

CENAB-EN-HN

**U.S. Army Corps of Engineers
Baltimore District**

**Interim Removal Action
Component 1 – Phases 2 and 3
Areas A and B
Former Lake Ontario Ordnance Works
Lewiston and Porter
Niagara County, New York**

Intermediate Design Analysis Report

Supplement to the 60% Design

Contract Number DACA31-96-D-0006
Delivery Order 0002

December 1998

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
Baltimore District
10 South Howard Street
Baltimore, Maryland 21201

98P-2216

Prepared by:



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PROJ_0008

**INTERIM REMOVAL ACTION
COMPONENT 1 - PHASES 2 AND 3
AREAS A AND B
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER
NIAGARA COUNTY, NEW YORK**

INTERMEDIATE DESIGN ANALYSIS REPORT

SUPPLEMENT TO THE 60% DESIGN

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TABLE OF CONTENTS

Section	Page
1. INTRODUCTION.....	1-1
1.1 PROJECT DESCRIPTION	1-1
1.2 GENERAL SITE BACKGROUND AND AREAS OF CONCERN	1-3
1.2.1 General Background	1-3
1.2.2 Areas of Concern	1-7
1.3 OBJECTIVE AND SCOPE OF THE DESIGN ANALYSIS REPORT	1-11
1.4 RECOMMENDATIONS OF ENGINEERING EVALUATION/COST ANALYSIS ...	1-12
1.4.1 Area A and Area B	1-13
1.4.2 TNT Pipelines	1-13
1.4.3 Chemical Waste Sewer System/Lift Stations	1-14
1.4.4 Aqueous Matrix (for Above Areas)	1-14
1.4.5 Miscellaneous Containerized Liquids and Oil	1-14
1.4.6 Asbestos-Containing Materials	1-14
1.5 REMEDIAL DESIGN STATUS	1-15
1.6 DOCUMENT OUTLINE	1-16
2. GENERAL DESIGN CONCEPTS.....	2-1
2.1 AREA A REMEDIATION	2-1
2.1.1 Site Background	2-1
2.1.2 Preferred Removal Action	2-2
2.1.3 Site Preparation	2-2
2.1.4 Erosion and Sedimentation Control	2-9
2.1.5 Excavation and Removal of Soils and Drums	2-10
2.1.6 Soil Stockpiling	2-12
2.1.7 Groundwater and Stormwater Control	2-14
2.1.8 Controlled Fill	2-15
2.1.9 Disposal of Materials	2-15
2.1.10 Confirmation Sampling	2-18
2.2 AREA B REMEDIATION	2-19
2.2.1 Site Background	2-20
2.2.2 Preferred Removal Action	2-22
2.2.3 Site Preparation	2-25
2.2.4 Erosion and Sedimentation Controls	2-26
2.2.5 Excavation and Removal of Soils and Drums/Labpacks	2-27
2.2.6 Soil Stockpiling	2-29
2.2.7 Groundwater and Stormwater Control	2-30
2.2.8 Controlled Fill	2-31
2.2.9 Disposal of Materials	2-31
2.2.10 Confirmation Sampling	2-33

LIST OF APPENDICES

APPENDIX A—INDEX OF PLANS AND SPECIFICATIONS

APPENDIX B—GENERAL SITE PLAN

**APPENDIX C—RESPONSE TO SUPPLEMENT TO THE 60% DESIGN (JANUARY
1998), 60% DESIGN, AND 30% DESIGN COMMENTS**

APPENDIX D—16 APRIL 1998 AND 4 DECEMBER 1997 MEETING MINUTES

LIST OF TABLES

Table No.	Page
Table 2-1 Area A Constituents of Concern and Detected in Subsurface Soils and NYSDEC Soil Cleanup Criteria	2-5
Table 2-2 Summary of Constituents Detected in Buried Drums and Test Pit Water in Area A.....	2-6
Table 2-3 Area B Constituents of Concern and Cleanup Criteria	2-23

LIST OF FIGURES

Figure No.	Page
Figure 1-1 LOOW Location Map	1-5
Figure 1-2 LOOW Study Area Location Map.....	1-9
Figure 2-1 Areal Extent of Areas A and B	2-3
Figure 2-2 Area A and B Removal Action Flow Diagram	2-8
Figure 2-3 Aqueous Treatment Flow Diagram.....	2-17
Figure 2-4 Area B—Designated Zones 1 and 2.....	2-21

LIST OF ACRONYMS

ACM	asbestos-containing material
AFP-68	Air Force Plant 68
CENAB	U.S. Army Corps of Engineers Baltimore District
Chem-Trol	Chem-Trol Pollution Services, Inc.
CRQL	Contract Required Quantification Limit
CWM	Chemical Waste Management
DAR	Design Analysis Report
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DOE	Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
HRS	Hazard Ranking System
LOOW	Lake Ontario Ordnance Works
NYSDEC	New York State Department of Environmental Conservation
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PPE	personal protective equipment
PRAC	Preplaced Remedial Action Contract
PRDI	preliminary remedial design investigation
QA	quality assurance
RCRA	Resource Conservation and Recovery Act
RI/FS	remedial investigation/ feasibility study
SCA	SCA Chemical Services, Inc.
SOW	scope of work
TSD	treatment, storage, and disposal
TSDF	treatment, storage, and disposal facility
USACE	U.S. Army Corps of Engineers
WESTON®	Roy F. Weston, Inc.

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

The U.S. Army Corps of Engineers Baltimore District (CENAB) has retained Roy F. Weston, Inc. (WESTON®) to develop the Remedial Design for Interim Removal Actions (IRAs) for Operable Unit (OU) No. 1 and OU No. 2 at the former Lake Ontario Ordnance Works (LOOW) located in Niagara County, New York. The remedial design is being performed in two phases in accordance with the CENAB scope of work (SOW) dated 23 May 1996. The first phase, the predesign phase, includes the preparation of the planning documents and completion of the preliminary remedial design investigation (PRDI) and report.

The purpose of the PRDI was to provide supplemental data for the second phase of the remedial design, the design for the selected remedy presented in the Final Engineering Evaluation/Cost Analysis (EE/CA) dated March 1995. The supplemental data collected during the PRDI augmented the existing data obtained from previous investigations at the LOOW site.

A summary of the results of the previous investigations is provided in Section 2 of the Remedial Design Work Plan dated October 1996. The results of the PRDI are presented in the final PRDI Report dated May 1997. The findings and conclusions of the previous investigations and PRDI are discussed in this document with regard to the basis of the proposed IRAs of the subject areas.

Based on direction provided by CENAB at a project meeting held on 16 April 1998, the IRA will be completed in five separate phases due to funding constraints. The proposed phasing is as follows:

Phase 1

Component 2 (Somerset Property) — Phase 1: Asbestos Removal in Buildings in Area 6, Surface Soil Removal in Area A1, Interior of Other Buildings, and Removal of Miscellaneous Chemicals.

Phase 2

Component 2 (Somerset Property) — Phase 2: Asbestos Removal — Asbestos Containing Soils in Designated Areas.

Phase 3

Components 1, 2, and 3 (CWM, Somerset and Town of Lewiston Properties) — Phase 1: TNT Pipeline and Chemical Waste Sewer.

Phase 4

Component 1 (CWM Property) — Phase 2: Area A.

Phase 5

Component 1 (CWM Property) — Phase 3: Area B.

Phases 1 and 2 of Component 2 remedial designs were completed to the 100% design level and are being performed under SPIDT using a firm fixed price contract. The 100% Design for Phase 1 and 2, Component 2, was submitted in June 1998. Phases 1, 2, and 3 of Component 1 (Phase 1 includes the TNT Pipeline, which extends onto the Town of Lewiston Property and the Chemical Waste Sewer that extends onto the Somerset Property) are to be completed as a supplement to the 60% design level since these phases will be performed under a Preplaced Remedial Action Contract (PRAC) time and materials contract. The revised supplement to the 60% Design for Component 1, Phase 1 was completed and submitted in August 1998.

This Design Analysis Report (DAR), which is part of the revised or supplement to the 60% Remedial Design submittal for Component 1, Phases 2 and 3, supercedes the previous 60% Design DAR submitted in September 1997. This DAR provides a discussion of the general design concepts and approach to the remediation of Areas A (Phase 2) and B (Phase 3). An overview of all the areas of concern as part of the five-phase IRA is provided in this section along with the recommendations for each area presented in the EE/CA. The supplement to the 60% Design includes the preparation of intermediate contract plans, intermediate performance-based contract

specifications, a Code B cost estimate (M-CACES Gold software), draft permitting and regulatory checklist plan, and a draft long-term monitoring plan. Separate specifications, contract drawings, and cost estimate will be provided for Phase 2 (Area A) and Phase 3 (Area B) of Component 1 because the remediation of these areas will be performed at different times in accordance with the revised IRA phasing. This DAR, the permitting document, and the long-term monitoring plan have been prepared to include both Phases 2 and 3 (Areas A and B) because these are more planning than contract documents. The index of plans and specifications for both Area A and B is included as Appendix A to this DAR. In addition, the supplement to the 60% submittal includes updated general site plans, which are provided as part of the contract plans.

1.2 GENERAL SITE BACKGROUND AND AREAS OF CONCERN

1.2.1 General Background

The former LOOW site is located within the Town of Lewiston and the Town of Porter in Niagara County, New York (see Figure 1-1). The site is located approximately 10 miles north of the City of Niagara Falls, New York.

The original site encompassed approximately 7,500 acres with actual U.S. Department of Defense (DOD) site activities having occurred on 2,500 acres. During the early 1940s, the LOOW site was used as a manufacturing plant producing TNT for use in World War II. Once completed, the complex contained a power plant, hospital, fire department, a water supply system adequate for a population of 100,000, and water supply and wastewater treatment system of underground water, sewage, acid, and TNT Pipelines.

The manufacturing portion of the plant was situated in the central southwestern section of the LOOW site, south of Balmer Road (see Figure 1-1). Wastewater from the TNT manufacturing operation, as well as stormwater and sanitary sewage, was transferred through an underground sewer network to a wastewater treatment plant located in the western portion of the TNT plant. The TNT Pipelines ran as one pair of east-west trending lines across the TNT production area before being routed south to the wastewater treatment plant at the west end of the production line.

An overestimation by the Army of the need for TNT during World War II resulted in the closure of the TNT plant in July 1943, after only 9 months of operation. Following the decommissioning of the TNT plant, the majority of the LOOW facility was sold to private citizens with the government retaining the former active 2,500-acre portion of the site.

Portions of the LOOW site have since been used by several branches of DOD and the U.S. Department of Energy (DOE) for various manufacturing and storage activities, including the pilot production of high-energy fuels. In 1955, the Navy and Air Force acquired 360 and 200 acres, respectively, of the former TNT plant. The acquisition of the properties by the Navy and the Air Force was for the joint development of a boron- and lithium-based high-energy rocket fuel production plant. The Air Force subsequently assumed responsibility for the project, which was identified as Air Force Plant 68 (AFP-68). Part of the construction of AFP-68 involved tying in the AFP-68 sanitary, stormwater, and Chemical Waste Sewer systems into the former TNT wastewater treatment plant located approximately 1,000 ft southwest of AFP-68. AFP-68 was decommissioned in 1959 while still in pilot-plant status.

In 1972, Chem-Trol Pollution Services, Inc. (Chem-Trol) acquired portions of LOOW for the development of a hazardous waste treatment, storage, and disposal (TSD) facility. Chem-Trol was acquired by SCA Chemical Services, Inc. (SCA) in 1973 and was subsequently acquired by Chemical Waste Management (CWM) in the early 1980s. In 1969, the Somerset Group (Somerset) obtained an approximately 100-acre section of the former LOOW property that contained AFP-68. Around 1979, the southern half of the former AFP-68 (about 50 acres) was sold to SCA. This section is currently owned by CWM. The portions of the former TNT and AFP-68 site specifically addressed by the PRDI are situated on property currently owned by CWM and the Town of Lewiston. CWM operates the site as a Resource Conservation and Recovery Act (RCRA) TSD facility. The portion of the site owned by the Town of Lewiston is currently unused.

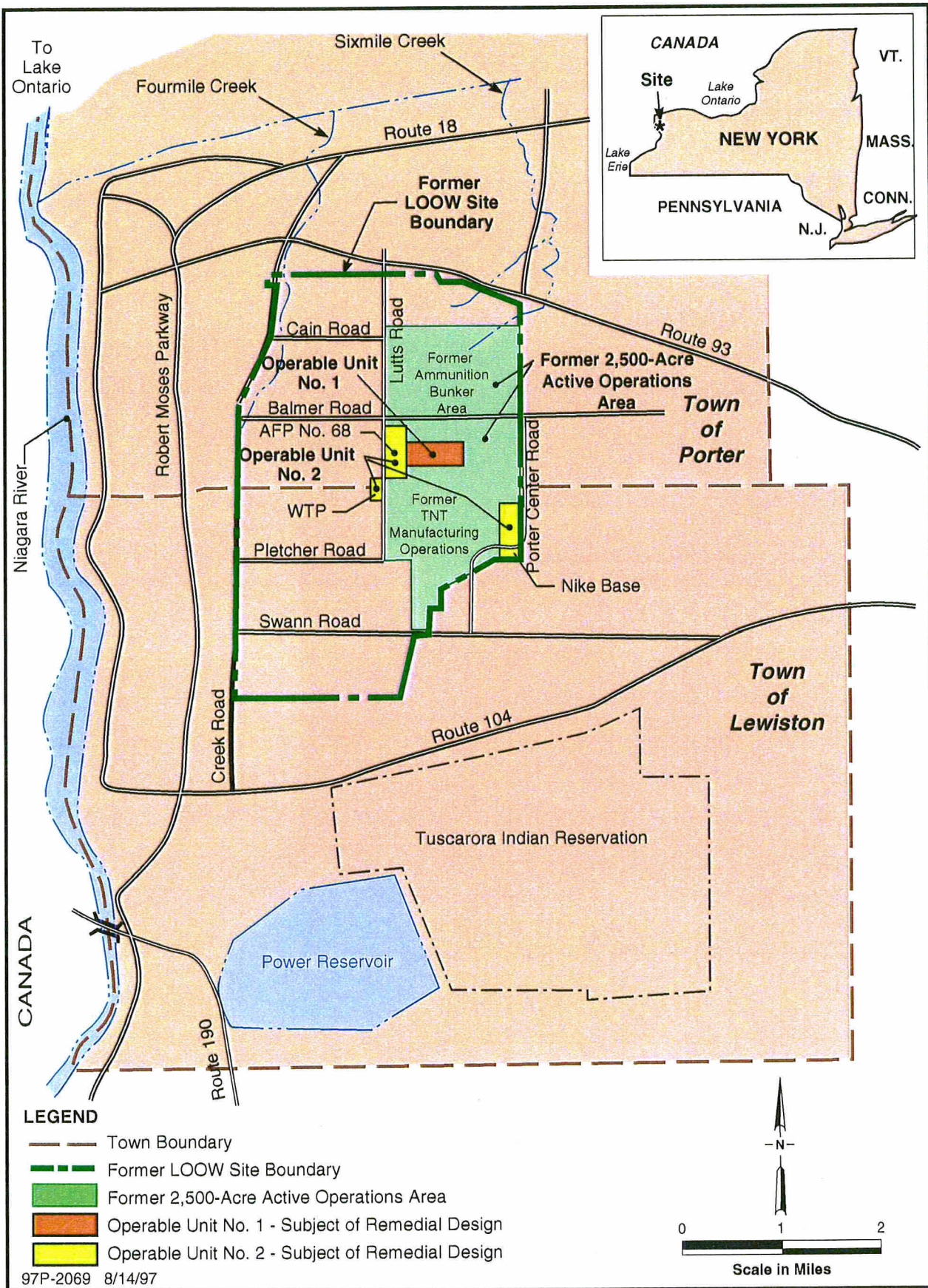


FIGURE 1-1 LOOW LOCATION MAP

1.2.2 Areas of Concern

Under the authority of the Defense Environmental Restoration Program (DERP), the U.S. Army Corps of Engineers (USACE) has undertaken a remedial investigation/feasibility study (RI/FS) at the LOOW site. As part of the RI/FS, USACE has investigated areas grouped into two separate units, OU No. 1 and OU No. 2 (Figure 1-1 and Figure 1-2).

1.2.2.1 Operable Unit No. 1

OU No. 1 consists of the following seven areas on property currently owned by CWM, as shown in Figure 1-2:

- An area originally suspected to contain approximately 30 buried drums, identified as Area A.
- An area used for the open incineration of wastes from AFP-68, identified as Area B.
- Three areas, originally suspected to contain a buried drum trench containing 200 to 300 drums also related to AFP-68, identified as Areas C, D, and Area North of C.
- An area originally suspected of containing buried drums located west of Area B, identified as the Wooded Area.
- The underground TNT and acid waste sewer systems from the original LOOW TNT manufacturing plant.

RI for OU No. 1 were conducted in 1988 and 1989. The investigations verified the presence of buried drums and localized soil and groundwater contamination in Area A, and contaminated sediments and localized groundwater contamination in Area B. The buried drums encountered in Area A were generally in a highly deteriorated condition and not intact. None of the suspected buried drums in Areas C, D, and the Area North of C were found, nor were any drums or contamination found in the Wooded Area. Investigations of the buried TNT sewer system identified the presence of TNT residues in the sewer system.

Based upon the findings of the RI, which included a qualitative risk assessment, an FS for OU No. 1 was initiated in 1989 with an advance final FS report completed in 1990. On 6 January 1992 the New York State Department of Environmental Conservation (NYSDEC) formally

OTHER HISTORICAL DOCUMENTS INDICATE THAT THE FS WAS NOT COMPLETED. WHAT RESOURCE DID THIS INFO COME FROM.

approved the preferred remedial alternative, which consisted of the excavation of contaminated drums and soils from Area A and Area B and disposal of these materials at an approved RCRA-permitted landfill. A final recommended approach to the remediation of the TNT Pipelines was not presented to NYSDEC until the results of further investigation were available. The PRDI provided supplemental data for the purpose of finalizing the remedial approach and design for the TNT Pipelines. The draft report (February 1997) and final PRDI report (May 1997) were submitted to NYSDEC for review and comment.

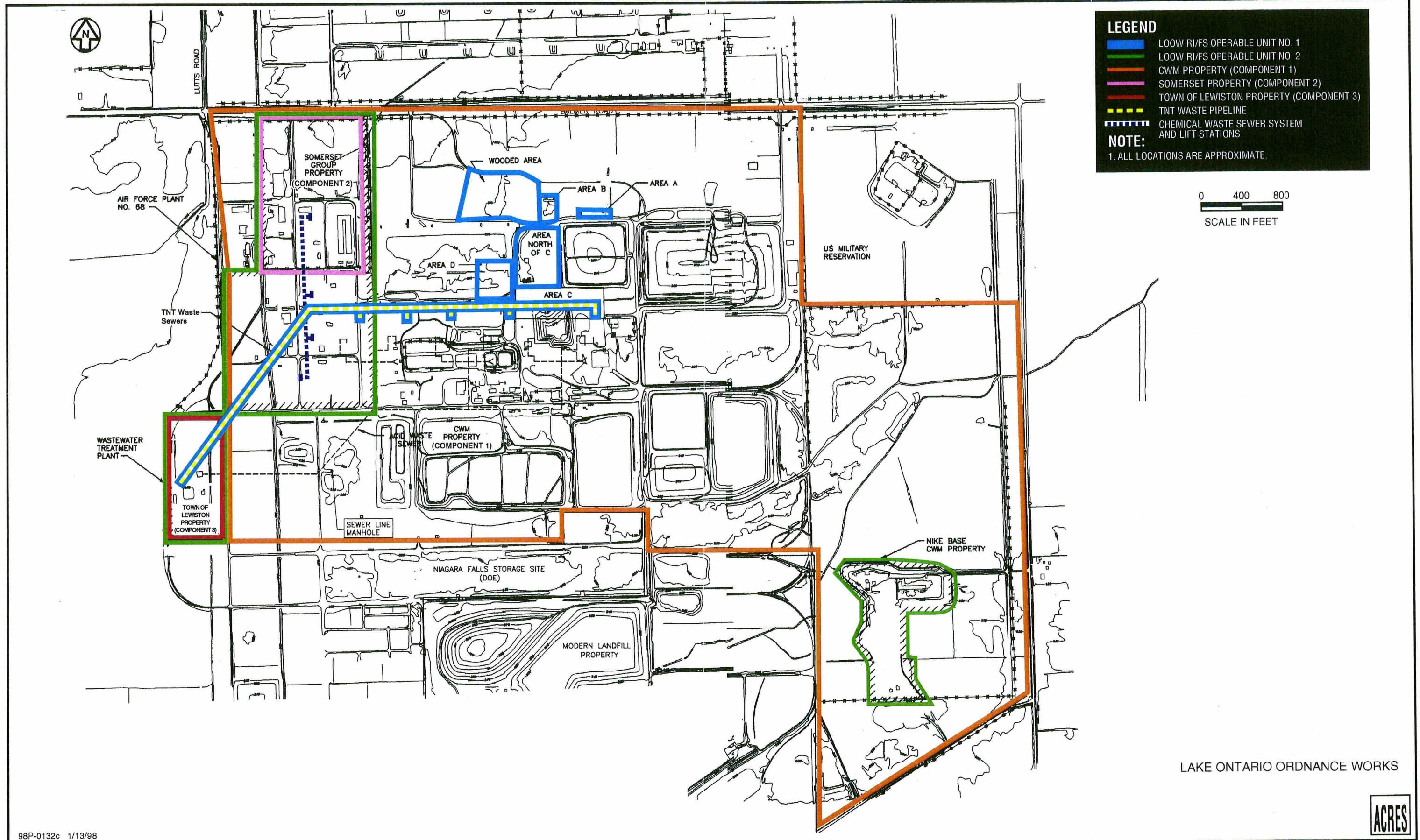
1.2.2.2 Operable Unit No. 2

OU No. 2, as shown in Figure 1-2, consists of the former AFP-68, located on properties owned by CWM and Somerset; a portion of the former NIKE Missile Base, located on CWM property; and the former LOOW wastewater treatment plant, located on property owned by the Town of Lewiston.

The first investigations of OU No. 2 began during RI activities for OU No. 1, during which time (1988) USACE performed a reconnaissance survey of those properties comprising OU No. 2 plus the existing TNT buildings located on CWM property. The reconnaissance survey consisted of a detailed site walkover that included confirming site conditions with numerous available site maps and as-built drawings. A summary report of this survey was prepared in late 1988. In 1992, USACE initiated a confirmation study of the OU No. 2 areas of concern, excluding the TNT buildings.

Because no previous sampling had been performed at any of the OU No. 2 study areas and under the supposition that contamination existed in some of those areas, the confirmation study investigations included some investigative aspects more applicable to an RI. These additional investigations included monitoring well installation and groundwater sampling, perimeter and personnel exposure air monitoring, Hazard Ranking System (HRS) II scoring, and a preliminary contamination assessment that incorporated many aspects of a baseline risk assessment.

The results of the OU No. 2 investigation were summarized in a Preliminary Contamination Assessment Report that was issued final in December 1992. The results indicated the presence of



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FIGURE 1-2 LOOW STUDY AREA LOCATION MAP

several contaminant source areas, specifically portions of the AFP-68 Chemical Waste Sewer system, loose asbestos-containing material (ACM) located within and around several of the former facility buildings, and miscellaneous containers of hazardous liquids and oils stored within buildings and concrete pads at various locations within the former AFP-68.

In 1994, USACE performed an EE/CA for portions of OU No. 1 and OU No. 2. The EE/CA was prepared to address non-time-critical removal actions in the following areas:

- OU No. 1
 - Area A—buried drum trench on CWM property.
 - Area B—burn pit area on CWM property.
 - TNT pipelines on CWM and Town of Lewiston properties.
- OU No. 2
 - AFP-68 consisting of the following:
 - ♦ Chemical waste sewer system sewage and sludges located on both the CWM and Somerset properties.
 - ♦ Loose ACM on the Somerset property.
 - ♦ Miscellaneous containers of hazardous liquids and oils on the Somerset property.

A summary of the EE/CA recommendations for the above-listed subject areas is presented in the following subsection.

1.3 OBJECTIVE AND SCOPE OF THE DESIGN ANALYSIS REPORT

A meeting was held on 16 April 1998 to discuss the new phasing of the IRA due to funding constraints that resulted in further division of the remedial design according to the new phasing. In attendance were representatives from CENAB and WESTON. The meeting minutes, which include the list of attendees, are provided as Appendix D. At the meeting it was announced that in order to expedite the remediation using the currently available funds, the IRA will be performed in five separate phases. The first two phases include the removal of loose asbestos-containing materials and miscellaneous chemicals from the Somerset Property. The designs for these first two

phases have been completed. The additional three phases include the TNT Pipeline and Chemical Waste Sewer (Phase 1, Component 1), Area A (Phase 2), and Area B (Phase 3). The work for the three phases of Component 1 will be performed under the Preplaced Remedial Action Contract (PRAC). This is a cost-plus contract that can be performed with an incomplete design. Field decisions are made on issues that have not been completely finalized in the design. CENAB directed WESTON to revise the previously submitted supplement to the 60% Design (dated January 1998) to conform with this new phasing and address comments on this previous submittal. A revised supplement to the 60% Design for Phase 1 of Component 1 was submitted to CENAB in August 1998. This design submittal did not include Areas A and B (Phases 2 and 3) in accordance with the new IRA phasing.

Therefore, this submittal of the DAR is part of the supplement to the 60% Design for Phases 2 and 3 of Component 1 and addresses the comments received from CENAB on the September 1997 60% Design. Responses to the 60% Design comments are provided as Appendix C.

This submittal of the DAR includes the areas under Component 1 (CWM property) that will be remediated under Phases 2 and 3 of Component 1 of the IRA, which includes the remediation of Areas A and B.

Section 2 of this DAR presents the general design concepts to the IRA of the Areas A and B based on comments received on the 30% and 60% Design submittals.

1.4 RECOMMENDATIONS OF ENGINEERING EVALUATION/COST ANALYSIS

The intent of the non-time-critical removal actions at the LOOW site is to reduce the threat of exposure and/or contaminant migration from identified source areas until a final remedial action(s) is implemented. Specific objectives for accomplishing this goal were defined as:

- Removal of previously identified contaminated sediment, soil, and drums from the Area A drum trench and the Area B burn pit.
- Removal of contaminated materials associated with the former TNT Pipeline system.
- Removal of accumulated sludges and liquids in the Chemical Waste Sewer system and associated lift stations.

- Dewatering of all areas, as needed, to remediate the above-referenced areas.
- Removal of loose ACM and miscellaneous containerized liquids and oils identified during previous site investigation on the Somerset Property.
- Proper treatment and/or disposal of all wastestreams from the removal actions.
- Restoration of all disturbed areas.

Based on the EE/CA, IRA remedies were selected for the LOOW areas of concern. The remedial design consists of the preparation of design plan and specifications for the selected removal actions detailed in the subsections that follow. This DAR outlines the general design concepts and approach for the removal actions highlighted below.

1.4.1 Area A and Area B

The highest ranked removal action for Area A and Area B was the excavation/landfilling disposal alternative. Under this alternative, the contaminated sediment, soil, deteriorated drums, and miscellaneous materials will be excavated and transferred by truck to a competitively bid permitted facility for disposal. The material will be pretreated as required for disposal.

1.4.2 TNT Pipelines

The proposed approach to the remediation of the TNT Pipelines presented in the EE/CA included:

- Removal and open flaming/detonation of any encountered crystalline TNT solids at a nearby secure site.
- Removal and biotreatment of explosives-contaminated sediment and solids.
- Removal and disposal of all remaining excavated materials characterized as a hazardous waste at a RCRA-permitted landfill.
- Removal and disposal of all nonhazardous materials at a 6NYCRR Part 360-permitted landfill.

Based on the results of the PRDI, alternative approaches to complete removal were recommended. The revised Supplement to the 60% Design for Phase 1 of Component 1, dated

August 1998, includes both removal and closure in place of designated sections of the TNT pipeline.

1.4.3 Chemical Waste Sewer System/Lift Stations

The highest ranked removal action for the Chemical Waste Sewer system/lift stations consists of the following:

- Removal of the bottom sludges by vacuum extraction.
- Treatment of the removed sludges by thermal destruction at an existing off-site, permitted incinerator.
- High-pressure water jet cleaning of the lift stations and trunkline. The sludge/wastewater mixture from the cleaning operation would be vacuumed into a tank truck and transferred to a competitively bid, permitted treatment facility.
- Final sealing of the lift stations by rewelding the manhole covers to reduce the safety hazard.

1.4.4 Aqueous Matrix (for Above Areas)

The liquids present in the excavations, pipeline systems, and lift stations will be collected as part of the removal action and pumped into a tank truck for transfer to a permitted treatment facility. Treatment requirements will be determined based on sampling results for the contaminated water.

1.4.5 Miscellaneous Containerized Liquids and Oil

These materials will be properly containerized, as needed, and transferred to a permitted off-site facility for cost-effective recycling, treatment, or alternate disposal method.

1.4.6 Asbestos-Containing Materials

Loose ACM will be removed by a licensed asbestos contractor and transferred to one of several nearby 6NYCRR Part 360-permitted landfills.

1.5 REMEDIAL DESIGN STATUS

The status of the remedial design for each of the areas identified for IRA in the EE/CA in the order listed in the previous section is as follows. The 30% and 60% Remedial Designs were submitted in April 1997 and September 1997, respectively. Separate design packages were prepared for the CWM property (Component 1) and the Somerset Property (Component 2). Component 1 included Areas A and B, the TNT pipeline, and the Chemical Waste Sewer (the RI included this under Operable Unit No. 2, as discussed below). The supplement to the 60% Design submitted in January 1998 for Component 1 excluded Areas A and B due to IRA funding issues. Greater funding constraints were identified after the Supplement to the 60% Design that resulted in further phasing of the IRA. In accordance with the most recent IRA phasing, a revised Supplement to the 60% Design for Component 1, Phase 1 (TNT pipeline, and Chemical Waste Sewer) was submitted in August 1998. Response to comments received from NYSDEC and USACE reviewers on these design submittals is provided in Appendix C of this report. This DAR is part of the Supplement to the 60% Design for Component 1, Phases 2 (Area A) and 3 (Area B).

As stated, the 30% and 60% Remedial Designs were divided into two separate components by property and not by Operable Units as defined in the RI/FS and EE/CA. The Chemical Waste Sewer was included under Component 1. Under the revised IRA phasing, the Chemical Waste Sewer is included under Phase 1 of Component 1. The revised Supplement to the 60% Design for Phase 1 Component 1 was submitted in August 1998.

The loose asbestos detected on the Somerset Property was further investigated through an asbestos survey conducted in November 1997. The results of this investigation were presented in the 60% Design for Component 2 (Somerset Property), dated January 1998. The final remedial design for the loose asbestos and miscellaneous chemicals located on the Somerset Property was provided in the 100% Design submitted for Component 2, Phases 1 and 2, submitted in June 1998, under the new IRA phasing.

1.6 DOCUMENT OUTLINE

This DAR has been prepared in accordance with the CENAB SOW, dated 23 May 1996, and the modification to the Delivery Order, dated 15 September 1998. The document has been organized as follows:

- Section 1—Introduction
- Section 2—General Design Concepts - Areas A and B

2. GENERAL DESIGN CONCEPTS

2.1 AREA A REMEDIATION

Area A is located southeast of the intersection of Balmer Road and Lutts Road within OU No. 1 on the former LOOW site (see Figures 1-1 and 1-2). Area A is located on CWM Property (Component 1) and the remediation of this area is designated as Phase 2 of Component 1, under the new IRA phasing. The footprint of Area A is approximately 250 ft by 150 ft. The area was first investigated in 1981 by SCA (EE/CA, Acres, March 1995). During this investigation an approximately 220-ft-long by 40-ft-wide buried drum trench was encountered.

2.1.1 Site Background

Test pit excavation activities conducted during the initial RI in 1988 (EE/CA, Acres, March 1995) verified the presence of buried drums in Area A. The combined results of geophysical surveys, test pit excavations, and soil boring activities, conducted during the RI, indicated that the buried drum trench is approximately 220 ft long by 40 ft wide by 10 ft deep. The estimated areal extent of Area A is shown in Figure 2-1. The drum trench is located along the southern part of Area A and extends just under the northern side of H Street.

The contaminants that were detected in subsurface soils and soil test pit samples in Area A are presented in Table 2-1. Acetone, the pesticide delta-BHC, and phenol were detected above the NYSDEC cleanup level in subsurface soils. Arsenic, chromium, and nickel were also detected above the criteria; however, the cleanup level may be higher based on background levels. The buried drums and test pit water displayed the greatest concentrations of contaminants. A summary of the contaminants detected in the drum and test pit water samples and the highest concentration detected is presented in Table 2-2.

Based on the information gathered to date, the following materials have been identified for remediation (EE/CA, Acres, March 1995):

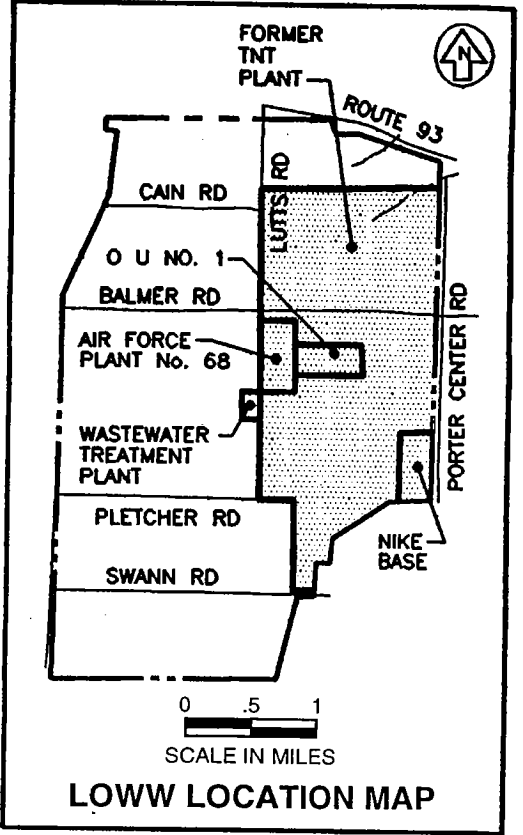
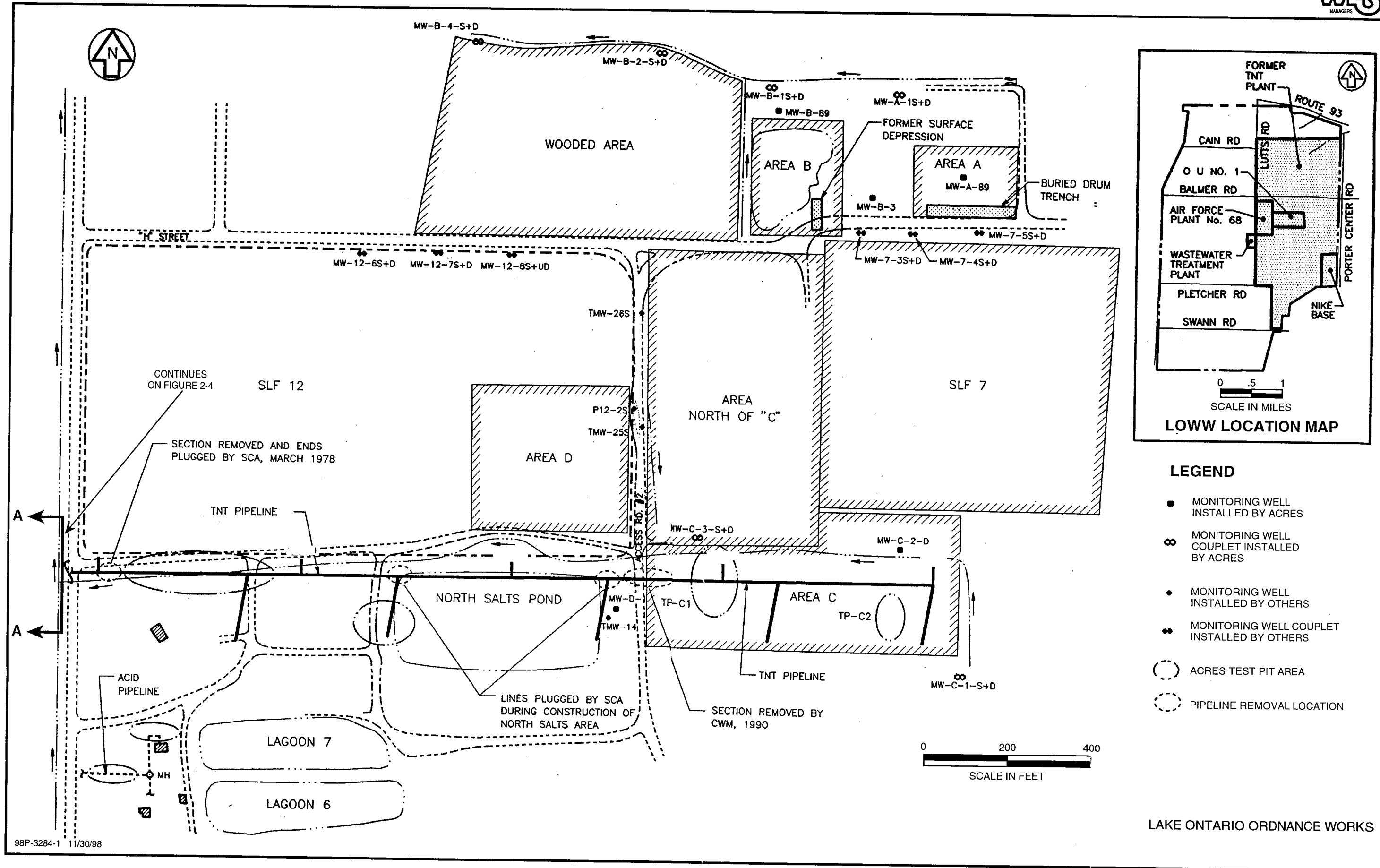
- Drums and contaminated trench soils with an estimated volume of approximately 4,000 cubic yards (yd³) (based on the trench dimensions of 220 ft by 40 ft by 10 ft for a total of 3,259 yd³ of contaminated material, plus 20% for overexcavation).
- Localized contaminated groundwater from within the trench, estimated at 200,000 gallons (based on groundwater at 3 ft below ground surface [bgs], which equates to 70% of the trench being within the saturated zone and an estimated porosity of 40% for the trench materials). The existence of any contaminated groundwater beyond the immediate trench is not considered part of this removal action.

2.1.2 Preferred Removal Action

The removal action recommended in the EE/CA is the removal and disposal alternative in which the contaminated materials within the identified dimensions of the Area A drum trench would be excavated by backhoe or excavator and trucked for disposal at a permitted facility (see Figure 2-2 for Area A Removal Action Flow Diagram). Based on previous site investigations, the drum trench limits are estimated at 220 ft long by 40 ft wide by 10 ft deep. Initial excavation will be performed within these dimensions. Confirmation soil sampling will be conducted within the limits of the excavation to verify that removal of contaminated material has been completed to established cleanup criteria standards. Further details of this remedial action are outlined in the following subsections.

2.1.3 Site Preparation

Prior to commencing site excavation in the designated removal areas within Area A, all vegetation, topsoil, and rootmass will be removed from within the limits of the proposed excavation. Requirements for site preparation will be provided in the contract specifications (Section 02110: Clearing and Grubbing). Topsoil outside the limits of the drum trench removed for installation of the contaminated soil stockpile area, will be temporarily stockpiled at a designated location for site revegetation at the completion of removal activities. Stockpiled topsoil will be sampled prior to placement for site revegetation. All subsurface utility lines, currently located within and along the limits of work, will be either relocated outside the limits of work or clearly identified so as to avoid their damage by, and interference with, earthwork-related construction activities. Based on utility maps of the area, an existing underground electrical line will need to be relocated from the eastern side of Area A.



LEGEND

- MONITORING WELL INSTALLED BY ACRES
- ∞ MONITORING WELL COUPLET INSTALLED BY ACRES
- MONITORING WELL INSTALLED BY OTHERS
- MONITORING WELL COUPLET INSTALLED BY OTHERS
- ACRES TEST PIT AREA
- PIPELINE REMOVAL LOCATION

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FIGURE 2-1 AREAL EXTENT OF AREAS A AND B

Table 2-1

**Area A Constituents of Concern and Detected in
Subsurface Soils and NYSDEC Soil Cleanup Criteria**

Constituent	Maximum Concentration (mg/kg)	NYSDEC* Recommended Soil Cleanup Objective (mg/kg)
Volatile Organics		
Acetone	.99	0.2
1,2-Dichloroethene	0.012J	NA
Benzene	0.011J	0.06
Toluene	0.150	1.5
Ethylbenzene	0.010J	5.5
Styrene	0.009J	NA
Total Xylenes	0.046	1.2
Semivolatiles		
Phenol	.086J	0.03 or MDL
4-Chloroaniline	.150J	0.220
2-Methylnaphthalene	.360J	36.4
Diethylphthalate	.052J	7.1
Pesticides/PCBs		
delta-BHC	0.50	0.30
Metals		
Arsenic	10	7.5 or SB
Barium	130	300 or SB
Boron	86.8	NA
Chromium	19	10 or SB
Lead	16	SB
Lithium	107	NA
Nickel	22	13 or SB
Zinc	71	50

* NYSDEC, Division of Hazardous Waste Remediation, TAGM HWR-94-4046, "Determination of Soil Cleanup Objectives and Cleanup Levels."

SB = Soil Background Levels

MDL = Method Detection Limit

J = Detected Concentration is below the Contract Required Quantification Limit

NA = No criteria provided

Table 2-2

**Summary of Constituents Detected in Buried Drums
and Test Pit Water in Area A**

Constituent	Maximum Concentration Detected in Drum Samples (mg/kg)	Maximum Concentration Detected in Test Pit Water (µg/L)
Volatile Organics		
Vinyl Chloride	ND	12
Acetone	4.6E	1600E
1,1-Dichloroethane	0.005J	31
1,2-Dichloroethene (Total)	.012	110
Methylene Chloride	ND	ND
2-Butanone	.079	130
Trichloroethene	0.001J	11
Benzene	0.010	32
cis-1,3-Dichloropropene	ND	7J
4-Methyl-2-Pentanone	ND	6J
Tetrachloroethene	0.003J	0.8J
Toluene	0.170	260E
Ethylbenzene	0.018	4J
Styrene	0.007	7J
Total Xylenes	0.033	16
Semivolatiles		
Phenol	ND	97
2-Methylphenol	ND	26
4-Methylphenol	ND	64
2,4-Dichlorophenol	ND	7J
Naphthalene	0.086J	25
2-Methylnaphthalene	0.370J	29
Acenaphthylene	0.009J	ND
Acenaphthene	0.041J	ND
Diethylphthalate	0.100J	ND
N-Nitrosodiphenylamine (1)	0.330J	ND
Phenanthrene	1.500	5J
Anthracene	0.045J	ND

Table 2-2

**Summary of Constituents Detected in Buried Drums
and Test Pit Water in Area A
(Continued)**

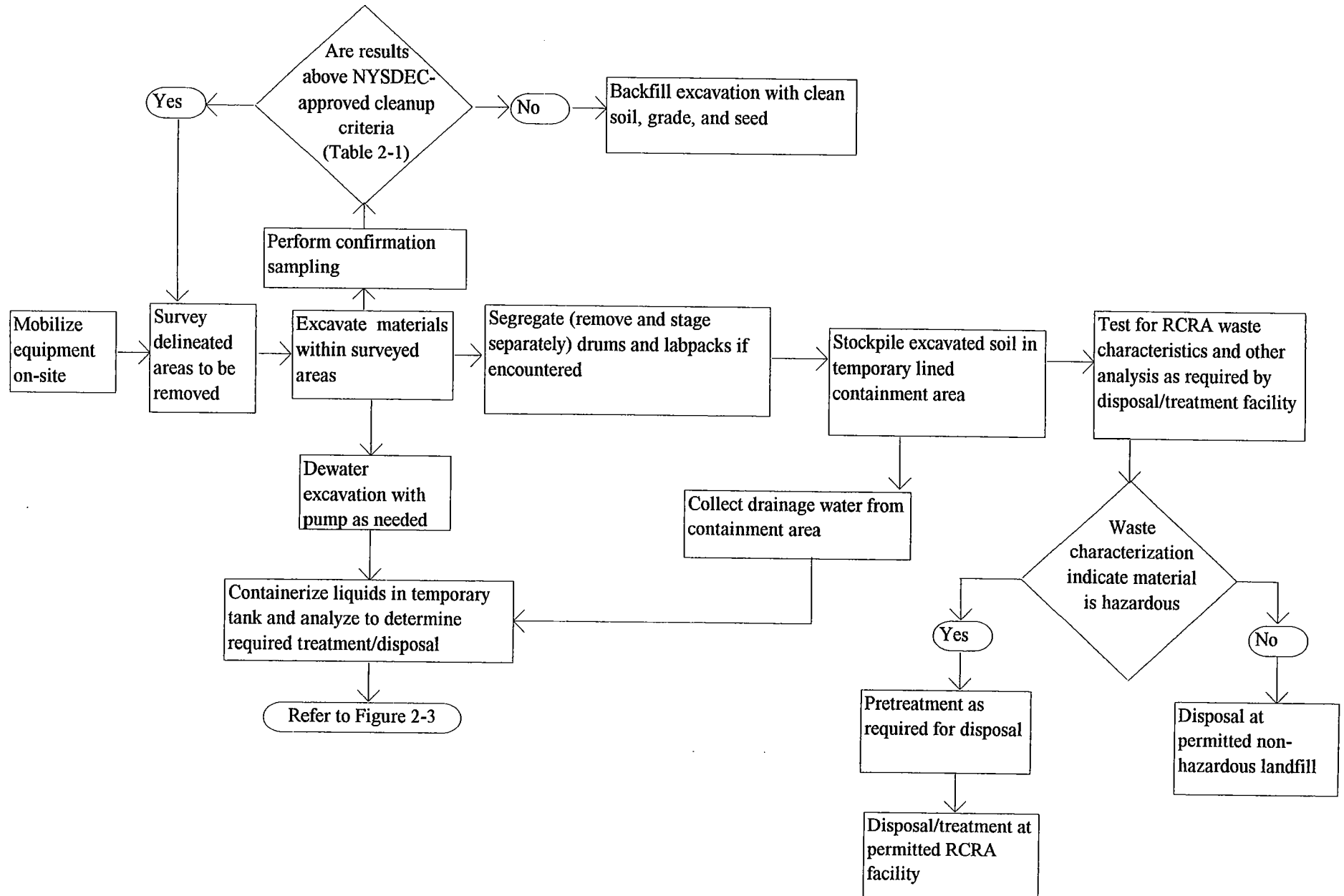
Constituent	Maximum Concentration Detected in Drum Samples (mg/kg)	Maximum Concentration Detected in Test Pit Water (µg/L)
Fluoranthene	0.054J	ND
Di-n-Butylphthalate	ND	1J
Pyrene	0.300J	0.4J
Chrysene	0.054J	ND
Pesticides/PCBs		
delta-BHC	ND	ND
Heptachlor epoxide	0.002J	ND
Endosulfan I	0.029	ND
4,4'-DDE	0.019J	ND
4,4'-DDT	ND	ND
Metals		(mg/L)
Total Arsenic	19	0.012
Total Barium	110	0.14
Total Beryllium	0.63	ND
Total Boron	ND	120
Total Chromium	22	ND
Total Copper	44	0.015
Total Iron	46,690	7.7
Total Lead	21	0.010
Total Lithium	67	38
Total Nickel	21	0.16
Total Potassium	3,570	5.0
Total Silver	1.1	ND
Total Sodium	ND	65
Total Zinc	75	0.34

J = The detected concentration is below the Contract Required Quantification Limit (CRQL).

E = Compounds whose concentrations exceed the calibrated range of the GC/MS instrument for that specific analysis.

ND = Not detected.

**Figure 2-2
Area A and B Removal Action Flow Diagram**



Area A is located adjacent to an active access road used by CWM. Area A and the adjacent road are located within an active RCRA treatment, storage, and disposal facility (TSDF). Complete closure of the roadway during excavation operations shall be restricted to a Friday to Monday time period with full access available to CWM by Tuesday morning. Partial (one lane) and full closures shall be limited and coordinated with CWM. Temporary sheeting and shoring may be required to maintain the roadway open during required active periods. Any pavement requiring removal should be saw-cut to minimize the extent of removal and disturbance to adjacent pavement. The Contractor shall coordinate all traffic control with CWM.

2.1.4 Erosion and Sedimentation Control

Temporary erosion and sedimentation controls will be installed and maintained during the entire excavation and backfilling process to prevent the migration of disturbed soils and sediment to downgradient areas of the site. Primarily silt fence, hay bales, and rock construction entrances will be used to fulfill this function. Specific controls and locations to properly control the runoff shall be shown on the Contractor's Erosion and Sedimentation Control Plans (E&S Plan) for Area A, as specified in Section 01561: Environmental Protection of the Contract Specification and as shown on the Intermediate Contract Drawings (Drawings). Diversion berms and/or channels, rock check dams, or other temporary measures will be used where appropriate and shall be shown on the Contractor's E&S Plan. Stormwater that has come in contact with contaminated soil within the lined stockpile area will be contained for testing to determine if treatment is required. All erosion and sediment controls will be designed and constructed in accordance with New York's Guidelines for Urban Erosion and Sedimentation Control.

In order to expedite the earthwork staging and soil removal, stockpiling locations shall be established prior to the start of the actual remediation activities. In particular, stockpile locations for clean soils and contaminated soils (see Subsection 2.1.6) shall be established in proximity to the perimeter of Area A. These areas are shown on the Drawings. Each stockpile area must be prepared with erosion and sedimentation controls to prevent migration of sediments from the area. Contaminated soil stockpile areas will consist of a bermed aggregate pad underlain by a geomembrane liner that is graded to drain to a collection sump. The excavated soil from the drum

trench will be placed in lined roll-offs. The lined stockpile area is designed to contain potential spillage of excavated soils and stormwater that falls on the pad until it is tested.

The soil stockpile area shown on the Drawings has been sized to accommodate a daily production rate of 500 yd³/day. The Contractor may construct a smaller stockpile area depending on his anticipated excavation and handling production. The Contractor is required to use lined roll-offs to stockpile excavated soil, and the roll-offs must be placed within the bermed lined pad area in order to contain any spills and contact waters. The roll-offs will also require impervious covers to minimize generation of contact waters.

2.1.5 Excavation and Removal of Soils and Drums

As indicated in Subsection 2.1.2, the method of remediation will be removal and disposal. Therefore, contaminated materials within the delineated area will be excavated, stockpiled, tested, and transported to a permitted treatment/disposal facility. The transporting vehicles shall be loaded and operated in such a manner so as to prevent any spillage or loss of material until it is unloaded at the accepting facility. Requirements for excavation and staging are provided in the contract specifications (Section 02226: Excavation, Staging, and Containerization of Contaminated Soils and Drums - Area A).

Excavation will begin within the previously delineated area shown on the Drawings. The area defined in the EE/CA and shown on the Drawings will be surveyed and staked out by the Contractor to establish the initial limits of contamination. Following excavation of material within this initially delineated area, confirmation sampling shall be performed to determine if the limits of the buried drum trench have been reached in accordance with the NYSDEC-approved cleanup criteria. The results of this sampling will be used to determine if further excavation is needed. If confirmation and verification samples reveal contaminants below cleanup criteria, removal of soil from Area A will be terminated and backfilling operations will begin.

All excavation activities shall be planned and executed so as not to disturb any surrounding structures and to minimize impact to existing pavements. Excavation side slopes are the sole responsibility of the excavation Contractor. Side slope declination, shoring, and bracing are,

however, subject to inspection and potential modification by the Contracting Officer in order to minimize the amount of extraneous soil excavated or shoring materials used that may have to be disposed of as hazardous or nonhazardous material. Remote sampling is the preferred technique for confirmation sampling of excavations greater than 4 ft to avoid additional excavation required for sloping. However, if a need should arise for personnel to enter the excavation for drum removal, the working area slopes should be cut to inclinations approved by the federal Occupational Safety and Health Administration (OSHA) requirements of 29 CFR Part 1926 to provide for safe working conditions. Cut slope inclinations in these instances must be designed by a qualified civil or geotechnical engineer. Sheet piling and shoring of excavation sidewalls, if needed to protect construction personnel or existing nearby structures (e.g., utilities or roadways), should be designed and constructed and also must conform to federal OSHA requirements.

The Contractor will receive payment on a per cubic yard basis based on a survey of the excavation when the cleanup criteria have been met or a physical limitation (clay layer) has been encountered. The survey shall be performed by an independent surveyor registered in the State of New York.

The results of previous investigations indicate that many, if not most, of the drums encountered in the test pits were crushed, broken, and deteriorated. Therefore, most, and possibly all, of the drums encountered will not be intact. Crushed, broken, and deteriorated drums that no longer contain any liquid shall be segregated from soil and disposed of separately.

If any intact drums are encountered, they will be excavated by hand to minimize damage to the existing drum and to prevent uncontrolled releases. Drums that have been completely excavated will be removed from the excavation area using a canvas hoist attachment (or approved equivalent removal technique) and transferred to the drum staging area. The staging area will be constructed prior to commencing any excavation activities and shall consist of a bottom impervious liner and bermed or walled perimeter for liquid containment to prevent the migration of materials from uncontrolled releases. The drum staging area may be contained within the lined soil stockpile area, as shown on the Drawings. The layout, location, and dimensions of the drum storage and soil stockpile areas are the ultimate responsibility of the Contractor and will be detailed in his Operations Plans.

The drum contents will be sampled and analyzed to determine the characteristics of the contents. Intact drums will be overpacked, to prevent uncontrolled releases, and properly labeled for transport.

The contents of leaking intact drums in the staging or excavation area will be transferred into new drums to prevent further migration of released contents. Any spilled material in the staging area will be remediated immediately after transferring the drum contents.

During excavation operations, the Contractor must enforce all health and safety regulations applicable to the construction including, but not limited to, dust control, hearing and vision protection, protective headwear, and appropriate level of personal protective equipment (PPE). Requirements for health and safety are presented in the contract specifications (Section 01110: Safety, Health, and Emergency Response (HTRW/UST)). The CWM administrative building is located northeast of Area A. Strict dust controls and air monitoring of the work area and perimeter shall be performed by the Contractor during excavation activities.

2.1.6 Soil Stockpiling

Soil stockpiling and staging locations must be constructed prior to moving any soils on-site. Two storage/stockpile areas will be required for Area A (Section 02226: Excavation, Staging, and Containerization of Contaminated Soils and Drums - Area A). One stockpile area will be used to stage contaminated soils awaiting disposal, and the other stockpile area will be used to store clean soils that will be used as backfill.

These two stockpile locations will be situated in close transporting distance to the excavation area. The contaminated soil stockpile area will be constructed with a liner and drainage collection system to contain all liquids in contact with the contaminated soil and to prevent migration of contaminated soil or sediment. Migration of any type of contaminant is not permitted. It will be the responsibility of the Contractor to ensure that no migration from the contaminated stockpile area occurs.

Because different contractors may perform the remediation of Areas A and B, the contaminated soil stockpile area will need to be removed after each phase to allow for confirmation sampling

below the liner to confirm that leakage from the stockpile area did not contaminate the underlying soil. Since the stockpile area is to be removed for each phase, the specifications will require the use of lined roll-offs to be placed on a designated storage pad composed of a geomembrane covered by a geotextile and 8 inches of No. 57 stone (no asphalt). The lined stockpile area will also be used for the storage of potentially contaminated groundwater and surface water and the equipment decontamination pad. The lined stockpile area will be sized to accommodate a daily production rate of approximately 500 yd³/day. The excavated soils will require testing prior to disposal, so the stockpile area will require sufficient area to handle 2 days of production, or approximately 30 roll-offs. This will allow for test results to be available within 24 hours to permit shipping the soils off-site the following day.

Based on these assumptions, the approximate dimensions of the stockpile area are 160 ft by 300 ft, as shown on the Drawings. The storage area will also be designed to allow stormwater infiltration to flow to a low area to be tested. If the collected stormwater meets CWM discharge permit requirements, it will be discharged as stormwater to the nearest stormwater channel; otherwise it will be treated. Waters from the decontamination pad will be collected separately. The stockpile will also be configured to segregate "dirty" roll-off filling operations from "clean" roll-off pick-up and off-site transport activities. The lined storage area will be pitched to also segregate the stormwater from the clean and dirty areas to reduce the amount of stormwater to potentially treat. After completion of the remediation, the storage area will be removed and the site regraded, top soil replaced, and vegetation restored. Once the geomembrane is removed, confirmation samples of the soil subgrade will be taken prior to site restoration.

Roll-offs must remain in the bermed asphalt staging area until off-site transport in order to contain any spillage or contact water. Contact water shall be minimized by providing impermeable covers for the roll-offs.

The second area located to the west of Area B will be used to store imported clean soil for backfilling, as well as topsoil necessary to restore the area to final grades. Containment of liquids is not necessary as long as the runoff is free of soil and sediments. A row of silt fencing and gravel filters surrounding the stockpile is a suitable method of erosion control for the clean soil stockpile.

After removal of the lined soil stockpile area, the Contractor must perform confirmation sampling in this area to confirm that there has been no migration of contaminants from this soil storage area. If any contamination above the cleanup criteria is detected within the stockpile area, the Contractor will remove impacted soils that exceed the cleanup criteria at no additional cost to the Government. The Contractor shall collect soil samples from the stockpile area prior to its construction to document existing conditions. The Intermediate Contract Drawings show acceptable locations of these stockpile areas. The Contractor must provide a drawing showing designated stockpile areas prior to mobilization.

2.1.7 Groundwater and Stormwater Control

Perched groundwater infiltration into and stormwater ponding within excavations may be encountered during construction activities. If perched groundwater is encountered, it is believed that this inflow can be sufficiently controlled by proper grading of the excavation bottoms in combination with localized pumping from a sump at a designated excavation low point. The pumped water shall be routed into tank truck(s) or temporary storage tanks located within the lined soil stockpile area, if the volume of collected water is greater than the capacity of the trucks available. The stored water shall then be analyzed to determine its characteristics for treatment/disposal at an aqueous treatment facility. The preferred disposal option for both contact stormwater and groundwater seepage into excavations is treatment/disposal at an off-site (or on-site CWM) permitted treatment/disposal facility. Treatment on-site by the Contractor and discharge to an existing stormwater channel, if the water quality meets permit requirements, is an option available to the Contractor. If surface water discharge is proposed on CWM property, the effluent would have to meet CWM SPDES permit effluent limitations and monitoring requirements. All discharge activities will be coordinated with CWM and the Contracting Officer. The Contractor is recommended to establish stormwater diversions to direct noncontact stormwater to applicable on-site stormwater channels.

Requirements for the collection, characterization, treatment, and discharge of liquid from dewatering activities are presented in the contract specifications (Section 02141: Dewatering

Liquids and Handling). Diversion channels and/or berms shall also be constructed as necessary to divert stormwater run-on away from excavations.

2.1.8 Controlled Fill

Controlled fill will be required as backfill and final site grading fill. Requirements for controlled fill are presented in the contract specifications (Section 02210: Backfill and Grading for Remediation Areas). Off-site borrow material imported to the site for use as excavation backfill must be tested in accordance with the contract specifications (Section 02210) to ensure it is environmentally clean and meets the physical properties required in the specifications.

Fill compacted with heavy compaction equipment will be placed in approximately 8- to 10-inch (loose thickness) horizontal lifts. Fill to be compacted using hand-operated vibratory plate compactors (e.g., "jumping jacks") will be placed in maximum 6-inch (loose thickness) lifts. Nonstructural backfill materials will be compacted to at least 90% of the maximum Standard Proctor compaction test (ASTM D-698). Structural backfill materials shall be compacted to at least 95% of the maximum Standard Proctor compaction tests. A heavy (10-ton static weight) self-propelled vibratory roller (sandy soils) or sheepsfoot roller (clayey soils), shall be used to compact backfill soils, except at locations within 5 ft from existing structures and utilities. Lighter, walk-behind compaction equipment shall be used to compact fill soils within these locations.

Prior to removal of erosion and sedimentation controls, the site shall be graded to match adjacent topography and prevent ponding of surface water. In order to finalize site restoration, an appropriate seed and mulch (Section 02935: Turf) shall be placed over the disturbed area. Upon germination and establishment of the vegetation, site erosion controls will be removed.

2.1.9 Disposal of Materials

Where applicable, the containerization of all hazardous materials will be completed according to contract specifications (Section 02226: Excavation, Staging, and Containerization of Contaminated Soils and Drums - Area A). All hazardous materials will be transported and

disposed of according to contract specifications (Section 02120: Transportation and Disposal of Hazardous and Non-Hazardous Materials).

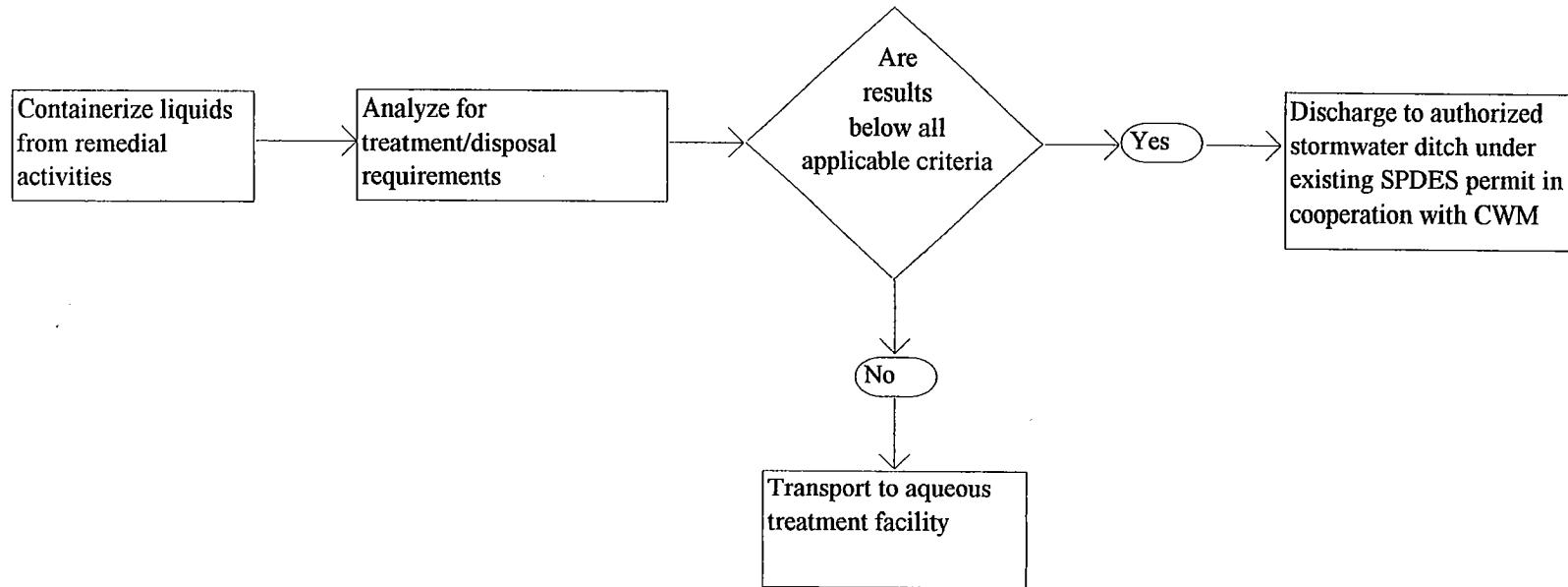
Water

All water that comes in contact with potentially contaminated soils, including surface water runoff, groundwater infiltration, and water ponded as a result of a storm event will be collected in a tank truck or temporary storage tanks. The water will be sampled and analyzed to determine specific treatment requirements prior to treatment/disposal or direct discharge on-site (see Figure 2-3, Flow Diagram for Aqueous Treatment). The preferred method is transport to and disposal of all contact waters at a permitted treatment facility. The results from previous investigations can be submitted for waste acceptance; however, the accepting facility may request additional information. The Contractor has the option to discharge the water on-site to CWM stormwater channels if the water meets applicable discharge limits and monitoring requirements. If the water does not meet regulatory limitations, then the Contractor must dispose of the water at a permitted facility or treat the water on-site until discharge limitations are met.

Soils

The stockpiled material will be sampled and analyzed to determine waste classification. Analysis shall consist of RCRA waste characteristics to determine whether the stockpiled material is hazardous or nonhazardous in accordance with 40 CFR 261 and 6NYCRR Part 371, and other analyses as required by the accepting facility. Soils classified as hazardous, as identified in 40 CFR 261 and 6NYCRR Part 371, will be disposed of at a permitted RCRA hazardous waste facility. Soils classified as nonhazardous will be disposed of at a 6NYCRR Part 360 permitted landfill. On-site reduction of moisture content through stabilization or other techniques to meet the requirements of the accepting facility may be completed by the Contractor. Chemical stabilization, pretreatment, etc., will be performed by the accepting facility.

Figure 2-3
Aqueous Treatment Flow Diagram



2.1.10 Confirmation Sampling

Confirmation sampling will be conducted by the Contractor to verify the removal of contaminated material to the established NYSDEC-approved cleanup criteria. The Contracting Officer or his representative will provide quality assurance (QA) oversight of the Contractor's sampling and analysis program. Requirements for confirmation sampling are provided in the contract specifications (Section 02010: Confirmation and Verification Sampling). Remote sampling is the preferred technique for confirmation sampling of excavations greater than 4 ft to avoid additional excavation required for sloping. The Contractor shall provide the necessary manpower, equipment, and materials to obtain confirmation samples from the excavation.

Confirmation sampling will be performed after the excavation has reached the designated limits of Area A and initial field screening does not indicate elevated concentrations of organic compounds. Initial field screening methods may consist of PID/FID field instruments or other acceptable field screening methods. If sustained field screening readings above background are observed on soil samples removed from the excavation, the contracting officer may direct the contractor to continue excavation or perform confirmation sampling. For the excavation walls a grid area of 400 ft² (10-ft by 40-ft narrow sidewall) to 550 ft² (10-ft by 55-ft long sidewall) or a total of 20 sidewall samples is specified to be collected and analyzed using rapid (24 hours or less) turnaround analysis for a focused list of parameters that have been previously detected in subsurface soils. Samples will be collected in the center of each grid section. The bottom of Area A will be excavated to the depth cleanup criteria are met (estimated at 10 ft) or to 6 inches below the top of the clay layer, whichever comes first. It is recommended that confirmation samples be performed on the bottom of the excavation to document the level of cleanup, in the case that the clay layer is encountered first. The results would not be used to extend the depth of the excavation if the clay layer is encountered. A grid area of approximately 1,100 ft² (20 ft by 55 ft) or eight total floor samples is specified. The total confirmation samples would, therefore, be 28, if no sample exceeded the cleanup criteria and no additional excavation beyond the initial limits were performed. The contaminants detected above NYSDEC recommended soil cleanup levels in soils from Area A are highlighted (in bold) in Table 2-1. The confirmation samples will be analyzed for the focused list of parameters shown in Table 2-1, which represents constituents

previously detected in subsurface soils. The confirmation sample results will be compared to the NYSDEC soil cleanup levels presented in Table 2-1.

QA split verification samples shall be collected for at least 10% of the confirmation samples. Verification samples are to be analyzed at an independent, approved laboratory for the complete list of parameters for the specified analytical method for VOCs, SVOCs, pesticides, PCBs, and metals. QA verification samples will be provided within a 48-hour period.

Removal activities will continue until confirmation and QA split verification sample results are below the levels indicated in Table 2-1. If the confirmation results exceed the soil cleanup levels, excavation will continue in 2-ft to 4-ft vertical sections (wall) and 1-ft horizontal lifts (floor), as directed by the Contracting Officer, until confirmation and verification sample results are below the specified cleanup levels for the contaminant levels listed in Table 2-1. If the results of the QA verification sample analysis indicate constituents detected other than those listed in Table 2-1, these constituents will be compared to NYSDEC soil cleanup criteria to determine if excavation is required.

2.2 AREA B REMEDIATION

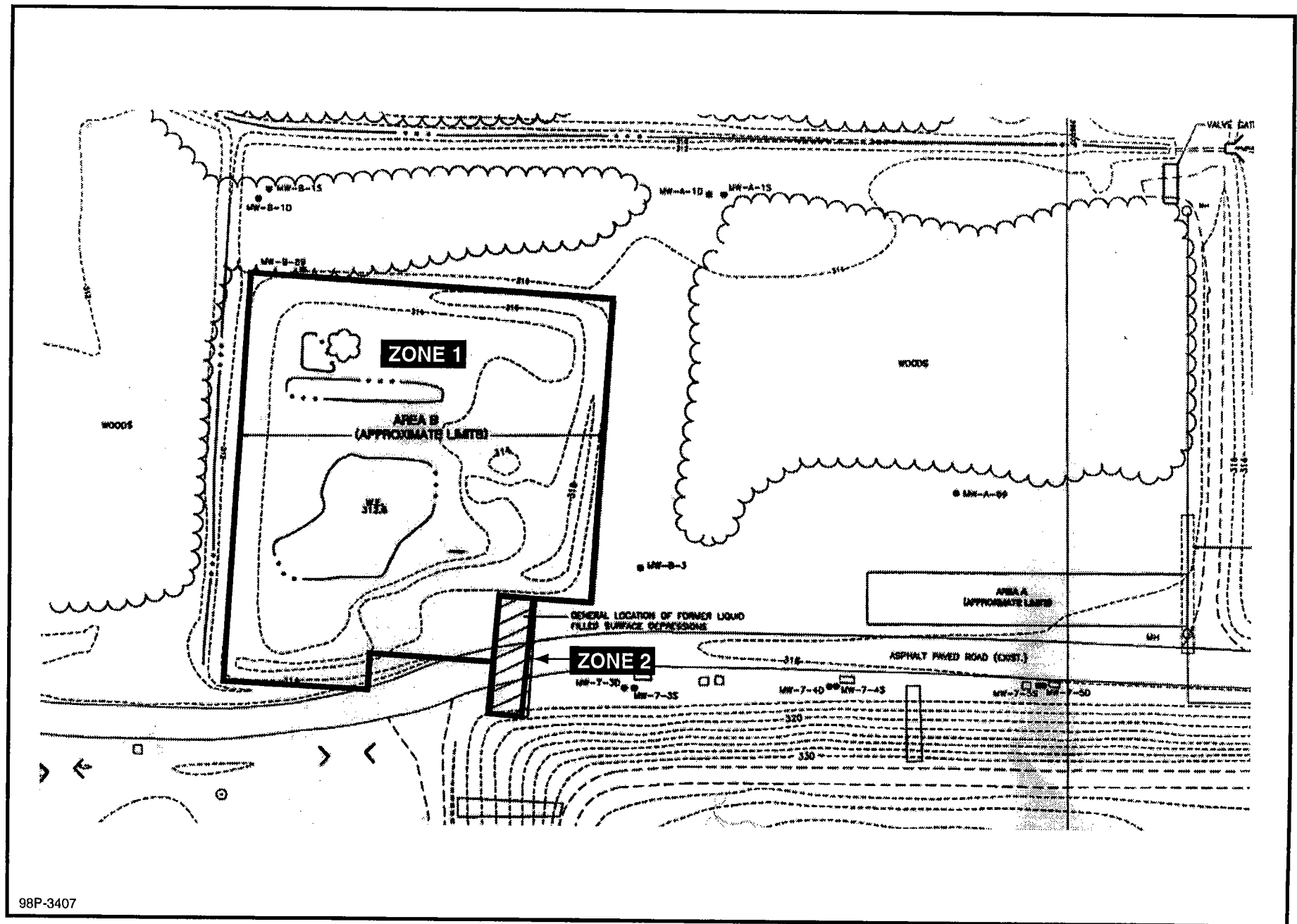
Area B is located southeast of the intersection of Balmer Road and Lutts Road within the OU No. 1 on the former LOOW site (see Figures 1-1 and 1-2). Area B is also located on CWM Property (Component 1) and the remediation of this area will be performed under Phase 3 of Component 1 in accordance with the new IRA phasing. The western limits of Area A are within 200 ft of the southeast corner of Area B. The footprint of Area B has been estimated at approximately 280 ft by 200 ft. A burn pit located in the southern portion of Area B dates back to 1963. Two large surface depressions exist within the former burn pit. The remediation areas within Area B were investigated and identified during an inspection by SCA in 1981 (EE/CA, Acres, March 1995).

2.2.1 Site Background

Aerial photographs dating back to 1963 indicate that the burn pit activities were apparently concentrated in the southern portion of Area B, just north of H Street. Two rectangular depressions also existed within the pit and are shown in Figure 2-4. One of these depressions measures approximately 200 ft long by 15 ft wide and is located in the northern portion of the former burn pit. The second surface depression measured approximately 100 ft long by 25 ft wide and was located in the southeast corner of Area B. During the construction of SLF-7, H Street was relocated about 25 ft north of its former location. This northern relocation of H Street appears to have resulted in the elimination of this second surface depression (EE/CA, Acres, March 1995).

The pond sediment samples displayed the highest concentrations of contaminants detected in Area B. The contaminants were predominantly benzene derivatives (e.g., chlorobenzene, ethylbenzene, styrene, and 1,2,4-trichlorobenzene) and are distinctly different from the contaminants detected elsewhere in Area B. For example, subsurface soil samples collected from the area south of the bermed pond displayed elevated levels of carbon tetrachloride, hexachloroethane, and tetrachloroethene (EE/CA, Acres, March 1995).

Based on the investigation results obtained to date, it appears that separate source areas exist in Area B. The sediment within the pond in Area B is contaminated with heterocyclic and aromatic compounds. Visual observations of the sediment identified the presence of deteriorated drums and labpack materials (EE/CA, Acres, March 1995). This contamination appears to be limited to the upper few feet of sediment because subsurface soil samples did not contain significant contamination at depth. Because the berms were constructed of locally derived materials, it is assumed that the berms are also contaminated. The contaminants detected in the subsurface soils and groundwater to the south of Area B were primarily chlorinated organics such as tetrachloroethene. Because of the differences in the types of contamination detected to the area south of Area B (source "Zone" 2) and those contaminants detected within the bermed pond in Area B (source "Zone" 1), the occurrences of these different contaminants may represent separate source areas within Area B. These separate sources are identified as Zone 1 and Zone 2 in Figure 2-4. It appears the contamination south of Area B may be related to the possible use of the former



98P-3407

FIGURE 2-4 AREA B – DESIGNATED ZONES 1 AND 2

surface depression for wastewater storage and as a burn pit (EE/CA, Acres, March 1995). The contaminants that were detected above the NYSDEC cleanup criteria in Area B are presented in Table 2-3.

Based on information gathered to date, the following materials have been identified for remediation (EE/CA, Acres, March 1995):

- Zone 1—Contaminated pond sediment estimated at approximately 3,000 yd³ (based on a 24,500-ft² area 3 ft in depth).
- Zone 1—Contaminated berm materials at approximately 6,000 yd³ (based on 33,000 ft² of berm at an average height of 5 ft).
- Zone 1—Contaminated mounded sediment and soil within the ponded area estimated at 1,300 yd³ (based on a 7,150-ft² area with an average thickness of 5 ft).
- Zone 2—Contaminated soils within the former surface depression south of the present burn pit boundaries, estimated at 1,700 yd³ (based on the depression dimensions of 100 ft long by 25 ft wide by 18 ft deep).
- Locally contaminated groundwater from within the former surface depression, estimated at 120,000 gallons (based on the groundwater at 3 ft bgs resulting in 83% of the volume of the trench within the saturated zone and an estimated porosity of 40% for the trench materials). The existence of contaminated groundwater beyond the excavation trench is not considered part of this removal action. (Remedial Design for Interim Removal Actions Operable Units 1 and 2 LOOW - Work Plan, August 1996)

It is the preferred option to treat the ponded water at a permitting treatment facility. All discharge activities will be coordinated with CWM and the Contracting Officer.

The Contractor has the option to discharge the ponded water on-site to CWM stormwater channels if the water meets applicable discharge limits and monitoring requirements. If the water does not meet regulatory limitations, then the Contractor must dispose of the water at a permitted facility or treat the water on-site until discharge limitations are met.

2.2.2 Preferred Removal Action

The removal action recommended in the EE/CA is the removal and disposal alternative in which the contaminated materials within the delineated areas shown in Figure 2-4 in Area B would be

Table 2-3

Area B Constituents of Concern and Cleanup Criteria

Constituent	Maximum Concentration (mg/kg)	NYSDEC* Recommended Soil Cleanup Objective (mg/kg)
AREA B - Zone 1		
Volatile Organics		
✓ Methylene Chloride	6.5	0.1
✓ Benzene	0.27	0.06
✓ Chlorobenzene	1.8	1.7
✓ Ethylbenzene	7.3	5.5
✓ Styrene	4.8	NA
✓ Total Xylenes	0.31	1.2
Semivolatile Organics		
✓ 1,2,4-Trichlorobenzene	0.35	3.4
✓ 1,4-Dichlorobenzene	5.9	NA
2-Methylnaphthalene	3.5 ?	36.4
Pesticides		
✓ Aldrin	0.041	0.041
✓ alpha-BHC	1.2	0.11
✓ Dieldrin	0.93	0.044
✓ Heptachlor epoxide	0.039	0.02
Metals		
Arsenic	1.3 ?	7.5 or SB
Barium	120 ?	300 or SB
✓ Boron	558.0	NA
Chromium	24	10 or SB
Copper	35 ?	25 or SB
✓ Lithium	1,150.0	NA
Lead	29	SB
Mercury	0.21	0.1
Nickel	16	13 or SB

Table 2-3

Area B Constituents of Concern and Cleanup Criteria
(Continued)

Constituent	Maximum Concentration (mg/kg)	NYSDEC* Recommended Soil Cleanup Objective (mg/kg)
Zinc	220	20 or SB
AREA B - Zone 2		
Volatile Organics		
Acetone	0.8	0.2
Carbon Tetrachloride	4.5	0.6
Tetrachloroethene	11	1.4
Carbon Disulfide	0.026	2.7
Chloroform	0.110 ⁷	0.3
Semivolatile Organics		
Hexachloroethane	9.0	NA
Naphthalene	0.19J	13
2-Methylnaphthalene	0.58	36.4
Phenanthrene	0.53J ⁷	50.0
Metals		
Boron	84.9	NA
Lithium	39.1 ⁷	NA

* NYSDEC, Division of Hazardous Waste Remediation, TAGM HWR-94-4046, "Determination of Soil Cleanup Objectives and Cleanup Levels."

J = Detected concentration is below the Contract Required Quantification Limit (CRQL).

SB = Soil Background.

NA = No published NYSDEC cleanup criteria.

excavated by backhoe or excavator and transported for disposal at a competitively bid permitted facility (see Figure 2-2 for Area B removal action flow diagram). Excavation will be performed within the limits shown in Figure 2-4 based on the results of previous investigations. Confirmation soil sampling will be conducted once these limits of the excavation have been reached or as directed by the Contracting Officer to verify that contaminated material removal has been completed to established cleanup criteria standards. Further details of this remedial action are outlined in the following subsections.

2.2.3 Site Preparation

Prior to commencing site excavation in the designated removal areas within Area B, all vegetation, topsoil, and rootmass will be removed from within the limits of the proposed excavation. Requirements for site preparation are provided in the contract specifications (Section 02110: Clearing and Grubbing). Topsoil will be temporarily stockpiled within the lined contaminated stockpile area for testing to determine if it can be used for site revegetation at the completion of removal activities. Stockpiled topsoil will be sampled prior to placement for site revegetation. If the topsoil analytical results indicate that concentrations of constituents are not below cleanup criteria, this material shall be disposed at a permitted facility with the other excavated material.

All subsurface utility lines, currently located within and along the limits of work, will be either relocated outside the limits of work or clearly identified so as to avoid their damage by, and interference with, earthwork-related construction activities.

Area B is located adjacent to an active access road used by CWM. Area B and the adjacent road are located within an active RCRA TSDF facility. Complete closure of this roadway during excavation operations shall be restricted to a Friday to Monday time period with full access available to CWM by Tuesday morning. Partial (one lane) or full closures shall be limited and coordinated with CWM. Temporary sheeting and shoring may be required to maintain the roadway open during required active periods. Any pavement requiring removal should be saw-cut to minimize the extent of removal and disturbance to adjacent pavement. The Contractor shall coordinate all traffic control with CWM.

2.2.4 Erosion and Sedimentation Controls

Temporary erosion and sedimentation controls will be installed and maintained during the entire excavation and backfilling process to prevent the migration of disturbed soils and sediment to downgradient areas of the site. Primarily silt fence, hay bales, and rock construction entrances will be used to fulfill this function. Specific controls and locations to properly control the runoff will be shown on the Contractor's Erosion and Sedimentation Control Plan (E&S Plan) for Area B as specified in Section 01561: Environmental Protection of the Contract Specifications and as shown on the contract drawings. Diversion berms and/or channels, rock check dams, or other temporary measures will be used where appropriate and shall be shown in the Contractor's E&S Plan. Stormwater that has come in contact with contaminated soil within the lined stockpile area will be contained for testing to determine if treatment is required. All erosion and sediment controls will be designed and constructed in accordance with New York's Guidelines for Urban Erosion and Sedimentation Control.

In order to expedite the earthwork staging and soil removal, stockpile locations shall be established prior to the start of the actual remediation activities. In particular, stockpile locations for clean soils and contaminated soils (see Subsection 2.2.6) shall be established in proximity to the perimeter of Area B. These areas are shown on the Intermediate Contract Drawings. Each stockpile area must be prepared with erosion and sedimentation controls to prevent migration of sediments from the area. Contaminated soil stockpile areas will consist of a bermed aggregate pad underlain by a geomembrane liner that is graded to drain to a collection sump. The excavated soil from Area B will be placed in lined rolloffs. This lined stockpile area is designed to contain potential spillage of excavated soils and stormwater that falls on the pad until it is tested.

The soil stockpile area shown on the Intermediate Contract Drawings has been sized to accommodate a daily production rate of 500 yd³/day. The Contractor may construct a smaller stockpile area depending on his anticipated excavation and handling production. The Contractor is required to use lined roll-offs to stockpile excavated soil; and the roll-offs must be placed within the bermed lined pad area in order to contain any spills and potential contact waters. The roll-offs will also require impervious covers to minimize generation of contact waters.

2.2.5 Excavation and Removal of Soils and Drums/Labpacks

As indicated in Subsection 2.2.2, the method of remediation will be removal and disposal. Therefore, contaminated materials within the delineated area will be excavated, stockpiled, tested, and transported to a permitted treatment/disposal facility. The transporting vehicles shall be loaded and operated in such a manner so as to prevent any spillage or loss of material until it is unloaded at the accepting facility. Requirements for excavation and staging are provided in the contract specifications (Section 02226: Excavation, Staging, and Containerization of Contaminated Soils and Drums - Area B).

Excavation will begin within the area of the two surface depressions within the burn pit area shown on the Intermediate Contract Drawings. First, the area must be surveyed to establish the initial limits of contamination. Following excavation of material within this initially delineated area, confirmation sampling shall be performed to determine if the contaminated material limits have been reached in accordance with the NYSDEC-approved cleanup criteria. The results of this sampling will be used to determine if further excavation is needed. If confirmation and verification samples reveal contaminants below cleanup criteria, removal of soil from Area B will be terminated and backfilling operations will begin.

All excavation activities shall be planned and executed so as not to disturb any surrounding structures and to minimize impact to existing pavements. Excavation side slopes are the sole responsibility of the excavation Contractor. Side slope declination, shoring, and bracing are, however, subject to inspection and potential modification by the Contracting Officer in order to minimize the amount of extraneous soil excavated or shoring materials used that may have to be disposed of as hazardous or nonhazardous material. Remote sampling is the preferred technique for confirmation sampling of excavations greater than 4 ft to avoid additional excavation required for sloping. However, if a need should arise for personnel to enter the excavation for drum/labpack removal, the working area slopes should be cut to inclinations approved by the federal OSHA requirements of 29 CFR Part 1926 to provide for safe working conditions. Cut slope inclinations in these instances must be designed by a qualified civil or geotechnical engineer. Sheet piling and shoring of excavation sidewalls, if needed to protect construction personnel or

existing nearby structures (e.g., utilities or roadways), should be designed and constructed and also must conform with federal OSHA requirements.

The Contractor will receive payment on a cubic yard basis based on a survey of the excavation when the cleanup criteria have been met or a physical limitation (clay layer) has been encountered. The survey shall be performed by an independent surveyor registered in the State of New York.

The results of previous investigations indicate that many, if not most, of the drums encountered in the test pits were crushed, broken, and deteriorated. Therefore, most, and possibly all, of the drums encountered will not be intact. Crushed, broken, and deteriorated drums that no longer contain any liquid shall be segregated from soil and disposed of separately.

If any intact drums/labpacks are encountered, then they will be excavated by hand to minimize damage to the existing drums/labpacks and prevent uncontrolled releases. Drums that have been completely excavated will be removed from the excavation area using a canvas hoist attachment (or other approved equivalent removal technique) and transferred to the drum staging area. The staging area will be constructed prior to commencing any excavation activities and shall consist of a bottom impervious liner and bermed or walled perimeter for liquid containment to prevent the migration of materials from uncontrolled releases. The drum/labpack staging area may be contained within the lined soil stockpile area, as shown on the Intermediate Contract Drawings. The layout, location, and dimensions of the drum/labpack storage and soil stockpile areas are the responsibility of the Contractor, and will be detailed in his Operations Plan.

The drum contents will be sampled and analyzed to determine the characteristics of the contents. Intact drums will be overpacked to prevent uncontrolled releases and properly labeled for transport.

The contents of leaking intact drums in the staging or excavation area will be transferred into new drums to prevent further migration of released contents. Any spilled material in the staging area will be remediated immediately after transferring the drum contents.

During excavation operations, the Contractor must enforce all health and safety regulations applicable to the construction including, but not limited to, dust control, hearing and vision

protection, protective headwear, and appropriate level of PPE. Requirements for health and safety are presented in the contract specifications (Section 01110: Safety, Health, and Emergency Response (HTRW/UST)). The CWM administrative building is located northeast of Area B. Strict dust controls and air monitoring of the work area and perimeter shall be performed by the Contractor during excavation activities.

2.2.6 Soil Stockpiling

Soil stockpiling and staging locations must be constructed prior to moving any soils on-site. Two storage/stockpile areas will be required for Area B (Section 02226: Excavation, Staging, and Containerization of Contaminated Soils and Drums - Area B). One stockpile area will be used to stage contaminated soils awaiting disposal, and the other stockpile area will be used to store clean soils that will be used as backfill.

These two stockpile locations will be situated in close transporting distance to the excavation area. The contaminated soil stockpile area will be constructed with a liner and drainage collection system to contain all liquids in contact with the contaminated soil and to prevent migration of contaminated soil or sediment. Migration of any type of contaminants is not permitted. It will be the responsibility of the Contractor to prevent migration from the contaminated stockpile area. A configuration of bermed aggregate pad with a geomembrane liner is presented on the Intermediate Contract Drawings. Lined roll-offs will be used to stockpile soils prior to off-site transport and disposal. Roll-offs must remain in the bermed aggregate staging area until off-site transport, in order to contain spillage or contact water. Contact water shall be minimized by providing impermeable covers for the roll-offs.

The second area located to the west of Area B will be used to store imported clean soil for backfilling, as well as topsoil necessary to restore the area to final grades. The intent of the clean soil stockpile is to prevent sediment from migrating from the soil pile location. Containment of liquids is not necessary as long as the runoff is free of soil and sediments. A row of silt fencing and sand gravel filters surrounding the stockpile is a suitable method of erosion control for the clean soil stockpile.

After removal of the aggregate soil stockpile area, the Contractor must perform confirmation sampling in this area to confirm that there has been no migration of contaminants from this soil storage area. If any contamination above the cleanup criteria is detected within the stockpile area, the Contractor will remove impacted soils that exceed the cleanup criteria at no additional cost to the Government. The Contractor shall collect soil samples from the stockpile area prior to its construction to document existing conditions. The Intermediate Contract Drawings show acceptable locations of these stockpile areas. The Contractor must provide a drawing showing designated stockpile areas prior to mobilization as part of this Operations Plan.

2.2.7 Groundwater and Stormwater Control

Perched groundwater infiltration into and stormwater ponding within excavations may be encountered during construction activities. If perched groundwater is encountered, it is believed that this inflow can be sufficiently controlled by properly grading the excavation bottoms in combination with localized pumping from a sump at a designated excavation low point. The pumped water shall be routed into tank truck(s), or temporary storage tanks located within the lined soil stockpile area, if the volume of collected water is greater than capacity of the trucks available. The stored water shall then be analyzed to determine its characteristics for transport/disposal at an aqueous treatment facility. Treatment at an off-site or CWM's on-site facility is the preferred approach for contact stormwater and groundwater seepage into excavations. Treatment on-site by the Contractor and discharge to an existing stormwater channel if the water quality meets CWM permit requirements, is an option available to the Contractor. If surface water discharge is proposed on CWM property, the effluent would have to meet CWM SPDES permit effluent limitations and monitoring requirements. All discharge activities must be coordinated with CWM through the Contractor Officer. The Contractor is recommended to establish stormwater diversions to direct noncontact stormwater to applicable on-site stormwater channels.

Requirements for the collection, characterization, treatment, and discharge of liquid from dewatering activities are presented in the contract specifications (Section 02141: Dewatering

Liquids and Handling). Diversion channels and/or berms shall also be constructed as necessary to divert stormwater run-on away from excavations.

2.2.8 Controlled Fill

Controlled fill will be required as backfill and final site grading fill. Requirements for controlled fill are presented in the contract specifications (Section 02210: Backfill and Grading for Remediation Areas). Off-site borrow material imported to the site for use as excavation backfill must be tested in accordance with the specifications (Section 02210) to ensure it is environmentally clean and meets the physical properties required in the specifications.

Fill compacted with heavy compaction equipment shall be placed in approximately 8- to 10-inch (loose thickness) horizontal lifts. Fill to be compacted using hand-operated vibratory plate compactors (e.g., "jumping jacks") shall be placed in maximum 6-inch (loose thickness) lifts. Nonstructural backfill materials shall be compacted to at least 90% of the maximum Standard Proctor compaction test (ASTM D-698). Structural backfill materials shall be compacted to at least 95% of the maximum Standard Proctor compaction test. A heavy (10-ton static weight) self-propelled vibratory roller (sandy soils) or sheepsfoot roller (clayey soils) shall be used to compact fill soils at locations at least 5 ft from existing structures and utilities. Lighter, walk-behind compaction equipment shall be used to compact fill soils within 5 ft of these locations.

Prior to removal of erosion and sedimentation controls, the site shall be graded to match adjacent topography and prevent ponding of surface water. In order to finalize site restoration, an appropriate seed and mulch (Section 02935: Turf) shall be placed over the disturbed area. Upon germination and establishment of the vegetation, site erosion controls will be removed.

2.2.9 Disposal of Materials

Where applicable, the containerization of all hazardous materials will be completed according to contract specifications (Section 02226: Excavation, Staging, and Containerization of Contaminated Soils and Drums - Area B). All hazardous materials will be transported and

disposed of according to contract specifications (Section 02120: Transportation and Disposal of Hazardous Materials).

2.2.9.1 Ponded Surface Water

The ponded water within the depression in Area B could potentially be discharged without treatment. Therefore, the pond water will be carefully removed to a temporary holding tank, to within several inches of the bottom, to avoid disturbing any of the contaminated sediments. Discharge to surface drainage will require meeting all applicable discharge requirements under CWM's current SPDES permit. Discharge of any liquids must be coordinated with CWM.

Analysis of water quality prior to discharge will be performed by the Contractor. Ponded water that is above the permit limits will be treated on-site by the Contractor and then discharged under the CWM SPDES permit or transported to a competitively bid off-site or CWM's on-site treatment facility.

2.2.9.2 Water

All water that comes in contact with potentially contaminated soils, including surface water runoff, groundwater infiltration, and water ponded as a result of a storm event will be collected in a tank truck or temporary storage tanks. The water will be sampled and analyzed to determine specific treatment requirements prior to treatment/disposal or direct discharge on-site (see Figure 2-3, Flow Diagram for Aqueous Treatment). The results from previous investigations can be submitted for waste acceptance; however, the accepting facility may request additional information. The preferred method is transport to and disposal of all contact waters at a permitted treatment facility. The Contractor has the option to discharge the ponded water on-site to CWM stormwater channels if the water meets applicable discharge limits and monitoring requirements. If the water does not meet regulatory limitations, then the Contractor must dispose of the water at a permitted facility or treat the water on-site until discharge limitations are met.

2.2.9.3 Soils

The stockpiled material will be sampled and analyzed to determine waste classification. Analysis shall consist of RCRA waste characteristics, to determine whether it is hazardous or nonhazardous in accordance with 40 CFR 261 and 6NYCRR Part 371, and other analyses as required by the accepting facility. Soils classified as hazardous, as identified in 40 CFR 261 and 6NYCRR Part 371, will be disposed of at a permitted RCRA hazardous waste facility or an off-site incinerator due to Land Ban criteria. Soils classified as nonhazardous will be disposed of at a 6NYCRR Part 360 permitted landfill. On-site reduction of moisture content through stabilization or other techniques to meet the requirements of the accepting facility may be completed by the Contractor. Chemical stabilization, pretreatment, etc., will be performed by the accepting facility.

2.2.10 Confirmation Sampling

Confirmation sampling will be conducted by the Contractor to verify the removal of contaminated material to the established NYSDEC-approved cleanup criteria. The Contracting Officer or his representative will provide QA oversight of the Contractor's sampling and analysis program. Requirements for confirmation sampling are provided in the contract specifications (Section 02010: Confirmation and Verification Sampling). Remote sampling is the preferred technique for confirmation sampling of excavations greater than 4 ft to avoid additional excavation required for sloping. The Contractor shall provide the necessary manpower, equipment, and materials to obtain the confirmation samples from the excavation. The Contractor is required to provide proper support for all excavations to meet OSHA requirements for access of sampling personnel, if sampling personnel must enter the excavation area. This may include sloping, benching, or other excavation support methods to stabilize the sides of the excavation. The Contractor will perform this work in a manner that will minimize the amount of extraneous soil excavated or shoring materials used that may have to be disposed of as hazardous waste. Sloping, shoring, and other excavation methods are subject to review and modification by the Contracting Officer to minimize the amount of extraneous soil excavated.

Confirmation sampling at Area B will be completed as follows:

- Contaminated pond sediment (estimated volume 3,000 yd³ based on a 24,500-ft² area 3 ft in depth)—Following removal of the sediment to a depth of 3 ft, the area will be screened with a FID/PID. If sustained readings above background are observed, the contracting officer may direct the contractor to excavate and remove another foot or collect confirmation samples using an approximately 4,000-ft² grid area (five to six samples total). Based on the results of the 24-hour turnaround confirmation sampling, an additional 1 ft or greater as directed by the Contracting Officer of material will be excavated and removed from within the designated grid.
- Contaminated berm materials at approximately 6,000 yd³ (based on 33,000 ft² of berm at an average height of 5 ft)—A similar approach is specified for contaminated pond sediment for a total of eight to nine confirmation samples.
- Contaminated mounded sediment and soil within the ponded area estimated at 1,300 yd³ (based on a 7,150-ft² area with an average thickness of 5 ft)—A similar approach to confirmation sampling is specified for contaminated pond sediment. Following initial excavation to 5 ft below the existing surface, field screening with FID/PID will be conducted and then either further excavation or confirmation sampling will be performed based on field screening results. Total samples for the first round of confirmation sampling consists of two samples.
- Contaminated soils within the former surface depression south of the present burn pit boundaries, estimated at 1,700 yd³ (based on the depression dimensions of 100 ft long by 25 ft wide by 18 ft deep). Since this is a below-ground excavation, sidewall and floor confirmation samples are specified. The sidewall confirmation sampling will occur after field screening and will be performed on an approximate grid area of 450 ft² (18-ft by 25-ft narrow sidewall) or one sample per side, and of 450 ft² (9 ft by 50 ft on long sidewall) or four samples per side. The total sidewall samples will then be 10. The floor samples will be taken using a grid area of 625 ft² (25 ft by 25 ft) or four samples. If the clay layer is encountered the excavation will proceed 6 inches into the clay layer and confirmation samples will be collected. No further excavation will occur after the top 6 inches of the clay layer is removed. The results of the confirmation samples at this depth will be used only to document cleanup achieved. If the clay layer is not encountered, excavation will proceed until clean criteria are met (estimated at 18 ft) or the clay layer is encountered.

The contaminants detected above NYSDEC recommended soil cleanup levels in Area B include benzene derivatives (e.g., benzene, chlorobenzene, ethylbenzene, styrene, 1,4-dichlorobenzene and 1,2,4-trichlorobenzene) in the basin sediments (Zone 1) and primarily chlorinated organics (e.g., carbon tetrachloride, hexachloroethane, and tetrachloroethene) and acetone in the subsurface soils and groundwater in the former surface depression (Zone 2). Confirmation samples will be analyzed for the focused list of volatile organic and semivolatile organic compounds detected in samples from the two different source areas (Zone 1 and Zone 2) as listed

in Table 2-3. The confirmation sample results will be compared with the soil cleanup levels also presented in Table 2-3. The confirmation samples from Zone 1 will also be analyzed for the focused list of pesticides that exceed the cleanup criteria as highlighted (in bold) in Table 2-3. Confirmation samples will also be analyzed for the metals listed in Table 2-3 and compared to cleanup criteria and soil background levels.

QA split verification samples shall be collected for at least 10% of the confirmation samples. Verification samples are to be analyzed at an independent, approved laboratory for the complete list of parameters for the specified method for VOCs, SVOCs, pesticides, PCBs, and metals. Sample results will be provided within a 48-hour period.

Removal activities will continue until confirmation and verification results are below the levels indicated in Table 2-3. Confirmation samples will be used to provide more rapid data on whether additional excavation is needed. Both confirmation and verification sample data are needed to proceed with backfilling. If the confirmation results exceed the soil cleanup levels or established background for metals, excavation will continue in 2-ft to 4-ft vertical sections (wall) and 1-ft to 2-ft horizontal lifts (floor) or as directed by the Contracting Officer until confirmation sample results are below the specified cleanup levels for the contaminants listed in Table 2-3.

APPENDIX A

INDEX OF PLANS AND SPECIFICATIONS

APPENDIX A
LAKE ONTARIO ORDNANCE WORKS (LOOW)
INDEX OF SPECIFICATIONS

Division 1 - Special Clauses

<u>Section No.</u>	<u>Title</u>
01010	Summary of Work
01030	Job Conditions
01110	Safety, Health, and Emergency Response (HTRW/UST)
01300	Submittal Procedures
01310	Project Schedule
01440	Contractor Quality Control
01450	Chemical Data Quality Control
01500	Temporary Construction Facilities
01561	Environmental Protection
01720	As-Built Drawings

Division 2 - Site Work

02010	Confirmation, Verification, and Post-Interim Removal Action Sampling
02050	Demolition
02110	Clearing and Grubbing
02120	Transportation and Disposal of Hazardous and Non- Hazardous Materials
02141	Dewatering Liquids and Handling
02143	Decontamination of Construction Equipment
02210	Backfilling and Grading for Remediation Areas
02222	Excavation, Trenching, and Backfilling for Utilities Systems

APPENDIX A
LAKE ONTARIO ORDNANCE WORKS (LOOW)
INDEX OF SPECIFICATIONS
(Continued)

<u>Section No.</u>	<u>Title</u>
02226	Excavation, Staging, and Containerization of Contaminated Soils and Debris - Area A (Phase 2) - Area B (Phase 3)
02241	Aggregate Base Course
02271	Geomembrane for Staging Areas
02272	Separation/Bedding Geotextile for Staging/ Decontamination/Stockpile Areas
02546	Aggregate Surface Course
02551	Bituminous Paving for Roads, Streets and Open Storage Areas
02935	Turf

LAKE ONTARIO ORDNANCE WORKS (LOOW)

Drawing Index — 60% Design

- Cover Sheet
- Overall Site Plan
- Area A (Phase 2)/Area B (Phase 3) Site Plans - Sheet 1
- Area A (Phase 2)/Area B (Phase 3) Site Plans - Sheet 2
- General Details
- Erosion and Sedimentation Details and Notes

APPENDIX B

GENERAL SITE PLAN

APPENDIX B

GENERAL SITE PLAN

See Plate 2 of the Drawings (under separate cover).

APPENDIX C

RESPONSE TO SUPPLEMENT TO THE 60% DESIGN (JANUARY 1998), 60% DESIGN, AND 30% DESIGN COMMENTS

**Former Lake Ontario Ordnance Works RD
Phase I Interim Removal Action - Components 1, 2, and 3
Supplement to the 60% Design
Lewiston and Porter, Niagara County, New York**

Draft Long-Term Monitoring Plan:

1. Section 3, Sampling And Analysis Plan, page 3-1 1st paragraph. The latest and current edition of the ER 1110-1-263, "Chemical Data Quality Management for Hazardous, Toxic, Radioactive Waste Remedial Activities" is April 1996. This 1996 edition is a major revision to the 1990 edition and should not longer be referenced (as noted my prior review comment). Please revise your reference to ER 1110-1-263.

Response: Reference has been revised.

Intermediate Design Analysis Report:

1. General comment pertaining to collecting QA verification samples at a 20% rate; this percentage may remain as is in the Intermediate Design Analysis Report and also applicable sections of the Preliminary Contract Specifications since the sampling and analysis to be done in the field is only a screening type analysis to confirm the presence or absence of TNT (as well as other contaminants of concern). The higher percentage of QA splits will provide further back-up data for verification of the field screening type methodology and provide additional data for the purpose of data validation and verification of the field screening effort.

Response: Concur.

2. Section 3.4.5.7 - Confirmation Soil Sampling, second paragraph which continues on page 3-35; on the 5th line, insert a comma after the word "explosive" to distinguish it from VOCs test and have the sentence read more clearly. Three more lines down; delete the term "pesticide" in the "pesticide/PCB" analysis mentioned. Pesticides are not a contaminant of concern at this site (this was requested in the 60% design comments but was not revised as indicated in your response).

Response: Section has been revised accordingly.

3. Table 3-3, Confirmation and QA Split Verification Analytical Requirements TNT Pipeline, on pages 3-36 and 3-37. The following changes are required:
 - a. Under the Analytes column, any listings of "Pesticides/PCBs" need to be changed to "PCBs." Accordingly, the SW-846 test method to specify for analysis of PCBs is method 8082. In Update III to SW-846 the pesticides and PCBs analyses have been segregated into two methods.

- b. At the top of the table on page 3-37, for the QA Split Verification Samples, change the line which states VOCs analysis by method 8250 to method 8260. Method 8250 is a SVOC analysis by using a packed column, which has been deleted (as well as all other packed column methods) in the Update III to SW-846 methods.

Response: The table has been revised to address these comments.

4. General Comment. All SW-846 methods listed for analyses should be the most recent revision as promulgated in Update III (for example 8270 should be 8270C).

Response: Table has been revised to reflect new methods.

5. The POC for these comments is Mr. Alan Warminski at 410-962-2179.

Industrial Hygienist's comments on LOOW Supplemental 60% Design.

- 1) In general this document is well done and has incorporated the comments provided by the LOOW NAB team.

- 2) In the Preliminary Contract Specification Volume I have the following comments:

- A) p. 01110-1, Section 1.1 - please reference the most current TLV Booklet (1997-1998).

Response: This reference has been revised to reflect the current update.

- B) p. 01110-2, Section 1.1 - please reference EM 385-1-1 ("1996").

Response: This reference has been revised to reflect the current update.

- C) p. 01110-15, Section 1.11.2.1 - leave in the CIH or CSP as qualifications for the Safety and Health Manager.

Response: This option as suggested has been included and section revised accordingly.

- 3) The point of contact for these comments is Mr. Pete Garger, CIH at 410-962-2714.

65398: Lake Ontario Ordnance Works at Lewiston/Porter, NY - Draft 60%

File: 65398SMB.DBF

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1	62366-463	BUTLER	CENWO-HX-G	GEO	Spec 02271	Para 1.5	
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Don't omit this paragraph heading. You are requesting submittals from the contractor.

Response: The paragraph heading has been added back as noted in the comment.

2.	62366-464	BUTLER	CENWO-HX-G	GEO	Spec 02271	Para 1.5	
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Para 1.5.2 Layout and Detail Drawings, 1.5.3 As-built drawings, and 1.5.7 Warranty. These submittals can be omitted. They are more relevant to landfill construction.

Para 1.5.6 Qualifications. Remove submittal requirements for fabricator's, inspector's, and independent laboratory's. You have deleted the qualification statements in paragraph 1.4 for these individuals so there is not point in requiring them to submit their qualifications.

Response: The submittals were omitted as specified in the comment.

3.	62366-465	BUTLER	CENWO-HX-G	GEO	Spec 02271	Para 2.1	
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Are there any minimum requirements for the geomembrane used as stockpile covers. Typically we require a 10 mil unreinforced polyethylene geomembrane or a 6 mil reinforced geomembrane.

Response: WESTON has added a paragraph to Part 2 of Section 02271 relating to geomembrane stockpile cover requirements. The paragraph will specify a minimum 10 mil unreinforced polyethylene geomembrane or a 6 mil reinforced geomembrane.

4.	62366-466	BUTLER	CENWO-HX-G	GEO	Spec 02271	Para 3.1	
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Subgrade. 2 inch maximum particle size is larger than we typically allow for subgrades beneath membranes. It would be better to limit the maximum particle size to .5 inches or at least require the surface be smooth rolled so that it does not contain any protrusions greater than .5 inches.

Response: The "subgrade" for the geomembrane in the stockpile area is currently NYSDOT Type 2 aggregate, as shown on the detail. This material passes 90 to 100% of the material through the 1-inch sieve. The aggregate will be separated from the geomembrane by a 16 oz/sy bedding geotextile.

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The detail will be revised to call for NYSDOT Type 1A aggregate (100% passing 1/2") and the maximum particle size of paragraph 3.1 will be reduced accordingly.

5. 62366-467 BUTLER CENWO-HX-G GEO Spec 02271 Para 3.3

At some sites, we have required the stockpile width to be not greater than the width of the geomembrane roll. This has eliminated the need for on site seaming of geomembranes.

Response: Because location and size of the stockpile area will be subject to the approval of the property owner, it is WESTON's opinion that adding such a requirement may limit the Contractor's flexibility in configuring his stockpile area(s). A statement has been added, however, to the specifications to require, where possible, only one geomembrane panel to avoid field seaming.

6. 62366-468 BUTLER CENWO-HX-G GEO Spec 02271 Para 3.5

Remove Paragraph 3.5. It is not applicable to this project.

Response: The specification was revised as noted in the comment.

7. 62366-469 BUTLER CENWO-HX-G GEO Spec 02272 Para 1.5

Don't remove the submittals heading. You are requesting that submittals be provided.

Response: The paragraph heading will be added back as noted in the comment.

8. 62366-470 BUTLER CENWO-HX-G GEO Spec 02272 Para 1.5

Consider removing the requirement for submittal of a geotextile sample unless you intend to have an independent laboratory run QA test on the sample. For the geotextiles used for this project, there is probably no need to perform QA tests.

Response: The requirement for a sample was removed as suggested in the comment.

9. 62366-471 BUTLER CENWO-HX-G GEO Spec 02272 Para 2.1

Remove the woven option from the first line of this paragraph. I don't think you want to use a woven geotextile for the bedding or separation applications outlined in this set of plans and specification.

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Response: The specification was revised as noted in the comment .

10. 62366-472 BUTLER CENWO-HX-G GEO Spec 02272 Para 3.4

For this application, there is not need to test sewn geotextile seams for strength.

Response: The requirement for seam testing was removed as noted in the comment.

11. 62366-473 BUTLER CENWO-HX-G GEO Spec 02272 Para 3.6

Omit this paragraph.

Response: The paragraph was removed as noted in the comment.

12. 62366-474 BUTLER CENWO-HX-G GEO Spec 02272 General

Were any calculations done to determine if the geotextiles specified provide adequate puncture protection for the geomembrane.

Response: No puncture calculations were done on the geotextile since the stockpile areas are temporary. The material properties specified are based on the use of these materials in similar applications.

13. 62366-475 BUTLER CENWO-HX-G GEO Spec 02141 3.1.4

Should the Specs require that samples be collected beneath the liquid storage tanks to verify they have not leaked.

Response: A requirement for the Contractor to collect verification samples at the temporary tank locations has been added.

14. There is no comment 14

15. 62366-477 BUTLER CENWO-HX-G GEO Spec 02143 3.1.4

Specify the number of samples required to verify the soils beneath the decon area have not become contaminated. State what the samples will be tested for and what the action levels are for the various contaminants.

#	Temp ID	Last Name	Office Symbol	Discipline	Page/Sheet	Room Dtl	Post IT
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Response: The specification has been modified to require the collection of 2 samples before the decon pad is constructed and after it is removed. The sample will be analyzed for asbestos only, and the criteria for removal of subgrade soil will be based on a result that exceeds the concentrations of the pre-construction samples.

16. 62366-478 BUTLER CENWO-HX-G GEO Spec 02210 1.3.5

Delete the note left in the text. Fill in the blank for the free haul limits.

Response: This issue is best addressed by the Contracting Officer for the PRAC contract.

17. 62366-479 BUTLER CENWO-HX-G GEO Spec 02228 2.1.1

Shouldn't the impermeable barrier be listed as 40 mils instead of 60 mils.

Response: This section has been revised to state 40 mils.

18. 62366-480 BUTLER CENWO-HX-G GEO Spec 02229 3.1.1.13

Approval of the Contracting Officer should be required prior to the contractor excavating additional soil due to failed confirmation test results.

Response: Approval by the CO has been added.

19. 62366-481 BUTLER CENWO-HX-G GEO Spec 02229 3.3.1.2

Is it clearly stated anywhere in the specs what contaminants the backfill should be tested for at a frequency of once per 1000 cubic yards. Are these composite or grab samples.

Response: The testing of backfill is contained in paragraph 1.3.1 of specification 02210. The frequency of testing has been changed to 1 per 1,000 cubic yards.

#	Temp ID	Last Name	Office Symbol	Discipline	Page/Sheet	Room Dtl	Post IT
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20.	62366-482	BUTLER	CENWO-HX-G	GEO	Spec 02222	3.3.3	
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Is it not clearly stated anywhere in the specs what contaminants the area beneath the stockpiles should be tested for. Do we want to require a minimum of 1 sample be collected beneath each stockpile prior to and after removal.

Response: Requirements for sampling of subgrade soil below stockpile areas have been added to this section.

**151.65398: Phase I Interim Removal Action at Lake Ontario Ordnance Works - PRAC
Design 60**

File: 65398LLT.DBF

#	Temp ID	Last Name	Office Symbol	Discipline	Page/Sheet	Room Dtl	Post IT
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1	2994995-891	TATE	CENWO-HX-G				
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Preliminary Contract Specifications Section 02141 Paragraph 1.1 "disposal of collected waters at a competitively bid permitted treatment facility." Using a competitive bidding process would not be cost effective. Announcement of intent to purchase wastewater treatment services in regional newspapers concurrent with asking for prices from the major permitted plants in the area is adequate. The Removal Action Contractor should be responsible for the hauling because the Contractor will be able to control the schedule.

Response: The words "competitively bid" have been deleted from this specification section.

**5151.65398: REMOVAL ACTION at LAKE ONTARIO ORD WORKS, NY -
60% DESIGN**

File: 65398SLH.DBF

#	Temp ID	Last Name	Office Symbol	Discipline	Page/Sheet	Room Dtl	Post IT
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1	853027-11	HANSON	CENWO-HX-T	EST			
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Work Breakdown Structure (WBS). The cost estimate should be structured in accordance with the standard interagency "HTRW Remedial Action Work Breakdown Structure" per ER 1110-3-1301. This can be obtained from the Corps Cost Engineering offices.

Response: This format was approved by the CENAB Design Manager because the costs can be more readily reviewed and understood by the various USACE and state regulatory reviewers.

98: Phase I Interim Removal Action at Lake Ontario Ord Wks - Supplemental to

File: 65398JRD.DBF

#	Temp ID	Last Name	Office Symbol	Discipline	Page/Sheet	Room Dtl	Post IT
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599304-592	DOLTON	CEMRO-HX-H	SAF & HEA	pg 01110-47	tbl 0110-2		
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The Combustible Gases - Fire Hazard "Sustained Action Levels" column, in listing levels above 10% LEL (i.e. 10-25% and >25%) is not an agreement with the 10% value currently recommended by a number of organizations including OSHA, ANSI, and NIOSH. See the discussion on the relevancy of using the 10% LEL value as opposed to using high values (such as 20%) in the preamble of the OSHA final rule on Permit-Required Confined Spaces for General Industry, page 4473, 14 January 1993 Federal Register. Based on the OSHA definition in the confined space standard of "hazardous atmosphere", change the Combustible Gases - Fire Hazard action levels to 0-10% and >10%, and delete the value range or 10-25% and >25%.

Likewise, change the "Oxygen Level" upper action level from >25% to >23.5% based on the OSHA definition of "Oxygen Enriched Atmosphere" in the Permit-Required Confined Spaces for General Industry standard.

Response: These revisions have been made to Table 01110-2.

CENAB-EN-HT

Number	Location	Comment
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Intermediate Design Analysis Report

1. 3.3.1, pg. 3-13 This section indicates that the EE/CA made an assumption that all of the TNT pipeline sediments contained more than 10% explosives. The comment is not true. Correct.

Response: The cost estimate in the EE/CA made this assumption. This has been clarified in this section.

2. Appendix E, pg. 27 Marsh comment 25 The requirement to sample the WWTP for lead and asbestos needs to be addressed.

Response: See the results of asbestos and lead sampling in the Draft Asbestos Summary Report provided with the supplement to the 60% Design DAR.

Preliminary Contract Specifications

3. Page 02142-2, 3.1.1.1 The requirement to perform pre and post excavation surveys need to be evaluated. The District has a recent (March 1998) detailed photometric/topographic survey that can serve as the base map.

Response: See response to this comment in 60% Design comments.

4. 02142-2, 3.1.1.3 and 3.1.1.7 These sections appear to be incomplete.

Response: These are statements of work the Contractor will complete - see Section 3.1.1.

5. 02142-4, 3.1.1.12 We need to consider sealing the chemical waste line, especially at the Somerset/CWM property line. We should also consider method similar to the TNT lines.

Response: The requirement to seal the Chemical Waste Sewer at the Somerset Property line has been added. This item is not reflected in the cost estimate.

6. 02142-Attachment A This attachment should be referenced in the body of the specification. In addition, the Contractor needs to be able to identify the locations that these samples were collected.

Response: A reference has been to Section 1.1.1 of this specification.

7. 02143-2, 3.1.5 The requirement to have a separate decontamination structure for PCB contaminated equipment seems somewhat redundant. What is the reason for this requirement?

Response: The requirement for this separate decon area has been revised to allow the Contractor this as an option. A separate decon pad may be cost-effective since the materials used in the decon pad for PCBs may be characterized as a hazardous waste at project closure. Cross contamination is also an issue.

8. 02210-5, 1.5 This section indicates a subsurface geotechnical investigation and materials, this reviewer is not aware of this investigation. Are we trying to identify previous remedial investigation reports (Weston, Acres, etc.)? If so, then these need to be identified elsewhere in these specifications, such as, Section 01030-Job Conditions.

Response: The reference to soil borings was revised to test pits and a reference to the test pit log, provided in Section 02220, is given.

9. 02210-7, 2.3.5 a. The specific analytical test methods should be specified for these parameters. These requirement did not appear to be in section 01450 Chemical Data Quality Control.

Response: Analytical test methods have been added to this section.

b. What is the basis of sampling the topsoil at a frequency of 1 per 2000 CY?

Response: The basis is frequencies used on other remediation projects.

10. 02222-2, 1.2.1 There are both metric and English units in this section (and others) please delete metric unit of measure. An exception to this requirement are chemical data results (i.e., mg/l).

Response: Metric units have been deleted where used with English units.

11. 02228 Define the term Explosives Expert. Weston and CENAB need to discuss this term.

Response: This term is defined in Section 01110, 1.11.9.

12. 02228-1, 1.1.1 This section (and others) specifically indicates direction by the Baltimore District (CENAB) for various activities. Please change all of these to the Contracting Officer (CO).

Response: This section has been revised accordingly.

13. 02228-3, 3.1.1.1 See previous comment number 3, regarding an existing topographic survey.

Response: See previous response.

14. 02228-3, 3.1.1.5 Indicate that the concrete does not appear to be reinforced.

Response: This statement has been added.

15. 02228-6, 3.1.1.9.a In the last sentence of this section, change the word "bid" to "lid."

Response: This revision has been made.

16. 02228, Attachment 1 See comment number 6 above regarding this Attachment.

Response: A reference has been added to Section 1.1.1.

17. 02229-2, 1.1.10 See comment number 12 above.

Response: The appropriate revisions have been made.

18. 02229-4, 2.1.1 This section indicates a 60 mil HDPE membrane, whereas elsewhere in this document (02228-2, 2.1.1, 02229-9, 3.3.1.1, 02271-6, 2.1.1) other materials are specified. Coordinate.

Response: The geomembrane used for staging areas and the decontamination pad is a 40 mil membrane. This has been made consistent in the specifications and drawings.

19. 02229-9, 3.3.1.2 This section needs to be coordinated with 02210-4, 1.3.1.

Response: The two sections have been revised accordingly. The requirements for testing are different for on-site and off-site sources of backfill as is noted in these sections.

20. 02229-9, 3.3.3 The section specifies a "bedding geotextile". This requirement is not specified or identified elsewhere. Coordinate.

Response: The specification for geotextile, Section 02272, is entitled SEPARATION/ BEDDING GEOTEXTILE FOR STAGING/DECONTAMINATION/STOCKPILE AREAS. This terminology is also used on the Drawings.

21. The remedial Investigation and Design Section POC for these comments is Russell Marsh at (410) 962-2227.

New York State Department of Environmental Conservation

Intermediate Design Analysis Report

Page 3-11, Section 3.1.5: It should be noted that the 1982 finding by SCA of TNT concentrations above 10% by weight, was not from a sample of the TNT waste pipelines, but from an "Acid" sewer line.

Response: This clarification has been added to the text.

Page 3-17, Section 3.3.2: The proposed bioremediation of sediments of TNT pipeline contents has not been submitted for Department review. The proposal must be submitted, reviewed and approved prior to its use as a treatment option.

Response: This comment passed on to CENAB.

Page 3-42, Section 3.4.6.3: Since it is proposed to remediate both the TNT pipelines and Chemical waste sewers, the underground lines between the two piping systems needs to be addressed.

Response: Tie-ins have been addressed in the contract specifications.

Page 4-7, Section 4.2.4: The USACE has stated that buildings associated with the former wastewater treatment plant will be demolished as part of this removal action. A discussion of the demolition should be added to this report.

Response: The demolition of the former WWTP is addressed in the contract specifications. A statement has been added to Section 4.2.4 to address this issue.

1 422241-23 WARMINSKI CENAB-EN-HI CHM 2-7 Par 2.2.1

Water Quality Monitoring and Review of Data from Current Groundwater Monitoring, 3rd paragraph in this section, 5th line. This paragraph states the 5 wells will be analyzed for the constituents listed, Are these wells the shallow groundwater wells which will be installed. If so, please state “shallow wells” in this paragraph to be clear.

2	422241-24	WARMI Sam	CENAB-EN-HI	CHM	3-1	Sec 3
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b. At the bottom of page 3-1, add to the last bullet item that a listing of the “Data Deliverable” are to be included in the SAP.

b. Agree; the information stated in this comment will be added to the LTMP.

3 422241-25 WARMINSKI CENAB-EN-HI CHM 2-15 Sec 2.1.1

Confirmation Sampling: At the top of page 2-16, the second paragraph states that QA split verification sampling shall be collected at a rate of 20%. This percentage is rather high and should be scaled back to 10-15% range.

Response: The reason for selecting 20% of the confirmation samples for verification sampling was based on discussions with CENAB at the 30% design in which confirmation sample analysis was to be of the field screening type using rapid screening techniques that

would not go through data validation and would be used primarily to make rapid field decisions. For example, the confirmation analysis for TNT is proposed to be performed using field test kits and spectrophotometer analysis whereas verification samples would undergo analysis using EPA approved methods at a fixed-based CENAB approved facility. Similarly, VOA for confirmation samples is by GC method whereas VOA analysis for verification is by GC/MS methods. Since the analysis method of the confirmation samples is different from verification samples the higher percentage was used. However, this percentage can be revised to 10% per discussion at the 4 December 1997 meeting.

4 422241-26 WARMINSKI CENAB-EN-HI CHM 2-29 Sec 2.1.1

Confirmation Sampling. Second paragraph on page 2-29: Same comment as above.

Response: Agree, see response above for Warminski Comment 3 (422241-25).

5 422241-27 WARMINSKI CENAB-EN-HI CHM 3-29 Sec 3.4.1

Confirmation Soil Sampling. Please provide an estimate on the number of confirmation samples which are planned to be taken along the various lengths or the TNT pipeline. Also, provide an approximate estimate of the number of confirmation samples to be taken from the "1 per 75 sq. ft." criteria that is being used.

In the second paragraph, 20% of QA verification sampling is called for. This percentage should be reduced to 10%. Also, list what will be the required turn around time for analysis on these QA verification samples. Will field work be held-up until results are obtained on the QA samples.

At the end of the last paragraph in this section, what is the justification for sampling pesticides? PCB should be the only contaminant of concern from these locations.

Response: An estimate of the number of confirmation samples along the TNT pipeline and samples from the specified per square foot criteria will be included in the revised DAR.

As stated in the response to Warminski Comment 3 (422241-25), the DAR can be revised to state a rate of 10% for QA split verification sampling. As shown in the Contract Specifications, the turnaround time for QA split verification samples will be 48-hours which will not hold-up the field work since the Contractor can move-on to other sections of the pipeline, if needed. The DAR will be revised to reflect this information.

The DAR will be revised to reflect sampling for PCBs only (and no pesticides).

6 422241-28 WARMINSKI CENAB-EN-HI CHM 01450-20 Sec 3.4.3

The following comments pertain to the Preliminary Contract Specifications, Component One (CWM Property):

Data Reduction, Validation, and Reporting. In sub-paragraph b. and c.: Is the data validation being discussed an "internal validation" by the analytical laboratory which will perform the analysis, prior to release of the data in a final report, or is this data validation per EPA Functional Guidelines? Please state more clearly here.

Will "Data Validation" per EPA Functional Guidelines be required of the QA verification samples to be collected on this project? If so state that a Chemical Data Package containing all the required data deliverable items will need to be provided to a selected Independent Chemical Data Validator.

Response: The data validation paragraph refers to both internal laboratory validation and by an independent party, which will be conducted according to the EPA National Functional Guidelines, using any existing EPA Region II modifications to the National Functional Guidelines; the Contract Specifications will be revised to clarify this information.

Data validation will be required for the QA verification samples as stated in the above response; the Specifications will be revised to reflect this information and that concerning data deliverables as stated in this comment.

7 422241-29 WARMINSKI CENAB-EN-HI CHM 02010-2 sec 1.5.3

Data validation. Will the "independent firm" be conducting data validation per EPA Functional Guidelines? If so, please state that here.

Response: Yes, see response to Warminski Comment 6 (422241-28) above.

8 422241-30 WARMINSKI CENAB-EN-HI CHM 02010-4 sec 3.1.1

Confirmation and Verification Samples. Last paragraph on page -4 states minimum percentage of 20%. This should be reduced to a 10% minimum.

Response: As stated in the response to Warminski Comment 3 (422241-25), the DAR can be revised to state a rate of 10% for QA split verification sampling.

9 422241-31 WARMINSKI CENAB-EN-HI CHM 02010-8 sec 3.1.4

Data Reporting Deliverables. At the end of this section, as part of the QC results clarification, the following data and associated forms should be included: Initial Calibration, Continuing Calibration Verification, Surrogate Spikes, and Serial Dilutions (for metals). These additional data deliverable items will be required, especially if the data will be validated per EPA Functional Guidelines.

Response: Agree, the information noted in this comment will be added to the Specifications.

NYDEC - Kent Johnson Comments

Intermediate Design Analysis Report - Component One (CWM Property)

Page 2-15, Section 2.1.10, Confirmation Sampling (Area A): The number of confirmation samples stated in this section (28) is not in agreement with Table 2010-3 (a & b) of Section 2010, Preliminary Contract Specifications (18). To better assess the residual impact of soils remaining in place, a portion of the confirmation samples should be analyzed for a full suite of volatile & semi-volatile organic compounds. Results from this approach will be beneficial if the Corps decide to pursue a "risk-based" remedial approach.

Response: The number of confirmation samples is 18, as specified in Section 2010 of the specifications. The DAR will be revised appropriately. The analysis for acetone is for the 24-hour turnaround analysis by a GC and the QA verification samples will be analyzed for a full suite of Target Compound List (TCL) volatiles. However, as discussed in the 4 December 1997 meeting, the DAR will be revised to reflect analysis of confirmation samples expanded to the following target volatiles: acetone, benzene, toluene, 1,2 dichloroethene (total), 2-butanone (MEK), and styrene. As agreed in the 4 December 1997 meeting, analysis for semivolatiles will not be added for Area A.

Page 2-29, Section 2.2.10, Confirmation Sampling (Area B): To better assess the residual impact of soils remaining in place, a portion of the confirmation samples should be analyzed for a full suite of volatile & semi-volatile organic compounds and Pesticides. Results from this approach will be beneficial if the Corps decide to pursue a "risk-based" remedial approach.

Response: The analysis for the specific compounds listed is for the 24-hour turnaround analysis by a GC and the QA verification samples will be analyzed for a full suite of Target Compound List (TCL) volatiles, semivolatiles, and pesticides. However, as discussed in the 4 December 1997 meeting, the DAR will be revised to reflect analysis of confirmation samples expanded to the following: Zone 1 volatiles — methylene chloride, benzene, toluene, chlorobenzene, styrene, and ethyl benzene; Zone 1 semivolatiles — 1,2,4-trichlorobenzene and 1,4-dichlorobenzene; Zone 2 volatiles — acetone, carbon tetrachloride, chloroform, and tetrachloroethene; and Zone 2 semivolatiles — benzoic acid and hexachloroethane. The pesticide list for Area B Zone 1 confirmation samples is already comprehensive and does not need to be expanded.

Page 2-33, Section 2.3.5, Identification of Potential Tie-Ins and Pipeline Integrity: The proposed "in-place closure" procedures for the TNT pipelines (Section 3.4.2.3) calls for suspected tie-ins and areas of suspected integrity problems will be uncovered and visually inspected. These procedures should also be followed for the Chemical Waste Sewer System.

Response: Concur.

Remote investigation techniques are commonly used for sewers and are sufficient for the Chemical Waste Sewer; the areas do not need to be uncovered.

Page 2-33, Section 2.3.6, Power Washing the Sewer System: The report does not contain procedures to assess the removal of liquid and solid contaminants from the sewer system. How will it be determined that the system has been decontaminated to acceptable levels? The collection of confirmation samples from pipeline segments left in place is necessary.

The sections states that each pipeline segment will sealed to prevent the backwash of the next section from entering the washed section. How will the pipeline segments be sealed?

Response:

Best engineering practices will be used to remove sediment and there is are no drivers for migration of any residual material to the soil/groundwater since the pipeline will be sealed. However, in order to document the post remediation conditions, wipe samples will be collected from the inside wall using a remote collection method. Samples will be collected at a rate of one sample per accessible location, which will be each end to be plugged at the lift stations. The samples will be analyzed at an off-site/fixed based laboratory for TCL semivolatiles and PCBs. The samples will be collected by wiping a 10 cm x 10 cm area of the inside of the sewer/lift station using a remote sampler. The wipe sample will be collected using a dedicated clean gauze pad that has been pre-moistened with methanol and a clean stainless steel or aluminum template. A clean pair of phthalate-free gloves will be used to collect each sample. Also see response to LTMP/CWM General Comment.

The chemical waste sewer will be sealed with a grout plug at the access points which are the lift station locations shown on the drawings. The specification will be revised to reflect this.

Page 3-1, Section 3.1, Summary of PRDI Findings: Because the TNT Pipelines between Station 25+00 (suspected Chemical Waste Sewer Tie-in) and the former Town of Lewiston Wastewater Treatment Plant have not been thoroughly investigated and characterized, the quantities stated in this section should be considered preliminary estimates and are subject to change.

Response: Concur with this comment; the DAR will be revised to reflect this information.

Page 3-8, Section 3.1.3, AFP-68 Tie-In to the TNT Pipeline System: The Corps should confirm that the lines from the oil/water separator have been sealed prior to the initiation of field activities.

Response: Concur with this comment.

Page 3-15, Section 3.3.2, Proposed Bioremediation of Sediments/Pretreatment and Disposal Option for Pipeline Contents: Is the data on the contents of the TNT pipelines sufficient to determine disposal options (at what concentration will materials be sent to RCRA permitted facility, what is the range of TNT concentrations at which bioremediation of sediments is feasible, at what concentration does it become more cost-effective to land dispose of the sediments as opposed to bioremediate)?

Response: CENAB has directed WESTON to assume disposal at RCRA facility of pipeline sediments and surrounding soils for spec's and cost est.

Page 3-19, Section 3.3.4, Handling and Treatment of Crystalline Material: What is the status of securing access to the New York Army National Guard facility for the possible use as part of this program?

Response: CENAB to look into this.

Page 3-34, Section 3.4.2.4, Flushing the Pipeline and Removal of Sediments: In order to assess the effectiveness of the power washing of the TNT pipeline, video survey should be performed after washing is completed and prior to sealing the pipeline segment (This is required as part of contract specification Section 02228, Part 3.1.18(f)).

Response: Concur with this comment; the DAR will be revised appropriately.

Intermediate Design Analysis Report - Component Two (Somerset Property)

Page 2-15, Section 2.1.2, Preferred Removal Action - Asbestos: It is not clear from this section what the scope of the removal action for asbestos containing materials is.

Response: This will be based on the asbestos survey and alternative analysis currently being developed.

The scope will be based on the asbestos survey, the results of which will be incorporated into the revised DAR.

Page 2-16, Section 2.1.2, Preferred Removal Action - Asbestos: In-place closure of Asbestos containing materials may require a notice in the facility deed.

Response: Comment noted; this information will be reflected in the revised DAR and the Permit Application Report.

Draft Long-Term Monitoring Plant - Component One (CWM Property)

General: The scope of and need for long-term monitoring of the areas subject of the interim removal actions is dependent on the results of the post-remedial confirmation samples.

Response: Concur with this comment; this information will be reflected in the revised LTMP. See response to DAR/CWM Comment concerning Page 2-33, Section 2.3.6. Also, in order to document the post remediation conditions in the portions of the TNT pipeline left in-place, wipe samples will be collected from the inside wall using a remote collection method. Samples will be collected at a rate of one sample per accessible location, which will be each end to be plugged. The samples will be analyzed at an off-site/fixed based laboratory for explosives, and additionally for TCL semivolatiles and PCBs in the southern

portion of the pipeline below station 25+00. The samples will be collected as described in the response to DAR/CWM Comment concerning Page 2-33, Section 2.3.6.

Page 2-3, Section 2.2.1, Water Quality Monitoring and Review of Data from Current Groundwater Monitoring: The monitoring wells installed in 1988 by Acres, as part of the remedial investigation, must be inspected prior to use to determine their ability to produce representative samples.

The sampling of CWM wells should be coordinated with CWM's sampling of the wells (May, December) to minimize costs and to provide consistency with the historical CWM data.

The locations of the proposed monitoring wells associated with the portions of the TNT lines left in place should be discussed in the text. These wells should be located as close as possible to the ends of the pipeline sections left in place. If confirmation samples (wipe samples) of the pipelines indicate that contaminant levels are below clean-up objectives, then monitoring wells may not be necessary.

The approach used to determine the need for long term monitoring should be consistent for both the TNT pipelines and the Chemical Waste Sewer system. In other words, if the level of decontamination of a pipeline segment can not be documented sufficiently, then long-term monitoring will be necessary.

Response:

Concur; presampling inspection of the Acres monitor wells will be incorporated into the revised LTMP.

Concur; coordination of sampling of the monitor wells will be incorporated into the revised LTMP.

The LTMP will be revised to eliminate the proposed monitor wells. However, a caveat will be added in the LTMP that monitoring points may be added based on the results of the risk analysis based on the wipe samples and RI sampling.

Concur; the information in this comment will be incorporated into the revised LTMP.

Page 2-10, Section 2.2.1.2, Sampling of Shallow Groundwater Monitor Wells: The procedures outlined in this Section do not address the handling of water purged from the well prior to sampling. Historically, shallow monitoring wells at the CWM Chemical Services facility are purged to dryness and sampled, within 24 hours, via a Teflon, bottom filling bailer.

Response: The LTMP will be revised to include handling of purged water (will be drummed and disposed appropriately as specified in the (SAP). In addition, the sampling procedures will be revised as specified in the comment.

Page 3-1, Section 3, Sampling and Analysis Plan: When developing the Sampling and Analysis Plan (SAP) for this project, the approved CWM Chemical Services SAP should be reviewed.

Response: Concur; the LTMP will be revised to reflect a review of the CWM SAP.

Draft Long-Term Monitoring Plan - Component Two (Somerset Property)

Page 2-1, Section 2.1.1, Chemical Waste Sewer System and Lift Station: How will the proposed evaluation of on-going groundwater monitoring at LOOW ensure there are no post-remedial impacts to groundwater due to the in-place closure of the Chemical Waste Sewer System? Currently there are no monitoring wells in the vicinity of the sewer system.

Response: Based on the discussions at the 4 December meeting, confirmation or post remediation sampling is preferred to long-term monitoring. See response to comment concerning page 2-33, Section 2.3.6 for discussion on proposed sampling methods for post remediation sampling of the Chemical Waste Sewer.

Code B Cost Estimate - Component One (CWM Property)

General: The total cost estimate included in this document is \$4,277,831.00. This figure is much less than the \$13,000,000 estimate presented at the September 17, 1997 public meeting and the \$9,532,000 estimate from the Engineering Evaluation/Cost Analysis (EE/CA) (Acres, 1995). Based on this discrepancy in costs, a detailed review of each area's remedial costs needs to be performed.

Responses: Concur.

The following are Department comments on the Code B cost estimate:

Area A: Total costs for Area A included in the "Code B" Cost estimate is \$1,167,224. The total costs contained in the EE/CA cost estimate is \$1,980,794, a difference of \$813,570. The largest difference in cost is associated with the transport and disposal costs of hazardous and non-hazardous materials (\$710,467). The EE/CA used a disposal cost of \$232/ton and \$37/ton for hazardous and non-hazardous wastes, while the "Code B" estimate uses \$96/ton and \$28.50/ton for the hazardous and non-hazardous wastes. Discussions with individuals familiar with current disposal costs indicates that the disposal unit costs contained in the "Code B" estimated are more reflective of current costs.

Response: Concur.

The number and type of analysis for confirmation samples contained in Section does not agree with Section 2.1.10 of the Design Analysis Report.

Response: The number of confirmation samples is correct because additional units have been added to cover QC samples. The type of samples matches the DAR except for that 23

samples for zinc analysis (confirmation samples) needs to be added. In addition, the analysis of confirmation samples will be expanded beyond just acetone as stated in the response to the Comment concerning Page 2-15, Section 2.1.10, Confirmation Sampling (Area A).

Area B: Total costs for Area B included in the "Code B" cost estimate is \$2,355,133. The total costs contained in the EE/CA cost estimate is \$4,626,000, a difference of \$3,458,776. The largest difference in cost is associated with the transport and disposal cost of hazardous and non-hazardous Materials (\$1,655,230). This difference is also due to a change in disposal unit costs.

Response: Concur.

Why are analysis for methylene chloride, benzene (23 samples); 1,2,4-trichlorobenzene (23 samples); and Acetone (18 samples) listed in addition to 31 samples to be analyzed for volatile organic constituents, when these constituents can be detected as part of a volatile organics analysis?

The analyses for methylene chloride, benzene, and 1,2,4-trichlorobenzene are confirmation samples whereas the VOC analysis is for QA verification samples. Therefore, these analyses will remain in the cost estimate but the number of VOC analyses was listed incorrectly and will be changed to 13 (plus QC) samples. In addition, the analyses for the confirmation samples will be expanded as per the response to the Comment concerning Page 2-29, Section 2.2.10, Confirmation Sampling (Area B).

The "Code B" cost estimate does not appear to contain costs for roadway repairs and liquid treatment and disposal.

Response: All roadway repairs and liquid T&D is included in Area "A" Estimate.

Chemical Waste Sewer: Total costs for the Chemical Waste Sewer included in the "Code B" cost estimate is \$86,380. The total costs contained in the EE/CA cost estimate is \$281,500, a difference of \$195,120. The largest difference in cost is associated with the transport and disposal costs of materials removed from the pipeline and lift stations (\$72,248). However, the unit cost for disposal used in "Code B" estimate (\$96) does not correspond to the unit cost for incineration and therefore is not accurate.

Response: The characteristics of the sludge in the lift stations will be re-evaluated to determine if incineration is required. Quote was obtained for disposal using available analytical data. WESTON will confirm quote. WESTON will get cost for incineration.

TNT Lines: Because the remedial approach in the 60% design involves closing approximately half of the pipeline in-place and removing the other half, a large reduction in costs (\$1.68 million) from the cost of the approach used as part of the EE/CA (total removal) is reflected in the estimate.

Response: Concur.

The cost of disposing the concrete encased pipe that is excavated and removed does not appear to be included in the cost estimate.

Response: Will revise for offsite disposal.

It is not clear from the cost estimate whether the costs for disposal include the material which is proposed to be treated by biological degradation.

Response: The cost for bioremediation to be developed by CENAB. CENAB has directed WESTON to provide a cost estimate for RCRD disposal of sediments and soils surrounding the TNT pipeline for 60% Supplemental submittal.

Code B Cost Estimate - Component Two (Somerset Property)

The cost estimate will need to be appended once the proposed Asbestos survey is completed. (The EE/CA cost estimate for this item was \$140,000)

Response: Concur.

It appears that the costs for the remediation of the Chemical Waste Sewer Line on the Somerset Property are identical to the costs at the CWM property. Are these costs separate or are the numbers duplicated because the remedial action is on both properties?

Response: Numbers are duplicated since the remediation is assumed to be performed on the entire sewerline on both properties by the same Contractor in a continuous operation.

Cost Engineering Branch Review Comments - Somerset Property

1. Cost for removal and disposal of the asbestos materials are not included in the estimates.

Response: Cost are being developed by Acres as part of Asbestos Survey. The survey was completed in November.

2. Cost of permits should be added to the estimate (DAR, p. 2-21).

Response: Will revise.

3. Sampling and Analysis costs need to be added to the estimate.

Response: Will revise.

4. Cost for welding the lift station lids shut need to be added to the estimate.

Response: Will revise.

5. Explain the need for the storage area liner system shown on plate 4.

Response: This was discussed at 60% design meeting and liner system was retained.

6. Where are decontamination costs for equipment and personnel?

Response: Cost are included in unit rates.

7. The 90% estimate should be developed in much greater detail and should be more clearly defined as to what each work item includes. NOTES should be used to clarify all work.

Response: Comments from the 60% Design will be addressed to the extent discussed at the 60% Design Meeting in the Supplement to the 60% Design.

8. Estimate should be structured using the HTRW RA Work Breakdown Structure down to at least the third title level.

Response: Will revise.

9. Price quotes should be obtained for all items of substantial quantity/cost or specialized work. As a minimum, quotes should be obtained for the following items:

- A. Visual inspection of pipeline using video
- B. Water, soil and drum disposal

A copy of the quotes should be submitted or the quotes can be documented in the MCACES estimate by noting the supplier's name, phone number and date contacted in the MCACES Note for that item of work.

Response: Quotes have been obtained and will be submitted.

10. SF costs should not be used for pressure washing in the 90% design; indicate specific labor and equipment requirements.

Response: These costs were based on actual costs from the remediation of a TNT line by in-place closure at the AAAP in Childersburg.

11. Costs for field office overhead (general conditions) should be based on a detailed itemization and not a flat percentage (10.0%). Provide a detailed breakdown of the field office overhead costs by adding a title level 1 activity called General Requirements.

Response: Will revise.

12. It is recommended you use the type A estimate in the MCACES program (not K) to allow for automatic repricing of labor and equipment.

Response: Will revise.

13. Evaluate profit using the Corps' Weighted Guidelines Method and revise the estimate as necessary. This method is included in the MCACES program.

Response: Will revise.

14. Sales tax needs to be added to the estimate; insert on the Report Title page.

Response: Will revise.

15. The current Davis-Bacon labor rates for the Lewis and Porter area should be used in lieu of the average rates listed in the standard region 2 database. Appropriate labor rates should be obtained from the project manager and loaded into the estimate.

Response: These rates need to be provided from CENAB. When rates are received, WESTON will revise.

16. How is the reduction in productivity for work performed in Personal Protective Equipment accounted for in the estimate (e.g. entering the lift stations in level B as suggested on p.2-21 of the Intermediate Design Analysis Report)? Please explain in the NOTES for each respective work item how any reduction in productivity is accounted for?

Response: It is assumed that personnel will not be required to enter the lift stations for remediation. Therefore no confined space or level "B" Protection is anticipated.

17. Region 1 crew and equipment databases should be used in the estimate as this project is in Region 1 (not 2).

Response: Is a current database available from CENAB. Our latest is dated 93.

18. Estimated contract durations should be listed on the Title page of estimate.

Response: Will revise.

19. Subcontractor(s) should be added to the MCACES

Response: Will revise.

20. Phone number of the estimator should be added to the Title page of the MCACES estimate.

Response: Will revise.

21. Bond cost 1.0% appears low; review and revise as necessary.

Response: Will revise.

22. Escalation should be computed using the Corps 18 Feb 97 Escalation Factor spreadsheet (copy attached).

Response: Will revise.

23. SIOH costs should be 8.0%, no 5.0%.

Response: Will revise.

24. Other government costs (EDC, Lab QA, As-Builts) should be 3.5%.

Response: Will revise.

25. A list of all assumptions made in the development of the cost estimate needs to be provided. This list should be included under "Project Notes" in the Title Page section of the MCACES estimate.

Response: Will revise.

26. Future estimates should be submitted in both the hard copy and floppy disk format. Submission of a hard copy only is not sufficient. Files on floppy disk should be submitted in the compressed format and should include the following databases:

- A. Project
- B. Crews
- C. Labor Rates
- D. Equipment Rates

Response: Will provide.

27. NOTES should be used to the maximum extent possible in your MCACES estimate to explain/justify the cost figures you use and to clarify the work being performed.

Response: Please refer to the DAR, Specifications, Plans and responses to the 60% Design comments for the basis of the cost estimate.

28. Written responses and appropriate submittal of a revised estimate are required.

Response: Provided.

29. Contingency of 5.0% appears low; review and revise as necessary.

Response: Will revise.

Cost Engineering Branch Review Comments - CWM Property

1. Remedial action for the PCB contamination is not included in the estimate.

Response: Will obtain incineration cost.

2. Cost of permits should be added to the estimate.

Response: Will revise.

3. How are decontamination costs for equipment and personnel handled in the estimate?

Response: In unit rates.

4. Estimate should be structured using the HTRW RA Work Breakdown Structure down to at least the third title level.

Response: Will revise.

5. Price quotes should be obtained for all items of substantial quantity/cost or specialized work. As a minimum, quotes should be obtained for the following items:

- A. Visual inspection of pipeline using video
- B. All transportation and disposal fees
- C. Off-site borrow soil and topsoil

A copy of the quotes should be submitted or the quotes can be documented in the MCACES estimate by noting the supplier's name, phone number and date contacted in the MCACES Note for that item of work.

Response: Will provide for A&B.

6. Will there be any 1 year O&M requirements in this project? If so, add them to the estimate.

Response: Not included.

7. Will there be any monitoring requirements in this project? If so, add them to the estimate.

Response: Will identify and revise.

8. The estimate does not include any costs for transportation and disposal of liquids from Area B (Detail p. 16).

Response: Included in Area "A" - assumes to be done at same time.

9. Insure all utility reallocations are included in the estimate.

Response: Will specify.

10. SF costs should not be used for pressure washing in the 90% design; indicate specific labor and equipment requirements (Detail p. 30).

Response: Cost estimate obtained from actual cost for flushing at Alabama Army Ammunition Plant.

11. Costs for field office overhead (general condition) should be based on a detailed itemization and not a flat percentage (10.0%). Provide a detailed breakdown of the field office overhead costs by adding a title level 1 activity called General Requirements. Also, please note that General Requirements costs are typically much higher than 10.0% for projects of this scope.

Response: Will revise.

12. It is recommended you use the type A estimate in the MCACES program (not K) to allow for automatic repricing of labor and equipment.

Response: Will revise.

13. Evaluate profit using the Corps' Weighted Guidelines Method and revise the estimate as necessary. The method is included in the MCACES program.

Response: Will revise.

14. Sales tax needs to be added to the estimate; insert on the Report Title page.

Response: Will revise.

15. The current Davis-Bacon labor rates for the Lewis and Porter area should be used in lieu of the average rates listed in the standard region 2 database. Appropriate labor rates should be obtained from the project manager and loaded into the estimate.

Response: Need rates from CENAB, when rates are obtained will revise.

16. How is the reduction in productivity for work performed in Personal Protective Equipment accounted for in the estimate? Please explain in the NOTES for each respective work item how any reduction in productivity is accounted for?

Response: It is assumed that personnel will not require to enter confined space which would require Level "B" protection.

17. Region 1 crew and equipment databases should be used in the estimate as this project is in Region 1 (not 2).

Response: Is current database available, our latest is 1993.

18. Estimated contract duration should be listed on the Title page of the estimate.

Response: Will revise.

19. Subcontractor(s) should be added to the MCACES estimate for all work that is to be subcontracted. Revise the necessary work items indicating the subs performing the work.

Response: Will revise.

20. Phone number of the estimator should be added to the Title page of the MCACES estimate.

Response: Will revise.

21. Bond cost of 1.0% appears low; review and revise as necessary.

Response: Will revise.

22. Escalation should be computed using the Corps 18 Feb 97 Escalation Factor spreadsheet (copy attached).

Response: Will revise.

23. SIOH costs should be 8.0%, not 5.0%.

Response: Will revise.

24. Other government costs (EDC, Lab QA, As-Builts) should be 3.5%.

Response: Will add.

25. A list of all assumptions made in the development of the cost estimate needs to be provided. This list should be included under "Project Notes" in the Title Page section of the MCACES estimate.

Response: Will revise.

26. Future estimates should be submitted in both the hard copy and floppy disk format. Submission of a hard copy only is not sufficient. Files on floppy disk should be submitted in the compressed format and should include the following databases:

- A. Project
- B. Crews
- C. Labor Rates
- D. Equipment Rates

Response: Will provide.

27. NOTES should be used to the maximum extent possible in your MCACES estimate to explain/justify the cost figures you use and to clarify the work being performed.

Response: Will be provided as appropriate.

28. Written responses and appropriate submittal of a revised estimate are required.

Response: Provided.

29. Contingency of 5.0% appears low; review and revise as necessary.

Response: Will revise.

30. It is assumed that no significant time/scheduling constraints will be imposed on the contractor. If the work is to be phased, performed outside of normal working hours or performed out of sequence, then additional costs and construction time will have to be added to the estimate. Specific contract requirements regarding scheduling and sequence of work should be determined now and the estimate revised (if necessary) to reflect the costs of such constraints.

Response: Thihlorsued needs to be further discussed to address this comment. No discussion of schedule was brought up at 60% Design Meeting.

31. Site Set-Up, Mobilization costs (activity 10) should be included under the new activity titled General Requirements.

Response: Will revise.

1 422241-23 GARGER CENAB-EN-HI INH 4-1

Long term monitoring plan - change the reference to ER 385-1-92 to the 18 March 94 edition, also indicate that site work will follow guidance outlined in EM 385-1-1, 3 Sept 96, USACE Safety and Health Requirements Manual.

Response: Concur; the LTMP will be revised to reference the USACE documents noted in the comment.

2 422241-24 GARGER CENAB-EN-HI INH 01030-8

In the Contract Specifications Section - It is EPA region II and not EPA region III, also remove reference to State of MD AMA, PADEP and VA Council on the Environment and list appropriate NY State references.

Response: Concur.

3 422241-25 GARGER CENAB-EN-HI INH 01030-14

Contract Specifications - Part 16 Work in Confined Spaces - Update reference for EM 385-1-1 to 3 Sept 96 edition.

Response: Concur.

4 422241-26 GARGER CENAB-EN-HI INH 01110-14

Contract Specifications Section 11.11.2.1 - leave in either CIH or CSP.

Response: Will revise.

5 422241-27 GARGER CENAB-EN-HI INH 02050-2

Contract Specifications Section 1.1 - use EM 385-1-1 3 Sept 96 edition.

Response: Will revise.

6 422241-28 GARGER CENAB-EN-HI INH 1

Draft Permit Application - Will there be an asbestos abatement permit required in accordance with New Your State regulations?

Response: Yes; the Permit Application Report will be revised to add the need for a asbestos abatement permit.

7 422241-29 GARGER CENAB-EN-HI INH General

The comments above apply to the designated sections in both the CWM and Somerset deliverables. The POC for the comments above is Mr. Pete Garger CIH at 410 962-2714.

Response:

1 422241-23 BROCK CENAB-EN-HM SAF 01110-25/s

Preliminary Contract Specs (CWM Property) sec 1.14.3 - Should this section be omitted since other section pertaining to the occupational physician were omitted?

Response: Concur.

2 422241-24 BROCK CENAB-EN-HM SAF sec 022297

In this section under the headings of GENERAL (Part 1) and EXECUTION (Part 3), will there be titles for the various subsections (i.e., for sect 1.1.1 - 1.1.12 and sec 3.1.1 - 3.2.5) as there are for subsections in other portions of this RD? Actually there are other areas within these Preliminary Specs where the subsections are not titled also. It seems for consistency and ease of maneuvering through the document this titling would be appropriate.

Response: Format is in accordance with USACE guide specifications.

3 422241-25 BROCK CENAB-EN-HM ENV 2-27/CWM/I

Under the section about Ponded Surface Water it is stated that "ponded water above the permit limits will be treated on site and discharged". Please clarify to where this water will be discharged.

Response: This needs to be discussed and verified with CWM. No comments on 60% Design was provided by CWM.

4 422241-26 BROCK CENAB-EN-HM GEO 2-7/CWM/Mo

Under section 2.2.1.1, "Installation of Shallow GW mon wells - TNT Pipeline", the second bullet is unclear. Should this sentence just reference that the 6-in bore hole be drilled as is written in the SAP rather than putting the "or" 10" into the shallow water-bearing zone?

Response: The intention of this section was to allow the contractor to specify the well specifications; the paragraph will be revised to reference the SAP for the depth of the well.

5 422241-27 BROCK CENAB-EN-HM GEO 2-9/CWM/Mo

Figure 2-3 does not show any type of protection around the riser pipe. Will there be any protector pads or protective pipes around the riser? Also, the diagram for this monitoring well shows the top of the screen at the water table. Will fluctuations in the water table affect samples being taken if the waste table rises above that screen height? Also, recommend bringing the filter pack at least 1 foot above the top of screen. It is common that the filter pack be brought up 1-3 feet above the screen so that the annulus seal will not plug the upper portion of the screen or leak into the well bore.

Response: The need for protection around the well will be determined by the contractor, as specified in the SAP. The diagram was provided as general example; details of the well installation will be provided in the SAP. In order to clarify this, the well diagram will be removed from the LTMP.

6 422241-28 BROCK CENAB-EN-HM GEO 2-8/CWM/Mo

When developing the well it is recommended that the criteria set in the EM 1110-7, Monitoring Well Installation at Hazardous and Toxic Waste Sites, be used in determining that the well has been properly developed. This EM gives guidance on what should appear on the well development records.

Response: Concur; the reference to EM 1110-7 will added to the LTMP for well development guidance.

7 422241-29 BROCK CENAB-EN-HM GEO 2-10/CWM/M

As in the previous comment, it is recommended that well purging follow the guidance set in the EM 1110-7. It should be stated that not only should turbidity be stabilized, but also pH and conductivity as well, if possible. Development of a monitoring well development form and monitoring well purging/sampling form by the contractor is recommended unless they already have a standard form that addresses the criteria set in the EM.

Response: Concur; the information presented in this comment will be added to the LTMP.

8 422241-30 BROCK CENAB-EN-HM GEO 3-2/CWM/Mo

The description about the different SAPs and which one to use when is a bit confusing. Please clarify.

Response: This paragraph provides the Contractor with the option of writing a SAP or using the existing SAP that has been already approved by the USACE. The paragraph will be revised by eliminating this option to use the existing SAP; this will eliminate the confusion and prevent the possibility of using procedures in the existing SAP which may be outdated in the future.

1 422241-29 MARSH CENAB-EN-HT ENV SIMMS 0103 2.3

Include the asbestos survey.

Response: Concur.

2 422241-30 MARSH CENAB-EN-HT ENV SIMMS 0103 5

Delete the references to Chemical Waste Management in this section.

Response: Will revise.

3 422241-31 MARSH CENAB-EN-HT ENV SIMMS 0103 13.6

Add New York State and delete others.

Response: Will revise.

4 422241-32 MARSH CENAB-EN-HT ENV SIMMS 0111 1.8.1.1

There are many references to CWM and contamination associated only with their property in this section. Delete those references. See 1.8.1.1, 1.8.3, 1.9.1, 1.9.2.6, 1.11.9, 1.12.2.1, 1.13.2.2, 1.18.3.1, 1.19.3.

Response: Will revise.

5 422241-33 MARSH CENAB-EN-HT ENV SIMMS 0145

There are many references in this section that do not apply to the Somerset Property. Delete. See. See 1.3.3, Table 01450-1a, 1b. Add a Table for asbestos.

Response: Will revise.

6 422241-34 MARSH CENAB-EN-HT ENV SIMMS 0150

There are many references in this section that do not apply to Somerset Property. Delete.

Response: Will revise.

7 422241-35 MARSH CENAB-EN-HT ENV SIMMS 0214

There are many references in this section to CWM and contamination associated with that property. Delete from this section.

Response: Will revise.

8 422241-36 MARSH CENAB-EN-HT ENV SIMMS 0214

Delete the tables not associated with Somerset, and add tables for miscellaneous chemicals and oils.

Response: Will revise.

9 422241-37 MARSH CENAB-EN-HT ENV SIMMS 0214 Attach 1

Delete the reference to CWM.

Response: Will revise.

10 422241-38 MARSH CENAB-EN-HT ENV SIMMS Plat

This site map needs to show all of the Somerset property. Indicate areas where the contamination (asbestos, chemicals, oils, etc.) is located.

Response: The site map will be revised to more clearly show the limits of the Somerset property, as well as areas of known contamination, based on available information provided by ACRES International Corp.

11 422241-39 MARSH CENAB-EN-HT ENV CWM Plate

Erosion Control Plan-This figure indicates excavation will occur into the cap and/or liner of the landfill to the south. This issue needs to be discussed.

Response: The limits of the excavation shown, particularly to the south near the landfill, will be rechecked and compared to the limit of waste in this area as originally depicted by ACRES International Corp. If necessary, ACRES will be contacted to more clearly delineate the southern boundary for the limit of waste.

12 422241-40 MARSH CENAB-EN-HT ENV CWM Plate

Top Plan

1. Why was the pipeline stationing reversed from previous submittals. Change stationing back to previous method.

However, all references to stationing in these comments are as shown on the current drawings.

Response: The pipeline stationing had been reversed to start (Sta. 0+00) at a known point of reference (e.g., the WWTP building). The stationing will be changed back to the original following receipt of applicable point of reference from Kevin Connare of ACRES.

2. Indicate approximate location of pipe that connects equalization basins to the south TNT line.

Response: Available information and mapping, as provided by ACRES International, will be reviewed for the approximate location of the pipe that connects the equalization basins to the south TNT line. This information will be added to the plan.

3. Station 16+10 to 17+30 should be closed in place.

Response: This is in the area of the PCB spill which will be excavated. This section of the pipeline was also accessed at several locations to obtain the requested quantity of sediment for WES. Recommend complete removal.

4. Isn't there a manhole at approx. 5+00?

Response: This will be verified based on available drawings, and revised as appropriate.

Top Profile

5. Show the sub and super structure of the WWTP.

Response: If this information is available from existing drawings that Acres has obtained, this information will be provided. A photograph of the building has been provided with the specifications.

Bottom Plan

6. There are several known line crossing not shown on this drawing. Include these lines (CWM water and Chemical waste lines near 20+50).

Response: These will be shown on the drawings.

7. The following approximate sections should be closed in place 25+75 to 27+00, and 27+30 to end of this figure (approx. 32+50).

Response: These areas have been accessed by SCA (removal) and by Arces for sampling as shown on Figure 2-11 in the Work Plan. The pipeline encasement is near the surface along this section and easier to remove than the further downgradient locations.

8. The Detail Symbols are not correct. Generally, they indicate that the details are on page 7, versus page 8. Correct.

Response: Will revise.

9. Indicate the stormwater management area near 31+00.

Response: Will revise.

10. Indicate all known plugged and removed sections of the pipeline. These include Weston and Acres sampling areas, CWM/SCA sampling/removed areas.

Response: Will revise according to available information/drawings.

11. Show approximate locations of original laterals from TNT production areas.

Response: Will revise according to available information/drawings.

Bottom Profile

12. Indicate location of manholes, utilities, samples/plugged areas.

Response: Will revise according to available information/drawings.

13 422241-41 MARSH CENAB-EN-HT ENV CWM Plate

Plan

1. Indicate all plugged, sampled (plugged), removed sections of line.

Response: Based on available information, the plan will be updated to show all known plugged, sampled, or removed sections of pipe.

2. Indicate near by or utility crossing locations.

Response: Based on available information, the plan will be updated to show utility crossing locations

3. Indicate the North Salts pond.

Response: The location of the North Salt pond will be shown.

4. Stations 41+75 to 43+75 and 44+00 to 50+03 should be closed in place.

Response: These sections have been accessed by CWM in 1990 (removal), by access for test pit sampling (see Figure 2-11 in Workplan) and WESTON (TP-1). This area has been disturbed for construction and the integrity of the pipeline is unknown in this area. Due to these conditions it would be difficult to close sections in-place in this area knowing the past and more recent disturbance in this area.

5. Add the single 10" line from 45+37 to 50+03.

Response: Will revise according to available information/drawings.

6. Indicate locations of laterals and manholes.

Response: Will revise according to available information/drawings.

Profile

7. Indicate manholes, laterals, plugs, removed sections, etc.

Response: Will revise according to available information/drawings.

8. The notes on this page should be moved to plates 5 and/or 7.

Response: Will revise.

14 422241-42 MARSH CENAB-EN-HT ENV CWM Plate

Indicate location of crossing and near by utility lines.

Response: Based on available information, the locations of nearby utilities and utility crossings will be added to the plan.

15 422241-43 MARSH CENAB-EN-HT ENV CWM Plate

Pipe Removal Detail

1. Show the second pipe, separation distance, etc. and identify concrete encasement.

Pipe Removal at Existing Swale

2. Indicate second pipeline.

3. Change note 1 to indicate plate 9.

Response:

Pipe Removal Detail

1. The second pipe, along with the separation distance (based on available information), will be shown in the detail.

Pipe Removal at Existing Swales

2. The second pipeline will be shown.

3. Note 1 will be revised to indicate Plate 9.

16 422241-44 MARSH CENAB-EN-HT ENV CWM 01030- 2.3

Include list of all previous reports.

Response: Please provide WESTON with the list of applicable reports.

17 422241-45 MARSH CENAB-EN-HT ENV CWM 01030- 5

Add CWM point of contact, name, address, phone.

Response: Concur; revisions will be made as stated in this comment.

18 422241-46 MARSH CENAB-EN-HT ENV CWM 01030- 13.6

Add New York State and delete others.

Response: Will revise.

19 422241-47 MARSH CENAB-EN-HT ENV CWM 01030- 14.2

Include adverse weather days.

Response: CENAB to provide.

20 422241-48 MARSH CENAB-EN-HT ENV CWM 01450- 1.3.1

Delete the reference to Section 02080 Asbestos Abatement.

Response: Will revise.

Section 02144 Miscellaneous Liquids and Oils could not be found.

Response: Will revise.

21 422241-49 MARSH CENAB-EN-HT ENV CWM 02010- 3.1.1.1

The required to perform 20% QA samples seems somewhat high. Consider 5-10%.

Response: Concur; QA samples can be revised to 10% as stated in response to Warminski Comment 3 (422241-25).

22 422241-50 MARSH CENAB-EN-HT ENV CWM 02010- 3.1.1.14

1. Para 3 - The 20% QA sampling rate seems high. See earlier comment.
2. Para 4 - Add explosives to the list.
3. Para-%□d How was the five confirmation number generated?

Response: See response to Marsh Comment 21 above.

Explosives do not need to be added to the list since the samples will be analyzed for explosives using a field test kit and laboratory QA verification sampling as discussed in paragraphs 2 and 3.

The five samples for PCBs is an engineering judgment estimate based on the expected size of the spill area.

23 422241-51 MARSH CENAB-EN-HT ENV CWM 02010- T 02010-1

The NYSDEC soil cleanup limits need to be discussed.

Response: The NYSDEC cleanup levels are the “cleanup criteria” discussed in the individual subsections (e.g., 3.1.1.1.4). The appropriate subsections and tables in Specification 02010 and 02226 will be revised to clarify this.

24 422241-52 MARSH CENAB-EN-HT ENV CWM 02010- T 02010-1

Include minimum field screening methods for explosives.

Response: Minimum explosives field screening will be added to the Table 02010-1c.

25 422241-53 MARSH CENAB-EN-HT ENV CWM 02050-

1. General note - The need for a lead and asbestos survey at the WWTP must be determined.

Response: This needs to be further discussed with CENAB.

26 422241-54 MARSH CENAB-EN-HT ENV CWM 02050- 3.1

Indicate the superstructure of the WWTP will be demolished.

Response: Concur.

27 422241-55 MARSH CENAB-EN-HT ENV CWM 02141- 1.1

Add liquids in WWTP to this list.

Response: Agree, the information will be added to 02141 as stated in the comment.

28 422241-56 MARSH CENAB-EN-HT ENV CWM 02141- 1.1

There are several locations in these specifications that refer to "competitively-bid off-site (or on-site at CWM's treatment facility)". Change these to read "competitively-bid treatment facility".

Response: Agree, the information in 02141 will be revised as stated in the comment.

29 422241-57 MARSH CENAB-EN-HT ENV CWM 02226- T 02226-1

The NYSDEC soil cleanup limits need to be discussed.

Response: See response to Marsh Comment 23.

30 422241-58 MARSH CENAB-EN-HT ENV CWM 02226- T 02226-3

Consider changing the analyte in Area A from just acetone to VOCs.

Response: The analysis for acetone is for the 24-hour turnaround analysis by a GC and the QA verification samples will be analyzed for a full suite of TCL volatiles. However, the DAR and Specifications will be revised as stated in the response to NYSDEC/Johnson DAR/CWM Comment concerning Page 2-15, Section 2.1.10, Confirmation Sampling (Area A).

31 422241-59 MARSH CENAB-EN-HT ENV CWM 02229- 1.1.10

Indicate that the treatment of TNT crystals is included in this contract.

Response: Will revise. Issue of where crystals will be taken for detonation needs to be resolved.

32 422241-60 MARSH CENAB-EN-HT ENV CWM 02229- 3.1.1.1

The requirement for an existing topographical survey may be able to be deleted. Also, delete the requirement for a final topographical survey.

Response:The existing (pre-excavation) survey may be warranted since it would serve as verification of the original topographic information for these areas as provided by ACRES.

The final topographic survey would serve as the basis for verification of backfill quantities in the event that final grades differ in any way from pre-excavation grades, as well as to serve as a record drawing.

Existing survey information may be used and can be stated in the specifications but may not cover all areas or changes in conditions since the survey or field modifications to final

grading. However, both of these surveys can be eliminated from the specification, if so desired by CENAB.

33 422241-61 MARSH CENAB-EN-HT ENV CWM 02229- 3.3.1.1

Based on results to date, we should consider changing the presumption that excavated soils are contaminated.

Response: Agree that most soils will not be contaminated based on PRDI, for this reason predetermination of soil characteristic prior to stockpiling is allowed to avoid costly handling. Since the potential still exists for contamination along the pipeline (e.g., PCB spill) it is prudent to have contractor handle soils based on confirmation samples that can be done prior to staging.

The specification states that the soil is to be considered potentially contaminated (not presumed contaminated). However, the specification will be revised to de-emphasize the potential for being contaminated.

35 422241-63 MARSH CENAB-EN-HT ENV CWM 02229- 3.3.1.2

Based on results to date, we should consider changing the presumption that excavated soils are contaminated.

Response: See response to No. 35.

The specification states that the soil is to be considered potentially contaminated (not presumed contaminated). However, the specification will be revised to de-emphasize the potential for being contaminated.

36 422241-64 MARSH CENAB-EN-HT ENV CWM DA, 1- 1.3.3

We should discuss groating certain section of the chemical waste lines, similar to the TNT lines.

Response: As discussed at 60% Design meeting, the chemical waste sewer will be sealed with grout at the access point in the lift station following flushing operations and video confirmation.

37 422241-65 MARSH CENAB-EN-HT ENV CWM DA, 2- 2.1.9

Note - What requirements does CWM have to accept waste (liquid, soil, and waste)?

Response: The CWM requirements for water to be disposed in their stormwater channels are provided in Attachment 1 of Contract Specification 02141. CWM requires analytical testing dependent on the type of waste (physical properties, etc.) and existing analytical data/information about the waste. It will be the responsibility of the Contractor to

determine the waste acceptance requirements from the permitted facility that they choose to utilize.

38 422241-66 MARSH CENAB-EN-HT ENV CWM DA, 2- 2.2.10

1. The requirement to analyze only for the specific compounds needs to be discussed.
2. The requirements to perform QA samples at 20%, seems high. Consider 5-10%.

Response:

1. The analysis for specific compounds is for the 24-hour turnaround analysis by a GC and the QA verification samples will be analyzed for a full suite of target compound list volatiles, semivolatiles and pesticides. However, the DAR and Specifications will be revised as stated in the response to NYSDEC/Johnson DAR/CWM Comment concerning Page 2-29, Section 2.2.10, Confirmation Sampling (Area B).

2. See response to Warminski Comment No. 3.

39 422241-67 MARSH CENAB-EN-HT ENV CWM DA, 2- 2.3.2

It should not be assumed that all water collected will be disposed of at the on-site aqueous treatment facility. It is likely that it will be, however, this precludes any other TSD facilities from having grounds for a protest.

Response: Concur; the DAR will be revised to state that the water will be disposed at a competitively bid TSD but will mention that there is an on-site facility from which a bid can be sought.

40 422241-68 MARSH CENAB-EN-HT ENV CWM DA, 2- 2.3.6

We need to discuss post cleaning confirmation sampling.

Response: See response to Johnson/NYSDEC Comment concerning page 2-33, Section 2.3.6.

41 422241-69 MARSH CENAB-EN-HT ENV CWM DA, 3- 3.3.1

Para 3 - We need to discuss closure in place versus pipeline removal for various sections of the line.

Response: See responses to No. 12 (3.) and No. 13 (4.).

42 422241-70 MARSH CENAB-EN-HT ENV CWM DA, 3- 3.4.1.2

Para 2 - Requiring an asphalt pad for the soil stockpiling area may be a little extreme. We need to discuss this item.

Response: Based on discussions at the 60% Design meeting, this item was retained.

43 422241-71 MARSH CENAB-EN-HT ENV CWM DA, 3- Table 3-2

1. Include explosive concentrations in this table.
2. We need to discuss the NYSDEC soil cleanup limits.

Response:

1. Explosive concentrations are not shown in the table since the concentrations are not greater than the NYSDEC cleanup criteria; however, total maximum concentration of explosives will be added for informational purposes.

2. See response to Marsh Comment 23.

44 422241-72 MARSH CENAB-EN-HT ENV CWM DA, 3- 3.4.1.6

Para 1 - The requirements to sample at the rate of 1 per 75 ft² seems a little high. We need to discuss this rate.

Response: The rate of sampling was based on past experience for verification sampling. This can be revised to 1 sample per 150 ft².

45 B-EN41-73 MARSH CENAB-EN-HT ENV CWM DA, 3- 3.4.2.4

Para 2 - This section implies that the Government will be responsible for previously clean soils that become contaminated due to the Contractor's actions. This should not be the case.

Response: Will revise accordingly.

46 422241-74 MARSH CENAB-EN-HT ENV CWM DA, 4- 4.1 A-B

Para 1 - The assumption that this section will be removed needs to be discussed.

Response: See response to No. 41.

47 422241-75 MARSH CENAB-EN-HT ENV CWM DA, 4- 4.1

Section C-D3 to C-D4 - The assumption that removal is the RA for this section needs to be discussed.

Response: See response to No. 41.

48 422241-76 MARSH CENAB-EN-HT ENV

The Remedial Investigation and Design Section POC for these comments is Russell Marsh at (410) 962-2227.

Response:

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Garger, CENAB-EN-:

Comment 671753-24, page 1-10

Section 1.3 - add the word "critical" between "non-time" and "removal actions"

Response:

Revision will be made.

Comment 671753-25, page 1-13

Section 1.4, 2nd paragraph, line 4 - suggest adding the words "associated with landfill expansion" after "construction activities".

Response:

Clarification will be made.

Comment 671753-26, page 2-13

Section 2.1.9, line 5, - delete one of the "will be completed by the contractor" statements.

Response:

Deletion will be made.

Comment 671753-27, page 2-39

Section 2.3.1 - there appears to be some text missing between page 2-26 and 2-39.

Response:

The repeated last two lines on page 2-39 from the preceding paragraph will be deleted.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 671753-28, page 3-15

Section 3.3.2, remove this section since it is inappropriate to discuss the bioremediation as part of this effort.

Response:

This section will be revised to state that following the removal of sediments from the pipeline the contractor is responsible for the containerization and transport of the sediments to a designated treatment/disposal facility. The evaluation and final treatment/disposal of the pipeline sediments is being performed through a separate research and development contract under the direction of USACE, Baltimore District.

Since this effort is not within WESTON's scope of work, it is our understanding that the USACE, Baltimore District will provide prior to the 90% design submittal, the requirements for moisture content, containerization, and transport of the sediments and contaminated soils to the designated treatment/disposal site. All references to bioremediation will be deleted as directed.

Comment 671753-29, page 3-21

Section 3.4.1.1 - add the reference for the requirements for excavation outlined in EM 385-1-1, 3 Sept. 96, Section 25.

Response:

Reference will be added.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 671753-30, Appendix

General comment: What will be the clean up criteria for asbestos in soil around BLDG. 6 for the purposes of estimating extent of contamination and cost of remediation.

Response:

Based on our discussion at the 30% Design meeting on 20 May 1997, no clean-up criteria for asbestos in soil was known by the team. CENAB has since contacted NYSDEC regarding this matter, but Kent Johnson (NYSDEC) was not aware of a specific criteria. Jim Davis (WESTON) mentioned that the clean-up of asbestos fragments observed outside of enclosed buildings at the Childersburg Army Ammunitions Plant was conducted by collecting and bagging for disposal all visible pieces by trained asbestos abatement workers.

Based on the areal extent and depth of asbestos containing materials determined from the proposed survey, potential options will be evaluated and presented for review and comment.

Noble, CENAB-EN-HI:

Comment 671753-48, page 2-14, Tab 2-1

Also applies to page 3-10, section 3.2. The NY guidance memorandum cited for soil clean-up levels, HWR-92-4046, has an update which came out in 1994. Perhaps there is even a 1996 update. Please research and use the most current guidance from the state of New York.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

WESTON will obtain the most current update of the NYSDEC guidance memorandum and revise if appropriate, the clean-up criteria referenced in the DAR.

Marsh, CENAB-EN-H:

Comment 6671753-107, page 2-13, section 2.1.10, paragraph 2

This section indicates that a 200 SF grid will be utilized for confirmation sampling. This needs to be evaluated based on the site.

Response:

As discussed at the 30% design meeting on 20 May 1997, the confirmation sampling will be performed after the designated limits of the Area A excavation are completed and initial field screening methods do not indicate elevated concentrations of organic compounds. If sustained PID/FID readings above background are observed on soil samples removed from the walls of the excavation, the contracting officer may direct the contractor to continue excavation or perform verification sampling. For the excavation walls a grid area of 400 sq. ft (10' x 40' narrow side wall) to 550 sq. ft. (10' x 55', long side wall) or a total of 20 sidewall samples is recommended to be collected and analyzed using rapid (24 hr or less) turn-around analysis. The bottom of Area A will be excavated to the depth clean-up criteria are met (estimated at 10 ft) or to 6 inches below the top of the clay layer, whichever comes first. It is recommended that confirmation samples be performed on the bottom of the excavation to document the level of clean-up, in the case that the clay layer is encountered first, the results would not be used to extend the depth of the excavation. A grid area of approximately 1100 sq. ft. (20' x 55') or 8 total floor samples is suggested. The total confirmation samples would therefore be 28, if no sample exceeded the clean-up criteria and no additional excavation beyond the initial limits was performed.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-108, page 2-13, section 2.1.10, paragraph 3

This section indicates that additional excavations will be 2 ft internals on the walls and 1 ft intervals on the floor. Explain why these are different.

Response:

As discussed at the 20 May 1997 meeting, the base of the excavation will be limited to the depth clean-up criteria are met (estimated at 10 ft) or 6 inches into the clay layer, which ever comes first. Due to the potential of encountering the clay layer above the estimated depth, the thickness of the lift to be removed was limited to 2 ft. Furthermore, it is on a practical level easier to remove a 1 ft lift on the bottom of an excavation then the side wall. Excavation of the side walls will be extended at 2 ft intervals or as directed by the contracting officer based on field screening techniques and confirmation sampling and analysis.

Comment 6671753-109, page 2-14, Table 2-1

There are several blank cells on this table. If there is no value for a specific cell, please identify (i.e., dash -). This will indicate that there is no value, and not that one has been forgotten.

Response:

The table will be revised to show either a number or dash (signifying no criteria exists) in each cell.

Comment 6671753-110, page 2-25, section 2.2.10, paragraph 2

Same comments as numbers 2 and 3 above.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Based on the discussions at the 20 May meeting, the following confirmation sampling program is proposed for Area B:

- Contaminated pond sediment (estimated volume 3,000 yd³ based on a 24,500 ft² area 3 ft in depth) - Following removal of the sediment to a depth of 3 ft, the area will be screened with a FID/PID. If sustained readings above background are observed the contracting officer may direct the contractor to excavate and remove another foot or collect verification samples using an approximately 4,000 sq. ft grid area (5-6 samples total). Based on the results of the 24 hr. turn around verification sampling, an additional 1 ft of material will be excavated and removed from within the designated grid.
- Contaminated berm materials at approximately 6,000 yd³ (based on 33,000 ft² of berm at an average height of 5 ft): similar approach suggested for a total of 8-9 samples.

Contaminated mounded sediment and soil within the ponded area estimated at 1,300 yd³ (based on a 7,150 ft² area with an average thickness of 5 ft): Similar approach recommended including first, excavation to 5 ft below the existing surface, field screening and then either further excavation or verification sampling. Total samples for the first round of verification sampling is 2 samples.

- Contaminated soils within the former surface depression south of the present burn pit boundaries, estimated at 1,700 yd³ (based on the depression dimensions of 100 ft long by 25 ft wide by 18 ft deep). Since this is a below ground excavation, sidewall and floor confirmation samples are recommended. The sidewall confirmation sampling would occur after field screening and be performed on an approximate grid area of 450 sq. ft (18' x 25' narrow sidewall) or one sample per side, and of 450 sq. ft (9' x 50' on long sidewall) or 4 samples per side. The total sidewall samples would then be 10. The floor samples would be taken using a grid area of 625 sq. ft (25' x 25') or 4 samples. If the clay layer is encountered the excavation will proceed 6 inches into the clay layer and confirmation samples collected. No further excavation will occur after the top 6 inches of the clay layer is removed. The results of the confirmation samples, at this depth will be used only to document clean-up achieved. If the clay layer is not encountered, excavation will proceed until clean criteria are met (estimated at 18 ft).

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-111, page 3-7, section 3.1.3, paragraph 2

Change the date to October 1996.

Response:

Date will be changed.

Comment 6671753-112, page 3-7, section 3.1.3, paragraph 5

This comment is just a note. This section indicates that a drawing exists that discharge from the sludge basins was to the North TNT line. This is the first that this reviewer has heard of this drawing. It would be beneficial to see that drawing.

Response:

The referenced drawing has been provided with these responses.

Comment 667173-113, page 3-8, section 3.1.4, paragraph 2

This section indicates that the farthest downstream sampling point was Station 25+00, this does not agree with 3.1.3 paragraph 4 (30+80). Coordinate.

Response:

The correction will be made.

Comment 6671753-114, page 3-11, section 3.3.1, paragraph 1

The third and fourth sentences do not agree. Coordinate.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

The word compares in the forth sentence will be changed to contrasts.

Comment 6671753-115, page 3-15, section 3.3.2

This reviewer does not agree with this section. Further discussions between Weston and the Corps are warranted.

Response:

See response to comment Number 671753-28 (Garger).

Comment 667153-116, page 3-23, section 3.4.1.3

This section indicated that the pipeline will be dewatered from the upstream access point if a pressure head exists. As long as the head is not excessive (i.e. gradient above ground surface), the head will aid in dewatering the pipeline from the downgradient access point. Suggest discussions on this matter.

Response:

The text will be revised and reflected in the specifications that the pipeline may be dewatered from the downgradient access point if an excessive pressure head does not exist. Excessive pressure was observed in the pipeline below station 25+00. The contractor shall utilize the existing manholes, where present, to release the pressure head prior to accessing the pipeline.

Comment 6671753-117, page 3-24

1. Paragraph 2 - This section indicates that confirmation samples will be collected at 25 ft. internals. This is extremely excessive and unnecessary. The interval will need to be

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

evaluated somewhat based on field conditions, however, and average interval of several hundred feet (200-500') is more reasonable.

2. Paragraph 3 - This section indicates removal and resampling at 6" intervals, this may not be practical during construction activities. This will need to be discussed.

The use of field screening methods during construction activities may be appropriate. These should be added to the next submission of plans/specifications.

Response 1:

Based on discussions at the May 20 meeting, the confirmation samples along sections of the pipeline that have been completely removed will be based on visual evidence of staining and spillage and through field test kits for TNT. The specifications will require visual inspection and field testing prior to collecting and analyzing soil samples. At a minimum, confirmation samples will be taken at the ends of each removed/or flushed section and at 250 ft for sections less than 500 ft and at 500 ft intervals for sections greater than 500 ft intervals for sections completely removed.

Response 2:

As discussed, the use of field test kits for TNT will be used by the contractor to identify remaining hot spots. It is suggested that the field test kits be used to determine if the clean-up criteria is met or whether additional excavation is needed. Laboratory confirmation sampling will then be used to verify field test results that indicate clean-up criteria has been attained.

The use of field screening methods will be added to text and the specifications.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-118, page 3-25, section 3.4.1.6

Soils/sediments - This section will need to be modified based on discussions regarding the use of biotreatment methods.

Response:

This section will be revised to state that the contractor is responsible for containerization and transport of the pipeline sediments and contaminated soils (soils that exceed clean-up criteria and cannot be backfilled) to a designated treatment/disposal facility as directed by USACE, Baltimore District. The contractor is responsible for the disposal of the concrete and pipeline from those sections that are designated to be removed. The contractor is also responsible for treatment/disposal of waters collected from the pipelines and excavations.

WESTON is to confirm that local facilities will accept the concrete and pipeline materials based on field screening using Webster's Reagent to confirm the materials are non-detonable. WESTON will also confirm that CWM will accept liquids for the pipeline.

Comment 6671753-119, page 3-28, section 3.4.2.1, paragraph 3

This section may need to be revised based on discussions regarding use of downstream access points.

Response:

See response to comment Number 6671753-116 (Marsh).

Comment 6671753-120, page 3-29, section 3.4.2.3, paragraph 2

This section indicates that laterals will be removed. The potential to leave them in place needs to be provided.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Response:

WESTON will review the available information to determine which laterals are likely intact and could be flushed in place. The specifications will allow closure in-place of the laterals unless the condition of the pipeline precludes the use of this method.

Comment 6671753-121, page 3-30, section 3.4.2.4, paragraph 2

This section should require a liner at the sumps.

Response:

The section will be revised to reflect the requirements of a liner at the sumps.

Comment 6671753-122, page 4-1, section 4.1

This section will need to be revised based on discussions regarding the use of biotreatment.

Response:

See responses to comment Number 6671753-115 (Marsh).

Comment 6671753-123, page 4-2, C-D1-C-D2

The potential to leave this section in place needs to be evaluated.

Response:

The cost evaluation was provided at the request of CENAB at the previous meeting on the results of the PRDI held on 22 January 1997. Based on the discussion at the 30% Design meeting, this section will not be included in the 60% Design submittal.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-124, page 4-7, C-D3-C-D4

Based on the depth to pipe in this section the potential to leave this section in place needs to be evaluated.

Response:

Based on the discussion at the 30% Design meeting on 20 May 1997, the sections of the pipeline that will be indicated for closure in-place are shown on the marked-up Figures 4-1 and 4-2. These revisions will be reflected in the 60% Design submittal.

Comment 6671753-125, page 4-8, Table 4-1

There are different mobilization/demobilization rates for the different treatment methods. Explain.

Response:

See response to comment Number 667153-123 (Marsh).

Comment 6671753-126, Appendix A

CWM Property - Add Transportation/Handling Explosives.

Response:

As discussed at the 20 May meeting, CENAB will determine where the contractor is to transport the pipeline sediments and contaminated soil and will provide to WESTON the requirements for moisture content, containerization and transportation of these materials. WESTON will provide CENAB with information gathered to date regarding transport of explosives.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 6671753-127, Appendix A

Drawing Index - This section indicates that profile drawings for the pipelines will be provided. Do these exist or will they be generated?

Response:

The profile drawings will be prepared using the depth to pipeline measurements taken during the PRDI.

Kent Johnson, NYSDEC:

Comment 1: Page 2-7, Section 2.1.5, Excavation and Removal of Soils and Drums:

Additional details are needed to describe what is meant by the statement - "First, the area must be surveyed to establish the initial limits of contamination".

Response:

This statement will be clarified to state that the area define in the EE/CA and shown on the design drawings will be staked out by the contractor. Acres has surveyed these areas and will provide WESTON with the coordinates for the design drawings.

Comment 2: Page 2-9, Section 2.1.6, Second Paragraph:

Please clarify the meaning of the second sentence of this paragraph.

Response:

This sentence will be deleted.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 3: Page 2-9, Section 2.1.6, First Paragraph:

Use of roll-off containers for excavated soils which are contaminated will minimize the need for confirmation sampling of this stockpile area.

Response:

This section will be revised to allow for the use of roll-off containers for excavated soils. The specifications will also reflect this.

Comment 4: Page 2-10, Section 2.1.7:

For the treatment and discharge of collected groundwater and surface waters, the COE should check the costs and feasibility of: CWM treatment, local POTW treatment, and/or obtaining a SPDES permit.

Response:

WESTON will investigate the feasibility of these options and allow the contractor to select among the feasible options for the most cost effective method.

CWM will be contacted to discuss this issue.

Comment 5: Page 2-13, Section 2.1.10:

Confirmation samples should be analyzed for Hazardous Substance List Volatile Organics.

Response:

Since these areas have already been thoroughly investigated and the containments of concern identified, it is recommended that a partial VOC list be used for confirmation

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

sampling to allow for rapid turn-around of samples and minimization of both potentially contaminated groundwater and surface water collection, treatment and discharge.

Comment 6: Page 2-14, Table 2-1:

The Table must also include the clean-up criteria for water used in flushing the TNT pipelines.

Response:

We request further discussion of this comment with NYSDEC. The objective of the Interim Removal Action is to remove the material that has been identified as a potential risk. After flushing in-place, removal of the pipeline contents will be verified with a video camera. No confirmation sampling is proposed.

Comment 7: Page 2-23, Section 2.2.9:

Please see previous comments on treatment and discharge to surface water.

Response:

See response to comment No. 4.

Comment 8: Page 2-25, Section 2.2.10:

Confirmation samples should be analyzed for Hazardous Substance List Volatile Organics, Lithium and Boron.

Response:

See response to comment No. 5.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 9: Page 2-41, Section 2.3.2, Asbestos:

Please cite the 6 NYCRR part 360 regulation for an in-place closure cover system.

Response:

Since asbestos is the only "solid waste" present in this area, an alternative cover that allows for the maintenance of "wet" moisture conditions may be more appropriate than an impermeable Part 360 cover system. CENAB is also still evaluating the options for remediation of the loose asbestos in this area.

Comment 10: Page 2-41, Section 2.4.4:

The pipeline camera survey of the chemical waste sewer system should include the entire system, to the extent possible.

Response:

The camera survey is proposed for the chemical waste sewer line shown on the drawings to be flushed.

Comment 11: Page 3-8, Section 3.1.3:

Please provide details on the statement: "All of the outlet lines from the oil/water separator are scheduled to be sealed with cement grout by CWM."

Response:

CWM is to plug the discharge points from the oil/water separator identified during the PRDI.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 12: Page 3-15, Section 3.3.2:

A determination as to the appropriateness of bioremediation of the pipeline sediments cannot be made at this time. Once the pilot study being conducted by the USACE Waterways Experimental Station is completed and a report is submitted, through review of the technology will be performed.

Response:

The sections discussing bioremediation will be deleted as directed by CENAB.

Comment 13: Page 3-18, Section 3.3.3:

Has any progress been made with the New York National Guard to secure access to their property in case crystalline materials are encountered?

Response:

CENAB to comment.

Comment 14: Page 3-29, Section 29, Section 3.4.2.4:

If feasible, the filtering and recirculation of wash water used for power washing the pipelines may result in a reduction in the amount of water used and treated.

Sections of the pipeline which have the presence of sediment and debris indicated by the video survey must have a post-washing confirmation survey to assure satisfactory decontamination of the pipe.

Response:

Concur.

Response to Comments
30% Preliminary Design - Preliminary Design Analysis Report
Lake Ontario Ordnance Works
Towns of Porter/Lewiston NY
June 4, 1997

Comment 15: Page 3-31, Section 3.4.2.6:

What are the proposed parameters of analysis for the TNT line confirmation sample?

How will the decontamination of the TNT pipelines be confirmed?

When back filling the temporary sumps/access points, the fill material should be of sufficiently low permeability to prevent the pipeline and/or bedding from becoming a preferential pathway to contaminant migration.

Response:

Confirmation that the contents of the pipeline have been removed will be performed using a video camera. No confirmation sampling is proposed.

The pipeline will be plugged using a bentonite grout at the access points. The sump areas will be lined and backfilled with soils that do not exceed the clean-up criteria. The local soils are clayey and generally possess a low permeability.

Comment 16: Page 4-7, Section 4.1:

Is location D4 the point where the chemical waste sewer system ties in?

Response:

This is the approximate location where it is suspected that the tie-in to the oil-water separator is located. The actual point of connection was not located during the PRDI.

APPENDIX D

16 APRIL 1998 AND 4 DECEMBER 1997 MEETING MINUTES

**FINAL MEETING MINUTES
INTERIM REMEDIAL ACTION DESIGN
FORMER LOOW, NIAGARA CO., NY
April 16, 1998**

Meeting called by: Roy F. Weston, Inc. (WESTON)

Subject of Meeting: New Phasing of Interim Removal Action Due to Funding Constraints, Division of Remedial Design According to New Phasing, and Project Schedule.

Location: Roy F. Weston, Inc., West Chester, PA

Attendees:	Pete Garger -	USACE, Baltimore District
	Russell Marsh -	USACE, Baltimore District
	Justina Wesley -	USACE, Baltimore District
	Stacie Popp -	WESTON
	David Pohl -	WESTON
	William Zahn -	WESTON

Summary of Discussion:

Purpose:

The purpose of the meeting was to discuss the new phasing of the Interim Removal Action and the approach to the remedial design for the LOOW site. Justina Wesley provided an over view of the revised approach. Due to further funding constraints, the IRA is now planned to be completed in five separate phases. The proposed phasing is as follows:

Somerset Property

Component 2	Phase 1	Asbestos Removal - Buildings in Area 6, Interiors of other Buildings & Misc. Chemicals
	Phase 2	Asbestos Removal - Asbestos Containing Soils in Designated Areas

CWM Property

Component 1	Phase 1	Chemical Waste Sewer & TNT Pipeline
	Phase 2	Area A
	Phase 3	Area B

The Component 2 design deliverables will be completed to a 100% design level. The IRA for Component 2 will be performed under SPIDT using a firm fixed price contract. Whereas, the Component 1 design submittal will be completed at a Supplement to the 60% design level since the Component 1 phases will be performed under a PRAC time and materials contract. Due to the level of revisions on the Component 2 specifications, and for the purpose of technical review,

the Component 2 design for both Phases 1 and 2 will be submitted at a 90% and 100% design level. The 90% design specifications will contain strike-outs (deleted text) and shading (added text), whereas the 100% design will delete all text that is struck-out and will not show shading of added text to the guide specifications. The Supplement to the 60% design for Component 1 will show all strike-outs and shading.

Technical Issues and Approach:

- The funding limitation for Component 2 Phase 1 is \$500,000. The focus of this first phase will be the removal of loose asbestos from Building 6-01 and from the interiors of the other buildings on the Somerset Property in which asbestos containing material was found. The miscellaneous containerized liquids will also be removed and properly disposed. Buildings 30, 31 and 41 are excluded from the IRA since they have been used by the property owner and are designated as beneficial use structures. Loose asbestos containing material was encountered in Buildings 6-01, 6-02, 6-03, and 30A. This material will be removed as part of Phase 1. Component 2 Phase 2 will include the removal and disposal of the asbestos containing soils designated in the draft Asbestos survey Report as Areas A, B, C, D, E, and F.
- The removal of loose asbestos materials and asbestos containing soils at temporary buildings T-1 and T-2, and at the pipe bridge on the western property line of the Somerset Property may be included as part of Phase 1, depending on the total cost.

Action Item: WESTON is to determine the cost for each of the two phases for Component 2, and confirm the cost is below \$500,000 for Phase 1. The scope of the two phases is to be communicated to and approved by CENAB.

- The location of the staging area for the asbestos containing material for the Somerset Property was shown on the Supplement to the 60% Design drawings (Sheet 3). The location of this staging needs to be discussed with the property owner.

Action Item: CENAB to check with John Syms regarding his comments on the Supplement to the 60% Design, particularly any concerns with the use of this area.

- Since the specification Section 02080: Asbestos Abatement already contains health and safety requirements associated with asbestos removal work, and no hazardous wastes are anticipated to be encountered during this work, Section 01110: Safety, Health and Emergency Response will not be included in the specifications for Component 2 Phases 1 and 2. A requirement for 40 hour OSHA training for the persons handling the miscellaneous containerized liquids for Phase 1, will be included in Section 02144: Miscellaneous Liquids and Oils.
- The requirements for a CPM type schedule specified in Section 01310: Project Schedule will be modified for Component 2 Phases 1 and 2, to require a bar type schedule of primary work

activities/tasks. This was agreed to be more applicable due to the short time frame of these phases.

- The requirements for sampling and testing the Miscellaneous Liquids and Oils for disposal characterization needs to be added to Section 02144: Miscellaneous Liquids and Oils.
- It was agreed that no verification sampling and analysis of excavated soil areas for Component 2 as part of the asbestos removal is required. Soils within designated areas for removal shall be excavated to a maximum depth of 6 inches. CENAB suggested that to reduce the quantity excavated, soil should be removed in 2 to 4 inch lifts and the area visually surveyed for asbestos materials. If no asbestos materials are observed no further excavation should be performed. This comment had been discussed previously, and the concern was the practical application of this requirement. Due to the significant quantity of debris and existing vegetation in many of the asbestos abatement areas and the practical limits of the operator and earth moving equipment, removal at 2 inch lifts are likely not feasible. This suggestion by CENAB will be further discussed with construction personnel with experience in soil excavation.
- Clearance sampling will be performed on surfaces that have been cleaned of asbestos to verify that the removal was completed. The requirements for this sampling will be stated in Section 02080: Asbestos Abatement.
- The deletion of the requirements for preparation of a SAP, QUAPP and CPC Plan for Component 2 Phases 1 and 2 was discussed. The only sampling that would be performed is the characterization testing for disposal of the miscellaneous liquids and oils, the clearance sampling for remediated surfaces as part of the asbestos removal, and personnel and perimeter air sampling for the asbestos removal activities. The requirements for this testing and analysis will be define in Sections 02080: Asbestos Abatement and Section 02144: Miscellaneous Liquids and Oils.

Action Item: CENAB to check the requirements of the SPIDT Contract to determine if these requirements can be deleted. WESTON will review contents of Section 01450: Chemical Data Control to determine which requirements need to be incorporated into other sections if this section is deleted.

- Perimeter air sampling before, during and after the asbestos removal for Component 2 Phases 1 and 2 shall be conducted to document air quality and effectiveness of controls. These requirements shall be added to the specifications.
- The Design Analysis Report, Environmental checklist and Long-term Monitoring Report will be prepared on a Component basis (two separate documents) at the design level outlined above.

Schedule for Remedial Design:

- The 90% Design for Component 2 Phases 1 and 2 is to be submitted on 13 May 1998. The 100% Design submittal is scheduled for 8 June 1998.
- The submittal schedule for the Supplement for the 60% Design for Component 1 Phases 1, 2 and 3 will be developed over the next few weeks as final review comments are received.

Other Items:

- CENAB will be providing a request for a cost estimate for the additional work required for this change in design approach and number of submittals. Under the current SOW three design submittal packages remain (1 component under the 90% submittal and 2 components under the 100% design submittal). The proposed additional (total five additional submittals) will therefore require a modification to the current scope of work.
- The distribution list shall be modified to replace the submittals to the New York District (Federal Plaza - attention Allison Ali) with the Buffalo District (attention Ray Pilon).

**DRAFT MEETING MINUTES
60 % REMEDIAL DESIGN
FORMER LOOW, LEWISTON & PORTER, NY
December 4, 1997**

Meeting called by: USACE, Baltimore District

Subject of Meeting: Status of Project, Funding for Remediation,
60% Design Comments, and Project Schedule

Location: Roy F. Weston, Inc., West Chester, PA

Attendees:	Michelle Brock -	USACE, Baltimore District
	Ed Cox -	USACE-COE
	Pete Garger -	USACE, Baltimore District
	John Krol -	USACE, Baltimore District
	Russell Marsh -	USACE, Baltimore District
	Justina Wesley -	USACE, Baltimore District
	Alan Warminski -	USACE, Baltimore District
	Dave Brouwer -	USACE, New York District
	Kent Johnson -	NYSDEC
	William Lowe -	WESTON
	Dan Moretz -	WESTON
	David Pohl -	WESTON
	Stacie Popp -	WESTON
	William Zahn -	WESTON

Summary of Discussion:

Purpose:

- Justina Wesley opened the meeting and stated that CENAB has determined to take the project to PRAC construction at the 60% design level. The purpose of the meeting was to resolve the technical issues so the project can move to construction.

PRAC Contract:

- In order to expedite the remediation using the currently available funds for this type of work, the work will be performed under the PRAC contract. The is a cost plus type contract that can be performed with an incomplete design. Field decisions are made on issues that have not been completely finalized in the design. The proposed funding is approximately \$2 million.

- CENAB directed WESTON to address the technical issues discussed during this meeting in a Supplement to the 60% Design.
- Since the proposed funds are limited, it was proposed that the remediation of Areas A & B be held off, and the remediation to be performed under the PRAC be focused on the remediation of the TNT pipeline, Chemical Waste Sewer, and the miscellaneous chemicals and loose asbestos on the Somerset Property. The Supplement to the 60% shall therefore exclude Areas A and B at this time.

TNT Pipeline - Technical Issues:

- CENAB and NYSDEC concurred that some type of confirmation sampling in the sections of the pipeline that are flushed with the power washer should be performed. This sampling is preferred to long-term monitoring. A type of wipe sampling method was suggested, however no approved method exists for sampling the inside of pipelines. A sampling method will be proposed by WESTON for review by CENAB and NYSDEC. The question of what criteria should be used was also discussed. No clean-up criteria currently exists. WESTON raised the concern that achieving any criteria should be confirmed in the field before requiring a contractor to meet these standards. It was agreed by NYSDEC that the video confirmation to assure the sediment and other visible debris had been removed, will be used to determine if further flushing is needed using the high pressure wash method. Closure documentation sampling will be performed after the video confirmation, but will be used for documentation purposes only and for the assessment of long-term risk to be performed as part of the RI/FS of the LOOW site. The method of sampling must therefore consider the use of the results for the risk assessment. It was mentioned that wipe sample results can not be directly correlated to a risk factor since these pipelines are below ground. A leach type test may provide potential impact to groundwater, however the soils are predominantly low permeability clays with very low seepage rates. No groundwater monitoring points should be specified at this time (remove from long-term Monitoring Plan), pending the results of the confirmation sampling and subsequent risk assessment.

ACTION ITEM: WESTON will propose methods for wipe sampling to be reviewed by CENAB and NYSDEC, considering the use of the results in the site risk assessment and for determining long-term monitoring requirements.

- The issue of handling and disposal of crystalline material was discussed. Although there was no evidence during previous investigations of the presence of crystalline material, the possibility exists, particularly in the down-gradient end of the pipeline which was not sampled. CENAB stated that the contractor shall be responsible for the handling and disposal of this material. This will require a specialty contractor, who must prepare a plan on how this will be performed. This plan will be reviewed by the Huntsville, District. For the purpose of the cost estimate it was determined that three such "events" in which crystalline material will need to

be handled and disposed shall be assumed. The issue of where the crystalline material can be detonated and if material can be stored on CWM property until the end of the project requiring only a one time detonation needs to be resolved. The cost of the specialty contractor and the specialty equipment for the TNT pipeline remediation (blast shield for excavator) needs to be included in revised cost estimate.

ACTION ITEM: CENAB to discuss with the National Guard the use of their property for the temporary storage and detonation or other suitable treatment. NYSDEC stated that they would help with this process. Also need to determine if a temporary holding area can be set-up on CWM property until all the pipeline has been removed or flushed out, requiring only one "treatment event."

- The Supplement to the 60% Design cost estimate shall include the cost for disposal of PCB containing materials in the pipeline and in the spill area, and the cost for the transportation and disposal of the pipeline sediments and contaminated soils encountered adjacent to the pipeline. The amount of PCB liquid in the pipeline that will require incineration shall be based on the percentage of liquid that is primarily oil. This oil would be separated from the other liquid from the pipeline by the contractor and sent to an incinerator. the remaining liquids would be sent to a RCRA treatment facility. The total volume PCB liquids shall be estimated using the total volume in the south pipeline from station 25+00 to the WWTP multiplied by the percent of oil suspected (20-40%). This volume shall be added to the volume estimated for the line containing PCB contaminated liquids that is suspected of originating from the oil/water separator and tying into the south TNT pipeline. It is suspected that this line was encountered at station 25+00 that resulted in the PCB spill reported during the PRDI. The estimated length of this pipeline is 150 ft. and is 6 inches in diameter (to be confirmed on drawings). The amount of PCB containing soils from the PCB spill to be excavated and disposed of by the contractor shall be estimated at 15ft x 10ft x 10ft. It should be assumed that all the excavation material will require disposal at a TOSCA facility. The specifications for the Supplement for the 60% shall include the remediation of the PCB spill near station 25+00.
- The sediment in the south pipeline from station 25+00 to the WWTP shall be considered to contain PCBs requiring off-site disposal at a TOSCA facility.

Chemical Waste Sewer:

- CENAB agreed with NYSDEC that confirmation or post remediation sampling of the Chemical Waste Sewer shall be performed following the video inspection of the flushed out section. Remote wipe sampling was suggested as a method for this sampling. See summary of discussion above regarding confirmation sampling of the TNT pipeline.

ACTION ITEM: WESTON will propose methods for wipe sampling to be review by CENAB and NYSDEC, considering the use of the results in the site risk assessment and for determining long-term monitoring requirements.

- CENAB agreed with NYSDEC that the flushed out sewer shall be sealed with grout at the access point, which in this case is the lift station. NYSDEC also requested that all tie-ins encountered along the sewer line shall also be grouted. The specifications will be revised to reflect this.

Asbestos Removal:

- The asbestos survey sampling has been completed and the report on the survey is anticipated to be completed by the end of December. WESTON noted that potential asbestos containing materials (ceiling tiles predominantly) were observed in most of the buildings on the Somerset property. CENAB stated that any building that has been used by the owner is considered a beneficial use property and is not part of the remediation. WESTON also noted that a significant amount of scrap metal, old equipment/parts and miscellaneous debris was observed in a number of buildings in which potential asbestos containing material was observed. The owner stated that he wanted all these materials replaced after the remediation. This would add to the cost of the remediation as it would be labor intensive. In addition, significant amounts of transite panel fragments were observed under concrete and scrap metal debris on the Somerset property. It was suggested that these materials be left in-place. CENAB is to perform a site walk through in the next few weeks to assess the extent of the asbestos and these issues.
- The asbestos survey was expanded to include sampling of suspected lead-based paint in the building in which asbestos remediation is planned. The results of the lead paint sampling will be provided in the asbestos survey report. If lead-based paints are found, this could impact the disposal costs for the asbestos remediation.

60% Design Comments:

- Comments from CENAB and NYSDEC on the 60% design were discussed. These discussion will be reflected in the written responses to these comments provided along with these meeting minutes.