Screening Site Inspection

Site Safety Plan

for

Arlington Heights Municipal Landfill

USEPA ID No. ILD 984 781 526

BVWST Project No. 71220-024

US EPA RECORDS CENTER REGION 5
481472

B&V Waste Science and Technology Corp.
101 North Wacker Drive, Suite 1100
Chicago, Illinois 60606
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Prepared By: _____ Date: 3/19/93

Reviewed By: _____ Date: 3/19/93
(BVWST PM)

Approved By: for William Ives _____ Date: 6 APR 93
(BVWST HSM)

NOTICE

B&V Waste Science and Technology Corp. (BVWST) produced this site safety plan for use on the specific project indicated herein. This site safety plan is not intended or represented to be suitable for use by others on the project, or for reuse on extensions of the project, or for use on any other project. Any use without written verification or adaption by BVWST will be at the user's sole risk and without liability or legal exposure to BVWST.

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Contents

1.0 Summary Information 1-1

2.0 Team Member Responsibilities 2-1
2.1 Director of Health and Safety 2-1
2.2 Project Manager 2-1
2.3 Field Team Leader 2-1
2.4 Site Health and Safety Officer 2-1
2.5 Field Team 2-2
2.6 Project Contractor 2-2

3.0 Site Background 3-1

4.0 Site Characteristics 4-1
4.1 Facility Description 4-1
4.2 Current Site Use 4-1
4.3 Past Disposal Methods 4-1
4.4 Physical Features and Unusual Conditions 4-1

5.0 Scope of Work 5-1
5.1 Summary of Previous Site Activities and Sampling Results 5-1
5.2 Planned Site Preparation 5-1
5.3 Planned Site Activities and Dates 5-1
5.4 Number of People Onsite 5-2
5.5 Number of Days to Complete Field Work 5-2

6.0 Hazard Evaluation 6-1
6.1 Character of Waste(s) 6-1
6.2 Chemicals of Concern 6-1
6.3 Other Potential Hazards 6-1
6.4 Overall Hazard Level 6-1
6.5 Task-by-Task Risk Analysis 6-1
6.5.1 Groundwater Sampling 6-5

7.0 Personnel Training and Protection 7-1
7.1 Training Requirements 7-1
7.2 Training Briefing Topics 7-2
7.3 Medical Monitoring Requirements 7-3
7.4 Site- and Contaminant-Specific Medical Monitoring 7-3
7.5 Personal Protection 7-3
7.5.1 Levels of Protection 7-3
7.5.2 Protective Ensembles 7-4

Contents (Continued)

7.5.3 Reassessment of Protection Level 7-5
7.5.4 Inspection of Personal Protective Equipment 7-5
7.6 Monitoring Program 7-6
7.6.1 Operation, Maintenance and Calibration of Instruments . . 7-9
7.6.2 Initial Survey 7-9
7.6.3 Periodic Survey 7-10
7.6.4 Perimeter Monitoring 7-10
7.7 Site Control Measures 7-11
7.7.1 Site Organization 7-11
7.7.2 Buddy System 7-13
7.7.3 Site Communications Plan 7-13
7.7.4 Work Zone Definition 7-13
7.7.5 Nearest Medical Assistance 7-15
7.7.6 Visitors 7-15
7.7.7 Safe Work Practices 7-17
7.7.8 Required Onsite Safety Equipment 7-17
7.8 Decontamination Plan 7-17
7.8.1 Standard Operating Procedures 7-17
7.8.2 Levels of Decontamination Protection Required for Personnel 7-24
7.8.3 Monitoring Effectiveness 7-24
7.8.4 Sampling Equipment Decontamination 7-24
7.8.5 Deposition of Decontamination Wastes 7-24
7.8.6 Contamination Reduction Corridor Breakdown 7-25

8.0 Emergency Response/Contingency Plan 8-1
8.1 Pre-Emergency Planning 8-1
8.1.1 Personnel Roles and Lines of Authority 8-1
8.1.2 Recognition/Prevention of Hazardous Substance Effects on Humans 8-1
8.1.3 Evacuation Routes/Procedures 8-2
8.2 Emergency Actions 8-2
8.2.1 Emergency Contact/Notification System 8-2
8.2.2 Emergency Medical Treatment Procedures 8-3
8.2.3 Failure of Protective Equipment 8-4
8.2.4 Fire or Explosion 8-4
8.2.5 Spills or Leaks 8-4
8.2.6 Injury/Illness Reporting Requirements 8-4

9.0 Spill Containment Program 9-1

10.0 Confined Space Entry 10-1

Contents (Continued)

11.0 Certifications 11-1

Tables

Table 1-1 Emergency Contact List 1-2
Table 5-1 Personnel Requirements 5-2
Table 6-1 Chemicals of Concern 6-2
Table 6-2 Sampling Task Analysis 6-6
Table 7-1 Working Environment Action Levels for Site Activities 7-7
Table 7-2 Breathing Zone Action Levels for Site Activities 7-8
Table 7-3 Communication Systems 7-14
Table 7-4 Standing Orders for Exclusion Zone 7-18
Table 7-5 Standing Orders for Contamination Reduction Zone (CRZ) . . . 7-19
Table 7-6a Work Practices for Temperatures in Excess of 70 F 7-20
Table 7-6b Work Practices for Temperatures Less than 40 F 7-22
Table 7-7 Decontamination Stations 7-23

Figures

Figure 4-1 Site Location Map 4-2
Figure 7-1 Evacuation Route Map 7-12
Figure 7-2 Route to the Hospital 7-16

Appendices

Appendix A Worker's Compensation Accident Report Forms for Illinois

Appendix B Hazardous Waste Site Investigation Personnel Activity Report

Appendix C Proposed Sampling Plan

1.0 Summary Information

Client: U.S. Environmental Protection Agency, Region V

Project Officer: Carl D. Norman (312) 886-5495

Work Assignment Manager: Alan Altur (312) 886-0390

Project Manager (PM): William Ives (312) 346-3775

Field Team Leader (FTL): John Quinn (312) 346-3775

Site Health and Safety Officer (SHSO): Will be selected from qualified employees

Site Location: Arlington Heights, IL

Plan Distribution:

William Ives - Chicago

Jack Schill - Kansas City

Site Health and Safety Officer

File

Table 1-1 Emergency Contact List		
Organization	Contact	Phone Number
Project Manager	William Ives	(312) 346-3775 (w) (708) 778-7620 (h)
Director of Health and Safety (DHS)	Jack Schill	(913) 338-6595 (w) (816) 224-2406 (h)
Medical Records: Chicago Regional Office	Barry Fischer, MD/US Occupational Health, Inc.	(312) 641-1449 (w)
Worker's Compensation Administrator	Diane Mettenbrink	(913) 339-8561 (w)
Ambulance	Arlington Heights	911
Police	Arlington Heights	911
Fire	Arlington Heights	911
HAZMAT	Arlington Heights Fire Department	911
State Police	Chicago District	(312) 283-2400
Hospital	Northwest Community	(708) 506-4350
Poison Control Center		1-800-252-2022
Regional EPA	Alan Altur, WAM	(312) 886-0390
State Authority	Tom Crause IEPA - DLPC	(217) 782-6761
National Response Center		1-800-424-8802
Center for Disease Control		(404) 488-4100
Chemtrec *		1-800-424-9300

* Provides information to persons responding to accidents involving shipments of hazardous materials.

2.0 Team Member Responsibilities

The following personnel organization is critical to the planned activities at the site. The field team members will be selected from qualified personnel.

2.1 Director of Health and Safety

The director of health and safety (DHS) is responsible for providing the project manager with assistance and support with regard to all regulatory and safety aspects of site activity.

2.2 Project Manager

The project manager (PM) is responsible for technical direction and overall project administration. As part of that responsibility, the PM will assure project plans meet all OSHA requirements and will keep the health and safety of all site personnel a primary objective.

2.3 Field Team Leader

The field team leader (FTL) is responsible for leading the team in the planned field activities. A part of the responsibility is analyzing site conditions and their potential impacts on the health and safety of team members during onsite activities. The site health and safety officer will assist the FTL in the site analysis and advise on precautionary measures.

2.4 Site Health and Safety Officer

The site health and safety officer (SHSO) has primary responsibility for ensuring that the provisions of this site safety plan are adequate and implemented in the field. Changing field conditions may require quick decisions to be made to assure adequate protection for workers. Therefore, the person assigned as SHSO must be experienced and have satisfactorily completed the additional training

requirements specified by OSHA in 29 CFR 1910.120 and the company safety and health program. The SHSO is also responsible for conducting site inspections on a regular basis to ensure the effectiveness of this site safety plan.

2.5 Field Team

The field team (FT) is the personnel responsible for data collection activities under the FTL's oversight. Each member is expected to handle all assigned duties with attention to the inherent hazards involved.

2.6 Project Contractor

The various project contractor (PC) organizations have primary responsibility for supplying personnel and equipment to perform tasks under the oversight of the FTL. The PC manager has overall responsibility for ensuring that all contractor personnel know and observe the site safety plan at all times while working on the site.

3.0 Site Background

This section briefly describes the hazardous wastes known or alleged to be present and the activities that produced these wastes. This information is condensed from the following documents:

Title	Author	Date
Preliminary Assessment	IEPA	1990
Site Inspection	E & E	January 28, 1988
Environmental Assessment Report	Harza	February, 1989
Memo	IEPA	March 9, 1989

The Arlington Heights Municipal Landfill (AHML) operated as a municipal waste landfill from 1968 until 1974. In the 1970s, IEPA inspections discovered 55-gallon drums being landfilled. Many of the drums appeared to be empty. Some were removed from the site; others were buried. In the 1970s and 1980s, leachate seeps were observed by the IEPA.

In the late 1980s, Illinois Bell Telephone complained to IEPA that the water flooding their below-ground telephone vaults was landfill leachate.

The village bought the property between 1964 and 1968. The previous owners used the land for farming and a small gravel pit.

4.0 Site Characteristics

4.1 Facility Description

The site is a 54-acre property (Figure 1). The landfilled waste is covered by 1.5 million cubic yards of soil and sediment from a creek improvement project. Most of the site is securely fenced, but access is poorly restricted at the gates. North and east of the property are residential areas; west and south of the site are industrial/ commercial areas. The site location and layout are shown on Figures 1 and 2, respectively.

4.2 Current Site Use

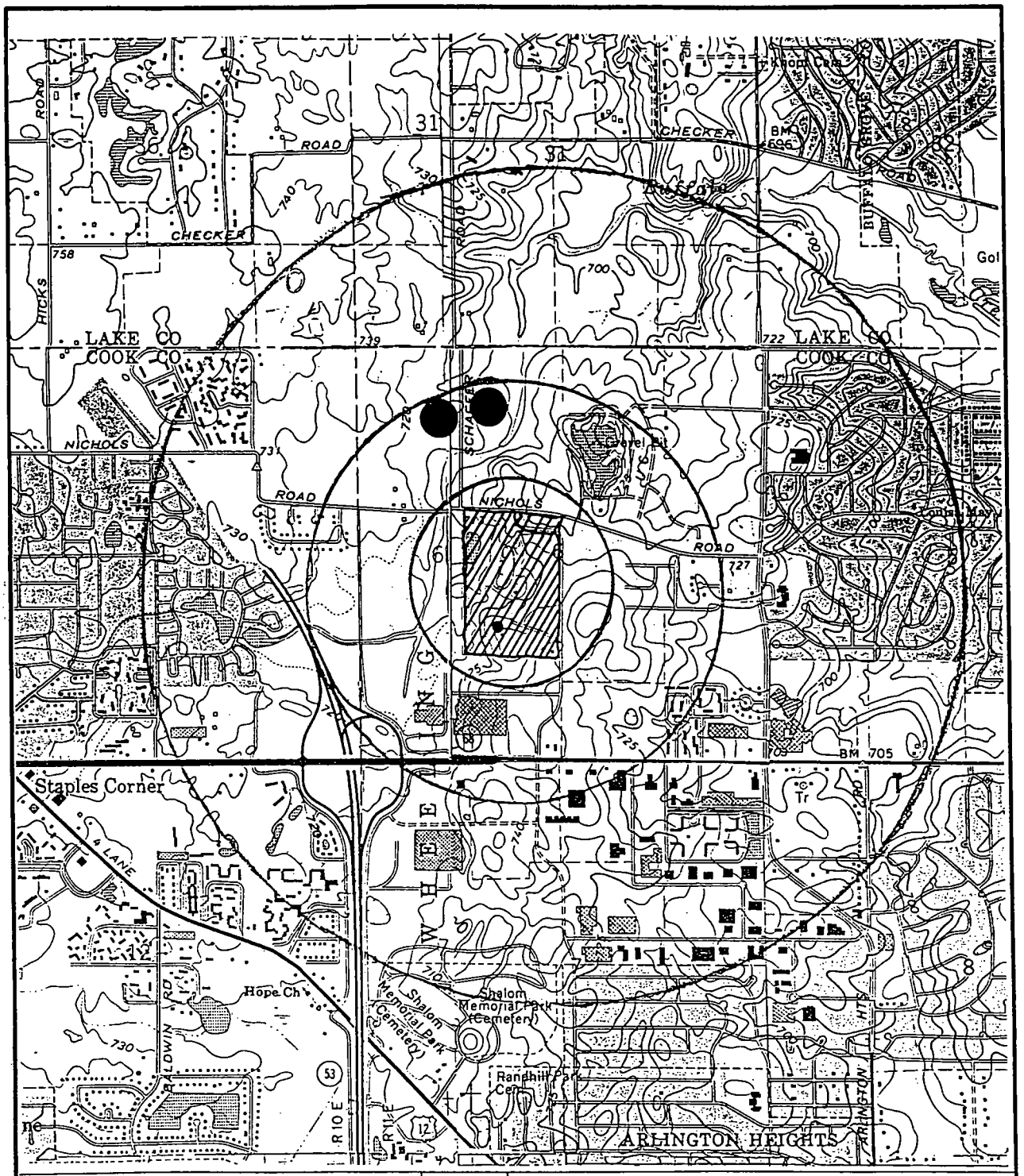
The landfill portion of the property is inactive. The south end of the property has a municipal water tank; a deep backup municipal well, a fire training facility, and a maintenance building. Occasional groups of firemen use the training facility. Village representatives check on the water system periodically.

4.3 Past Disposal Methods

Landfilling of municipal wastes took place from the mid-1960s until 1974. Drums, which may have been empty, were buried along with the other wastes. Construction debris was landfilled until the late 1980s. Recent activity has been limited to covering the landfill with soil and sediment from a creek improvement project.

4.4 Physical Features and Unusual Conditions

Some of the landfill's slopes have grades of up to 30%.



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USGS (1960, 1963b)

Scale:
1:24,000

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Figure 4–1
Site Location Map

Arlington Heights Municipal Landfill
Arlington Heights, IL

B&V Waste Science and Technology Corp.

5.0 Scope of Work

5.1 Summary of Previous Site Activities and Sampling Results

A sample of a 1984 leachate seep indicated organic chemicals.

An SSI took place at the landfill in 1987. Sampling included only surficial soils. Various organics and metals were detected.

Monitoring wells were installed by Harza in 1988. Analysis of water samples was limited to inorganics.

Flooded onsite telephone vaults were sampled in the late 1980s. Organics were detected.

An SSI reconnaissance visit was performed on December 31, 1992.

5.2 Planned Site Preparation

No special site preparation is required.

5.3 Planned Site Activities and Dates

Environmental samples will be collected at this site to attempt, under the USEPA Statement of Work (SOW), to establish the presence or absence of CERCLA-regulated hazardous substances. Samples will be collected from the landfill site following the proposed sampling plan which is included in Appendix C of this report.

The sampling visit is planned for the spring of 1993. Level D personal protective equipment should ensure the health and safety of field team members. Table 5-1 shows task-related protective levels and site control measures.

Table 5-1 Personnel Requirements			
Activity	Buddy System	Line of Sight	Protective Level
Monitoring Well Sampling	Yes	Yes	D
Surface Water Sampling	Yes	Yes	D
Sediment Sampling	Yes	Yes	D
Leachate Seep Sampling	Yes	Yes	D
Soil Sampling	Yes	Yes	D

5.4 Number of People Onsite

The sampling team will consist of three Chicago-based scientists/engineers, trained in proper health and safety procedures and personal protection.

5.5 Number of Days to Complete Field Work

The sampling visit will require up to three days.

6.0 Hazard Evaluation

6.1 Character of the Waste(s)

The physical forms of potential hazardous wastes are:

- Solid
- Gas
- Liquid
- Vapors

The characteristics of the potential wastes which could make them hazardous to human health and the environment are:

- Volatility
- Toxicity

6.2 Chemicals of Concern

Previous sampling efforts at the site indicate probable hazardous substances. The chemicals are presented in Table 6-1.

6.3 Other Potential Hazards

Some of the landfill's slopes have grades of up to 30%. However, no samples will be taken from the slopes, and the sampling team can access all areas of the landfill via gently graded dirt roads.

6.4 Overall Hazard Level

The overall hazard level is low for all sampling activities, including monitoring wells, surface water, sediment, leachate, and surficial soil. The surface water bodies to be sampled are shallow and slow flowing. They should pose no special hazard.

6.5 Task-by-Task Risk Analysis

The task planned is environmental sampling of five types: monitoring wells, surface water, sediment, leachate, and soil. The evaluation of hazards is based on

Table 6-1
Chemicals of Concern

Chemical Name	Highest Reported Onsite Concentration	Exposure Routes	TWA	Hazard/Symptoms	Matrix
Chloroform	5 ppb	Inh, Abs, Con	PEL 2 ppm	Dizziness, mental dullness, nausea, disorientation, carcinogen	Soil, *
1-2-dichloroethane	15.8 ppb	Ing, Con, Inh	TLV 10 ppm PEL 1 ppm	Cough, nausea, diarrhea	Leachate seep, *
Trans-1,2-dichloroethene	6,224 ppb	Inh, Ing, Con	TLV 200 ppm	Skin irritant, dizziness, nausea	*
1,2-dichloropropane	79.2 ppb	Inh, Con, Ing	PEL 75 ppm	Eye irritant, drowsiness, light headedness, skin irritant, carcinogen	*
Trans-1,3-dichloropropene	384 ppb	Ing, Inh, Con	None described	Skin and eye irritant	*
Methylene chloride	2.8 ppb	Inh, Ing, Con	PEL 500 ppm TLV 50 ppm	Fatigue, weakness, light headedness, numbness, nausea, irritated skin and eyes, carcinogen	*
Tetrachloroethene	4.3 ppb	Inh, Ing, Con	PEL 25 ppm	Irritant of eyes, nose, throat, nausea, dizziness, headache, carcinogen	*

* Reported in analyses of water taken from flooded telephone line conduit.

Table 6-1
Chemicals of Concern

Chemical Name	Highest Reported Onsite Concentration	Exposure Routes	TWA	Hazard/Symptoms	Matrix
Trichloroethene	124 ppb	Inh, Ing, Con	PEL 50 ppm	Headache, vertigo, tremors, nausea, eye irritant, carcinogen	Leachate seep, *
Vinyl Chloride	370 ppb	Inh	PEL 1 ppm	Weakness, abdominal pain	*
Benzene	22.2 ppb	Inh, Abs, Ing, Con	PEL 1 ppm	Irritant of eyes and nose, headache, nausea, carcinogen	Leachate seep, *
Toluene	270 ppb	Inh, Abs, Ing, Con	PEL 100 ppm	Fatigue, weakness, confusion, dizziness, headache, dilated pupils	Leachate seep, soil, *
Carbon tetrachloride	600 ppb	Inh, Abs, Ing, Con	PEL 2 ppm	CNS depression, nausea, skin irritant, carcinogen	Leachate seep
1,1,1-trichloroethane	600 ppb	Inh, Ing, Con	PEL 350 ppm	Headache, CNS depression, poor equilibrium, eye irritant	Leachate seep
1,1-dichloroethane	700 ppb	Inh, Ing, Con	PEL 100 ppm	CNS depression, skin irritant	Leachate seep, *
1,2-trans dichloroethylene	20.7 ppb	Inh	PEL 200 ppm	Hallucinations, nausea, weakness	Leachate seep
Benzoic acid	80 ppb	Con, Ing, Inh	None described	Irritant of eye and skin	Soil
Phenanthrene	63 ppb	Ing, Con	PEL 0.2 mg/m^3	None described	Soil

* Reported in analyses of water taken from flooded telephone line conduit.

Table 6-1
Chemicals of Concern

Chemical Name	Highest Reported Onsite Concentration	Exposure Routes	TWA	Hazard/Symptoms	Matrix
Fluoranthene	110 ppb	Ing, Con	0.1 mg/m^3	Dermatitis, bronchitis	Soil
Pyrene	83 ppb	Inh, Ing	PEL 0.2 mg/m^3	Skin irritant	Soil
Chrysene	50 ppb	Con, Con	PEL 0.2 mg/m^3	Dermatitis, bronchitis	Soil
Benzo (b&k) fluoranthene	75 ppb	Inh, Con	0.1 mg/^{3}	Dermatitis, bronchitis	Soil
Arsenic	19 ppm	Inh, Abs, Con, Ing	PEL 0.010 mg/m^3	Respiratory irritant, carcinogen	Soil
Beryllium	0.8 ppm	Inh	PEL 0.002 mg/m^3	Respiratory symptoms, weakness, carcinogen	Soil
Cadmium	1.3 ppm	Inh, Ing	PEL 0.2 mg/m^3	Cough, tight chest, headache, chills, carcinogen	Soil
Chromium	45 ppm	Inh, Ing	PEL 1 mg/m^3	None described	Soil
Cobalt	8.6 ppm	Inh, Ing, Con	PEL 0.05 mg/m^3	Cough	Soil
Copper	43 ppm	Inh, Ing, Con	PEL 1 mg/m^3	Nasal and eye irritant	Soil
Lead	37 ppm	Inh, Ing, Con	PEL 0.050 mg/m^3	Weakness, pallor	Soil

knowledge of previous site work, background information, and anticipated risks posed by the sampling activities. The proposed sampling is described further in Appendix C of this report.

The following measures will be followed to eliminate task hazards:

- Continuous ambient air monitoring
- Maintenance of safe footing.
- Handling of pH fixing chemicals which will be made safe by the use of "individual dose" ampules and the wearing of chemical splash goggles and chemical-resistant gloves. A micropipette will be used to transfer preservatives from the ampule ϕf flow from the ampule is restricted. OSHA-specified 15-minute eye flush equipment will be on hand.
- Prevention of dermal contact with sampled media.

Task analysis for groundwater sampling and the related occupational hazards and their prevention/mitigation is listed in Table 6-2. The risk associated with the planned sampling task are low.

6.5.1 Groundwater Sampling

The potential for toxic exposure to hazardous organic vapors exists during groundwater sampling activities. A worker standing upwind will open each monitoring well and monitor first with an LEL/0_2 meter to check for an explosive atmosphere. Then the well will be screened with a FID or PID to determine the presence of organic vapors before performing any groundwater sampling activities.

Table 6-2
Sampling Task Analysis

		Media		
		Soil	Surface Water (sediment and leachate)	Groundwater
Hazards	Contact with or inhalation of chemicals with high concentrations within media.	●	●	●
	Back strain and muscle fatigue due to lifting or shoveling.	●	●	●
	Contact or inhalation of decon solutions.	●	●	●
	Explosive Atmosphere.			●
	Spillage of sampling media onto personnel.		●	●
	Contact with sampling preservatives.		●	●
	Trip, slip, fall hazard from site operations.	●	●	●
	Potential gas release during monitoring well sampling.			●
Hazard Control Measures	Proper awareness of chemicals and review of suspected constituents; implement action of adequate protection program.	●	●	●
	Proper lifting (pre-lift weight assessment, use of legs, multiple personnel) techniques to prevent back strain. Use of slow, easy motions when digging to decrease back strain.	●	●	●
	Wearing of personal protective equipment appropriate to sampling task.	●	●	●
	Monitor wells initially with LEL/0_2 meter.			●
	MSDS onsite for preservatives and decon solution.	●	●	●

7.0 Personnel Training and Protection

The material presented in this section is fundamental for protecting workers engaged in hazardous waste operations. The worker should review this information each time the site safety plan is read. Therefore, no attempt has been made to render this section site-specific.

7.1 Training Requirements

All personnel before actively engaging in hazardous waste operations must have a certificate stating the successful completion of 40-hour hazardous waste site operator training and a certificate of successful completion of 8-hour refresher training if more than twelve months have elapsed since 40-hour completion. The certification must be current within the last twelve months. The training must comply with applicable OSHA regulations found in 29 CFR 1910.120 et. seq.

Consistent with OSHA 29 CFR 1910.120 paragraph (e)(8), individuals designated as field team leader (FTL) or site health and safety officer (SHSO) require an additional eight hours of supervisors training. Policy requires the SHSO to have at least six days of experience at or above the level of protection planned for in this site safety plan.

All workers who enter the exclusion or decontamination zones at a site where use of a negative pressure respirator is necessary must have successfully completed a qualitative respirator fit test in accordance with OSHA 29 CFR 1910.134 within the preceding 12 months.

All personnel working on a site will be currently trained in cardiopulmonary resuscitation (CPR) and first aid (FA).

Before departing from the office, all personnel assigned to work at a potential hazardous site will present to the designated SHSO:

- Certification of 40-hour training course completion.
- Certification of 8-hour annual refresher, if appropriate.

- Certification of CPR/FA training.
- Certification of respirator fit testing.

In addition, the person designated as FTL will present to the designated SHSO a copy of certification of completion of an 8-hour health and safety supervisors training course.

The certification of the SHSO will be presented to the DHS or a regional health and safety coordinator for a project involving regional office personnel.

Copies of all pertinent certificates will be in the possession of field team members during the field work.

7.2 Training Briefing Topics

To the fullest extent appropriate, the following subjects will be discussed by a qualified individual, such as the SHSO, at the frequency indicated:

Subject	Frequency
Chemical hazards	Initially, periodically
Hazard recognition	Initially, periodically
Evacuation routes and procedures	Daily
Evacuation safe distance areas	Daily
Site-specific safety hazards	Initially, periodically
Personal protective equipment	Initially, periodically
Changes in level of protection	As needed
Communication system	Daily
Emergency response procedure	Daily
Decontamination procedures	Initially, periodically

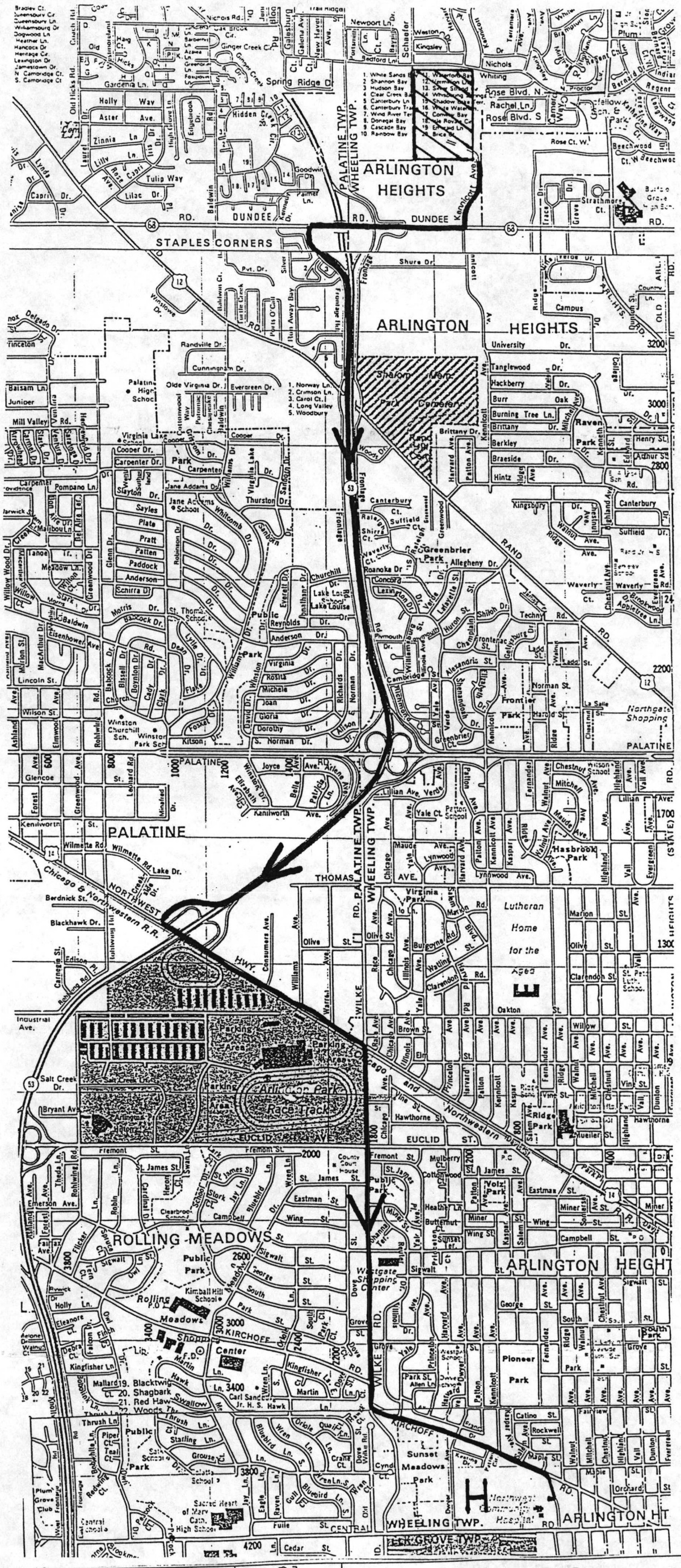


Figure 7–2
Route to the Hospital

Arlington Heights Municipal Landfill
Arlington Heights, IL

B&V Waste Science and Technology Corp.

7.3 Medical Monitoring Requirements

All personnel who will be actively engaged in hazardous waste operations must complete a comprehensive medical monitoring examination within the 12 months before beginning work at a site. The examination must comply with OSHA regulations found in 29 CFR 1910.120 et seq. The examination certification must be signed by a medical doctor, indicate any work limitations placed on the individual, and specify that the individual is capable of working while wearing respiratory protective equipment. The medical certification must be presented to the SHSO before site activities begin.

7.4 Site- and Contaminant-Specific Medical Monitoring

For activities at the site, no contaminant-specific medical test will be required before individuals enter the exclusion or contamination reduction zones.

7.5 Personal Protection

Personnel must wear protective equipment when response or investigative activities involve known or suspected atmospheric contamination; when hazardous vapors, gases, or particulate may be generated by site activities; or when direct contact with skin-affecting substances may occur. Full facepiece respirators protect lungs, gastrointestinal tract, and eyes against airborne toxicants. Chemical-resistant clothing protects the skin from contact with skin-destructive and absorbable chemicals.

7.5.1 Levels of Protection

The specific levels of protection and the necessary components for each have been divided into four categories according to the degrees of protection afforded:

Level A: Should be worn when the highest level of respiratory, skin, and eye protection is needed.

NOTE: Personnel are not authorized to work at Level A without additional training and written approval from the DHS.

Level B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection is needed. Level B is the primary level of choice when encountering totally unknown environments.

Level C: Should be worn when the criteria for using air-purifying respirators are met and a lesser level of skin protection is needed.

Level D: Should be worn only as a work uniform and not in any area with respiratory or skin hazards. Level D provides minimal protection against chemical hazards.

7.5.2 Protective Ensembles

Level B Personal Protective Equipment (PPE):

- Supplied-air respirator (OSHA/NIOSH approved). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator [with escape bottle for immediately dangerous to life or health (IDLH) or potential for IDLH atmosphere].
- Saranex hooded chemical-resistant one-piece suit.
- Long cotton underwear (as applicable).
- Outer gloves, chemical-resistant (Nitrile - 11 mil).
- Inner gloves, chemical-resistant (Nitrile - 4 mil).
- Boots, chemical-resistant, steel toe and steel shank.
- Outer boot covers, chemical-resistant, disposable.
- Hard hat.
- 2-way radio communications (intrinsically safe) or equivalent.

Level C Personal Protective Equipment:

- Air purifying respirator (OSHA/NIOSH approved) with an organic vapor/acid gas/high efficiency particulate filter cartridge or other appropriate cartridge.
- Saranex chemical-resistant one piece suit.
- Outer gloves, chemical-resistant (Nitrile - 11 mil).
- Inner gloves, chemical-resistant (Nitrile - 4 mil).
- Boots, steel toe and steel shank, chemical resistent.
- Outer boot covers, disposable, chemical-resistant.
- Hard hat.

Level D Personnel Protective Equipment:

- Coveralls (tyvek).
- Boots, chemical resistent, steel toe and steel shank.
- Safety glasses with side shields or goggles.
- Hard hat (face shield optional).
- Outer gloves, chemical-resistant (Nitrile - 11 mil).
- Inner gloves, chemical-resistant (Nitrile - 4 mil).

7.5.3 Reassessment of Protection Level

The level of protection provided by PPE selection shall be upgraded or downgraded based on results of monitoring and the established action levels. When the information warrants, the FT will withdraw and regroup at a designated area. The SHSO will reassess the level of PPE required for protection. If the PPE level required is upgraded and the FTL or SHSO are not qualified to work in the new hazard level, the FT shall withdraw and not reenter the site until a qualified FTL or SHSO are onsite.

7.5.4 Inspection of Personal Protective Equipment

The primary inspection of PPE in use for activities at the site will occur before immediate use and will be conducted by the user. This ensures that the specific device or article has been checked out by the user, and that the user is familiar with its use.

7.6 Monitoring Program

The determination of present hazards is achieved initially by monitoring the breathing zone. Presence of volatile organics can be established by detection of vapors by either a photoionization detector (PID) or a flame ionization detector (FID). When properly calibrated, either instrument can be used as a screening tool. In addition, instruments can detect oxygen sufficiency or deficiency, explosion/fire potential, radiation, respirable dust, and other potentially hazardous situations.

Policy requires the initial screening of a site or portion of a site under investigation with (1) an organic vapor detector (HNu or OVA), (2) a radiation meter, and (3) a hydrogen cyanide meter. Serious consideration of use of other testing equipment will be made, based on the available historical and site observation information. The DHS has established action levels, i.e., concentration values at which changes in work activity must occur to adequately protect the workers health and safety. These action levels are provided in Table 7-1 and Table 7-2.

The frequency of use of monitoring instruments is dependent upon the mobility and other characteristics of the potential hazardous substances. Field teams will use a FID or PID to scan for volatile organic compounds (VOCs) when initially entering a site. If VOC presence is not detected, subsequent monitoring shall be performed every 30 minutes. If the VOC concentration exceeds background, the subsequent monitoring shall occur every 15 minutes.

Radioactivity is undetectable without use of a radiation meter. Prudence requires a radiation scan on every site.

Table 7-1
Working Environment Action Levels
for Site Activities

Environment	Instrument	Reading	Action
Organic Vapor Presence	OVA or HNu	Background	Level D
		Above background	Measure breathing zone (see Table 7-2)
Oxygen Amount in Air	O_2 Meter (MSA 261)	< 19.5% O_2	Level B. Explosive meter not valid at <10% O_2
		19.5%-23% O_2	SCBA not needed on basis of O_2 content only
		> 23% O_2	Evacuate. Explosive hazard. Consult with DHS
Explosion/Fire Danger	LEL Meter (MSA 261)	< 10% LEL	Continue activities. Measure breathing zone with OVA or HNu and LEL meter
		10-25% LEL	Identify and eliminate source. Continue activities. Measure breathing zone
		> 25% LEL	Evacuate. Explosion hazard. Consult with DHS
Radioactivity	Minirad Radiation Meter	Background	Continue activities
		Above background	Evacuate. Consult with DHS
Cyanide Gas	Monitox CN Meter	Any indication	Measure breathing zone. Consult with DHS
		No indication	Continue activities
H_2S Gas	MSTox H_2S	Any indication	Measure breathing zone. Consult with DHS
Respirable Dust	Mini-Ram Dust Meter	< 2 mg/m^3	Continue activities
		> 2 mg/m^3	Measure breathing zone
Noise	Noise Meter	< 85 dB(A)	No hearing protection required
		> 85 dB(A)	Hearing protection required

Table 7-2
Breathing Zone Action Levels
for Site Activities

Environment	Instrument	Reading	Action
Organic Vapor Presence	OVA or HNu	< 5 ppm above background	Level C with appropriate cartridges
		5 ppm above background to 500 ppm	Level B
		> 500 ppm	Evacuate. Consult with DHS
Oxygen Amount in Air	O_2 Meter (MSA 261)	< 19.5% O_2	Level B. Explosive meter not valid of <10% O_2
		19.5%-23% O_2	SCBA not needed on basis of O_2 content only
		> 23% O_2	Evacuate. Explosive hazard. Consult with DHS
Explosion/Fire Danger	LEL Meter (MSA 261)	< 10% LEL	Continue activities
		> 10% LEL	Evacuate. Consult with DHS
Cyanide Gas	Monitor CN Meter	Any indication	Evacuate. Consult with DHS for authorization to re-enter at Level B
		> 5 ppm	Evacuate at once. Consult with DHS
Hydrogen Sulfide Gas	MSTox H_2S	No indication	Continue activities
		< 5 ppm	Level D. Monitor breathing zone constantly
		> 5 ppm	Level B
Respirable Dust	Mini-Ram Dust Meter	< 2 mg/m^3	Continue activities
		2 mg/m^3 to 10 mg/m^3	Use of respirator with appropriate dust filters
		> 10 mg/m^3	Evacuate. Consult DHS

The use of cyanide (CN) compounds was also prevalent in industry in the past. Prudence dictates that every site be checked over with a Monitox CN meter.

When beginning work at a monitoring well, the well will be uncapped by a field team member standing upwind. The team will use an LEL/0_2 meter to determine the presence of an explosive atmosphere in the well. The well will then be scanned with an organic vapor detector to determine the presence of volatile organics.

The frequency of monitoring other hazards will be determined on a site-specific basis. Such decisions are necessarily based on available data, but the following are situations
where it is necessary to reassess the monitoring instrumentation needed and frequency of use:

- Beginning of a new work phase (e.g., start of drum sampling or move to a different portion of the site).
- Discovery of evidence of hazardous substances not suspected when site safety plan was developed.
- Temperature extremes or individual medical considerations that limit personnel effectiveness.
- Change in ambient levels of contaminants.
- Change in work scope that effects the degree of contact with contaminants.
- Change in weather.

Monitoring of other hazards will be conducted during site activities at the time intervals specified in the plan. The following special monitoring instruments are available for use:

- Chemical specific detectors.
- O_2/LEL meter.
- Draeger pump and tubes for a number of specific chemicals.
- Noise meter.
- Dust meter.

7.6.1 Operation, Maintenance and Calibration of Instruments

The SHSO is responsible for the proper operation, maintenance, and calibration of each instrument to be used. The operation, maintenance, and calibration instructions to be followed are in the equipment manuals, which are included with the instruments. Equipment is to be calibrated daily.

7.6.2 Initial Survey

Before any site activity, the SHSO will conduct perimeter and general site monitoring, upwind and downwind, to establish background levels.

At initial entry, note the potential for IDLH conditions or oxygen deficient atmospheres. Real-time monitors can be useful in identifying any IDLH conditions, toxic levels of airborne contaminants, flammable atmospheres, or radioactive hazards. Periodic monitoring of conditions is critical, especially if exposures may have increased since initial monitoring or if new site activities have begun.

7.6.3 Periodic Survey

After site activities have begun, selective monitoring of high-risk workers (those closest to a source of contaminant generation) is essential. High risk workers will be monitored in accordance with Section 7.6..

Employees working closest with the source have the greatest likelihood of being exposed to concentrations that exceed established exposure limits. Representative sampling approaches that emphasize worst case conditions (greatest risk of exposure for employee) are acceptable. However, the sampling strategy may change if the operation or tasks change onsite or if exposures potentially increase.

7.6.4 Perimeter Monitoring

The SHSO is responsible for determining if site activities could negatively impact zones outside the contamination reduction zone. If action levels for airborne contaminants listed in Table 7-1 are exceeded, the SHSO will perform monitoring at the perimeter of the contamination reduction zone to determine if the

contaminants are getting past the controlled zones. If action levels are exceeded at these locations, the SHSO must advise the PM and DHS. If necessary, the control zones will be expanded to compensate for the presence of the contaminants.

If the release of contaminants could negatively impact the health and safety of the surrounding areas, the SHSO will contact the local emergency response organizations (village fire and police departments) responsible for protecting public health from chemical exposures.

7.7 Site Control Measures

Site control, when necessary, is the use of procedures to minimize potential contamination of workers and to protect the public from site hazards. A number of site control procedures can be implemented to reduce worker and public exposure to chemical, physical, biologic and safety hazards:

- Site map.
- Work zones.
- Buddy system, when necessary.
- Decontamination procedures for both personnel and equipment.
- Site security.
- Communication.
- Safe work practices.

The site control program will be established in the planning stages of a project and modified based on new information from site assessments.

7.7.1 Site Organization

An essential factor in site control is a plan of organization for onsite work activities. When a portion of a site must be secure, the boundaries of the secure area must be clearly designated to all workers and visitors. The organization plan will map out the boundaries of the exclusion zone, contamination reduction zone, support zone, and the security perimeter in relation to the physical layout of the site.

A sketch or map showing physical features of the site such as (buildings, roads, pavement, utilities, etc.); planned work zone boundaries; escape routes, the rally point (if permanent); and other relevant information is included on Figure 7-1. The FTL and SHSO will coordinate the preparation of the organization plan and its implementation on the site. The SHSO will monitor the effectiveness of the plan in operation and advise the FTL on improvements.

7.7.2 Buddy System

The implementation of a buddy system is mandatory for entry into an exclusion zone. A buddy system requires at least two people who work as a team, each looking out for the other. The purpose of the buddy system is to have two persons, observe one another for stress, check the partner's protective clothing, notify the support zone in the event of an emergency and provide assistance, if needed.

The sampling team will remain in the same immediate area during sampling.

7.7.3 Site Communications Plan

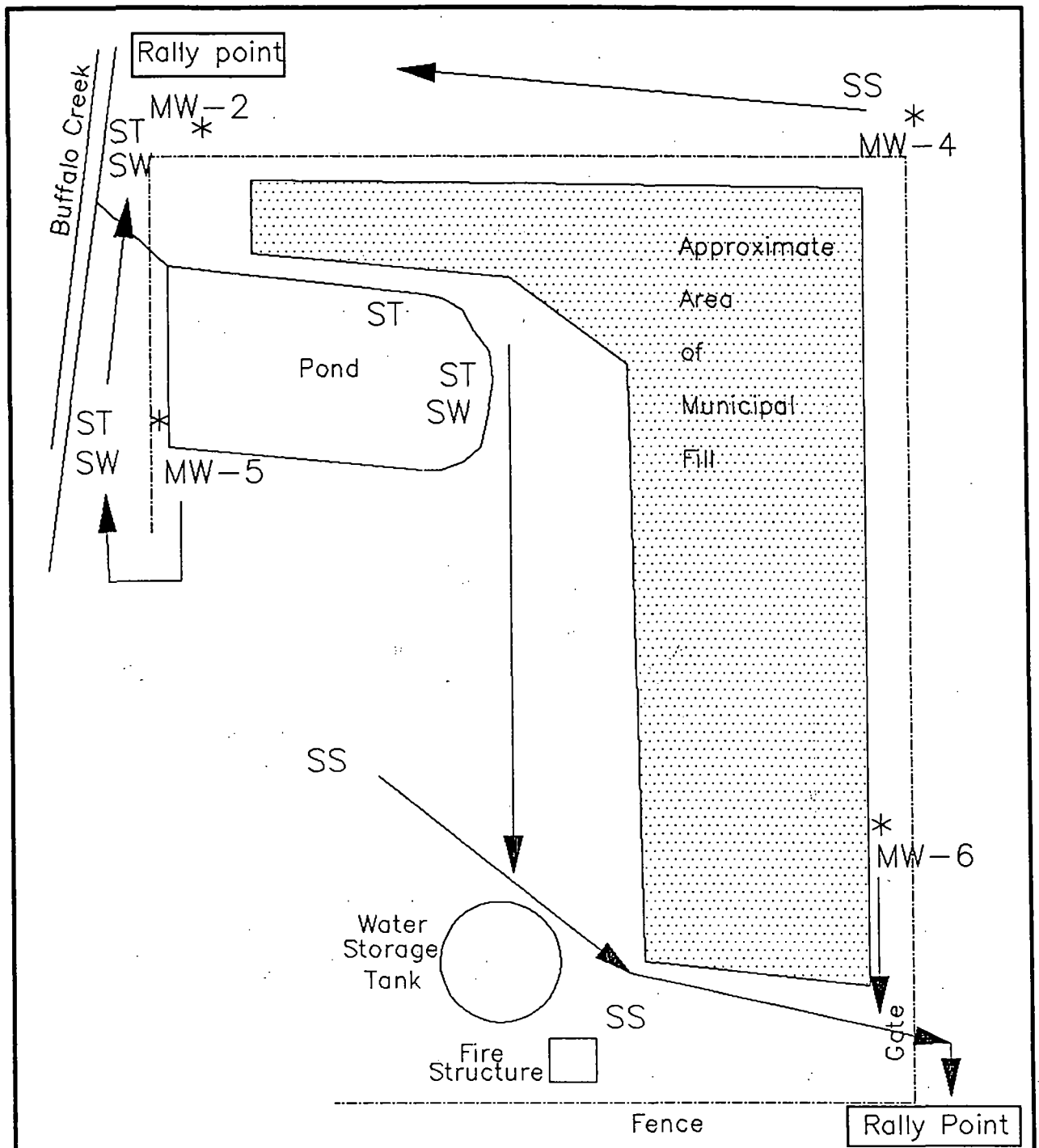
Successful communication between field teams and contact with personnel in the support zone is essential. Table 7-3 lists the communication systems that will be available during activities and emergencies at the site.

7.7.4 Work Zone Definition

Three general work zones will be established: exclusion zone, contamination reduction zone, and support zone. Boundaries of these work zones will be established in the field by the SHSO.

The exclusion zone is defined as the area where contamination is either known or likely to be present, or because of activity, will provide a potential to cause harm to personnel. Entry into the exclusion zone requires certification in training and medical monitoring in accordance with OSHA 29 CFR 1910.120.

The contamination reduction zone (CRZ) is the area where personnel conduct personal and equipment decontamination. It is essentially a buffer zone between



Source: Modified from Harza (1989)	N	Figure 7-1 Evacuation Route Map
Scale: Not to Scale		Arlington Heights Municipal Landfill Arlington Heights, IL

B&V Waste Science and Technology Corp.

Table 7-3 Communication Systems		
Purpose: Alert members to emergencies, convey safety information, communicate changes in the work to be accomplished, and maintain site control.		
Communication	Signal	Definition
Audible Internal Communications (whistle, vehicle horn, personal air horn)	One long blast	Evacuate area
	Two short blasts	Localized problem, be on the alert
	Two long blasts	All clear, re-entry permitted
	Three short blasts	Cease work operations
Visual Internal Communications (hand signals)	Hands clutching throat	Out of air / cannot breathe
	Hands on top of head	Need assistance
	Thumb(s) up	OK / I am all right / I understand
	Thumb(s) down	No / negative
	Arms waving upright	Send backup support
	Grip partners wrist	Exit area immediately
	Cross arms above head	Cease work operations

contaminated areas and clean areas. Activities to be conducted in the CRZ will require personal protection as defined in the decontamination plan. Entry into the CRZ requires certification in training and medical monitoring in accordance with OSHA 29 CFR 1910.120.

The support zone is situated in clean areas away from potentially contaminated soils. Personal protective equipment is therefore not required. The support zone should be established upwind of the exclusion zone.

7.7.5 Nearest Medical Assistance

A map of the route to the nearest medical facility that provides emergency care for individuals is provided in Figure 7-2. The route to the hospital will be verified by a CPR/FA-trained person and made known to all site personnel. The SHSO will drive the route at least weekly to ensure the route is not blocked, when site activity lasts for more than a week.

7.7.6 Visitors

All visitors' employers are ultimately responsible for their compliance with all applicable OSHA regulations while on a hazardous waste site. Personnel will be courteous to all visitors and adhere to the following procedures for the safety of visitors.

- Visitors are expected to have a legal or proprietary right to be on the property and, if not so entitled, to have entry permission from the property owner.
- The SHSO will advise all visitors of the nature, level, and degree of exposure likely as a result of site sampling activities and the emergency response procedures that pertain to the visitors for the site.
- Visitors entering zones of possible hazard should comply with OSHA requirements such as medical monitoring, training, and respiratory protection.
- Visitors must provide their own protective equipment.

- If a visitor interferes with work activity or poses a safety hazard to anyone onsite, the SHSO will terminate work activities and the PM and DHS will be contacted immediately.
- All nonconformance incidents will be recorded in the site log by the SHSO.

7.7.7 Safe Work Practices

The ensuing tables provide the following procedures:

- A list of standing orders for the exclusion zone (Table 7-4).
- A list of standing orders for the contamination reduction zone (Table 7-5).
- The work schedule and monitoring protocol for work performed in environments where the temperature is at or above 70 F or less than 40 F (Tables 7-6a and 7-6b).
- TLD badges will be worn onsite by all field team members.

7.7.8 Required Onsite Safety Equipment

The following safety equipment items are required onsite during field activities:

- Fire extinguishers (10 pound ABC).
- Eye-wash kits (15-minute capacity).
- First aid kits.
- Blanket; stretcher, optional.

7.8 Decontamination Plan

Decontamination involves the orderly controlled removal of contaminants. Table 5-1 lists the tasks and specific levels of protection required for each task. Table 7-7 lists the step-by-step procedure for the personnel decontamination processes planned for the site. Decontamination will be conducted in Level D protection.

Table 7-4 Standing Orders for Exclusion Zone
• No use of tobacco, use of cosmetics, eating, or drinking in this zone. • No horse play. • No matches or lighters in this zone. • Check in with the SHSO when entering this zone. • Check out with the SHSO when exiting this zone. • Implement the communications system. • Line of sight must be maintained. • Wear the appropriate level of protection as defined in the site safety plan.

Table 7-5 Standing Orders For Contamination Reduction Zone (CRZ)
• No use of tobacco, use of cosmetics, eating, or drinking in this zone. NOTE: Drinking water may be permitted in this zone as a preventative measure against heat stress disorders. • No horse play. • No matches or lighters in this zone. • Wear appropriate level of protection. • Make water in sealed containers with lever activated spouts and disposable paper cups or individual bottles of water available in the CRZ when temperatures exceed 70 F.

Table 7-6a Work Practices For Temperatures in Excess of 70 F

Heat stroke is a life-threatening heat disorder that requires life-saving first aid. Decontamination should be omitted.

Heat stress can become life threatening. Unless the victim is grossly contaminated, decontamination should be omitted or minimized and treatment begun immediately.

Summary of Guidelines

Where temperatures exceed 70 F, the following protocol will be implemented to prevent heat related disorders:

- Drinking water will be made available in the contaminant reduction zone. A closed container with a lever-type flow actuator and disposable cups will be used.

- The frequency of physiological monitoring depends on the air temperature adjusted for solar radiation and the level of physical work. The length of the work cycle will be governed by the frequency of the required physiological monitoring.

The following presents the maximum time in minutes that personnel are allowed to remain in heat stress conditions before physiological monitoring is required. Physiological monitoring includes a heart rate check and external visual inspection of the well being of personnel.

Required Frequency of Heat Stress Monitoring		
Temperature F *	Semi-Impermeable (minutes)	Impermeable (minutes)
70 - 75	150	120
75 - 80	120	90
80 - 85	90	60
85 - 90	60	30
> 90	45	15

* F = ta F + (13 x fraction of sunshine)

Table 7-6a Continued
Work Practices For Temperatures in Excess of 70 F

Signs and symptoms of heat stress follow, in order of severity:

Type	Symptom	Treatment
Heat Related Illness	Localized redness of skin and reduced sweating. Reduced tolerance to heat.	Keep skin clean and dry.
Heat Cramps	Muscle spasm and pain in extremities and abdomen.	Remove person to cool area. Give small amounts of salted water.
Heat Exhaustion	Weak pulse; shallow breathing; pale, cool, moist skin; profuse sweating; dizziness; fatigue.	Remove person to cool area, reduce body temperature. Cool by convection. Give small amounts of salted water. Do not allow person to become chilled.
Heat Stroke	Red, hot, dry skin; body temperature of 105 degrees Fahrenheit or greater; no respiration; nausea; dizziness; confusion; strong rapid pulse; coma.	Seek medical attention immediately. Keep victim cool, wrap in wet cloth if necessary. Do not chill victim. Fan vigorously during transport to hospital. Apply cold packs if available. Convulsions may occur.

Table 7-6b Work Practices For Temperatures Less Than 40 F

Follow the guidelines listed in the American Conference of Governmental Industrial Hygienists Threshold Limit Values.

Fatal exposures to cold among workers almost always result from accidental exposures involving failure to escape low environmental air temperatures or from immersion in low temperature water. Workers should be protected from exposure to cold so that the deep core temperature of the body does not fall below 96.8 F. Lower body temperatures will likely result in reduced mental alertness and rationality, or loss of consciousness with the threat of fatal consequences.

Pain in the extremities may be the first early warning of danger to cold stress. Severe shivering may occur if the body temperature drops to 95 F. Workers exhibiting signs of cold stress or hypothermia should be sent to a warm area until they are safely able to resume their duties.

Summary of Guidelines

When the work environment temperature is less than 40 F, workers should take these protective measures:

- Wear adequate insulating dry clothing to maintain core temperatures above 96.8 F.
- Remove and replace any clothing that becomes wet.
- Cover hands and head appropriately.
- Wear mittens for temperatures less than 0 F.
- Avoid contact of metal items with bare flesh.
- Making insulated coveralls or a warm area available during doffing to counter wet undergarments.

In addition to the above described protective measures, the SHSO shall monitor workers for signs of cold stress and hypothermia.

7.8.1 Standard Operating Procedures

Standard decontamination sequences are presented in Table 7-7. All site personnel will minimize contact with contaminants to minimize the need for extensive decontamination.

The prudent approach when planning for decontamination is to assume all personnel and equipment leaving the exclusion zone are grossly contaminated. The decontamination system set up shall provide for a wash and rinse at least once of all personal protective equipment worn. This cleaning will be done in combination with a sequential doffing of equipment, starting at the first station with the most heavily contaminated item and progressing to the last station. Before leaving the exclusion zone, remove gross contamination at the decontamination station set up in the exclusion zone.

Reduce the spread of contamination during washing/doffing by spreading each station by a minimum of three feet, thus ensuring contamination decreases as the person moves from one station to another further along in the line. Polyethylene plastic sheeting will be placed on the ground in the personnel decontamination corridor. The decontamination stations will be arranged on top of the plastic. The initial system will be modified, eliminating unnecessary stations, to adapt to site conditions. For example, wash/rinse step could be omitted for disposable garments/gloves or boot covers not visibly contaminated/soiled.

7.8.2 Levels of Decontamination Protection Required for Personnel

As a minimum, Level D protection will be required for personnel assisting with personnel decontamination. Personnel assisting with vehicular decontamination involving steam or powered water wash will wear Level C protection as a minimum.

7.8.3 Monitoring Effectiveness

The SHSO is responsible for monitoring decontamination procedures and determining their effectiveness.

Table 7-7
Decontamination Stations

Site Preparation

Section 7.8.5 provides additional information regarding investigation-derived waste disposal.

Station	Equipment	Decontamination Methods	Disposal Methods
1	Tools, sampling devices, etc.	Wash & rinse with damp wipe when necessary.	Wash water disposed onsite.
2	Boot covers and outer gloves.	Wash and rinse if visibly soiled.	Dispose in plastic garbage bags in a landfill.
3	Tyvek and inner gloves.	Wash and rinse if visibly soiled.	Dispose in plastic garbage bags in a landfill.
4	Hands and face.	Field wash with soap and water.	Water disposed onsite.
5	Body.	Shower as soon as possible.	

7.8.4 Sampling Equipment Decontamination

Sampling equipment will be decontaminated by washing it in a solution of biodegradable detergent, followed by a triple rinsing it with tap water and triple rinsing it in deionized water. All decontaminated equipment will be wrapped in foil.

7.8.5 Disposition of Decontamination Wastes

The disposition of decontamination wastes will follow the procedures set forth by USEPA Region V. Investigation-derived waste (IDW) must be disposed of onsite unless doing so will increase hazards. If it is necessary to remove IDW from sites, it will be landfilled in accordance with RCRA guidelines under direction from the IEPA.

All materials and equipment used for decontamination must be either decontaminated or disposed of properly. Clothing, tools, buckets, brushes, and other equipment that is contaminated must be secured in containers and labelled. Clothing not completely decontaminated onsite should be secured in plastic bags before being removed from the site. Spent decontamination soap/rinse solutions will be disposed of onsite at the sample collection points.

7.8.6 Contamination Reduction Corridor Breakdown

When the contamination reduction corridor is no longer needed, it will be closed down. All disposable clothing and plastic sheeting used during the operation will be double bagged and contained onsite until it is disposed of as directed by the USEPA WAM. All wash tubs, pails, containers, etc., must be thoroughly washed, rinsed, and dried before removal from the site.

8.0 Emergency Response/Contingency Plan

This section describes contingencies and emergency planning procedures to be implemented at the site.

8.1 Pre-Emergency Planning

During the daily site briefings, all employees will be trained in and reminded of the emergency response plan provisions, communication systems, and evacuation routes. The potentially hazardous conditions associated with specific site activities will be reviewed. The emergency response plan will be reviewed and revised, if necessary, on a regular basis by the SHSO to ensure the plan is adequate and consistent with prevailing site conditions. The local emergency response service will be contacted and briefed on the planned activities and the nature of the hazards.

8.1.1 Personnel Roles and Lines of Authority

The SHSO has primary responsibility for responding to and correcting emergency situations, including taking appropriate measures to ensure the safety of site personnel and the public. Possible actions may involve evacuation of personnel from the site area and evacuation of adjacent residents. The SHSO also directs responses to medical emergencies and ensures that corrective measures have been implemented, appropriate authorities have been notified, and follow-up reports have been completed.

8.1.2 Recognition/Prevention of Hazardous Substance Effects on Humans

Personnel will be familiar with techniques of hazard recognition from pre-assignment training and site-specific briefings. The SHSO is responsible for ensuring that prevention devices or equipment is available to personnel.

8.1.3 Evacuation Routes/Procedures

In the event of an emergency that necessitates an evacuation of the site, the communication systems listed in the communication system table will be used, if necessary.

Due to potentially changing climatic conditions at the site, the SHSO will designate a rally point at least daily and inform the field team of its location before the day's activities and when climatic conditions necessitate a change in rally point location.

Personnel will be expected to proceed to the closest exit with their buddy and mobilize to the safe distance area (rally point) associated with the evacuation route. The SHSO will make an accounting of all personnel. In the event of missing personnel, emergency response organizations will be notified immediately of the need for search and rescue. Personnel will remain at that area until an authorized individual provides further instructions.

Evacuation routes for the site and immediate area will be shown on the site organization map (Figure 7-1).

8.2 Emergency Actions

8.2.1 Emergency Contact/Notification System

Table 1-1 is the emergency contact list, which provides names and telephone numbers for emergency contact personnel. It is located at the beginning of the safety plan for quick reference.

In the event of a fire, spill, or medical emergency, personnel will take direction from the SHSO. The SHSO will immediately notify the appropriate emergency response organizations necessary to mitigate the emergency. As soon as possible, the SHSO will make contact with the PM and the DHS. The PM will contact the client and the DHS will advise the SHSO on contacting the appropriate local, state, and federal authorities.

The SHSO will coordinate response activities. If an outside response organization is notified to respond, the SHSO will dispatch a representative to the site entrance to escort the response organization to the emergency scene.

8.2.2 Emergency Medical Treatment Procedures

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination will be completed and first aid administered before transport. If the patient's condition is serious, at least partial decontamination will be completed (that is, complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket). First aid will be administered while waiting on an ambulance or paramedics. All injuries and illnesses must be reported immediately to the PM and the DHS by the SHSO. The SHSO will also report the injury or illness to the worker's compensation administrator within 24 hours.

Emergency decontamination means removing the chemical protective clothing and wrapping the person in a blanket before transport. If the chemical protective clothing cannot be removed without jeopardizing the injured, the person may be wrapped in plastic or blankets. If decontamination is not performed on the injured, the area of the transport vehicle where the injured will be placed should first be covered with plastic to prevent contamination. Personnel should accompany the contaminated victim to the medical facility to advise on matters involving the hazards of the contaminants and decontamination. Following the emergency, the injured, the transport vehicle, and the treatment location should go through a thorough decontamination under the direct supervision of the SHSO.

Any person transported to a clinic or hospital for treatment shall be accompanied by all available information on the chemical(s) they may have been exposed to at the site.

8.2.3 Failure of Protective Equipment

If a worker's respirator, chemical protective clothing, or other protective equipment fails or is damaged during site activity, proceed to the contaminant reduction zone and decontaminate to the extent necessary to safely replace the protective equipment. If direct contact with potentially contaminated material occurs, the affected skin will be washed immediately with soap and water.

8.2.4 Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. Upon their arrival, the SHSO or designated alternate will advise the fire commander of the location, nature, and identification of the hazardous materials onsite.

If it is safe to do so, site personnel may perform these activities:

- Use fire-fighting equipment available onsite to control or extinguish the fire.
- Remove or isolate flammable or other hazardous materials that may contribute to the fire.

8.2.5 Spill or Leaks

In the event of a spill or leak, site personnel will perform the following actions:

- Inform their supervisor immediately.
- Evaluate the adequacy of PPE and obtain appropriate protection.
- Locate the source of the spill and stop the flow if it can be done safely.

8.2.6 Injury/Illness Reporting Requirements

Injuries or illnesses that require attention beyond medical first aid or result in lost time from work must be reported to the worker's compensation administrator and the DHS as soon as possible but no later than 24 hours after the accident. The SHSO is responsible for contacting the worker's compensation administrator to obtain the necessary report form. The state form must be completed and submitted

within a 24-hour period for injuries and illnesses requiring medical attention or resulting in lost time. Copies of the Illinois forms are in Appendix A. The information required in all state worker's compensation accident report forms are similar. If the accident occurs in a state other than Illinois, complete an Illinois form in Appendix A to expedite the investigation. The SHSO is responsible for completing the form and submitting the original to the worker's compensation administrator and copies to the PM and DHS. Copies must be filed in the project file.

All incidents that are near-miss injury or illness accidents or physical accidents must be summarized on the hazardous waste site investigation activity report form and submitted to the PM and DHS as soon as possible.

The SHSO is responsible for investigating the cause of all accidents and reporting on the findings and corrective actions taken in the manner described above. The SHSO may request the assistance of the DHS or other personnel to investigate the accident. The final report on the accident is the responsibility of the SHSO.

9.0 Spill Containment Program

This section defines the spill containment program in place for site activities.

- All drums and containers used during the cleanup shall meet the appropriate DOT, OSHA, and USEPA regulations for the waste that they will contain.
- Drums and containers shall be inspected and their integrity assured before being moved. Drums or containers, which cannot be inspected before being moved because of storage conditions, shall be positioned in an accessible location and inspected before further handling.
- Operations onsite will be organized so as to minimize the amount of drum or container movement.
- Employees involved in the drum or container operations shall be warned of the hazards associated with the containers.
- Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment (absorbent, pillows, etc.) will be stationed in the immediate area. The spill containment equipment must be sufficient to contain and isolate the entire volume of hazardous substances being transferred.
- Drums or containers, which cannot be moved without failure, will have their contents transferred into a sound container. The empty drum/container will be carefully put into an overpack container.
- When handling flammables or combustibles, fire-extinguishing equipment that meets 29 CFR part 1910, subpart L, shall be on hand and ready for use to control fires.

10.0 Confined Space Entry

This subject is retained in the site safety plan to serve as a constant reminder to workers of this most hazardous situation.

Personnel are not authorized to enter confined spaces without prior training and written authorization from the DHS. Confined spaces are defined as spaces that meet the following criteria:

- Large enough for a person to bodily enter.
- Limited/restricted means of entry or exit.
- Not designed for continuous employee occupancy.

11.0 Certifications

(Note: This page should be retained by the SHSO and incorporated into the project file).

By my signature, I certify that:

1. I have read,
2. I understand, and
3. I will abide by

the site safety plan for the Arlington Heights Municipal Landfill site.

Printed Name	Signature	Date	Affiliation
John Quinn	John J Quinn	4/7/93	BVWST
Steve Mehay	Stephen Mehay	4/7/93	BVWST
Alison Cataldo	Alison Cataldo	4/7/93	BVWST

Appendix A

Arlington Heights Municipal Landfill

Worker's Compensation Accident Report Forms
for Illinois

EMPLOYER'S NAME | EMPLOYER'S FEIN NUMBER | IS THIS A LOST WORKDAY CASE? ☐ Yes ☐ No

ING BUSINESS UNDER THE NAME OF | CITY, STATE | ZIP CODE

ILING ADDRESS | CITY, STATE | ZIP CODE

EMPLOYER LOCATION IF DIFFERENT FROM MAILING ADDRESS

TURE OF BUSINESS OR SERVICE | SIC CODE | TOTAL NUMBER OF EMPLOYEES AT THE LOCATION WHERE ILLNESS OR INJURY OCCURRED

NAME OF WORKERS' COMPEN. INSURANCE CARRIER | POLICY NUMBER | SELF INSURED YES ☐ NO ☐ | COUNTY WHERE INJURY OCCURRED

PLOYEE'S NAME (LAST, FIRST, MIDDLE) | SOCIAL SECURITY NUMBER

OME ADDRESS | CITY, STATE | ZIP CODE

MALE ☐ FEMALE ☐ | MARRIED ☐ SINGLE ☐ WIDOW(ER) ☐ DIVORCED ☐ | BIRTH DATE MONTH DAY YEAR | NUMBER OF DEPENDENT CHILDREN UNDER 18 AT TIME OF INJURY OR ILLNESS

ATE AND TIME F THE INJURY OR EXPOSURE MONTH DAY YEAR ____ a.m. ____ p.m. | EMPLOYEE'S AVERAGE WEEKLY EARNINGS $ | LAST DAY EMPLOYEE WORKED MONTH DAY YEAR

JOB TITLE OR OCCUPATION | DEPARTMENT NORMALLY ASSIGNED

DDRESS OF LOCATION WHERE INJURY OR EXPOSURE OCCURRED | CITY, STATE | ZIP CODE

DID EMPLOYEE DIE AS A RESULT OF THE INJURY OR ILLNESS? ☐ YES ☐ NO | EMPLOYEE DIED AS A RESULT OF THE INJURY OR ILLNESS, GIVE DATE OF DEATH MONTH DAY YEAR

WAS THE INJURY OR EXPOSURE ON THE EMPLOYER'S PREMISES? ☐ YES ☐ NO | DID THIS INCIDENT RESULT IN: ☐ OCCUPATIONAL DISEASE | WAS EMPLOYEE GIVEN INDUSTRIAL COMMISSION HANDBOOK? ☐ YES ☐ NO

NATURE OF THE INJURY

PART OF THE BODY AFFECTED (BE SPECIFIC)

WHAT TASK WAS EMPLOYEE PERFORMING WHEN ILLNESS OCCURRED?

OBJECT OR SUBSTANCE RESPONSIBLE FOR INJURY OR ILLNESS (SOURCE)

HOW DID ACCIDENT OR ILLNESS OCCUR (TYPE)?

WHAT HAZARDOUS CONDITIONS, METHODS OR LACK OF PROTECTIVE DEVICES CONTRIBUTED?

WHAT UNSAFE ACT BY A PERSON CAUSED OR CONTRIBUTED TO THE INJURY OR ILLNESS?

HAVE MEDICAL SERVICES BEEN RENDERED TO THE EMPLOYEE? ☐ YES ☐ NO | IS OR HAS THE EMPLOYEE BEEN HOSPITALIZED? ☐ YES ☐ NO

NAME AND ADDRESS OF PHYSICIAN | CITY, STATE | ZIP CODE

NAME AND ADDRESS OF HOSPITAL | CITY, STATE | ZIP CODE

REPORT PREPARED BY: (NAME — PRINT OR TYPE) | SIGNATURE | TITLE AND TELEPHONE NUMBER

ACCIDENT REPORTING DEPT., ILLINOIS INDUSTRIAL COMMISSION, 100 West Randolph Street, Chicago, Illinois 60601

NOTE: DISCLOSURE OF THIS INFORMATION TO THE INDUSTRIAL COMMISSION IS MANDATORY UNDER IL. REV. STAT. CH. 48, §138. FAILURE TO PROVIDE ANY INFORMATION COULD RESULT IN PROSECUTION. APPROVED BY FORMS MANAGEMENT.

IL 56370085 (Rev. 6/90)

Appendix B

Arlington Heights Municipal Landfill

Hazardous Waste Site Investigation
Personnel Activity Report

(for BVWST Internal Use)

B & V WASTE SCIENCE AND TECHNOLOGY CORPORATION

HAZARDOUS WASTE SITE PERSONNEL ACTIVITY REPORT

Site Name _____ Project Number ☐☐☐☐☐ . ☐☐☐

Site Activity _____

Last Name	FI	MI	Employee #	Dept #	Level	Days	Field Team Position

Comments _____

Complete form at least weekly and submit to BVWST Health and Safety, N5

Site Safety Coordinator _____ Date _____

BVWST 12/90

Appendix C

Arlington Heights Municipal Landfill

Proposed Sampling Plan

Proposed Sampling Plan

Samples will be analyzed for Target Compound List and Target Analyte List chemicals under a routine analytical services request. Sample locations or the number of samples can be changed or eliminated by the field team leader because of existing site conditions during the site inspection. The reason for any change will be approved and documented by the project manager.

The proposed sampling plan includes groundwater (monitoring wells, surface water wastes, sediment, and leachate), and soil samples. Figure 3 shows proposed sample locations.

Groundwater

Groundwater sampling is planned at four Harza monitoring wells (MW). Locations were chosen based on preliminary information by Harza (1989). The wells chosen are MW-2 (northwest corner), MW-5 (west border), MW-4 (northeast corner), and MW-6 (southeast area). MW-6 is assumed to provide background concentrations.

Some of the MWs installed by Harza have locked covers. These locks may need to be clipped and replaced if the village cannot locate the keys. A problem with sampling these wells is that obstructions may prevent the lowering of a bailer. At one of the wells closely inspected during the reconnaissance visit (MW-8), the casing had no cap, and foreign objects were visible several feet into the casing. Tampering may have taken place with other MWs.

The static water level of the wells will be measured in the field.

Surface Water

Three surface water samples and four sediment samples will be collected to characterize the surface water pathway. In addition, leachate samples will be collected if seeps are present during the sampling visit.

Figure 3

Monitoring well.
Vault sampling location.
Sediment sample location.
Soil sample location.
Leachate sample locations, if any, will be determined in the field.

Water

Surface water will be collected at three locations. The onsite pond will be sampled near its eastern shore. Buffalo Creek will be sampled just downstream of its confluence with the pond's outlet. A background sample will be taken just upstream of the confluence.

Additional water samples will include a duplicate, a rinse blank, and a trip blank.

Sediment

Four sediment samples are proposed. Two samples will be taken from locations on the north and east shores of the onsite pond. One sample will be taken from Buffalo Creek just downstream of the onsite pond's outlet. A sediment background sample will be taken from Buffalo Creek, upstream of the pond's outlet.

A duplicate sample will also be taken.

Leachate

During the reconnaissance visit, no leachate seeps were observed, and no discolored soil was seen in the landfill's erosional gullies. During the sampling trip, the perimeter of the landfill will be inspected for seeps. If leachate seeps are observed during the sample visit, aqueous samples will be collected as close as possible to the seep.

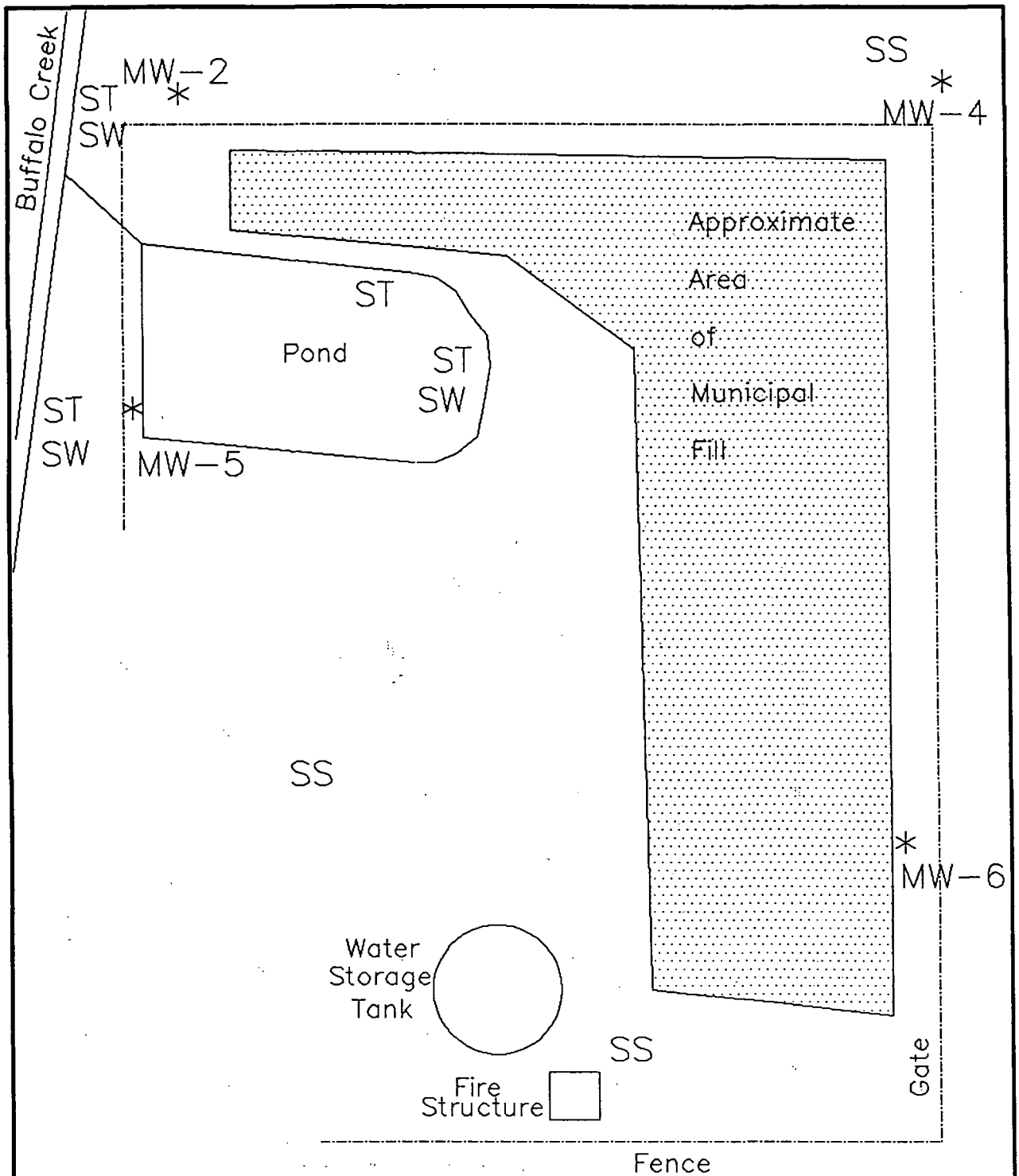
The surface water background sample from Buffalo Creek will provide background concentrations for leachate samples.

Soil

Three soil samples will be collected within two feet of the ground surface. The exact depths will be determined in the field. A sample will be taken from near the base of the fire training tower. Another will be collected from the southeast portion

of the site where drums were observed in the 1970s. A background soil sample will be taken offsite, near the northeastern corner of the property.

A duplicate sample will also be collected.



Source:
Modified from Harza (1989)

Scale:
Not to Scale

N

Figure 3
Proposed Sample Locations

Arlington Heights Municipal Landfill
Arlington Heights, IL

B&V Waste Science and Technology Corp.