POST CLOSURE MONITORING AND MAINTENANCE PLAN

NEW YORK STATE SUPERFUND STANDBY CONTRACT
LEHIGH INDUSTRIAL PARK SITE
Lackawanna, Erie County, New York

WORK ASSIGNMENT NO. D002478-38
SITE NO. 9-15-145

PREPARED FOR

New York State
Department of
Environmental Conservation
50 Wolf Road, Albany, New York 12233
Michael D. Zagata, Commissioner

Division of Hazardous Waste Remediation
Michael J. O'Toole, Jr., Director

PREPARED BY
PARSONS ENGINEERING SCIENCE, INC.
Syracuse, New York

PARSONS

JUNE 1995

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PARSONS ENGINEERING SCIENCE, INC.

PARSONS ENGINEERING SCIENCE, INC.

290 Elwood Davis Road, Suite 312 • Liverpool, New York 13088 • (315) 451-9560 • Fax (315) 451-9570

June 21, 1995

Mr. Steven Scharf, PE
Division of Hazardous Waste Remediation
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233

RE: Lehigh Industrial Park Site
Post Closure Monitoring and Maintenance Plan

Dear Mr. Scharf:

Please find enclosed three (3) copies of the revised Post Closure Monitoring and Maintenance Plan for your review. Parsons Engineering Science, Inc. (Parsons ES) has addressed the New York State Department of Environmental Conservation (NYSDEC) comments dated May 10, 1995. A summary of Parsons ES responses is included as Attachment A to this letter.

If you have any questions or would like to discuss this submission, please give me a call at (315) 451-9560.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.

William J. Long

William J. Long
Project Manager

WJL/rlc

cc: WJL
File 727021

Enclosures

ATTACHMENT A

RESPONSES TO NYSDEC COMMENTS DATED MAY 10, 1995
POST CLOSURE MONITORING AND MAINTENANCE PLAN
LEHIGH INDUSTRIAL PARK SITE

1. **Comment:** **Section 2.2: Monitoring wells No. 1 and 5 will be decommissioned and monitoring wells 2 and 3 are to remain in place. This needs to be changed in the plan.**

   Response: Section 2.2 has been changed to include the decommissioning of MW-1 and MW-5. Wells MW-2R and MW-3R have been deleted.

2. **Comment:** **Section 2.3.1: The groundwater wells will be sampled quarterly for the first year and then annually thereafter; depending on the analytical results.**

   Response: Correction made. Corrections have also been made to Sections 2.3.6 and 2.3.10 and Tables 2.2 and 2.3. The sample methods in Table 2.1 have also been changed to match previous sampling performed during the remedial investigation.

3. **Comment:** **Section 2.3.3: The static water levels of all the wells to be sampled must be measured prior to purging and sampling any of the wells. This will prevent the static levels of any of the wells from being affected by purging.**

   Response: The step-by-step sampling procedure requires measurement of the static water level prior to purging and sampling. Step 4 has been revised to further clarify measurement prior to purging and sampling.

4. **Comment:** **Periodic surveying of the cap is not discussed in the plan. How will any long-term settlement of the cap be monitored and identified? Bench marks established during construction could be preserved in protected locations for future cap monitoring surveys and other long-term elevation needs.**

   Response: Parsons ES does not envision a need for periodic surveying. The paragraph regarding cap repairs on Page 3-2 of Section 3.3.1 has been revised to include surveying if large areas of settlement or a lack of drainage are occurring. The benchmarks to be used are the monitoring wells.

5. **Comment:** **The plan should address how the well development water removed as a result of the well development and purging will be disposed.**

   Response: Disposal of purged well water has been added to Step 6 of Section 2.3.3, Field Procedures. The last sentence of this section reads, "The purged water may be disposed on the ground surface a minimum of ten feet away from the well in a downhill location."

6. **Comment:** **Page 3-2: Mowing should be twice a season, once in the spring and again in the fall.**

   Response: Correction made.

7. **Comment:** **Table 2.1: Remove all the leachate indicators from the groundwater quality analysis. Groundwater sampling need only look for volatiles, base-neutral acid (BNA), metals and pesticides/PCB compounds.**

   Response: Leachate indicators deleted. BNA and pesticides/PCB analysis added.

8. **Comment:** **Table C.1: This table needs to be changed to reflect the monitoring wells to be decommissioned.**

   Response: Table corrected.

9. **Comment:** **Page 5-1, Section 5.1 Change the phone number to: (518)457-0927.**

   Response: Correction made. The same correction has also been made in Section 2.3.9.

10. **Comment:** **Copies of quarterly and annual reports must also be submitted to:**

    Mr. Peter Buechi, P.E.
    Regional Hazardous Waste Engineer
    NYSDEC-Region 9
    270 Michigan Ave
    Buffalo, New York 14203-2999

    Response: Section 5.1 corrected to include Region 9.

POST-CLOSURE MONITORING AND MAINTENANCE PLAN FOR

NEW YORK STATE SUPERFUND STANDBY CONTRACT

LEHIGH INDUSTRIAL PARK SITE
LACKAWANNA, ERIE COUNTY
WORK ASSIGNMENT NO. D002478-38
SITE NO. 9-15-145

PREPARED FOR:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS REMEDIATION

PREPARED BY:

PARSONS ENGINEERING SCIENCE, INC.
290 ELWOOD DAVIS ROAD
SUITE 312
LIVERPOOL, NEW YORK 13088
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MAY 1995

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SECTION 1

INTRODUCTION

This document presents a monitoring and maintenance operations plan for post-closure activities at the Lehigh Industrial Park (LIP) site which complies with the requirements set forth under New York Codes, Rules and Regulations, Title 6 (6 NYCRR), Part 360-2.15(k)(7). The plan describes groundwater monitoring, site cover and drainage system inspection and maintenance, contingency plans, and reporting requirements. This plan also contains detailed instructions to be used by site personnel to assure efficient monitoring, groundwater sampling and analysis, and maintenance of facility components for a minimum period of 30 years after site closure.

1.1 PROJECT BACKGROUND

The LIP site is a former automotive scrapping facility, located at 31 South Street in the City of Lackawanna, Erie County, New York. The site occupies 9.1 acres of land and is bounded by South Street to the north, Buffalo Brake Beam Co. to the south, Conrail and South Buffalo Railway right-of-way to the east, and a residential area on the west. The shore of Lake Erie is approximately one mile to the west and Smokes Creek is approximately 1000 feet south of the southern border.

A Site History Report was prepared by Parsons Engineering Science, Inc. (Parsons ES) in September 1992 and presents detailed information on previous owners and operators, site conditions and occurrences of spills and other mishaps. In summary, a deed search of LIP revealed that in the early 1900's the site was initially separated into four parcels, and that these parcels were utilized independently from one another under different owners. They eventually became consolidated under a single owner in 1973.

Though ownership has changed hands many times, aerial photographs dating back to 1938 have revealed that the site has been used primarily as an automotive and metal scrap yard. The last business to operate at the site was known as Roblin Industries, Inc. (Roblin). Roblin filed for bankruptcy in 1985. Conversations with past Roblin employees and review of documents on file with various public agencies indicate that spills were commonplace, and some drums were received, scrapped, and possibly buried under waste/soil piles. There are, however, no records of drums on file with any of the agencies contacted. The Lehigh Industrial Park purchased the site from the bankruptcy trustee of Roblin in 1988.

Prior to New York State Department of Environmental Conservation (NYSDEC) involvement, the Erie County Department of Environmental Planning (ECDEP) was involved with environmental compliance issues at the LIP site. In 1979, soil sampling was supervised by the ECDEP as part of a cleanup of a polychlorinated biphenyl (PCB)-laden oil spill from a transformer. After excavation of oil-stained soil was performed, Roblin was advised that no further action was required on its part.

In 1988, after Roblin had gone bankrupt and the site was inactive, another PCB spill occurred (near the location of the previous spill), when hazardous waste disposal

workers were removing a transformer. Subsequent sampling confirmed that PCB-contaminated soils were present again at the site.

The LIP site was designated as a Class 2 inactive hazardous waste site (containing hazardous waste that constitutes a significant threat to the environment) in December 1990. For the past several years, the site has been plagued by vandalism, illegal dumping, and suspicious fires.

1.2 POST-CLOSURE SITE CONDITIONS

The Lehigh Industrial Park Site will be remediated in the Summer and Fall of 1995. The remediated site consists of a one foot thick clean soil cover over all contaminated and potentially contaminated areas which include an approximately 350 feet by 550 feet pile of non-hazardous waste soil and debris consolidated from the rest of the site. No hazardous waste will be left on site. The site will be fully revegetated to control erosion and fenced off to control access (Appendix A Record Drawings).

1.3 ORGANIZATION OF MONITORING AND MAINTENANCE PLAN

This plan is organized into five sections, including this introduction (Section 1). Section 2 provides a description of groundwater monitoring; Section 3 provides a description of site cover and drainage system inspections and correction procedures; Section 4 is a contingency plan; and Section 5 provides information on record keeping and the various reports that must be submitted. As-built drawings, a site health and safety plan, and post-closure inspection and maintenance report forms for post-closure field activities are contained in Appendices A, B, and C, respectively.

SECTION 2

GROUNDWATER MONITORING

2.1 GENERAL

Groundwater monitoring will be a routine part of the LIP site post-closure operations. The following subsections will describe the procedures for sampling monitoring wells, analysis of samples, and evaluation of sample results.

2.2 MONITORING WELL LOCATIONS

All existing wells are shown on Figure 2.1 and include a total of five monitoring wells. The wells were installed during the Preliminary Remedial Investigation conducted in 1992. MW-1 and MW-5 will be decommissioned during the remedial construction. The wells to be sampled include one representative upgradient well (MW-3) and two downgradient wells. Information regarding the wells is provided in Table C.1.

2.3 GROUNDWATER SAMPLING AND ANALYSIS

2.3.1 Frequency of Sampling

Groundwater sampling and analysis of three site wells will be conducted quarterly for the first year and annually thereafter, depending on the analytical results. The three wells will effectively monitor contaminant migration in all directions from the site. Should a well yield repeated high contaminant levels or a sudden rise in contamination, the well may be monitored quarterly in lieu of annually upon approval from the NYSDEC project manager.

2.3.2 Sample Container Preparation

Sample containers will be properly washed and decontaminated by the laboratory prior to use. The containers will be tagged and Chain of Custody initiated before shipping to the sampling site in coolers. The types of containers and preservation techniques are shown in Table C.1. Since all bottles will contain the necessary preservatives, they need only be filled. Following sample collection, the bottles will be placed on ice in the shipping cooler. The samples will be cooled to 4°C but not frozen.

2.3.3 Field Procedures

The following is a step-by-step sampling procedure to be used to collect the groundwater samples. Well sampling procedures will be recorded on the form shown on Figure C.1.

- Assemble all field equipment necessary for sample collection (Table C.2).
- Inspect equipment to ensure it is working properly.
- Select upgradient well (MW-3) as the initial sampling location.

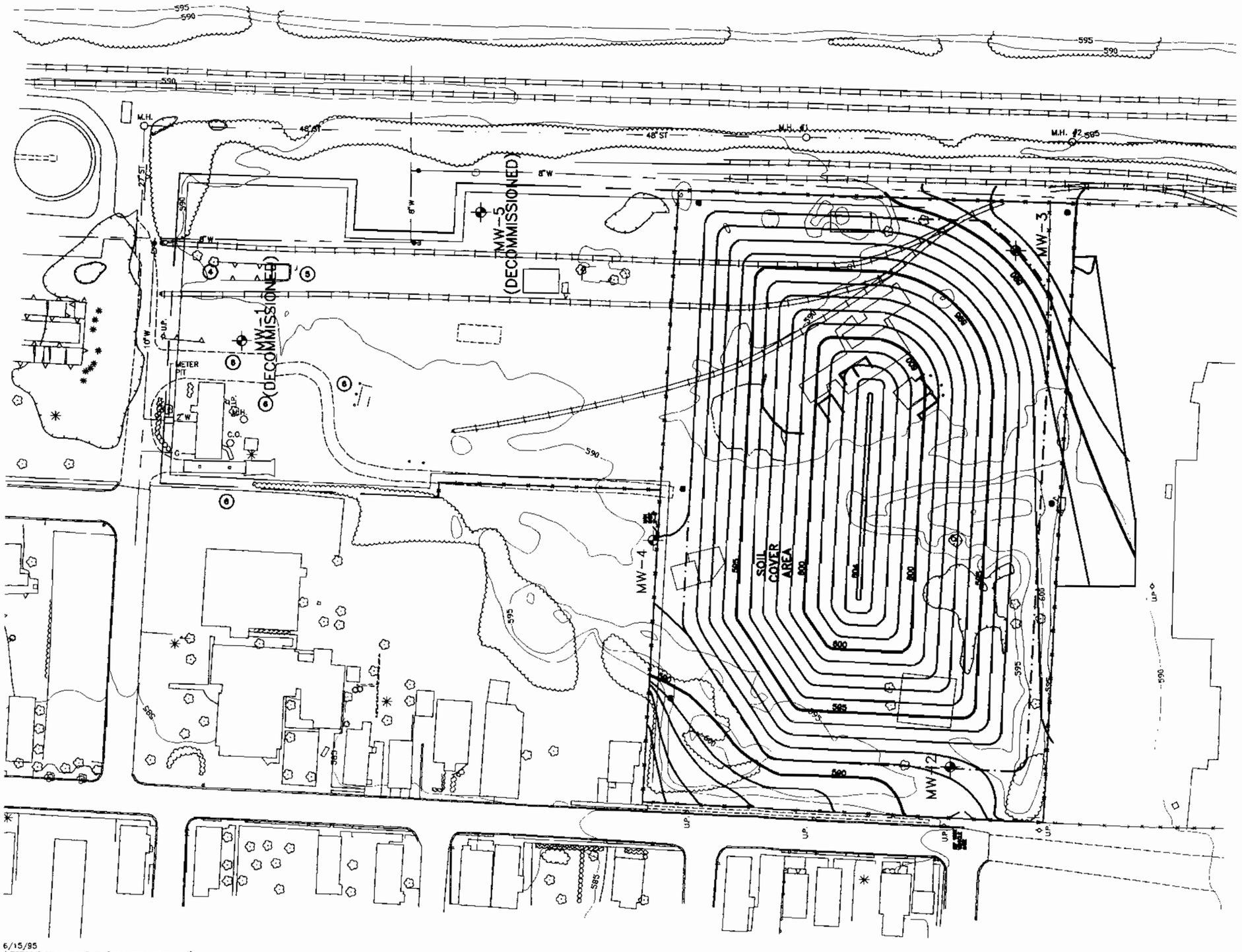
- Prior to purging and sampling, measure the static water level from the surveyed well elevation mark on the top of the casing with a water level indicator. Water levels will be measured to nearest 0.01 foot and recorded on the Groundwater Sampling Record (Figure C.1).
- Decontaminate the water level indicator. (See Section 2.3.4 for decontamination procedures.)
- Purge the well by removing a minimum of three well volumes of water. Purging will be conducted with a bailer or a centrifugal pump with a foot valve on the intake and dedicated polyethylene tubing. The centrifugal pump will be equipped with a gate valve on its discharge. If the well goes dry before the required volumes are removed, the well may be sampled when it recovers sufficiently. The purged water may be disposed on the ground surface a minimum of ten feet away from the well in a downhill location.
- Collect samples from each well with a dedicated bailer lowered by a dedicated nylon line. Temperature, conductivity, dissolved oxygen, pH, and turbidity will be measured, and sample description and location noted on the Groundwater Sampling Record (Figure C.1). Specific conductance and pH will be measured by precalibrated electronic probes. Temperature will be measured by a precalibrated probe or thermometer.
- Fill sample containers to be analyzed for volatile organic compounds first. Sample containers to be analyzed for metals and other analytes will then be filled. Sample containers will be labelled in accordance with historic monitoring well titles shown on Figure 2.1.
- The groundwater samples will be placed in a laboratory cooler, packed on ice and shipped overnight to the laboratory. Quality assurance blanks will be sent with each sample shipment. Chain-of-Custody procedures will be strictly followed as outlined in Section 2.3.5.

2.3.4 Equipment Decontamination

Prior to sampling equipment use, and between sampling points, all non-dedicated equipment (bailers, water-level indicators, etc.) coming in contact with well water will be properly decontaminated. The decontamination procedure is as follows: (Water-level indicator is used as an example.)

- Thoroughly clean the water-level indicator with a biodegradable detergent, such as Alconox and tap water.
- Triple rinse the water-level indicator with distilled water.
- Allow water-level indicator to air dry or wipe dry using disposable paper towels.
- Wrap water-level indicator in aluminum foil or place in clean plastic bag so that no outside contaminants are introduced.

Between rinses, equipment will be placed on polyethylene sheets or aluminum foil if necessary. At no time will washed equipment be placed directly on the ground.



LEGEND

- PROPERTY LINE
- 596 PROPOSED INDEX CONTOUR (5 FT.)
- PROPOSED INTERMEDIATE CONTOUR (1 FT.)
- MW-2 MONITORING WELL LOCATION

100' 50' 0 100'

Approximate Scale in Feet

PARSONS ENGINEERING SCIENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

MONITORING WELL LOCATION MAP
LEHIGH INDUSTRIAL PARK
LACKAWANNA, NEW YORK

FIGURE 2.1

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To prevent cross-contamination between wells, separate bailers and rope will be used for each well.

2.3.5 Field Sample Custody

Evidence of sample traceability and integrity is provided by Chain-of-Custody (COC) procedures. These procedures document the sample traceability from the selection and preparation of the sample containers by the laboratory, to sample collection, to sample shipment, to laboratory receipt and analysis (Figure C.2). A sample is considered to be in a person's custody if the sample is:

- In a person's possession;
- Maintained in view after possession is accepted and documented;
- Locked and tagged with Custody Seals so that no one can tamper with it after having been in physical custody; or
- In a secured area which is restricted to authorized personnel only.

A COC record (Figure C.3) accompanies the sample containers from selection and preparation at the laboratory, during shipment to the field for sample containment and preservation, and during return to the laboratory. Triplicate copies of the COC must be completed for each sample set collected.

The COC lists the field personnel responsible for taking samples, the project name and number, the name of the analytical laboratory to which the samples are sent, and the method of sample shipment. The COC also lists a unique description of every sample bottle in the set. If samples are split and sent to different laboratories, a copy of the COC record will be sent with each sample.

The REMARKS space is used to indicate if the sample is a matrix spike, matrix spike duplicate or matrix duplicate. Since they are not specific to any one sample point, trip and field blanks are indicated on separate rows. Once all bottles are properly accounted for on the form, the sampler will write his or her signature and the date and time on the first RELINQUISHED BY space. The sampler will also write the method of shipment, the shipping cooler identification number, and the shipper airbill number on the top of the COC. Mistakes will be crossed out with a single line and initialed by the author.

One copy of the COC is retained by sampling personnel and the other two copies are put into a sealable plastic bag and taped inside the lid of the shipping cooler. The cooler lid is closed, custody seals provided by the laboratory are affixed to the latch and across the back and front lids of the cooler, and the person relinquishing the sample signs his name across the seal. The seal is taped, and the cooler is wrapped tightly with clear packing tape. It is then relinquished by field personnel to personnel responsible for shipment, typically an overnight carrier. The COC seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the designated person, and the sample will not be analyzed.

2.3.6 Sample Analysis

As required in 6NYCRR Part 360-2.11(c)(5)(ii)(a), groundwater will be analyzed for either baseline or routine parameters (Table 2.1). Baseline parameters will be analyzed once per year, during rotating quarters (i.e., first quarter in year 1, second quarter in year 2, third quarter in year 3, etc.). Routine parameters will be analyzed for during the other three quarters only during the first year of sampling. Table 2.2 shows the sampling schedule for the first five years of post-closure activities.

After the first two rounds of analysis, the need for monitoring all selected monitoring wells and for analyzing VOCs for subsequent sampling will be evaluated. If repeated non-detects are found in non-critical monitoring wells, reduced monitoring frequency may be used in these wells upon the NYSDEC's approval.

After five years, the parameter list will be reevaluated based on the post-closure sampling results.

Samples will be analyzed by a laboratory which is New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) approved in all categories of solid and hazardous waste. The number of samples to be analyzed annually are summarized in Table 2.3.

2.3.7 Quality Assurance/Quality Control

In addition to water samples collected from monitoring wells, and the sample port two types of "blanks" will be collected and submitted to the chemical laboratory for analyses. The blanks will consist of 40 mL VOA vials, as follows:

a. Trip Blank - A Trip Blank will be prepared before the sample bottles are sent by the laboratory. It consists of a sample of distilled, deionized water which accompanies the other sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of water samples, where sampling and analysis for volatile organic compounds is planned. The Trip Blank will be analyzed for volatile organic compounds as a measure of the internal laboratory procedures and their effect on the results.

b. Field Blank - Field Blanks will be prepared before the sample bottles are sent by the laboratory. Field Blanks will consist of the following:

c. Atmospheric Blank - To measure the contribution of atmospheric contaminants, a sample bottle of organic-free distilled, deionized water is prepared by the laboratory and sent with the shipment of sample bottles. The blank is opened as sampling takes place. When sampling is completed, the blank is capped. The blank is utilized when sampling and analysis for volatile organic compounds is being performed. In these cases, the blank will be analyzed for volatile organic compounds.

2.3.8 Health and Safety

A Health and Safety Plan is provided in Appendix B which includes information on chemical and physical hazards anticipated during maintenance and monitoring at the site, personnel protection and monitoring equipment, accident prevention and

contingency plan, sample handling, monitoring well decommissioning, and decontamination.

2.3.9 Data Evaluation and Reporting

The results of each monitoring event will be summarized quarterly in a letter report. Analytical results will be evaluated quarterly with respect to background levels detected in monitoring wells during the Remedial Investigation, and applicable NYSDEC and NYSDOH standards and guidance values. Analytical results showing an increase in contamination must be reported to the NYSDEC project manager within 14 days of such determination.

An annual summary report will be prepared which compares background levels, individual sampling round results and applicable water quality standards. Included in the report will be a table with the following information:

- Sample identification number
- Sample collection date
- Well identification including description of upgradient wells
- Analytical results
- Method Detection Limits (MDL)
- Chemical Abstracts Service (CAS) numbers for all compounds
- Applicable water quality standards
- New York State Department of Health guidance values and statistical triggers
- Delineation of samples with exceedances of background levels, standards, guidance values, or statistical triggers.

A summary and discussion of all exceedances of background levels, standards, values, or statistical triggers and any proposed modifications to the sampling and analysis schedule will also be included.

The NYSDEC office responsible for this project is:

Mr. Gerald Rider, P.E.
Chief, Operation, Maintenance & Support Section
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010
(518) 457-0927

2.3.10 Contingency Monitoring Plan

This Contingency Monitoring Plan provides for increased water quality monitoring should an increase or migration of contaminants be determined. This plan has been developed in accordance with NYCRR Part 360-2.11(c)(5)(iii).

If increasing contamination for one or more routine parameters is found, then those affected monitoring wells will be sampled and analyzed for baseline parameters during

the next quarter and semiannually thereafter. The semiannual baseline sampling will continue until the elevated parameter(s) is shown not to be site-derived, the contaminant release is remediated, or it is determined there is no threat to public health or the environment.

If, during analysis for baseline parameters, increasing contamination is found for any parameter(s), quarterly sampling and analysis will be conducted for those baseline parameters of increasing contamination. This increased monitoring schedule will continue until the elevated parameter(s) is shown not to be site-derived, the contaminant release is remediated, or it is determined there is no threat to public health or the environment.

TABLE 2.1
GROUNDWATER QUALITY ANALYSIS TABLE

	GROUNDWATER		
	Baseline Parameters	Routine Parameters	Suggested Methods
FIELD PARAMETERS			
Static water level (in wells and sumps)	x	x	
Specific Conductance	x	x	9050
Temperature	x	x	
pH	x	x	9040/9041
Turbidity	x	x	
Field Observations [1]	x	x	
METALS			
Aluminum	x		202.1 CLP-M
Cadmium	x	x	213.2 CLP-M
Calcium	x	x	213.1 CLP-M
Iron	x	x	236.1 CLP-M
Lead	x	x	239.2 CLP-M
Magnesium	x	x	242.1 CLP-M
Manganese	x	x	243.1 CLP-M
Potassium	x	x	258.1 CLP-M
Sodium	x	x	273.1 CLP-M
TOXIC METALS			
Antimony	x		204.2 CLP-M
Arsenic	x		206.2 CLP-M
Barium	x		208.1 CLP-M
Beryllium	x		210.2 CLP-M
Cadmium	x		213.2 CLP-M
Chromium (total and hexavalent)[2]	x		218.2 CLP-M
Copper	x		220.1 CLP-M
Lead	x		239.2 CLP-M
Mercury	x		245.2 CLP-M
Nickel	x		249.1 CLP-M
Selenium	x		270.2 CLP-M
Silver	x		272.1 CLP-M
Thallium	x		279.2 CLP-M
Zinc	x		289.1 CLP-M
Cyanide	x		335.2 CLP-M
Volatile organics	x		524.2
Base-Neutral Acid (BNA)	x		ASP 91-2
Pesticides/PCBs	x		ASP 91-3

This list may be modified as needed.

All samples must be whole and unfiltered except as otherwise specified by the NYSDEC project manager.

1 Any unusual conditions (colors, odors, surface sheens, etc.) noticed during well development, purging, or sampling must be reported.

2 The requirement to analyze Hexavalent Chromium may be waived provided that Total and Hexavalent and Trivalent Chromium values do not exceed 0.05 mg/l.

3 Suggested methods are the same methods used in previous sampling rounds. The methods may be changed as needed with prior approval from the NYSDEC.

TABLE 2.2

GROUNDWATER SAMPLING SCHEDULE
LEHIGH INDUSTRIAL PARK SITE

Post-Closure Year	Parameter List To Be Sampled			
	Quarter			
	1	2	3	4
1	B	R	R	R
2	None	B	None	None
3	None	None	B	None
4	None	None	None	B
5 [1]	B	None	None	None

R = Routine Parameters (see Table C.2).

B = Baseline Parameters (see Table C.2).

[1] = Environmental monitoring program to be evaluated after 5 years

TABLE 2.3

NUMBER OF GROUNDWATER SAMPLES FOR LABORATORY ANALYSIS PER SAMPLING EVENT

	Monitoring Wells [1]	
Parameter	Baseline	Routine
BNA	3	0
Pesticides/PCBs	3	0
Metals [2]	3	3
VOCs [3]	3	0
Duplicates	1	1
Field Blanks	0	0
MS/MSD	1	1
Total	14	8

[1] 1 sample/each well for 3 wells sampled annually

[2] Baseline and Routine Parameters vary for metals

[3] VOCs will be analyzed only for Baseline parameters.

SECTION 3

POST CLOSURE LANDFILL CARE AND MAINTENANCE

3.1 INTRODUCTION

This section contains procedures for post-closure care and maintenance of the soil cover, drainage swales, drainage benches, leachate collection trenches, and other site structures. Specific procedures include routine inspections, routine maintenance, and contingency actions.

3.2 ROUTINE INSPECTIONS

The site will be inspected quarterly throughout the post-closure period. The site will also be inspected following particularly heavy storm events, e.g. a 10-minute, 2-year frequency storm. The landfill will be inspected for:

- visible debris, litter and waste;
- loss of vegetative cover;
- integrity of drainage system including:
    - clogging of swales and drop inlet covers;
    - sediment build-up;
    - pooling or ponding;
    - slope integrity; and
    - overall adequacy of surface runoff collection system;
- condition of access road, gates and fences;
- integrity of groundwater monitoring wells (to be inspected during sampling);
- integrity of soil cover including:
    - erosion or settling of cover material;
    - animal borrows;
    - woody vegetation.

A site inspection map, post-closure inspection checklist, well inspection checklist, and maintenance schedule are contained in Appendix D. The site plan is to be used to document problems and indicate areas that require attention.

3.3 ROUTINE MAINTENANCE

3.3.1 Soil Cover Maintenance

- Monitor site vegetation progress to annually confirm that the desired grass species have become established and that the desired ground cover is forming. Reseed and retreat local spots if the vegetation fails to become established by the end of the second growing season.

- Conduct annual ground inspections at the beginning of each summer to determine the status of woody plant species on the site surface.
- Mow the landfill cap surface twice each year, once in the spring and once in the fall, to control woody vegetation and promote short grass species.
- If woody plants are detected, remove the plants using one of the following methods:
  - For a small number of isolated individual plants, pull out the plants or cut them off at ground level by hand.
  - For more extensive areas involving hundreds of individual plants, remove the plants by mowing the area once a year in late summer to early fall. Mowing should be deferred until after the grass cover has become firmly established and will not be damaged by mowing equipment.

Indications of erosion or other site maintenance problems detected during routine site inspections or following particularly heavy storm events will be corrected as soon as possible. Repairs of eroded areas will be made with materials and methods specified herein. If erosion of the topsoil layer is encountered, the repair action may include, but not be limited to, the following:

- Covering repaired areas with topsoil, as specified in the remedial construction Contract Documents (available at NYSDEC-Albany), to minimum thickness (min. 3 inches) and design grades; and
- reseeding and fertilizing in accordance with materials and application rates specified in Section 02990 Finish Grading, Topsoil and Seeding of the Contract Documents.

If erosion is persistent in certain areas, alternate methods for maintaining soil and vegetative cover or erosion protection will be evaluated on a case-specific basis.

Spots barren of vegetation in the final cap will be reseeded and fertilized as necessary. Seed and fertilizer will be of the same type and quality as originally specified. Any undesirable species will be removed if their presence is suspected of deteriorating the integrity of the cap.

The need for cap repairs due to subsidence or settling will be determined based on an evaluation of whether the function of the cap in the affected area has been impaired. Should large areas appear to have settled or drainage is not occurring, a survey of the cover may be conducted to determine the extent and nature of the repairs. Bench marks, such as the monitoring wells, established during construction shall be used for the survey. Those areas where the function has been impaired will be repaired to ensure that the integrity of the cap is maintained. Repair actions may include, but are not limited to:

- stripping and stockpiling topsoil from the affected area;
- regrading the affected area in accordance with the grading plan shown on the record drawings; and

- replacing topsoil, and reseeding and fertilizing to reestablish vegetative cover as described previously.

For animal control, follow these procedures:

- Conduct an annual site inspection for to look for woodchuck or other animal burrow or den entrances on the landfill. If den or burrow entrances are found, a program to trap, shoot, or otherwise remove the burrowing animal(s) will be implemented on a case-specific basis. Following removal of the burrowing animal(s), the entrances will be plugged and the bare areas will be reseeded and fertilized. Seed and fertilizer will be of the same type and quality as originally specified.

3.3.2 Maintenance of Site Structures

Maintenance activities will be performed as determined necessary based on routine inspections. During all maintenance activities, vehicle traffic crossing over the drainage benches shall be kept to a minimum. Maintenance vehicles shall cross the perimeter drain at the stone access crossings only.

Drainage System Management

All elements of the drainage system including drainage piping, swales, and drop inlets will be maintained throughout the post-closure period. All elements will be inspected quarterly or after severe rainfall events to verify the structures are intact and undisturbed, and that channels and discharge areas are free of obstructions which would impair the free flow of surface water run-off. In the event any of the structures are found to be damaged or incapable of conveying the design flows, repairs will be made as soon as practical. Any obstructions found in benches or swales will be immediately removed and channels regraded as necessary. If any culverts are found to be damaged such that their function is impaired, they will be repaired or replaced. Accumulated sediment will be removed from drainage channels and/or around outlet structures as required to maintain required capacity and proper operation.

Groundwater Monitoring Wells

Monitoring wells which are damaged such that representative ground water samples cannot be obtained will be repaired or replaced. Repair measures will be based on case-specific evaluation. Any well damaged beyond repair or rendered inoperative will be replaced with a new well of similar depth and construction. Detailed requirements for well installation and decommissioning are specified in Section 02900, Groundwater Monitoring Wells, of the Contract Documents.

Access Control

The access road will be maintained in good condition so that routine inspections and required maintenance activities at the site can be carried out. The gates will be kept in good condition and locked to prevent unauthorized access. The condition of the gates, fences and roads will be assessed as part of the quarterly inspections. Repairs will be conducted as needed.

SECTION 4

CONTINGENCY PLAN

4.1 INTRODUCTION

The objective of this contingency plan is to establish procedures for handling events which occur outside the scope of the routine maintenance. The contingency plan should be implemented following the identification of a site condition which is not covered by the routine maintenance plan.

Natural occurrences such as storms, drought and subsidence should be considered "expected occurrences" and are addressed under the routine maintenance program. Certain problems which cannot be reasonably expected to occur, such as earthquakes, are not addressed in this contingency plan.

The following problems are examples of occurrences which are not expected to occur, but may be discovered during a routine post-closure inspection:

- degradation of the soil cover integrity which may be a result of or indicated by:
  - waste/contaminated soil protruding through the topsoil cover;
  - soil erosion or other drainage problems; or
  - uncontrolled burrowing by pests.
- vegetative cover missing despite repeated efforts at revegetation;

The following guidelines are offered to determine when the contingency plan should be implemented and to determine possible corrective actions when responding to a contingency. All corrective actions, where appropriate, will be executed in a timely fashion after notifying the appropriate regulatory agencies.

4.2 FIRE

Fires at the site will be immediately reported to the local fire department. Appropriate response measures, including personnel safety, will be the responsibility of the fire department. Fires will be quenched according to approved fire department protocol. Damage to the surface drainage system or soil cover will be repaired where these systems have been compromised.

4.3 VANDALISM

Vandalism will be reported to the local law enforcement authorities. If vandals have gained entry to the site, appropriate measures will be taken to eliminate or restrict future access. Vandalism to monitoring wells will be repaired as appropriate on a case-specific basis. Damage caused by off-road vehicles will be repaired where the damage is determined to have compromised the integrity of the soil cover or the function of the surface drainage system.

4.4 SEVERE EROSION AND COMPROMISE OF SOIL COVER INTEGRITY

Severe erosion of the soil cover, as well as the storm water management system will be repaired to original specifications. The cause of severe erosion will be investigated and remedial measures, if needed, will be developed and implemented accordingly.

4.5 UNAUTHORIZED DUMPING OR DISPOSAL

Unauthorized dumping or waste disposal will be reported to the NYSDEC and local enforcement officials. Appropriate measures will be taken to determine the waste characteristics, containment requirements and the necessary removal and disposal techniques. The waste will be removed and disposed of at an approved disposal facility, as appropriate. Efforts will be taken to eliminate further dumping and to restrict subsequent entry to the site. Persons found in the act of illegal dumping will be prosecuted according to the law and will be held responsible for all costs incurred in removing the waste.

4.6 QUALITY ASSURANCE/QUALITY CONTROL

To assure the performance of site inspection and maintenance, a reporting procedure has been established. A site inspection checklist is provided in Appendix C. The site inspection checklist was developed in accordance with the parameters identified in this section. The checklist will be completed after regularly scheduled site inspections and inspections following severe storms.

The monitoring and maintenance contractor and any future designated authority responsible for performing site inspections and supervising maintenance operations will be fully qualified (as determined by NYSDEC) to perform the work. The site inspection checklist and maintenance schedule will be completed under the supervision of a New York State licensed Professional Engineer. Maintenance and repair work shall conform to the requirements set forth in this Plan.

SECTION 5

REPORTING AND RECORD KEEPING

5.1 INTRODUCTION

This section describes the reporting and record keeping that will be followed by the monitoring and maintenance contractor during the 30 year post-closure period. Groundwater data must be reported to NYSDEC on a quarterly basis. An annual report summarizing monitoring and maintenance activities will also be submitted to NYSDEC. Copies of the quarterly and annual reports will be sent to NYSDEC at each of the following locations:

Mr. Gerald Rider, P.E.
Chief, Operation, Maintenance & Support Section
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010
(518) 457-0927

Mr. Peter Buechi, P.E.
Regional Hazardous Waste Engineer
New York State Department of Environmental
Conservation - Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

5.2 QUARTERLY REPORTS

The quarterly report will include all of the quarterly groundwater data. The report outline will be based on the data reporting regulations in 6NYCRR Part 360-2.11(c)(4)(iv), including tables showing collection data, analytical results and applicable NYSDEC and NYSDOH standards and guidance values, a summary of contraventions of water quality standards and a discussion of results.

5.3 ANNUAL REPORT

The annual report will contain a summary of water quality information from the quarterly reports with special note of any changes in water quality which have occurred throughout the year. The annual report will also summarize the inspection and maintenance activities on the cap and site structures for the year. Combustible gas monitoring results and discussions will also be presented in the annual report.

5.4 RECORD KEEPING

Records of data, drawings, and calculations concerning any work proposed or completed at the site are kept on permanent file by NYSDEC, Albany, New York. In addition, records will be maintained in conjunction with the post-closure monitoring and maintenance at the landfill. For example, wells will be monitored and data recorded on a data sheet. This and other investigative results are incorporated into

reports that are submitted to NYSDEC. Included in the reports are appendices with copies of data sheets, log books, and laboratory analysis results. The originals will be kept by NYSDEC or its contractor for performing maintenance and monitoring activities for at least five years.

APPENDIX A

RECORD DRAWINGS

APPENDIX B

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

For

Post-Closure Monitoring and Maintenance

Field Activities

at the

Lehigh Industrial Park Site

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
290 Elwood Davis Road, Suite 312
Liverpool, New York 13088

MARCH 1995

Reviewed and Approved By:

	Name	Date
NYSDEC Representative	_____	_____

TABLE OF CONTENTS

LIST OF FIGURES

EMERGENCY CONTACTS

In the event of any situation or unplanned occurrence requiring assistance, the appropriate contact(s) should be made from the list below. For emergency situations, contact should first be made with the site coordinator who will notify emergency personnel who will then contact the appropriate response teams. This emergency contacts list must be in an easily accessible location at the site.

Contacts	Phone Number
Police Department	(716) 822-4900
Fire Department	(716) 823-0212
Poison Control Center	(800) 888-7655
Emergency Dispatch Center	
Emergency Management Office	

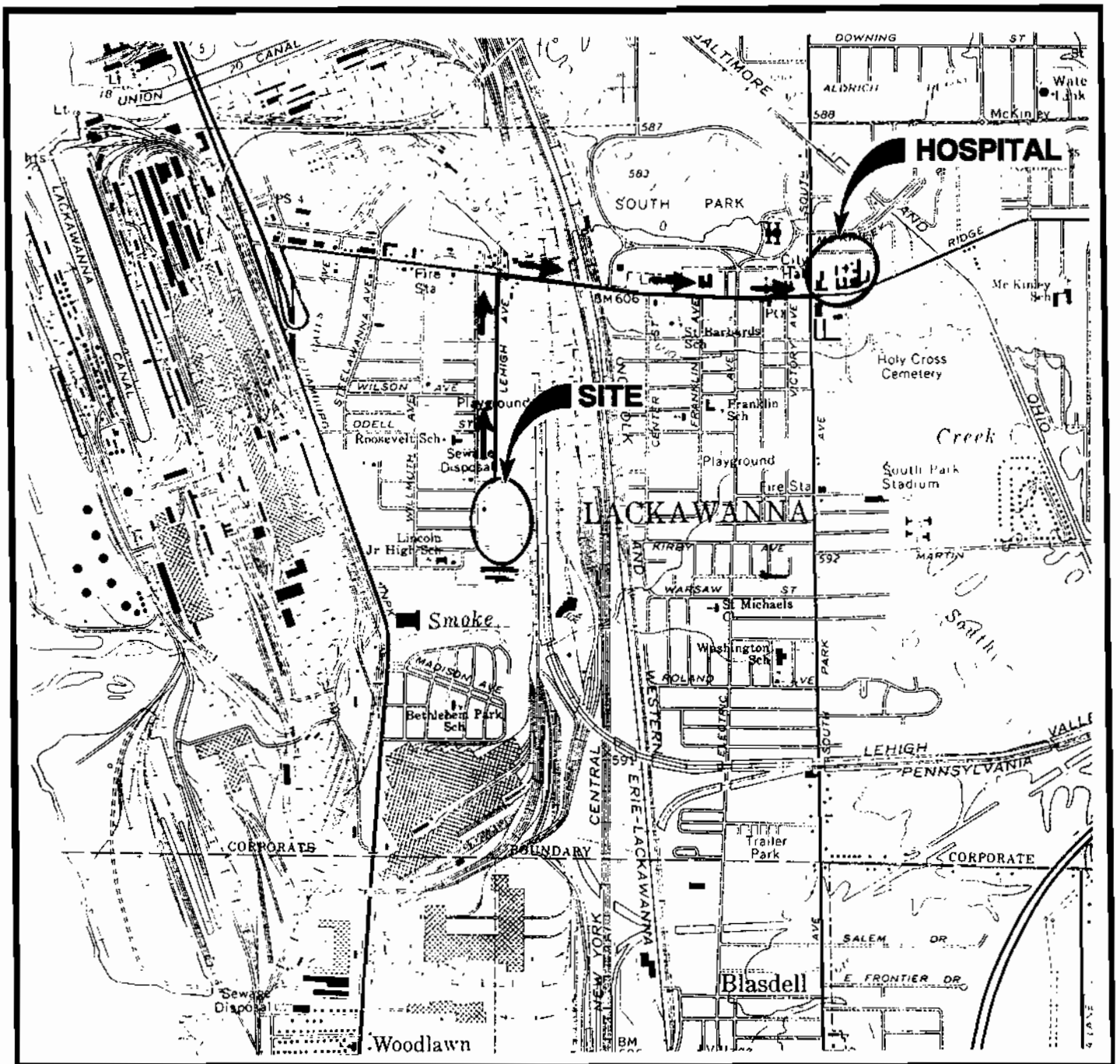
Medical Emergency

Our Lady of Victory Hospital 55 Melroy Ave. Lackawanna	(716) 825-8000

ROUTE TO HOSPITAL:

Head north on Lehigh Ave. to Ridge Rd., and make a right on Ridge Rd. Go about 1.5 miles to South Park Ave. and continue over South Park on Ridge Rd. Hospital Emergency Room entrance will be on the left. SEE MAP, NEXT PAGE.

Travel time approximately 10 minutes.



SOURCE: U.S.G.S. 7.5 MINUTE SERIES TOPOGRAPHIC
BUFFALO SE QUADRANGLE. 1965

SCALE
0 2000 4000 FT.
2000 FT.

QUADRANGLE LOCATION

N

LATITUDE: 42°49'00"
LONGITUDE: 78°50'25"

ENGINEERING-SCIENCE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

ROUTE TO HOSPITAL

LEHIGH INDUSTRIAL PARK SITE

SECTION B.1

INTRODUCTION

B.1.1 PURPOSE AND REQUIREMENTS

The purpose of this health and safety plan is to establish personnel protection standards and mandatory safety practices and procedures for post-closure field activities at the LIP site.

This plan assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise while operations are being conducted at the site. The provisions of the plan are mandatory for all on-site personnel performing groundwater monitoring and site maintenance. All personnel who engage in project activities must be familiar with this plan and sign-off on the Plan Acceptance Form (Attachment A) prior to beginning work on-site. The Plan Acceptance Form must be submitted to the Health and Safety Officer assigned to this site. All personnel should abide by the standard safe work practices presented in Attachment B. Except for regular site maintenance such as mowing and erosion repair, all field personnel must comply with its requirements.

B.1.2 SITE HISTORY AND DESCRIPTION

The LIP site (formerly Roblin Steel) is located at 31 South Street, Lackawanna, New York. The 9.1 acre parcel was operated by Roblin Scrap Products as a materials processing facility processing scrap metals and other materials. At least two incidences of leaking transformers have been documented for the site, one occurring in 1979, the other in 1988. The first spill (1979) was reportedly remediated, at the time. The second spill will be remediated in 1995 and the site is currently listed as a Class 2 site on the State Registry of Inactive Hazardous Waste Sites.

The LIP site will be remediated in the Summer and Fall of 1995. The remediated site will consist of a one foot thick clean soil cover over all contaminated and potentially contaminated areas which include a 350 feet by 570 feet pile of non-hazardous waste soil and debris consolidated from the rest of the site. No hazardous waste will be left on site. The site will be fully revegetated to control erosion and fenced off to control access (Drawing ____, Appendix A).

B.1.3 SCOPE OF WORK

Field tasks to be performed at the LIP site include:

- Site inspection;
- Site maintenance; and
- Groundwater monitoring well sampling.

SECTION B.2

RISK ANALYSIS

B.2.1 CHEMICAL HAZARDS

Contaminants which may be encountered while conducting field tasks at the LIP site include non-hazardous level PCBs, metals such as lead, mercury, chromium, arsenic, and cadmium, and volatile and semi-volatile organic compounds.

In addition to the chemicals detected on-site, some of the solvents used in the processing of samples and for the decontamination of equipment are potentially hazardous to human health if they are not used properly. Material Safety Data Sheets for these compounds are included in Attachment C. Some or all of these compounds may be used in the current tasks to be performed at the site.

B.2.2 PHYSICAL HAZARDS

B.2.2.1 Heat Stress

Heat stress may be present when working during a hot summer day. Proper training and preventive measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules.
  - Modify work/rest schedules according to monitoring requirements.
  - Mandate work slowdowns as needed.
  - Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:
  - Maintain water temperature 50° to 60°F (10° to 16.6°C).
  - Provide small disposal cups that hold about four ounces (0.1 liter).
  - Have workers drink 16 ounces (0.5 liters) of fluid (preferably water or dilute drinks) before beginning work.
  - Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.

- Train workers to recognize the symptoms of heat related illness.

B.2.2.2 Cold-Related Illness

If work on this project begins in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Systemic cold exposure is referred to as hypothermia. Local cold exposure is generally labeled frostbite.

Hypothermia. Hypothermia is defined as a decrease in the patient core temperature below 96°F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interferences with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include: shivering, apathy, listlessness, sleepiness, and unconsciousness.

Frostbite. Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20°F. Symptoms of frostbite are: a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; tissues are cold, pale, and solid.

B.2.2.3 Prevention of Cold Related Illness

- Educate workers to recognize the symptoms of frostbite and hypothermia
- Identify and limit known risk factors:
- Assure the availability of enclosed, heated environment on or adjacent to the site.
- Assure the availability of dry changes of clothing.
- Develop the capability for temperature recording at the site.
- Assure the availability of warm drinks.

Monitoring

Start (oral) temperature recording at the job site:

- At the Field Team Leader's discretion when suspicion is based on changes in a worker's performance or mental status.
- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind-chill less than 20°F, or wind-chill less than 30°F with precipitation).
- As a screening measure whenever any one worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

SECTION B.3

PERSONNEL PROTECTION AND MONITORING

B.3.1 MEDICAL SURVEILLANCE

The sampling and/or monitoring personnel or contractor will utilize the services of a licensed occupational health physician with knowledge and/or experience in the hazards associated with the project to provide the medical examinations and surveillance specified herein.

B.3.1.1 Medical Examination

Personnel involved in the groundwater monitoring operation must have undergone medical evaluation prior to any field work, and thereafter at 12-month intervals. The 12-month medical examination includes a complete medical and work history and a standard occupational physical including examination of all major organ systems, complete blood count with differential (CBC), and a SMAC/23 blood chemistry screen which includes calcium, phosphorous, glucose, uric acid, BUN, creatinine, albumin, SGPT, SGOT, LDH, globulin, A/G ratio, alkaline phosphatase, total protein, total bilirubin, triglyceride, cholesterol, and a creatinine/BUN ratio. Additionally a pulmonary function test will be performed by trained personnel to record Forced Vital Capacity (FVC) and Forced Expiratory Volume in seconds ($FEV_{1.0}$). An audiogram and visual acuity measurement, including color perception, is provided The medical exam is performed under the direction of a licensed Occupational Health Physician. A medical certification as to the fitness or unfitness for employment on hazardous waste projects, or any restrictions on his/her utilization that may be indicated, is provided by the physician. This evaluation will be repeated as indicated by substandard performance or evidence of particular stress that is evident by injury or time loss illness on the part of any worker.

B.3.2 SITE SPECIFIC TRAINING

The site monitoring and maintenance contractor will be responsible for developing a site specific occupational hazard training program and providing training to all personnel that are to work at the site. This training will consist of the following topics:

- Names of personnel responsible for site safety and health.
- Safety, health, and other hazards at the site.
- Proper use of personal protective equipment.
- Work practices by which the employee can minimize risk from hazards.
- Safe use of engineering controls and equipment on the site.
- Acute effects of compounds at the site.
- Decontamination procedures.

B.3.3 PERSONAL PROTECTIVE EQUIPMENT AND ACTION LEVELS

Personnel protection to groundwater monitoring at the LIP site will necessitate the following equipment:

Level D

- Coveralls
- Safety boots
- PVC inner and chemically resistant outer gloves (must be worn during all sampling activities)
- Splash goggles (must be worn if a splash hazard is present)

All personal protective equipment used during the course of any field activities must meet the following OSHA standards:

Type of Protection	Regulation	Source
Eye and Face	29 CFR 1910.133	ANSI Z87.1-1968
Head	29 CFR 1910.135	ANSI Z89.1-1969
Foot	29 CFR 1910.136	ANSI Z41.1-1967

ANSI = American National Standards Institute

B.3.4 AIR MONITORING REQUIREMENTS

Air monitoring is not expected to be necessary during the monitoring and maintenance activities at the LIP site. However, if monitoring and maintenance activities do occur around enclosed spaces or material containers, oxygen deficiency and presence of combustible gases should be monitored.

All monitoring instruments must be calibrated and maintained periodically. The limitations and possible sources of errors for each instrument must be understood by the operator. It is important that the operator ensures that the instrument responds properly to the substances it was designed to monitor. Portable air quality monitoring equipment that measures total ionizables present such as the Photovac-Microtip HL-2000 must be calibrated at least once each day. Combustible gas/oxygen meters (explosimeters) such as the MSA Model 360 must be calibrated at least once each week. The specific instruction for calibration and maintenance provided for each instrument should be followed.

SECTION B.4

ACCIDENT PREVENTION AND CONTINGENCY PLAN

B.4.1 ACCIDENT PREVENTION

On a day-to-day basis, individual personnel should be constantly alert for indicators of potentially hazardous situations and for signs and symptoms in themselves and others that warn of hazardous conditions and exposures. Rapid recognition of dangerous situations can avert an emergency. Before each work assignment, the personnel should be aware of the following:

- Tasks to be performed;
- Time constraints (e.g. rest breaks, cartridge changes);
- Hazards that may be encountered, including their effects, how to recognize symptoms or monitor them, concentration limits, or other danger signals; and
- Emergency procedures.

B.4.2 CONTINGENCY PLAN

In the event that an emergency develops on site, the procedures delineated herein are to be immediately followed. Emergency conditions are considered to exist if:

- Any member of the field crew is involved in an accident or experiences any adverse effects or symptoms of exposure while on site;
- A condition is discovered that suggests the existence of a situation more hazardous than anticipated.

General emergency procedures, and specific procedures for personal injury and chemical exposure, are described in the health and safety plan. As a general precaution, emergency equipment available at the work site should include a first aid kit and eye wash.

B.4.2.1 Chemical Exposure

If a member of the field crew demonstrates symptoms of chemical exposure the procedures outlined below should be followed:

- Another team member (buddy) should remove the individual from the immediate area of contamination. The buddy should communicate to the Field Team Leader (via two-way radio or hand signals) of the chemical exposure. The Field Team Leader should contact the appropriate emergency response agency.
- Precautions should be taken to avoid exposure of other individuals to the chemical.
- If the chemical is on the individual's clothing, the chemical should be neutralized or removed if it is safe to do so.

- If the chemical has contacted the skin, the skin should be washed with copious amounts of water.
- In case of eye contact, an emergency eye wash should be used. Eyes should be washed out for at least 15 minutes.
- All chemical exposure incidents must be reported in writing to the Office Health and Safety Representative. The Site Safety Officer or Field Team Leader is responsible for notifying the Project Manager immediately and completing the accident report (see Attachment A).

B.4.2.2 Air Monitoring Requirements

Air monitoring is not required unless entry into a confined space is needed.

B.4.2.3 Personal Injury

In case of personal injury at the site, the following procedures should be followed:

- Another team member (buddy) should signal the Field Team Leader that an injury has occurred.
- A field team member trained in first aid can administer treatment to an injured worker.
- The victim should then be transported to the nearest hospital or medical center. If necessary, an ambulance should be called to transport the victim.
- The Field Team is responsible for making certain that an accident report form is completed (see Attachment C). This form is to be submitted to the Office Health and Safety Representative. Follow-up action should be taken to correct the situation that caused the accident.

B.4.2.4 Evacuation Procedures

- The Field Team Leader will initiate evacuation procedure by signalling to leave the site.
- All personnel in the work area should evacuate the area and meet in the common designated area.
- All personnel suspected to be in or near the contract work area should be accounted for and the whereabouts of missing persons determined immediately.
- Further instruction will then be given by the Field Team Leader.

B.4.2.5 Procedures Implemented in the Event of a Major Fire, Explosion, or On-Site Health Emergency Crisis

- Notify the paramedics and/or fire department, as necessary;
- Signal the evacuation procedure previously outlined and implement the entire procedure;
- Notify LIP site personnel;
- Isolate the area;

- Stay upwind of any fire;
- Keep the area surrounding the problem source clear after the incident occurs;
- Complete accident report form and distribute to appropriate personnel.
- Smoking, eating and drinking will not be permitted on site (see Attachment B).

HEALTH AND SAFETY PLAN ATTACHMENT A

AIR MONITORING EQUIPMENT CALIBRATION AND MAINTENANCE

AIR MONITORING EQUIPMENT CALIBRATION AND MAINTENANCE

All monitoring instruments must be calibrated and maintained periodically. The limitations and possible sources of errors for each instrument must be understood by the operator. It is important that the operator ensures that the instrument responds properly to the substances it was designed to monitor. Portable air quality monitoring equipment that measures total ionizables present, such as the Photovac MicroTIP HL-2000® must be calibrated at least once each day. Combustible gas/oxygen/% LEL meters (explosimeters) such as the MSA Model 360®, must be zeroed at the beginning of each sampling period. The specific instructions for calibration and maintenance provided for each instrument should be followed.

HEALTH AND SAFETY PLAN ATTACHMENT B

FORMS FOR HEALTH AND SAFETY-RELATED ACTIVITIES

Note: The OSHA Job Safety and Health Protection Poster must be posed prominently during intrusive field activities. The following page is an example of the poster to be used in the field. The actual poster must be a 11 inch by 17 inch size version of this page.

JOB SAFETY & HEALTH PROTECTION

The Occupational Safety and Health Act of 1970 provides job safety and health protection for workers by promoting safe and healthful working conditions throughout the Nation. Provisions of the Act include the following:

Employers

All employers must furnish to employees employment and a place of employment free from recognized hazards that are causing or are likely to cause death or serious harm to employees. Employers must comply with occupational safety and health standards issued under the Act.

Employees

Employees must comply with all occupational safety and health standards, rules, regulations and orders issued under the Act that apply to their own actions and conduct on the job.

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor has the primary responsibility for administering the Act. OSHA issues occupational safety and health standards, and its Compliance Safety and Health Officers conduct jobsite inspections to help ensure compliance with the Act.

Inspection

The Act requires that a representative of the employer and a representative authorized by the employees be given an opportunity to accompany the OSHA inspector for the purpose of aiding the inspection.

Where there is no authorized employee representative, the OSHA Compliance Officer must consult with a reasonable number of employees concerning safety and health conditions in the workplace.

Complaint

Employees or their representatives have the right to file a complaint with the nearest OSHA office requesting an inspection if they believe unsafe or unhealthful conditions exist in their workplace. OSHA will withhold, on request, names of employees complaining.

The Act provides that employees may not be discharged or discriminated against in any way for filing safety and health complaints or for otherwise exercising their rights under the Act.

Employees who believe they have been discriminated against may file a complaint with their nearest OSHA office within 30 days of the alleged discriminatory action.

Citation

If upon inspection OSHA believes an employer has violated the Act, a citation alleging such violations will be issued to the employer. Each citation will specify a time period within which the alleged violation must be corrected.

The OSHA citation must be prominently displayed at or near the place of alleged violation for three days, or until it is corrected, whichever is later, to warn employees of dangers that may exist there.

Proposed Penalty

The Act provides for mandatory civil penalties against employers of up to $7,000 for each serious violation and for optional penalties of up to $7,000 for each nonserious violation. Penalties of up to $7,000 per day may be proposed for failure to correct violations within the proposed time period and for each day the violation continues beyond the prescribed abatement date. Also, any employer who willfully or repeatedly violates the Act may be assessed penalties of up to $70,000 for each such violation. A minimum penalty of $5,000 may be imposed for each willful violation. A violation of posting requirements can bring a penalty of up to $7,000.

There are also provisions for criminal penalties. Any willful violation resulting in the death of any employee, upon conviction, is punishable by a fine of up to $250,000 (or $500,000 if the employer is a corporation), or by imprisonment for up to six months, or both. A second conviction of an employer doubles the possible term of imprisonment. Falsifying records, reports, or applications is punishable by a fine of $10,000 or up to six months in jail or both.

Voluntary Activity

While providing penalties for violations, the Act also encourages efforts by labor and management, before an OSHA inspection, to reduce workplace hazards voluntarily and to develop and improve safety and health programs in all workplaces and industries. OSHA's Voluntary Protection Programs recognize outstanding efforts of this nature.

OSHA has published Safety and Health Program Management Guidelines to assist employers in establishing or perfecting programs to prevent or control employee exposure to workplace hazards. There are many public and private organizations that can provide information and assistance in this effort, if requested. Also, your local OSHA office can provide considerable help and advice on solving safety and health problems or can refer you to other sources for help such as training.

Consultation

Free assistance in identifying and correcting hazards and in improving safety and health management is available to employers, without citation or penalty, through OSHA-supported programs in each State. These programs are usually administered by the State Labor or Health department or a State university.

Posting Instructions

Employers in States operating OSHA approved State Plans should obtain and post the State's equivalent poster.

Under provisions of Title 29, Code of Federal Regulations, Part 1903.2(a)(1) employers must post this notice (or facsimile) in a conspicuous place where notices to employees are customarily posted.

More Information

Additional information and copies of the Act, specific OSHA safety and health standards, and other applicable regulations may be obtained from your employer or from the nearest OSHA Regional Office in the following locations:

Atlanta, GA	(404) 347-3573
Boston, MA	(617) 565-7164
Chicago, IL	(312) 353-2220
Dallas, TX	(214) 767-4731
Denver, CO	(303) 844-3061
Kansas City, MO	(816) 426-5861
New York, NY	(212) 337-2378
Philadelphia, PA	(215) 596-1201
San Francisco, CA	(415) 744-6670
Seattle, WA	(206) 553-5930

To report suspected fire hazards, imminent danger safety and health hazards in the workplace, or other job safety and health emergencies, such as toxic waste in the workplace, call OSHA's 24-hour hotline: 1-800-321-OSHA.

Washington, DC
1992 (Reprinted)
OSHA 2203

Robert B. Reich, Secretary of Labor

U.S. Department of Labor

Occupational Safety and Health Administration

PARSONS ENGINEERING SCIENCE COMPANIES

ACCIDENT REPORT FORM

Project Name:_____

INJURED OR ILL EMPLOYEE

1. Name _____ Social Security #_____
   (First) (Middle) (Last)
2. Home Address _____
   (No. and Street) (City or Town) (State and Zip)
3. Age _____ 4. Sex: Male ( ) Female ( )
5. Occupation _____
   (Specific job title, not the specific activity employee was performing at time of injury)
6. Department _____
   (Enter name of department in which injured person is employed, even though they may have been temporarily working in another department at the time of injury)

EMPLOYER

7. Name _____
8. Mailing Address _____
   (No. and Street) (City or Town) (State and Zip)
9. Location (if different from mailing address):_____

_____

THE ACCIDENT OR EXPOSURE TO OCCUPATIONAL ILLNESS

10. Place of accident or exposure _____
    (No. and Street) (City or Town) (State and Zip)
11. Was place of accident or exposure on employer's premises? _____(Yes/No)
12. What was the employee doing when injured?_____

_____
(Be specific - was employee using tools or equipment or handling material?)

_____

13. How did the accident occur? _____
    (Describe fully the events that resulted in the injury or

_____
occupational illness. Tell what happened and how. Name objects and

_____
substances involved. Give details on all factors that led to accident. Use separate sheet if needed)

PARSONS ENGINEERING SCIENCE COMPANIES

ACCIDENT REPORT FORM

14. Time of accident: _____

15. Date of injury or initial diagnosis of occupational illness _____ (Date)

16. ES WITNESS TO ACCIDENT

(Name)	(Affiliation)	(Phone No.)
_____	_____	_____
_____	_____	_____
_____	_____	_____

OCCUPATIONAL INJURY OR OCCUPATIONAL ILLNESS

17. Describe the injury or illness in detail; indicate part of body affected.

_____

_____

18. Name the object or substance which directly injured the employee. (For example, object that struck employee; the vapor or poison inhaled or swallowed; the chemical or radiation that irritated the skin; or in cases of strains, hernias, etc., the object the employee was lifting, pulling, etc.)

_____

_____

19. Did the accident result in employee fatality? _____ (Yes or No)

20. Number of lost workdays ____/restricted workdays _____ resulting from injury or illness?

OTHER

21. Did you see a physician for treatment? _____ (Yes or No) _____ (Date)

22. Name and address of physician _____

_____

(No. and Street) (City or Town) (State and Zip)

23. If hospitalized, name and address of hospital _____

_____

(No. and Street) (City or Town) (State and Zip)

Date of report _____ Prepared by _____

Official position _____

REQUIRED HEALTH AND SAFETY DOCUMENTATION

The subcontractor must provide proof that all employees who will work on the site meet the medical and training requirements of the applicable OSHA regulations. Complete documentation for all employees must be submitted to the Engineering-Science project manager at least one week in advance of the initiation of field activities. Workers without up-to-date documentation will not be allowed to engage in any field work. Proof of the following is required, as indicated (checked) below:

(1) HAZARDOUS WASTE WORK (29 CFR 1910.120)

- [ ] Physical within the last 12 months which meets the requirements of 29 CFR 1910.120.
- [ ] Certified by a physician as fit to wear a respirator.
- [ ] Fit tested for *full-face* air-purifying respirator within the last 6 months.
- [ ] Fit tested for *half-face* air-purifying respirator within the last 6 months.
- [ ] *40-Hour* OSHA Training for hazardous waste operations.
- [ ] *24-Hour* or 40-Hour OSHA Training for hazardous waste operations.
- [ ] 8-Hour Refresher training within the last 12 months.

(2) INDUSTRIAL/TANK WORK
(Only necessary if respirators will be used)

- [ ] Physical within the last 12 months.
- [ ] Certified by a physician to wear a respirator.
- [ ] Fit tested for *full-face* air-purifying respirator within the last 6 months.
- [ ] Fit tested for *half-face* air-purifying respirator within the last 6 months.

Note that any tank work which is the result of a clean-up operation initiated by any governmental body (federal, state, etc.) falls under the purview of the OSHA hazardous waste regulations as specified in 29 CFR 1910.120.

PROJECT HEALTH AND SAFETY DOCUMENT TRACKING FORM

Project Name: _____
Project Number: _____
Project Manager: _____
Site Safety Officer: _____
Update Number: _____

Project Type (Check One): [ ] Hazardous Waste
[ ] Industrial/Tank

Date Form Completed:

ES or Subcontractor (1)	Dates of Field Work	Names of Site Workers	EFFECTIVE DATE OF DOCUMENT (2)						
			Physical	Medical Respirator Fitness	Training 24-Hour	Training 40-Hour	8-Hour Update	HASP Sign-Off	Site-Specific Training Sign-Off
ES									
ES									

(1) List each subcontractor below the double line.
(2) NA = not applicable. The requirements vary depending on the type of project and the particular worker involved.

INSTRUCTIONS: THIS FORM MUST BE COMPLETED BY THE PROJECT MANAGER AND SUBMITTED TO THE OFFICE H&S REPRESENTATIVE PRIOR TO THE INITIATION OF SITE ACTIVITIES. IT MUST BE UPDATED REGULARLY BY THE SITE SAFETY OFFICER THEREAFTER UNTIL FIELD WORK IS COMPLETED. COPIES OF ALL UPDATES MUST BE PROVIDED TO THE OFFICE H&S REPRESENTATIVE. ALL DOCUMENTATION LISTED IS TO BE PLACED IN THE H&S FILE FOR EACH PROJECT. FILES WILL BE AUDITED.

PROJECT HEALTH AND SAFETY PLAN

AND WORK PLAN ACCEPTANCE FORM

I have read and agree to abide by the contents of the Work Plan and Health and Safety Plan for the following project:

_____	_____
(Project Title)	(Project Number)

Furthermore, I have read and am familiar with the work plan or proposal which describes the field work to be conducted and the procedures to be utilized in the conduct of this work.

Name (print)	Signature	Date

Place in project Health and Safety File as soon as possible

SITE-SPECIFIC HEALTH AND SAFETY TRAINING

I hereby confirm that site-specific health and safety training has been conducted by the site health and safety officer which included:

- Names of personnel responsible for site safety and health
- Safety, health, and other hazards at the site
- Proper use of personal protective equipment
- Work practices by which the employee can minimize risk from hazards
- Safe use of engineering controls and equipment on the site
- Acute effects of compounds at the site
- Decontamination procedures

For the following project:

_____	_____
(Project Title)	(Project Number)

Name (print)	Signature	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Place in project Health and Safety File as soon as possible

HEALTH AND SAFETY PLAN ATTACHMENT C

MATERIAL SAFETY DATA SHEETS

METHANOL
METHANOL
METHANOL

MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER (201) 796-7100
CHEMTREC ASSISTANCE (800) 424-9300

SUBSTANCE IDENTIFICATION

CAS-NUMBER 67-56-1

SUBSTANCE: **METHANOL**

TRADE NAMES/SYNONYMS:
METHYL ALCOHOL; WOOD ALCOHOL, METHYL HYDROXIDE, CARBINOL, MONOHYDROXYMETHANE, WOOD SPIRIT, WOOD NAPHTHA, METHYLOL, COLONIAL SPIRIT COLUMBIAN SPIRIT; PYROXYLIC SPIRIT; COULOMATIC (R) CONDITIONER SOLUTION, STANDARD WATER IN METHANOL; STCC 4909230, UN 1230, RCRA U154, A454; A452; A936; A408; A947; A935, BP1105; A412, A411; A433P; SW2; SC95; A452SK; A408SK, A412P, A434, A412SK; A450, A433S, CH4O, ACC14280

CHEMICAL FAMILY,
HYDROXYL, ALIPHATIC

MOLECULAR FORMULA C-H3-O-H

MOLECULAR WEIGHT: 32.04

CERCLA RATINGS (SCALE 0-3), HEALTH=3 FIRE=3 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4) HEALTH=1 FIRE=3 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT METHYL ALCOHOL (METHANOL) PERCENT 100
CAS# 67-56-1

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
METHYL ALCOHOL (METHANOL):
200 PPM (262 MG/M3) OSHA TWA (SKIN); 250 PPM (328 MG/M3) OSHA STEL
200 PPM (262 MG/M3) ACGIH TWA (SKIN); 250 PPM (328 MG/M3) ACGIH STEL
200 PPM (262 MG/M3) NIOSH RECOMMENDED TWA (SKIN);
250 PPM (328 MG/M3) NIOSH RECOMMENDED STEL
200 PPM (262 MG/M3) DFG MAK TWA (SKIN).
400 PPM (524 MG/M3) DFG MAK 30 MINUTE PEAK, AVERAGE VALUE 4 TIMES/SHIFT

MEASUREMENT METHOD: SILICA GEL TUBE; WATER; GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTION; (NIOSH VOL III # 2000, METHANOL)

5000 POUNDS CERCLA SECTION 103 REPORTABLE QUANTITY
SUBJECT TO SARA SECTION 313 ANNUAL TOXIC CHEMICAL RELEASE REPORTING

**OSHA LIMITS ADOPTED JANUARY 19, 1989 ARE SUBJECT TO THE DECISION OF THE 11TH CIRCUIT COURT OF APPEALS (AFL-CIO V OSHA) AS OF JULY 7, 1992 **

PHYSICAL DATA

DESCRIPTION: CLEAR, COLORLESS LIQUID WITH A CHARACTERISTIC ALCOHOLIC ODOR

BOILING POINT: 149 F (65 C) MELTING POINT -137 F (-94 C)

SPECIFIC GRAVITY: 0.7914 VAPOR PRESSURE 97.25 MMHG @ 20 C

EVAPORATION RATE (BUTYL ACETATE=1) 4.6 SOLUBILITY IN WATER VERY SOLUBLE

ODOR THRESHOLD: 100 PPM VAPOR DENSITY: 1.11

SOLVENT SOLUBILITY: ETHER, BENZENE, ALCOHOL, ACETONE, CHLOROFORM, ETHANOL

VISCOSITY, 0.59 CPS @ 20 C

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD

DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT, FLAME, OR OXIDIZERS

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK

VAPOR-AIR MIXTURES ARE EXPLOSIVE

FLASH POINT 52 F (11 C) (CC) UPPER EXPLOSIVE LIMIT 36.0%

LOWER EXPLOSIVE LIMIT 6.0% AUTOIGNITION TEMP 725 F (385 C)

FLAMMABILITY CLASS(OSHA) IB

FIREFIGHTING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR ALCOHOL-RESISTANT FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL-RESISTANT FOAM (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. DIKE FIRE-CONTROL WATER FOR LATER DISPOSAL; DO NOT SCATTER THE MATERIAL. APPLY COOLING WATER TO SIDES OF CONTAINERS THAT ARE EXPOSED TO FLAMES UNTIL WELL AFTER FIRE IS OUT. STAY AWAY FROM ENDS OF TANKS. WITHDRAW IMMEDIATELY IN CASE OF RISING SOUND FROM VENTING SAFETY DEVICE OR ANY DISCOLORATION OF TANK DUE TO FIRE. ISOLATE FOR 1/2 MILE IN ALL DIRECTIONS IF TANK, RAIL CAR OR TANK TRUCK IS INVOLVED IN FIRE (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE PAGE 28)

EXTINGUISH ONLY IF FLOW CAN BE STOPPED. USE WATER IN FLOODING AMOUNTS AS FOG. SOLID STREAMS MAY NOT BE EFFECTIVE. COOL CONTAINERS WITH FLOODING QUANTITIES OF WATER, APPLY FROM AS FAR A DISTANCE AS POSSIBLE. AVOID BREATHING TOXIC VAPORS. KEEP UPWIND.

TRANSPORTATION DATA

DEPARTMENT OF TRANSPORTATION HAZARD CLASSIFICATION 49 CFR 172.101
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS 49 CFR 172.101 AND SUBPART E:
FLAMMABLE LIQUID

DEPARTMENT OF TRANSPORTATION PACKAGING REQUIREMENTS, 49 CFR 173.119
EXCEPTIONS 49 CFR 173.118

FINAL RULE ON HAZARDOUS MATERIALS REGULATIONS (HMR, 49 CFR PARTS 171-180), DOCKET NUMBERS HM-181, HM-181A, HM-181B, HM-181C, HM-181D AND HM-204, EFFECTIVE DATE OCTOBER 1, 1991. HOWEVER, COMPLIANCE WITH THE REGULATIONS IS AUTHORIZED ON AND AFTER JANUARY 1, 1991 (55 FR 52402, 12/21/90)

EXCEPT FOR EXPLOSIVES, INHALATION HAZARDS, AND INFECTIOUS SUBSTANCES, THE EFFECTIVE DATE FOR HAZARD COMMUNICATION REQUIREMENTS IS EXTENDED TO OCTOBER 1, 1993 (56 FR 47158, 09/18/91)

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING NAME ID NUMBER, 49 CFR 172.101,
METHYL ALCOHOL UN 1230

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS OR DIVISION, 49 CFR 172.101,
3 - FLAMMABLE LIQUID

U.S. DEPARTMENT OF TRANSPORTATION PACKING GROUP, 49 CFR 172.101
PG II

U.S. DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS, 49 CFR 172.101 AND SUBPART E
FLAMMABLE LIQUID, POISON

U.S. DEPARTMENT OF TRANSPORTATION PACKAGING AUTHORIZATIONS
EXCEPTIONS NONE
NON BULK PACKAGING, 49 CFR 173.202
BULK PACKAGING: 49 CFR 173.243

U.S. DEPARTMENT OF TRANSPORTATION QUANTITY LIMITATIONS 49 CFR 172.101
PASSENGER AIRCRAFT OR RAILCAR: 1 L
CARGO AIRCRAFT ONLY: 60 L

TOXICITY

METHYL ALCOHOL (METHANOL):
IRRITATION DATA: 20 MG/24 HOURS SKIN-RABBIT MODERATE; 40 MG EYE-RABBIT MODERATE; 100 MG/24 HOURS EYE-RABBIT MODERATE.
TOXICITY DATA: 86,000 MG/M3 INHALATION-HUMAN TCLO; 300 PPM INHALATION-HUMAN TCLO, 64,000 PPM/4 HOURS INHALATION-RAT LC50; 1000 PPM INHALATION-MONKEY LCLO; 50 GM/M3/2 HOURS INHALATION-MOUSE LCLO; 44,000 MG/M3/6 HOURS INHALATION-CAT LCLO, 15,800 MG/KG SKIN-RABBIT LD50; 393 MG/KG SKIN-MONKEY LDLO; 428 MG/KG ORAL-HUMAN LDLO, 143 MG/KG ORAL-HUMAN LDLO; 6422 MG/KG ORAL-MAN LDLO; 3429 MG/KG ORAL-MAN TDLO; 4 GM/KG ORAL-WOMAN TDLO, 7 GM/KG

ORAL-MONKEY LD50: 5628 MG/KG ORAL-RAT LD50: 7300 MG/KG ORAL-MOUSE LD50: 14,200 MG/KG ORAL-RABBIT LD50: 7500 MG/KG ORAL-DOG LDLO: 9800 MG/KG SUBCUTANEOUS-MOUSE LD50: 2131 MG/KG INTRAVENOUS-RAT LD50: 4710 MG/KG INTRAVENOUS-MOUSE LD50: 8907 MG/KG INTRAVENOUS-RABBIT LD50: 4641 MG/KG INTRAVENOUS-CAT LDLO: 7529 MG/KG INTRAPERITONEAL-RAT LD50: 10,765 MG/KG INTRAPERITONEAL-MOUSE LD50: 1826 MG/KG INTRAPERITONEAL-RABBIT LD50: 3556 MG/KG INTRAPERITONEAL-GUINEA PIG LD50: 8555 MG/KG INTRAPERITONEAL-HAMSTER LD50: 868 MG/KG UNREPORTED-MAN LDLO: MUTAGENIC DATA (RTECS), REPRODUCTIVE EFFECTS DATA (RTECS)
CARCINOGEN STATUS: NONE
LOCAL EFFECTS: IRRITANT- SKIN, EYE
ACUTE TOXICITY LEVEL: SLIGHTLY TOXIC BY DERMAL ABSORPTION AND INGESTION; RELATIVELY NON-TOXIC BY INHALATION.
TARGET EFFECTS: CENTRAL NERVOUS SYSTEM DEPRESSANT, NEUROTOXIN
AT INCREASED RISK FROM EXPOSURE: PERSONS WITH KIDNEY, EYE OR SKIN DISORDERS

HEALTH EFFECTS AND FIRST AID

INHALATION:
METHYL ALCOHOL (METHANOL)
NARCOTIC/NEUROTOXIN, 25,000 PPM IMMEDIATELY DANGEROUS TO LIFE OR HEALTH
ACUTE EXPOSURE- MAY CAUSE IRRITATION OF THE MUCOUS MEMBRANES, COUGHING, OPPRESSION IN THE CHEST, TRACHEITIS, BRONCHITIS, TINNITUS, UNSTEADY GAIT, TWITCHING, COLIC, CONSTIPATION, NYSTAGMUS, AND BLEPHAROSPASM. SYMPTOMS FROM OCCUPATIONAL EXPOSURE INCLUDE PARESTHESIAS, NUMBNESS AND SHOOTING PAINS IN THE HANDS AND FOREARMS, METABOLIC ACIDOSIS, AND EFFECTS ON THE EYES AND CENTRAL NERVOUS SYSTEM MAY OCCUR AS DETAILED IN ACUTE INGESTION.
CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE MAY CAUSE EFFECTS AS IN ACUTE INGESTION. REPEATED EXPOSURE TO 200-375 PPM CAUSED RECURRENT HEADACHES IN WORKERS. EXPOSURE FOR 4 YEARS TO 1200-8000 PPM RESULTED IN MARKED DIMINUTION OF VISION AND ENLARGEMENT OF THE LIVER IN A WORKMAN. REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:
METHYL ALCOHOL (METHANOL)
IRRITANT/NARCOTIC/NEUROTOXIN
ACUTE EXPOSURE- CONTACT WITH LIQUID MAY CAUSE IRRITATION. SKIN ABSORPTION MAY OCCUR AND CAUSE METABOLIC ACIDOSIS AND EFFECTS ON THE EYES AND CENTRAL NERVOUS SYSTEM AS DETAILED IN ACUTE INGESTION.
CHRONIC EXPOSURE- REPEATED OR PROLONGED CONTACT WITH THE LIQUID MAY CAUSE DEFATTING OF THE SKIN RESULTING IN ERYTHEMA, SCALING, AND ECZEMATOID DERMATITIS. CHRONIC ABSORPTION MAY RESULT IN METABOLIC ACIDOSIS AND EFFECTS AS DETAILED IN ACUTE INGESTION.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:
METHYL ALCOHOL (METHANOL)
IRRITANT
ACUTE EXPOSURE- VAPORS MAY CAUSE IRRITATION. HIGH CONCENTRATIONS HAVE BEEN REPORTED TO CAUSE VIOLENT INFLAMMATION OF THE CONJUNCTIVA AND EPITHELIAL DEFECTS ON THE CORNEA. MILD IRRITATION MAY OCCUR WITH DILUTE SOLUTIONS. THE UNDILUTED LIQUID HAS PRODUCED MODERATE CORNEAL OPACITY AND CONJUNCTIVAL REDNESS IN RABBITS. APPLICATION OF A DROP OF METHANOL IN RABBIT EYES CAUSED A MILD REVERSIBLE REACTION, GRADED 3 ON A SCALE OF 1-10 AFTER 24 HOURS.
CHRONIC EXPOSURE- REPEATED OR PROLONGED CONTACT MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:
METHYL ALCOHOL (METHANOL)
NARCOTIC/NEUROTOXIN
ACUTE EXPOSURE- MAY CAUSE MILD AND TRANSIENT INEBRIATION AND SUBSEQUENT DROWSINESS FOLLOWED BY AN ASYMPTOMATIC PERIOD LASTING 8-48 HOURS. FOLLOWING THE DELAY, COUGHING, DYSPNEA, HEADACHE, DULLNESS, WEAKNESS, VERTIGO OR DIZZINESS, NAUSEA, VOMITING, OCCASIONAL DIARRHEA, ANOREXIA, VIOLENT PAIN IN THE BACK, ABDOMEN, AND EXTREMITIES, RESTLESSNESS, APATHY OR DELIRIUM, AND RARELY, EXCITEMENT AND MANIA MAY OCCUR. RAPID, SHALLOW RESPIRATION DUE TO METABOLIC ACIDOSIS, COLD AND CLAMMY SKIN, HYPOTENSION, CYANOSIS, OPISTHOTONOS, CONVULSIONS, MILD TACHYCARDIA, CARDIAC DEPRESSION, PERIPHERAL NEURITIS, CEREBRAL AND PULMONARY EDEMA, UNCONSCIOUSNESS, AND COMA ARE POSSIBLE. EFFECTS ON THE EYE MAY INCLUDE OPTIC NEURITIS, BLURRED OR DIMMED VISION, DILATED, UNRESPONSIVE PUPILS, PTOSIS, EYE PAIN, CONCENTRIC CONSTRICTION OF VISUAL FIELDS, DIPLOPIA, CHANGE IN COLOR PERCEPTION, PHOTOPHOBIA, AND OPTIC NERVE ATROPHY. PARTIAL BLINDNESS OR POSSIBLY DELAYED TRANSIENT OR PERMANENT BLINDNESS MAY OCCUR. BILATERAL SENSORINEURAL DEAFNESS HAS BEEN REPORTED IN A SINGLE CASE. LIVER, KIDNEY, HEART, STOMACH, INTESTINAL AND PANCREATIC DAMAGE MAY ALSO OCCUR. DEATH

MAY BE DUE TO RESPIRATORY FAILURE OR RARELY FROM CIRCULATORY COLLAPSE. AS LITTLE AS 15 ML HAS CAUSED BLINDNESS, THE USUAL FATAL DOSE IS 80-240 ML. PROLONGED ASTHENIA AND IRREVERSIBLE EFFECTS ON THE NERVOUS SYSTEM INCLUDING DIFFICULTY IN SPEECH, MOTOR DYSFUNCTION WITH RIGIDITY, SPASTICITY, AND HYPOKINESIS HAVE BEEN REPORTED.
CHRONIC EXPOSURE- REPEATED INGESTION MAY CAUSE VISUAL IMPAIRMENT AND BLINDNESS AND OTHER SYSTEMIC EFFECTS AS DETAILED IN ACUTE INGESTION. REPRODUCTIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS.

FIRST AID- IF INGESTION OF METHANOL IS DISCOVERED WITHIN 2 HOURS, GIVE SYRUP OF IPECAC. LAVAGE THOROUGHLY WITH 2-4 L OF TAP WATER WITH SODIUM BICARBONATE (20 G/L) ADDED. GET MEDICAL ATTENTION IMMEDIATELY. LAVAGE SHOULD BE PERFORMED BY QUALIFIED MEDICAL PERSONNEL (DREISBACH, HANDBOOK OF POISONING, 12TH ED.).

ANTIDOTE
THE FOLLOWING ANTIDOTE(S) HAVE BEEN RECOMMENDED. HOWEVER, THE DECISION AS TO WHETHER THE SEVERITY OF POISONING REQUIRES ADMINISTRATION OF ANY ANTIDOTE AND ACTUAL DOSE REQUIRED SHOULD BE MADE BY QUALIFIED MEDICAL PERSONNEL.

METHANOL POISONING
GIVE ETHANOL, 50% (100 PROOF), 1.5 ML/KG ORALLY INITIALLY, DILUTED TO NOT MORE THAN 5% SOLUTION, FOLLOWED BY 0.5-1.0 ML/KG EVERY 2 HOURS ORALLY OR INTRAVENOUSLY FOR 4 DAYS IN ORDER TO REDUCE METABOLISM OF METHANOL AND TO ALLOW TIME FOR ITS EXCRETION. BLOOD ETHANOL LEVEL SHOULD BE IN THE RANGE OF 1-1.5 MG/ML (DREISBACH, HANDBOOK OF POISONING, 12TH ED.). ANTIDOTE SHOULD BE ADMINISTERED BY QUALIFIED MEDICAL PERSONNEL.

ORAL OR INTRAVENOUS ADMINISTRATION OF 4 METHYLPYRAZOLE INHIBITS ALCOHOL DEHYDROGENASE AND HAS BEEN USED EFFECTIVELY AS AN ANTIDOTE FOR METHANOL OR ETHYLENE GLYCOL POISONING (ELLENHORN AND BARCELOUX, MEDICAL TOXICOLOGY).

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES

INCOMPATIBILITIES:
METHYL ALCOHOL (METHANOL)
ACETYL BROMIDE: VIOLENT REACTION WITH FORMATION OF HYDROGEN BROMIDE
ALKYLALUMINUM SOLUTIONS: VIOLENT REACTION
ALUMINUM: CORRODES
BARIUM PERCHLORATE: DISTILLATION YIELDS HIGHLY EXPLOSIVE ALKYL PERCHLORATE
BERYLLIUM HYDRIDE: VIOLENT REACTION, EVEN AT -196 C
BROMINE: VIGOROUSLY EXOTHERMIC REACTION
CALCIUM CARBIDE: VIOLENT REACTION.
CHLORINE: POSSIBLE IGNITION AND EXPLOSION HAZARD
CHLOROFORM AND SODIUM HYDROXIDE: EXPLOSIVE REACTION
CHROMIUM TRIOXIDE (CHROMIC ANHYDRIDE): POSSIBLE IGNITION
CYANURIC CHLORIDE: VIOLENT REACTION.
DICHLOROMETHANE: POSSIBLE IGNITION AND EXPLOSION
DIETHYL ZINC: POSSIBLE IGNITION AND EXPLOSION
HYDROGEN PEROXIDE + WATER: EXPLOSION HAZARD
IODINE + ETHANOL + MERCURIC OXIDE: EXPLOSION HAZARD
LEAD: CORRODES.
LEAD PERCHLORATE: EXPLOSION HAZARD
MAGNESIUM: VIOLENT REACTION.
MAGNESIUM (POWDERED): MIXTURES ARE CAPABLE OF DETONATION
METALS: INCOMPATIBLE
NICKEL: POSSIBLE IGNITION IN THE PRESENCE OF NICKEL CATALYST
NITRIC ACID (CONCENTRATED): MIXTURES OF GREATER THAN 25% ACID MAY DECOMPOSE VIOLENTLY.
OXIDIZERS (STRONG): FIRE AND EXPLOSION HAZARD
PERCHLORIC ACID: EXPLOSION HAZARD.
PHOSPHOROUS TRIOXIDE: POSSIBLE VIOLENT REACTION AND IGNITION
PLASTICS, RUBBER, COATINGS: MAY BE ATTACKED
POTASSIUM: POSSIBLE DANGEROUS REACTION
POTASSIUM HYDROXIDE + CHLOROFORM: EXOTHERMIC REACTION
POTASSIUM TERT-BUTOXIDE: FIRE AND EXPLOSION HAZARD
SODIUM + CHLOROFORM: POSSIBLE EXPLOSION
SODIUM HYPOCHLORITE: EXPLOSION HAZARD
SODIUM METHOXIDE + CHLOROFORM: VIOLENT REACTION
SULFURIC ACID: FIRE AND EXPLOSION HAZARD
ZINC: EXPLOSION HAZARD

DECOMPOSITION:
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC OXIDES OF CARBON.

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORAGE

STORE IN ACCORDANCE WITH 29 CFR 1910.106

STORE AWAY FROM INCOMPATIBLE SUBSTANCES

DISPOSAL

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 40 CFR 262 EPA HAZARDOUS WASTE NUMBER U154

****

CONDITIONS TO AVOID

AVOID CONTACT WITH HEAT, SPARKS, FLAMES OR OTHER IGNITION SOURCES. VAPORS MAY BE EXPLOSIVE. MATERIAL IS POISONOUS; AVOID INHALATION OF VAPORS OR CONTACT WITH SKIN. DO NOT ALLOW MATERIAL TO CONTAMINATE WATER SOURCES

****

SPILL AND LEAK PROCEDURES

SOIL SPILL:
DIG HOLDING AREA SUCH AS LAGOON, POND OR PIT FOR CONTAINMENT

DIKE FLOW OF SPILLED MATERIAL USING SOIL OR SANDBAGS OR FOAMED BARRIERS SUCH AS POLYURETHANE OR CONCRETE

AIR SPILL:
APPLY WATER SPRAY TO KNOCK DOWN VAPORS

WATER SPILL:
ALLOW SPILLED MATERIAL TO AERATE

LIMIT SPILL MOTION AND DISPERSION WITH NATURAL BARRIERS OR OIL SPILL CONTROL BOOMS.

USE SUCTION HOSES TO REMOVE TRAPPED SPILL MATERIAL

OCCUPATIONAL SPILL:
SHUT OFF IGNITION SOURCES. DO NOT TOUCH SPILLED MATERIAL. STOP LEAK IF YOU CAN DO IT WITHOUT RISK. USE WATER SPRAY TO REDUCE VAPORS. FOR SMALL SPILLS, TAKE UP WITH SAND OR OTHER ABSORBENT MATERIAL AND PLACE INTO CONTAINERS FOR LATER DISPOSAL. FOR LARGER SPILLS, DIKE FAR AHEAD OF SPILL FOR LATER DISPOSAL. NO SMOKING, FLAMES OR FLARES IN HAZARD AREA! KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY ENTRY

REPORTABLE QUANTITY (RQ): 5000 POUNDS
THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) SECTION 304 REQUIRES THAT A RELEASE EQUAL TO OR GREATER THAN THE REPORTABLE QUANTITY FOR THIS SUBSTANCE BE IMMEDIATELY REPORTED TO THE LOCAL EMERGENCY PLANNING COMMITTEE AND THE STATE EMERGENCY RESPONSE COMMISSION (40 CFR 355.40). IF THE RELEASE OF THIS SUBSTANCE IS REPORTABLE UNDER CERCLA SECTION 103, THE NATIONAL RESPONSE CENTER MUST BE NOTIFIED IMMEDIATELY AT (800) 424-8802 OR (202) 426-2675 IN THE METROPOLITAN WASHINGTON, D.C. AREA (40 CFR 302.6)

PROTECTIVE EQUIPMENT

VENTILATION
PROVIDE GENERAL DILUTION VENTILATION TO MEET PUBLISHED EXPOSURE LIMITS
VENTILATION EQUIPMENT MUST BE EXPLOSION-PROOF.

RESPIRATOR:
THE FOLLOWING RESPIRATORS AND MAXIMUM USE CONCENTRATIONS ARE RECOMMENDATIONS BY THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NIOSH POCKET GUIDE TO CHEMICAL HAZARDS; NIOSH CRITERIA DOCUMENTS OR BY THE U.S. DEPARTMENT OF LABOR, 29 CFR 1910 SUBPART Z.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA)

METHYL ALCOHOL (METHANOL):

2000 PPM- ANY SUPPLIED-AIR RESPIRATOR
ANY SELF-CONTAINED BREATHING APPARATUS

5000 PPM- ANY SUPPLIED-AIR RESPIRATOR OPERATED IN A CONTINUOUS FLOW MODE

10,000 PPM- ANY SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE
ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE
ANY SUPPLIED-AIR RESPIRATOR THAT HAS A TIGHT FITTING FACEPIECE AND IS OPERATED IN A CONTINUOUS-FLOW MODE

25,000 PPM- ANY SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE AND OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE

ESCAPE- ANY APPROPRIATE ESCAPE-TYPE, SELF-CONTAINED BREATHING APPARATUS

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE

CLOTHING:
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE

AUTHORIZED - FISHER SCIENTIFIC, INC
CREATION DATE: 09/25/84 REVISION DATE: 10/12/92

-ADDITIONAL INFORMATION-
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HEALTH AND SAFETY PLAN ATTACHMENT D

STANDARD SAFE WORK PRACTICES

STANDARD SAFE WORK PRACTICES

1) Eating, drinking, chewing tobacco, smoking and carrying matches or lighters is prohibited in a contaminated or potentially contaminated area or where the possibility for the transfer of contamination exists.

2) Avoid contact with potentially contaminated substances. Do not walk through puddles, pools, mud, etc. Avoid, whenever possible, kneeling on the ground, leaning or sitting on equipment or ground. Do not place monitoring equipment on potentially contaminated surfaces (i.e., ground, etc).

3) All field crew members should make use of their senses to alert them to potentially dangerous situations in which they should not become involved; i.e., presence of strong and irritating or nauseating odors.

4) Prevent, to the extent possible, spillages. In the event that a spillage occurs, contain liquid if possible.

5) Field crew members shall be familiar with the physical characteristics of investigations, including:

- Wind direction
- Accessibility to associates, equipment, vehicles
- Communication
- Hot zone (areas of known or suspected contamination)
- Site access
- Nearest water sources

6) All wastes generated during activities on-site should be disposed of as directed by the project manager or his on-site representative.

7) Protective equipment as specified in the section on personnel protection will be utilized by workers during the initial site reconnaissance, and other activities.

APPENDIX C

SAMPLING INFORMATION / FORMS

TABLE C.1

SUMMARY OF MONITORING WELL DATA

Well Number	Date Installed	Total Depth (Ft)	Size/Type of Riser/Screen	Depth to Top of Screen (Ft)	Depth to Bottom of Screen (Ft)	Unit Screened
MW-1	Decommissioned					
MW-2	7/14/92	16.5	2" PVC	5.5	15.5	Silt, Sand & Gravel
MW-3	7/15/92	13.9	2" PVC	6.5	13.0	Silt, Sand & Gravel
MW-4	7/16/92	15.5	2" PVC	5.5	14.5	Silt, Sand & Gravel
MW-5	Decommissioned					

NOTES: 1. Depths measured from ground surface
2. S.S. = stainless steel
3. PVC = polyvinyl chloride

TABLE C.2

GROUNDWATER SAMPLE CONTAINERIZATION AND HOLDING TIMES

Analysis	Bottle Type	Preservation[1]	Holding Time[2]
Aqueous Samples			
Metals	1 liter plastic bottle	Nitric Acid to pH <2 cool to 4°C	5 Days
Volatile Organic Compounds (VOCs)	40 ml glass vial w/ Teflon septum	Cool to 4° C	7 Days

[1] All samples to be preserved in ice during collection and transport.

[2] Days from validated time of sample receipt (VTSR)

TABLE C.3

GROUNDWATER SAMPLING EQUIPMENT

SAMPLING EQUIPMENT

- Photoionization detector
- Explosive gas meter
- Personal safety equipment (hard hats, etc.)
- Sampling and analysis program
- Appropriate number (including spares) of sample bottles
- Water-level indicator (electric drop-line)
- Polyethylene ground cloth
- Aluminum Foil
- Distilled water
- Alconox detergent
- Tap water source
- Disposable surgical gloves
- Disposable towels
- pH meter
- Conductivity meter
- Buckets (small: 5 gallon; large: 25 to 30 gallon)
- Teflon well bailer
- Nylon rope (individual lengths for each well)
- Stainless steel submersible pumps
- Pump hoist
- Flashlight

SHIPPING AND PACKAGING EQUIPMENT

- Shipping labels
- Sufficient ice chests to hold all sample bottles, packing material and ice

DOCUMENTATION EQUIPMENT

- Well Sampling Record
- Chain-of-Custody Forms
- Waterproof Pens

TABLE C.4
WELL INSPECTION CHECKLIST
LEHIGH INDUSTRIAL PARK SITE

			Well Inspection (GOOD/FAIR/POOR OR YES/NO)							
Well Number	Well Depth (feet)	TOIC (1) Water Level (feet)	Well Marking (G/F/P)	Casing Lock (G/F/P)	Protective Cover (G/F/P)	Well Cap (G/F/P)	Obstructions in Well (Y/ N)	Water in Annulet (Y/ N)	Inspection Date	Comments
MW-2	16.5									
MW-3	13.9									
MW-4	15.5									

(1) – TOP OF INNER CASING

GROUNDWATER SAMPLING RECORD

Sample Identifier: _____ Site Name: _____

Date: _____ Time: _____

Samplers: _____ of _____

Weather: _____

Sample Location: _____

Screen/Sample Depth: _____

Sampling Device: _____

Groundwater Purging:

Initial Static Water Level: _____

Well Volume: _____

2-Inch Casing: _____ Feet of Water x 0.16 Gallons/Foot = _____ Gallons

3-Inch Casing: _____ Feet of Water x 0.36 Gallons/Foot = _____ Gallons

4-Inch Casing: _____ Feet of Water x 0.65 Gallons/Foot = _____ Gallons

Volume of groundwater purged: _____

Purging Device: _____

Purge Water Disposition (e.g., contained): _____

Sample Description: _____

Color: _____

Odor: _____

Other: _____

Sample Analyzed for: _____

QC Samples at this Location: _____

QC Samples Analyzed for: _____

Field Tests:

Temperature (C/F): _____

Ph: _____

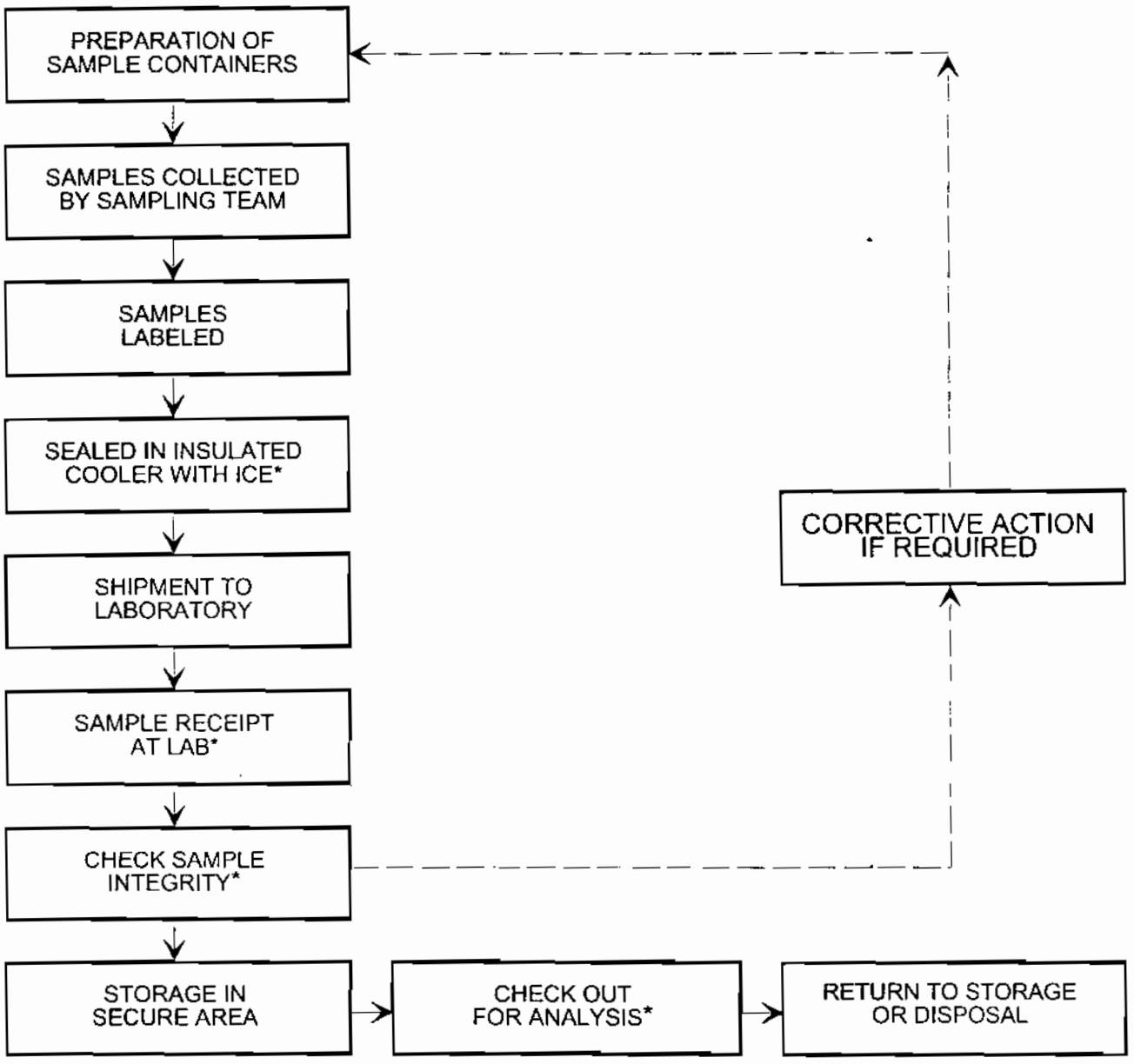
Conductivity (uS/cm): _____

Turbidity (NTU): _____

PID (ambient): _____

Comments: _____

SAMPLE CUSTODY



* REQUIRES SIGN-OFF ON CHAIN OF CUSTODY FORM.

CLIENT:	PROJECT NO	PROJECT MGR:	TYPES OF ANALYSES REQUESTED	Send results to:
PROJECT NAME:	NOTES – (Reference QAPP and/or analytical protocols to be used):			ENGINEERING – SCIENCE, INC. 290 Elwood Davis Road Liverpool, NY 13088 Telephone: (315) 451–9560 Fax: (315) 451–9570
SAMPLERS:				Lab Submitted to:

FIELD SAMPLE ID: TYPE	NUMBER	DEPTH CODES / QC IDENTIFIERS	Location Description	Date	Time	GRAB	COMP	NO OF Bottles	Matrix / Preservative / Remarks
XX	001	001–002							

Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date:	Time	SHIPPED VIA:	AIRBILL NO:
Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date:	Time	SHIPPED VIA:	AIRBILL NO:
Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date:	Time	SHIPPED VIA:	AIRBILL NO:

TYPE CODES:

SOLID
- SD – Sediment
- SS – Surface Soil
- SB – Subsurface Soil
- MW – Monitoring Well Boring
- TP – Test Pit/Tank Pit
- DR – Drum Waste
- WA – Solid Waste
- OS – Other Solid (eg. wipe samples, asbestos, etc.)

WATER
- MW – Monitoring Well
- LC – Leachate
- SW – Surface Water
- DW – Drill Water
- FD – Fuel Dispenser
- MH – Manhole
- OW – Oil Water Separator
- PR – Piping Run
- ST – Storm Water
- WW – Waste Water
- OL – Other Liquid (eg. Drum liquid)

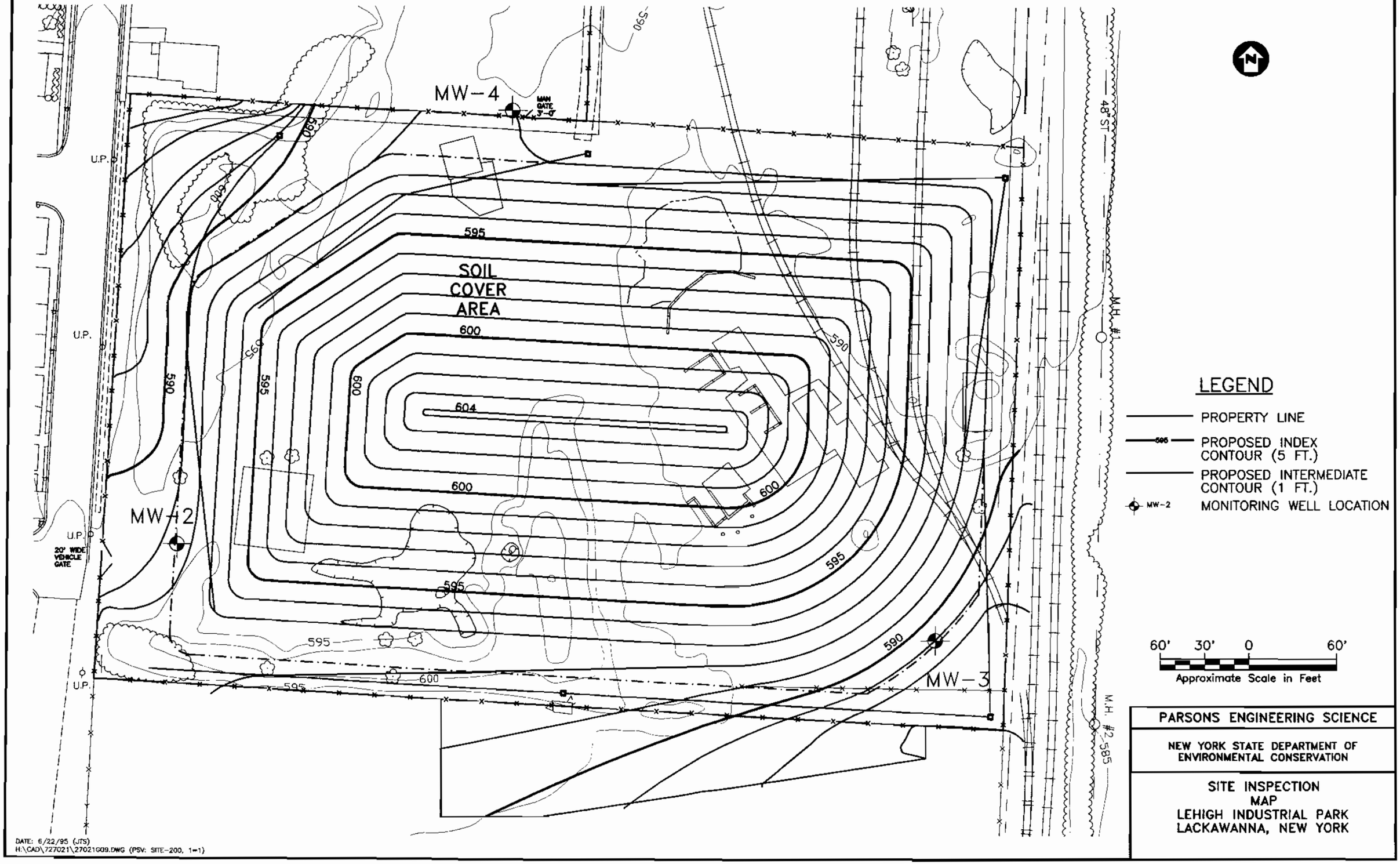
QUALITY CONTROL
- FB – Field Blank (number each)
- TB – Trip Blank (number each)
- WB – Wash Blank (number each)

No. 045C

FIGURE C.3

APPENDIX D

POST-CLOSURE INSPECTION AND MAINTENANCE REPORT FORM



PARSONS ENGINEERING SCIENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SITE INSPECTION MAP
LEHIGH INDUSTRIAL PARK
LACKAWANNA, NEW YORK

DATE: 6/22/95 (JTS)
H:\CAD\727021\27021G09.DWG (PSV: SITE-200, 1=1)

LEHIGH INDUSTRIAL PARK SITE

POST-CLOSURE SITE INSPECTION CHECKLIST

Date: _____

Weather: _____

Personnel (Organization: _____

Instructions: Complete the checklist of visual evaluation items and then complete specific data items. Field measurements should be made with a cloth tape and noted on the attached site plan. Estimated measurements shall be so noted. Attach hand sketches or photographs to the site plan to further define conditions or problems.

I. VISUAL EVALUATION ITEMS

	CONDITION: (Check)				
		Not	Action Required?		
	Acceptable	Acceptable	Yes	No	REMARKS
1) Vegetative Cover					
a) Overall Site	____	____	____	____	
b) Drainage Bench	____	____	____	____	
c) Woody Vegetation	____	____	____	____	
2) Integrity of Drainage System					
a) Sediment Build-Up	____	____	____	____	
b) Pooling or Ponding	____	____	____	____	
c) Slope Integrity	____	____	____	____	
d) Erosion Protection (Riprap, grout, vegetation)	____	____	____	____	
e) Obstruction of Culverts	____	____	____	____	
3) Condition of Access/ Perimeter Maintenance Roads					
a) Road Condition	____	____	____	____	
b) Gates/Locks/Signs	____	____	____	____	
4) Integrity of Ground Water Monitoring Wells	____	____	____	____	
5) Integrity of Soil Cover					
a) Erosion Damage	____	____	____	____	
b) Leachate Breakthrough	____	____	____	____	
c) Settlement	____	____	____	____	
6) Other (e.g., Litter, Unauthorized Dumping, etc.)	____	____	____	____	

	CONDITION: (Check)			
		Not	Action Required?	
	Acceptable	Acceptable	Yes	No	REMARKS

II. SPECIFIC DATA ITEMS (Write N.A. if not applicable)

A. Erosion and Settlement:

1) Approximate size in feet of eroded area(s). (List Separately)

a. _____ feet by _____ feet

b. _____ feet by _____ feet

c. _____ feet by _____ feet

2) How deep is the most extreme point of erosion when measured from the adjacent surface. (List separately)

a. _____ feet

b. _____ feet

c. _____ feet

3) Approximate size in feet of eroded areas outside the soil cap area such as drainage ditches, roads or slopes. _____

4) Attach a hand sketch or photograph to the attached site plan showing the location(s) of the eroded area(s). Identify each area by using the letter a, b, c, etc. from Question 1.

5) Approximate size in feet of leachate breakout(s). (List Separately)

a. _____ feet by _____ feet

b. _____ feet by _____ feet

c. _____ feet by _____ feet

6) Approximate size in feet of any settlement area within the soil cap area. (List Separately)

a. _____ feet by _____ feet

b. _____ feet by _____ feet

c. _____ feet by _____ feet

7) Approximate depth of each settlement area when measured from the adjacent surface. (List Separately)

a. _____ feet

b. _____ feet

c. _____ feet

8) Attach a hand sketch or photograph to the attached site plan showing the location of the settlement area(s). Identify each area by using the letter a, b, or c, etc. from Question 6.

_____

_____

Signature of Inspector(s)

Attachments

_____ Yes _____ No

MAINTENANCE SCHEDULE

Date:_____ Weather:_____

Personnel:_____ Equipment:_____

_____ _____

_____ _____

Maintenance:

Performed (Check)	Item	Remarks
	1) Vegetative Cover:	
____	a) Seeding	
____	b) Fertilizing	
____	c) Topsoil Replaced	
____	d) Removal of Undesirable vegetation	
	2) Drainage Swales or Bench	
____	a) Regrading (Excavation/Filling)	
____	b) Anti-Erosion Material Replacement	
____	c) Topsoil	
____	d) Seed/Fertilize	
	3) Roadway Culverts	
____	a) Clearing Obstructions	
____	b) Pipe End Repair	
____	c) Anti-Erosion Material Replacement	
	4) Access and Perimeter Maintenance Roads:	
____	a) Roadway Aggregate	
____	b) Grading	
	c) Repair/Replacement	
____	i) gate	
____	ii) locks	
____	iii) signs	
	5) Soil Cover	
____	a) Excavation	
____	b) Grading	
____	c) Compaction	
____	d) Testing	
____	e) Topsoil	
____	f) Seed/Fertilize	
	6) Ground Water Monitoring Wells	
____	a) Drilling	
____	b) Screening/Riser	
____	c) Casing	
____	d) Fill/Grout/Surface Seal	