

NYSDEC

**1996 CLEAN WATER/CLEAN AIR BOND ACT
ENVIRONMENTAL RESTORATION PROJECTS
TITLE 5**

SITE MANAGEMENT PLAN

**FREDERICK PROPERTY ENVIRONMENTAL RESTORATION PROJECT
147 STATE STREET**

NYSDEC SITE B00131-8

MANCHESTER, NEW YORK

Submitted To:

**NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
AND
NYS DEPARTMENT OF HEALTH**

Submitted By:

VILLAGE OF MANCHESTER, NEW YORK

JANUARY 2007

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VILLAGE OF MANCHESTER, NEW YORK
FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION PROJECT
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SITE MANAGEMENT PLAN
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1. INTRODUCTION

1.1. PROJECT.

The New York Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) selected a remedy for the Frederick Property Environmental Restoration Project located at 147 State Street in the Village of Manchester, New York. The presence of hazardous substances that created threats to human health and /or the environment were addressed by the remedial plan selected.

Past automotive service and fueling operations have resulted in the disposal of hazardous substances, including volatile organic compounds (VOCs). These hazardous substances have contaminated the soil and groundwater at the site.

To eliminate or mitigate these threats, the NYSDEC selected the following remedial plan:

- Demolish the existing building including removal of the floor drainage system and subsurface hydraulic lift units and evaluate surrounding soil conditions.
- Remove stone dry well area behind building and evaluate surrounding soil conditions.
- Remove soils contaminated at levels above SCGs to prevent further groundwater contamination.
- Create an Operation, Maintenance and Monitoring Plan to track natural attenuation of contaminants in groundwater following source soil removal.
- Install institutional and engineering controls to restrict groundwater usage and prevent vapor intrusion into any future buildings on this site.

The existing building has been demolished including the removal of all subsurface drainage systems and hydraulic lifts. The dry well was excavated and closed. All surrounding contaminated soil was excavated and removed. This Site Management Plan covers institutional and engineering controls in place, the Operation, Maintenance and Monitoring Plan and a Site Monitoring Plan for the continued remedial work at this site.

2. INSTITUTIONAL AND ENGINEERING CONTROLS

2.1. INSTITUTIONAL CONTROLS.

Possible future use for the Frederick Property may be restricted residential, recreational, commercial or light industrial use as long as the following long-term applicable institutional controls, in the form of an Environmental Easement on file with the Ontario County Clerk's Office, are employed to the use of the Frederick Property:

- Any use of groundwater as a source of potable or process water without necessary water quality treatment as determined by the NYSDOH, and prior notification and approval of the NYSDEC, shall not be permitted.
- Any proposed structure constructed on the property shall have an approved soil vapor intrusion barrier system installed in accordance with NYSDEC regulations and directives.

The Controlled Property may not be used for a higher level of use such as unrestricted use, and the above-stated institutional controls may not be discontinued without an amendment or extinguishment of the Environmental Easement. A draft copy of the Environmental Easement is attached as Appendix A.

2.2. ENGINEERING CONTROLS.

In addition to the institutional controls listed above, the following engineering controls shall be employed and apply to the Frederick Property:

- Turf maintenance shall be performed by the Village of Manchester.
- Eight (8) on-site monitoring wells installed as part of the Site investigation Work Plan shall be maintained and inspected annually. These wells are the sampling points for tracking groundwater natural attenuation as required in the Operation, Maintenance and Monitoring and Site Management Plans.
- Access to and on the site shall be limited, restricted and controlled by the Village of Manchester.

Access to the property will be granted to NYSDEC and designated personnel for the purpose of performing inspections and the required annual monitoring and sampling of groundwater as outlined in this plan.

3. ANNUAL CERTIFICATION

The Village of Manchester, as owner of the property will provide an annual certification report prepared and submitted by a professional engineer or environmental professional acceptable to NYSDEC, which will certify that the institutional and engineering controls put in place are unchanged from the previous certification. The report will also certify that nothing has occurred that would impair the ability of the controls to protect public health, the environment or constitute a violation or failure to comply with any operation and/or maintenance.

The annual certification will address and evaluate the effectiveness of the institutional and engineering controls employed. The results from sampling data collected used to evaluate the effectiveness of the remedial work and to determine the need for further remedial action or sampling will be included in the annual certification report. Copies of field logs with data collected from each sampling event including field measurements, weather conditions and comments will be included in the annual certification report. All laboratory analysis results from groundwater samples collected will be included in the report.

The annual certification report will state if any new information concerning the quality of groundwater on the site is discovered.

4. SITE MONITORING PLAN

Groundwater monitoring shall be performed annually for a five (5) year period. Key monitoring points will include the upgradient wells at the site (MW-1/RW-1), wells in the vicinity of the former tanks (MW-2/RW-2 and MW-3/RW-3), and the wells downgradient of the building (MW-5) and the dry well area (MW-6). This program will allow the effectiveness of the remedial work to be monitored.

4.1. GROUNDWATER SAMPLING PROCEDURES.

- 4.1.1. Groundwater samples will be collected in order; first from monitoring wells considered least impacted, followed by those considered most impacted. Generally upgradient wells will be sampled first.
- 4.1.2. Measurements of total organic vapor pressure will be performed using a Photo Ionization Detector (PID) by removing the well vault cover and opening the well cap slightly and placing the instrument probe beneath the cap. After the reading has been obtained, the well cap will be completely removed and the well will be allowed to ventilate for a period of 3 to 5 minutes. After the wellhead has been ventilated, a measurement in the breathing zone will be collected. See the Health and Safety Plan for specific health and safety procedures.
- 4.1.3. Depth to water will be measured from the top of the well casing to the top of the water surface to the nearest 0.01- foot during sampling. Ground surface and top of casing elevations will be surveyed to within 0.01-foot so that water elevation can be calculated.
- 4.1.4. An interface sounding device capable of detecting free-phase hydrocarbons will be used if free product is detected in the well.
- 4.1.5. Elevation of groundwater in feet will be calculated and recorded given the elevation of the top of the wellhead and depth to water.
- 4.1.6. Low-flow (minimal draw-down) groundwater sampling procedures will be utilized. Groundwater samples will be collected utilizing a bladder or peristaltic pump to minimize volatilization. A flow rate of 0.5 L/min or less will be used to achieve minimal draw-down (ideally <0.1 m) and minimize stress to the system.

4. SITE MONITORING PLAN (continued)

4.1. GROUNDWATER SAMPLING PROCEDURES. (continued)

- 4.1.7. A flow through cell will be utilized to monitor water quality parameters, including pH, conductivity, ORP, turbidity, DO, and temperature. Stabilization will be achieved when three successive readings taken every three to five minutes are within ± 0.1 standard units for pH: $\pm 3\%$ for conductivity; ± 10 mv for ORP; and $\pm 10\%$ for turbidity, DO, and temperature.
- 4.1.8. Departures from the standard sampling procedure will require prior approval from the NYSDEC, will be documented in the field book and be included in the Annual Site Monitoring Report.
- 4.1.9. Samples to be analyzed for volatile organic compounds will be obtained so that the sample container is headspace free. All such samples will be collected in 40-milliliter (ml) vials with Teflon septa. The container will be immediately capped so that volatilization is minimized. This will be achieved by filling the container to slightly overflowing, forming a meniscus at the mouth of the container. The cap will be placed upon the convex meniscus and tightly sealed. To check that the sample is air-free, the container will be inverted and the cap gently tapped. The absence of entrapped air indicates a successful seal. When air is evident in the container, the entire sample will be discarded and another sample will be collected. Evacuation and sampling data for each well will be recorded in the field logbook at the time of sampling and will be included in the Annual Site Monitoring Report.

4. SITE MONITORING PLAN (continued)

4.2. SAMPLE HANDLING.

Groundwater samples collected in the field will be labeled immediately. Labels with adhesive backing will be completed with indelible ink and affixed to the side of the sample container. Information written on sample labels will include:

- a. Project Number
- b. Site location
- c. Sample location (monitor well number and depth)
- d. Analysis required
- e. Sample number
- f. Initials of sampler
- g. Date
- h. Time

The label will be securely attached to the sample container to minimize loss or mutilation. Each label will be filled out as completely as possible prior to collecting sample.

If samples are to be sent to a fixed-base laboratory via courier, seals will be placed over the container lids to discourage and detect unauthorized tampering with the samples. The sample seals will include the following information:

- a. Project number
- b. Sample number
- c. Initials of sampler
- d. Date
- e. Time

The chain-of custody for possession and responsibility of samples must be documented from the time and place of the sample acquisition to the time and place of their final destination. To maintain and document sample possession, chain-of-custody procedures will be followed that include the completion of chain-of custody records and various other requirements.

4. SITE MONITORING PLAN (continued)

4.3. DECONTAMINATION PROCEDURES.

Sampling equipment will be decontaminated prior to and between samples and / or sampling locations as follows:

- 4.3.1. Clean in solution of alconox and water.
- 4.3.2. Rinse using potable water.
- 4.3.3. Let air dry.

If free-phase product is encountered during sampling, an additional rinse of diluted methanol followed by a potable water rinse will be added to the above procedure.

4.4. DISPOSAL OF WASTE.

Solid and liquid waste generated during field work will be containerized and disposed of at a permitted waste disposal facility in accordance with NYSDEC.

5. ENVIRONMENTAL EFFECTIVENESS MONITORING

All water quality data including field parameters compiled from pre-remedial investigative work, post-remedial work and annual sampling as a result of this plan shall be collected, compiled and compared on an annual basis. Data collected in the field logbook shall also be included and compared in the annual report. Any significant observations including weather conditions, groundcover growth, site maintenance or unauthorized use of the property will be noted. Data will be used to track the natural attenuation of contaminants in the groundwater.

6. ANALYTICAL PROGRAM

Water quality data is required to meet the objectives of the groundwater monitoring plan. Water quality data will consist of field parameters including pH, temperature, conductivity, dissolved oxygen, ORP and laboratory analysis for TCL VOCs and SVOCs. The final round of groundwater samples will include ASP Category B deliverables and DUSR evaluation.

The quantity of groundwater samples will be a minimum of eight (8) on-site samples per annual event.

6.1. QA/QC SAMPLES.

The laboratory will be requested to run a series of duplicate analyses on sample extracts as a check on laboratory procedures (MS/MSD). One duplicate groundwater sample will be collected for each annual groundwater sample.

Dedicated sampling equipment will be used for any materials that will contact the groundwater samples (ie. tubing or boilers). In the event that non-dedicated equipment is used, one equipment blank per sampling day will be collected to ensure that non-dedicated sampling devices have been effectively decontaminated. The equipment blanks will be collected after the sampling equipment has been decontaminated by running de-ionized water through the equipment and into two 40-ml VOA vials. The equipment blank will be analyzed for volatiles only.

One trip blank per sample shipment will be submitted for analysis to the laboratory to evaluate the possibility of air borne cross-contamination of samples in the field. The trip blank will be prepared and supplied by the laboratory and will accompany samples in the field and to the laboratory. The trip blank will be analyzed for volatiles only.

7. EVALUATION OF MONITORING RESULTS

The results from sampling data collected will be used to evaluate the effectiveness of the remedial work and to determine the need for further remedial action or sampling. The monitoring program will be evaluated after a five (5) year period to determine if further monitoring is necessary. At the end of the five year period NYSDEC will make the determination to discontinue or modify the monitoring plan based on groundwater sample analysis.

8. RECORDS

All records, forms, laboratory analysis reports and copies of logbooks will be submitted to the professional engineer or environmental professional acceptable to NYSDEC responsible for the compilation and submittal of the annual certification report.

APPENDIX A

ENVIRONMENTAL EASEMENT

**ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36
OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW**

THIS INDENTURE made this _____ day of _____, 20____, between Owner(s) Village of Manchester having an office at 8 Clifton Street, Manchester, New York 14504 (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and of ensuring the potential restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor is the owner of real property located in the Village of Manchester, Ontario County, New York known and designated on the tax map of the Village of Manchester as Map No. 31, 20-1-4, being the same as that property conveyed to Grantor by deed on the 22nd day of September 1967, and recorded in the Land Records of the Ontario County Clerk at Liber 686, page 661, comprised of approximately 0.479 acres, and hereinafter more fully described in Schedule A attached hereto and more fully described in the "Controlled Property"; and

WHEREAS, the Commissioner does hereby acknowledge that the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established at this Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the covenants and mutual promises contained herein and the terms and conditions of State Assistance Contract Number C302654 Grantor grants, conveys and releases to Grantee a permanent Environmental Easement pursuant to Article 71,

B. The Controlled Property may not be used for a higher level of use such as unrestricted use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

D. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Controlled Property, including:

1. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

2. The right to give, sell, assign, or otherwise transfer the underlying fee interest to the Controlled Property by operation of law, by deed, or by indenture, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by

Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person intentionally violates this Environmental Easement, the Grantee may revoke the Certificate of Completion provided under ECL Article 27, Title 14, or Article 56, Title 5 with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach. Grantor shall then have a reasonable amount of time from receipt of such notice to cure. At the expiration of said second period, Grantee may commence any proceedings and take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement in accordance with applicable law to require compliance with the terms of this Environmental Easement.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar its enforcement rights in the event of a subsequent breach of or noncompliance with any of the terms of this Environmental Easement.

6. Notice. Whenever notice to the State (other than the annual certification) or approval from the State is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information: County, NYSDEC Site Number, NYSDEC Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to: Environmental Easement Attorney
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-1500

Such correspondence shall be delivered by hand, or by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner

County: Ontario

Site No: B00131

Contract/Order No: C302654

EDMS # 270354 and 276575

APPENDIX B

OPERATION, MAINTENANCE AND MONITORING PLAN

VILLAGE OF MANCHESTER, NEW YORK
FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION PROJECT
147 STATE STREET

NYSDEC SITE B00131-8

OPERATION, MAINTENANCE AND MONITORING PLAN

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Health and Safety Plan with Emergency Contingency Plan	

1. PURPOSE

The Operation, Maintenance and Monitoring Plan and the Site Management Plan provide direction and guidance for the operational procedures, maintenance activities and requirements for the continued evaluation of groundwater quality on the property.

The Operation, Maintenance and Monitoring Plan consists of an annual groundwater sampling event and periodic inspection and maintenance activities. Data collected and interpreted from the annual sampling event will be used to analyze and track the natural attenuation of contaminants in the groundwater at the site. Maintenance and inspection activities will consist of mowing, marking and preservation of monitoring wells and controlling access to the property. The five year Plan requires the collection and monitoring of groundwater from the existing monitoring wells located on the site outlined in Section 4 of the Site Management Plan. The provisions of the Site Management Plan will be implemented in the Operation, Maintenance and Monitoring Plan.

The completed remedial work will not immediately meet groundwater standards therefore a sampling and monitoring plan will be implemented. Groundwater sampling will be performed annually for a period of five (5) years following remedial site work. Key monitoring points will include up gradient wells at the site (MW-1 and RW-1), wells in the vicinity of the former tanks (MW-2/RW-2 and MW-3/RW-3), and the wells down gradient of the building (MW-5) and the dry well area (MW-6). This manual describes the techniques and procedures required to monitor and trend the effectiveness of the completed remedial work.

The remedial action taken at the Frederick Property site is intended to be protective of human health and the environment by removing the source of contamination and limiting potential exposure to residual contaminants in groundwater.

The Frederick Property site will be maintained and managed by the Village of Manchester. The Village will restrict any use of the property for the duration of this plan. The Village of Manchester has not yet proposed a specific use for this site. Future uses may include restricted residential, recreational, commercial or light industrial development.

Access to the property will be granted to NYSDEC and designated personnel for the purpose of performing inspections and the required annual monitoring and sampling of groundwater as outlined in this plan.

2. RECORD MANAGEMENT

This manual shall be maintained and available for the duration of the Plan. All reports and records generated in the field and laboratory analysis results shall be compiled by a professional engineer or environmental professional and submitted in an annual report to NYSDEC. These documents shall include at a minimum the following:

1. Field log books, including weather, temperature, time of day and site observations from each sampling event.
2. Instrumentation information, description and calibration logs.
3. Qualifications and certifications of all personnel on site.
4. Chain of custody forms for all samples collected, submitted and analyzed.
5. Analysis reports for all samples analyzed.
6. Field parameter measurements recorded for each sampling event.
7. Blank copy of all forms used.

In addition to the above mentioned documentation, the Health and Safety Plan with Emergency Contingency Plan for this site shall be maintained and attached as Appendix A of this manual.

3. MAINTENANCE PLAN

Maintenance of the property consists of mowing grass, preserving and protecting the monitoring wells and restricting access to the property. The Village of Manchester will be responsible for the maintenance of the property. Personnel designated to perform the annual sampling event will be responsible for the preservation and protection of the monitoring wells.

4. MONITORING PLAN

Groundwater monitoring shall be performed annually for a five (5) year period. Key monitoring points will include the upgradient wells at the site (MW-1/RW-1), wells in the vicinity of the former tanks (MW-2/RW-2 and MW-3/RW-3), and the wells downgradient of the building (MW-5) and the dry well area (MW-6). This program will allow the effectiveness of the remedial work to be monitored.

4.1. GROUNDWATER SAMPLING PROCEDURES.

- 4.1.1. Groundwater samples will be collected in order; first from monitoring wells considered least impacted, followed by those considered most impacted. Generally upgradient wells will be sampled first.
- 4.1.2. Measurements of total organic vapor pressure will be performed using a Photo Ionization Detector (PID) by removing the well vault cover and opening the well cap slightly and placing the instrument probe beneath the cap. After the reading has been obtained, the well cap will be completely removed and the well will be allowed to ventilate for a period of 3 to 5 minutes. After the wellhead has been ventilated, a measurement in the breathing zone will be collected. See the Health and Safety Plan for specific health and safety procedures.
- 4.1.3. Depth to water will be measured from the top of the well casing to the top of the water surface to the nearest 0.01- foot during sampling. Ground surface and top of casing elevations will be surveyed to within 0.01-foot so that water elevation can be calculated.
- 4.1.4. An interface sounding device capable of detecting free-phase hydrocarbons will be used if free product is detected in the well.
- 4.1.5. Elevation of groundwater in feet will be calculated and recorded given the elevation of the top of the wellhead and depth to water.
- 4.1.6. Low-flow (minimal draw-down) groundwater sampling procedures will be utilized. Groundwater samples will be collected utilizing a bladder or peristaltic pump to minimize volatilization. A flow rate of 0.5 L/min or less will be used to achieve minimal draw-down (ideally <0.1 m) and minimize stress to the system.

4. MONITORING PLAN (continued)

4.1. GROUNDWATER SAMPLING PROCEDURES. (continued)

- 4.1.7. A flow through cell will be utilized to monitor water quality parameters, including pH, conductivity, ORP, turbidity, DO, and temperature. Stabilization will be achieved when three successive readings taken every three to five minutes are within ± 0.1 standard units for pH; $\pm 3\%$ for conductivity; ± 10 mv for ORP; and $\pm 10\%$ for turbidity, DO, and temperature.
- 4.1.8. Departures from the standard sampling procedure will require prior approval from the NYSDEC, will be documented in the field book and included in the Annual Site Monitoring Report.
- 4.1.9. Samples to be analyzed for volatile organic compounds will be obtained so that the sample container is headspace free. All such samples will be collected in 40-milliliter (ml) vials with Teflon septa. The container will be immediately capped so that volatilization is minimized. This will be achieved by filling the container to slightly overflowing, forming a meniscus at the mouth of the container. The cap will be placed upon the convex meniscus and tightly sealed. To check that the sample is air-free, the container will be inverted and the cap gently tapped. The absence of entrapped air indicates a successful seal. When air is evident in the container, the entire sample will be discarded and another sample will be collected. Evacuation and sampling data for each well will be recorded in the field logbook at the time of sampling and will be included in the Annual Site Monitoring Report.

4. MONITORING PLAN (continued)

4.2. SAMPLE HANDLING.

Groundwater samples collected in the field will be labeled immediately. Labels with adhesive backing will be completed with indelible ink and affixed to the side of the sample container. Information written on sample labels will include:

- a. Project Number
- b. Site location
- c. Sample location (monitor well number and depth)
- d. Analysis required
- e. Sample number
- f. Initials of sampler
- g. Date
- h. Time

The label will be securely attached to the sample container to minimize loss or mutilation. Each label will be filled out as completely as possible prior to collecting sample.

If samples are to be sent to a fixed-base laboratory via courier, seals will be placed over the container lids to discourage and detect unauthorized tampering with the samples. The sample seals will include the following information:

- a. Project number
- b. Sample number
- c. Initials of sampler
- d. Date
- e. Time

The chain-of custody for possession and responsibility of samples must be documented from the time and place of the sample acquisition to the time and place of their final destination. To maintain and document sample possession, chain-of-custody procedures will be followed that include the completion of chain-of custody records and various other requirements.

4. MONITORING PLAN (continued)

4.2. SAMPLE HANDLING. (continued)

- 4.2.1. Chain-of-custody is defined as the documented record of the transfer of responsibility for the care and safekeeping of acquired samples from one person or organization to another.
- 4.2.2. A sample is under custody if it is: 1) physically in one's possession, 2) in plain view after being placed in one's physical possession, 3) locked in a designated and identified secure area where tampering is prevented.
- 4.2.3. The field personnel initially taking the sample are responsible for the care and custody of the sample until it is properly transferred to delivery or laboratory personnel.
- 4.2.4. Records concerning sample handling and transportation will be kept in the field logbook.
- 4.2.5. All samples will be accompanied by a chain-of-custody record. The chain-of-custody record will provide the project number, sample name, name of sampler, site location, sample matrix, number of containers and the analysis required. Each person or organization who relinquishes and / or receives responsibility for the samples shall sign, date and retain one copy of the record for his / her files.
- 4.2.6. The chain-of-custody record will be filled out completely. Each sample will be described completely on separate lines. No duplication or ditto marks will be used. An individual record will be completed for each final destination.
- 4.2.7. All ice chests will be sealed with duct tape until received by the laboratory receiving-agent to prevent unauthorized tampering.

4. MONITORING PLAN (continued)

4.3. DECONTAMINATION PROCEDURES.

Sampling equipment will be decontaminated prior to and between samples and / or sampling locations as follows:

4.3.1. Clean in solution of alconox and water.

4.3.2. Rinse using potable water.

4.3.3. Let air dry.

If free-phase product is encountered during sampling, an additional rinse of diluted methanol followed by a potable water rinse will be added to the above procedure.

4.4. DISPOSAL OF WASTE.

Solid and liquid waste generated during field work will be containerized and disposed of at a permitted waste disposal facility in accordance with NYSDEC.

5. ENVIRONMENTAL EFFECTIVENESS MONITORING

All water quality data including field parameters compiled from pre-remedial investigative work, post-remedial work and annual sampling as a result of this plan shall be collected, compiled, and compared on an annual basis. Data collected in the field logbook shall also be included and compared in the annual report. Any significant observations including weather conditions, groundcover growth, site maintenance or unauthorized use of the property will be noted. Data will be used to track the natural attenuation of contaminants in the groundwater.

6. ANALYTICAL PROGRAM

Water quality data is required to meet the objectives of the groundwater monitoring plan. Water quality data will consist of field parameters including pH, temperature, conductivity, dissolved oxygen, ORP and laboratory analysis for TCL VOCs and SVOCs. The final round of groundwater samples will include ASP Category B deliverables and DUSR evaluation.

The quantity of groundwater samples will be a minimum of eight (8) on-site samples per annual event.

6.1. QA/QC SAMPLES.

The laboratory will be requested to run a series of duplicate analyses on sample extracts as a check on laboratory procedures (MS/MSD). One duplicate groundwater sample will be collected for each annual groundwater sample.

Dedicated sampling equipment will be used for any materials that will contact the groundwater samples (ie. tubing or boilers). In the event that non-dedicated equipment is used, one equipment blank per sampling day will be collected to ensure that non-dedicated sampling devices have been effectively decontaminated. The equipment blanks will be collected after the sampling equipment has been decontaminated by running de-ionized water through the equipment and into two 40-ml VOA vials. The equipment blank will be analyzed for volatiles only.

One trip blank per sample shipment will be submitted for analysis to the laboratory to evaluate the possibility of air borne cross-contamination of samples in the field. The trip blank will be prepared and supplied by the laboratory and will accompany samples in the field and to the laboratory. The trip blank will be analyzed for volatiles only.

7. EVALUATION OF MONITORING RESULTS

The results from sampling data collected will be used to evaluate the effectiveness of the remedial work and to determine the need for further remedial action or sampling. The monitoring program will be evaluated after a five (5) year period to determine if further monitoring is necessary. At the end of the five year period NYSDEC will make the determination to discontinue or modify the monitoring plan based on groundwater sample analysis.

8. RECORDS

All records, forms, laboratory analysis reports, and copies of logbooks will be submitted to the professional engineer or environmental professional acceptable to NYSDEC responsible for the compilation and submittal of the annual certification report.

9. INSTITUTIONAL CONTROLS

Engineering and institutional controls in the form of an environmental easement shall be put in place to require compliance with the Site Management Plan to restrict groundwater use as a source of potable or process water and to prevent vapor intrusion into any future buildings constructed on the site. The easement shall also require the property owner to complete and submit to the NYSDEC an annual certification.

10. ANNUAL CERTIFICATION

The Village of Manchester, as owner of the property will provide an annual certification prepared and submitted by a professional engineer or environmental professional acceptable to NYSDEC, which will certify that the institutional and engineering controls put in place are unchanged from the previous certification. The report will also certify that nothing has occurred that would impair the ability of the controls to protect public health, the environment or constitute a violation or failure to comply with any operation and/or maintenance.

APPENDIX A

HEALTH AND SAFETY PLAN

**Health and Safety Plan
for the**

**FREDERICK PROPERTY
ENVIRONMENTAL RESTORATION
PROJECT**

NYSDEC SITE B00131-8

MANCHESTER, NY

Prepared by:

Village Of Manchester, New York

January 2005

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1. INTRODUCTION

1.1. General.

This Health and Safety Plan (HASP) has been prepared to identify the health and safety procedures, methods, and requirements for activities performed during the Remedial Work Plan at the Frederick Property project site (the site) in Manchester, New York. This plan applies to the activities to be performed by employees of the Village of Manchester and/or Sniedze Associates, (Sniedze) during implementation of Remedial Work Plan activities as outlined in the Record of Decision.

This HASP sets forth the minimum safety requirements pursuant to OSHA regulations. It should be acknowledged that the employees of other consulting and/or contracted companies must review this HASP. The protection of the health and safety of employees is a responsibility of their employers. Contractors and/or consultants may use this HASP as a guide to develop their own independent Health and Safety Plans for use by their employees, provided that the minimum requirements of this HASP are fulfilled. Each contractor performing work on this project performs different aspects of the tasks and there may be unique or special hazards to their work that require precautions above and beyond those outlined in this HASP.

This HASP addresses health and safety issues related to the presence of specific physical and/or chemical hazards potentially present during the performance of Remedial Work Plan activities. An Emergency Response/Contingency Plan (Section 9) has been prepared to outline the procedures to be followed in an emergency or unusual situation. During development of this HASP, consideration was given to current health and safety standards as defined by the Occupational Safety and Health Administration and/or National Institute for Occupational Safety and Health (OSHA/NIOSH).

This document will be periodically reviewed to ensure that it is current and technically correct. Any changes in site conditions and/or the scope of work will require a review and modification of this HASP. Such changes will be completed in the form of an addendum.

1.2. Project Background.

A detailed description of the site is presented in the Remedial Work Plan. The overall objectives of this remediation are to demolish the existing building, including removal of floor drainage system and subsurface hydraulic lift units, closure of the dry well area behind the building, remove contaminated soils from the area of the former pump islands and around the hydraulic lift and dry well to prevent further groundwater contamination.

Prepare an operation, monitoring and maintenance program to track natural attenuation of contaminants in groundwater following source soil removal; and provide institutional controls to restrict groundwater usage and prevent vapor intrusion into any future buildings at the site.

1. INTRODUCTION (continued)

1.3. Definitions.

The following definitions will apply to this HASP:

- a. Site - The area where the work shall be performed.
- b. Project - All work performed on the site under the scope of work presented in the Remedial Work Plan.
- c. Subcontractor - Includes on-site subcontractor personnel hired by Sniedze Associates or Village of Manchester.
- d. On-Site Personnel – All Village of Manchester, Sniedze Associates, State of New York, and subcontractor personnel performing/observing work tasks for this project.
- e. Visitor - All other personnel, except the on-site personnel, entering the site during project work. Visitors will need to receive approval from the on-site health and safety supervisor to enter the Work Zone.
- f. Community – Members of the public potentially affected by project work, such as neighbors and passers-by.
- g. Health and Safety Supervisor (HSS) - is a Sniedze Associates or Village of Manchester employee so designated, and will be primarily responsible for the implementation and enforcement of the HASP. The HSS will be familiar with applicable state and federal occupational safety and health regulations and have formal training in occupational safety and health (OSHA Supervisory Training).
- h. Work Zone - Any portion of the project where hazardous substances are, or may reasonably be suspected, to be present in the air, water, or soil/sediment.
- i. Decontamination Zone - Area between the Work Zone and Support Zone that provides a transition between contaminated and clean areas. Decontamination stations are located in this Zone.
- j. Support Zone - The rest of the site. Support equipment is located in this Zone.
- k. Monitoring - The use of field instrumentation to provide information regarding the levels of contaminants in air. Monitoring will be conducted to evaluate on-site personnel, visitors, and community exposures to chemical and physical hazards.
- l. HASP - Health and Safety Plan approved for this Project.
- m. Buddy System - A system of grouping workers in hazardous areas developed to ensure that workers are able to provide assistance when needed, observe partner for signs of chemical or heat exposure, and contact HSS or others if emergency assistance is needed.

2. IDENTIFICATION OF KEY HEALTH AND SAFETY PERSONNEL

2.1. Key Personnel.

Implementation of this HASP will be accomplished through an integrated team effort. The names of key personnel involved with this project are provided below:

Village of Manchester

Bruce E. Miles, Mayor
Village of Manchester
8 Clifton Street
Manchester, NY 14504
(585) 289-4340

Angela M. D'Arduini, Clerk/Treasurer
Nancy Johnsen, Trustee
Norman Folts, Trustee
Jeff Liberati, Public Works

Sniedze Associates (Consultant for Village of Manchester)

Robert H. Raeman, Project Manager
Sniedze Associates
482 North Main Street
Canandaigua, NY 14424
(585) 394-2630 - office
(585) 314-4378 - cell phone

Dave Engert, (Sub-Consultant), Health and Safety Supervisor
S.A.W. Environmental Services, Inc.
672 Frey Road
Macedon, NY 14502
(315) 986-4751 & (315) 986-8233 - office
(585) 377-3861 - cell phone (during field activities)

New York State Department of Environmental Conservation

Gregory B. MacLean, P.E., Supervising Project Manager
6274 East Avon-Lima Road
Avon, NY 14414-9519
(585) 226-5353

New York State Department of Health

Dave Napier, Regional Toxics Coordinator
42 South Washington Street
Rochester, NY 14608
(585) 423-8071

2. IDENTIFICATION OF KEY HEALTH AND SAFETY PERSONNEL (continued)

2.2. Assignment of HASP Responsibilities.

2.2.1. Project Manager - Roles and Responsibilities.

The Project Manager (PM) will direct work outlined in the Remedial Work Plan in a manner consistent with generally accepted professional principles and practices. PM will provide for the health and safety of all Sniedze personnel on-site during any job function covered by this HASP. It is the responsibility of PM to:

- Name a HSS who has the health and safety responsibility for tasks listed in this HASP;
- Assure medical examinations and training requirements for all Sniedze on-site personnel are current and comply with 29 CFR 1919.120 and 134;
- Be responsible for scheduling the pre-job indoctrination of all Sniedze personnel with regard to this HASP and other safety requirements, including but not limited to: (a) potential hazards; (b) personal hygiene principles; (c) personal protective equipment (PPE); (d) respiratory protection equipment usage; and (e) emergency procedures dealing with fire and medical situations;
- Be responsible for the implementation of the HASP, special safety considerations, and the emergency response/contingency plan;
- Ensure that all Sniedze on-site personnel are properly protected and equipped; and
- Comply with OSHA health and safety regulations.

2.2.2. HSS Roles and Responsibilities.

It is the responsibility of the HSS and/or designated alternate to:

- Maintain a daily logbook for recording all significant health and safety activities and incidents, including an on-site personnel and visitor log;
- Have authority to suspend work due to health and/or safety related concerns;
- Provide on-site technical assistance;

2. IDENTIFICATION OF KEY HEALTH AND SAFETY PERSONNEL (continued)

2.2. Assignment of HASP Responsibilities. (continued)

2.2.2. HSS Roles and Responsibilities. (continued)

- Conduct routine air monitoring (including community monitoring, if required), including equipment maintenance and calibration, assure that a basic first aid kit is on-site during the completion of the project;
- Conduct periodic health and safety audits;
- Ensure that appropriate personnel have received the necessary training, including safety equipment and personal protective equipment;
- Provide regular pre-task health and safety briefings;
- Ensure that appropriate personnel have received the necessary physical examinations;
- Review the adequacy of the HASP;
- Draft necessary amendments to the HASP for review;
- Assure that all site, oversight, project and authorized personnel are made aware of the provisions of the HASP and have been informed of the nature of any physical and/or chemical hazards associated with the site activities; and
- Maintain control of required documents for record keeping purposes.

3. TASK HEALTH AND SAFETY RISK ANALYSIS

3.1. Scope.

The purpose of this section is to identify the physical, chemical, and biological hazards associated with the job tasks/operations being performed during this project. A brief description of the project activities is contained in Section 1.2. Project Background. The following subsections discuss each task and/or operation in terms of the associated potential hazards. Also identified are the protective measures to be implemented during completion of the specific activity.

3.2. Task-by-Task Analysis.

Activities conducted under this HASP are discussed by tasks, which have been grouped together according to similar potential hazards. The tasks covered are as follows:

Task No.	Task Description
1	Building Demolition & Hydraulic Lift Removal
2	Dry Well Closure
3	Soil Removal & Disposal
4	Groundwater Monitoring

Physical hazards and associated protection mechanisms for each task are listed in Table 1. Section 3.7 (Physical Hazards) of this HASP also provides supplemental information regarding general physical hazards that require additional consideration during site activities. As mentioned in Section 1.2, the site may contain petroleum compounds and potentially other parameters such as metals, volatiles, and semi-volatile compounds. Biological hazards that may be encountered, identification of those tasks associated with potential for contact with biological hazards, and a description of suggested preventive measures are listed in Table 2. All tasks will be performed in the level of protection outlined in each of the following task-specific subsections. Section 4 (Personal Protective Equipment [PPE] and Equipment Reassessment) provides information describing the protective equipment ensembles.

The potential routes of exposure for chemical constituents include inhalation, skin absorption, ingestion, and skin/eye contact. The potential for exposure through any of these routes will depend on the specific activity conducted by the worker. Because of general operating procedures (Section 7.5) (i.e., no eating or smoking), ingestion is not considered a likely exposure route. Other potential routes of exposure for activities to be conducted during remediation are discussed in the following task specific subsections.

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.3. Task 1 – Building Demolition and Hydraulic Lift Removal.

3.3.1. Description of Activity.

This task will consist of demolition of the existing building, including removal of floor drainage system and subsurface hydraulic lift units. Excavated soil will be screened for volatile organic compounds (VOCs) using an instrument with a photoionization detector (PID). If based on field observations and/or VOC screening results it appears that the soil around the hydraulic lifts is contaminated, then the removed soil will be staged on plastic sheeting and will not be placed back in the excavation. In addition, a total of five (5) composite soil samples will be collected from the excavation to assess residual petroleum contamination. One sample will be collected from each sidewall (total of four) and one from the bottom.

This task includes backfilling the excavation. Excavated soil (if not contaminated) and granular backfill will be used to backfill the hydraulic lift excavation.

3.3.2. Hazard Assessment.

Potential chemical hazards associated with excavating and removing hydraulic lifts include skin or eye contact with soil containing chemical constituents and inhalation of organic vapors. Potential physical hazards include injury from equipment error or operator error, or soil failure at the sides of the excavated pit. Other physical hazards include falling into the pit and tripping over obstacles.

3.3.3. Health and Safety Mitigation Actions.

Workers will be required to wear modified Level D protection during this task. The worker breathing-zone will be monitored using a photoionization detector (PID). If total volatile organic levels and particulate levels are higher than the criteria specified in Section 4.0, field personnel may be required to upgrade to Level C protection, and community monitoring as outlined in Section 4.4 will be implemented.

Field personnel will be required to wear hard hats and steel toed boots during sampling, excavation and backfilling activities to reduce the risk of physical injury. No field personnel will be allowed to enter excavations over four (4) feet deep. Workers will utilize caution when working adjacent to the excavation and the area around the excavation will be kept free of equipment and obstacles to avoid tripping. The excavation shall be terminated if conditions are encountered which make the excavation sidewalls unstable, and the excavation must be shored.

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.4. Task 2 – Dry Well Closure.

3.4.1. Description of Activity.

This task will consist of closure of the dry well area behind the building including removal of any sludge or “liquid” waste and removal of piping and the stone used for the dry well. Any liquid present in the dry well will be pumped out and disposed of in accordance with regulations. Excavated soil will be screened for volatile organic compounds (VOCs) using an instrument with a photoionization detector (PID). If based on field observations and/or VOC screening results it appears that the soil around the hydraulic lifts is contaminated, then the removed soil will be staged on plastic sheeting and will not be placed back in the excavation. In addition, a total of five (5) composite soil samples will be collected from the excavation to assess residual petroleum contamination. One sample will be collected from each sidewall (total of four) and one from the bottom.

This task includes backfilling the excavation. Excavated soil (if not contaminated) and granular backfill will be used to backfill the dry well excavation.

3.4.2. Hazard Assessment.

Potential chemical hazards associated with excavating the dry well include skin or eye contact with soil containing chemical constituents and inhalation of organic vapors. Potential physical hazards include injury from equipment error or operator error, or soil failure at the sides of the excavated pit. Other physical hazards include falling into the pit and tripping over obstacles.

3.4.3. Health and Safety Mitigation Actions.

Workers will be required to wear modified Level D protection during this task. The worker breathing-zone will be monitored using a photoionization detector (PID). If total volatile organic levels and particulate levels are higher than the criteria specified in Section 4, field personnel may be required to upgrade to Level C protection, and community monitoring as outlined in Section 4.4. will be implemented.

Field personnel will be required to wear hard hats and steel toed boots during sampling, excavation and backfilling activities to reduce the risk of physical injury. No field personnel will be allowed to enter excavations over four (4) feet deep. Workers will utilize caution when working adjacent to the excavation and the area around the excavation will be kept free of equipment and obstacles to avoid tripping. The excavation shall be terminated if conditions are encountered which make the excavation sidewalls unstable, and the excavation must be shored.

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.5. Task 3 – Soil Removal and Disposal.

3.5.1. Description of Activity.

This task will consist of removal of contaminated soils from the area of the former pump islands and if detected above SCG around the hydraulic lift and the dry well area. Excavated soil will be screened for volatile organic compounds (VOCs) using an instrument with a photoionization detector (PID). If based on field observations and/or VOC screening results it appears that the soil around the hydraulic lifts is contaminated, then the removed soil will be staged on plastic sheeting and will not be placed back in the excavation. In addition, a total of five (5) composite soil samples will be collected from the excavation to assess residual petroleum contamination. One sample will be collected from each sidewall (total of four) and one from the bottom.

This task includes backfilling the excavation. Excavated soil (if not contaminated) and granular backfill will be used to backfill the dry well excavation.

3.5.2. Hazard Assessment.

Potential chemical hazards associated with excavating and removing soil include skin or eye contact with soil containing chemical constituents and inhalation of organic vapors. Potential physical hazards include injury from equipment error or operator error, or soil failure at the sides of the excavated pit. Other physical hazards include falling into the pit and tripping over obstacles.

3.5.3. Health and Safety Mitigation Actions.

Workers will be required to wear modified Level D protection during this task. The worker breathing-zone will be monitored using a photoionization detector (PID). If total volatile organic levels and particulate levels are higher than the criteria specified in Section 4, field personnel may be required to upgrade to Level C protection, and community monitoring as outlined in Section 4.4. will be implemented.

Field personnel will be required to wear hard hats and steel toed boots during sampling, excavation and backfilling activities to reduce the risk of physical injury. No field personnel will be allowed to enter excavations over four (4) feet deep. Workers will utilize caution when working adjacent to the excavation and the area around the excavation will be kept free of equipment and obstacles to avoid tripping. The excavation shall be terminated if conditions are encountered which make the excavation sidewalls unstable, and the excavation must be shored.

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.6. Task 4 – Groundwater Monitoring.

3.6.1. Description of Activity.

The groundwater monitoring program will involve uncapping, purging (pumping water out of the well), and sampling monitoring wells. A mechanical pump may be utilized to purge the wells and can be hand, gas or electric operated. Water samples taken from the wells are then placed in containers and shipped to a laboratory for analysis.

3.6.2. Hazard Assessment.

Potential chemical hazards associated with ground-water sampling include inhalation of volatile organic vapors emanating from the well head after initial opening, and contact of groundwater containing chemical constituents with skin or eyes. Potential physical hazards include electric shock from improper grounding of electrical equipment, slipping on wet surfaces, and tripping over obstructions.

3.6.3. Health and Safety Mitigation Actions.

Workers will be required to wear modified Level D protection. Because there is a potential for the inhalation of organic vapors venting from the well cap upon opening, breathing zone monitoring will be conducted using a PID. The level of personal protection may be adjusted (upgraded to Level C, or downgraded back to modified Level D) during ground-water sample collection in accordance with the reassessment program described in Section 4. If necessary, community monitoring will be implemented as outlined in Section 4.4. Splash goggles and rubber gloves will be used to minimize the potential for dermal contact with ground water containing chemical constituents during sampling. The work area will be kept dry and clean (to the extent possible) to avoid slipping and unnecessary exposure to ground water potentially containing chemical constituents.

Whenever possible, pumps will be used to purge wells, thereby avoiding the potential for muscle strain and heat stress. Electrical equipment will have the following safeguards: ground fault interrupters or properly grounded circuitry, and protection of extension cords from damage. Workers must ensure that all power cords, etc., for sampling devices are in good working condition to minimize the hazard of electrocution. All personnel will operate in a manner to reduce exposure to these hazards.

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.7. Physical Hazards.

Physical hazards and associated protective mechanisms are listed in Table 1. The purpose of this section is to provide information regarding health and safety approaches to general physical hazards associated with site-activities.

3.7.1. Heat Stress.

One of the most frequently encountered problems during field investigations is heat stress. Heat stress manifests itself in two forms: heat stroke and heat exhaustion. Depending on ambient conditions, the worker, and the work being performed, heat stress can adversely affect a worker in as little as 15 minutes. This is especially important as ambient temperatures exceed approximately 70°F at high humidity. For this reason, all workers will be observed for heat stress using the following indicators: worker appearance and responses. The field staff will take care to monitor ambient conditions, the type of protective equipment, and personnel fitness. Work loads will be adjusted to account for potentially unsafe conditions.

Early symptoms of heat stress can include rashes, cramps, discomfort, irritability, and drowsiness. These symptoms can cause impaired functional ability, which may threaten the safety of operations. Advanced symptoms of heat exhaustion include pale, clammy skin, profuse perspiration, and extreme tiredness or weakness.

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

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.7. Physical Hazards. (continued)

3.7.2. Cold Stress.

Persons working outdoors in temperatures at or below freezing may be frostbitten. Frostbite may be categorized into three types:

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

Signs and symptoms of frostbite include:

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

As time passes, the affected worker may become confused, stagger, experience eyesight impairment, lose consciousness, and/or stop breathing. First aid for frostbite includes protecting the frozen area from further injury, bringing the victim indoors, warming the affected areas quickly with warm water and maintaining respiration according to first aid procedures. Medical help should be called immediately.

Frostbite may be prevented by the use of insulated gloves, socks and other protective clothing capable of keeping moisture away from the skin. All clothing should be chosen so that it is compatible with the PPE required for certain activities.

3. TASK HEALTH AND SAFETY RISK ANALYSIS (continued)

3.8. Potential Compounds of Concern.

As previously mentioned in Section 1.2, constituents likely present in the ground water and soil at the site are petroleum compounds and potentially metals, volatiles, and semi-volatile compounds.

The site was used as a service station for 30± years. This was used to determine the compounds of concern for environmental media as referenced in the SI/RAR Work Plan. The levels of PPE associated with each work task were selected based on petroleum compounds, the most likely to be present in the different environmental media.

Of the petroleum compounds present in gasoline, benzene is the most toxic. The OSHA limit (TWA) for benzene in air is 1 ppm. However, the field instrument specified in Section 4.3 detects the sum of all volatile organics. Since benzene is typically 2% of total volatile hydrocarbons at a petroleum spill (NYSDEC Air Guide-29: estimation of benzene emissions from SVE systems), the action level was set at 3 ppm. This provides a safety factor of greater than 10 times. PPE is discussed in Section 4.

4. PERSONNEL PROTECTIVE EQUIPMENT (PPE) AND REASSESSMENT

4.1. Personal Protective Equipment (PPE) Selection Criteria.

PPE ensembles chosen for each individual task were specified in Section 3. Task Health and Safety Risk Analysis. Equipment selection was based upon the mechanics of the task and the nature of the hazards anticipated. The following criteria were used in the selection of equipment ensembles:

- Chemical hazards known or suspected to be present.
- Routes of entry through which the chemicals could enter the body, e.g., inhalation, ingestion and skin contact.
- Potential for contaminant/worker contact while performing the specific task or activity.

It is anticipated that work activities will be performed using Level D protection. However, Level C protection will be available for potential upgrade.

4.2. Selected PPE Ensembles.

The following components of modified Level D PPE will be available and used as appropriate in accordance with the following paragraph, Levels of Protection:

- Coveralls.
- Steel toed boots.
- Gloves (Rubber outer, rubber inner).
- Safety glasses or face shields.

Level C protection will be utilized, if necessary, as determined by the levels indicated by the PID. Level C protection will consist of the following:

- Polyethylene coated Tyvek disposable coveralls.
- Rubber overboots.
- Outer protective gloves.
- Full face respirator with combination organic vapor, acid gases and particulates cartridges (NIOSH/MSHA approved).

4. PERSONNEL PROTECTIVE EQUIPMENT (PPE) AND REASSESSMENT (continued)

4.2. Selected PPE Ensembles. (continued)

Levels of Protection

In general, the following levels of protection will be used for specific work activities. Adjustments to these levels may be required given the site conditions encountered:

a. Building Demolition, Hydraulic Lift Removal and Dry Well Closure

This work will be conducted in modified Level D protective gear including:

- Coveralls.
- Steel toed boots.
- Rubber overboots.
- Gloves (rubber outer, rubber inner).
- Safety glasses or face shields.
- Hard hat.

Based on air monitoring results, PPE may be upgraded to Level C protective gear by the addition of a full-face purifying respirator with combination organic vapor, acid gases, and particulate cartridges (NIOSH/MSHA approved).

b. Soil Removal and Disposal

This work will be conducted in modified Level D protective gear including:

- Coveralls.
- Steel toed boots.
- Rubber overboots.
- Gloves (rubber outer, rubber inner).
- Safety glasses or face shields.
- Hard hat.

Based on air monitoring results, PPE may be upgraded to Level C protective gear by the addition of a full-face purifying respirator with combination organic vapor, acid gases and particulate cartridges (NIOSH/MSHA approved).

4. PERSONNEL PROTECTIVE EQUIPMENT (PPE) AND REASSESSMENT (continued)

4.2. Selected PPE Ensembles. (continued)

Levels of Protection (continued)

c. Groundwater Monitoring

This work will be conducted in modified Level D protective gear including:

- PE-coated Tyvek coveralls.
- Steel toed boots.
- Rubber overboots.
- Gloves (rubber outer, rubber inner).
- Safety glasses or face shields.

Based on air monitoring results, PPE may be upgraded to Level C protective gear by the addition of a full-face purifying respirator with combination organic vapor, acid gases, and particulate cartridges (NIOSH/MSHA approved).

4. PERSONNEL PROTECTIVE EQUIPMENT (PPE) AND REASSESSMENT (continued)

4.3. PPE Reassessment.

Air monitoring will be conducted during work tasks described in Sections 3.3. through 3.6. of this HASP. Such monitoring will be conducted within the work zone, and the downwind perimeter of the work zone, utilizing a HNU Systems PID with a 10.2 eV lamp, or equivalent. The air monitoring equipment utilized will be calibrated, as per the manufacturer's instructions. The calibrations and checks will be recorded in the daily logbook. This will be performed by HSS or designated alternate at the beginning of each day and more frequently, as the conditions warrant. Following the daily calibration checks, background measurements will be obtained in the support zone using the PID and recorded in the logbook.

Prior to sampling any groundwater wells, background readings will be obtained in the Support Zone. Following the establishment of background conditions, monitoring will be conducted in the Work Zone. Data will be utilized for upgrading to Level C, if necessary, by comparing data to pre-established action levels. The frequency of air monitoring with monitoring devices will depend on the potential hazards associated with each location and work activity.

The action levels for the PID monitoring device are provided below.

Upgrade from Level D to Level C and Initiate Community Monitoring:

Total Organic Vapor (TOV) - greater than or equal to 5 ppm and less than 50 ppm, with compensation made for background readings, sustained for at least 5-minutes. See Section 4.4. for community monitoring.

Downgrade from Level C to Level D and Discontinue Community Monitoring:

TOV - less than 5 ppm, sustained for a period of at least 5 minutes, with subsequent approval to downgrade provided by HSS.

Evacuate Area and Initiate Community Monitoring:

TOV - greater or equal to 50 ppm sustained for at least 30 seconds. See Section 4.4. for community monitoring and Section 9.6.5. for emergency evacuation.

4. PERSONNEL PROTECTIVE EQUIPMENT (PPE) AND REASSESSMENT (continued)

4.4. Community Air Monitoring Plan.

The Community Air Monitoring Plan shall comply with the current New York State Department of Health Generic Community Air Monitoring Plan (Appendix 1A to Draft DER-10, Technical Guidance for Site Investigation and Remediation) which has been added to this Section 4.4. as pages 19-1 and 19-2.

Real-time air monitoring for volatile compounds to protect the community will be performed as outlined in this section. Volatile organic compounds will be monitored at the downwind perimeter of the work area on a continuous basis. If TOV levels exceed 5 ppm above background, work activities will be halted and monitoring continued under the provisions of the Vapor Emission Response Plan.

Vapor Emission Response Plan

If the TOV concentrations exceed 5 ppm above background at the perimeter of the work area, activities will be halted and monitoring continued. If the TOV level decreases below 5 ppm above background, work activities can resume. If the TOV levels are greater than 5 ppm over background but less than 25 ppm over background at the perimeter of the work area, activities can resume provided:

- The TOV level 200 feet downwind of the work area or half the distance to the nearest residential or commercial structure, whichever is less, is below 5 ppm above background.

If the TOV level is above 25 ppm at the perimeter of the work area, activities must be shut down. When work shutdown occurs, downwind air monitoring, as directed by the HSS, will be implemented to ensure that vapor emissions do not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

Major Vapor Emission

If any TOV levels greater than 5 ppm above background are identified 200 feet downwind from the work area or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted.

If, following the cessation of the work activities, or as the result of an emergency, TOV levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If efforts to abate the emission source are unsuccessful and if TOV levels are approaching 5 ppm above background for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect.

However, the Major Vapor Emission Response Plan shall be immediately placed into effect if TOV levels are greater than 10 ppm above background in the 20 Foot Zone.

4. PERSONNEL PROTECTIVE EQUIPMENT (PPE) AND REASSESSMENT (continued)

4.4. Community Air Monitoring Plan. (continued)

Major Vapor Emission Response Plan

Upon taking effect, the following activities will be undertaken:

- Appropriate Emergency Response Contacts as listed in Table 3 will be notified.
- The local police authorities will immediately be contacted by the HSS and advised of the situation and emergency response will be initiated (see Section 9.6.5.).
- The HSS will assess actions to immediately reduce high TOV levels, such as covering excavations or contaminated soil. In addition, the HSS will assess changing of work practices to minimize releasing vapors or implementing engineering controls to better disburse vapors. The objective of any assessment will be to reduce TOV concentrations to below action levels.
- Frequent air monitoring will be conducted at 30 minutes intervals within the 20 Foot Zone. If two (2) successive readings below action levels are measured, air monitoring may be halted or modified by the HSS.

4.5. Daily Logbook.

The findings of all direct reading measurements will be documented in the daily logbook maintained by the HSS and/or the designated alternate. The daily logbook entry will document the task, time, meter reading and level of protection being worn by workers involved with the activity. Actions taken in response to releases or recordings above pre-established action levels will also be recorded in the daily logbook. The daily logbook will also document personnel conducting work activities, visitors, activities completed and will be available for state (NYSDEC and NYSDOH) personnel to review.

APPENDIX 1A

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.

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.

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.

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/m^3) 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 $150 \text{ mcg}/\text{m}^3$ 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 $150 \text{ mcg}/\text{m}^3$ 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 $150 \text{ mcg}/\text{m}^3$ 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.

5. PERSONNEL TRAINING REQUIREMENTS

5.1. Training Requirements.

All on-site personnel and visitors must be trained commensurate with their job responsibilities. Such training will be provided by their employer prior to being allowed to engage in project work that could expose personnel to health and safety hazards. The Project Manager (PM) has the responsibility to check that appropriate training was provided by obtaining documentation for all on-site personnel. Every worker is required to read and understand the HASP prior to commencement of work activities in which the worker is involved. On-site personnel are also required to sign a training acknowledgment form. Signing this form documents that they have completed all required training, that they understand the activity to be carried out and the hazards involved, and that they will abide by all the safety rules.

5.1.1. Site Orientation.

Following is a listing of general site information/training provided to all on-site personnel during the initial site orientation:

- Names of all site health and safety personnel and alternates.
- Work rules and safe work practices.
- Use of personal protective equipment.
- Site chemical and physical hazards.
- Safe use of engineering controls and site equipment.
- Medical surveillance requirements.
- Symptoms associated with exposure to site hazards.
- Site control measures.
- Decontamination procedures.
- Provisions of the emergency response plan.
- Standard operating procedures, e.g., confined space entry, spill containment, etc.

This listing of health and safety topics essentially incorporates a thorough review of this HASP.

5. PERSONNEL TRAINING REQUIREMENTS (continued)

5.1. Training Requirements. (continued)

5.1.2. Pre-Assigned Training.

On-site personnel and visitors entering the Work and/or Decontamination Zones will have pre-assigned training in accordance with the provisions outlined in 29 CFR 1910.120(e) Training, prior to engaging in their work activities.

The project manager (PM) is responsible for checking and documenting that personnel assigned to this project are trained in accordance with 29 CFR 1910.120(e) Training. For this purpose, all on-site personnel must supply copies of company issued wallet training cards and/or training certificates.

5.1.3. First Aid/Cardiopulmonary Resuscitation (CPR).

The HSS and designated alternate must possess current certification in first aid and CPR. At least one of these individuals must be present during each work-shift while on-site personnel are performing work tasks. Documentation of current certification will be filed with this HASP.

5.2. Periodic Health & Safety Meetings.

The HSS or designated alternate will conduct periodic health and safety meetings. These meetings will review existing protocols as well as be a means to update personnel on new site requirements or conditions. The meetings will also provide an opportunity for site personnel to express any health and safety concerns. Topics for discussion would include, but not be limited to, the following:

- Review of available analytical or relevant process data, which may relate to a potential for worker exposure during task execution.
- Review of the type and frequency of environmental and personal monitoring (if any) to be performed.
- Task-specific levels of protection and anticipated potential for upgrading.
- Review of emergency procedures.
- Review of existing and/or new health and safety issues.

5. PERSONNEL TRAINING REQUIREMENTS (continued)

5.3. Documentation/Record Keeping.

Documenting compliance with the training requirements specified in this section requires all on-site personnel to sign a training acknowledgment form. Signed forms will be filed with this HASP.

6. MEDICAL SURVEILLANCE

6.1. General Medical Program.

Medical surveillance for this project will reflect the provisions established under Title 29 CFR 1910.120(f), OSHA's medical surveillance requirements for hazardous waste operations (medical clearance is not required for individuals who will visit the Support Zone).

Before working on tasks covered by this HASP, verification of current health status and medical restrictions for personnel performing the tasks must be provided to the HSS. Such verification must be in the form of company issued wallet cards or other equivalent documentation.

6.2. Respirator Certification.

Prior to authorizing use of any air purifying or air supplied respirator, OSHA--under 29 CFR 1910.134, 29 CFR 1926.58--requires that a determination be made regarding the prospective wearer's physical ability to safely use such equipment. Consequently, individuals scheduled to work in areas that may require the use of a respirator must provide the HSS with current documentation (not older than 24 months) regarding the individual's physical abilities to wear a respirator. The inability to provide current or complete documentation will be sufficient grounds to preclude any individual from areas or tasks requiring such protection. Any worker performing sampling activities who may have to wear a respirator, must have been trained in the proper use of the respirator, must have 40 hours of OSHA training, and must have passed a respirator fit test.

6. MEDICAL SURVEILLANCE (continued)

6.3. Exposure/Injury Medical Emergency.

As a follow-up to an injury/illness or possible excessive exposure to a chemical or physical hazard, all on-site personnel are entitled to and encouraged to seek appropriate medical attention. The HSS or designated alternate must be appraised of the need for seeking such medical attention and assist in determining the immediacy of the situation.

During and immediately following the emergency medical situation, the HSS (or designated alternate) have the following responsibilities:

- Ensure that the examining medical facility is fully appraised of the site condition and/or hazard that caused the medical emergency.
- Conduct an investigation of the site condition that caused the medical situation prior to reassigning the task.
- Complete an accident report.
- Ensure the injured/ill worker receives written medical clearance prior to return to the site.
- Provide a copy of the medical clearance and accident report for the employee's medical records.

Injuries/illnesses and/or possible excessive exposure to a chemical or physical hazard requiring emergency medical treatment must be reported within 24 hours to the Health and Safety Manager. Fatalities must be reported immediately.

7. SITE CONTROL MEASURES

7.1. Site Control.

Site control will minimize potential contamination of workers and observers, protect the public from potential on-site hazards, and prevent vandalism of equipment and materials. Site control measures also enhance response during an emergency.

Most, if not all, work under this program will be done under Level D conditions. If an upgrade is necessary, the site of field operations will be divided into three distinct areas. The actual dimensions of the areas are considered task and location specific and will be determined on a task-specific basis. When utilized, the work areas at each location will be divided into the three following zones: Work Zone, Decontamination Zone, and Support Zone. Work activities that will require the establishment of Work Zones are tank excavation, soil sampling, monitoring well installation, and ground-water sampling.

7.1.1. Work Zone.

The Work Zone is the area in which building demolition, hydraulic lift removal, dry well closure, excavation and groundwater monitoring will occur. Workers entering this Zone must be protected as previously defined in Section 4.2. During work activities, only OSHA-trained workers will be allowed into this Zone. Within this Zone, the levels of protection may be changed by the HSS or designated alternate based on the degree of hazard present.

7.1.2. Decontamination Zone.

The Decontamination Zone is the area that is set up adjacent to the Work Zone where equipment and personnel are decontaminated. One centralized Decontamination Zone will be set up to service all the sampling locations to facilitate decontaminating equipment that is reused throughout the sampling procedure (e.g., spatulas, scoops, beakers) and worker cleanup. The location of the Decontamination Zone will depend on the prevailing wind direction and physical site features.

7.1.3. Support Zone.

A Support Zone may be set up outside the Decontamination Zone. The Support Zone will be used to store equipment and first aid supplies. Administrative and other support functions will occur within the Support Zone, including communications and documentation. Protective clothing worn in the Work Zone may not be worn in a Support Zone except in emergencies.

7. SITE CONTROL MEASURES (continued)

7.2. Site Security.

It is the responsibility of the HSS (or designated alternate) to control access to active work Zones and assure proper security. Any evidence of unauthorized entry should be noted in the daily field report.

Open excavations will be secured with fencing and/or barriers if left unattended (overnight). The monitoring wells will all be equipped with locking protective casings.

7.3. The Buddy System.

Most activities in contaminated or otherwise hazardous areas should be conducted with a "buddy" who is able to:

- Provide partner with assistance.
- Observe partner for signs of chemical or heat exposure.
- Periodically check the integrity of partner's protective clothing.
- Notify the HSS or others if emergency help is needed.

7.4. Site Communications.

Communications will be conducted through verbal communications. When out of audible range, verbal communications will be assisted (if necessary) using portable telephones or a two-way radio.

Communications between workers in the various Zones shall consist of either: mutually agreed upon hand signals, voice or radio transmissions. A portable telephone will be used to contact appropriate agencies in an emergency.

7. SITE CONTROL MEASURES (continued)

7.5. Safe Work Practices.

Operating procedures consist of general safety rules for all workers. All workers will be conscientious of others working around them and check that they are safe and working in a safe manner.

General safety rules which will be enforced at the site including the following:

- Smoking will be prohibited in any area within the fenced portion of the site, in any Work Zone and Decontamination Zone, and during any sampling activities.
- Eating and chewing gum will be prohibited in any area within the fenced portion of the site, in any Work Zone and Decontamination Zone, and during sampling activities.
- Field work will be conducted only during daylight hours.
- Anyone authorized to enter the fenced portion of the site or any Work Zone or Decontamination Zone, who does not participate in routine activities, will be entered in the daily log book and will be required to follow all procedures in this HASP.
- Workers must thoroughly wash their hands prior to leaving the Work Zone and Decontamination Zone, or after any other sampling activities, before eating, drinking or any other activities.

7.6. Visitors.

Visitors will be permitted in the immediate area of active operations only with approval from the HSS. Approval for entry into Work Zones and Decontamination Zones will require physical examination and compliance with training requirements (OSHA 29 CFR 1910.120). All site visitors must be briefed on appropriate sections of the Emergency Response/Contingency Plan (Section 9) and the Task Health and Safety Risk Analysis (Section 3). Visitors will be documented on the daily log of all site activities prepared by the HSS (or designated alternate). Visitor vehicles are restricted to Support Zones.

7. SITE CONTROL MEASURES (continued)

7.7. Nearest Medical Facility.

First aid supplies will be located near the area of work activity and/or in the appropriate field vehicle. Additional medical assistance can be summoned by dialing 911.

The nearest medical facility is the Clifton Springs Hospital & Clinic located at 2 Coulter Street in Clifton Springs, New York. Figure 1 shows the emergency route with directions to the hospital from the site. Additional information regarding medical assistance, evacuation routes, emergency procedures, etc. are contained in Section 9.

7.8. Safety Equipment.

In addition to the PPE necessary to conduct work activities, the following inventory of safety equipment will be available:

- Industrial first aid kit.
- Scissors/knife for emergency equipment removal.
- Emergency eye-wash.
- Rope for securing objects and use as a lifeline.
- Electrolyte replacement drink - stored in clean area and used to prevent heat stress.
- Fire extinguisher for Class A, B, and C fires.
- Hand.held air horn.

8. DECONTAMINATION

8.1. Decontamination Plan.

The various tasks and specific levels of protection required for each task are put forth in Section 3 of this HASP. Consistent with the levels of protection required, Figure 2 provides a step-by-step representation of the personnel decontamination process for Levels C and D.

All reusable personnel gear will be cleaned with a detergent and water. Personnel gear may include overboots, hard hats, respirators, and air monitors. Personnel with equipment working within the site or any work area shall proceed directly to the Decontamination Zone upon completion of work.

Prior to removal of protective gear, personnel will remove soil from boots and gloves using designated wash basins. If other protective gear or clothing is thoroughly soiled, the HSS or designated alternate may decide to dispose of this equipment, rather than try to clean it.

8.2. Equipment Decontamination.

Sampling equipment will be decontaminated in accordance with procedures defined in the Remedial Work Plan (Sampling Procedures) for this site. Decontamination of equipment will be completed either in the Work Zone or in the Decontamination Zone.

Cleaning of small reusable equipment will be performed by hand washing. All sampling equipment will be cleaned prior to use and between samples using the procedure identified in the Remedial Work Plan.

The disposal requirements for wastes generated during the decontamination procedures are presented in the Remedial Work Plan.

8.3. Emergency Decontamination Procedures.

In the event of an emergency, the first priority is for all workers to move to a safe location before removing PPE. All workers will quickly and calmly remove disposable equipment and place all reusable equipment at a secured location within the Decontamination Zone for later cleaning. In the event of an injury, the person closest to the injured person will perform the appropriate emergency first aid procedures, and then will remove the injured person's PPE in the Decontamination Zone prior to transporting to an appropriate safe location.

9. EMERGENCY RESPONSE/CONTINGENCY PLAN

9.1. General.

The following Emergency Response/Contingency Plan includes instruction and procedures for emergency vehicle access, evacuation procedures for personnel, methods of containing fires and procedures for medical emergencies. All emergency conditions require concise and timely actions that are conducted in a manner that minimizes the health and safety risks.

9.2. Emergency Response/Contingency Plan.

All workers shall be familiar with the Emergency Response/Contingency Plan described in this section. The following procedures shall be implemented in an emergency:

- First aid or other appropriate initial action will be administered by those closest to the accident/event. This assistance will be coordinated by the HSS or designated alternative and conducted in a manner to minimize health and safety risks to those rendering assistance to other workers.
- Workers shall report all accidents and unusual events to HSS and Project Manager.
- The HSS or designated alternate is responsible for conducting the emergency response in an efficient, rapid, and safe manner. The HSS or designated alternate will decide if outside assistance and/or medical treatment is required and shall be responsible for alerting local authorities and arranging for their assistance.

9.3. Incident Reporting Procedures.

The HSS will provide to the Project Manager an accident report which will include the following:

- Description of the emergency (including date, time, and duration).
- Date, time and name of all persons/agencies notified and their response.
- Description of corrective actions implemented or other resolution of the incident.

9. EMERGENCY RESPONSE/CONTINGENCY PLAN (continued)

9.4. Responsibilities.

The HSS (or designated alternate) shall have the responsibility for directing response activities in the event of an emergency, specifically:

- Assess the situation.
- Determine required response measures.
- Notify appropriate response teams.
- Determine and direct workers during the emergency.

The HSS or designated alternate shall coordinate any response activities with those of public agencies and is responsible for implementing the emergency response procedures for all workers. All workers are responsible for conducting themselves in a mature, calm manner during an accident or unusual event.

9.5. Public Response Agencies.

A list of public response agencies that may be contacted in an emergency, depending on the nature of the situation, is included in Table 3. This table presents the local emergency numbers including the local hospital (Clifton Springs Hospital), Health Department, ambulance service, fire and police departments and utility numbers. In addition, nationwide hotline numbers provided by the United States Environmental Protection Agency (USEPA) for emergency assistance are included. This contact list should be retained by all workers.

The route to the closest hospital is provided in this HASP on Figure 1. Directions to the hospital are listed below. The HSS will provide direction and/or maps to the hospital to all on-site personnel prior to commencement of on-site activities.

9.5.1 Emergency Route from the Site to the Clifton Springs Hospital.

Directions	Distance	Time
Start: Depart 147 State Street (Frederick Property), Manchester, NY 14504 on State Street (East)	0.7	0:02
1. Turn LEFT (North) onto NYS Route 21	0.4	0:01
2. Turn RIGHT (East) onto NYS Route 96	4.5	0:08
3. Turn RIGHT (South) onto Kendall Street	0.6	0:01
4. Turn LEFT (East) onto East Main Street	<0.1	<1 min.
5. Turn RIGHT (South) onto Local Road	<0.1	<1 min.
End: Arrive 2 Coulter Street, Clifton Springs, NY 14432		
Total Route	6.3 mi	14 min.

9. EMERGENCY RESPONSE/CONTINGENCY PLAN (continued)

9.6. Accidents and Non-Routine Events.

Several types of emergencies are outlined in the following subsections. These are not intended to cover all potential situations, and the corresponding response procedures should be followed using common sense. Every accident is a unique event that must be dealt with by trained personnel working in a calm, controlled manner. In an accident/unusual event, the prime consideration is to provide the appropriate initial response to assist those in the accident while minimizing risks to other workers and the community.

9.6.1 On-Site Personal Injury.

If a worker is physically injured, appropriate first aid procedures shall be followed. Depending on the severity of the injury, emergency medical response may be sought. If the worker can be moved, he/she will be taken to the edge of the work area where protective clothing (if any) will be removed, emergency first aid administered, and transportation to a local emergency medical facility provided.

If the injury to the worker is exposure to chemicals, the following first aid procedures are generally initiated as soon as possible:

- a. Eye Exposure - If solid or liquid gets into the eyes, wash eyes immediately with water lifting the lower and upper lids occasionally. Obtain medical attention immediately.
- b. Skin Exposure - If solid or liquid gets on the skin, wash skin immediately at the emergency wash station using water. Obtain medical attention if skin is damaged.
- c. Inhalation - If a person inhales large amounts of organic vapor, move him/her to fresh air at once. If breathing has stopped, appropriately trained personnel should perform cardiopulmonary resuscitation. Keep the affected person warm and at rest. Obtain medical attention immediately.
- d. Ingestion - If solid or liquid is swallowed, medical attention shall be obtained immediately.

The HSS (or designated alternate) shall inform the Project Manager of the injury/accident, and provide a written report detailing the accident, its causes and consequences within one day of the accident.

9. EMERGENCY RESPONSE/CONTINGENCY PLAN (continued)

9.6. Accidents and Non-Routine Events. (continued)

9.6.2. Temperature-Related Problems.

Excessive heat or cold may affect workers' health and the ability to function. These are discussed in Section 3.7, including first aid procedures.

9.6.3. Fires.

Workers will be knowledgeable in fire-suppression techniques. They shall be instructed in proper use of the fire extinguisher(s) supplied. Fire extinguishers should be used only for small fires in the early stages of development. When the fire cannot be controlled through extinguisher use, the area should be evacuated immediately. The local fire department should be called to fight the fire.

9.6.4. Precipitation.

In general, field and sampling activities can be conducted during rain, snowfall, or light fog. If rain (or snow) becomes heavy it may be necessary to cease work activities. All on-site activities will be halted during a thunder and lightning storm.

9.6.5. Emergency Evacuation Procedures.

The HSS (or designated alternate) will initiate emergency evacuation procedures, should an incident be determined to be sufficiently serious to require evacuation of an area. Air monitoring action levels that would require evacuation are discussed in Section 4.3 and 4.4. In addition, fire or other uncontrolled situations would require evacuation. In the event of an evacuation:

- a. The HSS or designated alternate will contact all workers by voice or the two-way radio. All workers are to stop work immediately and report to a designated area.
- b. A worker count will be conducted.
- c. The area in question will be evacuated through the Decontamination Zone, if feasible (provided that Zone is not affected). All workers will reassemble at a safe distance.

9. EMERGENCY RESPONSE/CONTINGENCY PLAN (continued)

9.6. Accidents and Non-Routine Events. (continued)

9.6.5. Emergency Evacuation Procedures. (continued)

- d. The HSS (or designated alternate) will assess potential adverse impact on the community (see Section 4.4 for community monitoring) and contact emergency-response agencies--as warranted--for potential community evacuation.
- e. If evacuation is due to high TOV readings in the Work Zone, the HSS (or designated alternate) will assess actions to reduce TOV levels in air. Such actions may include back-filling open excavations, capping of borings, or implementing engineering controls.
- f. Engines and motorized equipment will be shut off before the site is evacuated.

TABLE 1

PHYSICAL HAZARDS

Physical Hazard	Task Number	Protection Mechanism
Noise	1, 2, 3	Hearing protection when elevated noise levels exist.
Heavy Manual Lifting	1, 2, 3, 4	Lift with legs; get assistance.
Housekeeping	1, 2, 3, 4	Store equipment properly. Remove rubbish/scrap material from work area.
Compressed Gases (calibration gas)	3	Store properly.
Vehicle Traffic	1, 2, 3, 4	Warning signs; away from work area.
Heavy Equipment	1, 2, 3	Trained/licensed operators; warning signs. Backup alarms.
Materials Handling	1, 2, 3	Materials stacked/stored to prevent collapsing. Machinery properly braced.
Hazardous Material Storage	1, 2, 3	Segregate flammable/combustible liquid from ignition sources, store in approved containers, solvent waste, oily rags and liquids kept in fire resistant containers.
Fire Prevention	1, 2, 3, 4	Training in fire extinguisher use and classes.
Electrical	1, 2, 3	Approved grounding and bonding procedures. Electrical lines/cords/cables guarded and maintained. Damaged equipment tagged/removed from service.
Hand/Power Tool	1, 2, 3, 4	Guards and safety devices in place.
Tools	1, 2, 3, 4	Defective tools tagged/removed from service. Tools maintained and inspected; intrinsically safe. Proper eye protection used.

TABLE 2

BIOLOGICAL HAZARDS

Hazard	Task Number	Location/Source	Route of Exposure*	Immunization Required	Prevention
Poisonous Plants	1, 2, 3, 4	Fields, brush covered and wooded areas	I, C, G	No	Avoid contact with plants. Wear long sleeves and pants.
Insects	1, 2, 3, 4	All areas	D	No	Insect repellent. Wear long sleeves and pants.
Deer Tick (potential vector of Lyme's Disease)	1, 2, 3, 4	Fields, brush covered and wooded areas	D	No	Insect repellent. Wear long sleeves and pants. Avoid contact with plants. Check yourself for bites and rashes.

* I - Inhalation, G - Ingestion, C - Contact, D - Direct Penetration (Bite, Injection, Open Wound or Sore)

TABLE 3

EMERGENCY RESPONSE CONTACT LIST

Local Contact List

Agency	Contact/Function	Phone Number
Manchester Fire Department	Report Fire	911
Local Ambulance	Ambulance	911
Clifton Springs Hospital & Clinic	Hospital	(315) 462-9561

Contingency Plan Contact List

Agency	Contact/Function	Phone Number
Ontario County Sheriffs Department	Report Incidents	911
New York State Police	Report Incidents	911

National Emergency Contact List

Agency	Phone Number
USEPA Emergency Response Team, Region 2	(212) 340-6656
Chemtrec - Chemical Emergencies (Washington, DC)	(800) 424-9300
National Foam Center - Emergency Response (Pennsylvania)	(215) 363-1400

Utility Contact List

Agency	Contact/Function	Phone Number
New York State Electric & Gas (NYSEG)	Electrical interruption	(800) 572-1131
New York State Electric & Gas (NYSEG)	Natural gas odor	(800) 572-1121
Rochester Gas & Electric (RGE)		(888) 253-8888
Telephone Company (Alltel Communication)		(800) 542-6204
Underground Utility (UFPO)		(800) 962-7962

New York State Department of Environmental Conservation Contact List

Agency	Contact/Function	Phone Number
NYS Department of Environmental Conservation (NYSDEC)	Oil spill or hazardous material spill	(800) 457-7362

MINIMUM DECONTAMINATION LAYOUT
LEVEL C & LEVEL D PROTECTION

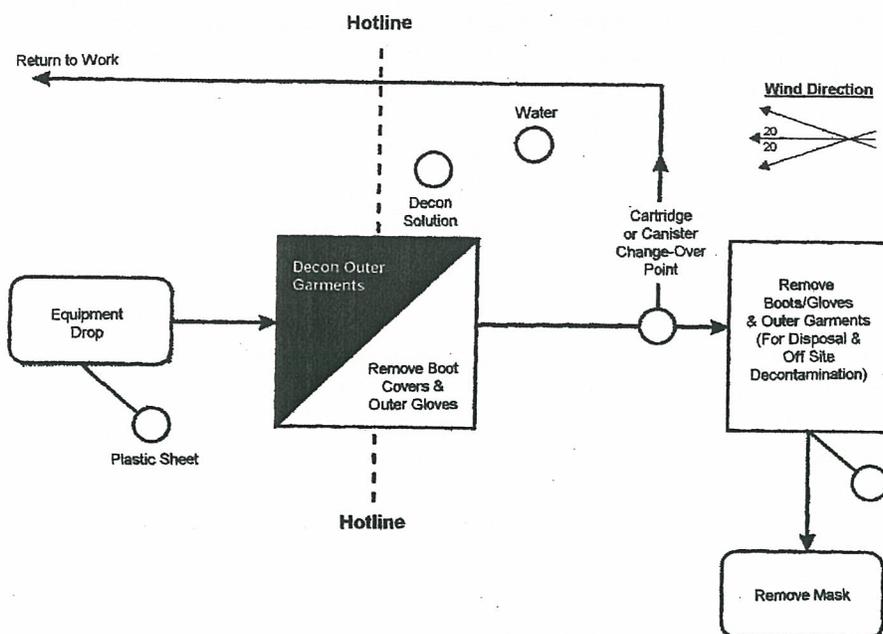
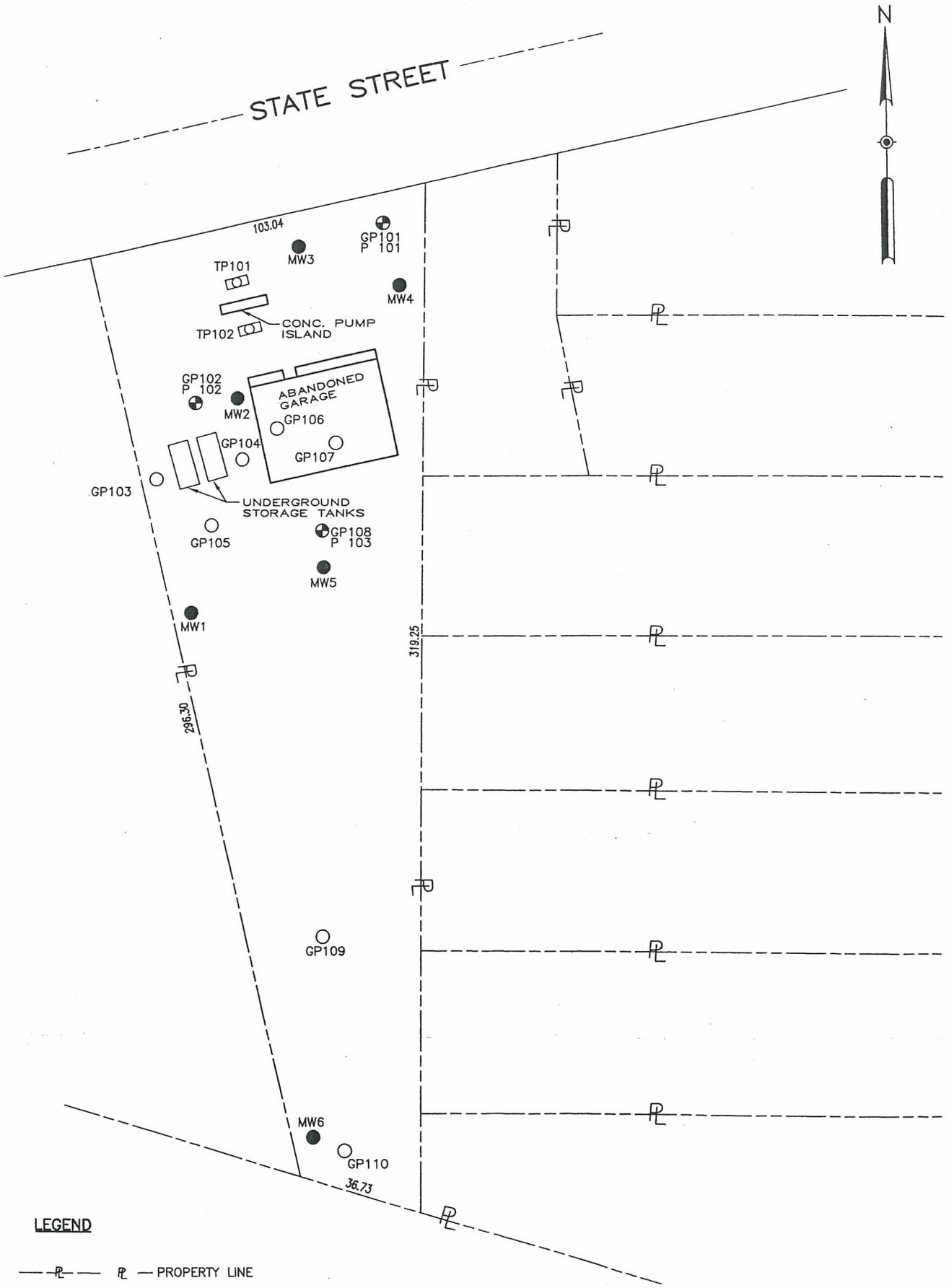


FIGURE 2



LEGEND

- P — PROPERTY LINE
- GP — GEOPROBE LOCATION
- ⊕ GP — TEMPORARY MICROWELL LOCATION
P — PIEZOMETRIC WELL
- MW — MONITORING WELL LOCATION
- TP — TEST PIT

SCALE APPROXIMATE
1" = 40'

**FIGURE 2
SITE PLAN**



147 STATE STREET

CLIFTON SPRINGS HOSPITAL

FIGURE 1 - LOCATION MAP/EMERGENCY ROUTE