TRICORE ENVIRONMENTAL, LLC

June 16, 2009

VIA USPS PRIORITY MAIL
WITH DELIVERY CONFIRMATION

Mr. Brian Bauer
Illinois Environmental Protection Agency
Bureau of Land #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

RE: LPC No. 0971855024 – Lake County
Wauconda/Shivam Energy, Inc.
399 West Liberty Street
IEMA Incident Nos. 892744 and 903199
LUST TECHNICAL FILE

Dear Mr. Bauer:

TriCore Environmental, LLC, on behalf of Shivam Energy, Inc., is providing an original and one copy of an Illinois Environmental Protection Agency Leaking Underground Storage Tank Program Amended Corrective Action Plan and Budget for the above referenced Illinois Emergency Management Agency incident numbers.

If you should have any questions concerning this submittal or require additional information, please contact either of the undersigned at (630) 520-9973.

Sincerely,

Marcos I. Czakó, P.G.
Project Manager

Shawn Rodeck, P.E.
President

cc: Mr. Rajani Patel, Shivam Energy, Inc., 399 W. Liberty St., Wauconda, IL 60084
Ms. Jackie D. Soccorso, Village of Wauconda, 109 W. Bangs St., Wauconda, IL 60084
Ms. Gwen Carey, 363 W. Bangs St., Wauconda, IL 60084

Attachment

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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
LEAKING UNDERGROUND STORAGE TANK SECTION
AMENDED CORRECTIVE ACTION PLAN

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199
LPC No. 0971855024

Prepared for:

Mr. Rajani Patel
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084

Prepared by:

TriCore Environmental, LLC
1800 West Hawthorne Lane, Suite P
West Chicago, Illinois 60185
Phone: (630) 520-9973
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June 10, 2009

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Illinois Environmental Protection Agency Leaking Underground Storage Tank Program

Corrective Action Plan

A. Site Identification

IEMA Incident # (6- or 8-digit): 892744 and 903199 IEPA LPC # (10-digit): 0971855024

Site Name: Shivam Energy, Inc.

Site Address (Not a P.O. Box): 399 West Liberty Street

City: Wauconda County: Lake ZIP Code: 60084

Leaking UST Technical File

B. Site Information

1. **Will the owner or operator seek reimbursement from the Underground Storage Tank Fund?** Yes ☒ No ☐
2. **If yes, is the budget attached?** Yes ☒ No ☐
3. **Is this an amended plan?** Yes ☒ No ☐
4. **Identify the material(s) released:** unleaded gasoline
5. **This Corrective Action Plan is submitted pursuant to:**
   - a. **35III. Adm. Code 731.166** ☐
     The material released was:
     - **-petroleum** ☐
     - **-hazardous substance (see Environmental Protection Act Section 3.215)** ☐
   - b. **35 III. Adm. Code 732.404** ☐
   - c. **35 III. Adm. Code 734.335** ☒

C. Proposed Methods of Remediation

1. **Soil:** A dual phase extraction (DPE) system will be utilized to address the concentrations of the constituents of concern (COCs) above the Tier 2 soil remediation objectives (SROs).

2. **Groundwater:** A DPE system will be utilized to address the concentrations of the COCs above the Tier 1 groundwater remediation objectives (GROs).

D. Soil and Groundwater Investigation Results (for incidents subject to 35 Ill. Adm. Code 731 only or 732 that were classified using Method One or Two, if not previously provided)

Not applicable.

Provide the following:

1. **Description of investigation activities performed to define the extents of soil and/or groundwater contamination;**
2. **Analytical results, chain-of-custody forms, and laboratory certifications;**
3. **Tables comparing analytical results to applicable remediation objectives;**
4. **Boring logs;**
5. **Monitoring well logs; and**
6. **Site maps meeting the requirements of 35 III. Adm. Code 732.110(a) or 734.440 and showing:**
   a. **Soil sample locations;**
   b. **Monitoring well locations; and**
   c. **Plumes of soil and groundwater contamination.**

E. Technical Information – Corrective Action Plan

Provide the following:

1. **Executive summary identifying the objectives of the corrective action plan and the technical approach to be utilized to meet such objectives;**

   In-Situ Chemical Oxidation Investigation Activities

   On January 18, 2007 and August 7, 2008, TriCore Environmental, LLC (TriCore) oversaw the installation of five on-site soil borings (SB-33 through SB-37) and two off-site soil borings (SB-39 and SB-40) to a maximum depth of 22 feet below land surface (bls). The soil borings were installed to evaluate in-situ chemical oxidation as a remediation method for the site. The locations of the soil borings are illustrated on Figure 1. Prior to performing SB-39 and SB-40, a permit was obtained from the Wauconda Park District for authorization to perform the soil borings in Osage Park. The soil borings were completed using the following drilling and sampling procedures.

   Each boring was drilled and sampled to a maximum depth of 6 feet bls using a stainless steel hand auger to collect soil samples in 1.0-foot depth intervals. A hand auger was utilized to minimize the risk of damage to subsurface structures and utilities. The reduced risk of striking utility lines increases the safety factor for drillers and other on-site personnel.

   The borings were then completed with a truck-mounted Geoprobe® using direct-push technology to advance the borings. Continuous soil samples were collected at 2.0-foot intervals to the termination depth of each soil boring. The soil samples were collected within a disposable macro-core liner which was placed within a 2.125-inch inside diameter by 4.0-foot long macro-core sampler. To prevent cross contamination between soil borings and sampling intervals, all drilling and sampling equipment was decontaminated prior to each use using a distilled water and Liquinox® solution wash, followed by a distilled water rinse.

   As soil samples were collected, the geology of the subsurface soil was described. Upon retrieval, a portion of each soil sample was immediately divided for field screening and laboratory analysis. Samples designated for field screening were placed in airtight plastic

bags, allowed to volatilize and equilibrate, and then screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID) equipped with a 10.6 electron volt lamp. The PID was field calibrated using isobutylene gas prior to use. The other portion of each sample was placed into laboratory provided containers, labeled accordingly, and packed in a cooler containing ice. The soil sample from each boring collected at the static water table or at the interval directly below the static water table was submitted for total petroleum hydrocarbon gasoline range organics (TPH), chemical oxygen demand (COD), and the Resource Conservation and Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). The soil samples were shipped under standard chain-of-custody protocol to Pace Analytical Services, Inc. (Pace) in Green Bay, Wisconsin for laboratory analysis using United States Environmental Protection Agency (USEPA) methods. Additionally, one soil sample was collected for total plate count and shipped under standard chain-of-custody protocol to Suburban Laboratories, Inc. in Hillside, Illinois for laboratory analysis.

After soil samples were collected, the borings were backfilled with bentonite and hydrated. The ground surface was restored using material similar to the surrounding ground surface.

Analytical laboratory results are summarized in Tables 1 and 2. Copies of the analytical laboratory reports and certifications are provided in Appendix A. Soil boring logs are provided in Appendix B.

On January 19, 2007 and June 23, 2008, TriCore sampled MW-2, MW-11S, MW-15, MW-18, MW-26, and MP-1 to evaluate in-situ chemical oxidation as a remediation method for the site. The locations of the wells are illustrated on Figure 1. Prior to sampling the wells, the depth to groundwater was measured in each well using an electronic oil/water interface meter equipped with an audible signal. The meter was washed using a distilled water and Simple Green® solution wash between each use. Each well was then developed by removing approximately three well volumes using a dedicated, disposable high-density polyethylene (HDPE) bailer. The purge water generated during the sampling activities were contained on site in 55-gallon drums for future disposal. After the wells were allowed to recharge, groundwater samples were collected from each well using the dedicated, disposable HDPE bailer. The samples were collected without headspace in laboratory-provided containers, labeled accordingly, packed in a cooler containing ice, and shipped under standard chain-of-custody protocol to Pace for laboratory analysis. The groundwater samples were submitted for TPH, COD, RCRA metals, total nitrogen, and total phosphorus analyses using USEPA methods.

Analytical laboratory results are summarized in Tables 3 and 4. Copies of the analytical laboratory reports and certifications are provided in Appendix C. Costs associated with the in-situ chemical oxidation evaluation activities performed on June 23 and August 7, 2008 have been included in an Amended Corrective Action Budget provided in Appendix D. These costs have not been included in the budgets previously approved by the Illinois Environmental Protection Agency (IEPA). An Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form is provided in Appendix E. A copy of the Office of the State Fire Marshal Eligibility and Deductible Determination is provided in Appendix F.

In-Situ Chemical Oxidation Evaluation

Based on the analytical results from the investigation activities described above, TriCore evaluated the use of in-situ chemical oxidation to address the concentrations of the COCs in the groundwater above the Tier 1 GROs. Since the site is located within the wellhead protection area of the Village of Wauconda community water supply well located in Osage Park, the Tier 1, Class I GROs were utilized as the remediation objectives for the groundwater component of the groundwater ingestion exposure route. Based on these objectives, groundwater treatment areas were determined.

By modifying the total mass of contaminant equation provided in the IEPA Chemical Oxidation Guidance dated September 2008, the mass of contaminants in the saturated soil and the mass of contaminants in the groundwater were calculated independently. For the mass of contaminants in the saturated soil, the dry bulk density of the soil was utilized in the equation instead of the wet bulk density. Similarly, for the mass of contaminants in the groundwater, the total soil porosity and the density of water were utilized in the equation instead of the wet bulk density.

The saturated soil treatment area encompassed the estimated area above the Tier 1 SROs. Utilizing the PID measurements and the depth of the field-interpreted groundwater table during drilling activities, a treatment depth of 8 to 12 feet was estimated. To determine the mass of contamination in the soil, the average COD concentration was used since it was the higher of the average TPH and COD concentrations in the soil. An average COD concentration of 3,400.00 parts per million (ppm) and a surface area of 5,400.91 square feet (ft^2) was utilized to determine the mass of contamination in the soil. By using the treatment depth, a total of 800.13 cubic yards (yds^3) of soil is estimated to be treated by the oxidation process. Using the modified equation described above, the mass of contaminants in the saturated soil was calculated to be 7,977 pounds (lbs).

The proposed groundwater treatment area encompasses the estimated area above the Tier 1 GROs. Utilizing the maximum seasonal fluctuations in groundwater from all of the wells located within the treatment area, a treatment thickness of 2 feet was estimated. To determine the mass of contaminants in the groundwater, the average groundwater COD concentration was used since it was the higher of the average TPH and COD concentrations in the groundwater. An average COD concentration of 42.53 ppm and a surface area of 94,882.59 ft^2 was utilized to determine the mass of contamination in the groundwater. By using the treatment depth, a total of 7,028.34 yds^3 is estimated to be treated by the oxidation process. Using the modified equation described above, the mass of contaminants in the groundwater treatment area was calculated to be 173 lbs. Therefore, the total mass of contaminants to be treated during the oxidation process is 8,150 lbs.

By estimating that 3 lbs of oxygen are required to remediate one lb of contaminant, it is estimated that approximately 24,451 lbs of oxygen are required to remediate the total mass of contaminants in the saturated soil and groundwater. Based on the chemical specific parameters provided by the manufacturer, Solvay Chemicals, Inc., the volume of chemical to be injected was determined. It is estimated that 176,667 lbs of chemical is required to treat the 8,150 lbs of contaminants within the proposed treatment areas. Based on these calculations, the volume of product required to be applied to the saturated

soil and groundwater within the treatment areas is not feasible. Calculations estimating the volume of product required to be applied to the treatment areas are provided in Appendix G.

Although the analytical laboratory results from SB-41 through SB-44 and SB-47 through SB-49, completed on February 2, 2009, revealed concentrations of the COCs above the Tier 1 SROs, these areas were not included in the calculations provided above. However, based on the concentrations of the COCs within the evaluated area as compared to the concentrations of the COCs from SB-41 through SB-44 and SB-47 through SB-49, the amount of oxygen and chemical required to treat the mass of contaminants within these areas would be greater than calculated above.

Soil Investigation Activities

On December 11, 2007, TriCore completed one on-site soil boring (SB-38) to collect site-specific geochemical parameters for the development of the Tier 2 SROs. The location of the soil boring is illustrated on Figure 1. The soil boring was completed to 4 feet bls with a stainless steel hand auger and soil samples were collected and screened using the methods and materials described above.

Two soil samples were selected for laboratory analysis: one from a depth interval of 2 to 3 feet bls and another from a depth interval of 3 to 4 feet bls. The soil samples were submitted under standard chain-of-custody protocol to Pace for fraction of organic carbon content using American Society for Testing and Materials Method D2974.

After soil samples were collected, the boring was backfilled with the soil cuttings. The surrounding ground surface was then capped with the existing topsoil and grass.

Analytical laboratory results are summarized in Table 1. Copies of the analytical laboratory reports and certification are provided in Appendix A. A soil boring log is provided in Appendix B. Costs associated with the soil investigation activities described above have been included in an Amended Corrective Action Budget provided in Appendix D. These costs have not been included in the budgets previously approved by the IEPA.

Vapor Migration Activities

On December 27, 2008, TriCore received a call from Ms. Gwen Carey, owner of the residential property located directly north of the site along Bangs Street. Ms. Carey indicated that her son, Mr. Scott Carey, who owns the home directly north of her, and Mr. Joe Munson, who owns the home located directly north of Mr. Carey, had gasoline vapors present in their basements.

On December 29, 2008, TriCore met Ms. Carey at her home. Ms. Carey indicated that she did not have any gasoline vapors present in her home. This was due to an operating vacuum blower located on site that is directly connected by subsurface piping to the backfill material surrounding the cleanout for the sanitary sewer line that services her home. The sanitary sewer line cleanout is located east of her home, in her front yard. The vacuum blower contains a dilution valve that was partially open to the ambient air. The vacuum blower was installed in 1991 as part of the corrective action activities associated with Illinois Emergency Management Agency (IEMA) incident numbers 892744 and 903199. The blower has operated periodically from 1991 through March 9,

2006 and continuously since March 9, 2006. TriCore and Ms. Carey then proceeded to Mr. Carey's home. Prior to entering Mr. Carey's home, a hydrocarbon odor was observed emanating up from the grass areas between the two homes. Upon arrival to Mr. Carey's house, the basement was inspected. No gasoline vapors were observed within Mr. Carey's basement; however, the basement was damp and humid. Water staining was also present on the concrete floor of the basement, indicating that the basement was not sealed to the outside. At the time, Mr. Munson's home was not accessible and therefore, his basement was not inspected. Please note that Mr. Carey's and Mr. Munson's homes are not connected to the vacuum blower.

After meeting Ms. Carey and inspecting the homes, TriCore inspected the sump wells (S-1 through S-3) associated with the underground storage tank (UST) system and several of the monitoring wells near the UST system (RW-1 (04'), MP-3, MW-2, MW-6, MW-12S, MW-13, MW-26, and MW-27) by lowering a bailer into each of the wells. The locations of the wells are illustrated on Figure 1. A sheen of weathered free product was present in MW-27. No free product was present in any of the other wells that were inspected.

The sanitary sewer line servicing Ms. Carey's house runs through the backfill material surrounding her basement. The sanitary sewer line runs southeast from Ms. Carey's home and connects to the main that runs along Bangs Street. The sanitary sewer line servicing Mr. Carey's and Mr. Munson's homes were constructed similarly to Ms. Carey's. It is assumed that the vapors associated with the on-site free product migrated into the backfill material surrounding the sanitary sewer line that runs southeast from the remediation building to the sanitary sewer main that runs along Bangs Street. The vapors then migrated north along the main and towards the residential homes through the backfill material surrounding the sanitary sewer lines servicing their homes. Since the dilution valve on the vacuum blower was partially open, the vacuum delivered from the blower was enough to remove the vapors within the backfill material surrounding the sanitary sewer line servicing Ms. Carey's house; however, it did not deliver enough vacuum to remove the vapors surrounding the sanitary sewer lines servicing Mr. Carey's or Mr. Munson's homes. Therefore, on December 30, 2008, TriCore returned to the site and closed the dilution valve on the vacuum blower so that a greater vacuum would be applied to the backfill material surrounding the sanitary sewer lines and main.

On December 31, 2008, TriCore returned to the site to regauge the wells and meet with Mr. Brian Bauer, Project Manager with the IEPA Leaking Underground Storage Tank Section, and Ms. Jackie D. Soccorso, Director of Environmental Quality with the Village of Wauconda. Upon arrival at the site, TriCore gauged S-1 through S-3, MW-2, MW-26, and MW-27 with an electronic oil/water interface meter equipped with an audible signal. The meter was washed using a distilled water and Simple Green® solution wash between each use. A combination of new and weathered free product was present in S-1 through S-3 and MW-27. No free product was present in MW-2 or MW-26.

TriCore, Mr. Bauer, and Ms. Soccorso then met with Ms. Carey and inspected her basement. A PID equipped with a 10.6 electron volt lamp was used to screen a floor drain in her basement. A concentration of 0.0 ppm was measured. Mr. Carey's basement was then inspected. The PID was also used to screen a floor drain in his basement and a concentration of 0.0 ppm was measured. No gasoline vapors were present in either home.

On March 9, 2009, Ms. Carey contacted TriCore and indicated that Mr. Carey and Mr. Munson had gasoline vapors present in their homes over the weekend. That morning, TriCore met Ms. Carey at her home and then proceeded to her son's home. Upon arrival to Mr. Carey's home, the basement was inspected. A PID equipped with a 10.6 electron volt lamp was used to screen the basement. A concentration of 2.7 ppm was measured. In addition, the basement was damp and humid. Water was present on the floor of the basement in several locations. At the time, Mr. Munson's home was not accessible and therefore, the basement was not inspected. TriCore then screened the storm sewer manholes and inlets located along Bangs Street with the PID. A concentration of 0.0 ppm was measured in all of the manholes and inlets that were screened.

On March 12, 2009, Mr. Munson contacted TriCore and indicated that gasoline vapors were present in his home.

On March 13, 2009, TriCore exposed the sanitary sewer line that runs southeast from the remediation building to the sanitary sewer main that runs along Bangs Street to determine if the line was a migratory pathway for the gasoline vapors. The location of the sanitary sewer line is illustrated on Figure 1.

R.W. Collins of Chicago, Illinois was contracted to trench perpendicular to the sanitary sewer line and expose the line. Prior to trenching, a private utility locator, Lucky Locators, Inc. of Algonquin, Illinois, was contracted to locate the sanitary sewer line. Once the line was located, TriCore then proceeded with the trenching activities. All of the soil that was removed during the trenching was stockpiled on visqueen until the trench needed to be backfilled. After the grass and topsoil were removed, clay was encountered to a depth of approximately 5 feet bls. Underlying the clay was sand. The sanitary sewer line was located approximately 4.5 feet bls just above the top of the sand layer. The backfill material surrounding the 6-inch line was typical to the native sand layer below it; therefore, it was determined not to be a migratory pathway for the gasoline vapors. After the line was exposed, the trench on the south side of the sewer line was excavated deeper and a recovery well, RW-2, was installed south of the sewer line within the trench. The recovery well was installed at a depth of 8 feet bls and was constructed out of 4-inch inside diameter, Schedule 40 polyvinyl chloride (PVC) casing, 4-inch diameter, 0.010-inch slot Schedule 40 PVC screen, a 4-inch PVC end cap, and a 4-inch well plug. The well was constructed so that the screened portion of the well was located within the sand layer. The area surrounding the well was then backfilled with bentonite while the remaining portion of the trench was backfilled with the clay that was excavated.

On March 30, 2009, Ms. Carey contacted TriCore indicating that Mr. Carey had gasoline vapors present in his home.

On April 1, 2009, TriCore and Concept Plumbing, Inc. (Concept Plumbing) of Palatine, Illinois inspected Mr. Carey's basement. The basement was screened with a PID equipped with a 10.6 electron volt lamp. A PID concentration of 0.0 ppm was measured. Upon further inspection of the basement, a dry toilet was found. Concept Plumbing verified that the basement floor drain had a u-trap. If vapors migrate through the sanitary sewer line along Bangs Street and towards Mr. Carey's home, the dry toilet would be a point of entry for the vapors to enter the home. Mr. Carey was advised to keep water in the toilet so that vapors do not migrate into his home through this point of entry.

After inspecting Mr. Carey's basement, TriCore and Concept Plumbing met with Mr. Munson and inspected his home. In Mr. Munson's basement, there is a floor opening in which a vertical drop pipe from the 1st floor connects to the horizontal sewer line exiting to the Bangs Street sewer main from beneath the basement floor. There is no seal around the drop pipe and the floor opening. Like Mr. Carey's home, if vapors migrate through the sanitary sewer line along Bangs Street and towards Mr. Munson's home, the open sanitary sewer line and floor opening would be a point of entry for the vapors to enter the home. Mr. Munson was advised to seal the floor opening around the drop pipe with concrete so that vapors do not migrate into his home through this point of entry.

Copies of the waste manifests for the free product and groundwater that were recovered on December 31, 2008 through April 1, 2009 were provided in Appendix A of the Free Product Removal Plan (FPRP) dated April 6, 2009. Costs associated with the vapor migration activities described above have been included in the Amended Corrective Action Budget provided in Appendix D. Please note that the costs for the free product and groundwater recovery events described above are not included in the budget since these costs were included in the aforementioned FPRP.

Free Product Removal Activities

On December 31, 2008, TriCore contracted North Branch Environmental (North Branch) of Roselle, Illinois to remove the free product present in S-1 through S-3 and MW-27. North Branch removed a total of 15 gallons of free product and 2,485 gallons of groundwater from the wells utilizing a vacuum truck. The free product and groundwater that were removed were transported off-site by North Branch for treatment and disposal at their facility.

On January 9 and 27, March 9 and 13, and April 1, 2009, TriCore contracted North Branch to perform free product recovery events at the site. During these events, North Branch recovered a total of 59 gallons of free product and 11,841 gallons of groundwater from S-1 through S-3 and MW-27. On February 26, 2009, TriCore recovered approximately 0.01 gallons of free product and 3.99 gallons of groundwater from S-1 through S-3 and MW-27 using disposable, dedicated HDPE bailers. The free product and groundwater recovered on this date were contained on site in a 55-gallon drum. Please note that the volume of free product and groundwater recovered on January 9 and April 1, 2009 included approximately 150 gallons of purged free product and groundwater that were contained on site in 55-gallon drums that were generated during the groundwater sampling activities performed on January 5 and 6, 2009 and the free product recovery activities performed on February 26, 2009. Further details regarding the groundwater sampling activities are provided below. Free product recovery volumes are summarized in Table 5.

On May 15, 2009, in accordance with the aforementioned FPRP, TriCore installed SB-51/MW-29 through SB-57/MW-35 and RW-3. As described in the aforementioned FPRP, a 4-inch diameter well was installed within SB-55/MW-33 through SB-57/MW-35 since the wells will be utilized as recovery wells for the proposed DPE system. These wells will be referred to as RW-4 through RW-6 throughout the remainder of this report. The locations of the wells are illustrated on Figure 1. Further details regarding the well installation activities will be provided in a FPRP. Costs associated with the free product

removal activities described above have not been included in the Amended Corrective Action Budget provided in Appendix D since these costs were included in the aforementioned FPRP.

Groundwater Sampling Activities

On January 5 and 6, 2009, TriCore sampled all of the existing wells, except for MW-2, MW-4, MW-9S, MW-24, MW-25, MW-27, RW-1 ('04), and MP-2 through MP-4, to assess the concentrations of the COCs in the groundwater. Monitoring wells MW-2, MW-4, and MW-9S could not be sampled due to obstructions within the wells. Monitoring wells MW-24 and MW-25 were not accessible due to piles of snow and ice that were covering the wells. Monitoring well MW-27 was not sampled due to the presence of free product in the well. Wells RW-1 ('04) and MP-2 through MP-4 were not sampled since they are located adjacent to MP-1. The locations of the wells are illustrated on Figure 1.

Prior to sampling the wells, the depth to free product and/or groundwater was measured in each well using an electronic oil/water interface meter equipped with an audible signal. The meter was washed using a distilled water and Simple Green® solution wash between each use. If free product was present in the well, it was removed using a dedicated disposable HDPE bailer. If no free product was present in the well, it was developed by removing approximately three well volumes using a dedicated, disposable HDPE bailer. The free product and purge water generated during the sampling activities were contained on site in 55-gallon drums. After the wells were allowed to recharge, groundwater samples were collected from each well using the dedicated, disposable HDPE bailer. If free product was present in a well, it was not sampled during this event. The samples were collected without headspace in laboratory-provided 40-milliliter glass vials containing hydrochloric acid as a preservative, labeled accordingly, packed in a cooler containing ice, and shipped under standard chain-of-custody protocol to Pace for laboratory analysis. The groundwater samples were submitted for benzene, toluene, ethylbenzene, total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) analysis using USEPA Method 8021.

Analytical laboratory results revealed benzene concentrations above the Tier 1 GROs in MW-15, MW-16, MW-26, MP-1, and RW-1. Analytical laboratory results are summarized in Table 6 and illustrated on Figure 2. The groundwater flow direction is illustrated on Figure 3. Copies of the analytical laboratory reports and certification were provided in Appendix B of the Stage 2 Site Investigation Plan (SIP) dated April 14, 2009, prepared for IEMA incident number 903199. Costs associated with the groundwater sampling activities described above have been included in the Amended Corrective Action Budget provided in Appendix D. These costs have not been included in the budgets previously submitted to the IEPA.

a. The major components (e.g., treatment, containment, removal) of the corrective action plan;

DPE System

To recover the free product present at the site, to prevent further migration of vapors, and to remediate the concentrations of the COCs in the soil and groundwater to the

applicable remediation objectives, a DPE system is being proposed.

Groundwater Evaluation

As stated in the IEPA letter dated May 16, 2008, since the benzene concentrations above the Tier 1 SROs observed in B-4c and B-5b are below the shallow groundwater table that exists in Osage Park, these concentrations should be addressed through the installation of monitoring wells and treated as a groundwater issue. Therefore, one groundwater monitoring well (SB-67/MW-33) will be installed at the location of B-4c and one groundwater monitoring well (SB-68/MW-34) will be installed at the location of B-5b. The locations of the proposed wells are illustrated on Figure 1. Prior to performing these wells, a permit from the Wauconda Park District will need to be obtained for authorization to install the wells in Osage Park.

The borings will be completed and sampled using the methods, materials, and equipment described above. The soil sample collected above the field interpreted water table exhibiting the highest PID measurement will be shipped under standard chain-of-custody protocol to an Illinois Environmental Laboratory Accreditation Program (IL ELAP) approved laboratory for BTEX and MTBE analysis using USEPA methods.

After soil samples are collected, a groundwater monitoring well will be installed within each boring. The groundwater monitoring wells will be installed with a track-mounted Geoprobe® using hollow-stem augers. To prevent cross contamination during the installation of the wells, all drilling equipment will be decontaminated prior to each use. Each well will be constructed out of 2-inch inside diameter Schedule 40 PVC casing, 2-inch inside diameter, 0.010 slot Schedule 40 PVC screen, a 2-inch PVC end cap, a 2-inch well plug, and a stick-up well cover. The stick-up well covers are being used so that proper well seals can be obtained due to the shallow groundwater table in this area of Osage Park. The annulus of each well will be filled with washed silica sand to approximately 1 foot above the top of the well screen. Bentonite pellets will be added followed by bentonite chips to approximately 6 inches below the top of each well casing. The bentonite pellets and chips will be hydrated to provide a seal to prevent potential surface water from migrating into the well through the sand pack. A stick-up well vault with a bolt-down cover will be installed to protect each well.

Approximately one week after their installation, TriCore will gauge, develop, and sample all of the existing wells using the methods and materials described above. The groundwater samples will be shipped under standard chain-of-custody protocol to an IL ELAP approved laboratory for BTEX and MTBE analysis using USEPA methods. In addition, the top-of-casing elevation of MW-33 and MW-34 will be surveyed in reference to another well so that the groundwater elevations and flow direction can be determined. The analytical laboratory results from this sampling event will also be used as the baseline sampling event for the DPE system to evaluate the COC concentration changes with time due to natural and system induced reductions. If analytical laboratory results reveal concentrations of the COCs above the Tier 1 GROs, then remediation of these COCs in this area will be addressed in an Amended Corrective Action Plan (CAP).

b. The scope of the problems to be addressed by the proposed corrective action; and

DPE System

According to the IEPA Source Water Assessment Protection (SWAP) online database, the Village of Wauconda community water supply well located north of the site in Osage Park has a wellhead protection area of 1,000 feet; therefore, the site is located within the wellhead protection area of the community water supply well. Since the site is located within a wellhead protection area, concentrations of the COCs in the groundwater must be remediated to the Tier 1, Class I GROs. Additionally, concentrations of the COCs in the soil must be remediated to the Tier 2 SROs. Further details regarding the Tier 2 SROs are provided below in Section E. 2. Based on the zones where the concentrations of the COCs above the Tier 2 SROs are located, the depth to groundwater, and the lithologies beneath the site, DPE is a viable remediation method that will address the concentrations of the COCs above the applicable remediation objectives. Additionally, the DPE system will recover the free product present at the site and prevent further vapor migration.

Groundwater Evaluation

Since the concentrations of the COCs above the Tier 1 SROs in the soil samples collected from B-4c and B-5b are below the groundwater table, by installing groundwater monitoring wells at these locations, it would evaluate the concentrations of the COCs in the groundwater at these locations. Further details regarding the groundwater evaluation activities were provided above in Section E. 1. a.

c. a schedule for implementation and completion of the plan;

The following is a proposed schedule for the implementation and completion of this plan once it has been approved by the IEPA.

Activity	Projected Completion Time
Obtain an access permit with the Wauconda Park District for Osage Park	Weeks 1 and 2
Obtain groundwater and air discharge permits from the IEPA, and groundwater discharge and building permits from the Village of Wauconda	Weeks 1 through 4
Coordinate and install SB-67/MW-33 and SB-68/MW-34 in Osage Park, and RW-7 through RW-10	Weeks 3 and 4
Trenching, groundwater discharge connection, and piping installation	Weeks 5 and 6
Coordinate and place order with electric company for the power drop	Weeks 5 and 6
Baseline groundwater sampling	Week 6
Place order for the permanent DPE system	Week 6
Temporary DPE system and generator installation	Weeks 7 and 8
Temporary DPE system start up	Week 8
Temporary DPE system operation and maintenance	Weeks 8 through 34
Quarterly groundwater sampling	Weeks 21 through 33
Installation of power drop	Week 32
Permanent DPE system installation	Weeks 33 and 34
Permanent DPE system startup	Week 34

Permanent DPE system operation and maintenance	Weeks 34 through 112
Quarterly groundwater sampling	Weeks 45 through 111
System shutdown (as long as Tier 1, Class I GROs are met)	Week 112
Soil and groundwater attenuation sampling	Week 138

2. Identification of the remediation objectives proposed for the site;

Soil Remediation Objectives

Since the site is located within the wellhead protection area of the Village of Wauconda community water supply well located in Osage Park, Tier 2 evaluations were performed for the COCs above the Tier 1 SROs. The Tier 2 evaluations were performed to evaluate the maximum BTEX and MTBE concentrations that could remain on site that would result in groundwater concentrations equal to the Tier 1, Class I GROs at that location. If the concentrations of the COCs are above the Tier 2 SROs, they will be remediated utilizing DPE.

The Tier 2 SROs were calculated using soil screening level Equations S17 through S22, and S25, located in 35 Illinois Administrative Code (IAC) Part 742, Appendix C, Table A. Default parameters listed in 35 IAC Section 742, Appendix C, Tables B, E, and K, and site-specific parameters were used in these evaluations. Since the site meets the criteria of Class I groundwater, Class I GROs were utilized within the equations to calculate the Tier 2 SROs. The site-specific input parameters are summarized in the table below.

Site-Specific Input Parameters	Value	Units
Dry Soil Bulk Density (Table 1)	1.74	g/cm^3
Soil Particle Density (Specific Gravity) (Table 1)	2.65	g/cm^3
Total Soil Porosity (Table 1)	0.344	L_{pore}/L_{soil}
Organic Carbon Content (subsurface soils below 1 meter) (Table 1)	0.0078	g/g
Hydraulic Conductivity (k) Estimated from the data collected by Bradburne, Briller, and Johnson, LLC from MW-6 during a slug test conducted on September 24, 1997 (Appendix H).	2,084.53 ($6.61x10^{-3}$)	m/yr (cm/sec)
Hydraulic Gradient (i) Derived based on the measured groundwater elevations collected during the monitoring activities conducted on January 5 and 6, 2009 (Appendix H).	0.0157	cm/cm
Source Length/Width Parallel to Groundwater Flow Direction in the Horizontal Plane (Figure 4) Measured from the northern curb of West Liberty Street to B-1	5,090.16	cm

The Tier 2 SROs for the SCGIER are summarized in the table below.

COC above the Tier 1 SROs	Maximum Detected Concentration (mg/kg)	Tier 2 SROs for the SCGIER (mg/kg)
Benzene	**104 (SB-44 @ 6 to 8 feet bls)**	**0.064**
Toluene	**1,000 (SB-44 @ 6 to 8 feet bls)**	**31.939**
Ethylbenzene	**294 (SB-44 @ 6 to 8 feet bls)**	**42.061**
Total Xylenes	**1,530 (SB-44 @ 6 to 8 feet bls)**	**440.507**
MTBE	**30.1 (SB-44 @ 6 to 8 feet bls)**	**0.374**

Based on the calculations above, any BTEX and MTBE concentrations above these Tier 2 SROs would result in concentrations of the COCs in the groundwater above the Tier 1, Class I GROs at that location. Since soil concentrations above these Tier 2 SROs are

within the wellhead protection area of the community water supply well, they would have to be addressed. Printouts for these evaluations are provided in Appendix I. Analytical laboratory results are summarized in Table 7 and illustrated on Figures 5A and 5B.

Groundwater Remediation Objectives

As mentioned above in Section C. 2., since the site is located within the wellhead protection area of the Village of Wauconda community water supply well located in Osage Park, Tier 1, Class I GROs are being proposed for the site.

3. **A description of the remedial technologies selected:**

   a. **The feasibility of implementing the remedial technologies;**

      Based on the proposed locations of the recovery wells, the piping trenches, and the remediation building, there are no site features inhibiting the installation and operation of the DPE system.

   b. **Whether the remedial technologies will perform satisfactorily and reliably until the remediation objectives are achieved; and**

      The DPE technology is a very reliable means to remediate the site since the equipment is easy to access for any necessary repairs. Periodic operation and maintenance (O&M) events will ensure that the DPE system is performing satisfactorily and reliably.

   c. **A schedule of when the technologies are expected to achieve the applicable remediation objectives;**

      It is estimated that a minimum of 24 months will be required to remediate the concentrations of the COCs in the soil and groundwater to the applicable remediation objectives. Although a pilot test was performed on RW-1 ('04) on May 12, 2005, TPH concentrations in the air bag sample collected during the test would not be representative of the TPH concentrations being removed from the recovery wells. Evidence of this is present in the analytical laboratory results from MP-1 through MP-3 and RW-1 ('04), which were installed in 2005, as compared to the analytical laboratory results from SB-41, SB-44, and SB-49, which were installed in 2009. Therefore, estimated rates of removal will be determined once the permanent DPE system has been started. This information will be used to evaluate the time required to remediate the concentrations of the COCs to the applicable remediation objectives. This information will be provided to the IEPA in a semi-annual Remediation Status Report. Analytical laboratory results from the soil samples collected are summarized in Table 7.

      As mentioned below in Section E. 4., groundwater samples will be collected from all of the existing monitoring wells quarterly during the operation of the DPE system. Then, all of the existing monitoring wells, RW-1 through RW-6, RW-1 ('04), and proposed recovery wells RW-7 through RW-10 will be sampled for two quarters after the system has been shut down. Additionally, six months after the system has been shut down, soil samples will be collected from the locations which previously exhibited soil concentrations above the Tier 2 SROs. Analytical laboratory results and reports will be provided in semi-annual Remediation Status Reports and/or an

Amended CAP.

4. **A confirmation sampling plan that describes how the effectiveness of the corrective action activities will be monitored during their implementation and after their completion;**

Groundwater Quality Monitoring

Prior to placing the DPE system on-line, groundwater samples will be collected from all of the existing monitoring wells, RW-1 through RW-6, RW-1 ('04), and proposed recovery wells RW-7 through RW-10. During the operation of the DPE system, groundwater samples will be collected from all of the existing monitoring wells on a quarterly basis as described above in Section E. 3. c. Prior to sampling the wells, the depth to free product and/or groundwater will measured in each well using the methods and materials described above.

The samples will be collected using the methods and materials described above in Section E. 1. The samples will be submitted to an IL ELAP approved laboratory for BTEX and MTBE analysis using USEPA methods. The results will be used as a baseline to evaluate the COC concentration changes with time due to natural and system induced reductions.

Quarterly groundwater monitoring will be conducted until groundwater concentrations remain below the Tier 1, Class I GROs for two quarters after the system has been shut down. TriCore will request permission from the IEPA to shut the system down after groundwater concentrations are below the Tier 1, Class I GROs. The system may be restarted if groundwater concentrations exceed the Tier 1, Class I GROs in any of the wells during future groundwater monitoring events.

Soil Quality Monitoring

Six months after the system has been shut down, soil samples will be collected from the locations which previously exhibited soil concentrations above the Tier 2 SROs (CB-11, CB-12, MP-3, SB-41, SB-43, SB-44, SB-48, and SB-49). The system may be restarted and additional extraction wells added if soil concentrations remain above the Tier 2 SROs.

Costs associated with the groundwater and soil quality monitoring activities described above are provided in the Amended Corrective Action Budget provided in Appendix E.

5. **A description of the current and projected future uses of the site;**

The site is currently an operating gasoline retail station consisting of a single story convenience store building with no basement or crawl space, three dispenser islands with a canopy, two 10,000-gallon steel unleaded gasoline underground storage tanks, and a storage shed. At the time this report was written, the owner plans to continue to operate the site as a gasoline retail station.

6. **A description of engineered barriers or institutional controls that will be relied upon to achieve remediation objectives:**

Since DPE will be utilized to remediate the concentrations of the COCs in the soil and groundwater to levels below the applicable remediation objectives, no engineered barriers

or institutional controls will be relied upon to achieve the remediation objectives.

a. **an assessment of their long-term reliability;**

b. **operating and maintenance plans; and**

c. **maps showing area covered by barriers and institutional controls;**

7. **The water supply well survey:**

   a. **Map(s) showing locations of community water supply wells and other potable wells and the setback zone for each well;**

      According to the information provided by the IEPA SWAP database and the Illinois State Geological Survey (ISGS) online database, the closest potable water supply well is located approximately 365 feet north of the site in Osage Park. The well is an active community water supply well for the Village of Wauconda and has a minimum setback zone of 200 feet. According to the ISGS driller's log, the well was installed in 1957 and has a depth of 325 feet. Additionally, according to the IEPA SWAP Fact Sheet for the Village of Wauconda, the well is installed within bedrock that is overlain by relatively impermeable silty or clayey till.

      On May 6, 2004, TriCore performed an area reconnaissance to locate the community water supply well. The well is located in the northwest corner of Osage Park. The location of the well is illustrated on Figures 1 through 5. Copies of the water supply well information obtained from the IEPA SWAP database and the ISGS online database were provided in Appendix G of the aforementioned Stage 2 SIP.

   b. **Map(s) showing regulated recharge areas and wellhead protection areas;**

      According to the IEPA SWAP online database, the community water supply well located north of the site in Osage Park has a wellhead protection area of 1,000 feet; therefore, the site is located within a wellhead protection area of a potable water supply well. No regulated recharge areas are located within 2,500 feet of the site. A map showing the location of the site in relation to the wellhead protection area was provided in Appendix G of the aforementioned Stage 2 SIP.

   c. **Map(s) showing the current extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;**

      A map showing the current extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives is illustrated on Figure 2.

   d. **Map(s) showing the modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;**

      The modeled extent of groundwater contamination exceeding the most stringent Tier 1 GROs has not been determined at this time. This information will be provided in an Amended CAP.

   e. **Tables listing the setback zone for each community water supply well and other potable water supply wells;**

      As mentioned above in Section E. 7. a., the Village of Wauconda community water supply well located north of the site has a minimum setback zone of 200 feet.

f. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any field observations associated with any wells identified; and

The following personnel or websites were consulted regarding the locations of potable water supply wells within 2,500 feet of the site.

1. IEPA SWAP database
2. Janet Christer, Freedom of Information Act Coordinator, Bureau of Water, IEPA
3. ISGS online database

As mentioned above in Section E. a. 7., on May 6, 2004, TriCore verified the location of the Village of Wauconda community water supply well located 365 feet north of the site in Osage Park.

g. A certification from a Licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey (certification of this plan satisfies this requirement);

A certification from a Licensed Professional Engineer is provided in Section G. below.

8. Appendices:

a. References and data sources report that are organized; and

The following is a list of references that were utilized to complete this report.

1. Amended CAP dated July 31, 2004, prepared by TriCore
2. Revised Corrective Action Budget dated September 28, 2004, prepared by TriCore
3. Amended CAP dated July 12, 2006, prepared by TriCore
4. Amended CAP dated January 17, 2008, prepared by TriCore
5. IEPA SWAP database
6. ISGS online database

b. Field logs, well logs, and reports of laboratory analyses;

Copies of the analytical laboratory reports for the soil samples collected on January 18, 2007 through August 7, 2008 are provided in Appendix A. Soil boring logs for the borings completed on these dates are provided in Appendix B. Copies of the analytical laboratory reports for the groundwater samples collected on January 19, 2007 and June 23, 2008 are provided in Appendix C. Field logs, well logs, and copies of analytical laboratory reports for the other investigation activities completed at this site were provided in the reports previously submitted to the IEPA.

9. Site map(s) meeting the requirements of 35 III. Adm. Code 732.110(a) or 734.440;

Site maps meeting the requirements of 35 IAC 734.440 are illustrated on Figures 1 through 5.

10. Engineering design specifications, diagrams, schematics, calculations, manufacturer's specifications, etc.;

The design and placement of the DPE system focuses on the areas of the site that contain free product and COC concentrations in the soil and/or groundwater above the applicable remediation objectives. In addition, it focuses on the areas of the site where vapor migration has been present. The free product present in MW-27 and S-1 through S-3 have created vapors that have migrated along the sanitary sewer main in Bangs Street and into three residential homes located north of the site. The system will use existing recovery wells RW-1 through RW-6, RW-1 ('04), and proposed recovery wells RW-7 through RW-10 as extraction points. The proposed locations of RW-7 through RW-10 are illustrated on Figure 6.

Proposed recovery wells RW-7 through RW-10 will be installed and soil samples collected using the methods and materials described above in Section D. 1. The soil sample from RW-7, RW-9, and RW-10 collected above the field-interpreted water table exhibiting the highest PID measurement will be shipped under standard chain-of-custody protocol to an IL ELAP approved laboratory for BTEX and MTBE analysis using USEPA methods. No soil samples will be submitted for laboratory analysis from RW-8 since the well will be located adjacent to SB-49, which was completed on February 2, 2009. A 4-inch inside diameter recovery well will then be installed in each boring. The placement of the recovery wells was based on the calculated radius of influence (ROI) of 13 feet that was observed during the pilot test performed on May 12, 2005. Further details regarding the pilot test are provided below in Section E. 11. Proper recovery well placement will ensure recovery of the existing free product, as well as efficient SVE removal rate and zone of influence of the groundwater extraction component in order to address the vapor migration, and the soil and groundwater concentrations above the applicable remediation objectives.

The DPE system will be enclosed within a remediation building equipped with a heater, exhaust fan, thermostats, and interior lighting. The system will extract liquids and vapors from each well through the use of a drop tube inserted into each well. DPE well details are illustrated on Figure 7. The extracted liquids and vapors will be transported from the wells to the building through underground piping by a rotary claw vacuum pump system, which will create a vacuum in the extraction wells. The piping will be installed within a trench which will be completed prior to the system installation. Trench details are illustrated on Figure 8. The extracted materials will then enter a knock-out tank which will be equipped with level sensors. The air will be drawn out of the knock-out tank by the vacuum pump. A portion of the air will be discharged into the atmosphere. The air remaining in the separator will be diverted into a vapor phase carbon unit. The vapor phase carbon unit will remove the VOCs and the treated air will be discharged to the atmosphere. The vapor phase carbon unit will be operated until off-gas concentrations are within the permitted levels, at which time 100 percent of the extracted air will be discharged into the atmosphere.

The liquids collected in the knock-out tank will be transferred to an oil/water separator (OWS) by a transfer pump. The free product will be gravity drained from the OWS to a 55-gallon product recovery drum equipped with float switches. Water will travel by gravity from the OWS to a 60-gallon holding tank. The tank will be equipped with level

sensors that will operate a transfer pump that will transfer water from the holding tank to an air stripper where it will be treated. The treated water will then be discharged from the air stripper into the Village of Wauconda sanitary sewer.

Prior to constructing and operating the DPE system, TriCore will obtain an air discharge and water pollution control permits from the IEPA. In addition, TriCore will obtain building and water discharge permits from the Village of Wauconda.

Monthly compliance samples will be collected from the treated groundwater and analyzed for BTEX and MTBE to ensure that the water discharging into the Village of Wauconda sanitary sewer has been properly treated and meets the objectives outlined in the IEPA Bureau of Water and Village of Wauconda discharge permits. A total of 24 compliance sampling events will be performed during the operation of the system. An air sample will also be collected from the vacuum pump effluent on a quarterly basis so that the mass of VOCs removed can be calculated. Calculating the mass of VOCs removed on a quarterly basis will assist in evaluating when the effluent air concentrations will be within the permitted levels so that operation of the vapor phase carbon unit will no longer be required.

In addition to the compliance-sampling schedule, the following O&M schedule will also be followed after the system has been started: three days during the first week, two days during the second week, one day per week during the third and fourth weeks, and once every two weeks during the remainder of the system operation.

At this time, the system is scheduled to operate for a period of two years. Based on this operating period, a total of 57 O&M days will be required. During a typical O&M day, a technician will perform the following activities: inspect the system and recovery well components, collect vacuum readings from the system, monitor vacuum readings at the recovery wells, gauge monitoring wells, and collect influent and effluent groundwater discharge samples and effluent air samples. System component cleaning will be performed on a periodic or as needed basis. Below is a detailed breakdown of the O&M costs over a two-year period.

Personnel

Senior Technician for O&M: 8 hours/day for 57 days at $70.88/hour = $32,321.28

Senior Technician for cleaning and repairs: 100 hours at $70.88/hour = $7,088.00

Equipment

Truck: 57 days at $95.00/day = $5,415.00

PID: 57 days at $75.00/day = $4,275.00

Oil/Water interface meter: 57 days at $35.00/day = $1,995.00

Materials

Nitrile gloves for O&M: 8 pairs/day for 57 days at $0.50/pair = $228.00

Distilled water: 1 gallon/day for 57 days at $2.00/gallon = $114.00

Nitrile gloves for compliance sampling: 2 pairs/event for 24 events at $0.50/pair = $24.00

Ice for compliance sampling: 1 bag/event for 24 events at $2.00/bag = $48.00

Vacuum pump bearing grease: 1 grease gun at $20.00/gun = $20.00

Analytical

Compliance influent groundwater sample for BTEX and MTBE analysis: 1 sample/event for 24 events at $88.33/sample = $2,119.92

Compliance effluent groundwater sample for BTEX and MTBE analysis: 1 sample/event for 24 events at $88.33/sample = $2,119.92

Effluent air sample for BTEX, MTBE, and TPH: 1 sample/quarter for 2 years at $75.00/sample = $600.00

Compliance sample overnight shipment: 16 events at $54.52/event = $872.32

(The compliance samples for eight of these events will be shipped with the groundwater samples collected from the quarterly sampling events; therefore, they are not included in these costs.)

Utilities

Electric Power Drop: $5,000.00

Electric: 24 months at $800.00/month = $19,200.00

Phone: 24 months at $50.00/month = $1,200.00

Total O&M costs = $82,640.44

Approximate O&M costs/month = $3,443.35

Since it will take approximately 6 months after the trenching and piping have been installed before the permanent DPE system procurement is completed and subsequently installed and ready for startup, TriCore is proposing to operate a temporary DPE system during that 6 month period. The temporary DPE system will focus strictly on the areas where free product is present and vapor migration is suspected. The temporary DPE system will utilize RW-2 through RW-6 as extraction points.

A map showing the layout of the remediation building and the recovery wells is illustrated on Figure 6. Recovery well and trench details are illustrated on Figures 7 and 8. Equipment and technical specifications provided by the manufacturer are provided in Appendix J. TriCore will be renting the temporary DPE system and purchasing the permanent DPE system. Quotes for the rental of the temporary system and purchase of the permanent system are also provided in Appendix J.

Once the permanent DPE system reaches the end of the remediation project, the equipment will be salvaged. Based on a conversation with a used remediation equipment vendor, the estimated salvage value of the equipment is approximately five percent of the purchase price; therefore, an average salvage value of the system is approximately $4,825.00. Costs associated with the installation and operation of the DPE systems are included in the Amended Corrective Action Budget provided in Appendix D.

Unsaturated Zone Design

- Total Area of Contamination = 10,017 ft^2
- Radius of Capture at the site = 20 ft per recovery point at 18.50 acfm each

- Required Removal Rate = 169.34 acfm
- Required Points for SVE Recovery = 10 recovery points; however, an additional recovery point has been proposed to address the vapor migration.

The unsaturated zone design calculations are provided in Appendix K.

Mass Loading

Unsaturated Zone Mass of Contamination = 2,704.9 lbs of VOCs

Saturated Zone Mass of Contamination = 1,971.40 lbs of VOCs

The mass loading calculations are provided in Appendix K. The mass of contamination calculated for the saturated zone does not account of the free product present at the site.

Mass Removal Rates

As mentioned above in Section E. 3. c., mass removal rates will be determined once the permanent DPE system has been started. This information will be provided to the IEPA in a semi-annual Remediation Status Report.

11. A description of bench/pilot studies;

The initial step in the remediation process was to perform a DPE pilot test. The pilot test was performed to determine the applicability of DPE as an effective remediation method for the site. Additionally, the pilot test data was used to determine system design requirements such as the effective ROI, vacuum and flow rate requirements for the system components, estimated friction losses, and layout of the trenching and piping.

As mentioned above in Section E. 10., On May 12, 2005, a pilot test was performed utilizing RW-1 ('04) as the extraction well. Prior to the start of the test, the initial background vacuum and depth to water measurements were collected from the wells to be monitored (MW-4, MW-27, and MP-1 through MP-4). Readings collected during the test included well vacuum, air flow rate, and effluent air concentrations using a PID. An air bag sample was collected prior to the end of the pilot test.

The DPE pilot test was conducted for approximately 3.15 hours. Vacuum response levels were measured at the monitoring points that are located at various distances from RW-1 ('04). Monitoring revealed a maximum vacuum response of 3.05 inches of water in monitoring point MP-2, which is located 12 feet from RW-1 ('04). The maximum distance at which a vacuum response was observed was at MW-27 which is located 63 feet from RW-1. A vacuum response of 0.05 inches of water was observed in the well. The vacuum response levels at the specific distances were used to calculate an effective ROI based on 1.0 percent of the vacuum at RW-1. An effective vacuum ROI was estimated at 13 feet. The pilot test results also showed groundwater drawdown at the surrounding monitoring points and wells. The groundwater drawdown indicates that any contaminated soils normally saturated under static groundwater conditions would be exposed to the SVE component of the system during operation.

The maximum air flow was measured at 18.5 cubic feet per minute. The maximum VOC concentration in the air based on the PID measurements was 6.5 parts per million. During the pilot test, groundwater was removed from the extraction well using a vacuum truck to increase the amount of unsaturated soil exposed to the vacuum created by the

blower. The groundwater extraction rate during the pilot test was approximately 1.35 gallons per minute.

The remediation system design utilized readings and data from the pilot test, to select the number of extraction wells, proper well placement, and piping requirements. The presence of free product and vapor migration was also utilized to determine well placement.

Results from the DPE pilot test are summarized in Tables 8 and 9. Analytical laboratory results from the air bag sample are summarized in Table 10. Estimated ROI graphs for the vacuum influence and the groundwater elevation changes are provided in Appendix K. A copy of the analytical laboratory report from the air bag sample was provided in Appendix B of the Amended CAP dated July 12, 2006.

12. Cost comparison between proposed method of remediation and other methods of remediation;

A cost comparison between DPE and other methods of remediation was not performed due to the limited methods of remediation available for this site to address the concentrations of the COCs in the soil and groundwater, the free product, and the vapor migration. Due to the location of the concentrations of the COCs in the soil above the Tier 2 SROs in relation to the UST system, excavation is not feasible. As demonstrated above in Section E. 1., in-situ chemical oxidation is not a feasible option due the volume of oxygen and chemical required to treat the mass of contaminants in the saturated zone.

13. For the proposed Tier 2 or 3 remediation objectives, provide the following:

a. The equations used;

The equations used in the Tier 2 evaluation presented above in Section E. 2. are Equations S17 through S22 and S25.

b. A discussion of how input variables were determined;

Site-specific input variables were based on the data collected during the investigation activities performed at the site; while default variables were obtained from 35 IAC Section 742, Appendix C, Tables B, E, and K.

c. Map(s) depicting distances used in equations; and

A map depicting the distance used in the Tier 2 evaluation is illustrated on Figure 4.

d. Calculations;

The Tier 2 calculations are provided in Appendix I.

14. Provide documentation to demonstrate the following for alternative technologies:

a. The proposed alternative technology has a substantial likelihood of successfully achieving compliance with all applicable regulations and remediation objectives;

Based on the lithologies beneath the site where concentrations of the COCs, free product, and vapor migration are most prevalent and the data collected during the pilot test, DPE will be an effective remedial technology for the site.

b. The proposed alternative technology will not adversely affect human health and safety or the environment;

As mentioned above in Section E. 10., TriCore will obtain air discharge and water pollution control permits from the IEPA, as well as a water discharge permit from the Village of Wauconda. By meeting the discharge requirements outlined in the permits, DPE will not adversely affect human health and safety or the environment.

c. The owner or operator will obtain all Illinois EPA permits necessary to legally authorize use of the alternative technology;

As mentioned above in Section E. 10., permits will be obtained from the IEPA to construct and operate the proposed DPE system. A permit will also be obtained from the Village of Wauconda to discharge the treated groundwater into their sanitary sewer system.

d. The owner or operator will implement a program to monitor whether the requirements of subsection (14)(a) have been met;

Soil

As mentioned above in Section E. 4., six months after the DPE system has been shut down, soil samples will be collected from the locations which previously exhibited concentrations above the Tier 2 SROs to reevaluate the concentrations in those locations as a result of the operation of the DPE system.

Groundwater

As mentioned above in Section E. 4., quarterly groundwater monitoring will be conducted during the operation of the DPE system until groundwater concentrations remain below the Tier 1 GROs for two quarters after the system has been shut down.

e. Within one year from the date of Illinois EPA approval, the owner or operator will provide to the Illinois EPA monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection (14)(a); and

Mass removal rates from the DPE system and analytical laboratory results from the quarterly groundwater sampling activities will be provided to the IEPA in the semi-annual Remediation Status Reports and/or an Amended CAP.

f. Demonstration that the cost of alternative technology will not exceed the cost of conventional technology and is not substantially higher than at least two other alternative technologies, if available and technically feasible.

As mentioned above in Section E. 12., conventional technology, excavation, is not feasible due to the location of the concentrations of the COCs in the soil in relation to the UST system. Additionally, based on the locations of the concentrations of the COCs in the soil and groundwater and the site lithology, other alternative technologies are not feasible.

F. Exposure Pathway Exclusion

Not applicable.

Provide the following:

1. **A description of the tests to be performed in determining whether the following requirements will be met:**
   a. **Attenuation capacity of the soil will not be exceeded for any of the organic contaminants;**
   b. **Soil saturation limit will not be exceeded for any of the organic contaminants;**
   c. **Contaminated soils do not exhibit any of the reactivity characteristics of hazardous waste per 35 III. Adm. Code 721.123;**
   d. **Contaminated soils do not exhibit a pH < 2.0 or > 12.5; and**
   e. **Contaminated soils which contain arsenic, barium, cadmium, chromium, lead, mercury, or selenium (or their associated salts) do not exhibit any of the toxicity characteristics of hazardous waste per 35 III. Adm. Code 721.124.**
2. **A discussion of how any exposure pathways are to be excluded.**

G. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

UST Owner or Operator

Name: Shivam Energy, Inc.
Contact: Rajani Patel
Address: 399 West Liberty Street
City: Wauconda
State: IL
ZIP Code: 60084
Phone: (847) 722-6618
Signature: Rajani Patel
Date: 03/29/09

Consultant

Company: TriCore Environmental, LLC
Contact: Marcos Czako
Address: 1800 West Hawthorne Ln., Suite P
City: West Chicago
State: IL
ZIP Code: 60185
Phone: (630) 520-9973
Signature: Marcos Czako
Date: 06/10/09

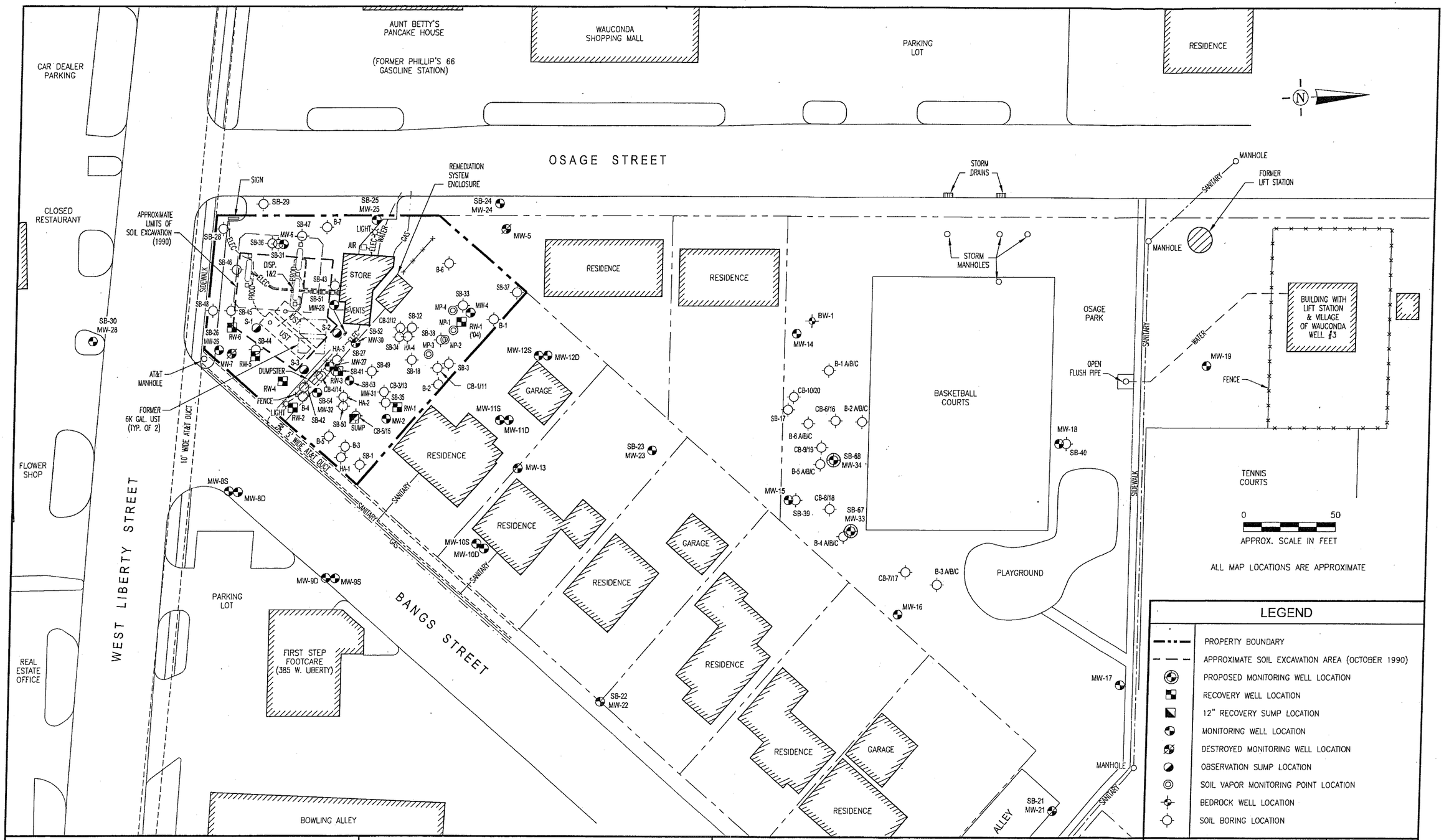
I certify under penalty of law that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 731, 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

Licensed Professional Engineer or Geologist

Name: Shawn Rodeck
Company: TriCore Environmental, LLC
Address: 1800 West Hawthorne Ln., Suite P
City: West Chicago
State: IL
ZIP Code: 60185
Phone: (630) 520-9973
Ill. Registration No.: 062-052879
License Expiration Date: 11/30/09
Signature: Shawn Rodeck
Date: 06/10/09

L.P.E. or L.P.G. Seal

FIGURES



LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE SOIL EXCAVATION AREA (OCTOBER 1990)
- PROPOSED MONITORING WELL LOCATION
- RECOVERY WELL LOCATION
- 12" RECOVERY SUMP LOCATION
- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION
- OBSERVATION SUMP LOCATION
- SOIL VAPOR MONITORING POINT LOCATION
- BEDROCK WELL LOCATION
- SOIL BORING LOCATION

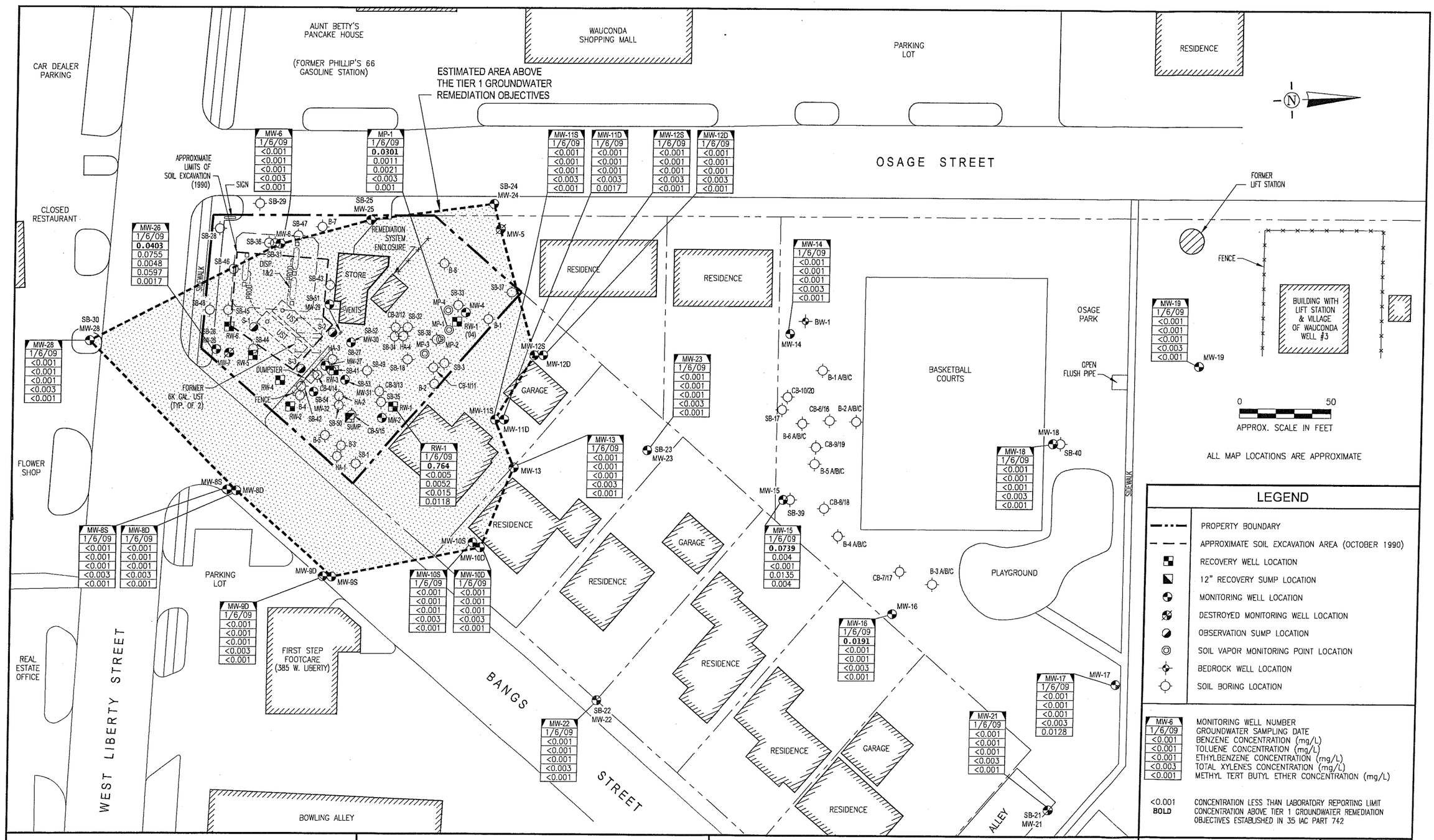
TriCore Environmental, LLC
1800 West Hawthorne Lane, Suite P
West Chicago, Illinois 60185
(630) 520-9973

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084

SITE MAP
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	6/7/09
DRAWING FILE:	0401PMW3

FIGURE
1



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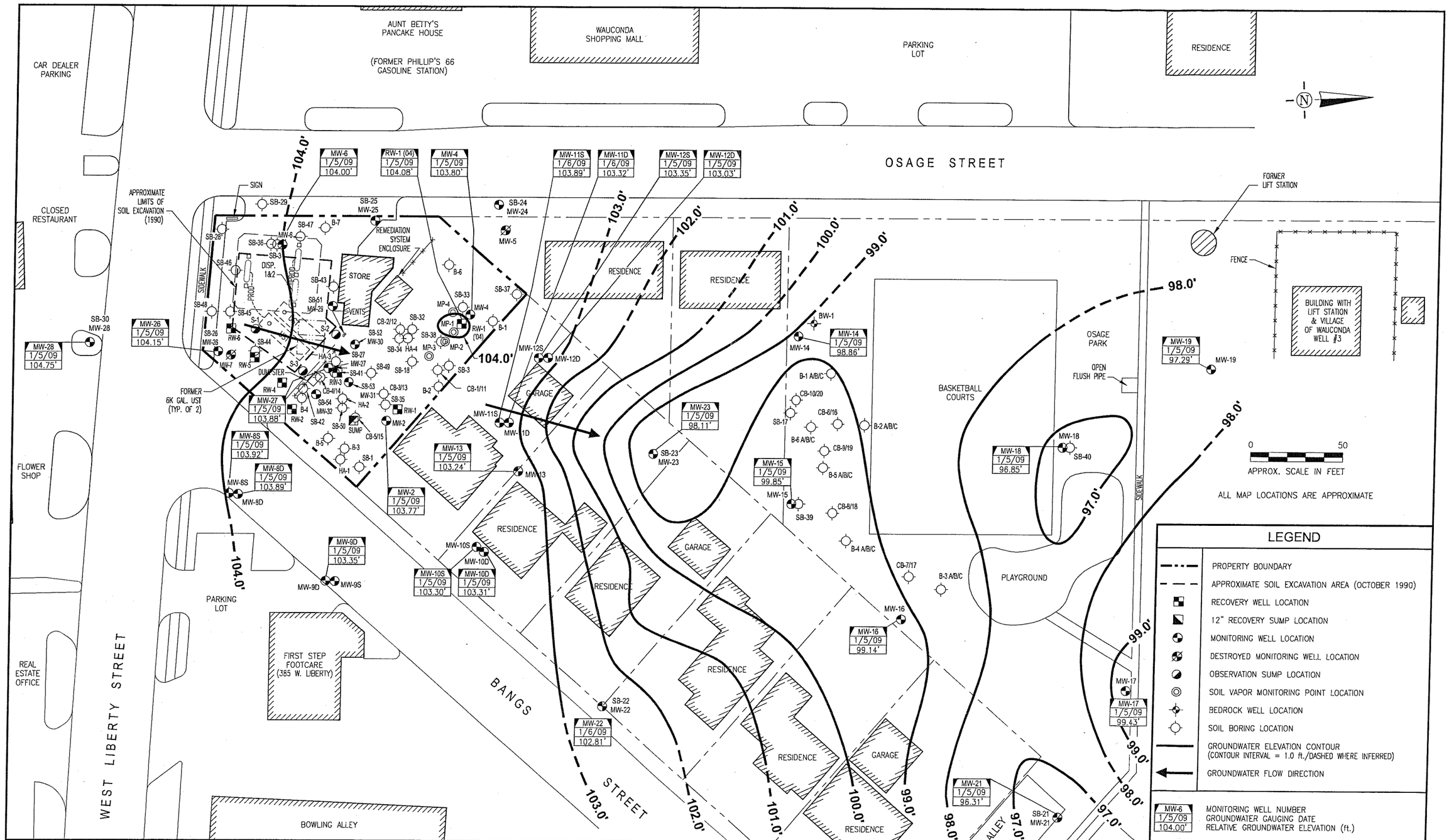
GROUNDWATER ANALYTICAL RESULTS MAP
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	6/7/09
DRAWING FILE:	0401GA3B

FIGURE
2



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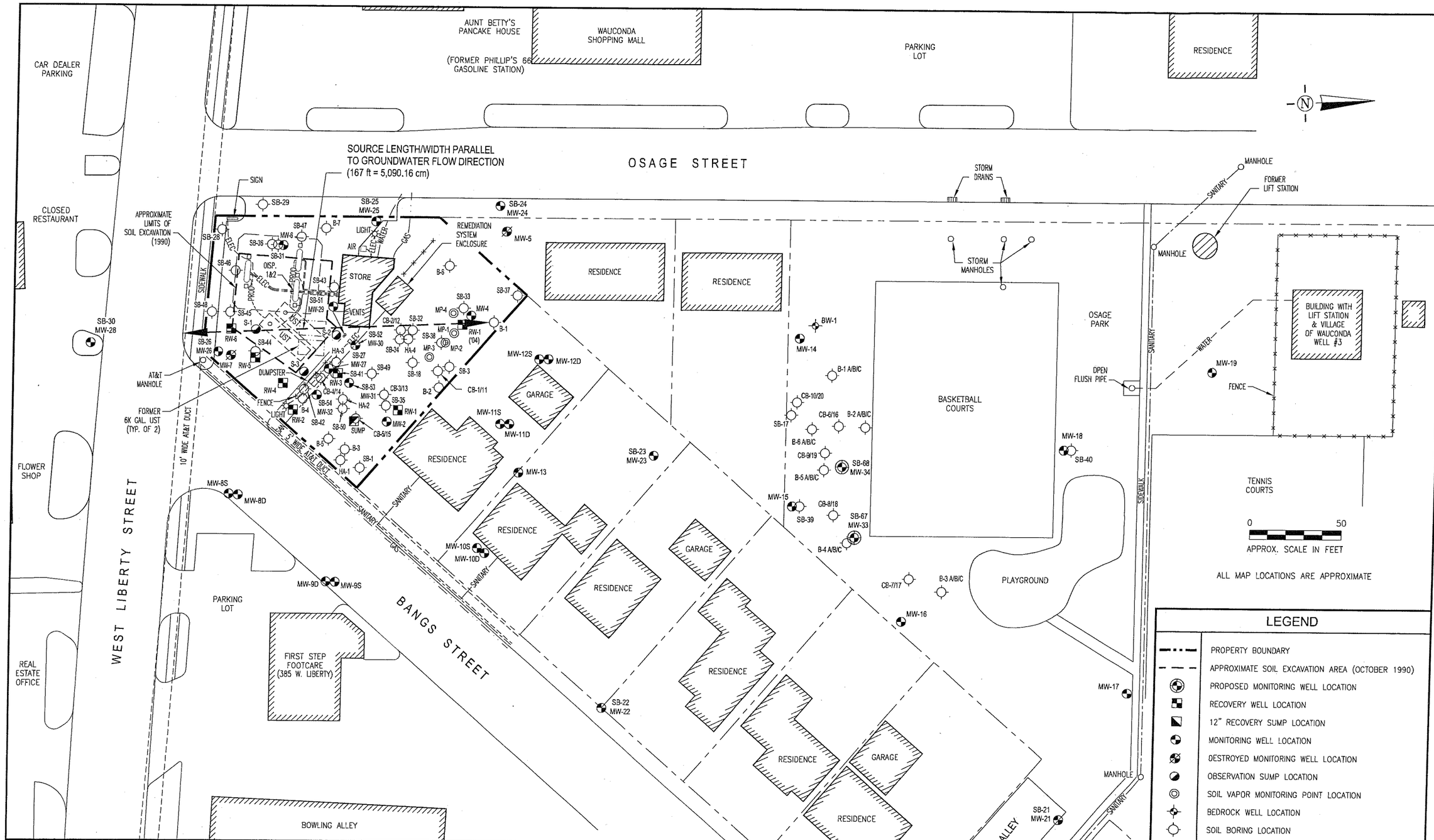
GROUNDWATER FLOW DIRECTION MAP
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	6/7/09
DRAWING FILE:	0401GE1A

FIGURE
3



LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE SOIL EXCAVATION AREA (OCTOBER 1990)
- PROPOSED MONITORING WELL LOCATION
- RECOVERY WELL LOCATION
- 12" RECOVERY SUMP LOCATION
- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION
- OBSERVATION SUMP LOCATION
- SOIL VAPOR MONITORING POINT LOCATION
- BEDROCK WELL LOCATION
- SOIL BORING LOCATION

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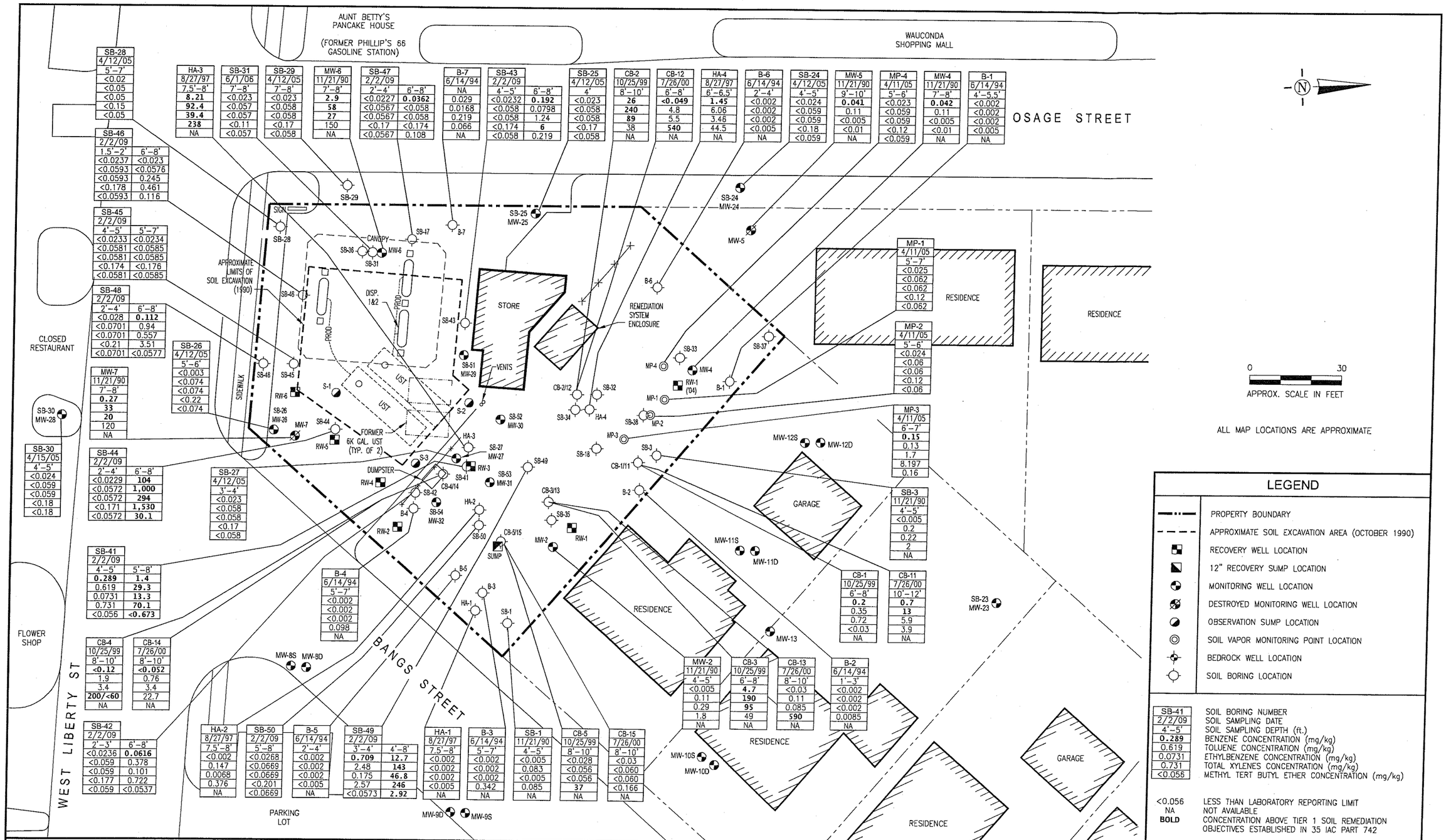
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084

SOURCE DIMENSION USED FOR THE SSL EQUATIONS - SOIL LEACHING
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	6/10/09
DRAWING FILE:	0401RBCAS2

FIGURE
4



SB-28	
4/12/05	
5'–7'	
<0.02	
<0.05	
<0.05	
<0.15	
<0.05	

HA-3	
8/27/97	
7.5'–8'	
8.21	
92.4	
39.4	
238	
NA	

SB-31	
6/1/06	
7'–8'	
<0.023	
<0.057	
<0.057	
<0.11	
<0.057	

SB-29	
4/12/05	
7'–8'	
<0.023	
<0.058	
<0.058	
<0.17	
<0.058	

MW-6	
11/21/90	
7'–8'	
2.9	
58	
27	
150	
NA	

SB-47		
2/2/09		
2'–4'	6'–8'	
<0.0227	**0.0362**	
<0.0567	<0.058	
<0.0567	<0.058	
<0.17	<0.174	
<0.0567	0.108	

B-7	
6/14/94	
NA	
0.029	
0.0168	
0.219	
0.066	
NA	

SB-43		
2/2/09		
4'–5'	6'–8'	
<0.0232	**0.192**	
<0.058	0.0798	
<0.058	1.24	
<0.174	**6**	
<0.058	0.219	

SB-25	
4/12/05	
4'	
<0.023	
<0.058	
<0.058	
<0.17	
<0.058	

CB-2	
10/25/99	
8'–10'	
26	
240	
89	
38	
NA	

CB-12	
7/26/00	
6'–8'	
<0.049	
4.8	
5.5	
540	
NA	

HA-4	
8/27/97	
6'–6.5'	
1.45	
6.06	
3.46	
44.5	
NA	

B-6	
6/14/94	
2'–4'	
<0.002	
<0.002	
<0.002	
<0.005	
NA	

SB-24	
4/12/05	
4'–5'	
<0.024	
<0.059	
<0.059	
<0.18	
<0.059	

MW-5	
11/21/90	
9'–10'	
0.041	
0.11	
<0.005	
<0.01	
NA	

MP-4	
4/11/05	
5'–6'	
<0.023	
<0.059	
<0.059	
<0.12	
<0.059	

MW-4	
11/21/90	
7'–8'	
0.042	
0.11	
<0.005	
<0.01	
NA	

B-1	
6/14/94	
4'–5.5'	
<0.002	
<0.002	
<0.002	
<0.005	
NA	

SB-46		
2/2/09		
1.5'–2'	6'–8'	
<0.0237	<0.023	
<0.0593	<0.0576	
<0.0593	0.245	
<0.178	0.461	
<0.0593	0.116	

SB-45		
2/2/09		
4'–5'	5'–7'	
<0.0233	<0.0234	
<0.0581	<0.0585	
<0.0581	<0.0585	
<0.174	<0.176	
<0.0581	<0.0585	

SB-48		
2/2/09		
2'–4'	6'–8'	
<0.028	**0.112**	
<0.0701	0.94	
<0.0701	0.557	
<0.21	3.51	
<0.0701	<0.0577	

SB-26	
4/12/05	
5'–6'	
<0.003	
<0.074	
<0.074	
<0.22	
<0.074	

MW-7	
11/21/90	
7'–8'	
0.27	
33	
20	
120	
NA	

SB-30	
4/15/05	
4'–5'	
<0.024	
<0.059	
<0.059	
<0.18	
<0.18	

SB-44		
2/2/09		
2'–4'	6'–8'	
<0.0229	**104**	
<0.0572	**1,000**	
<0.0572	**294**	
<0.171	**1,530**	
<0.0572	**30.1**	

SB-27	
4/12/05	
3'–4'	
<0.023	
<0.058	
<0.058	
<0.17	
<0.058	

SB-41		
2/2/09		
4'–5'	5'–8'	
0.289	**1.4**	
0.619	**29.3**	
0.0731	**13.3**	
0.731	**70.1**	
<0.056	**<0.673**	

B-4	
6/14/94	
5'–7'	
<0.002	
<0.002	
<0.002	
0.098	
NA	

CB-4	
10/25/99	
8'–10'	
<0.12	
1.9	
3.4	
200/<60	
NA	

CB-14	
7/26/00	
8'–10'	
<0.052	
0.76	
3.4	
22.7	
NA	

SB-42		
2/2/09		
2'–3'	6'–8'	
<0.0236	**0.0616**	
<0.059	0.378	
<0.059	0.101	
<0.177	0.722	
<0.059	<0.0537	

HA-2	
8/27/97	
7.5'–8'	
<0.002	
0.147	
0.0068	
0.376	
NA	

SB-50	
2/2/09	
5'–8'	
<0.0268	
<0.0669	
<0.0669	
<0.201	
<0.0669	

B-5	
6/14/94	
2'–4'	
<0.002	
<0.002	
<0.002	
<0.005	
NA	

SB-49		
2/2/09		
3'–4'	4'–8'	
0.709	**12.7**	
2.48	**143**	
0.175	**46.8**	
2.57	**246**	
<0.0573	**2.92**	

HA-1	
8/27/97	
7.5'–8'	
<0.002	
<0.002	
<0.002	
<0.005	
NA	

B-3	
6/14/94	
5'–7'	
<0.002	
<0.002	
<0.002	
0.342	
NA	

SB-1	
11/21/90	
4'–5'	
<0.005	
0.083	
<0.005	
0.085	
NA	

CB-5	
10/25/99	
8'–10'	
<0.028	
<0.056	
<0.056	
37	
NA	

CB-15	
7/26/00	
8'–10'	
<0.03	
<0.060	
<0.060	
<0.166	
NA	

MW-2	
11/21/90	
4'–5'	
<0.005	
0.11	
0.29	
1.8	
NA	

CB-3	
10/25/99	
6'–8'	
4.7	
190	
95	
49	
NA	

CB-13	
7/26/00	
8'–10'	
<0.03	
0.11	
0.085	
590	
NA	

B-2	
6/14/94	
1'–3'	
<0.002	
<0.002	
<0.002	
0.0085	
NA	

CB-1	
10/25/99	
6'–8'	
0.2	
0.35	
0.72	
<0.03	
NA	

CB-11	
7/26/00	
10'–12'	
0.7	
13	
5.9	
3.9	
NA	

MP-1	
4/11/05	
5'–7'	
<0.025	
<0.062	
<0.062	
<0.12	
<0.062	

MP-2	
4/11/05	
5'–6'	
<0.024	
<0.06	
<0.06	
<0.12	
<0.06	

MP-3	
4/11/05	
6'–7'	
0.15	
0.13	
1.7	
8.197	
0.16	

SB-3	
11/21/90	
4'–5'	
<0.005	
0.2	
0.22	
2	
NA	

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE SOIL EXCAVATION AREA (OCTOBER 1990)
- RECOVERY WELL LOCATION
- 12" RECOVERY SUMP LOCATION
- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION
- OBSERVATION SUMP LOCATION
- SOIL VAPOR MONITORING POINT LOCATION
- BEDROCK WELL LOCATION
- SOIL BORING LOCATION

SB-41	SOIL BORING NUMBER
2/2/09	SOIL SAMPLING DATE
4'–5'	SOIL SAMPLING DEPTH (ft.)
0.289	BENZENE CONCENTRATION (mg/kg)
0.619	TOLUENE CONCENTRATION (mg/kg)
0.0731	ETHYLBENZENE CONCENTRATION (mg/kg)
0.731	TOTAL XYLENES CONCENTRATION (mg/kg)
<0.056	METHYL TERT BUTYL ETHER CONCENTRATION (mg/kg)

<0.056	LESS THAN LABORATORY REPORTING LIMIT
NA	NOT AVAILABLE
BOLD	CONCENTRATION ABOVE TIER 1 SOIL REMEDIATION OBJECTIVES ESTABLISHED IN 35 IAC PART 742

TriCore Environmental, LLC
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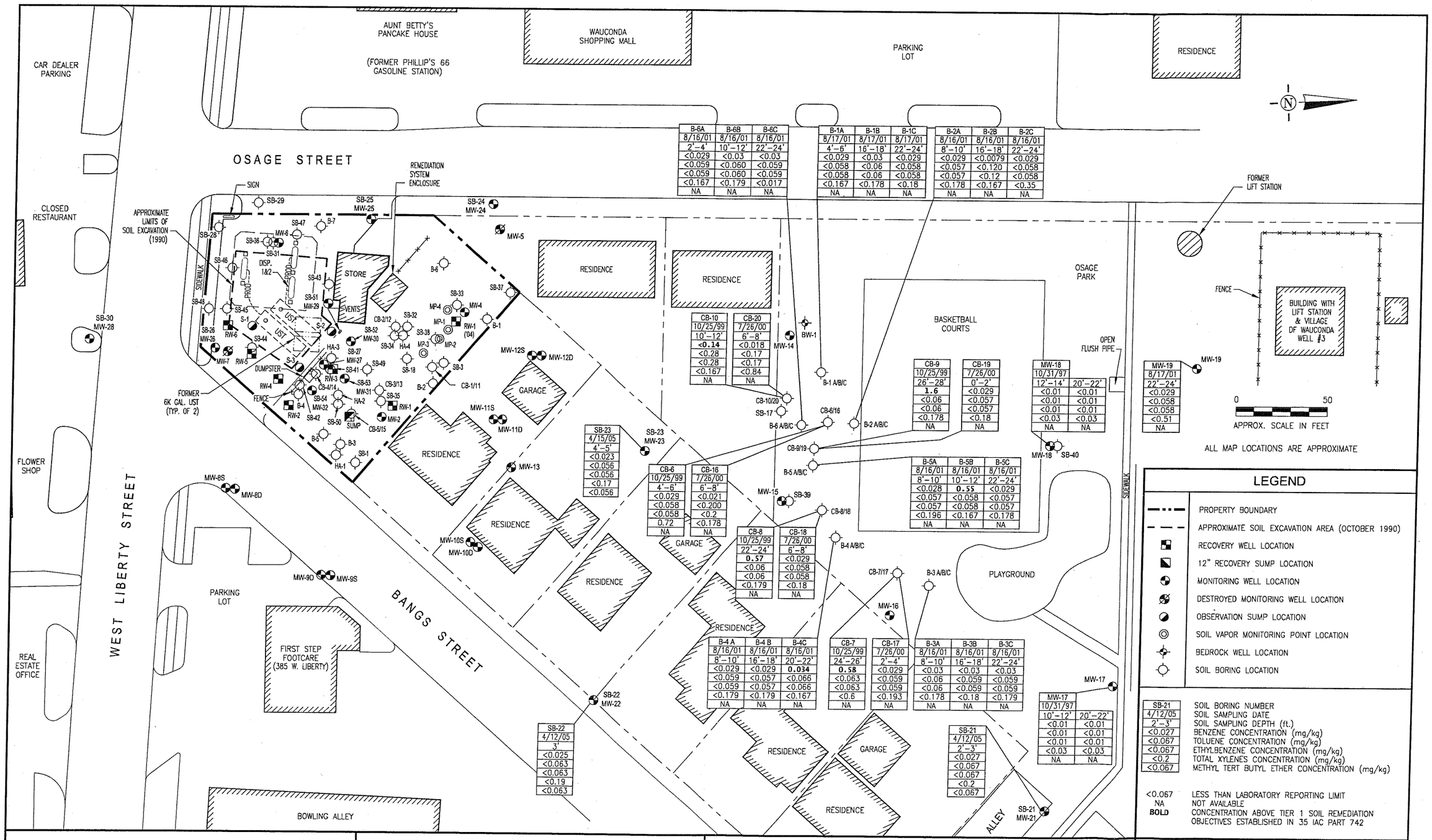
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084

SOIL ANALYTICAL RESULTS MAP - ON-SITE AREA
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 30'
DATE:	6/12/09
DRAWING FILE:	0401SA3

FIGURE
5A



B-6A	B-6B	B-6C
8/16/01	8/16/01	8/16/01
2'–4'	10'–12'	22'–24'
<0.029	<0.03	<0.03
<0.059	<0.060	<0.059
<0.059	<0.060	<0.059
<0.167	<0.179	<0.017
NA	NA	NA

B-1A	B-1B	B-1C
8/17/01	8/17/01	8/17/01
4'–6'	16'–18'	22'–24'
<0.029	<0.03	<0.029
<0.058	<0.06	<0.058
<0.058	<0.06	<0.058
<0.167	<0.178	<0.18
NA	NA	NA

B-2A	B-2B	B-2C
8/16/01	8/16/01	8/16/01
8'–10'	16'–18'	22'–24'
<0.029	<0.0079	<0.029
<0.057	<0.120	<0.058
<0.057	<0.12	<0.058
<0.178	<0.167	<0.35
NA	NA	NA

CB-10
10/25/99
10'–12'
<0.14
<0.28
<0.28
<0.167
NA

CB-20
7/26/00
6'–8'
<0.018
<0.17
<0.17
<0.84
NA

CB-9
10/25/99
26'–28'
1.6
<0.06
<0.06
<0.178
NA

CB-19
7/26/00
0'–2'
<0.029
<0.057
<0.057
<0.18
NA

MW-18	
10/31/97	
12'–14'	20'–22'
<0.01	<0.01
<0.01	<0.01
<0.01	<0.01
<0.03	<0.03
NA	NA

MW-19
8/17/01
22'–24'
<0.029
<0.058
<0.058
<0.51
NA

B-5A	B-5B	B-5C
8/16/01	8/16/01	8/16/01
8'–10'	10'–12'	22'–24'
<0.028	**0.55**	<0.029
<0.057	<0.058	<0.057
<0.057	<0.058	<0.057
<0.196	<0.167	<0.178
NA	NA	NA

SB-23
4/15/05
4'–5'
<0.023
<0.056
<0.056
<0.17
<0.056

CB-6
10/25/99
4'–6'
<0.029
<0.058
<0.058
0.72
NA

CB-16
7/26/00
6'–8'
<0.021
<0.200
<0.2
<0.178
NA

CB-8
10/25/99
22'–24'
0.57
<0.06
<0.06
<0.179
NA

CB-18
7/26/00
6'–8'
<0.029
<0.058
<0.058
<0.18
NA

B-4A	B-4B	B-4C
8/16/01	8/16/01	8/16/01
8'–10'	16'–18'	20'–22'
<0.029	<0.029	**0.034**
<0.059	<0.057	<0.066
<0.059	<0.057	<0.066
<0.179	<0.179	<0.167
NA	NA	NA

CB-7
10/25/99
24'–26'
0.58
<0.063
<0.063
<0.6
NA

CB-17
7/26/00
2'–4'
<0.029
<0.059
<0.059
<0.193
NA

B-3A	B-3B	B-3C
8/16/01	8/16/01	8/16/01
8'–10'	16'–18'	22'–24'
<0.03	<0.03	<0.03
<0.06	<0.059	<0.059
<0.06	<0.059	<0.059
<0.178	<0.18	<0.179
NA	NA	NA

MW-17	
10/31/97	
10'–12'	20'–22'
<0.01	<0.01
<0.01	<0.01
<0.01	<0.01
<0.03	<0.03
NA	NA

SB-22
4/12/05
3'
<0.025
<0.063
<0.063
<0.19
<0.063

SB-21
4/12/05
2'–3'
<0.027
<0.067
<0.067
<0.2
<0.067

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE SOIL EXCAVATION AREA (OCTOBER 1990)
- RECOVERY WELL LOCATION
- 12" RECOVERY SUMP LOCATION
- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION
- OBSERVATION SUMP LOCATION
- SOIL VAPOR MONITORING POINT LOCATION
- BEDROCK WELL LOCATION
- SOIL BORING LOCATION

SB-21	
4/12/05	SOIL BORING NUMBER
2'–3'	SOIL SAMPLING DATE
<0.027	SOIL SAMPLING DEPTH (ft.)
<0.067	BENZENE CONCENTRATION (mg/kg)
<0.067	TOLUENE CONCENTRATION (mg/kg)
<0.2	ETHYLBENZENE CONCENTRATION (mg/kg)
<0.067	TOTAL XYLENES CONCENTRATION (mg/kg)
	METHYL TERT BUTYL ETHER CONCENTRATION (mg/kg)

<0.067 LESS THAN LABORATORY REPORTING LIMIT
NA NOT AVAILABLE
BOLD CONCENTRATION ABOVE TIER 1 SOIL REMEDIATION OBJECTIVES ESTABLISHED IN 35 IAC PART 742

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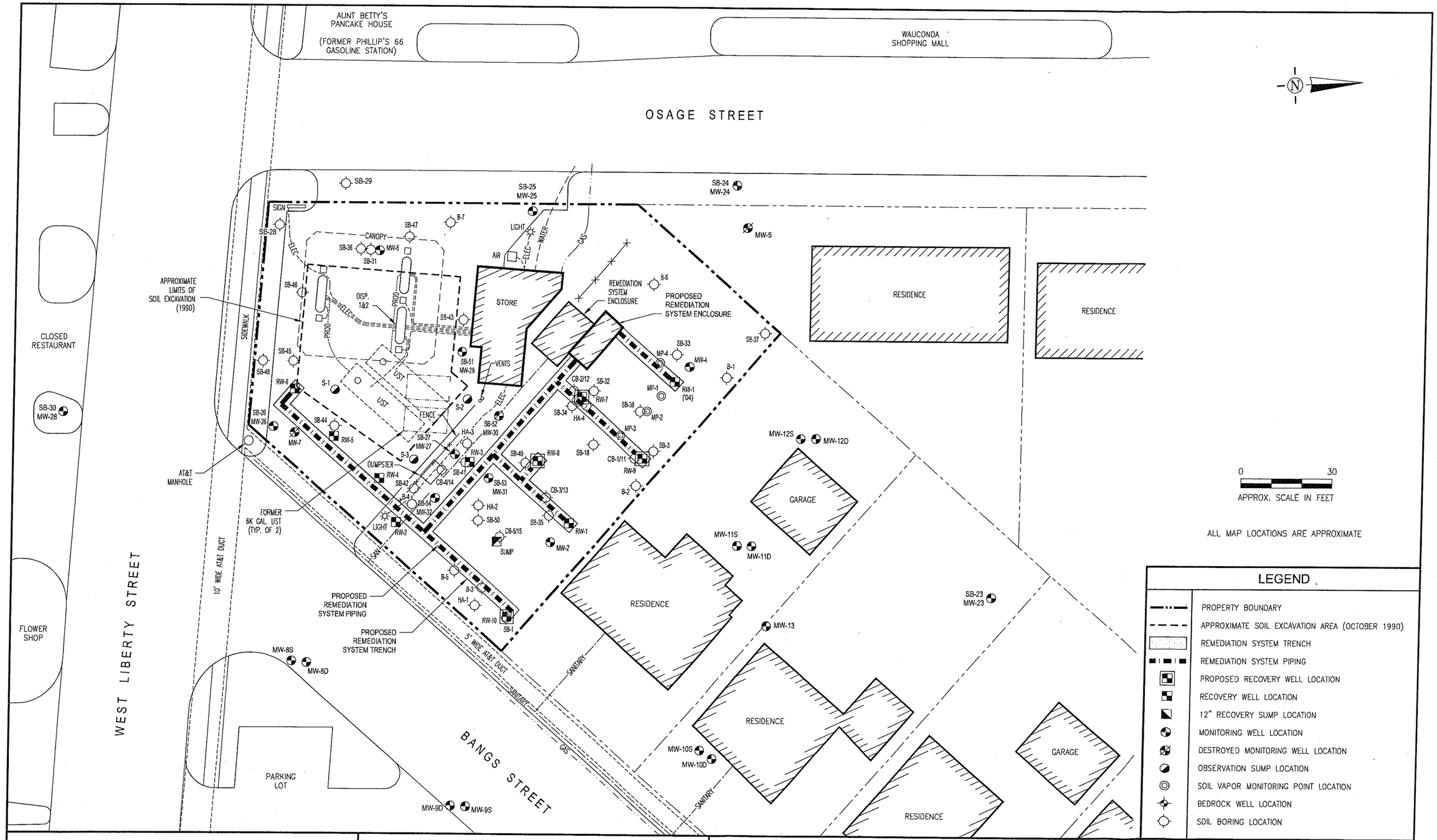
SOIL ANALYTICAL RESULTS MAP - OFF-SITE AREA
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 50'
DATE:	6/12/09
DRAWING FILE:	0401SA4

FIGURE
5B



LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE SOIL EXCAVATION AREA (OCTOBER 1990)
- REMEDIATION SYSTEM TRENCH
- REMEDIATION SYSTEM PIPING
- PROPOSED RECOVERY WELL LOCATION
- RECOVERY WELL LOCATION
- 12" RECOVERY SUMP LOCATION
- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION
- OBSERVATION SUMP LOCATION
- SOIL VAPOR MONITORING POINT LOCATION
- BEDROCK WELL LOCATION
- SDIL BORING LOCATION

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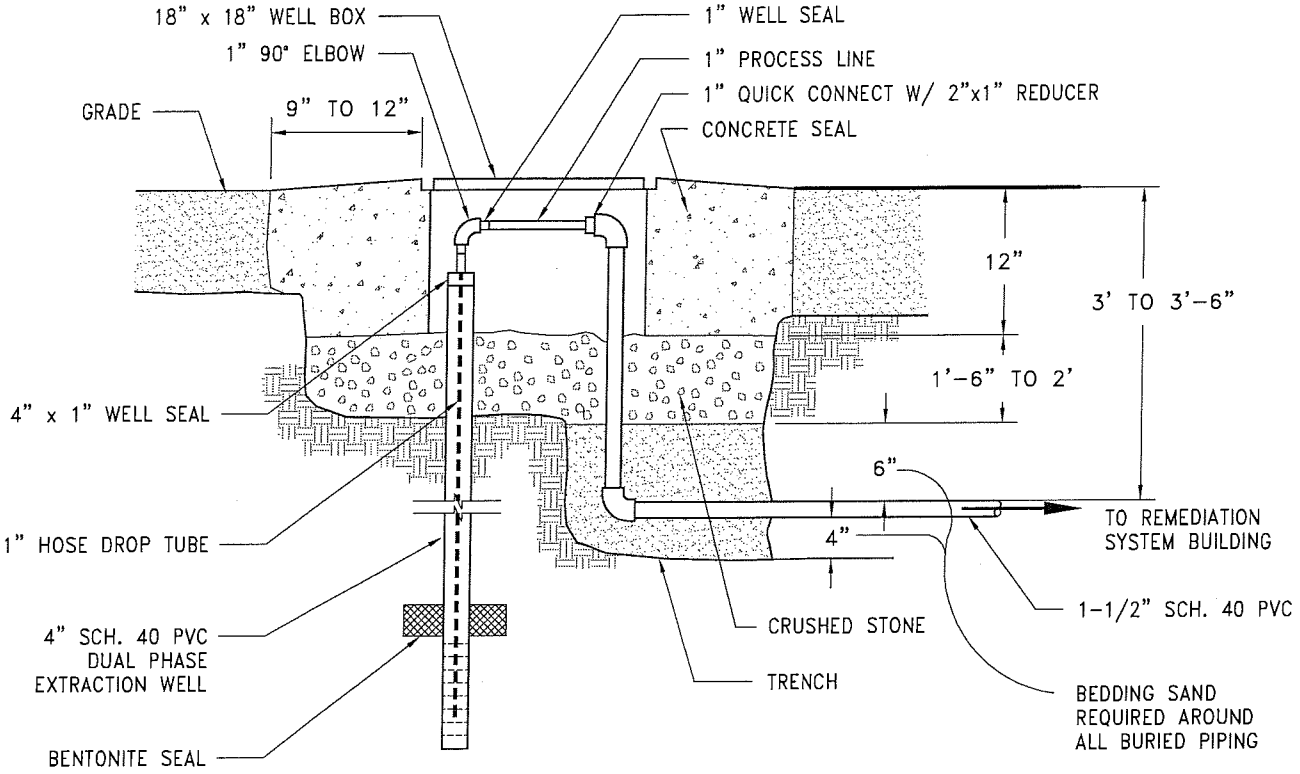
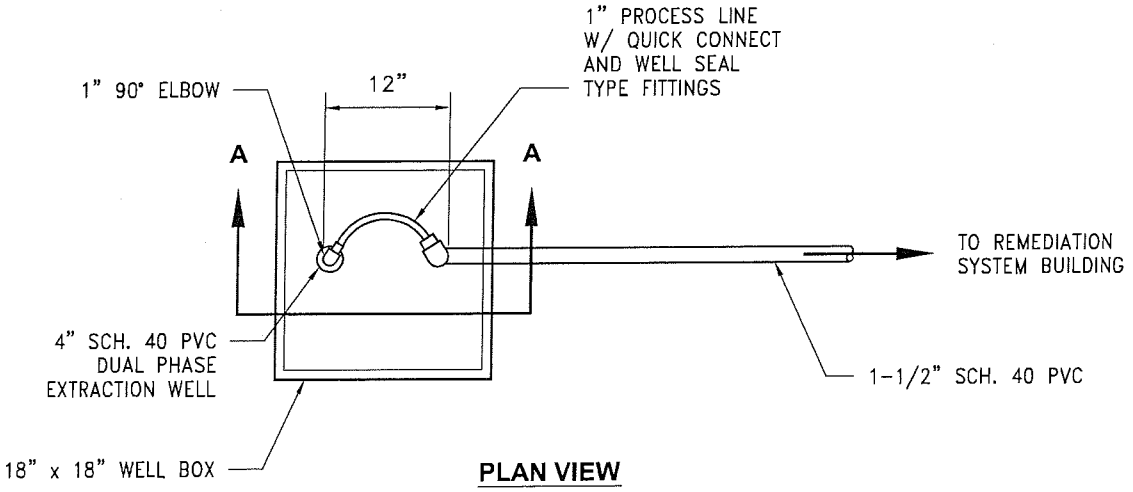
PROPOSED DPE SYSTEM LAYOUT MAP
SHIVAM ENERGY, INC.
399 WEST LIBERTY STREET
WAUCONDA, LAKE COUNTY, ILLINOIS 60084

DRAWN BY:	MWS
APPROVED BY:	SAR
SCALE:	1" = 30'
DATE:	6/10/09
DRAWING FILE:	0401PRS1

FIGURE
6

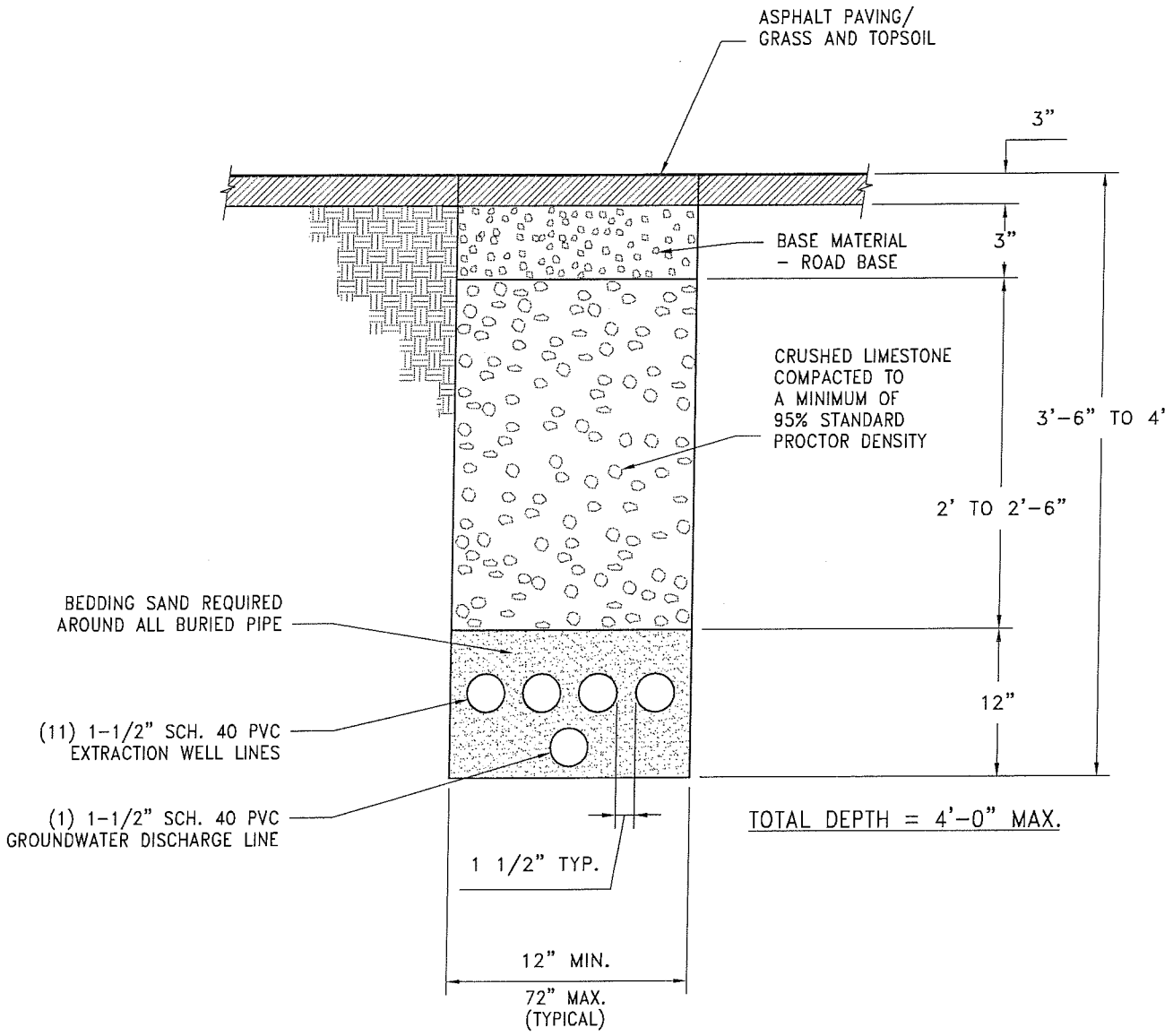


SECTION A - A



PLAN VIEW

Shivam Energy, Inc. 399 West Liberty Street Wauconda, Illinois 60084	**DPE RECOVERY WELL DETAILS** SHIVAM ENERGY, INC. 399 WEST LIBERTY STREET WAUCONDA, LAKE COUNTY, ILLINOIS	DRAWN BY: MWS APPROVED BY: MC SCALE: NOT TO SCALE DATE: 6/10/09 DRAWING FILE: 0401DPWD1	FIGURE **7**



TRENCH SECTION SHOWING BACKFILL

Shivam Energy, Inc. 399 West Liberty Street Wauconda, Illinois 60084	**SURFACE/TRENCH BACKFILL DETAILS** SHIVAM ENERGY, INC. 399 WEST LIBERTY STREET WAUCONDA, LAKE COUNTY, ILLINOIS	DRAWN BY: MWS APPROVED BY: MC SCALE: NOT TO SCALE DATE: 6/10/09 DRAWING FILE: 0401STBD1	FIGURE **8**

TABLES

TABLE 1

Soil Geochemical and Geotechnical Results

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

				Geochemical and Geotechnical Parameters														
Sample ID	Date Sampled	Sample Depth (feet bls)	PID Reading (ppm)	Total Organic Carbon (mg/kg)	pH (--)	Reactive Cyanide (mg/kg)	Reactive Sulfide (mg/kg)	Grain Size Analysis (--)	Visual Soil Classification (--)	Total Porosity (%)	Moisture Content (%)	Dry Bulk Density (pcf)	Wet Bulk Density (pcf)	Specific Gravity (--)	TPH Gasoline Range Organics (mg/kg)	Chemical Oxygen Demand (mg/L)	Fraction of Organic Carbon (%)
MP-2	11-Apr-08	1-3	0.5	14,000														
MP-2	11-Apr-08	5-8	0.7	18,000														
MP-3	11-Apr-08	6-7	238		7.2													
SB-32	1-Jun-08	7-8.5	414			<0.005	<20											
SB-32	1-Jun-08	9.5-11	NA					97% Sand 3% Silt	Dark grayish brown, fine grained SAND (SP)	34.4	17.2	100.8	127.2	2.65				
SB-33	18-Jan-07	10-11	31												<12	3,200		
SB-34	18-Jan-07	8-10	1,333												18	1,700		
SB-35	18-Jan-07	8-10	118												<13	2,000		
SB-36	18-Jan-07	10-11	0.3												<12	5,900		
SB-37	18-Jan-07	6-8	0.4												<12	4,300		
SB-38	11-Dec-07	2-3	0.1															3.37
SB-38	11-Dec-07	3-4	0.1															0.777
SB-39	7-Aug-08	14.25-15.25	NA												<11.8	12,780.68		
SB-40	7-Aug-08	16-17	0												<11.8	15,320.15		

Notes:
1) PID = photoionization detector
2) bls = below land surface; mg/kg = milligrams per kilogram; mg/L = milligrams per Liter; ppm = parts per million; pcf = pounds per cubic foot; % = percent; --- = no specific units
3) <1.9 = concentration less than the laboratory reporting limit
4) The samples were analyzed for grain size analysis, visual soil classification, total porosity, moisture content, dry bulk density, wet bulk density, specific gravity, and fraction of organic carbon using American Society for Testing and Materials methods
5) The samples were analyzed for total organic carbon using United States Environmental Protection Agency (USEPA) Method 9060
6) The sample was analyzed for pH using USEPA Method 9045C
7) The sample was analyzed for reactive cyanide using USEPA Method 7.3.3.2
8) The sample was analyzed for reactive sulfide using USEPA Method 7.3.4.2
9) The samples were analyzed for total petroleum hydrocarbon (TPH) gasoline range organics using USEPA Method 8015
10) The samples were analyzed for chemical oxygen demand using USEPA Method 410.4
11) Shading = not applicable

TABLE 2

Soil Analytical Results - Total Metals

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes				COCs and Tier 1 Soil Remediation Objectives							
				Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)
Inhalation - Residential				750	690,000	1,800	270	---	10	---	---
Ingestion - Residential				13	5,500	78	230	400	23	390	390
Sample ID	Date Sampled	Sample Depth (feet bls)	PID Reading (ppm)								
SB-33	18-Jan-07	10-11	31	2.8	6.4	<0.59	3.9	2.2	0.012	<2.4	<1.2
SB-34	18-Jan-07	8-10	1,333	<2.4	3.6	<0.61	3.1	2	<0.012	<2.4	<1.2
SB-35	18-Jan-07	8-10	118	<2.5	4.3	<0.63	3.1	2.1	<0.013	<2.5	<1.3
SB-36	18-Jan-07	10-11	0.3	5.3	31	<0.58	15	6.2	<0.012	<2.3	<1.2
SB-37	18-Jan-07	6-8	0.4	<2.3	41	<0.58	18	7.6	0.017	<2.3	<1.2
SB-39	7-Aug-08	14.25-15.25		2.3	41.9	<0.29	14.4	5.9	<0.012	<1.2	<0.59
SB-40	7-Aug-08	16-17	0	3.8	40.7	<0.3	12.3	6.5	0.012	<1.2	<0.59

Notes:

1) PID = photoionization detector; COCs = constituents of concern

2) bls = below land surface; mg/kg = milligrams per kilogram; ppm = parts per million

3) <1.9 = concentration less than the laboratory reporting limit

4) The soil samples were analyzed for arsenic, barium, cadmium, chromium, lead, selenium, and silver using United States Environmental Protection Agency (USEPA) Method 6010B

5) The soil samples were analyzed for mercury using USEPA Method 7471A

6) --- = no toxicity criteria available for the route of exposure

7) All concentrations are below the Tier 1 soil remediation objectives established in 35 Illinois Administrative Code Part 742

8) Shading = not applicable

TABLE 3

Groundwater Geochemical Results

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

		Geochemical Parameters			
Sample ID	Date Sampled	Chemical Oxygen Demand (mg/L)	TPH Gasoline Range Organics (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Total Phosphorus (mg/L)
MW-2	19-Jan-07	96	12	1.1	<0.5
MW-11S	19-Jan-07	28	0.2	<1	<0.5
MW-18	19-Jan-07	<21	<0.1	8.5	<0.5
MW-26	19-Jan-07	66	0.13	<1	<0.5
MP-1	19-Jan-07	34	3.1	<1	<0.5
MW-15	23-Jun-08	35.3	0.46	1.2	<0.17
MW-18	23-Jun-08	17.4	<0.0396	8.4	0.18

Notes:

1) mg/L = milligrams per Liter

2) <0.005 = concentration less than the laboratory reporting limit

3) All groundwater samples were analyzed for chemical oxygen demand United States Environmental Protection Agency (USEPA) Method 410.4

4) All groundwater samples were analyzed for total petroleum hydrocarbon (TPH) gasoline range organics using USEPA Method 8015

5) All groundwater samples were analyzed for total kjeldahl nitrogen using USEPA Method 351.2

6) All groundwater samples were analyzed for total phosphorus using USEPA Method 365.4

7) Shading = not applicable

TABLE 4

Groundwater Analytical Results - Dissolved Metals

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes		COCs and Tier 1 Groundwater Remediation Objectives							
		Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Selenium (mg/L)	Silver (mg/L)
GCGIER - Class I Groundwater		0.05	2	0.005	0.1	0.0075	0.002	0.05	0.05
GCGIER - Class II Groundwater		0.2	2	0.05	1	0.1	0.01	0.05	---
Sample ID	Date Sampled								
MW-2	19-Jan-07	<0.02	0.13	<0.005	<0.005	<0.0075	<0.0002	<0.02	<0.01
MW-11S	19-Jan-07	<0.02	0.058	<0.005	<0.005	<0.0075	<0.0002	<0.02	<0.01
MW-18	19-Jan-07	<0.02	0.17	<0.005	<0.005	<0.0075	<0.0002	<0.02	<0.01
MW-26	19-Jan-07	<0.02	0.055	<0.005	<0.005	<0.0075	<0.0002	<0.02	<0.01
MP-1	19-Jan-07	<0.02	0.19	<0.005	<0.005	<0.0075	<0.0002	<0.02	<0.01
MW-15	23-Jun-08	<0.0012	0.0988	0.00058	<0.00011	0.0044	<0.0001	<0.0016	<0.00034
MW-18	23-Jun-08	0.014	0.176	0.00014	0.0012	0.0039	<0.0001	<0.0016	<0.00034

Notes:

1) GCGIER = groundwater component of the groundwater ingestion exposure route; COCs = constituents of concern
2) mg/L = milligrams per Liter
3) <0.005 = concentration less than the laboratory reporting limit
4) All concentrations are below the Tier 1 groundwater remediation objectives established in 35 Illinois Administrative Code Part 742
5) All groundwater samples were analyzed for arsenic, barium, cadmium, chromium, lead, selenium, and silver using United States Environmental Protection Agency (USEPA) Method 6010B
6) All groundwater samples were analyzed for mercury using USEPA Method 7470A
7) --- = no toxicity criteria available for route of exposure

TABLE 5

Free Product Recovery Volumes

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Well ID	Recovery/Gauging Date	Depth to Free Product (feet below TOC)	Depth to Water (feet below TOC)	Free Product Thickness (feet)	Free Product Recovered (gallons)	Free Product and Groundwater Recovered (gallons)
MW-2	29-Nov-90	10.00	10.30	0.30		
MW-2	27-Jan-92	FP				
MW-2	19-Feb-92	FP				
MW-2	24-Aug-92	FP				
MW-2	19-Jan-93	FP				
MW-2	27-Jun-94	10.95	10.96	0.01		
MW-6	11-Oct-01	sheen	7.39			
MW-6	14-Mar-02	sheen	6.93			
MW-6	6-Jun-02	sheen	6.7			
MW-6	30-Aug-02	sheen	7.27			
MW-6	6-Dec-02	sheen	7.83			
MW-6	6-May-04	sheen	7.45			
MW-7	29-Nov-90	7.39	7.69	0.30		
S-1	31-Dec-08	6.15	6.19	0.04	15	2,500
S-1	5-Jan-09	6.95	7.00	0.05	0.01	4
S-1	9-Jan-09	6.95	6.99	0.04	10	2,000
S-1	27-Jan-09	7.78	7.87	0.09	10	2,100
S-1	30-Jan-09	8.83	8.87	0.04		
S-1	26-Feb-09	7.23	7.31	0.08	0.01	4
S-1	9-Mar-09	5.97	6.03	0.06	15	3,000
S-1	13-Mar-09	6.43	6.47	0.04	14	2,800
S-1	1-Apr-09	6.2	6.23	0.03	10	2,000
S-1	19-May-09	6.94	6.99	0.05		
S-2	31-Dec-08	6.24	6.27	0.03	See S-1 Above	See S-1 Above
S-2	27-Jan-09	9.19	9.30	0.11	See S-1 Above	See S-1 Above
S-2	26-Feb-09	7.32	7.39	0.07	See S-1 Above	See S-1 Above
S-2	9-Mar-09	6.04	6.08	0.04	See S-1 Above	See S-1 Above
S-2	13-Mar-09	6.52	6.55	0.03	See S-1 Above	See S-1 Above
S-2	1-Apr-09	6.25	6.27	0.02	See S-1 Above	See S-1 Above
S-2	19-May-09	6.95	7.00	0.05		
S-3	31-Dec-08	6.23	6.26	0.03	See S-1 Above	See S-1 Above
S-3	5-Jan-09	6.77	6.82	0.05	0.01	4
S-3	9-Jan-09	6.96	7.02	0.06	See S-1 Above	See S-1 Above
S-3	27-Jan-09	8.15	8.3	0.15	See S-1 Above	See S-1 Above
S-2	30-Jan-09	8.93	8.97	0.04		
S-3	26-Feb-09	7.32	7.39	0.07	See S-1 Above	See S-1 Above
S-3	9-Mar-09	6.04	6.10	0.06	See S-1 Above	See S-1 Above
S-3	13-Mar-09	6.51	6.54	0.03	See S-1 Above	See S-1 Above
S-3	1-Apr-09	6.26	6.29	0.03	See S-1 Above	See S-1 Above
S-3	19-May-09	7.05	7.10	0.05		
MW-27	31-Dec-08	6.97	7.03	0.06	See S-1 Above	See S-1 Above
MW-27	5-Jan-09	7.25	7.35	0.1	0.01	4
MW-27	6-Jan-09	7.3	7.36	0.06	0.01	1
MW-27	9-Jan-09	7.29	7.39	0.1	See S-1 Above	See S-1 Above
MW-27	27-Jan-09	7.59	7.72	0.13	See S-1 Above	See S-1 Above
MW-27	30-Jan-09	7.66	7.68	0.02	See S-1 Above	See S-1 Above
MW-27	26-Feb-09	7.28	7.36	0.08	See S-1 Above	See S-1 Above
MW-27	13-Mar-09	6.82	6.825	0.005	See S-1 Above	See S-1 Above
				Totals:	74.05	14,417.0

Notes:
1) TOC = top-of-casing
2) Shading = not applicable or not present
3) See S-1 above indicates that the individual volumes of product and groundwater recovered for each well was not noted during that event. The total volumes recovered during that event are noted in S-1.

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-2	29-Nov-90		10.00	10.30	0.30						
MW-2	27-Jan-92		FP								
MW-2	19-Feb-92		FP								
MW-2	24-Aug-92		FP								
MW-2	19-Jan-93		FP								
MW-2	17-Jun-93	101.06		10.71		90.35	**0.23**	**3.2**	0.65	**15**	
MW-2	11-Nov-93	101.06		10.96		90.10	**0.134**	0.01	0.052	**1.43**	
MW-2	27-Jun-94	101.06	10.95	10.96	0.01	90.11					
MW-2	16-Feb-95	101.06		10.36		90.70	**0.178**	0.0313	0.447	0.3	
MW-2	28-Jul-95	101.06		10.13		90.93	**0.257**	0.117	0.139	0.808	
MW-2	22-Mar-96	101.06		11.14		89.92	**0.1**	0.154	**0.331**	3.93	
MW-2	17-Jun-96	101.06		9.33		91.73	0.0029	0.0041	0.0107	0.355	
MW-2	25-Sep-96	101.06		10.68		90.38	0.0154	0.0167	0.0546	0.584	
MW-2	24-Apr-97	101.06		9.89		91.17	**1.11**	**3.1**	**0.71**	5.76	
MW-2	17-Jun-97	101.06		9.88		91.18	**2.57**	**3.85**	0.487	5.53	
MW-2	27-Aug-97	101.06		10.48		90.58	**0.116**	0.519	0.534	7.45	
MW-2	5-Nov-97	113.61		10.75		102.86	**0.076**	0.02	**0.31**	2.4	
MW-2	27-Feb-98	113.61		10.23		103.38	**0.17**	0.029	0.074	0.73	
MW-2	10-Jun-98	113.61		10.08		103.53	**0.0079**	0.0011	0.0075	0.15	
MW-2	8-Oct-98	113.61		10.31		103.30	**0.013**	0.019	0.18	**1.38**	
MW-2	31-Mar-99	113.61		10.12		103.49	**0.64**	0.024	0.087	**250/<5**	
MW-2	9-Jun-99	113.61		10.00		103.61	**0.77**	0.22	0.075	0.62	
MW-2	2-Sep-99	113.61		10.60		103.01	**0.086**	0.0076	0.029	0.066	
MW-2	28-Oct-99	113.61		10.52		103.09	**0.16**	0.0025	0.016	0.041	
MW-2	23-Feb-00	113.61		10.32		103.29	**0.55**	0.019	0.27	0.861	
MW-2	24-May-00	113.61		9.77		103.84	**0.09**	0.11	0.11	1.37	
MW-2	15-Aug-00	113.61		10.21		103.40	**0.36**	0.13	0.054	0.41	
MW-2	9-Nov-00	113.61		10.03		103.58	**0.14**	0.099	0.12	0.96	
MW-2	11-Oct-01	113.61		10.24		103.37	**0.027**	0.036	0.02	0.142	
MW-2	14-Mar-02	113.61		9.85		103.76	**0.083**	0.012	**0.13**	0.72	
MW-2	6-Jun-02	113.61		9.62		103.99	**0.1**	0.052	0.32	3.08	
MW-2	30-Aug-02	113.61		10.16		103.45	**0.017**	0.0058	0.073	0.448	
MW-2	6-Dec-02	113.61		10.62		102.99	**0.012**	<0.001	0.003	0.0031/<0.001	
MW-2	6-May-04	113.61		10.34		103.27	**0.031**	0.0014	0.0046	0.003	<0.01
MW-2	21-Apr-05	113.61		10.17		103.44	**0.035**	<0.001	0.0022	0.029	0.024
MW-2	31-Dec-08	113.61		9.58		104.03					
MW-2	5-Jan-09	113.61		9.84		103.77					
MW-2	6-Jan-09	113.61	Obstruction in well, not able to collect samples								
MW-4	28-Nov-90						**3.5**	0.33	0.27	1.1	
MW-4	27-Jan-92						**3.1**	0.065	0.072	4.147	
MW-4	24-Aug-92						**0.14**	0.024	0.19	0.49	
MW-4	19-Jan-93						**0.26**	0.006	BDL	0.021	
MW-4	17-Jun-93	98.97		8.22		90.75	**0.015**	<0.001	<0.001	0.005	
MW-4	11-Nov-93	98.97		8.58		90.39	<0.001	<0.001	<0.001	<0.001	
MW-4	27-Jun-94	98.97		8.65		90.32	**0.154**	0.0243	0.0081	0.0098	
MW-4	16-Feb-95	98.97		8.24		90.73	**0.253**	0.113	0.0845	0.202	
MW-4	28-Jul-95	98.97		8.06		90.91	**0.179**	0.0115	0.175	0.261	
MW-4	22-Mar-96	98.97		8.75		90.22	**0.363**	0.346	0.178	0.456	
MW-4	17-Jun-96	98.97		5.79		93.18	<0.002	<0.002	<0.002	<0.005	
MW-4	25-Sep-96	98.97		8.44		90.53	0.0032	<0.002	0.0052	0.0052	
MW-4	24-Apr-97	98.97		7.84		91.13	**0.444**	0.0255	0.0945	**0.11**	
MW-4	17-Jun-97	98.97		6.87		92.10	**0.386**	0.0359	0.125	0.273	
MW-4	27-Aug-97	98.97		8.23		90.74	**0.0568**	0.0321	0.128	0.322	
MW-4	5-Nov-97	111.44		8.54		102.90	0.037	0.0035	0.043	0.11	
MW-4	27-Feb-98	111.44		7.98		103.46	**0.13**	<0.005	<0.005	0.04	
MW-4	10-Jun-98	111.44		7.94		103.50	**0.029**	0.019	0.022	0.052	
MW-4	8-Oct-98	111.44		8.52		102.92	**0.018**	0.0024	0.033	0.1/<0.001	
MW-4	31-Mar-99	111.44		8.07		103.37	<0.001	<0.001	<0.001	<0.003	
MW-4	9-Jun-99	111.44		8.07		103.37	**0.36**	0.028	0.28	0.8228	
MW-4	2-Sep-99	111.44		9.50		101.94	**0.18**	0.017	0.28	1.1/<0.005	
MW-4	28-Oct-99	111.44		8.44		103.00	**0.073**	0.0046	0.095	0.360/<0.004	
MW-4	23-Feb-00	111.44		8.17		103.27	**0.57**	<0.005	0.042	0.061/<0.005	
MW-4	24-May-00	111.44		7.69		103.75	**0.095**	0.0057	0.01	0.0089/<0.001	
MW-4	15-Aug-00	111.44		8.10		103.34	**0.36**	0.022	0.13	0.140/<0.0025	
MW-4	9-Nov-00	111.44		7.97		103.47	**0.16**	<0.025	0.13	0.064/<0.005	
MW-4	11-Oct-01	111.44		8.11		103.33	**0.039**	0.005	0.03	0.013/<0.001	
MW-4	14-Mar-02	111.44		7.68		103.76	**0.13**	0.0049	<0.001	<0.003	
MW-4	6-Jun-02	111.44		7.35		104.09	**0.013**	<0.001	0.0058	0.0025/<0.001	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-4	30-Aug-02	111.44		8.05		103.39	0.14	0.013	0.035	0.031/<0.001	
MW-4	6-Dec-02	111.44		8.53		102.91	0.17	0.004	0.0016	0.016/<0.001	
MW-4	6-May-04	111.44		8.25		103.19	Obstruction in well, not able to collect samples				
MW-4	21-Apr-05	111.44		8.07		103.37	0.14	0.003	<0.001	0.0035	0.0011
MW-4	5-Jan-09	111.44		7.64		103.80					
MW-4	6-Jan-09	111.44					Obstruction in well, not able to collect samples				
MW-5	28-Nov-90						<0.005	<0.005	<0.005	<0.01	
MW-5	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-5	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-5	19-Jan-93						BDL	BDL	BDL	BDL	
MW-5	17-Jun-93	95.44		4.71		90.73	<0.001	<0.001	<0.001	<0.001	
MW-5	11-Nov-93	95.44		5.09		90.35	<0.001	<0.001	<0.001	<0.001	
MW-5	27-Jun-94	95.44		5.31		90.13	<0.001	<0.001	<0.001	<0.003	
MW-5	16-Feb-95	95.44		4.81		90.63	<0.002	<0.002	<0.002	<0.005	
MW-5	28-Jul-95	95.44		4.99		90.45	<0.0073	<0.002	<0.002	<0.005	
MW-5	22-Mar-96	95.44		5.28		90.16	<0.002	<0.002	<0.002	<0.005	
MW-5	17-Jun-96	95.44		4.24		91.20	<0.002	<0.002	<0.002	<0.005	
MW-5	25-Sep-96	95.44		5.07		90.37	<0.002	<0.002	<0.002	<0.005	
MW-5	24-Apr-97	95.44		4.40		91.04	<0.002	<0.002	<0.002	<0.005	
MW-5	17-Jun-97	95.44		4.34		91.10	<0.002	<0.002	<0.002	<0.003	
MW-5	27-Aug-97	95.44		4.84		90.60	<0.002	<0.002	<0.002	<0.003	
MW-5	5-Nov-97	108.15		5.21		102.94	<0.001	<0.001	<0.01	<0.003	
MW-5	27-Feb-98	108.15		4.58		103.57	<0.001	<0.001	<0.001	<0.003	
MW-5	10-Jun-98	108.15		4.53		103.62	<0.001	<0.001	<0.001	<0.003	
MW-5	8-Oct-98	108.15		4.78		103.37	<0.001	<0.001	<0.001	<0.003	
MW-5	31-Mar-99	108.15		4.76		103.39	0.053	0.07	0.11	0.38	
MW-5	9-Jun-99	108.15		4.65		103.50	<0.001	<0.001	<0.001	<0.003	
MW-5	2-Sep-99	108.15		5.34		102.81	<0.001	<0.001	<0.001	<0.002	
MW-5	28-Oct-99	108.15		5.19		102.96	<0.001	<0.001	<0.001	<0.003	
MW-5	23-Feb-00	108.15		4.92		103.23					
MW-5	24-May-00	108.15		4.34		103.81	<0.001	<0.001	<0.001	<0.003	
MW-5	15-Aug-00	108.15		4.81		103.34	<0.001	<0.001	<0.001	<0.003	
MW-5	9-Nov-00	108.15		4.75		103.40	<0.001	<0.001	<0.001	<0.003	
MW-5	11-Oct-01	108.15		4.80		103.35	<0.001	<0.001	<0.001	<0.003	
MW-5	14-Mar-02	108.15		4.41		103.74	<0.001	<0.001	<0.001	<0.003	
MW-5	6-Jun-02	108.15		4.63		103.52	<0.001	<0.001	<0.001	<0.003	
MW-5	30-Aug-02	108.15		4.75		103.40	<0.001	<0.001	<0.001	<0.003	
MW-5	6-Dec-02	108.15		5.24		102.91	<0.001	<0.001	<0.001	<0.003	
MW-5	6-May-04						Well destroyed				
MW-6	28-Nov-90						<0.005	<0.005	<0.005	<0.01	
MW-6	27-Jan-92										
MW-6	24-Aug-92										
MW-6	19-Jan-93						BDL	BDL	BDL	BDL	
MW-6	17-Jun-93	98.46		7.07		91.39	<0.001	<0.001	<0.001	<0.001	
MW-6	11-Nov-93	98.46		7.63		90.83	<0.001	<0.001	<0.001	<0.001	
MW-6	27-Jun-94	98.46		7.57		90.89	<0.001	<0.001	<0.001	<0.003	
MW-6	16-Feb-95	98.46		7.41		91.05	<0.002	<0.002	<0.002	<0.005	
MW-6	28-Jul-95	98.46		7.11		91.35	0.0045	<0.002	<0.002	<0.005	
MW-6	22-Mar-96	98.46		7.89		90.57	<0.002	<0.002	<0.002	<0.005	
MW-6	17-Jun-96	98.46		6.11		92.35	<0.002	<0.002	<0.002	<0.005	
MW-6	25-Sep-96	98.46		7.59		90.87	<0.002	<0.002	<0.002	<0.005	
MW-6	24-Apr-97	98.46		6.87		91.59	<0.002	<0.002	<0.002	<0.005	
MW-6	17-Jun-97	98.46		6.81		91.65	<0.002	<0.002	<0.002	<0.005	
MW-6	27-Aug-97	98.46		7.34		91.12	<0.002	<0.002	<0.002	<0.005	
MW-6	5-Nov-97	111.06		7.74		103.32	<0.001	<0.001	<0.002	<0.003	
MW-6	27-Feb-98	111.06		7.03		104.03	<0.001	<0.001	<0.001	<0.003	
MW-6	10-Jun-98	111.06		6.97		104.09	<0.001	<0.001	<0.001	<0.003	
MW-6	8-Oct-98	111.06		7.28		103.78	<0.001	<0.001	<0.001	<0.003	
MW-6	31-Mar-99	111.06		7.14		103.92	<0.001	<0.001	<0.001	<0.003	
MW-6	9-Jun-99	111.06		6.95		104.11	<0.001	<0.001	<0.001	<0.003	
MW-6	2-Sep-99	111.06		7.71		103.35	<0.001	<0.001	<0.001	<0.002	
MW-6	28-Oct-99	111.06		7.64		103.42	<0.001	<0.001	<0.001	<0.002	
MW-6	23-Feb-00	111.06		7.42		103.64	<0.001	<0.001	<0.001	<0.003	
MW-6	24-May-00	111.06		6.68		104.38	<0.001	<0.001	<0.001	<0.003	
MW-6	15-Aug-00	111.06		7.25		103.81	0.58	3.1	0.55	2.49	
MW-6	9-Nov-00	111.06		7.11		103.95	0.069	1	0.35	2.3	
MW-6	11-Oct-01	111.06	sheen	7.39		103.67					
MW-6	14-Mar-02	111.06	sheen	6.93		104.13	0.0029	0.002	0.015	0.032	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-6	6-Jun-02	111.06	sheen	6.70		104.36	0.0017	0.0016	0.012	0.0256	
MW-6	30-Aug-02	111.06	sheen	7.27		103.79	0.0015	0.0011	0.1	0.0245	
MW-6	6-Dec-02	111.06	sheen	7.83		103.23	<0.001	<0.001	0.0041	0.0099	
MW-6	6-May-04	111.06	sheen	7.45		103.61	<0.001	<0.001	0.001	<0.003	<0.001
MW-6	21-Apr-05	111.06		7.26		103.80					
MW-6	22-Apr-05						<0.001	<0.001	<0.001	<0.003	<0.001
MW-6	29-Dec-08	111.06		6.67		104.39					
MW-6	5-Jan-09	111.06		7.06		104.00					
MW-6	6-Jan-09	111.06					<0.001	<0.001	<0.001	<0.003	<0.001
MW-7	29-Nov-90		7.39	7.69	0.30						
MW-7	21-Apr-05						Well destroyed				
MW-8S	1-Apr-91	86.88		6.61		80.27	<0.005	<0.005	<0.005	<0.01	
MW-8S	27-Jan-92						<0.002	<0.003	<0.002	<0.01	
MW-8S	24-Aug-92						<0.002	<0.003	<0.002	<0.007	
MW-8S	19-Jan-93										
MW-8S	17-Jun-93	98.29		7.56		90.73	<0.001	<0.001	<0.001	<0.001	
MW-8S	11-Nov-93	98.29		7.58		90.71	<0.001	<0.001	<0.001	<0.001	
MW-8S	27-Jun-94	98.29		7.46		90.83	<0.001	<0.001	<0.001	<0.003	
MW-8S	16-Feb-95	98.29		7.43		90.86	<0.002	<0.002	<0.002	<0.005	
MW-8S	28-Jul-95	98.29		7.14		91.15	<0.0034	<0.002	<0.002	<0.005	
MW-8S	22-Mar-96	98.29		7.73		90.56	<0.002	<0.002	<0.002	<0.005	
MW-8S	17-Jun-96	98.29		6.46		91.83	<0.002	<0.002	<0.002	<0.005	
MW-8S	25-Sep-96	98.29		7.49		90.80	<0.002	<0.002	<0.002	<0.005	
MW-8S	24-Apr-97	98.29		6.94		91.35	<0.002	<0.002	<0.002	<0.005	
MW-8S	17-Jun-97	98.29		6.86		91.43	<0.002	<0.002	<0.002	<0.005	
MW-8S	27-Aug-97	98.29		7.26		91.03	<0.002	<0.002	<0.002	<0.005	
MW-8S	5-Nov-97	110.89		7.62		103.27	<0.001	<0.001	<0.001	<0.003	
MW-8S	27-Feb-98	110.89		7.50		103.39	<0.001	<0.001	<0.001	<0.003	
MW-8S	10-Jun-98	110.89		6.95		103.94	<0.001	<0.001	<0.001	<0.001	
MW-8S	8-Oct-98	110.89		7.19		103.70	<0.001	<0.001	<0.001	<0.003	
MW-8S	31-Mar-99	110.89		7.12		103.77	<0.001	<0.001	<0.001	<0.003	
MW-8S	9-Jun-99	110.89		7.00		103.89	<0.001	<0.001	<0.001	<0.003	
MW-8S	2-Sep-99	110.89		7.61		103.28	<0.001	<0.001	<0.001	<0.002	
MW-8S	28-Oct-99	110.89		7.56		103.33	<0.001	<0.001	<0.001	<0.002	
MW-8S	23-Feb-00	110.89		7.48		103.41	<0.001	0.0024	<0.001	<0.0041	
MW-8S	24-May-00	110.89		6.77		104.12	<0.001	<0.001	<0.001	<0.003	
MW-8S	15-Aug-00	110.89		7.62		103.27	<0.001	<0.001	<0.001	<0.003	
MW-8S	9-Nov-00	110.89		7.20		103.69	<0.001	<0.001	<0.001	<0.003	
MW-8S	11-Oct-01	110.89		7.26		103.63	<0.001	<0.001	<0.001	<0.003	
MW-8S	14-Mar-02	110.89		6.91		103.98	<0.001	<0.001	<0.001	<0.003	
MW-8S	6-Jun-02	110.89		6.71		104.18	<0.001	<0.001	<0.001	<0.003	
MW-8S	30-Aug-02	110.89		7.18		103.71	<0.001	<0.001	<0.001	<0.003	
MW-8S	6-Dec-02	110.89		7.64		103.25	<0.001	<0.001	<0.001	<0.003	
MW-8S	6-May-04	110.89		7.39		103.50	<0.001	<0.001	<0.001	<0.003	<0.001
MW-8S	21-Apr-05	110.89		7.22		103.67					
MW-8S	22-Apr-05						<0.001	<0.001	<0.001	<0.003	<0.001
MW-8S	5-Jan-09	110.89		6.97		103.92					
MW-8S	6-Jan-09	110.89		7.00		103.89	<0.001	<0.001	<0.001	<0.003	<0.001
MW-8D	1-Apr-91	86.96		6.77		80.19	<0.005	<0.005	<0.005	<0.01	
MW-8D	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-8D	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-8D	19-Jan-93										
MW-8D	17-Jun-93										
MW-8D	11-Nov-93	98.31		7.50		90.81	<0.001	<0.001	<0.001	<0.001	
MW-8D	27-Jun-94	98.31		7.94		90.37	<0.001	<0.001	<0.001	<0.003	
MW-8D	16-Feb-95	98.31		7.80		90.51	<0.002	0.0039	<0.002	<0.005	
MW-8D	28-Jul-95	98.31		7.65		90.66	0.0023	<0.002	<0.002	0.0054	
MW-8D	22-Mar-96	98.31		8.06		90.25	<0.002	<0.002	<0.002	<0.005	
MW-8D	17-Jun-96	98.31		6.81		91.50	<0.002	<0.002	<0.002	<0.005	
MW-8D	25-Sep-96	98.31		7.55		90.76	<0.002	<0.002	<0.002	<0.005	
MW-8D	24-Apr-97	98.31		7.33		90.98	<0.002	<0.002	<0.002	<0.005	
MW-8D	17-Jun-97	98.31		7.32		90.99	<0.002	<0.002	<0.002	<0.005	
MW-8D	27-Aug-97	98.31		7.85		90.46	<0.002	<0.002	<0.002	<0.005	
MW-8D	5-Nov-97	111.03		8.06		102.97	<0.001	<0.001	<0.001	<0.003	
MW-8D	27-Feb-98	111.03		7.00		104.03	<0.001	<0.001	<0.001	<0.003	
MW-8D	10-Jun-98	111.03		7.36		103.67	<0.001	<0.001	<0.001	<0.003	
MW-8D	8-Oct-98	111.03		7.67		103.36	<0.001	<0.001	<0.001	<0.003	
MW-8D	31-Mar-99	111.03		7.40		103.63	<0.001	<0.001	<0.001	<0.003	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-8D	9-Jun-99	111.03		7.10		103.93	<0.001	<0.001	<0.001	<0.003	
MW-8D	2-Sep-99	111.03		8.02		103.01	<0.001	<0.001	<0.001	<0.002	
MW-8D	28-Oct-99	111.03		7.95		103.08	<0.001	<0.001	<0.001	<0.002	
MW-8D	23-Feb-00	111.03		7.92		103.11	<0.001	<0.001	<0.001	<0.003	
MW-8D	24-May-00	111.03		7.01		104.02	<0.001	<0.001	<0.001	<0.003	
MW-8D	15-Aug-00	111.03		7.62		103.41	<0.001	<0.001	<0.001	<0.003	
MW-8D	9-Nov-00	111.03		7.72		103.31	<0.001	<0.005	<0.001	<0.003	
MW-8D	11-Oct-01	111.03		7.67		103.36	<0.001	<0.001	<0.001	<0.003	
MW-8D	14-Mar-02	111.03		7.28		103.75	<0.001	<0.001	<0.001	<0.003	
MW-8D	6-Jun-02	111.03		7.04		103.99	<0.001	<0.001	<0.001	<0.003	
MW-8D	30-Aug-02	111.03		7.51		103.52	<0.001	<0.001	<0.001	<0.003	
MW-8D	6-Dec-02	111.03		8.00		103.03	<0.001	<0.001	<0.001	<0.003	
MW-8D	6-May-04	111.03		7.70		103.33	<0.001	<0.001	<0.001	<0.003	<0.001
MW-8D	21-Apr-05	111.03		7.53		103.50					
MW-8D	22-Apr-05						<0.001	<0.001	<0.001	<0.003	<0.001
MW-8D	5-Jan-09	111.03		7.14		103.89					
MW-8D	6-Jan-09	111.03					<0.001	<0.001	<0.001	<0.003	<0.001
MW-9S	1-Apr-91	86.00		6.12		79.88	<0.005	<0.005	<0.005	<0.01	
MW-9S	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-9S	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-9S	19-Jan-93						BDL	BDL	BDL	BDL	
MW-9S	17-Jun-93	97.42		6.79		90.63	<0.001	<0.001	<0.001	<0.001	
MW-9S	11-Nov-93	97.42		7.04		90.38	<0.001	<0.001	<0.001	<0.001	
MW-9S	27-Jun-94	97.42		7.03		90.39	<0.001	<0.001	<0.001	<0.003	
MW-9S	16-Feb-95	97.42		7.04		90.38	<0.002	<0.002	<0.002	<0.005	
MW-9S	28-Jul-95	97.42		6.82		90.60	<0.002	<0.002	<0.002	<0.005	
MW-9S	22-Mar-96	97.42		7.32		90.10	<0.002	<0.002	<0.002	<0.005	
MW-9S	17-Jun-96	97.42		6.35		91.07	<0.002	<0.002	<0.002	<0.005	
MW-9S	25-Sep-96	97.42		7.10		90.32	<0.002	<0.002	<0.002	<0.005	
MW-9S	24-Apr-97	97.42		6.72		90.70	<0.002	<0.002	<0.002	<0.005	
MW-9S	17-Jun-97	97.42		6.74		90.68	<0.002	<0.002	<0.002	<0.005	
MW-9S	27-Aug-97	97.42		6.90		90.52	<0.002	<0.002	<0.001	<0.005	
MW-9S	5-Nov-97	110.16		7.21		102.95	<0.001	<0.001	<0.001	<0.003	
MW-9S	27-Feb-98	110.16		6.86		103.30	<0.001	<0.001	<0.001	<0.003	
MW-9S	10-Jun-98	110.16		6.67		103.49	<0.001	<0.001	<0.001	<0.003	
MW-9S	8-Oct-98	110.16		6.83		103.33	<0.001	<0.001	<0.001	<0.003	
MW-9S	31-Mar-99	110.16		6.90		103.26	<0.001	<0.001	<0.001	<0.003	
MW-9S	9-Jun-99	110.16		6.76		103.40	<0.001	<0.001	<0.001	<0.003	
MW-9S	2-Sep-99	110.16		7.26		102.90	<0.001	<0.001	<0.001	<0.003	
MW-9S	28-Oct-99	110.16		7.20		102.96	<0.001	<0.001	<0.001	<0.003	
MW-9S	23-Feb-00	110.16		7.90		102.26	<0.001	<0.001	<0.001	<0.003	
MW-9S	24-May-00	110.16		6.64		103.52	<0.001	<0.001	<0.001	<0.003	
MW-9S	15-Aug-00	110.16		6.93		103.23	<0.001	<0.001	<0.001	<0.003	
MW-9S	9-Nov-00	110.16		6.75		103.41	<0.001	<0.005	<0.001	<0.003	
MW-9S	11-Oct-01	110.16		6.96		103.20	<0.001	<0.001	<0.001	<0.003	
MW-9S	14-Mar-02	110.16		6.73		103.43	<0.001	<0.001	<0.001	<0.003	
MW-9S	6-Jun-02	110.96		6.52		104.44	<0.001	<0.001	<0.001	<0.003	
MW-9S	30-Aug-02	110.96		6.92		104.04	<0.001	<0.001	<0.001	<0.003	
MW-9S	6-Dec-02	110.96		7.27		103.69	<0.001	<0.001	<0.001	<0.003	
MW-9S	6-May-04	110.96		7.12		103.84	<0.001	<0.001	<0.001	<0.003	<0.001
MW-9S	21-Apr-05	110.96		6.95		104.01					
MW-9S	22-Apr-05						<0.001	<0.001	<0.001	<0.003	<0.001
MW-9S	6-Jan-09						Obstruction in well, not able to gauge or collect samples				
MW-9D	1-Apr-91	86.06		6.26		79.80	<0.005	<0.005	<0.005	<0.01	
MW-9D	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-9D	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-9D	19-Jan-93										
MW-9D	17-Jun-93										
MW-9D	11-Nov-93	97.48		7.13		90.35	<0.001	<0.001	<0.001	<0.001	
MW-9D	27-Jun-94	97.48		7.13		90.35	<0.001	<0.001	<0.001	<0.003	
MW-9D	16-Feb-95	97.48		7.15		90.33	<0.002	<0.002	<0.002	<0.005	
MW-9D	28-Jul-95	97.48		6.92		90.56	<0.002	<0.002	<0.002	<0.005	
MW-9D	22-Mar-96	97.48		7.42		90.06	<0.002	<0.002	<0.002	<0.005	
MW-9D	17-Jun-96	97.48		6.44		91.04	<0.002	<0.002	<0.002	<0.005	
MW-9D	25-Sep-96	97.48		7.19		90.29	<0.002	<0.002	<0.002	<0.005	
MW-9D	24-Apr-97	97.48		6.84		90.64	<0.002	<0.002	<0.002	<0.005	
MW-9D	17-Jun-97	97.48		6.79		90.69	<0.002	<0.002	<0.002	<0.005	
MW-9D	27-Aug-97	97.48		7.02		90.46	<0.002	<0.002	<0.002	<0.005	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-9D	5-Nov-97	110.26		7.32		102.94	<0.001	<0.001	<0.001	<0.003	
MW-9D	27-Feb-98	110.26		6.74		103.52	<0.001	<0.001	<0.001	<0.003	
MW-9D	10-Jun-98	110.26		6.79		103.47	<0.001	<0.001	<0.001	<0.003	
MW-9D	8-Oct-98	110.26		6.93		103.33	<0.001	<0.001	<0.001	<0.003	
MW-9D	31-Mar-99	110.26		7.01		103.25	<0.001	<0.001	<0.001	<0.003	
MW-9D	9-Jun-99	110.26		6.87		103.39	<0.001	<0.001	<0.001	<0.003	
MW-9D	2-Sep-99	110.26		7.41		102.85	<0.001	<0.001	<0.001	<0.003	
MW-9D	28-Oct-99	110.26		7.31		102.95	<0.001	<0.001	<0.001	<0.003	
MW-9D	23-Feb-00	110.26		7.10		103.16	<0.001	<0.001	<0.001	<0.003	
MW-9D	24-May-00	110.26		6.74		103.52	<0.001	<0.001	<0.001	<0.003	
MW-9D	15-Aug-00	110.26		7.07		103.19	<0.001	<0.001	<0.001	<0.003	
MW-9D	9-Nov-00	110.26		6.90		103.36	<0.001	<0.001	<0.001	<0.003	
MW-9D	11-Oct-01	110.26		7.05		103.21	<0.001	<0.001	<0.001	<0.003	
MW-9D	14-Mar-02	110.26		6.83		103.43	<0.001	<0.001	<0.001	<0.003	
MW-9D	6-Jun-02	110.26		6.62		103.64	<0.001	<0.001	<0.001	<0.003	
MW-9D	30-Aug-02	110.26		7.04		103.22	<0.001	<0.001	<0.001	<0.003	
MW-9D	6-Dec-02	110.26		7.38		102.88	<0.001	<0.001	<0.001	<0.003	
MW-9D	6-May-04	110.26		7.21		103.05	<0.001	<0.001	<0.001	<0.003	<0.001
MW-9D	21-Apr-05	110.26		7.04		103.22					
MW-9D	22-Apr-05						<0.001	<0.001	<0.001	<0.003	<0.001
MW-9D	5-Jan-09	110.26		6.91		103.35					
MW-9D	6-Jan-09	110.26					<0.001	<0.001	<0.001	<0.003	<0.001
MW-10S	1-Apr-91	85.93		5.28		80.65	<0.005	<0.005	<0.005	<0.010	
MW-10S	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-10S	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-10S	19-Jan-93						BDL	BDL	BDL	BDL	
MW-10S	17-Jun-93	96.38		5.91		90.47	<0.001	<0.001	<0.001	<0.001	
MW-10S	11-Nov-93	96.38		6.12		90.26	<0.001	<0.001	<0.001	<0.001	
MW-10S	27-Jun-94	96.38		6.11		90.27	<0.001	<0.001	<0.001	<0.003	
MW-10S	16-Feb-95	96.38		6.08		90.30	<0.002	<0.002	<0.002	<0.005	
MW-10S	28-Jul-95	96.38		5.84		90.54	<0.002	<0.002	<0.002	<0.005	
MW-10S	22-Mar-96	96.38		6.33		90.05	<0.002	<0.002	<0.002	<0.005	
MW-10S	17-Jun-96	96.38		5.26		91.12	<0.002	<0.002	<0.002	<0.005	
MW-10S	25-Sep-96	96.38		6.09		90.29	<0.002	<0.002	<0.002	<0.005	
MW-10S	24-Apr-97	96.38		5.73		90.65	<0.002	<0.002	<0.002	<0.005	
MW-10S	17-Jun-97	96.38		5.64		90.74	<0.002	<0.002	<0.002	<0.005	
MW-10S	27-Aug-97	96.38		5.90		90.48	**0.0126**	<0.002	<0.002	<0.005	
MW-10S	5-Nov-97	108.99		6.19		102.80	<0.001	<0.001	<0.001	<0.003	
MW-10S	27-Feb-98	108.99		5.77		103.22	<0.001	<0.001	<0.001	<0.003	
MW-10S	10-Jun-98	108.99		5.66		103.33	<0.001	<0.001	<0.001	<0.003	
MW-10S	8-Oct-98	108.99		5.83		103.16	<0.001	<0.001	<0.001	<0.003	
MW-10S	31-Mar-99	108.99		5.95		103.04	<0.001	<0.001	<0.001	<0.003	
MW-10S	9-Jun-99	108.99		5.76		103.23	<0.001	<0.001	<0.001	<0.003	
MW-10S	2-Sep-99	108.99		6.21		102.78	<0.001	<0.001	<0.001	<0.003	
MW-10S	28-Oct-99	108.99		6.30		102.69	<0.001	<0.001	<0.001	<0.003	
MW-10S	23-Feb-00	108.99		6.06		102.93	<0.001	<0.001	<0.001	<0.003	
MW-10S	24-May-00	108.99		5.68		103.31	<0.001	<0.001	<0.001	<0.003	
MW-10S	15-Aug-00	108.99		5.94		103.05	<0.001	<0.001	<0.001	<0.003	
MW-10S	9-Nov-00	108.99		5.90		103.09	<0.001	<0.005	<0.001	<0.003	
MW-10S	11-Oct-01	108.99		5.94		103.05	<0.001	<0.001	<0.001	<0.003	
MW-10S	14-Mar-02	108.99		5.79		103.20	<0.001	<0.001	<0.001	<0.003	
MW-10S	6-Jun-02	108.99		5.55		103.44	<0.001	<0.001	<0.001	<0.003	
MW-10S	30-Aug-02	108.99		5.91		103.08	<0.001	<0.001	<0.001	<0.003	
MW-10S	6-Dec-02	108.99		6.24		102.75	<0.001	<0.001	<0.001	<0.003	
MW-10S	6-May-04	108.99		6.15		102.84	<0.001	<0.001	<0.001	<0.003	<0.001
MW-10S	21-Apr-05	108.99		5.97		103.02					
MW-10S	22-Apr-05						<0.001	<0.001	<0.001	<0.003	<0.001
MW-10S	5-Jan-09	108.99		5.69		103.30					
MW-10S	6-Jan-09	108.99					<0.001	<0.001	<0.001	<0.003	<0.001
MW-10D	1-Apr-91	85.06		5.62		79.44	<0.005	<0.005	<0.005	<0.010	
MW-10D	27-Jan-92						0.005	<0.002	<0.002	<0.005	
MW-10D	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-10D	19-Jan-93										
MW-10D	17-Jun-93										
MW-10D	11-Nov-93	96.31		6.21		90.10	<0.001	<0.001	<0.001	<0.001	
MW-10D	27-Jun-94	96.31		6.23		90.08	<0.001	<0.001	<0.001	<0.003	
MW-10D	16-Feb-95	96.31		6.15		90.16	<0.002	<0.002	<0.002	<0.005	
MW-10D	28-Jul-95	96.31		5.90		90.41	<0.002	<0.002	<0.002	<0.005	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-10D	22-Mar-96	96.31		6.42		89.89	<0.002	<0.002	<0.002	<0.005	
MW-10D	17-Jun-96	96.31		5.27		91.04	<0.002	<0.002	<0.002	<0.005	
MW-10D	25-Sep-96	96.31		6.17		90.14	<0.002	<0.002	<0.002	<0.005	
MW-10D	24-Apr-97	96.31		5.77		90.54	<0.002	<0.002	<0.002	<0.005	
MW-10D	17-Jun-97	96.31		5.74		90.57	<0.002	<0.002	<0.002	<0.005	
MW-10D	27-Aug-97	96.31		6.83		89.48	<0.002	<0.002	<0.002	<0.005	
MW-10D	5-Nov-97	108.93		6.13		102.80	<0.001	<0.001	<0.001	<0.003	
MW-10D	27-Feb-98	108.93		5.71		103.22	<0.001	<0.001	<0.001	<0.003	
MW-10D	10-Jun-98	108.93		5.61		103.32	<0.001	<0.001	<0.001	<0.003	
MW-10D	8-Oct-98	108.93		6.79		102.14	<0.001	<0.001	<0.001	<0.003	
MW-10D	31-Mar-99	108.93		5.90		103.03	<0.001	<0.001	<0.001	<0.003	
MW-10D	9-Jun-99	108.93		5.81		103.12	<0.001	<0.001	<0.001	<0.003	
MW-10D	2-Sep-99	108.93		6.18		102.75	<0.001	<0.001	<0.001	<0.003	
MW-10D	28-Oct-99	108.93		6.18		102.75	<0.001	<0.001	<0.001	<0.003	
MW-10D	23-Feb-00	108.93		6.10		102.83	<0.001	<0.001	<0.001	<0.003	
MW-10D	24-May-00	108.93		5.55		103.38	<0.001	<0.001	<0.001	<0.003	
MW-10D	15-Aug-00	108.93		5.91		103.02	<0.001	<0.001	<0.001	<0.003	
MW-10D	9-Nov-00	108.93		5.80		103.13	<0.001	<0.005	<0.001	<0.003	
MW-10D	11-Oct-01	108.93		5.90		103.03	<0.001	<0.001	<0.001	<0.003	
MW-10D	14-Mar-02	108.93		5.74		103.19	<0.001	<0.001	<0.001	<0.003	
MW-10D	6-Jun-02	108.93		5.52		103.41	<0.001	<0.001	<0.001	<0.003	
MW-10D	30-Aug-02	108.93		5.85		103.08	<0.001	<0.001	<0.001	<0.003	
MW-10D	6-Dec-02	108.93		6.22		102.71	<0.001	<0.001	<0.001	<0.003	
MW-10D	6-May-04	108.93		6.09		102.84	<0.001	<0.001	<0.001	<0.003	0.0055
MW-10D	21-Apr-05	108.93		5.94		102.99					
MW-10D	22-Apr-05						<0.001	<0.001	<0.001	<0.003	0.0041
MW-10D	5-Jan-09	108.93		5.62		103.31					
MW-10D	6-Jan-09	108.93					<0.001	<0.001	<0.001	<0.003	<0.001
MW-11S	1-Apr-91	85.82		5.52		80.30	**0.15**	<0.005	<0.005	0.011	
MW-11S	27-Jan-92						**3.6**	0.021	0.18	4.491	
MW-11S	24-Aug-92						**0.006**	0.029	0.006	0.81	
MW-11S	19-Jan-93						**1.3**	0.007	0.03	0.1	
MW-11S	17-Jun-93	96.99		6.01		90.98	**0.14**	<0.001	<0.001	<0.001	
MW-11S	11-Nov-93	96.99		6.80		90.19	**1.35**	<0.001	<0.001	<0.001	
MW-11S	27-Jun-94	96.99		6.84		90.15	**0.785**	0.0094	0.173	0.282	
MW-11S	16-Feb-95	96.99		6.53		90.46	**1.55**	0.0248	0.163	0.239	
MW-11S	28-Jul-95	96.99		6.42		90.57	**0.954**	0.0545	0.316	0.29	
MW-11S	22-Mar-96	96.99				96.99					
MW-11S	17-Jun-96	96.99		4.43		92.56	<0.002	<0.002	<0.002	<0.005	
MW-11S	25-Sep-96	96.99		6.77		90.22	**1.76**	0.0443	0.519	1.22	
MW-11S	24-Apr-97	96.99		6.12		90.87	**0.384**	0.0087	0.134	2.1	
MW-11S	17-Jun-97	96.99		6.11		90.88	3.94	**1.02**	**0.734**	2.06	
MW-11S	27-Aug-97	96.99		6.58		90.41	**1.79**	0.586	0.657	1.2	
MW-11S	5-Nov-97	109.54		6.85		102.69	**1**	0.05	0.37	0.023	
MW-11S	27-Feb-98	109.54		6.58		102.96	**0.19**	<0.005	0.033	0.11	
MW-11S	10-Jun-98	109.54		6.29		103.25	**0.8**	0.014	0.12	<0.001	
MW-11S	8-Oct-98	109.54		6.49		103.05	**0.91**	0.03	0.4	0.76	
MW-11S	31-Mar-99	109.54		6.42		103.12	**0.28**	<0.002	0.04	0.012/<0.002	
MW-11S	9-Jun-99	109.54		6.40		103.14	**3.7**	**6.7**	**0.73**	2.77	
MW-11S	2-Sep-99	109.54		7.16		102.38	**1.4**	0.029	0.43	1.34	
MW-11S	28-Oct-99	109.54		6.84		102.70	**0.78**	0.038	0.31	0.889	
MW-11S	23-Feb-00	109.54		6.25		103.29	**0.0028**	<0.001	<0.001	<0.003	
MW-11S	24-May-00	109.54		6.05		103.49	**0.018**	<0.001	0.0011	<0.003	
MW-11S	15-Aug-00	109.54		6.62		102.92	**1.3**	0.051	0.42	1.116	
MW-11S	9-Nov-00	109.54		6.35		103.19	**0.37**	<0.025	0.03	0.097/<0.005	
MW-11S	11-Oct-01	109.54		6.56		102.98	**0.78**	<0.021	0.44	0.95/<0.01	
MW-11S	14-Mar-02	109.54		5.89		103.65	**0.024**	<0.001	<0.001	<0.003	
MW-11S	6-Jun-02	109.54		5.43		104.11	**0.073**	0.0036	0.012	0.0077/<0.001	
MW-11S	30-Aug-02	109.54		6.52		103.02	**1.2**	0.051	**0.55**	0.86/<0.01	
MW-11S	6-Dec-02	109.54		6.88		102.66	**2.1**	0.045	0.67	0.26/<0.02	
MW-11S	6-May-04	109.54		6.59		102.95	**0.059**	<0.001	<0.001	<0.003	<0.001
MW-11S	21-Apr-05	109.54		6.38		103.16	**0.012**	<0.001	<0.001	<0.003	<0.001
MW-11S	6-Jan-09	109.54		5.65		103.89	<0.001	<0.001	<0.001	<0.003	<0.001
MW-11D	1-Apr-91	85.90		6.57		79.33	<0.005	<0.005	<0.005	<0.01	
MW-11D	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-11D	24-Aug-92						<0.004	<0.002	<0.002	<0.005	
MW-11D	19-Jan-93										
MW-11D	17-Jun-93										

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-11D	11-Nov-93	97.02		6.81		90.21	<0.001	<0.001	<0.001	<0.001	
MW-11D	27-Jun-94	97.02		6.95		90.07	**0.248**	0.0028	0.0637	0.135	
MW-11D	16-Feb-95	97.02		6.70		90.32	**0.433**	0.0058	0.0407	0.0446	
MW-11D	28-Jul-95	97.02		6.49		90.53	**0.94**	0.0386	0.219	0.215	
MW-11D	22-Mar-96	97.02		7.07		89.95	**0.424**	0.0075	0.0467	0.0191	
MW-11D	17-Jun-96	97.02		6.12		90.90	**0.0482**	<0.002	<0.002	<0.005	
MW-11D	25-Sep-96	97.02		6.89		90.13	**0.392**	0.0077	0.104	0.204	
MW-11D	24-Apr-97	97.02		6.31		90.71	**0.339**	0.131	0.0807	0.184	
MW-11D	17-Jun-97	97.02		6.32		90.70	**1.56**	0.368	0.278	0.956	
MW-11D	27-Aug-97	97.02		7.84		89.18	**0.311**	0.0167	0.0837	0.224	
MW-11D	5-Nov-97	109.58		7.13		102.45	**0.17**	0.0045	0.09	0.29	
MW-11D	27-Feb-98	109.58		6.23		103.35	**0.024**	<0.001	<0.001	<0.003	
MW-11D	10-Jun-98	109.58		6.52		103.06	**0.02**	<0.001	<0.001	<0.003	
MW-11D	8-Oct-98	109.58		6.76		102.82	**0.12**	0.004	0.038	0.044	
MW-11D	31-Mar-99	109.58		6.90		102.68	0.0034	<0.001	<0.001	<0.003	
MW-11D	9-Jun-99	109.58		6.64		102.94	**0.75**	**1.4**	0.14	0.53	
MW-11D	2-Sep-99	109.58		7.22		102.36	**0.082**	0.0048	0.037	0.1225	
MW-11D	28-Oct-99	109.58		7.10		102.48	**0.077**	0.0023	0.035	0.1	
MW-11D	23-Feb-00	109.58		6.91		102.67	**0.16**	0.0012	0.0098	0.1	
MW-11D	24-May-00	109.58		6.49		103.09	0.0011	<0.001	<0.001	<0.003	
MW-11D	15-Aug-00	109.58		7.04		102.54	**0.014**	<0.001	0.0053	0.011	
MW-11D	9-Nov-00	109.58		6.95		102.63	**0.26**	<0.012	0.027	0.059	
MW-11D	11-Oct-01	109.58		6.83		102.75	**0.017**	<0.001	0.0035	<0.003	
MW-11D	14-Mar-02	109.58		6.42		103.16	<0.001	<0.001	<0.001	<0.003	
MW-11D	6-Jun-02	109.58		6.33		103.25	<0.001	<0.001	<0.001	<0.003	
MW-11D	30-Aug-02	109.58		6.74		102.84	**0.035**	<0.001	0.0012	<0.003	
MW-11D	6-Dec-02	109.58		7.09		102.49	0.001	<0.001	<0.001	<0.003	
MW-11D	6-May-04	109.58		6.80		102.78	**0.008**	<0.001	<0.001	<0.003	0.0025
MW-11D	21-Apr-05	109.58		6.63		102.95	<0.001	<0.001	<0.001	<0.003	<0.001
MW-11D	6-Jan-09	109.58		6.26		103.32	<0.001	<0.001	<0.001	<0.003	0.0017
MW-12S	1-Apr-91	81.23		2.21		79.02	**1.8**	0.14	0.11	0.4	
MW-12S	27-Jan-92						**0.041**	0.002	0.013	0.054	
MW-12S	24-Aug-92						**0.2**	0.002	0.004	0.005	
MW-12S	19-Jan-93						BDL	BDL	BDL	BDL	
MW-12S	17-Jun-93	92.64		2.60		90.04	0.003	<0.001	<0.001	<0.001	
MW-12S	11-Nov-93	92.64		2.45		90.19	<0.001	<0.001	<0.001	<0.001	
MW-12S	27-Jun-94	92.64		2.52		90.12	**0.137**	<0.001	<0.001	<0.003	
MW-12S	16-Feb-95	92.64		2.25		90.39	**0.0902**	<0.002	<0.002	<0.005	
MW-12S	28-Jul-95	92.64		2.10		90.54	**0.0137**	<0.002	<0.002	<0.005	
MW-12S	22-Mar-96	92.64		2.62		90.02	<0.002	<0.002	<0.002	<0.005	
MW-12S	17-Jun-96	92.64		1.50		91.14	<0.002	<0.002	<0.002	<0.005	
MW-12S	25-Sep-96	92.64		2.36		90.28	<0.002	<0.002	<0.002	<0.005	
MW-12S	24-Apr-97	92.64		1.89		90.75	<0.002	<0.002	<0.002	<0.005	
MW-12S	17-Jun-97	92.64		1.76		90.88	<0.002	<0.002	<0.002	<0.005	
MW-12S	27-Aug-97	92.64		2.24		90.40	<0.002	<0.002	<0.002	<0.005	
MW-12S	5-Nov-97	105.19		2.50		102.69	0.0026	<0.001	<0.001	<0.003	
MW-12S	27-Feb-98	105.19		2.56		102.63	<0.001	<0.001	<0.001	<0.003	
MW-12S	10-Jun-98	105.19		1.90		103.29	<0.001	<0.001	<0.001	<0.003	
MW-12S	8-Oct-98	105.19		2.17		103.02	<0.001	<0.001	<0.001	<0.003	
MW-12S	31-Mar-99	105.19		2.29		102.90	<0.001	<0.001	<0.001	<0.003	
MW-12S	9-Jun-99	105.19		2.13		103.06	**0.07**	<0.001	<0.001	<0.003	
MW-12S	2-Sep-99	105.19		3.75		101.44	<0.001	<0.001	<0.001	<0.002	
MW-12S	28-Oct-99	105.19		2.58		102.61	**0.16**	0.0045	0.0043	0.005	
MW-12S	23-Feb-00	105.19		2.33		102.86	**0.054**	0.0021	0.011	0.012	
MW-12S	24-May-00	105.19		1.92		103.27	**0.13**	0.0034	0.015	0.017	
MW-12S	15-Aug-00	105.19		2.23		102.96	**0.24**	0.016	0.053	0.059	
MW-12S	9-Nov-00	105.19		2.15		103.04	**0.27**	0.037	0.12	0.2133	
MW-12S	11-Oct-01	105.19		2.32		102.87	**0.11**	0.013	0.12	0.1224	
MW-12S	14-Mar-02	105.19		1.98		103.21	**0.18**	0.0075	0.041	0.121	
MW-12S	6-Jun-02	105.19		1.80		103.39	**0.18**	0.023	0.042	0.0061	
MW-12S	30-Aug-02	105.19		2.20		102.99	**0.2**	0.027	0.077	0.1817	
MW-12S	6-Dec-02	105.19		2.58		102.61	**0.051**	0.006	0.017	0.079	
MW-12S	6-May-04	105.19		2.40		102.79	**0.043**	0.0035	<0.001	0.022	0.0012
MW-12S	21-Apr-05	105.19		2.20		102.99	**0.027**	0.0014	<0.001	0.0097	0.0021
MW-12S	29-Dec-08	105.19		1.00		104.19					
MW-12S	5-Jan-09	105.19		1.84		103.35					
MW-12S	6-Jan-09	105.19					<0.001	<0.001	<0.001	<0.003	<0.001
MW-12D	1-Apr-91	81.36		2.21		79.15	**0.074**	<0.005	<0.005	<0.01	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-12D	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-12D	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-12D	19-Jan-93										
MW-12D	17-Jun-93										
MW-12D	11-Nov-93	92.79		2.57		90.22	<0.001	<0.001	<0.001	<0.001	
MW-12D	27-Jun-94	92.79		3.38		89.41	<0.001	<0.001	<0.001	<0.003	
MW-12D	16-Feb-95	92.79		2.85		89.94	<0.002	<0.002	<0.002	<0.005	
MW-12D	28-Jul-95	92.79		2.60		90.19	<0.002	<0.002	<0.002	<0.005	
MW-12D	22-Mar-96	92.79		3.15		89.64	<0.002	<0.002	<0.002	<0.005	
MW-12D	17-Jun-96	92.79		2.08		90.71	<0.002	<0.002	<0.002	<0.005	
MW-12D	25-Sep-96	92.79		2.93		89.86	<0.002	<0.002	<0.002	<0.005	
MW-12D	24-Apr-97	92.79		2.30		90.49	<0.002	<0.002	<0.002	<0.005	
MW-12D	17-Jun-97	92.79		2.29		90.50	<0.002	<0.002	<0.002	<0.005	
MW-12D	27-Aug-97	92.79		2.75		90.04	<0.002	<0.002	<0.002	<0.005	
MW-12D	5-Nov-97	105.34		3.13		102.21	<0.001	<0.001	<0.001	<0.003	
MW-12D	27-Feb-98	105.34		1.97		103.37	<0.001	<0.001	<0.001	<0.003	
MW-12D	10-Jun-98	105.34		2.47		102.87	<0.001	<0.001	<0.001	<0.003	
MW-12D	8-Oct-98	105.34		2.86		102.48	<0.001	<0.001	<0.001	<0.003	
MW-12D	31-Mar-99	105.34		2.77		102.57	<0.001	<0.001	<0.001	<0.003	
MW-12D	9-Jun-99	105.34		2.68		102.66	<0.001	<0.001	<0.001	<0.003	
MW-12D	2-Sep-99	105.34		3.31		102.03	<0.001	<0.001	<0.001	<0.002	
MW-12D	28-Oct-99	105.34		3.20		102.14	<0.001	<0.001	<0.001	<0.002	
MW-12D	23-Feb-00	105.34		3.00		102.34	<0.001	<0.001	<0.001	<0.003	
MW-12D	24-May-00	105.34		2.49		102.85	<0.001	<0.001	<0.001	<0.003	
MW-12D	15-Aug-00	105.34		2.82		102.52	<0.001	<0.001	<0.001	<0.003	
MW-12D	9-Nov-00	105.34		2.75		102.59	<0.001	<0.001	<0.001	<0.003	
MW-12D	11-Oct-01	105.34		2.82		102.52	<0.001	<0.001	<0.001	<0.003	
MW-12D	14-Mar-02	105.34		2.50		102.84	<0.001	<0.001	<0.001	<0.003	
MW-12D	6-Jun-02	105.34		2.34		103.00	<0.001	<0.001	<0.001	<0.003	
MW-12D	30-Aug-02	105.34		2.81		102.53	<0.001	<0.001	<0.001	<0.003	
MW-12D	6-Dec-02	105.34		3.20		102.14	<0.001	<0.001	<0.001	<0.003	
MW-12D	6-May-04	105.34		2.96		102.38	<0.001	<0.001	<0.001	<0.003	<0.001
MW-12D	21-Apr-05	105.34		3.73		101.61	<0.001	<0.001	<0.001	<0.03	<0.001
MW-12D	5-Jan-09	105.34		2.31		103.03					
MW-12D	6-Jan-09	105.34					<0.001	<0.001	<0.001	<0.003	<0.001
MW-13	1-Apr-91	85.19		5.24		79.95	2.6	0.3	0.19	0.56	
MW-13	27-Jan-92										
MW-13	19-Feb-92						1.9	0.01	0.14	0.72	
MW-13	24-Aug-92						14	2.1	0.85	13	
MW-13	19-Jan-93						0.009	BDL	BDL	0.005	
MW-13	17-Jun-93	96.50		6.00		90.50	<0.001	<0.001	<0.001	<0.001	
MW-13	11-Nov-93	96.50		6.28		90.22	0.81	0.054	0.346	4.56	
MW-13	27-Jun-94	96.50		6.29		90.21	0.142	0.0037	0.119	0.413	
MW-13	16-Feb-95	96.50		6.20		90.30	0.0475	<0.002	0.0202	0.129	
MW-13	28-Jul-95	96.50		6.01		90.49	0.41	0.0051	0.56	2.548	
MW-13	22-Mar-96	96.50		6.53		89.97	0.212	0.0092	0.0901	0.973	
MW-13	17-Jun-96	96.50		3.78		92.72	<0.002	<0.002	<0.002	<0.005	
MW-13	25-Sep-96	96.50		6.29		90.21	0.109	0.0261	0.911	9.6	
MW-13	24-Apr-97	96.50		5.80		90.70	<0.002	<0.002	<0.002	<0.005	
MW-13	17-Jun-97	96.50		5.59		90.91	0.0195	<0.002	0.0201	0.107	
MW-13	27-Aug-97	96.50		6.17		90.33	1.4	0.38	0.361	3.65	
MW-13	5-Nov-97	109.12		6.38		102.74	0.16	<0.025	0.67	5.8	
MW-13	27-Feb-98	109.12		5.51		103.61	<0.001	<0.001	<0.001	<0.003	
MW-13	10-Jun-98	109.12		5.78		103.34	0.38	<0.025	0.67	3.4	
MW-13	8-Oct-98	109.12		6.02		103.10	<0.025	<0.025	0.28	3.5	
MW-13	31-Mar-99	109.12		6.17		102.95	0.027	<0.0025	0.11	0.81	
MW-13	9-Jun-99	109.12		6.07		103.05	0.008	0.013	0.13	0.903.3	
MW-13	2-Sep-99	109.12		6.64		102.48	0.23	<0.025	0.12	0.72	
MW-13	28-Oct-99	109.12		6.45		102.67	0.2	<0.01	0.11	0.718	
MW-13	23-Feb-00	109.12		5.50		103.62					
MW-13	24-May-00	109.12		5.91		103.21	0.0073	<0.001	0.0019	0.021	
MW-13	15-Aug-00	109.12		6.24		102.88	0.038	<0.005	0.3	0.5453	
MW-13	9-Nov-00	109.12		6.08		103.04	<0.001	<0.005	0.0014	<0.003	
MW-13	11-Oct-01	109.12		6.21		102.91	0.05	0.0023	0.069	0.0122	
MW-13	14-Mar-02	109.12		5.89		103.23	<0.001	<0.001	<0.001	<0.003	
MW-13	6-Jun-02	109.12		5.06		104.06	0.0077	<0.001	0.009	<0.003	
MW-13	30-Aug-02	109.12		6.15		102.97	0.013	0.0018	0.03	0.0024	
MW-13	6-Dec-02	109.12		6.53		102.59	0.044	<0.01	0.085	<0.03	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-13	6-May-04	109.12		6.37		102.75	0.0039	<0.001	0.013	<0.003	<0.001
MW-13	21-Apr-05	109.12		6.27		102.85					
MW-13	22-Apr-05	109.12					0.0077	<0.001	0.039	0.013	<0.001
MW-13	29-Dec-08	109.12		5.00		104.12					
MW-13	5-Jan-09	109.12		5.88		103.24					
MW-13	6-Jan-09	109.12					<0.001	<0.001	<0.001	<0.003	<0.001
MW-14	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-14	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-14	19-Jan-93						BDL	BDL	BDL	BDL	
MW-14	17-Jun-93	89.62		0.00		89.62	<0.001	<0.001	<0.001	<0.001	
MW-14	11-Nov-93	89.62		0.00		89.62	<0.001	<0.001	<0.001	<0.001	
MW-14	27-Jun-94	89.62		0.00		89.62	<0.001	<0.001	<0.001	<0.003	
MW-14	16-Feb-95	89.62		0.00		89.62	<0.002	<0.002	<0.002	<0.005	
MW-14	28-Jul-95	89.62		0.00		89.62	<0.002	<0.002	<0.002	<0.005	
MW-14	22-Mar-96	89.62				89.62					
MW-14	17-Jun-96	89.62		0.03		89.59	<0.002	<0.002	<0.002	<0.005	
MW-14	25-Sep-96	89.62		0.05		89.57	<0.002	<0.002	<0.002	<0.005	
MW-14	24-Apr-97	89.62		0.00		89.62	<0.002	<0.002	<0.002	<0.005	
MW-14	17-Jun-97	89.62		0.00		89.62	<0.002	<0.002	<0.002	<0.005	
MW-14	27-Aug-97	89.62		0.00		89.62	<0.002	<0.002	<0.002	<0.005	
MW-14	5-Nov-97	99.46		0.79		98.67	<0.001	<0.001	<0.001	<0.003	
MW-14	27-Feb-98	99.46		0.00		99.46	<0.001	<0.001	<0.001	<0.003	
MW-14	10-Jun-98	99.46		0.00		99.46	<0.001	<0.001	<0.001	<0.003	
MW-14	8-Oct-98	99.46		0.09		99.37	<0.001	<0.001	<0.001	<0.003	
MW-14	31-Mar-99	99.46		0.00		99.46	<0.001	<0.001	<0.001	<0.003	
MW-14	9-Jun-99	99.46		0.00		99.46	<0.001	<0.001	<0.001	<0.003	
MW-14	2-Sep-99	99.46		0.19		99.27	<0.001	<0.001	<0.001	<0.003	
MW-14	28-Oct-99	99.46		0.00		99.46	<0.001	<0.001	<0.001	<0.003	
MW-14	23-Feb-00	99.46		0.00		99.46	<0.001	<0.001	<0.001	<0.003	
MW-14	24-May-00			0.00			<0.001	<0.001	<0.001	<0.003	
MW-14	15-Aug-00			0.00			<0.001	<0.001	<0.001	<0.003	
MW-14	9-Nov-00			0.00			<0.001	<0.001	<0.001	<0.003	
MW-14	11-Oct-01	99.16		0.02		99.14	<0.001	<0.001	<0.001	<0.003	
MW-14	14-Mar-02	99.16		0.02		99.14	<0.001	<0.001	<0.001	<0.003	
MW-14	6-Jun-02	99.16		0.00		99.16	<0.001	<0.001	<0.001	<0.003	
MW-14	30-Aug-02	99.16		0.00		99.16	<0.001	<0.001	<0.001	<0.003	
MW-14	6-Dec-02	99.16		0.00		99.16	<0.001	<0.001	<0.001	<0.003	
MW-14	6-May-04	99.16		0.00		99.16	<0.001	<0.001	<0.001	<0.003	<0.001
MW-14	21-Apr-05	99.16		0.00		99.16					
MW-14	22-Apr-05	99.16					<0.001	<0.001	<0.001	<0.003	<0.001
MW-14	5-Jan-09	99.16		0.30		98.86					
MW-14	6-Jan-09	99.16					<0.001	<0.001	<0.001	<0.003	<0.001
MW-15	27-Jan-92						0.005	<0.002	<0.002	<0.005	
MW-15	24-Aug-92						0.03	<0.002	<0.002	<0.005	
MW-15	19-Jan-93						0.24	BDL	BDL	BDL	
MW-15	17-Jun-93	88.40		0.00		88.40	0.85	<0.001	<0.001	<0.001	
MW-15	11-Nov-93	88.40		0.56		87.84	1.03	<0.001	<0.001	<0.001	
MW-15	27-Jun-94	88.40		0.50		87.90	2.04	<0.001	<0.001	<0.003	
MW-15	16-Feb-95	88.40		0.85		87.55	1.82	<0.002	<0.002	<0.005	
MW-15	28-Jul-95	88.40		0.20		88.20	3.55	<0.002	<0.002	<0.005	
MW-15	22-Mar-96	88.40		0.74		87.66	10.5	<0.002	<0.002	<0.005	
MW-15	17-Jun-96	88.40		0.00		88.40	9.75	<0.002	<0.002	<0.005	
MW-15	25-Sep-96	88.40		0.75		87.65	7.6	<0.002	<0.002	<0.005	
MW-15	24-Apr-97	88.40		0.16		88.24	10.7	0.0084	<0.002	<0.005	
MW-15	17-Jun-97	88.40		0.00		88.40	9.59	0.0381	<0.005	<0.005	
MW-15	27-Aug-97	88.40		0.40		88.00	8.32	<0.05	<0.05	<0.125	
MW-15	5-Nov-97	100.25		0.68		99.57	8.2	<0.05	<0.05	<0.15	
MW-15	27-Feb-98	100.25		0.22		100.03	7.4	<0.1	<0.1	<0.3	
MW-15	10-Jun-98	100.25		0.18		100.07	6.9	<0.1	<0.1	<0.3	
MW-15	8-Oct-98	100.25		0.43		99.82	5.4	<0.05	<0.05	<0.15	
MW-15	31-Mar-99	100.25		1.30		98.95	4.6	<0.025	<0.025	<0.075	
MW-15	9-Jun-99	100.25		1.20		99.05	4.2	0.032	<0.025	<0.075	
MW-15	2-Sep-99	100.25		1.55		98.70	2.9	0.036	0.034	0.079	
MW-15	28-Oct-99	100.25		1.44		98.81	2.5	0.049	0.078	0.165	
MW-15	23-Feb-00	100.25		0.90		99.35	1.2	0.045	0.091	0.2	
MW-15	24-May-00	100.25		0.71		99.54	0.97	0.034	0.11	0.255	
MW-15	15-Aug-00	100.25		0.86		99.39	0.58	0.024	0.12	0.264	
MW-15	9-Nov-00	100.25		0.75		99.50	0.13	0.0074	0.027	0.055	

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-15	11-Oct-01	100.25		0.84		99.41	0.2	0.012	0.062	0.1125	
MW-15	14-Mar-02	100.25		0.62		99.63	0.21	0.011	0.055	0.0993	
MW-15	6-Jun-02	100.25		0.47		99.78	0.17	0.0055	0.033	0.0688	
MW-15	30-Aug-02	100.25		0.83		99.42	0.22	0.0073	0.04	0.0628	
MW-15	6-Dec-02	100.25		1.11		99.14	0.24	0.0062	0.031	0.0394	
MW-15	6-May-04	100.25		0.95		99.30	0.12	0.004	0.0023	0.0063	<0.001
MW-15	21-Apr-05	100.25		0.79		99.46					
MW-15	22-Apr-05	100.25					0.076	0.0024	<0.001	0.0045	<0.001
MW-15	5-Jan-09	100.25		0.40		99.85					
MW-15	6-Jan-09	100.25					0.0739	0.004	<0.001	0.0135	0.004
MW-16	27-Jan-92						<0.002	<0.002	<0.002	<0.005	
MW-16	24-Aug-92						<0.002	<0.002	<0.002	<0.005	
MW-16	19-Jan-93						BDL	BDL	BDL	BDL	
MW-16	17-Jun-93	91.82		2.23		89.59	<0.001	<0.001	<0.001	<0.001	
MW-16	11-Nov-93	91.82		2.47		89.35	<0.001	<0.001	<0.001	<0.001	
MW-16	27-Jun-94	91.82		2.59		89.23	<0.001	<0.001	<0.001	<0.003	
MW-16	16-Feb-95	91.82		2.60		89.22	0.0103	<0.002	<0.002	<0.005	
MW-16	28-Jul-95	91.82		2.44		89.38	0.182	<0.002	<0.002	<0.005	
MW-16	22-Mar-96	91.82		3.14		88.68	1.83	<0.002	<0.002	<0.005	
MW-16	17-Jun-96	91.82		1.63		90.19	2.08	<0.002	<0.002	<0.005	
MW-16	25-Sep-96	91.82		2.38		89.44	2.19	<0.002	<0.002	<0.005	
MW-16	24-Apr-97	91.82		7.95		83.87	3.53	<0.002	<0.002	<0.005	
MW-16	17-Jun-97	91.82		4.49		87.33	3.6	<0.002	<0.002	<0.005	
MW-16	27-Aug-97	91.82		5.51		86.31	4.17	0.219	<0.05	0.197	
MW-16	5-Nov-97	101.72		7.75		93.97	3.9	<0.025	<0.025	<0.075	
MW-16	27-Feb-98	101.72		6.28		95.44	4.2	<0.050	<0.05	<0.15	
MW-16	10-Jun-98	101.72		2.36		99.36	3.3	<0.050	<0.05	<0.15	
MW-16	8-Oct-98	101.72		2.55		99.17	5.1	<0.025	<0.025	<0.075	
MW-16	31-Mar-99	101.72		3.47		98.25	4	<0.025	<0.025	<0.075	
MW-16	9-Jun-99	101.72		3.30		98.42	4.6	<0.050	<0.05	<0.15	
MW-16	2-Sep-99	101.72		3.75		97.97	4.4	<0.050	<0.05	<0.1	
MW-16	28-Oct-99	101.72		3.50		98.22	4.4	<0.020	<0.02	<0.04	
MW-16	23-Feb-00	101.72		3.05		98.67	3.3	<0.025	<0.025	<0.075	
MW-16	24-May-00	101.72		2.91		98.81	2.6	<0.025	<0.025	<0.050	
MW-16	15-Aug-00	101.72		3.07		98.65	1.7	<0.010	<0.01	<0.03	
MW-16	9-Nov-00	101.72		3.11		98.61	1.5	<0.050	<0.01	<0.03	
MW-16	11-Oct-01	101.72		3.06		98.66	0.35	<0.050	<0.0025	<0.0075	
MW-16	14-Mar-02	101.72		2.75		98.97	0.017	<0.001	<0.001	<0.003	
MW-16	6-Jun-02	101.72		2.65		99.07	0.2	<0.002	<0.002	<0.006	
MW-16	30-Aug-02	101.72		2.97		98.75	0.13	<0.001	<0.001	<0.003	
MW-16	6-Dec-02	101.72		3.21		98.51	0.12	<0.001	<0.001	<0.003	
MW-16	6-May-04	101.72		3.07		98.65	0.049	<0.001	<0.001	<0.003	0.0034
MW-16	21-Apr-05	101.72		2.95		98.77					
MW-16	22-Apr-05	101.72					0.045	<0.001	<0.001	<0.003	0.0032
MW-16	5-Jan-09	101.72		2.58		99.14					
MW-16	6-Jan-09	101.72					0.0191	<0.001	<0.001	<0.003	<0.001
MW-17	5-Nov-97	100.91		2.05		98.86	<0.001	<0.001	<0.001	<0.003	
MW-17	27-Feb-98	100.91		1.63		99.28	<0.001	<0.001	<0.001	<0.003	
MW-17	10-Jun-98	100.91		1.58		99.33	<0.001	<0.001	<0.001	<0.003	
MW-17	8-Oct-98	100.91		1.87		99.04	<0.001	<0.001	<0.001	<0.003	
MW-17	31-Mar-99	100.91		2.29		98.62	<0.001	<0.001	<0.001	<0.003	
MW-17	9-Jun-99	100.91		2.15		98.76	<0.001	<0.001	<0.001	<0.003	
MW-17	2-Sep-99	100.91		2.65		98.26	<0.001	<0.001	<0.001	<0.002	
MW-17	28-Oct-99	100.91		2.54		98.37	<0.001	<0.001	<0.001	<0.002	
MW-17	23-Feb-00	100.91		2.04		98.87	<0.001	<0.001	<0.001	<0.003	
MW-17	24-May-00	100.91		1.81		99.10	<0.001	<0.001	<0.001	<0.002	
MW-17	15-Aug-00	100.91		2.07		98.84	<0.001	<0.001	<0.001	<0.003	
MW-17	9-Nov-00	100.91		1.98		98.93	<0.001	<0.005	<0.001	<0.003	
MW-17	11-Oct-01	100.91		2.14		98.77	<0.001	<0.001	<0.001	<0.003	
MW-17	14-Mar-02	100.91		1.81		99.10	<0.001	<0.001	<0.001	<0.003	
MW-17	6-Jun-02	100.91		1.59		99.32	0.0024	<0.001	<0.001	<0.003	
MW-17	30-Aug-02	100.91		2.01		98.90	<0.001	<0.001	<0.001	<0.003	
MW-17	6-Dec-02	100.91		2.34		98.57	<0.001	<0.001	<0.001	<0.003	
MW-17	6-May-04	100.91		2.13		98.78	0.0011	<0.001	<0.001	<0.003	0.053
MW-17	21-Apr-05	100.91		1.99		98.92					
MW-17	22-Apr-05	100.91					0.0041	<0.001	<0.001	<0.003	0.057
MW-17	5-Jan-09	100.91		1.48		99.43					
MW-17	6-Jan-09	100.91					<0.001	<0.001	<0.001	<0.003	0.0128

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							0.005	1	0.7	10	0.07
GCGIER - Class II Groundwater							0.025	2.5	1	10	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-18	5-Nov-97	99.19		5.32		93.87	<0.001	<0.001	<0.001	<0.003	
MW-18	27-Feb-98	99.19		2.63		96.56	<0.001	<0.001	<0.001	<0.003	
MW-18	10-Jun-98	99.19		2.85		96.34	<0.001	<0.001	<0.001	<0.003	
MW-18	8-Oct-98	99.19		6.37		92.82	<0.001	<0.001	<0.001	<0.003	
MW-18	31-Mar-99	99.19		2.81		96.38	<0.001	<0.001	<0.001	<0.003	
MW-18	9-Jun-99	99.19		2.46		96.73	<0.001	<0.001	<0.001	<0.003	
MW-18	2-Sep-99	99.19		4.73		94.46	<0.001	<0.001	<0.001	<0.003	
MW-18	28-Oct-99	99.19		3.95		95.24	<0.001	<0.001	<0.001	<0.003	
MW-18	23-Feb-00	99.19		3.25		95.94	<0.001	<0.001	<0.001	<0.003	
MW-18	24-May-00	99.19		2.34		96.85	<0.001	<0.001	<0.001	<0.003	
MW-18	15-Aug-00	99.19		2.98		96.21	<0.001	<0.001	<0.001	<0.003	
MW-18	9-Nov-00	99.19		3.35		95.84	<0.001	<0.005	<0.001	<0.003	
MW-18	11-Oct-01	99.19		3.42		95.77	<0.001	<0.001	<0.001	<0.003	
MW-18	14-Mar-02	99.19		2.40		96.79	<0.001	<0.001	<0.001	<0.003	
MW-18	6-Jun-02	99.19		2.33		96.86	<0.001	<0.001	<0.001	<0.003	
MW-18	30-Aug-02	99.19		3.50		95.69	<0.001	<0.001	<0.001	<0.003	
MW-18	6-Dec-02	99.19		3.54		95.65	<0.001	<0.001	<0.001	<0.003	
MW-18	6-May-04	99.19		2.83		96.36	<0.001	<0.001	<0.001	<0.003	<0.001
MW-18	21-Apr-05	99.19		2.73		96.46					
MW-18	22-Apr-05	99.19					<0.001	<0.001	<0.001	<0.003	<0.001
MW-18	5-Jan-09	99.19		2.34		96.85					
MW-18	6-Jan-09	99.19					<0.001	<0.001	<0.001	<0.003	<0.001
MW-19	19-Oct-01	100.62		5.42		95.20	<0.001	<0.001	<0.001	<0.003	
MW-19	14-Mar-02	100.62		3.70		96.92	<0.001	<0.001	<0.001	<0.003	
MW-19	6-Jun-02	100.62		2.90		97.72	<0.001	<0.001	<0.001	<0.003	
MW-19	30-Aug-02	100.62		4.85		95.77	<0.001	<0.001	<0.001	<0.003	
MW-19	6-Dec-02	100.62		5.71		94.91	<0.001	<0.001	<0.001	<0.003	
MW-19	3-May-04	100.62		4.10		96.52	<0.001	<0.001	<0.001	<0.003	<0.001
MW-19	21-Apr-05	100.62		3.77		96.85					
MW-19	22-Apr-05	100.62					<0.001	<0.001	<0.001	<0.003	<0.001
MW-19	5-Jan-09	100.62		3.33		97.29					
MW-19	6-Jan-09	100.62					<0.001	<0.001	<0.001	<0.003	<0.001
BW-1	19-Jan-93						BDL	BDL	BDL	BDL	
BW-1	17-Jun-93						<0.001	<0.001	<0.001	<0.001	
BW-1	11-Jan-93						<0.001	<0.001	<0.001	<0.001	
BW-1	27-Jun-94						<0.001	<0.001	<0.001	<0.003	
BW-1	16-Feb-95						<0.002	<0.002	<0.002	<0.005	
BW-1	28-Jul-95						<0.002	<0.002	<0.002	<0.005	
BW-1	22-Mar-96						<0.002	<0.002	<0.002	<0.005	
BW-1	27-Feb-98										
BW-1	11-Oct-01	99.08		27.34		71.74	<0.001	<0.001	<0.001	<0.003	
BW-1	14-Mar-02	99.08		25.56		73.52	<0.001	<0.001	<0.001	<0.003	
BW-1	6-Jun-02	99.08		30.36		68.72	<0.001	<0.001	<0.001	<0.003	
BW-1	30-Aug-02	99.08		28.25		70.83	<0.001	<0.001	<0.001	<0.003	
BW-1	6-Dec-02	99.08		26.61		72.47	<0.001	<0.001	<0.001	<0.003	
BW-1	6-May-04	99.08					Not able to open, manhole needs to be repaired				
RW-1 ('04)	21-Apr-05	108.01		4.58		103.43	0.44	0.0097	0.028	0.11	0.01
RW-1 ('04)	29-Dec-08	108.01		2.42		105.59					
RW-1 ('04)	5-Jan-09	108.01		3.93		104.08					
MP-1	21-Apr-05	108.51		5.09		103.42	0.49	0.013	<0.0025	0.015	0.0096
MP-1	6-Jan-09	108.51					0.0301	0.0011	0.0021	<0.003	0.001
MP-2	21-Apr-05	108.72		5.31		103.41	0.23	0.0095	0.14	0.2	0.0077
MP-3	21-Apr-05	109.30		5.89		103.41	0.13	0.65	0.13	1.2	0.011
MP-3	29-Dec-08	109.30		5.17		104.13					
MP-4	21-Apr-05	109.33		5.89		103.44	0.24	0.014	<0.001	0.013	0.0061
MW-21	21-Apr-05	102.43		8.79		93.64					
MW-21	22-Apr-05	102.43					<0.001	<0.001	<0.001	<0.003	<0.001
MW-21	5-Jan-09	102.43		6.12		96.31					
MW-21	6-Jan-09	102.43					<0.001	<0.001	<0.001	<0.003	<0.001
MW-22	21-Apr-05	107.15		4.62		102.53					
MW-22	22-Apr-05	107.15					<0.001	<0.001	<0.001	<0.003	<0.001
MW-22	6-Jan-09	107.15		4.34		102.81	<0.001	<0.001	<0.001	<0.003	<0.001
MW-23	21-Apr-05	104.89		6.90		97.99					
MW-23	22-Apr-05	104.89					<0.001	<0.001	<0.001	<0.003	<0.001
MW-23	5-Jan-09	104.89		6.78		98.11					
MW-23	6-Jan-09	104.89					<0.001	<0.001	<0.001	<0.003	<0.001
MW-24	21-Apr-05	105.54		4.35		101.19	<0.001	<0.001	<0.001	<0.003	<0.001
MW-25	24-May-05	107.74		4.31		103.43	<0.001	<0.001	<0.001	<0.003	<0.001

TABLE 6

Groundwater Elevation and Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes							COCs and Tier 1 Groundwater Remediation Objectives				
							Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
GCGIER - Class I Groundwater							**0.005**	**1**	**0.7**	**10**	0.07
GCGIER - Class II Groundwater							**0.025**	**2.5**	**1**	**10**	0.07
Sample ID	Date Sampled	Reference Elevation (feet)	Static Depth to Free Product (feet below TOC)	Static Depth to Water (feet below TOC)	Free Product Thickness (feet)	Groundwater Elevation (feet)					
MW-26	21-Apr-05	111.38		7.48		103.90					
MW-26	22-Apr-05	111.38					<0.001	<0.001	<0.001	<0.003	<0.001
MW-26	29-Dec-08	111.38		6.00		105.38					
MW-26	31-Dec-08	111.38		6.94		104.44					
MW-26	5-Jan-09	111.38		7.23		104.15					
MW-26	6-Jan-09	111.38					**0.0403**	0.0755	0.0048	0.0597	0.0017
MW-26	13-Mar-09	111.38		6.83		104.55					
MW-26	1-Apr-09	111.38		6.72		104.66					
MW-26	19-May-09	111.38		7.32		104.06					
MW-27	21-Apr-05	111.15		7.54		103.61	**0.048**	0.0095	0.15	0.68	0.016
MW-27	29-Dec-08	111.15		6.83	Sheen	104.32					
MW-27	31-Dec-08	111.15	6.97	7.03	0.06	104.17					
MW-27	5-Jan-09	111.15	7.25	7.35	0.10	103.88					
MW-27	9-Jan-09	111.15	7.29	7.39	0.10	103.84					
MW-27	27-Jan-09	111.15	7.59	7.72	0.13	103.53					
MW-27	30-Jan-09	111.15	7.66	7.68	0.02	103.49					
MW-27	26-Feb-09	111.15	7.28	7.36	0.08	103.85					
MW-27	9-Mar-09	111.15		6.5		104.65					
MW-27	13-Mar-09	111.15	6.82	6.825	0.005	104.33					
MW-27	1-Apr-09	111.15		6.71		104.44					
MW-27	19-May-09	111.15	7.37	7.39	0.02	103.78					
MW-28	21-Apr-05	112.55		8.10		104.45					
MW-28	22-Apr-05	112.55					<0.001	<0.001	<0.001	<0.003	<0.001
MW-28	5-Jan-09	112.55		7.80		104.75					
MW-28	6-Jan-09	112.55					<0.001	<0.001	<0.001	<0.003	<0.001
RW-1	6-Jan-09						**0.764**	<0.005	0.0052	<0.015	0.0118
RW-1	19-May-09			6.10							
RW-2	1-Apr-09			9.40							
RW-2	19-May-09			9.70							
RW-3	19-May-09			7.20							
RW-4	19-May-09			7.36							
RW-5	19-May-09		6.93	8.40	1.47						
RW-6	19-May-09			7.05							
MW-29	19-May-09		7.32	9.39	2.07						
MW-30	19-May-09		7.46	7.54	0.08						
MW-31	19-May-09			7.36							
MW-32	19-May-09			7.43							

Notes:
1) GCGIER = groundwater component of the groundwater ingestion exposure route; COCs = constituents of concern
2) mg/L = milligrams per Liter; TOC = top-of-casing
3) <0.005 = concentration less than the laboratory reporting limit
4) **Bold** = a concentration above the Tier 1 groundwater remediation objective(s) established in 35 Illinois Administrative Code Part 742
5) All groundwater samples were analyzed for and methyl tertiary butyl ether (MTBE) and/or benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency Method 8020 or 8021B
6) Shading = not available, not applicable, or not present; Sheen = a sheen of free product was present on the groundwater; BDL= concentration below the laboratory detection limit; FP = free product present
7) Groundwater elevations are relative to a site specific datum of 100 feet

TABLE 7

Soil Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes				COCs and Tier 1 Soil Remediation Objectives				
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)
SCGIER - Class I Groundwater				0.03	12	13	150	0.32
SCGIER - Class II Groundwater				0.17	29	19	150	0.32
Inhalation - Residential				0.8	650	400	320	8,800
Inhalation - Construction Worker				2.2	42	58	5.6	140
Ingestion - Residential				12	16,000	7,800	16,000	780
Ingestion - Construction Worker				2,300	410,000	20,000	41,000	2,000
Soil Saturation Limit				870	650	400	320	8,800
Sample ID	Date Sampled	Sample Depth (feet bls)	PID Reading (ppm)					
SB-1	21-Nov-90	4-5	20	<0.005	0.083	<0.005	0.085	
SB-2/MW-2	21-Nov-90	4-5	20	<0.005	0.11	0.29	1.8	
SB-3	21-Nov-90	4-5	>100	<0.005	0.2	0.22	2	
SB-4/MW-4	21-Nov-90	7-8	50	0.042	0.11	<0.005	<0.01	
SB-5/MW-5	21-Nov-90	9-10	0	0.041	0.11	<0.005	<0.01	
SB-6/MW-6	21-Nov-90	7-8	50	2.9	58	27	150	
SB-7/MW-7	21-Nov-90	7-8	200	0.27	33	20	120	
B-1	14-Jun-94	4-5.5	1	<0.002	<0.002	<0.002	<0.005	
B-2	14-Jun-94	1-3	10	<0.002	<0.002	<0.002	0.0085	
B-3	14-Jun-94	5-7	60	<0.002	<0.002	<0.002	0.342	
B-4	14-Jun-94	5-7	50	<0.002	<0.002	<0.002	0.098	
B-5	14-Jun-94	2-4	13	<0.002	<0.002	<0.002	<0.005	
B-6	14-Jun-94	2-4	500	<0.002	<0.002	<0.002	<0.005	
B-7	14-Jun-94			0.029	0.0168	0.219	0.066	
HA-1	27-Aug-97	7.5-8	0	<0.002	<0.002	<0.002	<0.005	
HA-2	27-Aug-97	7.5-8	12	<0.002	0.147	0.0068	0.376	
HA-3	27-Aug-97	7.5-8	212	8.21	92.4	39.4	238	
HA-4	27-Aug-97	6.0-6.5	284	1.45	6.06	3.46	44.5	
SB-19/MW-17	31-Oct-97	10-12	0	<0.01	<0.01	<0.01	<0.03	
SB-19/MW-17	31-Oct-97	20-22	0	<0.01	<0.01	<0.01	<0.03	
SB-20/MW-18	31-Oct-97	12-14	0	<0.01	<0.01	<0.01	<0.03	
SB-20/MW-18	31-Oct-97	20-22	0	<0.01	<0.01	<0.01	<0.03	
CB-1	25-Oct-99	6-8	104	0.2	0.35	0.72	<0.03	
CB-2	25-Oct-99	8-10	294	26	240	89	38	
CB-3	25-Oct-99	6-8	510	4.7	190	95	49	
CB-4	25-Oct-99	8-10	90	<0.12	1.9	3.4	200/<60	
CB-5	25-Oct-99	8-10	21.9	<0.028	<0.056	<0.056	37	
CB-6	25-Oct-99	4-6	6.6	<0.029	<0.058	<0.058	0.72	
CB-7	25-Oct-99	24-26	2.6	0.58	<0.063	<0.063	<0.6	
CB-8	25-Oct-99	22-24	6.3	0.57	<0.06	<0.06	<0.179	
CB-9	25-Oct-99	26-28	7.6	1.6	<0.06	<0.06	<0.178	
CB-10	25-Oct-99	10-12	2.6	<0.14	<0.28	<0.28	<0.167	
CB-11	26-Jul-00	10-12	321	0.7	13	5.9	3.9	
CB-12	26-Jul-00	6-8	553	<0.049	4.8	5.5	540	
CB-13	26-Jul-00	8-10	307	<0.03	0.11	0.085	590	
CB-14	26-Jul-00	8-10	514	<0.052	0.76	3.4	22.7	
CB-15	26-Jul-00	8-10	18	<0.03	<0.060	<0.060	<0.166	
CB-16	26-Jul-00	6-8	2.7	<0.021	<0.200	<0.2	<0.178	
CB-17	26-Jul-00	2-4	3.0	<0.029	<0.059	<0.059	<0.193	
CB-18	26-Jul-00	6-8	3.6	<0.029	<0.058	<0.058	<0.18	
CB-19	26-Jul-00	0-2	3.3	<0.029	<0.057	<0.057	<0.18	
CB-20	26-Jul-00	6-8	3.2	<0.018	<0.17	<0.17	<0.84	
MW-19	17-Aug-01	22-24		<0.029	<0.057	<0.057	<0.51	
B-1a	17-Aug-01	4-6		<0.029	<0.058	<0.058	<0.167	
B-1b	17-Aug-01	16-18		<0.03	<0.06	<0.06	<0.178	
B-1c	17-Aug-01	22-24		<0.029	<0.058	<0.058	<0.18	
B-2a	16-Aug-01	8-10		<0.029	<0.057	<0.057	<0.178	
B-2b	16-Aug-01	16-18		<0.0079	<0.120	<0.12	<0.167	
B-2c	16-Aug-01	22-24		<0.029	<0.058	<0.058	<0.35	
B-3a	16-Aug-01	8-10		<0.03	<0.06	<0.06	<0.178	
B-3b	16-Aug-01	16-18		<0.03	<0.059	<0.059	<0.18	
B-3c	16-Aug-01	22-24		<0.03	<0.059	<0.059	<0.179	
B-4a	16-Aug-01	8-10		<0.029	<0.059	<0.059	<0.179	
B-4b	16-Aug-01	16-18		<0.029	<0.057	<0.057	<0.179	
B-4c	16-Aug-01	20-22		0.034	<0.066	<0.066	<0.167	

TABLE 7

Soil Analytical Results - BTEX and MTBE

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Tier 1 Exposure Routes				COCs and Tier 1 Soil Remediation Objectives				
				Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)
SCGIER - Class I Groundwater				**0.03**	**12**	**13**	**150**	**0.32**
SCGIER - Class II Groundwater				**0.17**	**29**	**19**	**150**	**0.32**
Inhalation - Residential				**0.8**	**650**	400	**320**	8,800
Inhalation - Construction Worker				**2.2**	**42**	**58**	**5.6**	140
Ingestion - Residential				**12**	16,000	7,800	16,000	780
Ingestion - Construction Worker				2,300	410,000	20,000	41,000	2,000
Soil Saturation Limit				870	**650**	400	**320**	8,800
Sample ID	Date Sampled	Sample Depth (feet bls)	PID Reading (ppm)					
B-5a	16-Aug-01	8-10		<0.028	<0.057	<0.057	<0.196	
B-5b	16-Aug-01	10-12		**0.55**	<0.058	<0.058	<0.167	
B-5c	16-Aug-01	22-24		<0.029	<0.057	<0.057	<0.178	
B-6a	16-Aug-01	2-4		<0.029	<0.059	<0.059	<0.167	
B-6b	16-Aug-01	16-18		<0.03	<0.060	<0.060	<0.179	
B-6c	16-Aug-01	20-22		<0.03	<0.059	<0.059	<0.017	
RW-1	11-Apr-05	4	1.3	<0.024	<0.059	<0.059	<0.12	<0.059
MP-1	11-Apr-05	5-7	0.8	<0.025	<0.062	<0.062	<0.12	<0.062
MP-2	11-Apr-05	5-6	0.7	<0.024	<0.06	<0.06	<0.12	<0.06
MP-3	11-Apr-05	6-7	238	**0.15**	0.13	1.7	**8.197**	0.16
MP-4	11-Apr-05	5-6	24.5	<0.023	<0.059	<0.059	<0.12	<0.059
SB-21/MW-21	12-Apr-05	2-3	5.1	<0.027	<0.067	<0.067	<0.2	<0.067
SB-22/MW-22	12-Apr-05	3	1.7	<0.025	<0.063	<0.063	<0.19	<0.063
SB-24/MW-24	12-Apr-05	4-5	0.9	<0.024	<0.059	<0.059	<0.18	<0.059
SB-25/MW-25	12-Apr-05	4	0.6	<0.023	<0.058	<0.058	<0.17	<0.058
SB-26/MW-26	12-Apr-05	5-6	5.3	<0.003	<0.074	<0.074	<0.22	<0.074
SB-27/MW-27	12-Apr-05	3-4	1.6	<0.023	<0.058	<0.058	<0.17	<0.058
SB-28	12-Apr-05	5-7	0.6	<0.02	<0.05	<0.05	<0.15	<0.05
SB-29	12-Apr-05	7-8	1.2	<0.023	<0.058	<0.058	<0.17	<0.058
SB-23/MW-23	15-Apr-05	4-5	1.3	<0.023	<0.056	<0.056	<0.17	<0.056
SB-30/MW-28	15-Apr-05	4-5	0.9	<0.024	<0.059	<0.059	<0.18	<0.18
SB-31	1-Jun-06	7-8	0.0	<0.023	<0.057	<0.057	<0.11	<0.057
SB-41	2-Feb-09	4-5	901	**0.289**	0.619	0.0731	0.731	<0.056
SB-41	2-Feb-09	5-8	>9,999	**1.4**	**29.3**	**13.3**	**70.1**	**<0.673**
SB-42	2-Feb-09	2-3	0.0	<0.0236	<0.059	<0.059	<0.177	<0.059
SB-42	2-Feb-09	6-8	629	**0.0616**	0.378	0.101	0.722	<0.0537
SB-43	2-Feb-09	4-5	33.7	<0.0232	<0.058	<0.058	**<0.174**	<0.058
SB-43	2-Feb-09	6-8	70.8	**0.192**	0.0798	1.24	**6**	0.219
SB-44	2-Feb-09	2-4	38.1	<0.0229	<0.0572	<0.0572	<0.171	<0.0572
SB-44	2-Feb-09	6-8	9,914	**104**	**1,000**	**294**	**1,530**	**30.1**
SB-45	2-Feb-09	4-5	7.8	<0.0233	<0.0581	<0.0581	<0.174	<0.0581
SB-45	2-Feb-09	5-7	16.0	<0.0234	<0.0585	<0.0585	<0.176	<0.0585
SB-46	2-Feb-09	1.5-2	11.4	<0.0237	<0.0593	<0.0593	<0.178	<0.0593
SB-46	2-Feb-09	6-8	314	<0.023	<0.0576	0.245	0.461	0.116
SB-47	2-Feb-09	2-4	0.6	<0.0227	<0.0567	<0.0567	<0.17	<0.0567
SB-47	2-Feb-09	6-8	6.8	**0.0362**	<0.058	<0.058	<0.174	0.108
SB-48	2-Feb-09	2-4	0.0	<0.028	<0.0701	<0.0701	<0.21	<0.0701
SB-48	2-Feb-09	6-8	>9,999	**0.112**	0.94	0.557	3.51	<0.0577
SB-49	2-Feb-09	3-4	63.7	**0.709**	2.48	0.175	2.57	<0.0573
SB-49	2-Feb-09	4-8	7,109	**12.7**	**143**	**46.8**	**246**	**2.92**
SB-50	2-Feb-09	5-8	8.5	<0.0268	<0.0669	<0.0669	<0.201	<0.0669

Notes:
1) SCGIER = soil component of the groundwater ingestion exposure route; PID = photoionization detector; COCs = constituents of concern
2) mg/kg = milligrams per kilogram; ppm = parts per million; bls = below land surface
3) <0.065 = concentration less than the laboratory reporting limit
4) **Bold** = a concentration above the Tier 1 soil remediation objective(s) established in 35 Illinois Administrative Code Part 742
5) All soil samples were analyzed for methyl tertiary butyl ether (MTBE) and/or benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency Method 8020 or 8021
6) Shading = not applicable or the soil sample location has been resampled

TABLE 8

Dual Phase Extraction Pilot Test Results

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Test Well: RW-1		Initial DTP (feet): NA		Initial DTW (feet): 4.64		Stack Diameter (inches): 2		Distance from extraction well RW-1 (feet)						
Test Date: May 12, 2005		Final DTP (feet): NA		Final DTW (feet): NA		Liquids Recovered (gallons): 255		6	6	12	12	24	63	
Time	Elapsed Time	Test Well Vacuum	Test Well Vacuum	Air Flow	PID	Time Sample Collected	Total Liquids Recovered	MP-1	MW-4	MP-2	MP-4	MP-3	MW-27	Comments
hours	minutes	in. Hg	psi	acfm	ppm	hours	gallons	in. H_2O	in. H_2O	in. H_2O	in. H_2O	in. H_2O	in. H_2O	
							Initial DTP (feet):							
							Initial DTW (feet):	5.13	8.15	5.36	5.93	5.93	7.64	
							Initial Pressure:	0	+0.05	+0.05	0	0	0	
9:06														
9:10	04	18.32	9.00					0.05	1.4	2.5	0.025	0.05	0	Started pilot test
9:15	09	14.76	7.25	16.36	6.5									
9:30	24	13.23	6.50	16.91	5.0			0.025	0.575	2.75	0.025	0.05	0.05	
9:50	44	12.22	6.00	18.54	4.9			0.025	0.25	3.00	0.025	0.025	0.025	
10:15	69	11.20	5.50	17.45	5.2			0.025	0.15	2.50	0.025	0.05		
10:35	89	10.69	5.25	18.54	4.1			0.025	0.125	2.50	0.05	0.05	0.025	
10:50	104	11.71	5.75	17.45	4.6			0.05	0.50	2.25	0.05	0.05	0.025	
11:00	114	11.71	5.75	18.54	3.7			0.05	0.35	2.25	0.05	0.025	0.025	
11:30	144	11.71	5.75	17.45	5.1			0.05	0.175	2.25	0.05	0.05	0.025	
12:15	189	11.20	5.50	17.45	3.1	12:15	255	0.05	0.25	2.00	0.025	0.05	0.025	Stopped pilot test
							Final DTP (feet):							
							Final DTW (feet):	5.9	8.88	5.76	6.41	6.24	7.73	

Notes:
1) ppm = parts per million
2) acfm = actual cubic feet per minute
3) in. Hg = inches of mercury
4) psi = pounds per square inch
5) DTW = depth to water; DTP = depth to product
6) Assume all readings on the observation wells are in H_20 vacuum, unless noted with a plus sign (+), which indicates pressure
7) NP, NA, or shading = not present or not applicable
8) PID = photoionization detector
9) Test Well Vacuum (psi) measurements collected from the influent air stream using a flow meter provided by TriCore

TABLE 9

Pounds of Total BTEX and MTBE Extracted by the Pilot Test

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Operation Time	Operation Time (minutes)	Air Flow (acfm)	PID (ppm)	Groundwater Extracted (gallons)	Influent Total BTEX and MTBE (µg/L)	Mass of BTEX and MTBE Removed				Cumulative BTEX and MTBE Removed (pounds)	Cumulative VOCs Removed (pounds)
						Liquid (pounds)	Dissolved (pounds)	Vapor (pounds)	Total (pounds)		
9:06											
9:10	4					0	0.0000	0.00000	0.00000	0.00000	0.0000
9:15	9	16.36	6.5			0	0.0000	0.00005	0.00005	0.00005	0.0001
9:30	24	16.91	5.0			0	0.0000	0.00014	0.00014	0.00020	0.0004
9:50	44	18.54	4.9			0	0.0000	0.00029	0.00029	0.00049	0.0008
10:15	69	17.45	5.2			0	0.0000	0.00043	0.00043	0.00092	0.0011
10:35	89	18.54	4.1			0	0.0000	0.00059	0.00059	0.00151	0.0016
10:50	104	17.45	4.6			0	0.0000	0.00065	0.00065	0.00216	0.0017
11:00	114	18.54	3.7			0	0.0000	0.00075	0.00075	0.00291	0.0020
11:30	144	17.45	5.1			0	0.0000	0.00090	0.00090	0.00381	0.0024
12:15	189	17.45	3.1	255	597.7	0	0.0013	0.00118	0.00245	0.00626	0.0031

Notes:
1) cfm = cubic feet per minute
2) ppm = parts per million
3) µg/L = micrograms per Liter
4) Influent Total benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) data taken from analytical laboratory results from the groundwater samples collected from RW-1 on April 21, 2005
5) PID = photoionization detector
6) shading = not applicable
7) VOCs = volatile organic compounds

Equations:
dissolved BTEX and MTBE removed (lbs) = gw extracted (gal) * sum of the influent total BTEX and MTBE (µg/L) * (3.78 L/1 gal) * (1 lb/4.53e8 µg)
vapor BTEX and MTBE removed (lbs) = sum of the vapor removed for each individual compound (lbs)
vapor individual compound removed (lbs) = air bag concentration (ppmv)/10^6 (ppmv) * molecular weight of compound (lb/lb-mole) * 1/379.5 (scf/lb-mole) * air flow (cfm) * operation time (min)
VOCs removed (lbs) = TPH air bag concentration (ppmv)/10^6 (ppmv) * molecular weight of compound (lb/lb-mole) * 1/379.5 (scf/lb-mole) * air flow (cfm) * operation time (min)

Conversions:

1 gallon =	3.785412	liters
1 pound =	453,600,000	µg
1 pound =	453,600	mg
1 $feet^3$ =	0.028316847	$meter^3$
1 lb-mole =	379.5	scf

Molecular Weights:

Benzene =	78.11
Toluene =	92.14
Ethylbenzene =	106.16
Total Xylenes =	106.16
MTBE =	88.15
TPH =	86.18

TABLE 10

Air Bag Analytical Results

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Sample ID	Date Sampled	Time Sampled	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	MTBE (ppmv)	TPH (ppmv)	Methane (ppmv)
RW-1 - Stack	12-May-05	12:15 PM	0.96	<0.1	<0.1	<0.3	<0.1	4.20	125.00

Notes:
1) The air sample was analyzed for benzene, toluene, ethylbenzene, total xylenes, methyl tert-butyl ether (MTBE), and total petroleum hydrocarbons (TPH) using United States Environmental Protection Agency (USEPA) Method TO-14 Source
2) The air was analyzed for methane using USEPA Method TO-3 Air
3) ppmv = parts per million by volume

APPENDIX A

ANALYTICAL LABORATORY REPORTS AND CERTIFICATIONS - SOIL

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company: TriCore Environmental, LLC
Address: 1800 W. Hawthorne Lane, Suite P
West Chicago, Illinois 60185
Email To: miczako@comcast.net
Phone: 630-520-9973 Fax 630-520-9976
Requested Due Date/TAT: standard

Section B Required Project Information:

Report To: Marcos I. Czako
Copy To:
Purchase Order No.: 100018
Project Name: Former Clark #646
Project Number: 100018

Section C Invoice Information:

Attention: Shawn Rodeck
Company Name: TriCore Environmental, LLC
Address: 1800 W. Hawthorne Lane, Suite P
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

SITE LOCATION: ☐ GA ☐ IL ☑ IN ☐ MI ☐ NC ☐ OH ☐ SC ☐ WI ☐ OTHER

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Filtered (Y/N)	Requested Analysis: TPH	COD	RCRA Metals	TKN	Total Phosphorus	Residual Chlorine (Y/N)	Pace Project No / Lab I.D.	Comments
1	SB-33@10-11	SL	G			1/18/07	1320		3	3								N	X	X	X			N	880335 001	3-40z AG
2	SB-34@8-10	SL	G			1/18/07	1519		3	3								N	X	X	X			N	002	
3	SB-35@8-10	SL	G			1/18/07	1640		3	3								N	X	X	X			N	003	
4	SB-36@10-11	SL	G			1/18/07	1025		3	3								N	X	X	X			N	004	
5	SB-37@6-8	SL	G			1/18/07	1150		3	3								N	X	X	X			N	005	
6	MP-1	WT	G			1/19/07	1345		5		1	1	3					N	X	X	X	X	X	006	N	2-250mL CLP, 3-40z
7	MW-11S	WT	G			1/19/07	1405		5		1	1	3					N	X	X	X	X	X	007	N	
8	MW-2	WT	G			1/19/07	1335		5		1	1	3					N	X	X	X	X	X	008	N	
9	MW-26	WT	G			1/19/07	1320		5		1	1	3					N	X	X	X	X	X	009	N	
10	MW-18	WT	G			1/19/07	1307		5		1	1	3					N	X	X	X	X	X	010	N	
11																										
12																										

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	1/19/07	1510		1/19/07	1510
	1/19/07	1700	PDS		
PDS	1/20/07	1150		1/20/07	1150

SAMPLE CONDITIONS

Temp in °C	Received on Ice Y/N	Custody Sealed Cooler Y/N	Samples Intact Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
1.0	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Marcos I. Czako
SIGNATURE of SAMPLER: DATE Signed (MM / DD / YY)

Sample Condition Upon Receipt

Pace Analytical

Client Name: TRICORE Project # 880335

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other PDS

Tracking #: [redacted]

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used JB Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 1.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: MB 1-20-07

Temp should be above freezing to 6°C Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.
Rush Turn Around Time Requested:	☑Yes ☐No (KA) ☐N/A	7. 5 day TAT
Sufficient Volume:	☑Yes ☐No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No (KV) ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: S/GW	☑Yes ☐No ☐N/A	12.
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed MB — Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☑N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 1-22-07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

480335

A. Site Identification

IEMA Incident #: 892744, 903199 IEPA LPC# (10-digit): 0971855024

Site Name: Former Clark Retail Station #646

Site Address (Not a P.O. Box): 399 West Liberty Street

City: Wauconda County: Lake ZIP Code: 60084

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. (initial)
2. Chain-of-custody procedures were followed in the field. (initial)
3. Sample integrity was maintained by proper preservation. (initial)
4. All samples were properly labeled. (initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms (initial)
2. Sample integrity was maintained by proper preservation. (initial)
3. All samples were properly labeled. (initial)

680335

4. Quality assurance/quality control procedures were established and carried out. LW (initial)

5. Sample holding times were not exceeded. LW (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. LW (initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). LW (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name: Marcos I. Czako

Title: Project Manager

Company: TriCore Environmental, LLC

Address: 1800 West Hawthorne Lane, Suite P

City, State, ZIP: West Chicago, Illinois 60185

Phone: 630-520-9973

Signature: [signature]

Date: 1/19/06

Laboratory Representative

Name: Laurie Wolfel

Title: Project Manager

Company: Pace Analytical

Address: 1241 Bellevue St

City, State, ZIP: Green Bay WI 54302

Phone: 920 469 2436

Signature: Laurie Wolfel

Date: 1/26/07

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 880335

Client: TRICORE ENVIRONMENTAL, LLC.
Project Name: FORMER CLARK #646
Project Number: 100018

Lab Contact: Laurie Woelfel
Collected By: MARCOS CZAKO
Report Serial No: 880335012920070833

Lab Sample Number	Field ID	Matrix	Collection Date
880335-001	SB-33 @ 10-11	SOIL	01/18/07 13:20
880335-002	SB-34 @ 8-10	SOIL	01/18/07 18:19
880335-003	SB-35 @ 8-10	SOIL	01/18/07 16:40
880335-004	SB-36 @ 10-11	SOIL	01/18/07 10:25
880335-005	SB-37 @ 6-8	SOIL	01/18/07 11:50
880335-006	MP-1	WATER	01/19/07 13:45
880335-007	MW-11S	WATER	01/19/07 14:05
880335-008	MW-2	WATER	01/19/07 13:35
880335-009	MW-26	WATER	01/19/07 13:20
880335-010	MW-18	WATER	01/19/07 13:07

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Laurie Woelfel
Approval Signature

1/29/07
Date

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 880335

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-33 @ 10-11

Matrix Type : SOIL
Collection Date : 01/18/07
Report Date : 01/26/07
Lab Sample Number : 880335-001

INORGANICS

Test	Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	2.8	2.4	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Barium	6.4	0.59	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Cadmium	< 0.59	0.59	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Chromium	3.9	0.59	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Lead	2.2	0.89	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Mercury	0.012	0.012	1	mg/Kg		01/25/07	SW846 7471A	SW846 7471A
Selenium	< 2.4	2.4	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Silver	< 1.2	1.2	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
COD - Soluble	3200	1200	1	mg/L		01/24/07	EPA 410.4	EPA 410.4
Percent Solids	84.7		1	%		01/23/07	SM M2540G	SM M2540G

TPH - GASOLINE

Prep Date: 01/24/07

Analyte	Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	< 12	12	50	mg/Kg		01/24/07	SW846 5030B	SW846 M8015

All soil results are reported on a dry weight basis unless otherwise noted.

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 880335

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-34 @ 8-10

Matrix Type : SOIL
Collection Date : 01/18/07
Report Date : 01/26/07
Lab Sample Number : 880335-002

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	2.4	2.4	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Barium		3.6	0.61	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Cadmium	<	0.61	0.61	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Chromium		3.1	0.61	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Lead		2.0	0.91	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Mercury	<	0.012	0.012	1	mg/Kg		01/25/07	SW846 7471A	SW846 7471A
Selenium	<	2.4	2.4	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Silver	<	1.2	1.2	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
COD - Soluble		1700	1200	1	mg/L		01/24/07	EPA 410.4	EPA 410.4
Percent Solids		82.1		1	%		01/23/07	SM M2540G	SM M2540G

TPH - GASOLINE

Prep Date: 01/24/07

Analyte	Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	16	12	50	mg/Kg		01/24/07	SW846 5030B	SW846 M8015

All soil results are reported on a dry weight basis unless otherwise noted.

Pace Analytical
Services, Inc.

Analytical Report Number: 880335

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-35 @ 8-10

Matrix Type : SOIL
Collection Date : 01/18/07
Report Date : 01/26/07
Lab Sample Number : 880335-003

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	2.5	2.5	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Barium		4.3	0.63	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Cadmium	<	0.63	0.63	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Chromium		3.1	0.63	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Lead		2.1	0.95	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Mercury	<	0.013	0.013	1	mg/Kg		01/25/07	SW846 7471A	SW846 7471A
Selenium	<	2.5	2.5	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Silver	<	1.3	1.3	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
COD - Soluble		2000	1300	1	mg/L		01/24/07	EPA 410.4	EPA 410.4
Percent Solids		79.2		1	%		01/23/07	SM M2540G	SM M2540G

TPH - GASOLINE

Prep Date: 01/24/07

Analyte		Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	<	13	13	50	mg/Kg		01/24/07	SW846 5030B	SW846 M8015

All soil results are reported on a dry weight basis unless otherwise noted.

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 880335

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-36 @ 10-11

Matrix Type : SOIL
Collection Date : 01/18/07
Report Date : 01/26/07
Lab Sample Number : 880335-004

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic		5.3	2.3	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Barium		31	0.58	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Cadmium	<	0.58	0.58	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Chromium		15	0.58	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Lead		6.2	0.87	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Mercury	<	0.012	0.012	1	mg/Kg		01/25/07	SW846 7471A	SW846 7471A
Selenium	<	2.3	2.3	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Silver	<	1.2	1.2	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
COD - Soluble		5900	1200	1	mg/L		01/24/07	EPA 410.4	EPA 410.4
Percent Solids		86.4		1	%		01/23/07	SM M2540G	SM M2540G

TPH - GASOLINE

Prep Date: 01/24/07

Analyte		Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	<	12	12	50	mg/Kg		01/24/07	SW846 5030B	SW846 M8015

All soil results are reported on a dry weight basis unless otherwise noted.

Pace Analytical
Services, Inc.

Analytical Report Number: 880335

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-37 @ 6-8

Matrix Type : SOIL
Collection Date : 01/18/07
Report Date : 01/26/07
Lab Sample Number : 880335-005

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	2.3	2.3	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Barium		41	0.58	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Cadmium	<	0.58	0.58	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Chromium		18	0.58	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Lead		7.6	0.86	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Mercury		0.017	0.012	1	mg/Kg		01/25/07	SW846 7471A	SW846 7471A
Selenium	<	2.3	2.3	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
Silver	<	1.2	1.2	1	mg/Kg		01/24/07	SW846 3050B	SW846 6010B
COD - Soluble		4200	1200	1	mg/L	N	01/24/07	EPA 410.4	EPA 410.4
Percent Solids		86.8		1	%		01/23/07	SM M2540G	SM M2540G

TPH - GASOLINE

Prep Date: 01/24/07

Analyte		Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	<	12	12	50	mg/Kg		01/24/07	SW846 5030B	SW846 M8015

All soil results are reported on a dry weight basis unless otherwise noted.

Pace Analytical
Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Lab Number	TestGroupID	Field ID	Comment
880335-002	TPHGAS-S	SB-34 @ 8-10	Sample exhibits hydrocarbon pattern resembling weathered gasoline.
880335-006	TPHGAS-W	MW-1	Sample exhibits hydrocarbon pattern resembling gasoline.
880335-008	TPHGAS-W	MW-2	Sample exhibits hydrocarbon pattern resembling gasoline.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the check standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Test Group Name	880335-001	880335-002	880335-003	880335-004	880335-005	880335-006	880335-007	880335-008	880335-009	880335-010
ARSENIC	B	B	B	B	B	B	B	B	B	B
BARIUM	B	B	B	B	B	B	B	B	B	B
CADMIUM	B	B	B	B	B	B	B	B	B	B
CHROMIUM	B	B	B	B	B	B	B	B	B	B
COD						B	B	B	B	B
COD - SOLUBLE	B	B	B	B	B					
LEAD	B	B	B	B	B	B	B	B	B	B
MERCURY	B	B	B	B	B	B	B	B	B	B
NITROGEN, TOTAL KJELDAHL						B	B	B	B	B
PERCENT SOLIDS	B	B	B	B	B					
PHOSPHORUS, TOTAL						B	B	B	B	B
SELENIUM	B	B	B	B	B	B	B	B	B	B
SILVER	B	B	B	B	B	B	B	B	B	B
TPH - GASOLINE	G	G	G	G	G	G	G	G	G	G

Code	Facility	Address	IL Certification
B	Green Bay Lab (Bellevue St)	1241 Bellevue Street, Suite 9 Green Bay, WI 54302	200050
G	Green Bay Lab (Industrial Dr)	1795 Industrial Drive Green Bay, WI 54302	200051

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: METALS
QC Batch Number: 17820
Prep Method: SW846 3050B
Analytical Method: SW846 6010B

QC Type	Client Sample ID	Lab Sample ID
MB	MBSMTG2089-73	MBSMTG2089-73
LCS	LCSSMTG2089-73	LCSSMTG2089-73
MS	SB-33 @ 10-11MS	880335-001MS
MSD	SB-33 @ 10-11MSD	880335-001MSD

Client Sample ID	Lab Sample ID	MB ID
SB-33 @ 10-11	880335-001	MB
SB-35 @ 8-10	880335-003	MB
SB-37 @ 6-8	880335-005	MB

Client Sample ID	Lab Sample ID	MB ID
SB-34 @ 8-10	880335-002	MB
SB-36 @ 10-11	880335-004	MB

Test Name	Method Blank Result	Conc	LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number	Parent Result	Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	UCL %	RPD %
Arsenic	<	0.84	50.0	49.9	99.8		---	---	---		---		80	120	20	880335-001		2.85	59.0	60.5	97.7		59.0	61.6	99.6		1.8		75	125	20
Barium	<	0.1	50.0	48.9	97.7		---	---	---		---		80	120	20	880335-001		6.38	59.0	65	99.4		59.0	65.7	100.6		1.1		75	125	20
Cadmium	<	0.051	50.0	49.7	99.5		---	---	---		---		80	120	20	880335-001	<	0.06	59.0	54.3	91.9		59.0	55.3	93.7		1.9		75	125	20
Chromium	<	0.15	50.0	51.7	103.4		---	---	---		---		80	120	20	880335-001		3.86	59.0	62.8	99.8		59.0	63.9	101.7		1.7		75	125	20
Lead	<	0.34	50.0	50.2	100.3		---	---	---		---		80	120	20	880335-001		2.23	59.0	57.8	94.2		59.0	58.5	95.3		1.2		75	125	20
Selenium	<	0.81	50.0	49.4	98.7		---	---	---		---		80	120	20	880335-001	<	0.96	59.0	57.4	97.2		59.0	58.3	98.8		1.6		75	125	20
Silver	<	0.24	25.0	24.6	98.4		---	---	---		---		80	120	20	880335-001	<	0.28	29.5	29.9	101.2		29.5	30.3	102.5		1.3		75	125	20

Conc = mg/Kg unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17820

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: GAS
QC Batch Number: 17832
Prep Method: SW846 5030B
Analytical Method: SW846 M8015B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2129-5MB	GG2129-5MB
LCS	GG2129-5MBLCS	GG2129-5MBLCS
LCSD	GG2129-5MBLCSD	GG2129-5MBLCSD
MS	SB-33 @ 10-11MS	880335-001MS
MSD	SB-33 @ 10-11MSD	880335-001MSD

Client Sample ID	Lab Sample ID	MB ID
SB-33 @ 10-11	880335-001	MB
SB-35 @ 8-10	880335-003	MB
SB-37 @ 6-8	880335-005	MB

Client Sample ID	Lab Sample ID	MB ID
SB-34 @ 8-10	880335-002	MB
SB-36 @ 10-11	880335-004	MB

Test Name	Method Blank Result Conc		LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	UCL %	RPD %
TPH - Gasoline	<	2.6	50.0	57.5	115		50.0	55.5	111		3.5		85	117	20	880335-001		5.70	59.0	63	97		59.0	64.4	99		2.2		54	116	20

Conc = mg/Kg unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17832

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: WETCHEM
QC Batch Number: 17844
Prep Method: EPA 410.4
Analytical Method: EPA 410.4

QC Type	Client Sample ID	Lab Sample ID
MB	WCG1928-100MB	WCG1928-100MB
LCS	WCG1928-100MBLCS	WCG1928-100MBLCS
MS	SB-37 @ 6-8MS	880335-005MS
MSD	SB-37 @ 6-8MSD	880335-005MSD

Client Sample ID	Lab Sample ID	MB ID
SB-33 @ 10-11	880335-001	MB
SB-35 @ 8-10	880335-003	MB
SB-37 @ 6-8	880335-005	MB

Client Sample ID	Lab Sample ID	MB ID
SB-34 @ 8-10	880335-002	MB
SB-36 @ 10-11	880335-004	MB

Test Name	Method Blank Result Conc		LCS Spiked Conc	LCS Recovery Conc	LCS Recovery %	LCS Recovery C	LCSD Spiked Conc	LCSD Recovery Conc	LCSD Recovery %	LCSD Recovery C	LCS/LCSD RPD %	LCS/LCSD RPD C	LCS/LCSD Control Limits LCL %	LCS/LCSD Control Limits UCL %	LCS/LCSD Control Limits RPD %	Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery Conc	MS Recovery %	MS Recovery C	MSD Spiked Conc	MSD Recovery Conc	MSD Recovery %	MSD Recovery C	MS/MSD RPD %	MS/MSD RPD C	MS/MSD Control Limits LCL %	MS/MSD Control Limits UCL %	MS/MSD Control Limits RPD %
COD - Soluble	<	17	400.000	405.9	101.5		---	---	---		---		80	120	20	880335-005		4200.38	11515.0	22069.9	155.2	N	11515.0	24303.9	174.6	N	9.6		80	120	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17844

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: METALS
QC Batch Number: 17864
Prep Method: SW846 7471A
Analytical Method: SW846 7471A

QC Type	Client Sample ID	Lab Sample ID
MB	MBSMTG2111-12	MBSMTG2111-12
LCS	LCSSMTG2111-12	LCSSMTG2111-12
MS	880328-001MS	880328-001MS
MSD	880328-001MSD	880328-001MSD

Client Sample ID	Lab Sample ID	MB ID
SB-33 @ 10-11	880335-001	MB
SB-35 @ 8-10	880335-003	MB
SB-37 @ 6-8	880335-005	MB

Client Sample ID	Lab Sample ID	MB ID
SB-34 @ 8-10	880335-002	MB
SB-36 @ 10-11	880335-004	MB

Test Name	Method Blank Result	Conc	LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	UCL %	RPD %
Mercury	<	0.0015	0.25	0.24	97.8		---	---	---		---		85	115	20	880328-001	0.13	0.29	0.48	122.1	N	0.29	0.43	103.5		11.8		85	115	20

Conc = mg/Kg unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17864

SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, IL 60162 Tel. 708.544.3260 Fax: 708.544.8587 Toll Free: 800.783.LABS www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

Company Name: TriCore Environmental, LLC
Company Address: 1800 W. Hawthorne Lane, Suite P
City: West Chicago State: IL Zip: 60185
Phone: 630-520-9973 Fax: 630-520-9976 ☐ Fax Report
Email Address: miczako@comcast.net ☐ Email Report
Project ID / Location: 100019 / Wauconda
Project Manager (Report to): Marcos I. Czakó
Sample Collector(s): Marcos I. Czakó

TURNAROUND TIME REQUESTED
☒ Normal ☐ RUSH* *Additional Rush Charges Approved.
*Date & Time Needed:
Normal TAT is 5-7 work days for most work. Rush work must be pre-approved and additional charges apply.

Specify Regulatory Program: (Required) ☐ None/Info Only
☒ LUST ☐ SRP ☐ SDWA
☐ 503 Sludge ☐ NPDES ☐ MWRDGC
☐ Disposal ☐ Other* *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED
Enter an "X" in box below for request

Page 1 of 1
PO No. 100019
Shipping Method
QC Reporting Level (Please Circle) 1 2 3

LAB USE ONLY
SLI ORDER No. 0701065?
QC sample(s) provided? ☐ Yes ☐ No
Temperature of Received Samples 1.7 °C
Samples received within 6 hours of collection? ☐ Yes

	SAMPLE IDENTIFICATION *Use One Line Per Preservation & Container Type*	COLLECTION DATE	COLLECTION TIME	MATRIX	GRAB/COMP.	Qty	SIZE & TYPE	PRESERVATIVE	Total Plate Count									R	Condition	Split	LAB #
1	SB-33 @ 10'-11'	1/18/07	1320	S	Grab	1	4oz. Amber	—	X												01A
2		/ /																			
3		/ /																			
4		/ /																			
5		/ /																			
6		/ /																			
7		/ /																			
8		/ /																			
9		/ /																			
10		/ /																			
11		/ /																			
12		/ /																			

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water(SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H_2SO_4, HCl, HNO_3, Methanol (MeOH) NaOH, Sodium Bisulfate (NaB), NaThio

COMMENTS & SPECIAL INSTRUCTIONS:

CONDITION CODES
1. Improper/damaged container/cap
2. Improper preservation
3. Insufficient sample volume
4. Headspace/air bubbles for VOCs
5. Received past holding time
6. Received frozen
7. Label conflicts with COC

1. Relinquished By	Date	2. Relinquished By	Date	3. Relinquished By	Date	4. Relinquished By	Date
[signature]	1/18/07						
Received By	Time	Received By	Time	Received By	Time	Received By	Time
[signature] ☐ Ice?	15:55	☐ Ice?		☐ Ice?		☐ Ice?	

Submission of samples subject to Terms and Conditions on back. Rev. 01/01/03 White - Original (Return with report), Yellow - Lab Copy, Pink - Sampler Copy

SUBURBAN LABORATORIES, Inc.
4140 Litt Drive · Hillside, Illinois 60162-1183
Tel. (708) 544-3260 · Toll Free (800) 783-LABS · Fax (708) 544-8587
www.SuburbanLabs.com

ACCREDITED IN ACCORDANCE WITH nelac

January 23, 2007

Marcos Czako
Tri core Environmental
1800 W. Hawthorne Lane
West Chicago, IL 60185

Tel: (630) 520-9973
Fax: (630) 520-9976

Lab Order: **07010657**

Project Name: 100019 / Wauconda

Dear Marcos Czako:

Suburban Laboratories, Inc. received 1 sample(s) on 01/18/07 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation including, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call your customer service representative at (708) 544-3260.

Sincerely,

Eric Yeggy

Eric Yeggy
Project Manager

cc:

SUBURBAN LABORATORIES, Inc.
4140 Litt Drive · Hillside, Illinois 60162-1183
Tel. (708) 544-3260 · Toll Free (800) 783-LABS · Fax (708) 544-8587
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CASE NARRATIVE

Client ID: Tri_core Environmental
Project Name: 100019 / Wauconda
Lab Order: 07010657
Chain of Custody # electronic
Temperature of samples upon receipt in our Lab: 17 °C

Date: January 23, 2007
PO #:
QC Level: Level I

General Comments:
- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:
- Reporting Limit: The reporting limit is designed to be the lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).

Method References:
For a complete list of method references please contact us.
- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater

Project Specific Comments:

Suburban Laboratories, Inc.

4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Laboratory Results

Client ID: Tri_core Environmental

Report Date: January 23, 2007

Project Name: 100019 / Wauconda

Lab Order: 07010657

Client Sample ID: SB-33 @ 10' 11'

Matrix: SOIL

Lab ID: 07010657-01A

Date Received: 01/18/2007 3:55 PM

Collection Date: 01/18/2007 1:20 PM

Parameter	Result	Qual.	Report Limit	Units	Dilution Factor	Date Analyzed	Batch ID
TOTAL PLATE COUNT, MULTIPLE DILUTIONS			Method: M9215B-Mdils			Analyst: CB	
1:10	23.0	c	0	CFU/g	1	01/19/2007 12:10 PM	R58594
1:100	6.00	c	0	CFU/g	1	01/19/2007 12:10 PM	R58594
1:1000	5.00	c	0	CFU/g	1	01/19/2007 12:10 PM	R58594
1:10000	ND	c	0	CFU/g	1	01/19/2007 12:10 PM	R58594
1:100000	ND	c	0	CFU/g	1	01/19/2007 12:10 PM	R58594
1:1000000	ND	c	0	CFU/g	1	01/19/2007 12:10 PM	R58594
Final Result:	230		0	CFU/g	1	01/19/2007 12:10 PM	R58594

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A — Required Client Information:

Company: TriCore Environmental, LLC
Address: 1800 W. Hawthorne Lane, Suite P
West Chicago, Illinois 60185
Email To: miczako@comcast.net
Phone: 630-520-9873 Fax 630-520-9876
Requested Due Date/TAT: standard

Section B — Required Project Information:

Report To: Marcos I. Czako
Copy To:
Purchase Order No.: 100018
Project Name: Former Clark #646
Project Number: 100018

Section C — Invoice Information:

Attention: Shawn Rodeck
Company Name: TriCore Environmental, LLC
Address: 1800 W. Hawthorne Lane, Suite P
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

SITE LOCATION: ☐ GA ☐ IL ☑ IN ☐ MI ☐ NC ☐ OH ☐ SC ☐ WI ☐ OTHER

Section D — Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Requested	Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
1	SB-38@2-3	SL	G			12/11/07	3:00		1	1								FOC	N	N	1-40zAG
2	SB-38@3-4	SL	G			12/11/07	3:10		1	1								FOC	N	N	✓
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Pace Project No. / Lab I.D.: 891867

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	12/11/07	5:00 PM	FED EX		
FED EX	12/14/07	1100	KJ Lockman	12/14	1100

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
1.0	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE:
PRINT Name of SAMPLER: Marcos I. Czako
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 12/11/07

Sample Condition Upon Receipt

Pace Analytical

Client Name: TRICORE ENV. Project # 891867

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used JB Type of Ice: (Wet) Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature 1.0 Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C Comments:

Date and Initials of person examining contents: 12/14/07 KJL
12/12/14/07 LL

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☒Yes ☐No ☐N/A	7. 5 DAY TAT
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: S		
All containers needing preservation have been checked.	☐Yes ☐No ☒N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☒N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☒N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: LW **Date:** 12/17/07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

891867

This page can be completed online.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident #: 892744, 903199 IEPA LPC# (10-digit): 0971855024

Site Name: Former Clark Retail Station #646

Site Address (Not a P.O. Box): 399 West Liberty Street

City: Wauconda County: Lake ZIP Code: 60084

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. MAE (initial)
2. Chain-of-custody procedures were followed in the field. MAE (initial)
3. Sample integrity was maintained by proper preservation. MAE (initial)
4. All samples were properly labeled. MAE (initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms KJL (initial)
2. Sample integrity was maintained by proper preservation. KJL (initial)
3. All samples were properly labeled. KJL (initial)

891867

This page can be completed online.

4. Quality assurance/quality control procedures were established and carried out. (initial)

5. Sample holding times were not exceeded. (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. (initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name: Marcos I. Czako

Title: Project Manager

Company: TriCore Environmental, LLC

Address: 1800 West Hawthorne Lane, Suite P

City, State, ZIP: West Chicago, Illinois 60185

Phone: 630-520-9973

Signature: Marcos I. Czako

Date: 12/11/07

Laboratory Representative

Name: Laurie Woelfel

Title: Project Manager

Company: Pace Analytical

Address: 1241 Bellevue St

City, State, ZIP: Green Bay WI 54302

Phone: 920 469 2436

Signature: Laurie Woelfel

Date: 12/19/07

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 891867

Client: TRICORE ENVIRONMENTAL, LLC.
Project Name: FORMER CLARK #646
Project Number: 100018

Lab Contact: Laurie Woelfel
Collected By: MARCOS CZAKO
Report Serial No: 891867121920071319

Lab Sample Number	Field ID	Matrix	Collection Date
891867-001	SB-38 @ 2-3	SOIL	12/11/07 15:00
891867-002	SB-38 @ 3-4	SOIL	12/11/07 15:10

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

Laurie Woelfel
Approval Signature

12/19/07
Date

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 891867

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-38 @ 2-3

Matrix Type : SOIL
Collection Date : 12/11/07
Report Date : 12/19/07
Lab Sample Number : 891867-001

INORGANICS

Test	Result	EQL	Dilution	Units	Code	Anl Date/Time	Prep Method	Anl Method
Fraction Organic Carbon	3.27	0.580	0.58	%		12/14/07	ASTM D2974	ASTM D2974
						Prep Date/Time: 12/14/07		Anl By: DEY

All soil results are reported on a dry weight basis unless otherwise noted.

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Analytical Report Number: 891867

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : SB-38 @ 3-4

Matrix Type : SOIL
Collection Date : 12/11/07
Report Date : 12/19/07
Lab Sample Number : 891867-002

INORGANICS

Test	Result	EQL	Dilution	Units	Code	Anl Date/Time	Prep Method	Anl Method
Fraction Organic Carbon	0.777	0.580	0.58	%		12/14/07	ASTM D2974	ASTM D2974
						Prep Date/Time: 12/14/07		Anl By: DEY

All soil results are reported on a dry weight basis unless otherwise noted.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the CCV standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Test Group Name	891867-001	891867-002
FRACTION ORGANIC CARBON	B	B

Code	IL Certification
B	200050

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

SDG: 891867
Lab Section: WETCHEM
QC Batch Number: 27472
Prep Method: ASTM D2974
Analytical Method: ASTM D2974

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2378-001MB	WCG2378-001MB
LCS	WCG2378-001MBLCS	WCG2378-001MBLCS
DUP	891742-002DUP	891742-002DUP

Client Sample ID	Lab Sample ID		Client Sample ID	Lab Sample ID	
SB-38 @ 2-3	891867-001	MB	SB-38 @ 3-4	891867-002	MB

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number	Parent Result Conc	Lab Dup Conc	Lab Dup RPD %	C	Lab Dup RPD Limit %
Fraction Organic Carbon	44	58.00	55.3	95.3		---	---	---		---		80	120	10	891742-002	0.2457	0.1263	64.2	*	10

Conc = % unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 12/19/2007
QC Batch Number: 27472

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A
Required Client Information:

Company:	TriCore Environmental, LLC
Address:	1800 W. Hawthorne Lane, Suite P
	West Chicago, Illinois 60185
Email To:	miczako@comcast.net
Phone:	630-520-9973
Fax	630-520-9976
Requested Due Date/TAT:	standard

Section B
Required Project Information:

Report To:	Marcos I. Czako
Copy To:	
Purchase Order No.:	100018
Project Name:	Former Clark #646
Project Number:	100018

Section C
Invoice Information:

Attention:	Shawn Rodeck
Company Name:	TriCore Environmental, LLC
Address:	1800 W. Hawthorne Lane, Suite P
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

SITE LOCATION: ☐ GA ☐ IL ☑ IN ☐ MI ☐ NC ☐ OH ☐ SC ☐ WI ☐ OTHER

Filtered (Y/N): N N N

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	TPH	COD	RCRA Metals	TKN	Total Phosphorus	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D. 407540
1	SB-39 @ 14.25-15.25	SL	G			8/7/08	1358		3	3								X	X	X			N	001 3-4oz ag
2	SB-40 @ 16-17	SL	G			8/7/08	1238		3	3								X	X	X			N	002 ↓
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature] / Sampler	8/7/08	1600	[signature]	8/7/08	1600
[signature]	8/7/08	1700	Waltco		
Waltco	8/8/08	850	[signature] Schust	8/8/08	850

SAMPLE CONDITIONS

Temp in °C	Received on Ice	Custody Sealed Cooler	Samples Intact
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N
	Y/N	Y/N	Y/N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Marcos Czako
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM / DD / YY): 08/07/08

Sample Condition Upon Receipt

Pace Analytical

Client Name: Tri Core Project # 407540

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other Walter

Optional: Proj. Due Date: Proj. Name:

Tracking #:

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used N/A Type of Ice: ☑ Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature KJ Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 8/8/08 JB

Temp should be above freezing to 6°C Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.	
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.	
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.	
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.	
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.	
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.	
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.	
Sufficient Volume:	☑Yes ☐No ☐N/A	8.	
Correct Containers Used:	☑Yes ☐No ☐N/A	9.	
-Pace Containers Used:	☑Yes ☐No ☐N/A		
Containers Intact:	☑Yes ☐No ☐N/A	10.	
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.	
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.	
-Includes date/time/ID/Analysis Matrix: S			
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed	Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.	
Headspace in VOA Vials (>6mm):	☐Yes ☐No ☑N/A	15.	
Trip Blank Present:	☐Yes ☐No ☑N/A	16.	
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: LW **Date:** 8/11/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

This page can be completed online.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident #: 892744, 903199 IEPA LPC# (10-digit): 0971855024

Site Name: Former Clark Retail Station #646

Site Address (Not a P.O. Box): 399 West Liberty Street

City: Wauconda County: Lake ZIP Code: 60084

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. (initial)
2. Chain-of-custody procedures were followed in the field. (initial)
3. Sample integrity was maintained by proper preservation. (initial)
4. All samples were properly labeled. (initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms (initial)
2. Sample integrity was maintained by proper preservation. (initial)
3. All samples were properly labeled. (initial)

407540

This page can be completed online.

4. Quality assurance/quality control procedures were established and carried out. (initial)

5. Sample holding times were not exceeded. (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. (initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name: Marcos I. Czako

Title: Project Manager

Company: TriCore Environmental, LLC

Address: 1800 West Hawthorne Lane, Suite P

City, State, ZIP: West Chicago, Illinois 60185

Phone: 630-520-9973

Signature:

Date: 05/28/09

Laboratory Representative

Name: Laurie Urquhart

Title: Project Manager

Company: Pace Analytical

Address: 1241 Bellevue St

City, State, ZIP: Green Bay WI 54302

Phone: 920 469 2436

Signature: Laurie Urquhart

Date: 5/28/09

407540

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

August 15, 2008

Marcos Czako
TriCore Environmental, LLC.
1800 West Hawthorne Lane
Suite P
West Chicago, IL 60185

RE: Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

Dear Marcos Czako:
Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Laurie Woelfel

Laurie Woelfel

laurie.woelfel@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

Green Bay Certification IDs
Louisiana Certification #: 04168
Kentucky Certification #: 82
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-150
New York Certification #: 11888
Illinois Certification #: 200050
Florida (NELAP) Certification #: E87948

Green Bay Volatiles Certification IDs
Louisiana Certification #: 04169
Kentucky Certification #: 83
Wisconsin DATCP Certification #: 105-444
Wisconsin Certification #: 405132750
South Carolina Certification #: 83006001
Minnesota Certification #: 055-999-334
North Carolina Certification #: 503
North Dakota Certification #: R-200
New York Certification #: 11887
Illinois Certification #: 200051
Florida (NELAP) Certification #: E87951

Pace Analytical Services, Inc.
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Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

Lab ID	Sample ID	Matrix	Date Collected	Date Received
407540001	**SB-39 @ 14.25-15.25**	Solid	08/07/08 13:58	08/08/08 08:50
407540002	**SB-40 @ 16-17**	Solid	08/07/08 12:38	08/08/08 08:50

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SAMPLE ANALYTE COUNT

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
407540001	**SB-39 @ 14.25-15.25**	ASTM D2974-87	AG	1	PASI-G
		EPA 6010	DLB	7	PASI-G
		EPA 7471	LMS	1	PASI-G
		EPA 8015B Modified	PMS	1	PASI-G
407540002	**SB-40 @ 16-17**	ASTM D2974-87	AG	1	PASI-G
		EPA 6010	DLB	7	PASI-G
		EPA 7471	LMS	1	PASI-G
		EPA 8015B Modified	PMS	1	PASI-G

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ANALYTICAL RESULTS

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

Sample: SB-39 @ 14.25-15.25 **Lab ID: 407540001** Collected: 08/07/08 13:58 Received: 08/08/08 08:50 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 5035A/5030B							
TPH (C06-C10)	**<11.8**	mg/kg	11.8	1	08/12/08 10:29	08/12/08 19:03		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**2.3**	mg/kg	1.2	1	08/12/08 16:07	08/13/08 20:52	7440-38-2	
Barium	**41.9**	mg/kg	0.29	1	08/12/08 16:07	08/13/08 20:52	7440-39-3	
Cadmium	**<0.29**	mg/kg	0.29	1	08/12/08 16:07	08/13/08 20:52	7440-43-9	
Chromium	**14.4**	mg/kg	0.29	1	08/12/08 16:07	08/13/08 20:52	7440-47-3	
Lead	**5.9**	mg/kg	0.59	1	08/12/08 16:07	08/13/08 20:52	7439-92-1	
Selenium	**<1.2**	mg/kg	1.2	1	08/12/08 16:07	08/13/08 20:52	7782-49-2	
Silver	**<0.59**	mg/kg	0.59	1	08/12/08 16:07	08/13/08 20:52	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**<0.012**	mg/kg	0.012	1	08/12/08 15:48	08/13/08 13:37	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**15.5**	%	0.10	1		08/09/08 08:38		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

Sample: SB-40 @ 16-17 **Lab ID: 407540002** Collected: 08/07/08 12:38 Received: 08/08/08 08:50 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 5035A/5030B							
TPH (C06-C10)	**<11.8**	mg/kg	11.8	1	08/12/08 10:29	08/12/08 19:29		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**3.8**	mg/kg	1.2	1	08/12/08 16:07	08/13/08 21:03	7440-38-2	
Barium	**40.7**	mg/kg	0.30	1	08/12/08 16:07	08/13/08 21:03	7440-39-3	
Cadmium	**<0.30**	mg/kg	0.30	1	08/12/08 16:07	08/13/08 21:03	7440-43-9	
Chromium	**12.3**	mg/kg	0.30	1	08/12/08 16:07	08/13/08 21:03	7440-47-3	
Lead	**6.5**	mg/kg	0.59	1	08/12/08 16:07	08/13/08 21:03	7439-92-1	
Selenium	**<1.2**	mg/kg	1.2	1	08/12/08 16:07	08/13/08 21:03	7782-49-2	
Silver	**<0.59**	mg/kg	0.59	1	08/12/08 16:07	08/13/08 21:03	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	**0.012**	mg/kg	0.012	1	08/12/08 15:48	08/13/08 13:38	7439-97-6	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**15.6**	%	0.10	1		08/09/08 08:38		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

QC Batch: PMST/1699
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 407540001, 407540002

SAMPLE DUPLICATE: 62504

Parameter	Units	407540001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.5	15.8	2	10	

Pace Analytical Services, Inc.
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QUALITY CONTROL DATA

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

QC Batch: GCV/2099
QC Batch Method: EPA 5035A/5030B
Analysis Method: EPA 8015B Modified
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 407540001, 407540002

METHOD BLANK: 63301
Associated Lab Samples: 407540001, 407540002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
TPH (C06-C10)	mg/kg	<10.0	10.0	

LABORATORY CONTROL SAMPLE & LCSD: 63302 63303

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH (C06-C10)	mg/kg	50	56.1	56.1	112	112	80-120	.02	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 63304 63305

Parameter	Units	1078485001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C10)	mg/kg	ND	63.7	63.7	81.2	78.9	127	124	64-131	3	20	

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QUALITY CONTROL DATA

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

QC Batch: MERP/1210
QC Batch Method: EPA 7471
Analysis Method: EPA 7471
Analysis Description: 7471 Mercury
Associated Lab Samples: 407540001, 407540002

METHOD BLANK: 63395
Associated Lab Samples: 407540001, 407540002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Mercury	mg/kg	<0.010	0.010	

LABORATORY CONTROL SAMPLE: 63396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.25	0.26	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 63397 63398

Parameter	Units	407289009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	0.0054J	.29	.29	0.34	0.33	113	113	85-115	.6	20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

QC Batch: MPRP/1621
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 407540001, 407540002

METHOD BLANK: 63849
Associated Lab Samples: 407540001, 407540002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Arsenic	mg/kg	<1.0	1.0	
Barium	mg/kg	<0.25	0.25	
Cadmium	mg/kg	<0.25	0.25	
Chromium	mg/kg	<0.25	0.25	
Lead	mg/kg	<0.50	0.50	
Selenium	mg/kg	<1.0	1.0	
Silver	mg/kg	<0.50	0.50	

LABORATORY CONTROL SAMPLE: 63850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	25	24.5	98	80-120	
Barium	mg/kg	25	24.8	99	80-120	
Cadmium	mg/kg	25	24.3	97	80-120	
Chromium	mg/kg	25	25.3	101	80-120	
Lead	mg/kg	25	24.8	99	80-120	
Selenium	mg/kg	25	24.1	96	80-120	
Silver	mg/kg	12.5	12.0	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 63851 63852

Parameter	Units	407566002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	2.9	28.4	28.4	28.1	27.7	89	87	75-125	2	20	
Barium	mg/kg	62.5	28.4	28.4	90.7	84.3	99	77	75-125	7	20	
Cadmium	mg/kg	0.45	28.4	28.4	26.5	26.0	92	90	75-125	2	20	
Chromium	mg/kg	18.9	28.4	28.4	45.1	43.1	92	85	75-125	5	20	
Lead	mg/kg	48.3	28.4	28.4	78.2	67.4	105	67	75-125	15	20	M0
Selenium	mg/kg	0.33J	28.4	28.4	24.9	24.4	86	85	75-125	2	20	
Silver	mg/kg	0.081J	14.2	14.2	13.2	13.0	92	91	75-125	2	20	

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 100018 FORMER CLARK #646
Pace Project No.: 407540

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

M0 Matrix spike recovery was outside laboratory control limits.

mg/Kg = (Result (ug/L)*DF*FV(L))/(W(g)*((100-%Moisture)/100))

	Sample	Analyte	Result (ug/L)	Initial weight (g)	Final Vol. (L)	DF	%moisture	Final Calc. (mg/Kg)
SB39	407540001	COD	269770	0.05	0.002	1	15.498	12769.8753
SB40	407540002	COD	323370	0.05	0.002	1	15.57	15320.1469
								#DIV/0!
								#DIV/0!
								#DIV/0!
	407540001							#DIV/0!
	MDL	COD	11820	0.05	0.002	1	15.498	559.5134
	EQL	COD	50000	0.05	0.002	1	15.498	2366.8079
								#DIV/0!
								#DIV/0!
								#DIV/0!
								#DIV/0!
								#DIV/0!
	407540002							#DIV/0!
	MDL	COD	11820	0.05	0.002	1	15.57	559.9905
	EQL	COD	50000	0.05	0.002	1	15.57	2368.8262
								#DIV/0!
								#DIV/0!
								#DIV/0!
								#DIV/0!
								#DIV/0!
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APPENDIX B

SOIL BORING LOGS

SB-33

TriCore Environmental, LLC

Drill Method:	Direct-push	Date Drilled:	01-18-07	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	10 Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
				PT	Grass and topsoil
	0.2			CL	Brown silty CLAY, no odor, dry
	1.4			CL	Brown silty CLAY, trace organics, no odor, dry
	0.9			PT	Black topsoil, trace organics, no odor, moist
	2.2			CL	Dark brown and black silty CLAY, trace sand, gravel, and organics, no odor, moist
	0.4			CL	Brown and tan silty CLAY, trace sand and gravel, no odor, dry
	2.4		5		Brown and tan silty CLAY, no odor, moist
	1.5			CL	
	9.7			CL	Tanish-gray silty CLAY, trace gravel and organics, slight odor, very moist
	31 (lab)		10	SW	Gray fine grained SAND, well sorted, odor, saturated at 10'
	2.0			SW	Gray fine grained SAND, well sorted, saturated
	2.2		15		

Completion Notes:

Backfilled with hydrated bentonite from 15.5' to 0.25' bls. Capped with grass.

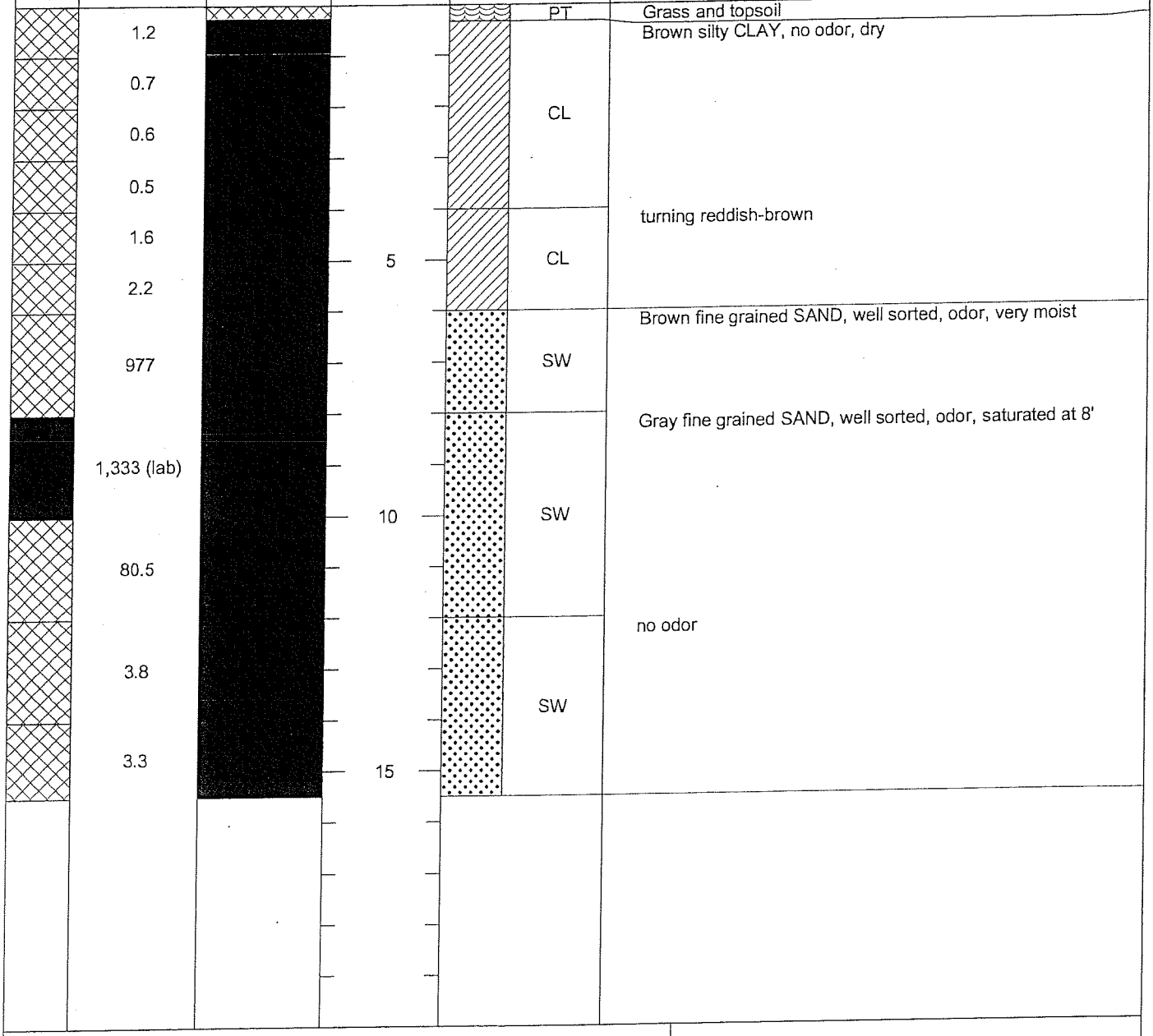
Site:
Former Clark Retail Station #646
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 | Page 1

SB-34

TriCore Environmental, LLC

Drill Method: Direct-push	Date Drilled: 01-18-07	Logged By:
Boring Dia: 2.125 Inches	DTW While Drilling: 8 Feet	M. Czako



Completion Notes:

Backfilled with hydrated bentonite from 15.5' to 0.25' bls. Capped with grass.

Site:
Former Clark Retail Station #646
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018

TriCore Environmental, LLC

SB-35

Drill Method:	Direct-push	Date Drilled:	01-18-07	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	8 Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
				PT	Grass and topsoil
	0.1			CL	Brown silty CLAY, trace sand, no odor, dry
	0.1				
	0.1			CL	Brown silty CLAY, some sand, no odor, dry
	0.1			SC	Brown silty CLAY interbedded with brown fine grained SAND, no odor, moist
	0.1			SW	Brown fine grained SAND, well sorted, trace gravel, no odor, moist
			5		
	3.1			SW	odor
	6.1			SW	hydrocarbon staining at 7.75'
	118 (lab)			SW	Gray fine grained SAND, well sorted, trace gravel, odor, saturated at 8'
			10		
	103				
	2.4			SW	no odor
	1.9		15		

Completion Notes:

Backfilled with hydrated bentonite from 16' to 0.25' bls. Capped with grass.

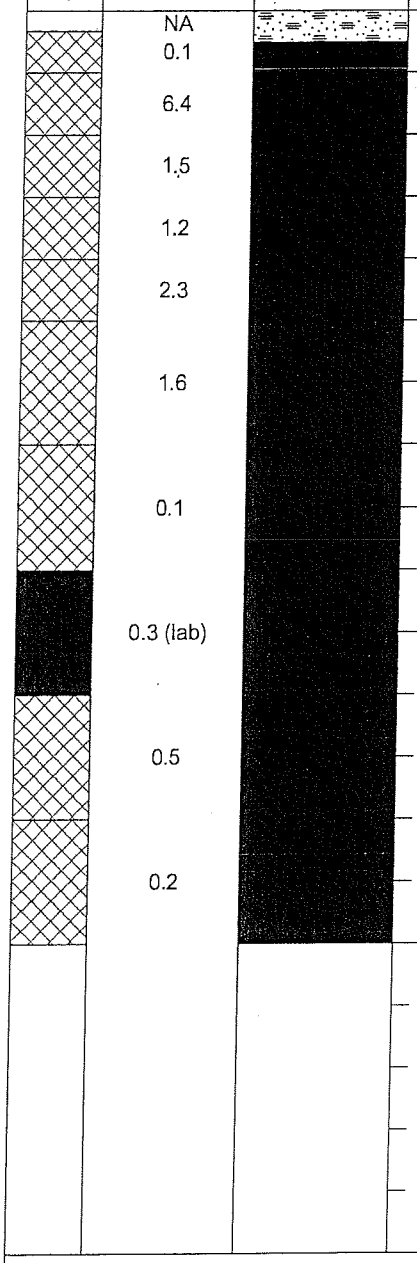
Site:
Former Clark Retail Station #646
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 | Page 1

SB-36

TriCore Environmental, LLC

Drill Method:	Direct-push	Date Drilled:	01-18-07	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	10 Feet	M. Czako



Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
	NA			Concrete	Concrete
	0.1			CL	Gray and tan silty CLAY, some medium grained brown sand, no odor, moist
	6.4				Gray and tan silty CLAY, brittle, dry, no odor
	1.5			CL	
	1.2				
	2.3		5		
	1.6			CL	Gray and tan silty CLAY, trace sand and gravel, stiff, moist
	0.1				
				CL	Gray silty CLAY, trace sand and gravel, moist
				CL	Gray silty CLAY, no odor, moist
	0.3 (lab)		10	CL	Gray sandy CLAY, no odor, saturated at 10'
	0.5			SW	Brown fine grained SAND, well sorted, no odor, saturated
	0.2		15		

Completion Notes:

Backfilled with hydrated bentonite from 15' to 0.5' bls. Capped with asphalt.

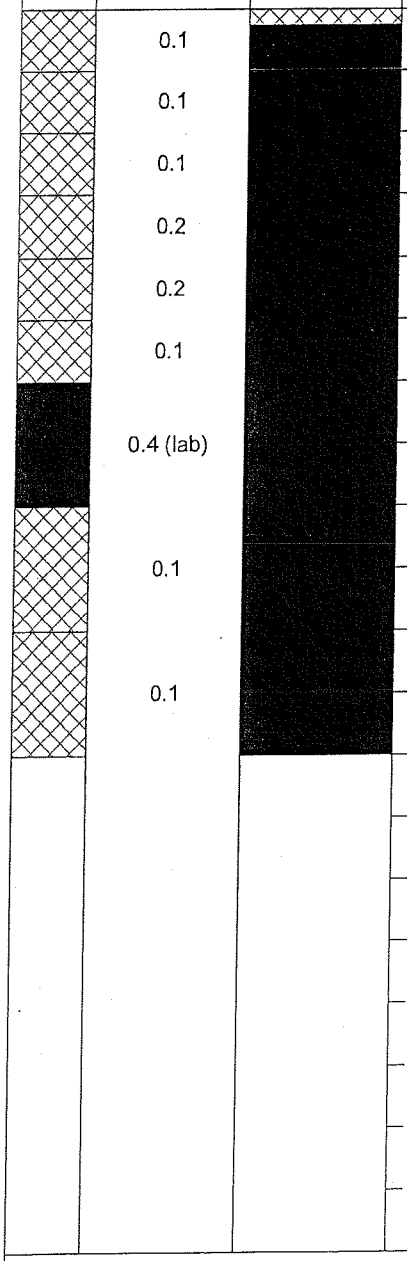
Site:
Former Clark Retail Station #646
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018

SB-37

TriCore Environmental, LLC

Drill Method: Direct-push	Date Drilled: 01-18-07	Logged By:
Boring Dia: 2.125 Inches	DTW While Drilling: 6 Feet	M. Czako



Sample	PID (ppm)	Depth (feet)	Lithology	Description
	0.1		PT	Grass and topsoil, some organics, no odor, moist
	0.1		CL	Greenish-gray silty CLAY, trace organics, no odor, moist
	0.1			Gray and tan silty CLAY, trace organics, no odor, moist
	0.2		CL	
	0.2	5		
	0.1		CL	turning stiff and very moist
	0.4 (lab)		CL	Tanish-gray silty CLAY, no odor, saturated at 6'
	0.1	10	CL	Gray silty CLAY, trace sand and gravel, stiff, no odor, saturated
	0.1		SW	Brown fine grained SAND, well sorted, no odor, saturated
		15		

Completion Notes:

Backfilled with hydrated bentonite from 12' to 0.25' bls. Capped with grass.

Site:
Former Clark Retail Station #646
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 | Page 1

SB-38

TriCore Environmental, LLC

Drill Method:	HA	Date Drilled:	12-11-07	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	NA Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
	0.1			PT	Grass Black top soil, no odor, moist
	0.1			PT	
	0.1 (lab)			CL	Reddish-brown silty CLAY, no odor, moist
	0.1 (lab)				
			5		
			10		
			15		

Completion Notes:

Backfilled with hydrated bentonite from 4' to 0.25' bls. Capped with grass.

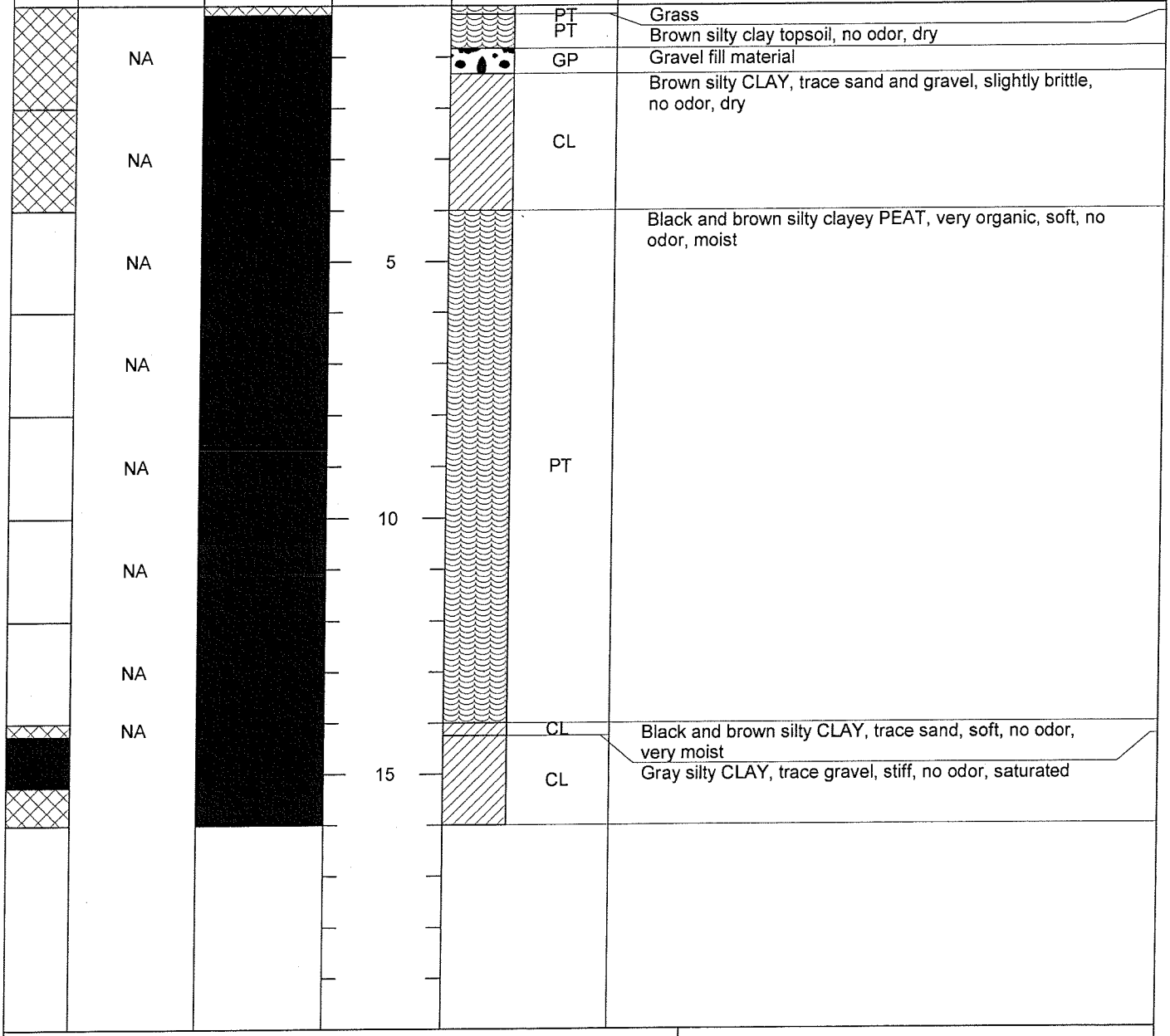
Site:
Former Clark Retail Station #646
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 | Page 1

SB-39

TriCore Environmental, LLC

Drill Method: Direct-Push	Date Drilled: 08-07-08	Logged By:
Boring Dia: 2.125 Inches	DTW While Drilling: 14.25 Feet	M. Czako



Completion Notes:

Backfilled with bentonite from 16' to 0.167' bls. Capped with grass.

Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018

SB-40

TriCore Environmental, LLC

Drill Method:	Direct-Push	Date Drilled:	08-07-08	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	15.5 Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
	0			PT	Grass
	0			PT	Brown silty clayey topsoil, some organics, trace gravel and sand, no odor, dry
	0			SC	Brown silty clayey SAND, trace gravel, no odor, dry
	0			CL	Brown silty CLAY, trace sand and gravel, slightly brittle, stiff, no odor, dry
	0		5	CL	Brown and tan silty CLAY, trace organics and gravel, stiff, no odor, dry
	0			CL	Dark gray silty CLAY, trace sand, slightly brittle, no odor, moist
	0			PT	Black and brown silty clayey PEAT, soft, slight odor, moist
	0		10		
	0			CL	Brown silty CLAY, some organics, soft, odor, moist
	0			CL	Brown silty CLAY, no odor, moist
	0		15		
	0			CL	Gray silty CLAY, trace gravel, semi-stiff, no odor, saturated
	0				
	0		20		
	0				

Completion Notes:

Backfilled with bentonite from 22' to 0.167' bls. Capped with grass.

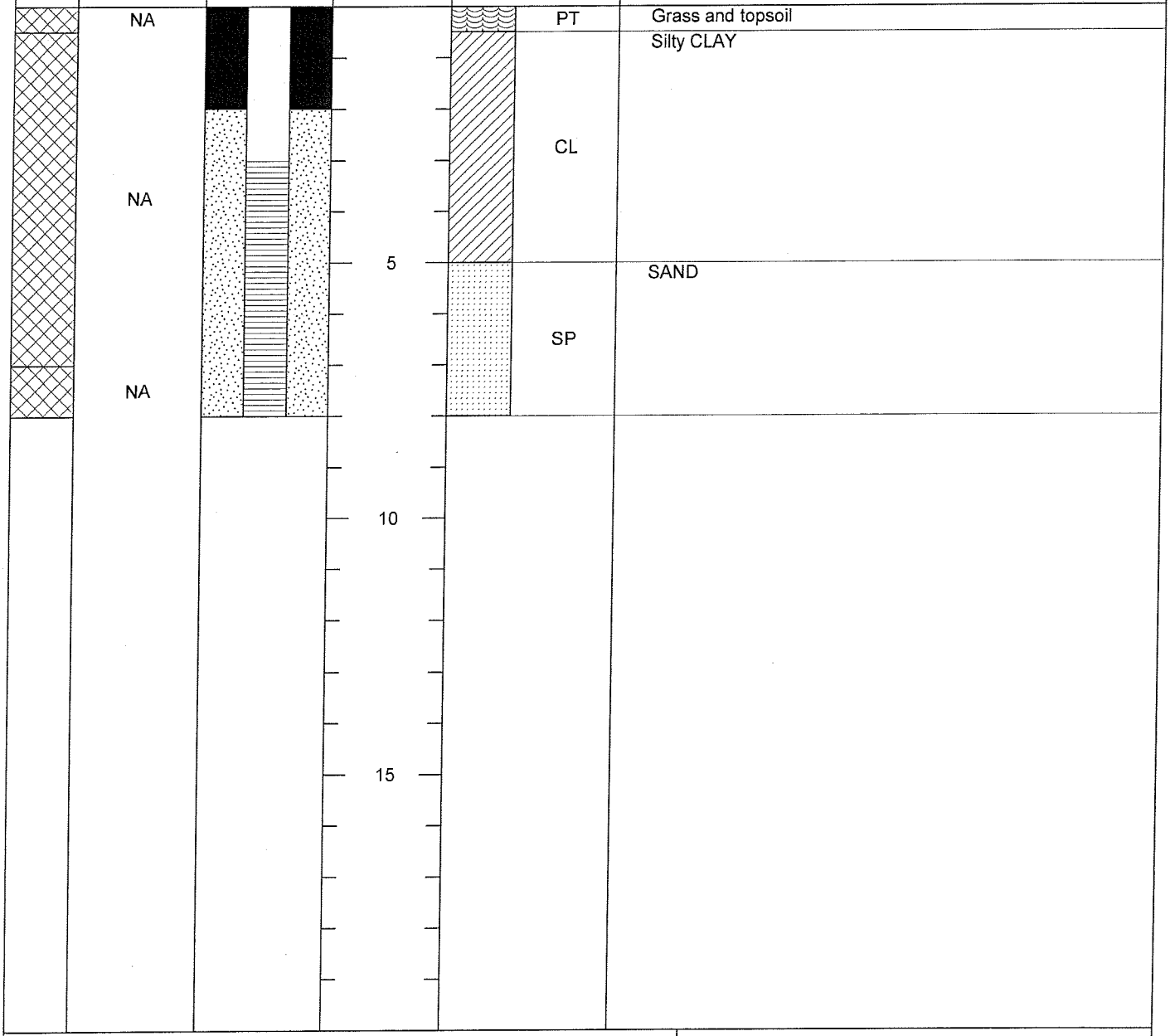
Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 Page 1

RW-2

TriCore Environmental, LLC

Drill Method:	NA	Date Drilled:	03-13-09	Logged By:
Boring Dia:	NA Inches	DTW While Drilling:	NA Feet	P. Worrall



Completion Notes:

4" sch 40, PVC casing from 2' als to 3' bls; 4" sch 40, 0.010" slotted PVC screen from 3' to 8' bls. Backfilled with sand from 8' to 2' bls, hydrated bentonite from 2' to 0.5' bls, topsoil from 0.5' to 0.0 bls. There is no manhole associated with this well since the well is a stickup well. The well will be cut down and a manhole installed during the DPE system installation activities.

Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

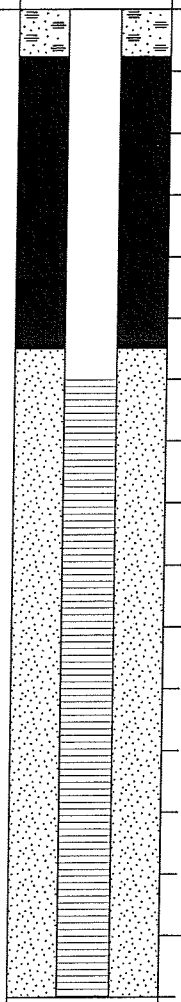
Project No.: 100018 | Page 1

RW-3

TriCore Environmental, LLC

Drill Method:	HSA	Date Drilled:	05/15/09	Logged By:
Boring Dia:	10.25 Inches	DTW While Drilling:	NA Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
					No soil samples were collected since the well was installed adjacent to SB-41. See soil boring log SB-41 for lithological description.



Completion Notes:

4" sch 40, PVC casing from 0.5' to 6' bls; 4" sch 40, 0.010" slotted PVC screen from 6' to 16' bls. Backfilled with sand from 16' to 5.5' bls, hydrated bentonite from 5.5' to 0.75' bls. Capped with concrete. 8" manhole installed flush to surface.

Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018

SB-41

TriCore Environmental, LLC

Drill Method:	Direct-Push	Date Drilled:	02/02/09	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	8 Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
				PT	Grass and topsoil
	0.0			CL	Brown silty CLAY, some organics, no odor, slightly moist, soft
	0.0			CL	Brown silty CLAY, some organics, trace sand, no odor, slightly moist, soft
	104				
	901 (lab)			CL	Brown silty CLAY, some organics, trace sand and gravel, no odor, slightly moist, soft
			5		Brown fine grained SAND, slight odor, moist
	> 9,999 (lab)			SP	
	7,754			SP	Gray fine grained SAND, odor, saturated @ 8'
			10		Gray fine grained SAND, slight odor, saturated
	81.0				
	679			SP	
	138		15		

Completion Notes:

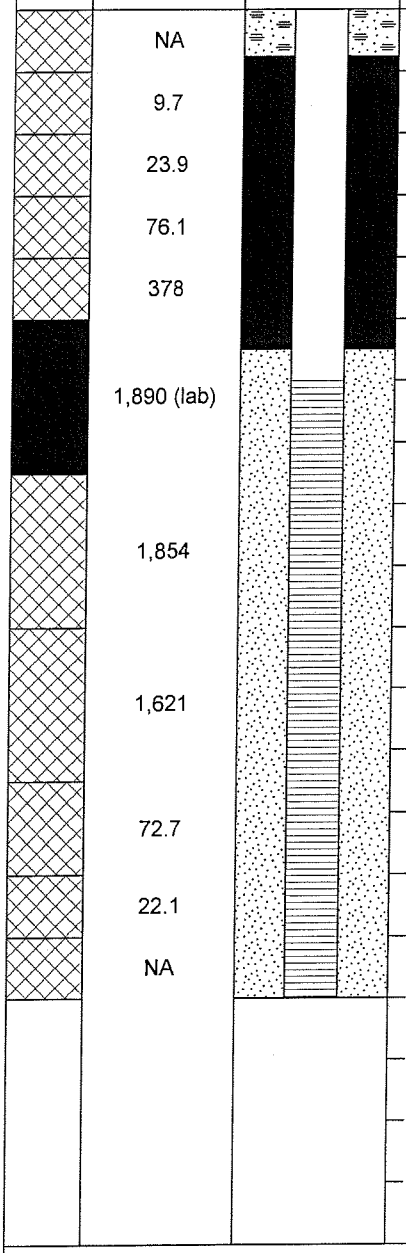
Backfilled with bentonite from 16' to 0.25' bls. Capped with grass.

Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 | Page 1

RW-4

TriCore Environmental, LLC	Drill Method: HSA	Date Drilled: 05/15/09	Logged By: M. Czako
	Boring Dia: 10.25 Inches	DTW While Drilling: 7.5 Feet	



Sample	PID (ppm)	Depth (feet)	Lithology	Description
	NA		Concrete	Concrete
			GW	Gravel fill material
	9.7		CL	Brown CLAY, trace gray silt, slight odor, slightly moist
	23.9		CL	Brown CLAY, trace gray silt, trace sand and gravel, slight odor, slightly moist
	76.1		CL	Gray silty brown CLAY, slight odor, slightly moist
	378		CL	no odor
	1,890 (lab)	5	SP	Brown fine grained SAND, odor, moist, saturated @ 7.5'
	1,854			Gray fine grained SAND, odor, black staining from 9.25' to 9.5', saturated
	1,621	10	SP	
	72.7			
	22.1			Gray fine grained SAND, no odor, saturated
	NA	15	SP	

Completion Notes:

4" sch 40, PVC casing from 0.5' to 6' bls; 4" sch 40, 0.010" slotted PVC screen from 6' to 16' bls. Backfilled with sand from 16' to 5.5' bls, hydrated bentonite from 5.5' to 0.75' bls. Capped with concrete. 8" manhole installed flush to surface.

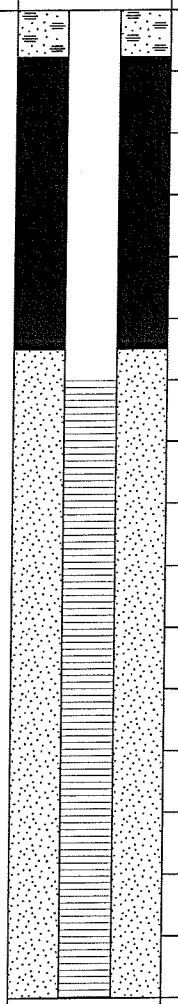
Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 Page 1

RW-5

TriCore Environmental, LLC

Drill Method:	HSA	Date Drilled:	05/15/09	Logged By:
Boring Dia:	10.25 Inches	DTW While Drilling:	NA Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
			5 10 15		No soil samples were collected since the well was installed adjacent to SB-44. See soil boring log SB-44 for lithological description.

Completion Notes:

4" sch 40, PVC casing from 0.5' to 6' bls; 4" sch 40, 0.010" slotted PVC screen from 6' to 16' bls. Backfilled with sand from 16' to 5.5' bls, hydrated bentonite from 5.5' to 0.75' bls. Capped with concrete. 8" manhole installed flush to surface.

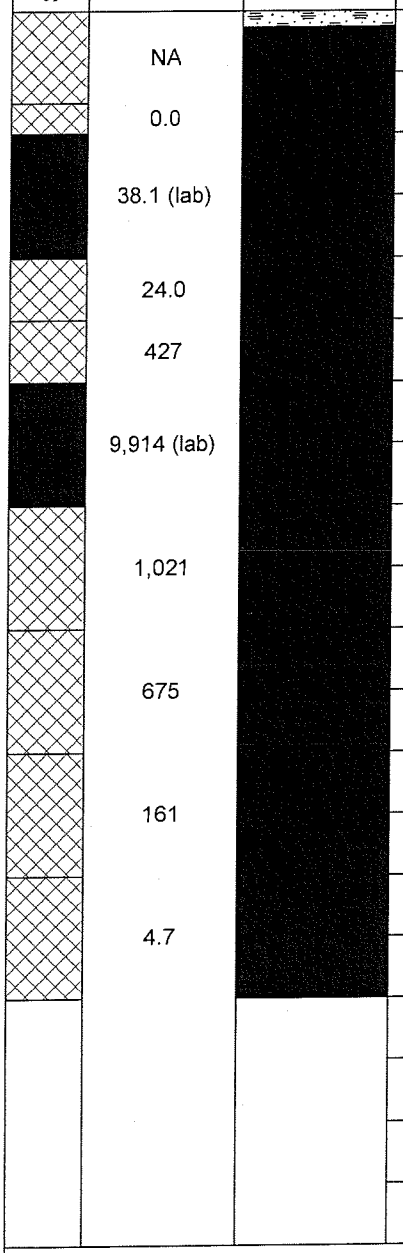
Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 Page 1

SB-44

TriCore Environmental, LLC

Drill Method:	Direct-Push	Date Drilled:	02/02/09	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	8 Feet	M. Czako



Lithology	Description
Concrete	Concrete
GW	Gravel fill material
CL	Brown silty CLAY, trace sand and gravel, no odor, slightly moist
CL	Brown silty CLAY, little gray silt, trace sand and gravel, semi-stiff, slight odor, slightly moist
SP	Brown fine grained SAND, odor, moist
SP	Gray fine grained SAND, odor, saturated @ 8'
SP	Gray fine grained SAND, no odor, saturated

Completion Notes:

Backfilled with bentonite from 16' to 0.25' bls. Capped with concrete.

Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

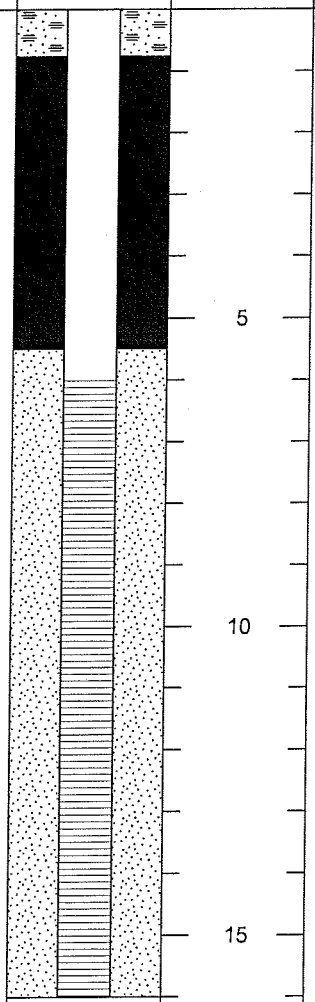
Project No.: 100018

RW-6

TriCore Environmental, LLC

Drill Method:	HSA	Date Drilled:	05/15/09	Logged By:
Boring Dia:	10.25 Inches	DTW While Drilling:	NA Feet	M. Czako

Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
					No soil samples were collected since the well was installed adjacent to SB-45. See soil boring log SB-45 for lithological description.



Completion Notes:

4" sch 40, PVC casing from 0.5' to 6' bls; 4" sch 40, 0.010" slotted PVC screen from 6' to 16' bls. Backfilled with sand from 16' to 5.5' bls, hydrated bentonite from 5.5' to 0.75' bls. Capped with concrete. 8" manhole installed flush to surface.

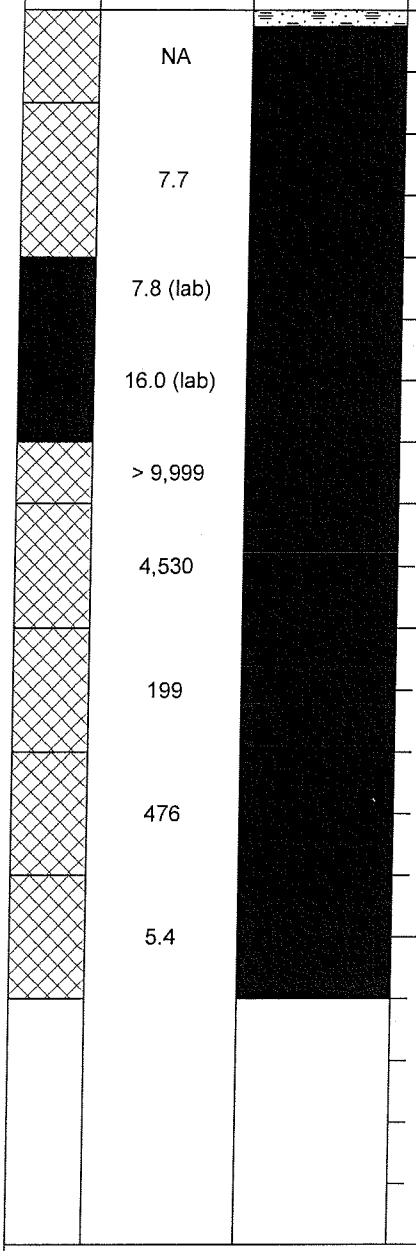
Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 Page 1

SB-45

TriCore Environmental, LLC

Drill Method:	Direct-Push	Date Drilled:	02/02/09	Logged By:
Boring Dia:	2.125 Inches	DTW While Drilling:	7 Feet	M. Czako



Sample	PID (ppm)	Completion	Depth (feet)	Lithology	Description
				Concrete	Concrete
	NA			GW	Gravel fill material
	7.7			CL	Brown silty CLAY, trace silt, sand and gravel, stiff, no odor, slightly moist
	7.8 (lab)		5		
	16.0 (lab)				
	> 9,999			CL	Grayish-brown silty CLAY, trace silt, sand and gravel, stiff, no odor, saturated @ 7'
				SP	Brown fine grained SAND, odor, saturated
	4,530				Gray fine grained SAND, odor, saturated
			10		
	199			SP	
	476				
					Gray fine grained SAND, no odor, saturated
	5.4		15	SP	

Completion Notes:

Backfilled with bentonite from 16' to 0.25' bls. Capped with concrete.

Site:
Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Illinois 60084
IEMA No.: 892744 and 903199
LPC No.: 0971855024

Project No.: 100018 Page 1

APPENDIX C

ANALYTICAL LABORATORY REPORTS AND CERTIFICATIONS - GROUNDWATER

Pace Analytical™
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	TriCore Environmental, LLC
Address:	1800 W. Hawthorne Lane, Suite P, West Chicago, Illinois 60185
Email To:	miczako@comcast.net
Phone:	630-520-9973
Fax	630-520-9976
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Marcos I. Czako
Copy To:	
Purchase Order No.:	100018
Project Name:	Former Clark #646
Project Number:	100018

Section C Invoice Information:

Attention:	Shawn Rodeck
Company Name:	TriCore Environmental, LLC
Address:	1800 W. Hawthorne Lane, Suite P
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☑ UST ☐ RCRA ☐ OTHER

SITE LOCATION

☐ GA ☐ IL ☑ IN ☐ MI ☐ NC
☐ OH ☐ SC ☐ WI ☐ OTHER

Filtered (Y/N): N N

Requested Analysis

Pace Project No. / Lab I.D.: 880335

Section D Required Client Information

SAMPLE ID
One Character per box.
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL WP; WIPE AR; AIR OT; OTHER TS; TISSUE

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	TPH	COD	RCRA Metals	TKN	Total Phosphorus		Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
1	SB-33 @ 10-11	SL	G			1/18/07	1320		3	3								X	X	X			001	N	3-4oz AG
2	SB-34 @ 8-10	SL	G			1/18/07	1519		3	3								X	X	X			002	N	
3	SB-35 @ 8-10	SL	G			1/18/07	1640		3	3								X	X	X			003	N	
4	SB-36 @ 10-11	SL	G			1/18/07	1025		3	3								X	X	X			004	N	
5	SB-37 @ 6-8	SL	G			1/18/07	1150		3	3								X	X	X			005	N	↓
6	MP-1	WT	G			1/19/07	1345		5		1	1	3					X	X	X	X	X	006	N	2-250ml C.P., 3-4oz
7	MW-11S	WT	G			1/19/07	1405		5		1	1	3					X	X	X	X	X	007	N	
8	MW-2	WT	G			1/19/07	1335		5		1	1	3					X	X	X	X	X	008	N	
9	MW-26	WT	G			1/19/07	1320		5		1	1	3					X	X	X	X	X	009	N	
10	MW-18	WT	G			1/19/07	1307		5		1	1	3					X	X	X	X	X	010	N	↓ ↓
11																									
12																									

Additional Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
[signature]	1/19/07	1510	[signature]	1/19/07	1510		Y/N	Y/N	Y/N
[signature]	1/19/07	1700	PDS				Y/N	Y/N	Y/N
PDS	1/20/07	1150	[signature]	1/20/07	1150	1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Marcos I. Czako

SIGNATURE of SAMPLER:

DATE Signed (MM / DD / YY)

Sample Condition Upon Receipt

Pace Analytical

Client Name: TRICORE Project # 880335

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other PDS

Tracking #: [redacted]

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used JB Type of Ice: (Wet) Blue None ☐ Samples on Ice, cooling process has begun

Cooler Temperature 1.0 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: MB 1-20-07

Temp should be above freezing to 6°C Comments:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.	
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.	
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.	
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.	
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.	
Short Hold Time Analysis (<72hr):	☐Yes ☑No ☐N/A	6.	
Rush Turn Around Time Requested:	☑Yes ☐No ☐N/A	7. 5 day TAT	
Sufficient Volume:	☑Yes ☐No ☐N/A	8.	
Correct Containers Used:	☑Yes ☐No ☐N/A	9.	
-Pace Containers Used:	☑Yes ☐No ☐N/A		
Containers Intact:	☑Yes ☐No ☐N/A	10.	
Filtered volume received for Dissolved tests	☐Yes ☑No ☑N/A	11.	
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.	
-Includes date/time/ID/Analysis Matrix: S/W			
All containers needing preservation have been checked.	☑Yes ☐No ☐N/A	13.	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes ☐No ☐N/A		
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☐Yes ☐No	Initial when completed MB	Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☑N/A	14.	
Headspace in VOA Vials (>6mm):	☐Yes ☑No ☐N/A	15.	
Trip Blank Present:	☐Yes ☐No ☑N/A	16.	
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A		
Pace Trip Blank Lot # (if purchased):			

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 1-22-07

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 - 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

880335

A. Site Identification

IEMA Incident #: 892744, 903199 IEPA LPC# (10-digit): 0971855024

Site Name: Former Clark Retail Station #646

Site Address (Not a P.O. Box): 399 West Liberty Street

City: Wauconda County: Lake ZIP Code: 60084

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. (initial)
2. Chain-of-custody procedures were followed in the field. (initial)
3. Sample integrity was maintained by proper preservation. (initial)
4. All samples were properly labeled. (initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms (initial)
2. Sample integrity was maintained by proper preservation. (initial)
3. All samples were properly labeled. (initial)

880335

4. Quality assurance/quality control procedures were established and carried out. LW (initial)

5. Sample holding times were not exceeded. LW (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. LW (initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). LW (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name: Marcos I. Czako

Title: Project Manager

Company: TriCore Environmental, LLC

Address: 1800 West Hawthorne Lane, Suite P

City, State, ZIP: West Chicago, Illinois 60185

Phone: 630-520-9973

Signature: [signature]

Date: 1/19/06

Laboratory Representative

Name: Laurie Woelfel

Title: Project Manager

Company: Pace Analytical

Address: 1241 Bellevue St

City, State, ZIP: Green Bay WI 54302

Phone: 920 469 2436

Signature: Laurie Woelfel

Date: 1/26/07

Pace Analytical®

1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920-469-2436, Fax: 920-469-8827

Analytical Report Number: 880335

Client: TRICORE ENVIRONMENTAL, LLC.
Project Name: FORMER CLARK #646
Project Number: 100018

Lab Contact: Laurie Woelfel
Collected By: MARCOS CZAKO
Report Serial No: 880335012920070833

Lab Sample Number	Field ID	Matrix	Collection Date
880335-001	SB-33 @ 10-11	SOIL	01/18/07 13:20
880335-002	SB-34 @ 8-10	SOIL	01/18/07 18:19
880335-003	SB-35 @ 8-10	SOIL	01/18/07 16:40
880335-004	SB-36 @ 10-11	SOIL	01/18/07 10:25
880335-005	SB-37 @ 6-8	SOIL	01/18/07 11:50
880335-006	MP-1	WATER	01/19/07 13:45
880335-007	MW-11S	WATER	01/19/07 14:05
880335-008	MW-2	WATER	01/19/07 13:35
880335-009	MW-26	WATER	01/19/07 13:20
880335-010	MW-18	WATER	01/19/07 13:07

I certify that the data contained in this Final Report has been generated and reviewed in accordance with approved methods and Laboratory Standard Operating Procedure. Exceptions, if any, are discussed in the accompanying sample comments. Release of this final report is authorized by Laboratory management, as is verified by the following signature. This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. The sample results relate only to the analytes of interest tested.

Approval Signature

Date

Pace Analytical
Services, Inc.

Analytical Report Number: 880335

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : MP-1

Matrix Type : WATER
Collection Date : 01/19/07
Report Date : 01/29/07
Lab Sample Number : 880335-006

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Barium		190	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Cadmium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Chromium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Lead	<	7.5	7.5	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Mercury	<	0.20	0.20	1	ug/L		01/23/07	SW846 7470A	SW846 7470A
Selenium	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Silver	<	10	10	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
COD		34	20	1	mg/L		01/22/07	EPA 410.4	EPA 410.4
Nitrogen, Total Kjeldahl	<	1.0	1.0	1	mg/L		01/24/07	EPA 351.2	EPA 351.2
Phosphorus	<	0.50	0.50	1	mg/L		01/23/07	EPA 365.4	EPA 365.4

TPH - GASOLINE

Prep Date: 01/23/07

Analyte	Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	3100	100	1	ug/L		01/23/07	SW846 5030B	SW846 M8015

Pace Analytical
Services, Inc.

Analytical Report Number: 880335

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : MW-11S

Matrix Type : WATER
Collection Date : 01/19/07
Report Date : 01/26/07
Lab Sample Number : 880335-007

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Barium		58	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Cadmium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Chromium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Lead	<	7.5	7.5	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Mercury	<	0.20	0.20	1	ug/L		01/23/07	SW846 7470A	SW846 7470A
Selenium	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Silver	<	10	10	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
COD		28	20	1	mg/L		01/22/07	EPA 410.4	EPA 410.4
Nitrogen, Total Kjeldahl	<	1.0	1.0	1	mg/L		01/24/07	EPA 351.2	EPA 351.2
Phosphorus	<	0.50	0.50	1	mg/L		01/23/07	EPA 365.4	EPA 365.4

TPH - GASOLINE

Prep Date: 01/23/07

Analyte	Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	200	100	1	ug/L		01/23/07	SW846 5030B	SW846 M8015

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Green Bay, WI 54302
920-469-2436

Analytical Report Number: 880335

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : MW-2

Matrix Type : WATER
Collection Date : 01/19/07
Report Date : 01/26/07
Lab Sample Number : 880335-008

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Barium		130	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Cadmium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Chromium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Lead	<	7.5	7.5	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Mercury	<	0.20	0.20	1	ug/L		01/23/07	SW846 7470A	SW846 7470A
Selenium	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Silver	<	10	10	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
COD		96	20	1	mg/L		01/22/07	EPA 410.4	EPA 410.4
Nitrogen, Total Kjeldahl		1.1	1.0	1	mg/L		01/24/07	EPA 351.2	EPA 351.2
Phosphorus	<	0.50	0.50	1	mg/L		01/23/07	EPA 365.4	EPA 365.4

TPH - GASOLINE

Prep Date: 01/23/07

Analyte	Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	12000	2500	25	ug/L		01/23/07	SW846 5030B	SW846 M8015

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Green Bay, WI 54302
920-469-2436

Analytical Report Number: 880335

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : MW-26

Matrix Type : WATER
Collection Date : 01/19/07
Report Date : 01/26/07
Lab Sample Number : 880335-009

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Barium		55	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Cadmium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Chromium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Lead	<	7.5	7.5	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Mercury	<	0.20	0.20	1	ug/L		01/23/07	SW846 7470A	SW846 7470A
Selenium	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Silver	<	10	10	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
COD		66	20	1	mg/L		01/22/07	EPA 410.4	EPA 410.4
Nitrogen, Total Kjeldahl	<	1.0	1.0	1	mg/L		01/24/07	EPA 351.2	EPA 351.2
Phosphorus	<	0.50	0.50	1	mg/L		01/23/07	EPA 365.4	EPA 365.4

TPH - GASOLINE

Prep Date: 01/23/07

Analyte	Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	130	100	1	ug/L		01/23/07	SW846 5030B	SW846 M8015

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920-469-2436

Analytical Report Number: 880335

Client : TRICORE ENVIRONMENTAL, LLC.
Project Name : FORMER CLARK #646
Project Number : 100018
Field ID : MW-18

Matrix Type : WATER
Collection Date : 01/19/07
Report Date : 01/26/07
Lab Sample Number : 880335-010

INORGANICS

Test		Result	EQL	Dilution	Units	Code	Anl Date	Prep Method	Anl Method
Arsenic	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Barium		170	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Cadmium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Chromium	<	5.0	5.0	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Lead	<	7.5	7.5	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Mercury	<	0.20	0.20	1	ug/L		01/23/07	SW846 7470A	SW846 7470A
Selenium	<	20	20	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
Silver	<	10	10	1	ug/L		01/24/07	SW846 3010A	SW846 6010B
COD	<	21	21	1	mg/L		01/22/07	EPA 410.4	EPA 410.4
Nitrogen, Total Kjeldahl		8.5	1.0	1	mg/L		01/24/07	EPA 351.2	EPA 351.2
Phosphorus	<	0.50	0.50	1	mg/L		01/23/07	EPA 365.4	EPA 365.4

TPH - GASOLINE

Prep Date: 01/23/07

Analyte		Result	EQL	Dil.	Units	Code	Anl Date	Prep Method	Anl Method
TPH - Gasoline	<	100	100	1	ug/L		01/23/07	SW846 5030B	SW846 M8015

Pace Analytical
Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

Lab Number	TestGroupID	Field ID	Comment
880335-002	TPHGAS-S	SB-34 @ 8-10	Sample exhibits hydrocarbon pattern resembling weathered gasoline.
880335-006	TPHGAS-W	MW-1	Sample exhibits hydrocarbon pattern resembling gasoline.
880335-008	TPHGAS-W	MW-2	Sample exhibits hydrocarbon pattern resembling gasoline.

Qualifier Codes

Flag	Applies To	Explanation
A	Inorganic	Analyte is detected in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
B	Inorganic	The analyte has been detected between the method detection limit and the reporting limit.
B	Organic	Analyte is present in the method blank. Method blank criteria is evaluated to the laboratory method detection limit. Additionally, method blank acceptance may be based on project specific criteria or determined from analyte concentrations in the sample and are evaluated on a sample by sample basis.
C	All	Elevated detection limit.
D	All	Analyte value from diluted analysis or surrogate result not applicable due to sample dilution.
E	Inorganic	Estimated concentration due to matrix interferences. During the metals analysis the serial dilution failed to meet the established control limits of 0-10%. The sample concentration is greater than 50 times the IDL for analysis done on the ICP or 100 times the IDL for analysis done on the ICP-MS. The result was flagged with the E qualifier to indicate that a physical interference was observed.
E	Organic	Analyte concentration exceeds calibration range.
F	Inorganic	Due to potential interferences for this analysis by Inductively Coupled Plasma techniques (SW-846 Method 6010), this analyte has been confirmed by and reported from an alternate method.
F	Organic	Surrogate results outside control criteria.
G	All	The result is estimated because the concentration is less than the lowest calibration standard concentration utilized in the initial calibration. The method detection limit is less than the reporting limit specified for this project.
H	All	Preservation, extraction or analysis performed past holding time.
HF	Inorganic	This test is considered a field parameter, and the recommended holding time is 15 minutes from collection. The analysis was performed in the laboratory beyond the recommended holding time.
J	All	Concentration detected equal to or greater than the method detection limit but less than the reporting limit.
K	Organic	Detection limit may be elevated due to the presence of an unrequested analyte.
L	All	Elevated detection limit due to low sample volume.
M	Organic	Sample pH was greater than 2
N	All	Spiked sample recovery not within control limits.
O	Organic	Sample received overweight.
P	Organic	The relative percent difference between the two columns for detected concentrations was greater than 40%.
Q	All	The analyte has been detected between the limit of detection (LOD) and limit of quantitation (LOQ). The results are qualified due to the uncertainty of analyte concentrations within this range.
S	Organic	The relative percent difference between quantitation and confirmation columns exceeds internal quality control criteria. Because the result is unconfirmed, it has been reported as a non-detect with an elevated detection limit.
U	All	The analyte was not detected at or above the reporting limit.
V	All	Sample received with headspace.
W	All	A second aliquot of sample was analyzed from a container with headspace.
X	All	See Sample Narrative.
Z	Organics	This compound was separated in the check standard but it did not meet the resolution criteria as set forth in SW846.
&	All	Laboratory Control Spike recovery not within control limits.
*	All	Precision not within control limits.
+	Inorganic	The sample result is greater than four times the spike level: therefore, the percent recovery is not evaluated.
<	All	The analyte was not detected at or above the reporting limit.
1	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses passed QC based on precision criteria.
2	Inorganic	Dissolved analyte or filtered analyte greater than total analyte; analyses failed QC based on precision criteria.
3	Inorganic	BOD result is estimated due to the BOD blank exceeding the allowable oxygen depletion.
4	Inorganic	BOD duplicate precision not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
5	Inorganic	BOD result is estimated due to insufficient oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
6	Inorganic	BOD laboratory control sample not within control limits. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
7	Inorganic	BOD result is estimated due to complete oxygen depletion. Due to the 48 hour holding time for this test, it is not practical to reanalyze and try to correct the deficiency.
8	Inorganic	Sample was received unpreserved. Sample was preserved either at the time of receipt or at the time of sample preparation.
9	Inorganic	Sample was received with insufficient preservation. Acid was added either at the time of receipt or at the time of sample preparation.

Test Group Name	880335-001	880335-002	880335-003	880335-004	880335-005	880335-006	880335-007	880335-008	880335-009	880335-010
ARSENIC	B	B	B	B	B	B	B	B	B	B
BARIUM	B	B	B	B	B	B	B	B	B	B
CADMIUM	B	B	B	B	B	B	B	B	B	B
CHROMIUM	B	B	B	B	B	B	B	B	B	B
COD						B	B	B	B	B
COD - SOLUBLE	B	B	B	B	B					
LEAD	B	B	B	B	B	B	B	B	B	B
MERCURY	B	B	B	B	B	B	B	B	B	B
NITROGEN, TOTAL KJELDAHL						B	B	B	B	B
PERCENT SOLIDS	B	B	B	B	B					
PHOSPHORUS, TOTAL						B	B	B	B	B
SELENIUM	B	B	B	B	B	B	B	B	B	B
SILVER	B	B	B	B	B	B	B	B	B	B
TPH - GASOLINE	G	G	G	G	G	G	G	G	G	G

Code	Facility	Address	IL Certification
B	Green Bay Lab (Bellevue St)	1241 Bellevue Street, Suite 9 Green Bay, WI 54302	200050
G	Green Bay Lab (Industrial Dr)	1795 Industrial Drive Green Bay, WI 54302	200051

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: WETCHEM
QC Batch Number: 17806
Prep Method: EPA 410.4
Analytical Method: EPA 410.4

QC Type	Client Sample ID	Lab Sample ID
MB	WCG1928-099MB	WCG1928-099MB
LCS	WCG1928-099MBLCS	WCG1928-099MBLCS
MS	MW-18MS	880335-010MS
MSD	MW-18MSD	880335-010MSD

Client Sample ID	Lab Sample ID	MB ID
MW-1	880335-006	MB
MW-2	880335-008	MB
MW-18	880335-010	MB

Client Sample ID	Lab Sample ID	MB ID
MW-11S	880335-007	MB
MW-26	880335-009	MB

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	UCL %	RPD %
COD	< 9.7	400.0	399.5	99.9		---	---	---		---		90	110	10	880335-010	18.74	208.3	234.3	103.5		208.3	220.8	97.0		5.9		90	110	10

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17806

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: METALS
QC Batch Number: 17807
Prep Method: SW846 7470A
Analytical Method: SW846 7470A

QC Type	Client Sample ID	Lab Sample ID
MB	MBWMTG1985-68	MBWMTG1985-68
LCS	LCSWMTG1985-68	LCSWMTG1985-68
MS	MW-1MS	880335-006MS
MS	880255-003MS	880255-003MS
MS	880226-001MS	880226-001MS
MSD	MW-1MSD	880335-006MSD
MSD	880255-003MSD	880255-003MSD
MSD	880226-001MSD	880226-001MSD

Client Sample ID	Lab Sample ID	MB ID
MW-1	880335-006	MB
MW-2	880335-008	MB
MW-18	880335-010	MB

Client Sample ID	Lab Sample ID	MB ID
MW-11S	880335-007	MB
MW-26	880335-009	MB

Test Name	Method Blank Result	Conc	LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number	Parent Result	Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	UCL %	RPD %
Mercury	<	0.072	5.0	5	100.7		---	---	---		---		85	115	20	880226-001	<	0.072	5.0	5.1	101.1		5.0	5.1	101.1		0.0		85	115	20
Mercury	<	0.072	5.0	5	100.7		---	---	---		---		85	115	20	880255-003	<	0.072	5.0	5.2	103.8		5.0	5.3	105.4		1.6		85	115	20
Mercury	<	0.072	5.0	5	100.7		---	---	---		---		85	115	20	880335-006	<	0.072	5.0	5.2	103.9		5.0	5.2	104.1		0.1		85	115	20

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
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Report Date: 1/26/2007
QC Batch Number: 17807

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: WETCHEM
QC Batch Number: 17812
Prep Method: EPA 365.4
Analytical Method: EPA 365.4

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2101-075MB	WCG2101-075MB
LCS	WCG2101-075MBLCS	WCG2101-075MBLCS
MS	880337-001MS	880337-001MS
MS	MW-18MS	880335-010MS
MS	880281-003MS	880281-003MS
MSD	880337-001MSD	880337-001MSD
MSD	MW-18MSD	880335-010MSD
MSD	880281-003MSD	880281-003MSD

Client Sample ID	Lab Sample ID	MB ID
MW-1	880335-006	MB
MW-2	880335-008	MB
MW-18	880335-010	MB

Client Sample ID	Lab Sample ID	MB ID
MW-11S	880335-007	MB
MW-26	880335-009	MB

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	LCS Recovery %	LCS Recovery C	LCSD Spiked Conc	LCSD Recovery Conc	LCSD Recovery %	LCSD Recovery C	LCS/LCSD RPD %	LCS/LCSD RPD C	LCS/LCSD Control Limits LCL %	LCS/LCSD Control Limits UCL %	LCS/LCSD Control Limits RPD %	Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery Conc	MS Recovery %	MS Recovery C	MSD Spiked Conc	MSD Recovery Conc	MSD Recovery %	MSD Recovery C	MS/MSD RPD %	MS/MSD RPD C	MS/MSD Control Limits LCL %	MS/MSD Control Limits UCL %	MS/MSD Control Limits RPD %
Phosphorus	< 0.13	5.0	4.6	92.3		---	---	---		---		90	110	20	880335-010	< 0.13	5.0	4.9	98.5		5.0	4.9	98.8		0.3		90	110	20
Phosphorus	< 0.13	5.0	4.6	92.3		---	---	---		---		90	110	20	880337-001	2.3	5.0	7.1	95.9		5.0	7	93.7		1.6		90	110	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
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Report Date: 1/26/2007
QC Batch Number: 17812

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: GAS
QC Batch Number: 17818
Prep Method: SW846 5030B
Analytical Method: SW846 M8015B

QC Type	Client Sample ID	Lab Sample ID
MB	GG2127-12MB	GG2127-12MB
LCS	GG2127-12MBLCS	GG2127-12MBLCS
LCSD	GG2127-12MBLCSD	GG2127-12MBLCSD

Client Sample ID	Lab Sample ID	MB ID
MW-1	880335-006	MB
MW-2	880335-008	MB
MW-18	880335-010	MB

Client Sample ID	Lab Sample ID	MB ID
MW-11S	880335-007	MB
MW-26	880335-009	MB

Test Name	Method Blank Result Conc		LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD %	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number		Parent Result Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD %	C	MS/MSD Control Limits LCL %	UCL %	RPD %
TPH - Gasoline	J	66	1000.0	1068.1	107		1000.0	1057.5	106		1.0		85	117	20	---		---	---	---	---		---	---	---		---		---	---	---

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17818

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: WETCHEM
QC Batch Number: 17828
Prep Method: EPA 351.2
Analytical Method: EPA 351.2

QC Type	Client Sample ID	Lab Sample ID
MB	WCG2101-076MB	WCG2101-076MB
LCS	WCG2101-076MBLCS	WCG2101-076MBLCS
MS	880356-003MS	880356-003MS
MS	880281-003MS	880281-003MS
MSD	880356-003MSD	880356-003MSD
MSD	880281-003MSD	880281-003MSD

Client Sample ID	Lab Sample ID	MB ID
MW-1	880335-006	MB
MW-2	880335-008	MB
MW-18	880335-010	MB

Client Sample ID	Lab Sample ID	MB ID
MW-11S	880335-007	MB
MW-26	880335-009	MB

Test Name	Method Blank Result Conc	LCS Spiked Conc	LCS Recovery Conc	LCS Recovery %	LCS Recovery C	LCSD Spiked Conc	LCSD Recovery Conc	LCSD Recovery %	LCSD Recovery C	LCS/LCSD RPD %	LCS/LCSD RPD C	LCS/LCSD Control Limits LCL %	LCS/LCSD Control Limits UCL %	LCS/LCSD Control Limits RPD %	Parent Sample Number	Parent Result Conc	MS Spiked Conc	MS Recovery Conc	MS Recovery %	MS Recovery C	MSD Spiked Conc	MSD Recovery Conc	MSD Recovery %	MSD Recovery C	MS/MSD RPD %	MS/MSD RPD C	MS/MSD Control Limits LCL %	MS/MSD Control Limits UCL %	MS/MSD Control Limits RPD %
Nitrogen, Total Kjeldahl	< 0.48	5.0	4.9	97.9		---	---	---		---		90	110	20	880356-003	1.5	5.0	6.9	108.0		5.0	6.9	108.5		0.4		90	110	20

Conc = mg/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
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Report Date: 1/26/2007
QC Batch Number: 17828

Pace Analytical Services, Inc.

1241 Bellevue Street
Green Bay, WI 54302
920-469-2436
Fax: 920-469-8827

QC Summary

Batch: 880335
Lab Section: METALS
QC Batch Number: 17837
Prep Method: SW846 3010A
Analytical Method: SW846 6010B

QC Type	Client Sample ID	Lab Sample ID
MB	MBWMTG2082-48	MBWMTG2082-48
LCS	LCSWMTG2082-48	LCSWMTG2082-48
MS	MW-1MS	880335-006MS
MSD	MW-1MSD	880335-006MSD

Client Sample ID	Lab Sample ID	MB ID
MW-1	880335-006	MB
MW-2	880335-008	MB
MW-18	880335-010	MB

Client Sample ID	Lab Sample ID	MB ID
MW-11S	880335-007	MB
MW-26	880335-009	MB

Test Name	Method Blank Result	Conc	LCS Spiked Conc	LCS Recovery Conc	%	C	LCSD Spiked Conc	LCSD Recovery Conc	%	C	LCS/LCSD RPD	%	C	LCS/LCSD Control Limits LCL %	UCL %	RPD %	Parent Sample Number	Parent Result	Conc	MS Spiked Conc	MS Recovery Conc	%	C	MSD Spiked Conc	MSD Recovery Conc	%	C	MS/MSD RPD	%	C	MS/MSD Control Limits LCL %	UCL %	RPD %
Arsenic	<	7.6	500.0	512.3	102.5		---	---	---		---			80	120	20	880335-006	<	7.6	500.0	515.5	103.1		500.0	511	102.2		0.9			75	125	20
Barium	<	1	500.0	494.6	98.9		---	---	---		---			80	120	20	880335-006		186.5	500.0	689	100.5		500.0	677.9	98.3		1.6			75	125	20
Cadmium	<	0.74	500.0	501.3	100.3		---	---	---		---			80	120	20	880335-006	<	0.74	500.0	485.1	97.0		500.0	481.6	96.3		0.7			75	125	20
Chromium	<	1.3	500.0	515.3	103.1		---	---	---		---			80	120	20	880335-006	<	1.3	500.0	511.1	102.2		500.0	507.5	101.5		0.7			75	125	20
Lead	<	3.4	500.0	508.3	101.7		---	---	---		---			80	120	20	880335-006	<	3.4	500.0	492.8	98.6		500.0	487.8	97.6		1.0			75	125	20
Selenium	<	8.3	500.0	515.6	103.1		---	---	---		---			80	120	20	880335-006	<	8.3	500.0	512.3	102.5		500.0	511.1	102.2		0.2			75	125	20
Silver	<	2.6	250.0	247.8	99.1		---	---	---		---			80	120	20	880335-006	<	2.6	250.0	257.6	103.1		250.0	254.7	101.9		1.2			75	125	20

Conc = ug/L unless otherwise noted
C = QC Code, see Qualifer Sheet
Parent Result is reported down to MDL in order to allow Validation of this worksheet
The %R and RPD results are calculated from raw data values with more significant figures than are reported on this form.

Report Date: 1/26/2007
QC Batch Number: 17837

(Please Print Clearly)

Company Name:	TriCore
Branch/Location:	West Chicago, IL
Project Contact:	Marcos Czako
Phone:	630-520-9973
Project Number:	
Project Name:	Former Clark # 646
Project State:	IL
Sampled By (Print):	Patrick Worrall
Sampled By (Sign):	[signature]
PO #:	Regulatory Program:

Pace Analytical® www.pacelabs.com

CHAIN OF CUSTODY

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	Marcos Czako
Mail To Company:	TriCore
Mail To Address:	1800 W. Hawthorne Ln. Ste P West Chicago, IL 60185
Invoice To Contact:	Shawn Rodeck
Invoice To Company:	TriCore
Invoice To Address:	Same As Above
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge
W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

FILTERED? (YES/NO): Y/N — N, N, N
PRESERVATION (CODE)*: Pick Letter — B, C, D

Analyses Requested: TPH GRO; COD TKN Total Phosphorus; RCRA Metals

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	TPH GRO	COD TKN Total Phosphorus	RCRA Metals	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-15	6/23/08	1300	GW	X	X	X			
002	MW-18	6/23/08	1235	GW	X	X	X		3-40mL 2-250mL C 1-250mL	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: standard

Transmit Prelim Rush Results by (complete what you want):

Email #1:	mczako@comcast.net
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	6/24/08 1350	[signature]	6/24/08 1350
[signature]	6/24/08 1700	Waltco	
Waltco	6/25/08 910	[signature] Schut	6/25/08

PACE Project No. 405568
Receipt Temp = 2.0 °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal
Present / Not Present
Intact / Not Intact

C019a(27Jun2006)

Version 6.0 06/14/06

ORIGINAL

Sample Condition Upon Receipt

Pace Analytical

Client Name: Tri Cove Project # 405568

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other Walter

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used N/A Type of Ice: Wet Blue None ☐ Samples on ice, cooling process has begun

Cooler Temperature R01 Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: 6/25/08 LRS

Temp should be above freezing to 6°C Comments:

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No ☐N/A	5.
Short Hold Time Analysis (<72hr):	☐Yes ☒No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☒No ☐N/A	7.
Sufficient Volume:	☒Yes ☐No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No ☐N/A	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
Containers Intact:	☒Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
All containers needing preservation have been checked.	☒Yes ☐No ☐N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	☒Yes ☐No ☐N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	☒Yes ☐No	Initial when completed LRS / Lot # of added preservative
Samples checked for dechlorination:	☐Yes ☐No ☒N/A	14.
Headspace in VOA Vials (>6mm):	☐Yes ☒No ☐N/A	15.
Trip Blank Present:	☐Yes ☐No ☒N/A	16.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: LW **Date:** 6/26/08

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

4055608

This page can be completed online.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident #: 892744, 903199 IEPA LPC# (10-digit): 0971855024

Site Name: Former Clark Retail Station #646

Site Address (Not a P.O. Box): 399 West Liberty Street

City: Wauconda County: Lake ZIP Code: 60084

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. (initial)
2. Chain-of-custody procedures were followed in the field. (initial)
3. Sample integrity was maintained by proper preservation. (initial)
4. All samples were properly labeled. (initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms LKW (initial)
2. Sample integrity was maintained by proper preservation. (initial)
3. All samples were properly labeled. (initial)

405568

This page can be completed online

4. Quality assurance/quality control procedures were established and carried out. LW (initial)

5. Sample holding times were not exceeded. LW (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. LW (initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). LW (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name: Patrick Worrall

Title: Geologist III

Company: TriCore Environmental, LLC

Address: 1800 West Hawthorne Lane, Suite P

City, State, ZIP: West Chicago, Illinois 60185

Phone: 630-520-9973

Signature:

Date: 6/26/08

Laboratory Representative

Name: Laurie Woelfel

Title: Project Manager

Company: Pace Analytical

Address: 1241 Bellevue Street

City, State, ZIP: Green Bay, WI 54302

Phone: 920-469-2436

Signature: _____

Date: _____

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

July 03, 2008

Marcos Czako
TriCore Environmental, LLC.
1800 West Hawthorne Lane
Suite P
West Chicago, IL 60185

RE: Project: FORMER CLARK #646
Pace Project No.: 405568

Dear Marcos Czako:
Enclosed are the analytical results for sample(s) received by the laboratory on June 25, 2008. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Laurie Woelfel

Laurie Woelfel

laurie.woelfel@pacelabs.com
Project Manager

Enclosures

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: FORMER CLARK #646
Pace Project No.: 405568

Green Bay Certification IDs
Florida (NELAP) Certification #: E87948
Illinois Certification #: 200050
California Certification #: 06246CA
New York Certification #: 11888
North Dakota Certification #: R-150
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 82
Louisiana Certification #: 04168

Green Bay Volatiles Certification IDs
Florida (NELAP) Certification #: E87951
California Certification #: 06247CA
Illinois Certification #: 200051
New York Certification #: 11887
North Dakota Certification #: R-200
North Carolina Certification #: 503
Minnesota Certification #: 055-999-334
South Carolina Certification #: 83006001
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
Kentucky Certification #: 83
Louisiana Certification #: 04169

Pace Analytical Services, Inc.
1241 Bellevue Street
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: FORMER CLARK #646
Pace Project No.: 405568

Lab ID	Sample ID	Matrix	Date Collected	Date Received
405568001	MW-15	Water	06/23/08 13:00	06/25/08 09:10
405568002	MW-18	Water	06/23/08 12:35	06/25/08 09:10

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SAMPLE ANALYTE COUNT

Project: FORMER CLARK #646
Pace Project No.: 405568

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
405568001	MW-15	EPA 351.2	DAW	1	PASI-G
		EPA 365.4	DAW	1	PASI-G
		EPA 410.4	RRS	1	PASI-G
		EPA 5030/8015 Mod.	SES	1	PASI-G
		EPA 6010	DLB	7	PASI-G
		EPA 7470	LMS	1	PASI-G
405568002	MW-18	EPA 351.2	DAW	1	PASI-G
		EPA 365.4	DAW	1	PASI-G
		EPA 410.4	RRS	1	PASI-G
		EPA 5030/8015 Mod.	SES	1	PASI-G
		EPA 6010	DLB	7	PASI-G
		EPA 7470	LMS	1	PASI-G

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ANALYTICAL RESULTS

Project: FORMER CLARK #646
Pace Project No.: 405568

Sample: MW-15 **Lab ID: 405568001** Collected: 06/23/08 13:00 Received: 06/25/08 09:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 5030/8015 Mod.								
TPH (C06-C10)	**460**	ug/L	100	39.6	1		06/30/08 16:12		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	**<1.2**	ug/L	20.0	1.2	1	06/30/08 08:13	06/30/08 21:47	7440-38-2	
Barium	**98.8**	ug/L	5.0	0.33	1	06/30/08 08:13	06/30/08 21:47	7440-39-3	
Cadmium	**0.58J**	ug/L	5.0	0.13	1	06/30/08 08:13	06/30/08 21:47	7440-43-9	B
Chromium	**<1.1**	ug/L	5.0	1.1	1	06/30/08 08:13	06/30/08 21:47	7440-47-3	
Lead	**4.4J**	ug/L	10.0	1.4	1	06/30/08 08:13	06/30/08 21:47	7439-92-1	
Selenium	**<1.6**	ug/L	20.0	1.6	1	06/30/08 08:13	06/30/08 21:47	7782-49-2	
Silver	**<0.34**	ug/L	10.0	0.34	1	06/30/08 08:13	06/30/08 21:47	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.10**	ug/L	0.20	0.10	1	06/26/08 16:33	06/27/08 11:27	7439-97-6	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**1.2**	mg/L	1.0	0.42	1		06/27/08 15:39	7727-37-9	
365.4 Total Phosphorus	Analytical Method: EPA 365.4								
Phosphorus	**<0.17**	mg/L	0.50	0.17	1		06/27/08 13:57	7723-14-0	
410.4 COD	Analytical Method: EPA 410.4								
Chemical Oxygen Demand	**35.3J**	mg/L	50.0	10.8	1		07/01/08 15:40		

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ANALYTICAL RESULTS

Project: FORMER CLARK #646
Pace Project No.: 405568

Sample: MW-18 **Lab ID: 405568002** Collected: 06/23/08 12:35 Received: 06/25/08 09:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	Analytical Method: EPA 5030/8015 Mod.								
TPH (C06-C10)	**<39.6**	ug/L	100	39.6	1		06/30/08 14:55		
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Arsenic	**14.0J**	ug/L	20.0	1.2	1	06/30/08 08:13	06/30/08 21:51	7440-38-2	
Barium	**176**	ug/L	5.0	0.33	1	06/30/08 08:13	06/30/08 21:51	7440-39-3	
Cadmium	**0.14J**	ug/L	5.0	0.13	1	06/30/08 08:13	06/30/08 21:51	7440-43-9	B
Chromium	**1.2J**	ug/L	5.0	1.1	1	06/30/08 08:13	06/30/08 21:51	7440-47-3	
Lead	**3.9J**	ug/L	10.0	1.4	1	06/30/08 08:13	06/30/08 21:51	7439-92-1	
Selenium	**<1.6**	ug/L	20.0	1.6	1	06/30/08 08:13	06/30/08 21:51	7782-49-2	
Silver	**<0.34**	ug/L	10.0	0.34	1	06/30/08 08:13	06/30/08 21:51	7440-22-4	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	**<0.10**	ug/L	0.20	0.10	1	06/26/08 16:33	06/27/08 11:31	7439-97-6	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	**8.4**	mg/L	1.0	0.42	1		06/27/08 15:39	7727-37-9	M0
365.4 Total Phosphorus	Analytical Method: EPA 365.4								
Phosphorus	**0.18J**	mg/L	0.50	0.17	1		06/27/08 13:58	7723-14-0	
410.4 COD	Analytical Method: EPA 410.4								
Chemical Oxygen Demand	**17.4J**	mg/L	50.0	10.8	1		07/01/08 15:40		

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QUALITY CONTROL DATA

Project: FORMER CLARK #646
Pace Project No.: 405568

QC Batch: MERP/1148
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Associated Lab Samples: 405568001, 405568002

METHOD BLANK: 45884
Associated Lab Samples: 405568001, 405568002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Mercury	ug/L	<0.10	0.20	

LABORATORY CONTROL SAMPLE: 45885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.6	111	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 45886 45887

Parameter	Units	405568001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.10	5	5	5.4	5.4	107	108	85-115	.5	20	

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QUALITY CONTROL DATA

Project: FORMER CLARK #646
Pace Project No.: 405568

QC Batch: WETA/1838
QC Batch Method: EPA 365.4
Analysis Method: EPA 365.4
Analysis Description: 365.4 Phosphorus
Associated Lab Samples: 405568001, 405568002

METHOD BLANK: 45971
Associated Lab Samples: 405568001, 405568002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Phosphorus	mg/L	<0.17	0.50	

LABORATORY CONTROL SAMPLE: 45972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphorus	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 45973 45974

Parameter	Units	405568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	0.18J	5	5	5.0	5.0	97	97	90-110	.6	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 45975 45976

Parameter	Units	1075708001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Phosphorus	mg/L	5.2	20	20	24.3	24.1	95	95	90-110	.6	20	

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QUALITY CONTROL DATA

Project: FORMER CLARK #646
Pace Project No.: 405568

QC Batch: WETA/1845
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Associated Lab Samples: 405568001, 405568002

METHOD BLANK: 46085
Associated Lab Samples: 405568001, 405568002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.42	1.0	

LABORATORY CONTROL SAMPLE: 46086

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 46087 46088

Parameter	Units	405568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Nitrogen, Kjeldahl, Total	mg/L	8.4	5	5	13.6	13.9	104	111	90-110	3	20	M0

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QUALITY CONTROL DATA

Project: FORMER CLARK #646
Pace Project No.: 405568

QC Batch: GCV/1807
QC Batch Method: EPA 5030/8015 Mod.
Analysis Method: EPA 5030/8015 Mod.
Analysis Description: Gasoline Range Organics
Associated Lab Samples: 405568001, 405568002

METHOD BLANK: 46277
Associated Lab Samples: 405568001, 405568002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
TPH (C06-C10)	ug/L	<39.6	100	

LABORATORY CONTROL SAMPLE & LCSD: 46278 46279

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
TPH (C06-C10)	ug/L	1000	1120	1150	112	115	80-120	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 46916 46917

Parameter	Units	405568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH (C06-C10)	ug/L	<39.6	1000	1000	1000	1010	100	101	66-124	.9	20	

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QUALITY CONTROL DATA

Project: FORMER CLARK #646
Pace Project No.: 405568

QC Batch: MPRP/1496
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 405568001, 405568002

METHOD BLANK: 46768
Associated Lab Samples: 405568001, 405568002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Arsenic	ug/L	<1.2	20.0	
Barium	ug/L	<0.33	5.0	
Cadmium	ug/L	0.15J	5.0	
Chromium	ug/L	<1.1	5.0	
Lead	ug/L	<1.4	10.0	
Selenium	ug/L	<1.6	20.0	
Silver	ug/L	<0.34	10.0	

LABORATORY CONTROL SAMPLE: 46769

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	500	520	104	80-120	
Barium	ug/L	500	537	107	80-120	
Cadmium	ug/L	500	522	104	80-120	
Chromium	ug/L	500	512	102	80-120	
Lead	ug/L	500	505	101	80-120	
Selenium	ug/L	500	507	101	80-120	
Silver	ug/L	250	223	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 46770 46771

Parameter	Units	405688035 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	2.1J	500	500	543	525	108	105	75-125	3	20	
Barium	ug/L	250	500	500	792	768	108	104	75-125	3	20	
Cadmium	ug/L	<0.13	500	500	550	530	110	106	75-125	4	20	
Chromium	ug/L	3.2J	500	500	509	491	101	98	75-125	4	20	
Lead	ug/L	1.8J	500	500	497	479	99	95	75-125	4	20	
Selenium	ug/L	2.0J	500	500	533	514	106	102	75-125	4	20	
Silver	ug/L	<0.34	250	250	240	230	96	92	75-125	4	20	

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QUALITY CONTROL DATA

Project: FORMER CLARK #646
Pace Project No.: 405568

QC Batch: WETA/1864
QC Batch Method: EPA 410.4
Analysis Method: EPA 410.4
Analysis Description: 410.4 COD
Associated Lab Samples: 405568001, 405568002

METHOD BLANK: 47560
Associated Lab Samples: 405568001, 405568002

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Chemical Oxygen Demand	mg/L	<10.8	50.0	

LABORATORY CONTROL SAMPLE: 47561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	500	504	101	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 47562 47563

Parameter	Units	405736001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chemical Oxygen Demand	mg/L	<11.3	526	526	538	543	101	102	90-110	.9	10	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: FORMER CLARK #646
Pace Project No.: 405568

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

M0 Matrix spike recovery was outside laboratory control limits.

APPENDIX D

AMENDED CORRECTIVE ACTION BUDGET

General Information for the Budget and Billing Forms

LPC #: 0971855024 County: Lake

City: Wauconda Site Name: Shivam Energy, Inc.

Site Address: 399 West Liberty Street

IEMA Incident No.: 892744 903199

IEMA Notification Date: Dec 27, 1989 Oct 30, 1990

Date this form was prepared: Jun 4, 2009

This form is being submitted as a (check one, if applicable):

- ☐ Budget Proposal
- ☒ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s):

Date(s):

This package is being submitted for the site activities indicated below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Investigation . . . . . Stage 1: ☐ Stage 2: ☐ Stage 3: ☐
- ☒ Corrective Action Actual Costs

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: Shivam Energy, Inc.

Send in care of: Shawn Rodeck

Address: P.O. Box 825

City: Warrenville State: IL Zip: 60555-0825

The payee is the: Owner ☒ Operator ☒ (Check one or both.)

Rajan Patel

Signature of the owner or operator of the UST(s) (required)

If you have a change of address, click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☒ 101 or more: ☐

Number of USTs at the site: 4 (Number of USTs includes USTs presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 3

Incident Numbers assigned to the site due to releases from USTs: 892744 903199

20081812

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
Gasoline	6,000	Yes ☒ No ☐	892744 & 903199	Tank Leak
Gasoline	6,000	Yes ☒ No ☐	892744 & 903199	Tank Leak
Gasoline	10,000	Yes ☐ No ☒		
Gasoline	10,000	Yes ☐ No ☒		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		

Add More Rows Undo Last Add

IEMA Nos. 892744
903199

B. PROPOSED BUDGET SUMMARY AND BUDGET TOTAL

1. Investigation Costs: $ 14,685.49
2. Analysis Costs: $ 41,765.90
3. Personnel Costs: $ 151,151.59
4. Equipment Costs: $ 15,630.00
5. Field Purchases and Other Costs: $ 228,367.12
6. Handling Charges: $ 10,394.10

TOTAL PROPOSED BUDGET = $ 461,994.20

IEMA Nos. 892744
903199

E. INVESTIGATION COSTS

Method I ☐ Method II ☐ Method III ☐ Not Applicable ☑

1. **Drilling Costs** - This includes the costs for drilling labor, drill rig usage, and other drilling equipment. Borings which are to be completed as monitoring wells should be listed here. Costs associated with disposal of cuttings should not be included here. An indication must be made as to why each boring is being conducted (i.e., classification, monitoring wells, migration pathways).

1	borings to	4	feet	=	4	feet to be bored for	SB-38 for f_{oc}
1	borings to	16	feet	=	16	feet to be bored for	SB-39 for in-situ remediation evaluation
1	borings to	22	feet	=	22	feet to be bored for	SB-40 for in-situ remediation evaluation
4	borings to	16	feet	=	64	feet to be bored for	RW-7 through RW-10
2	borings to	25	feet	=	50	feet to be bored for	SB-67/MW-33 and SB-68/MW-34
9	borings to	16	feet	=	144	feet to be bored for	Soil resampling after system shut down
	borings to		feet	=	0	feet to be bored for	
	borings to		feet	=	0	feet to be bored for	
	borings to		feet	=	0	feet to be bored for	
	borings to		feet	=	0	feet to be bored for	

Total Feet to be Bored via Hand Auger: 4
Total Feet to be Bored via Push for In-Situ Remediation Evaluations: 38
Total Feet to be Bored via Push for Recovery Wells: 64
Total Feet to be Bored via Push for Groundwater Evaluation Wells: 50
Total Feet to be Bored via Push for Soil Resampling: 144

Push Events for In-situ Remediation Evaluation: 1 events x $ 1,308.60 per event =$ 1,308.60
HSA Events for the Recovery Wells: 1 events x $ 1,635.75 per event =$ 1,635.75
Push Events for the Groundwater Evaluation Wells: 1 events x $ 1,308.60 per event =$ 1,308.60
Total Feet to be Bored via Push for Soil Resampling: 144 feet x $ 19.63 per foot =$ 2,826.72

	borings through		ft of bedrock =	0	Ft bedrock to be bored
	borings through		ft of bedrock =	0	Ft bedrock to be bored

Total Feet Bedrock to be Bored: 0

Borings: _____ Ft bedrock x $ _____ per foot bedrock = $ 0.00 (or)

_____ Hours x $ _____ per Hour = $ 0.00

_____ # of Mobilizations @ $ _____ per mobilization = $ 0.00

Other Costs	Number of Units	Unit Cost	Total Cost

2. **Professional Services (e.g., P.E., geologist)** - These cost must be listed in Section G, the Personnel section of the forms.

3. Monitoring Well Installation Materials - Costs listed here must be costs associated with well casing, well screens, filter pack, annular seal, surface seal, well covers, etc. List the items below in a time and materials format.

Materials	Number of Units	Unit Cost	Total Cost
RW-7 through RW-10 4-inch well installation via HSA	64	27.26	1,744.64
MW-33 and MW-34 2-inch well installation via HSA	50	17.99	899.50

4. Disposal Costs - This includes the costs for disposing of boring cuttings and any water generated while performing borings of installing wells.

Disposal of Cuttings: 17 drums x $ 272.62 per drum = $ 4,634.54

Disposal of Water: 2 drums x $ 163.57 per drum = $ 327.14

Transportation Costs:$ _____

Describe how the water/soil will be disposed: The soil will be disposed of at a landfill. The groundwater will be treated at a treatment facility and then disposed of.

TOTAL INVESTIGATION COSTS = $ 14,685.49

F. ANALYSIS COSTS

1. Physical Soil Analysis - This must only include ***analysis*** costs for classification of soil types at the site.

_____	Moisture Content sample(s) x $	_____	per sample	= $	0.00
_____	Dry Bulk Density sample(s) x $	_____	per sample	= $	0.00
	Indicate method to be performed:	_____			
_____	Soil Porosity sample(s) x $	_____	per sample	= $	0.00
	Indicate method to be performed:	_____			
_____	Soil Classification sample(s) x $	_____	per sample	= $	0.00
	Indicate method to be performed:	_____			
_____	Grain Size sample(s) x $	_____	per sample	= $	0.00
	Indicate method to be performed:	_____			
2	Natural Organic Carbon Fraction (f_{oc}) sample(s) x $	41.44	per sample	= $	82.88
	Indicate method to be performed:	ASTM D2974			
_____	sample(s) x $	_____	per sample	= $	0.00
_____	sample(s) x $	_____	per sample	= $	0.00
_____	sample(s) x $	_____	per sample	= $	0.00
_____	sample(s) x $	_____	per sample	= $	0.00
_____	sample(s) x $	_____	per sample	= $	0.00

2. Soil Analysis Costs - This must be for laboratory ***analysis*** only.

14	BTEX and MTBE sample(s) x $	92.69	per sample	= $	1,297.66
2	TPH sample(s) x $	133.04	per sample	= $	266.08
2	RCRA Metals sample(s) x $	102.51	per sample	= $	205.02
2	RCRA Metals sample(s) prep x $	17.45	per sample	= $	34.90
2	COD sample(s) x $	15.27	per sample	= $	30.54
_____	Flashpoint sample(s)	_____	per sample	= $	0.00
_____	pH sample(s) x $	_____	per sample	= $	0.00

	TCLP Lead sample(s)	x $		per sample	= $	0.00
	TCLP Lead sample(s) prep	x $		per sample	= $	0.00
	Paint filter sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00

3. Groundwater Analysis Costs - This must be for laboratory ***analysis*** only.

442	BTEX and MTBE sample(s)	x $	88.33	per sample	= $	39,041.86
2	TPH sample(s)	x $	133.04	per sample	= $	266.08
2	COD sample(s)	x $	32.71	per sample	= $	65.42
2	RCRA Metals sample(s)	x $	129.77	per sample	= $	259.54
2	RCRA Metals sample(s) prep	x $	12.00	per sample	= $	24.00
	Flash Point sample(s)	x $		per sample	= $	0.00
2	Nitrogen (total) sample(s)	x $	47.98	per sample	= $	95.96
2	Phosphorus (total) sample(s)	x $	47.98	per sample	= $	95.96
	Chloride sample(s)	x $		per sample	= $	0.00
	Alkalinity sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00
	sample(s)	x $		per sample	= $	0.00

TOTAL ANALYSIS COSTS = $ 41,765.90

G. PERSONNEL

All personnel costs that are not included elsewhere in the budget/billing form must be listed here. Costs must be listed per task, not personnel type. The following are some examples of tasks: Drafting, data collection, plan, report, or budget preparation for CAP (i.e. site classification work plan, 45 day report, or high priority corrective action budget), sampling, field over-site for drilling and well installation (i.e. drilling/well installation, corrective action or early action), of maintenance of DPE system . The above list is not inclusive of all possible tasks.

Senior Technician (Title) : 3 hours x $ 68.62 per hour = $ 205.86

Task to be performed for the above hours: SVE blower O&M

Geologist III (Title) : 33.75 hours x $ 95.96 per hour = $ 3,238.65

Task to be performed for the above hours: Project coordination; groundwater sampling; vapor migration field activities; sanitary sewer line excavation and backfilling oversight; vapor barrier and RW-2 installation

Project Manager (Title) : 30.75 hours x $ 92.51 per hour = $ 2,844.68

Task to be performed for the above hours: Project management and coordination; remediation evaluation;

Project Manager (Title) : 54.50 hours x $ 95.29 per hour = $ 5,193.31

Task to be performed for the above hours: Project management and coordination; IEPA air permit # 91060030 cancellation; Amended CAP and Budget preparation

Project Manager (Title) : 91.25 hours x $ 98.14 per hour = $ 8,955.28

Task to be performed for the above hours: Project management and coordination; soil boring installation oversight; soil sampling; boring log prep; remediation evaluation; Amended CAP and Budget preparation; O&M

Senior Project Manager (Title) : 4.50 hours x $ 102.79 per hour = $ 462.56

Task to be performed for the above hours: Project and reimbursement management

Senior Project Manager (Title) : 3.75 hours x $ 105.87 per hour = $ 397.01

Task to be performed for the above hours: Project and reimbursement management

Senior Project Manager (Title) : 68.25 hours x $ 109.05 per hour = $ 7,442.66

Task to be performed for the above hours: Project and reimbursement management; project coordination; remediation evaluation; off-site access preparation; groundwater sampling; vapor barrier coordination and installation oversight; basement inspections as a result of vapor migration; correspondence with residents as a result of vapor migration

Senior Professional Engineer (Title) : 10.75 hours x $ 137.64 per hour = $ 1,479.63

Task to be performed for the above hours: Remediation evaluation; Amended CAP and Budget review and certification

Project Manager (Title) : 40 hours x $ 98.14 per hour = $ 3,925.60

Task to be performed for the above hours: Preparation of Amended CAP and Budget

Senior Draftperson/CAD (Title) : 14 hours x $ 65.43 per hour = $ 916.02

Task to be performed for the above hours: Preparation of figures

Senior Professional Geologist (Title) : 10 hours x $ 119.95 per hour = $ 1,199.50

Task to be performed for the above hours: Design of DPE system

Senior Professional Engineer (Title) : 18 hours x $ 141.76 per hour = $ 2,551.68

Task to be performed for the above hours: Design of DPE system; review and certification of Amended CAP and Budget

Sr. Administrative Assistant (Title) : 6 hours x $ 49.07 per hour = $ 294.42

Task to be performed for the above hours: Preparation, copying, and shipping of Amended CAP and Budget

Project Manager (Title) : 22 hours x $ 98.14 per hour = $ 2,159.08

Task to be performed for the above hours: Oversight of the RW and MW installation; soil sampling

Senior Project Manager (Title) : 10 hours x $ 109.05 per hour = $ 1,090.50

Task to be performed for the above hours: Coordination of DPE system installation

Senior Technician (Title) : 142 hours x $ 70.88 per hour = $ 10,064.96

Task to be performed for the above hours: Coordination of DPE system installation; assist with trenching, excavation, backfilling, resurfacing, and DPE system installation; system startup

Project Manager (Title) : 112 hours x $ 98.14 per hour = $ 10,991.68

Task to be performed for the above hours: Oversight of system installation, trenching, excavating, backfilling, and soil transportation and disposal

Senior Professional Engineer (Title) : 12 hours x $ 141.76 per hour = $ 1,701.12

Task to be performed for the above hours: System start up

Senior Technician : 556 hours x $ 70.88 per hour = $ 39,409.28

(Title)

Task to be performed for the above hours: Operation and maintenance; system component repairs and cleaning

Project Manager : 154 hours x $ 98.14 per hour = $ 15,113.56
(Title)

Task to be performed for the above hours: Groundwater sampling coordination; baseline and quarterly groundwater sampling; surveying;

Senior Technician : 132 hours x $ 70.88 per hour = $ 9,356.16
(Title)

Task to be performed for the above hours: Baseline and quarterly groundwater sampling; surveying

Project Manager : 18 hours x $ 98.14 per hour = $ 1,766.52
(Title)

Task to be performed for the above hours: Soil boring installation after the shut down of the DPE system; soil sampling

Geologist III : 14 hours x $ 98.14 per hour = $ 1,373.96
(Title)

Task to be performed for the above hours: Soil boring installation after the shut down of the DPE system; soil sampling

Project Manager : 48 hours x $ 98.14 per hour = $ 4,710.72
(Title)

Task to be performed for the above hours: Preparation of monthly compliance reports

Senior Professional Engineer : 12 hours x $ 141.76 per hour = $ 1,701.12
(Title)

Task to be performed for the above hours: Review of monthly compliance reports

Project Manager : 40 hours x $ 98.14 per hour = $ 3,925.60
(Title)

Task to be performed for the above hours: Preparation of semi-annual Remediation Status Reports

Senior Professional Engineer : 8 hours x $ 141.76 per hour = $ 1,134.08
(Title)

Task to be performed for the above hours: Review of semi-annual Remediation Status Reports

Senior Accounting Technician : 88 hours x $ 59.98 per hour = $ 5,278.24
(Title)

Task to be performed for the above hours: Preparation of quarterly reimbursement packages

Senior Professional Engineer : 16 hours x $ 141.76 per hour = $ 2,268.16
(Title)

Task to be performed for the above hours: Review of quarterly reimbursement packages

TOTAL PERSONNEL COSTS = $ 151,151.59

H. EQUIPMENT COSTS

All Equipment used must be listed in a time and materials format. **Handling charges should not be added here; use section J.**

Equipment	Own or Rent?	Time Used	Unit Rate	Total Cost/Item
Truck	Own	87	95.00	8,265.00
PID	Own	65	75.00	4,875.00
Oil/Water Interface Probe	Own	64	35.00	2,240.00
Measuring Wheel	Own	14	5.00	70.00
Survey Equipment	Own	1	75.00	75.00
Digital Camera	Own	10	5.00	50.00
Metal Detector	Own	1	25.00	25.00
LEL Meter	Own	1	30.00	30.00

Total (Page H-1) :	$15,630.00

I. FIELD PURCHASES AND OTHER COSTS

All field purchases must be listed in a time and materials format. **Handling charges must not be added here; use section J, Handling Charges to calculate the handling charges.**

Field Purchases	Quantity	Price/Item	Total Cost	Do Handling Charges Apply?
Ice	35	$2.00	$70.00	No
Terracore Samplers	14	$10.90	$152.60	Yes
Distilled Water	65	$2.00	$130.00	No
Nitrile Gloves	1,880	$0.50	$940.00	No
Baggies	278	$0.25	$69.50	No
Disposable HDPE Bailers	442	$10.00	$4,420.00	No
Rope	8,840	$0.25	$2,210.00	No
Disposable VOC Samplers	442	$2.00	$884.00	No
Nonhazardous Waste Labels	19	$2.00	$38.00	No
Effluent Air Sample Analysis	8	$75.00	$600.00	Yes
Soil Sample Overnight Shipping - RWs and SBs	4	$54.52	$218.08	Yes
Gws Overnight Shipping - Base., Qtrly., and Compliance	28	$54.52	$1,526.56	Yes
Amended CAP Shipping	1	$15.00	$15.00	Yes
Monthly Compliance Report Shipping	24	$5.00	$120.00	Yes
Semi-Annual Rem. Effectiveness Report Shipping	4	$15.00	$60.00	Yes
Quarterly Reimbursement Package Shipping	8	$15.00	$120.00	Yes
Vacuum Pump Bearing Grease	1	$20.00	$20.00	Yes
Barricades	10	$50.00	$500.00	Yes
Private Utility Locator	1	$200.00	$200.00	Yes
Visqueen- Stock Piling During Trenching on 3/13/09	40	$1.50	$60.00	No
Village of Wauconda Permit Fee - Trenching on 3/13/09	1	$1,000.00	$1,000.00	Yes
R.W. Collins - Trenching on 3/13/09	1	$1,575.00	$1,575.00	Yes
Barricades - Trenching on 3/13/09	1	$120.00	$120.00	Yes
Bentonite - Trenching and RW-2 Install on 3/13/09	15	$12.00	$180.00	Yes
Private Utility Locator - Trenching on 3/13/09	1	$200.00	$200.00	Yes
RW-2 Parts - RW-2 Installation on 3/13//09	1	$30.00	$30.00	Yes

Subtotal Page I-1 :	$15,458.74

Other costs - A listing and description of all other costs which will be/were incurred and are not specifically listed on this form should be attached. The listing should include a cost breakdown in a time and materials format.

1. **Temporary Dual Phase Extraction System Costs**

A. DPE System Rental						
6	months	@	$3,595.00	per month	=	$21,570.00
B. Delivery of DPE System			=	$1,425.00		
C. Pickup of DPE System			=	$1,425.00		
Total DPE System Rental Costs			=	**$24,420.00**		

2. **Permanent Dual Phase Extraction System Costs**

A. DPE Inlet Manifold	=	$7,612.00
B. Air/Water Moisture Separator	=	$4,009.00
C. Rotary Clay Vacuum Pump	=	$14,612.00
D. Vapor Phase Carbon	=	$7,150.00
E. Oil/Water Separator	=	$8,620.00
F. Air Stripper	=	$7,117.00
G. System Control Panel	=	$7,724.00
H. Enclosed Trailer	=	$22,156.00
I. Labor to Assemble the System at Manufacturer	=	$17,500.00
J. Shipping	=	$2,500.00
Total Permanent Dual Phase Extraction System Costs	=	**$99,000.00**

3. **Permits Costs**

A. IEPA Air Pollution Control Permit		
1. 2009-2010 Initial and Annual Fee	=	$1,500.00
2. 2010-2011 Annual Fee	=	$200.00
3. 2011-2012 Annual Fee	=	$200.00
B. Village of Wauconda Building Permit Fee	=	$1,000.00
C. Village of Wauconda Water Discharge Permit		
1. 2009-2010 Initial and Annual Fee	=	$1,500.00
2. 2010-2011 Annual Fee	=	$500.00
3. 2011-2012 Annual Fee	=	$500.00
Total Permits Costs	=	**$5,400.00**

4. **Trenching Costs for System Installation**

A. Trenching, backfilling, and resurfacing

Personnel

1. Foreman

10	days	@	$825.00	per day	=	$8,250.00

2. Senior Technician

10	days	@	$760.00	per day	=	$7,600.00

Equipment

1. Backhoe and Bobcat with Operator

10	days	@	$1,400.00	per day	=	$14,000.00

2. Backhoe and Bobcat Mobilization

1	mobilization	@	$800.00	per mobilization	=	$800.00

3. Plate Compactor

10	days	@	$75.00	day	=	$750.00

4. Asphalt Cutter

1	day	@	$700.00	day	=	$700.00

Materials

1. Piping

980	feet	@	$10.00	per foot	=	$9,800.00

2. 18" x 18" Manholes

10	manholes	@	$300.00	per manhole	=	$3,000.00

3. 3' x 3' Concrete Collars Around Manholes

90	$feet^3$	@	$8.64	per $foot^3$	=	$777.60

4. Backfill

188	$yards^3$	@	$21.81	per $yard^3$	=	$4,100.28

5. 3" Asphalt

330	$feet^2$	@	$3.85	per $foot^2$	=	$1,270.50

B. Soil Transportation

191	$yards^3$	@	$20.00	per $yard^3$	=	$3,820.00

C. Soil Disposal

191	$yards^3$	@	$20.00	per $yard^3$	=	$3,820.00

Total Trenching Costs for System Installation = **$58,688.38**

5. System Operational Costs

A. Electric Power Drop

1	drop	@	$5,000.00	per drop	=	$5,000.00

A. Electric Power

24	months	@	$800.00	per month	=	$19,200.00

B. Phone Service

24	months	@	$50.00	per month	=	$1,200.00

Total System Operational Costs = **$25,400.00**

TOTAL OTHER COSTS = $ 212,908.38

Subtotal Page I-1 :	$	15,458.74
Total Pages I-1 and I-2 :	$	228,367.12

J. HANDLING CHARGES

Handling charges are eligible for payment on subcontractor billings and/or field purchases only if they are equal to or less than the amounts determined by the following table:

Subcontractor or Field **Purchase Cost**	Eligible Handling Charges as a **Percentage of Cost**
$1 - $5,000	12%
$5,001 - $15,000	$600 + 10% of amt. Over $5,000
$15,001 - $50,000	$1,600 + 8% of amt. Over $15,000
$50,001 - $100,000	$4,400 + 5% of amt. Over $50,000
$100,001 - $1,000,000	$6,900 + 2% of amt. Over $100,000

A. Subcontractor Charges

Subcontractor	Section in these Forms where Cost is Listed	Subcontract Amount
Drilling and Recovery Well Installation	E	$7,515.71
Soil and Water Disposal	E	$4,961.68
Soil, Water, and Air Laboratory Analysis and Shipping	F and I	$44,263.14
Senior Draftperson/CAD	G	$916.02
Private Utility Locator	I	$200.00
Temporary DPE System Rental	I	$24,420.00
Trenching for System Installation	I	$58,688.38
System Operational Costs	1	$25,400.00
R.W. Collins - Trenching on 3/13/09	I	$1,575.00
Private Utility Locator - Trenching on 3/13/09	I	$200.00

Subtotal Page J-1 :	$168,139.93

B. Field Purchase

Field Purchase	Field Purchase Amount
Report and Reimbursement Package Shipping	$315.00
Vacuum Pump Bearing Grease	$20.00
Barricades	$500.00
Permanent DPE System	$99,000.00
IEPA Air Pollution Control Permit	$1,900.00
Village of Wauconda Building and Water Discharge Permits	$3,500.00
Village of Wauconda Permit Fee - Trenching on 3/13/09	$1,000.00
Barricades - Trenching on 3/13/09	$120.00
Bentonite - Trenching and RW-2 Install on 3/13/09	$180.00
RW-2 Parts - RW-2 Installation on 3/13//09	$30.00

Subtotal Page J-2 :	$ 106,565.00
Total Pages J-1 and J-2 :	$ 274,704.93
Handling Charge*	$ 10,394.10

*Use chart at top of Page J-1 to calculate the allowable handling charge.
Copies of invoices for subcontractor costs and receipts for field purchases are required for billing submissions.

K. LOW PRIORITY CORRECTIVE ACTION

Corrective Action at Low Priority Sites consists of groundwater monitoring for three years.

A. Preparation of the Corrective Action Plan. Attach the appropriate sections of the budget/billing forms to support the summary of costs.

1 Investigation Costs: $ _____

2 Analysis Costs: $ _____

3 Personnel Costs: $ _____

4 Equipment Costs: $ _____

5 Field Purchases and Other Costs: $ _____

6 Handling Charges: $ _____

B. **1st Year Sampling and Analytical Costs (Quarterly Monitoring)** - Provide a summary of the 1st year costs below. Attach the appropriate section of the budget /billing forms to support the summary of costs.

1 Analysis Costs: $ _____

2 Personnel Costs: $ _____

3 Equipment Costs: $ _____

4 Field Purchases and Other Costs: $ _____

5 Handling Charges: $ _____

C. **2nd Year Sampling and Analytical Costs (Semi-Annual Monitoring)** - Provide a summary of the 2nd year costs below. Attach the appropriate section of the budget /billing forms to support the summary of costs.

1 Analysis Costs: $ _____

2 Personnel Costs: $ _____

3 Equipment Costs: $ _____

4 Field Purchases and Other Costs: $ _____

5 Handling Charges: $ _____

D. **3rd Year Sampling and Analytical Costs (Annual Monitoring)** - Provide a summary of the 3rd year costs below. Attach the appropriate section of the budget /billing forms to support the summary of costs.

1 Analysis Costs: $ _____

2 Personnel Costs: $ _____

3 Equipment Costs: $ _____

4 Field Purchases and Other Costs: $ _____

5 Handling Charges: $ _____

TOTAL LOW PRIORITY CORRECTIVE ACTION COSTS: $ 0.00

L. HIGH PRIORITY CORRECTIVE ACTION

Corrective Action at High Priority Sites may involve both soil and groundwater remediation. Below provide a summary of costs for the remediation type(s) chosen and attach the appropriate sections of the budget/billing forms to support the summary of costs.

A. Preparation of the Corrective Action Plan

1. Investigation Costs: $ 2,944.34
2. Analysis Costs: $ 3,354.38
3. Personnel Costs: $ 8,887.22
4. Equipment Costs: $ 470.00
5. Field Purchases and Other Costs: $ 3,646.77
6. Handling Charges: $ 822.97

B. Groundwater Remediation

1. Analysis Costs: $ _____
2. Personnel Costs: $ _____
3. Equipment Costs: $ _____
4. Field Purchases and Other Costs: $ _____
5. Handling Charges: $ _____

Of the above costs, please provide a break down of the costs associated with operation and maintenance (O&M), if applicable, as requested below:

_____ Months of O&M x $ _____ per month = $ _____

C. Excavation and Disposal

1. Analysis Costs: $ _____
2. Personnel Costs: $ _____
3. Equipment Costs: $ _____
4. Field Purchases and Other Costs: $ _____
5. Handling Charges: $ _____

Of the above costs, please provide a break down of the costs associated with excavation, transportation, and disposal as requested below:

Excavation: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Transportation: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Disposal: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

D. Alternate Technology, Type DPE System

1. Investigation Costs: $ 11,741.15
2. Analysis Costs: $ 38,411.52
3. Personnel Costs: $ 142,264.37
4. Equipment Costs: $ 15,160.00
5. Field Purchases and Other Costs: $ 224,720.35
6. Handling Charges: $ 9,571.12

Of the above costs, please provide a break down of the following costs as requested below if applicable:

Excavation: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Transportation: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Treatment: _____ $yard^3$ x $ _____ per $yard^3$ = $ _____

Operation and Maintenance (O&M):

24 Months of O&M x $ 3,443.35 per month = $ 82,640.44

E. Backfill Costs

1. Personnel Costs: $ _____
2. Equipment Costs: $ _____
3. Field Purchases and Other Costs: $ _____
4. Handling Charges: $ _____

Of the above costs, please provide a break down of the following costs as requested below if applicable:

Type of Backfill: _____

_____ $yard^3$ x $ _____ per $yard^3$ = $ _____

M. JUSTIFICATION FOR BUDGET AMENDMENTS

If this form is being submitted for an amendment, you must submit a narrative justifying the need for the amendment. If the amendment includes a revision in a corrective action proposal, a new proposal must be submitted.

This budget amendment includes costs for the following.

1. Remediation evaluation.
2. Performing one soil boring to collect soil samples for f_{oc} analysis.
3. Obtaining off-site access and performing two soil borings to further evaluate chemical oxidation as a remediation method.
4. Groundwater sampling two monitoring wells to further evaluate chemical oxidation as a remedial method.
5. Obtaining off-site access and installing MW-33 and MW-34 to evaluate the groundwater concentrations at two locations in Osage Park.
6. Installation of RW-7 through RW-10.
7. DPE system installation.
8. O&M.
9. Groundwater sampling activities.
10. Soil boring installation after the shut down of the DPE system.
11. Preparation of remediation permits, compliance reports, and status reports.
12. Preparation of this Amended CAP and Budget.
13. Preparation of reimbursement packages.
14. Vapor migration activities.

APPENDIX E

OWNER/OPERATOR AND LICENSED PROFESSIONAL ENGINEER/GEOLOGIST BUDGET CERTIFICATION FORM

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 892744 . I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

Owner/Operator: Shivam Energy, Inc.

Authorized Representative: Rajani Patel Title: Owner

Signature: Rajani Patel Date: 03/29/09

Subscribed and sworn to before me the 29 day of March, 2009.

Sandra L. Rodeck
(Notary Public)

Seal: OFFICIAL SEAL
SANDRA L. RODECK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12-26-2011

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G.: Shawn Rodeck L.P.E./L.P.G. Seal: REGISTERED PROFESSIONAL ENGINEER SHAWN A. RODECK 062-052879 STATE OF ILLINOIS

L.P.E./L.P.G. Signature: Shawn Rodeck Date: 06/10/2009

Subscribed and sworn to before me the 10 day of June, 2009.

Sandra L. Rodeck
(Notary Public)

Seal: OFFICIAL SEAL
SANDRA L. RODECK
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 12-26-2011

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

APPENDIX F

OFFICE OF THE STATE FIRE MARSHAL ELIGIBILITY AND DEDUCTIBLE DETERMINATION

Office of the Illinois
State Fire Marshal
"Partnering With the Fire Service to Protect Illinois"

CERTIFIED MAIL - RECEIPT REQUESTED #7008 2810 0000 2103 5320

April 29, 2009

Shivam Energy, Inc.
399 W. Liberty Street
Wauconda, IL 60084

In Re: Facility No. 2-010129
IEMA Incident No. 89-2744
Liberty Clark
399 Liberty Street
Wauconda, Lake Co., IL

Dear Applicant:

The Reimbursement Eligibility and Deductible Application received on April 24, 2009 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek payment of costs in excess of **$10,000**. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank 1 6,000 gallon Gasoline
Tank 2 6,000 gallon Gasoline

You must contact the Illinois Environmental Protection Agency to receive a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

1. Neither the owner nor the operator is the United States Government,
2. The tank does not contain fuel which is exempt from the Motor Fuel Tax Law,
3. The costs were incurred as a result of a confirmed release of any of the following substances:

   "Fuel", as defined in Section 1.19 of the Motor Fuel Tax Law

   Aviation fuel

   Heating oil

Kerosene

Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

4. The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.

5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.

6. The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.

7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. We reserve the right to change the deductible determination should additional information that would change the determination become available. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision, (35 Illinois Administrative Code 105.102(a) (2)).

For information regarding the filing of an appeal, please contact:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(312) 814-3620

The following tanks are also listed for this site:

Tank 3 10,000 gallon Gasoline
Tank 4 10,000 gallon Gasoline

Your application indicates that there has not been a release from these tanks under this incident number. You may be eligible to seek payment of corrective action costs associated with these tanks if it is determined that there has been a release from one or more of these tanks. Once it is determined that there has been a release from one or more of these tanks you may submit a separate application for an eligibility determination to seek corrective action costs associated with this/these tanks.

If you have any questions, please contact our Office at (217) 785-1020 or (217) 785-5878.

Sincerely,

Deanne Lock
Administrative Assistant
Division of Petroleum and Chemical Safety

cc: IEPA
Facility File

APPENDIX G

IN-SITU CHEMICAL OXIDATION CALCULATIONS

Mass of Contaminants in the Saturated Soil Utilizing COD

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation
Total Mass of Contaminants = (Highest Average Concentration (ppm)/1,000,000) * Volume of Contaminated Mass (yd^3) * (1 - Soil Porosity (%)) * Dry Bulk Density (lbs/ft^3) * (27 ft^3/ 1 yd^3)

Conversions

1	yd^3	=	27	ft^3

Highest Average Concentration = 3,400.00 ppm
The average COD concentration in the soil was the higher of the average TPH and COD concentrations in the soil samples that were collected from within the contaminated soil plume. TPH and COD concentrations for the soil samples collected are summarized in Table 1.

Volume of Contaminated Mass = 800.13 yd^3
The volume was estimated by determining the area of the contaminated soil plume (5,400.91 ft^2) and an average thickness of the soil contamination below the average field interpreted water table (4 ft). The contaminated plume is illustrated on Figure 5.

Dry Bulk Density = 108.6 lbs/ft^3
The dry bulk density is summarized in Table 1.

Total Mass of Contaminants = 7,977 lbs

Mass of Contaminants in the Groundwater Utilizing COD

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation
Total Mass of Contaminants = (Highest Average Concentration (ppm)/1,000,000) * Volume of Contaminated Mass (yd^3) * Soil Porosity (%) * Density of Water (lbs/ft^3) * (27 ft^3/ 1 yd^3)

Conversions

1	yd^3	=	27	ft^3

Highest Average Concentration	=	42.53	ppm

The average COD concentration in the groundwater was the higher of the average TPH and COD concentrations in the groundwater samples that were collected. TPH and COD concentrations for the groundwater samples collected are summarized in Table 3.

Volume of Contaminated Mass	=	7,028.34	yd^3

The volume was estimated by determining the area of the contaminated groundwater plume (94,882.59 ft^2) and utilizing the groundwater fluctuation (2 ft) from the most recent groundwater elevations in the wells within the proposed groundwater treatment area to determine a treatment thickness. The contaminated plume is illustrated on Figure 2.

Total Soil Porosity	=	34.4	%

The total soil porosity is summarized in Table 1.

Density of Water	=	62.43	lbs/ft^3

Total Mass of Contaminants	**=**	**173**	**lbs**

Amount of Oxygen Required

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation
Amount of Oxygen Required (lbs) = Total Mass of Contaminants (lbs) * 3 lbs of Oxygen/1 lb of Contaminant

The IEPA assumes that 3 lbs of oxygen will treat 1 lb of contaminants

Total Mass of Contaminants = 8,150 lbs

The Total Mass of Contaminants is the sum of the mass of the soil and groundwater contaminants which were calculated on the previous sheets.

Amount of Oxygen Required = 24,451 lbs

Amount of Product Required

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation
Amount of Product Required (lbs) = Amount of Oxygen Required (lbs)/Amount of Oxygen in Product (%) * 1.25

The IEPA allows a 20% to 30% safety factor in addition to the amount of product required; therefore the value of the Amount of Oxygen Required divided by the Amount of Oxygen in the Product should be multiplied by 1.25.

Amount of Oxygen Required = 24,451 lbs
The Amount of Oxygen Required was calculated on the attached sheet.

Amount of Oxygen in the Product = 17.30 %
This value was obtained from the information provided by the manufacturer. Information provided by the manufacturer is attached.

Amount of Product Required = 176,667 lbs

APPENDIX H

HYDRAULIC GRADIENT AND HYDRAULIC CONDUCTIVITY CALCULATIONS

HYDRAULIC GRADIENT CALCULATION

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084

Gauging Date: January 5, 2009

The value for the hydraulic gradient was solved using the groundwater elevation data from MW-26 (104.15 feet), MW-15 (99.85 feet), and MW-18 (96.85 feet), and the distance between MW-26 and MW-18 (466). These values were used to solve for the true hydraulic gradient in three dimensions (USGS 1983).

$$\left[\frac{(h_1 - h_2)}{x}\right] = \left[\frac{(h_1 - h_3)}{d_1 \rightarrow d_3}\right]$$

Equation #1

Where:

h_1	=	highest head	MW-26	(104.15 feet)
h_2	=	intermediate head	MW-15	(99.85 feet)
h_3	=	lowest head	MW-18	(96.85 feet)
$d_1 \rightarrow d_3$	=	distance from h_1 to h_3		466 feet
x	=	distance between h_1 and h_3 at which the total head is equal to h_2 (value solved by equation #1)		274.49 feet

Solving the above equation for x results in a value of 274.49 feet, which is the distance from h1 where the total head is equal to that at h2 [MW-15 (99.85 feet)]

Hydraulic gradient is then calculated as:

$$i = \left[\frac{(h_2 - h_3)}{x \rightarrow d_3}\right]$$

Equation #2

Where:

$x \rightarrow d_3$	=	distance from distance x to h_3 = ($d_1 \rightarrow d_3$) - x	191.51 feet
i	=	hydraulic gradient (solved by equation #2)	0.0157

Logarithmic Average of Hydraulic Conductivity

MW-4:	1.08×10^{-3} cm/sec	=	2.13×10^{-3} ft/min
MW-6:	6.61×10^{-3} cm/sec	=	1.30×10^{-2} ft/min
MW-14:	8.37×10^{-5} cm/sec	=	1.65×10^{-4} ft/min
MW-16:	2.25×10^{-5} cm/sec	=	4.42×10^{-5} ft/min

$\log_{(\text{average value})}$ = [log (2.13×10^{-3} ft/min) + log (1.30×10^{-2} ft/min) + log (1.65×10^{-4} ft/min) + log (4.42×10^{-5} ft/min)] / 4

$\log_{(\text{average value})}$ = -3.173

Average Value = inv. Log (-3.173) = $10^{-3.268}$ = 6.72×10^{-4} ft/min

$\log_{(\text{average value})}$ = [log (2.13×10^{-3} ft/min) + log (1.30×10^{-2} ft/min] / 4

$\log_{(\text{average value})}$ = -3.173

Average Value (Service Station Area) = inv. Log (-3.173) = $10^{-3.268}$ = 5.37×10^{-3} ft/min

$\log_{(\text{average value})}$ = [log (1.65×10^{-4} ft/min) + log (4.42×10^{-5} ft/min)] / 4

$\log_{(\text{average value})}$ = -3.173

Average Value (Osage Park) = inv. Log (-3.173) = $10^{-3.268}$ = 8.60×10^{-5} ft/min

Average Linear Ground-Water Flow Velocity

Darcy's Law: $v = Q / \eta a = v/\eta = -K\Delta H / \eta \Delta L = Ki/\eta_e$

ΔH = difference in hydraulic head
ΔL = distance between well openings
K = hydraulic conductivity
η = effective porosity (assume 0.20)
i = ($\Delta H / \Delta L$); from 8/27/97 potentiometric surface figure (MW-4 and MW-16)

v = [6.72 x 10^{-4} ft/min (average of all four wells)] x (5 ft/280 ft) / 0.2

$\bar{v}$ = 5.21 x 10^{-5} ft/min = **31.74 ft/year (average for entire site)**

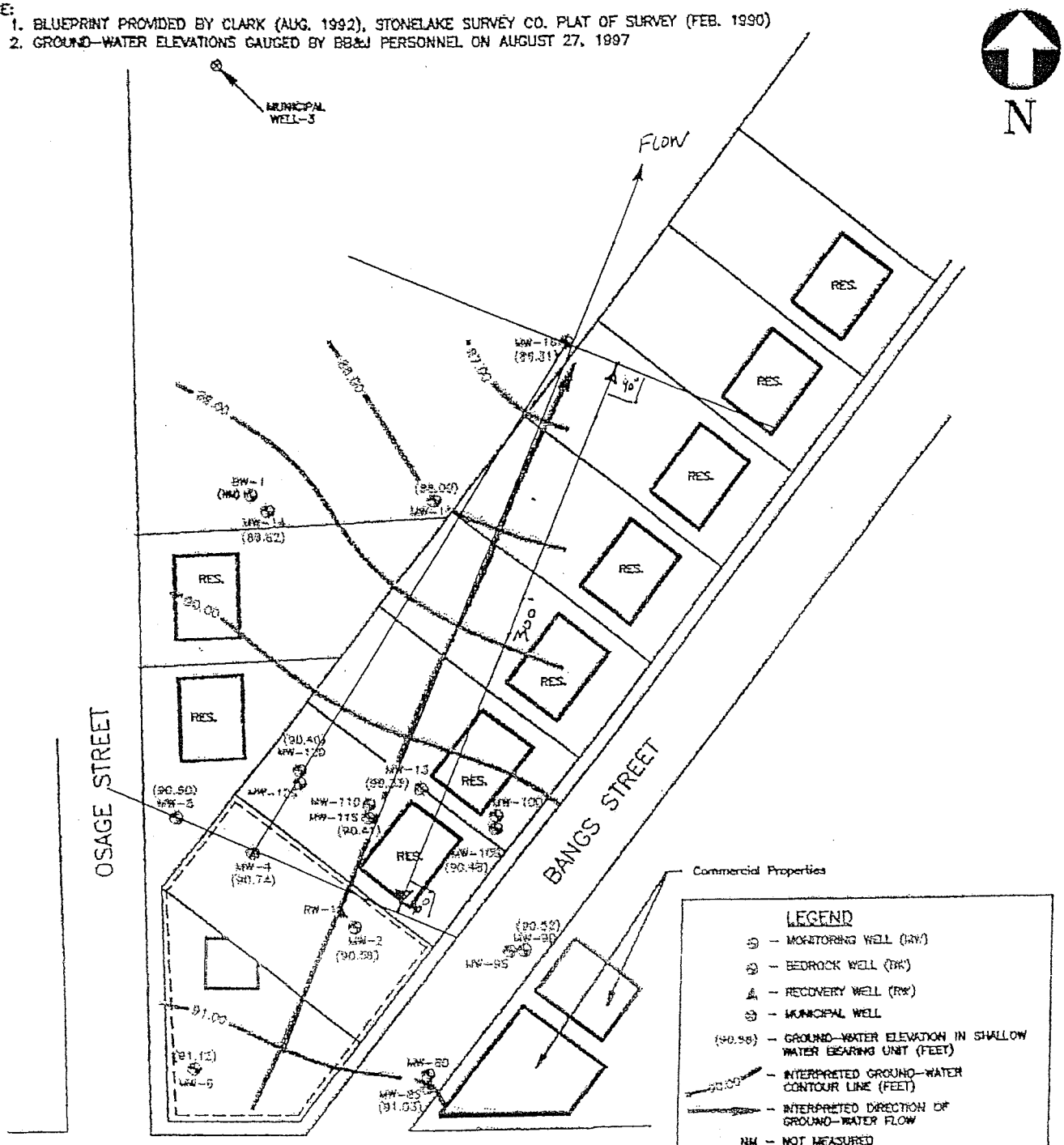
v = [5.37 x 10^{-3} ft/min (average of wells MW-4 and MW-6)] x (5 ft/280 ft) / 0.2

$\bar{v}$ = 4.16 x 10^{-4} ft/min = **254.02 ft/year (adjusted average for flow in Service Station Area)**

v = [8.60 x 10^{-5} ft/min (average of wells MW-14 and MW-16)] x (5 ft/280 ft) / 0.2

$\bar{v}$ = 6.69 x 10^{-6} ft/min = **4.07 ft/year (adjusted average for Osage Park)**

SOURCE:
1. BLUEPRINT PROVIDED BY CLARK (AUG. 1992), STONELAKE SURVEY CO. PLAT OF SURVEY (FEB. 1990)
2. GROUND-WATER ELEVATIONS GAUGED BY BB&J PERSONNEL ON AUGUST 27, 1997



LEGEND

- MW – MONITORING WELL (MW)
- BR – BEDROCK WELL (BR)
- RW – RECOVERY WELL (RW)
- MW – MUNICIPAL WELL
- (90.98) – GROUND-WATER ELEVATION IN SHALLOW WATER BEARING UNIT (FEET)
- 90.00 – INTERPRETED GROUND-WATER CONTOUR LINE (FEET)
- INTERPRETED DIRECTION OF GROUND-WATER FLOW
- NM – NOT MEASURED
- SUBJECT PROPERTY BOUNDARY
- RES – RESIDENCE
- S: SHALLOW WELL
- D: DEEP WELL

NOTE: POTENTIOMETRIC SURFACE MAP GENERATED UTILIZING SURFER VERSION 4.15.

THE GROUND-WATER ELEVATION FOR MW-13 WAS NOT USED TO GENERATE THIS MAP, DUE TO AN ANOMALOUS WATER LEVEL MEASUREMENT.

Prepared/Date: SSS/10-8-97
Checked/Date: SGH/10-8-97

Clark Station No. 646
399 West Liberty Street

Bradburne, Briller & Johnson, LLC
208 South LaSalle
Chicago, IL 60604

Ground-Water Potentiometric Surface Map

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-4
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: PCO
Check Date: 11-13-97

Analysis Checked By:
Check Date:

Variable	Eng. Unit		S.I. Unit		Description
Yo =	0.910	ft	27.7	cm	Drawdown at time "0"
Yt =	0.074	ft	2.3	cm	Drawdown at time "t"
t =	4.00	min	240	sec	Time
SWL =	8.35	ft	254.5	cm	Static water level before slug test
TD =	17.15	ft	522.7	cm	Total depth of well
Le =	8.80	ft	268.2	cm	Length of screen (Le=Lw if SWL is within screen interval)
H =	21.65	ft	659.9	cm	Saturated aquifer thickness
Rw =	0.34	ft	10.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.20		0.20		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.17	ft	5.2	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	8.80	ft	268.2	cm	Total depth of water in well
Le/Rw =	25.9		25.9		Function of dimensionless coefficients
A =	2.3		2.3		Dimensionless coefficient
B =	0.4		0.4		Dimensionless coefficient
C =	1.9		1.9		Dimensionless coefficient

If Lw<H	Ln(Re/Rw) =	2.090	K = 1.08E-03	cm/sec	K = 2.13E-03 ft/min
If Lw=H	Ln(Re/Rw) =	2.438	K = 1.26E-03	cm/sec	K = 2.49E-03 ft/min

HYDRAULIC CONDUCTIVITY = 1.08E-03 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #646

PROJECT NUMBER C01-7-0011

MW-4

SLUG-OUT

BOUWER AND RICE METHOD

(1976, 1989)

VARIABLES			
H =	659.9	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	10.4	cm	Radius of Well and Sand Pack
La =	268.2	cm	Screen Length
Lw =	268.2	cm	Depth of Water to Bottom of Casing
Yo =	27.7	cm	Graph Variable
Yt =	2.3	cm	Graph Variable
t =	240	sec	Graph Variable
A =	2.3		Interpreted Constant
B =	0.4		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 1.08E-03 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 30 feet below ground surface. Data taken from soil boring MW-8.

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-6
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: PCO
Check Date: 11-13-97

Analysis Checked By:
Check Date:

Variable	Eng. Unit		S.I. Unit		Description
Yo =	0.670	ft	20.4	cm	Drawdown at time "0"
Yt =	0.022	ft	0.7	cm	Drawdown at time "t"
t =	1.00	min	60	sec	Time
SWL =	7.52	ft	229.2	cm	Static water level before slug test
TD =	14.68	ft	447.5	cm	Total depth of well
Le =	7.16	ft	218.2	cm	Length of sceen (Le=Lw if SWL is within screen interval)
H =	22.48	ft	685.2	cm	Saturated aquifer thickness
Rw =	0.34	ft	10.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.20		0.20		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.17	ft	5.2	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	7.16	ft	218.2	cm	Total depth of water in well
Le/Rw =	21.1		21.1		Function of dimensionless coefficients
A =	2.2		2.2		Dimensionless coefficient
B =	0.3		0.3		Dimensionless coefficient
C =	1.7		1.7		Dimensionless coefficient

If Lw<H	Ln(Re/Rw) =	1.906	K = 6.61E-03	cm/sec	K = 1.30E-02 ft/min
If Lw=H	Ln(Re/Rw) =	2.267	K = 7.87E-03	cm/sec	K = 1.55E-02 ft/min

HYDRAULIC CONDUCTIVITY = 6.61E-03 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #648

PROJECT NUMBER C01-7-0011

MW-8

SLUG-OUT

BOUWER AND RICE METHOD

(1976, 1989)

VARIABLES

H =	685.2	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	10.4	cm	Radius of Well and Sand Pack
Le =	218.2	cm	Screen Length
Lw =	218.2	cm	Depth of Water to Bottom of Casing
Yo =	20.4	cm	Graph Variable
Yt =	0.7	cm	Graph Variable
t =	60	sec	Graph Variable
A =	2.2		Interpreted Constant
B =	0.3		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 6.61E-03 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 30 feet below ground surface. Data taken from soil boring MW-8.

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-14
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: PLO
Check Date: 11-13-97

Analysis Checked By:
Check Date:

Variable	Eng. Unit		S.I. Unit		Description
Yo =	1.500	ft	45.7	cm	Drawdown at time "0"
Yt =	1.050	ft	32.0	cm	Drawdown at time "t"
t =	3.00	min	180	sec	Time
SWL =	0.53	ft	16.2	cm	Static water level before slug test
TD =	23.24	ft	708.4	cm	Total depth of well
Le =	4.80	ft	146.3	cm	Length of screen (Le = Lw if SWL is within screen interval)
H =	56.00	ft	1706.9	cm	Saturated aquifer thickness
Rw =	0.38	ft	11.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.00		0.00		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.08	ft	2.5	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	22.71	ft	692.2	cm	Total depth of water in well
Le/Rw =	12.8		12.8		Function of dimensionless coefficients
A =	1.9		1.9		Dimensionless coefficient
B =	0.3		0.3		Dimensionless coefficient
C =	1.4		1.4		Dimensionless coefficient

If Lw < H	Ln(Re/Rw) =	1.930	K = 8.37E-05	cm/sec	K = 1.65E-04 ft/min
If Lw = H	Ln(Re/Rw) =	2.665	K = 1.15E-04	cm/sec	K = 2.27E-04 ft/min

HYDRAULIC CONDUCTIVITY = 8.37E-05 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #646

PROJECT NUMBER C01-7-0011

MW-14

SLUG-OUT

BOUWER AND RICE METHOD

(1976, 1989)

VARIABLES			
H =	1706.9	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	11.4	cm	Radius of Well and Sand Pack
Le =	146.3	cm	Screen Length
Lw =	692.2	cm	Depth of Water to Bottom of Casing
Yo =	45.7	cm	Graph Variable
Yt =	32.0	cm	Graph Variable
t =	180	sec	Graph Variable
A =	1.9		Interpreted Constant
B =	0.3		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 8.37E-05 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 33 feet below ground surface. Data taken from well log for Osage Park monitoring well, Wauconda, IL.

HYDRAULIC CONDUCTIVITY (BOUWER AND RICE METHOD)

Project No: C01-7-0011
Project Name: Clark Refining & Marketing, Inc.
Location: Station #646

Well No: MW-16
Slug-in/Slug-out: SLUG-OUT
Test Date: 9/24/97
Test By: DPO

Analyzed By: DPO
Analysis Date: 9/24/97

Data Checked By: DPO
Check Date: 11-12-97

Analysis Checked By: _____
Check Date: _____

Variable	Eng. Unit		S.I. Unit		Description
Yo =	1.200	ft	36.6	cm	Drawdown at time "0"
Yt =	0.600	ft	18.3	cm	Drawdown at time "t"
t =	22.00	min	1320	sec	Time
SWL =	5.86	ft	178.6	cm	Static water level before slug test
TD =	22.86	ft	696.8	cm	Total depth of well
Le =	4.80	ft	146.3	cm	Length of screen (Le=Lw if SWL is within screen interval)
H =	27.14	ft	827.2	cm	Saturated aquifer thickness
Rw =	0.38	ft	11.4	cm	Radial distance between undisturbed aquifer and well center
Rc =	0.08	ft	2.5	cm	Actual casing inside radius
n =	0.00		0.00		Porosity of sand pack (n = "0" if SWL above screen interval)
Rc.t =	0.08	ft	2.5	cm	Theoretical casing radius (if SWL is within screen interval)
Lw =	17.00	ft	518.2	cm	Total depth of water in well
Le/Rw =	12.8		12.8		Function of dimensionless coefficients
A =	1.9		1.9		Dimensionless coefficient
B =	0.3		0.3		Dimensionless coefficient
C =	1.4		1.4		Dimensionless coefficient

If Lw<H	Ln(Re/Rw) =	1.955	K = 2.25E-05	cm/sec	K = 4.42E-05 ft/min
If Lw=H	Ln(Re/Rw) =	2.528	K = 2.90E-05	cm/sec	K = 5.71E-05 ft/min

HYDRAULIC CONDUCTIVITY = 2.25E-05 cm/sec

COMMENTS:

HYDRAULIC CONDUCTIVITY CALCULATION

Clark Refining & Marketing, Inc.

Station #646

PROJECT NUMBER C01-7-0011

MW-16

SLUG-OUT

BOUWER AND RICE METHOD

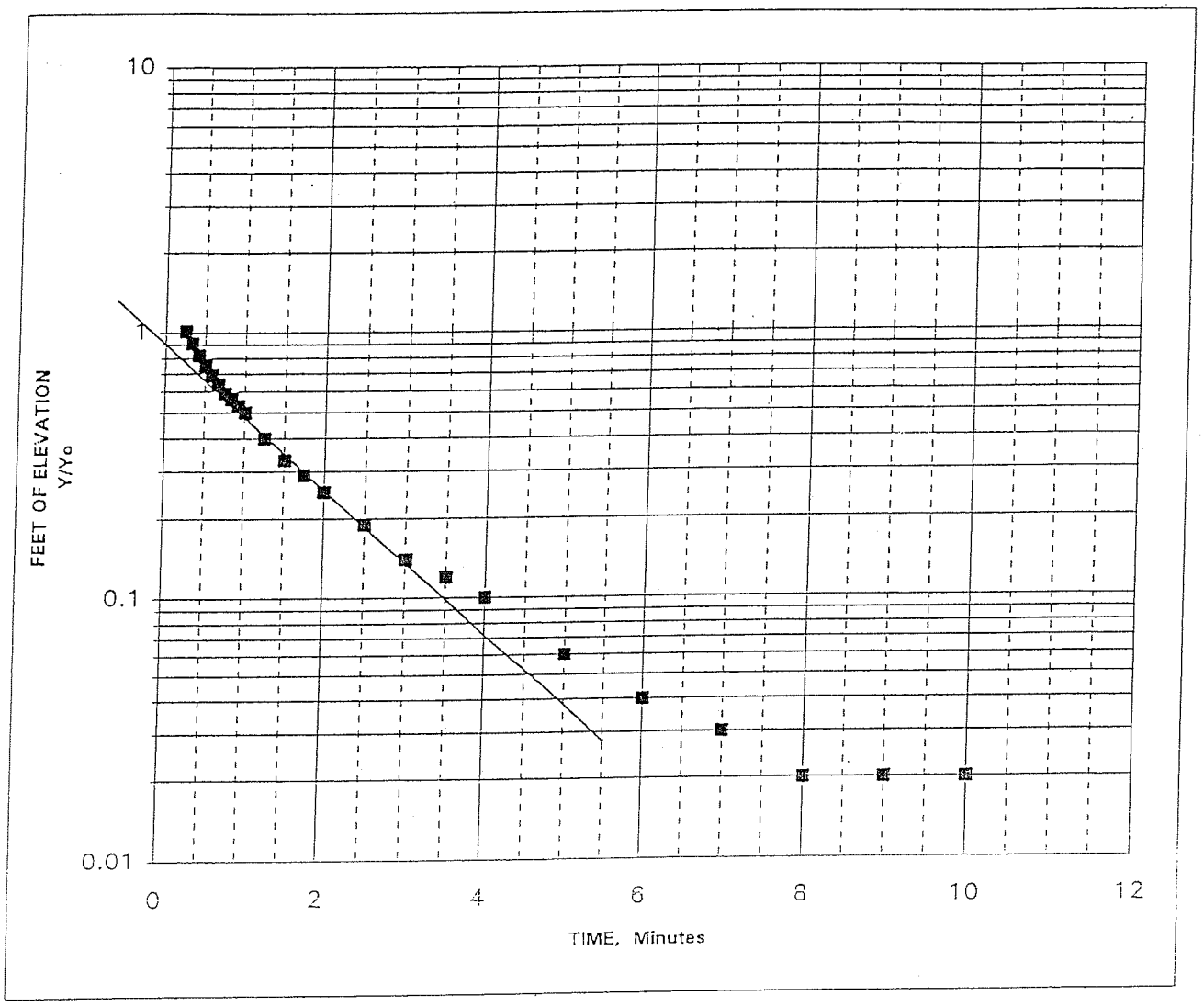
(1976, 1989)

VARIABLES			
H =	827.2	cm	Saturated Aquifer Thickness
Rc =	2.5	cm	Radius of Well Casing
Rw =	11.4	cm	Radius of Well and Sand Pack
La =	146.3	cm	Screen Length
Lw =	518.2	cm	Depth of Water to Bottom of Casing
Yo =	36.6	cm	Graph Variable
Yt =	18.3	cm	Graph Variable
t =	1320	sec	Graph Variable
A =	1.9		Interpreted Constant
B =	0.3		Interpreted Constant

HYDRAULIC CONDUCTIVITY = 2.25E-05 cm/sec

Assumption: Saturated aquifer thickness measurement for hydraulic conductivity calculation is estimated at 33 feet below ground surface. Data taken from well log for Osage Park monitoring well, Wauconda, IL.

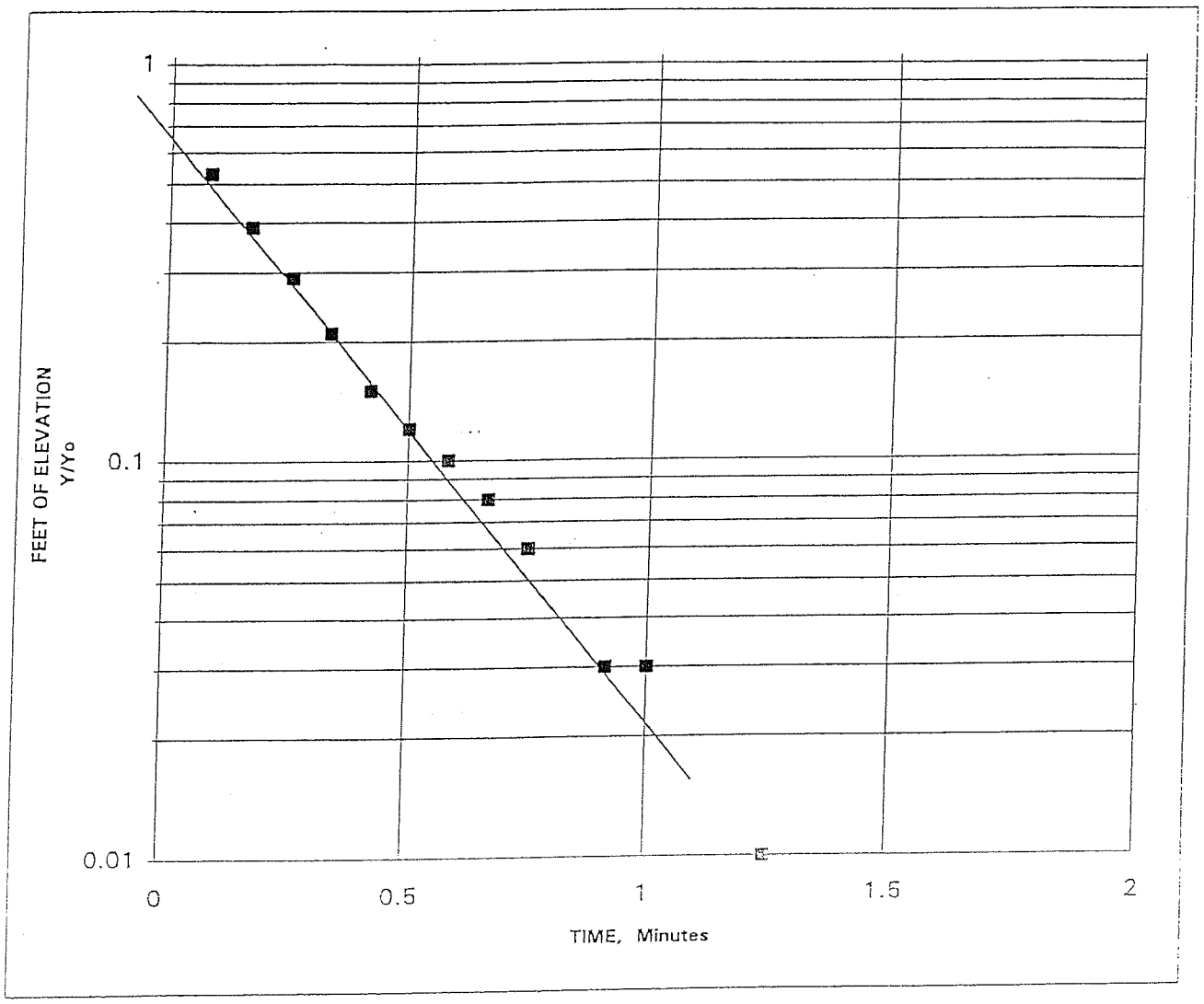
Figure 4: SLUG TEST DATA
Well MW-4
Slug Out



Time	Y
0	0.91
4	0.074

Prepared/Date: ____/_____

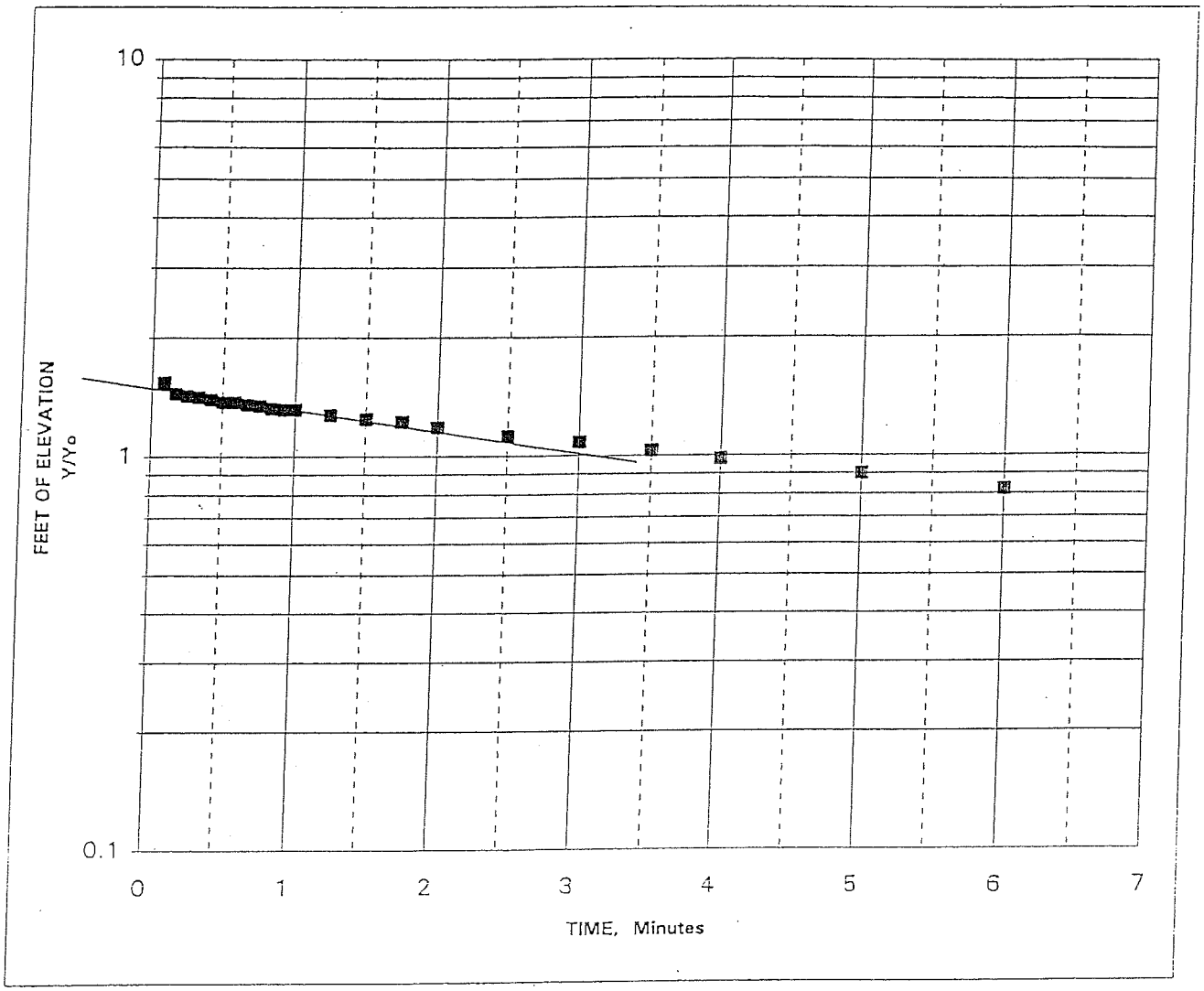
Figure 4: SLUG TEST DATA
Well MW-6
Slug Out



Time	Y
0	0.67
1	0.022

Prepared/Date: ____/_____

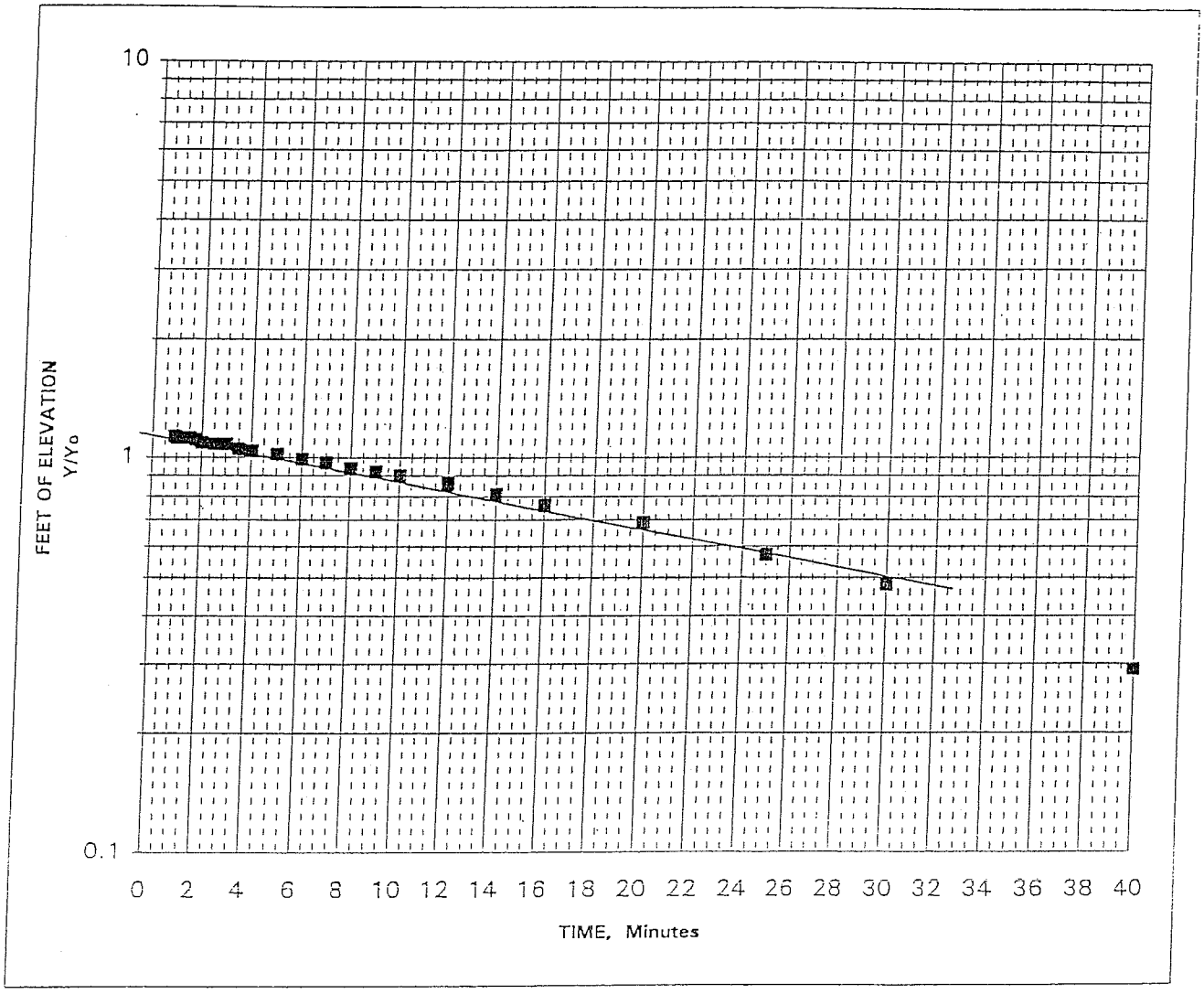
Figure 4: SLUG TEST DATA
Well MW-14
Slug Out



Time	Y
0	1.5
3	1.05

Prepared/Date:____/_____

Figure 4: SLUG TEST DATA
Well MW-16
Slug Out



Time	Y
0	1.2
22	0.6

Prepared/Date:____/_____

APPENDIX I

SSL PRINTOUTS – SOIL LEACHING

Soil Component of the Groundwater Ingestion Exposure Route

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Constituent: **BTEX and MTBE**

Equation S17

$$C_w \cdot \left[K_d + \frac{(\theta_w + \theta_a \cdot H')}{\rho_b} \right]$$

Where:

SCGIER RO	=	remediation objective		=	unknown	mg/kg
C_w	=	target soil leachate concentration (Equation S18)				
			Benzene	=	0.100	mg/L
			Toluene	=	20.000	mg/L
			Ethylbenzene	=	14.000	mg/L
			Total Xylenes	=	200.000	mg/L
			MTBE	=	1.400	mg/L
K_d	=	soil-water partition coefficient (Equation S19)				
			Benzene	=	0.458	cm^3/g
			Toluene	=	1.414	cm^3/g
			Ethylbenzene	=	2.821	cm^3/g
			Total Xylenes	=	2.020	cm^3/g
			MTBE	=	0.089	cm^3/g
θ_w	=	water-filled soil porosity (Equation S20)		=	0.308	L_{water}/L_{soil}
θ_a	=	air-filled soil porosity (Equation S21)		=	0.036	L_{air}/L_{soil}
H'	=	Henry's Law Constant (default - chemical specific)				
			Benzene	=	0.228	unitless
			Toluene	=	0.272	unitless
			Ethylbenzene	=	0.323	unitless
			Total Xylenes	=	0.25	unitless
			MTBE	=	0.0241	unitless
ρ_b	=	dry soil bulk density (Table 1)		=	1.739605	g/cm^3

Therefore, solving for the *SCGIER RO* for benzene =	0.064	mg/kg
solving for the *SCGIER RO* for toluene =	31.939	mg/kg
solving for the *SCGIER RO* for ethylbenzene =	42.061	mg/kg
solving for the *SCGIER RO* for total xylenes =	440.507	mg/kg
solving for the *SCGIER RO* for MTBE =	0.374	mg/kg

Target Soil Leachate Concentration

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Constituent: **BTEX and MTBE**

Equation S18 $$C_w = DF \cdot GW_{obj}$$

Where:

C_w	=	target soil leachate concentration (Equation S18)	=	unknown	mg/L
DF	=	dilution factor (20 or Equation S22, whichever is greater)	=	20.00	unitless
GW_{obj}	=	groundwater remediation objective (Tier 1, Class I GRO - chemical specific)			
		Benzene	=	0.005	mg/L
		Toluene	=	1	mg/L
		Ethylbenzene	=	0.7	mg/L
		Total Xylenes	=	10	mg/L
		MTBE	=	0.07	mg/L

Therefore, solving for C_w for benzene =	0.100	mg/L
solving for C_w for toluene =	20.000	mg/L
solving for C_w for ethylbenzene =	14.000	mg/L
solving for C_w for total xylenes =	200.000	mg/L
solving for C_w for MTBE =	1.400	mg/L

Soil-Water Partition Coefficient

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation S19

$$K_d = K_{oc} \bullet f_{oc}$$

Where:

K_d	=	Soil-water partition coefficient	=	unknown	cm^3/g
K_{oc}	=	Organic carbon partition coefficient (default - chemical specific)			
		Benzene	=	58.9	L/kg
		Toluene	=	182	L/kg
		Ethylbenzene	=	363	L/kg
		Total Xylenes	=	260	L/kg
		MTBE	=	11.5	L/kg
f_{oc}	=	organic carbon content of soil (Table 1)	=	0.00777	g/g

Therefore, solving for K_d for Benzene	=	0.458	cm^3/g
solving for K_d for Toluene	=	1.414	cm^3/g
solving for K_d for Ethylbenzene	=	2.821	cm^3/g
solving for K_d for Total Xylenes	=	2.020	cm^3/g
solving for K_d for MTBE	=	0.089	cm^3/g

Water-Filled Soil Porosity

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation S20

$$\theta_w = \eta \cdot \left(\frac{I}{K_s} \right)^{\frac{1}{(2b+3)}}$$

Where:

θ_w	=	water-filled soil porosity	=	unknown	L_{water}/L_{soil}
η	=	total soil porosity (Table 1)	=	0.344	L_{pore}/L_{soil}
I	=	infiltration rate (default)	=	0.3	m/yr
K_s	=	saturated hydraulic conductivity (default)	=	5	m/yr
$1/(2b+3)$	=	exponential (default)	=	0.039	unitless

Therefore, solving for θ_w = 0.308 L_{water}/L_{soil}

Air-Filled Soil Porosity

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation S21 $$\theta_a = \eta - \theta_w$$

Where:

θ_a	=	air-filled soil porosity	=	unknown	L_{air}/L_{soil}
η	=	total soil porosity (Table 1)	=	0.344	L_{pore}/L_{soil}
θ_w	=	water-filled soil porosity (Equation S20)	=	0.308	L_{water}/L_{soil}

Therefore, solving for θ_a = 0.036 L_{air}/L_{soil}

Dilution Factor

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation S22

$$DF = 1 + \frac{K \bullet i \bullet d}{I \bullet L}$$

Where:

DF	=	dilution factor	=	unknown	unitless
K	=	aquifer hydraulic conductivity (Appendix H)	=	2,084.53	m/yr
i	=	hydraulic gradient (Appendix H)	=	0.0157	
d	=	mixing zone depth (Equation S25)	=	5.842	m
I	=	infiltration rate (default)	=	0.3	m/yr
L	=	source length parallel to groundwater flow (Figure 4)	=	50.90	m

Therefore, solving for DF = 13.52 unitless

Please note that since the calculated DF is less than 20, a value of 20 is utilized in Equation S18.

Estimation of Mixing Zone Depth

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation S25

$$d = \left(0.0112 \cdot L^2\right)^{0.5} + d_a\left[1 - \exp\frac{\left(-L \cdot I\right)}{\left(K \cdot i \cdot d_a\right)}\right]$$

Where:

d	=	mixing zone depth	=	unknown	m
L	=	source length parallel to groundwater flow (Figure 4)	=	50.90	m
d_a	=	aquifer thickness (site-specific)	=	9.2	m
I	=	infiltration rate (default)	=	0.3	m/yr
K	=	aquifer hydraulic conductivity (Appendix H)	=	2,084.53	m/yr
i	=	hydraulic gradient (Appendix H)	=	0.0157	m/m

Therefore, solving for d = 5.842 m

APPENDIX J

REMEDIATION SYSTEM QUOTES AND EQUIPMENT AND TECHNICAL SPECIFICATIONS

SCHRADER ENVIRONMENTAL SERVICES, INC.
212 S PINE RIVER
ITHACA, MI 48847
OFFICE (989) 875-6500
FAX (989) 875-8880

FAX PROPOSAL

PROPOSAL NUMBER CS040609-1R1

ATTN: **MARCOS CZAKO** **DATE:** April 17, 2009

TO: Tri Cor Environmental **PHONE:** 630-740-5291
1800 W. Hawthorne Lane Suite P **FAX:** 630-520-9976
W. Chicago, IL

RE: DPE Pilot Test equipment
SITE: Wanaconda, Illinois

Item:	Description:	Quantity:	Item cost:	Total:
	Rental of the following equipment:			
1	**SES Dual phase extraction system**	1-6 Months		**$3,595.00**
	Includes:	6 Month Minimum		Per Month
	Enclosed Trailer	Rental		
	- 8' X 14' enclosed/insulated dual axle 7000# GVW trailer			
	- Double rear entry and single side entry lockable doors	6+ Months		**$3,395.00**
	- Inside height of trailer is 92"			Per month
	- (2) EXP lights, w/switch, EXP electric heater in equipment room			
	- Manual inlet louver and 12" EXP exhaust fan			
	SVE Skid			*included*
	Includes:			
	- Roots URAI 36 Positive Displacement Blower			
	- 70 ACFM @12" HG			
	- Inlet particulate filter			
	- Vacuum & temperature gauges			
	- Inlet Silencer			
	(4) Well Inlet Manifold			*included*
	Includes: (note: additional wells can be added)			
	- (4) 2" dia. male camlock well inlet connections			
	- Clear sight tubes w/ball valves			
	- Vacuum gauges & sample ports			
	- (1) 2" dia. ERDCO flow meter			
	Moisture Separation Tank			*included*
	Includes:			
	- Approx. 80 gallon capacity			
	- 2" dia. inlet & outlet connections			
	- Low, high, high high level control float switches for transfer pump operation			
	- Sight glass			
	- 6" dia. clean out port			
	- 1" dia. FNPT manual drain w/valve			
	- 1/2 hp EXP transfer pump			

	Air Stripper Stat 15 (or Equal) Per Request Designed Flow to system is 10 gpm - 3 Stainless Steel Trays with demister - Stainless Steel Sump - Blower with 5 hp 230/3ph/60 VAC EXP - Manual Air Flow Balancing Damper - High level alarm - Low Pressure Alarm Switch - Inlet Filter - Discharge Pump 3/4 HP 230/3/60 VAC EXP - Auto Pump Out Provisions		*included*
	10 gpm fiberglass Oil/water separator Includes: - Steel stand for separator - 55 gallon product drum with high level system shutdown switch - 150 gallon Polyethylene transfer tank with (3) EXP liquid level switches for transfer pump operation - 1/2 HP EXP 230/3/60 VAC Centrifical Transfer Pump - 8x30 bag filter housing - 100 micron bag filters 8" X 30"	$7.50/ea.	*included* *As Required*
	Control Panel Package Includes: - NEMA 4 rated enclosure - Hand/off auto switches w/faults lights - Low, high, high high level control relays - 7 KVA transformer - Baseboard heater in control room		*included*
2	**SES's technician for on-site start up assistance** *Plus Per-Diem and Travel Expenses*	$875.00/ day plus expenses	
3	**Delivery to Wanaconda, Illinois**		$1,425.00
4	**Pick Up after Rental Period from Wanaconda, Illinois**		$1,425.00

Note: On site power requirement is 230/3/60 VAC sized at 100 amps

Note: Wells, Field Connections, Installation and Permits are by others at this time

DELIVERY: 4-5 Weeks after receipt of a written purchase order, pending equipment availability.

RENTAL TERMS: First and last months rent due with order plus shipping and a signed rental contract. Monthly rent due 1st of each month.

MODIFICATION OF RENTAL EQUIPMENT: Any modification (removal or replacement) either mechanical or electrical for site specific applications that require SES re-work before or after the rental period will be billed. 1½% per month finance charge will apply to any invoices over 30 days.
The above pricing does not include any applicable sales tax.

ACCEPTANCE:

Accepted by: _____ Company: _____

Printed Name & Title: _____

Purchase Order #: _____ Date: _____

Sincerely,
Schrader Environmental Services, Inc.

Charles Sumrack
Operations Manager

BISCO Environmental **NEEP Systems**

Soil and Groundwater Remediation Equipment

May 11, 2009

Mr. Marcos Czako
TriCore Environmental, LLC
1800 West Hawthorne Lane, Suite P
West Chicago, IL 60185
630-520-9976
micako@comcast.net

Subject: DPE Trailer
Shivam energy
Wauconda, IL

BISCO Proposal No. 10523

Dear Mr. Czako,

BISCO Environmental is pleased to provide the following proposal to purchase a turnkey remediation system based on the components, materials and design described herein. It is our objective to provide the most cost effective system design to meet the performance specifications and achieve desired cleanup requirements. The proposed enclosed trailer system would have (1) one Class I Division II rated equipment room.

BISCO will supply piping, fittings, components, instrumentation and equipment of suitable materials, design and methods in accordance with generally acceptable practices within the soil and groundwater remediation industry. The system will be pre-piped, pre-wired, and pre-tested to insure a minimum amount of field connections upon installation of the system. Primary system components are described below for your review and consideration:

DPE Inlet Manifold:

- (1) 4" SCH80 PVC or aluminum header with (11) 2" SCH80 PVC legs
- (11) 2" Brass gate valves
- (11) 2" Swing check valves
- (11) Sample ports
- (11) Vacuum indicators 0-30" Hg
- (11) Inline flow meters 2.0" inlet/outlet

Air/water moisture separator:

- 80-gallon vertical steel air/water separator
- 2" Tangential inlet and out with integral demister tower and pad
- 4" Flanged bottom clean out port
- 1" Manual drain port with ball valve and male cam lock fitting
- 2" stainless steel stem mounted 3-position float switch assembly in a clear site tube
- Progressive cavity 1.0 HP 240/1/60 XP motor with recirculation line
- Pump inlet ball valve and wye stainer
- Pump discharge gate valve, check valve, pressure gauge and sample port

DPE Pump (~195 ACFM @ 18" Hg Vacuum at the pump inlet):

- 2" SCH80 PVC inlet piping
- Induced VGAC manifold with (3) 3" SCH80 PVC butterfly valves
- Induced VGAC manifold terminations at trailer exterior with 2" Part F cam locks
- 1" Manual dilution air gate valve with filter silencer at trailer exterior wall
- 2" Inline air filter with differential pressure gauge
- Inlet flow element and indicator gauge
- Inlet low vacuum switch
- Inlet temperature gauge
- Influent vacuum gauge
- Inlet vacuum relief valve
- Busch MM1322AV rotary claw vacuum pump
- 8.7HP 240/3/60 TEFC motor
- Discharge temperature gauge
- 2" Temperature appropriate discharge piping and stack with rain cap at trailer exterior

Vapor Phase Carbon

- (2) Tetrasolv Filtration VFV-1000 vacuum rated VGAC filters
- 1000 Pounds of reactivated GAC each filter
- 3" NPT inlet/outlet with 2" part F cam locks
- (3) 3' x 20' Flex hoses with part C cam locks on each end
- VGAC vessels ship loose for installation at the trailer exterior by others

Oil Water Separator:

- 20 GPM capacity
- Stainless steel construction
- 60 Gallon integral effluent holding tank
- External site gauge with 3-position level switch
- Centrifugal transfer pump 0.5HP 240/1/60 XP motor
- Discharge bag filter housing – Aluminum construction, 50 GPM max, 10 Filter bags
- Inlet and outlet unions
- ¼ ' Pressure bleed valve at top of housing
- Pre and post ball valves and pressure gauges
- 55 Gallon product drum with LSH (Shipped loose for installation by others at trailer exterior)

Air Stripper:

- BISCO/NEEP Shallow Tray Model 2331-P – HDPE Construction
- 2" clear sump sight gauge
- Sump liquid low and high level switches
- Air Stripper blower to handle 300 CFM @ 18"w.c. back pressure
- 5HP 230/1/60 XP motor
- Blower low pressure switch
- Blower control butterfly valve
- Blower interconnecting piping
- Centrifugal transfer pump 0.5HP 240/1/60 XP motor
- Pump inlet ball valve and wye strainer
- Pump discharge check valve, gate valve, pressure gauge, and sample port
- Discharge local indicating flow totalizer

System Control Panel (Relay Based):

- NEMA 4 698a rated dead front lockable door in door enclosure
- 240/1/60 electrical service
- (1) 20HP VFD for DPE pump motor phase conversion
- 120 VAC control voltage transformer
- (4) Channel auto dialer
- External emergency stop button
- Standard motor starters with thermal overload protection as needed
- Circuit breakers for all inductive and resistive loads, motors, lights,
- Interlocks as required for proper system operation
- Illuminated hand-off-auto selector switches
- Hour meters for the DPE pump motor
- Alarm lights with manual reset as required for proper system function
- Intrinsically safe control relays and wiring as necessary
- Through door main disconnect with primary and branch circuit protection
- Reset button to clear fault conditions
- Panel mounted at trailer exterior nose

Enclosed Trailer:

- Interior trailer dimensions- 8' W x 18' L x 7' 6" H
- Non slip interior floor covering
- Trailer interior temperature switch
- Floor sump with Level switch
- Tandem-axle with electric brakes
- Extended tongue to allow for turning radius with nose mounted MCP
- Double opening rear cargo doors
- Four (4) Jack-stands (Supplied loose)
- Insulated floor walls and ceiling
- Class I Div II interior heater 3.6 kW
- Door mounted inlet air vents
- Emergency (E-Stop) push button (located in trailer)
- Three (3) Class I Div II interior light fixtures
- Class I Div II 20" pressure fan (thermostatically controlled)
- System to be fully assembled, pre-piped, and pre-wired per ***NATIONAL ELECTRIC CODE, ARTICLE 500, CLASS 1, DIV. 2, HAZARDOUS LOCATIONS.***

System Pricing

The DPE trailer as described above		**$ 96,500.00**
Shipping		**$ 2,500.00**
	Total	**$ 99,000.00**

System Component Price Breakdown

DPE Manifold	$ 7,612.00
Moisture Separator System	$ 4,009.00
DPE System	$ 14,612.00
Oil/Water Separator System	$ 8,620.00
Air Stripping System	$ 7,117.00
Vapor Phase Carbon	$ 7,150.00
System Control Panel	$ 7,724.00
Trailer	$ 22,156.00
Labor	$ 17,500.00

Assumptions, Clarifications and Exceptions

- *BISCO* will supply and install piping, fittings, components, instrumentation and equipment of suitable materials, design and methods in accordance with generally acceptable practices within the soil and groundwater remediation industry.
- All final invoices will be issued for equipment upon notice of readiness to ship.
- Subject to credit approval, payment terms are one third due with written order, one third due prior to shipment or readiness to ship, one third due net 30 days from shipment or readiness to ship.
- Issuance of a purchase order or notice to proceed constitutes the acceptance of BISCO's terms and conditions. In the event of a conflict with any customer terms, BISCO's terms shall take precedence
- Warranty period begins upon notification that the system/equipment is ready to ship.
- BISCO is not responsible for any discrepancies between the written RFP documents and the RFP drawings. Pricing is limited to only those items describe herein. Accidental errors or omissions in interpreting the bid documents may require additional costs.
- Pricing is based on the SVE and Air Sparge pumps and motors specified. No additional pressure loss calculations have been performed. The actual mechanical installation of the system may require pipe, fittings or instruments that impact the operational flows, vacuums and pressures.
- If applicable, pricing is based on the telemetry and or PLC systems specified. If additional I/O capacity is required to meet desired control capability, increased cost may be required.
- Sizing and costs for the equipment containers, sheds, trailers or skids may change based upon engineered and scaled drawings during the submittal process.
- Every effort will be made to locate flow sensors/meters in desired locations. However, installation per manufacturer's specifications may be influenced by enclosure or skid sizing and/or system operating temperatures or pressures.

- Pricing is based on uninterrupted system construction at BISCO's manufacturing facility. Customer requests to stop, delay, postpone or interrupt completion of a system already in the manufacturing process may result in additional handling and set up charges.

- If a customer or consultant operational witness test is required prior to shipment, the test shall be scheduled immediately following BISCO's functional test of the system. Delays in performance of the customer witness test may result in additional handling and set up charges.

- If customer is unready to accept shipment at time of notification to ship, customer will advise BISCO in writing of the reason for delay, anticipated readiness date, and acknowledge ownership of the equipment as of the notification to ship date. BISCO will store equipment for a period of 30 days free of charge. Customer will be invoiced monthly storage charges @ a rate of $ 5.00/ square foot / month, plus any applicable one time mobilization charge to relocate equipment to a storage facility other than BISCO Environmental.

- No permitting services or costs are included.

- On-site construction services, on-site ancillary piping, or on-site electrical work are not provided as a part of this proposal

- No PE stamped structural drawings, wind load calculations, or tie down plans for system enclosures are included. They can be made available for an additional cost on a T&M basis if requested.

- Equipment offloading services at the destination or job site have not been included.

- Delivery is ~8-10 weeks after submittal approval. Submittals will be provided within 2-3 weeks of receipt by BISCO of a completed purchase order confirmation (POC) form.

- Prior to system fabrication, we will provide a submittals package for your review and approval. Submittals can include a system P&ID, layout drawing, electrical distribution diagram, control panel drawings, and manufacturer's catalog cut sheets for the system's major components. Once submittals are approved, the components will be ordered and the system will be fabricated.

- BISCO will provide an O&M Manual (one copy and one electronic copy (CD) that consists of system drawings and manufacturer's related component information. Any additional copies, or informational/operational plans, schedules or procedures may require additional cost.

- O&M Manuals are shipped approximately 1-2 weeks after final system testing, programming and completion of as built drawings.

- Pursuant to NEC Article 409; BISCO Environmental, Inc. provides U.L. Listed industrial control panels manufactured with short circuit current ratings (SCCR) of 10kA as standard product. The need for an alternate SCCR must be communicated in writing to BISCO Environmental, Inc. prior to placing any order.

- Not having any ambient sound level data regarding the site, we cannot guarantee meeting any sound requirement if specified. We can/have included interior sound blankets, sound ducting hoods and insulation, so it is quite possible that the sound levels from the systems will fall within acceptable levels.

- Steel shipping containers are not NFPA certified with fire wall ratings. They may not meet national fire code requirements.
- Due to the volatility of fuel costs, transportation quotes/estimates older than two weeks will be re-quoted and may result in additional costs.

STANDARD TERMS AND CONDITIONS

AGREEMENT: This offer may only be accepted on, and is expressly limited to acceptance of the terms described herein and acceptance by the buyer shall be deemed as acceptance of all of the terms.

ASSUMPTIONS: BISCO Environmental assumes the information provided by the buyer is the full extent of the information necessary to determine the scope of the project. **It is the responsibility of the buyer to provide all information necessary to prepare the proposal to BISCO Environmental. In the preparation of the proposal, BISCO Environmental cannot consider any information germane to the project not provided by the buyer. This includes but is not limited to: local and federal applicable codes, government regulations, site conditions, project specifications, available electric power, hazardous location classifications, etc.** Any errors or omissions in the proposal resulting from unidentified legal or technical requirements are outside the scope of this proposal, and BISCO Environmental will not be responsible for them.

MODIFICATION: No changes shall be made in the quotation or purchase order unless agreed to by the seller in writing. This order is not subject to deviations of customer's confirming purchase order.

PRICING: Subject to credit approval, Net 30 days, or as stated in the body of the proposal Terms stated within the proposal take precedence. No retainers whatsoever will be allowed regardless of agreements between purchaser and ultimate owner or user.

TAXES: The quoted price does not include sales, use, excise or similar taxes except as noted in the proposal. If sales taxes are quoted as a component of the price, such tax amounts have ben calculated based on representations by the buyer. The buyer retains responsibility for any sales, use, excise or similar not expressly outlined in the proposal and paid by BISCO Environmental on the buyers behalf.

F.O.B. All items on this proposal will be shipped F.O.B. BISCO or F.O.B origin point if drop shipped. BISCO Environmental shall not be responsible nor liable for any damage caused by the freight carrier. Acceptance of the freight by carrier is acknowledgment that containers or method of shipping was acceptable when picked up.

VALIDITY: This proposal will be valid for thirty (30) days unless otherwise stated in the proposal.

CANCELLATION: Buyer may cancel this agreement only upon payment of reasonable cancellation charges which shall take into account expenses incurred and commitments made by BISCO Environmental.

WARRANTY: All products not manufactured by BISCO Environmental carry the original manufacturer's warranty. Copies are available on request.

BISCO Environmental warrants its packaged and manufactured equipment against any defect in material or workmanship, under normal use and storage for a period of twelve (12) months from date of manufacture. In the event that products are found to be defective within the warranty period, BISCO Environmental's sole obligation and remedy shall be the furnishing of replacements for any defective parts, and such replacement parts shall be furnished but not installed by BISCO Environmental. BISCO ENVIRONMENTAL WILL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES IN ANY CLAIM SUIT OR PROCEEDINGS ARISING UNDER WARRANTY. NOR WILL BISCO ENVIRONMENTAL ACCEPT ANY LIABILITY FOR CLAIMS For LABOR, LOSS OFF PROFIT, REPAIRS OR OTHER EXPENSES INCIDENTAL TO REPLACEMENT. The product warranty expressed above is our only warranty and may not be verbally changed or modified by any representative of BISCO Environmental. All freight costs incurred in shipping parts to or from BISCO Environmental or to the manufacturer if necessary are at the expense of the customer.

BISCO Environmental expressly disclaims any warranties, expressed or implied, including any warranty of merchantability or fitness for a particular purpose or any warranty arising from a course of dealing or usage of trade. Except to the extent required by applicable law, BISCO Environmental shall not be liable, in tort, contract or otherwise, for any loss or damage, whether direct, consequential or incidental, of any person or entity arising in connections with the equipment.

RETURNS: All returns are subject to a 25% restocking fee. All special orders are non-returnable. All returnable items must be in new, unused, resalable condition and in original packaging. All freight costs incurred due to returns are at the expense of the customer. All material being returned for warranty evaluation is subject to labor charges if found to be out of warranty. Shop labor rate is $75.00 per hour.

If you have any questions or concerns please feel free to give me a call.

Sincerely,

John Slesinski
Phone 508-738-5103
E-mail: jslesinski@biscoenv.com
CC: Leo McDonough

APPENDIX K

MASS LOADING CALCULATIONS AND RADIUS OF INFLUENCE GRAPHS

Mass Loading - Unsaturated Soil

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation
Total Mass of Contaminants = (Average Total VOC Concentration (ppm)/1,000,000) * (Total Volume of Contaminated Mass (yd^3) * Dry Bulk Density (lbs/ft^3) * (27 ft^3/ 1 yd^3)

Conversions

1	yd^3	=	27	ft^3

Concentration at Point Source = 5,142.50 ppm
The VOC concentration at the point source was determined by calculating a ratio of the BTEX and MTBE concentrations to the PID reading for the sample submitted for laboratory analysis from SB-44. The ratio was then utilized to determine the estimated BTEX and MTBE concentrations in the unsaturated soil for the point source. The BTEX and MTBE concentrations were then averaged and multiplied by 5 lbs VOCs per lb of BTEX and MTBE . BTEX and MTBE concentrations are summarized in Table 7.

Concentration of Remaining Soil Plume = 785.25 ppm

The VOC concentration in the remaining soil plume was determined by calculating a ratio of the BTEX and MTBE concentrations to the PID reading for the sample submitted for laboratory analysis from each boring. The ratio was then utilized to determine the estimated BTEX and MTBE concentrations in the unsaturated soil for that boring. The BTEX and MTBE concentrations were then averaged and multiplied by 5 lbs VOCs per lb of BTEX and MTBE . BTEX and MTBE concentrations for the soil samples collected are summarized in Table 7.

Volume of Point Source Contaminated Mass = 11.11 yd^3
The point source volume was estimated by determining the area of the point source (10 feet by 10 feet) and an average thickness of the soil contamination above the water table at this source area (3 feet). The point source area is approximately 1% of the total contaminated plume volume (1,113 yd^3). The contaminated plume is illustrated on Figure 5.

Volume of Contaminated Mass in Remaining Soil Plume = 1,101.89 yd^3
The remaining soil plume volume was estimated by determining the volume of the remaining soil plume (volume of the point source (11.10 yd^3) subtracted from the volume of the total soil plume. The total soil plume volume was estimated by determining the total area of the soil plume (10,017 $feet^2$)) and an average thickness of the soil contamination in the remaining soil plume above the water table (3 feet). The remaining contaminated plume area is approximately 99% of the total contaminated plume volume. The contaminated plume is illustrated on Figure 5.

Average Total VOC Concentration = 828.82 ppm
By utilizing a ratio of the volume of contaminated masses to the total volume of contaminated mass and the total VOC concentrations, an average total VOC concentration throughout the soil plume was estimated. This average was then utilized in the equation above to calculate the total mass of contaminants.

Dry Bulk Density = 108.6 lbs/ft^3
The dry bulk density is summarized in Table 1.

Total Mass of Contaminants = 2,704.9 lbs

Mass Loading - Saturated Soil

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation
Total Mass of Contaminants = (Highest Average Concentration (ppm)/1,000,000) * (Volume of Contaminated Mass (yd^3) * Dry Bulk Density (lbs/ft^3) * (27 ft^3/ 1 yd^3)

Conversions

1	yd^3	=	27	ft^3

Average Concentration = 361.39 ppm
The VOC concentration in the saturated soil was determined by calculating a ratio of the BTEX and MTBE concentrations to the PID reading for the sample submitted for laboratory analysis from each boring. The ratio was then utilized to determine the estimated BTEX and MTBE concentrations in the soil below the water table for that boring. The BTEX and MTBE concentrations were then averaged and multiplied by 5 lbs VOCs per lb of BTEX and MTBE . BTEX and MTBE concentrations for the soil samples collected are summarized in Table 7.

Volume of Contaminated Mass = 1,855.00 yd^3
The volume was estimated by determining the area of the contaminated soil plume (10,017 feet2) and an average thickness of the soil contamination below the water table (5 feet). The contaminated plume is illustrated on Figure 5.

Dry Bulk Density = 108.6 lbs/ft^3
The dry bulk density is summarized in Table 1.

Total Mass of Contaminants = 1,965.7 lbs

Mass Loading - Groundwater

Shivam Energy, Inc.
399 West Liberty Street
Wauconda, Lake County, Illinois 60084
IEMA Incident Nos. 892744 and 903199

Equation

Total Mass of Contaminants = (Highest Average Concentration (ppm)/1,000,000) * (Volume of Contaminated Mass (yd^3) * Soil Porosity (%) * Density of Water (lbs/ft^3) * (27 ft^3/1 yd^3)

Conversions

1	yd^3	=	27	ft^3

Highest Average Concentration = 1.70 ppm

The average BTEX and MTBE concentration from MW-26, RW-1, and MW-26 (0.34 ppm) was multiplied by 5 lbs VOCs per lb of BTEX and MTBE. These wells are located within the contaminated groundwater plume referenced below in the Volume of Contaminated Mass description. BTEX and MTBE concentrations are summarized in Table 6.

Volume of Contaminated Mass = 5,820.56 yd^3

The volume was estimated by determining the area of the contaminated groundwater plume surrounding the site (31,431 $feet^2$), and utilizing the depths in the soil borings at which saturated conditions were present and PID measurements showed vertical delineation to determine a treatment thickness (5 feet). The contaminated plume is illustrated on Figure 2. The contaminated groundwater plume present north of the site in Osage Park will be addressed once MW-33 and MW-34 are installed to evaluate the groundwater concentrations at B-4c and B-5b. This information will be provided in an Amended CAP.

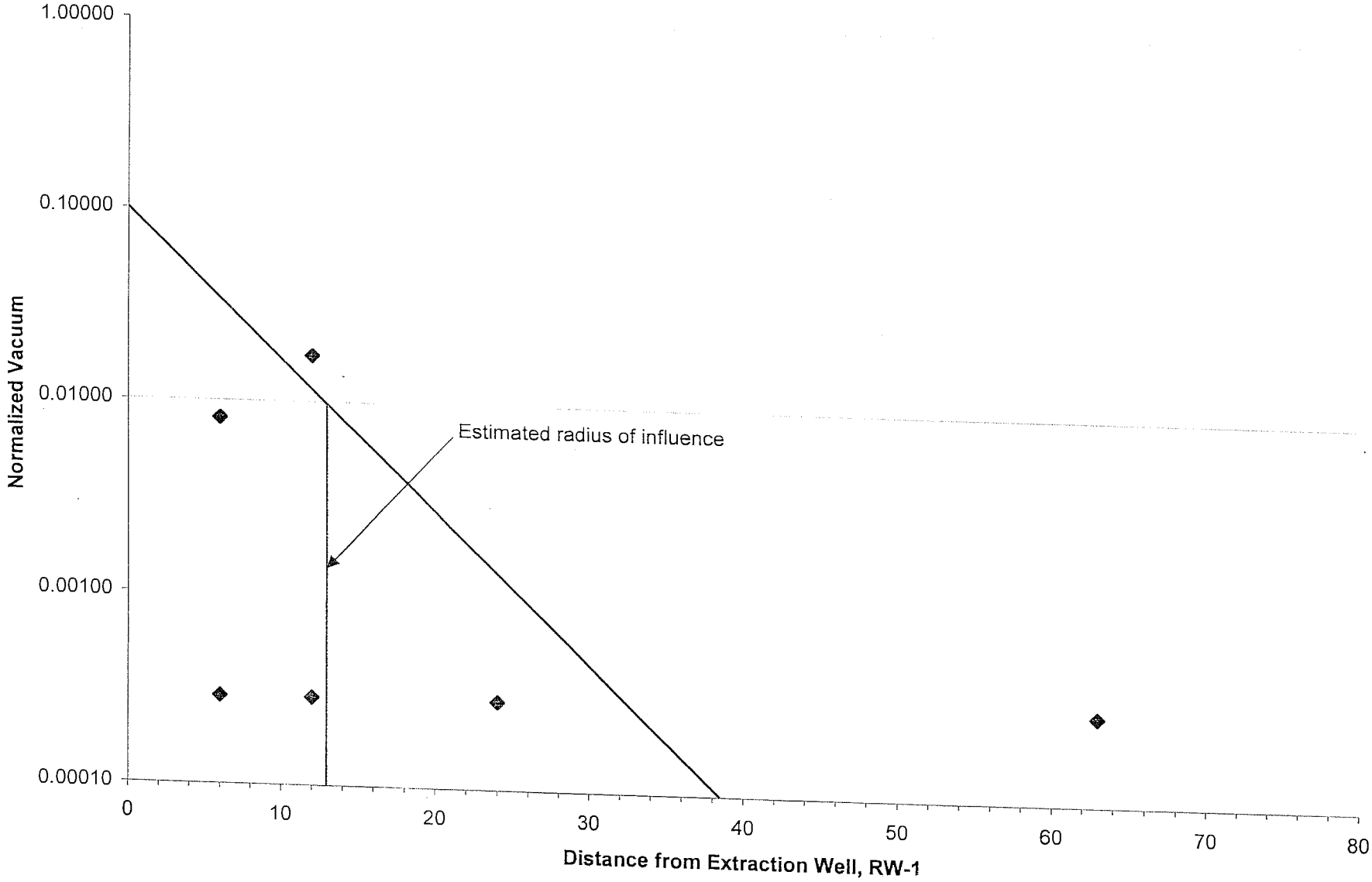
Total Soil Porosity = 34.4 %

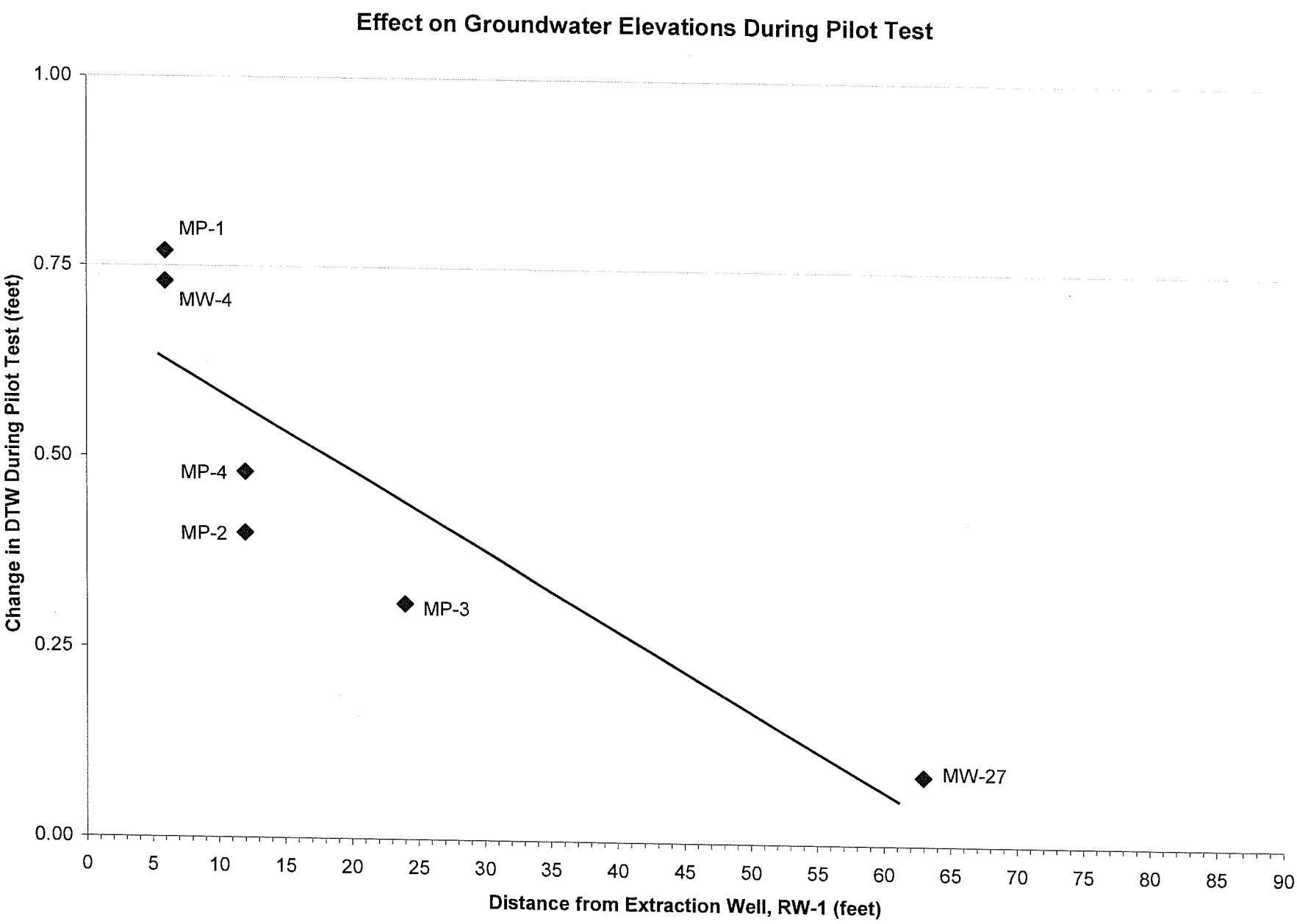
The total soil porosity is summarized in Table 1.

Density of Water = 62.43 lbs/ft^3

Total Mass of Contaminants = 5.7 lbs

Estimated Radius of Influence
Average Vacuum 12.68 in. Hg (173 in. H_2O)




Effect on Groundwater Elevations During Pilot Test
Change in DTW During Pilot Test (feet)
1.00
0.75
0.50
0.25
0.00
MP-1
MW-4
MP-4
MP-2
MP-3
MW-27
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
Distance from Extraction Well, RW-1 (feet)