

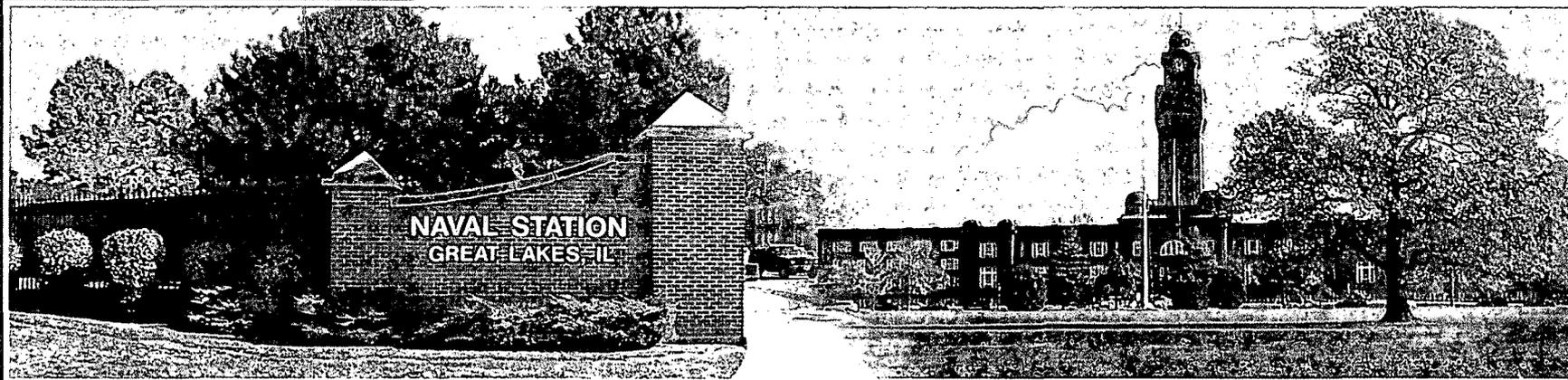
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FINAL DEMOLITION WORK PLAN AND SITE HEALTH AND SAFETY PLAN BUILDING 105
GREEN DEMOLITION NS GREAT LAKES IL
3/1/2003
TOLTEST, INC



Final Demolition Work Plan & Site Health and Safety Plan

Building 105 Green Demolition Great Lakes Naval Training Center *Great Lakes, Illinois*



**Environmental Job Order Contract No. N68950-00-D-0200
Delivery Order No. 0015
TolTest Project No. 40861.03**

Prepared for:

Department of the Navy
Naval Training Center
Environmental Department
Building 1-A, 201 Decatur Avenue
Great Lakes, Illinois 60088-5600

Submitted by:

TolTest, Inc.
1000 S. Northpoint Boulevard
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March 2003

TOLTEST, INC.



*Solutions for Your Site Development,
Construction, and Environmental Projects*

March 19, 2003

Project No. 40816.03

Mr. Christopher Bartku
NTC Environmental Department
201 Decatur Avenue, Building 1A
Great Lakes, Illinois 60088

**Response to Comments
DO No. 0015 Building 105 Green Demolition,
N68950-00-D-0200 Environmental Job Order Contract, Various Midwest States,
Great Lakes, IL**

Dear Mr. Bartku:

On February 12, 2003, TolTest received the following comments regarding the DO 0015 Work Plan and Health and Safety Plan (HASP). TolTest's response to these comments may be incorporated into the final Work Plan and HASP by referencing this document.

Comment 1: Construction methodology should be discussed that is highly sensitive to the contaminated soils: i.e. consider including the following type of information:

"The building will be demolished to the slab and all building materials removed from the site before proceeding further. With only the slab remaining, the north side concrete in the uncontaminated area will be removed as well as the foundation footers. This material based on the previous testing identified in Appendix A will be disposed of as non-hazardous.

The remaining concrete within the footprint of the soil contamination plume will be loaded in covered roll-offs and immediately tested for contamination [refer to Section 3.10? for concrete sampling details]. The site will be completely covered at the end of each workday with plastic to prevent rainwater from spreading the contamination in the remaining soils. Soil and backfill management within the boundaries of soil contamination will be as minimal as possible. Excavations for removal of utilities will be as small as possible and the removed soil will be placed in covered roll-off and immediately tested per the {Sampling Plan in Section 3.10?}.

Air monitoring will consist of PID's at all times when working in the contaminated soil area. Workers will be conservatively wearing PPE Level C with air purifying respirators and xxx type of cartridges when working within the contaminated soil area. If a PID reading exceeds xx, work will discontinue, the Navy will be notified, and a potential upgrade of PPE will be done or measures (as approved by the Navy) taken. Note here some contractors perform modeling to determine PPE based on soil contaminant concentrations that we have data on.

Excavations will be backfilled with clean soil. It is anticipated the elevated slab on the west side will contain useable clean fill dirt that can be used for backfilling footer and utility excavations.

Because of the contaminated soil area, standard methods for paving will be modified so as not to disturb deeper contaminated soils. It is anticipated one foot of soil/aggregate will be removed from the contaminated area (after the foundation and footers are removed). An x mil liner will be placed at that depth and clean xxx placed on top [refer to detail of asphalt and liner - Section 3.11?]."

Response: The overall operational approach to demolition was revised to incorporate your suggestions. TolTest will demolish the building and remove the building debris. Once the building debris is removed, the Navy and TolTest will identify where the impacted concrete and soil are located. The non-impacted concrete and soil will be removed first. The non-impacted soil will be staged on site for use as backfill material and the non-impacted concrete will be recycled at Vulcan Materials.

The concrete and soil suspected of being impacted by the Chemicals of Concern (COCs) will be removed and the concrete and soil staged in lined and covered containers until analytical analysis is received and evaluated.

After the concrete foundation and the soil are removed, TolTest will excavate and remove the soil within the building footprint to a depth of eight-inches below the existing grade to facilitate the installation of a 40-mil High Density Polyethylene (HDPE) liner and asphalt cap.

Comment 2: Oily waste discussed in 3.8 e.g. page 16 not expected in shallow soils - contaminant expected to be encountered in shallow soils is a solvent please change through out; deeper soils i.e. footers and excavation this may apply to

Response: The reference to oily waste was removed from the document.

Comment 3: Suspected solvent contaminated concrete will not be allowed to be stockpiled unless it is in a covered roll-off that will reduce the volatilization of the contaminant

Response: TolTest will stage any material suspected to be impacted with COCs in lined containers and cover the containers with plastic tarps.

Comment 4: page 16. TCLP limits identified - if the solvent is a listed waste, wouldn't you take totals analysis instead? see 10. below

Response: Since the potentially impacted concrete and soil is not considered a listed waste, TolTest will collect TCLP samples to evaluate whether the soil is characteristically hazardous or not. If the TCLP sample results are evaluated above 0.7 milligrams per liter (mg/L), the soil will be classified as a characteristically hazardous waste. If the TCLP results are below 0.7 mg/L, the soil will be classified as a special waste.

Comment 5: Appendix A Soil Map - identify in the report body the depths of contamination at the sampling locations since it is relevant to the demolition activities.

Response: TolTest has attached the boring logs for the samples that TolTest collected at Building 105 as part of the RCRA Closure Project performed in November 2001. The boring logs indicate the depth of the soil samples that were submitted to the laboratory for analysis. The highest concentrations of PCE and DCE were found in soils at a depth of four-feet below ground surface or greater. These boring logs are included as Attachment I to this letter.

Comment 6: Pg 18 utilities - inside bldg 105 there are quite a few floor drains that are not identified on the map in Appendix A which will be relevant when compared to contamination depth

Response: Figures 1 and 2 were revised to include the locations of floor drains within Building 105. The revised Figures 1 and 2 are included in Appendix A.

Comment 7: pg 19 utilities excavations - no mention of PPE or exposure potential to high concentrations of VOCs

Response: Section 3.2 of the Health and Safety Plan (HASP) details the Personal Protective Equipment (PPE) that will be utilized for this Delivery Order (DO).

Comment 8: pg 19 lined and "covered" rolloffs to prevent as much volatilization of VOCs as possible

Response: TolTest will cover the lined containers with plastic tarps. No change in the text was made.

Comment 9: pg 20 3.11 modify wording to discuss how 95% compaction may not be achieved as agreed to by the Navy so as to disturb as little contaminated soil as possible; also address the liner and provide a detail cut in the appendix (i.e. how deep, what kind of backfill layers, asphalt thickness)

Response: A substantial change was made to the site restoration approach. The inclusion of the liner installation into the scope of work for this project created several engineering obstacles to overcome while minimizing the volume of soil excavated from the site. TolTest will install the liner and a geo-composite fabric on the sub-grade. Once the liner and geo-composite fabric are installed, TolTest will place and compact 3.5-inches of recycled CA-6 gravel. If the sub-grade is a suitable material, obtaining 95% compaction of the gravel is possible. TolTest has included a detailed cut sheet of the liner as Attachment II to this letter.

Comment 10: Probably one of the most important comments, Page 19, Section 3.10, TolTest has stated the PCE and associated compounds are not listed hazardous waste and as such characteristic testing is applicable. I am not convinced and conservatively interpret that the solvents are spent because that are no longer fit for use without being regenerated, reclaimed, or otherwise reprocessed and the wastes are generated from solvents used for their solvent properties, i.e., to dissolve or mobilize other constituents (i.e. dirt/grease/oil from clothes). Please provide a Skinner Memo or equivalent or have the IEPA provide a site specific determination such that we do not have to manage concrete and soils as F-Listed wastes if they contain any concentration.

Response: TolTest's response to this comment is addressed in Attachment III. TolTest presented the site history for Building 105 to Mr. Jerry Phillips, USEPA RCRA Corrective Actions Coordinator, to receive a regulators opinion of TolTest's interpretation of the RCRA Waste Determination regulations. In Attachment III, Mr. Phillips replied to TolTest's email and confirmed that the soil is not considered a listed hazardous waste, but will be considered a characteristically hazardous waste if the TCLP sample results are evaluated above 0.7 Mg/L.

Comment 11: pg 19, 3.10 F-listed solvent scan and RCRA metals identified – please identify EPA methods - also, on excavations for utilities down below a couple of feet, may want to include POLs since there may be a potential impact from the upgradient leaking USTs from the B144/145 area

Response: TolTest has received authorization to use Kestrel Hawk RDF Landfill for disposal of special waste, Peoria Disposal Company for disposal of hazardous waste meeting the Uniform Treatment Standards, and the Environmental Quality Company for hazardous waste exceeding the Uniform Treatment Standards for this project. The three disposal facilities have indicated that the only analytical requirements for profiling the waste are TCLP volatiles by the United States Environmental Protection Agency (USEPA) Method SW846-8260B/1311 and total volatiles by USEPA Method SW846-8260B. However, TolTest will be required to comply with Mr. Kelly Devereaux's, NTC Operations Manager, standard PWC waste characterization analytical parameters.

Comment 12: pg 19, 3.10 is one sample per covered rolloff adequate - will it be a grab or composite - please reference an IEPA or EPA sampling criteria document

Response: All three disposal facilities have agreed to have one composite and one grab sample collected from each roll off box containing materials suspected to be impacted by COCs. The composite sample will be analyzed for TCLP volatiles and the grab sample will be analyzed for total volatiles. The TCLP composite sample will be evaluated and compared to the USEPA's Action Level for characteristically hazardous wastes (PCE – 0.7 mg/L). The total volatile sample result will be used by the disposal facility to determine if the concentration of PCE exceeds the Uniform Treatment Standards (60 ppm in soil and 6 ppm in concrete).

Comment 13: pg 20 undesirable engineering properties - change to reflect that the asphalt paving will be to cap the site and it is anticipated compaction will not be 95% - still expect a proof roll of subgrade however

Response: If the sub-grade consists of undesirable engineering properties, a proof roll will more than likely fail due to excessive moisture or soils containing debris. If the proof roll fails, this would indicate that other engineering solutions would have to be considered to provide an adequate foundation for the asphalt. The compaction of stone to 95% and asphalt stability are dependant upon an adequate sub-grade material.

Comment 14: pg 21 include the liner

Response: TolTest included installation of the liner in Section 3.11, Site Restoration. A 40-mil HDPE liner will be installed after the site grading work is completed. Once the liner is placed over the sub-grade, TolTest will also install a geo-composite fabric to aid in the drainage of infiltrated surface water.

Comment 15: disposal facility not in Plan - must be provided for Navy approval

Response: TolTest has included three disposal facilities in Section 6.0 of the WP that may be utilized for this DO depending on the waste characterization sample results. Peoria Disposal Company (PDC) will be utilized in the event that the soil and concrete are classified as characteristically hazardous but the concentration of PCE is below the treatment standards.

If the soil and concrete are classified as characteristically hazardous and the concentration of PCE is above the treatment standards, Mr. Kelly Devereaux, NTC Operations Manager, has provided TolTest with the authorization to utilize the Environmental Quality (EQ) disposal facility.

For concrete and soil that are not classified as characteristically hazardous, but as special waste, the Kestrel Hawk RDF will be utilized for disposal.

Comment 16: Appendix I is there an AHA for the soil contamination?

Response: TolTest has added an Activity Hazard Analysis for occupational exposure to PCE impacted soil and concrete.

Comment 17: Appendix H 7.9.1 are you going to provide the PEL for the soil contaminants?

Response: The Permissible Exposure Limit (PEL) is provided on Table 3.1 in Section 3.2 of the HASP.

Comment 18: please review schedule and update as necessary based on receipt of these comments

Response: TolTest has included a revised schedule in Appendix A.

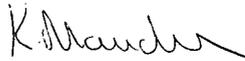
Should further clarification concerning this document be necessary, please do not hesitate to contact us at 847-689-0697.

Respectfully Submitted,

TolTest, Inc.



Jeff Tinney
Project Manager



Khushwant Mander
EJOC Senior Project Manager

cc: Lance Parsons

ATTACHMENTS

ATTACHMENT I
SOIL BORING LOGS

Project No: 40862.01

Log of Borehole: GP01

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings ppm 10 20 30 40 50 60 70 80 90	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface				
0.5	0.5		ASPHALT					
1			FILL					
2	2.0	SS-1	CLAY gray (CL)		3.5	NA	0.8	
4				-becomes sandy at 4.0 ft (ML)				
5	5.0		SAND black, coarse grained (SP)					
5.5	5.5		CLAY gray (CL)					
6		SS-2*			3.0	NA	4.4	
8				-becomes wet at 8.0 ft				
9				-becomes brown at 9.0 ft (CL)				
10		SS-3*			3.5	NA	66.2	
12	12.0			End of Borehole				
13								
14								
15								
16								

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe	Total Depth: 12.0	Datum: Ground surface
Drilling Date: 11-1-01	Initial Water Elevation (ft)/date: 8.0/11-1-01	Checked by:
Drilling Company: Terra Probe	Water Elevation (ft)/date:	Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP02

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings				Well Data		
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows	ppm						
							5	10	15	20			
0	0.0			Ground Surface									
0.5				ASPHALT									
1				FILL									
1.5		SS-1		CLAY gray (CL)	4.0	NA					0.8		
2				SAND black, coarse grained (SP)									
2.5													
3													
4	4.0	SS-2		CLAY gray with sand (ML)	3.5	NA					0.6		
4.5				ASPHALT									
4.8				CLAY with coarse sand (ML)									
5													
6		SS-3*		SAND black, coarse grained, wet (SP)	2.0	NA					15.8		
8.0				CLAY gray (CL)									
9													
10													
12	12.0			End of Borehole									
13													
14													
15													
16													

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-1-01

Initial Water Elevation (ft)/date: 8.0/11-1-01

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP03

Location: Building 105, NTC

Geologist: Mike Graf

City, County, State: Great Lakes, Lake, IL



SUBSURFACE PROFILE					SAMPLE		PID Readings ppm 10 20 30 40 50 60 70 80 90	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface				
0.5	0.5		ASPHALT					
1	1.5		FILL					
2		SS-1	CLAY dark brown (CL)		2.5	NA	0.4	
4	4.0		SAND gray, coarse grained (SP)					
5			CLAY black with gravel (ML)					
6		SS-2	-becomes gray at 5.0 ft (CL)		2.0	NA	0.9	
8			-becomes dark brown at 8.0 ft (CL)					
10		SS-3*	-becomes gray and wet at 10.0 ft		4.0	NA	58.8	
12	12.0			End of Borehole				

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-1-01

Initial Water Elevation (ft)/date: 10.0/11-1-01

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP04

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings					Well Data		
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows	ppm							
							20	40	60	80	100	140	180	
0	0.0			Ground Surface										
0.8				TOPSOIL										
1				CLAY dark brown to black with sand (ML)										
2		SS-1		-becomes light brown at 3.0 ft	2.5	NA								
3														
4														
4.5				GRAVEL black with sand (GM)										
5														
5.5				CLAY dark brown, moist										
6		SS-2			2.0	NA					92.7			
7														
8				GRAVEL black with sand (GM)										
8.5				CLAY gray (CL)										
9														
10		SS-3*		-becomes brown at 10.0 ft	4.0	NA								
10														
12.0				End of Borehole										
13														
14														
15														
16														

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-1-01

Initial Water Elevation (ft)/date: NA

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP05

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings 2 4 6 8 ppm	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0		ASPHALT	Ground Surface				
1	1.0		FILL					
1.5	1.5							
2		SS-1	SAND	dark brown (SP)	2.0	NA	0.5	
3								
4	4.0		CLAY	brown (CL)				
4.4	4.4		GRAVEL	dark brown (GM)				
4.8	4.8		CLAY	gray (CL)				
5		SS-2			3.0	NA	0.4	
6								
7								
8								
9				-becomes brown at 9.0 ft				
10		SS-3		-becomes gray and wet at 10.0 ft	4.0	NA	2.3	
11								
12	12.0			End of Borehole				
13								
14								
15								
16								

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-1-01

Initial Water Elevation (ft)/date: 10.0/11-1-01

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP06

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings				Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows	10	20	30	40	
0	0.0			Ground Surface							
	0.3			ASPHALT							
				FILL							
1	1.5										
2		SS-1		GRAVEL dark brown (GM)	2.5	NA	0.6				
3											
4	4.5										
5				CLAY reddish gray (CL)							
6		SS-2		-becomes gray at 6.5 ft	4.0	NA			34.1		
7											
8											
9											
10		SS-3			3.5	NA			35.8		
11	11.5										
12	12.0			GRAVEL dark brown (GM)							
				End of Borehole							
13											
14											
15											
16											

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-1-01

Initial Water Elevation (ft)/date: NA

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP07

Location: Building 105, NTC

Geologist: Mike Graf

City, County, State: Great Lakes, Lake, IL



SUBSURFACE PROFILE					SAMPLE		PID Readings 2 4 ppm 6 8	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface ASPHALT				
1	1.0			FILL				
2		SS-1			2.5	NA	1.0	
3	3.0			CLAY brown (CL)				
4	4.0			GRAVEL light gray (GM)				
5	4.7			CLAY brown (CL)				
6		SS-2			2.5	NA	0.6	
7								
8	8.0			GRAVEL brown (GM)				
9				CLAY gray and wet (CL)				
10		SS-3			3.0	NA	0.5	
11								
12	12.0			End of Borehole				
13								
14								
15								
16								

Drilling Method: Geoprobe	Total Depth: 12.0	Datum: Ground surface
Drilling Date: 11-1-01	Initial Water Elevation (ft)/date: 8.2/11-1-01	Checked by:
Drilling Company: Terra Probe	Water Elevation (ft)/date:	Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP08

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings				Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows	ppm				
							2	4	6	8	
0	0.0			Ground Surface ASPHALT							
1	1.0			FILL							
2	2.0	SS-1		CLAY brown (CL)	2.5	NA	1.1				
3											
4	4.0			GRAVEL gray (GM)							
5	4.7			CLAY light brown (CL)							
6		SS-2			3.0	NA	0.6				
7											
8	8.0			GRAVEL brown (GM)							
9				CLAY gray and wet (CL)							
10		SS-3			4.0	NA	0.4				
11											
12	12.0			End of Borehole							
13											
14											
15											
16											

Drilling Method: Geoprobe	Total Depth: 12.0	Datum: Ground surface
Drilling Date: 11-1-01	Initial Water Elevation (ft)/date: NA	Checked by:
Drilling Company: Terra Probe	Water Elevation (ft)/date:	Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP09

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	9.3			Ground Surface				
0	9.3			CONCRETE				
1				SAND black, medium grained (SP)				
2		SS-1			1.5	NA	5.0	
3								
4	4.3			-becomes gray and more granular at 3.5 ft -becomes black and medium grained at 4.0 ft				
5				CLAY brown (CL)				
6		SS-2			2.0	NA	9.7	
7								
8	8.0							
8	8.3			SAND black, medium grained (SP)				
9				CLAY gray (CL)				
10		SS-3*			4.0	NA	19.3	
11								
12	12.0							
12	12.3			SAND black (SP)				
13				CLAY brown and dry (CL)				
14		SS-4			4.0	NA	7.8	
15								
16	16.0			End of Borehole				
17								

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe	Total Depth: 16.0	Datum: Ground surface
Drilling Date: 11-2-01	Initial Water Elevation (ft)/date: NA	Checked by:
Drilling Company: Terra Probe	Water Elevation (ft)/date:	Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP10

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings 5 10 ppm 15 20	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface				
	0.3			CONCRETE				
	0.5			SAND dark brown (SP)				
1				CLAY gray (CL)				
2		SS-1			2.0	NA	11.2	
3								
4	4.0			Refusal at 4.0 ft				
5				End of Borehole				
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 4.0

Datum: Ground surface

Drilling Date: 11-2-01

Initial Water Elevation (ft)/date: NA

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP11

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface				
	0.5		■	ASPHALT				
	1.0		▨	FILL				
1			▨	CLAY brown (CL)				
2		SS-1	▨		2.0	NA		23.9
3								
4								
5				-becomes moist at 5.0 ft				
6		SS-2*	▨		2.0	NA		24.8
7								
8								
9								
10		SS-3	▨		4.0	NA		21.0
11								
12	12.0			Refusal at 12.0 ft				
				End of Borehole				
13								
14								
15								
16								

* Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-2-01

Initial Water Elevation (ft)/date: NA

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP12

Location: Building 105, NTC

Geologist: Mike Graf

City, County, State: Great Lakes, Lake, IL



SUBSURFACE PROFILE					SAMPLE		PID Readings				Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows	ppm				
							2	4	6	8	
0	0.0			Ground Surface							
	0.3			ASPHALT							
				FILL							
1	1.5										
2		SS-1		CLAY dark brown (CL)	3.5	NA					
3											
4	4.0			Refusal at 4.0 ft							
				End of Borehole							
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

Drilling Method: Geoprobe

Total Depth: 4.0

Datum: Ground surface

Drilling Date: 11-2-01

Initial Water Elevation (ft)/date: NA

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP13

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings 2 4 ppm 6 8	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface				
				TOPSOIL				
1	1.5							
2		SS-1*		CLAY brown (CL)	3.5	NA	3.5	
3								
4								
5								
6		SS-2			4.0	NA	3.7	
7								
8								
9				-becomes wet at 9.0 ft				
10		SS-3			3.5	NA	3.3	
11								
12	12.0			End of Borehole				
13								
14								
15								
16								

*Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 12.0

Datum: Ground surface

Drilling Date: 11-2-01

Initial Water Elevation (ft)/date: 9.0/11-2-01

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

Project No: 40862.01

Log of Borehole: GP14

Location: Building 105, NTC

Geologist: Mike Graf



City, County, State: Great Lakes, Lake, IL

SUBSURFACE PROFILE					SAMPLE		PID Readings	Well Data
Depth (ft)	Elevation	Sample Number	Legend	Description	Recovery (ft)	SPT Blows		
0	0.0			Ground Surface				
	0.3			ASPHALT				
1				FILL				
2		SS-1*			3.5	NA	3.8	
3								
4	4.0			Refusal at 4.0 ft				
5				End of Borehole				
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

*Designates sample submitted for laboratory analysis

Drilling Method: Geoprobe

Total Depth: 4.0

Datum: Ground surface

Drilling Date: 11-2-01

Initial Water Elevation (ft)/date: NA

Checked by:

Drilling Company: Terra Probe

Water Elevation (ft)/date:

Sheet: of 1 of 1

ATTACHMENT II
LINER MANUFACTURER CUT SHEET



Product Data Sheet

GSE STANDARD PRODUCTS

GSE HD Textured

GSE HD Textured is the textured version of GSE HD. It is a high quality, high density polyethylene (HDPE) geomembrane with one or two coextruded, textured surfaces, and consisting of approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilizers; no other additives, fillers or extenders are used. The resin used is specially formulated, virgin polyethylene and is designed specifically for flexible geomembrane applications. GSE HD Textured has excellent resistance to UV radiation and is suitable for exposed conditions. This product allows projects with greater slopes to be designed since frictional characteristics are enhanced. *These product specifications meet or exceed GRI GM13.*

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM VALUE				
Product Code			HDT 030A000	HDT 040A000	HDT 060A000	HDT 080A000	HDT 100A000
Thickness, mils (mm)	ASTM D 5994	every roll	27 (0.69)	36 (0.91)	54 (1.4)	72 (1.8)	90 (2.3)
Density, g/cm ³	ASTM D 1505	200,000 lb	0.94	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ¹	ASTM D 6693, Type IV	20,000 lb					
Strength at Break, lb/in-width (N/mm)	Dumbell, 2 ipm		45 (8)	60 (11)	90 (16)	120(21)	150 (27)
Strength at Yield, lb/in-width (N/mm)			63 (11)	84 (15)	130 (23)	173 (30)	216 (38)
Elongation at Break, %	G.L. = 2.0 in (51 mm)		150	150	150	150	150
Elongation at Yield, %	G.L. = 1.3 in (33 mm)		13	13	13	13	13
Tear Resistance, lb (N)	ASTM D 1004	45,000 lb	21 (93)	28 (125)	42 (187)	56 (249)	70 (311)
Puncture Resistance, lb (N)	ASTM D 4833	45,000 lb	54 (240)	72 (320)	108 (480)	144 (641)	180 (801)
Carbon Black Content, %	ASTM D 1603	20,000 lb	2.0	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	+Note 1	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load ² , hrs	ASTM D 5397, Appendix	200,000 lb	400	400	400	400	400
REFERENCE PROPERTY	TEST METHOD	FREQUENCY	NOMINAL VALUE				
Thickness, mils (mm)	ASTM D 5994	every roll	30 (0.75)	40 (1.0)	60 (1.5)	80 (20)	100 (2.5)
Oxidative Induction Time, minutes	ASTM D 3895, 200° C; O ₂ , 1 atm	200,000 lb	>100	>100	>100	>100	>100
Roll Length (approximate), ft (m)	Standard Textured		830 (253)	700 (213)	520 (158)	400 (122)	330 (101)
Roll Width, ft (m)			22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)	22.5 (6.9)
Roll Area, ft ² (m ²)			18,674 (1,735)	15,750 (1,463)	11,700 (1,087)	9,000 (836)	7,425 (690)

NOTES:

- +Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- GSE HD Standard Textured is available in rolls weighing about 4,000 lb (1,800 kg).
- ¹The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are minimum average values.
- ²Note: NCTL for HD Textured is conducted on representative smooth membrane samples.
- All GSE geomembranes have dimensional stability of $\pm 2\%$ when tested with ASTM D 1204 and ITB of $< 77^\circ$ C when tested with ASTM D 746. DS008 R09/30/02

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Americas	GSE Lining Technology, Inc.	Houston, Texas	800-435-2008	281-443-8564	Fax: 281-230-8650
Europe/Middle East/Africa	GSE Lining Technology GmbH	Hamburg, Germany		49-40-767420	Fax: 49-40-7674233
Asia/Pacific	GSE Lining Technology Company Ltd.	Bangkok, Thailand		66-2-937-0091	Fax: 66-2-937-0097

This product data sheet is also available on our website at:

www.gseworld.com



Product Data Sheet

GSE STANDARD PRODUCTS

GSE FabriNet

GSE FabriNet geocomposites typically consist of GSE HyperNet with nonwoven polypropylene geotextile fabric heat-bonded to one or both sides. The geotextile serves as a filter to prevent the geonet from clogging while the geonet provides a path for fluids (liquids and gases). Geocomposites may also be used as a cushion to protect a geomembrane from unduly rough substrates. GSE FabriNet is designed specifically for use in situations where high normal loads are expected, such as in landfill cell designs.

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE VALUE ^(d)		
			6 oz/yd ²	8 oz/yd ²	10 oz/yd ²
Geocomposite					
Product Code			F420600605	F420800805	F421001005
Transmissivity ^(a) , m ² /sec	ASTM D 4716-00	1/540,000 ft ²	1 x 10 ⁻⁴	1 x 10 ⁻⁴	9 x 10 ⁻⁴
Ply Adhesion, lb/in average	GRI GC-7	1/50,000 ft ²	1.0	1.0	1.0
Roll Width, ft (m)			14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
Roll Length, ft (m)			230 (70.1)	200 (60.9)	190 (58.0)
Roll Area, ft ² (m ²)			3,335 (310)	2,900 (269)	2,755 (256)
Geonet core^(b)					
Transmissivity ^(a) , m ² /sec	ASTM D 4716-00		2 x 10 ⁻⁴	2 x 10 ⁻⁴	2 x 10 ⁻⁴
Thickness, mil (mm)	ASTM D 5199	1/50,000 ft ²	200 (5)	200 (5)	200 (5)
Density, g/cm ³	ASTM D 1505	1/50,000 ft ²	0.94	0.94	0.94
Tensile Strength (MD), lb/in (N/mm)	ASTM D 5035	1/50,000 ft ²	45 (7.9)	45 (7.9)	45 (7.9)
Carbon Black Content, %	ASTM D 1603	1/50,000 ft ²	2.0	2.0	2.0
Geotextile (prior to lamination)^(b,c)					
Mass per Unit Area, oz/yd ² (g/m ²)	ASTM D 5261	1/90,000 ft ²	6 (200)	8 (270)	10 (335)
Grab Tensile, lb (N)	ASTM D 4632	1/90,000 ft ²	170 (755)	220 (975)	260 (1,155)
Puncture Strength, lb (N)	ASTM D 4833	1/90,000 ft ²	90 (395)	120 (525)	165 (725)
AOS, US sieve (mm)	ASTM D 4751	1/540,000 ft ²	70 (0.212)	80 (0.180)	100 (0.150)
Flow Rate, gpm/ft ² (lpm/m ²)	ASTM D 4491	1/540,000 ft ²	110 (4,480)	110 (4,480)	85 (3,460)
UV Resistance, % retained	ASTM D 4355 (after 500 hours)	once per formulation	70	70	70

NOTES:

- ^(a) Gradient of 0.1, normal load of 10,000 psf, water at 70° F between steel plates for 15 minutes.
- ^(b) Component properties prior to lamination.
- ^(c) Several geotextiles are available and may be supplied as determined by GSE.
- ^(d) These are MARV values that are based on the cumulative results of specimens tested and determined by GSE.

DS018 R10/22/02

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Asia/Pacific	GSE Lining Technology Company Ltd.	Bangkok, Thailand		66-2-937-0091	Fax: 66-2-937-0097

This product data sheet is also available on our website at:

www.gseworld.com

ATTACHMENT III
CORRESPONDENCE FROM THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA)

From: <Phillips.Gerald@epamail.epa.gov>
To: Jerry Gers <JGers@toltest.com>
Date: 3/4/03 9:20AM
Subject: Re: Written Email Confirmation - RCRA Question - Jerry Gers

Jerry,

Your summary correctly represents our discussions.

Gerry

Gerald W. Phillips
Corrective Action Manager
Waste, Pesticides and Toxics Division
U.S. Environmental Protection Agency
77 W. Jackson Blvd.
Chicago, Illinois 60604
Phone: 312.886.0977
Fax: 312.353.4788
E-mail: phillips.gerald@epa.gov

Jerry Gers
<JGers@toltest.com>
m> To: Gerald Phillips/R5/USEPA/US@EPA
cc: Jeff Tinney <JTinney@toltest.com>
03/03/03 10:57 AM cc: Jeff Tinney <JTinney@toltest.com>
bcc:
Fax to:
Subject: Written Email Confirmation - RCRA Question -
Jerry Gers

Hi Gerry!

Thanks for all your help over the last couple of weeks in response to my RCRA question regarding "Listed Waste" identification under RCRA. Our Client, Great Lakes Naval Training Center, would like us to get your email confirmation of the response you orally gave to me last week. To assist you, I have prepared a written scenario (below) which you can then respond to:

Building 105 was constructed in 1939 and is located at the Great Lakes Naval Training Center in Great Lakes, Illinois. Past uses of the facility included a dry cleaning operation and vending food storage facility. The dry cleaning facility was taken out of operation in 1993 or 1994. Subsequent site investigations at Building 105 have indicated that concentrations of PCE and DCE in the soil and groundwater are present above IEPA Corrective Action

Objectives.

Currently, TolTest does not know the status of the site. The Navy has indicated that the site is a Solid Waste Management Unit (SWMU). The Navy has not been able to determine the source of PCE/DCE impact to the subsurface soils or groundwater.

Under Contract N68950-00-D-0200, Delivery Order 0015, TolTest has been contracted to demolish the building including foundations and utilities servicing Building 105. The intent of this project is to demolish the building, Environmental remediation is not a primary goal.

Based on the lack of information regarding how the PCE/DCE came into contact with the soil and groundwater, TolTest has proposed to demolish the building and manage soils/concrete in contact with the impacted soil as a potential characteristic hazardous waste. To determine whether the soil is characteristically hazardous, TolTest will collect samples of the soil and concrete suspected to be impacted by PCE/DCE and analyze the samples for volatiles using the TCLP extraction method (SW846-8260B/1311). The Navy is willing to agree to this approach but would like to have confirmation that this approach complies with the RCRA regulations from a Federal RCRA Regulator. The one remaining question the Navy might have is whether the impacted soils might be considered Listed Hazardous Wastes. As we have previously discussed, we can not determine the history of how the Constituent of Concern entered the soils. Yes, there was a dry cleaner at the location in the past. However, we have no records of hazardous waste activity, available.

If you still concur, I would appreciate your email confirmation to me regarding your view that this material is not a Listed Hazardous Waste, but might potentially be a Characteristic Hazardous Waste depending on results of TCLP analysis. Please call me at 419-241-7175 to further discuss this if there are any questions.

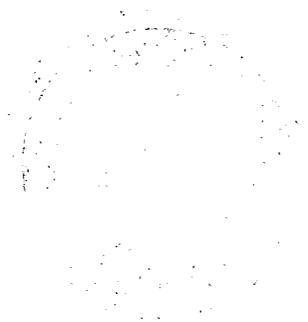
Gerry, I am thanking you in advance.
Regards
Jerry Gers, P.E.
Principal Engineer - TolTest, Inc.

CC: Jeff Tinney <JTinney@toltest.com>

**ENVIRONMENTAL JOB ORDER CONTRACT
NO. N68950-00-D-0200
DELIVERY ORDER NO. 0015**

**FINAL
DEMOLITION WORK PLAN
&
SITE HEALTH AND SAFETY PLAN
BUILDING 105 GREEN DEMOLITION
GREAT LAKES NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS**

PREPARED FOR



**DEPARTMENT OF THE NAVY
NAVAL TRAINING CENTER
ENVIRONMENTAL DEPARTMENT
BUILDING 1-A, 201 DECATUR AVENUE
GREAT LAKES, ILLINOIS 60088-5600**

**SUBMITTED
MARCH 2003**

BY

***TOLTEST* INC.**

**1000 S. NORTHPOINT BOULEVARD
WAUKEGAN, IL 60085
(847) 689-0697
FAX (847) 689-0698**

TOLTEST PROJECT NO. 40861.03

**FINAL
DEMOLITION WORK PLAN
&
SITE HEALTH AND SAFETY PLAN**

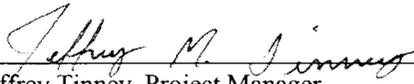
**BUILDING 105 GREEN DEMOLITION
GREAT LAKES NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS**

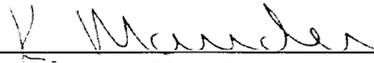
**EJOC NO. N68950-00-D-0200
DELIVERY ORDER NO. 0015**

Submitted by:

**TolTest, Inc.
1000 S. Northpoint Boulevard
Waukegan, IL 60085**

TolTest, Inc. hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under this contract is complete, accurate, and complies with all requirements of the contract.

Prepared by:  Date: 03/19/03
Jeffrey Tinney, Project Manager

Reviewed by:  Date: 03/19/03
Khush Mander, EJOC Senior Project Manager

Approved by:  Date: 03/19/03
Richard Barcum, CIH, CSP, Corporate Health & Safety Manager

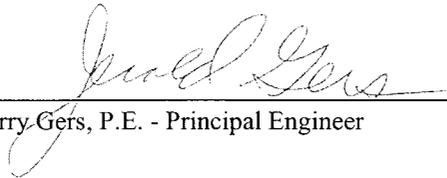
Approved by:  Date: 03/19/03
Jerry Gers, P.E. - Principal Engineer

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LIST OF ACRONYMS

ACM	asbestos-containing material
ASTM	American Society for Testing Methods
CFR	Code of Federal Register
Cleveland	Cleveland Corporation, Zion, Illinois
COCs	chemicals of concern
CSP	Certified Safety Professional
DCE	cis-1, 2-dichloroethene
DO	Delivery Order
DOCR	Delivery Order Closure Report
DOT	Department of Transportation
DQCR	Daily Quality Control Report
EPA	Environmental Protection Agency
GLNTC	Great Lakes Naval Training Center, Great Lakes, Illinois
HDPE	High-Density Polyethylene
LBP	lead-based paint
LEL	lower explosive limit
mg/L	milligrams per liter
mg/m ³	milligrams per cubic meter
Navy	Department of the Navy, Naval Facilities Engineering Command
NESHAP	National Emission Standard for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Safety and Health
NTR	Navy Technical Representative
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenol
PCE	tetrachloroethene
PEL	Permissible Exposure Limit
PID	photoionization detector
PPE	personal protective equipment
ppm	parts per million
PWC	Public Works Center
RCRA	Resource Conservation and Recovery Act
SHASP	Site Health and Safety Plan
SOW	Statement of Work
SSHO	Site Safety and Health Officer
Superior	Superior Special Services, Port Washington, Wisconsin
TCLP	Toxicity Characteristic Leaching Procedure
TWA	Time Weighted Average
UFGS	United Facilities Guide Specifications
VOC	volatile organic compound
WP	Work Plan

PART I - DEMOLITION WORK PLAN

1.0 INTRODUCTION

This Work Plan (WP) has been prepared by TolTest pursuant to the Department of the Navy, Naval Facilities Engineering Command (Navy) under Contract No. N689500-00-D-0200, Delivery Order (DO) No. 0015 Statement of Work (SOW) dated December 4, 2000. This WP is specific to the green demolition of Building 105 at the Great Lakes Naval Training Center, Great Lakes, Illinois (GLNTC).

Building 105 is a one-story rectangular-shaped brick structure totaling approximately 10,710 square feet that is located at the northwest corner of the intersection of Sampson Street and Porter Avenue. The building has a concrete block foundation, brick and tile façade, concrete floor, and metal deck roof covered with tarred gravel. The layout of the building is shown on **Figure 1 in Appendix A**.

Building 105 was constructed in 1939 and is not a historical structure and documented in an October 24, 2000 letter from the Illinois State Historic Preservation Agency. Past uses of the facility included a dry cleaning operation that continued until 1993 or 1994, when the building was converted to a Navy Exchange vending machine operation food storage and distribution facility. **Figure 2 in Appendix A** depicts the demolition limits.

TolTest will completely demolish Building 105 including the concrete floor, foundations, and utilities servicing Building 105 while recycling at least 25 percent of the building debris by weight. The scope of work for this DO is presented in Section 1.4 of this WP.

1.1 Impacted Soil and Groundwater

Impacted soils and groundwater have been identified at this site based upon investigations conducted by EarthTech, Inc. and TolTest for the Navy. These investigations indicate that tetrachloroethene (PCE) and cis-1, 2-dichloroethene (DCE) are the primary chemicals of concern (COCs) in soil and groundwater at the site. **Figures 3A through 3F in Appendix A** depict the known locations of these COCs based upon investigations conducted by TolTest and EarthTech, Inc. Health and safety monitoring and contaminant contact minimization will be a high priority for this project, particularly when equipment or personnel are operating in or disturbing concrete or subsurface areas known or suspected to be affected with these COCs. Further, personnel will implement waste minimization and safety practices which include, but are not limited to, the following:

- Avoid contact with impacted materials to the extent possible, thereby minimizing potential exposures and decontamination fluid generation.
- Complete tasks without entering a trench with impacted soils or groundwater, if possible.
- Remove soil materials only to the extent necessary to provide a safe environment to remove/close utilities and remove building foundations and footers. In addition, remove

materials in layers if possible so that if COCs are stratified, impacted material can be segregated from non-impacted material.

- If possible, avoid penetration of the saturated (groundwater) zone at the site so that groundwater control is not required. Based upon previous investigations conducted at the site, groundwater appears to be at least 10 feet below grade at most areas of the site although groundwater was detected within 6 feet below grade at a location near the south wall of the building.
- Cover or otherwise protect excavations in impacted soil during precipitation events to avoid or reduce the need for removal of contaminated runoff.
- Cover roll-off containers and drums to protect the contents from precipitation.

Sampling and laboratory analysis to characterize soil and groundwater conditions is not required as this task is being addressed by a separate DO. Further, soil and groundwater remediation activities will not be an explicit objective of this DO and will occur only as incidental to completion of demolition activities. However, sampling and analytical characterization will be required to classify waste materials generated during demolition and appropriately manage them as construction debris, hazardous waste, non-hazardous special waste, or materials that may qualify for recycling. Waste characterization requirements for soil, concrete, and utility debris potentially impacted by PCE and/or DCE are discussed in Section 3.10.

1.2 Asbestos-Containing Material

Based upon the Cape Environmental 1993 asbestos survey provided to TolTest by the Navy, asbestos-containing material (ACM) is not known to be present at Building 105. However, during a preliminary site walk, TolTest discovered pipe insulation suspected to contain asbestos. A bulk sample of the suspected ACM will be collected and submitted to TolTest's laboratory for analysis by the polarized light microscopy. If the bulk sample analytical report confirms that the suspected materials are ACM, TolTest will remove, manage and dispose of the material appropriately. ACM removal will be conducted in accordance with the National Emissions Standard for Hazardous Air Pollutants (NESHAP) regulations under a modification to this contract. TolTest will utilize its laboratory in Toledo, Ohio for any additional sample analyses required.

Roofing materials that may be asbestos containing but are non-friable and that will remain non-friable during abatement and demolition activities will not be removed as asbestos waste in accordance with the NESHAP guidelines (40 Code of Federal Register [CFR] Part 61). NESHAP states that a Category I non-friable material does not have to be removed prior to demolition activities. NESHAP does recommend wetting the non-friable material during the demolition, and TolTest will do so.

1.3 Recycling and Reuse

The Navy's December 4, 2000 SOW for this DO requires that TolTest find mechanisms to recycle or reuse 25% by weight of the building structure and contents during the

decommissioning and demolition of Building 105. TolTest will recycle the following materials from Building 105, to the extent possible:

- Scrap metal, including scrap metal that may be coated with lead-based paint (LBP)
- Mercury-containing light bulbs, switches, thermostats, and gages
- Polychlorinated Biphenol (PCB)-containing ballast
- Concrete and brick
- Asphalt

Some materials and equipment may be suitable for reuse or sold to others for reuse. Examples of such materials and equipment are as follow:

- Furniture and countertops
- Doors
- Air conditioning units
- Pumps and other miscellaneous equipment
- Shelving

TolTest will provide the Navy Technical Representative (NTR) with documentation of the weights of material being recycled or reused as well as material that is disposed of as construction debris, special waste, and hazardous waste.

Each load of recyclable materials or waste will be weighed on a truck scale at the respective disposal or recycling facility. The weight of each load will be documented and submitted to the NTR. In addition to weighing each load, TolTest will provide the NTR with the weight ticket of each load from the respective destination facility. The weight tickets documenting the weight of material transported off site will be included in the Delivery Order Closure Report (DOCR) that will be submitted to the NTR after field activities have been completed.

1.4 Scope of Work

TolTest will complete the tasks associated with this DO in accordance with the specifications included in the Navy's December 4, 2000 SOW and the applicable regulations in 29, 40, and 49 CFR. The demolition activities for Building 105 will include, but are not limited to, the following:

- Obtain required permits.
- Install and maintain safety fencing around the perimeter of the demolition area as needed.
- Remove and arrange recycling or disposal of potential mercury and PCB-containing materials including thermostats, gas meter gages, fluorescent lights and ballasts.
- Recover Freon from heating, ventilation, and air conditioning equipment.

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- Demolish interior structures inside Building 105 such as conduit, piping, walls, and doors.
 - Demolish Building 105, including the foundation, footers, utilities, and utility ducts.
 - Perform air monitoring for respirable dust and lead during the building demolition activities.
 - Perform air monitoring for PCE when suspected PCE-impacted soil is encountered.
 - Recycle or reuse a minimum of 25% of the building contents, equipment, and demolition debris, and provide the NTR with proper documentation.
 - Excavate and uncover the underground utility lines that service Building 105.
 - Perform a utility closure of the utilities currently servicing Building 105.
 - Place and compact fill material in the excavations created during the demolition of the foundation and utilities.
 - Install a 40-mil High-Density Polyethylene (HDPE) liner over the footprint of the building.
 - Provide for the restoration of the building footprint and utility excavation areas, including application and compaction of approved subgrade base and asphalt.
 - Submit a DOCR to the NTR detailing the activities for the demolition of Building 105. The DOCR will include documentation of quantities of materials recovered for reuse or recycling and photographic documentation of demolition activities.



2.0 EQUIPMENT, PERSONNEL, AND SUBCONTRACTORS

This section details the equipment, personnel, and subcontractors to be utilized to complete the tasks for this project

Personnel assigned to this project may change to efficiently complete the tasks defined in this WP. Should any personnel changes occur, the replacement person will have an equivalent background to that of the individual being replaced. TolTest will coordinate the use of all subcontractors utilized to complete this DO. **Table 1.0** below depicts the equipment, TolTest personnel, and subcontractors that will be utilized to complete this DO.

Table 1.0 Equipment, Personnel, and Subcontractors

EQUIPMENT	TOLTEST PERSONNEL	SUBCONTRACTORS
Track Excavators Track Loader Grapple Attachment Bulldozer Field Truck Dump Trailers Air Compressor Hydraulic Concrete Breaker Hydraulic Tamper Drum Roller Assorted Hand Tools Generator Oxygen/Acetylene Torch Fire Extinguishers Water Supply Equipment for Dust Control Soil and Concrete Sampling Equipment (as needed) Decontamination Supplies Asbestos Abatement Equipment (if needed)	Jeff Tinney, Project Manager Ken Knoblett, Site Supervisor; Site Safety and Health Officer Mike Graf QA/QC Officer; Competent Person for Lead Bill Webster Equipment Operator Mike Hubans Equipment Operator Floyd Cushing General Labor Support	Superior Special Services Recycling of Ballasts, Light Bulbs, Thermostats, Meter Gages, Mercury Switches Waste Management Countryside RDF Construction Debris Disposal Environmental Quality Disposal Co. Soil & Hazardous Waste Disposal Cleveland Corporation Metal Recycling Vulcan Materials Concrete Recycling Kirschoffer Trucking Debris Transportation Lake County Grading Building Demolition Severn Trent Laboratory Laboratory Analysis (waste characterization) STAT Analysis Laboratory Laboratory Analysis (Air Monitoring Analysis)

3.0 DEMOLITION SEQUENCE AND OPERATIONAL APPROACH

This section details the specific operational tasks required to accomplish this project. The following is a listing of major regulations and/or standards that will be adhered to during the execution of the project:

- 15 United States Code (USC) s/s 2601 et seq. (1976) Toxic Substances Control Act (TSCA)
- 15 USC s/s 2683 TSCA Section 403
- 29 CFR 1910.134, Occupational Safety and Health Administration (OSHA) Respiratory Protection Program
- 29 CFR 1926.62, OSHA Safety and Health Regulations for Construction, Lead
- 29 CFR 1926.1101, OSHA Asbestos Construction Standard
- 29 CFR 1910.120, OSHA Hazardous Waste Operations and Emergency Response
- 40 CFR Part 61, Environmental Protection Agency (EPA) NESHAP
- 40 CFR 261.2, Definition of Solid Waste
- 40 CFR 261 Subpart C, Characteristics of Hazardous Wastes
- 40 CFR 262.11, Hazardous Waste Determination
- 40 CFR 262.20, General Manifest Requirements
- 40 CFR 264, Standards for Treatment, Storage, and Disposal Facilities (T/S/Ds)
- 40 CFR 265, Interim Status Standards for T/S/Ds
- 40 CFR 267, Interim Status Standards for Owners and Operators of a New Hazardous Waste Land Disposal Facility
- 40 CFR 268, Land Disposal Restrictions
- 40 CFR 271, Requirements for Authorization of a State Hazardous Waste Program
- 40 CFR 272, Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 745, Lead, Identification of Dangerous Levels of Lead
- 40 CFR 763 Subpart E, EPA Asbestos Hazard Emergency Response Act (AHERA)
- 40 CFR 763 Subpart E Appendix C, EPA Model Accreditation Plan (MAP)
- 49 CFR Part 130, Oil Spill Prevention and Response Plans
- 49 CFR Part 171, General Information, Regulations, and Definitions for Hazardous Materials
- 49 CFR Part 172, Hazardous Materials Table
- 49 CFR Part 173, General Requirements for Shipments
- 49 CFR Part 177, Carriage by Highway
- 49 CFR Part 61, United States Department of Transportation (DOT)

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- U.S. Army Corps of Engineers Safety Manual EM385-1-1
 - United Facilities Guide Specifications (UFGS) Section F2000, Selective Demolition
 - UFGS Section 01525, Safety Requirements
 - UFGS Section 01572, Waste Management
 - UFGS Section 01575, Temporary Environmental Controls
 - UFGS Section 02220, Site Demolition
 - UFGS Section 02315, Excavation and Fill
 - UFGS Section 02530, Sanitary Sewerage
 - UFGS Section 02721, Sub-base Course for Flexible Paving
 - UFGS Section 02722, Graded Crushed Aggregate Course for Flexible Pavement
 - UFGS Section 02742, Hot Mix Bituminous Pavement
 - UFGS Section 13280, Asbestos Abatement
 - UFGS Section 13281, Engineering Control of Asbestos Containing Materials
 - UFGS Section 13282, Removal and Disposal of Material Containing Lead
 - UFGS Section 13286, Handling of Lighting Ballasts and Lamps Containing PCBs and Mercury
 - 77 IAC 855, Asbestos Abatement for Public and Private Schools in Illinois
 - 225 ILCS 207, Illinois Commercial and Public Buildings Asbestos Abatement Act

A general description of the tasks and operational approach for the demolition of Building 105 is presented in the following sections. A detailed sequence of project activities is presented in **Appendix A** along with the site maps and project time line.

3.1 Permitting and Notification

TolTest submitted a time line for the demolition activities for this DO to the NTR on October 9, 2002. The time line details the sequence of events for this DO and will be updated and re-submitted to the NTR should the schedule change. TolTest will also notify the NTR a minimum of three days prior to initiating fieldwork for the demolition activities.

TolTest will submit a copy of the 10-Day Demolition Notification to the Illinois EPA. A copy of the 10-Day Demolition Notification will be provided to the NTR prior to the start of work.

TolTest will obtain a permit to use a fire hydrant in the vicinity of Building 105 to mist the demolition debris to reduce the levels of respirable dust while Building 105 is being demolished. TolTest will utilize a backflow prevention device in accordance with the hydrant permit specification to eliminate the potential for backflow contamination of the domestic water supply.

A pre-construction meeting will be conducted by TolTest prior to the start of the demolition activities. The meeting will be coordinated by TolTest, and the NTR will be notified one week prior to the date the meeting is scheduled. The NTR may invite other interested GLNTC personnel to attend the pre-construction meeting, during which TolTest will explain the demolition sequence and operational approach and answer questions regarding these items.

Minutes from the pre-construction meeting will be recorded and submitted to the NTR within seven days. The NTR will be given an opportunity to review the minutes and make comments. If the NTR makes any comments, TolTest will revise the minutes and submit a final copy of the minutes to the NTR within seven days of receiving the comments.

TolTest will submit to the NTR a Daily Quality Control Report (DQCR) that outlines the daily activities and demolition progress by the close of the next business day. The report will include, but is not limited to, the following information:

- Names of employees and hours worked
- Daily tasks completed
- Weight tickets of material removed from the site
- Air monitoring analytical results
- Health and Safety Meeting minutes
- Re-work items
- Problems or complications
- Maps and locations of underground utilities

3.2 Utility Shut Off

The Navy provided maps of known utilities with the SOW. **Figures 4A through 4D** in **Appendix A** depict the locations of known utilities servicing Building 105. TolTest will contact the Base Utilities/Public Works Center (PWC) to have a utility locate performed so that underground utilities at the site can be identified/confirmed. Utilities may include fire department lines, telephone lines, sewer lines, water lines, steam lines, electrical service, and computer and cable lines. Underground utilities will be identified in the demolition area and marked with spray paint or flags. Removal of electrical equipment, meters, et cetera inside or outside the building will require that the affected utilities be properly isolated prior to the start of work. TolTest will not perform any building demolition activities until all of the utilities servicing Building 105 have been shut off by the PWC Utilities Representatives.

3.3 Site Set-up

TolTest will place "DO NOT ENTER" signs on the security fence and maintain the fence throughout the duration of the demolition activities. Erosion control fencing will also be installed where needed.

During interior demolition activities, TolTest will utilize barriers at doors, and z-flap barriers will be used at work personnel entry/egress points to the building. In addition, barriers will be installed at exhaust ducts. The purpose of these barriers will be to inhibit fugitive dust emissions.

Prior to the start of each workday, TolTest will conduct daily safety meetings covering topics relevant to the completion of each day's tasks. The daily Health and Safety meeting minutes will be included in the DQCR that will be submitted to the NTR by the end of the next business day.

TolTest will utilize roll-off boxes provided by Waste Management to stage and store excavated soil and concrete that may be impacted by the COCs discussed in Section 1.1. TolTest will collect waste characterization samples of the staged soil and concrete and submit the samples to Severn Trent Laboratory for analysis. TolTest will evaluate the waste characterization samples and dispose of the materials appropriately. As negotiated in the contract, it is anticipated that less than 100 cubic yards of soil and 5% (150 cy) of concrete debris/existing sub-base will need to be disposed of as hazardous waste as part of this demolition project.

Silt fence will be placed over the perimeter of each storm sewer grate or catch basin located within the demolition area. TolTest will maintain the silt fence throughout the demolition activities. **Figure 2 in Appendix A** depicts the anticipated limits of demolition.

3.4 Mercury- and PCB-Containing Device Removal

TolTest will disconnect the light fixtures from the ceiling and then remove the fixtures. Fluorescent light bulbs contain mercury and require special handling procedures. The bulbs from the light fixtures will be removed and placed into wooden crates for recycling at the Superior Special Services (Superior) facility in Port Washington, Wisconsin. TolTest will handle and store the mercury-containing fluorescent light bulbs in accordance with 29 CFR 1910.120 and 1926.1101.

TolTest will disconnect the ballasts from the light fixtures after the bulbs have been removed. The ballasts contain PCBs and require special handling. The ballasts will be removed and placed into DOT-approved drums. The drums will be labeled as a hazardous material containing PCBs and transported to Superior for recycling. The light fixtures will be placed in a roll-off box for recycling at a local scrap metal facility.

Thermostats, electrical switches, and gages found to contain mercury would be carefully removed and placed into a DOT-approved drum for recycling at Superior. Although the mercury waste will be recycled, it is considered to be a hazardous waste in accordance with 40 CFR 261 and will be transported to Superior in accordance with applicable 49 CFR regulations.

3.5 Freon Removal

Freon will be recovered from the heating, ventilation, and air conditioning systems by TolTest and recovered freon will be provided to the Defense Reutilization and Marketing Office as directed by the Contracting Officer (CO). If the Defense Reutilization and Marketing Office does

not want to take possession of the recovered Freon, TolTest will recycle the Freon through Cahill Heating and Ventilation in Gurnee, Illinois.

3.6 Interior Demolition

After the ceiling tile and ceiling tile support structures have been removed, TolTest will demolish the interior walls utilizing hammers and reciprocating saws in accordance with 29 CFR 1910.242 and 1926.300. The debris generated from the interior wall demolition will be placed in a container for disposal as construction debris at Waste Management Countryside RDF. Any steel electrical conduit or piping found in the wall will be demolished, removed, and placed in a container for recycling at Cleveland Corporation (Cleveland). Metal with LBP will be managed in accordance with 40 CFR 261.4. Scrap metal containing LBP offered for recycling is excluded from being considered a solid waste and the requirements for disposal of solid wastes. Interior demolition debris placed in containers will be covered with tarps to reduce the potential for any potential lead dust from being released into the atmosphere.

The tarps that are utilized to cover the containers will be secured with elastic cords and nylon rope. If weather conditions indicate that a severe rain event is likely, TolTest will place poles under the tarp, which will allow the rainwater to run off the tarp. This will reduce the potential of the tarp from accumulating rainwater, which could cause the tarp to sag and become dislodged from the container.

Conduit and piping will be cut and removed from the building. TolTest will place the metal debris in a container for recycling at a local scrap metal facility.

Metal items that will be cut utilizing an oxygen/acetylene torch will be demolished in accordance with the following regulations after any painted surfaces have been tested for lead and appropriate precautions taken as needed:

- 29 CFR 1910.101, Compressed Gas General Requirements
- 29 CFR 1910.110, Storage and Handling of Liquefied Petroleum Gases
- 29 CFR 1910.252, Welding, Cutting, and Brazing General Requirements
- 29 CFR 1926.153, Liquefied Petroleum Gas Fire Protection and Prevention
- 29 CFR 1926.350, Gas Welding and Cutting

During the demolition activities involving the oxygen/acetylene torch, TolTest will have a fire extinguisher adjacent to the area where the task is being performed. Further, TolTest will obtain a hot work permit from the GLNTC Fire Department.

Several exterior metal doors will be removed from their hinges and recovered for reuse, if possible. If the doors cannot be reused or sold for reuse, they will be placed in the scrap metal container for recycling. TolTest assumed that the paint on the doors contained LBP and has notified Cleveland that the exterior metal doors may contain LBP. Cleveland will accept these doors for recycling in accordance with 40 CFR Parts 261.4 and 262.11. 40 CFR 261.4 lists

exemptions from solid waste regulations. Scrap metal containing LBP offered for recycling is excluded from being considered a solid waste and the requirements for disposal of solid wastes.

The OSHA Lead Standard in 29 CFR 1926.62 requires that lead abatement be performed if materials confirmed to contain LBP are to be demolished utilizing destructive techniques. TolTest will remove the metal doors and doorframes without disturbing the LBP on the metal structures. TolTest does not intend to perform destructive demolition on the metal doors or door frames, therefore, abatement of these metal doors and doorframes is not required in accordance with the OSHA Lead Standards.

3.7 Air Monitoring

During the building demolition, TolTest will perform an exposure assessment in accordance with 29 CFR 1926.62 to evaluate the presence of lead in the air. Personal and environmental respirable dust and lead air samples will be collected and submitted to STAT Analysis Laboratory for analysis following the National Institute for Occupational Safety and Health (NIOSH) 7082 method for lead and NIOSH 0600 method for respirable dust. Personnel working at the site will receive the appropriate training needed to work in potential lead hazard situations. TolTest's competent person for lead will evaluate work conditions and testing results.

Lead air sampling will be conducted with low and high volume flow sampling pumps attached to a cellulose membrane filter air sample cassette. Lead air samples will be collected on a 37-millimeter-diameter filter cassette with 0.8-micron-pore-size mixed-cellulose-ester filter support pad. Personal samples are collected in the workers breathing zone with a volumetric flow rate of approximately 1.0 to 4.0 liters per minute. Workers performing different tasks will be sampled separately. Because project personnel may potentially work five 9.5-hour days per week, the Permissible Exposure Limit (PEL) and Action Levels will be adjusted accordingly, as required by the 29 CFR 1926.62(c)(2). Each work task will be sampled until one representative 9.5-hour shift sample for each task is established to create an exposure assessment. A 9.5-hour Time Weighted Average (TWA) for lead will be calculated and evaluated by TolTest's competent person and the TolTest Certified Safety Professional (CSP). Environmental samples will be collected outside of the lead control area utilizing a volumetric flow rate of approximately 12.0 to 15.0 liters per minute. The high volume pumps will be placed downwind of the work activities to monitor for fugitive dusts that may be created during the demolition activities. After an exposure assessment has been created and approved, personal sampling may be performed intermittently during the course of this project.

TolTest has identified the following tasks that will require an exposure assessment to be performed in accordance with the above referenced methodology:

- Exterior door removal assumed to contain LBP
- Building demolition
- Concrete floor demolition
- Destructive demolition (abrasive blasting, welding, cutting, torch burning) of painted metal

Site work is generally restricted to the hours of 0700 to 1630 (9.5 hours) Monday through Friday. Therefore, as indicated above, the PEL and Action Levels will assume a 9.5-hour workday.

The lead PEL and Action Level are as follow:

- The OSHA PEL for worker exposure to airborne lead is 42 micrograms of lead per cubic meter of air ($\mu\text{g}/\text{m}^3$) averaged over a 9.5-hour TWA.
- The Action Level for worker exposure to airborne lead is 25 $\mu\text{g}/\text{m}^3$ averaged over a 9.5-hour workday.

Respirable dust air sampling will be conducted with low and high volume flow sampling pumps attached to a 10-millimeter aluminum cyclone. Respirable dust air samples will be collected on pre-weighed 5.0-micron pore size polyvinyl chloride filter. Personal samples are collected in the workers breathing zone with a volumetric flow rate of approximately 2.5 liters per minute. Workers performing different tasks will be sampled separately. Because project personnel may potentially work five 9.5-hour days per week, the PEL and Action Levels will be adjusted accordingly. Each work task will be sampled until one representative 9.5-hour shift sample for each task is established to create an exposure assessment. A 9.5-hour TWA for lead will be calculated and evaluated by TolTest's competent person and the TolTest CSP. Environmental samples will be collected outside of the lead control area utilizing a volumetric flow rate of approximately 2.5 liters per minute. The high volume pumps will be placed downwind of the work activities to monitor for fugitive dusts that may be created during the demolition activities. After an exposure assessment has been created and approved, personal sampling may be performed intermittently during the course of this project.

TolTest has identified the following tasks that will require an exposure assessment to be performed in accordance with the above referenced methodology:

- Building Demolition
- Concrete floor demolition
- Destructive demolition (abrasive blasting, welding, cutting, torch burning) of painted metal

Site work is generally restricted to the hours of 0700 to 1630 (9.5 hours) Monday through Friday. Therefore, as indicated above, the PEL and Action Levels will assume a 9.5-hour workday.

- The OSHA PEL for worker exposure to airborne respirable dust is 4 micrograms of respirable dust per cubic meter of air ($\mu\text{g}/\text{m}^3$) averaged over a 9.5-hour TWA.
- The Action Level for worker exposure to airborne respirable dust is 2.5 milligrams per cubic meter (mg/m^3) averaged over a 9.5-hour workday.

Personal air sampling will be conducted for the first full shift at the beginning of the project. After one set of sampling results has been obtained for each task involved with this project, an exposure assessment will be created. The exposure assessment will describe what methods are

used during the demolition activities and the analytical results associated with each task. This assessment will be used to evaluate respirator requirements, if any, and the amount of future air sampling required for this project.

At this time, TolTest does not anticipate that interior demolition activities will require cutting of structures that may contain LBP. The OSHA Lead Standard in 29 CFR 1926.62 requires that an exposure assessment be performed if materials confirmed to contain LBP are to be altered or disturbed by such activities as abrasive blasting, welding, cutting, or torch burning. If painted steel beams, pipes, or like structures are encountered, TolTest will collect samples of the paint to determine if the paint is in fact LBP so that proper precautions can be taken during demolition.

TolTest has adopted a conservative approach to air monitoring for the COCs associated with the impacted soil that are expected to be encountered at the site. Concentrations of COCs above the OSHA PEL are expected during the removal of foundations and utility closure activities. TolTest will perform air monitoring at the site when suspected COC-impacted soil is encountered.

Air monitoring will consist of using an integrated exposure assessment sampling approach. Air pumps equipped with charcoal sample tubes will be utilized to collect personal samples from workers breathing zones and environmental samples collected downwind of the work area. The samples will be submitted to STAT Analysis Laboratory for analysis by NIOSH method 1003.

PCE air sampling will be conducted with low volume flow sampling pumps attached to a glass charcoal tube. PCE air samples will be collected in coconut shell charcoal flame-sealed glass tubes seven centimeters in length by four millimeters in diameter. Personal samples are collected in the workers breathing zone with a volumetric flow rate of approximately 0.01 to 0.2 liters per minute. Workers performing different tasks will be sampled separately. Because project personnel may potentially work five 9.5-hour days per week, the PEL and Action Levels will be adjusted accordingly. Each work task will be sampled until one representative 9.5-hour shift sample for each task is established to create an exposure assessment. A 9.5-hour TWA for PCE will be calculated and evaluated by TolTest's competent person and the TolTest CSP. After an exposure assessment has been created and approved, personal sampling may be performed intermittently during the course of this project.

TolTest has identified the following tasks that will require an exposure assessment to be performed in accordance with the above referenced methodology:

- Any task in which workers are in direct contact with suspected COC-impacted soil
- Utility Capping in areas suspected to be impacted by COCs

Site work is generally restricted to the hours of 0700 to 1630 (9.5 hours) Monday through Friday. Therefore, as indicated above, the PEL and Action Levels will assume a 9.5-hour workday.

- The OSHA PEL for worker exposure to PCE is 21 parts per million (ppm) averaged over a 9.5-hour TWA.

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- The Action Level for worker exposure to PCE is 12 mg/m³ averaged over a 9.5-hour workday.

In addition to using the PCE analytical data from the exposure assessment, TolTest will use the PCE air sampling analytical results to determine the level of personal protective equipment (PPE) required at the site. The following Action Levels have been established for determination of appropriate PPE:

- Level D PPE - Less than 21 ppm
- Level C PPE – 21 to 1,050 ppm
- Level B PPE – Above 1,050 ppm

TolTest will also perform constant air monitoring utilizing a photoionization detector (PID) and Drager pump. The PID will be constantly analyzing the air in the suspected COC-impacted work area. The PID readings will be documented every five-minutes and submitted to the NTR in the DQCR. TolTest will collect a grab air sample utilizing the Drager pump every 30 to 45-minutes and document the results in the DQCR.

These real time air sample results will also be used to evaluate the level of PPE that is required to prevent worker exposure to the COCs in the work area. Since the PID and Drager pump sampling devices are not as accurate as the laboratory analytical method, the following Action Levels will be utilized to determine the level of PPE that will be required based on the PID and Drager pump air sample results:

Level D – Less than 12 ppm

Level C – 12 to 625 ppm

Level B – Above 625 ppm

3.8 Demolition Methodology

TolTest will completely demolish the building, including foundations, and footers. Perimeter sidewalks, non-asphalt pavement surfaces, pads, knee walls, and curbs will also be demolished within the demolition limits shown on **Figure 2** in **Appendix A**. The steam manhole and curbing adjacent east of the building will remain. To the extent possible, TolTest will minimize the length of time that demolition materials remain on site. Materials that are potentially impacted by COCs will be stored in lined and covered containers regardless of duration stored on site.

Due to the high probability of encountering COC-impacted soil within the footprint of the building, TolTest will demolish the building to the concrete floor and foundations. Once the building is demolished, TolTest will completely remove the building debris from the site prior to demolishing the concrete floor and foundations.

Based on previous analytical data for the site, the NTR and TolTest will determine where the concrete floor, soil, and foundations that are suspected to be impacted by the COCs. Once the

suspected COC-impacted area is defined, TolTest will demolish and remove the concrete floor and foundations that have been identified by TolTest and the NTR as not being impacted by COCs. TolTest anticipates that approximately 200 cubic yards of non-impacted soil will be encountered within this area, which will be used to backfill the foundation trench and utility trenches.

The remaining concrete and soil within the footprint of the building will be managed as a potentially hazardous waste. Care will be taken to minimize the volume of soil removed from within this area. The suspected COC-impacted concrete floor, foundations, and soil will be removed from the ground and placed in roll off boxes. Concrete and soil will be segregated into separate roll off boxes. The suspected COC-impacted soil and concrete will be sampled in accordance with the procedures outlined in Section 3.10 of this WP.

At the end of each day, the roll off boxes that contain the suspected COC-impacted soil and concrete and the area within the footprint of the building suspected to be impacted by COCs will be covered with plastic tarps to minimize the volatilization of the COCs.

Because of the high probability of encountering COC-impacted soil within the footprint of the building exists, TolTest will remove as little soil as possible to facilitate the installation of a 40-mil HDPE liner and the construction of an asphalt cap over the liner. The standard compaction and paving specifications associated with this DO will be modified so that the least amount of potentially hazardous waste is removed from the site. It is anticipated that one foot of shallow subsurface soil will be removed to install the 40-mil HDPE liner and asphalt cap.

3.8.1 Building Demolition

During the demolition of Building 105, it is possible that low levels of lead dust may be detected in the ambient atmosphere. To comply with the OSHA Lead Standards in 29 CFR 1926.62, TolTest will perform the demolition work under the supervision of a competent person that is trained to perform work involving lead. Mr. Mike Graf is a certified and licensed Lead Supervisor and meets the OSHA Lead Standard qualifications for a competent person for work involving lead. A copy of Mr. Graf's Lead Supervisor's license are provided in **Appendix B**.

TolTest and Lake County Grading personnel directly involved in building demolition activities have been trained in Lead Awareness, which meets the OSHA Lead Standard requirements. Copies of the TolTest and Lake County Grading personnel training certifications are provided in **Appendix B**.

TolTest will begin the demolition of Building 105 by utilizing an excavator to demolish the north wall. Demolition activities will proceed generally from north to south. The demolition of Building 105 will be completed in accordance with 29 CFR 1926.850.

Prior to and during the building demolition, TolTest will place air monitors downwind of the demolition site and monitor for dust and lead levels. High volume pumps equipped with pre-weighed dust and lead cassettes will be utilized to evaluate the concentration of dust and lead in the air. The samples collected prior to the beginning of demolition activities will provide

background concentrations of respirable dust and lead. The OSHA PEL for respirable dust is 5 mg/m³, and the OSHA PEL for airborne lead is 50 micrograms per cubic meter (42 on a 9.5 hour TWA); however, detection of dust or lead levels above background, downwind and outside of the actual demolition work area will trigger corrective action. The cassettes will be submitted to STAT Analysis Laboratory and analyzed by NIOSH Method 0600 for dust and NIOSH Method 7082 for lead. Air monitoring results will be posted at the work site within two days of submitting the cassettes to the laboratory.

TolTest will obtain a permit to use a fire hydrant adjacent to the site from the appropriate authority. A backflow preventor will be attached to the hydrant, and a hose will be utilized to supply water to the site. TolTest will require that building debris be sufficiently wetted to provide adequate dust control. If utilizing water from the fire hydrants will not sufficiently wet the building debris to manage the concentration of dusts below the background levels established prior to demolition activities, TolTest will mobilize a water truck or water trailer to the site that will be utilized to wet the debris. Air monitoring results will continue to be performed until the results indicate that this engineering control is successful in managing the dust and lead levels.

If at any time during the building demolition the air monitoring results indicate that the respirable dust or lead levels exceed the OSHA PEL in the work area or exceed background outside of the work area proper, TolTest will implement additional engineering controls to manage the dust and lead levels. These additional engineering controls could include, but are not limited to, the following:

- Increased use of water
- Ventilation in the area
- Change in work practices

Once the building has been demolished, TolTest will segregate the demolition debris into stockpiles of recyclable material utilizing a loader. Concrete debris will be staged adjacent to the former building, and TolTest will coordinate the transportation of the concrete debris to Vulcan Materials for recycling. If concrete is encountered that is suspected of being impacted with COCs, it would be segregated and placed into a lined container. Suspect concrete will be sampled and analytically characterized to determine the appropriate disposition of the material. Tarps will be placed over the concrete debris to reduce the potential of rainwater from washing lead dust or oily waste from the stockpile. Any scrap metal found in the demolition debris will be segregated and placed in the scrap metal container for recycling. Materials that are not being recycled will be segregated and placed in a stockpile away from the recyclable materials for disposal as construction debris at Waste Management Countryside RDF.

TolTest will place tarps over the onsite containers at the end of each day to reduce the potential of rain water from washing lead dust from the container and minimize the volatilization of the suspected COCs. The suspected COC-impacted soil and concrete will be sampled in accordance with Section 3.10 of this WP.

If materials intended to be disposed of as construction debris are suspected to be impacted by petroleum hydrocarbons or other COCs, TolTest will segregate the materials and use tarps to cover them. TolTest will submit a sample of these materials to characterize the waste stream. Based on the evaluation of the analytical results for this sample, TolTest will dispose of the waste stream in accordance with 40 CFR Parts 261 and 262.

3.8.2 Concrete Floor and Foundation Demolition

As previously mentioned, TolTest and the NTR will identify the location of the suspected COC-impacted concrete and soil based on previous analytical data for the site. Once the location of COC impacted area is identified, TolTest will remove the concrete floor, foundations, and soil from the areas identified as not being impacted by COCs.

An excavator equipped with a hydraulic breaker will be utilized to demolish the concrete floor. As the concrete is demolished, TolTest will stockpile the non-impacted concrete debris utilizing a loader within the perimeter fence.

During the demolition of the concrete floor, a second excavator will be utilized to remove large sections of the concrete foundation by prying the sections from the ground. Once a large section of the foundation has been removed from the ground, TolTest will demolish the concrete sections utilizing the excavator equipped with the hydraulic breaker.

The excavator equipped with the hydraulic breaker will demolish the footings in sections approximately five feet in length. Once the footings are demolished into five-foot sections, the excavator equipped with the bucket will remove the concrete debris and place it in the concrete debris stockpile.

Once the non-impacted concrete and soil is removed, TolTest will remove the concrete that is in contact with the potentially impacted soil identified in the Resource Conservation and Recovery Act (RCRA) closure investigations as being impacted with COCs in the same manner as the non-impacted concrete. The suspected COC-impacted concrete and soil will be placed in a lined container. Once the potentially impacted concrete is removed from the ground, TolTest will scrape the soil from the concrete and place the soil in a lined container to be appropriately characterized. TolTest will collect a chip sample of the potentially impacted concrete and submit the chip sample to Severn Trent Laboratory for analysis. If the analytical result indicates that the concentration of COCs in the chip sample is below the Toxicity Characteristic Leaching Procedure (TCLP) limits for the COCs defined for this site, the concrete will be recycled at the Vulcan Materials facility in Lake Bluff, Illinois. If the chip sample analytical result exceeds any of the RCRA TCLP Action Level, it will be disposed of as hazardous waste at a GLNTC approved disposal facility.

After the concrete floor and foundations are removed from the areas suspected to be impacted by COCs, TolTest will excavate the soil from within the area identified as being potentially impacted by COCs. The excavated soil will be directly placed in lined containers and sampled in accordance with the sampling procedures in Section 3.10 of this WP.

TolTest has contacted several HDPE liner manufacturers. Each HDPE liner manufacturer recommends that at least six inches of sand be placed on the liner to prevent damage to the liner that could be caused by the heat (approximately 350° F) of the asphalt being installed. TolTest estimates that approximately twelve inches of soil will be removed from within the footprint of the building to facilitate the installation of a 40-mil HDPE liner and allow six inches of sand to be placed upon the HDPE liner. Approximately 4 inches of asphalt will be placed on top of the sand to construct an asphalt cap over the former footprint of Building 105.

As previously mentioned, TolTest will segregate the soil that is suspected of being impacted by COCs from the non-impacted soil during the excavation activities. Non-impacted soil will be staged on site and covered with plastic sheeting. Soil suspected to be impacted by COCs will be placed in lined containers, sampled in accordance with Section 3.10 of this WP, and covered with plastic tarps to minimize the volatilization of the suspected COCs.

If the excavations in the impacted soil areas are to remain open for an extended period of time or if precipitation is forecasted, procedures to divert surface runoff will be implemented. The excavation will be covered with an anchored, impermeable material such as 6-mil plastic sheeting. This will inhibit water from entering the excavation, and potential surface water runoff will be diverted. If the controls fail to keep rainwater out of the excavation, the water will be pumped to a holding tank, tested, and the disposition determined appropriately after the analytical results are received. The results will be documented in the DOCR if this situation is encountered.

Should groundwater be encountered in quantities sufficient to warrant control by dewatering, TolTest will assess the groundwater situation and prepare and submit a plan to the NTR for review and approval. The plan will include the proposed method to control groundwater during excavation activities, the equipment that will be used, and a discussion of permits needed for discharge, if any. Since it is known that groundwater is impacted by regulated substances in certain areas of the site (see Section 1.1 and **Figures 3C through 3F in Appendix A**), groundwater control, if required, will need to be carefully planned and implemented.

TolTest will transport the non-impacted concrete debris to Vulcan Materials in Lake Bluff, Illinois in 22-cubic-yard dump trucks unless it is found to be characteristically hazardous. TolTest will load the trucks utilizing the loader until the stockpiled concrete is completely removed from the site. The NTR or designated representative will be given an opportunity to witness the trucks being weighed in and out of the Vulcan Materials facility for weight verification. Vulcan Materials will submit weight tickets to TolTest documenting the weight of the concrete debris transported to their recycling facility. TolTest will submit the weight tickets to the NTR on the second business day that concrete debris was transported from the site to the Vulcan Materials facility. A copy of the weight tickets documenting the material recycled will be provided in the DOCR that will be submitted to the NTR after field activities have been completed. Photographic documentation of the demolition activities will also be provided. Concrete that is found to be hazardous waste will be disposed of at a GLNTC-approved disposal facility.

3.9 Underground Utility Closure

After the building has been demolished, TolTest will excavate, uncover, and demolish the underground utilities servicing Building 105. Based upon information from the Navy, it is known that water, steam, electric, and sanitary sewer utilities exist at the facility. **Figures 4A through 4D in Appendix A** depict the utilities and their demolition limits for this project. TolTest will coordinate with Base Utilities/PWC to confirm utility locations and assess whether other utilities may be present at the site. TolTest will address unknown utilities that may be encountered as work progresses and evaluate each situation as it is encountered to determine appropriate safety measures and methods of closure. TolTest is responsible for physical demolition and capping of utilities and no new construction re-routing of utilities will be performed under this DO. Connections to storm sewers will be capped. Sanitary and steam connections will be capped at the main (manhole) and where possible, removed from the building to the manhole. The intent is not to have any inactive utility line remaining after demolition outside the building footprint. Utilities such as alarm systems, cable TV, telephone, natural gas, and water will be removed to the satisfaction of the NTR. Utilities that run to power poles or other buildings will be decommissioned and removed to the power pole or building, as applicable. If a utility excavation is located within a COC-impacted area, the excavated soil and ductwork, conduit, piping, or wiring will be segregated and placed into the appropriate roll-off box. In addition, the measures discussed in Section 3.8 to control precipitation runoff into these areas will be deployed as needed.

TolTest will excavate and uncover the utilities with an excavator. Once the utilities are uncovered at least ten feet beyond the former building foundation, excavation activities will continue until the proper slope is achieved to allow TolTest personnel to enter the excavation in accordance with 29 CFR 1926.652, Excavation Requirements.

Once the TolTest excavation competent person has approved the excavation, the excavation will be entered to gain access to the utility and/or utility ducts. Prior to demolishing the utility, TolTest will perform air monitoring to evaluate the atmosphere for the concentration of oxygen and the percent lower explosive limit (LEL). TolTest will not utilize an oxygen/acetylene torch in the excavation until the concentration of oxygen is between 19.5 and 23.5 percent and the percent LEL is less than 10 percent. Once the atmosphere is evaluated to be within the aforementioned ranges, TolTest will demolish metal piping utilizing an oxygen/acetylene torch in accordance with a Burn and Hot Works Permit. After the piping has been cut, TolTest will remove the piping from the utility ducts and place the scrap metal debris in the Cleveland roll-off box for recycling unless it is within an impacted area in which case it will be segregated in a lined roll-off container and appropriately characterized.

Concrete utilities and utility ducts will be demolished with a hydraulic breaker. The excavator equipped with a bucket will be utilized to remove the concrete debris from the excavation. Non-impacted concrete debris will be removed from the ground and stockpiled adjacent to the excavation for recycling at the Vulcan Materials facility. Concrete suspected to be impacted by COCs will be removed from the ground and placed in lined containers for waste characterization. Hazardous waste will be disposed of at a GLNTC-approved disposal facility.

One telephone line is present at the site; TolTest will coordinate the removal of this utility with Ameritech. The presence of underground utilities will be established through the Base Utilities/PWC locate. Unless it is not feasible or if otherwise directed, these utilities will be cut at the main/lateral junction or if the telephone line runs to a pole, it will be cut at that point.

Utility decommissioning activities will be documented with photographs.

3.10 Waste Characterization

Potentially impacted soil, concrete, and utility debris will be segregated into lined roll-off containers as previously discussed. In order for wastes to be characterized as listed hazardous wastes, the contaminant source and history of how the contaminant was used must be known. TolTest has reviewed the RCRA process for determination of hazardous wastes under 40 CFR 261.31 and found that there is not enough site history to classify the PCE-impacted soil as a listed hazardous waste.

Composite samples of the materials within each container will be acquired by TolTest and submitted to Severn Trent Laboratory for analysis by the United States EPA Method SW846-8260B/1311. USEPA Method SW846-8260B/1311 is the TCLP extraction method for volatile organic compounds (VOCs). If the laboratory analytical results for any characterization sample has a result of 0.7 milligrams per liter (mg/L) or higher, the waste will be considered characteristically hazardous.

Once the soil/concrete is evaluated to be characteristically hazardous, a grab sample must be collected to evaluate the total concentration of PCE in the soil and/or concrete. TolTest will collect one grab sample from within the container that is considered to be characteristically hazardous for analysis by USEPA Method SW846-8260B. USEPA Method SW846-8260B is the analytical parameter for detection of VOCs reported in milligrams per kilogram (mg/kg). This grab sample will be utilized to compare the total concentration of PCE in the soil and/or concrete to the treatment standards for PCE.

Based on the comparison of the grab sample to the treatment standards, TolTest can identify the proper disposal facility to accept the waste. Section 6.0 of this WP details the three different disposal facilities that may be considered for this project.

The sampling equipment will be decontaminated using the following procedure between each sampling point:

- Gross debris removal will be conducted with a brush or paper towel.
- The equipment will be washed in an Alconox/deionized water solution.
- The equipment will be rinsed in deionized water and allowed to air dry.

After the analytical results are received, the materials will be classified as special waste, hazardous waste, construction debris, or recyclable waste. Upon approval for disposition of the material, manifests will be prepared and the material will be transported by a licensed, permitted,

trained, and equipped transporter to the appropriate facility(ies). TolTest will coordinate with the NTR to have the designated Navy Environmental Department Representative sign required manifests. Once the waste streams are characterized and the proper shipping name is determined, TolTest will provide an example of the manifests with the appropriate information to the NTR for review. If the NTR makes comments to the information contained within the manifest, TolTest will revise the information on the manifest to incorporate the NTR's comments.

3.11 Site Restoration

After the building has been demolished and the utility lines have been removed and capped, TolTest will proof roll the subgrade. Some leveling of the grade may be necessary within the building footprint as the foundations at the southwest, northwest, and northeast portions of the building appear to be elevated above surrounding grade. In addition, it is possible that coal and other deleterious materials may be encountered in the site soils and asphalt sub-base at the site. Should materials be encountered that are not acceptable for pavement subgrade due to undesirable engineering properties, the NTR will be notified immediately to determine an appropriate course of action and modification to the contract.

TolTest will backfill the utility trenches and foundation trenches utilizing the on site excavated soil determined by the Navy as not being impacted by COCs at the site. The top twelve inches of the utility trenches will be backfilled with engineered fill, which will be placed in the trenches and excavations in 6-inch lifts and compacted to 95% of American Society for Testing Method (ASTM) D 698 maximum density with a drum roller. Each 6-inch lift will be added and compacted until the trenches' grade is within four inches of the existing grade of the surrounding surface. The top four inches will be covered with asphalt.

Where granular fill is required to properly restore the site, the engineered fill will meet ASTM D 2487 classification of GW, GP, GM, SW, SP, or SM with a maximum ASTM D 4318 liquid limit of 35, a maximum ASTM D 4318 plasticity index of 12, and a maximum of 25 percent by weight passing the ASTM D 1140 No. 200 sieve. Common fill will be a clayey soil. All fill material types will be free of deleterious and objectionable materials (i.e., debris, roots, scrap metal, vegetation, and soft particles) and will not be frozen when placed.

Once the backfill material for the utility and foundation trenches has been placed and compacted, TolTest will conduct a proof roll of the building footprint sub-grade utilizing a 20-cubic-yard dump truck filled with at least 20 tons of gravel. The dump truck will drive over the subgrade, and the third party testing company will witness the proof roll. One-half of the passes will be made perpendicular to the other passes. If the third-party representative determines that the proof roll passes, TolTest will install the HDPE liner.

TolTest will install the 40-mil HDPE liner on top of the sub-grade within the footprint of the building and over the backfill material in the utility trenches. The liner will be unrolled within the footprint of the building. Several overlapping seams are anticipated to line the total surface area estimated at approximately 13,700 square feet. To minimize infiltration of water through the liner, the seams will be welded.

Once the seams of the 40-mil HDPE liner are welded, TolTest will install a geo-composite fabric over the liner. The geo-composite fabric will act as a protective barrier to prevent damage to the HDPE liner while fill material is being placed. The geo-composite fabric will also allow for the drainage of surface water that infiltrates through the asphalt.

Approximately three to four inches of recycled CA-6 gravel will be placed and compacted on top of the geo-composite fabric. The recycled CA-6 gravel will provide a foundation to construct the asphalt paving. The CA-6 gravel will be graded to the appropriate slope to match the slope of the existing grade and allow surface water runoff to enter the storm sewer system.

Once the CA-6 gravel is spread and compacted, TolTest will construct an asphalt cap over the former building footprint and utility trenches. The asphalt will be placed and compacted in accordance with the Paving Specifications listed below.

Prior to importing the fill material on site, TolTest will collect one sample or have the supplier produce documentation of each fill material type, sub-base aggregate, base course aggregate, and asphalt that will be used for this project to ensure the material meets the specifications of this DO. Information documenting the physical characteristics of the proposed material and how it correlates to the material specifications of the DO is provided in **Appendix C**. The asphalt mix for the project will meet the following specifications: a) stability: peak; b) unit weight: peak; and c) percent air voids: median. The asphalt mix will include 25% by weight of reclaimed (recycled) asphalt pavement. The asphalt will meet the requirements of ASTM D 995.

TolTest will test the density of each lift of fill material every 500 square feet of placement, in accordance with ASTM D 2922 and D 3017, after the fill material has been placed and compacted. Specification 02315, Excavation and Fill submitted to TolTest in the Navy's December 4, 2000 SOW indicates requirements for the backfill. TolTest will compact the material to a minimum of 95 percent of ASTM D 698 maximum dry density with a drum roller. TolTest will provide documentation of the compaction tests to the NTR for every lift tested. Density tests will be conducted on the sub-base and base courses every 100 square yards (900 square feet). The density requirements for these materials are 95% of the maximum dry density as determined by ASTM D 1557. The final base course layer will be proof rolled to ensure that the course does not exhibit pumping, yielding, or other types of failure.

The density of the asphalt layer will be 80% to 100% of the density obtained from specimens of the same mix prepared in accordance with ASTM D 1559. The asphalt will be spread at 250°F to 300°F with self-propelled electronically controlled spreaders and compacted with self-propelled pneumatic-tired rollers. The compaction requirements for parking lots per the Illinois DOT requirements are specified in **Appendix D**. The Illinois DOT requirements or the Navy requirements described in the specifications and summarized above will prevail, whichever is more stringent. Freshly applied asphalt will be protected from vehicular traffic until the surface temperature has cooled to at least 120°F.

If any of the density test results indicate that the tested material does not meet the specifications, TolTest will continue to compact the material until the appropriate density is achieved and documented with a successful test.

As indicated in the contract for this DO, TolTest will be responsible for stormwater runoff from the site until paving is complete. Paving will be conducted only in the building footprint area and other excavation areas involved with this project. Storm inlet grates that may have been disturbed by the demolition activities will be reset. **Figure 5** in **Appendix A** depicts significant aspects of the site restoration.

4.0 SCHEDULING

A detailed schedule has been submitted to the Navy that outlines the sequence for the hazardous material removal and demolition activities. The hazardous material removal activities are expected to take approximately 2 days to complete. The demolition activities are expected to take approximately 30 days. Work activities will be conducted during normal working hours, Monday through Friday, between the hours of 0700 and 1630, unless special arrangements are made with the NTR.

Project activities are tentatively scheduled to commence at Building 105 in the Spring of 2003. TolTest understands that the demolition work is not to proceed until the Navy has vacated the building and the Contracting Officer has issued a written notice to proceed. The work under the demolition DO will be conducted in such a manner as to minimize interference with the normal functions of the surrounding area, disturbance of the impacted soil and groundwater area, and generation of hazardous waste. If the schedule changes during any phase of this DO, TolTest will revise the time line and submit the revised schedule to the NTR.

5.0 ENVIRONMENTAL PROTECTION

TolTest will provide and maintain environmental protection through the completion of this project. A pre-construction meeting will be held prior to the commencement of project activities to discuss the proposed environmental protection and to develop a mutual understanding relative to required reports and measures to be taken should there be an incident that requires a response. Due to the presence of impacted soils and groundwater at the site, it will be a high priority on this project to practice contaminant avoidance, minimize to the extent possible the disturbance of impacted areas, and minimize spreading of potential contaminants. When working in areas that are known to be impacted, personnel will remove soil materials only as necessary to allow utility closure and foundation removal in a safe manner. When possible, personnel will remove material in layers and utilize other methods to permit efficient segregation of materials that may be classified as hazardous or special waste and cannot be recycled.

Environmental protection will be provided to correct conditions that develop during construction or that are required to control pollution that develops during normal construction practices. TolTest's operations will comply with applicable federal, state, and local regulations pertaining to water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

TolTest will at all times be aware of and adhere to all Environmental Protection Policies in force at GLNTC. Information will be obtained by referencing OPNAVINST 5090.1B and the GLNTC Hazardous Waste Management Plan. TolTest will maintain compliance at all times with 40 CFR 263, 264, and 265 as well as IL Title 35, Subtitle G, Sections 700 through 871.

Any hazardous waste created, used, or brought onto government property by TolTest will be TolTest's responsibility. Hazardous waste will be stored and transported in approved containers in accordance with 49 CFR 178. Wastes will be properly labeled with the proper shipping description, accumulation start date and generator information. Containers will be removed from the project site and stored and treated/disposed of in accordance with 40 CFR 263, 264, and 265 and IL Title 35 Sections 700 through 750.

Special measures will be taken to prevent hazardous substances from entering the ground, drainage areas, or local bodies of water. Environmental requirements for the prevention of any spills is contained in EPA Regulations on Oil Pollution Prevention, Title 40 CFR 112. For oil and hazardous substance spills that may be large enough to be a reportable quantity under federal, state, or local regulations, the Environmental Operations Manager will be notified immediately and appropriate notifications will be made.

TolTest will preserve the integrity of the natural resources of the project area. This includes ensuring that the surrounding area is not environmentally damaged in any way and preventing the release of hazardous substances into the surrounding air, land, or water. Absorbent pads will be available at all times to clean and wipe up any small spills.

TolTest is aware that LBP could potentially be present in or on the structures that will be demolished. To minimize the potential of worker exposure, TolTest will spray water on the demolition debris during demolition activities. TolTest will also perform air monitoring to

evaluate the presence of lead dust in the air. Air monitors will be placed downwind of the demolition activities, and TolTest will collect samples throughout the demolition activities and take corrective actions as necessary.

During this project, TolTest will store debris generated as a result of demolition activities on site. TolTest will store the debris in a location approved by the NTR and comply with 40 CFR 262.34, 265.171, 265.172, and 265.173 regulations for Satellite Accumulation Points. These regulations requires TolTest to properly label and mark containers, use containers in good condition, use containers that are compatible with the material being stored within the container, and manage the containers in such a manner as to prevent a rupture or leak.

TolTest will label and mark any drums that are used to store waste in accordance with 49 CFR, Part 172. The containers that will be used to store waste will be DOT-approved containers. TolTest will store the waste in such a manner as to reduce the potential for the integrity of the container's shell to become compromised. TolTest does not anticipate that incompatible waste streams will be generated.

6.0 WASTE MANAGEMENT PLAN

TolTest and its subcontractors will adhere to these applicable regulations during this DO:

- 40 CFR 261.2, Definition of Solid Waste
- 40 CFR 261 Subpart C, Characteristics of Hazardous Wastes
- 40 CFR 262.11, Hazardous Waste Determination
- 40 CFR 262.20, General Manifest Requirements
- 49 CFR Part 130, Oil Spill Prevention and Response Plans
- 49 CFR Part 171, General Information, Regulations, and Definitions for Hazardous Materials
- 49 CFR Part 172, Hazardous Materials Table
- 49 CFR Part 173, General Requirements for Shipments
- 49 CFR Part 177, Carriage by Highway
- 35 IAC Subtitle B, Air Pollution, Parts 228 and 243
- 35 IAC Subtitle C, Water Pollution, Part 302
- 35 IAC Subtitle G, Waste Disposal, Parts 742-750 and 807-810

TolTest is required to recycle or salvage for reuse at least 25% of the building contents and demolition debris generated during this DO. The remaining demolition debris will be disposed of as construction debris, special waste, or hazardous waste, as applicable. TolTest has identified the following materials that can be recycled or reused:

- Concrete debris
- Asphalt debris
- Metal debris
- Mercury waste
- PCB-containing ballasts
- Furniture and countertops
- Doors
- Air conditioning units
- Pumps and other miscellaneous equipment
- Shelving

The majority of the recyclable demolition debris is anticipated to be concrete. Vulcan Materials in Lake Bluff, Illinois will accept and recycle concrete debris. Metal debris will be recycled at the Cleveland facility in Zion, Illinois. Mercury and PCB waste will be recycled or reused at the Superior facility in Port Washington, Wisconsin.

TolTest will attempt to recycle or reuse as much of the demolition debris as possible. Demolition debris may consist of, but is not limited to, the following materials:

- Lumber
- Non-impacted soil
- Non-ACM ceiling tile
- Drywall
- Toilet and sink fixtures

Demolition debris that cannot be recycled will be disposed of at Waste Management Countryside RDF in Grayslake, Illinois.

Potentially impacted soil, water, concrete, or other debris will be characterized by the GLNTC Hazardous Waste Operations Manager, Mr. Kelly Devereaux. TolTest will provide Mr. Devereaux with a waste profile form for his approval. The method of disposal and disposal facility will be based on the TCLP laboratory analytical results from the samples collected from the soil and concrete suspected to be impacted by COCs.

If the TCLP laboratory analytical results for the samples collected from the soil and/or concrete suspected to be impacted by COCs is less than 0.7 mg/L, the soil and/or concrete will be classified as a special waste and disposed of at the Kestrel Hawk Landfill in Racine, Wisconsin.

If the TCLP laboratory analytical results for the samples collected from the soil or concrete suspected to be impacted by COCs is greater than 0.7 mg/L and below the treatment standard (less than 60 ppm for soil and 6 ppm for concrete), the soil and/or concrete will be classified as a characteristically hazardous waste and will be disposed of at the Peoria Disposal Company in Peoria, Illinois.

If the TCLP laboratory analytical results for the samples collected from the soil or concrete suspected to be impacted by COCs is greater than 0.7 mg/L and above the treatment standard, TolTest will transport, treat, and dispose the soil at the Environmental Quality (EQ) disposal facility in Belleville, Michigan as a characteristically hazardous waste requiring treatment. Mr. Devereaux provided TolTest with authorization to use the EQ disposal facility if needed, based on a February 20, 2003 phone conversation.

TolTest will notify the NTR three days prior to transporting the waste to the respective disposal facility. The NTR will make arrangements for a GLNTC Environmental Department representative to sign the waste manifests.

Mercury- and PCB containing waste will be recycled or reused at Superior's facility in Port Washington, Wisconsin. TolTest has an existing profile that has been approved by the GLNTC Environmental Department and accepted by Superior. TolTest will utilize the approved profile to gain acceptance of the mercury and PCB waste into Superior's facility. The NTR will be notified three days prior to transporting the waste to Superior. The NTR will make arrangements for a

GLNTC Environmental Department representative to review and sign the waste manifest prior to transporting the waste to Superior.

The mercury and PCB waste will be manifested on an Illinois Uniform Hazardous Materials Manifest under the following shipping names:

- Waste Mercury contained in manufactured articles, 9, UN2909, PGIII
- Waste Polychlorinated Biphenyls, Solid, 9, UN2315, PGIII

It is anticipated that LBP debris will be generated during this DO. TolTest will collect a sample of the waste and submit the sample to the Severn Trent Laboratory for analysis by EPA Method 1311/6010B. Once the sample results are evaluated, the waste will be characterized as either hazardous or non-hazardous per 40 CFR Parts 261 and 262. If the debris containing waste is characterized as hazardous waste, the shipping name will be: Hazardous Waste, Solid, n.o.s. (Lead), 9, NA3077, PGIII. If the debris containing waste is characterized as non-hazardous waste, the shipping name will be: Non-hazardous solid containing lead. Scrap metal with LBP will be recycled under the exemption in 40 CFR 261.4.

Once the demolition debris are characterized (except scrap metal as noted above), TolTest will submit a copy of the waste profile to the NTR. Once the Navy approves the profile, TolTest will submit the approved profile to a disposal facility. If the waste is characterized as non-hazardous, TolTest will dispose of the waste at Waste Management Countryside RDF. If the waste is characterized as hazardous, TolTest will dispose of the waste at the Waste Management Facility.

During this project, TolTest will submit weight tickets of the debris removed from the site to the NTR. Weight tickets will document the weight of the materials recycled and the weight of the materials disposed of as construction debris, non-hazardous special waste, or hazardous waste. Disposal facility certifications are provided in **Appendix E**.

Impacted groundwater is not expected to be encountered during demolition activities. However, in the event that groundwater is encountered that is suspected of being impacted, it will be sampled and characterized. Based upon the analytical results and the estimated volume of water that will need to be pumped, TolTest will submit a plan to the NTR that describes the proposed dewatering method and the method that will be used to treat or store for future disposal the impacted groundwater removed by pumping.



PART II - SITE HEALTH AND SAFETY PLAN

1.0 INTRODUCTION

TolTest is responsible for the safety, health, and emergency response provisions for each DO under this contract. These provisions are provided through the development and implementation of TolTest's Corporate Health and Safety Plan and this Site Health and Safety Plan (SHASP). All personnel on site—visitors, contractors, and subcontractors included—will be informed of this plan and any potential health and safety hazards of the operation.

2.0 APPLICABILITY

This plan will be followed during all site activities starting with site mobilization through site demobilization. This plan incorporates the requirements of the following regulations and/or appropriate guidance:

- Federal Acquisition Regulation (FAR) clause 52.236-13, Accident Prevention
- OSHA Construction Industry Standards, 29 CFR 1926
- OSHA General Industry Standards, 29 CFR 1910 (including, but not limited to, 29 CFR 1910.120, Hazardous Waste Site Activities)
- OPNAVINST 5090.1B and the GLNTEC Hazardous Waste Management Plan
- U.S. Army Corps of Engineers Health and Safety Manual EM385-1-1
- Other applicable federal, state, and local safety and health requirements

The implementation of the Demolition Work Plan (Part I of this document) includes the necessary tasks that will be performed to demolish Building 105.

3.0 SITE SAFETY AND HEALTH

This section addresses the responsibilities for safety and health oversight, PPE, and site-specific control measures and operating procedures.

3.1 Key Personnel

The Site Safety and Health Officer (SSHO) for this DO has the overall responsibility for ensuring that the provisions of this SHASP are implemented in the field. The SSHO will be present during the period that heavy equipment is operating and will observe and document the activities. The SSHO is responsible for conducting daily tailgate safety meetings and site inspections to ensure the effectiveness of this plan. As field conditions change, decisions will be made regarding additional protective measures. Personnel assigned to this project are experienced, meet the supervisory training requirements specified by OSHA in 29 CFR 1910.120, and have First Aid and CPR training. In the event the SSHO becomes injured or impaired, other TolTest field personnel can render first aid and CPR.

3.2 Personal Protective Equipment

PPE is to be used by employees for each of the site tasks and operations being performed. The type of PPE will depend upon the level of potential exposure to hazards. TolTest personnel will be equipped, at a minimum, with the PPE listed below:

- Working uniform
- Coverall suit (use depends on site conditions)
- Steel-toe boots/shoes
- Hard hat
- Safety glasses
- Hearing protection if noise level exceeds 85 dB
- Latex gloves inside Work gloves

Level C PPE may include:

- Level D PPE, minus safety glasses (eye protection supplemented along with breathing protection (See next entry)
- Full Face, Negative Pressure Respirator equipped with particulate (P-100) and/or VOC filters

If TolTest personnel are expected to enter an excavation or trench deemed safe for entry by TolTest's excavation competent person, they will wear the Level B PPE until an exposure assessment can support the downgrade of PPE from Level B. Determination of this level of PPE was based on the potential exposure to impacted soil.



Level B PPE may include:

- Saranex suits
- Rubber boots and latex gloves inside work gloves
- Full Face Self Contained Breathing Apparatus (SCBA)

Prior to entering an excavation or trench, TolTest will perform air monitoring to evaluate the atmosphere for the presence of VOCs, concentration of oxygen, and percent LEL. TolTest will perform the air monitoring utilizing a PID, LEL meter, and Draeger tubes, as necessary. Based on the air monitoring results, TolTest will make a decision regarding the appropriate PPE required for safe entry into an excavation or trench.

Potential VOC COCs and potential hazards are listed in **Table 2.0** below. Note that the primary exposure routes of concern (based upon IL Title 35 Part 742 Construction Worker levels and Class I Groundwater Ingestion levels) are inhalation of PCE vapor from soil and ingestion of PCE and DCE from groundwater. The SSHO will carefully monitor work conditions when potentially impacted soil and/or groundwater are encountered so that appropriate precautions may be taken relative to work practices and PPE. The site COC concentrations noted in **Table 2.0** were derived from the various investigations that have been conducted at the site generally summarized in the Demolition Work Plan, Section 1.1 (Part I of this document).

Table 2.0 Chemicals of Concern

COC	TWA/IDLH	MEDIA/ CONCENTRATION ON SITE	ACTION LEVELS	POSSIBLE ROUTES OF EXPOSURE
Tetrachloro-ethene (PCE; tetrachloro-ethylene)	OSHA PEL: 25-ppm TWA, 200-ppm ceiling, and 300 ppm 5 min. max. peak in any 3-hr period IDLH: 150 ppm ACGIH TLV: 25 ppm ACGIH STEL: 100 ppm OTHER: Carcinogen	Surface soil: 0 to 1,500,000 ug/kg Subsurface soil: 0 to 550,000 ug/kg Groundwater: 0 to 7,400 ug/L	Construction worker inhalation: 28,000 ug/kg Construction worker ingestion: 2,400,000 ug/kg Groundwater ingestion: 5 ug/L	Inhalation Contact Absorption Ingestion
Cis-1,2-dichloroethene (DCE)	OSHA PEL: NE IDLH: NE ACGIH TLV: NE ACGIH STEL: NE OTHER: Can cause liver damage, irritations, and produce narcotic effects *NE = Not Established	Surface soil: 0 to 820 ug/kg Subsurface soil: 0 to 820 ug/kg Groundwater: 0 to 3,200 ug/L	Construction worker inhalation: 1,200,000 ug/kg Construction worker ingestion: 20,000,000 ug/kg Groundwater ingestion: 70 ug/l	Inhalation Contact Absorption Ingestion

Note: Surface soil includes soil within 1 meter of grade. Subsurface soil is greater than 1 meter in depth.



3.3 Site Control Measures

Control procedures will be implemented to prevent unauthorized access to the work area. A privacy fence will be installed around the work area as needed. The SSHO will ensure that all personnel entering the site have the necessary training and medical approval documentation. Personnel entering the site will be given a thorough briefing on the site hazards and safe work procedures prior to proceeding. A safety meeting will be conducted on a daily basis and will be documented. The topics of discussion will include potential physical and chemical hazards involved in excavation and sewer line decommissioning activities. The TolTest Corporate Health & Safety Manual will be used as a reference to discuss in detail the pertinent topics that are applicable for each days work activities.

All visitors will be expected to comply with applicable regulatory OSHA requirements as well as the requirements of this SHASP. With the exception of the NTR, visitors will also be expected to provide their own PPE. In the event visitors do not adhere to the provisions of the SHASP, they will be requested to leave the work area. All non-conformance incidents will be recorded in the site log. The SSHO will document a written record of all personnel entering and exiting the site.

3.4 Site Standard Operating Safety Procedures

The following safety rules will be adhered to during all site activities:

- At least one copy of this SHASP will be available at the project site in a location readily available to all personnel, including visitors.
- Personnel will practice contamination avoidance.
- No food or beverages will be present or consumed in the work area.
- No tobacco products will be used on the project site.
- No alcohol or drugs will be present or consumed on site or in any vehicle or worksite equipment.
- No personnel will be permitted to work while under the influence of alcohol or drugs while on site or operating a vehicle or worksite equipment.
- Emergency equipment consisting of fire extinguishers, a first aid kit, and a mobile telephone will be located in a company vehicle in a readily accessible location.
- Visual contact will be maintained between crew members at all times, and crew members will be required observe each other for signs of exposure to chemical, biological, or physical agents. *Indications of adverse effects include, but are not limited to:*
 - Changes in complexion and skin coloration
 - Changes in coordination
 - Changes in demeanor
 - Excessive salivation and pupillary response
 - Changes in speech pattern

-
- All personnel will inform their partners or team members of visible or non-visible effects of overexposure to chemical, biological, or physical agents. *General symptoms of overexposure and specific overexposure symptoms for PCE and DCE may include:*

From Inhalation:

- Headache
- Drowsiness
- Dizziness/lack of coordination
- Exhilaration
- Nausea
- Weakness
- Blurred vision
- Cramps
- Irritation of the eyes, skin, or respiratory tract
- Unconsciousness

From Ingestion:

- Abdominal pain

From Contact:

- Dry skin
- Redness
- Skin burns
- Blisters

From Absorption:

- Redness
- Pain

3.5 Site-Specific Respiratory Protection

During this project, respiratory protection may be required on a limited basis. The presence of lead dust and LBP on metal structures that are to be demolished by means that could potentially cause airborne lead dust or measured elevated levels of respirable dust will initially result in the required use of respirators. Lead dust, LBP, and respirable dust particulates suspended in the atmosphere are relatively easy to manage.

VOCs are characteristically noticeable with olfactory senses (smell), especially on warm or hot days with little to no wind. PCE typically has a chloroform-like odor. If VOCs are suspected by any members of the crew, the SHSO shall evaluate the situation. Work will cease until the presence of VOCs is evaluated. The selection of respirators, if deemed necessary, as well as any decisions regarding upgrading or downgrading of respiratory protection, will be made by the SSHO together with TolTest's CHSM.

For the activities that a respirator will be required, TolTest will submit a copy of medical documentation for the personnel expected to wear respirators to the NTR. A copy of TolTest



personnel's current respirator fit test will also be submitted to the NTR. The respirator fit test will be conducted in accordance with 29 CFR 1910.134. TolTest personnel will wear full-face negative air purifying respirators. If the use of respirators is required, TolTest will submit a copy of the manufacturer's catalog cut sheets for the respirator and respirator cartridges.

TolTest personnel will be required to perform fit checks of their respirators prior to engaging in any activity in which the use of a respirator is required. The following procedures for respirator fit checks will be adhered to in accordance with 29 CFR 1910.134:

- **Perform positive pressure fit checks.** Positive fit checks are performed by sealing the exhalation valve and exhaling gently. The check is considered to be successful if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal
- **Perform negative pressure fit checks.** Negative pressure fit checks are performed by placing the palm of the hands over the respirator cartridge off the air inlet. Once the inlet is sealed, personnel will gently inhale so that the face piece slightly collapses, then hold their breath for 10 seconds. The fit check will be considered successful if the seal remains in the slightly collapsed condition with no inward leakage of air detected.
- **Perform manufacturer's recommended user seal checks.**

TolTest personnel will be responsible for the maintenance and upkeep of their respirators. Cleaning and maintenance procedures will be adhered to in accordance with 29 CFR 1910.134 as follows:

- Step 1.** Remove respirator cartridges after each day's use.
- Step 2.** Rinse the respirator and respirator components in warm water.
- Step 3.** Wash the respirator and respirator components with warm water and a cleaning solution with a disinfecting agent that is approved by the manufacturer.
- Step 4.** Rinse the respirator and respirator components in warm water.
- Step 5.** Hand dry the respirator and respirator components.
- Step 6.** Replace all respirator components including the cartridges.
- Step 7.** Place the respirator in a plastic bag and store in a safe area.

3.6 Material Safety Data Sheets

A list of typical material safety data sheets for the following items is provided in **Appendix F**:

- Mercury-containing light bulbs
- Mercury-containing thermostats, switches, gages
- PCB-containing ballast
- Tetrachloroethene (PCE)

-
- DCE
 - Lead
 - Freon
 - Alconox (sampling equipment decontamination)

4.0 INCIDENT PREVENTION

Daily safety inspections, incident reporting, excavation safety, and liquid/soil handling safety are discussed in the following paragraphs. In addition, this section includes a list of Activity Hazard Analyses, documents that describe the work activity, probable hazards related to the work, and proactive or precautionary measures that will be taken for safeguarding against and minimizing or eliminating each particular hazard.

4.1 Daily Safety Inspections

All machinery and equipment will be inspected daily by the Site Supervisor/SSHO to ensure a safe operating condition. Inspections will be in accordance with the manufacturer's recommendations and will be documented. Records of inspections will be maintained at the site, will be made available upon request, and will become part of the project file.

In addition to daily inspections, the SSHO will conduct a daily safety meeting. The SSHO will discuss safety topics relevant to the hazards involved in that day's work. All employees and visitors will review and sign the safety log, which documents the topics of discussion. The safety log will be submitted to the NTR with the Contractor Quality Control Reports.

4.2 Incident Reporting

All incident reporting and record-keeping requirements will be followed. TolTest forms will be completed for all incidents, including personal injury, safety incident, equipment damage and vehicle incident reports. (Copies of these forms are provided in **Appendix G.**) All reports will be submitted to the Navy representative within 24 hours of any incident.

4.3 Excavation Safety

All excavating work will be conducted, at a minimum, in strict conformance with 29 CFR 1926.650 through 29 CFR 1926.652, including requirements for continuously sloping excavations, if required. Excavation and trenching procedures are outlined in **Appendix H.**

It is not anticipated that shoring or bracing of the excavations will be required; however, shoring and sheeting of the excavation will be used, if necessary, to prevent personal injury, damage to structures, injurious caving, and erosion. If used, the shoring, sheeting, and bracing will be carefully removed, as the excavation is backfilled.

Excavation work will not commence until TolTest has contacted the Base Utilities/PWC a minimum of 72 hours prior to excavation activities. TolTest will visually survey the area to ensure that clearances to overhead utility lines will be sufficient for the movement of vehicles and operation of demolition equipment. The requirements stated in OSHA 29 CFR 1926 General Construction Industry Standard and the National Electric Safety Code will be followed by TolTest.

During periods when the work site is unoccupied (i.e., overnight, weekends, and similar off periods), barricades and orange construction fencing will be placed around the excavations in such a manner as to alert personnel to the danger and prevent them from entering the work area if additional protection is needed. A security fence will be in place around the work area during demolition activities.

4.4 Activity Hazard Analyses

The protective measures to be implemented during completion of the tasks/operations associated with this work are identified in the Activity Hazard Analyses provided in **Appendix I**. Tasks/operations for which AHAs have been developed are:

- Site Preparation/Layout
- Light Tube and Ballast Removal
- Demolition Utilizing Hand Tools
- Demolition Utilizing Heavy Equipment
- Demolition Utilizing an Oxygen/Acetylene Torch
- Soil Excavation
- Soil and Concrete Sampling
- Backfill and Site Restoration
- Debris Loadout
- Equipment Decontamination

5.0 EMERGENCY RESPONSE

This section addresses work zones and evacuation procedures, decontamination, emergency medical treatment and first aid, emergency response procedures, and spill and discharge control. TolTest will implement emergency response and contingency procedures in accordance with OSHA standards 29 CFR 1910.120(L).

5.1 Work Zones and Evacuation Procedures

Daily safety meetings will identify the work zones for demolition activities. The three general work zones that will be established at the site are the Exclusion Zone, Contamination Reduction Zone, and Support Zone.

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 will initially require the use of PPE. Downgrading PPE requirements will be made by the SSHO in consultation with TolTest's CHSM. Barricades will surround this zone.

The **Contamination Reduction Zone** is defined as the area where personnel conduct personal and equipment decontamination should contact with contaminated soil or concrete be suspected. It is essentially a buffer zone between potentially contaminated and clean areas.

The **Support Zone** is defined as a clean area where the chance to encounter hazardous materials or conditions is minimal. PPE is, therefore, not required in this zone.

Safe Distances are outside the Exclusion Zone, and **Places of Refuge** are outside the Contamination Reduction Zone.

In the event of an emergency that necessitates evacuation of the site, all personnel will be expected to leave the work zone and mobilize at a safe distance to an area designated by the SSHO using the prescribed evacuation routes. Personnel will remain at that area until the SSHO provides further instructions.

5.2 Decontamination

All site personnel should minimize contact with contaminants in order to minimize the need for extensive decontamination. The SSHO is responsible for monitoring decontamination procedures and determining their effectiveness. Eye wash stations will be available in the work area. Decontamination for VOCs, if determined to be present, will be managed by first washing the affected items with Alconox and water (or equivalent laboratory trisodium phosphate soap), triple rinsing them with water, then allowing them to air dry.

5.3 Emergency Medical Treatment and First Aid

There are no anticipated hazards on site that require specific medical attention or protocols. All TolTest employees participate in TolTest's medical screening and surveillance programs. If an

injury/illness or exposure occurs, employees must seek medical attention immediately. TolTest field personnel are trained in First Aid and CPR and can administer immediate assistance.

5.3.1 Cold Stress

Cold and/or wet environmental conditions can place workers at risk of cold-related illness. Most cold-related worker fatalities have resulted from failure to escape low air temperatures, or from immersion in low temperature water.

Frostbite is the freezing of body tissue, ranging from superficial freezing of surface skin layers to deep freezing of underlying tissue. Frostbite will only occur when the ambient temperatures are below 32°F. The risk of frostbite increases as the temperature drops and the wind speed increases.

Frostbite First Aid. To administer first aid for frostbite, take the exposed worker indoors. Provide the worker with warm drinks, but no coffee, tea, or alcohol. Rewarm the affected areas as quickly as possible by placing them in warm water (102°F to 105°F) or covering them with warm clothing. Keep the frozen tissue submerged or covered for 20 to 30 minutes or until the frozen tissue regains its original color, even though the tissue may be very painful as it thaws. If present, do not allow blisters to be broken. Cover the injured area with sterile, soft, dry material, keep the patient warm, and get medical attention.

- ***Do not rub the frostbitten areas, as additional damage could occur.***
- ***Do not use heat lamps or hot water bottles to warm the frostbitten areas.***
- ***Do not place the exposed part near a hot stove.***

Hypothermia can occur whenever temperatures are below 45°F. The principal cause of hypothermia in these conditions usually involves the loss of insulating properties of clothing due to moisture; heat loss due to increased air movement, and evaporation of moisture on the skin.

Extremely low temperatures are not necessary to induce hypothermia. Hypothermia can occur in temperatures as high as 65°F, depending on the *wind chill factor*. Wind increases the body's heat loss by dispersing layers of warm air trapped between layers of clothing and skin. This heat loss increases as the wind speed increases.

General hypothermia is more life threatening than frostbite because it affects the entire body system. Lower body temperatures will very likely result in:

- reduced mental alertness
- reduction in rational decision making
- loss of consciousness with the threat of fatal consequences

The single most important aspect of life-threatening hypothermia is a drop in the deep core body temperature. Once the core body temperature drops to 95°F, thermal control is lost, and the body

is no longer in thermal balance. If the core body temperature drops below 95°F, a coma may occur. Death can occur *within two hours* of the first signs and symptoms.

The general symptoms of hypothermia are usually exhibited in five stages:

- Shivering
- Apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body
- Unconsciousness, glassy stare, slow pulse and respiratory rate
- Freezing of the extremities
- Death

Site workers should be protected from exposure to cold so that the deep core body temperature does not fall below 98.6°F. To prevent this from occurring, the following controls will be implemented:

- Site workers should wear warm clothing such as gloves and heavy socks when the air temperature is below 45°F. Protective clothing such as Tyvek or other disposable overalls may be used to shield employees from the wind.
- When the air temperature is below 32°F, *clothing* for warmth should include:
 - Insulated suits such as whole-body thermal underwear
 - Wool socks or polypropylene socks to keep moisture off the feet
 - Insulated gloves
 - Insulated boots
 - Insulated head cover such as hard hat, winter liner, or knit cap
 - Insulated jacket, with wind- and water-resistant outer layer
- When the air temperature is below 32°F, the following ***work practices*** must be implemented:
 - Site workers shall dress in layers, with thinner, lighter clothing worn next to the body.
 - If a site worker's underclothing becomes wet from sweat (and the worker is uncomfortable), the worker may finish the task at hand prior to changing into dry clothing. If the underclothing becomes wet in any other way, the worker must change into dry clothing immediately.
 - The intake of caffeinated beverages should be limited due to their circulatory and diuretic effects.
 - Site workers will be provided with a warm (65°F or above) break area.
 - The buddy system will be practiced at all times on site. Any site worker observed with severe shivering will be directed to go immediately to the heated break area.

5.3.2 Heat Stress

Physical hazards may involve heat-related symptoms such as heat stress, heat cramps, heat exhaustion, or heat stroke.

Heat stress is the aggregate of environmental and physical work factors that make up the total heat load imposed on the body. The environmental factors of heat stress include air temperature, humidity, radiant heat exchange, and wind/water vapor pressure (related to humidity). Physical work contributes to the total heat stress by producing metabolic heat in the body proportional to the intensity of the work. Heavy physical labor can greatly increase the likelihood of heat fatigue, heat exhaustion, and *heat stroke*, the latter being a life threatening condition. Heat stress monitoring and observation of personnel will commence when the ambient temperature is 80°F or above (70°F if chemical protective clothing is worn).

All employees will be informed of the possibility and symptoms of heat stress. If an employee experiences extreme fatigue, cramps, dizziness, headache, nausea, profuse sweating, or pale, clammy skin, the employee and the SSHO/Site Supervisor will take control measures. If the symptoms do not subside after a reasonable rest period, the SSHO/Site Supervisor will seek medical assistance.

To prevent heat stress, the following control measures will be implemented:

- Site workers will be encouraged to drink plenty of water throughout the day.
- On-site drinking water will be kept cool to encourage personnel to drink frequently.
- A work regimen that will provide adequate rest periods for cooling down will be established, as required.
- All personnel will be advised of the dangers and symptoms of heat stroke, heat exhaustion, and heat cramps.
- Employees will be instructed to observe and monitor themselves and coworkers for signs of heat stress and to take additional breaks as necessary.
- All breaks will take place in cool, shaded rest areas.

Heat Cramps are caused by heavy sweating and inadequate electrolyte replacement. Symptoms include muscle spasms and pain in the hands, feet, or abdomen.

Heat Exhaustion is caused by increased stress on various body organs. Signs and symptoms include:

- Pale, cool, moist skin
- Heavy sweating
- Dizziness, nausea
- Fainting

Heat stroke is the most serious form of heat stress and should always be treated as a medical emergency. The body's temperature regulation system fails, and the body temperature rapidly rises to critical levels. Immediate action must be taken to cool the body before serious injury or death occurs. Symptoms of heat stroke include:



- Red, hot, usually dry skin
- *Lack of or reduced perspiration*
- Nausea
- Dizziness and confusion
- Strong, rapid pulse
- Coma

5.4 Emergency Alerting and Response Procedures

The following information will be used for on-site emergencies that require immediate action to prevent additional problems or harm to responders, the public, property, or the environment.

The on-site emergency phone number is (847) 688-3333 or 911. A mobile telephone will be located inside the TolTest support truck. In the event of any injuries or accidents, the TolTest CHSM, Mr. Rich Barcum, CSP, CHMM, CIH, will be notified within 4 hours of the occurrence. Mr. Barcum can be reached at (419) 241-7175.

Jeff Tinney, Project Manager, can be reached at the TolTest Waukegan office at (847) 689-0697 or by cell phone at (847) 812-8200. The cell phone number of the SSHO, Mike Hubans, is (847) 812-3148.

Table 3.0 Emergency Telephone Numbers

Naval Training Center Environmental Office	(847) 688-5999 x157
Navy Hazardous Substance Response Team	(847) 688-3333
Navy Trouble Desk	(847) 688-4820
Great Lakes Police Department, Emergency	(847) 688-3333 or 911
Great Lakes Fire Department, Emergency	(847) 688-3333 or 911
Ambulance Service (Building 200H)	(847) 688-3333 or 911
National Response Center, Coast Guard	(800) 424-8802
CHEMTREC Emergency Response	(800) 424-9300
Environmental Hotline	(847) 688-4197
Provena St. Therese Hospital	(847) 360-2467
Naval Hospital – 2705 Sheridan Road	(847) 688-4560
US Veterans’ Medical Center – 3001 Green Bay Road	(847) 688-1900
TolTest Office, Waukegan IL	(847) 689-0697
TolTest Corporate Office, Toledo, OH	(419) 241-7175

Directions to the nearest hospital are provided in **Appendix J**.

5.5 Spill and Discharge Control

This section provides contingency measures for potential spills and discharges from the handling and transportation of any hazardous substances imported to the site by TolTest or their subcontractors. The SSHO will conduct spill prevention briefings daily during safety meetings for all personnel who are involved with handling, receipt, storage, and/or cleanup of spilled material.

If a spill or discharge occurs, the following actions, at a minimum, will be taken:

- Take immediate measures to control and contain the spill within the site boundaries. This will include, at a minimum, the following:
 - Keep unnecessary people away, isolate hazardous areas, and deny entry.
 - Do not allow anyone to touch spilled material.
 - Stay upwind and keep out of low areas where fluids/ vapors may accumulate.
 - Keep combustibles away from the spilled material
 - Use water spray or foam to reduce vapor or dust generation, as needed.
 - Take samples for analysis to determine that clean up is adequate.
 - Take other corrective measures as needed.
- Notify the Navy representative immediately after the situation is under control.
- If the spill or discharge exceeds the reportable quantity for the substance involved, notify the federal and state regulatory authorities as appropriate.
- Submit a written report to the Department of the Navy within 7 days of a verbal report.

5.5.1 Storage

All tanks, containers, and pumping equipment used for the storage or handling of flammable and combustible liquids will be labeled or placarded in accordance with the US DOT. Oils or fuels temporarily stored will be kept in tightly sealed containers (with the exception of proper venting), in fire-resistant areas and at safe distances from ignition sources. All transfer vessels will be emptied at the end of the workday.

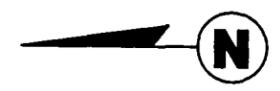
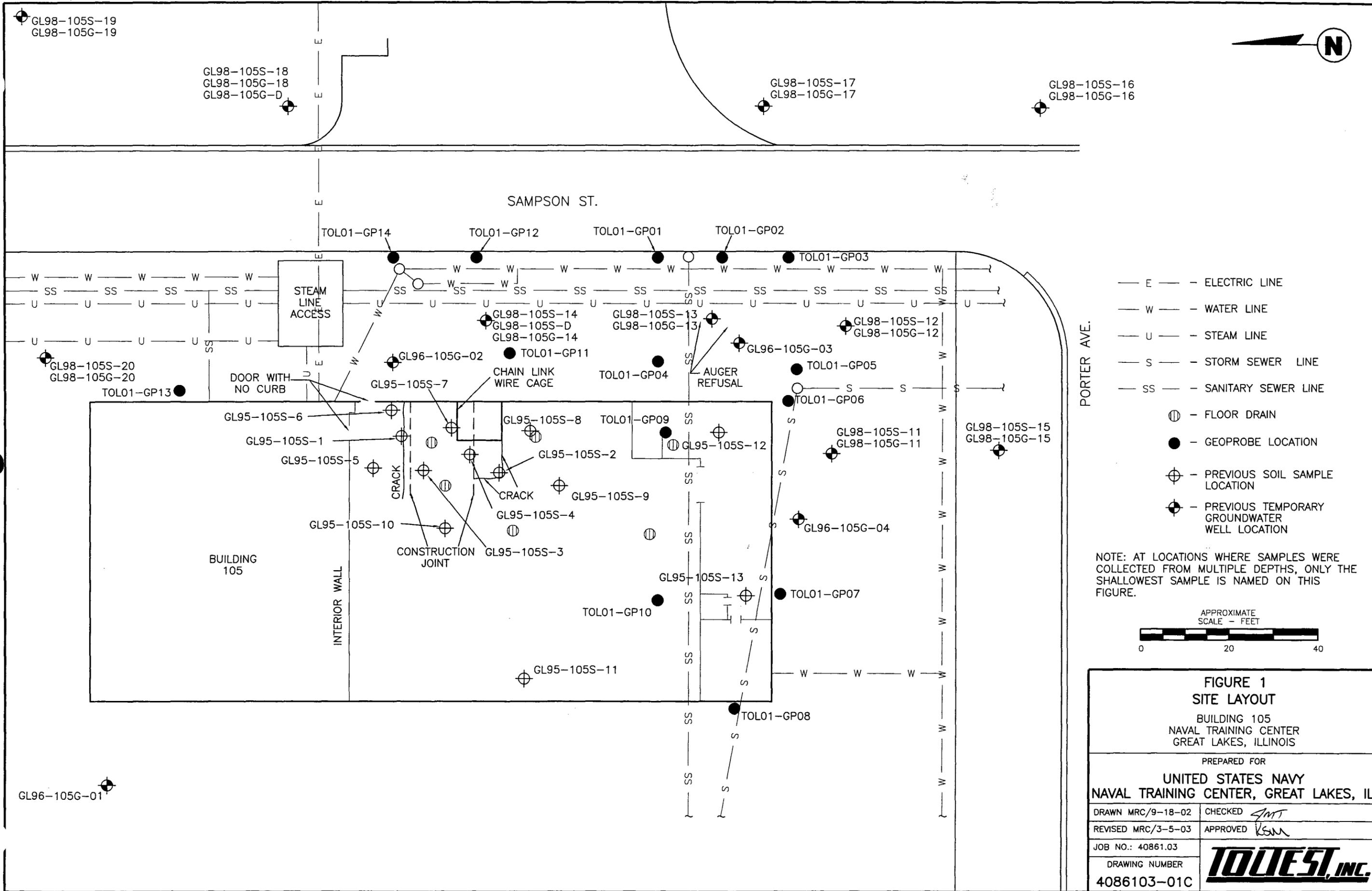
5.5.2 Pumping Flammable and Combustible Liquids

Flammable liquid pumping systems will be electrically bonded and grounded. Flammable liquid will be drawn from, or transferred into vessels, containers, or tanks through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container, or portable tanks, by gravity or pump, through an approved self-closing valve. Transferring flammable liquid by means of air pressure on the container or portable tank is prohibited.

5.5.3 Equipment Inspection

Equipment inspection is part of the daily routine during field activities. The Site Supervisor is to ensure that no oil/fuel spill has accumulated in any area by conducting daily visual inspection of the equipment. Equipment and safety issues will be documented in the daily report.

APPENDIX A
SITE MAPS, DEMOLITION SEQUENCE, AND TIME LINE



- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE
- ⊕ — FLOOR DRAIN
- — GEOPROBE LOCATION
- ⊕ — PREVIOUS SOIL SAMPLE LOCATION
- ⊕ — PREVIOUS TEMPORARY GROUNDWATER WELL LOCATION

NOTE: AT LOCATIONS WHERE SAMPLES WERE COLLECTED FROM MULTIPLE DEPTHS, ONLY THE SHALLOWEST SAMPLE IS NAMED ON THIS FIGURE.

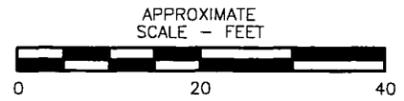
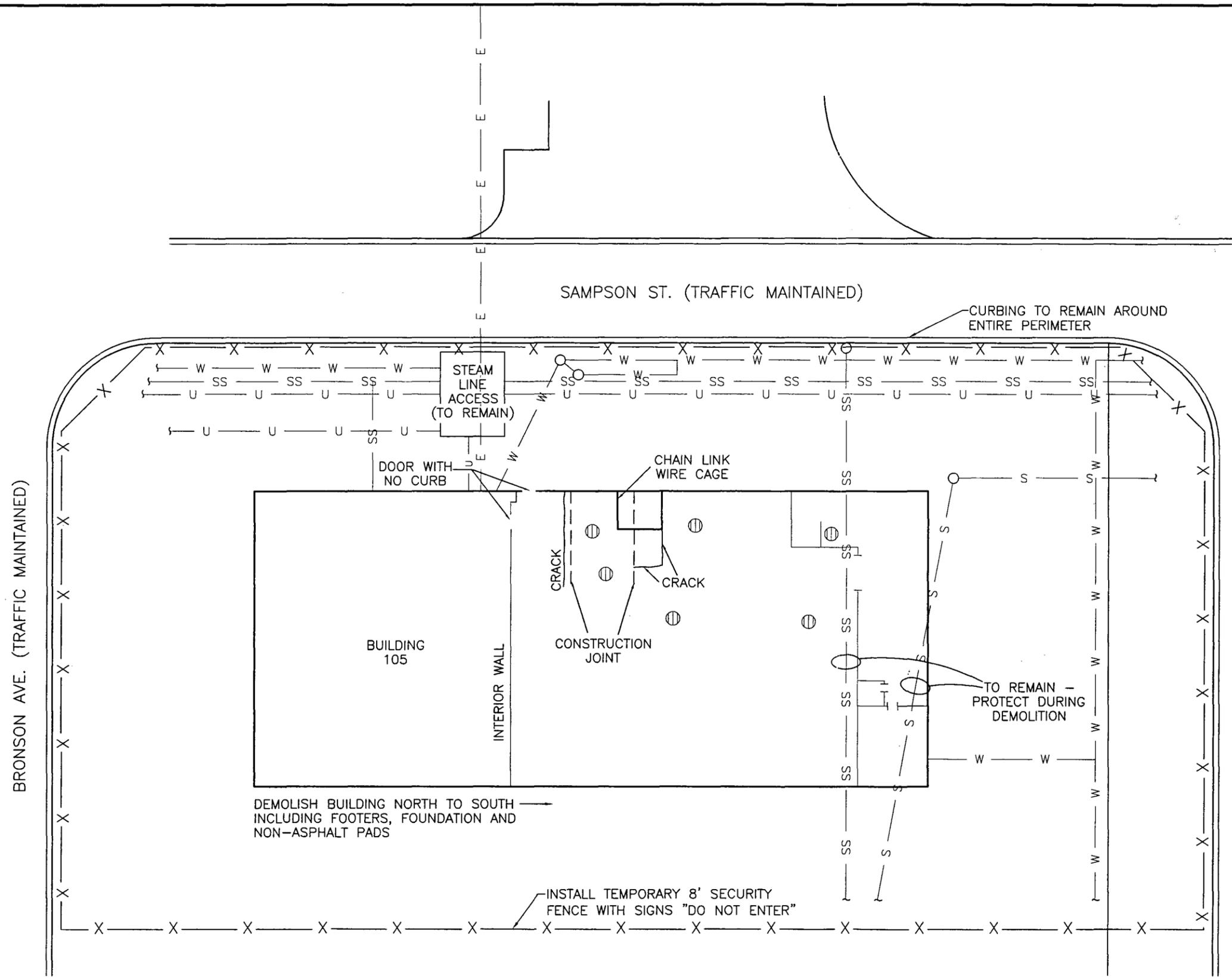


FIGURE 1	
SITE LAYOUT	
BUILDING 105 NAVAL TRAINING CENTER GREAT LAKES, ILLINOIS	
PREPARED FOR	
UNITED STATES NAVY	
NAVAL TRAINING CENTER, GREAT LAKES, IL	
DRAWN MRC/9-18-02	CHECKED <i>AMT</i>
REVISED MRC/3-5-03	APPROVED <i>BSM</i>
JOB NO.: 40861.03	
DRAWING NUMBER	
4086103-01C	
TOUEST, INC.	



- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE
- ⊕ — FLOOR DRAIN

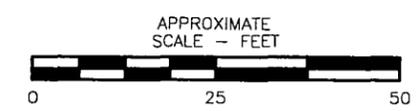


FIGURE 2 DEMOLITION LIMITS	
BUILDING 105 NAVAL TRAINING CENTER GREAT LAKES, ILLINOIS	
PREPARED FOR UNITED STATES NAVY NAVAL TRAINING CENTER, GREAT LAKES, IL	
DRAWN MRC/9-18-02	CHECKED <i>JMT</i>
REVISED MRC/3-5-03	APPROVED <i>JSM</i>
JOB NO.: 40861.03	TOLLEST, INC.
DRAWING NUMBER 4086103-02C	

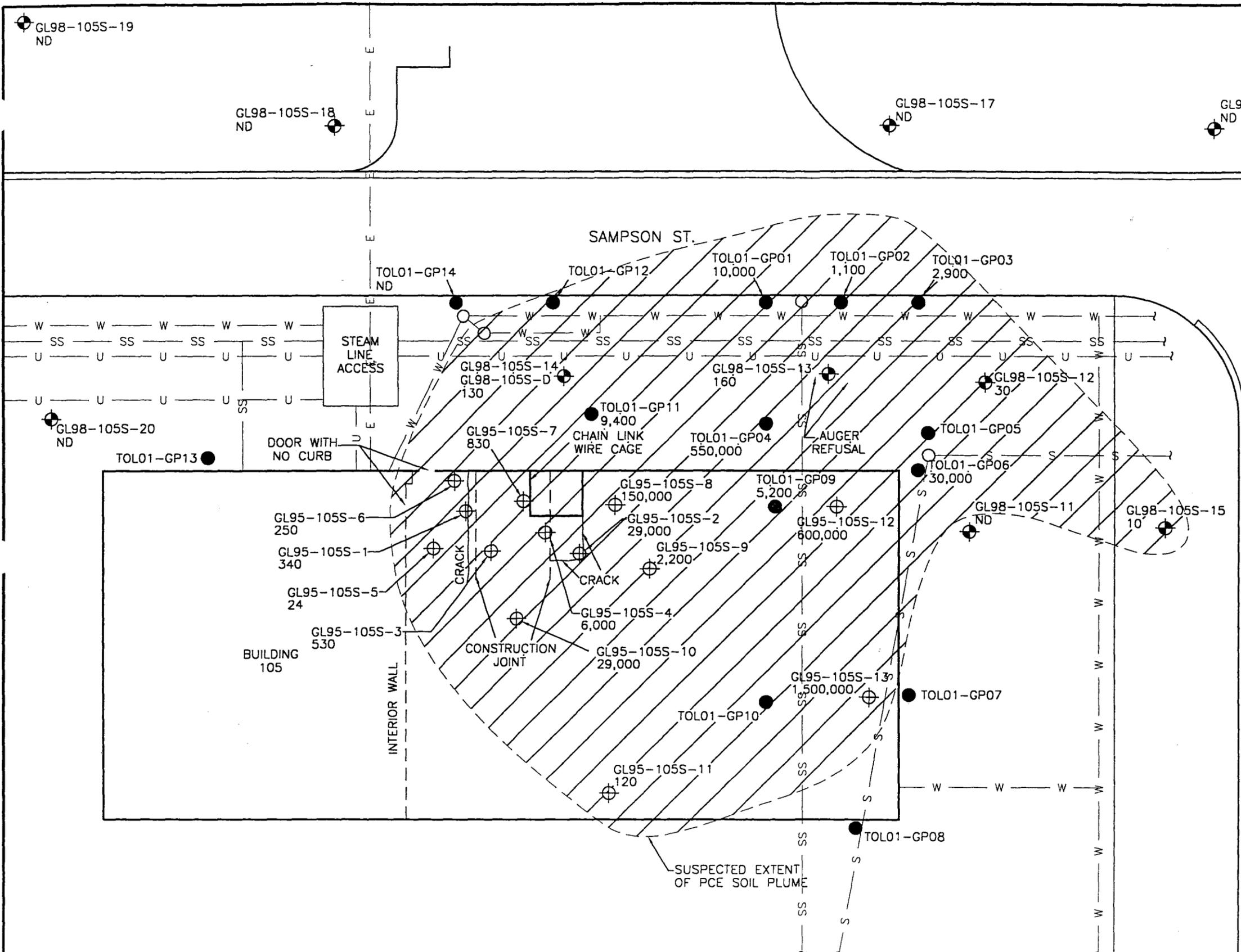
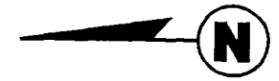
- NOTES:**
- 1.) SEE FIGURES 3A-3F FOR PCE AND DCE DISTRIBUTION. ADJUST WORK PRACTICES AND PPE AS APPROPRIATE.
 - 2.) UTILITY DEMOLITIONS NOTED ON FIGURES 4A-4D. MANHOLES TO REMAIN.
 - 3.) DISTURBANCE OF AREA OUTSIDE BUILDING FOOTPRINT AND UTILITY DEMOLITIONS TO BE MINIMIZED TO THE EXTENT POSSIBLE.

GL98-105S-19
ND

GL98-105S-18
ND

GL98-105S-17
ND

GL98-105S-16
ND



- ND - NOT DETECTED
- 2,900 - PCE CONCENTRATION IN $\mu\text{g}/\text{kg}$
- E - ELECTRIC LINE
- W - WATER LINE
- U - STEAM LINE
- S - STORM SEWER LINE
- SS - SANITARY SEWER LINE
- - GEOPROBE LOCATION
- ⊕ - PREVIOUS SOIL SAMPLE LOCATION
- ⊙ - PREVIOUS SOIL AND TEMPORARY GROUNDWATER WELL LOCATION

NOTE: AT LOCATIONS WHERE SAMPLES WERE COLLECTED FROM MULTIPLE DEPTHS, ONLY THE HIGHEST CONCENTRATION IS NAMED ON THIS FIGURE.

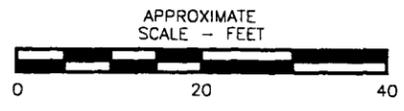


FIGURE 3A
PCE SOIL ANALYSIS MAP

BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

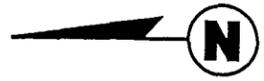
DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KSM 12/30/02
JOB NO.: 40861.03	
DRAWING NUMBER	
4086103-03dC	TOUEST, INC.

GL98-105S-19
ND

GL98-105S-18
ND

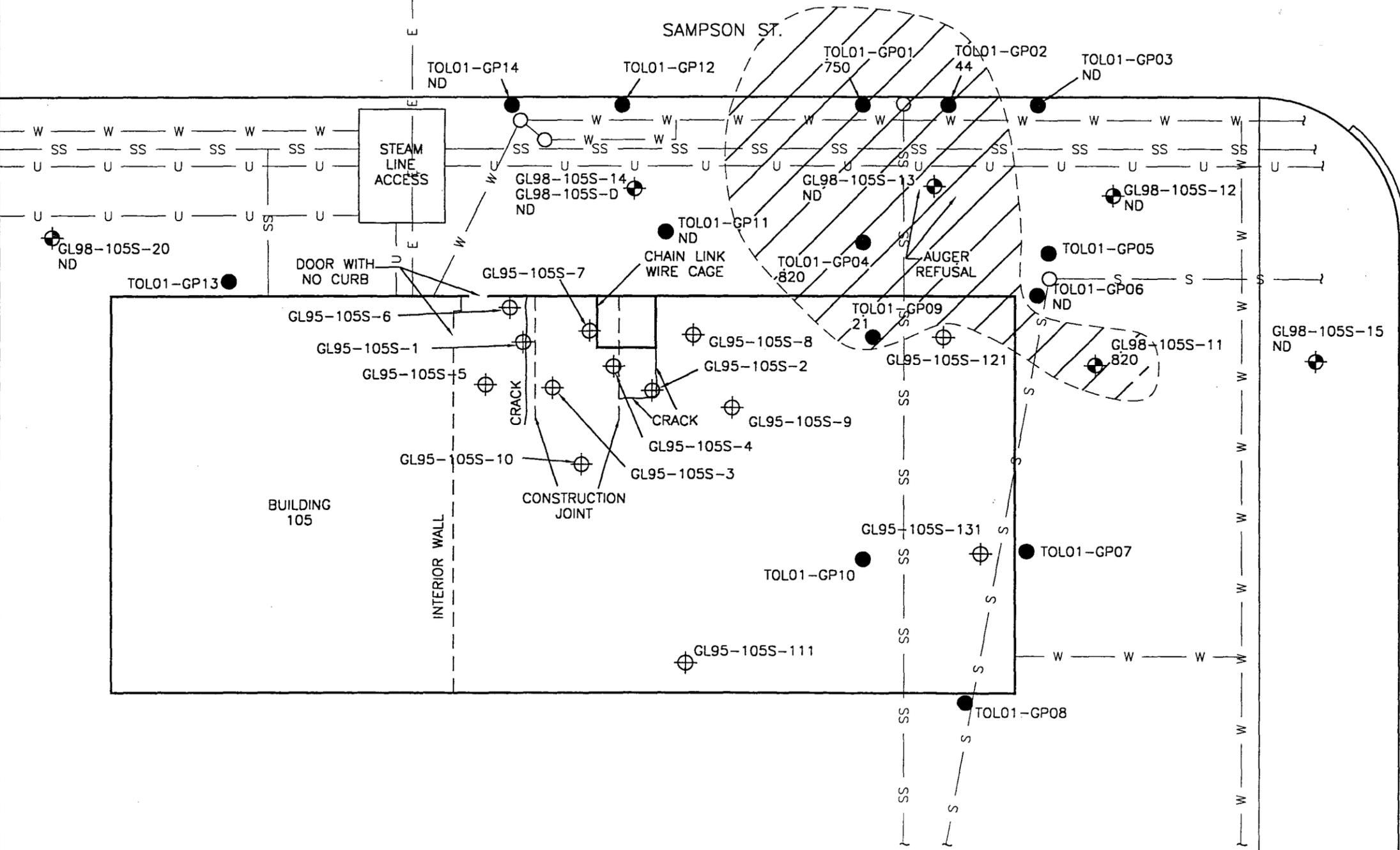
GL98-105S-17
ND

GL98-105S-16
ND



SAMPSON ST.

PORTER AVE.



- ND - NOT DETECTED
- 820 - DCE CONCENTRATION IN $\mu\text{g}/\text{kg}$
- E — - ELECTRIC LINE
- W — - WATER LINE
- U — - STEAM LINE
- S — - STORM SEWER LINE
- SS — - SANITARY SEWER LINE
- - GEOPROBE LOCATION
- ⊕ - PREVIOUS SOIL SAMPLE LOCATION
- ⊕ - PREVIOUS SOIL AND TEMPORARY GROUNDWATER WELL LOCATION

NOTE: AT LOCATIONS WHERE SAMPLES WERE COLLECTED FROM MULTIPLE DEPTHS, ONLY THE HIGHEST CONCENTRATION IS NAMED ON THIS FIGURE.

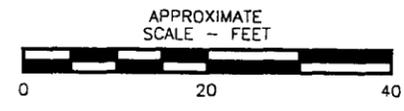


FIGURE 3B
DCE SOIL ANALYSIS MAP

BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KSM 12/30/02
JOB NO.: 40861.03	
DRAWING NUMBER 4086103-03bc	TOUEST, INC.

GL98-105G-19
ND

GL98-105G-18
ND

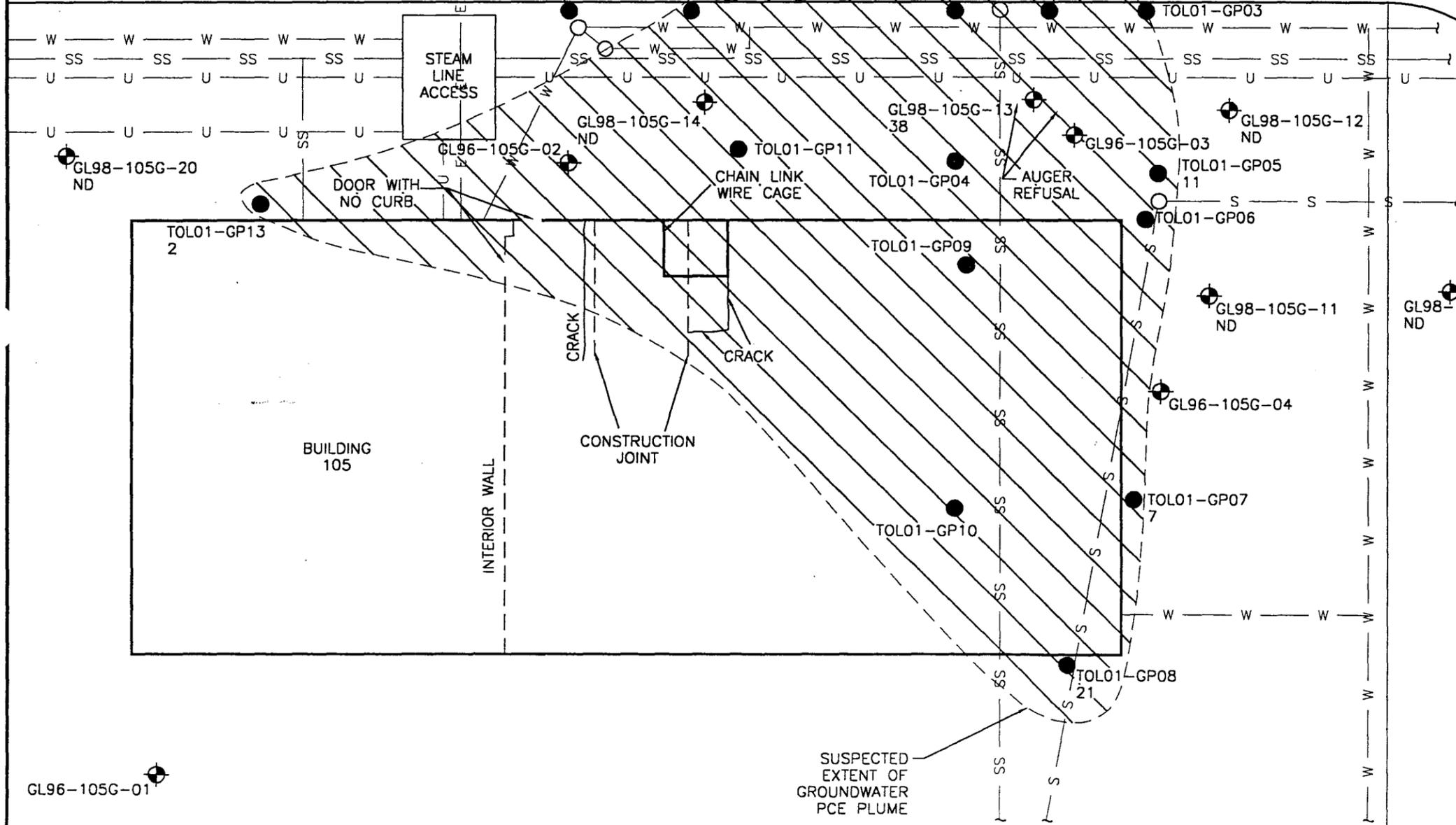
GL98-105G-17
ND

GL98-105G-16
ND



SAMPSON ST.

PORTER AVE.



- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE
- — GEOPROBE LOCATION
- ⊕ — PREVIOUS TEMPORARY GROUNDWATER WELL LOCATION
- ND — NOT DETECTED
- 150 — PCE CONCENTRATION IN $\mu\text{g/L}$

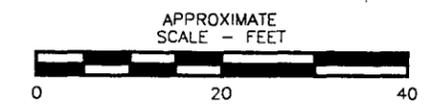


FIGURE 3C
PCE GROUNDWATER ANALYSIS MAP

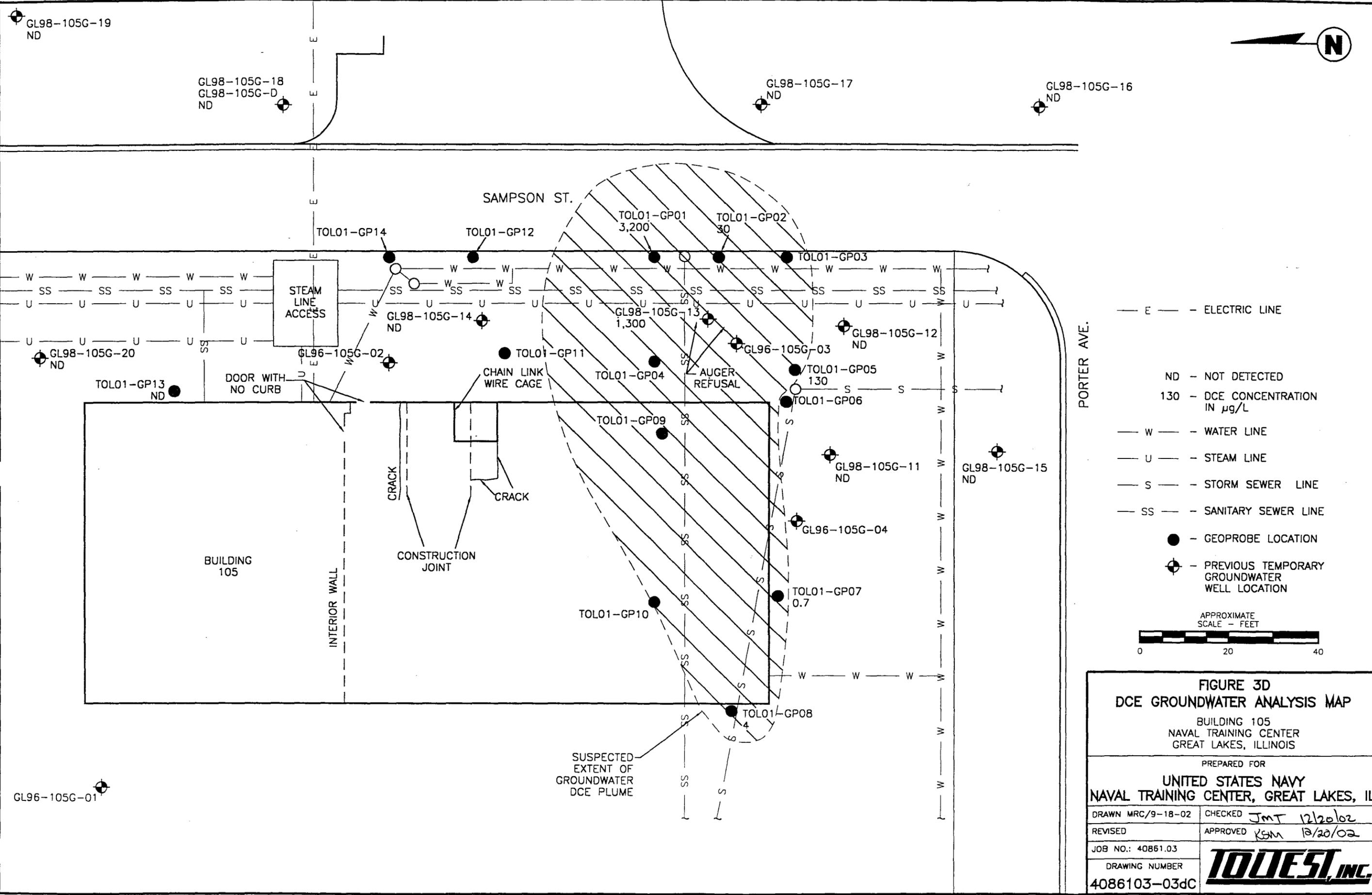
BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KGM 12/20/02
JOB NO.: 40861.03	
DRAWING NUMBER 4086103-03cC	TOUEST, INC.

GL96-105G-01

SUSPECTED
EXTENT OF
GROUNDWATER
PCE PLUME



- E — — ELECTRIC LINE
 - W — — WATER LINE
 - U — — STEAM LINE
 - S — — STORM SEWER LINE
 - SS — — SANITARY SEWER LINE
 - — GEOPROBE LOCATION
 - ⊕ — PREVIOUS TEMPORARY GROUNDWATER WELL LOCATION
 - ND — NOT DETECTED
 - 130 — DCE CONCENTRATION IN $\mu\text{g/L}$
- APPROXIMATE SCALE — FEET
- 0 20 40

FIGURE 3D
DCE GROUNDWATER ANALYSIS MAP

BUILDING 105
 NAVAL TRAINING CENTER
 GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
 NAVAL TRAINING CENTER, GREAT LAKES, IL

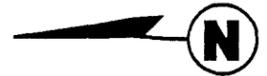
DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KSM 12/20/02
JOB NO.: 40861.03	
DRAWING NUMBER	
4086103-03dC	TOWERS, INC.

GL98-105S-19
GL98-105G-19

GL98-105S-18
GL98-105G-18
GL98-105G-18

GL98-105S-17
GL98-105G-17

GL98-105S-16
GL98-105G-16



SAMPSON ST.

TOL01-GP14

TOL01-GP01

TOL01-GP02

TOL01-GP03

STEAM
LINE
ACCESS

830

CHAIN LINK
WIRE CAGE

AUGER
REFUSAL

DOOR WITH
NO CURB

GL98-105S-20
GL98-105G-20

TOL01-GP13

GL96-105G-02

GL95-105S-7

TOL01-GP11

TOL01-GP04

GL96-105G-03

TOL01-GP05

GL98-105S-12
GL98-105G-12

GL98-105S-11
GL98-105G-11

GL98-105S-15
GL98-105G-15

GL95-105S-6

GL95-105S-1

GL95-105S-5

GL95-105S-8

GL95-105S-2

TOL01-GP09

GL95-105S-12

CRACK

CRACK

GL95-105S-9

GL95-105S-4

GL95-105S-10

GL95-105S-3

GL96-105G-04

BUILDING
105

CONSTRUCTION
JOINT

GL95-105S-13

TOL01-GP07

INTERIOR WALL

TOL01-GP10

GL95-105S-11

TOL01-GP08

SUSPECTED
EXTENT OF
PCE SOIL PLUME

SUSPECTED
EXTENT OF
PCE GROUNDWATER PLUME

GL96-105G-01

PORTER AVE.

- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE
- — GEOPROBE LOCATION
- ⊕ — PREVIOUS SOIL SAMPLE LOCATION
- ⊕ — PREVIOUS SOIL AND TEMPORARY GROUNDWATER WELL LOCATION

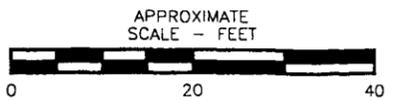


FIGURE 3E
PCE SOIL AND GROUNDWATER PLUME MAP
BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

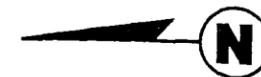
DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KGM 12/30/02
JOB NO.: 40861.03	
DRAWING NUMBER 4086103-03eC	TOLQUEST, INC.

GL98-105S-19
GL98-105G-19

GL98-105S-18
GL98-105G-18
GL98-105G-D

GL98-105S-17
GL98-105G-17

GL98-105S-16
GL98-105G-16



SAMPSON ST.

TOL01-GP14

TOL01-GP12

TOL01-GP01

TOL01-GP02

TOL01-GP03

STEAM
LINE
ACCESS

GL98-105S-14
GL98-105S-D
GL98-105G-14

GL98-105S-13
GL98-105G-13

GL98-105S-12
GL98-105G-12

GL98-105S-20
GL98-105G-20

GL96-105G-02

TOL01-GP11

GL96-105G-03

TOL01-GP05

DOOR WITH
NO CURB

GL95-105S-7

CHAIN LINK
WIRE CAGE

TOL01-GP04

AUGER
REFUSAL

TOL01-GP06

SUSPECTED
EXTENT OF
DCE SOIL PLUME

TOL01-GP13

GL95-105S-6

TOL01-GP09

GL95-105S-12

GL98-105S-11
GL98-105G-11
820

GL98-105S-15
GL98-105G-15

GL95-105S-1

GL95-105S-8

GL95-105S-2

GL95-105S-5

GL95-105S-4

GL95-105S-9

GL96-105G-04

BUILDING
105

GL95-105S-10

GL95-105S-3

GL95-105S-13

TOL01-GP07

INTERIOR WALL

CONSTRUCTION
JOINT

TOL01-GP10

GL95-105S-11

TOL01-GP08

SUSPECTED
EXTENT OF
DCE GROUNDWATER PLUME

PORTER AVE.

- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- SS — — SANITARY SEWER LINE

- — GEOPROBE LOCATION
- ⊕ — PREVIOUS SOIL SAMPLE LOCATION
- ⊕ — PREVIOUS SOIL AND TEMPORARY GROUNDWATER WELL LOCATION

APPROXIMATE
SCALE - FEET

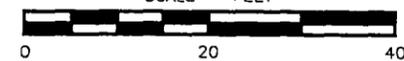


FIGURE 3F DCE SOIL AND GROUNDWATER PLUME MAP

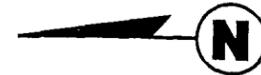
BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KGM 12/20/02

JOB NO.: 40861.03	TOWEST, INC.
DRAWING NUMBER 4086103-03fc	

GL96-105G-01



SAMPSON ST.

STEAM LINE ACCESS (TO REMAIN)

CAP

REMOVE

CHAIN LINK WIRE CAGE

CRACK

CRACK

CONSTRUCTION JOINT

BUILDING 105

INTERIOR WALL

PORTER AVE.

- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE

APPROXIMATE SCALE - FEET

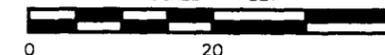


FIGURE 4A STEAM LINE DEMOLITION

BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR

UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02 CHECKED JMT 12/20/02

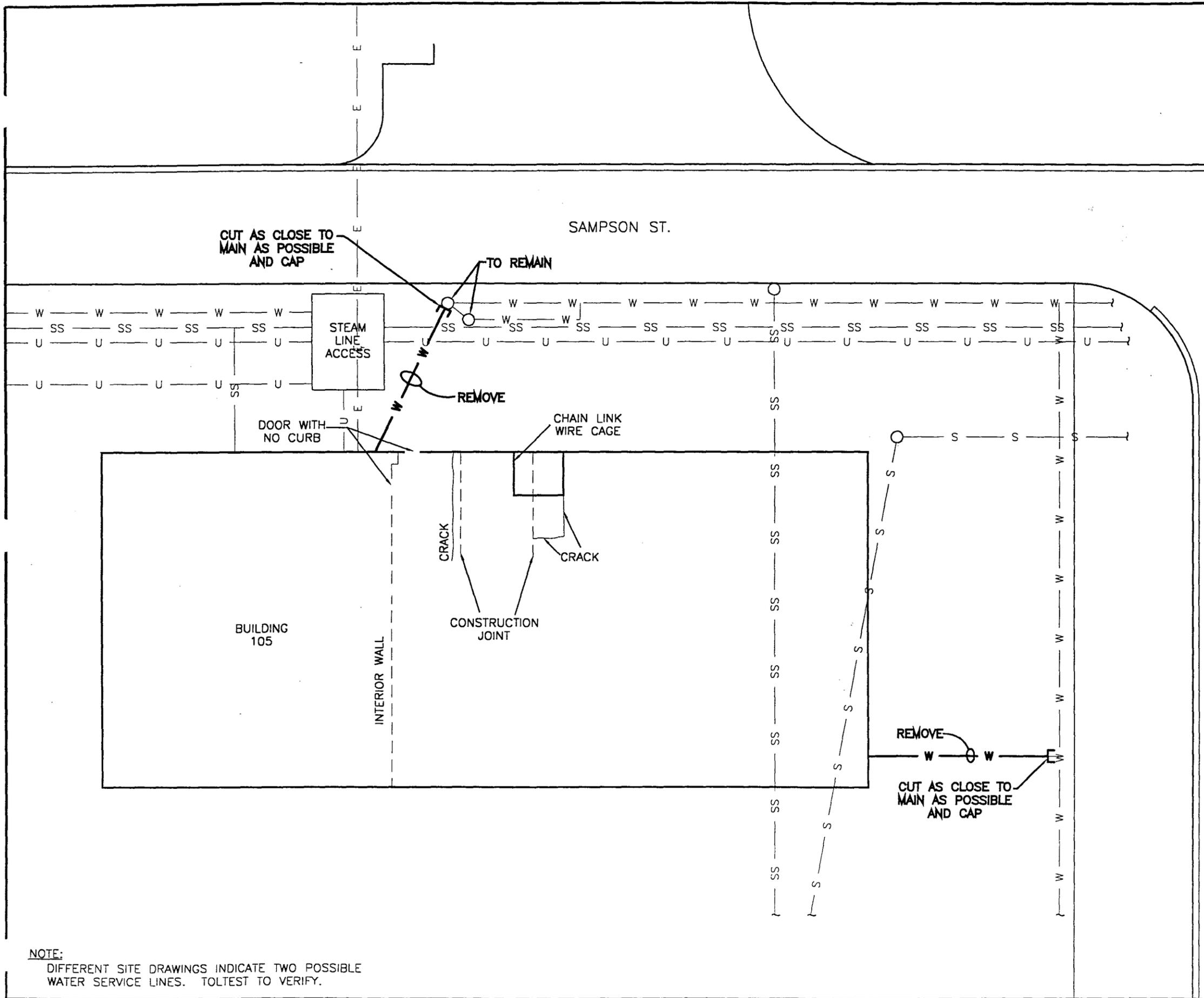
REVISED APPROVED KSM 12/20/02

JOB NO.: 40861.03

DRAWING NUMBER

4086103-04aC

TOQUEST, INC.



- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE

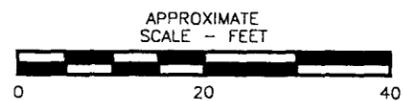


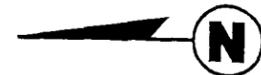
FIGURE 4B
WATER LINE DEMOLITION

BUILDING 105
 NAVAL TRAINING CENTER
 GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
 NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED RSM 12/20/02
JOB NO.: 40861.03	
DRAWING NUMBER	TOLTEST, INC.
4086103-04bc	

NOTE:
 DIFFERENT SITE DRAWINGS INDICATE TWO POSSIBLE WATER SERVICE LINES. TOLTEST TO VERIFY.



SAMPSON ST.

INSTALL CONCRETE
PLUG AND CAP.
MANHOLE TO REMAIN.

STEAM
LINE
ACCESS

REMOVE

DOOR WITH
NO CURB

CHAIN LINK
WIRE CAGE

AUGER
REFUSAL

CRACK

CRACK

CONSTRUCTION
JOINT

BUILDING
105

INTERIOR WALL

PORTER AVE.

- E — — ELECTRIC LINE
- W — — WATER LINE
- U — — STEAM LINE
- S — — STORM SEWER LINE
- SS — — SANITARY SEWER LINE

APPROXIMATE
SCALE - FEET



FIGURE 4D SANITARY SEWER DEMOLITION

BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02 CHECKED JMT 12/20/02

REVISED APPROVED KGM 10/30/02

JOB NO.: 40861.03

DRAWING NUMBER

4086103-04dC

TOUEST, INC.

GL98-105S-19
GL98-105G-19

GL98-105S-18
GL98-105G-18
GL98-105G-D

GL98-105S-17
GL98-105G-17

GL98-105S-16
GL98-105G-16



SAMPSON ST.

TOL01-GP14

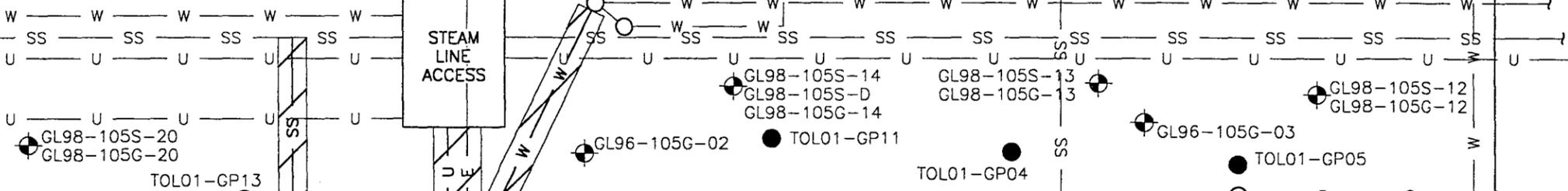
TOL01-GP12

TOL01-GP01

TOL01-GP02

TOL01-GP03

STEAM
LINE
ACCESS



GL98-105S-20
GL98-105G-20

TOL01-GP13

GL96-105G-02

TOL01-GP11

TOL01-GP04

GL98-105S-14
GL98-105G-14

GL98-105S-13
GL98-105G-13

GL96-105G-03

GL98-105S-12
GL98-105G-12

TOL01-GP05

TOL01-GP06

GL98-105S-11
GL98-105G-11

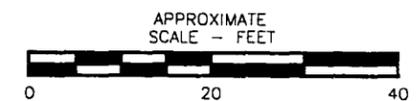
GL98-105S-15
GL98-105G-15

GL96-105G-04

PORTER AVE.

- APPROXIMATE EXTENT OF NEW ASPHALT
- ELECTRIC LINE
- WATER LINE
- STEAM LINE
- STORM SEWER LINE
- SANITARY SEWER LINE
- GEOPROBE LOCATION
- PREVIOUS SOIL SAMPLE LOCATION
- PREVIOUS TEMPORARY GROUNDWATER WELL LOCATION

NOTE: AT LOCATIONS WHERE SAMPLES WERE COLLECTED FROM MULTIPLE DEPTHS, ONLY THE SHALLOWEST SAMPLE IS NAMED ON THIS FIGURE.



GL96-105G-01

SITE RESTORATION NOTES:

FILL EXCAVATIONS AND COMPACT WITH MATERIAL AS INDICATED IN WORK PLAN AND SPECIFICATIONS. TOP 13" SHALL BE 3" OF COMPACTED SUBBASE COURSE AGGREGATE, 6" OF BASE COURSE AGGREGATE AND 4" OF ASPHALT INSTALLED PER SPECIFICATIONS. MANHOLES TO REMAIN. REMOVE TEMPORARY SECURITY FENCE.

**FIGURE 5
SITE RESTORATION**

BUILDING 105
NAVAL TRAINING CENTER
GREAT LAKES, ILLINOIS

PREPARED FOR
UNITED STATES NAVY
NAVAL TRAINING CENTER, GREAT LAKES, IL

DRAWN MRC/9-18-02	CHECKED JMT 12/20/02
REVISED	APPROVED KGM 12/20/02
JOB NO.: 40861.03	
DRAWING NUMBER 4086103-05C	

ID	Task Name	Duration	Start	Feb 2, '03							Feb 9, '03							Feb 16, '03							Feb 23, '03							Mar 2, '03							Mar 9, '03							Mar 16, '03						
				S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	Subbr	65 days	Fri 12/20/02	[Redacted]																																																
2	aft Work Plan	1 day	Fri 12/20/02	[Redacted]																																																
3	Govt. review	40 days	Fri 12/20/02	[Redacted]																																																
4	Submit Final Work Plan	0 days	Fri 3/7/03	[Redacted]																																																
5	Submit 10-Day Notice	10 days	Fri 3/7/03	[Redacted]																																																
6	Utility Locate	1 day	Wed 2/19/03	[Redacted]																																																
7	Install Safety Fence	1 day	Fri 2/21/03	[Redacted]																																																
8	Interior Demolition	11 days	Mon 3/3/03	[Redacted]																																																
9	Remove Light Bulbs	2 days	Mon 3/3/03	[Redacted]																																																
10	Remove Ballast	2 days	Wed 3/5/03	[Redacted]																																																
11	Transport Bulbs and Ballist	1 day	Mon 3/17/03	[Redacted]																																																
12	Transport Demolition Debris	1 day	Mon 3/17/03	[Redacted]																																																
13	Building Demolition	18 days	Mon 3/24/03	[Redacted]																																																
14	Demolish Building	15 days	Mon 3/24/03	[Redacted]																																																
15	Segregate Building Debris	15 days	Wed 3/26/03	[Redacted]																																																
16	Load and Haul Debris	15 days	Thu 3/27/03	[Redacted]																																																
17	Foundation Demolition	18 days	Mon 4/21/03	[Redacted]																																																
18	Demolish Non-Impacted FI	2 days	Mon 4/21/03	[Redacted]																																																
19	Segregated Non-Impacted	1 day	Wed 4/23/03	[Redacted]																																																
20	Excavate and Stage Non-I	1 day	Thu 4/24/03	[Redacted]																																																
21	Load and Haul Non-Impact	4 days	Tue 4/22/03	[Redacted]																																																
22	Demolish Impacted Concr	2 days	Mon 4/28/03	[Redacted]																																																
23	Excavate and Stage Impac	1 day	Wed 4/30/03	[Redacted]																																																
24	Remove Underground Utili	1 day	Wed 4/30/03	[Redacted]																																																
25	Waste Characterization Sa	5 days	Wed 4/30/03	[Redacted]																																																
26	Profile Impacted Debris	4 days	Tue 5/6/03	[Redacted]																																																
27	Load and Haul Impacted D	3 days	Mon 5/12/03	[Redacted]																																																
28	Site restoration	10 days	Thu 5/1/03	[Redacted]																																																
29	Backfill Utility Trenches	2 days	Thu 5/1/03	[Redacted]																																																
30	Install Liner	3 days	Mon 5/5/03	[Redacted]																																																
31	Backfill Footprint	3 days	Thu 5/8/03	[Redacted]																																																
32	Place Asphalt	2 days	Tue 5/13/03	[Redacted]																																																
33	DOCR	21 days	Mon 5/26/03	[Redacted]																																																
34	Submit Draft DOCR	1 day	Mon 5/26/03	[Redacted]																																																
35	Govt. Review	10 days	Mon 5/26/03	[Redacted]																																																
36	Submit Final DOCR	1 day	Mon 6/23/03	[Redacted]																																																

◆ 37

Project: 105 Schedule Date: Wed 3/19/03	Task		Milestone		Rolled Up Split		External Tasks	
	Split		Summary		Rolled Up Milestone		Project Summary	
	Progress		Rolled Up Task		Rolled Up Progress			

APPENDIX B
LEAD TRAINING DOCUMENTATION

State of Illinois A 136307

Department of Public Health

LICENSE, PERMIT, CERTIFICATION, REGISTRATION

EXPIRATION DATE	CATEGORY	I.D. NUMBER
03/31/2004	5317	L- 007771

Mike

P Graf

LEAD SUPERVISOR LICENSE



Occupational Training & Supply, Inc.

12601 S. Springfield • Alsip, IL 60803 • 708 / 385-1325

Michael P. Graf

381-74-9295

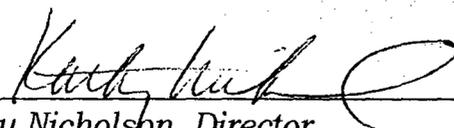
has successfully completed the 8 hour Lead Paint Abatement Supervisor Refresher course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health in accordance with the Illinois Lead Poisoning Prevention Code.

Lead Paint Abatement Supervisor Refresher

*Course Date: January 29, 2003
Expiration Date: January 29, 2006*

*Exam Date: January 29, 2003
Certificate: LSR030129303*

2003


Kathy Nicholson, Director

This is to certify that

Tim Boos

277-74-7261

Has Satisfactorily Completed Training in
Accordance with Applicable Rules and
Regulations

Lead Supervisor Refresher

Completed: January 29, 2003

Certificate

Expires: January 29, 2006

LSR030129302

2003

Occupational Training & Supply, Inc.

12601 S. Springfield • Alsip, IL 60803 • 708 / 385-1325

Occupational Training & Supply, Inc.

12601 S. Springfield • Alsip, IL 60803 • 708 / 385-1325

Tim Boos

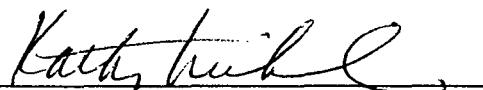
277-74-7261

has successfully completed the 8 hour Lead Paint Abatement Supervisor Refresher course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health in accordance with the Illinois Lead Poisoning Prevention Code.

Lead Paint Abatement Supervisor Refresher

Course Date: January 29, 2003
Expiration Date: January 29, 2006

Exam Date: January 29, 2003
Certificate: LSR030129302


Kathy Nicholson, Director

2003

State of Illinois A 137575
Department of Public Health
LICENSE, PERMIT, CERTIFICATION, REGISTRATION

EXPIRATION DATE	CATEGORY	I.D. NUMBER
03/31/2004	5317	L- 007775

Timothy A Boos

LEAD SUPERVISOR LICENSE



ISSUED UNDER THE AUTHORITY OF
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC HEALTH

INDICATED ON THE FACE OF THIS LICENSE
AND HAS BEEN REPRODUCED IN THE MANNER
OF THE LICENSEE'S RECORDS AND REGULATIONS
IF THE LICENSEE HAS COMPLIED WITH THE PROVISIONS
OF THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH ACT



TOLLEST, INC.

Certificate of Completion

This is to certify that

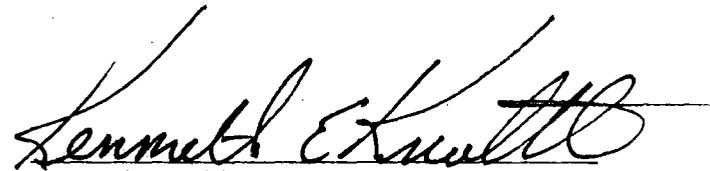
Floyd Cushing

Has successfully completed the following training:

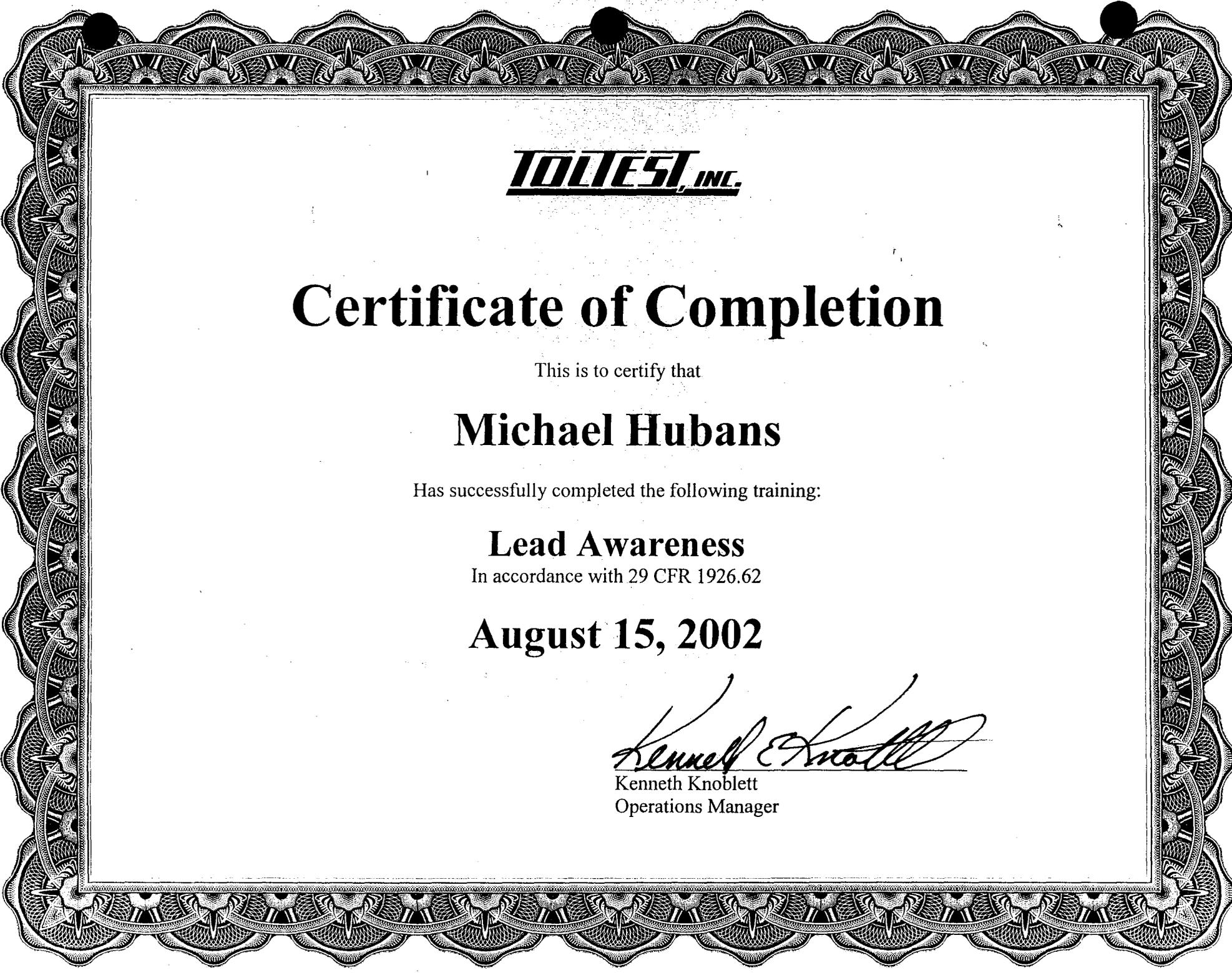
Lead Awareness

In accordance with 29 CFR 1926.62

August 15, 2002



Kenneth Knoblett
Operations Manager



TOLLEST, INC.

Certificate of Completion

This is to certify that

Michael Hubans

Has successfully completed the following training:

Lead Awareness

In accordance with 29 CFR 1926.62

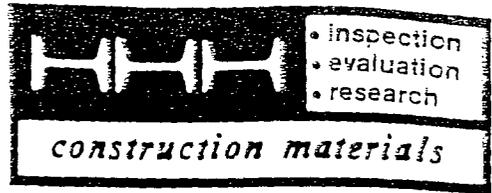
August 15, 2002



Kenneth Knoblett
Operations Manager



APPENDIX C
FILL MATERIAL, SUBGRADE BASE, AND ASPHALT



H. H. HOLMES TESTING LABORATORIES, INC.

May 19, 2001

• 170 Shepard Avenue • Wheeling, Illinois 60090 • 847-541-4040 • Fax: 847-537-9098

Report No. L-1

Lab No. 01-3493

File No. 1434.001

Toltest, Inc.
1915 N. 12TH Street
Toledo, OH 43624

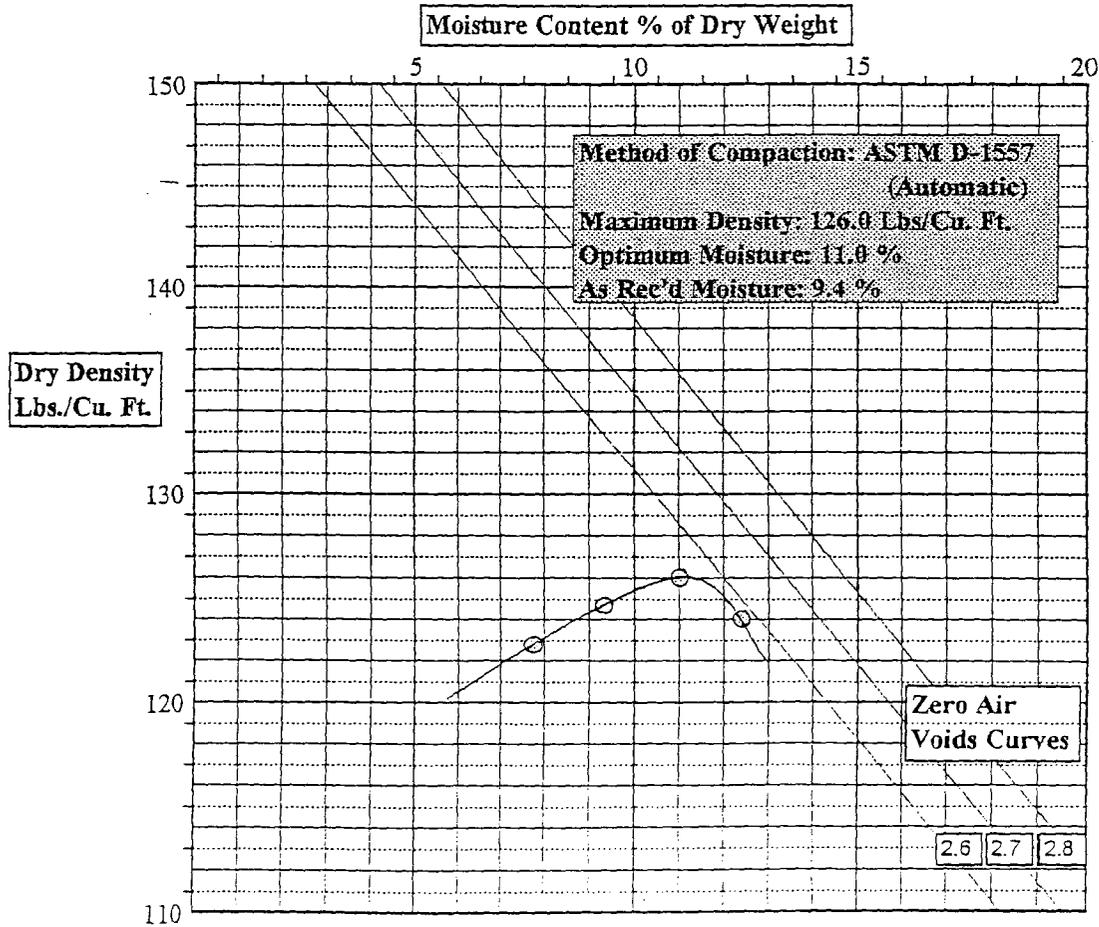
Re: Building 144 Demolition
G.L.N.T.C.
Great Lakes, IL

Report of Tests

Subject: Modified Proctor Test of Crushed Concrete

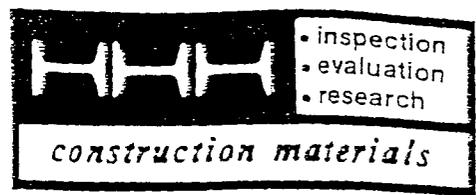
Source: Site

Date Sampled: 5/12/01



Respectfully Submitted,

Scott R. Nelson
President



H. H. HOLMES TESTING LABORATORIES, INC.

May 25, 2001

• 170 Shepard Avenue • Wheeling, Illinois 60090 • 847-541-4040 • Fax: 847-537-9098

Report No. L-2

Lab No. 01-3493

File No. 1434.001

Toltest, Inc.

1915 N. 12TH Street

Toledo, OH 43624

Re: Building 144 Demolition

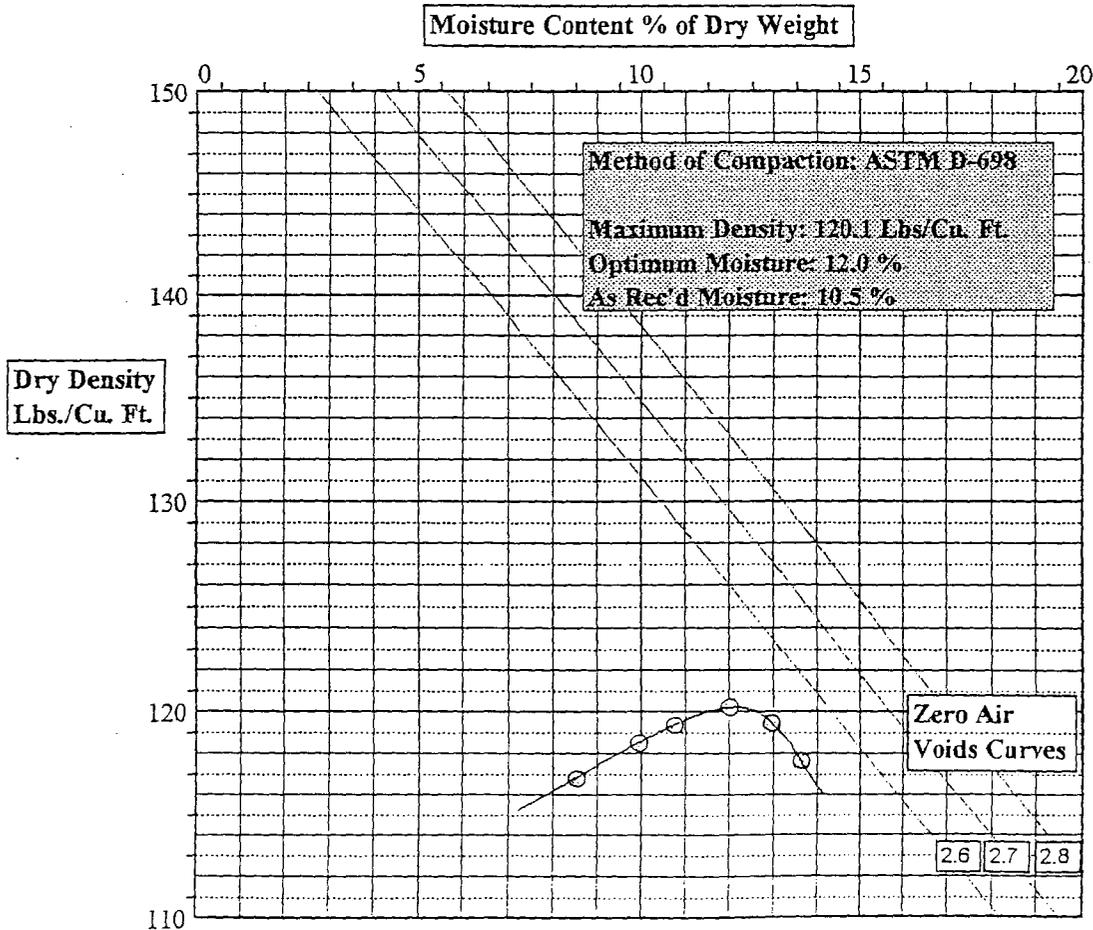
G.L.N.T.C.

Great Lakes, IL

Report of Tests

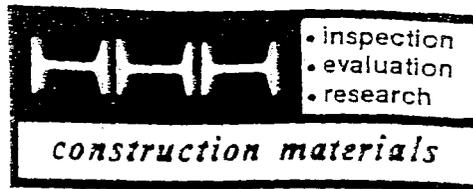
Subject: Standard Proctor Test of Crushed Concrete CA-6

Source: Vulcan - Lake Bluff



Respectfully Submitted,

Scott R. Nelson
 President



H. H. HOLMES TESTING LABORATORIES, INC.

May 25, 2001

• 170 Shepard Avenue • Wheeling, Illinois 60090 • 847-541-4040 • Fax: 847-537-9098

Report No. L-3

Lab No. 01-3493

File No. 1434.001

Toltest, Inc.
1915 N. 12TH Street
Toledo, OH 43624

Re: Building 144 Demolition
G.L.N.T.C.
Great Lakes, IL

Report of Tests

Subject: Sieve Analysis of Crushed Concrete CA-6

Source: Vulcan - Lake Bluff

Date Sampled: 5/18/2001

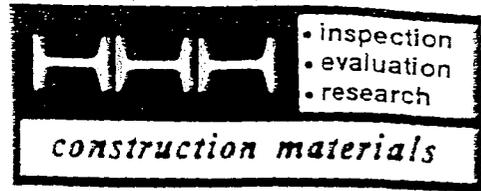
Method: ASTM C-136

Sieve #	Test Data		Specification
	Wt. Retained	% Passing	
1 1/2"	0	100.0	100%
1"	610	90.8	90 to 100%
3/4"	1707	74.1	
1/2"	2576	61.0	60 to 90%
3/8"	3460	47.6	
#4	4390	33.5	30 to 56%
#8	4990	24.4	
#16	5390	18.3	10 to 40%
#30	5678	14.0	
#50	5974	9.5	
#100	6136	7.0	
#200	6257	5.2	4 to 12%
Total	6600		

Note: Sample tested meets the IDOT specification for CA-6.

Respectfully Submitted,

Scott R. Nelson
President



H. H. HOLMES TESTING LABORATORIES, INC.

• 170 Shepard Avenue • Wheeling, Illinois 60090 • 847-541-4040 • Fax: 847-537-9098

May 25, 2001

Report No. L-4

Lab No. 01-3493

File No. 1434.001

Toltest, Inc.
1915 N. 12TH Street
Toledo, OH 43624

Re: Building 144 Demolition
G.L.N.T.C.
Great Lakes, IL

Report of Tests

Subject : Analysis of Crushed Concrete CA-6
Source : Vulcan - Lake Bluff
Date Received : 5/18/2001
Specifications : IDOT Class B
Method of Tests : ASTM - Listed Below

Test Data

Specification

Deleterious Particles - ASTM C-123, 142

Total Deleterious (%)	3.5	≤ 6.0
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Abrasion Resistance - ASTM C-131

Wear Loss (%)	31.6	≤ 40
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Note: This material meets the requirements of IDOT Class B for the above selected laboratory tests.

Respectfully submitted,

Scott R. Nelson
President

APPENDIX D

ILLINOIS DEPARTMENT OF TRANSPORTATION

COMPACTION SPECIFICATIONS

AND

CHARACTERIZATION ANALYTICAL REQUIREMENTS

the other.

Backfill shall not be placed in water at closed abutments, culverts or retaining walls. The excavated area around these structures shall be pumped dry, and any mud or loose material within the excavated space shall be removed. Sloping sides of the excavated space shall be removed. Sloping sides of the excavated space, that would be liable to cause objectionable wedging action of the backfill against the structure, shall be stepped or serrated to prevent such action. At piers, backfill may be placed in water, provided that both the water level and backfill are kept at approximately the same elevation on opposite sides of the pier. A time interval, approved by the Engineer, shall elapse before placing additional fill on one side of the pier above the water surface.

A cubical deposit of porous coarse aggregate, at least 600 mm (2 ft.) in each dimension, shall be placed back of each drain hole in abutment and wingwalls and culvert sidewalls. The bottom of this deposit shall be 50 mm (2 inches) below the drain hole. No additional compensation will be allowed for such work. All form boards or other obstructions shall be removed from the drains before the embankment is constructed.

205.06 Compaction. Each layer of the embankment material shall be disked sufficiently to break down oversized clods, mix the different materials, secure a uniform moisture content, and ensure uniform density and compaction. Disking may be omitted if the fill material consists of sand or gravel.

If the roadway embankment is less than 450 mm (1 1/2 ft.), all lifts shall be compacted to not less than 95 percent of the standard laboratory density. If the embankment height is between 450 mm and 900 mm (1 1/2 ft. and 3 ft.) inclusive, the first lift shall be compacted to not less than 90 percent, and the balance to a minimum of 95 percent of the standard laboratory density. If the embankment exceeds 900 mm (3 ft.) in height, the lower 1/3 of the embankment, but not to exceed the lower 600 mm (2 ft.), shall be compacted in a manner that will yield a minimum of 90 percent of standard laboratory density to the uppermost lift of that portion of the embankment. The next 300 mm (1 ft.) of embankment shall be compacted to not less than 93 percent, and the balance of the embankment compacted to not less than 95 percent of the standard laboratory density.

The top 600 mm (2 ft.) of all embankments shall not contain more than 120 percent of the optimum moisture determined according to AASHTO T 99 (Method C). The Contractor will be permitted the use of an approved additive to effect a quicker drying time.

The standard laboratory density shall be the maximum density determined according to AASHTO T 99 (Method A or C). A coarse particle correction according to AASHTO T 224 shall be used with Method A and may be used with Method C.

The density of the compacted embankment will be determined by the Engineer at regular intervals according to AASHTO T 191 or AASHTO T 238 and T 239, or by other methods approved by the Engineer.

The embankment shall be sprinkled with water when it is necessary to increase the moisture content of the soil to permit the embankment to be constructed to the densities indicated above.

Compacting equipment and compacting operations shall be coordinated with the rate of placing embankment so that the required density is obtained.

Special care shall be exercised in compacting embankments adjacent to structures and in sharp depressions. Where such areas are inaccessible to the compacting equipment being used, the material shall be placed in 200 mm (8 inches) horizontal layers and uniformly compacted with suitable mechanical equipment. Embankment placed adjacent to a structure shall not contain more than 110 percent of the optimum moisture determined according to AASHTO T 99 (Method C).

205.07 Maintaining and Trimming Embankments. The Contractor shall replace, at his/her own expense, any portions of the embankment which have been damaged or displaced by reason of carelessness or negligence on the Contractor's part. After the embankments have been constructed, their sides shall be trimmed to the proper slopes where required, and shall be maintained by the Contractor to the proper elevation and cross section until acceptance.

205.08 Settlement Platforms. When called for on the plans or should the Contractor desire to request credit for the placement of any additional embankment due to possible settlement during construction, settlement platforms shall be erected at the locations shown on the plans or as directed by the Engineer and as hereinafter specified. Notification of such desire on the part of the Contractor shall be made to the Engineer in writing prior to the start of construction.

The settlement platforms shall be placed on natural soil, where practical, after the roadway area has been cleared, disked and compacted. Compacted granular bedding material up to 150 mm (6 inches) thick may be used to properly seat the platform. Granular material to be used for bedding may consist of any fine aggregate suitable to the Engineer. The subgrade or bedding shall be prepared and leveled in such a manner that the platform makes uniform contact.

A 19-mm (3/4-inch) diameter steel pipe shall be attached to a 3-mm (1/8-inch) thick by 1.2-m (4-ft.) square steel plate with a threaded malleable iron floor flange welded to the plate. 1.2-m (4-ft.) lengths of 19-mm (3/4-inch) diameter pipe shall be added as the height of the embankment increases. The top of the grade pipe shall at no time extend more than 1.4 m (4 1/2 ft.) or less than 150 mm (6 inches).

The Contractor shall exercise extreme caution when placing material adjacent to the settlement plates and no equipment shall pass within 1.5 m (5 ft.) of the settlement plate until the height of fill is 1 m (3 ft.) above the plate in order to maintain a plumb grade pipe.

A casing of 64-mm (2 1/2-inch) diameter steel pipe (standard) shall be installed around the vertical pipe to negate the effect of negative skin friction and to help prevent damage to the grade pipe.

Settlement platforms shall be maintained by the Contractor in the required positions at all times during the construction of the embankment. All movement or disturbance, other than normal settlement, of the settlement platforms shall be immediately corrected by the Contractor by repairing or replacing them as directed by the Engineer. All extensions to the grade pipes shall be added under the supervision of the Engineer.

Settlement readings will be taken by the Engineer as required prior to and after construction of the embankment. The final readings will be taken after the top grade

SECTION 300. SUBGRADES, SUBBASES AND BASE COURSES

SUBGRADE

SECTION 301. SUBGRADE PREPARATION

301.01 Description. This work shall consist of preparing the completed subgrade. It shall include shaping and final compaction of the earth for the construction of subbase, base, and surface courses.

301.02 Equipment. Equipment shall meet the requirements of the following Articles of Section 1100 - Equipment:

Item	Article/Section
(a) Tandem Roller	1101.01
(b) Three-Wheel Roller	1101.01
(c) Tamping Roller	1101.01
(d) Pneumatic-Tired Roller	1101.01
(e) Subgrade Planer	1103.08
(f) Subgrade Machine	1103.09
(g) Heavy Subgrade Template	1103.10

CONSTRUCTION REQUIREMENTS

301.03 General. If the rough grading has been included in a previous contract, the roadbed shall be restored by removing all vegetation, filling all depressions, and smoothing the surface. If the contract includes rough grading and surfacing, the rough grading shall be completed as far in advance of the construction of the surfacing as feasible. Soft and unstable material that will not compact when rolled or tamped shall be removed and disposed of according to Article 202.03, and replaced with material approved by the Engineer, according to Articles 205.05 and 205.06.

The entire subgrade shall be compacted to not less than 95 percent of the standard laboratory density. Densities will be determined as provided in Article 205.06. All holes, ruts, soft places and other defects shall be corrected. In no case shall the surface course, base course, gutter, curb, or combination curb and gutter be placed on soft or unstable material, or over areas that are not drained in a manner satisfactory to the Engineer. If the subgrade is dusty or muddy, operations shall be delayed until it is in a condition satisfactory to the Engineer.

In cut sections, the Contractor responsible for the rough grading shall take the following steps in an effort to obtain not less than 95% of the standard laboratory density in the subgrade.

- (a) Step 1. Cut plan ditches which drain the area at least to grade. This shall be done at least two weeks prior to Step 2.
- (b) Step 2. Air dry the top 200 mm (8 inches) of subgrade. This procedure shall include at least two 200 mm (8-inch) depth processings utilizing discs or tillers each day for 3 consecutive good drying days.
- (c) Step 3. Recompact the layer processed in Step 2 to achieve not less than

EQ WASTE CHARACTERIZATION REPORT

TO EXPEDITE YOUR WASTE APPROVAL, PLEASE COMPLETE THIS FORM ENTIRELY

Please Choose One EQ Management Facility

- | | | | |
|---|--|---|--------------------------|
| <input type="checkbox"/> Michigan Disposal Waste Treatment Plant
(Stabilization and Treatment) | 49350 N. I-94 Service Drive
Phone: 800-592-5489 | Belleville, MI 48111
Fax: 800-592-5329 | EPA ID # MID 000 724 831 |
| <input type="checkbox"/> Wayne Disposal, Inc. Site #2 Landfill
(Hazardous & Chemical Waste Landfill) | 49350 N. I-94 Service Drive
Phone: 800-592-5489 | Belleville, MI 48111
Fax: 800-592-5329 | EPA ID # MID 048 090 633 |
| <input type="checkbox"/> Michigan Recovery Systems, Inc.
(Solvent Recycling, Fuel Blending, WW Treatment) | 36345 Van Born Road
Phone: 800-521-0998 | Romulus, MI 48174
Fax: 734-326-9375 | EPA ID # MID 060 975 844 |
| <input type="checkbox"/> EQIS - Transfer & Processing
(Drum Transfer/Non-Hazardous Liquid Processing) | 1010 Old Rawsonville Road
Phone: 734-547-1000 | Ypsilanti, MI 48197
Fax: 734-480-9195 | EPA ID # MIR 000 033 969 |

Section 1 - Generator & Customer Information

SIC # _____ Generator EPA ID # _____ Generator _____ Facility Address _____ City _____ State _____ Zip _____ County _____ Mailing Address (if different) _____ City _____ State _____ Zip _____ Generator Contact _____ Title _____ Phone _____ Fax _____	EQ Customer No. _____ Invoicing Company _____ Address _____ City _____ State _____ Zip _____ Country _____ Invoicing Contact _____ Phone _____ Fax _____ Technical Contact _____ Phone _____ Fax _____
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Section 2 - Shipping and Packaging Information

2.1) Shipping volume: _____ Shipping frequency: <input type="checkbox"/> One Time Only <input type="checkbox"/> Annual 2.2) DOT shipping name _____ Density: _____ lbs./gallon or lbs./cubic yard (or) Specific Gravity: _____	2.3) Packaging : (check all that apply) <input type="checkbox"/> Bulk Solid (Yd ³ < 2000 lbs/yd ³) <input type="checkbox"/> Bulk Solid (Ton >2000 lbs/yd ³) <input type="checkbox"/> Bulk Liquids (Gallons) <input type="checkbox"/> Cubic Yard Boxes <input type="checkbox"/> Drums <input type="checkbox"/> Other (palletized, 5 gal. pails, etc.) _____ Quoted bulk disposal charges for solid materials will be billed by the cubic yd., if waste density is less than 2,000 lbs. per cubic yd. If waste density is greater than 2,000 lbs. per cubic yd., then bulk disposal charges will be billed by the ton regardless of the approved container.
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Section 3 - Physical Characteristics

WASTE COMMON NAME: _____

3.1) Color (describe): _____ 3.2) Odor (describe): _____ 3.3) Physical state at 70 °F: (check all that apply) <input type="checkbox"/> Solid <input type="checkbox"/> Dust <input type="checkbox"/> Liquid <input type="checkbox"/> Sludge 3.4) Does this waste contain?: (check all that apply) <input type="checkbox"/> Free liquids <input type="checkbox"/> Metal fines <input type="checkbox"/> Powders <input type="checkbox"/> Oily residue <input type="checkbox"/> Biodegradable sorbants <input type="checkbox"/> NONE 3.5) Does this waste contain?: (check all that apply) <input type="checkbox"/> NONE <input type="checkbox"/> Asbestos - friable <input type="checkbox"/> Pyrophoric waste <input type="checkbox"/> Asbestos - non-friable <input type="checkbox"/> Reactive waste <input type="checkbox"/> Dioxins <input type="checkbox"/> Shock Sensitive waste <input type="checkbox"/> Furans <input type="checkbox"/> Radioactive waste <input type="checkbox"/> Biohazard <input type="checkbox"/> Explosives	3.6) Describe the composition of the waste (i.e. key chemical compounds, soil, water, ppe, debris, etc.): _____ to _____ % _____ to _____ % _____ to _____ % _____ to _____ % <p style="text-align: right;">Total = 100 %</p> 3.7) Does this waste contain > 50% contaminated soil? <input type="checkbox"/> Yes <input type="checkbox"/> No 3.8) Does this waste contain >50% debris by volume? <input type="checkbox"/> Yes <input type="checkbox"/> No (debris is greater than 2.5 inches in size)
--	---

Section 4 - Generating Process and Regulatory Information

4.1) Provide a detailed description of the process (es) generating this waste (attach flow diagram if available):

Based upon RCRA waste regulations (40 CFR 261) and Michigan Act 451 Rules:

- | | |
|--|--|
| <p>4.2) Is this an EPA RCRA listed hazardous waste (F, K, P or U)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.3) Is this a MICHIGAN hazardous waste (Other than RCRA)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.4) Is this a MICHIGAN nonhazardous liquid industrial waste? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.5) Is this a UNIVERSAL waste? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.6) Does this waste exceed LDR treatment standards? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.7) Is this an EPA RCRA characteristic hazardous waste (D001-D043)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.8) What is the flash point of this waste? <input type="checkbox"/> <90°F <input type="checkbox"/> 90-140°F <input type="checkbox"/> 140-199°F <input type="checkbox"/> >200°F</p> <p>4.9) Is the waste an oxidizer? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.10) What is the pH of this waste? <input type="checkbox"/> <2 <input type="checkbox"/> 2-4.9 <input type="checkbox"/> 5-10 <input type="checkbox"/> 10.1-12.4 <input type="checkbox"/> ≥12.5</p> <p>4.11) Does this waste contain reactive cyanide ≥ 250 ppm? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.12) Does this waste contain reactive sulfide ≥ 500 ppm? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>4.13) Is the waste surcharge exempt? (attach surcharge form) <input type="checkbox"/> Yes <input type="checkbox"/> No</p> | <p align="right">Waste Code(s)</p> <hr/> <hr/> <hr/> <hr/> |
|--|--|

Code	Regulatory Level TCLP (mg/L)	Concentration (if above)
D004	Arsenic 5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D005	Barium 100	<input type="checkbox"/> Below <input type="checkbox"/> Above
D006	Cadmium 1	<input type="checkbox"/> Below <input type="checkbox"/> Above
D007	Chromium 5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D008	Lead 5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D009	Mercury 0.2	<input type="checkbox"/> Below <input type="checkbox"/> Above
D010	Selenium 1	<input type="checkbox"/> Below <input type="checkbox"/> Above
D011	Silver 5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D012	Endrin 0.02	<input type="checkbox"/> Below <input type="checkbox"/> Above
D013	Lindane 0.4	<input type="checkbox"/> Below <input type="checkbox"/> Above
D014	Methoxychlor 10	<input type="checkbox"/> Below <input type="checkbox"/> Above
D015	Toxaphene 0.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D016	2,4-D 10	<input type="checkbox"/> Below <input type="checkbox"/> Above
D017	2,4,5-TP(Silvex) 1	<input type="checkbox"/> Below <input type="checkbox"/> Above
D018	Benzene 0.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D019	Carbon Tetrachloride 0.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D020	Chlordane 0.03	<input type="checkbox"/> Below <input type="checkbox"/> Above
D021	Chlorobenzene 100	<input type="checkbox"/> Below <input type="checkbox"/> Above
D022	Chloroform 6.0	<input type="checkbox"/> Below <input type="checkbox"/> Above
D023	o-Cresol 200	<input type="checkbox"/> Below <input type="checkbox"/> Above

Code	Regulatory Level TCLP (mg/L)	Concentration (if above)
D024	m-Cresol 200	<input type="checkbox"/> Below <input type="checkbox"/> Above
D025	p-Cresol 200	<input type="checkbox"/> Below <input type="checkbox"/> Above
D026	Cresols 200	<input type="checkbox"/> Below <input type="checkbox"/> Above
D027	1,4-Dichlorobenzene 7.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D028	1,2-Dichloroethane 0.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D029	1,1-Dichloroethylene 0.7	<input type="checkbox"/> Below <input type="checkbox"/> Above
D030	2,4-Dinitrotoluene 0.13	<input type="checkbox"/> Below <input type="checkbox"/> Above
D031	Heptachlor 0.008	<input type="checkbox"/> Below <input type="checkbox"/> Above
D032	Hexachlorobenzene 0.13	<input type="checkbox"/> Below <input type="checkbox"/> Above
D033	Hexachlorobutadiene 0.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D034	Hexachloroethane 3.0	<input type="checkbox"/> Below <input type="checkbox"/> Above
D035	Methyl Ethyl Ketone 200	<input type="checkbox"/> Below <input type="checkbox"/> Above
D036	Nitrobenzene 2	<input type="checkbox"/> Below <input type="checkbox"/> Above
D037	Pentachlorophenol 100	<input type="checkbox"/> Below <input type="checkbox"/> Above
D038	Pyridine 5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D039	Tetrachloroethylene 0.7	<input type="checkbox"/> Below <input type="checkbox"/> Above
D040	Trichloroethylene 0.5	<input type="checkbox"/> Below <input type="checkbox"/> Above
D041	2,4,5-Trichlorophenol 400	<input type="checkbox"/> Below <input type="checkbox"/> Above
D042	2,4,6-Trichlorophenol 2	<input type="checkbox"/> Below <input type="checkbox"/> Above
D043	Vinyl Chloride 0.2	<input type="checkbox"/> Below <input type="checkbox"/> Above

- 4.14) The hazardous constituent information is based on: Analysis (Please attach for review) Generator Knowledge Both
- 4.15) If this is a characteristic (D-coded) hazardous waste, does it contain underlying hazardous constituents (List in Section 5)? Yes No N/A

Section 5 - Constituent Information

Review the following items in the EQ Resource Guide and indicate their concentrations below:

- 1) MVOC (Michigan Volatile Organic Compounds) 2) CCVOC (Subpart CC Volatile Organic Compounds)
 3) UHC (Underlying Hazardous Constituents) 4) TRI (Toxic Release Inventory Constituents)

Indicate all constituents in your waste stream, their concentrations, and circle Yes or No for UHC:

UHC?	
Yes-No	
Yes-No	
Yes-No	

UHC?	
Yes-No	
Yes-No	
Yes-No	

Section 6 - PCB & TSCA Information

- 6.1) What is the concentration of PCBs in the waste? None 0-5 ppm 6-49 pp 50-499 ppm 500+ppm
- 6.2) Does the waste contain PCB contamination from a source with a concentration ≥ 50 ppm? Yes No
- 6.3) Does this waste contain free liquids? (use paint filter test) Yes No
- 6.4) Has this waste been processed into a non-liquid form? Yes No
 If yes, what was the concentration of PCBs prior to processing? N/A 0-499 ppm 500+ ppm
- 6.5) Is the non-liquid PCB waste in the form of soil, rags, debris, or other contaminated media? Yes No
- 6.6) Are you a PCB capacitor manufacturer or a PCB equipment manufacturer? Yes No
- 6.7) Has the PCB Article (e.g., transformer, hydraulic machine, PCB-contaminated electrical equipment) been drained/flushed of all PCBs and decontaminated in accordance with 40 CFR 761.60(b)? N/A Yes No

Section 7 - Benzene NESHAP Information

NESHAP SIC CODES		
2812	2836	2875
2813	2841	2879
2816	2842	2891
2819	2843	2892
2821	2844	2893
2822	2851	2895
2823	2861	2899
2824	2865	2911
2835	2869	3312
2834	2873	4953
2835	2874	9511

- 7.1) Does this waste stream contain Benzene? (if "no" to 7.1, please skip to section 8) Yes No
- 7.2) Does the waste stream come from a facility with one of the SIC codes listed under NESHAP? Yes No
- 7.3) Does your company manage wastes from facilities with Total Annual Benzene (TAB) ≥ 10 Mg/year? Yes No
 → If you answered "NO" to question 7.2 AND 7.3 please skip to Section 8.
- 7.4) Does the waste contain >10 % water? Yes No
- 7.5) What is the TAB quantity for your facility? _____ Mg/Year Yes No
- 7.6) Does the waste contain >1.0 mg/kg total Benzene? Yes No
- 7.7) What is the total Benzene concentration in your waste? _____ percent or _____ ppmw.

(Do not use TCLP analytical results. Acceptable laboratory methods include 8020, 8240, 8260, 602, and 624.)

Section 8 - Waste Constituent Information

→ COMPLETE FOR MICHIGAN DISPOSAL WASTE TREATMENT PLANT, WAYNE DISPOSAL, AND EQS T&P

- 8.1) Does this waste contain any "Potentially Odorous Constituents" as defined in the EQ Resource Guide? Yes No
- 8.2) Does this waste contain any MVOC constituents as defined in the EQ Resource Guide? Yes No
- 8.3) Is this waste subject to Subpart CC regulation (i.e., contain ≥ 500 ppm (VOCs) Volatile Organic Compounds)? Yes No
 → If 8.1, 8.2 or 8.3 is "yes" --please indicate the constituents and their concentrations in the table provided in Section 5

Section 9 - Reclamation/Recycling/Fuel Blending

→ Complete for Michigan Recovery Systems ONLY

- 9.1) Heat value (BTU/lb): _____ Chlorine(%): _____ Water (%): _____ Solids (%): _____
- 9.2) Is this material a recoverable petroleum product? Yes No 9.3) Is this material for wastewater treatment? Yes No
 → If 9.1 or 9.2 is "yes" --please attach the **Wastewater Addendum Form** found in the EQ Resource Guide.

Section 10 - Certification

I certify that all information (including attachments) is complete and factual and is an accurate representation of the known and suspected hazards, pertaining to the waste described herein. I authorize EQ's Resource Team to add supplemental information to the waste approval file, provided I am contacted and give verbal permission. I authorize EQ's Resource Team to obtain a sample from any waste shipment for purposes of verification and confirmation. I agree that, if EQ approves the waste described herein, all such wastes that are transported, delivered, or tendered to EQ by Generator or on Generator's behalf shall be subject to, and Generator shall be bound by, the attached Standard Terms and Conditions:

Generator Signature _____ Printed Name _____
 Company _____ Title _____ Date _____

The generator's signature must appear on the EQ Waste Characterization Report. If the generator has authorized a third-party to certify this document, a written notice (on generator letterhead) must accompany this submittal. Although the EQ Resource Team is authorized to make certain modifications to the information provided on this form, the addition or removal of waste codes and waste constituents must be documented by the generator.

STANDARD TERMS AND CONDITIONS

The Agreement between the Customer and EQ – The Environmental Quality Company and/or its member companies (hereinafter "EQ"), related to or associated with Delivered Waste, as herein defined, shall be governed by the following Standard Terms and Conditions in addition to the terms and conditions contained in any Waste Characterization Report, Customer Approval Quote Confirmation, Generator Approval Notification, Notice of Waste Approval Expiration, and/or Credit Agreement associated with such Delivered Waste.

The Customer may use its standard forms (such as purchase orders, acknowledgments of orders, and invoices) to administer its dealings under this Agreement for convenience purposes, but all provisions thereof in conflict with these terms and conditions shall be deemed stricken.

Definitions

The following definitions shall apply for purposes of this Agreement:

"Acceptable Waste" shall mean any hazardous waste, as defined under applicable State or federal law, determined by EQ as acceptable for treatment and/or disposal in accordance with this Agreement.

"Delivered Wastes" shall mean all wastes (i) which are transported, delivered, or tendered to EQ by the Customer, (ii) which the Customer has arranged for the transport, delivery or tender to EQ; or (iii) which are transported, delivered, or tendered to EQ under a Credit Agreement between the Customer and EQ.

"Non-Conforming Wastes" shall mean wastes that (a) are not in accordance in all material respects with the warranties, descriptions, specifications or limitations stated in the Waste Characterization Report and this Agreement; (b) have constituents or components of a type or concentration not specifically identified in the Waste Characterization Report (i) which increase the nature or extent of the hazard and risk undertaken by EQ in treating and/or disposing of the waste, or (ii) for whose treatment and/or disposal a Waste Management Facility is not designed or permitted, or (iii) which increase the cost of treatment and/or disposal of waste beyond that specified in EQ's price quote, or (c) are not properly packaged, labeled, described, or placarded, or otherwise not in compliance with United States Department of Transportation and United States Environmental Protection Agency regulations.

Control of Operations

EQ shall have sole control over all aspects of the operation of any treatment and/or disposal facility of EQ receiving Delivered Wastes under this Agreement (hereinafter,

"Waste Management Facility"), including, without limitation, maintaining EQ's desired volume of Acceptable Wastes being delivered to any Waste Management Facility by the Customer or any other person or entity.

Identification of Waste

For each waste material to be transported, delivered, or tendered to EQ under this Agreement, the Customer shall provide, or cause to be provided, to EQ a representative sample of the waste material and a completed Waste Characterization Report containing a physical and chemical description or analysis of such waste material, which description shall conform with any and all guidelines for waste acceptance provided by EQ. On the basis of EQ's analysis of such representative sample of the waste material and such Waste Characterization Report, EQ will determine whether such wastes are Acceptable Wastes. EQ does not make any guarantee that it will handle any waste material of any particular quantity or type of waste material, and EQ reserves the right to the decline to transport, treat and/or dispose of waste material. The Customer shall promptly furnish to EQ any information regarding known, suspected or planned changes in the composition of the waste material. Further, the Customer shall promptly inform EQ of any change in the characteristic or condition of the waste material which becomes known to the Customer subsequent to the date of the Waste Characterization Report.

Non-Conforming Wastes

In the event that EQ at any time discovers that any Delivered Waste is Non-Conforming Waste, EQ may reject or revoke its acceptance of the Non-Conforming Waste. The Customer shall have seven (7) days to direct an alternative lawful manner of disposition of the waste, unless it is necessary by reason of law or otherwise to move the Non-Conforming Waste prior to expiration of the seven (7) day period. If the Customer does not direct an alternative disposal, at its option, EQ may return any such Non-Conforming Wastes to the Customer, and the Customer shall pay or reimburse EQ for all costs and expenses incurred by EQ in connection with the receipt, handling, sampling, analyses, transportation and return to the Customer of such Non-Conforming Wastes. If it is impossible or impractical for EQ to return the Non-Conforming Waste to the Customer, the Customer shall reimburse EQ for all costs, of any type or nature whatsoever, incurred by EQ, solely because such Delivered Waste was Non-Conforming Waste (including, but not limited to, all costs associated with any remedial steps necessary, due to the nature of the Non-Conforming Waste, in connection with material with which the Non-Conforming Waste may have been commingled and all expenses and charges for analyzing, handling, locating, preparing for transporting, storing and disposing of any Non-Conforming Waste).

Customer Warranty - Acceptable Wastes

All Delivered Wastes shall be Acceptable Wastes and shall conform in all material respects to the description and specifications contained in the Waste Characterization Report. The information set forth in the Waste Characterization Report or any manifest, placard or label associated with any Delivered Wastes, or otherwise represented by the Customer or the generator (if other than the Customer) to EQ, is and shall be true, accurate and complete as of the date of receipt of the involved waste by EQ.

Customer Warranty - Title to Wastes

Either the Customer or the generator (if other than the Customer) shall hold clear title, free of any all liens, claims, encumbrances, and charges to Delivered Waste until such waste is accepted by EQ.

Customer Warranty - Compliance with Laws

The Customer shall comply with all applicable federal, state and local environmental statutes, regulations, and other governmental requirements, as well as directives issued by EQ from time to time, governing the transportation, treatment and/or disposal of Acceptable Wastes, including, but not limited to, all packaging, manifesting, containerization, placarding and labeling requirements.

Customer Warranty - Updating Information

If the Customer receives information that Delivered Waste or other hazardous waste described in the Waste Characterization Report, or some component of such waste, presents or may present a hazard or risk to persons, property or the environment which was not disclosed to EQ, or if the Customer or generator (if other than the Customer) has changed the process by which such waste results, the Customer shall promptly report such information to EQ in writing.

Customer Indemnity

The Customer shall indemnify, defend and hold harmless EQ, and its affiliated or related companies, and all of their respective present or future officers, directors, shareholders, employees and agents from and against any and all losses, damages, liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, costs and expenses (including, but not limited to, reasonable costs of defense, settlement, and reasonable attorneys' fees), which may be asserted against any or all of them by any person or any governmental agency, or which any or all of them may hereafter suffer, incur, be responsible for or pay out, as a result of or in connection with bodily injuries (including, but not limited to, death, sickness, disease and emotional or mental distress) to any person (including EQ's employees), damage (including, but not limited to, loss of use) to any property (public or private), or any requirements to conduct or incur expense for investigative, removal or remedial expenses in connection with contamination of or adverse effect on the environment, or any violation or alleged violation of any statutes, ordinances, orders, rules or regulations of any governmental entity or agency, caused or arising out of (i) a breach of this Agreement by the Customer, (ii) the failure of any warranty of the Customer to be true, accurate and complete, or (iii) any willful or negligent act or omission of the Customer, or its employees or agents in connection with the performance of this Agreement.

Force Majeure

EQ shall not be liable for any failure to accept, receive, handle, treat, and/or dispose of Delivered Waste due to an act of God, fire, casualty, flood, war, strike, lockout, labor trouble, failure of public utilities, equipment failure, facility shutdown, injunction, accident, epidemic, riot, insurrection, destruction of operation or transportation facilities, the inability to procure materials, equipment, or sufficient personnel or energy in order to meet operational needs without the necessity of allocation, the failure or inability to obtain any governmental approvals or to meet Environmental Requirements (including, but not limited to voluntary or involuntary compliance with any act, exercise, assertion, or requirement of any governmental authority) which may temporarily or permanently prohibit operations of EQ, the Customer, or the Generator, or any other circumstances beyond the control of EQ which prevents or delays performance of any of its obligations under this Agreement.

Governing Laws

This Agreement shall in all respects be governed by and shall be construed in accordance with the laws of the State of Michigan applied to contracts executed and performed wholly within such state.

APPENDIX E
DISPOSAL FACILITY CERTIFICATIONS

ACORD™ CERTIFICATE OF LIABILITY INSURANCE Page 1 of 2		DATE 01/15/2003
PRODUCER 877-945-7378 Willis North America, Inc. - Regional Cert Center 26 Century Blvd. P. O. Box 305191 Nashville, TN 372305191	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURERS AFFORDING COVERAGE		
INSURED Kestrel Hawk Park Landfill 1989 Oakes Road Racine, WI 53406	INSURER A: Pacific Employers Insurance Company 22748-003 INSURER B: American Alternative Insurance Corporatio 19720-001 INSURER C: Greenwich Insurance Company 22322-001 INSURER D: INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	HDOG19889269	11/1/2002	11/1/2003	EACH OCCURRENCE	\$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	\$
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person)	\$
					PERSONAL & ADV INJURY	\$ 2,000,000
					GENERAL AGGREGATE	\$ 2,000,000
					PRODUCTS - COMP/OP AGG	\$ 2,000,000
					GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	
A	AUTOMOBILE LIABILITY	ISAH07970341	11/1/2002	11/1/2003	COMBINED SINGLE LIMIT (Ea accident)	\$ 2,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALLOWED AUTOS				BODILY INJURY (Per accident)	\$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	\$
	<input checked="" type="checkbox"/> HIRED AUTOS				AUTO ONLY - EA ACCIDENT	\$
	<input checked="" type="checkbox"/> NON-OWNED AUTOS				OTHER THAN EA ACC AGG	\$
						\$
B	EXCESS LIABILITY	01A2UM000022002	11/1/2002	11/1/2003	EACH OCCURRENCE	\$ 3,000,000
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE	\$ 3,000,000
	<input type="checkbox"/> DEDUCTIBLE					\$
	<input type="checkbox"/> RETENTION \$				\$	
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WLRC43501264	11/1/2002	11/1/2003	<input checked="" type="checkbox"/> WC STATUTORY LIMITS	
		SCFC43501227	11/1/2002	11/1/2003	<input type="checkbox"/> OTHER	
					E.L. EACH ACCIDENT	\$ 2,000,000
					E.L. DISEASE - EA EMPLOYEE	\$ 2,000,000
C	OTHER	PEC000350202	6/30/2002	6/30/2003	E.L. DISEASE - POLICY LIMIT	\$ 2,000,000
	Environmental Remediation Pollution Liability				\$10,000,000. Limit	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Type of Insurance	Policy No.	Eff. Date	Exp. Date	Limits
Excess Liability	AEC930558101	11/1/02	11/01/03	\$5,000,000.

Issuing Carrier: American Guaranty & Liability Insurance Company

It is agreed that Toltest, Inc. is included as Additional Insured as respects the General Liability policy, if required by written contract.

CERTIFICATE HOLDER <input checked="" type="checkbox"/>	ADDITIONAL INSURED; INSURER LETTER:
CANCELLATION	
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.	
AUTHORIZED REPRESENTATIVE <i>Susan S. Finley</i>	

ACORD CERTIFICATE OF LIABILITY INSURANCE

CSR SM
PEORI26

DATE (MM/DD/YY)
12/27/02

PRODUCER Coyle Insurance Agency Inc 4921 N Glen Park Place Peoria IL 61614 Tel: 309-692-5522 Fax: 309-692-5099	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
	INSURERS AFFORDING COVERAGE
INSURED Coulter Companies, Inc.; Peoria Disposal Company, et al P. O. Box 9071 Peoria IL 61612-9071	INSURER A: Illinois National Insurance Co
	INSURER B: Zurich American Insurance Co
	INSURER C: Steadfast Insurance Company
	INSURER D:
	INSURER E:

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
B	GENERAL LIABILITY	GLO5258390-00	12/31/02	12/31/03	EACH OCCURRENCE \$ 1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire) \$ 50,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person) \$ 5,000
					PERSONAL & ADV INJURY \$ 1,000,000
					GENERAL AGGREGATE \$ 2,000,000
					PRODUCTS - COMP/OP AGG \$ 2,000,000
					GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC
B	AUTOMOBILE LIABILITY	BAP5258391-00	12/31/02	12/31/03	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS				PROPERTY DAMAGE (Per accident) \$
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN EA ACC AGG \$
C	EXCESS LIABILITY	SUO5258397-00	12/31/02	12/31/03	EACH OCCURRENCE \$ 10,000,000
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE \$ 10,000,000
	<input type="checkbox"/> DEDUCTIBLE				\$
	<input checked="" type="checkbox"/> RETENTION \$ 10,000				\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC9308081-00	12/31/02	12/31/03	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER \$
					E.L. EACH ACCIDENT \$ 1,000,000
					E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	OTHER	PLL5298828	12/31/02	12/31/05	Per Claim \$ 15,000,000 Aggregate \$ 15,000,000

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Limits shown are those in effect at policy inception. Toltest, Inc. is named as additional insured under General Liability and Automobile Liability, at all Toltest, Inc. projects at various locations, but only as respects work done by or on behalf of Peoria Disposal Company.

CERTIFICATE HOLDER	<input checked="" type="checkbox"/> ADDITIONAL INSURED; INSURER LETTER: <u>A</u>	CANCELLATION
Toltest, Inc. Attn: Will Wagner 1915 N. 12th St. Toledo OH 43624		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.
TOLTE-1		

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

Page 1 of 2

DATE
01/10/2003

PRODUCER 877-945-7378

Willis North America, Inc.
26 Century Blvd.
P.O. Box 305191
Nashville, TN 37230-5191

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED
EQ Holding Company
36255 Michigan Ave
Wayne, MI 48184

INSURER A: Commerce and Industry Insurance Company 19410-006

INSURER B: Commerce and Industry Insurance Company 19410-001

INSURER C: American International Specialty Lines In 26883-002

INSURER D: Midwest Employers Casualty Company 23612-092

INSURER E: American International Specialty Lines In 26883-007

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	GL4177902	8/22/2002	8/1/2003	EACH OCCURRENCE	\$1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (Any one fire)	\$300,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MEDEXP (Any one person)	\$25,000
					PERSONAL & AD INJURY	\$1,000,000
					GENERAL AGGREGATE	\$2,000,000
					PRODUCTS-COMP/OPAGG	\$2,000,000
					GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC	
B	AUTOMOBILE LIABILITY	CA7665295	8/22/2002	8/1/2003	COMBINED SINGLE LIMIT (Ea accident)	\$1,000,000
	<input checked="" type="checkbox"/> ANY AUTO				BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALLOWNED AUTOS				BODILY INJURY (Per accident)	\$
	<input checked="" type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	\$
	<input checked="" type="checkbox"/> HIRED AUTOS					
<input checked="" type="checkbox"/> NON-OWNED AUTOS						
	GARAGE LIABILITY				AUTO ONLY-EA ACCIDENT	\$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: EA ACC	\$
					AGG	\$
C	EXCESS LIABILITY	BE8086095	8/22/2002	8/1/2003	EACH OCCURRENCE	\$25,000,000
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE	\$25,000,000
	<input type="checkbox"/> DEDUCTIBLE					\$
	<input checked="" type="checkbox"/> RETENTION \$10,000					\$
D	WORKERS COMPENSATION AND EMPLOYERS LIABILITY	1378SAMI	1/1/2003	1/1/2004	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER	
					E.L. EACH ACCIDENT	\$1,000,000
					E.L. DISEASE-EA EMPLOYEE	\$
					E.L. DISEASE-POLICY LIMIT	\$
E	OTHER Pollution Liability (All Operations)	PLS2673560	8/1/2002	8/1/2005	\$24,000,000 Each Claim	\$28,000,000 Aggregate

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
 Pollution Liability Policy, American International Surplus Lines Insurance Company
 Policy Number PLS2673560 Policy Period: 8/01/02 to 8/01/05
 Limit of Liability: \$24,000,000 Each Incident
 \$28,000,000 Aggregate Limit

Evidence of Coverage

CERTIFICATE HOLDER

ADDITIONAL INSURED; INSURER LETTER:

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

SAMPLE COPY

APPENDIX F
MATERIAL SAFETY DATA SHEETS

41 E. 11th St., New York, NY 10003) V.1- 1980- Volume(issue)/page/year:
4,365,1984

TYPE OF TEST : Gene conversion and mitotic recombination
TEST SYSTEM : Yeast - Saccharomyces cerevisiae
DOSE/DURATION : 40 mmol/L
REFERENCE :

TCMUD8 Teratogenesis, Carcinogenesis, and Mutagenesis. (Alan R. Liss, Inc.,
41 E. 11th St., New York, NY 10003) V.1- 1980- Volume(issue)/page/year:
4,365,1984

TYPE OF TEST : Unscheduled DNA synthesis
TEST SYSTEM : Rodent - rat Liver
DOSE/DURATION : 4300 umol/L
REFERENCE :

CRNGDP Carcinogenesis (London). (Oxford Univ. Press, Pinkhill House,
Southfield Road, Eynsham, Oxford OX8 1JJ, UK) V.1- 1980-
Volume(issue)/page/year: 5,1629,1984

TYPE OF TEST : Host-mediated assay
TEST SYSTEM : Rodent - mouse Yeast - Saccharomyces cerevisiae
DOSE/DURATION : 1300 mg/kg
REFERENCE :

TCMUD8 Teratogenesis, Carcinogenesis, and Mutagenesis. (Alan R. Liss, Inc.,
41 E. 11th St., New York, NY 10003) V.1- 1980- Volume(issue)/page/year:
4,365,1984

*** NIOSH STANDARDS DEVELOPMENT AND SURVEILLANCE DATA ***

NIOSH OCCUPATIONAL EXPOSURE SURVEY DATA :

NOES - National Occupational Exposure Survey (1983)
NOES Hazard Code - X5352
No. of Facilities: 3 (estimated)
No. of Industries: 1
No. of Occupations: 3
No. of Employees: 61 (estimated)
No. of Female Employees: 6 (estimated)

*** STATUS IN U.S. ***

EPA TSCA Section 8(b) CHEMICAL INVENTORY

EPA TSCA Section 8(d) unpublished health/safety studies

On EPA IRIS database

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998

NTP Carcinogenesis studies; test completed (peer review), October 1997

*** END OF RECORD ***

International Chemical Safety Cards

TETRACHLOROETHYLENE

ICSC: 0076

TETRACHLOROETHYLENE

1,1,2,2-Tetrachloroethylene

Perchloroethylene

Tetrachloroethene

 $C_2Cl_4/Cl_2C=CCl_2$

Molecular mass: 165.8

CAS # 127-18-4

RTECS # KX3850000

ICSC # 0076

UN # 1897

EC # 602-028-00-4

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		STRICT HYGIENE!	
• INHALATION	Incoordination. Exhilaration. Dizziness. Drowsiness. Headache. Nausea. Weakness. Unconsciousness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
• SKIN	Dry skin. Redness. Skin burns. Blisters.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
• EYES	Redness. Pain.	Safety goggles, face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• INGESTION	Abdominal pain (further see Inhalation).	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place.	Separated from metals (see Chemical Dangers), food and feedstuffs. Keep in the dark. Ventilation along the floor.	Do not transport with food and feedstuffs. IMO: Marine Pollutant Xn symbol R: 40 S: 23-36/37 UN Hazard Class: 6.1 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the

ICSC: 0076

Commission of the European Communities © IPCS CEC 1993

International Chemical Safety Cards

TETRACHLOROETHYLENE

ICSC: 0076

I M P O R T A N T D A T A	<p>PHYSICAL STATE; APPEARANCE: COLOURLESS LIQUID, WITH CHARACTERISTIC ODOUR.</p> <p>PHYSICAL DANGERS: The vapour is heavier than air.</p> <p>CHEMICAL DANGERS: On contact with hot surfaces or flames this substance decomposes forming toxic and corrosive fumes (hydrogen chloride, phosgene, chlorine). The substance decomposes slowly on contact with moisture producing trichloroacetic acid and hydrochloric acid. Reacts with metals such as aluminium, lithium, barium, beryllium.</p> <p>OCCUPATIONAL EXPOSURE LIMITS (OELs): TLV: 50 ppm; 339 mg/m³ (STEL): 200 ppm; 1357 mg/m³ (ACGIH 1992-1993).</p>	<p>ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation, through the skin and by ingestion.</p> <p>INHALATION RISK: A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.</p> <p>EFFECTS OF SHORT-TERM EXPOSURE: The substance irritates the eyes, the skin and the respiratory tract. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. The substance may cause effects on the central nervous system.</p> <p>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the liver and kidney. Tumours have been detected in experimental animals but may not be relevant to humans (see Notes).</p>
	<p>PHYSICAL PROPERTIES</p> <p>Boiling point: 121°C Melting point: -22°C Relative density (water = 1): 1.6 Solubility in water, g/100 ml at 20°C: 0.015</p>	<p>Vapour pressure, kPa at 20°C: 1.9 Relative vapour density (air = 1): 5.8 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.09 Octanol/water partition coefficient as log Pow: 2.6</p>
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to indoor air and water.	
NOTES		
Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT use in the vicinity of a fire or a hot surface, or during welding. Technical grades may contain small amounts of carcinogenic stabilizers.		
Transport Emergency Card: TEC (R)-722 NFPA Code: H2; F0; R0;		
ADDITIONAL INFORMATION		
ICSC: 0076		TETRACHLOROETHYLENE
© IPCS, CEC, 1993		

IMPORTANT

Neither the CEC or the IPCS nor any person acting on behalf of the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the

**LEGAL
NOTICE:**

IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use.

CHEM SERVICE INC -- 0-659 CIS 1,2-DICHLOROETHENE -- 6550-00F037480

=====
MSDS Safety Information
=====

FSC: 6550
MSDS Date: 06/02/1992
MSDS Num: BWJDT
LIIN: 00F037480
Tech Review: 12/06/1994
Product ID: 0-659 CIS 1,2-DICHLOROETHENE
Responsible Party
Cage: 84898
Name: CHEM SERVICE INC
Address: 660 TOWER LN
Box: 3108
City: WEST CHESTER PA 19381-3108 US
Info Phone Number: 215-692-3026/800-452-9994
Emergency Phone Number: 215-692-3026/800-452-9994

=====
Preparer Co. when other than Responsible Party Co.
=====

Cage: 84898
Assigned Ind: N
Name: CHEM SERVICE INC
Box: 3108
City: WEST CHESTER PA 19381

=====
Contractor Summary
=====

Cage: 84898
Name: CHEM SERVICE INC
Box: 3108
City: WEST CHESTER PA 19381 US
Phone: 215-692-3026
Cage: 8Y898
Name: CHEM SERVICE, INC
Address: 660 TOWER LN
Box: 599
City: WEST CHESTER PA 19381 US
Phone: 610-692-3026, 610-692-3026

=====
Ingredients
=====

Cas: 156-59-2
RTECS #: KV9420000
Name: DICHLOROETHENE
Ozone Depleting Chemical: N

=====
Health Hazards Data
=====

Route Of Entry Inds - Inhalation: YES
Skin: YES
Ingestion: YES
Carcinogenicity Inds - NTP: NO
IARC: NO
OSHA: NO
Effects of Exposure: SKIN: MAY BE HARMFUL IF ABSORBED. CAN CAUSE
IRRITATION. INHALATION: MAY BE HARMFUL. DUST &/VAPORS CAN CAUSE
RESPIRATORY TRACT IRRITATION. CAN BE IRRITATING TO MUCOUS MEMBRANCES.
INGESTION: MAY BE HARM FUL. EYES: IRRITATION. EXPOSURE CAN CAUSE LIVER

DAMAGE. NARCOTIC AT HIGH CONCENTRATIONS.

Explanation Of Carcinogenicity: NONE

Signs And Symptions Of Overexposure: IRRITATION, NARCOTIC.

First Aid: EYES: FLUSH CONTINUOUSLY W/WATER FOR 15-20 MINS. SKIN: FLUSH W/WATER FOR 15-20 MINS. IF NOT BURNED, WASH W/SOAP & WATER TO CLEANSE. INHALATION: REMOVE TO FRESH AIR. GIVE CPR/OXYGEN IF NEEDED & CONTINU E LIFE SUPPORT UNTIL MEDICAL ASSISTANCEARRIVES. INGESTION: RINSE MOUTH OUT W/WATER, IF CONSCIOUS. OBTAIN MEDICAL ATTENTION IN ALL CASES.

=====
Handling and Disposal
=====

Spill Release Procedures: EVACUATE AREA. WEAR APPROPRIATE OSHA REGULATED EQUIPMENT. VENTILATE AREA. ABSORB ON VERMICULITE/SIMILAR MATERIAL. SWEEP UP & PLACE IN APPROPRIATE CONTAINER/HOLD FOR DISPOSAL. WASH CONTAMINATED SURFAC ES TO REMOVE ANY RESIDUES.

Waste Disposal Methods: BURN IN A CHEMICAL INCINERATOR EQUIPPED W/AN AFTERBURNER & SCRUBBER IAW/FEDERAL, STATE & LOCAL REGULATIONS.

Handling And Storage Precautions: STORE IN A COOL DRY PLACE ONLY W/COMPATIBLE CHEMICALS. KEEP TIGHTLY CLOSED. STORE UNDER REFRIGERATION.

Other Precautions: AVOID CONTACT W/SKIN, EYES & CLOTHING. DON'T BREATH VAPORS. CONTACT LENSES SHOULDN'T BE WORN IN THE LABORATORY. ALL CHEMICALS SHOULD BE CONSIDERED HAZARDOUS. AVOID DIRECT PHYSICAL CONTACT.

=====
Fire and Explosion Hazard Information
=====

Flash Point Text: 42.8F

Extinguishing Media: CO2, DRY CHEMICAL POWDER/SPRAY.

Unusual Fire/Explosion Hazard: FLAMMABLE CHEMICAL. VAPORS MAY TRAVEL CONSIDERABLE DISTANCE TO IGNITION SOURCE & FLASH BACK. DECOMPOSITION PRODUCTS ARE CORROSIVE.

=====
Control Measures
=====

Respiratory Protection: WEAR APPROPRIATE OSHA/MSHA APPROVED SAFETY EQUIPMENT.

Ventilation: CHEMICAL SHOULD BE HANDLED ONLY IN A HOOD.

Eye Protection: EYE SHIELDS

=====
Physical/Chemical Properties
=====

B.P. Text: 140F

M.P/F.P Text: -112F

Solubility in Water: INSOLUBLE

Appearance and Odor: COLORLESS LIQUID

=====
Reactivity Data
=====

Stability Indicator: YES

Stability Condition To Avoid: MOISTURE, AIR, LIGHT, HEAT & OTHER IGNITION SOURCES.

Materials To Avoid: STRONG OXIDIZING AGENTS, MAGNESIUM, ALUMINUM.

Hazardous Decomposition Products: TOXIC FUMES

Hazardous Polymerization Indicator: NO

=====
Toxicological Information
=====

=====
Toxicological Information
=====

MSDS Transport Information

=====
=====

Regulatory Information

=====
=====

Other Information

=====
=====

HAZCOM Label

=====

Product ID: 0-659 CIS 1,2-DICHLOROETHENE
Cage: 84898
Company Name: CHEM SERVICE INC
PO Box: 3108
City: WEST CHESTER PA
Zipcode: 19381 US
Health Emergency Phone: 215-692-3026/800-452-9994
Date Of Label Review: 12/16/1998
Label Date: 12/16/1998

Hazard And Precautions: SKIN: MAY BE HARMFUL IF ABSORBED. CAN CAUSE IRRITATION. INHALATION: MAY BE HARMFUL. DUST &/VAPORS CAN CAUSE RESPIRATORY TRACT IRRITATION. CAN BE IRRITATING TO MUCOUS MEMBRANCES. INGESTION: MAY BE HARM FUL. EYES: IRRITATION. EXPOSURE CAN CAUSE LIVER DAMAGE. NARCOTIC AT HIGH CONCENTRATIONS. IRRITATION, NARCOTIC.

=====

Disclaimer (provided with this information by the compiling agencies):
This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever expressly or implied warrants, states, or intends said information to have any application, use or viability by or to any person or persons outside the Department of Defense nor any person or persons contracting with any instrumentality of the United States of America and disclaims all liability for such use. Any person utilizing this instruction who is not a military or civilian employee of the United States of America should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation regardless of similarity to a corresponding Department of Defense or other government situation.

APPENDIX G
INCIDENT REPORTS

ASSOCIATE INJURY REPORT

CONTINUED

Manager, Corporate Health and Safety

Concur With Action Taken? Yes No Remarks _____

OSHA Classification: First Aid Recordable, No Lost/Restricted Workdays
 Recordable, Lost Workdays Recordable, Restricted Activity Fatality

Days Away From Work _____ Days Restricted Work _____

Worker's Compensation Claim Number (if applicable) _____

TolTest Tracking No. _____

Verbal Received (Date/Time) _____ Report Received (Date/Time) _____

Drug Screen Yes No Alcohol Screen Yes No

Manager, Corporate Health and Safety:

_____ Print _____ Signature _____ Date

A. Type of Injury or Illness Code: _____ E. Agent Code: _____

B. Injured Body Part Code: _____ F. Safety Rule Violated Code: _____

C. Activity at Time of Incident Code: _____ G. Incident Prevention Code: _____

D. Injury Cause Code: _____ H. Instruction/RE-Instruction Code: _____

**ATTACHMENT 3
GENERAL LIABILITY, PROPERTY DAMAGE AND LOSS REPORT**

This report is to be completed for all losses or damage to company property in excess of \$1000 and all third party damage, regardless of value, resulting from company activities.

Project/Department/Location _____ Project No. _____ Date _____

Address _____

How Did Damage or Loss Occur: _____

Description and Value (\$) of Damaged/Lost/Stolen Property: _____

Location of Damaged/Lost/Stolen Property (Before Loss): _____

Date and Time of Damage, Loss or Theft: _____

Owner of Damaged/Lost/Stolen Property:

Name _____ Phone No. () _____

Address _____ City _____

Employer and Address _____

Injured Parties (Also completed a Supervisor's Associate Injury Report if a Company Associate):

Name _____ Phone No. () _____

Address _____ City _____

Employer and Address _____

Description of Injury _____

Witnesses:

1. Name _____ Phone No. () _____

Address _____ City _____

Employer and Address _____

2. Name _____ Phone No. () _____

Address _____ City _____

Employer and Address _____

Were Pictures Taken? Yes No
Were Police Notified? Yes No Dept _____ Report No. _____

Completed By:

_____ Print _____ Signature _____ Date _____

Manager, Corporate Health and Safety:

_____ Print _____ Signature _____ Date _____

ATTACHMENT 4 INCIDENT INVESTIGATION REPORT

*** MUST BE COMPLETED WITHIN 72 HOURS ***

Investigation Date _____ Date of Incident _____

Employee Name _____

Supervisor Name _____

Dept. Name/Project Number/Project Name _____

Location of Incident _____

- Incident Classification
- | | | | | | |
|---------------|--------------------|------------------|----------------|--------------------------|----------------|
| <u>Injury</u> | First Aid | <u>Vehicle</u> | Chargeable | DOT | DOT Vehicle |
| | OSHA Recordable | | Non-Chargeable | | DOT Reportable |
| | Lost Workday | | | | |
| | Restricted Workday | <u>Near Miss</u> | | <u>General Liability</u> | |

- Description (Provide facts, describe how incident occurred, provide diagram [on back] or photos)

- Analysis 1 (What unsafe acts or conditions contributed to the incident?)

- Analysis 2 (What systematic or management deficiencies contributed to incident?)

- Corrective Action(s) (List corrective action items, responsible person, scheduled completion date)

- Witnesses (Attach statements or indicate why unavailable)

Investigated By _____

Print	Signature	Date
-------	-----------	------

Manager, Corp. _____

Print	Signature	Date
-------	-----------	------

Health and Safety

ATTACHMENT 5 INCIDENT REVIEW BOARD

DATE:	LOCATION:
BOARD MEMBERS:	
INCIDENT DATE:	ASSOCIATE(S) INVOLVED IN INCIDENT:
INVESTIGATION COMPLETE: YES NO	INCIDENT CLASSIFICATION
THE FOLLOWING INFORMATION <u>MUST</u> BE PROVIDED BY THE REVIEW BOARD FOR THIS INCIDENT (PRINT)	
SUPERVISOR: _____	
CAUSE OF INCIDENT:	
ACTION(S) RECOMMENDED BY BOARD*:	
<small>*ALL ACTIONS BY THE INCIDENT REVIEW BOARD ARE SUBJECT TO FINAL REVIEW BY THE INDIVIDUALS LISTED BELOW.</small>	
ACCEPTED:	
_____ ASSOCIATE SIGNATURE	_____ SUPERVISOR SIGNATURE
ACCEPTED:	REJECTED FOR:
_____ MANAGER, CORPORATE HEALTH AND SAFETY	_____
ACCEPTED:	REJECTED FOR:
_____ MANAGER, HUMAN RESOURCES	_____
ACCEPTED:	REJECTED FOR:
_____ DIVISION VICE PRESIDENT	_____

ATTACHMENT 6 VEHICLE INCIDENT REPORT

INCIDENT DESCRIPTION This report is to be initiated by the associate involved in the incident or his/her direct supervisor. Please answer all questions completely. This report must be forwarded to the Manager, Corporate Health and Safety within 24 hours of the incident.

INCIDENT DESCRIPTION

INCIDENT DATE _____ TIME _____ A.M. or P.M.
LOCATION OF INCIDENT (ADDRESS, CITY AND STATE) _____
DESCRIPTION OF INCIDENT _____

WITNESS _____ PHONE NO. () _____
ADDRESS _____ CITY _____ STATE _____ ZIP _____
POLICE OFFICER'S NAME _____ DEPARTMENT _____

COMPANY VEHICLE

DRIVER _____ DRIVERS LICENSE _____ STATE _____
ADDRESS _____ CITY _____ STATE _____ ZIP: _____
WORK PHONE NO () _____ SSN _____ PROJECT NAME/NO _____ OFFICE/DEPT _____
VEHICLE NO _____ YEAR _____ MAKE _____ MODEL _____ LICENSE PLATE NO _____
STATE _____ VEHICLE OWNER _____ COMPANY _____ LEASED/RENTED _____ PRIVATE VEHICLE _____
VEHICLE TYPE _____ COMMERCIAL MOTOR VEHICLE _____ NON COMMERCIAL _____
IF NOT COMPANY-OWNED: OWNER _____ PHONE NO () _____
ADDRESS _____ CITY _____ STATE _____ ZIP _____
VEHICLE DAMAGE _____
NO. OF VEHICLES TOWED FROM SCENE _____ NUMBER OF INJURIES _____ NUMBER OF FATALITIES _____
WERE HAZARDOUS MATERIALS RELEASED? _____ YES _____ NO IF YES, DESCRIBE MATERIALS _____

OTHER VEHICLE

DRIVER _____ DRIVERS LICENSE _____ STATE _____
ADDRESS _____ CITY _____ STATE _____ ZIP _____
PHONE NO () _____ SSN _____
OWNERS NAME (CHECK IF SAME AS DRIVER _____)
ADDRESS _____ CITY _____ STATE _____ ZIP _____
INSURANCE COMPANY _____ POLICY NO _____
ADDRESS _____ CITY _____ STATE _____ ZIP _____
VEHICLE: YEAR _____ MAKE _____ MODEL _____ PLATE NO _____ STATE _____
VEHICLE IDENTIFICATION NUMBER _____
VEHICLE DAMAGE _____
PASSENGERS YES NO INJURIES YES (List names and telephone numbers below) NO

WEATHER _____ CLEAR _____ CLOUDY _____ FOG _____ RAIN _____
_____ SLEET _____ SNOW _____ OTHER _____

PAVEMENT _____ ASPHALT _____ STEEL _____ CONCRETE _____ WOOD _____
_____ GRAVEL/DIRT _____ BRICK/STONE _____ OTHER _____

CONDITION _____ DRY _____ WET _____ ICY _____ POTHOLES _____
_____ OTHER _____

TRAFFIC CONTROL _____ TRAFFIC LIGHT _____ STOP SIGN _____ RAILROAD _____
_____ NO INTERSECTION _____ NO CONTROL _____

VEHICLE INCIDENT REPORT (continued)

ROADWAY _____ NUMBER OF LANES EACH DIRECTION _____ RESIDENTIAL _____
 _____ DIVIDED HIGHWAY _____ UNDIVIDED HIGHWAY _____

Draw and name roadways showing each vehicle, direction of travel, and point of impact. Indicate travel direction before the incident with a solid line and post-incident movement with a broken line.

SYMBOLS:

- Your Vehicle 
- Other Vehicle(s) 
- 
- Pedestrian 
- Stop Sign 
- Yield 
- Railroad 

ADDITIONAL INFORMATION: _____

ASSOCIATE	_____	_____	_____
	(Print)	(Signature)	(Date)
SUPERVISOR	_____	_____	_____
	(Print)	(Signature)	(Date)
DEPARTMENT SAFETY REPRESENTATIVE	_____	_____	_____
	(Print)	(Signature)	(Date)
CORPORATE HEALTH & SAFETY MNGR.	_____	_____	_____
	(Print)	(Signature)	(Date)

HEALTH & SAFETY DEPARTMENT			
TRACKING # _____	INCIDENT REPORT ORDERED _____	AT FAULT _____	Y N
ORIGINAL: ___ H&S FILE	D&A SCREEN	DEFENSIVE DRIVING	Y N
CC: ___ ASSOCIATE	___ DEPT. SAFETY REP	___ W/C FILE	___ DENISE

APPENDIX H
EXCAVATING AND TRENCHING PROCEDURES

Approved By:

Signatures on File

Richard L. Barcum, CSP, CHMM
Manager, Corporate Health and Safety

Signatures on File

David D. Alleman, CPA
Vice President, CFO

Procedure

EXCAVATION AND TRENCHING

1.0 PURPOSE AND SUMMARY

This procedure presents the federal requirements for excavation safety. Excavation operations pose unique and serious hazards. With very few exceptions, protective systems must be designed and installed to protect associates who enter excavations. Accepted protective systems include; sloping (including benching), shoring and shielding. The protective system must be designed by a registered professional engineer (civil), and plans must be available for inspections on-site, under prescribed conditions.

In addition to federal requirements, some states (such as California) and localities may require notification of trenching/excavation operations prior to beginning work.

Compliance with this procedure is mandatory to ensure associate protection when working in or around excavations. Additional programs in the Corporate Health and Safety Program manual on confined space, hazard communication, lock-out/tag-out, respiratory protection, and any other safety programs or procedures deemed essential for associate protection, are to be used in conjunction with this program.

2.0 RESPONSIBILITY MATRIX

2.1 Procedure Responsibility

The Manager, Corporate Health and Safety is responsible for the issuance, revision and maintenance of this procedure.

2.2 Program Responsibility

This program will be monitored by the Corporate Health and Safety Department.

2.3 Supervisors and Managers

It is the responsibility of each Project Supervisor and Project Manager to implement and maintain the procedures and steps set forth in this program.

2.4 Associates

Each associate involved with excavation and trenching work is responsible to comply with all applicable safety procedures and requirements of this program.

3.0 DEFINITIONS

- 3.1 **Accepted Engineering Requirements** – Those requirements or practices which are compatible with standards required by a registered professional engineer (civil).
- 3.2 **Angle Of Repose** – The greatest angle above the horizontal plane at which a material will lie without sliding.
- 3.3 **Benching** - A method of protecting associates from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near vertical surfaces between levels.
- 3.4 **Cave-In** - The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by failing or sliding, in sufficient quantity so that it could entrap, bury, or otherwise injure and immobilize a person.
- 3.5 **Competent Person** - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to associates, and who has authorization to take prompt corrective measures to eliminate them.
- 3.6 **Confined Space** – A space that:
- Is large enough and so configured that an associate can bodily enter and perform assigned work; and

- Has limited or restricted means for entry or exit (e.g., tanks, vessels, silos, storage bins, hoppers, vaults and pits are spaces that may have limited means of entry); and
- Is not designed for continuous associate occupancy.

3.7 Design Engineer – An individual, currently registered as a civil engineer in the applicable state, who, in all other respects, meets the requirements of a pertinent State OSHA Program, or Federal OSHA in terms of his or her ability to design shoring, sloping, benching, or alternate trench/excavation systems.

3.8 Duration Of Exposure - The longer an excavation is open, the longer the other factors have to work on causing it to collapse.

3.9 Excavation - Any man-made cut, trench, or depression in an earth surface, formed by earth removal.

3.10 Hazardous Atmosphere - An atmosphere which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

3.11 Project Manager – An individual who is responsible to coordinate and direct the activities of both the Design Engineer and the Project Supervisor. The Project Manager is responsible to assure that all pre-excavation requirements are met.

3.12 Project Supervisor – An individual, such as a supervisor or engineer, who is familiar with the installation of shoring or sloping/benching systems and the attendant hazards of excavation or trenching operations. Project supervisors shall meet the particular requirements of State OSHA programs, or where applicable, the requirements of a Federal OSHA competent person. Project Supervisors shall assure that excavation/trenching work practices are properly followed.

3.13 Protective System - A method of protecting associates from cave-ins, from material that could fall or roll from an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide necessary protection.

3.14 Sheeting – Means the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

- 3.15 **Shield** - A structure that is capable of withstanding the forces imposed on it by a cave-in and thereby protects associates within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. All shields must be in accordance with 29 CFR 1926.652(c)(3) or (c)(4).
- 3.16 **Shoring** – Means the members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.
- 3.17 **Sloping** - A method of protecting workers from cave-ins by excavating to form sides of an excavation that are inclined away from the excavation to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences such as soil type, length of exposure, and application of surcharge loads.
- 3.18 **Spoil** – The earth material that is removed in the formation of an excavation or trench.
- 3.19 **Support System** – Means a structure, such as underpinning, bracing, or shoring, which provides support to an adjacent structure, underground installation, or the sides of an excavation.
- 3.20 **Surcharge Loads** - Generated by the weight of anything in proximity to the excavation, push starts for a cave-in (anything up top pushing down). Common surcharge loads:
- weight of spoil pile
 - weight of nearby buildings, poles, pavement, or other structural objects.
 - weight of material and equipment
- 3.21 **Tabulated Data** – Means a table and charts approved by a registered professional engineer (civil) and used to design and construct a protective system.
- 3.22 **Trench** - A narrow excavation below the surface of the ground, less than 15 feet wide, with a depth no greater than the width.
- 3.23 **Undermining** - Undermining can be caused by such things as leaking, leaching, caving or over-digging. Undermined walls can be very dangerous.

3.24 **Vibration** - A force that is present on construction sites and must be considered. The vibrations caused by backhoes, dump trucks, compactors and traffic on job sites can be substantial.

4.0 EXCAVATION COMPETENT PERSON

Before any excavation activity begins, TolTest will designate an excavation competent person who will oversee all TolTest activities in and around the excavation. This procedure applies regardless of whether personnel will enter a trench or an excavation. The TolTest competent person will determine the safety measures needed at all TolTest projects which involve excavation.

4.1 Competent Person Responsibilities

The competent person is defined as one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to associates, and who has authorization to take prompt corrective measures to eliminate them.

Additionally, the competent person must be on-site during any excavation activity for which he or she is responsible. The competent person must also perform or be capable of performing the following tasks:

- Application of 29 CFR 1926 Subpart P to the excavation activity;
- Daily inspections of the excavation, including an inspection after a hazard increasing event such as rain;
- Classifying soil at the excavation;
- Determining proper protective requirements;
- Determining the need for excavation de-watering operations and monitoring all de-watering activity;
- Completing the TolTest Excavation Permit.

5.0 SOIL CLASSIFICATION

Appendix A of 29 CFR 1926 Subpart P outlines the minimum requirements for the classification of soil at TolTest project sites. Upon determining the soil type, the

competent person must then determine the protection systems which will be used to protect any associate or subcontractor who may enter the excavation.

5.1 OSHA Soil Classifications

The following are the soil classifications recognized by OSHA in 29 CFR 1926 Subpart P. The competent person must classify the soil based on the manual and visual tests conducted at the excavation site.

5.1.1 Type A soil means:

Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot (TSF) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam, and, in some cases, silty clay loam and sandy clay loam. Cemented soils like caliche and hardpan are considered Type A.

However, Soil is **NOT** Type A if:

- It is fissured; or
- The soil is subject to vibration from heavy traffic, pile driving or similar effects; or
- The soil has been previously disturbed; or
- The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
- The material is subject to other factors that would require it to be classified as a less stable material.

The exclusions for Type A most generally eliminate it from most construction situations.

5.1.2 Type B soil means:

- Cohesive soil with an unconfined compressive strength greater than 0.5 TSF (48 kPa) but less than 1.5 TSF (144 kPa); or

- Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.
- Soil that meets the unconfined compressive strength or cementation requirements for Type A, but has been previously disturbed; or
- Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subjected to vibration; or
- Dry rock that is not stable; or
- Material that is part of a sloped, layered system where the layers dip into the excavation on a slope of less steep than 4 horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

However, Soil is **NOT** Type B if:

- The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater.

5.1.3 Type C soil means:

- Cohesive soil with an unconfined compressive strength of 0.5 TSF (48 kPa) or less; or
- Granular soils including gravel, sand, and loamy sand; or
- Submerged soil or soil from which water is freely seeping; or
- Submerged rock that is not stable; or
- Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper.

5.2 Soil Classification Requirements

The competent person must be able to classify each soil and rock deposit associated with a trench or excavation as stable rock, Type A soil, Type B soil, or Type C soil.

5.3 Basis of Classification

The classification of soil type must be accomplished by at least one visual and one manual test. There are several allowable tests that can be used to determine soil type. This testing must be done by the competent person and performed prior to and during the job.

These tests should be run on freshly excavated samples from the excavation and are designed to determine stability based on a number of criteria: the cohesiveness, the presence of fissures, the presence and amount of water, the unconfined compressive strength, the duration of exposure, undermining, and the presence of layering, prior to excavation and vibration.

The cohesion tests are based on methods to determine the presence of clay. Clay, silt, and sand are size classifications, with clay being the smallest sized particles, silt intermediate and sand the largest. Clay minerals exhibit good cohesion and plasticity (can be molded). Sand exhibits no elasticity and virtually no cohesion unless surface wetting is present. The degree of cohesiveness and plasticity depend on the amounts of all three types and water.

When examining the soil, three questions must be asked: Is the sample granular or cohesive? Fissured or non-fissured? What is the unconfined compressive strength measured in TSF?

Note: The competent person has the option of following the requirements in section 5 of this procedure to determine soil type or assuming the soil to be Type C and following the protection requirements for Type C soil.

Methods of testing soils:

- *Visual test:* If the excavated soil is in clumps, it is cohesive. If it breaks up easily, not staying in clumps, it is granular.

- *Wet manual test:* Wet your fingers and work the soil between them. Clay is a slick paste when wet, meaning it is cohesive. If the clump falls apart in grains, it is granular.
- *Dry strength test:* Try to crumble the sample in your hands with your fingers. If it crumbles into grains, it is granular. Clay will not crumble into grains, only into smaller chunks.
- *Pocket penetrometer test:* This instrument is most accurate when soil is nearly saturated. This instrument will give unconfined compressive strength in tons per square foot. The spring-operated device uses a piston that is pushed into a coil up to a calibration groove. An indicator sleeve marks and retains the reading until it is read. The reading is calibrated in tons per square foot (TSF) or kilograms per cubic centimeter.
- *Thumb Penetration Test:* The competent person attempts to penetrate a fresh sample with thumb pressure. If the sample can be dented but penetrated only with great effort, it is Type A. If it can be penetrated several inches and molded by light pressure, it is Type C. Type B can be penetrated with effort and molded.

The following should be used as guidelines when performing the Thumb Penetration Test.

Type A – Penetrated to ½ of the thumb nail length with great effort.

Type B – Penetrated to the first thumb knuckle with great effort. Can be molded with effort

Type C – Penetrated several inches and easily molded with little effort or crumbles apart during the Thumb Penetration Test.

- *Shearvane:* Measures the approximate shear strength of saturated cohesive soils. The blades of the vane are pressed into a flat section of undisturbed soil, and the knob is turned slowly until soil failure. The dial is read directly when using the standard vane. The results will be in tons per square foot or kilograms per cubic centimeter.

The competent person will perform several tests of the excavation to obtain consistent, supporting data along its depth and length.

The soil is subject to change several times within the scope of an excavation and the moisture content will vary with weather and job conditions. The competent person must also determine the level of protection based on what conditions exist at the time of the test, and allow for changing conditions.

5.4 Reclassification

If, after the soil has been classified, conditions change, the competent person is responsible for evaluating the situation and, if necessary, changing the classification.

5.5 OSHA Soil Types

5.5.1 Stable Rock

Stable rock is not one of the texture classes. However, it is one of the OSHA classifications of soil. Stable rock is solid mineral material which can be excavated; and the sides stand vertical and remain stable and vertical throughout construction. Coral is not considered stable rock.

5.5.2 Cemented Soil

Cemented soils are soils that are held together by a chemical agent such as calcium carbonate. Examples of cemented soils would include caliche and hardpan. Cemented soils are classified as Type A soils with an unconfined compressive strength greater than 1.5 TSF.

5.5.3 Cohesive Soil

Cohesive soils are basically fine grained soils. Cohesive soils range from clay through clay loam. A cohesive soil will stand unsupported when excavated and is plastic when moist. That is, cohesive soil can be rolled into a ribbon. A cohesive soil is hard to break up when it is dry. Cohesive soils are classified as Type A soils with an unconfined compressive strength greater than 1.5 TSF

5.5.4 Granular Soil

Granular soils are composed of coarse grained material that have very little cohesive strength. Granular soils include loamy sand, sand and gravel. A soil is classified as granular if more than 65% of the grains

are distinguishable with the unaided eye. Granular soils, when excavated, will not stand and the walls of the excavation can crumble easily. Some granular soils will exhibit cohesion when wet, but when dry will fall apart. This type of soil is especially dangerous when found at a construction site because the walls of the trench appear to stand with no support, however, when they dry they could crumble and fall into the trench bottom. Granular soils are classified as soil Type B or C, and may require the highest degree of protection. Type C soils would have an unconfined compressive strength of less than 0.5 TSF.

5.5.5 Granular Cohesionless

Soils that range from silt through sandy loam or are composed of angular particles are said to be granular cohesionless soils. These are difficult soils to work with because the group ranges from a very stable Type B soil to the unstable Type C soil.

5.5.6 Layered Soil System

A layered soils system is composed of two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered. The layers may lay on a horizontal plane or be sloped. When they are sloped into the excavation they represent a collapse hazard to the trench wall. A slope greater than 4H:1V would classify any soil as Type C. Sloped layers less than 4H:1V may be classified as Type B soil, depending upon the soil classification. No layered system can be Type A soil.

6.0 SELECTION OF PROTECTIVE SYSTEMS

29 CFR 1926.652 requires that each associate in an excavation be protected from cave-ins by an adequate protective system unless excavations are:

- made in stable rock; or
- are less than five (5) feet in depth **and** examination by the competent person provides no indication of potential cave-in.

Additionally, whichever protective system is chosen must have the capacity to resist without failure all loads that are intended or could reasonably be applied to the system.

6.1 Design of Sloping and Benching Systems

The slopes and configurations of sloping and benching systems must be determined by the competent person in accordance with the requirements of 29 CFR 1926(b)(1) through (b)(4) as well as 29 CFR 1926 Subpart P – Appendix B.

After the competent person has determined the soil type based on one visual and one manual test, he or she may design the sloping and benching systems for excavations less that 20 feet deep using the following table.

MAXIMUM ALLOWABLE SLOPES BASED ON SOIL CLASSIFICATION

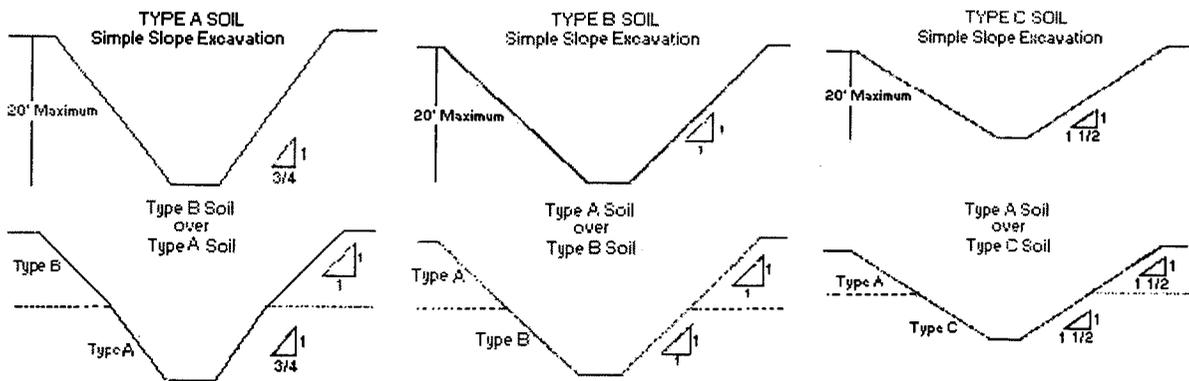
Soil Line	Maximum Allowable Slope/Bench for Excavations Less Than 20 Feet Deep
Stable Rock	Vertical Sides (90°)
Type A Soil	3/4H:1V (53°)
Type B Soil	1H:1V (45°)
Type C Soil	1 1/2H:1V (34°)

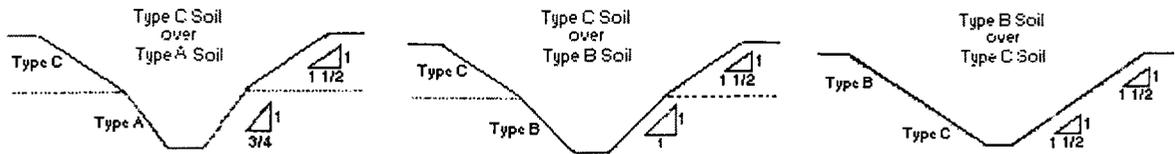
Note: If your sloped/benched soil shows any sign of distress you must increase the layback an additional 1/2H:1V.

Note: Sloping and Benching for excavations greater than 20 feet deep must be designed by a registered professional engineer (civil).

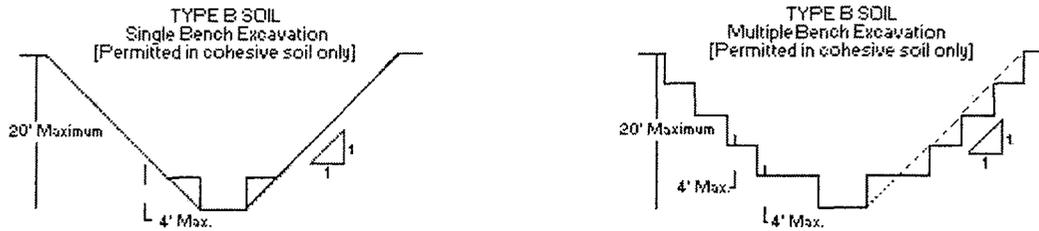
Note: Benching is not permitted in Type C soil unless the excavation is designed by a registered professional engineer (civil) and tabulated data provided.

SLOPE CONFIGURATIONS





BENCH CONFIGURATIONS



6.2 Design of Support Systems, Shield Systems, and Other Protective Systems

If the competent person determines that personnel will be protected from cave-ins by a protective system other than sloping and benching, the design of the support systems, shield systems, and other protective systems must be based on the conditions at the project site and data provided by a ToITest or subcontracted registered professional engineer or from tabulated data provided by the manufacturers of the protective systems. Deviation from the engineering recommendations must be approved by the registered professional engineer.

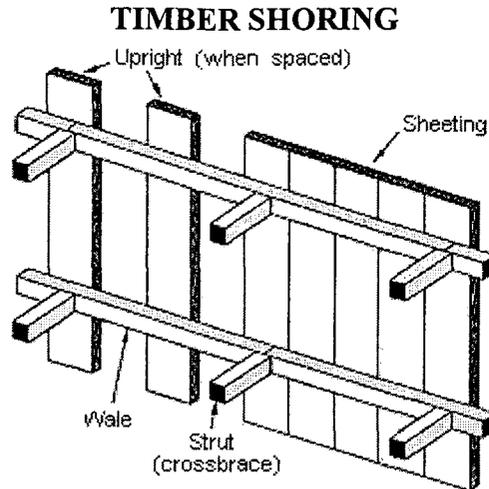
The design of the protective system must be in accordance with the requirements of 29 CFR 1926.652(c)(1) through (c)(4) and 29 CFR 1926 Subpart P – Appendices C, D, E.

In large/deep excavations where traditional shoring and sloping are not practical, alternate protective measures may be implemented to protect personnel in the excavation. Additionally, the top of the excavation must be protected with stop logs, earthen berms, or other types of protective barriers which will keep pedestrians and vehicles from approaching the edge of the excavation. Any deviations from traditional protective systems must be approved by the Manager, Corporate Health and Safety and a registered professional engineer (civil).

6.2.1 Shoring Types

Shoring is the provision of a support system for trench faces used to prevent movement of soil, underground utilities, roadways, and foundations. Shoring or shielding is used when the location or depth of the cut makes sloping back to the maximum allowable slope

impractical. Shoring systems consist of posts, wales, struts, and sheeting. There are two basic types of shoring, timber and aluminum hydraulic.



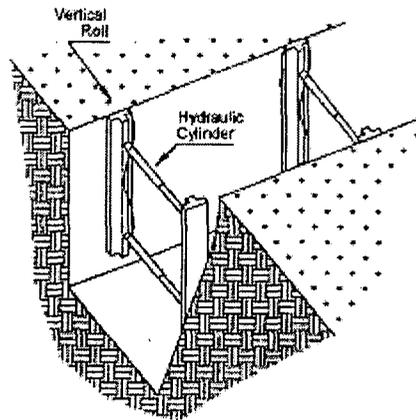
6.2.1.1 Hydraulic Shoring

Hydraulic shoring provides a critical safety advantage over timber shoring because workers do not have to enter the trench to install or remove hydraulic shoring. Other advantages of most hydraulic systems are that they:

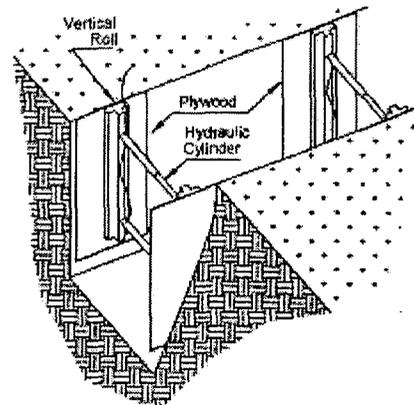
- Are light enough to be installed by one worker;
- Are gauge-regulated to ensure even distribution of pressure along the trench line;
- Can have their trench faces "preloaded" to use the soil's natural cohesion to prevent movement; and
- Can be adapted easily to various trench depths and widths.

All shoring should be installed from the top down and removed from the bottom up. Hydraulic shoring should be checked at least once per shift for leaking hoses and/or cylinders, broken connections, cracked nipples, bent bases, and any other damaged or defective parts.

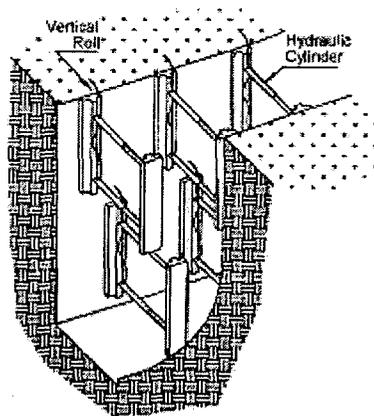
TYPICAL ALUMINUM HYDRAULIC SHORING INSTALLATIONS



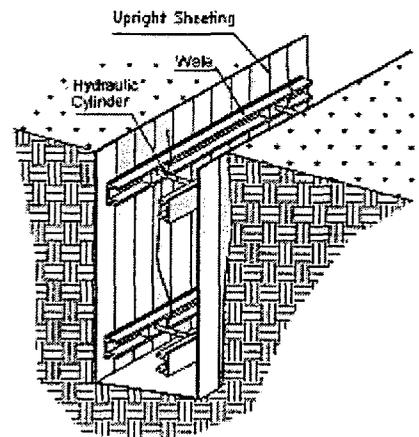
Vertical Aluminum Hydraulic Shoring
(Spot Bracing)



Vertical Aluminum Hydraulic Shoring
(With Plywood)



Vertical Aluminum Hydraulic Shoring
(Stacked)



Aluminum Hydraulic Shoring Water System
(Typical)

6.2.1.2 Pneumatic Shoring

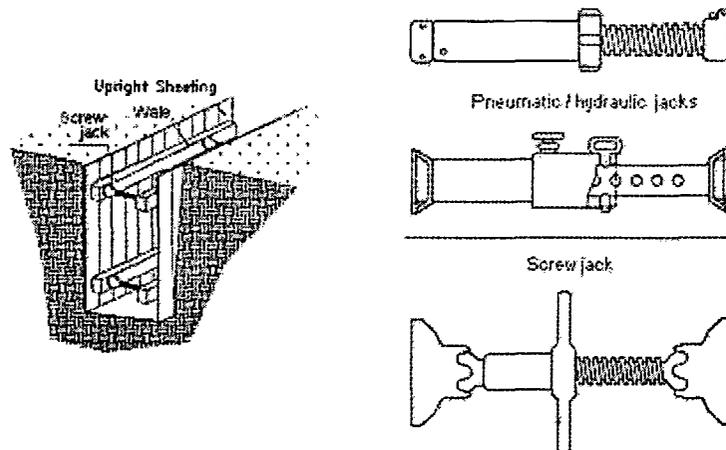
Pneumatic Shoring works in a manner similar to hydraulic shoring. The primary difference is that pneumatic shoring uses air pressure in place of hydraulic pressure. A disadvantage to the use of pneumatic shoring is that an air compressor must be on site.

1. Screw Jacks. Screw jack systems differ from hydraulic and pneumatic systems in that the struts of a screw jack system

must be adjusted manually. This creates a hazard because the worker is required to be in the trench in order to adjust the strut. In addition, uniform "preloading" cannot be achieved with screw jacks, and their weight creates handling difficulties.

2. Single-Cylinder Hydraulic Shores. Shores of this type are generally used in a water system, as an assist to timber shoring systems, and in shallow trenches where face stability is required.
3. Underpinning. This process involves stabilizing adjacent structures, foundations, and other intrusions that may have an impact on the excavation. As the term indicates, underpinning is a procedure in which the foundation is physically reinforced. Underpinning should be conducted only under the direction and with the approval of a registered professional engineer.

SHORING VARIATIONS



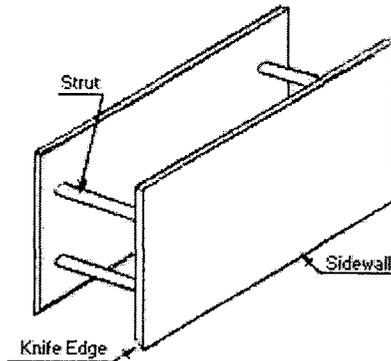
6.2.2 Shielding Types

6.2.2.1 Trench Boxes

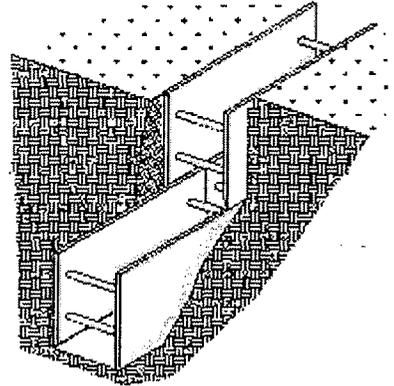
Trench Boxes are different from shoring because, instead of shoring up or otherwise supporting the trench face, they are intended primarily to protect workers from cave-ins and similar incidents. The excavated area between the outside of the trench box and the face of the trench should be as small as possible. The space between the trench boxes and the excavation side are backfilled to prevent lateral movement of the box. Shields may

not be subjected to loads exceeding those which the system was designed to withstand.

TRENCH SHIELD



TRENCH SHIELD STACKED

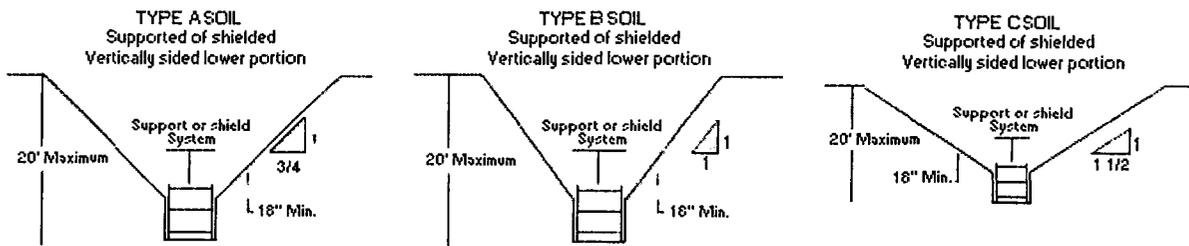


6.3 Combined Use

Trench boxes are generally used in open areas, but they also may be used in combination with sloping and benching. The box should extend at least 18 in (0.45 m) above the surrounding area if there is sloping toward excavation. This can be accomplished by providing a benched area adjacent to the box.

Earth excavation to a depth of 2 ft (0.61 m) below the shield is permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of possible loss of soil from behind or below the bottom of the support system. Conditions of this type require observation on the effects of bulging, heaving, and boiling as well as surcharging, vibration, adjacent structures, etc., on excavating below the bottom of a shield. Careful visual inspection of the conditions mentioned above is the primary and most prudent approach to hazard identification and control.

SLOPE AND SHIELD CONFIGURATIONS



7.0 EXCAVATION SAFETY REQUIREMENTS

Excavation activity exposes TolTest personnel and subcontractors to many dangers which, if not recognized, can cause death or serious injury.

7.1 General

Each associate in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with 29 CFR 1926.652. The competent person shall ensure that the required protective system is installed and maintained per the design specifications.

No associates shall be permitted to enter the excavation unless they are specifically required to do so. Unauthorized persons shall not be allowed access.

7.2 Supervision

Work in an excavation shall at all times be supervised by a TolTest competent person. This individual will be responsible for identifying any unusual developments which may warn of impending earth movement.

7.3 Surface Hazards

The excavation area should be inspected and any debris, structures, and surface protrusions that are located so as to create a hazard to associates shall be evaluated for structural integrity and supported or removed if necessary.

7.4 Underground Installations/Utility Locations

Before conducting any excavation work, the location of utility installations, such as sewer, telephone, fuel, electric, water lines, fiber optic, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined.

Utility companies or the state utility protection service shall be contacted at least two (2) working days prior to excavation activities to be advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation.

Note: Some states and localities have notification requirements that differ from Federal OSHA. Prior to excavating in any area, the Project Manager or designee should contact the local service to identify their location specific requirements.

TolTest personnel and subcontractors should be careful to protect and preserve the markings of approximate locations of facilities until the markings are no longer required for safe and proper excavations.

If the markings of utility locations are destroyed or removed before excavation commences or is completed, the TolTest competent person must notify the utility company or utility protection service to inform them that the markings have been destroyed and need replaced. Normally, it will take two (2) to three (3) working days advance notice for the utility protection service to remark the locations.

TolTest equipment operators shall maintain at least 3 feet clearance between any underground utility and the cutting edge or point of powered equipment. When excavating within 36 inches of the markings of underground facilities, personnel should conduct the excavation in a careful and prudent manner, excavating by hand (i.e. shovel) to determine the precise location of the facility/utility and to prevent damage.

While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard associates and prevent damage.

7.5 Access and Egress

TolTest will provide a safe means of access to and egress from all excavations. The following are considered acceptable methods of entering and exiting excavations.

7.5.1 Structural Ramps

Structural ramps that are used solely by associates as a means of access or egress from excavations shall be designed by the competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design or structural engineering, and shall be constructed in accordance with the design.

Structural members used for ramps and runways shall be of uniform thickness. Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping. Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments on the top surface to prevent slipping.

7.5.2 Means of Egress from Trench Excavations

A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for associates. Any ramp used for associate egress must be sloped at an angle which would allow associates to walk upright out of the excavation.

7.6 Exposure to Vehicular Traffic

TolTest and subcontract personnel who may be exposed to vehicular traffic both on projects and public highways shall be provided with and shall wear warning vests or other suitable garments marked with or made of reflectorized or high-visibility material. Additionally, depending upon site conditions the use of flaggers and warning signs may be necessary.

7.7 Exposure to Falling Loads

No TolTest associate or subcontractor shall be permitted underneath loads handled by lifting or digging equipment. Personnel must stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Truck drivers may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped with over-cab protective structures, in accordance with 29 CFR 1926.601(b)(6), to provide adequate protection for the operator from falling objects during loading and unloading operations.

7.8 Warning System for Mobile Equipment

When heavy equipment and trucks operate adjacent to an excavation or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals or stop logs. If possible, the approach grade should be away from the excavation.

7.9 Hazardous Atmospheres

Because there is a possibility that excavation activity at TolTest project sites involve hazardous atmospheres, the TolTest competent person must ensure that acceptable atmospheric conditions exist.

The TolTest competent person or his/her designee shall perform direct reading atmospheric monitoring in all excavations of any depth into which TolTest personnel or subcontractors must enter where a hazardous atmosphere exists or

could reasonably be expected to exist. If there are any questions, the competent person should treat the excavation like a confined space and follow Procedure HS401 – Confined Spaces.

Based on the competent person's visual observation of the excavation and the soil and/or fill material, atmospheric monitoring may not be necessary. However, if conditions change, the competent person must re-evaluate whether atmospheric monitoring is required.

7.9.1 Atmospheric Monitoring

When atmospheric monitoring is required, the competent person or his/her designee must check the atmosphere for the following in the order shown:

- Oxygen Content – acceptable conditions: 20.8%, 20.9% or 21%
- Flammable Conditions – acceptable conditions: less than 10% LEL
- Toxic Atmospheres – based on the established PEL or TLV

Note: Any reading other than those listed above, must be investigated prior to associates entering the excavation.

7.9.2 Ventilation

Adequate precautions shall be taken, for example providing ventilation to prevent associate exposure to harmful atmospheres. When controls are used that are intended to reduce the level of atmospheric contaminants to acceptable levels, direct reading air monitoring shall be conducted periodically as determined by the competent person or his/her designee to ensure that the atmosphere remains safe.

7.9.3 Emergency Response Equipment

Emergency rescue equipment, such as self-contained breathing apparatus (SCBA), a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be kept close to the excavation for use in an emergency.

7.10 Protection from Hazards Associated With Water Accumulation

Associates shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect associates against the hazards posed by water accumulation. The precautions necessary to protect associates adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.

If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operation.

If excavation work interrupts the natural drainage of surface water (such as streams); diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to run-off from heavy rains will require an inspection by a competent person.

7.11 Stability of Adjacent Structures

Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing or underpinning shall be provided to ensure the stability of such structures for the protection of associates.

Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to associates shall not be permitted except when:

- A registered professional engineer (civil) has approved the determination that such excavation work will not pose a hazard to associates; or
- A support system, such as underpinning, designed by a registered professional engineer (civil) is provided to ensure the safety of associates and the stability of the structure; or
- The excavation is in stable rock; or
- A registered professional engineer (civil) has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity.

- If a support system has been put in place to stabilize an adjacent structure, it must be inspected for movement and structural integrity daily by the competent person.
- Sidewalks, pavements, and other structures shall not be undermined unless a support system or another method of protection is provided to protect associates from the possible collapse of such structures.

7.12 Protection from Loose Rock or Soil

Adequate protection shall be provided to protect associates from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the excavation face to stop and contain falling material; or other means that provide equivalent protection.

Associates shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least 2 feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

7.13 Inspections

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work each day and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are required when associate exposure can be reasonably anticipated. An Excavation/Trenching Permit must be completed by the competent person to document the inspections. Canceled Excavation/Trenching Permits should be placed in the project file upon completion of the project.

Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed associates shall be

removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

7.14 Fall Protection

Where associates or equipment are required or permitted to cross over excavations; walkways or bridges with standard guardrails shall be provided.

Since open excavations are often an attractive nuisance to the public, adequate barrier for physical protection shall be provided at all excavations. Remotely located excavations may require special protection including, but not limited to, highly visible snow fence, concrete "jersey" barriers, chain link fence and flashing warning light. All wells, pits, shafts, etc., shall be barricaded or covered. Upon completion of exploration and similar operations, temporary wells, pits, shafts, etc. shall be covered or backfilled.

8.0 EXCAVATION PERMITS

An Initial Excavation/Trenching Permit (Attachment 1) must be completed by the competent person on the first day that personnel enter the excavation. On each subsequent day that an excavation is open and poses safety hazards to personnel who work around or may have to enter excavations, the competent person may complete the Daily Excavation/Trenching Permit (Attachment 2). However, when soil classification changes are evident or when additional protective systems are determined to be required, the competent person shall complete the Initial Excavation/Trenching Permit.

If a project site has several excavations open and active, each excavation must have its own permit completed. Conversely, a project site which has an open excavation that is not active does not require a daily Excavation/Trenching Permit if the competent person determines that the excavation is NOT posing hazards to site personnel or the public, and is adequately guarded. The competent person must determine what type of inspections and documentation will be required.

The Excavation/Trenching Permit should be retained in the project file and will serve as a record of daily excavation inspection.

9.0 TRAINING

Associates shall not be assigned, or permitted, to design, supervise, or work in or about excavations until they have completed an excavation briefing to include:

- Types of hazards associated with excavation operations,
- Safe work practices and techniques,

- A review of applicable Federal, State, and Local regulations, and
- A review of this procedure.

This briefing can be conducted by the Project Manager or Project Supervisor.

Associates shall not be assigned, or permitted, to act as an excavation competent person until they have completed the TolTest Excavation and Trenching Safety Program presented by the Corporate Health and Safety Department. In the event that it is not feasible to attend this training course, another course may be allowed at the discretion of the Manager, Corporate Health and Safety.

Tailgate Safety Meetings detailing the specific hazards of the work to be performed and safety precautions and procedures specific for the job shall be conducted by the Project Supervisor or designee at the beginning of each shift for each job. These shall be conducted according to the requirements of IPP150: Health and Safety Meetings.

10.0 EXCEPTION PROVISIONS

Variations to this procedure shall be requested in accordance with established variance procedures.

11.0 ATTACHMENTS

1. Initial Excavation/Trenching Permit
2. Daily Excavation/Trenching Permit
3. Selection of Protective Systems for Excavations 20 Feet or Less in Depth
4. Sloping Options
5. Shoring or Shielding Options
6. Utility Location Services

Attachment 1

Initial Excavation/Trenching Permit

Project Name:	
Project Location:	Project Number:
Name of Competent Person:	Permit Good on This Date Only:
Excavation Length, Depth and Width:	

EMPLOYEE TRAINING AND PRE-EXCAVATION BRIEFING

1. Does this job require special training: YES _____ NO _____
2. Mandatory pre-excavation briefing conducted on: _____ DATE _____

SOIL CLASSIFICATION and PROTECTIVE SYSTEM DETERMINATION

1. Will the competent person classify the soil based on its properties and site conditions? YES _____ NO _____
 If No, the soil is Type C, move to 9 of this section

VISUAL TEST

2. Based on visual observation, which best describes the soil in this excavation?
 Stable Rock Cemented Soil Cohesive Soil Granular Soil
 Granular Cohesionless Layered System Describe Layering: _____
3. Based on visual observation, which best describes the moisture condition of the soil? (check all that apply)
 Dry Soil Moist Soil Wet Soil Saturated Soil
 Seeping Water Surface Water Present Submerged
4. Is the excavation subject to vibration? YES _____ NO _____
5. Is the excavation in previously disturbed soil? YES _____ NO _____
6. Are fissures observed in the excavation walls or on the surface? YES _____ NO _____

MANUAL TEST (Must Perform At Least One of the Following)

THUMB PENETRATION TEST

7. Test Performed? YES _____ NO _____
 Soil indented with great effort (e.g. to 1/2 of the thumb nail) Type A
 Soil indented with some effort (e.g. to first thumb knuckle) Type B
 Soil easily penetrated several inches by thumb with little or no effort. Note: If soil is submerged seeping water, subjected to surface water, runoff, exposed to wetting. Type C

PENETROMETER OR SHEARVANE TEST

8. Test Performed? YES _____ NO _____
- Device Used/Serial Number: _____ Ave. TSF: _____

Soil with unconfined compressive strength of 1.5 TSF or greater Type A
 Soil with unconfined compressive strength of greater than 0.5 TSF and less than 1.5 TSF. Type B
 Soil with unconfined compressive strength of 0.5 TSF or less. Note: If soil is submerged seeping water, subjected to surface water, runoff, exposed to wetting. Type C

9. Soil Classification
 Stable Rock Type A Type B Type C
 No soil is Type A if fissured, subject to vibration, previously disturbed, or layered dipping into excavation on a slope of 4H:1V or greater.
10. Which best describes the layering system of the excavation/trench?
 No Layering Horizontal Layering Less than 4H:1V 4H:1V or greater
 If the layering system is Horizontal Layering, complete 11 of this section, otherwise skip to 12
11. Horizontal Layering
 Type A over Type B Type A over Type C Type B over Type A
 Type B over Type C Type C over Type A Type C over Type B

PROTECTIVE SYSTEM

12. What Type of Protective System Will Be Used?
 None Required Sloping Simple Bench Multiple Bench
 Timber Shoring Trench Shield Hydraulic Shoring
 Note: All Protective Systems must have tabulated data, developed by a registered professional engineer, available.

ELECTRICAL SAFETY

1. Are all electrical devices grounded and/or GFCI protected? YES ___ NO ___ N/A ___

SURFACE ENCUMBRANCES

1. Have all surface encumbrances that are located so as to create a hazard to associates been removed or supported, as necessary, to safeguard associates? YES ___ NO ___ N/A ___

UNDERGROUND INSTALLATIONS

1. Have the estimated locations of all underground installations been determined prior to excavation? YES ___ NO ___ N/A ___
 2. Have utility companies been contacted and advised of proposed work? YES ___ NO ___ N/A ___
 3. If underground installations are exposed, are they protected, supported or removed while the excavation is open? YES ___ NO ___ N/A ___

ACCESS AND EGRESS

1. Are stairways, ladders, or ramps provided every 25 feet? YES ___ NO ___ N/A ___
2. Are structural ramps that are used for access and egress of equipment and/or personnel designed by a competent person qualified in structural design and constructed in accordance with the design? YES ___ NO ___ N/A ___

EXPOSURE TO VEHICULAR TRAFFIC

1. Are personnel exposed to public of project vehicular traffic wearing reflectorized or high visibility vests? YES ___ NO ___ N/A ___

EXPOSURE TO FALLING LOADS

1. Are associates prohibited from standing underneath loads handled by lifting or diffing equipment? YES ___ NO ___ N/A ___

WARNING SYSTEMS FOR MOBILE EQUIPMENT

1. Are warning systems utilized when mobile equipment is operated adjacent to or the edge of an excavation? YES ___ NO ___ N/A ___

If yes, which type is being used?

- Hand Signal Stop Logs Earthen Berm Other _____

TESTING FOR HAZARDOUS ATMOSPHERES

1. Are the atmospheric hazards that can be reasonably expected to exist in excavations greater than 4 feet deep tested and controlled? YES ___ NO ___ N/A ___
2. Is testing conducted as often as necessary to ensure safety of personnel? YES ___ NO ___ N/A ___

TIMES & READINGS:	Time: _____				
	LEL: _____ %				
	Oxygen: _____ %				
	Toxic: _____ ppm of _____				
SPECIAL PRECAUTIONS:					

EMERGENCY RESCUE EQUIPMENT

1. Is emergency rescue equipment such as SCBA, safety harness and lifeline, or basket stretcher available and attended when hazardous atmospheric conditions exist? YES ___ NO ___ N/A ___

PROTECTION FROM HAZARDS ASSOCIATED WITH WATER ACCUMULATION

1. Is water being controlled or prevented from accumulating in excavation by the use of water removal equipment? YES ___ NO ___ N/A ___
2. Is water control equipment operation being monitored by a competent person? YES ___ NO ___ N/A ___

STABILITY OF ADJACENT STRUCTURES

1. Are support systems such as shoring, bracing, or underpinning provided to ensure stability of adjoining structures (i.e. buildings, walls) endangered by excavation activities? YES ___ NO ___ N/A ___
2. Has the support system been designed by a registered professional engineer (civil)? YES ___ NO ___ N/A ___

PROTECTION OF ASSOCIATES FROM LOOSE ROCK OR SOIL

1. Are associates protected from excavated or other material and equipment by placing spoils a minimum of two (2) feet from the edge of excavations or by the use of retaining devices? YES ___ NO ___ N/A ___

INSPECTIONS

1. Are daily inspections of excavations where associate exposure can be reasonably anticipated being done by the competent person? YES ___ NO ___ N/A ___
2. Are inspections being performed by a competent person after every rainstorm or other hazard increasing occurrence? YES ___ NO ___ N/A ___
3. Are associates removed from the excavation if the competent person finds evidence at any time of a situation that could result in a possible cave-in, protective system failure, hazardous atmosphere, or other hazardous condition? YES ___ NO ___ N/A ___

FALL PROTECTION

1. Are standard guardrails provided on walkways and bridges that cross over excavations? YES ___ NO ___ N/A ___
2. Are all remotely located excavations adequately barricaded or covered? YES ___ NO ___ N/A ___

SHORING AND OTHER PROTECTIVE SYSTEM

1. Have all shoring and/or protective systems been designed by a registered professional engineer (civil) or is it accompanied by tabulated data from the manufacturer? YES ___ NO ___ N/A ___
2. Are shoring and other protective systems checked/measured each day to detect movement and possible failure? YES ___ NO ___ N/A ___

(Signature of Competent Person)

(Date)

ATTACHMENT 2

Daily Excavation/Trenching Permit

Project Name:	
Project Location:	Project Number:
Name of Competent Person:	Permit Good on This Date Only:
Excavation Length, Depth and Width:	

SOIL CLASSIFICATION and PROTECTIVE SYSTEM DETERMINATION

- Has the soil classification changed from the previous day? YES _____ NO _____
If Yes, an Initial Excavation/Trenching Permit must be completed.
- Are additional protective systems needed which differ from those used during the previous day? YES _____ NO _____
If Yes, an Initial Excavation/Trenching Permit must be completed.

HAZARDS

- Are all electrical devices grounded and/or GFCI protected? YES ___ NO ___ N/A ___
- Have all surface encumbrances that are located so as to create a hazard to associates been removed or supported, as necessary, to safeguard associates? YES ___ NO ___ N/A ___
- If underground installations are exposed, are they protected, supported or removed while the excavation is open? YES ___ NO ___ N/A ___
- Are stairways, ladders, or ramps provided every 25 feet? YES ___ NO ___ N/A ___
- Are personnel exposed to public of project vehicular traffic wearing reflectorized or high visibility vests? YES ___ NO ___ N/A ___
- Are associates prohibited from standing underneath loads handled by lifting or diffing equipment? YES ___ NO ___ N/A ___
- Are warning systems utilized when mobile equipment is operated adjacent to or the edge of an excavation? YES ___ NO ___ N/A ___
If yes, which type is being used?
 Hand Signal Stop Logs Earthen Berm Other _____
- Are the atmospheric hazards that can be reasonably expected to exist in excavations greater than 4 feet deep tested and controlled? YES ___ NO ___ N/A ___
- Is testing conducted as often as necessary to ensure safety of personnel? YES ___ NO ___ N/A ___

TIMES & READINGS:	Time: _____				
	LEL: _____ %				
	Oxygen: _____ %				
	Toxic: _____ ppm of _____				
SPECIAL PRECAUTIONS:					

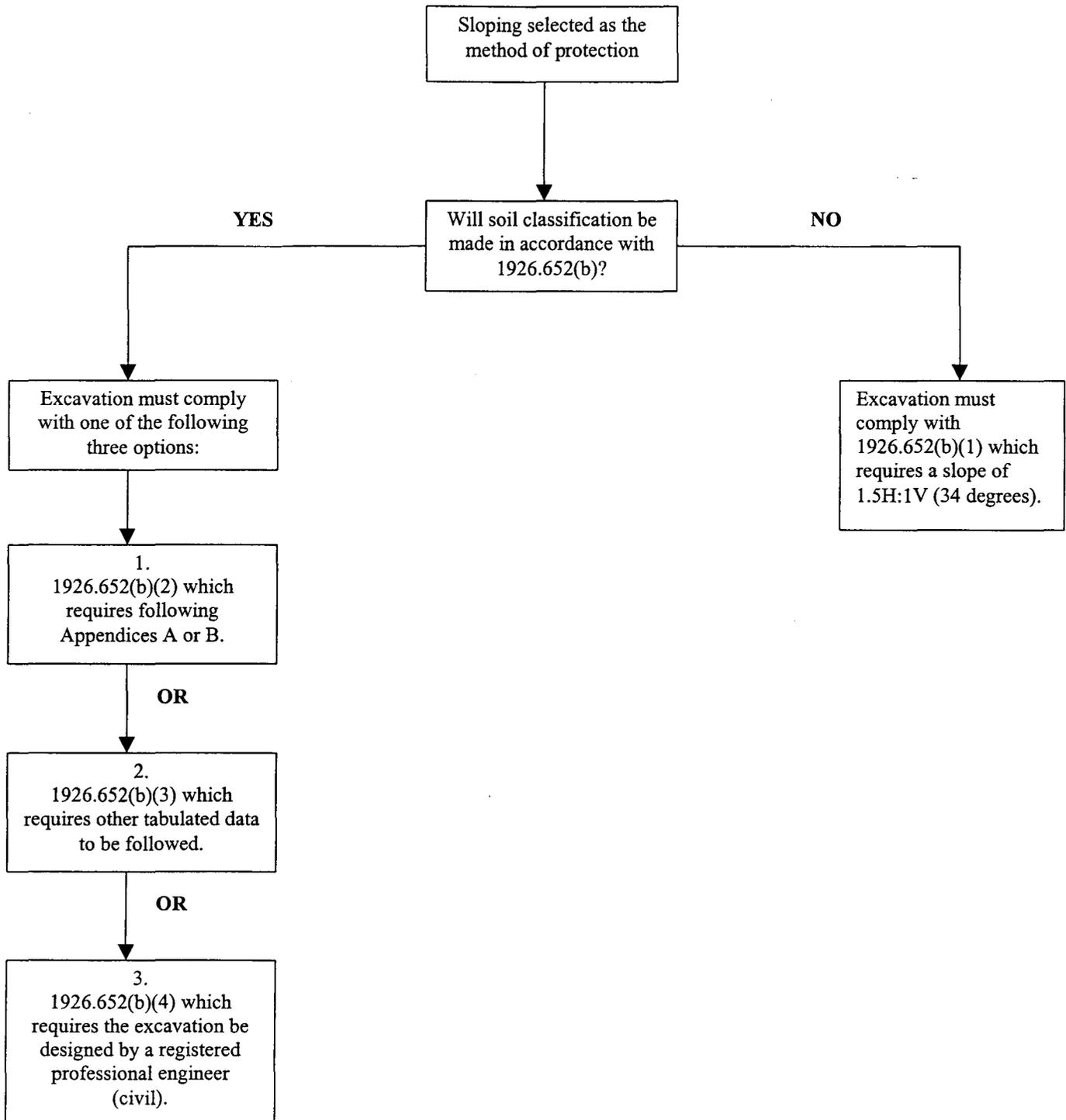
10. Is emergency rescue equipment such as SCBA, safety harness and lifeline, or basket stretcher available and attended when hazardous atmospheric conditions exist? YES ___ NO ___ N/A ___
11. Is water being controlled or prevented from accumulating in excavation by the use of water removal equipment? YES ___ NO ___ N/A ___
12. Is water control equipment operation being monitored by a competent person? YES ___ NO ___ N/A ___
13. Are support systems such as shoring, bracing, or underpinning provided to ensure stability of adjoining structures (i.e. buildings, walls) endangered by excavation activities? YES ___ NO ___ N/A ___
14. Are associates protected from excavated or other material and equipment by placing spoils a minimum of two (2) feet from the edge of excavations or by the use of retaining devices? YES ___ NO ___ N/A ___
15. Are daily inspections of excavations where associate exposure can be reasonably anticipated being done by the competent person? YES ___ NO ___ N/A ___
16. Are inspections being performed by a competent person after every rainstorm or other hazard increasing occurrence? YES ___ NO ___ N/A ___
17. Are associates removed from the excavation if the competent person finds evidence at any time of a situation that could result in a possible cave-in, protective system failure, hazardous atmosphere, or other hazardous condition? YES ___ NO ___ N/A ___
18. Are standard guardrails provided on walkways and bridges that cross over excavations? YES ___ NO ___ N/A ___
19. Are all remotely located excavations adequately barricaded or covered? YES ___ NO ___ N/A ___
20. Are shoring and other protective systems checked/measured each day to detect movement and possible failure? YES ___ NO ___ N/A ___

(Signature of Competent Person)

(Date)

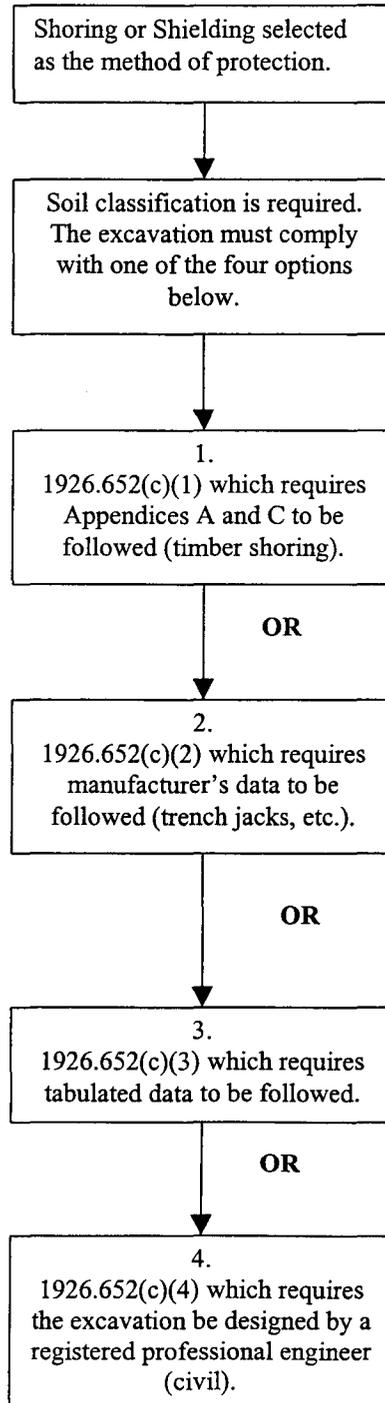
ATTACHMENT 4

SLOPING OPTIONS



ATTACHMENT 5

SHORING OR SHIELDING OPTIONS



ATTACHMENT 6

UTILITY LOCATION SERVICES

ALABAMA	Alabama One Call	1-800-292-8525
ALASKA	Locate Call Center of Alaska, Inc.	1-907-278-3121
ARIZONA	Arizona Blue Stake, Inc.	1-602-263-1100
ARKANSAS	Arkansas One Call System, Inc.	1-800-482-8998
CALIFORNIA	Underground Service Alert North Underground Service Alert South	1-800-422-4133 1-800-422-4133
COLORADO	Utility Notification Center of Colorado	1-800-922-1987
CONNECTICUT	Call Before You Dig	1-800-922-4455
DELAWARE	Miss Utility of Delmarva	1-800-282-8555
FLORIDA	Sunshine State One Call of Florida, Inc.	1-800-432-4770
GEORGIA	Utilities Protection Center, Inc.	1-800-282-7411
HAWAII	Hawaii One-Call	1-800-227-2600
IDAHO	Dig Line Palouse Empire Undrgrnd Crd. Cncl. Kootenai County Utility Coord. Cncl. Utilities Underground Location Center One Call Concepts – Idaho Shoshone county One Call	1-800-342-1585 1-800-822-1974 1-800-428-4950 1-800-424-5555 1-800-626-4950 1-800-398-3285
ILLINOIS	Julie, Inc. Chicago: Digger	1-800-892-0123 1-312-744-7000
INDIANA	Indiana Underground Plant Prototection Service. Inc.	1-800-382-5544
IOWA	Underground Plant Loc. Service, Inc.	1-800-292-8989
KANSAS	Kansas One Call Center	1-800-DIG-SAFE

KENTUCKY	Kentucky Underground Protec., Inc.	1-800-752-6007
LOUISIANA	Louisiana One Call	1-800-272-3020
MAINE	Dig Safe - Maine	1-888-344-7233
MARYLAND	Miss Utility of Delmarva Miss Utility	1-800-282-8555 1-800-257-7777
MASSACHUSETTS	Dig Safe - Massachusetts	1-888-344-7233
MICHIGAN	MISS DIG System Inc	1-800-482-7171
MINNESOTA	Gopher State One Call	1-800-252-1166
MISSISSIPPI	Mississippi One Call System, Inc.	1-800-227-6477
MISSOURI	Missouri One Call System, Inc.	1-800-344-7483
MONTANA	Utilities Underground Loc. Center Montana One Call	1-800-424-5555 1-800-551-8344
NEBRASKA	Diggers Hotline of Nebraska	1-800-331-5666
NEVADA	Underground Service Alert of NV	1-800-227-2600
NEW HAMPSHIRE	Dig Safe - New Hampshire	1-888-344-7233
NEW JERSEY	Garden State Undrgrnd. Plnt. Loc. Ser.	1-800-272-1000
NEW MEXICO	New Mexico One Call system, Inc.	1-800-321-ALERT
NEW YORK	Dig Safely New York New York City - Long Island One Call Center	1-800-962-7962 1-800-272-4480
NORTH CAROLINA	North Carolina One-Call Center	1-800-632-4949
NORTH DAKOTA	Utilities Underground Location Center	1-800-795-0555
OHIO	Ohio Utilities Protection Service	1-800-362-2764
OKLAHOMA	Call Okie	1-800-522-6543

OREGON	Utility's Underground Location Center	1-800-424-5555	
	Douglas Utility's Coordinating Council	1-503-673-6676	
	Josephine Utility's Coord Council	1-503-476-6676	
	Utility's Notification Center	1-800-332-2344	
	Rogue Basin Utility Coord Council	1-503-779-6676	
PENNSYLVANIA	Pennsylvania One Call System, Inc.	1-800-242-1776	
RHODE ISLAND	Dig Safe - Rhode Island	1-888-344-7233	
SOUTH CAROLINA	Palmetto Utility Protection Srvce Inc.	1-800-922-0983	
SOUTH DAKOTA	South Dakota One Call	1-800-781-7474	
TENNESSEE	Tennessee One Call System	1-800-351-1111	
TEXAS	Lone Star Notification Center	1-800-669-8344	
	Texas Excavation Safety System	1-800-344-8377	
	Texas One Call system	1-800-245-4545	
UTAH	Blue Stakes of Utah Utility Notification	1-800-662-4111	
VERMONT	Dig Safe - Vermont	1-888-344-7233	
VIRGINIA	Miss Utility of Virginia	1-800-552-7001	
	Miss Utility of Northern Virginia	1-800-257-7777	
WASHINGTON	Utilities Notification Center	1-800-332-2344	
	Grays Harbor & Pacific County Utility Coordinating Council	1-206-532-3550	
	Utilities Underground Location Center	1-800-424-5555	
	Chelan-Douglas Utility Coord Council	1-509-663-6111	
	Upper Yakima County Underground Utilities Council	1-800-553-4344	
	Inland Empire Utility Coord. Council	1-509-456-8000	
	Utilities Council of Cowlitz County	1-360-425-2506	
	Palouse Empire Utility Cord. Council	1-800-822-1974	
	WASHINGTON, DISTRICT OF COLUMBIA	Miss Utility	1-800-257-7777

WEST VIRGINIA	Miss Utility of West Virginia, Inc.	1-800-245-4848
WISCONSIN	Diggers Hotline, Inc.	1-800-242-8511
WYOMING	Wyoming One-Call Call Before You Dig Of Wyoming	1-800-348-1030 1-800-849-2476
CANADA	Alberta: Alberta One-Call Location Corp. British Columbia: BC One Call Ontario: Ontario One Call Ltd Quebec:Info-Excavation	1-800-242-3447 1-800-474-6886 1-800-400-2255 or 905-709-1717 1-800-663-9228
AUSTRALIA	Dial Before You Dig 1100	1100

Note: Many of the above utility location services can be accessed via their website by following the appropriate links at www.underspace.com/refs/ocdir.htm.

APPENDIX I
ACTIVITY HAZARD ANALYSES

ACTIVITY HAZARD ANALYSIS

ACTIVITY Asbestos Removal

ANALYZED BY/DATE G. Brown/06/01

REVIEWED BY/DATE

R. Barcum/07/01

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
<p>Asbestos Abatement</p>	<ol style="list-style-type: none"> 1. Exposure to airborne asbestos released during abatement activities. 2. Falling off scaffolds, ladders or manlifts. 3. Slipping on possible wet floors from abatement activities. 4. Congested work area due to too many workers in a small area. 5. Existing utilities. 6. Injury resulting from staples and nails from containment walls. 7. Slippery surfaces from wet material being disposed and wet cleaning activities. 8. Injury, strain from moving heavy equipment/objects or waste. 9. Slips, trips, falls 10. Sharp objects. 11. Electrical shock. 12. Inclement weather. 13. Crush potential. 14. Pinch points. 15. Inadequate lighting. 16. Traffic hazards. 17. Saw cutting. 	<ol style="list-style-type: none"> 1. Monitor for airborne contaminants; wear proper PPE including respirators with HEPA filters and disposable Tyvek suits. 2. Use caution while working on ladders and scaffolding and if over 6 foot, appropriate full-body harnesses with safety lanyards will be worn. Personnel working on ladders shall maintain 3 points of contact at all times. Only qualified persons shall operate manlifts. Maintain good housekeeping and keep moving equipment away. 3. Check for leaks in bags, and spills shall be cleaned up immediately. Maintain ongoing housekeeping practices. 4. Maintain ample room between workers to perform their work. Be aware of workers within your vicinity. 5. Isolate utilities before abatement. Watch for overhead lines. 6. Care is to be taken when tearing down containments. Not to hurry when cleaning the areas to get the job done. Be alert to objects and sharps that may potentially cause injury. 7. Looking for areas that may be wet and cleaning the areas to prevent slip, trip and fall hazards. Maintain good housekeeping. 8. Observe proper lifting techniques. To prevent overexertion, limit manual lifting and emphasize mechanical means where practical or obtain assistance from other personnel. 9. Clear pedestrian traffic areas of equipment materials, and debris. Identify, mark, or barricade immovable objects. Maintain good housekeeping at all times. 10. Wear gloves. Maintain hand and power tools in a safe condition. Keep guards in place during use. Eliminate or mark sharp, protruding objects. Be aware of pinch points. 11. Faulty or unsafe equipment shall be so marked and not used until repaired. Use power tools in conjunction with GFCIs. Power tools shall have a ground prong or be double insulated. Use proper lock out/tag out procedures for de-energized systems. 12. Take appropriate rest breaks to allow personnel to cool down or warm up. Drink plenty of non-caffeinated beverages. Maintain a healthy diet. Wear clothing appropriate for the weather. 13. Personnel will not work or stand beneath suspended loads. 14. Personnel will insure that they do not place themselves between two moving objects or a moving object and a fixed object. 15. Lighting shall be sufficient to allow personnel to perform work in a safe and efficient manner. If lighting is not sufficient, work will stop until the situation is corrected. All electrical lighting shall be used in conjunction with GFCIs. 16. Personnel shall wear high visibility vests while working within 25 feet of vehicular traffic areas or moving equipment. 17. Wet methods will be used to suppress fugitive dust. Personnel shall wear a hard hat and safety glasses to protect from flying debris. Personnel shall wear hearing protection when exposed to noise levels exceeding 85 dB.

ACTIVITY H. HAZARD ANALYSIS

ACTIVITY Site Restoration/Demobilization **ANALYZED BY/DATE** G. Brown/06/01 **REVIEWED BY/DATE** R. Barcum/07/01

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
<p>Containment Tear Down</p> <p>Clean Up</p> <p>Removal of Equipment</p> <p>Remove Fencing (if used)</p>	<ol style="list-style-type: none"> 1. Injury resulting from staples and nails from containment walls. 2. Slippery surfaces from wet material being disposed and wet cleaning activities. 3. Injury, strain from moving heavy equipment/objects or waste. 4. Slips, trips, falls. 5. Sharp objects. 6. Electrical shock. 7. Inclement weather. 8. Crush potential. 9. Pinch points. 10. Inadequate lighting. 11. Traffic hazards. 	<ol style="list-style-type: none"> 1. Care is to be taken when tearing down containments. Not to hurry when cleaning the areas to get the job done. Be alert to objects and sharps that may potentially cause injury. 2. Looking for areas that may be wet and cleaning the areas to prevent slip, trip and fall hazards. Maintain good housekeeping. 3. Observe proper lifting techniques. To prevent overexertion, limit manual lifting and emphasize mechanical means where practical or obtain assistance from other personnel. 4. Clear pedestrian traffic areas of equipment materials, and debris. Identify, mark, or barricade immovable objects. Maintain good housekeeping at all times. 5. Wear gloves. Maintain hand and power tools in a safe condition. Keep guards in place during use. Eliminate or mark sharp, protruding objects. Be aware of pinch points. 6. Faulty or unsafe equipment shall be so marked and not used until repaired. Use power tools in conjunction with GFCIs. Power tools shall have a ground prong or be double insulated. Use proper lock out/tag out procedures for de-energized systems. 7. Take appropriate rest breaks to allow personnel to cool down or warm up. Drink plenty of non-caffeinated beverages. Maintain a healthy diet. Wear clothing appropriate for the weather. 8. Personnel will not work or stand beneath suspended loads. 9. Personnel will insure that they do not place themselves between two moving objects or a moving object and a fixed object. 10. Lighting shall be sufficient to allow personnel to perform work in a safe and efficient manner. If lighting is not sufficient, work will stop until the situation is corrected. All electrical lighting shall be used in conjunction with GFCIs. 11. Personnel shall wear high visibility vests while working within 25 feet of vehicular traffic areas or moving equipment.
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Various hand tools/power tools	1. Visual inspection by competent person prior to use.	1. Review activity hazard analysis with personnel performing the tear down and demobilization prior to site restoration. Use tools only in accordance with manufacturer's intended use. Tools shall be used only by person's properly trained in their use.

ACTIVITY HAZARD ANALYSIS

ACTIVITY Mobilization

ANALYZED BY/DATE G. Brown/06/01 REVIEWED BY/DATE R. Barcum/07/01

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
<p>Pre-cleaning</p> <p>Placement of Equipment</p> <p>Install Fencing (if required)</p> <p>Containment Setup</p>	<ol style="list-style-type: none"> 1. Injury resulting from staples and nails from containment walls. 2. Slippery surfaces from wet material being disposed and wet cleaning activities. 3. Injury, strain from moving heavy equipment/objects or waste. 4. Slips, trips, falls 5. Sharp objects. 6. Electrical shock. 7. Inclement weather. 8. Crush potential. 9. Pinch points. 10. Inadequate lighting. 11. Traffic hazards. 	<ol style="list-style-type: none"> 1. Care is to be taken when tearing down containments. Not to hurry when cleaning the areas to get the job done. Be alert to objects and sharps that may potentially cause injury. 2. Looking for areas that may be wet and cleaning the areas to prevent slip, trip and fall hazards. Maintain good housekeeping. 3. Observe proper lifting techniques. To prevent overexertion, limit manual lifting and emphasize mechanical means where practical or obtain assistance from other personnel. 4. Clear pedestrian traffic areas of equipment materials, and debris. Identify, mark, or barricade immovable objects. Maintain good housekeeping at all times. 5. Wear gloves. Maintain hand and power tools in a safe condition. Keep guards in place during use. Eliminate or mark sharp, protruding objects. Be aware of pinch points. 6. Faulty or unsafe equipment shall be so marked and not used until repaired. Use power tools in conjunction with GFCIs. Power tools shall have a ground prong or be double insulated. Use proper lock out/tag out procedures for de-energized systems. 7. Take appropriate rest breaks to allow personnel to cool down or warm up. Drink plenty of non-caffeinated beverages. Maintain a healthy diet. Wear clothing appropriate for the weather. 8. Personnel will not work or stand beneath suspended loads. 9. Personnel will insure that they do not place themselves between two moving objects or a moving object and a fixed object. 10. Lighting shall be sufficient to allow personnel to perform work in a safe and efficient manner. If lighting is not sufficient, work will stop until the situation is corrected. All electrical lighting shall be used in conjunction with GFCIs. 11. Personnel shall wear high visibility vests while working within 25 feet of vehicular traffic areas or moving equipment.
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>Various hand tools/power tools</p>	<ol style="list-style-type: none"> 1. Visual inspection by competent person prior to use. 	<ol style="list-style-type: none"> 1. Review activity hazard analysis with personnel performing the set up. Use tools only in accordance with manufacturer's intended use. Tools shall be used only be person's properly trained in their use.

ACTIVITY 1. HAZARD ANALYSIS

ACTIVITY Light Ballast/Tube Removal **ANALYZED BY/DATE** G. Brown/06/01 **REVIEWED BY/DATE** R. Barcum/07/01

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
<p>Removal of ballasts, fluorescent light tubes, circuit boards, mercury switches, thermostats, gages.</p>	<ol style="list-style-type: none"> 1. Electrical shock. 2. Falling off scaffolds, ladders or manlifts. 3. Broken glass and sharps. 4. An overhead hazard can result from material, tools, or equipment. 5. Contact with oils if equipment is in poor condition. 6. Mercury and PCBs. 7. Inadequate lighting. 	<ol style="list-style-type: none"> 1. Isolate utilities prior to work start and verify isolation. 2. Use caution while working on ladders and scaffolding and if over 6 foot, appropriate full-body harnesses with safety lanyards will be worn. Personnel working on ladders shall maintain 3 points of contact at all times. Only qualified persons shall operate manlifts. Maintain good housekeeping and keep moving equipment away. 3. Attempt to remove light tubes intact, wear appropriate PPE (gloves, safety glasses, hard hat, etc.). Eliminate or mark sharp protruding objects. Be cognizant of pinch points. 4. Wear hardhat to prevent accidental collision/contact with light fixtures. 5. Wear appropriate gloves; deposit equipment in appropriate containment. Take appropriate corrective action for spills. Report to NTR. 6. Personnel shall take care to not break bulbs, ballasts, switches, or other like equipment during removal and placement into the drums or crates. 7. Lighting shall be sufficient to allow personnel to perform work in a safe and efficient manner. If lighting is not sufficient, work will stop until the situation is corrected. All electrical lighting shall be used in conjunction with GFCIs.
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
<p>Scaffolds/ladders/manlifts</p>	<ol style="list-style-type: none"> 1. Competent person shall inspect scaffolds/ladders/manlifts daily. 	<ol style="list-style-type: none"> 1. Appropriate use of scaffolding/ladders and fall protection. Only qualified operators shall operate manlifts.

Asbestos Activity Hazard Analysis (continued)

EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Scaffolds/ladders/manlifts	1. Competent person shall inspect scaffolds/ladders/manlifts prior to use.	1. Appropriate use of scaffolding/ladders and fall protection. Only qualified operators shall operate manlifts.
Respirators	1. Manually inspect respirators prior to each and every donning.	1. Train personnel on how to care for a respirator and perform positive and negative air checks, 29 CFR 1910.134.
Asbestos Abatement Equipment	1. Review worker training documentation prior to commencing work.	1. All workers must satisfactorily pass an EPA accredited training course in accordance with 40 CFR Part 763, EPA Model Accreditation Plan.
AFDs	1. AFDs operation shall be consistently monitored by site supervisor.	1. All workers must satisfactorily pass an EPA accredited training course in accordance with 40 CFR Part 763, EPA Model Accreditation Plan.
Various hand tools/power tools	1. Visual inspection by competent person prior to use.	1. Review activity hazard analysis with personnel performing the abatement. Use tools only in accordance with manufacturer's intended use. Tools shall be used only by person's properly trained in their use.
Cutting saws	1. Visual inspection by competent person prior to use.	1. Proper training for hearing protection.

ACTIVITY H. HAZARD ANALYSIS

ACTIVITY All site activities ANALYZED BY/DATE G. Brown/06/01 REVIEWED BY/DATE R. Barcum/07/01

The following controls are applicable to all site activities:

Potential Hazards	Controls
Housekeeping	<ul style="list-style-type: none"> Housekeeping will be maintained as the project progresses.
Hand Tools	<ul style="list-style-type: none"> A competent person will inspect all hand tools prior to use. Hand tools will only be used as intended by the manufacturer.
Power Tools	<ul style="list-style-type: none"> A competent person shall inspect all power tools prior to use. Power tools shall be equipped with a ground prong or be double insulated. Power tools shall be used in conjunction with a GFCI. Damaged power tools shall be immediately removed from service. All power tools shall have the appropriate guards in place prior to use.
Slips, Trips and Falls	<ul style="list-style-type: none"> Maintain good housekeeping at all times. Ensure adequate lighting. Remove, mark, or barricade hazards.
Inadequate lighting	<ul style="list-style-type: none"> Lighting shall be sufficient to allow personnel to perform work in a safe and efficient manner. If lighting is not sufficient, work will stop until the situation is corrected. All electrical lighting shall be used in conjunction with GFCIs.
Cuts and Abrasions	<ul style="list-style-type: none"> Personnel shall wear gloves when manually handling material with sharp edges. Eliminate or mark sharp protruding objects. Personnel shall be cognizant of pinch points and shall not allow themselves to get into a position between a stationary object and a moving piece of equipment.
Manual Lifting Hazards/ Back Injuries	<ul style="list-style-type: none"> Personnel shall ensure that they observe proper lifting techniques and shall minimize movements such as over reaching, bending and twisting. Personnel shall not lift more than 50 lbs. without help from a co-worker(s) or mechanical assistance.
Pinch Points	<ul style="list-style-type: none"> Personnel will ensure that they do not place themselves between a fixed and a moving object or between two moving objects.
Traffic	<ul style="list-style-type: none"> Personnel shall wear high visibility vests when working within 25 feet of vehicular traffic or moving equipment. Vehicle drivers shall obey posted site speed limits, stop signs, wear seat belts, and utilize common sense driving practices. Personnel shall stay only on designated routes at the facility unless an emergency arises.

ACTIVITY HAZARD ANALYSIS

ACTIVITY Excavation of PCE Impacted Soil ANALYZED BY/DATE G. Brown/06/01 REVIEWED BY/DATE R. Barcum/07/01

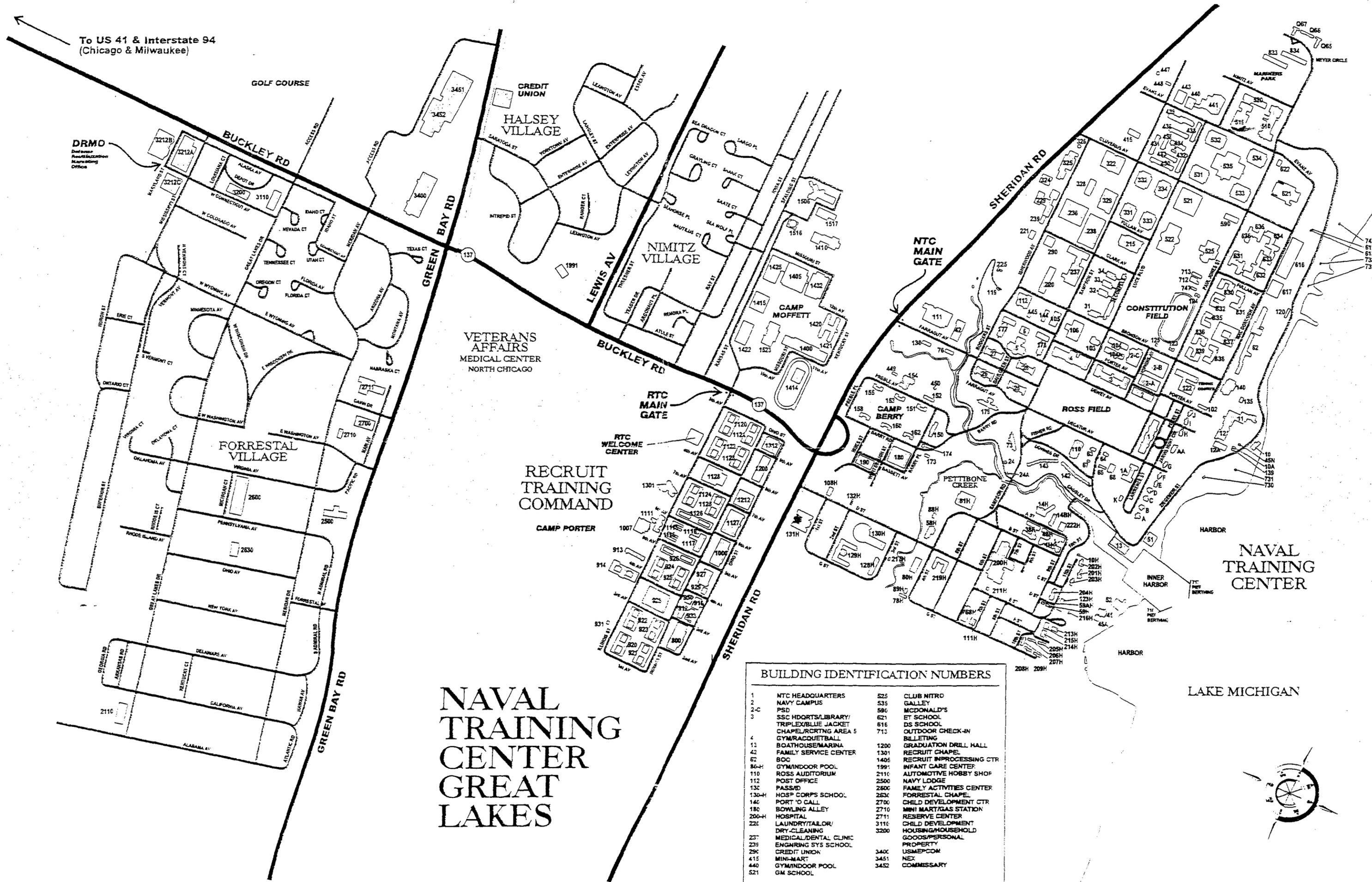
PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
<p>Identify the principal steps involved, including the equipment and machinery to be used, and the sequence of work activities</p>	<p>Analyze each principal step for its potential chemical/ toxicological, radiological, biological and physical hazards</p>	<ol style="list-style-type: none"> 1. Develop specific controls for each potential hazard. Also: 2. List inspection requirements for the equipment / machinery listed 3. Specify worker training requirements
<p>Excavation of soil with backhoe, trackhoe, excavator or similar equipment.</p> <p>Visual observation of soil and/or fill material.</p> <p>Loading soil in truck for off-site disposal.</p> <p>Confirmation soil sampling</p>	<ol style="list-style-type: none"> 1. Chemical/Toxicological Hazards: PCE/DCE impacted soil as described above. 3. Radiological Hazards: None 4. Biological hazards 5. Physical Hazards: Slip/trip/fall on uneven terrain or into open excavation (12 inches) 6. Thermal Stress(hot) 7. General heavy equipment hazards of being struck by or caught between moving parts. 8. Noise from heavy equipment. 9. Pinch points from soil sampling supplies. 10. Heavy lifting. 	<ol style="list-style-type: none"> 1. Chemical/Toxicological Hazards: 2. Level B PPE. Follow the air monitoring program for downgrade criteria to Level C PPE. 3. If soil is dry – use a water spray to prevent airborne dust. If soil is moist or wet, the extra spray is not necessary. 4. Radiological Hazards: None 5. Biological Hazards: Blood born Pathogens 6. Blood born pathogens may be present in sanitary sewer waste water. During utility closure activities, utilize nitrile gloves, face shields, and coveralls. 7. Physical Hazards: 8. Watch where you step, be aware that sticks, rocks or other items can be concealed by leaves and grass, causing you to trip. 9. The excavation will be shallow, thus a side wall collapse is not expected to pose a problem. 10. Only fully qualified and trained personnel will operate equipment. 11. Moving equipment must have properly functioning back-up alarms. Spotters on the ground will assist operators in maneuvering vehicles and equipment into tight or confined places. 12. Operators will maintain a constant awareness of personnel and equipment in the work area. Workers will wear high visibility vests and stay out of the way of moving equipment and at least two feet from the edge of the excavation. 13. Machinery or equipment shall not run unattended unless secured by the operator. Blade, bucket etc. will be fully lowered or blocked when not in use or being repaired. 14. Rollover protection will be used when conditions call for such use. 15. Hearing Protection will be worn at 85 dBA (typically only needed when within 10 feet of operating machinery) 16. Refer to the QPP for a discussion on heat/cold stress and severe weather. Wear appropriate clothing and keep hydrated. If weather conditions are dangerous, postpone field work. 17. Equipment or machinery will be taken out of service if an unsafe deficiency is noted and will remain out of service until corrected 18. Machinery or equipment will not be operated in a manner that will endanger persons or property nor will the safe operating speeds or loads be exceeded 19. Seats will be provided for each occupant of the equipment Safety belts will be used by the operator while equipment is in use. 20. Equipment operated on the highway will be equipped with headlights, taillights, brake lights, back-up lights, and turn signals visible from the front and rear. 21. All mobile equipment and the areas in which they are operated will be adequately illuminated. 22. Mechanized equipment will be shut down prior to and during refueling operations. 23. Whenever equipment is parked, the parking brake will be set and at least two wheels chocked.

ACTIVITY HAZARD ANALYSIS

PRINCIPAL STEPS	POTENTIAL HAZARDS	RECOMMENDED CONTROLS
		24. Load capacities ratings will not be exceed at any time. 25. No guard, safety appliance, or device will be tampered with. 26. Operators will notify their supervisors when taking medication that may impair safe operation of the vehicle. 27. Never walk or work directly in back or to the side of heavy equipment without the operator's knowledge and approval.
EQUIPMENT TO BE USED	INSPECTION REQUIREMENTS	TRAINING REQUIREMENTS
Excavator Backhoe Scrapers Loader	<ol style="list-style-type: none"> 1. Motor Vehicles Before initial use vehicles will be inspected by a mechanic and found to be in safe operating condition. Dump trucks must be inspected and operated in compliance with USACE EM 385-1-1 Section 18A - C. 2. Equipment Before equipment is placed in use it will be inspected and tested by a competent person assigned by the contractor using the equipment. Inspections and tests will be in accordance with manufacturer recommendations. All equipment will be inspected daily (when in use) to ensure safe operating conditions. A designated competent person will conduct the daily inspections or test in accordance with EM 385-1-1 Section 16A. Inspections shall be documented and kept on site with contractor records. 3. General Safety The SSHP will conduct daily site safety inspections. 	<ol style="list-style-type: none"> 1. Site Specific HAZWOPER 40-hour initial training, plus 8-hour refresher within past 12 months Initial site indoctrination training Daily tailgate safety meetings - to include radiation protection program when density testing is done. Hazard Communication training for any hazardous materials brought to the jobsite Excavation Competent Person (optional since entry into excavation over four feet will not occur). 2. Supervisory Personnel Supervisory HAZWOPER training First Aid and CPR (at least two with this certification on site at all times) Motor Vehicle/Equipment Motor vehicle operators will hold a valid operating license for the type and class of vehicle they are driving. Equipment specific training, licensing, certification as required by the type or piece of equipment.

APPENDIX J
HOSPITAL DIRECTIONS

To US 41 & Interstate 94
(Chicago & Milwaukee)



NAVAL TRAINING CENTER GREAT LAKES

BUILDING IDENTIFICATION NUMBERS

1	NTC HEADQUARTERS	525	CLUB NITRO
2	NAVY CAMPUS	535	GALLEY
2-C	PSD	590	MCDONALD'S
3	SSC HDQRTS/LIBRARY/ TRIPLEX/BLUE JACKET CHAPEL/RCRTNG AREA 5	621	ET SCHOOL
		616	DS SCHOOL
		713	OUTDOOR CHECK-IN
4	GYM/RACQUETBALL		BILLETING
11	BOATHOUSE/MARINA	1200	GRADUATION DRILL HALL
42	FAMILY SERVICE CENTER	1301	RECRUIT CHAPEL
62	BOC	1405	RECRUIT INPROCESSING CTR
86-H	GYM/INDOOR POOL	1991	INFANT CARE CENTER
110	ROSS AUDITORIUM	2110	AUTOMOTIVE HOBBY SHOP
112	POST OFFICE	2500	NAVY LODGE
133	PASS/ID	2600	FAMILY ACTIVITIES CENTER
130-H	HOSP CORPS SCHOOL	2630	FORRESTAL CHAPEL
140	PORT 'O CALL	2700	CHILD DEVELOPMENT CTR
180	BOWLING ALLEY	2710	MNH MARTIDAS STATION
200-H	HOSPITAL	2711	RESERVE CENTER
220	LAUNDRY/TAILOR/ DRY-CLEANING	3110	CHILD DEVELOPMENT
		3200	HOUSING/HOUSEHOLD
237	MEDICAL/DENTAL CLINIC		GOODS/PERSONAL
235	ENGRNG SYS SCHOOL		PROPERTY
290	CREDIT UNION	3400	USMEPCOM
415	MINI-MART	3451	NEX
440	GYM/INDOOR POOL	3452	COMMISSARY
521	GM SCHOOL		