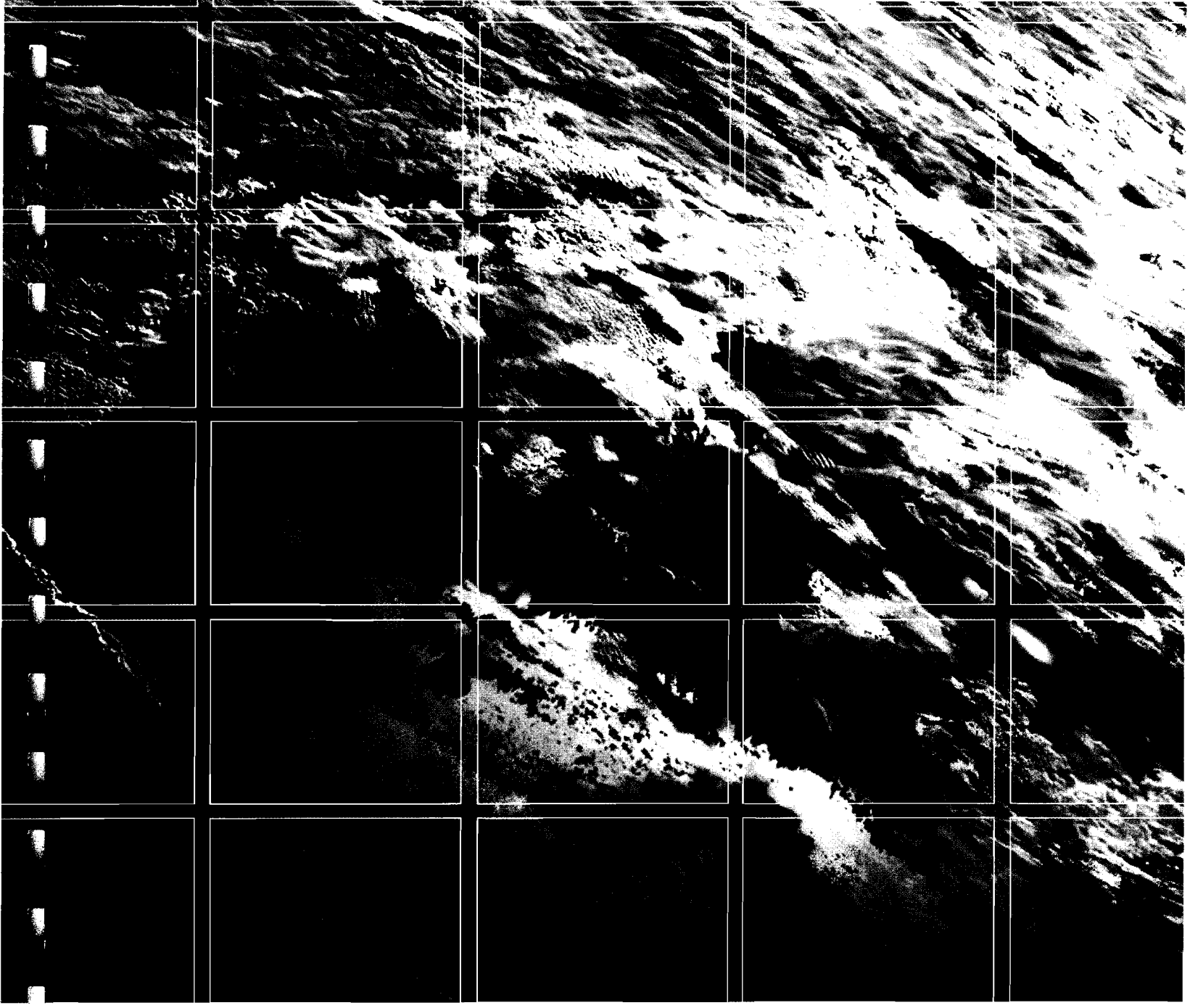

New York State Department of
Environmental Conservation

Work Plan for the Addendum Remedial Investigation

Pride Solvents
West Babylon, New York

September 2005

Environmental Resources Management
520 Broad Hollow Road
Melville, New York 11747

ERM

Delivering sustainable solutions in a more competitive world

WORK PLAN FOR THE ADDENDUM REMEDIAL INVESTIGATION

Pride Solvents
West Babylon, New York

September, 2005

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Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Prepared by:

Environmental Resources Management
520 Broad Hollow Road, Suite 210
Melville, New York 11747

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1.0 INTRODUCTION

In 2000, ERM-Northeast (ERM) performed a Remedial Investigation (RI) at the Pride Solvents and Chemical facility and surrounding area. A Focused Remedial Investigation (FRI) was carried out in 2002 and 2003. The focus of these remedial investigations was to evaluate the configuration of a previously documented southeasterly-flowing plume of chlorinated solvent contaminated groundwater that appears to emanate from the Pride Solvent property. Field work was completed in 2003 and an RI report was finalized in February 2004.

After completion of the RI report, the New York State Department of Environmental Conservation (NYSDEC) directed ERM to conduct a soil vapor sampling program on the former Pride Solvents facility and surrounding properties. The results of the Soil Vapor Sampling Program were documented in a report entitled "Remedial Investigation Report Addendum -Soil Vapor and Air Sampling" and submitted to the NYSDEC in January 2005.

1.1 BACKGROUND

The former Pride Solvents and Chemical Company facility is located at 78-88 Lamar Street in West Babylon, Suffolk County, New York (the site). The site is located within an industrial park known as the West Babylon Industrial Area. A site location map is provided in Figure 1.

The site is approximately 1.4 acres in size and contains two buildings with parking lots to the north and south and a loading dock between the buildings. Directly to the north, south and west are various other commercial and manufacturing facilities. Approximately 500 feet to the west of the site is the Babylon Town Landfill. The industrial park is bordered to the north and south by cemeteries and residential areas to the east.

The property has been owned by the current owner since 1973. The facility was operated as a chemical and solvent distribution and solvent reclamation facility until 2002. The site is currently inactive as a solvent recycling facility. One of the two buildings (78 Lamar Street) is currently leased by a wholesale and retail clothing business. The second building (88 Lamar Street) is currently unoccupied but is purportedly being prepared for a new tenant.

When in operation, the facility was regulated as a hazardous waste treatment, storage, and disposal facility under a Resource Conservation and Recovery Act (RCRA) Part B Permit (EPA ID No. NYD 057722258). Pride Solvents was listed on the NYSDEC Division of Environmental Remediation Registry of Inactive Hazardous Waste Disposal Sites in New York and as a Class 2 site in 1983. Pride Solvents was equipped to receive and store chlorinated and fluorinated solvent waste, and then reclaim the material by a distillation process. The reclamation/distillation was carried out in a portion of the 78 Lamar Street building. The remaining use of this building was for drum storage. The operation at 88 Lamar Street primarily consisted of bulk storage, packaging and distribution of non-flammable, flammable and combustible organic solvents.

2.0 *REMEDIAL INVESTIGATION ADDENDUM*

Based on the results of RI and FRI performed by ERM, the NYSDEC determined that additional investigation of on and off site areas would be required to fully characterize the site. Collection of additional data would allow the NYSDEC in conjunction with the New York State Department of Health (NYSDOH) to further assess exposure pathways for site related contaminants.

As outlined by the NYSDEC, the additional work to be carried out includes:

- An investigation of the area beneath 88 Lamar Street, using geophysical equipment, to locate potential and suspected drains, former trenches, a suspected drywell, or other utilities that may be a potential contaminant transport pathway(s).

- Further investigation of drywells on the Pride Solvent property. Previous sampling of sediments in on-site drywells included only surficial grab samples. Contamination potentially present in deeper sediments was not evaluated. Therefore, deeper sediments and soils, below the drywells, will be sampled to evaluate the presence of chlorinated volatile organic compounds (CVOCs). If CVOCs are in the deeper zones beneath the dry wells, they are a possible source of continuing groundwater contamination therefore a groundwater sample will be collected from each drywell.

- Collect and analyze sub-slab soil vapor sampling in both of the former Pride Solvent buildings, including the drum storage area behind 88 Lamar Street, from seven adjacent buildings; and, one soil vapor sample outside the 88 Lamar Street building. The purpose of this task is to evaluate possible exposure to CVOC vapors.

- Indoor air sampling of ten adjacent and nearby buildings to evaluate possible exposure to CVOCs.

- Soil boring installation to collect soil and groundwater samples to evaluate the downgradient extent of the plume.

- Soil and groundwater sampling above, on, and beneath (in the Magothy Aquifer) the Gardiners Clay to evaluate the extent of contamination of the Gardiners Clay and determine if the Magothy Aquifer is impacted.

- Determination of the thickness and hydraulic gradient across the Gardiners Clay and monitoring of the upper Glacial and Magothy aquifers for CVOCs contamination.

Once these tasks are completed, the Feasibility Study (FS) will be completed (preparation of the FS was discontinued after NYSDEC identified the need for additional investigation) if it is determined by the NYSDEC that no further data collection is necessary.

3.0 *ADDENDUM REMEDIAL INVESTIGATON*

This section summarizes the scope of work that will be performed during the RI Addendum. The assumptions made while developing this scope are included with the appropriate Task description. ERM's standard SOPs for field procedures are included in Appendix A.

3.1 *TASK 6: SUB-SLAB INVESTIGTION*

The building at 88 Lamar Street, one of the former Pride Solvents buildings, will be visually inspected to locate and trace possible drains, trenches, below grade pipes, and other possible utilities or subsurface features (SF) that may provide a pathway for contaminate migration. A geophysical investigation to locate possible contaminant pathways that may have been paved over, including a drywell suspected to be present beneath the drum storage area behind 88 Lamar Street will also be conducted.

If any SFs are found beneath the slab of 88 Lamar Street, the slab will be opened and sediments or soil in the SF collected and sent for analysis for Target Compound List (TCL), Volatile Organic Compounds (VOCs) using Contract Laboratory Program (CLP) Method.

3.2 *TASK 7: DRYWELL AND LEACH POOL INVESTIGATION*

Up to five drywells will be opened and continuous soil cores collected from the drywell sediment surface to the water table, approximately 17-feet below ground surface (bgs). Soil cores will be collected using a four-foot long macrocore advanced into the subsurface using a direct push hydraulic Geoprobe™ (Geoprobe). Soil cores will be screened in the field for the relative VOC concentration using photoionization detection (PID). In addition to soil sampling, a groundwater sample will be collected from within three feet of the downgradient (south) side of each drywell. The sample will be obtained using a screened Geoprobe groundwater sampler.

Soil samples collected from each drywell boring will be sent for laboratory analysis. These samples will include the sample that exhibits the greatest indication of contamination (e.g., elevated PID readings, staining, odor); and, a sample of "clean" soil collected below possible indications of contamination. If a potentially clean sample is not identified, or if there is

no indication of contamination, a soil sample will be collected from the two-foot interval above the water table. Drywell sediments or soil samples will be analyzed for TCL VOCs using OLM 04.2.

Groundwater samples collected from each drywell will be analyzed for TCL VOCs using OLM04.2.

ERM reviewed the data included in the 2004 RI report to identify the drywells most likely to have received CVOCs. These drywells include DW-03A, DW-06, DW-07, DW-11, and DW-12 (See Figure 3 from RI Report). The reasons for selecting these drywells are explained in the following paragraphs.

DW-03A is an auxiliary drywell that receives overflow from DW-03; both of these drywells are located on the south side of the former Pride Solvents facility, and hydraulically downgradient of the facility. A surficial drywell sediment sample, collected from this overflow drywell during the RI contained 62 micrograms per kilogram (µg/kg) of PCE. In addition, because DW-03A an overflow drywell, there is no grate opened to the atmosphere present at ground level, therefore, volatilization of CVOCs is limited. It is likely that a considerable quantity of PCE would have to have entered DW-03 to affect DW-03A, considering the amount of dilution that would have taken place when DW-03 overflowed into DW-03A. During the RI, it did not appear that the pavement over DW-03A was ever disturbed thereby suggesting that DW-03A was not cleaned out during previous remedial actions.

DW-06 and DW-07 are located in an area between 78 and 88 Lamar Street, the two buildings where drums were stored and where there are ramps leading into both buildings and the drum storage area behind 88 Lamar Street. A grab soil sample, collected during the RI, 16 to 19 feet below grade in soil boring P-45, located between a ramp leading to the rear of 78 Lamar Street and drywell DW-06, contained 2,000 µg/kg of PCE. A surficial soil sample collected from DW-07 contained only trace concentrations of CVOCs; however, the drywell is located in the vicinity of soil borings and wells where high concentrations of CVOCs were detected.

Drywells DW-11 and DW-12 are located in the north yard where there is evidence of drum storage. Surficial sediments in these two drywells contained trace amounts of CVOCs. However, in addition to being located in a former drum storage area, both drywells may have received runoff from the north yard, where drums were stored.

3.3 *TASK 8: SUB-SLAB SOIL VAPOR SURVEY*

Soil vapor samples (sub-slab), will be collected from beneath the two Pride Solvent buildings. Three sub-slab samples will be collected from each building, with at least one sample collected from beneath the drum-storage area behind 88 Lamar Street. Sub-slab vapor samples will also be collected from eight buildings adjacent to the former Pride Solvents facility (58 Lamar Street, 63 Lamar Street, 66 Lamar Street, 108 Lamar Street, 71 Kean Street, 75 Kean Street, 83 Kean Street and 87 Kean Street). In addition to the sub-slab soil vapor sampling, one soil vapor sample will be collected from the grassy area on the east side (front) of the 88 Lamar Street building. See figure 4 for map illustrating sub-slab soil vapor sample locations.

Sub-slab and soil vapor samples will be collected in compliance with the protocols set forth in the NYSDOH's "Guidance for Evaluating Soil Vapor Inclusion in the State of New York. Sub-slab samples will be collected using Summa Canisters equipped with airflow controllers set for a 24-hour sampling period. Soil vapor samples will be collected using a Suma Canister equipped with airflow controller set for a 2-hour collection period. Detailed soil gas sampling procedures are found in the SOPs in Appendix A.

Samples will be analyzed for VOCs using USEPA Method TO-15.

3.4 *TASK 9: INDOOR AIR SAMPLING*

Indoor air samples (three per building) will be collected and analyzed from 10 buildings (two Pride Solvents buildings located at 88 Lamar Street, 58 Lamar Street, 63 Lamar Street, 66 Lamar Street, 108 Lamar Street, 71 Kean Street, 75 Kean Street, 83 Kean Street and 87 Kean Street). In order to determine possible solvent usage and to identify areas where indoor air samples will be collected, occupants of the 10 buildings will be contacted and arrangements made to review and fill out the NYSDOH Indoor Air Questionnaire and Building Inventory form. Indoor air samples will then be collected and documented in compliance with the protocols set forth in the NYSDOH's "Guidance for Evaluating Soil Vapor Inclusion in the State of New York". ERM assumes that at least five (5) of the ten building can be sampled during each of two planned mobilizations.

Samples will be analyzed for VOCs using USEPA Method TO-15.

3.5 *TASK 10: DOWN GRADIENT SUBSURFACE SAMPLING*

Sampling of subsurface soil and groundwater downgradient of the former Pride Solvents facility will be conducted. The sub-tasks in Task 10 include soil boring installation, the installation of three well couplets including a double-cased well screened in the Magothy Aquifer; and, a well screened at the bottom of the Upper Glacial Aquifer. The purpose of this task is to better define the lateral limits of the Upper Glacial Aquifer groundwater contamination and the plume of CVOCs detected at the clay/upper glacial interface; determine the clay thickness of the Gardiners clay and if the clay is acting as a source of groundwater contamination to the Magothy Aquifer; and, determine the vertical hydraulic gradient between the Upper Glacial and Magothy Aquifers. The Task 10 sub-task activities are described in the following paragraphs. Detailed soil borings and well installation procedures are found in the SOPs in Appendix A.

3.5.1 *Subtask 10A: Soil Borings*

Seven soil borings will be advanced through the Upper Glacial Aquifer to the top of the Gardiners clay. As shown on Figure 2, the approximate locations of the borings is roughly parallel to Edison Avenue. Precise boring locations will be determined in the field in consultation with the NYSDEC Case Manager. For cost estimating purposes, ERM assumes that all drilling locations will be accessible by a truck-mounted drill rig and borings would extend to a depth of 90-feet. Additional assumptions are that a suitable staging area for a roll-off container and a secure staging area for drilling equipment and a decontamination will also be available.

Soil borings will be advanced from the ground surface through the upper Glacial Aquifer, into the Gardiners Clay. Soil samples will be collected continuously using a two-foot long split barrel core sample (split spoon) and will be screened in the field for VOCs using a PID. Soil samples collected from the bottom of the Upper Glacial Aquifer, immediately above the clay, and from the top of in the clay itself will be submitted for laboratory analysis. ERM's standard operating procedures (SOPs) for drilling with hollow stem augers (HSAs), collecting split-spoon soil samples and field screening with a PID, are included in Appendix A.

During drilling of the seven borings, groundwater samples will be collected from the top, middle, bottom (immediately above the clay) of the Upper Glacial Aquifer and if possible, from the clay itself roughly corresponding to depths of 20-feet, 50-feet, 90-feet, and 95-feet bgs, respectively. The method to be used for collecting groundwater samples will be determined in the field and may either be hydropunch, temporary

well screen, or other method acceptable to ERM and the NYSDEC. Groundwater and soil samples will be analyzed for USEPA TCL VOCs using CLP Method OLM 04.2. SOPs for groundwater sample collection are included in Appendix A.

The borings will be grouted once all samples are collected.

Boring ID	Approx. Depth	GW Sampling Method	Soil Sampling Method
P-87	95′	Screened Sampler	Macro Core
P-88	95′	Screened Sampler	Macro Core
P-89	95′	Screened Sampler	Macro Core
P-90	95′	Screened Sampler	Macro Core
P91	95′	Screened Sampler	Macro Core
P-92	95′	Screened Sampler	Macro Core
P-93	95′	Screened Sampler	Macro Core

3.5.2 *SUBTASK 10B: Installation of Paired Upper Glacial and Magothy Aquifer Wells*

Three well pairs will be installed. One well will be screened in the Magothy Aquifer (Magothy Wells) and the second screened in the Upper Glacial Aquifer. Installation of the well couplets will be at three of the seven soil boring (Subtask 10A) locations. The locations for installation of the monitoring well couplets will be selected in consultation with the NYSDEC after receipt and evaluation of the soil and groundwater analytical data from the soil borings (Subtask 10A). Additional well pairs and/or individual wells screened either in the Upper Glacial or Magothy Aquifers may be installed after groundwater elevation and chemistry data are received and evaluated from the three initial well pairs described above are installed. Additional well installations could be required to help better define the lateral or longitudinal extent of contamination in either of the two aquifers. ERM will install additional wells or well pairs only at the direction of the NYSDEC Project Manager.

3.5.2.1 *Magothy Wells*

Double cased wells will be used to isolate wells screened in the Magothy Aquifer from contamination present in the Upper Glacial Aquifer. Installation of the double-cased wells will be accomplished using HSA drilling. Initially, 10-inch inside diameter (ID) augers will be advanced to within 10-feet of the Gardiners clay. Additional split-spoon soil samples may be collected during drilling of the well boreholes to more accurately locate clay lenses or other intervals of geologic importance, to document lithology, or to confirm possible contaminated zones identified during the

initial soil borings. In the interval from 10-feet above the Gardiners clay into the clay, split-spoon soil samples will be collected to determine the exact elevation of the clay at each location. Two split spoon samples will be collected from the Gardner's Clay unit to determine if there is a sufficient thickness of clay to anchor the outer well casing.

An 8-inch steel outer casing will be securely grouted into the clay to prevent water from the Upper Glacial aquifer from migrating through the clay into the Magothy. Once the casing is in place and the grout has cured, continuous split-spoon soil samples will be collected through the clay to determine clay thickness. Drilling will continue inside the 8-inch diameter using 4-inch ID augers. Once the clay is penetrated, a groundwater grab sample will be collected from the Magothy. The borehole will be continued at least 20-feet into the Magothy to accommodate the well screen. The well will be constructed with a 10-foot long, 2-inch diameter, 0.010-slot polyvinyl chloride (PVC) screen and an appropriate length of 2-inch diameter riser pipe. The screen will be set approximately 20 feet into the Magothy, allowing for a sand filter of Morie #1 sand to be tremied into place around the well screen in the borehole annular space. The sand filter will extend at least 2-feet above the screen. Finer-grain sand consisting of Morie #00 sand will be tremied on top of the sand filter to separate the sand pack from the bentonite slurry seal (that will extend from the top of the sand and through the entire thickness of the clay to seal off the clay from the Magothy. After the bentonite seal is set and allowed to settle and cure, a grout mixture of concrete and bentonite will be tremied into the borehole annular space to within several feet of the ground surface. At least a foot of sand will be set above the grout.

Each well will be completed with a flush-mounted steel well vault with a bolt down cover set in a concrete surface seal with the bottom of the vault set in the sand to create a sand-drain to allow water that may seep into the vault to drain.

Well ID	Approx. Depth	Approx. Screen Interval
ERM-MW-8D	131′	111′ -131′
ERM-MW-9D	131′	111′ -131′
ERM-MW-10D	131′	111′ -131′

3.5.2.2 *Upper Glacial Wells*

A monitoring well screened at the bottom of the Upper Glacial aquifer will be installed near each Magothy well to complete the well couplets. Monitoring wells will be accomplished using 4-inch ID HSAs. The HSAs

will be advanced to within five-feet of the elevation of the clay identified in the drilling of the soil borings and double-cased wells. Split-spoon soil samples will be collected to the top of the clay to determine the exact depth of the clay at each location. Slit-spoon samples will be carefully advanced so as to locate the top of the clay and not to penetrate deep into the clay.

The well will be constructed with a 10-foot long, 2-inch diameter, 0.010-slot polyvinyl chloride (PVC) screen with a bottom cap and an appropriate length of 2-inch diameter riser pipe. The bottom of the well assembly will be placed on top of the clay and care will be taken to ensure the screen does not penetrate the clay. A filter pack of Morie #1 sand will be tremied into place around the well screen in the borehole annular space to at least two feet above the well screen. Fine-grain Morie #00 sand will be tremied at least two-feet on top of the filter sand to prevent the bentonite slurry seal from reaching the well screen. The bentonite slurry seal will be tremied in place at a minimum of two-feet above the sand. The remaining borehole annular space will be filled by a bentonite/concrete grout tremied into place from the bentonite seal to within several feet of the surface. At least one foot of sand will be placed at the top of the grout.

Each well will be completed with a flush-mounted steel well vault with a bolt down cover set in a concrete surface seal with the bottom of the vault set in the sand to create a sand-drain to allow water that may seep into the flush-mount vault to drain.

Well ID	Approx. Depth	Approx. Screen Interval
ERM-MW-8S	91′	81′-91′
ERM-MW-9S	91′	81′-91′
ERM-MW-10S	91′	81′-91′

3.5.3 *Monitoring Well Development*

Drilling and well installation procedures typically result in disturbance of natural bedding and hydraulic permeability of the surrounding formation. Each well will be developed to remove fine-grain material that may have entered the well during installation and to improve hydraulic communication with the surrounding formation. A development goal will be a turbidity of 50 NTUs (Nephelometric Turbidity Units) or less (if possible). Stabilization (+/- 20% in four successive measurements) of well discharge turbidity, temperature, and specific conductance will be used as the completion criteria for this task.

3.5.4 *Boring and Monitoring Well Horizontal and Vertical Control Survey*

The horizontal location and vertical position (measuring point) of each newly installed monitoring well and soil boring will be determined by a licensed land surveyor. The surveyor will use a notch made in the well casing during installation as a survey point for the monitoring well's top of casing elevation. The elevation of the ground surface at each newly installed well and soil boring will also be obtained. This will enable interpolation of gathered hydrogeologic information between wells. The measuring point elevation of each well will be determined to an accuracy of 0.01 feet in order to accurately map groundwater flow patterns. Vertical elevations will be determined relative to the NGVD (National Geodetic Vertical Datum) 1983. Horizontal control will be by State Plane Coordinates.

3.6 *SUBTASK 10D: GROUNDWATER SAMPLING*

At least two weeks after the installation of the monitoring wells, groundwater samples will be collected from the six newly installed wells and the 22 previously installed wells. Prior to initiating groundwater sampling activities, a complete round of depth to water measurements will be collected and used to determine groundwater elevations and incorporated into a groundwater flow map.

All wells will be purged as described in SOP-6 (Appendix A) and field measurements of temperature, pH, specific conductance, oxidation/reduction potential (ORP) and dissolved oxygen collected. Groundwater samples will be analyzed for TCL VOCs using CLP Method OLM 04.2.

3.7 *RI WASTE MANAGEMENT AND DISPOSAL*

The following section describes the handling and ultimate disposal of solid and liquid wastes generated during the implementation of the Addendum RI. Waste generated during the Addendum RI is expected to consist of drill cuttings, trash (boxes, paper, etc.), decontamination wash water, development water, and used protective clothing. All waste generated will be disposed of following all applicable rules and regulations. A subcontractor will collect necessary waste characterization samples and arrange for all water transport and disposal. An estimate of the amount of drill cuttings, monitoring well development water, and other waste materials are provided in the budget outline in Appendix B.

Because of the difficulty in accurately estimating the amount of investigation derived waste (IDW), the budgeted cost is an estimate and additional funds may be required if waste quantities are greater than anticipated. The cost estimate assumes that the material will be hazardous but less than ten-times the treatment standard.

Accordingly, handling and disposal will be as follows:

- Non-contaminated trash, debris, and protective clothing will be placed in trash bags and disposed of by the contractor performing the task that is generating the waste.

- Cuttings will be collected at the boring and well sites during installation and transferred by drums or other means to a roll-off container.

- Liquids generated from equipment decontamination, well purging and development will be placed in 55-gallon ring-top drums and stored in a designated area for later disposal based in accordance with any applicable federal and state regulation.

- Used protective clothing and equipment that is suspected to be contaminated with hazardous waste will be placed in plastic bags, packed in 55-gallon ring-top drums, and disposed of in accordance with any applicable federal and state regulation in addition to those referenced above by a waste subcontractor.

3.8 *SAMPLE ANALYSIS & VALIDATION*

3.8.1 *Sample Analysis*

All samples collected during the Pride Solvent Addendum RI field work will be submitted to a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory-meeting requirements for documentation, data reduction, and reporting. The laboratory shall provide an ASP Category B deliverables package. Data summary tables will be submitted to the NYSDEC with qualifiers and comparisons to regulatory standards.

3.8.2 *Data Validation Protocols*

Data validation is the assessment of data quality with respect to method requirements and technical performance of the analytical laboratory. Analytical data packages will be examined to ensure that all required lab

components are included, all QA/QC requirements were performed, and the data use restrictions are well defined.

Summary documentation regarding QA/QC results will be completed by the laboratory using NYSDEC ASP forms and will be submitted with the raw analytical data packages.

Data validation will be performed by an independent third party validator to assess and document analytical data quality in accordance with the project data quality objectives. The validation will evaluate data for its quality and usability. This process will qualify results so that the end user of the analytical results can make decisions with consideration of the potential accuracy and precision of the data. For example, the results are acceptable as presented, qualified as estimated and flagged with a "J", or rejected and flagged with an "R".

Because the NYSDEC ASP is based on the USEPA CLP, the USEPA Region II CLP Organics Data Review guidelines and the USEPA National Functional Guidelines for Evaluating Organics Analyses for the CLP will assist in formulating standard operation procedures (SOPs) and guidelines for the data validation process. Consequently, the data will be validated according to the protocols and QC requirements of the analytical methods, the NYSDEC ASP, USEPA Region II CLP Organics Data Review (CLP/SOW OLM 03.2) SOP No. HW-6 Revision #11 (May 1996), USEPA CLP National Functional Guidelines for Organic Data Review (February 1994), and the reviewer's professional judgment. The order in which the aforementioned guidance documents and/or criteria are listed to be used for validation does not imply a hierarchy of reliance on a particular document. The most comprehensive reference sources will be relied upon to perform the most complete validation possible.

The data validation process will provide an informed assessment of the laboratory's performance based upon contractual requirements and applicable analytical criteria. The report generated as a result of the data validation process will provide a base upon which the usefulness of the data can be evaluated by the end user of the analytical results.

During the review process, it will be determined whether laboratory submittals for sample results are supported by sufficient back-up data and QA/QC results to enable the reviewer to conclusively determine the quality of data. Each data package will be checked for completeness and technical adequacy of the data. Upon completion of the review, the reviewers will develop a QA/QC data validation report for each sample delivery group (SDG).

At a minimum the following items/criteria will be reviewed:

- Quantitation and detection limits
- Sample holding times and preservation (pH and temperature)
- GC/MS tuning and performance
- Initial calibrations
- Continuing calibrations
- Method, instrument and holding blanks
- Field and trip blanks
- Field duplicate results
- Surrogate spike recoveries
- Matrix spike/matrix spike duplicate/matrix spike blank results
- Internal standard area counts and retention times
- Data system printouts
- GC chromatograms and mass spectra
- Qualitative and quantitative compound identification
- Case narrative and deliverable compliance

After completion of the validation, the third party validator will prepare a data validation report. The ERM Quality Assurance Officer will review the report.

3.8.3 *Data Validator's Qualifications*

The person completing the data validation will have, at a minimum, the following credentials:

- a bachelors degree in chemistry or natural science with a minimum of 20 hours in chemistry; and
- one year experience in the implementation and application of the protocol(s) used in data generation.

Successful completion of the USEPA Data Validation Training Course may be substituted for the analytical experience requirement. The validator must also have a minimum of one (1) year experience evaluating CLP data packages for contract and protocol compliance. The resume of the Quality Assurance Officer (QAO) and other key personnel will be provided, as required.

4.0 EXPOSURE ASSESSMENT

Based on the findings of the Addendum RIT the qualitative Health and Environmental Exposure Assessment (HEEA) for the site prepared for the 2004 RI report will be updated and revised. The objectives of the HEEA are to identify potential exposure pathways for contaminants at the site, identify potential on-site and off-site receptors, and qualitatively evaluate potential exposures to these receptors. The HEEA will follow NYSDOH guidelines.

4.1 METHODOLOGY

The evaluation of potential exposures to human health will consist of the following steps:

- Identification of potential exposure pathways (including identification of public and private wells 0.5 mile up gradient and 1.5 miles down gradient of the site;
- Identification of chemicals of potential concern for each pathway; and
- Qualitative evaluation of exposure pathways.

Each of these steps is described below.

Identification of Potential Exposure Pathways

In this step, current and future potential exposure pathways for chemicals at the Pride Solvents site will be identified. In order for there to be a complete exposure pathway, there must be a source of chemical(s), a transport mechanism, and a receptor.

Identification of Chemicals of Potential Concern

Chemicals of potential concern for each complete exposure pathway will be identified by comparing the maximum detected concentrations of chemicals in each of the relevant media at the site to applicable Standards, Criteria and Guidance (SCGs). Those chemicals for which SCGs are exceeded will be further evaluated in the following step.

Qualitative Evaluation of Potential Exposure Pathways

In this step, a qualitative assessment of exposures associated with the potential chemicals of concern for each of the exposure pathways will be prepared. This step will identify site-specific factors influencing the impact of exceedences of SCGs, where appropriate.

4.2 *REPORT PREPARATION*

A revised HEEA report will be prepared. The HEEA will include the findings of the evaluation of human health exposures described in this section. The HEEA will be incorporated into the Addendum RI Report.

5.0 *ADDENDUM RI REPORT*

The preparation of a comprehensive RI Report was completed in 2004. Accordingly, the Addendum RI Report will build upon the findings and conclusions of the previous RI Report. The previous findings and conclusions will be incorporated into the RI Addendum Report along with new information obtained through additional investigation. The Addendum RI Report will summarize the field investigations, laboratory analytical results, and the HEEA. The Addendum RI Report will include the following:

- objectives of the Remedial Investigation Addendum,
- site description, including the physical and environmental setting of the Pride Solvents site and study area,
- description of field investigation methods and activities,
- supporting documentation (e.g., profile logs, field data forms, etc.),
- description of the groundwater flow,
- nature and extent of soil and groundwater contamination (findings of the field investigation),
- figures and tables summarizing site related data,
- updated plan views of groundwater flow and the distribution of contaminants (isoconcentration contour maps),
- HEEA, and
- findings and conclusions.

A draft Addendum RI Report Addendum will be submitted to NYSDEC for review and comment. Four copies of a final Addendum RI Report will be provided following incorporation of the NYSDEC comments.

6.0 *FOCUSED FEASIBILITY STUDY*

The scope of the Focused Feasibility Study (FFS) for the Pride Solvents site was previously described in the ERM document entitled "Work Plan for the Focused Remedial Investigation/Feasibility Study "dated May 2000. It was approved by the NYSDEC in August 2001. The FFS described in the following sections is included here for completeness.

6.1 *PURPOSE*

The purpose of a Focused Feasibility Study (FFS) is to determine an appropriate remedial response for specific site conditions (sources, pathways and receptors) posing an unacceptable exposure pathways. At the Pride Solvents site, the FFS will focus on Remediation of off-site groundwater. The remedial response to be selected in the FFS will consist of actions, which will eliminate unacceptable exposure pathways or reduce them to levels that are protective of human health and the environment.

The FFS for off-site groundwater at the Pride Solvents site will accomplish the following objectives:

- establish remedial objectives including cleanup goals for off-site groundwater relying on Applicable or Relevant and Appropriate federal and state Requirements (ARARs) and NYSDEC Standards, Criteria and Guidance (SCGs) where applicable,
- identify response actions which can achieve the established objectives,
- identify ARARs and SCGs that apply to the identified response actions or where they will be implemented (e.g., action and location-specific ARARs or SCGs),
- define and screen technologies that can accomplish those response actions, and
- assemble the appropriate technologies into remedial action alternatives and subject those alternatives to a detailed evaluation consistent with the NCP and NYSDEC TAGM on Selection of Remedial Actions at Inactive Hazardous Waste Sites (HWR-90-4030).

The FFS report will propose, based on the results of the alternative evaluation, implementation of the most cost-effective remedial action alternative, which satisfies or exceeds the remedial objectives.

6.2 *PROCEDURES*

The FFS will be developed in accordance with the requirements of 6 NYCRR Part 375-1.10 (Remedy Selection) and the National Contingency Plan (NCP). The NYSDEC Technical and Administrative Guidance Memorandum (TAGM) on Selection of Remedial Actions at Inactive Hazardous Waste Sites (May 15, 1990) will also be used to guide the development of the FFS. The FFS will be completed in five stages:

- define remedial action objectives,
- identify and select representative remedial action technologies,
- develop and evaluate remedial action alternatives,
- compare remedial action alternatives, also
- prepare FS report.

The five stages to completion of the FFS are described in detail below.

6.2.1 *Define Remedial Response Objectives*

Remedial response objectives and criteria will be developed for off-site groundwater at the Pride Solvents site based upon the following:

- results of the RI and the Exposure Assessment (if prepared),
- NYSDEC requirements for the selection of remedy as defined in 6 NYCRR Part 375,
- USEPA requirements of the NCP (NCP, 40 CFR 300),
- ARARs (federal) or SCGs (state), and
- Public health and environmental concerns.

The source areas, exposure pathways, and receptors at the Pride Solvents site will be identified and a list of potential ARARs will be developed. Potential chemical location and action specific ARARs will also be identified. The list of potential ARARs will be developed based on a review of New York State and USEPA SCGs) USEPA laws and regulations will be considered to the extent that they are more stringent than those of New York State. Location and action specific SCGs will be used in the evaluation of remedial action alternatives. Chemical-specific ARARs will be used to develop chemical-specific cleanup levels for the site. Chemical-specific cleanup levels will be developed in accordance with the requirements of 6 NYCRR Part 375 and the NCP.

6.2.2 *Identify and Select Representative Remedial Action Technologies*

Once the objectives of the remedial response have been determined, remedial action technologies will be identified. The chemical and physical characterization of the site will be considered in the identification of the remedial technologies. Generally, a number of technologies are available to address groundwater issues at the site. The purpose of this task is to identify, describe, and determine which technologies can be used to satisfy, in whole or in combination, the remedial response objectives for the site. The remedial technologies that cannot be implemented at the site will be eliminated from further consideration.

Remedial technologies will be identified through a review of New York State and USEPA guidelines, relevant literature, and through ERM's experience in developing remedial action plans for similar problems. Technologies will be identified to address both source control of substances of concern originating from the site and control of potential off-site groundwater contamination. Alternative technologies and resource recovery technologies will be given particular consideration. Exposure assessment will identify: (1) which site chemicals are substances of concern; and, (2) which exposure pathways are unacceptable and, as a result, would require remediation. Only technologies that address the environmental media and exposure pathways, were identified as unacceptable exposure pathways, will be evaluated in the FFS.

Within each technology, there may be several technology processes offering similar benefits at comparable costs. The selection of process options will be based on effectiveness and technical feasibility, however, in some cases, more than one process option may be identified.

6.2.3 *Develop and Evaluate Remedial Action Alternatives*

Individual technologies may satisfy some, but not all, of the remedial response objectives for the site. Several technologies may be combined to form a comprehensive approach that will satisfy the remedial response objectives for the site. Accordingly, the applicable remedial action technologies identified in Section 6.2.2 will be assembled into remedial action alternatives for the site. All significant site issues and pathways of migration of the substances of concern will be considered during the development of remedial action alternatives. Remedial approaches to be developed in this stage of the FFS will include alternatives in which the following are principal elements: (1) treatment to reduce toxicity, mobility or volume, including destruction, separation or in-situ methods; and, (2) containment measures to control and isolate chemicals of concern. In addition, a no action alternative will be evaluated.

Screening of the alternatives will occur after the technologies have been combined. Screening of the remedial alternatives is conducted to narrow the list of potential alternatives that will need detailed evaluation. As the alternatives are developed, each remedial alternative should be screened based on the ability to meet medium-specific remedial action objectives, implement ability, and short-term and long-term effectiveness. Cost will not be a screening tool during the screening process.

Detailed analysis of the alternatives will be conducted after the screening process is complete. Each alternative will be evaluated for the criteria identified in 6 NYCRR Part 375-1.10 and NCP at 40 CFR Part 300.430 (e)(9):

1. Protection of human health and the environment.
2. Compliance with SCGs.
3. Long-term effectiveness and permanence.
4. Reduction of toxicity, mobility, or volume.
5. Short-term effectiveness.
6. Implementability.
7. Cost.

Protection of human health and the environment and compliance with SCGs are threshold criteria, which all alternatives will be required to meet in order to be eligible for selection. Compliance with SCGs will be required unless, as stated in 6 NYCRR Part 375-1.10, "good cause exists why conformity should be dispensed with". The criteria to be used in the FFS for determining the need to comply with SCGs will be those discussed in 6 NYCRR Part 375-1.10 and in the NCP at 40 CFR 300.430(f)(1)(ii)(C).

Long and short term effectiveness, reduction of toxicity, mobility, or volume and implementability are primary balancing criteria that will be used to compare the alternatives. Community acceptance, an additional criteria identified in 6 NYCRR Part 375-1.10, will be addressed by the NYSDEC based on comments received during public review of the NYSDEC Proposed Remedial Action Plan (PRAP). The PRAP is to be prepared by the NYSDEC based on the information contained in the FFS. An analysis of the alternatives will be performed to provide the rationale for the remedy selection process. The detailed evaluation will include at a minimum the following criteria:

- The component treatment and disposal technologies that comprise a specific alternative, as well as any permanent facilities required.
- Specific engineering considerations required to implement each alternative.

- The degree to which each alternative would permanently and significantly reduce the volume, toxicity or mobility of the substances identified in the exposure assessment as chemicals of concern.
- The evaluation will include an analysis of whether waste biodegradation or in-situ destruction or other advanced, innovative or alternative technologies would be appropriate to reliably minimize present or future threats, if any, to public health or welfare of the environment.
- Each alternative will be compared to the remedial response objectives in order to determine its ability to adequately protect human health and the environment.
- Each alternative will be analyzed for compliance with the SCGs identified during the development of remedial objectives.
- Environmental impacts and proposed methods for mitigating any adverse effects, as well as the costs of such mitigation efforts.
- Operation, maintenance, and monitoring requirements of the remedial measures.
- Off-site disposal and transportation needs.
- A discussion of health and safety considerations during remedial implementation including requirements for health and safety plans. This section will address the short-term health and safety considerations for the on-site workers as well as nearby residents, if any.
- A description of how the alternative may be divided into functional components to allow for a possible phased (i.e., operable unit) approach to implementation.

The technical requirements for permits that might be needed for each alternative, if any, will be identified in accordance with 6 NYCRR Part 375-1.7.

A detailed breakdown of the capital, operation, and maintenance costs will be presented in an appendix to the FFS report and summarized in the text of the FFS. (The present worth cost of each alternative should be calculated using a 5% discount rate.) For each alternative, all engineering equipment shall be sized and process diagrams and schematics will be provided. Engineering calculations shall be provided in the appendix of the FFS report to support the process data.

6.2.4 *Compare Remedial Action Alternatives*

Upon completion of the alternative assessment, a comparison of the remedial alternatives will be performed. This comparison will include determining the relative importance of both the cost and non-cost criteria including the potential concerns related to feasibility and effectiveness. This section of the FFS will include a table that summarizes the analysis of alternatives. The table will describe, for each alternative evaluated, the following: (1) short and long term effectiveness; (2) the ability to reduce the toxicity, mobility, or volume of the substances of concern; (3) implementability; (4) cost; (5) compliance with SCGSs; and (6) the overall protection each alternative offers for human health and the environment. This information will also be used to determine the ability of each alternative to address the remedial response objectives. The alternatives will be compared in the FS report but will not be ranked. A preferred Alternative will not be chosen.

6.2.5 *Focused Feasibility Study Report*

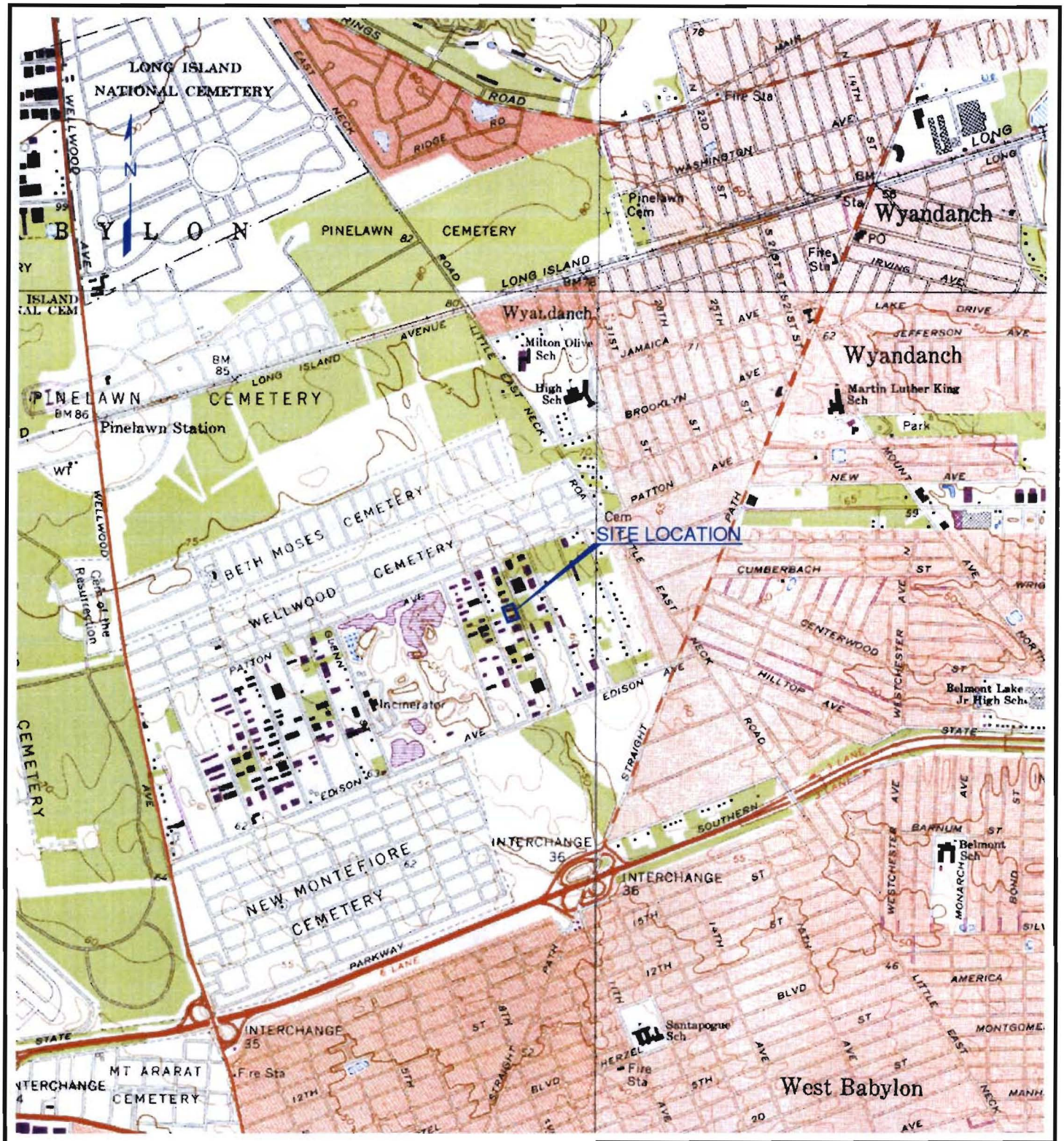
Following completion of the FFS, a draft FFS Report will be submitted to NYSDEC for review and approval. The FFS Report will contain an evaluation of remedial technologies. The FFS Report will be developed in accordance with the guidelines presented in the NYSDEC TAGM "Selection of Remedial Actions at Inactive Hazardous Waste Sites" (HWR-90-4030; 15 May 1989) and in the Interim Final USEPA guidance document "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA/540/G-89/004; October 1988). The FFS report will be prepared, signed, and stamped by a Professional Engineer who is licensed and registered in New York State.

7.0 SCHEDULE

The schedule for the Pride Solvents site RI/FS is shown in Appendix B.

8.0 *PROJECTED BUDGET*

The RI/FS budget, including subcontractor and equipment costs is shown in Appendix C.



SOURCE: U.S.G.S. QUADRANGLE MAPS, AMITYVILLE, N.Y., HUNTINGTON, N.Y., GREENLAWN, N.Y., BAY SHORE WEST, N.Y.

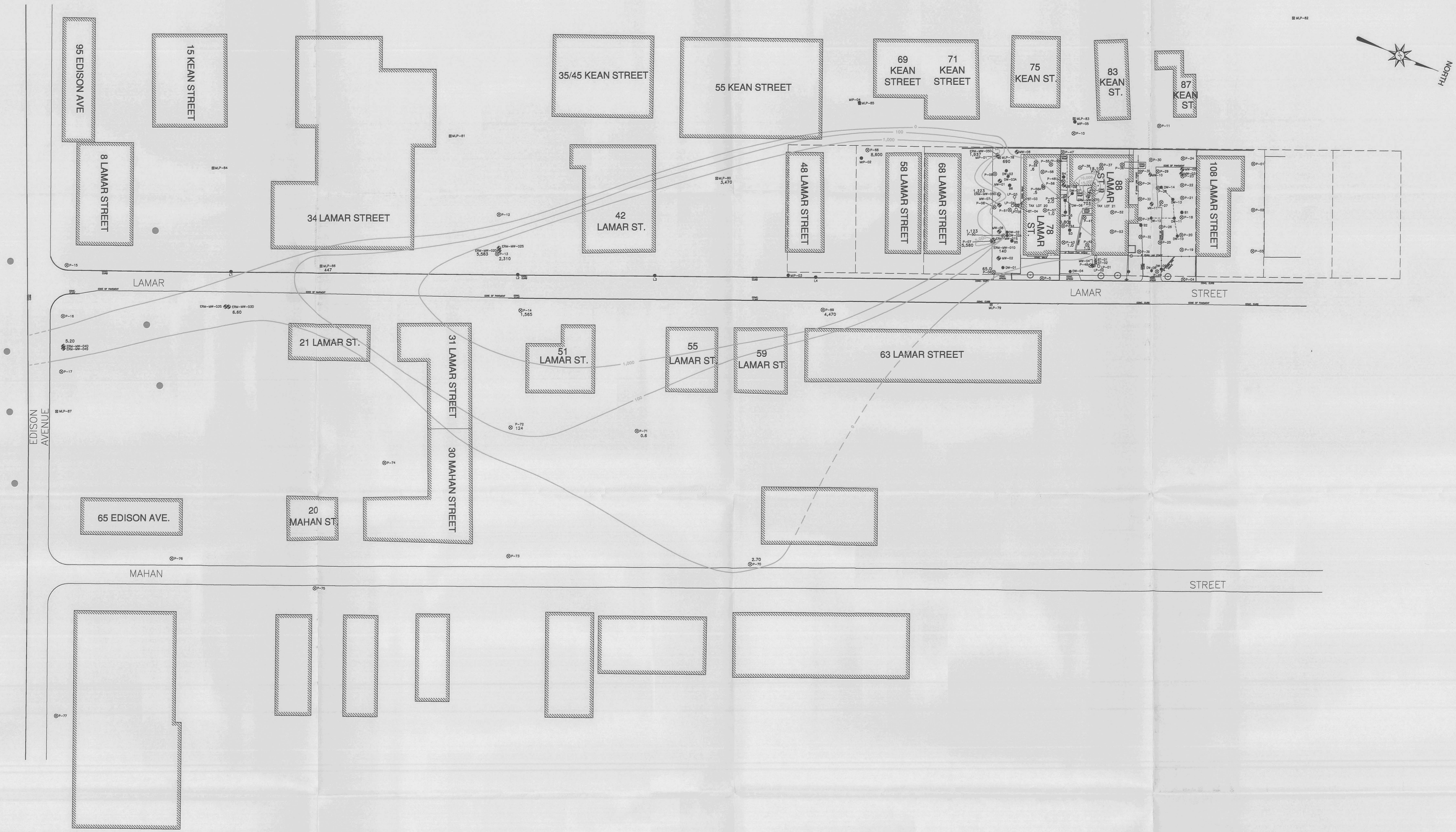
TITLE

SITE LOCATION MAP
NYSDEC I.D. NO. 1-52-025
WA: D-003970-02

PREPARED FOR

PRIDE SOLVENTS

ERM Environmental Resources Management			SCALE: GRAPHIC	FIGURE: 1
DRAWN: Y.S.	JOB NO.: 7270204003	FILE NAME: 72702.04	DATE: 12/18/02	



SOURCE: MODIFIED FROM
SURVEY BY NELSON & POPE
572 WALT WHITMAN ROAD, MELVILLE, NY 11747
AND YEC, INC/YEC ENGINEERING P.C.
61 CORPORATE WAY, SUITE 4M
VALLEY CORPORATE, NY 10989
MONITORING WELL AND BORING LOCATION PLAN
DWG. NO. 02076S, DATED 4/25/02, REVISED 8/13/02

0 60' 120'
GRAPHIC SCALE

- PROPOSED SOIL BORING LOCATION
- DW-01 DRY WELL
- LP-01 LEACHING POOL
- ST-01 SEPTIC TANK
- P-01 GROUNDWATER PROFILE BORING AND ON-SITE SOIL BORING
- B01, L1, MIP-01 CONDUCTIVITY/MEMBRANE INTERFACE PROBE BORING LOCATION
- MW-05 MONITORING WELL
- MLP-78 MOBILE LABORATORY GROUNDWATER PROFILE BORING
- ---- BURIED UNDERGROUND PIPE
- TREE
- 28.0 TOTAL CONCENTRATION OF CHLORINATED VOLATILE ORGANIC COMPOUNDS (CVOCs)
- —100— ISOCONCENTRATION LINE OF TOTAL CVOCS IN GROUNDWATER AT BOTTOM OF UPPER GLACIAL AQUIFER

ALL CONCENTRATIONS ARE IN MICROGRAMS PER KILOGRAM

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SITE CODE-1-52-025 WA D-003970-02

ERM Environmental Resources Management

CHECKED	DATE
DESIGN ENGINEER	
PROJECT ENGINEER	
PROJECT MANAGER	
APPROVED	
APPROVED	

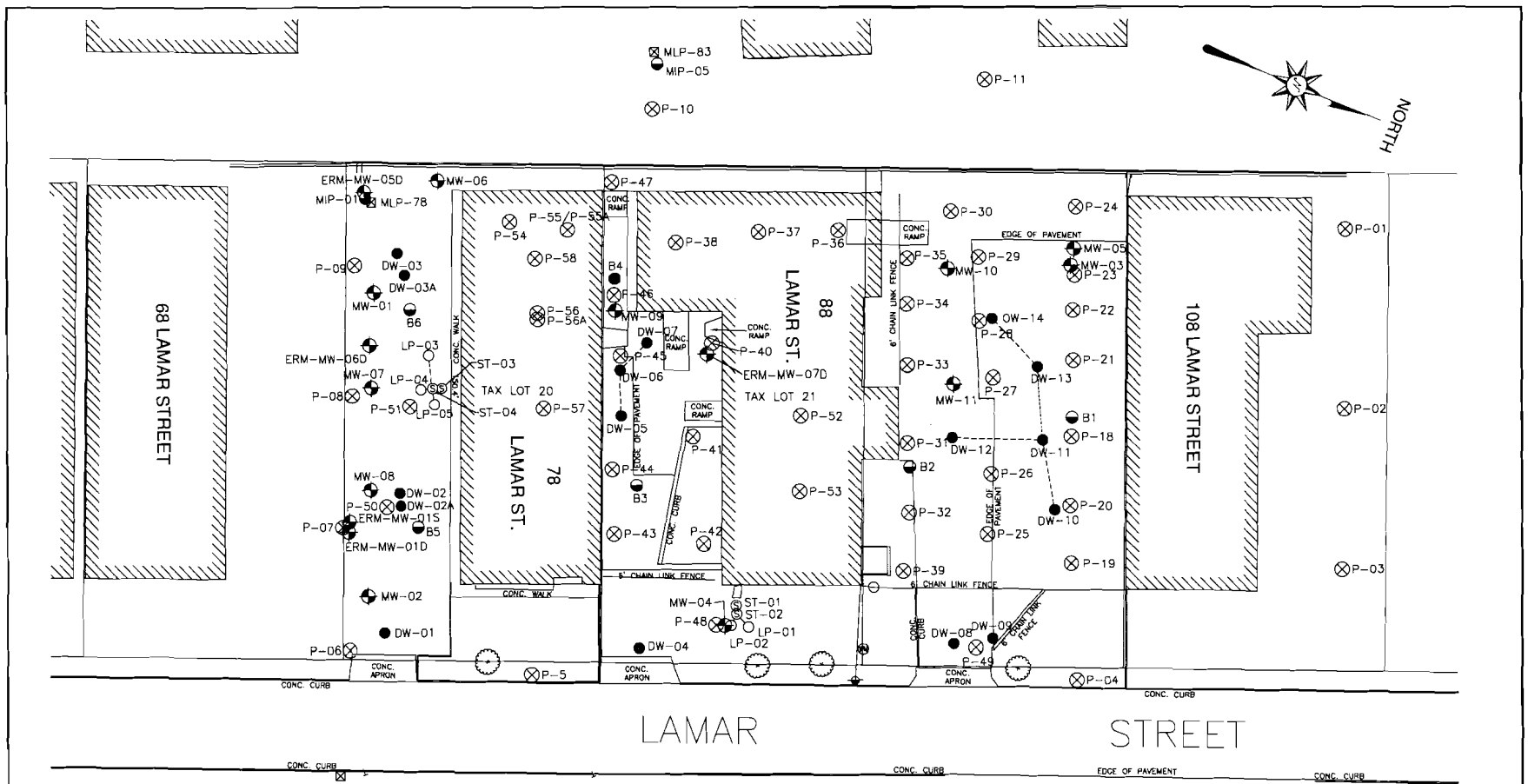
PROPOSED SOIL BORING LOCATIONS
PRIDE SOLVENTS AND CHEMICAL COMPANY

DRAWN	DATE	REVISED DATE
GKS	9/15/05	
SCALE	JOB NO.	FILE NAME
GRAPHIC	72702.04	7270204021Z

DRAWING NO. 2

REV. NO.

SHEET OF



LEGEND:

- ● DW-01 DRY WELL
- ○ LP-01 LEACHING POOL
- Ⓢ ST-01 SEPTIC TANK
- ⊗ P-01 GROUNDWATER PROFILE BORING
- B01, L1, MIP-01 CONDUCTIVITY/MEMBRANE INTERFACE PROBE BORING LOCATION
- MW-05 MONITORING WELL
- ⊠ MLP-78 MOBILE LABORATORY PROFILE (SOIL BORING)
- BURIED UNDERGROUND PIPE
- TREE

SOURCE: MODIFIED FROM
SURVEY BY NELSON & POPE
572 WALT WHITMAN ROAD, MELVILLE , NY 11747
AND YEC, INC/YEC ENGINEERING P.C.
61 CORPORATE WAY, SUITE 4M
VALLEY COTTAGE, NY 10989
MONITORING WELL AND BORING LOCATION PLAN
DWG. NO. 02076S, DATED 4/25/02, REVISED 8/13/02

0 40' 80'
GRAPHIC SCALE

TITLE
SITE PLAN
AND SAMPLING LOCATIONS

PRIDE SOLVENTS AND CHEMICAL COMPANY

PREPARED FOR NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SITE CODE 1-52-025 WA D-003970-02

ERM Environmental Resources Management

SCALE	FIGURE
GRAPHIC	3

DRAWN:	JOB NO.:	FILE NAME:	DATE
Y.S./EMF	72702.04	7270204018	1/27/03

APPENDIX A
STANDARD OPERATING PROCEDURES

Pride Solvents
West Babylon, New York

September, 2005

0029673.2890.App.A

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Prepared by:

Environmental Resources Management
520 Broad Hollow Road, Suite 210
Melville, New York 11747

SOP 1: SOIL BORINGS WITH HYDROPUNCH GROUNDWATER SAMPLING

Soil borings with collection of lithologic soil samples and Hydropunch groundwater sampling will be used to characterize stratigraphic conditions and characterize groundwater quality/impacts.

A NYSDOH ELAP-certified laboratory will analyze the groundwater samples obtained from these locations.

Drilling Methods

All boreholes (for soil borings or groundwater monitoring wells) will be advanced using hollow stem augers and a truck-mounted rotary drilling rig.

Source of Water

The use of drilling mud and/or foams shall not be allowed. All water used during drilling and/or steam-cleaning operations shall be from a potable source and so designated in writing. ERM's drilling subcontractor will obtain all permits from the local water purveyor and any other concerned authorities, and provide of any required back-flow prevention devices.

Drilling Equipment Decontamination

All drilling equipment and the back of the drilling rig shall be decontaminated by steam cleaning prior to performance of the first boring/well installation and between all subsequent borings/well installations. This shall include all hand tools, casing, augers, drill rods and bits, tremie pipe and other related tools and equipment. The steam cleaning equipment shall be capable of generating live steam with a minimum temperature of 212o degrees Fahrenheit. The equipment shall be cleaned to the satisfaction of the ERM's Hydrogeologist.
Lithologic Sample Collection

Split-spoon soil samples shall be collected continuously from ground surface to the water table, and at ten-foot intervals thereafter to the termination depth.

All soil sampling shall be performed by driving two-foot split-barrel (split-spoon) samplers in advance of the bottom of the borehole. Split-spoon samplers shall be driven in accordance with the general intent of ASTM Standards for Penetration Test and Split-Barrel Sampling of Soils (ASTM D1586-84).

Split-spoons will be advanced by either the wire-line method (downhole cable hammer) or with a cathead and standard 140-pound hammer simulating a free-fall of 30 inches. The soil samples will be collected using a properly decontaminated 2-foot by 2-inch carbon steel split-spoon sampler driven by a 140-lb. hammer dropped 30 inches repeatedly. An ERM Hydrogeologist will examine and identify the sample immediately upon collection. The sample will also be screened for VOCs using a hand-held photoionization detector (PID) total organic vapor analyzer.

Borehole Logging

The ERM Hydrogeologist will examine each split-spoon sample and use visual and field test criteria to classify the soils. The cuttings brought to the surface during the drilling will also be:

- Screened for VOCs using a hand-held PID total organic vapor analyzer; and
- Examined for any physical soil characteristics that may have not been observed in the split-spoon samples.

A standard "Geologic Log" will be maintained for each boring that will include all of the geological information gathered in the field, including the following:

- The structure of the soils sampled, including layering stratification features, and the dominant soil types;
- The color of soils, using Munsell Soil Color Charts;
- The moisture content of soils;
- Soil grain features, including grain sizes, degree of sorting or grading, angularity, and mineralogy. The soils will be classified using the ASTM Method D2488-84, a visual manual procedure;
- Identification of any rock fragments, organic material or other components; and
- The consistency of clay-dominated soils.

All of the soil information collected will be recorded as a designation under the USCS along with additional observations for each distinctive soil type within each sample. All soil samples will be collected and stored in glass jars or plastic zip lock bags. The ERM Hydrogeologist will label the jars or plastic bags with soil boring or well number, sample interval and date.

The ERM Hydrogeologist shall record penetration resistance, recovery and sample description for each split-barrel sample in soil boring logs.

Hydropunch Groundwater Sample Collection

Groundwater samples will be collected as needed from each of the soil borings utilizing the Hydropunch method or temporary well screen. ERM's drilling subcontractor will be responsible for provision of the Hydropunch sampling tool and all necessary accessory items (reusable and disposable) to collect groundwater samples.

The hollow stem augers will be advanced to just above the designated sample depth starting with the upper most sample in the profile. A properly decontaminated Hydropunch sampler will then be lowered through the augers to the bottom of the lead auger. The Hydropunch will then be driven in advance of the augers to the sample location depth and pulled back just enough to expose the screen within the Hydropunch. A new disposable bailer will be used for each sample. This will allow each sample zone to be purged until an acceptable sample can be obtained. Once the sample has been obtained with the bailer, it will be immediately transferred to laboratory-supplied bottles.

Borehole Abandonment

Boreholes not to be developed into groundwater monitoring wells, will be abandoned by backfill with the drill cuttings to within 2-feet of land surface. The remaining 2-feet will be filled with cement/bentonite grout, consisting of 5.0 pounds of high grade bentonite for each 94 pounds of Type I or Type II Portland cement mixed with 8.3 gallons of water for a target density of 13.9 pounds/gallon with an acceptable range of 13.4 to 14.5 pounds/gallon.

Work Site Restoration

Upon completion of the work, the drilling subcontractor shall restore all work areas/drilling locations to a pre-drilling condition. The drilling subcontractor shall remove and dispose of all debris, remove all equipment and materials from the each work site promptly and leave the location in a neat and orderly fashion to the satisfaction of ERM's Hydrogeologist. The restoration shall include repair of any holes, trenches, tire ruts, damage to pavement, etc. caused by the movement or operation of the drilling subcontractor's equipment.

SOP 2: ORGANIC VAPOR SCREENING - SOIL SAMPLE HEADSPACE

Field screening for organic compounds in soil samples will be performed as one of several field-screening criteria, and continuously in the breathing zone of all work areas where intrusive activities are to occur as part of the Health and Safety monitoring program. This will serve as an immediate indication as to volatile organic hazards at the work location and will determine if personnel health and safety protection is adequate. Screening with a hand-held PID meter will be performed during all intrusive work activities (i.e. installation of soil borings and/or groundwater monitoring wells, or collection of groundwater samples) as well as field investigation and all sample collection activities.

The procedure for monitoring VOCs in soils and the work areas are as follows:

1. Calibrate the PID daily in accordance with the particular manufacturer's procedures.
2. For health and safety monitoring during intrusive activities, the PID will be used to continuously monitor for organic vapors in the breathing zone of all work areas in accordance with the HASP.
3. For soil samples, a container separate from any jars that may be used for laboratory analysis will be used to check for total organic vapor concentrations using the PID. Generally, the sample aliquot retained for geologic description and archive is used for headspace total organic vapor screening.
4. Fill the sample container approximately 2/3 full with soil.
5. Place aluminum foil over the sample jar mouth, tightly sealing the opening.
6. Allow the jar to stand for 5 minutes in a location where the sample temperature change will be minimal.
7. After the 5 minutes, shake to jar for 1 minute to aid the desegregation of VOCs from the soil matrix.
8. Allow the jar to stand for an additional 5 minutes in a location where the sample temperature change will be minimal.
9. After the 5 minutes, insert the probe of a PID through the foil seal and observe the instrument for the maximum organic vapor reading.
10. Record the sample number and maximum headspace organic vapor concentration reading.

SOP 3: WATER LEVEL MEASUREMENT PROCEDURE

Groundwater elevation measurements are to be obtained using the following general procedures whenever depth to groundwater or groundwater elevation data is required. This may include activities such as soil borings, groundwater monitoring well installation/development, groundwater monitoring well sampling, and/or synoptic groundwater level measurements. The measurements will be collected concurrent with the groundwater sampling event and the water levels will be obtained prior to well evacuation and sample collection. The static water level will be measured to the nearest 0.01 foot.

1. Clean all water-level measuring equipment using appropriate decontamination procedures.
2. Remove locking well cap, note weather, time of day, and date, etc. in field notebook, or on an appropriate form.
3. Remove well casing cap.
4. Monitor headspace of well with a PID to determine presence of VOCs, and record in field notebook.
5. Lower water level measuring device into well until the water surface is encountered.
6. Measure distance from water surface to reference measuring point on well casing, and record in field notebook.
   NOTE: if water level measurement is from either the top of protective steel casing, top of PVC riser pipe, from ground surface, or some other position on the wellhead.
7. Measure total depth of well and record in field notebook or on log form.
8. Remove all downhole equipment; replace well casing cap and locking steel caps.
9. Calculate elevation of water:

   Ew = E - D

   Where

   Ew = Elevation of Water

   E = Elevation at point of measurement

   D = Depth to Water

SOP 4 : SOIL VAPOR SAMPLING USING SUMMA® CANISTERS

To correlate indoor air sampling results with a corresponding soil gas concentration underneath a structure, soil vapor samples will be collected from beneath the basement floors for each of the structures. The soil vapor samples will be collected at each location concurrently with the other indoor air samples in the building. In addition to the sub-slab soil vapor sampling, one soil vapor sample will be collected from the grassy area on the east side (front) of the 88 Lamar Street building. The soil vapor samples will be collected through a temporary sampling port using SUMMA® canisters equipped with timed sample acquisition regulators. The canisters and regulators will be certified clean by the laboratory prior to onsite use. A NYSDOH ELAP-certified laboratory will analyze each sample for the specified VOCs using United States Environmental Protection Agency (USEPA) Method TO-15. Specific details are presented below.

Selection and Preparation of Sample Collection Point:

- Observe the condition of the building floor slab for apparent penetrations such as concrete floor cracks, floor drains, or sump holes. Note the floor conditions on the sampling form and select a potential location or locations for a temporary or permanent subsurface probe. The location or locations should be central to the building away from foundation walls and apparent penetrations.

- Review the proposed location or locations with the occupant/owner describing how the sampling port or ports will be installed. After receiving permission from the occupant or owner, mark the proposed location(s) and describe the location(s) on the sampling form.

- Using the PID, screen indoor air in the area of floor penetrations such as concrete floor cracks, floor drains, or sump holes (note that the detection limits for the laboratory analyses to be performed on the samples collected are considerably lower than the detection limits of the PID). Record the indoor air PID readings on the sampling form.

Temporary Subsurface Probe Installation:

- Drill a 1-inch diameter hole about 1 to 2 inches into the concrete slab using an electric hammer drill.
- Extend the hole through the remaining thickness of the slab using a 1/2-inch drill bit. Extend the hole about three inches into the sub-slab material using either the drill bit or a steel probe rod.

- Insert a section of 1/4 -inch O.D. Teflon ™ tubing, or Teflon ™ lined tubing, to the bottom of the floor slab.

- Seal the annular space between the 1-inch hole and 1/4-inch tubing by applying melted beeswax into the 1-inch hole.

- Connect the 1/4-inch Teflon™ tubing to a stainless steel valve using compression fittings or hose clamps.

- Tracer gas (helium) will be utilized when collecting soil vapor samples where no slab is present to verify the integrity of the soil vapor probe seal. The tracer gas will be pumped into a sealed enclosure around the sampling point prior to the initial purging to enrich the atmosphere in the immediate vicinity of the area where the probe intersects the ground surface with the tracer gas. A helium detector will then be utilized to measure a vapor sample from the probe for the presence of high concentrations (> 20%) of the tracer. If a high concentration of helium is not observed it is assumed we have obtained an adequate seal.

- Open the in-line valve and purge the probe tubing using a polyethylene 60-cubic centimeter (cc) syringe. Close the valve, remove and cap the syringe, and connect the 1/4 -inch Teflon™ tubing and in-line valve to a SUMMA® canister. DO NOT DISCHARGE THE AIR/SOIL GAS SYRINGE INTO INDOOR AIR. For duplicate sample locations connect a second canister before purging by installing a ¼ -inch stainless steel "tee" fitting between the probe discharge tubing and the stainless steel valve.

Preparation of SUMMA® Canister and Collection of Sample:

- Place SUMMA® canister adjacent to temporary or permanent subsurface probe.

- Record SUMMA® canister serial number on sampling summary form and COC.

- Assign sample identification on canister ID tag, and record on sampling summary form and COC.

- Remove brass plug from canister fitting.

- Install pressure gage / metering valve on canister valve fitting and tighten. If pressure gage has additional (2nd) fitting, install brass plug from canister fitting into gage fitting and tighten.
- Open and close canister valve.
- Record gage pressure on sample summary form and COC. Gage pressure must read >25 inches Hg. Replace SUMMA® canister if gage pressure reads <25 inches Hg.
- Remove brass plug from gage fitting and store for later use.
- Install particulate filter onto metering valve input fitting and tighten.
- Connect subsurface probe to end of in-line particular filter via 1/4-inch O.D. Teflon™ tubing, or Teflon™ lined tubing, and "swagelok® -type" fittings.
- Open canister valve and in-line stainless steel valve to initiate sample collection.
- Take digital photograph of SUMMA® canister set up and surrounding area.
- Record date and local time (24-hour basis) of valve opening on sampling summary form and COC.

Termination of Sample Collectionollection:

- Revisit SUMMA® canister at the end of each sampling day and approximately after 80% of sample collection time has elapsed to verify sufficient amount of vacuum pressure remains for sample collection and shipment. If vacuum pressure no longer exists, or if vacuum pressure is <5 inches Hg, close the canister valve and document conditions. At end of sample collection record gage pressure on sampling form and COC.
- Record date and local time (24-hour basis) of valve closing on sampling summary form and COC.
- Close canister valve.
- Disconnect Teflon™ tubing and remove particulate filter and pressure gage / metering valve from canister.

- Reinstall brass plug on canister fitting and tighten.
- Remove SUMMA® canister from sample collection area.
- Remove temporary subsurface probe and plug the slab probe hole with solid laboratory grade rubber plug. Set plug slightly below the finished floor level cover flush with the floor surface using quick drying hydraulic cement.

Preparation and Sshipment of Sample to Analytical Laboratory:

- Pack SUMMA® canister in shipping container, note presence of brass plug installed in tank fitting.
- Complete COC and place requisite copies in shipping container.
- Close shipping container and affix custody seal to container closure.
- Zone A-1: Air sample obtained from crawl space or basement without an apparent vapor barrier.

Quality Assurance/Quality Control (QAQC) Samples:

The collection of QA/QC samples will include the submittal of blind sample duplicates to the analytical laboratory for analyses of target compounds. Duplicate samples will be collected 'side-by-side' over the same time interval. The following procedure should be followed when collecting a duplicate sample

- Record SUMMA® canister serial number on sampling summary form and COC.
- AAssign sample identification on canister ID tag, and record on sampling summary form and COC.
- Remove brass plug from canister fitting.
- Install pressure gage / metering valve on canister valve fitting and tighten. If pressure gage has additional (2nd) fitting, install brass plug from canister fitting into gage fitting and tighten.
- Open and close canister valve.

- Record gage pressure on sampling summary form and COC.
- Remove pressure gage and replace brass plug on canister fitting and tighten.

Zone A-1 type duplicate samples will be collected "side-by-side" over the same time interval. Zone A type samples will be obtained using a stainless steel "tee" type fitting and ¼ -inch O.D. Teflon™ tubing connected to the same subsurface probe.

Restoration of Sub-slab Soil Sampling Areas

Carpeted Areas - A square will be cut from the carpet prior to drilling. After sampling, the hole will be filled in with quick-set cement. After the cement has cured, the carpet square cutout will be glued back into place. Care will be taken to cut the carpet in areas beneath filing cabinets, tables, etc.

Floor Tiled Areas - A section of floor tile and mastic (approx. 2" square) will be cut out prior to drilling. After sampling, the hole will be filled in with quick-set cement. After the cement has cured, an epoxy coating comparable to the standard floor tile coloring (tan in most places) will be applied to the 2" square area.

Concrete Covered Areas - Drilled holes will be filled in with quick-set cement and leveled to a troweled finish.

SOP 5: MONITORING WELL CONSTRUCTION

Source of Water

The use of drilling mud and/or foams shall not be allowed. All water used during drilling and/or steam-cleaning operations shall be from a potable source and so designated in writing. ERM's drilling subcontractor will obtain all permits from the local water purveyor and any other concerned authorities, and provision of any required back-flow prevention devices.

Monitoring Well Borehole Construction

Boreholes shall be advanced by hollow-stem auger drilling method. Each monitoring well shall be installed within a separate borehole. Prior to the starting each borehole, the drilling rig will be positioned over the new well location and leveled to ensure the borehole is drilled as plumb and true as practical. Well borings shall have an inside diameter of at least four (4) inches larger than the outside diameter of the casing and well screen to ensure that a tremie may be employed during well construction procedures.

In order to reduce the potential for "running sands", a hydraulic head of potable water will be applied within the augers when the water table is encountered to maintain a positive hydrostatic head on subsurface materials. Each borehole will be advanced to the prescribed completion depth below grade. The drilling subcontractor shall verify by measurement that the borehole is open, and drill cuttings have been removed from the borehole prior to assembly of the well string.

Cuttings generated from the construction of the boreholes will be contained in New York State Department of Transportation (NYSDOT)-approved 55-gallon ring-top drums. The drums will be labeled according to the borehole/temporary well number.

Well Construction Materials

All monitoring wells shall be constructed of 2-inch inside diameter, threaded flush joint, schedule 40 PVC casing and screens ten (10) feet in length, of wire-wrapped construction having slot openings of 0.010-inches. Accordingly, well screen sand packs shall be a Type # 00 morie well sand. Type # 00 morie fine sand shall be used to separate well screen sand pack from the overlying bentonite slurry seal. Only pure Wyoming bentonite shall be used for bentonite slurry seals and in the cement/bentonite grout.

Cement bentonite grout shall be prepared utilizing 5.0 pounds of high grade bentonite for each 94 pounds of Type I or Type II Portland cement mixed with 8.3 gallons of water for a target density of 13.9 pounds/gallon with an acceptable range of 13.4 to 14.5 pounds/gallon.

To avoid bridging of material or creating void space, all sand, grout and slurry utilized in the subsurface for well construction will be tremied in place.

An ERM Hydrogeologist shall inspect all well materials for dents, cracks, grease, etc. and to ensure that the materials are in accordance with the specifications. Any materials found to be defective shall be rejected by ERM's Hydrogeologist and replaced by the drilling subcontractor at no cost to the NYSDEC. All well casing and screen shall be steam cleaned, wrapped in clean polyethylene sheeting and stored until the time of well construction.

Monitoring Well Construction Procedures

Well Assembly and Screen Placement

Once the well string is assembled in each borehole, the well shall be suspended in a manner such that the screen is set approximately one (1) foot above the bottom of the borehole. When the well screen is properly positioned, Type #1 morie sand pack shall be placed in the annulus by a tremie pipe to extend four (4) to five (5) feet (minimum 20% of the screen length) above the top of the screened interval to allow for settlement during development. Additionally, a 12-inch Type #00 morie sand pack shall be placed above the well screen sand pack to separate the bentonite slurry seal from the well screen sand pack. During this time, the augers will be slowly removed. The well pipe will also be pulled up no more than ½ foot to allow sand material to fill the borehole beneath the well screen. In addition, during the installation of the sand pack, the sand will be tamped down using a weighted tape measure to minimize the potential for bridging, and to ensure the proper placement and thickness of the sand.

Annular Seal

Upon completing the placement of the sand packs, a minimum 2-foot thick bentonite slurry seal will be tremied into the annular space.

Once the bentonite slurry seal is in place, the remaining annular space shall be backfilled by pressure injection of cement/bentonite grout using a

tremie pipe. The end of the tremie pipe shall be positioned approximately five (5) feet above the top of the bentonite slurry seal prior to injection of the cement/bentonite grout to prevent disturbance of the bentonite slurry seal. Injection shall continue until there is a return of grout from the annulus of the borehole at grade. The tremie pipe shall then be retracted from the well. Additional grout shall be added as required so the top of the grout shall settle at a maximum of three (3) feet below grade. One (1) foot of Type #1 morie sand will be placed on the surface of the grout to act as a drain for any surface water that may enter the vault.

Well Completions At Grade

For each of the wells, a 2-inch diameter PVC riser will extend from the top of the screen to approximately 4-inches below ground surface. A permanent mark will be made at the top of the well casing to provide a reference point from which to make future water level measurements.

Each well will be fitted with a flush-mounted steel well vault which is a minimum of two (2) inches larger in diameter than the well casing, and secured in a surface seal to adequately protect the casing. A locking cap will be provided for each well with one (1) to two (2) inches clearance between the top of the well cap and the bottom of the locking cap of the protective casing when in the locked position. ERM will provide keyed-alike padlocks for the wells.

Each well will have a concrete surface seal that will secure the protective casing in place. The surface seal will extend below the frost depth (a minimum of 24 inches) to prevent potential well damage. The top of the seal will be constructed by pouring concrete into a pre-built form with a minimum of 2-foot long sides. The bottom of the vault will be in the filter sand that will act as a drain to prevent ponding of water in the vault. The seal will be finished with a sloping surface to prevent surface runoff from ponding and entering the well vault.

SOP 6: MONITORING WELL DEVELOPMENT

All monitoring wells shall be developed by submersible pump or airlift methods to ensure the removal of any drilling fines and to improve the hydraulic communication with the surrounding formation. All wells shall be developed as soon as possible after installation, but not before the well seal and grout set, which unless approved by the NYSDEC shall be at least 24 hours. At no time shall water be introduced into the well during well development procedures.

If submersible pumps are used during development, the pump shall be decontaminated to the satisfaction of ERM's Hydrogeologist, and new lengths of dedicated ASTM Drinking Water quality polyethylene hose shall be used as a discharge line. If an airlift assembly is used during well development, the air source an oil-less type compressor outfitted with appropriate oil trap and/or filters, and new lengths of dedicated ASTM Drinking Water quality polyethylene hose shall be used as a discharge line. Additionally, the airlift assembly shall be configured in a manner such that the air discharge shall remain within the discharge hose and not come in contact with the well. The adequacy of the airlift assembly to fulfill the aforementioned conditions and effectively develop the monitoring well shall be subject to the approval of ERM's Hydrogeologist.

Each well shall be developed with the goal that the turbidity of the recovered well water is to be less than 50 NTUs. Additionally, pH, conductivity and temperature measurements of the development water shall be within 10% for a minimum of three consecutive measurements for development to be complete. ERM's Hydrogeologist shall be responsible for collection of turbidity, pH, conductivity and temperature measurements. All measurements will be documented on well log sheets and/or the field notebook.

Development water will be handled in accordance with the project-specific protocol for handling and disposal of solid and liquid investigative derived waste (IDW) generated during the implementation of the RI.

Wells will not be sampled for a minimum of one (1) week following development. Analytical results of the samples collected from the groundwater monitoring wells and/or composite water samples from the 55-gallon drums will determine the ultimate disposition of the development water.

SOP 7: GROUNDWATER SAMPLING

Groundwater sampling may be performed using USEPA low-flow well purging/sample collection techniques. The following subsections present general preliminary well sampling procedures common to both techniques followed by low-flow sampling procedures, and if for some reason it is not possible perform low-flow sampling, conventional procedures are also presented for reference.

The low-flow groundwater purging/sampling technique employs the use of a flow-through cell equipped with probes and a meter for measuring groundwater quality parameters such as pH, temperature, specific conductivity, and dissolved oxygen. One example of this equipment is the Horiba U-22 Flow-Through Cell and the specific manufacturer's calibration and operation instructions should be followed. In the event that low-flow purging/sampling cannot be performed and conventional procedures must be employed, SOPs 8, 9, 10 and 11 are presented to describe operating procedures for the measurement of pH, temperature, specific conductivity and dissolved oxygen using standard hand-held meters.

General Procedures

The following procedure will be used for all monitoring well groundwater sampling:

- Clean all water-level measuring equipment using appropriate decontamination procedures.
- Wear appropriate health and safety equipment as outlined in the HASP. In addition, samplers will don new sampling gloves at each individual well prior to sampling.
- Visually examine the exterior of the monitoring well for signs of damage or tampering and record in the field logbook.
- Unlock well cap.
- Take and record in field logbook PID readings.
- Measure the static water level in the well with a decontaminated steel tape or electronic water level indicator. The tape or water level indicator will be rinsed with deionized water in between individual wells to prevent cross-contamination. Synoptic round of water level measurements will all be completed on the same day.
- All wells will also be checked for the presence and thickness of Light or Dense Non Aqueous Phase Liquids (LNAPL/DNAPL).
- If LNAPL or DNAPL is encountered on the top of the water table at the time of sampling, a sample of the LNAPL or DNAPL will be collected for analysis if accumulations are sufficient. Measurement of

the thickness of this layer will be taken using an interface probe. A sample of the LNAPL or DNAPL may be obtained using a dedicated bottom-loading bailer. The sample will be sent to the laboratory for analysis of its chemical composition and physical properties (e.g., specific gravity, and gas chromatograph (GC) fingerprint). Initially, no groundwater sample will be collected from wells that contain LNAPL or DNAPL.

- If LNAPL or DNAPL is not detected in the well, continue with the low-flow sampling procedures described below.

Low-Flow Sampling

The low-flow sampling procedure is intended to facilitate the collection of minimum-turbidity groundwater monitoring well samples.

Sample Equipment

- Adjustable-rate, positive displacement pumps (e.g., centrifugal, submersible or bladder pumps constructed of stainless-steel or Teflon®). Peristaltic pumps may be used only for inorganic sample collection. The selected pump must be specifically designed for low-flow rates (i.e., use of a high volume pump that is adjusted down to a low flow setting is not permitted).
- Tubing: Tubing used in purging and sampling each well must be dedicated to that well. Once properly located, moving the pump in the well should be avoided. Consequently, the same tubing should be used for purging and sampling. Teflon® and Teflon®-lined polyethylene tubing must be used to collect samples for organic analysis. For samples collected for inorganic analysis, Teflon® or Teflon®-lined polyethylene, PVC, Tygon, or polyethylene or silicon tubing may be used.
- Electronic water level measuring device, 0.01-foot accuracy.
- Flow measurement supplies (e.g., graduated cylinder and stop watch).
- Interface probe.
-
- Power or air source (generator, compressed air tank, etc.).
- In-line purge criteria parameter monitoring instruments - pH, turbidity, specific conductance, temperature, and dissolved oxygen.
- Decontamination supplies.
- Logbook and field forms.
- Sample bottles.
- Sample preservation supplies (as specified by the analytical methods).
- Sample tags or labels, chain of custody forms.
- Well construction data, location map, field data from last sampling event.

Sample Procedure

1. 1. Lower pump, safety cable, tubing, and electrical lines very slowly into the well to a depth corresponding to the center of the saturated screen section of the well. The pump intake must be kept at least two feet above the bottom of the well to prevent mobilization of any sediment. Lowering the pump quickly, or even at a moderate rate, will result in disturbing sediment in the well. This is one of the most important steps in low flow sampling at the Site.

2. 2. Measure the water level again with the pump in well before starting the pump. Start pumping the well at 100 to 500 milliliters per minute. Ideally, the pump rate should cause little or no water level drawdown in the well (less than 0.3 foot and the water level should stabilize).

   Measure and record the depth to water and pumping rate every 3 to 5 minutes (or as appropriate) during pumping. If purging continues for more than 30 minutes, readings will be recorded at approximately 10-minute intervals. However, once stabilization is indicated, a minimum of 3 consecutive readings at 3 to 5 minute intervals will be recorded prior to sample collection. Care should be taken not to cause pump suction to be broken or entrainment of air in the sample. Do not allow the groundwater level to go below the pump intake.

   Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to minimize drawdown and/or to ensure stabilization of indicator parameters.

3. During purging, measure and record the field indicator parameters using the in-line meter (turbidity, temperature, specific conductance, pH, Eh, and dissolved oxygen) every 3 to 5 minutes (or as appropriate). If purging continues for more than 30 minutes, readings will be recorded at approximately 10-minute intervals. However, once stabilization is indicated, a minimum of 3 consecutive readings at 3 to 5 minute intervals will be recorded prior to sample collection.

   - The well is considered stabilized and ready for sample collection once all the field indicator parameter values remain within 10 percent for 3 consecutive readings.
   - If drawdown in the well is measured at 1 foot or more, continue to low flow purge until a minimum of the equivalent volume of 1 well

casing volume is removed. Using the flow equation to calculate the volume of purge water. Then collect the groundwater sample.

4. Before sampling, either disconnect the in-line cell or use a by pass assembly to collect groundwater samples before the in-line cell. All sample containers should be filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence.

5. SSamples requiring pH adjustments will have their pH checked to ensure that the proper pH has been obtained. For VOC samples, this will necessitate the collection of a test sample to determine the amount of preservative that needs to be added to the sample container prior to sampling.

6. Label the samples using waterproof labels, or apply clear tape over the paper labels. Place all samples in a cooler as described in the QAPP with bagged ice or frozen cold packs and maintain at 4°C for delivery to the laboratory.

7. Do not use ice for packing material; melting will cause bottle contact and possible breakage.

8. Measure and record well depth. Take final water quality reading using low flow cell.

9. Secure the well.

Standard Purging and Sampling Procedure

1. Calculate the volume of water in the well as follows:

   Volume (in gallons) = 3.14r2(h) x 7.48 gal/ft3

   Where

   h - well depth (feet) - static water level (feet)

   r = well radius (feet)

2. Lower the decontaminated submersible pump with new, dedicated lengths of polyethylene tubing into the well so the pump is set at the screen interval. Purge 3 to 5 volumes of water from the well, using the submersible pump.

3. Measure and record time, temperature, pH, turbidity, and specific conductance as each volume of well water is purged. Once the temperature, pH, and specific conductance have stabilized to within 10% for two successive well volumes and the turbidity is less than 50

NTUs, a groundwater sample may be collected. Measure DO and remove the submersible pump from the well.

4. After purging, allow static water level to recover to approximate original level.

5. Place polyethylene sheeting around well casing to prevent contamination of sampling equipment in the event equipment is dropped.

6. Obtain sample from well with a dedicated, factory pre-cleaned polyethylene Voss ™ bailer. The bailer will be suspended on a new, dedicated length of polypropylene string. The maximum time between purging and sampling will be three (3) hours. All the bailers for one day of sampling will be pre-cleaned and dedicated to each individual wells.

   Sample for VOCs first by lowering the bailer slowly to avoid degassing, then collect any other organic and inorganic samples by pouring directly into sample bottles from bailers.

   The sample preservation procedure will be to immediately place analytical samples in the cooler and chill to 4°C. Samples will be delivered to the appropriate laboratory within 24 hours. Samples will be maintained at 4°C until time of analysis.

7. Decontaminate the submersible pump and discard the pump discharge line.

8. Re-lock well cap.

9. Fill out field notebook, Well Sample Log Sheet, labels, Custody Seals and Chain-of-Custody forms.

SOP 8: INDOOR AIR SAMPLING USING SUMMA® CANISTERS

Indoor air samples will be collected from buildings at and adjacent to the site. The indoor air samples will be collected at each location concurrently with sub-slab samples. The indoor air samples will be collected using SUMMA® canisters equipped with timed sample acquisition regulators. The canisters and regulators will be certified clean by the laboratory prior to onsite re-use. A NYSDOH ELAP-certified laboratory will analyze each sample for the specified VOCs using United States Environmental Protection Agency (USEPA) Method TO-15. General details are presented below.

1. Prior to sampling, ERM will select an appropriate location for collection of the indoor and outdoor air samples. ERM will attempt to obtain the sample from a central location at the sampling point, away from foundation walls. If possible, sources of VOCs will be removed from the sampling area. A PID will be used to help identify such fd

2. The location of the sample will be marked, documented, and photographed. A Sample identification label will be visible in each photograph. In addition, a measuring device will be visible in each photograph to show that indoor ambient air sample intake valves are located between three and five-feet from the floor.

3. An initial PID reading will be made at the location of each air sample.

4. The SUMMA® canister will be attached to a sampling regulator set to collect a soil vapor sample over a 24-hour period (sample collection time interval may be changed at the discretion of the NYSDEC Project Manager). At the end of each day and after approximately 80% of the specified sample collection time has elapsed, the canister will be checked to ensure substantial vacuum pressure remains in the canister for sample collection and shipment.

5. For each indoor sample location, all the pertinent data will be recorded in the field forms. Additional general information will be recorded within a field book(s) designated to the project. This information should include the following:

   - Sampler's name;
   - Date, time and PID reading;
     Date and time of sample start and stop;
   - SUMMA® canister serial number;
   - Survey location number, and descriptive location of the sampling area;

- Sample identification for corresponding outdoor air samples
- Weather conditions;
- Barometric pressure;
- Initial SUMMA® canister pressure; and
- Final SUMMA® canister pressure.

Preparation of SUMMA® Ccanister and Ccollection of Ssample:

- Place SUMMA® canister at height equivalent to approximately the breathing zone of the ground story level of a building (e.g., approximately 5 feet above the ground surface). Position canister on stable surface, or suspend from stable structure with nylon rope. The canister inlet should be protected from precipitation (rain, ice, or snow) either by pointing the inlet downward or by shielding the top of the canister.

- Record SUMMA® canister serial number on sampling summary form and COC.

- Assign sample identification on canister ID tag, and record on sampling summary form and COC.

- Remove brass plug from canister fitting.

- Install pressure gage / metering valve on canister valve fitting and tighten. If pressure gage has additional (2nd) fitting, install brass plug from canister fitting into gage fitting and tighten.

- Open and close canister valve.

- Record gage pressure on sample summary form and COC. Gage pressure must read >25 inches Hg. Replace SUMMA® canister if gage pressure reads <25 inches Hg.

- Remove brass plug from gage fitting and store for later use.

- Install particulate filter onto metering valve input fitting and tighten.

- Open canister valve to initiate sample collection.

- Record local time on sampling summary form and COC.

- Take digital photograph of SUMMA® canister and surrounding area.

Termination of Sample Collection:

- Revisit SUMMA® canister at the end of each sampling day and approximately after 80% of sample collection time has elapsed to verify sufficient amount of vacuum pressure remains for sample collection and shipment. If vacuum pressure no longer exists, or if vacuum pressure is <5 inches Hg, close the canister valve and document conditions. At end of sample collection period (e.g., 24 hours after initiation of sample collection) record gage pressure on sampling form and COC.

- Record local time on sampling summary and COC.

- Close canister valve.

- Remove particulate filter and pressure gage / metering valve from canister.

- Reinstall brass plug on canister fitting and tighten.

- Remove SUMMA® canister from sample collection area.

- Preparation and shipment of sample to analytical laboratory will follow the procedure below.

- Pack SUMMA® canister in shipping container, note presence of brass plug installed in tank fitting.

- Complete COC and place requisite copies in shipping container.

- Close shipping container and affix custody seal to container closure.

Quality Assurance/Quality Control (QAQC) Samples:

The collection of QA/QC samples will include the submittal of blind sample duplicates to the analytical laboratory for analyses of target compounds. Duplicate samples will be collected 'side-by-side' over the same time interval. The following procedure should be followed when collecting a duplicate sample.

- Record SUMMA® canister serial number on sampling summary form and COC.

- Assign sample identification on canister ID tag, record on sampling summary form and COC.

- Remove brass plug from canister fitting.
- Install pressure gage / metering valve on canister valve fitting and tighten. If pressure gage has additional (2nd) fitting, install brass plug from canister fitting into gage fitting and tighten.
- Open and close canister valve.
- Record gage pressure on sampling summary form and COC.
- Remove pressure gage and replace brass plug on canister fitting and tighten.

SOP 9: Test Pit Installations

Test pits, if necessary, will be excavated in areas identified during the investigation. The actual locations of test pits that will be required to characterize impacted areas identified cannot be determined prior to initiation of fieldwork.

The vertical depth of each test pit will be determined based on the field investigation, judgment of the ERM Hydrgeologist and depth to groundwater. The width of the test pits is estimated to be the width of the backhoe bucket and a length of a maximum length of 10-feet.

During test pit installation, a description of the soil in each pit will be recorded on a log according to NYSDEC procedures. Soils will be logged according to the Unified Soil Classification System, noting such features as color, soil texture, particle shape, mottles, structure, consistence, and horizon thickness. In addition to soil type and physical characteristics, depth to ground water, field instrument measurements, presence of odor, vapors, discoloration and presence of NAPL will be recorded. If visual contamination is present soil samples may be collected.

Immediately following completion of excavation, logging and sample collection, the test pit will be backfilled with the excavated material. The upper several feet of soil (pre-excavation condition) will be segregated during the initial portion of excavation and subsequently be used to complete the backfilling and restore grade. The backhoe (bucket and tires) will be used to compact the backfill to ensure that no void space will remain.

APPENDIX B
SCHEDULE

Pride Solvents
West Babylon, New York

September 2005

0029673.2890.App.B

Prepared for:

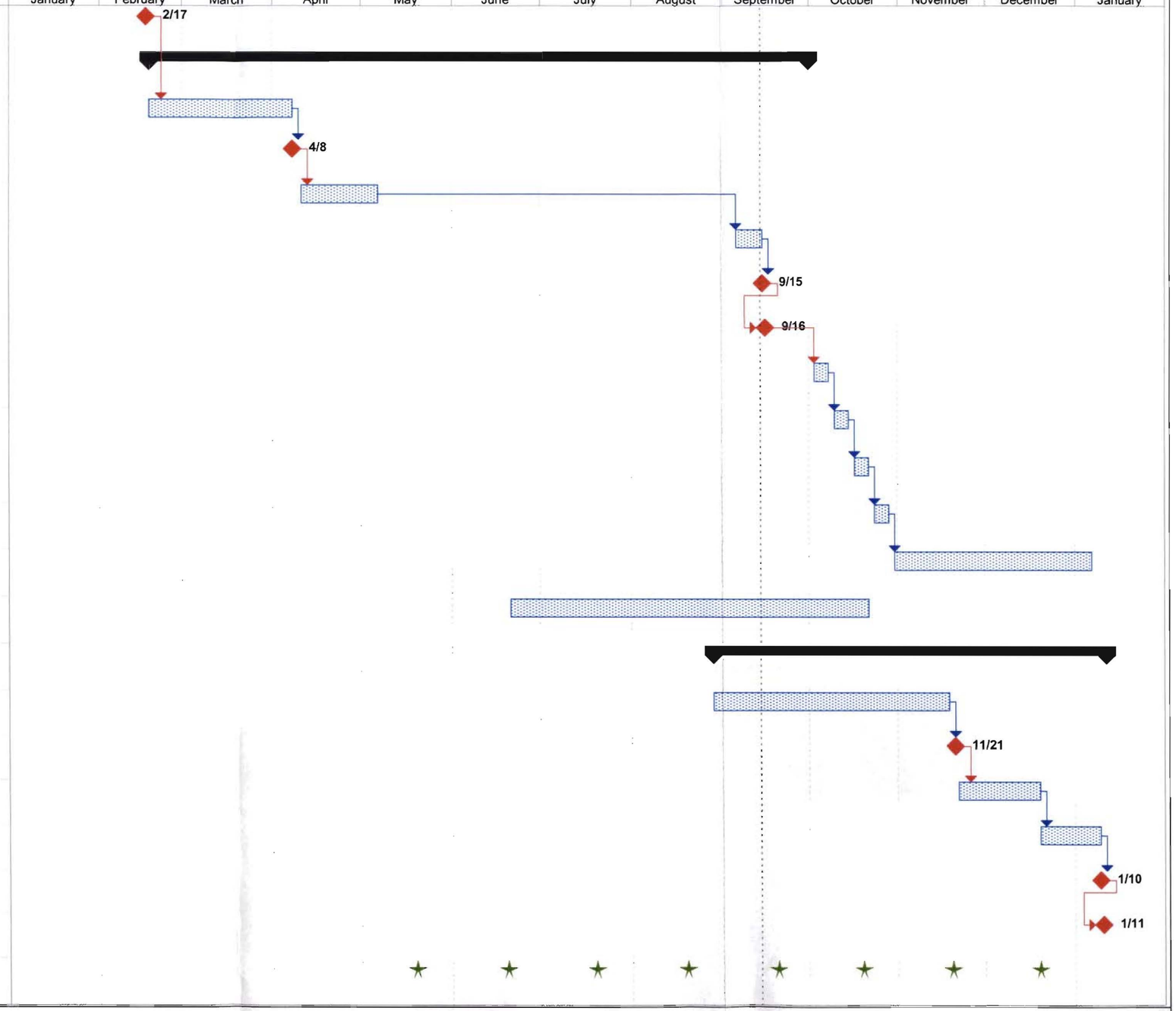
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Prepared by:

Environmental Resources Management
520 Broad Hollow Road, Suite 210
Melville, New York 11747

APPENDIX B
DETAILED REMEDIAL INVESTIGATION WORK ASSIGNMENT IMPLEMENTATION SCHEDULE
PRIDE SOLVENTS SITE - WEST BABYLON, NEW YORK
NYSDEC SITE CODE #1-52-025

ID	Task Name	Duration	Start	Finish	Predecessors
1	Notice of Work Assignment Ammendment	1 day	Thu 2/17/05	Thu 2/17/05	
2	**TASK 1 - WORKPLAN DEVELOPMENT**	**161 days**	**Fri 2/18/05**	**Fri 9/30/05**	
3	Work Plan Development	35 days	Fri 2/18/05	Thu 4/7/05	1
4	Submit Work Plan	1 day	Fri 4/8/05	Fri 4/8/05	3
5	NYSDEC/NYSDOH Review & Comment On Draft Work Plan	20 days	Mon 4/11/05	Fri 5/6/05	4
6	Finalize Work Plan	7 days	Tue 9/6/05	Wed 9/14/05	5
7	Submit Final Work Plan	1 day	Thu 9/15/05	Thu 9/15/05	6
8	NYSDEC Approval of Final Work Plan & Issuance Notice To Proceed	11 days	Fri 9/16/05	Fri 9/30/05	7
9	**TASK 6 - SUB-SLAB INVESTIGATION**	5 days	Mon 10/3/05	Fri 10/7/05	8
10	**TASK 7 - DRYWELL AND LEACH POOL INVESTIGATION**	5 days	Mon 10/10/05	Fri 10/14/05	9
11	**TASK 8 - SUB -SLAB SOIL VAPOR SURVEY**	5 days	Mon 10/17/05	Fri 10/21/05	10
12	**TASK 9 - INDOOR AIR SAMPLING**	5 days	Mon 10/24/05	Fri 10/28/05	11
13	**TASK 10 - DOWNGRADIENT SUBSURFACE SAMPLING**	50 days	Mon 10/31/05	Fri 1/6/06	12
14	**LABORATORY ANALYSES AND DATA VALIDATION**	89 days	Tue 6/21/05	Fri 10/21/05	
15	**TASK 11 - REPORT PREPARATION**	**98 days**	**Mon 8/29/05**	**Wed 1/11/06**	
16	Report Preparation	60 days	Mon 8/29/05	Fri 11/18/05	
17	Draft Report	1 day	Mon 11/21/05	Mon 11/21/05	16
18	NYSDEC Review & Comment on Report	20 days	Tue 11/22/05	Mon 12/19/05	17
19	Finalize Report	15 days	Tue 12/20/05	Mon 1/9/06	18
20	Final Report	1 day	Tue 1/10/06	Tue 1/10/06	19
21	NYSDEC Approval of Final Report	1 day	Wed 1/11/06	Wed 1/11/06	20
22	**Monthly Progress Reports**	**152 days**	**Fri 5/20/05**	**Tue 12/20/05**	



Date: Wed 9/14/05 | Task | Milestone | Recurring Activity | Summary

APPENDIX C
SCHEDULE 2.11

Pride Solvents
West Babylon, New York

September 2005

0029673.2890.App.C

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7015

Prepared by:

Environmental Resources Management
520 Broad Hollow Road, Suite 210
Melville, New York 11747

Schedule 2.11 (a)

Summary of Work Assignment Price

Work Assignment Number D003970-02.2

1)	Direct Salary Costs (Schedules 2.10(a) and 2.11 (b))	$209,274
2)	Indirect Costs (Schedule 2.10(g))	$339,024
3)	Direct Non-Salary Costs (Schedules 2.10 (b)(c)(d) and 2.11(c)(d))	$46,731
4)	Subcontractor Costs	

Cost-Plus-Fixed-Fee Subcontractors (Schedule 2.10(e) and 2.11(e)

	Name of Subcontractor	Services To Be Preformed	Subcontract Price
	Cost-Plus-Fixed-Fee Subcontracts		
	i) YEC, Inc.	Survey	$ 8,615
	ii) Delaware Engineering	Data Validation	$ 2,934
A)	**Total Cost-Plus-Fixed-Fee Subcontracts**		$11,549.43

Unit Price Subcontracts (Schedule 2.10(f) and 2.11(f))

Name of Subcontractor	Services To Be Preformed	Subcontract Price
i) Nelson & Pope	Survey	$ 16,290
ii) L.A.B. Validation	Data Validation	$ 12,000
iii) Nothnagle	Drilling	$ 67,611
iv) ADT	Drilling	$ 15,575
v)Severn Trent	Laboratory	$ 129,752
vi) Allied Waste	Waste Disposal	$ 9,750
vii)Environmental Closures	Drum Disposal/Leaching Pool Excavation	$ 12,640
viii) Geophysical	GPR Survey	$ 11,600
ix) Zebra	Geoprobe	$ 59,273
x) Nelson & Pope (2005)	Survey	$ 2,750
xi) STL-Knoxville (2005)	Air Sample Analysis	$ 11,500
xii) Advanced Geophysical (2005)	Geophysics	$ 4,000
xiii)Chemtech (2005)	Analytical Services	$ 15,100
xiv) Delta Well & Pump (2005)	Drilling Services	$ 143,335
xv) Innovative Recycling (2005)	Subsurface Investigation	$ 28,530
xvi) Environmental Data Svcs (2005)	Data Validation	$ 5,293

B)	**Total Unit Price Subcontracts**	$ 544,999.53
5)	Subcontract Management Fee (Only for Unit Price Subcontracts >$10,000)	$ 26,160.33
6)	Total Subcontract Costs (lines 4A + 4B + 5)	$ 582,709
7)	Fixed Fee (Schedule 2.10(h))	$ 38,381
8)	Total Work Assignment Price (Lines 1 + 2 + 3 + 6 + 7)	$ 1,216,119

Engineer/Contract #: C003970
Project Name Pride Solvents Site #1-52-025
Work Assignment No. D003970-02.2

Date Prepared: Oct 20, 2003

Schedule 2.11 (b)
Direct Labor Hours Budgeted

Labor Classification	*IX*	*VIII*	*VII*	*VI*	*V*	*IV*	*III*	*II*	*I*	*Admin.*	*Total Direct Labor Hrs.*
Av. Salary Rate ($) (Year 2004)	$70.07	$61.18	$49.39	$45.73	$37.91	$33.07	$23.21	$20.11	$19.43	$15.54	
Av. Salary Rate ($) (Year 2003)	$67.70	$59.11	$47.72	$44.18	$36.63	$31.95	$22.42	$19.43	$18.78	$15.01	
Av. Salary Rate ($) (Year 2001)	$63.20	$55.18	$44.55	$41.24	$34.19	$29.82	$20.93	$18.14	$17.53	$14.01	
Av. Salary Rate ($) (Year 2000)	$61.06	$53.31	$43.04	$39.85	$33.04	$28.82	$20.22	$17.53	$16.94	$13.54	
Av. Salary Rate ($) (Year 1999)	$59.00	$51.51	$41.59	$38.50	$31.92	$27.84	$19.54	$16.93	$16.36	$13.08	
Task 1 - Work Plan (1999)		12				21				4	37
Task 1 - Work Plan (2000)		20				75		48		28	171
Task 1 - Work Plan (2001)		10				105		12		14	141
Task 2 - FRI (2000)		9	2			16	291	15		1	334
Task 2 - FRI (2001)						95					95
Task 3 - Phase II FRI (2000)		13				2	40			1	56
Task 3 - Phase II FRI (2001)		83				195	1000	60		5	1343
Task 3 - Phase II FRI (2003)		20				200		200		15	435
Task 4 - FRI Report (2000)											0
Task 4 - FRI Report (2003)		50		100		200	300	40		40	730
Task 4 - FRI Report (2004)		40				200		150			390
Task 5 - FFS (2004)		56		320		200	70			80	726
Subtotal 1999 Hours		12	0	0	0	21	0	0	0	4	37
Subtotal 2000 Hours		42	2	0	0	93	331	63	0	30	561
Subtotal 2001 Hours		93	0	0	0	395	1000	72	0	19	1579
Subtotal 2003 Hours		70	0	100	0	400	300	240	0	55	1165
Subtotal 2004 Hours		96	0	320	0	400	70	150	0	80	1116
Subtotal 1999 Costs		$618.12	$0.00	$0.00	$0.00	$584.64	$0.00	$0.00	$0.00	$52.32	$1,255
Subtotal 2000 Costs		$2,239.02	$86.08	$0.00	$0.00	$2,680.26	$6,692.82	$1,104.39	$0.00	$406.20	$13,209
Subtotal 2001 Costs		$5,131.74	$0.00	$0.00	$0.00	$11,778.90	$20,930.00	$1,306.08	$0.00	$266.19	$39,413
Subtotal 2003 Costs		$4,137.70	$0.00	$4,418.00	$0.00	$12,780.00	$6,726.00	$4,663.20	$0.00	$825.55	$33,550

Engineer/Contract #: C003970
Project Name Pride Solvents Site #1-52-025
Work Assignment No. D003970-02.2

Date Prepared: 9/14/2005

Schedule 2.11 (b)
Direct Labor Hours Budgeted

Labor Classification	*IX*	*VIII*	*VII*	*VI*	*V*	*IV*	*III*	*II*	*I*	*Admin.*	*Total Direct Labor Hrs.*
Av. Salary Rate ($) (Year 2001)	$63.20	$55.18	$44.55	$41.24	$34.19	$29.82	$20.93	$18.14	$17.53	$14.01	
Task 1 - Work Plan		20	0	0		75	0	48		28	171
Task 2 - FRI		9	2	0		16	291	15		1	334
Task 3 - Phase II FRI		13	0	0		2	40	0		1	56
Task 4 - FRI Report		20	0	0		200	0	200		15	435
Task 5 - FFS		50	0	100		200	300	40		40	730
Subtotal 2001 Hours		112	2	100		493	631	303		85	1726
Subtotal 2001 Costs		6180.16	89.1	4124		14701.26	13206.83	5496.42		1190.85	$44,989
Total Hours		112	2	100		493	631	303		85	**1726**
Total Direct Labor Cost ($)		$6,180.16	$89.10	$4,124.00		$14,701.26	$13,206.83	$5,496.42		$1,190.85	**$44,989**

Engineer/Contract #: C003970
Project Name Pride Solvents Site #1-52-025
Work Assignment No. D003970-02.2

Date Prepared: 9/14/2005

Schedule 2.11 (b)
Direct Labor Hours Budgeted

Labor Classification	*IX*	*VIII*	*VII*	*VI*	*V*	*IV*	*III*	*II*	*I*	*Admin.*	*Total Direct Labor Hrs.*
Av. Salary Rate ($) (Year 2000)	$61.06	$53.31	$43.04	$39.85	$33.04	$28.82	$20.22	$17.53	$16.94	$13.54	
Av. Salary Rate ($) (Year 1999)	$59.00	$51.51	$41.59	$38.50	$31.92	$27.84	$19.54	$16.93	$16.36	$13.08	
Task 1 - Work Plan		32				96		48		32	208
Task 2 - FRI		9	2			16	291	15		1	334
Task 3 - Phase II FRI		13				2	40			1	56
Task 4 - FRI Report											0
Task 5 - FFS											0
Subtotal 1999 Hours		12				21				4	37
Subtotal 2000 Hours		42	2	0		93	331	63		30	561
Subtotal 1999 Costs		$618.12				$584.64				$52.32	$1,255
Subtotal 2000 Costs		2239.02	86.08	0		2680.26	6692.82	1104.39		406.2	$13,209
Total Hours		54	2	0		114	331	63		34	**598**
Total Direct Labor Cost ($)		$2,857.14	$86.08	$0.00		$3,264.90	$6,692.82	$1,104.39		$458.52	**$14,464**

Engineer/Contract #: C003970
Project Name Pride Solvents Site #1-52-025
Work Assignment No. D003970-02.2

Date Prepared: 9/14/2005

Schedule 2.11 (b-1)
Direct Administrative Labor Hours Budgeted

Labor Classification	*IX*	*VIII*	*VII*	*VI*	*V*	*IV*	*III*	*II*	*I*	*Admin.*	*Total Direct Labor Hrs.*
Av. Salary Rate ($) (Year 2000)	$61.06	$53.31	$43.04	$39.85	$33.04	$28.82	$20.22	$17.53	$16.94	$13.54	
Av. Salary Rate ($) (Year 1999)	$59.00	$51.51	$41.59	$38.50	$31.92	$27.84	$19.54	$16.93	$16.36	$13.08	
Task 1 - Work Plan		8								8	16
Task 2 - FRI											0
Task 3 - Phase II FRI		10								10	20
Task 4 - FRI Report		10								20	30
Task 5 - FFS		10								20	30
Subtotal 2000 Hours		38								58	96
Subtotal 2000 Costs		$2,026								$785	$2,811
											0
Total Hours		38								58	**96**
Total Direct Labor Cost ($)		$2,026								$785	**$2,811**

Contract/Project administrative hours would include (subject to contract allowability) but not necessarily be limited to the following activities:

1) Work Plan Budget Development
Conflict of Interest check
Budget schedules &
supporting documentation
2) Review work assignments (WA) progress
Conduct progress reviews
Prepare monthly project report
Update WA progress schedule
Prepare M/WBE Utilization Report
3) Contractor Application for Payment (CAP)
Oversee and prepare monthly CAP

4) Program Management
Prepare monthly cost control report
Cost control reviews
Staffing Plans
Manage subcontracts
NSPE list Update
Equipment inventory
5) Miscellaneous
Condct Health & Safety Reviews
Word processing and graphic artists
Report Editing

Contract/Project administrative hours would **not** inclde:
1) QA/QC reviews
2) Technical oversight by management
3) Develop subcontracts
4) Work plan development
5) Review of deliverables

Engineer/Contract #: C003970
Project Name Pride Solvents Site #1-52-025
Work Assignment No. D003970-02.2

Date Prepared: 9/14/2005

Schedule 2.11 (b-1)
Direct Administrative Labor Hours Budgeted

Labor Classification	*IX*	*VIII*	*VII*	*VI*	*V*	*IV*	*III*	*II*	*I*	*Admin.*	*Total Direct Labor Hrs.*
Av. Salary Rate ($) (Year 2000)	$61.06	$53.31	$43.04	$39.85	$33.04	$28.82	$20.22	$17.53	$16.94	$13.54	
Av. Salary Rate ($) (Year 1999)	$59.00	$51.51	$41.59	$38.50	$31.92	$27.84	$19.54	$16.93	$16.36	$13.08	
Task 1 - Work Plan		8								8	16
Task 2 - FRI		5								1	6
Task 3 - Phase II FRI		5								1	6
Task 4 - FRI Report											0
Task 5 - FFS											0
Subtotal 1999 Hours		4								4	8
Subtotal 2000 Hours		14								6	20
Subtotal 1999 Costs		$206								$52	$258
Subtotal 2000 Costs		$746								$81	$828
											0
Total Hours		18								10	**28**
Total Direct Labor Cost ($)		$952								$134	**$1,086**

Contract/Project administrative hours would include (subject to contract allowability) but not necessarily be limited to the following activities:

1) Work Plan Budget Development
Conflict of Interest check
Budget schedules &
supporting documentation
2) Review work assignments (WA) progress
Conduct progress reviews
Prepare monthly project report
Update WA progress schedule
Prepare M/WBE Utilization Report
3) Contractor Application for Payment (CAP)
Oversee and prepare monthly CAP

4) Program Management
Prepare monthly cost control report
Cost control reviews
Staffing Plans
Manage subcontracts
NSPE list Update
Equipment inventory
5) Miscellaneous
Condct Health & Safety Reviews
Word processing and graphic artists
Report Editing

Contract/Project administrative hours would **not** inclde:
1) QA/QC reviews
2) Technical oversight by management
3) Develop subcontracts
4) Work plan development
5) Review of deliverables

Engineer/Contract #: C003970
Project Name Pride Solvents
Work Assignment No.D003970-2.2

Date Prepared:

Schedule 2.11 (b)
Direct Labor Hours Budgeted

Labor Classification	*IX*	*VIII*	*VII*	*VI*	*V*	*IV*	*III*	*II*	*I*	*Admin.*	*Total Direct Labor Hrs.*
Av. Salary Rate ($) (Year 2005)	$72.52	$63.32	$51.12	$47.33	$39.24	$34.22	$24.02	$20.81	$20.11	$16.08	
Task 1 Work Plan Development; Change order pricing and prep				24		95	40	30		6	195
Task 6:Sub-slab Invesigation				8		40	5	50		2	105
Task 7: Drywell and Leachpool Invesigation				8		30	5	40		4	87
Task 8: Sub-slab Soil Vapor Survey				8		30	5	80		4	127
Task 9: Indoor Air Sampling				8		40	10	50		4	112
Task 10:Downgradient Subsurface Sampling				24		150	25	475		4	678
Task 11:Report				40		240	51	110		40	481
Task 5:Feasibility Study[1]				350		250	240	100		25	965
Task 1	$0.00	$0.00	$0.00	$1,135.92	$0.00	$3,250.90	$960.80	$624.30	$0.00	$96.48	$6,068.40
Task 6	$0.00	$0.00	$0.00	$378.64	$0.00	$1,368.80	$120.10	$1,040.50	$0.00	$32.16	$2,940.20
Task 7	$0.00	$0.00	$0.00	$378.64	$0.00	$1,026.60	$120.10	$832.40	$0.00	$64.32	$2,422.06
Task 8	$0.00	$0.00	$0.00	$378.64	$0.00	$1,026.60	$120.10	$1,664.80	$0.00	$64.32	$3,254.46
Task 9	$0.00	$0.00	$0.00	$378.64	$0.00	$1,368.80	$240.20	$1,040.50	$0.00	$64.32	$3,092.46
Task 10	$0.00	$0.00	$0.00	$1,135.92	$0.00	$5,133.00	$600.50	$9,884.75	$0.00	$64.32	$16,818.49
Task 11	$0.00	$0.00	$0.00	$1,893.20	$0.00	$8,212.80	$1,225.02	$2,289.10	$0.00	$643.20	$14,263.32
Task 5	$0.00	$0.00	$0.00	$16,565.50	$0.00	$8,555.00	$5,764.80	$2,081.00	$0.00	$402.00	$33,368.30
Total Hours	0	0	0	470	0	875	381	935	0	89	**2750**
Total Direct Labor Cost ($)	$0.00	$0.00	$0.00	$22,245.10	$0.00	$29,942.50	$9,151.62	$19,457.35	$0.00	$1,431.12	**$82,227.69**

1 - Revised Feasibilty Study Indirect Costs Includes Rebudgeting of Hours Remaining from previous budget

Schedule 2.11 (c)

Direct Non-Salary Costs

Work Assignment Number D003970-02.2

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. Units	Total Estimated Cost ($)
Miscellaneous			
Travel	$0.325 mile	2000	$650.00
Tolls			$100.00
Copies	$0.02 copy	10,000	$200.00
Shipping	$55.00 package	56	$3,080.00
Computer Usage			
CADD	$7.00 hour	80	$560.00
WP	$1.00 hour	120	$120.00
Low Value Equipment	$0.80 hour	3000	$2,400.00

Total Direct Non-Salary Costs $7,110.00

Schedule 2.11 (c)

Direct Non-Salary Costs

Work Assignment Number D003970-2.2

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. Units	Total Estimated Cost ($)
Task 1			
Shipping	30 each	5	$150.00
Copies	0.025 each	1000	$25.00
Computer Usage	$1.00 hr	20	$20.00
Milage	$0.38 mile	100	$37.50
Task 6			
Shipping	55 each	2	$110.00
Computer Usage	$1.00 hr	32	$32.00
Drafting Computer	$7.00 hr	16	$112.00
Low Value Equipment	$0.80 Field Hour	400	$320.00
Milage	$0.45 mile	200	$90.00
Portable Phone	2.5 day	5	$12.50
Task 7			
Shipping	55 each	3	$165.00
Computer Usage	$1.00 hr	30	$30.00
Drafting Computer	$7.00 hr	16	$112.00
Low Value Equipment	$0.80 Field Hour	300	$240.00
Milage	$0.45 mile	200	$90.00
Per Diem	$169.00 day		$0.00
Portable Phone	2.5 day	3	$7.50
Road Opening Permits (ToSH)	$250.00 each	2	$500.00
Right of Way Permits - Suffolk County	$25.00 each	14	$350.00
Task 8			
Shipping	55 each	5	$275.00
Computer Usage	$1.00 hr	50	$50.00
Drafting Computer	$7.00 hr	28	$196.00
Low Value Equipment	$0.80 Field Hour	425	$340.00
Milage	$0.45 mile	220	$99.00
Portable Phone	2.5 day	5	$12.50
Task 9			
Shipping	55 each	10	$550.00
Computer Usage	$1.00 hr	60	$60.00
Drafting Computer	$7.00 hr	150	$1,050.00
Low Value Equipment	$0.80 Field Hour	225	$180.00
Milage	$0.45 mile	300	$135.00
Portable Phone	2.5 day	10	$25.00
Task 10			
Shipping	55 each	15	$825.00
Computer Usage	$1.00 hr	100	$100.00
Drafting Computer	$7.00 hr	200	$1,400.00
Low Value Equipment	$0.80 Field Hour	690	$552.00
Milage	$0.45 mile	1200	$540.00
Portable Phone	2.5 day	50	$125.00
Task 11			
Shipping	30 each	15	$450.00
Computer Usage	$1.00 hr	500	$500.00
Drafting Computer	$7.00 hr	400	$2,800.00
Low Value Equipment	$0.80 Field Hour	0	$0.00
Milage	$0.45 mile	200	$90.00
Portable Phone	2.5 day	0	$0.00
Task 5			
Shipping	30 each	15	$450.00
Computer Usage	$1.00 hr	600	$600.00
Drafting Computer	$7.00 hr	300	$2,100.00
Low Value Equipment	$0.80 Field Hour	0	$0.00
Milage	$0.45 mile	200	$90.00
Portable Phone	2.5 day	0	$0.00

Total Direct Non-Salary Costs **$15,998.00**

Work Assignment No. D003970-02.2

Schedule 2.11(d) 2

Maximum Reimbursement Rates for Consultant Owned Equipment

Item	Purchase Price ($) x 85%	Usage Rate* ($/Unit of Time)	Capital Recovery** Rate ($/Unit of Time)	O&M Rate ($/Unit of Time)	Est. Usage (Unit of Time)	Est. Usage Cost ($) (Col. 3 x 6)
Microtip	$ 2,795.00	$ 32.00 /day	$ 4.00 /day	$ 28.00 /day	80	$ 2,560.00
Interface Probe	$ 1,350.00	$ 9.00 /day	$ 2.00 /day	$ 7.00 /day	60	$ 540.00
2-Inch Submersible	$ 2,527.00	$ 20.75 day	$ 3.75 day	$ 17.00 day	10	$ 207.50
Equipment Van	$ 17,000.00	$ 67.00 day	$ 22.00 day	$ 45.00 day	33	$ 2,211.00
					TOTAL	$ 5,519

*Usage Rate = Capital Recovery Rate + O&M Rate

*The maximum usage rate for an item of equipment reverts to the O&M rate when the total capital recovery reimbursement rate exceed 85% of the purchase price

**The Capital Recovery Rate is the equipment's depreciation for the useful life of the item.

Work Assignment No. D003970-2.2

Schedule 2.11(d) 2

Maximum Reimbursement Rates for Consultant Owned Equipment

Item	Purchase Price ($) x 85%	Usage Rate* ($/Unit of Time)	Capital Recovery** Rate ($/Unit of Time)	O&M Rate ($/Unit of Time)	Est. Usage (Unit of Time)	Est. Usage Cost ($) (Col. 3 x 6)
Microtip	$ 2,975.00	$ 32.00	$ 4.00	$ 28.00	75	$ 2,400.00
Equipment Van	$ 17,000.00	$ 67.00	$ 22.00	$ 45.00	70	$ 4,690.00
Grunfoss 2-in Pump	$ 2,527.00	$ 20.75	$ 3.75	$ 17.00	7	$ 145.25
Digital camera	$ 535.00	$ 3.50	$ 2.00	$ 1.50	42	$ 147.00
Interface Probe	$ 1,530.00	$ 9.00	$ 2.00	$ 7.00	45	$ 405.00
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
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		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
		$ -				$ -
					TOTAL	$ 7,787.25

*Usage Rate = Capital Recovery Rate + O&M Rate

*The maximum usage rate for an item of equipment reverts to the O&M rate when the total capital recovery reimbursement rate exceed 85% of the purchase price

**The Capital Recovery Rate is the equipment's depreciation for the useful life of the item.

Work Assignment No. D003970-02.2

Schedule 2.11(d) 3

Maximum Reimbursement Rate for Vendor Rented Equipment

Item	Max. Reimbursement Rate ($)*	Est. Usage (unit of time)	Est. Rental Cost ($) (Co. 2 x 3)
Fence	$ 4.34	400	$ 1,736
Sanitary Facility	$ 100.00	3	$ 300
		TOTAL	$ 2,036

*Reimbursement will be made at the Maximum Reimbursement rate or the actual rental rate, whichever is less.

Work Assignment No. D003970-2.2

Schedule 2.11(d) 3

Maximum Reimbursement Rate for Vendor Rented Equipment

Item	Max. Reimbursement Rate ($)*	Est. Usage (unit of time)	Est. Rental Cost ($) (Co. 2 x 3)
Horiba U-10 Parameter Meter	$ 50.00	10	$ 500.00
Helium Monitor	$ 400.00	1	$ 400.00
Helium and Tank Rental	$ 200.00	2	$ 400.00
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
		TOTAL	$ 1,300.00

*Reimbursement will be made at the Maximum Reimbursement rate or the actual rental rate, whichever is less.

Work Assignment No. D003970-02.2

Schedule 2.11(d) 5

Consumable Supplies

Item	Estimated Quantity	Unit Cost ($)	Total Budged Cost ($) (Col. 2 x 3)
Tyvex Suit	36	$ 7.50	$ 270.00
Detector Tubes	36	$ 6.25	$ 225.00
Ear plugs	80	$ 0.40	$ 32.00
Sample Gloves	2500	$ 0.25	$ 625.00
		TOTAL	$ 1,152.00

Work Assignment No. D003970-2.2

Schedule 2.11(d) 5

Consumable Supplies

Item	Estimated Quantity	Unit Cost ($)	Total Budged Cost ($) (Col. 2 x 3)
Tyvex Suits	21	$ 7.50	$ 157.50
Disposable gloves	300	$ 0.25	$ 75.00
Boot covers	45	$ 6.25	$ 281.25
Disposable Bailers	30	$ 10.50	$ 315.00
Disposable Tubing	2500	$ 1.20	$ 3,000.00
Air Sampling Fittings	1	$ 1,500.00	$ 1,500.00
Concrete/Sub-slab repair Sealant	1	$ 500.00	$ 500.00
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
		TOTAL	$ 5,828.75

Schedule 2.11 (E-1)
Cost Plus Fixed-Fee Subcontracts
Work Assignment Number D-003970-02.2
Pride Solvents Site

September 14, 2005

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE
YEC, INC.	Surveying & CAD Mapping **Phase I**	**$8,615**

A. Direct Salary Costs

Professional Responsibility Level	Labor Classification	Average Reimbursement Rate ($/Hr.)		Maximum Reimbursement Rate ($/Hr.)		Estimated Number of Hours	Total Estimated Direct Salary Cost ($)
Principal	VIII	2000	49.83	2000	53.82	8	398.64
Senior Geologist/Scientist/ Engineer/ Licensed Surveyor	V	2000	32.95	2000	36.25	40	1,318.00
Staff Geologist/ Scientist/Engineer	IV	2000	28.64	2000	31.50	0	0.00
Staff Geologist/ Scientist/Engineer/CAD Operator	III	2000	24.85	2000	27.58	16	397.60
Senior Technician/Staff Engineer/Scientist/Geologist	II	2000	18.39	2000	20.60	24	441.36
Technician/Draftsperson	I	2000	16.66	2000	18.66	0	0.00
						Total Direct Salary Costs:	2,555.60

B. Indirect Costs - 117% of direct salary cost

Indirect Costs: 2,990.05

C. Maximum Reimbursement Rates for Direct Non-Salary Costs:

Item	Maximum	Estimated No. of Units		
Mileage	0.32 /mile	150 miles/trip	2 trips	96.00
Tolls	11.00 /trip	2 trips		22.00
Survey Equipment Rental	65.00 day	2 day		130.00
CAD Equipment	15.00 hour	16 hours		240.00
Tele./Postage/Repro./Field supplies	100.00 lump sum			100.00
Subcontractor (GPS Bench Mark Tie-In to NYS Plan Coordinate)				1,650.00
			Total Direct Non Salary Costs:	2,238.00

D. Fixed Fee (15% of Total Direct and Indirect Salary Costs)

Fixed Fee: 831.85

Work Assignment No. D003970-02.2
Delaware Engineering, P.C.
Site Name: Pride Solvents and Chemical Co. of New York, Inc.

DELAWARE ENGINEERING, P.C.
SCHEDULE 2.11(E-2)
COST-PLUS-FIXED-FEE SUBCONTRACTS

NAME OF SUBCONTRACTOR	SERVICES TO BE PERFORMED	SUBCONTRACT PRICE
Delaware Engineering, P.C.	Professional Services Data Validation	$2,933.93

A. Direct Salary Costs 2000

Professional Responsibility Level	Labor Classification	2000 Average Reimbursement Rate ($/Hr)	2000 Maximum Reimbursement Rate ($/Hr)	2000 Estimated No. of Hours	Total Estimated Direct Salary Cost
NSPE VI		$33.47	$33.65	15.0	$502.05
NSPE III		$20.63	$22.57	35.0	$722.05
Total Direct Salary Costs					**$1,224.10**

B. Indirect Costs

Indirect costs shall be paid based on a percentage of direct salary costs incurred which shall not exceed a maximum of 117.0% or the actual rate calculated in accordance with 48 CFR Federal Acquisition Regulation, whichever is lower.

Budget for indirect costs is **$1,432.20**

C. Maximum Reimbursement Rates for Direct Non-Salary Costs

Item	Maximum Reimbursement Rate (Specify Unit)	Estimated No. of Units	Total Estimated Costs
Copying (Black & White)	$0.06	200	$12.00
Total Direct Non-Salary Costs			**$12.00**

D. Fixed Fee (10.0%)

The fixed fee is **$265.63**

Schedule 2.11(f-1)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	Services to be Performed	Subcontract Price	Management Fee
L.A.B Validation Corp. East Northport, NY	Validation	$ 12,000	$ 600.00

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Surface Water Sampling			
TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	$15	500	$ 7,500.00
Sediment Sampling			
TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	$15	300	$ 4,500.00
			$ 12,000.00
Subcontract Management Fee			$ 600.00
TOTAL			$ 12,600.00

Schedule 2.11(f-2)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Nelson & Pope	Surveyors **Phase II**	$ 16,290.00	$ 814.50

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Site Survey of sample points and site wells	$3,950 lump sum	3	$ 11,850.00
Property Boundary Survey	$4,440 lump sum	1	$ 4,440.00
Subtotal Subcontract Price			$ 16,290.00
Subcontract Management Fee			$ 814.50
			$ 17,104.50

Schedule 2.11(f-3)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Advanced Geological Services	Geophysics	$ 11,600.00	$ 580.00

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Geophysical Survey GPR and EM surveys of entire Site	$2,000 per day	2	$ 4,000.00
NYSDEC Realocation of funds (8/13/02)			$ 7,600.00
Subtotal Subcontract Price			$ 11,600.00
Subcontract Management Fee			$ 580.00
			$ 12,180.00

Schedule 2.11(f-4)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Severn Trent Laboratories Monroe, Connecticut	Laboratory Analyses **Phase I**	$ 40,003	$ 2,000.15

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	$230	111	$ 25,530.00
Additional VOC compounds [2]	$20	111	$ 2,220.00
TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	$115	17	$ 1,955.00
TCL SVOCs + 20 NYSDEC ASP CLP Method 95-2	$210	14	$ 2,940.00
TAL Inorganics no CN^- NYSDEC ASP CLP Methods for Inorganics,Exhibit D Part V (10/95)	$110	14	$ 1,540.00
ammonia method 350.3	$28	8	$ 224.00
chloride method 325.2	$23	8	$ 184.00
alkalinity method 310.1	$18	8	$ 144.00
hardness method 130.2	$23	8	$ 184.00
sulfate method 375.2	$18	8	$ 144.00
carbonate method 310.1	$18	8	$ 144.00
bicarbonate method 310.1	$18	8	$ 144.00
TCLP, RIC, Intact PCBs	$930	5	$ 4,650.00
		Subtotal	$ 40,003.00
		Management Fee	$ 2,000.15
		TOTAL	$ 42,003.15

9/14/2005

Work Assignment:D003970-2.2
Pride Solvents Chemical Co.

Cost Estimate for Laboratory Services - Severn Trent Laboratories, Monroe, Connecticut PHASE I

Sampling Event	Media	Number	Analytical Method	QA/QC (MS/MSD sets)	Duplicates	Field Blanks [1]	Trip Blanks [1]	Total Number of samples	Price per sample		Unit Cost
Profile	Water	69	TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	4	4	16	14	111	$230	**	$25,530
Sampling		69	Additional VOC compounds [2]	4	4	16	14	111	$20	**	$2,220
Groundwater Monitoring Wells	Water	8	TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	1	1	3	3	17	$115		$1,955
		8	TCL SVOCs + 20 NYSDEC ASP CLP Method 95-2	1	1	3	N/A	14	$210		$2,940
		8	TAL Inorganics no CN^- NYSDEC ASP CLP Methods for Inorganics,Exhibit D Part V (10/95)	1	1	3	N/A	14	$110		$1,540
		8	ammonia method 350.3	N/A	N/A	N/A	N/A	8	$28		$224
		8	chloride method 325.2	N/A	N/A	N/A	N/A	8	$23		$184
		8	alkalinity method 310.1	N/A	N/A	N/A	N/A	8	$18		$144
		8	hardness method 130.2	N/A	N/A	N/A	N/A	8	$23		$184
		8	sulfate method 375.2	N/A	N/A	N/A	N/A	8	$18		$144
		8	carbonate method 310.1	N/A	N/A	N/A	N/A	8	$18		$144
		8	bicarbonate method 310.1	N/A	N/A	N/A	N/A	8	$18		$144
		5	Disposal TCLP, RIC, Intact PCB	N/A	N/A	N/A	N/A	5	$930		$4,650
									TOTAL		**$40,003**

Notes

1 - Field blanks and trip blanks are to be collected at a rate of one (1) per day.

2 - 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113 - CAS Number 76-13-1)
dichlorofluoroethane (Freon 141 - CAS Number 1717-00-6)
1,4-dioxane (diethylene ether - CAS Number 123-91-1)

** Price marked up 100% for Profile Sampling for 24-hour turn-around

Schedule 2.11(f-5)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Severn Trent Laboratories	Laboratory Analyses	$89,748.75	$ 4,487.44
Monroe, Connecticut	**Phase II**		

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
TCL VOCs + 10 NYSDEC ASP CLP Method 95-1 (water)	$115	400	$ 46,000
TCL VOCs + 10 NYSDEC ASP CLP Method 95-1 (Soil)	$115	250	$ 28,750
TCLP, RIC, Intact PCBs	$930	10	$ 9,300
Soil Vapor Analysis (TO-17)	$150	5	$ 750
Air Sample Analysis	$225	3	$ 675
Subtotal			$ 85,475
Escalation factor for additional year of contract	5%		$ 4,274
Subtotal			$ 89,749
Management fee			$ 4,487
		TOTAL	$ 94,236

Work Assignment:D003970-2.2
Pride Solvents Chemical Co.

Cost Estimate for Laboratory Services - Severn Trent Laboratories, Monroe, Connecticut PHASE II

Sampling Event	Media	Number	Analytical Method	QA/QC (MS/MSD sets)	Duplicates	Field Blanks [1]	Trip Blanks [1]	Total Number of samples	Price per sample	Unit Cost
Profile	Water	100	Off-site Hydropunch							
		450	On-site Hydropunch							
		19	Monitoring wells (9 exisiting 10 new)							
		2	Septic Tanks							
		7	Leaching pools							
Profile		578	TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	30	30	81	81	830	$115	$95,450
	Soil	200	On-site Soil borings							
		15	Storm water drywells							
		2	Septic Tanks							
		7	Leaching pools							
		224	TCL VOCs + 10 NYSDEC ASP CLP Method 95-1	13	13	0	0	263	$115	$30,245
Disposal Sampling										
		10	Disposal TCLP, RIC, Intact PCB	N/A	N/A	N/A	N/A	10	$930	$9,300
									SUBTOTAL	**$134,995**
									5% markup for 2nd year of contract	$6,750
									TOTAL	**$141,745**

Notes

1 - Field blanks and trip blanks are to be collected at a rate of one (1) per day.

Schedule 2.11(f-6)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Nothnagle Drilling Scottsville, NY	Drilling Services Phase I	$ 67,611	$ 3,380.57

Item	Max. Reimbursement Rate (Specify Unit)	Unit	Est. No. of Units	Total Est. Cost
Install Profile Wells (3 samples) - Level D PPE		Well	11	
Drilling 0-50 using 4.25" augers	$ 10.00	feet	50	$ 5,500.00
Drilling 50-100 using 4.25" augers	$ 12.00	feet	40	$ 5,280.00
HydroPunch® 0-50	$ 100.00	each	2	$ 2,200.00
HydroPunch® 50-100	$ 150.00	each	1	$ 1,650.00
Supply DOT-approved 55-Gallon drums w/ pallet	$ 30.00	each	5	$ 1,650.00
Filling, moving, staging 55-Gallon drums	$ 130.00	hour	1	$ 1,430.00
Decontamination	$ 130.00	hour	1	$ 1,430.00
Install Profile Wells (5 samples) - Level D PPE		Well	3	
Drilling 0-50 using 4.25" augers	$ 10.00	feet	50	$ 1,500.00
Drilling 50-100 using 4.25" augers	$ 12.00	feet	40	$ 1,440.00
HydroPunch® 0-50	$ 100.00	each	3	$ 900.00
HydroPunch® 50-100	$ 150.00	each	2	$ 900.00
Supply DOT-approved 55-Gallon drums w/ pallet	$ 30.00	each	5	$ 450.00
Filling, moving, staging 55-Gallon drums	$ 130.00	hour	1	$ 390.00
Decontamination	$ 130.00	hour	1	$ 390.00
Install Profile Wells (7 samples) - Level D PPE		Well	3	
Drilling 0-50 using 4.25" augers	$ 10.00	feet	50	$ 1,500.00
Drilling 50-100 using 4.25" augers	$ 12.00	feet	40	$ 1,440.00
HydroPunch® 0-50	$ 100.00	each	4	$ 1,200.00
HydroPunch® 50-100	$ 150.00	each	4	$ 1,800.00
Supply DOT-approved 55-Gallon drums w/ pallet	$ 30.00	each	5	$ 450.00
Filling, moving, staging 55-Gallon drums	$ 130.00	hour	1	$ 390.00
Decontamination	$ 130.00	hour	1	$ 390.00
Install Water Table Monitoring Wells - Level D PPE		Well	4	
Drilling using 4.25" augers 0-50	$ 10.00	feet	25	$ 1,000.00
Split Spoon Sampling 0-50 (2" OD)	$ 10.00	each	5	$ 200.00
PVC screen - 2", #10 slot, Schedule 40	$ 14.00	feet	10	$ 560.00
PVC riser - 2", Schedule 40	$ 8.00	feet	15	$ 480.00
Sand pack	$ 7.50	feet	23	$ 690.00
Bentonite pellets	$ 22.00	feet	2	$ 176.00
Flush mount 4" protector, locking cover and concrete apron	$ 125.00	each	1	$ 500.00
Supply DOT-approved 55-Gallon drums w/ pallet	$ 30.00	each	11	$ 1,320.00
Filling, moving, staging 55-Gallon drums	$ 130.00	hour	1	$ 520.00
Well development	$ 130.00	hour	1	$ 520.00
Decontamination	$ 130.00	hour	1	$ 520.00
Install Deep Monitoring Wells - Level D PPE		Well	4	
Drilling using 4.25" augers 0-50	$ 10.00	feet	50	$ 2,000.00
Drilling using 4.25" augers 50-100	$ 12.00	feet	40	$ 1,920.00
Split Spoon Sampling 0-50 (2" OD)	$ 10.00	each	10	$ 400.00
Split Spoon Sampling 50-100 (2" OD)	$ 11.00	each	8	$ 352.00
PVC screen - 2", #10 slot, Schedule 40	$ 14.00	feet	10	$ 560.00
PVC riser - 2", Schedule 40	$ 8.00	feet	80	$ 2,560.00
Sand pack	$ 7.72	feet	88	$ 2,717.44
Bentonite pellets	$ 22.00	feet	2	$ 176.00
Flush mount 4" protector, locking cover and concrete apron	$ 125.00	each	1	$ 500.00
Supply DOT-approved 55-Gallon drums w/ pallet	$ 30.00	each	22	$ 2,640.00
Filling, moving, staging 55-Gallon drums	$ 130.00	hour	2	$ 1,040.00
Well development	$ 130.00	hour	2	$ 1,040.00
Decontamination	$ 130.00	hour	1	$ 520.00
Other Items				
Construct and maintain decontamination pad	$ 500.00	lump sum	1	$ 500.00
Level D PPE Charge	$ 7.00	per person per day	60	$ 420.00
Mobilization/Demobilization	$ 3,000.00	lump sum	1	$ 7,000.00
Per Diem	$ 150.00	per crew per day	30	$ 4,500.00
Other Items Subtotal				

Subtotal Subcontract Price	$ 67,611.44
Subcontract Management Fee	$ 3,380.57
TOTAL	$ 70,992.01

Cost Estimate for Drilling Services (Phase I)
Pride Solvents, West Babylon, NY
Nothnagle Drilling

Install Profile Wells (3 samples) - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling 0-50 using 4.25" augers	feet	50	$ 10.00	$ 500.00
Drilling 50-100 using 4.25" augers	feet	40	$ 12.00	$ 480.00
HydroPunch® 0-50	each	2	$ 100.00	$ 200.00
HydroPunch® 50-100	each	1	$ 150.00	$ 150.00
Supply DOT-approved 55-Gallon drums w/ pallet	each	5	$ 30.00	$ 150.00
Filling, moving, staging 55-Gallon drums	hour	1	$ 130.00	$ 130.00
Decontamination	hour	1	$ 130.00	$ 130.00
			Cost per Well	$ 1,740.00
			Cost for Eleven Profile Wells	$ 19,140.00

Install Profile Wells (7 samples) - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling 0-50 using 4.25" augers	feet	50	$ 10.00	$ 500.00
Drilling 50-100 using 4.25" augers	feet	40	$ 12.00	$ 480.00
HydroPunch® 0-50	each	4	$ 100.00	$ 400.00
HydroPunch® 50-100	each	4	$ 150.00	$ 600.00
Supply DOT-approved 55-Gallon drums w/ pallet	each	5	$ 30.00	$ 150.00
Filling, moving, staging 55-Gallon drums	hour	1	$ 130.00	$ 130.00
Decontamination	hour	1	$ 130.00	$ 130.00
			Cost per Well	$ 2,390.00
			Cost for Three Profile Wells	$ 7,170.00

Install Water Table Monitoring Wells - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling using 4.25" augers 0-50	feet	25	$ 10.00	$ 250.00
Split Spoon Sampling 0-50 (2" OD)	each	5	$ 10.00	$ 50.00
PVC screen - 2", #10 slot, Schedule 40	feet	10	$ 14.00	$ 140.00
PVC riser - 2", Schedule 40	feet	15	$ 8.00	$ 120.00
Sand pack	feet	23	$ 7.50	$ 172.50
Bentonite pellets	feet	2	$ 22.00	$ 44.00
Flush mount 4" protector, locking cover and concrete apron	each	1	$ 125.00	$ 125.00
Supply DOT-approved 55-Gallon drums w/ pallet	each	11	$ 30.00	$ 330.00
Filling, moving, staging 55-Gallon drums	hour	1	$ 130.00	$ 130.00
Well development	hour	1	$ 130.00	$ 130.00
Decontamination	hour	1	$ 130.00	$ 130.00
			Cost per Well	$ 1,621.50
			Cost for Two Wells	$ 3,243.00

Install Middle Monitoring Wells - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling using 4.25" augers 0-50	feet	50	$ 10.00	$ 500.00
Split Spoon Sampling 0-50 (2" OD)	each	10	$ 10.00	$ 100.00
PVC screen - 2", #10 slot, Schedule 40	feet	10	$ 14.00	$ 140.00
PVC riser - 2", Schedule 40	feet	40	$ 8.00	$ 320.00
Sand pack	feet	48	$ 7.50	$ 360.00
Bentonite pellets	feet	2	$ 22.00	$ 44.00
Flush mount 4" protector, locking cover and concrete apron	each	1	$ 125.00	$ 125.00
Supply DOT-approved 55-Gallon drums w/ pallet	each	16	$ 30.00	$ 480.00
Filling, moving, staging 55-Gallon drums	hour	2	$ 130.00	$ 260.00
Well development	hour	1	$ 130.00	$ 130.00
Decontamination	hour	1	$ 130.00	$ 130.00
			Cost per Well	$ 2,589.00
			Cost for Two Wells	$ 5,178.00

Install Deep Monitoring Wells - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling using 4.25" augers 0-50	feet	50	$ 10.00	$ 500.00
Drilling using 4.25" augers 50-100	feet	40	$ 12.00	$ 480.00
Split Spoon Sampling 0-50 (2" OD)	each	10	$ 10.00	$ 100.00
Split Spoon Sampling 50-100 (2" OD)	each	8	$ 11.00	$ 88.00
PVC screen - 2", #10 slot, Schedule 40	feet	10	$ 14.00	$ 140.00
PVC riser - 2", Schedule 40	feet	80	$ 8.00	$ 640.00
Sand pack	feet	88	$ 7.72	$ 679.36
Bentonite pellets	feet	2	$ 22.00	$ 44.00
Flush mount 4" protector, locking cover and concrete apron	each	1	$ 125.00	$ 125.00
Supply DOT-approved 55-Gallon drums w/ pallet	each	22	$ 30.00	$ 660.00
Filling, moving, staging 55-Gallon drums	hour	2	$ 130.00	$ 260.00
Well development	hour	1	$ 130.00	$ 130.00
Decontamination	hour	1	$ 130.00	$ 130.00
			Cost per Well	$ 3,976.36
			Cost for Two Wells	$ 7,952.72

Other Items	Units	Quantity	Rate	Cost
Construct and maintain decontamination pad	lump sum	1	$ 500.00	$ 500.00
Level D PPE Charge	per person per day	60	$ 7.00	$ 420.00
Mobilization/Demobilization	lump sum	1	$ 3,000.00	$ 7,000.00
Per Diem	per crew per day	30	$ 150.00	$ 4,500.00
Other Items Subtotal				$ 12,420.00

Total Estimated Project Cost $ 55,103.72

Assumptions:

Profile (three samples) wells will have sampling at 25, 50 and 90 feet

Profile (seven samples) wells will have sampling at 10 foot intervals from 20-90 feet

Two clusters of three monitoring wells will be installed to 25, 50 and 90 feet (could change based on HydroPunch Results)

Sand Pack for 90' well is average of 0-50 and 50-100' costs

Drums include both drill cuttings and development

Soil from Profile wells will be used to backfill boreholes

Schedule 2.11(f-7)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	Services to be Performed	Subcontract Price	Management Fee
ADT	Drilling Services	$ 15,575	$ 778.74
New Hyde Park, NY	Phase II		

Item	Max. Reimbursement Rate (Specify Unit)		Unit	Est. No. of Units	Total Est. Cost
Install Soil Borings - Level D PPE				**3**	
Drilling 0-50 using 4.25" augers	$	16.32	feet	50	$ 2,448.00
Drilling 50-100 using 4.25" augers	$	18.36	feet	50	$ 2,754.00
Drilling 50-125 using 4.25" augers	$	21.00	feet	25	$ 1,575.00
Split Spoon Sample 0-50	$	20.40	each		$ -
Split Spoon Sample 50-100	$	22.44	each	10	$ 673.20
Split Spoon Sample 50-125	$	25.20	each	12	$ 907.20
Supply DOT-approved 55-Gallon drums w/pallet	$	35.70	each	7	$ 749.70
Filling, moving, staging 55-Gallon drums	$	122.40	hour	2	$ 734.40
Decontamination	$	122.40	hour	1.5	$ 550.80
Install Profile Wells - Level D PPE			**Well**	**2**	
Drilling 0-50 using 4.25" augers	$	16.32	feet	50	$ 1,632.00
Drilling 50-100 using 4.25" augers	$	18.36	feet	40	$ 1,468.80
Drilling 50-125 using 4.25" augers	$	21.00	feet	25	$ 1,050.00
HydroPunch® 0-50	$	20.40	feet	4	$ 163.20
HydroPunch® 50-100	$	22.44	feet	6	$ 269.28
HydroPunch® 50-125	$	306.00	feet	2	$ 1,224.00
Supply DOT-approved 55-Gallon drums w/pallet	$	35.70	feet	7	$ 499.80
Filling, moving, staging 55-Gallon drums	$	122.40	feet	2	$ 489.60
Decontamination	$	122.40	feet	1.5	$ 367.20
Install Deep Monitoring Wells - Level D PPE			**Well**	**3**	
Drilling using 4.25" augers 0-50	$	16.32	feet	50	$ 2,448.00
Drilling using 4.25" augers 50-100	$	18.36	feet	50	$ 2,754.00
Drilling using 4.25" augers 50-125	$	21.00	feet	25	$ 1,575.00
Riser backfill (cement/bentonite grout) 0-50'	$	0.77	feet	50	$ 115.50
Riser backfill (cement/bentonite grout) 50-100'	$	0.77	feet	50	$ 115.50
Riser backfill (cement/bentonite grout) 50-125'	$	0.77	feet	12	$ 27.54
PVC screen - 2", #10 slot, Schedule 40	$	14.28	feet	20	$ 856.80
PVC riser - 2", Schedule 40	$	8.16	feet	115	$ 2,815.20
Sand pack	$	3.06	feet	12	$ 110.16
Bentonite pellets	$	0.77	feet	2	$ 4.59
Flush mount 4" protector, lock, concrete apron	$	102.00	each	1	$ 306.00
Supply DOT-approved 55-Gallon drums w/pallet	$	35.70	each	12	$ 1,285.20
Filling, moving, staging 55-Gallon drums	$	122.40	hour	2	$ 734.40
Well development	$	132.60	hour	2	$ 795.60
Decontamination	$	122.40	hour	1	$ 367.20
Other Items					
Soil Gas Sampling	$	1,860.00	lump sum	1	$ 1,860.00
Level D PPE Charge	$	10.20	per person per day	60	$ 612.00
Mobilization/Demobilization		NA	lump sum per crew	1	$ -
Per Diem		NA	per day	30	$ -
Steam Cleaner	$	50.00	per day	10	$ 500.00
Generator	$	35.00	per day	30	$ 1,050.00
OTHER:					
Equipment to move drums to staging area	$	50.00	per day	30	$ 1,500.00
Fire Hydrant Permit	$	80.00	lump sum	1	$ 80.00
Backflow prevention device		NA	per day	30	$ -
Backflow prevention device Testing*		NA	lump sum	1	$ -
Drilling Mud for Hydrostatic pressure**	$	15.00	per bag	50	$ 750.00
NYSDEC Realocation of funds (August 13, 2002)					$ (22,644.00)
Subtotal Subcontract Price					$ 15,574.87
Subcontract Management Fee					$ 778.74
TOTAL					$ 16,353.61

Cost Estimate for Drilling Services (Phase II)
Pride Solvents, West Babylon, NY
Aquifer Deilling Testting (ADT)

Install Soil Borings - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling 0-50 using 4.25" augers	feet	50	$ 16.32	$ 816.00
Drilling 50-100 using 4.25" augers	feet	50	$ 18.36	$ 918.00
Drilling 50-125 using 4.25" augers	feet	25	$ 21.00	$ 525.00
Split Spoon Sample 0-50	each		$ 20.40	$ -
Split Spoon Sample 50-100	each	10	$ 22.44	$ 224.40
Split Spoon Sample 50-125	each	12	$ 25.20	$ 302.40
Supply DOT-approved 55-Gallon drums w/pallet	each	7	$ 35.70	$ 249.90
Filling, moving, staging 55-Gallon drums	hour	2	$ 122.40	$ 244.80
Decontamination	hour	1.5	$ 122.40	$ 183.60
		Cost per Well		$ 3,464.10
		Cost for 3 Borings	1	$ 10,392.30

Install Profile Wells - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling 0-50 using 4.25" augers	feet	50	$ 16.32	$ 816.00
Drilling 50-100 using 4.25" augers	feet	50	$ 18.36	$ 918.00
Drilling 50-125 using 4.25" augers	feet	25	$ 21.00	$ 525.00
HydroPunch® 0-50	each	4	$ 20.40	$ 81.60
HydroPunch® 50-100	each	6	$ 22.44	$ 134.64
HydroPunch® 50-125	each	2	$ 306.00	$ 612.00
Supply DOT-approved 55-Gallon drums w/pallet	each	7	$ 35.70	$ 249.90
Filling, moving, staging 55-Gallon drums	hour	2	$ 122.40	$ 244.80
Decontamination	hour	1.5	$ 122.40	$ 183.60
		Cost per Well		$ 3,765.54
		Cost for 10 Profile Wells	2	$ 37,655.40

Install Deep Monitoring Wells - Level D PPE

Item	Units	Quantity	Rate	Cost
Drilling using 4.25" augers 0-50	feet	50	$ 16.32	$ 816.00
Drilling using 4.25" augers 50-100	feet	50	$ 18.36	$ 918.00
Drilling using 4.25" augers 50-125	feet	25	$ 21.00	$ 525.00
Riser backfill (cement/bentonite grout) 0-50'	feet	50	$ 0.77	$ 38.50
Riser backfill (cement/bentonite grout) 50-100'	feet	50	$ 0.77	$ 38.50
Riser backfill (cement/bentonite grout) 50-125'	feet	13	$ 0.77	$ 9.95
PVC screen - 2", #10 slot, Schedule 40	feet	10	$ 14.28	$ 142.80
PVC riser - 2", Schedule 40	feet	115	$ 8.16	$ 938.40
Sand pack	feet	12	$ 3.06	$ 36.72
Bentonite pellets	feet	2	$ 0.77	$ 1.53
Flush mount 4" protector, lock, concrete apron	each	1	$ 102.00	$ 102.00
Supply DOT-approved 55-Gallon drums w/pallet	each	12	$ 35.70	$ 428.40
Filling, moving, staging 55-Gallon drums	hour	2	$ 122.40	$ 244.80
Well development	hour	2	$ 132.60	$ 265.20
Decontamination	hour	1	$ 122.40	$ 122.40
		Cost per Well		$ 4,628.20
		Cost for 10 Wells	3	$ 46,281.95

Other Items	Units	Quantity	Rate	Cost
Construct and maintain decontamination pad	lump sum	1	NA	$ -
Level D PPE Charge	per person per day	60	$ 10.20	$ 612.00
Mobilization/Demobilization	lump sum	1	NA	$ -
Per Diem	per crew per day	30	NA	$ -
Steam Cleaner	per day	30	$ 50.00	$ 1,500.00
Generator	per day	30	$ 35.00	$ 1,050.00
OTHER:				$ -
Equipment to move drums to staging area	per day	30	$ 50.00	$ 1,500.00
Fire Hydrant Permit	lump sum	1	$ 80.00	$ 80.00
Backflow prevention device	per day	30	NA	$ -
Backflow prevention device Testing*	lump sum	1	NA	$ -
Drilling Mud for Hydrostatic pressure**	per bag	50	$ 15.00	$ 750.00
		Other Items Subtotal	4	$ 5,492.00

Total Estimate (1+2+3+4) $ 99,821.65

Assumptions:

*** Backflow prevention device must have valid certified test result after August 2000.**

** Due to the groundwater sampling, water cannot be used to counteract hydrostatic head

Drums include both drill cuttings and development

Soil from Profile wells will be used to backfill boreholes

Schedule 2.11(f-8)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	Services to be Performed	Subcontract Price	Management Fee
Zebra Environmental Lynbrook, NY	Geoprobe Services	$ 59,273	$ 2,963.66

Item	Reimbursement Rate (Specify Unit)	Unit	Est. No. of Units	Total Est. Cost
Soil Sampling			**4**	
Geoprobe	$ 1,075.00	per day	1.5	$ 6,450.00
Acetate Liners (assume macrocore)	$ 2.75	each	5	$ 55.00
Grout Backfill	$ 0.45	per foot	100	$ 180.00
Soil and Groundwater sampling			**50**	
Geoprobe	$ 1,345.00	per day	0.333	$ 22,394.25
Acetate Liners (assume macrocore)	$ 2.75	each	4	$ 550.00
Screen points	$ 6.25	each	1	$ 312.50
Expendable water points	$ 6.25	each	1	$ 312.50
Disposable Bailers	$ 7.50	each	0	$ -
Poly Tubing	$ 0.50	per foot	400	$ 10,000.00
Grout Backfill	$ 0.45	per foot	100	$ 2,250.00
Other Items				
Construct and maintain decontamination pad	$ 150.00	lump sum	1	$ 150.00
Level D PPE Charge (assume 2 man crew)	$ -	per person per day	46	$ -
Mobilization/Demobilization	$ -	lump sum	1	$ -
Per Diem	$ -	per crew per day	23	$ -
Concrete Coring Equipment (Drill and Bits)	$ 50.00	per location	20	$ 1,000.00
Decon Equipment/rig	$ 25.00	per day	23	$ 575.00
NYSDEC Realocation of funds (8/13/02)				$ 15,044.00
Subtotal Subcontract Price				$ 59,273.25
Subcontract Management Fee				$ 2,963.66
TOTAL				$ 62,236.91

Bid Sheet For Geoprobe Services
Pride Solvents, West Babylon, NY
Zebra Environmental
Install Soil Borings - Level D PPE

Item	Units	Quantity	Rate	Cost
Geoprobe	per day	1.5	$ 1,075.00	$ 1,612.50
Acetate Liners (assume macrocore)	each	5	$ 2.75	$ 13.75
Grout Backfill	per foot	100	$ 0.45	$ 45.00
Decontamination of equipment	per hour	1		

Cost per Boring		$ 1,671.25
Cost for 4 Borings	1	$ 6,685.00

Soil and Groundwater sampling - Level D PPE

Item	Units	Quantity	Rate	Cost
Geoprobe	per day	0.333	$ 1,345.00	$ 447.89
Acetate Liners (assume macrocore)	each	4	$ 2.75	$ 11.00
Screen points	each	1	$ 6.25	$ 6.25
Expendable water points	each	1	$ 6.25	$ 6.25
Disposable Bailers	each	0	$ 7.50	$ -
Poly Tubing	per foot	400	$ 0.50	$ 200.00
Grout Backfill	per foot	100	$ 0.45	$ 45.00
Decontamination of equipment	per hour	1		$ -

Cost per Boring		$ 716.39
Cost for 50 Borings	2	$ 35,819.25

Construct and maintain decontamination pad	lump sum	1	$ 150.00	$ 150.00
Level D PPE Charge (assume 2 man crew)	per person per day	46		$ -
Mobilization/Demobilization	lump sum	1		$ -
Per Diem	per crew per day	23		$ -
Concrete Coring Equipment (Drill and Bits)	per location	20	$ 50.00	$ 1,000.00
Decon Equipment/rig	per day	23	$ 25.00	$ 575.00

Other Items Subtotal	3	$ 1,725.00

Total Estimated Project Cost (1+2+3) $ 44,229

9/14/2005

Schedule 2.11(f-9)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	Services to be Performed	Subcontract Price	Management Fee
Allied Waste Services	Disposal	$ 9,750	$ -

Phase I

Item	Max. Reimbursement Rate (Specify Unit)	Unit	Est. No. of Units	Total Est. Cost
Soil Drum Disposal (Hazardous)	$ 95.00	per drum	68	$ 6,460.00
Water Drum Disposal (Hazardous)	$ 95.00	per drum	16	$ 1,520.00
Loading	$ 1,770.00	per load	1	$ 1,770.00
Subtotal Subcontract Price				$ 9,750.00
Subcontract Management Fee				
TOTAL				$ 9,750.00

Schedule 2.11(f-10)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	Services to be Performed	Subcontract Price	Management Fee
Environmental Closures	Disposal/Exacavation **Phase II**	$ 12,640	$ 632.00

Item	Max. Reimbursement Rate (Specify Unit)	Unit	Est. No. of Units	Total Est. Cost
Waste Disposal				
Soil Drum Disposal (Non-Hazardous)	$ 125.00	per drum	20	$ 2,500.00
Water Drum Disposal (Non-Hazardous)	$ 125.00	per drum	20	$ 2,500.00
Level D PPE	$ 20.00	per person	8	$ 160.00
Loading	$ 200.00	per 40 drums	4	$ 800.00
Leaching Pool Excavation				
Excavation Equipment and Labor	$ 1,400	day	2	$ 2,800.00
Restoration	$ 2,000	lump sum	1	$ 2,000.00
Level D PPE	$ 20.00	per person	9	$ 180.00
Plastic Sheeting	$ 50	per roll	2	$ 100.00
Liquid Disposal	$ 0.20	per gallon	8000	$ 1,600.00

Subtotal Subcontract Price	$ 12,640.00
Subcontract Management Fee	$ 632.00
TOTAL	$ 13,272.00

Schedule 2.11(f-11)
Unit Price Subcontracts
Work Assignment Number D003970-02.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Excavation of Leaching Pools		$ -	$ -

Item	Max. Reimbursement Rate (Specify Unit)	Unit	Est. No. of Units	Total Est. Cost
Excavation Equipment and Labor	$ -	day	3	$ -
Restoration	$ -	lump sum	1	$ -
Level D PPE	$ -	per person	9	$ -
Plastic Sheeting	$ -	per roll	2	$ -
Liquid Disposal	$ -	per gallon	19000	$ -
Subtotal Subcontract Price				$ -
Subcontract Management Fee				$ -
TOTAL				$ -

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Nelson & Pope	Monitoring Well Location Survey	$2,750.00	$ -

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Task 10			
Survey of Wells and Borings for elevation and for State Plane Coordinates	2,750.00 lump sum	1	$ 2,750.00
Subtotal Subcontract Price			**$ 2,750.00**
Subcontract Management Fee			**$ -**
TOTAL			**$ 2,750.00**

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
STL-Knoxville	Air Sampling	$ 11,500.00	$ 575.00

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Task 8			
VOC-TO-15	$175.00 each	14	$ 2,450.00
Flow Controller Rental	$25.00 each	14	$ 350.00
Summa Can Rental	$50.00 each	14	$ 700.00
			$ 3,500.00
Task 9			
VOC-TO-15	$175.00 each	32	$ 5,600.00
Flow Controller Rental	$25.00 each	32	$ 800.00
Summa Can Rental	$50.00 each	32	$ 1,600.00
			$ 8,000.00

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Advanced Geological Services	Geophysical Survey	$ 4,000.00	$ -

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Task 6			
Geophysical Survey Services	$2,000.00 day	2	$ 4,000.00
Subtotal Subcontract Price			**$ 4,000.00**
Subcontract Management Fee			**$ -**
TOTAL			**$ 4,000.00**

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Chemtech	Groundwater and Soil Sampling	$ **15,100.00**	$ **755.00**

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Task 6			
TCL VOCs OLM 4.2 (soil)	$67.00 each	13	$ 871.00
TCL VOCs OLM 4.2 (water)	$67.00 each	4	$ 268.00
		Task 6 Subtotal	$ **1,139.00**
Task 7			
TCL VOCs OLM 4.2 (soil)	$67.00 each	13	$ 871.00
TCL VOCs OLM 4.2 (water)	$67.00 each	3	$ 201.00
		Task 7 Subtotal	$ **1,072.00**
Task 10			
TCL VOCs OLM 4.2 (soil)	$67.00 each	39	$ 2,613.00
TCL VOCs OLM 4.2 (water)	$67.00 each	118	$ 7,906.00
Waste Characterization for VOCs, RCRA Waste Parameters (Aqueous)	$395.00 each	3	$ 1,185.00
Waste Characterization for VOCs, RCRA Waste Parameters (Soil)	$395.00 each	3	$ 1,185.00
		Task 10 Subtotal	$ **12,889.00**

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**		**Subcontract Price**	**Management Fee**
Delta Well & Pump Company, Inc.	Groundwater and Soil Sampling		**$ 143,335.22**	**$ 7,166.76**
TASK 10				
Item	Max. Reimbursement Rate (Specify Unit)		Est. No. of Units	Total Est. Cost
Mobilization/Demobilization	$3,262.50	lump sum	1	$ 3,262.50
Drilling of Soil Boring Boreholes	$21.75	ft	630	$ 13,702.50
Split Spoon Samples (0'-50')	$43.50	each	175	$ 7,612.50
Split Spoon Samples (50'-100')	$48.94	each	175	$ 8,564.06
Groundwater Samples	$217.50	each	28	$ 6,090.00
Abandon Boreholes	$516.56	each	7	$ 3,615.94
Subtotal Subcontract Task				**$ 42,847.50**
	Install Three (3) Well Nests			
Auger to Proposed Depth (assume 90 feet per well)	$81.56	ft	270	$ 22,021.88
Collect Split Spoon Samples	$48.94	each	30	$ 1,468.13
Set 8-inch Steel Outer Casing	$61.99	ft	270	$ 16,736.63
Collect Split Spoon Samples	$54.38	each	48	$ 2,610.00
Groundwater Sample	$271.88	each	3	$ 815.63
Install Double cased Well (assume 130 feet per well)	$16.31	ft	390	$ 6,361.88
Monitoring Well Materials	$10.88	ft	390	$ 4,241.25
Subtotal Subcontract Task				**$ 54,255.38**
	Installation of Three (3) Single Cased Wells			
Auger to Proposed Depth (assume 90 feet per well)	$21.75	ft	270	$ 5,872.50
Collect Split Spoon Samples	$48.94	each	15	$ 734.06
Monitoring Well Materials	$10.88	ft	285	$ 3,099.38
Monitoring Well Surface Completions (flush)	$271.88	each	6	$ 1,631.25
Monitoring Well Development	$163.13	hr	24	$ 3,915.00
Cuttings/Fluids Handling	$163.13	hr	40	$ 6,525.00
Decontamination	$163.13	hr	30	$ 4,893.75
Hydrant Fees (if any)	$271.88	each	10	$ 2,718.75
Sample Jars	$0.54	each	375	$ 203.91
Concrete/Asphalt Coring	$163.13	each	13	$ 2,120.63
One-Call Utility Clearance	$163.13	each	7	$ 1,141.88
Move/Stage Drums on Pallets	$163.13	hr	30	$ 4,893.75
Drums	$65.25	each	30	$ 1,957.50
Bobcat to move cuttings	$163.13	day	40	$ 6,525.00
Subtotal Subcontract Task				**$ 46,232.34**
Subtotal Subcontract Price				**$ 143,335.22**
Subcontract Management Fee				**$ 7,166.76**
TOTAL				**$ 150,501.98**

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Innovative Recycling Technologies, Inc.	Subsurface Investigation	**$ 28,530.00**	**$ 1,426.50**

Task 6	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
Labor, excavation equipment to work inside building	$2,800.00 day	3	$ 8,400.00
			$ -
Subtotal Subcontract Task			**$ 8,400.00**
Task 7			
Geoprobe	$1,170.00 Day	2	$ 2,340.00
Macrocore Samples	$12.00 each	20	$ 240.00
Subtotal Subcontract Task			**$ 2,580.00**
Task 8			
Install one soil vapor implant	$90.00 ea	1	**$ 90.00**
Task 10			
Waste Transport and disposal			
Roll of box spot/box	$430.00 ea	3	$ 1,290.00
Rol off rental	$16.00 day	75	$ 1,200.00
liner	$40.00 ea	3	$ 120.00
Soil Disposal	$185.00 ton	50	$ 9,250.00
Liquid Drum	$160.00 drum	35	$ 5,600.00
Subtotal Subcontract Task			**$ 17,460.00**
Subtotal Subcontract Price			**$ 28,530.00**
Subcontract Management Fee			**$ 1,426.50**
TOTAL			**$ 29,956.50**

Schedule 2.11(f)
Unit Price Subcontracts
Work Assignment Number D003970-2.2

Name of Subcontractor	**Services to be Performed**	**Subcontract Price**	**Management Fee**
Environmental Data Services	Data Validation	**$ 5,293.00**	**$ -**
Task 11			

Item	Max. Reimbursement Rate (Specify Unit)	Est. No. of Units	Total Est. Cost
TCL VOCs + TICs by OLM 4.2 -Soil	$21.00 ea	65	$ 1,365.00
TCL VOCs + TICs by OLM 4.2 - Aqueous	$20.00 ea	125	$ 2,500.00
TCL VOCs by Method TO-15 - Air, soil vapor	$18.00 ea	46	$ 828.00
TCLP and RCRA Waste Characeristics soil, aqueous	$100.00 ea	6	$ 600.00
Subtotal Subcontract Price			**$ 5,293.00**
Subcontract Management Fee			**$ -**
TOTAL			**$ 5,293.00**

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Engineer	Environmental Resources Management
Contract Number	C003970
Project Name	Pride Solvents & Chemical Company
Work Assignment No.	D003970-02.2
Task No./Name	Project Summary
Complete	52.8%

Date Prepared	02/18/05
Billing Period	12/31/05 - 1/29/05
Invoice No.	9349

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs	$ 252.30	$ 100,339.73	$ -	$ 100,592.03	$ 108,682.15	$ 209,274.18	$ 209,274	$ -
2. Indirect Costs 162 %	$ 408.73	$ 162,550.36	$ -	$ 162,959.08	$ 176,065.09	$ 339,024.17	$ 339,024	$ -
3. Subtotal Direct Salary Costs and Indirect Costs	$ 661.03	$ 262,890.09	$ -	$ 263,551.11	$ 284,747.24	$ 548,298.35	$ 548,298	$ -
4. Travel	$ -	$ 472.31	$ -	$ 472.31	$ 1,449.19	$ 1,921.50	$ 1,922	$ -
5. Other Non-Salary Costs	$ 35.89	$ 13,347.66	$ -	$ 13,383.55	$ 31,425.45	$ 44,809.00	$ 44,809	$ -
6. Subtotal Direct Non-Salary Costs	$ 35.89	$ 13,819.97	$ -	$ 13,855.86	$ 32,874.64	$ 46,730.50	$ 46,731	$ -
7. Subcontractors	$ -	$ 331,083.41	$ -	$ 331,083.41	$ 225,465.55	$ 556,548.96	$556,548.96	$ -
8. Subcontractor Management Fee	$ -	$ 15,636.70	$ -	$ 15,636.70	$ 10,523.63	$ 26,160.33	$ 26,160	$ -
9. Total WA Costs	$ 696.92	$ 623,430.17	$ -	$ 624,127.08	$ 553,611.05	$ 1,177,738.14	$ 1,177,738	$ -
10. Fixed Fee	$ 46.27	$ 18,402.30	$ -	$ 18,448.58	$ 19,932.31	$ 38,380.88	$ 38,380.88	$ -
11. Total WA Price	$ 743.19	$ 641,832.47	$ -	$ 642,575.66	$ 573,543.36	$ 1,216,119.02	$ 1,216,119	$ -

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Engineer	Environmental Resources Management
Contract Number	C003970
Project Name	Pride Solvents & Chemical Company
Work Assignment No.	D003970-02.2
Task No./Name	Task 1: Work Plan
Complete	50.4%

Date Prepared	02/18/05
Billing Period	12/31/05 - 1/29/05
Invoice No.	9349

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs	$ -	$ 8,045.35		$ 8,045.35	$ 7,823.11	$ 15,868.46	$ 15,868.46	$ -
2. Indirect Costs 162 %	$ -	$ 13,033.47		$ 13,033.47	$ 12,673.43	$ 25,706.91	$ 25,706.91	$ -
3. Subtotal Direct Salary Costs and Indirect Costs	$ -	$ 21,078.82		$ 21,078.82	$ 20,496.54	$ 41,575.37	$ 41,575.37	$ -
4. Travel		$ 201.00		$ 201.00	$ 81.50	$ 282.50	$ 282.50	$ -
5. Other Non-Salary Costs	$ -	$ 963.16		$ 963.16	$ 1,351.84	$ 2,315.00	$ 2,315.00	$ -
6. Subtotal Direct Non-Salary Costs	$ -	$ 1,164.16		$ 1,164.16	$ 1,433.34	$ 2,597.50	$ 2,597.50	$ -
7. Subcontractors		$ -		$ -	$ -	$ -	$ -	$ -
8. Subcontractor Management Fee		$ -		$ -	$ -	$ -	$ -	$ -
9. Total WA Costs	$ -	$ 22,242.98		$ 22,242.98	$ 21,929.88	$ 44,172.87	$ 44,172.87	$ -
10. Fixed Fee	$ -	$ 1,475.52		$ 1,475.52	$ 1,434.76	$ 2,910.28	$ 2,910.28	$ -
11. Total WA Price	$ -	$ 23,718.50		$ 23,718.50	$ 23,364.64	$ 47,083.14	$ 47,083.14	$ -

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page 1 of 1

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 2: Remedial Investigation
Complete: 95.2%

Date Prepared: 02/18/05
Billing Period: 12/31/05 - 1/29/05
Invoice No.: 9349

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs		$ 9,553.82		$ 9,553.82	$ 466.58	$ 10,020.40	$ 10,020.40	$ -
2. Indirect Costs 162 %	$ -	$ 15,477.18		$ 15,477.18	$ 755.87	$ 16,233.05	$ 16,233.05	$ -
3. Subtotal Direct Salary Costs and Indirect Costs	$ -	$ 25,031.00		$ 25,031.00	$ 1,222.45	$ 26,253.45	$ 26,253.45	$ -
4. Travel		$ 255.38		$ 255.38	$ 4.62	$ 260.00	$ 260.00	$ -
5. Other Non-Salary Costs		$ 4,328.59		$ 4,328.59	$ 24.66	$ 4,353.25	$ 4,353.25	$ -
6. Subtotal Direct Non-Salary Costs	$ -	$ 4,583.97		$ 4,583.97	$ 29.28	$ 4,613.25	$ 4,613.25	$ -
7. Subcontractors	$ -	$ 122,489.32		$ 122,489.32	$ 6,424.55	$ 128,913.87	$128,913.87	$ -
8. Subcontractor Management Fee	$ -	$ 5,125.99		$ 5,125.99	$ 254.73	$ 5,380.72	$ 5,380.72	$ -
9. Total WA Costs	$ -	$ 157,230.28		$ 157,230.28	$ 7,931.01	$ 165,161.29	$ 165,161.29	$ -
10. Fixed Fee	$ -	$ 1,752.17		$ 1,752.17	$ 85.57	$ 1,837.74	$ 1,837.74	$ -
11. Total WA Price	$ -	$ 158,982.45		$ 158,982.45	$ 8,016.58	$ 166,999.03	$ 166,999.03	$ -

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Engineer	Environmental Resources Management
Contract Number	C003970
Project Name	Pride Solvents & Chemical Company
Work Assignment No.	D003970-02.2
Task No./Name	Task 3: Phase II Focused Remedial Investigation
Complete	97.8%

Date Prepared	02/18/05
Billing Period	12/31/05 - 1/29/05
Invoice No.	9349

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs	$ -	$ 44,373.77	$ -	$ 44,373.77	$ 1,365.88	$ 45,739.65	$ 45,739.65	$ -
2. Indirect Costs 162 %	$ -	$ 71,885.51	$ -	$ 71,885.51	$ 2,212.72	$ 74,098.23	$ 74,098.23	$ -
3. Subtotal Direct Salary Costs and Indirect Costs	$ -	$ 116,259.28	$ -	$ 116,259.28	$ 3,578.60	$ 119,837.88	$ 119,837.88	$ -
4. Travel	$ -	$ 15.93	$ -	$ 15.93	$ 229.07	$ 245.00	$ 245.00	$ -
5. Other Non-Salary Costs	$ -	$ 6,083.21	$ -	$ 6,083.21	$ (1,729.96)	$ 4,353.25	$ 4,353.25	$ -
6. Subtotal Direct Non-Salary Costs	$ -	$ 6,099.14	$ -	$ 6,099.14	$ (1,500.89)	$ 4,598.25	$ 4,598.25	$ -
7. Subcontractors	$ -	$ 208,594.09	$ -	$ 208,594.09	$ 8,532.78	$ 217,126.87	$ 217,126.87	$ -
8. Subcontractor Management Fee	$ -	$ 10,510.72	$ -	$ 10,510.72	$ 345.62	$ 10,856.34	$ 10,856.34	$ -
9. Total WA Costs	$ -	$ 341,463.23	$ -	$ 341,463.23	$ 10,956.12	$ 352,419.35	$ 352,419.35	$ -
10. Fixed Fee	$ -	$ 8,138.15	$ -	$ 8,138.15	$ (2,939.96)	$ 5,198.19	$ 5,198.19	$ -
11. Total WA Price	$ -	$ 349,601.38	$ -	$ 349,601.38	$ 8,016.16	$ 357,617.54	$ 357,617.54	$ -

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Engineer	Environmental Resources Management
Contract Number	C003970
Project Name	Pride Solvents & Chemical Company
Work Assignment No.	D003970-02.2
Task No./Name	Task 4: Remedial Investigation Report
Complete	102.7%

Date Prepared	02/18/05
Billing Period	12/31/05 - 1/29/05
Invoice No.	9349

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs	$ -	$ 33,711.83		$ 33,711.83	$ 232.97	$ 33,944.80	$ 33,944.80	$ -
2. Indirect Costs 162 %	$ -	$ 54,613.16		$ 54,613.16	$ 377.41	$ 54,990.58	$ 54,990.58	$ -
3. Subtotal Direct Salary Costs and Indirect Costs	$ -	$ 88,324.99		$ 88,324.99	$ 610.38	$ 88,935.38	$ 88,935.38	$ -
4. Travel		$ -		$ -	$ -	$ -	$ -	$ -
5. Other Non-Salary Costs	$ -	$ 1,833.23		$ 1,833.23	$ 286.77	$ 2,120.00	$ 2,120.00	$ -
6. Subtotal Direct Non-Salary Costs	$ -	$ 1,833.23		$ 1,833.23	$ 286.77	$ 2,120.00	$ 2,120.00	$ -
7. Subcontractors		$ -		$ -	$ -	$ -	$ -	$ -
8. Subcontractor Management Fee		$ -		$ -	$ -	$ -	$ -	$ -
9. Total WA Costs	$ -	$ 90,158.22		$ 90,158.22	$ 897.15	$ 91,055.38	$ 91,055.38	$ -
10. Fixed Fee	$ -	$ 6,182.75		$ 6,182.75	$ (3,433.29)	$ 2,749.46	$ 2,749.46	$ -
11. Total WA Price	$ -	$ 96,340.97		$ 96,340.97	$ (2,536.14)	$ 93,804.84	$ 93,804.84	$ -

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page 1 of 1

Engineer	Environmental Resources Management	Date Prepared	02/18/05
Contract Number	C003970	Billing Period	12/31/05 - 1/29/05
Project Name	Pride Solvents & Chemical Company	Invoice No.	9349
Work Assignment No.	D003970-02.2		
Task No./Name	Task 5: Focused Feasability Study		
Complete	8.3%		

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs	$ 252.30	$ 4,654.96		$ 4,907.26	$ 56,002.62	$ 60,909.88	$ 60,909.88	$ -
2. Indirect Costs 162 %	$ 408.73	$ 7,541.04		$ 7,949.76	$ 90,724.24	$ 98,674.01	$ 98,674.01	$ -
3. Subtotal Direct Salary Costs and Indirect Costs	$ 661.03	$ 12,196.00		$ 12,857.02	$ 146,726.86	$ 159,583.89	$ 159,583.89	$ -
4. Travel		$ -		$ -	$ 90.00	$ 90.00	$ 90.00	$ -
5. Other Non-Salary Costs	$ 35.89	$ 139.47		$ 175.36	$ 5,094.64	$ 5,270.00	$ 5,270.00	$ -
6. Subtotal Direct Non-Salary Costs	$ 35.89	$ 139.47		$ 175.36	$ 5,184.64	$ 5,360.00	$ 5,360.00	$ -
7. Subcontractors		$ -		$ -	$ -	$ -		$ -
8. Subcontractor Management Fee		$ -		$ -	$ -	$ -	$ -	$ -
9. Total WA Costs	$ 696.92	$ 12,335.47		$ 13,032.38	$ 151,911.50	$ 164,943.89	$ 164,943.89	$ -
10. Fixed Fee	$ 46.27	$ 853.72		$ 899.99	$ 1,733.76	$ 2,633.75	$ 2,633.75	$ -
11. Total WA Price	$ 743.19	$ 13,189.18		$ 13,932.37	$ 153,645.27	$ 167,577.64	$ 167,577.64	$ -

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page of

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 6: Sub-Slab Investigation
Complete: _____ %

Date Prepared
Billing Period
Invoice No.

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs				$ -		$ -	$ 2,940.20	$ 2,940.20
2. Indirect Costs 162%				$ -		$ -	$ 4,763.12	$ 4,763.12
3. Subtotal Direct Salary Costs and Indirect Costs				$ -		$ -	$ 7,703.32	$ 7,703.32
4. Travel				$ -		$ -	$ 90.00	$ 90.00
5. Other Non-Salary Costs				$ -		$ -	$ 586.50	$ 586.50
6. Subtotal Direct Non-Salary Costs				$ -		$ -	$ 676.50	$ 676.50
7. Subcontractors				$ -		$ -	$ 13,539.00	
8. Subcontractor Management Fee							$ -	
9. Total WA Costs				$ -		$ -	$ 21,918.82	$ 21,918.82
10. Fixed Fee				$ -		$ -	$ 539.23	$ 539.23
11. Total WA Price				$ -		$ -	$ 22,458.06	$ 22,458.06

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page of

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 7: Drywell and leach pool investigations
Complete %

Date Prepared
Billing Period
Invoice No.

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs				$ -		$ -	$ 2,422.06	$ 2,422.06
2. Indirect Costs 162%				$ -		$ -	$ 3,923.74	$ 3,923.74
3. Subtotal Direct Salary Costs and Indirect Costs				$ -		$ -	$ 6,345.80	$ 6,345.80
4. Travel				$ -		$ -	$ 90.00	$ 90.00
5. Other Non-Salary Costs				$ -		$ -	$ 1,404.50	$ 1,404.50
6. Subtotal Direct Non-Salary Costs				$ -		$ -	$ 1,494.50	$ 1,494.50
7. Subcontractors				$ -		$ -	$ 3,652.00	$ 3,652.00
8. Subcontractor Management Fee								
9. Total WA Costs				$ -		$ -	$ 11,402.30	$ 11,402.30
10. Fixed Fee				$ -		$ -	$ 444.21	$ 444.21
11. Total WA Price				$ -		$ -	$ 11,846.50	$ 11,846.50

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page of

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 8 : Sub-slab Soil Vapor Survey
Complete %

Date Prepared
Billing Period
Invoice No.

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs				$ -		$ -	$ 3,254.46	$ 3,254.46
2. Indirect Costs 162%				$ -		$ -	$ 5,272.23	$ 5,272.23
3. Subtotal Direct Salary Costs and Indirect Costs				$ -		$ -	$ 8,526.69	$ 8,526.69
4. Travel				$ -		$ -	$ 99.00	$ 99.00
5. Other Non-Salary Costs				$ -		$ -	$ 873.50	$ 873.50
6. Subtotal Direct Non-Salary Costs				$ -		$ -	$ 972.50	$ 972.50
7. Subcontractors				$ -		$ -	$ 3,590.00	$ 3,590.00
8. Subcontractor Management Fee								
9. Total WA Costs				$ -		$ -	$ 13,089.19	$ 13,089.19
10. Fixed Fee				$ -		$ -	$ 596.87	$ 596.87
11. Total WA Price				$ -		$ -	$ 13,686.05	$ 13,686.05

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page of

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 9 : Indoor Air Sampling
Complete %

Date Prepared
Billing Period
Invoice No.

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs				$ -		$ -	$ 3,092.46	$ 3,092.46
2. Indirect Costs 162%				$ -		$ -	$ 5,009.79	$ 5,009.79
3. Subtotal Direct Salary Costs and Indirect Costs				$ -		$ -	$ 8,102.25	$ 8,102.25
4. Travel				$ -		$ -	$ 135.00	$ 135.00
5. Other Non-Salary Costs				$ -		$ -	$ 1,865.00	$ 1,865.00
6. Subtotal Direct Non-Salary Costs				$ -		$ -	$ 2,000.00	$ 2,000.00
7. Subcontractors				$ -		$ -	$ 8,000.00	$ 8,000.00
8. Subcontractor Management Fee							$ 575.00	
9. Total WA Costs				$ -		$ -	$ 18,102.25	$ 18,102.25
10. Fixed Fee				$ -		$ -	$ 567.16	$ 567.16
11. Total WA Price				$ -		$ -	$ 18,669.40	$ 18,669.40

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Page of

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 10: Downgradient Subsurface Sampling
Complete %

Date Prepared
Billing Period
Invoice No.

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs				$ -		$ -	$ 16,818.49	$ 16,818.49
2. Indirect Costs 162%				$ -		$ -	$ 27,245.95	$ 27,245.95
3. Subtotal Direct Salary Costs and Indirect Costs				$ -		$ -	$ 44,064.44	$ 44,064.44
4. Travel				$ -		$ -	$ 540.00	$ 540.00
5. Other Non-Salary Costs				$ -		$ -	$ 17,918.00	$ 17,918.00
6. Subtotal Direct Non-Salary Costs				$ -		$ -	$ 18,458.00	$ 18,458.00
7. Subcontractors				$ -		$ -	$ 176,434.22	$ 176,434.22
8. Subcontractor Management Fee							$ 9,348.26	
9. Total WA Costs				$ -		$ -	$ 238,956.66	$ 238,956.66
10. Fixed Fee				$ -		$ -	$ 3,084.51	$ 3,084.51
11. Total WA Price				$ -		$ -	$ 242,041.17	$ 242,041.17

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g)
Monthly Cost Control Report
Summary of Fiscal Information

Engineer: Environmental Resources Management
Contract Number: C003970
Project Name: Pride Solvents & Chemical Company
Work Assignment No.: D003970-02.2
Task No./Name: Task 11: Report
Complete %

Date Prepared
Billing Period
Invoice No.

	A	B	C	D	E	F	G	H
Expenditure Category	*Cost Claimed This Period*	*Paid to Date*	*Total Disallowed to Date*	*Total Costs Incurred to Date (A+B+C)*	*Estimated Costs to Completion*	*Estimated Total Work Assignment Price (A+B+E)*	*Approved Budget*	*Estimated Under/Over (G-F)*
1. Direct salary Costs				$ -		$ -	$ 14,263.32	$ 14,263.32
2. Indirect Costs 162%				$ -		$ -	$ 23,106.58	$ 23,106.58
3. Subtotal Direct Salary Costs and Indirect Costs				$ -		$ -	$ 37,369.90	$ 37,369.90
4. Travel				$ -		$ -	$ 90.00	$ 90.00
5. Other Non-Salary Costs				$ -		$ -	$ 3,750.00	$ 3,750.00
6. Subtotal Direct Non-Salary Costs				$ -		$ -	$ 3,840.00	$ 3,840.00
7. Subcontractors				$ -		$ -	$ 5,293.00	$ 5,293.00
8. Subcontractor Management Fee							$ -	
9. Total WA Costs				$ -		$ -	$ 46,502.90	$ 46,502.90
10. Fixed Fee				$ -		$ -	$ 2,615.89	$ 2,615.89
11. Total WA Price				$ -		$ -	$ 49,118.79	$ 49,118.79

Project Manager (Engineer) _____ Date _____

Schedule 2.11(g) - Supplemental

Cost Control Report for Subcontracts

Engineer	Environmental Resources Management
Contract Number	C003970
Project Name	Pride Solvents & Chemical Company
Work Assignment No.	D003970-02.2
Date Prepared	02/18/05
Billing Period	12/31/05 - 1/29/05
Invoice No.	9349

	A	B	C	D	E	F	G
Subcontract Name	*Subcontract Costs Claimed this Application Inc. Resubmittals*	*Subcontract Costs Approved for Payment on Previous Applications*	*Total Subcontract Costs to Date (A+B)*	*Subcontract Approved Budget*	*Management Fee Budget*	*Management Fee Paid*	*Total Costs to Date (C+F)*
L.A.B Validation Corp.	$ -	$ 10,145.00	$ 10,145.00	$ 12,000	$ 600	$ 507.25	$ 10,652.25
Nelson & Pope	$ -	$ 11,480.92	$ 11,480.92	$ 16,290	$ 815	$ 574.05	$ 12,054.97
STL Laboratories	$ -	$ 127,803.00	$ 127,803.00	$ 129,752	$ 6,487.59	$ 6,390.15	$ 134,193.15
Nothnagle Drilling		$ 67,557.56	$ 67,557.56	$ 67,611	$ 3,380.57	$ 3,377.88	$ 70,935.44
Environmental Closures	$ -	$ 12,170.00	$ 12,170.00	$ 12,640	$ 632.00	$ 608.50	$ 12,778.50
Aquifer Drilling and Testing	$ -	$ 11,701.13	$ 11,701.13	$ 15,575	$ 778.74	$ 585.06	$ 12,286.19
YEC, Inc.		$ 8,178.74	$ 8,178.74	$ 8,615			$ 8,178.74
Advanced Geological Services	$ -	$ 10,984.00	$ 10,984.00	$ 11,600	$ 580.00	$ 249.20	$ 11,233.20
Zebra Environmental	$ -	$ 59,272.20	$ 59,272.20	$ 59,273	$ 2,963.66	$ 2,963.61	$ 62,235.81
Allied Waste		$ 9,750.00	$ 9,750.00	$ 9,750			$ 9,750.00
Delaware Engineering		$ 2,040.86	$ 2,040.86	$ 2,934			$ 2,040.86
Nelson & Pope (2005)				$ 2,750	$ -		
Stl-Knoxville (2005)				$ 11,500	$ 575		
Advanced Geophysics (2005)				$ 4,000	$ -		
Chemtech (2005)				$ 15,100	$ 755		
Delta Well & Pump (2005)				$ 143,335	$ 7,167		
Innovative Recycling (2005)				$ 28,530	$ 1,427		
Environmental Data Services (2005)				$ 5,293	$ -		
TOTALS	$ -	$ 331,083.41	$ 331,083.41	$ 556,548.96	$ 26,160.33	$ 15,255.69	$ 346,339.10

Project Manager (Engineer) _____ Date _____

NOTES:

1) Costs listed in Columns A, B, C &D do not include any management fee costs.

2) Management fee is applicable to only properly procured, satisfactorily completed, unit price subcontracts over $10,000.

3) Line 11, Column G should equal Line 7 (Subcontractors), Column D of Summary Cost Control Report.

Schedule 2.11(i)
Monthly Cost Control Report
*Equipment Inventory Control Form**

Engineer _____ *Contract No. D003970-02.2*_____

1) Equipment Description _____
Purchase Date _____
Purchase Price _____
Dates & Location of Use Since Last Report
(Identify WA) _____
Present Storage Location _____
Condition of Equipment _____
Responsible Person and Phone No. _____

2) Equipment Description _____
Purchase Date _____
Purchase Price _____
Dates & Location of Use Since Last Report
(Identify WA) _____
Present Storage Location _____
Condition of Equipment _____
Responsible Person and Phone No. _____

3) Equipment Description _____
Purchase Date _____
Purchase Price _____
Dates & Location of Use Since Last Report
(Identify WA) _____
Present Storage Location _____
Condition of Equipment _____
Responsible Person and Phone No. _____

4) Equipment Description _____
Purchase Date _____
Purchase Price _____
Dates & Location of Use Since Last Report
(Identify WA) _____
Present Storage Location _____
Condition of Equipment _____
Responsible Person and Phone No. _____

* This form must be completed for all Department owned equipment in the custody of the Engineer and submitted as part of the Monthly Cost Control Report.

Schedule 2.11(h)
Monthly Cost Control Report
Summary of Labor Hours
Number of Direct Labor Hours Expended to Date/Estimated Number of Direct Labor Hours to Completion

Page 1 of 1

Engineer/Contract No. Environmental Resources Management
Project Name Pride Solvents & Chemical
Work Assignment No. D003970-02.2

Date Prepared 02/18/05
Billing Period 12/31/05 - 1/29/05
Invoice No. 9349

Subcontract Name	*IX Exp*	*IX Est**	*VIII Exp*	*VIII Est*	*VII Exp*	*VII Est*	*VI Exp*	*VI Est*	*V Exp*	*V Est*	*IV Exp*	*IV Est*	*III Exp*	*III Est*	*II Exp*	*II Est*	*I Exp*	*I Est*	*Admin Exp*	*Admin Est*	*Total no of direct labor hrs. Exp*	*Total No. of Direct Labor Hrs. Est*
Task 1 - WP		0	49.5	83.51		41.59		62.5		31.92	214	296		59.54	21	94.93	1.5	16.36	43	51.08	329	737.43
Task 2 - FRI			20	19		2		0		0	263	121		291	145	27		0	23	15	451	475
Task 3 FRI - PH II			125.5	116	3	0	10	0	86.5	0	684	397	119	40	371.8	260	164	0	52.25	21	1616	834
Task 4 - FRI Report			55	90	33	0	31	100	122	0	643.5	400	32	300	72	190	16.25	0	127	20	1131.75	1100
Task 5 -FFS Report		0	19	56		0		670	17	0	73.5	450	16.75	310	1.5	140		0	14	105	141.75	1731
Task 6 -		0		0		0		8		0		40		5		50		0		2	0	105
Task 7		0		0		0		8		0		30		5		40		0		4	0	87
Task 8		0		0		0		8		0		30		5		80		0		4	0	127
Task 9		0		0		0		8		0		40		10		50		0		4	0	112
Task 10		0		0		0		24		0		150		25		475		0		4	0	678
Task 11		0		0		0		40		0		240		51		110		0		40	0	481
Task 12																						
Total Hours	0	0	269	364.5	36	43.59	41	928.5	225.5	31.92	1878	2194	167.8	1101.54	611.3	1517	181.8	16.36	259.25	270.08	3669.50	6467.43
																					3669.5	

*Expended/Estimated

Invoice #	1054/2577
Project #	0001148
Project Name	103NE03 NYSDEC
Invoice Group	**
Invoice Date	8/21/03

NYSDEC
Mr. Raymond Lupe, PE
Bureau of Program Management
625 Broadway
Albany, New York 12233-7012

For Professional Services Rendered Through 7/26/03

Pride Solvents RI Report WA#D003970-02

Analysis of Costs	This Invoice
Direct Salaries	25.50
Overhead @1.62%	41.31
Total Direct and Indirect Salary Costs	66.81
Reimbursable Expenses	
Computer	
CAD	
Delivery	
In-House Reproduction	1.76
Total Other Non-Salary Costs	1.76
Fixed Fee @7%	4.68
Total This Invoice	73.25
Retainage	(3.66)
Amount Due	69.58

APPENDIX D
HEALTH AND SAFETY PLAN FOR THE ADDENDUM REMEDIAL INVESTIGATION

Pride Solvents
West Babylon, New York

September 2005

0029673.2890.App.D

Prepared for:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233

Prepared by:

Environmental Resources Management
520 Broad Hollow Road, Suite 210
Melville, NY 11747

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CERTIFICATION OF COMMITMENT TO WORKER HEALTH AND SAFETY AND HEALTH AND SAFETY OFFICER'S AUTHORITY

Environmental Resources Management, Inc. (ERM) employees, subcontractors and other prime contractors may be exposed to risks from hazardous conditions. ERM's policy is to minimize the possibility of work-related injury through aware and qualified supervision, health and safety training, medical monitoring, and the use of appropriate personal protective equipment. ERM has established a guidance program to implement this corporate policy in a manner that protects personnel to the maximum reasonable extent.

This site-specific Health and Safety Plan (HASP) applies to ERM personnel and subcontractors at the Pride Solvents Site where operations involve actual or potential exposure to safety or health hazards. This HASP describes emergency response procedures and actual and potential physical and chemical hazards that have been identified to ERM by others. ERM's contractors are retained as independent contractors and, as such, are responsible for ensuring the safety of their employees.

1.0 *INTRODUCTION*

This Health and safety plan (HASP) has been developed by Environmental Resources Management, Inc. (ERM) for the performance of Focused Remedial Investigation and Feasibility Study (FRI/FS) activities associated with the Pride Solvents Site. The scope of work includes the following intrusive activities:

1. Performing soil borings for the collection of soil and ground water samples
2. Installation of monitoring wells;
3. Performance of groundwater sampling
4. Sampling of dry wells and leach pools
5. Collection of Indoor and sub-slab air samples via SUMMA canister

The procedures set forth in this HASP are designed to reduce the risk of exposure to chemical substances and physical or other hazards, which may be present. The procedures described herein were developed in accordance with the publications indicated below:

1. Safety and Health Standards 29 CFR 1910 (General Industry), US Department of Labor, Occupational Safety and Health Administration (OSHA). Hereafter, referred as "29 CFR 1910."

2. OSHA 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response, U.S. Dept. of Labor, OSHA.

3. OSHA Safety and Health Standards 29 CFR 1926 (Construction Industry), U.S. Department of Labor, OSHA.

4. Standard Operating Safety Guides, U.S. Environmental Protection Agency (EPA), Office of Emergency and Remedial Response.

5. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health (NIOSH).

The recommended health and safety guidelines within this HASP may be modified if future information changes the activities to be performed or the characterization of the area in which work is to be performed.

1.1 IMPLEMENTATION

A copy of this HASP will be made available to all employees prior to their site work. They will be required to review this plan before the start of any site activities. All other personnel involved with FRI/FS activities will have received a pre-entry briefing.

1.2 BACKGROUND AND PREVIOUS INVESTIGATION RESULTS

1.2.1 Background

The Pride Solvents and Chemical Company, Inc. is an Inactive Hazardous Waste site (the Site) located at 78-88 Lamar Street in West Babylon, Suffolk County, New York. The Site is located within an industrial park known as the West Babylon Industrial Area. A site location map is provided in Figure 1-1.

The site is approximately 1.38 acres in size and contains two buildings with parking lots to the north and south and a loading dock between the buildings. Directly to the north, south and west are various other commercial and manufacturing facilities. Approximately 500 feet to the west of the site is the Babylon Town Landfill. The industrial park is bordered to the north, east and south by cemeteries.

The property has been owned and occupied by the current owner since 1973. The facility operates as a chemical and solvent distribution and reclamation facility. The site is currently regulated as a hazardous waste treatment, storage and disposal facility under a Resource Conservation and Recovery Act (RCRA) Part B Permit (EPA ID No. NYD 057722258). The Site is equipped to receive and store chlorinated and fluorinated solvent waste, then reclaim the material by a distillation process. The operation at 78 Lamar Street includes the reclamation of chlorinated and fluorinated solvents by distillation. The primary use of the building is for drum storage with a small portion delegated to the distillation process. The operation at 88 Lamar Street primarily consists of bulk storage, packaging and distribution of non-flammable, flammable and combustible organic solvents.

The Suffolk County Department of Health Services (SCDHS) cited the facility with several violations of its SPEDS permit during the early 1980s. In March of 1980 samples were obtained from two storm drains on the property that contained trichloroethylene (TCE) (3110 ug/l and 458 ug/l, respectively) above concentrations allowed by the SPEDS permit. In November of 1982 samples were again obtained from a storm drain which

contained toluene (4600 ppb) above the SPEDS permit. The facility is currently in operation.

1.2.2 *Previous Investigation Results*

Numerous reports have been generated pertaining to Pride Solvents and Chemical Company and/or the surrounding industrial area. These reports indicate that ground water in the vicinity of the industrial area has been contaminated by several Volatile Organic Compounds (VOCs). VOCs included tetrachloroethene (PCE), TCE, 1,2-dichlorethene (1,2-DCA), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), toluene, ethylbenzene and xylenes.

1.3 *CHEMICAL AND PHYSICAL HAZARDS*

1.3.1 *Chemical Hazards*

A summary of the exposure limits and physical properties of the chemicals of concern is shown in Table 1-1. The potential pathways of chemical exposure may be through inhalation, ingestion, skin contact and injection. This information was used to develop action levels for on-site activities. Although many of the chemicals detected are a potential health concern, measures will be taken to minimize potential for exposure. The chemicals found in samples would only pose a potential health hazard through continuous long-term exposure at the levels identified. Long-term exposure will not occur during the FRI/FS program, since potential exposures can be mitigated through appropriate personal protective procedures. In addition, any potential exposure will be of short duration over a period several days.

The greatest potential for personnel exposure will likely occur during the profile sampling and well installations. Specific health and safety procedures associated with these activities are provided in Section 4.4. Elevated volatile organic compounds as detected by direct reading instruments (greater than 1 ppm) will require utilization of colorimetric detector tubes to determine if vinyl choride is present specifically. Other compounds with low permissible exposure limits are not likely to represent the hazards associated with vinyl chloride due to their low volatility, low concentration or ability to be removed from breathing air by an air purifying respirator.

1.3.2 *Physical Hazards*

Table 1-2 contains a summary of potential physical hazards that may be encountered.

2.0 *PERSONNEL RESPONSIBILITIES*

The following responsibilities and authorities have been assigned to personnel during FRI/FS activities.

2.1 *HEALTH AND SAFETY OFFICER*

ERM has designated an employee as its health and safety officer (HSO). This HSO has the authority to command sufficient resources to safely perform the Work. Brian Heneveld, P.E.,CIH has been designated as the HSO.

2.2 *SITE HEALTH AND SAFETY COORDINATOR*

ERM has designated a Site Health and Safety Coordinator (SHSC) for this project. Day-to-day industrial hygiene support, including air monitoring, training, site safety inspections, shall be provided by the SHSC. The SHSC has the authority to stop on-site operations whenever conditions threaten the health or safety of employees. The SHSC or his designee will remain on-site during all project operations.

ERM has designated Eugene Gabay as the SHSC. Mr. Gabay has a sound working knowledge of occupational safety and health regulations; experience on the type of project described in this Work Plan; and training in air monitoring practices and techniques.

2.3 *SUBCONTRACTORS*

ERM will be supported in the FRI/FS activities by subcontractors. All subcontractors involved with onsite operations will be provided a copy of this HASP. Subcontractors involved with intrusive investigative activities will be informed of the health and safety concerns and the monitoring data presented in this plan and will be responsible, at a minimum, for maintaining the health and safety requirements presented in this plan. Information, such as air monitoring and analytical results, will be shared with subcontractors to assist them in addressing the health and safety recommendations.

ERM will ensure that subcontractors have met the training, respirator certification and medical examination requirements of the OSHA

Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). Subcontractors involved with intrusive activities will be required to provide to ERM completed certification forms for this purpose.

3.0 *MEDICAL MONITORING AND PERSONNEL TRAINING REQUIREMENTS*

The Occupational Safety and Health Administration (OSHA) has established requirements for a medical surveillance program designed to monitor and reduce health risks for employees who may potentially be exposed to hazardous materials. For the activities related to the FRI/FS, this potential has been limited to on-site activities. This program has been designed to provide baseline medical data for each employee involved in hazardous waste operations. Each employee must undergo testing and training, and a determination of his/her ability to wear personal protective equipment. The medical examinations must be administered on a pre-employment, annual basis, employment termination and as warranted for chemicals for which the employee may have been exposed. These examinations shall be provided by employers without cost or loss of pay to the employee.

In accordance with 29 CFR 1910.120, ERM will maintain all medical surveillance records for 30 years past employment and shall make these records available to the employee, Owner or regulatory agencies, as required. ERM currently utilizes Robert Shoenfeld, MD and Gary Moskowitz, D.O. of Plainview Medical Group, PC. Their office is located at 100 Manetto Hill Road, Plainview, NY 11803.

3.1 *MEDICAL MONITORING*

Due to potential exposure to hazardous materials, all ERM employees and subcontractors involved in intrusive on-site FRI/FS activities must participate in a medical monitoring program meeting specifications of 29 CFR Part 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER). The examining licensed physician is required to provide a written report to the employer of any medical condition which would place employees at increased risk of wearing a respirator or other personal protective equipment. A physician will specify respiratory protection clearance, or the user's ability to wear a respirator of any type for a Work shift. Each subcontractor involved in FRI/FS activities shall assume the responsibility of maintaining a medical surveillance program as well as maintaining Site personnel medical records as regulated by 29 CFR 1910.20, Medical and Exposure Records. Evidence of medical certification will be provided for all personnel, including subcontractors, who will be on-site. This documentation will be in the custody of the SHSC.

ERM provides three types of medical exams. Examination types are designated as baseline (B), annual (A), or exit (E). The examinations generally include at least the following:

- Completion of medical and work history (as well as completion of standardized forms as required by OSHA for work with asbestos, hazardous waste sites or other specific hazardous materials) (B,A,E).
- Physical examination directed to the pulmonary, respiratory, circulatory and gastrointestinal system (B,A,E).
- Chest x-ray (B,E).
- Height/weight (B,A,E).
- Blood pressure (B,A,E).
- Vision screening (B,A,E).
- Pulmonary function test including forced vital capacity (FVC) and forced expiratory volume (FEV) (B,A,E).
- Baseline blood chemistry and urinalysis (B,E).
- Electrocardiogram (B,E).
- Audiometric testing (B,A,E).
- Additional tests as determined by the examining physician.

A medical examination program is required for all those employees who wear or may wear respiratory protection as specified by 29 CFR 1910.134, Respiratory Protection and 29 CFR 1910.120 (HAZWOPER). Disposable dust type respirators are included under these regulations. This program must determine an individual's ability to wear respiratory protection while performing designated duties. All elements of 29 CFR 1910.134, Respiratory Protection, must be complied with, and will be verified by the SHSC. This verification includes review of the required written respiratory protection program regarding the selection, care, employee training requirements, use and maintenance of respirators.

3.2 *PERSONNEL TRAINING*

All personnel associated with FRI/FS activities at the Site have participated in a health and safety training program that complies with OSHA 29 CFR 1910.120, HAZWOPER, prior to mobilization at the Site. This program instructs employees on the intent of the standard, health and safety principles and procedures, proper operation of monitoring instruments, use of personal protective equipment, decontamination, and Site specific emergency plans. All personnel have an initial 40 hour training course. This course is supplemented by an annual 8 hour

refresher course. Any chemical specific training that may be required will be based upon compliance with 29 CFR 1910.1200, Hazard Communication. Personnel responsible for supervision and on-site management relative to site operations receive an additional 8 hours of specialized training.

Additional training is given to those employees responsible for responding to site emergencies.

A copy of this HASP will also be made available to all personnel for review. All employees will complete a Health and Safety Plan review form to verify they have reviewed this plan and a copy of the form is shown in Exhibit 1. All subcontractors involved with intrusive FRI/FS activities are required to certify that their employees have received medical exams, training and are capable of respirator usage. The Contractor Occupational Safety and Health Certification form is attached as Exhibit 3. All employees and subcontractors will also be required to fill out a field medical data sheet (Exhibit 5) prior to starting activities at the site.

All on-Site personnel involved with the FRI/FS project will attend a pre-entry briefing on the chemical and physical hazards associated with the site.

The initial health and safety briefing will consist of the following information:

- Names of personnel and alternates responsible for site safety and health.
- Injury, illness, and other hazards present on the site.
- Safe use of engineering controls and equipment on-site.
- Work practices by which the employee can minimize risks from hazards.
- Selection, use, care, and maintenance of Personal Protection Equipment (PPE).
- Site control procedures.
- Site decontamination procedures.
- Standard operation safety procedures.
- Review of Emergency Response Plan.

Documentation of all training, fit test and medical monitoring certificates will be maintained in the offices of ERM in the custody of the HSO.

A daily tail-gate meeting will be conducted prior to the start of the day's activities daily during performance of intrusive activities. The topics covered will include a reminder of site hazards, target activities for the day's work, changes in observed exposure levels, staff changes (e.g., due to illness) and responsibilities.

4.0 SITE MONITORING AND PERSONAL PROTECTIVE EQUIPMENT

4.1 PERSONAL PROTECTIVE EQUIPMENT PROGRAM

The comprehensive PPE program addresses a number of specific factors in addition to selection of the appropriate level of protection. These factors are discussed below.

Personal Use Factors and Equipment Limitations

Certain personal features of workers may jeopardize safety during equipment use. Protective or precautionary measures will be taken as necessary for the following personal features:

- Facial hair and long hair that passes between the face and the sealing surface of the respirator is prohibited because it interferes with respirator fit and wearer vision, allowing excessive contaminant penetration. Long hair must be effectively contained within protective hair coverings.

- Eyeglasses with conventional temple pieces will interfere with the respirator-to-face seal of a full face-piece. A spectacle kit should be installed in the face masks of workers requiring vision correction, providing a tight seal. Prescription eyeglasses worn on-site must meet ANSI Standard Z87.1. Contact lenses may trap contaminants and/or particulate between the lens and the eye, causing irritation. Wearing contact lenses with a respirator in a contaminated atmosphere is prohibited (29 CFR §1910.134(e)(5)(iii)).

- Gum and chewing tobacco are prohibited during respirator use because they may cause the ingestion of contaminants and may compromise the respirator fit.

During equipment use, workers will be encouraged to report any perceived problems or difficulties to their supervisor(s). These malfunctions include, but are not limited to:

- degradation of the protective ensemble;
- perception of odors;
- skin irritation;
- unusual residues on PPE;
- discomfort;
- resistance to breathing;

- fatigue due to respirator use;
- interference with vision or communication;
- restriction of movement; and
- personal responses such as rapid pulse, nausea and chest pain.

If a supplied air respirator is being used, all hazards that might endanger the integrity of the air line should be removed from the working area prior to use. During use, other workers and vehicles should be excluded from the area.

Work Mission Duration

In selecting PPE, the anticipated duration of the work mission will be considered . Several factors may limit the mission length, including: air supply, equipment effectiveness and temperature. The HSO will make all decisions regarding selection of PPE and mission duration.

Suit/Ensemble Permeation, Degradation and Penetration. The possibility of chemical permeation, degradation, or penetration of protective ensembles during the work mission may limit mission duration. No single clothing material is an effective barrier to all chemicals or all combinations of chemicals, and no material is an effective barrier to prolonged chemical exposure.

Ambient Temperature. The ambient temperature may have a major influence on work mission duration as it affects both the worker and the protective integrity of the ensemble. Heat stress, which can occur even in relatively moderate temperatures, presents the greatest immediate danger to an ensemble-encapsulated worker. Hot and cold ambient temperatures also can effect:

- valve operation on suits and/or respirators;
- the durability and flexibility of suit material;
- the integrity of suit fasteners;
- the breakthrough time and penetration rates of chemicals; and
- the concentration of airborne contaminants.

All of these factors may decrease the duration of protection provided by a given piece of clothing or respiratory equipment.

Storage and Maintenance

Clothing and respirators will be stored properly to prevent damage or malfunction due to exposure to dust, moisture, sunlight, damaging chemicals, extreme temperatures and impact. Many equipment failures can be directly attributed to improper storage.

Different types and materials of clothing and gloves will be stored separately to prevent issuing the wrong material by mistake. Protective clothing will be folded or hung in accordance with manufacturers' recommendations. Contaminated clothing for reuse will remain in the contaminant reduction zone.

SCBAs, supplied air respirators and air-purifying respirators, if required, will be dismantled, washed and disinfected after each use. SCBAs will be stored in storage chests supplied by the manufacturer. Air-purifying respirators should be stored individually in their original cartons or carrying cases, or in heat sealed or resealable plastic bags.

The technical aspects of PPE maintenance procedures vary by manufacturer and type of equipment. Manufacturers frequently restrict the sale of certain PPE parts only to individuals or groups who are specially trained, equipped and authorized by the manufacturer to purchase them.

Training and Proper Fitting

Training. Employees have been trained in the proper use of protective equipment prior to using any equipment on-site. The purpose of the training has been to: (1) become familiar with the equipment in a nonhazardous situation; (2) instill confidence and awareness in the user of the limitations and capabilities of the equipment; (3) increase the operating and protective efficiency of PPE use; and (4) reduce maintenance expenses.

Respirator Fit Testing. The "fit" of the facepiece-to-face seal of a respirator will be tested on each potential wearer to ensure a tight seal; every facepiece does not fit every wearer. Certain features, such as scars, very prominent cheekbones, deep skin creases, dentures or missing teeth and the chewing of gum and tobacco may interfere with the respirator-to-face seal. Under conditions where these features may impede a good seal, a respirator must not be worn. All personnel who may wear a respirator will be qualitatively fit-tested with irritant smoke, isoamyl acetate, or equivalent methods according to 29 CFR 1926.58, Appendix C at least semiannually.

Donning and Doffing Procedures

The PPE program includes clearly defined donning and doffing procedures as indicated in the following sections.

Donning. A routine has been established for donning and evaluating all levels of protective clothing and equipment. If the clothing is too small, the likelihood of tearing the suit material and accelerating worker fatigue

will increase. If the clothing is too large the possibility of snagging the material and compromising the dexterity and coordination of the worker is increased. In either case, better fitting clothing will be provided.

Doffing. Exact procedures for removing PPE have been established and will be followed to prevent contaminant migration from the work area and transfer of contaminants to the wearer's body, the doffing assistant, and others. These procedures will be performed only after decontamination of the suited worker. These procedures are described in detail in Section 5.3.

Inspection Procedures

An effective PPE inspection program features four different inspections:

- inspection and operational testing of equipment received from the factory or distributor;
- inspection of equipment as it is issued;
- inspection before and after use or training and prior to maintenance; and,
- periodic inspection of stored equipment.

PPE Program Evaluation

At a minimum the PPE program is reviewed annually to evaluate the effectiveness of the following factors:

- the number of personnel-hours that are spent in various PPE ensembles;
- the degree to which the site complies with the HAZWOPER standards on PPE use, inspection, maintenance and recordkeeping;
- accident, injury and illness statistics and recorded levels of exposure;
- the adequacy of operating procedures to guide the selection of PPE;
- the degree of coordination with comprehensive and site-specific health and safety programs; and,
- recommendations for and results of program improvement and modification.

4.2 *PERSONAL PROTECTIVE EQUIPMENT*

The various types of personal protective equipment and levels of protection to be used during Site activities are discussed in this section.

These levels are based upon OSHA guidelines presented in 29 CFR 1910.120. All equipment will carry applicable MSHA/NIOSH approvals.

The Field Geologist in consultation with the SHSC will determine the necessity to upgrade, downgrade or modify levels of protection. The SHSC will make entries in the Daily Site Safety Log when protection levels are modified, explaining the reason for the modification. Descriptions of Levels D, C, and B personal protective equipment follow:

Level D Protection

- Coveralls or work uniform affording protection for nuisance contamination.
- Steel-toe work boots.
- Safety glasses.
- Hard hat.

Optional Equipment as required by the SHSC

- Chemical resistant outer gloves and inner latex surgical gloves;
- Rubber overboots;
- Hearing protection;
- Disposable dust masks;
- Disposable outer coveralls;
- Portable 2-way radios;
- Chemical splash goggles.

Level C Protection

- Full-face air purifying respirator (APR) equipped with combination organic vapor (OV) cartridges and HEPA cartridges.
- Chemical-resistant coveralls (i.e., polylaminated Tyvek to be a different color from level D disposable coveralls).
- Chemical resistant outer gloves (i.e., nitrile) and inner latex surgical gloves.
- Steel-toe work boots with rubber overboots.
- Chemical-resistant tape over seams in protective clothing (gloves and boots).
- Hard Hat.

Optional Equipment as Required by the SHSC

- Hearing protection.
- Splash shield (full-face coverage, eight-inch minimum) or splash hood.
- Portable 2-way radios.

Level B Protection

- Full-face SCBA in pressure demand mode, or air-line respirator with escape SCBA bottle in pressure demand mode.
- Chemical resistant coveralls (i.e., polylaminated Tyvek).
- Chemical resistant outer gloves (i.e., nitrile) and inner latex surgical gloves.
- Steel-toe work boots with rubber overboots.
- Chemical-resistant tape over seams in protective clothing (gloves and boots).
- Hard Hat.

Optional Equipment as Required by SHSC

- Hearing protection
- Splash shield (full-face coverage, eight-inch minimum) or splash hood
- Portable 2-way radios

Procedure for Donning Protective Clothing and Equipment

- Donning:
  - Inspect all equipment.
  - Adjust hard hat for proper fit.
  - While standing or sitting, step into legs of suit and gather suit around the waist.
  - Put on overboots and tape boot to suit seam.
  - Don respirator (Levels B and C) and perform positive (Levels B and C) and negative pressure (Level c) fit check.
  - Put sleeves of suit over arms.
  - Put on inner gloves.
  - Put on hard hat.
  - Secure the suit by closing all fasteners.
  - Put on outer gloves and tape glove to suit seam.

- Have an assistant check to determine if all equipment is secure and functioning normally.

- Doffing:
  - Doffing procedures are included in Section 5.3 under decontamination procedures.

Respiratory Protection

All personnel involved with Site activities for which a respirator might be required must participate in a Respiratory Protection Program meeting the specifications of 29 CFR 1910.134. This program includes medical surveillance, training and fit testing.

General provisions for respirator use include:

- Respiratory protection, if required, will be provided to each employee for the duration of activities.
- Respirators will be inspected, cleaned and disinfected before and after each usage. Malfunctioning respirators will be repaired prior to future use. Respirators will be stored in a clean and dry locations when not in use.
- All employees required to wear respirators will be clean shaven to ensure a proper face-to-facepiece seal. Other situations that affect a proper seal will be avoided.
- Contact lenses are not permitted in designated exclusion zones. Prescription glasses worn with full-face respirators will be insert-type only meeting ANSI Standard Z87.1.
- All employees will conduct a positive (Levels B and C) and negative pressure (Level C) respirator fit check each time the respirator is donned.
- Respirator cartridges (Level C) will be changed on an as-needed basis (i.e. filter cartridges with restricted breathing and chemical cartridges with identified breakthrough), but at least daily.
- All equipment will carry applicable MSHA/NIOSH approvals.

4.3 *SITE MONITORING*

FRI/FS activities at the Site may create potentially hazardous conditions, such as the release of hazardous substances into the breathing space or surrounding area. An evaluation of chemical hazards at the Site will be performed to ensure employee and public safety. Air monitoring will be

conducted using direct reading instruments. In addition to air monitoring in the exclusion zone for worker protection, we will also be implementing a Community Air Monitoring Plan (CAMP), which will screen the downwind perimeter of each designated work area for volatile organic compounds (VOCs) and particulates (i.e. dust). See exhibit 8 for (CAMP) details.

The following section describes the monitoring parameters to be evaluated during FRI/FS activities. Specific analytical instruments and air monitoring action levels are also discussed in the following section. In addition to monitoring

Atmospheric chemical concentrations at the Site will be monitored under the direction of the SHSC. Continuous air monitoring results will be used as an action level criteria for upgrading or downgrading levels of protective equipment and implementing additional precautions or procedures. Classes of contaminants found at the Site mainly include VOCs, and Semivolatile Compounds (SVOCs). These contaminants can enter the body through inhalation, ingestion, absorption or injection. Due to low concentrations of constituents identified in site media, initially personnel working within the exclusion zone will utilize Level D PPE. Air monitoring will be utilized to determine if upgraded levels of PPE are appropriate based upon the exceedance of site specific action levels. Field personnel will first implement engineering controls (e.g. work upwind and apply basic hygiene principles) to reduce the risk of exposure. If further protection is necessary, respiratory protection and personal protective equipment will be utilized to protect against potential exposure.

Wind direction will be monitored in the exclusion zone using a wind sock or surveyors' tape. This information will be used to determine upwind and downwind locations.

4.3.1 Site Monitoring Instruments

All air monitoring will be conducted with appropriate equipment to identify the contaminants of concern at the Site. The following instruments will be utilized, as necessary, to quantify the suspected materials at the Site:

- *Volatile Organic Compounds (VOCs)* - Photoionization detector (PID), Photovac MicroTip MP-100 or Thermo Environmental Instruments Model 580B OVM/Datalogger. Note: Exposure monitoring will not be performed utilizing a Flame Ionization Detector (FID) due to likely presence of methane gas.

- *Specific Toxics* - Direct reading detector tubes, such as a Draeger tube.

Direct reading instruments will be used continuously during the FRI/FS operations and as indicated in section 4.3.2. All instruments used during Site activities will be intrinsically safe for use in designated areas. Instruments will be calibrated prior to use and on an as-needed basis, thereafter consistent with the manufacturers recommendations. Calibration information will be documented in a Daily Site Safety Log.

All Site monitoring will be conducted under the supervision of the HSO. All on-Site readings will be recorded by the SHSC in the Daily Site Safety Log.

4.3.2 *Site Monitoring Frequency*

Site monitoring will be conducted to assess both the current conditions and changing status of airborne contaminant concentrations. The following air monitoring schedule will be performed at the Site:

- *Initial Background* - Upon initial entry and prior to initiation of any Site activities, to identify IDLH conditions, exposures above OSHA-PELs and site specific action levels.

- *Daily Background* - Prior to initiation of daily Site activities within the exclusion zone and at the conclusion of daily Site activities. Includes both upwind and downwind locations.

- *Contaminant Migration* - Degree of contaminant migration will be evaluated by monitoring at an upwind and downwind EZ perimeter location every two hours or as deemed necessary by the HSO.

- *Specific Toxic Monitoring* - Monitored in the presence of elevated readings near the drilling rig, as deemed necessary by the HSO.

Site monitoring will be conducted under the direction of the HSO and may be revised based on previous sampling results and current Site conditions. Site monitoring results will be documented in the Daily Site Safety Log provided as exhibit 2. Due to the short duration of the FRI/FS event, no sampling will be performed for subsequent laboratory analysis to determine potential employee exposures.

4.3.3 *Action Levels*

The following action levels have been established for activity cessation, Site evacuation, emergency response, implementation of special procedures, and the upgrade or downgrade in the level of personal protective equipment. The action levels are based upon OSHA Final Rule PELs promulgated by 29 CFR 1910 Subpart Z - Toxic and Hazardous Substances. Level D protection shall be used as a minimum for all Site

activities that do not pose a potential threat of exposure to elevated toxic or hazardous substances. The requirements for upgrading or downgrading and optional protective equipment will be determined by the HSO. Descriptions of the various levels of personal protection are presented in Section 4.2.

Total Volatile Organic Compound Action Levels

Total volatile organic compound (TVOC) action levels have been established to evaluate both employee exposure and contaminant migration. TVOC action levels will be monitored during FRI/FS. Action levels for TVOC are defined in Table 4-1.

Specific Toxics

A specific toxic action level has been established to evaluate employee or representative employee exposure to a specific contaminant. Vinyl chloride has been selected as the specific toxic, due to its low PEL and presence in groundwater at the site. Vinyl chloride will be monitored when TVOC levels exceed 5 ppm. This action level is shown in Table 4-2.

TABLE 4-1
TOTAL VOLATILE ORGANIC COMPOUND ACTION LEVELS

TVOC Concentration (ppm)[1]	Recommended Action or Level of Protection
Background to 5 ppm (TWA) in breathing zone[2] [3]	Level D
5 PPM to 100 ppm (TWA) in breathing zone[2]	Level C - Full face with OV cartridges
>100 ppm	Level B - Supplied air respirator

Notes:

(1) The breathing zone should be monitored for several minutes when volatile concentrations are close to action levels to determine whether the concentration is a temporary fluctuation or an exceedance.

(3) Measurements taken during Breathing Zone (BZ) monitoring should be Time Weighted Averages (TWA), averaged over five minutes.

(4) Readings greater than 1 ppm require measurement of vinyl chloride utilizing colorimetric detector tubes and implementation of action levels provided in Table 4-2.

Changes to the action levels and use of any personal protective equipment are allowed according to the professional discretion of the HSO based upon the nature of the field operations, observations, and their previous experience during other similar activities at other similar sites.

Based upon the feasibility of the use of personal protective equipment to prevent exposure, the HSO may utilize engineering controls such as mechanical ventilation to replace upgraded levels of personal protective equipment in areas outside of the EZ.

TABLE 4-2
VINYL CHLORIDE ACTION LEVEL

Vinyl chloride Concentration (ppm)(1)	**Recommended Action or Level of Protection**
Background to 1.0 ppm (TWA) in breathing zone(2)	Level D
>1.0 ppm (TWA)	Level B - Supplied air respirator

Notes:

(1) The breathing zone should be monitored for several minutes when volatile concentrations are close to action levels to determine whether the concentration is a temporary fluctuation or an exceedance. These action levels are considered adequately protective due to the limited duration of site activities.

(2) Measurements taken during Breathing Zone (BZ) monitoring should be Time Weighted Averages (TWA), averaged over five minutes.

Changes to the action levels and use of any personal protective equipment are allowed according to the professional discretion of the HSO based upon the nature of the field operations, observations, and their previous experience during other similar activities at other similar sites.

Based upon the feasibility of the use of personal protective equipment to prevent exposure, the HSO may allow the substitution of administrative or engineering controls to replace personal protective equipment in areas outside of the EZ.

4.4 *LEVELS OF PROTECTION*

4.4.1 *Remedial investigation Activities*

Of primary concern during on-site operations are intrusive activities. These activities will be conducted initially utilizing Level D PPE and include the following:

- Soil Borings;
- Drilling and construction of monitoring wells;
- Collection of ground water samples; and,
- Collection of Soil vapor and indoor air samples.

An exclusion zone (EZ) will be set up which includes all areas major soil disturbance including soil boring and monitoring well construction activities. Entry to these areas will be restricted to necessary personnel required to perform the necessary activity. The contaminant reduction zone (CRZ) will be placed upwind utilizing the prevailing wind direction. Areas outside of the EZ and CRZ will make up the support zone (SZ). All the FRI/FS activities will be initially performed in Level D PPE. Monitoring instruments will be utilized to indicate if action levels have been exceeded and additional protection is warranted for exclusion zone workers. Ambient air monitoring for TVOC, explosivity and vinyl chloride (if required) will be conducted in exclusion zone areas. The number of open excavations at one time will be minimized to limit the potential for sources of volatile organic compounds. Readings will be taken from background areas and within the breathing zone of the work area. Action levels for these instruments are defined in Tables 4-1and 4-2. The HSO will make the final decision regarding the level of protection for on-Site workers based upon the measurements indicated by direct reading instruments.

4.5 *REASSESSMENT OF PROTECTION PROGRAM*

The levels of protection chosen for the FRI/FS at the Site are based on information obtained from historical Site records and the results of investigations already completed at the Site. As additional work is conducted at the Site, additional information concerning the types and quantities of material present at the Site will be obtained. This additional information will be used to re-evaluate the chosen levels of protection. Levels of protection for various work activities will be modified if this additional information warrants such an action.

4.6 *LOGS, REPORTS AND RECORDKEEPING*

All logs, reports and records related to this project will be maintained in the custody of the SHSC. Following project completion, it will be transferred to ERM's offices located at 520 Broad Hollow Road, Melville, New York

5.0 *DECONTAMINATION*

5.1 *GENERAL PERSONNEL DECONTAMINATION*

Personnel involved with the FRI/FS activities may be exposed to contaminants in a number of ways, despite the most stringent protective procedures. While performing on-Site duties, Site personnel may come in contact with hazardous substances. Site equipment and monitoring instruments may also be exposed to hazardous substances.

In general, decontamination involves scrubbing with a detergent/water solution followed by clean water rinses. All disposable items shall be disposed of in designated lined containers to be sent for off-Site disposal. Non-disposable equipment will be decontaminated each time it leaves the exclusion zone. Certain parts of equipment, such as respirator harness assemblies and cloth components, are difficult to decontaminate. If grossly contaminated, they may have to be soaked for a period of time in a cleaning solution. Rubber components shall be soaked in detergent/ water and scrubbed with a brush. In addition to decontamination, all respirators, non-disposable protective clothing and personal articles soiled from exhalation or perspiration, must be sanitized before they can be used again. Each respirator user will be responsible for the proper maintenance, decontamination, and sanitizing of his/her own respirator and non-disposable personal protective equipment.

All PPE and decontamination water will be contained in 55 gallon drums for sampling and a determination of appropriate disposal. Details of this procedure are provided in Section 5.4.

5.2 *PERSONNEL DECONTAMINATION PROCEDURES*

The following procedures have been established to provide Site personnel with minimum guidelines for proper decontamination. These minimum procedures must be followed by personnel leaving the exclusion zone (see Section 6.3). The decontamination process shall take place at a reasonable distance from any area of potential contamination.

Designated stations will be established within the decontamination area and include at least wash tubs, scrub brushes, detergent/water and rinse water. Non-disposable equipment will be cleaned and staged for the next use. Wash stations shall consist of a potable water supply, hand soap and clean towels. In most instances, employees will perform self

decontamination. In cases where further assistance is necessary, such as Level B operations, employees will be designated to work the decontamination area. Modifications of the decontamination procedures may be necessary as determined by the HSO. Decontamination solutions will be contained in 55-gallon drums, sampled and disposed of consistent with regulatory guidance and applicable regulations.

5.3 *DECONTAMINATION PROCEDURES FOR PRESCRIBED LEVELS OF PROTECTION*

The following decontamination procedures shall be implemented during Site activities for the appropriate level of protection.

Level D - Personal Protection Decontamination Procedure

Step 1 - Segregated Equipment Drop: Deposit contaminated equipment (tools, sampling devices, monitoring instruments, etc.) onto plastic drop cloths.

Step 2 - Boot, Outer Glove and Coverall Wash: Brush overboots (if used), outer gloves (if used) and coveralls (if used) free of residual materials. If necessary, wash with detergent/water solution and rinse with water.

Step 3 - Boot, Outer Glove and Coverall Removal: Remove overboots (if used), outer gloves (if used), and coveralls (if used) in that order. Place disposable overboots, outer gloves, and coveralls into a container with a plastic liner. Stage non-disposable equipment for future use.

Step 4 - Inner Glove Wash and Removal: Wash and remove inner gloves (if used) and place in lined container.

Step 5 - Field Wash: Wash hands and face thoroughly.

Level C - Personal Protection Decontamination Procedure

Step 1 - Segregated Equipment Drop: Previously described.

Step 2 - Overboot, Outer Glove and Coverall Wash: Overboots, outer gloves and coveralls shall be scrubbed with a detergent/water solution.

Step 3 - Overboot, Outer Glove and Coverall Rinse: Rinse overboots, outer gloves and coveralls using generous amounts of water.

Step 4 - Tape Removal - Remove tape from around boots and gloves and place into container with a plastic liner.

Step 5 - Removal of Overboots and Outer Gloves: Remove overboots and outer gloves in that order. Non-disposable overboots and gloves will be staged for future use and disposable overboots and gloves will be placed into a container with a plastic liner.

Step 6 - Cartridge Change: This is the last step in the decontamination procedures for those workers wishing to change respirator cartridges and return to the exclusion zone. The workers cartridges are exchanged, new outer gloves and overboots are donned, and joints are taped. For workers moving to support zone, spent cartridges will be removed as part of Step 9.

Step 7 - Removal of Chemical-Resistant Clothing: With care, remove chemical resistant suit. The exterior of the suit shall not come into contact with any inner layers of clothing. Place disposable clothing in container with plastic liner.

Step 8 - Inner Glove Wash and Rinse: Inner gloves shall be washed with a detergent/water solution and rinsed with water.

Step 9 - Remove Respirator: Remove respirator and place on plastic. Keep face/glove contact to a minimum.

Step 10 - Inner Glove Removal: Remove inner gloves and deposit in container with plastic liner.

Step 11 - Field Wash: Wash hands and face thoroughly.

Level B - Personal Protection Decontamination Procedure

Step 1 - Segregated Equipment Drop: Previously described.

Step 2 - Overboot, Outer Glove, Coverall and SCBA Wash: Previously described. Use caution in cleaning the SCBA system, especially the regulator.

Step 3 - Overboot, Outer Glove, Coverall and SCBA Rinse: Previously described.

Step 4 - Tape Removal: Previously Described.

Step 5 - Removal of Overboots and Outer Gloves: Previously described.

Step 6 - Tank Change: This is the last step in the decontamination procedure for those workers wishing to change air tanks and return to the

exclusion zone. The worker's air tank is exchanged, new outer gloves and overboots are donned, and joints taped.

Step 7 - SCBA Backpack Removal: The SCBA shall be removed and placed on plastic. The face piece shall remain on the user and disconnected from the remaining SCBA unit before proceeding to the next station.

Step 8 - Chemical-Resistant Clothing Removal: Previously described.

Step 9 - Inner Glove Wash and Rinse: Previously described.

Step 10 - Remove Respirator: Previously described.

Step 11 - Inner Glove Removal: Previously described.

Step 12 - Field Wash: Wash hands and face thoroughly.

5.4 *DECONTAMINATION WASTEWATER, PPE AND SAMPLING EQUIPMENT DISPOSAL PROCEDURES*

The FRI/FS activities will generate small quantities of decontamination waste water, spent PPE, and expended disposable sampling equipment which will be contained in 55-gallon drums for off-site disposal. ERM intends to sample, characterize and dispose of the drums within a reasonable time period after sampling has been completed, as defined below. Drums will be placed adjacent to the decontamination zone for ease in placing waste materials in the drums, and for subsequent transportation and off-site disposal. All drums will be secured at the end of each day by placing the lid and securing the ring back on the drums and by tightening the drum bolts.

Drums containing spent PPE and disposable sampling equipment will be assumed to be a hazardous waste, labeled accordingly with commercially available labels, and disposed of by incineration at an appropriately permitted off-site facility. Waste characterization samples will be collected from the drums and analyzed prior to disposal. The PPE and sampling equipment drums as well as the drums containing decontamination wash water will remain on-site until the waste characterization data is available and arrangements for disposal have been finalized.

The drums containing decontamination wash water will also be sampled for waste characterization purposes so they may be profiled and accepted by an appropriate waste disposal facility. Waste characterization samples of the decontamination wash water will be collected on the last day of

field work and shipped to an NYSDOH accredited laboratory for analysis. The drums containing decontamination wash waters will be appropriately labeled with commercially available drum labels indicating that the drums contain waste material which must be managed as "Hazardous" until classified otherwise in accordance with ongoing laboratory analysis. All spent PPE, disposable sampling equipment and decontamination wash water drum labels will contain the following information:

- the name and address of the generator,
- the contents of the drum,
- drum content classification (i.e. Hazardous, Non-Hazardous, PCBs etc.)
- appropriate warnings relative to the material classification
- the operation that generated the contents,
- the start accumulation date,
- the telephone number of the responsible contact, and
- any other appropriate information relative to the drum's classification.

Following receipt of the analytical results of the drum characterization samples, the waste decontamination wash water will be profiled as either "RCRA and/or TSCA Hazardous" or "Non-Hazardous" and appropriate arrangements will be made for transportation and off-site disposal of the drums. The labels on the drums will then be changed to reflect the appropriate classification prior to shipment for off-site disposal. In addition, the waste characterization data will be used to complete the appropriate hazardous waste classification and waste manifest forms for the spent PPE and the disposable sampling equipment.

It is anticipated that the drums of waste to be generated through the sampling work to be performed by ERM will be removed from the Pride Solvents for disposal within 45 days after the termination of field activities. All activities related to drum storage and/or transportation for off-site disposal will be coordinated by ERM with the NYSDEC on-site representative. Copies of all waste disposal manifests and other documentation (i.e. Certificates of Disposal) will be provided by ERM to NYSDEC when it becomes available.

6.0 SITE ACCESS AND SITE CONTROL

6.1 SITE ACCESS

Access to Site activity areas will be limited to authorized personnel only. Such personnel include ERM staff, subcontractors and regulatory personnel. Access into the work areas will be limited to those authorized personnel with appropriate training, fit testing and medical surveillance, and wearing appropriate personal protective equipment. All active areas will be monitored by the SHSC to ensure unauthorized personnel do not enter.

6.2 SITE CONTROL

Certain procedures must be followed to ensure suitable control and limitation of access. For purposes of this plan, the "site" refers to the drilling location within the West Babylon Industrial Park area. All personnel entering the Site will report to the ERM Field Staff prior to conducting any field activities. Entrance onto the Site will only be permitted for authorized personnel. Specific work areas will be delineated.

6.3 WORK ZONES

Both physical and chemical hazards can be minimized by the establishment and maintenance of work zones. No zones shall be delineated so as to block active roads.

Exclusion Zone

An exclusion zone (EZ) shall be established at the location of all intrusive field activities prior to initiating excavation. The EZ shall be delineated by the field personnel to take into account the limits of the operating area and the spatial requirements of equipment and personnel. The perimeter of the EZ shall be delineated with a temporary warning tape or equivalent to ensure no unauthorized entry. All persons within the EZ shall wear the required level of personal protection. A wind direction indicator (i.e., wind sock or surveyors tape) will be located in the EZ to continuously monitor wind direction. A work area shall remain an exclusion zone until sampling and decontamination operations are completed.

7.0 EMERGENCY RESPONSE

7.1 PRE-EMERGENCY PLANNING

Pre-emergency planning is an integral part of any emergency response. Prior to the commencement of field work, the project team will meet to discuss the projects' health and safety requirements. Personnel roles, lines of authority and communication will be addressed, so that when the field work begins, the field team will be familiar with their responsibilities.

7.2 NOTIFICATION OF SITE EMERGENCIES

Appropriate authorities, as indicated in Table 7-1, will be immediately notified of the nature and extent of the emergency. Emergency procedures, under direction from the SHSC, will be initiated as indicated in Section 7.8. The SHSC will notify and coordinate activities with regulatory representatives.

Should an injured person have an excessive exposure to contaminated soils or materials, they will be decontaminated, if appropriate, and brought immediately to the hospital. The decision whether or not to decontaminate a victim is based upon the type and severity of the illness or injury and the nature of the contaminant. For some emergency victims, immediate decontamination may be an essential part of life-saving first aid. For others, decontamination may aggravate the injury or delay life-saving treatment. If decontamination does not interfere with essential treatment, it will be performed.

If decontamination can be performed, the protective clothing will be washed, rinsed and/or cut off. If decontamination cannot be performed, the victim will be wrapped in blankets, plastic or rubber to reduce contamination of other personnel. Emergency and offsite personnel will be alerted to potential contamination, and they will be instructed in specific decontamination procedures if necessary. At least one person familiar with the incident will be sent along with the victim during emergency treatment.

In the event of an emergency, Site personnel shall be evacuated to a safe distance as identified by the SHSC. A number of factors will go into the determination of a safe distance, they include:

- the toxicological properties of the substance;

- the physical state of the substance;
- the quantity and route of the release;
- the method of release;
- the vapor pressure of the substance;
- the vapor density relative to air;
- wind speed and direction;
- atmospheric stability;
- the height of the release;
- air temperature and temperature change with altitude;
- local topography;
- fires; and
- machinery failures.

Evacuation will proceed in an upwind direction if possible.

7.3 *RESPONSIBILITIES*

The SHSC will be responsible for responding to all emergencies, and will:

- Notify appropriate authorities and/or health care facilities of the activities and hazards of Site operations. Table 7-1 provides emergency telephone numbers that will be posted within the support zone.
- Ensure that the map (Figure 7-1) which details the most direct route to the nearest hospital and the list of emergency telephone numbers (Table 7-1) are posted on Site and in all site support vehicles. Both the route to the hospital and emergency contacts will also be posted in the SZ where FRI/FS activities are being conducted and at the main entrance. The SHSC will require all drivers of the support vehicles to become familiar with the emergency route and the travel time required at the beginning of project operations.

7.4 *ACCIDENTS AND INJURIES*

In the event of an accident or injury at the Site, appropriate emergency measures must be taken immediately to assist those who have been injured or exposed, and to protect others from hazards. The SHSC shall

be immediately notified and will respond according to the seriousness of the injury.

If the emergency involves personnel injuries, local Emergency Services will be contacted immediately. The SHSC, or a person designated by the

SHSC, should be prepared to provide the following information:

- exact location of the emergency;
- phone number he/she is calling from;
- type of injury(ies);
- how many persons have been injured; and
- what assistance or first aid is being given to the injured person(s).

Do NOT hang up unless told to do so. In most cases, the EMS dispatcher will require the caller to *stay on the phone.*
When emergency services arrive, Site personnel shall immediately inform them of the details of the situation and what type of chemicals and hazards may be encountered on the Site. If available, Material Safety Data Sheets should be given to the responders.

If warranted by the severity of the incident, emergency response personnel may enter the exclusion zone dependent upon monitoring data. If appropriate, Emergency personnel will exit the exclusion zone through the contaminant reduction zone utilizing the same decontamination procedures as are applicable to FRI/FS workers.

The SHSC will observe and document any and all recognized symptoms of injury or illness. A reference of common symptoms is provided as Table 7-2.

All occupational injuries and illnesses will be documented by the SHSC on an OSHA 101 form. This form is available in all ERM offices. Completed forms will be faxed immediately to the HSO for appropriate action.

First Aid

An emergency first aid facility shall be maintained at the Site for the duration of the project. First aid and CPR shall be administered only by qualified persons trained in first aid and CPR. Table 7-3 lists basic procedures for assisting an injured person.

Personnel will be informed of any changes in location of the Emergency First Aid Facility each morning during the daily health and safety meetings. If the location is changed mid-day, personnel will be informed

individually. The facility will be managed under the direction of the SHSC.

TABLE 7-2
REFERENCE OF COMMON SYMPTOMS

Type of Injury of Exposure	Symptom
Chemical Exposure, Ingestion or Inhalation	Symptoms of chemical exposure, ingestion or inhalation may include one or more of the following: Abnormal pulse Behavioral changes Breathing difficulties or abnormal breathing Changes in complexion or skin color Convulsions Coordination difficulties Coughing Dizziness or drowsiness Drooling Diarrhea Fatigue and/or weakness Irritation of eyes, nose, respiratory tract, skin, throat, mouth, or lips Headache Itching Light-headedness Nausea/vomiting Skin irritation or rash Sneezing Sweating Tearing Tightness in the chest Unconsciousness
Heat Stroke	Signs and symptoms of heat stroke are hot, red skin; very small pupils; and very high body temperatures-sometimes as high as 105 degrees. If the victim was sweating from heavy work or exercise, his or her skin may be wet; otherwise, it will feel dry.
Heat Exhaustion	The usual signs and symptoms of heat exhaustion are cool, pale, and moist skin, heavy sweating; dilated pupils, headache, nausea; dizziness; and vomiting. Body temperature will be nearly normal.
Hypothermia	Signs and symptoms of hypothermia are: shivering; a decreased and sometimes irregular heart rate; a weak pulse; cool skins; decreased blood pressure; decreasing core temperature and slow, irregular breathing.
Frostbite	Signs and symptoms of frostbite area: a sensation of cold followed by numbness; tingling, stinging and aching may be felt initially. The skin may appear white, reddish-purple and finally black; blisters may also be present.

TABLE 7-3
BASIC FIRST AID PROCEDURES

Chemical Exposure: **Ingestion or inhalation**

1. Contact Emergency Services.
2. If possible move chemical hazards away from the area of the injured person or the injured person away from the area of chemical hazards and decontaminate.
3. If appropriate, remove personal protective equipment.
4. Await Emergency Services.

First Aid:

1. Be calm and quickly evaluate the emergency.
2. Contact Emergency Services.
3. Do not move the injured person unless necessary or instructed to do so.
4. If possible, move any physical and chemical hazards away from the area of the injured person.
5. Take care of the most serious injuries first - breathing must be restored, bleeding must be stopped, etc.
6. Cover injured person to keep warm and monitor for shock.

Heat Related Injuries: **Heat Stroke**

1. Contact Emergency Services.
2. Remove person from heat to cool location.
3. Lie victim on back.
4. Remove personal protective equipment and loosen up clothing.
5. Cool victim fast (i.e. immerse in cool bath, ice packs, wrap with wet sheets or towels).
6. Care for shock and monitor breathing.
7. Await Emergency Services.

Heat Related Injuries: **Heat Exhaustion**

1. Remove person from heat to cool location.
2. Lie victim on back with feet up.
3. Remove personal protection equipment and loosen up clothing.
4. Cool victim (i.e. fanning, ice packs, wrap with wet sheets or towels).
5. Care for shock and monitor breathing.
6. If conscious and can tolerate it, provide a half-glass of water every 15 minutes.
7. Should see improvements within 30 minutes. (If not, contact Emergency Services).

Cold Related Injuries: **Hypothermia**

1. Contact Emergency Services.
2. Remove person from cold to warm location.
3. Remove any wet clothing.
4. Warm body slowly.
5. Care for shock and monitor breathing.
6. Await Emergency Services.

TABLE 7-3
BASIC FIRST AID PROCEDURES (cont'd)

Cold Related Injuries: **Frostbite**

1. Remove person from cold to warm location.
2. Remove personal protective equipment and clothing covering effected areas.
3. Place affected area in warm water to re-warm.
4. After re-warming, loosely bandage affected area.
5. Seek medical attention.

7.5 *SITE COMMUNICATIONS*

Telephones will be used as the primary off-Site communication network. Telephone services will be made available on-Site by mobile phones during the FRI/FS activities.

On-Site communications will be maintained via verbal communication and hand signals. Site communication systems will be set up by the SHSC. When verbal communication is ineffective, hand signals will be utilized.

- Hand grips throat - Can't breathe!
- Grip partner's wrist - Evacuate area immediately!
- Hands on top of head - Need Assistance.
- Thumbs up - O.K., No problem.
- Thumbs down - No, Negative.

7.6 *SITE ACCESS AND SECURITY*

In an emergency the SHSC must know who is on the site and must be able to control the entry of personnel into the exclusion zone areas to prevent additional injury and exposure. Therefore, access to Site activity areas will be limited to authorized personnel with appropriate training and medical surveillance, and wearing appropriate personal protective equipment. Such personnel may include authorized Owner representatives, subcontractors, and Regulatory personnel. All active areas will be monitored by the SHSC to ensure unauthorized personnel do not enter.

Sign-in procedures will be implemented to ensure that only authorized personnel participate in exclusion zone activities. The SHSC will coordinate this effort and maintain documentation accordingly. An Exclusion Zone Sign-In Sheet is presented as Exhibit 6 and a Site Sign-In Sheet is presented as Exhibit 7.

8.0 SPECIAL PRECAUTIONS AND PROCEDURES

8.1 POTENTIAL RISKS

The FRI/FS activities at the Site pose potential exposure risks from both chemical and physical hazards. The potential for chemical exposure to hazardous substances is significantly reduced through the use of personal protective clothing, engineering controls and implementation of safe work practices including air monitoring.

Physical hazards associated with the activities can also be encountered. Physical hazards may be encountered during activities involving sampling, heavy equipment, temperature extremes, traffic and overhead or underground utilities. This plan establishes precautionary measures to reduce the risks of these hazards. The hazards are addressed below.

8.1.1 HEAVY MACHINERY/EQUIPMENT

All Site personnel must remain aware of those Site activities that involve the use of heavy equipment and machinery. Since respiratory protection and eyewear often reduces peripheral vision of the wearer, it is essential that all personnel at the Site exercise extreme caution during operation of equipment and machinery to avoid physical injury to themselves or others. Personnel will always work under the assumption that the operator is not aware of their presence.

Machinery and equipment will be equipped with all appropriate safety and warning devices. Operators will inspect all machinery and equipment prior to operations. All unsafe or damaged equipment shall be identified by a "Danger - Do Not Operate" tag or equivalent.

8.2 HEAT STRESS

The timing of these activities may be such that heat stress may pose a threat to the health and safety of Site personnel. Acclimation periods and work/rest regimens will be implemented as necessary so that personnel do not suffer adverse effects from heat stress. Heat stress, if necessary, will be monitored in accordance with the American Conference of Governmental and Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) for Heat Stress or equivalent when the temperature is greater than 80°F. The following work/rest regimen will be utilized:

Temp °F	*Work-Rest Regimen*
80	Work Break Every 2 hours.
82	75% Work - 25% Rest, each hour.
85	50% Work - 50% Rest, each hour.
88	25% Work - 75% Rest, each hour.
90	Delay work until cooler temperatures prevail.

Special clothing and an appropriate diet and fluid intake will be recommended for all Site personnel to further reduce these temperature-related hazards. A good rule of thumb to prevent dehydration from heat stress is that fluid intake should equal fluid loss from the body, which can be accomplished through frequent small intakes of water. Potable water and/or a drink substitute (i.e., Gatorade) will be available for employee consumption.

8.3 COLD STRESS

The timing of remediation activities may be such that cold stress may also present a threat to the health and safety of Site employees. Work/rest schedules, with rest in a warming shelter, will be implemented as necessary to reduce adverse effects from cold exposure. Cold stress, if necessary, will be monitored in accordance with the ACGIH TLV for Cold Stress or equivalent. The addition of wind speed and the resulting wind chill will be considered when determining an appropriate work/rest schedule and appropriate clothing.

Site personnel will be encouraged to consume water to avoid dehydration. Potable water and/or a drink substitute (i.e., Gatorade) shall be available for employee consumption. Workers will wear adequately insulated clothing to limit exposure to cold.

8.4 TRAFFIC

Areas of operation located along active thoroughfares will utilize traffic cones, flag men, warning signs or other applicable measures to divert motorists safely around the Site activities. All employees involved in these activities will wear orange reflector safety vests.

8.5 *UNDERGROUND/OVERHEAD UTILITIES*

Overhead utilities, such as electrical wires, may also be encountered at the Site. Site personnel will ensure that equipment and machinery is kept clear of all overhead utilities. At least 10 feet of clearance will be maintained between equipment and overhead utilities for 50kv electric lines or less. For lines over 50kv, the minimum clearance shall be 10 feet plus 4 inches for each additional 10 KV. In transit, with the boom lowered, equipment clearance shall be 4 feet for voltages less than 50kv, and for voltages from 50kv up to 345kv, the clearance shall be increased 4 inches for every 10kv over that voltage.

All underground/overhead utilities will be marked out prior to the commencement of any work. This will be achieved through contacting the appropriate organization (i.e. One Call, Dig Safe, No Cuts etc.) which will notify all utilities in the area of what and where work is to be conducted. The Long Island One Call phone number is 800-272-4480. The call must be made 2-10 days before any drilling begins.

8.6 *STANDARD SAFETY OPERATING PROCEDURES*

The following are additional safety precautions for Site activities:

- Eating, drinking, chewing gum or tobacco, smoking or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in the exclusion, decontamination and other designated work areas.
- Hands and face will be thoroughly washed upon leaving the work area and before eating, drinking, or any other activity.
- Contact with potentially contaminated surfaces will be avoided. Personnel, wherever possible, will not walk through puddles, mud, or other discolored surfaces; kneel on ground; lean, sit or place equipment on drums, containers, vehicles or the ground.
- Medicine and alcohol can increase the effect of exposure to toxic chemicals. Therefore:
  - Personnel using prescription drugs shall inform the doctor who prescribed them of their potential contact with toxic materials;
  - Personnel who take over-the-counter drugs within a day before work on-site must inform the SHSC of the warnings listed on the drug's container (the part of the label that says, for example, "Do not take this medication if you are operating a motor vehicle");

- Alcoholic beverage intake will be prohibited during project operations. Personnel under the influence of alcohol or recreational or illegal drugs will not be allowed on-site.

- Personnel and equipment in the work areas will be minimized and consistent with effective Site operations.
- Hearing protection may be required for Site personnel working around heavy equipment. This requirement will be at the discretion of the SHSC.
- Any work operations conducted on hazardous energy sources will be performed in accordance with 29 CFR 1910.147 - Control of Hazardous Energy Sources.
- Employees will always utilize the buddy system.
- Material Safety Data Sheets (MSDSs) will be provided for all materials brought on-Site.
- All on-Site electrical systems will be maintained in accordance with 29 CFR 1926 Subpart K - Electrical and will meet applicable 1993 National Electric Code specifications.
- General trash and waste material will be deposited in designated receptacles.
- Whenever decontamination procedures for protective clothing are in effect, the entire body shall be thoroughly washed as soon as possible after the protective clothing is removed.

8.8 ACCIDENT PREVENTION PLAN

An accident prevention plan (APP) has been incorporated into this HASP as indicated below and as referenced in the appropriate sections.

Safety Meetings

Safety meetings will be performed each week. Pre-entry briefings will also be performed prior to the initiation of any new activity. Additional information is provided in Section 3.2.

Fire Prevention and Protection

A firefighting program will be followed throughout all phases of FRI/FS. All fires, regardless of size or stage, will require the immediate notification of the Fire Department. This program also provides for effective firefighting equipment (two 20 lb ABC-rated extinguishers) to be available without delay and will be designed to effectively meet all incipient stage fires as they occur as required by 29 CFR 1926.151. Should the fire be past

the initial or beginning stage and can no longer be controlled or extinguished by portable fire extinguishers, evacuation of the area will be implemented.

Firefighting equipment will be conspicuously located and readily accessible at all times and will be periodically inspected and be maintained in operating condition in accordance with 29 CFR 1920.150.

Site Housekeeping

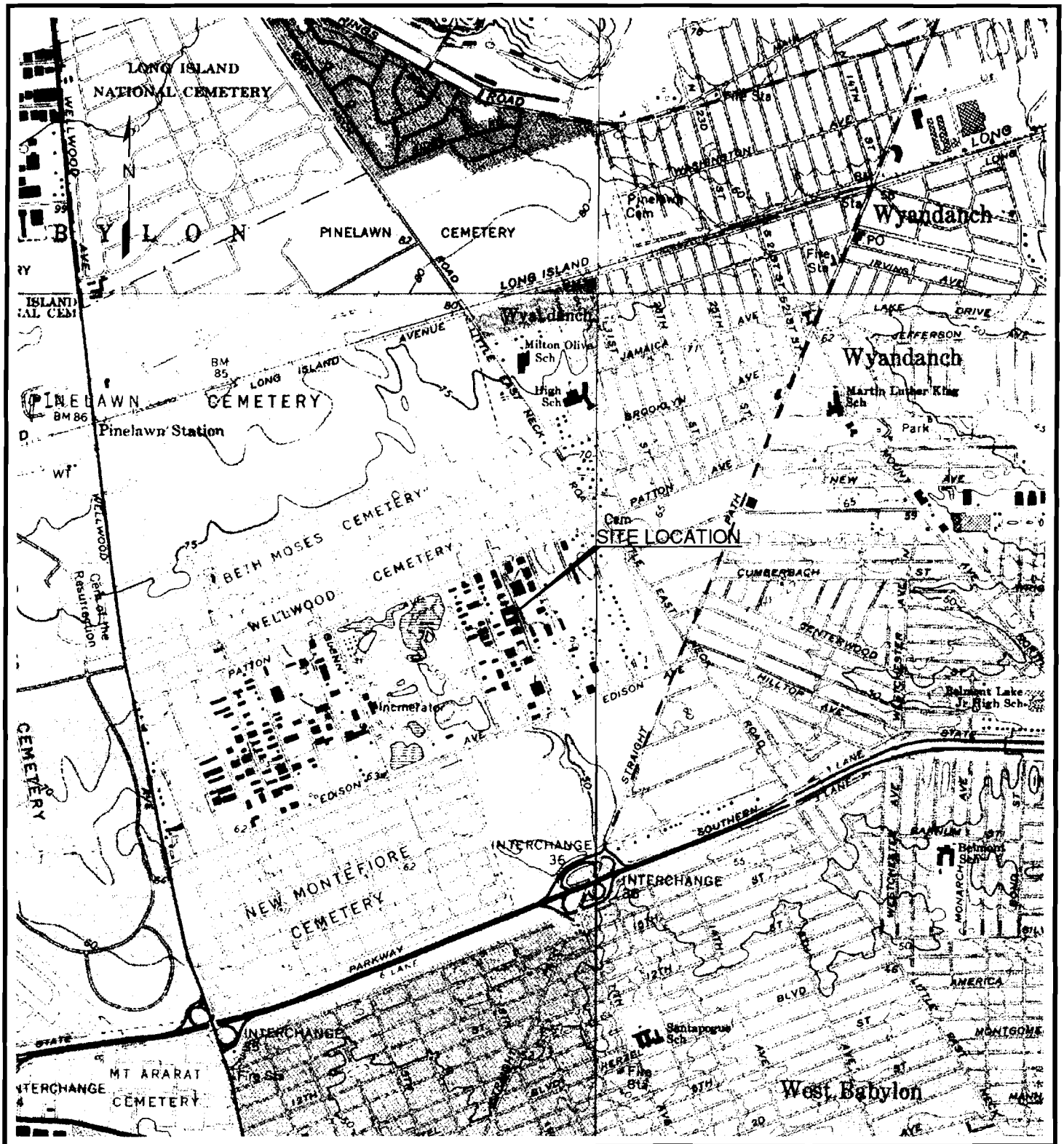
Form and scrap lumber with protruding nails and all other debris will be kept clear from all work areas in accordance with 29 CFR 1926.25. Combustible scrap and debris will also be removed at regular intervals. Containers will be provided for collection and separation of all refuse. Covers will be provided on containers used for flammable or harmful substances. Wastes will be disposed of at frequent intervals.

Mechanical Equipment Inspection

All vehicles in use will be checked at the beginning of each shift to ensure that all parts, equipment, and accessories that affect safe operation are in proper operating condition and free from defects. All defects will be corrected before the vehicle is placed in service in accordance with 29 CFR 1926.601.

Confined Spaces

No confined spaces will be entered as part of the FRI/FS program.



0 2000' 4000'

APPROX. GRAPHIC SCALE

SOURCE: U.S.G.S. QUADRANGLE MAPS, AMITYVILLE, N.Y., HUNTINGTON, N.Y., GREENLAWN, N.Y., BAY SHORE WEST, N.Y.

TITLE

SITE LOCATION MAP
NYSDEC I.D. NO. 1-52-025
WA: D-003970-02

PREPARED FOR

PRIDE SOLVENTS

ERM Environmental Resources Management			SCALE: GRAPHIC	FIGURE: 1
DRAWN: Y.S.	JOB NO.: 7270204003	FILE NAME: 72702.04	DATE: 12/18/02	

Yahoo! Driving Directions

Starting from: A 188 Lamar St, West Babylon, NY 11704-1312

Arriving at: B 366 Broadway, Amityville, NY 11701-2711

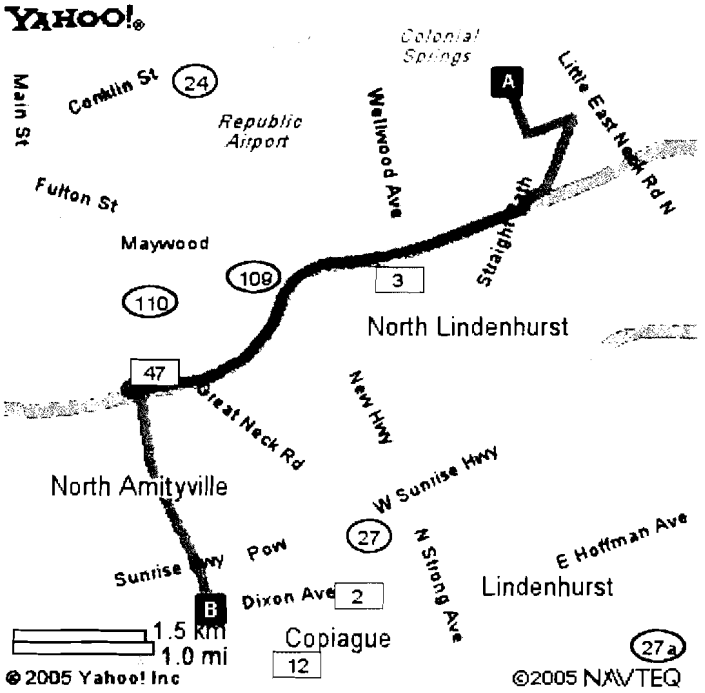
Distance: 6.5 miles **Approximate Travel Time:** 12 mins

Your Directions

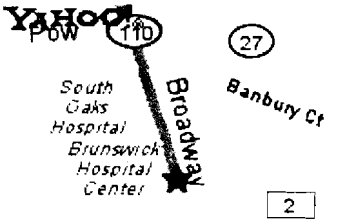
1.	Start at **188 LAMAR ST, WEST BABYLON** - go **0.4** mi
2.	Turn L on **EDISON AVE** - go **0.3** mi
3.	Turn R on **STRAIGHT PATH** - go **0.5** mi
4.	Bear R onto **SOUTHERN STATE PKY** toward **SOUTHERN PARKWAY WEST** - go **3.4** mi
5.	Take exit **#32S/RT-110 SOUTH** onto **BROADWAY|RT-110|** toward **AMITYVILLE** - go **1.8** mi
6.	Arrive at **366 BROADWAY, AMITYVILLE,** on the R

When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.

Your Full Route



Your Destination



Address:
366 Broadway
Amityville, NY 11701-2711

TABLE 1-1: EXPOSURE LIMITS AND PHYSICAL PROPERTIES OF COMPOUNDS OF POTENTIAL CONCERN

Compound	Highest Observed Concentration *(specify units and media)*	PEL/TLV *ppm or mg/m³ (specify)*	IDLH *ppm or mg/m³ (specify)*	Warning Concentration *(in ppm)*	Symptoms & Effects of Acute Exposure	Photoionization Potential
Ethylbenzene	52 ppb-GW	100 ppm	800 ppm	200 ppm	Irritation to eyes and nose. Headache, narcosis	8.71
Toluene	940 ppb-GW	200 ppm	500 ppm	1.7 ppm	Fatigue, confusion, euphoria, dizziness, headache, tears.	8.80
Xylene	130ppb-GW	100 ppm	900 ppm	5 ppm	Irritation to eyes, nose and throat. Drowsiness, nausea, incoordination.	8.50
Chlorobenzene	1 ppb-GW	75 ppm	2 mg/m³	2 ppm	Irritation to eyes, skin, nose; Drowsiness, incoordination, central nervous system depressant	9.07
1,2-Dichloroethylene	2400 ppb-GW	200 ppm	1000 ppm	--	Irritation to eyes, respiratory sys, CNS depres	--
1,1-Dichloroethane	260 ppb-GW	100 ppm	3000 ppm	--	Irritation to skin, CNS depres, lung damage	--
1,1-Dichloroethene	170 ppb-GW	NA	NA	--	Irritation to eyes, skin, throat, nausea, (carcinogenic)	--

NA - Not Available
NE - None Established
U - Unknown
Ca - NIOSH has recommended that the substance be treated as a potential humancarcinogen.
S - Soil
SW - Surface Water
T - Tailings
W - Waste
TK - Tanks
SD - Sediment
A - Air
GW - Ground Water
SL - Sludge
D - Drums L - Lagoon
OFF - Off-site

TABLE 1-1: EXPOSURE LIMITS AND PHYSICAL PROPERTIES OF COMPOUNDS OF POTENTIAL CONCERN

Compound	Highest Observed Concentration *(specify units and media)*	PEL/TLV *ppm or mg/m³ (specify)*	IDLH *ppm or mg/m³ (specify)*	Warning Concentration *(in ppm)*	Symptoms & Effects of Acute Exposure	Photoionization Potential
1,2 Dichloroethane	--	50 ppm	50 ppm	--	Irritation to eyes, corneal opacity, CNS depres, nausea, vomit, (carcinogenic)	--
1,1,1-Trichloroethane	1500 ppb-GW	350 ppm	700 ppm	--	Irritation, eyes, skin,CNS depres,	--
Trichloroethylene	420 ppb-GW	100 ppm	Ca 1000ppm	--	Irritation to eyes, nose, throat liver damage, (Carcinogenic)	--
Tetrachloroethylene	180 ppb-GW	100 ppm	150 ppm	--	Irritation to eyes, nose, throat liver damage, (Carcinogenic)	--
Vinyl chloride	65 ppb-GW	1 ppm	NA	--	Weak, Abdominal pain, pallor (carcinogenic)	--
Methylene Chloride	4 ppb-GW	100 ppm	2000 ppm	--	Dizziness, nausea, vomit, slurred speech, stagger convulsions, (carcinogenic)	--
Naphthalene	--	10ppm	250ppm	38ppm	Irritation to eyes, upper resp. system, stomach pain	8.12

NA - Not Available
S - Soil
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W - Waste
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OFF - Off-site

TABLE 1-2
PHYSICAL SAFETY CONCERNS

HAZARD	DESCRIPTION	LOCATION	PROCEDURES USED TO REDUCE HAZARD
Heavy equipment	Drill Rigs	Used throughout Site	Personnel maintain eye contact with operators; hard hats, safety shoes and safety glasses worn during equipment operation when required.
Existing Underground Utilities	Storm water, sewer, electrical, gas	Verify with area utilities.	Verify number and location of utilities prior to Site operations. Locate prior to subsequent excavation activities.
Water	Ground water	Throughout Site	At least two workers present; safety fencing and barricade tape.
Power lines	Aboveground	On-site and off-site.	Maintain at least 10 feet of total clearance for lines 50 KV or less. For lines over 50kv, the minimum clearance shall be 10 feet plus 4 inches for each 10kv. In transit, with the boom lowered, equipment clearance shall be 4 feet for voltages less than 50kv and for voltages from 50kv up to 345kv, the clearance shall be increased 4 inches for every 10kv over that voltage.
Noise	During Site activities	Throughout Site	Hearing protectors with proper noise reduction rating.
Temperature extremes	Hot weather activities. Cold weather activities.	Throughout Site	Protection as designated by Site Safety Officer.
Handling Drums	Potential pinch points	Throughout drum storage area	Maintain adequate clearance between drum and other objects. Keep feet clear during movement.

TABLE 7-1
EMERGENCY CONTACT/NOTIFICATION SYSTEM

Emergency Contacts	Name	Telephone
Health and Safety Officer		(631) 756-8900
Site Health and Safety Coordinator		(631) 756-8929/ (516) 315-8305
On-Site Operations Manager	Eugene Gabay	(631) 756-8929/ (516) 315-8305
Hospital – Brunswick Hospital	West Islip	(631) 789-7000
Police Department (Village)	Suffolk County	911
Fire Department	West Babylon	911
NYSDEC Representative	Nancy Garry	(518) 402-9621
NY Poison Information System		(800) 962-1253
NYSDOH		(800) 458-1158
EPA Emergency Response Team		(908) 321-6660
National Response Center		(800) 424-8802
Center for Disease Control		(800) 232-4636

DIRECTIONS TO PRIMARY HOSPITAL (see Figure 7-1)
Distance Approx. Miles

From site, go west on Edison Avenue, make a left onto Wellwood Avenue. Take the Sunrise Highway West. Exit at the South 110 exit. Head South on Rte. 110, turns into Broadway. Brunswick Hospital Center is ahead on the right.

EXHIBIT 1

HEALTH AND SAFETY PLAN REVIEW RECORD

I have read the FRI/FS Health and Safety Plan for the Pride Solvents and have been briefed on the nature, level, and degree of exposure likely as a result of participation in this Project. I agree to conform to all the requirements of the Health and Safety Plan.

_____
Employee Signature

_____ _____
Name Date

_____
Project Manager Signature

_____ _____
Name Date

EXHIBIT 2
DAILY SITE SAFETY LOG

Site: Pride Solvents
Project: Focused Remedial Investigation and Feasibility Study
Time on: _____ Time off: _____
Weather/Temperature: _____
Wind Direction: _____

Site Safety Talk: Yes_____ No_____

Topics: _____
_____
_____
_____

Daily Safety Inspection:

Time:_____ Initials:_____ Time:_____ Initials:_____

Comments:_____

Instrument Calibration:

Instrument	Time	Calibration Gas	Calibration Conc.	Actual Conc.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Comments:_____

Personal Protective Equipment: Universal Equipment - hard hat, safety glasses and work boots.

Task 1:	Task 2:	Task 3:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date:_____

Air Monitoring:

Concentration

Time/Location:	Inst:	Settings:	Inst:	Settings:

Comments (including upgrade, non-compliance, etc.):

_____
_____
_____
_____
_____

Site Safety Officer:_____Signature:_____Date:_____

EXHIBIT 3

CONTRACTOR OCCUPATIONAL HEALTH AND SAFETY

CERTIFICATION

Project: _____

Contractor: _____

1. Contractor certifies that the following personnel to be employed during on-site FRI/FS activities have met the following requirements of the OSHA Hazardous Waste Operations Standard (29 CFR 1910.120) and other applicable OSHA standards. (Indicate date below.)

Contractor Personnel	Medical Examination	Training Certification	Respirator
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

2. Contractor certifies that it has received a copy of the Health and Safety Plan and will ensure that its employees are informed and will comply with its requirements.

3. Contractor further certifies that is has read and understands and will comply with all provisions of its contractual agreement with ERM.

Signed: _____

Date: _____

EXHIBIT 4 TRAINING ACKNOWLEDGMENT FORM

NAME: _____
SOCIAL SECURITY: _____
EMPLOYER: _____

I have completed the required training for work to be conducted at the Pride Solvents, including the following topics:

a. Work Rules and Safety Requirements;
b. Personal Protection Equipment;
c. Potentially Hazardous Chemicals;
d. Emergency Equipment;
e. Reporting Injuries and Illnesses;
f. Emergency Procedures;
g. Job Assignments;
h. Personal Hygiene;
i. Medical Tests;
j. Motor Tests; and
k. Standard Operating Procedures.

I further confirm that a respirator fit test was conducted within the past year and that I have been issued a respirator of the same type.

Employee:

Signature:_____ Date:_____

I certify that this employee has received adequate safety training and understands the requirements of the Health and Safety Plan.

Site Safety Officer:

Signature:_____ Date:_____

EXHIBIT 5 FIELD MEDICAL DATA SHEET

Name:_____ Phone:_____
Address:_____
Date of Birth:_____ Height:_____ Weight:_____
Allergies:_____
Particular sensitivities:_____
Do you wear contact lenses:_____ *Note: Contact lenses are not permitted on-site*
List exposures to hazardous chemicals, if any, and resultant illness or symptoms.

_____
_____
_____

List medications you presently use:_____

_____
_____

List any medical restrictions:_____

_____
_____

Special medical or incident response training:_____

_____
_____

Name, address and phone number of personal physician:

_____
_____
_____

Nearest Relative:_____ Phone:_____

_____ _____
Employee Signature Date

EXHIBIT 6 EXCLUSION ZONE SIGN-IN SHEET

Site: *Pride Solvents* Date:____________________

Remedial Investigation and Feasibility Study

Employee	Company	Level of Protection	Time In	Time Out

EXHIBIT 7 SITE SIGN-IN SHEET

Site: *Pride Solvents Site*
Remedial Investigation and Feasibility Study

Date:____________

Employee	Company	Time In	Time Out

EXHIBIT 8 Generic Community Air Monitoring Plan

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air. The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH. Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

9.0 COMMUNITY AIR MONITORING PLAN

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

10.0 VOC MONITORING, RESPONSE LEVELS, AND ACTIONS

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

- All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

11.0 *PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS*

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

- All readings must be recorded and be available for State (DEC and DOH) personnel to review.