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U.S. Army Corps of Engineers
Baltimore District

Phases I and II Interim Removal Action Component 2 — Phases 1 and 2 Former Lake Ontario Ordnance Works Lewiston and Porter Niagara County, New York

Final Design Analysis Report

100% Design

Contract Number DACA31-96-D-0006
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June 1998

Prepared for:

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

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INTERIM REMOVAL ACTION
COMPONENT 2—PHASES 1 AND 2
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER
NIAGARA COUNTY, NEW YORK

FINAL DESIGN ANALYSIS REPORT

100% FINAL DESIGN

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BALTIMORE DISTRICT
10 South Howard Street
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June 1998

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LIST OF ACRONYMS

6NYCRR	Title 6, New York Codes, Rules, and Regulations
ACM	asbestos-containing material
AFP-68	Air Force Plant 68
ALAAP	Alabama Army Ammunition Plant
ARARs	applicable or relevant and appropriate requirements
BTEX	benzene, toluene, ethylbenzene, and xylene
CENAB	U.S. Army Corps of Engineers Baltimore District
Chem-Trol	Chem-Trol Pollution Services, Inc.
CWM	Chemical Waste Management
DAR	Design Analysis Report
DERP	Defense Environmental Restoration Program
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
E&S	erosion and sedimentation
HASP	Health and Safety Plan
HRS	Hazard Ranking System
IRA	interim removal action
LOOW	Lake Ontario Ordnance Works
NESHAP	National Emission Standards for Hazardous Air Pollutants
NYSDEC	New York State Department of Environmental Conservation
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PACM	potentially asbestos-containing material
PCB	Polychlorinated biphenyl
PPE	personal protective equipment
PRAC	Preplaced Remedial Action Contract
PRDI	Preliminary Remedial Design Investigation
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
SCA	SCA Chemical Services, Inc.

LIST OF ACRONYMS
(Continued)

Somerset	Somerset Group
SOW	scope of work
SPDES	State Pollutant Discharge Elimination System
SVOC	semivolatile organic compound
TNT	trinitrotoluene
TSD	treatment, storage, and disposal
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound
WESTON	Roy F. Weston, Inc.
yd^3	cubic yards

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 augments 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 the Design Analysis Report (DAR) dated January 1998 with regard to the basis of the proposed IRAs of the subject areas.

The remedial design has been completed in the following stages: 30%, 60%, 90%, and 100% designs. This DAR is part of the 100% remedial design submittal. This DAR provides a discussion of the general design concepts and approach to the remediation of each subject area. The 100% Design includes the preparation of contract plans, performance-based contract specifications, and a cost estimate (M-CACES Gold software). The index of plans and specifications are included as Appendices A and B to this DAR.

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

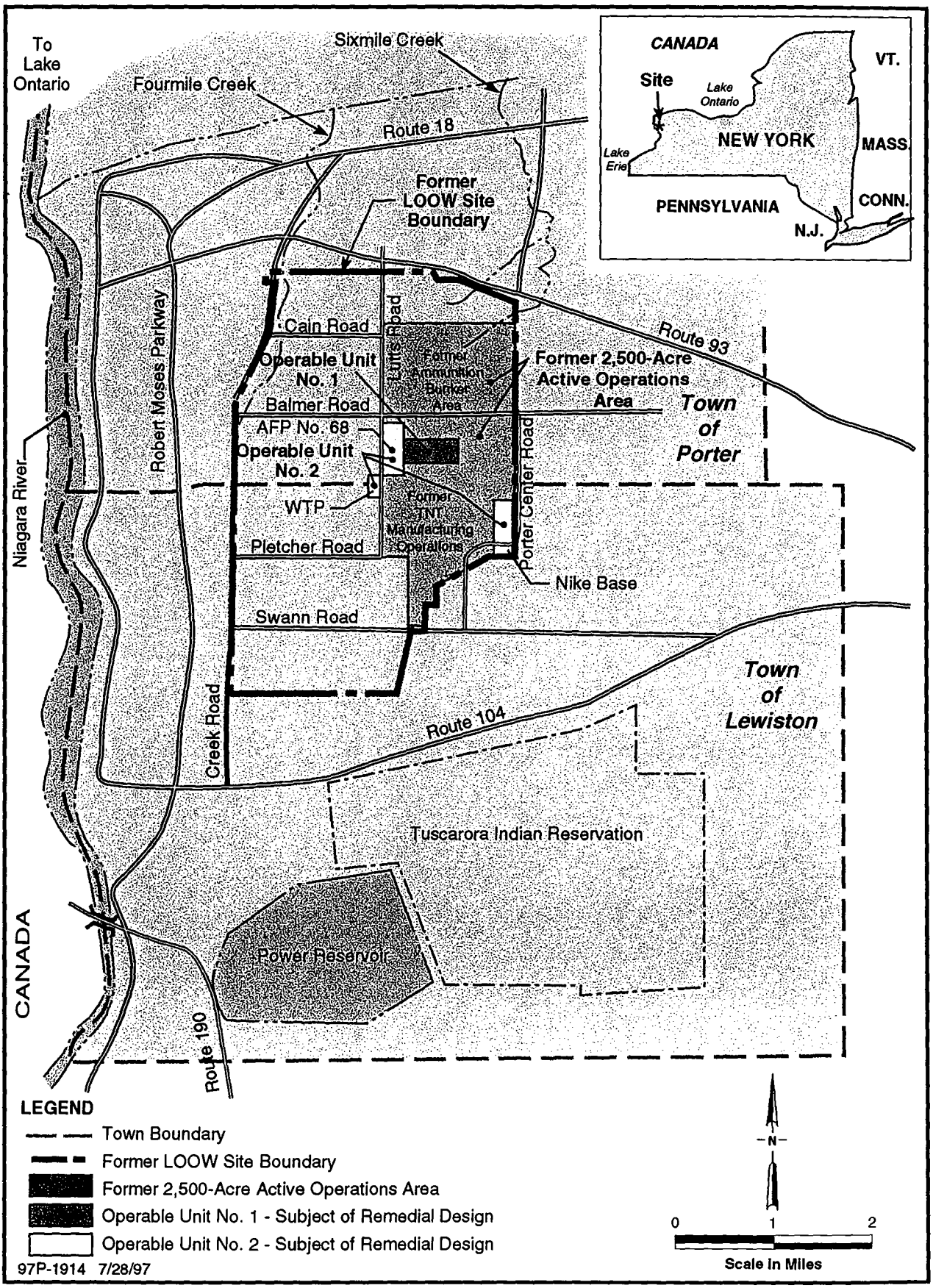


FIGURE 1-1 LOOW LOCATION MAP

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 approximate 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.

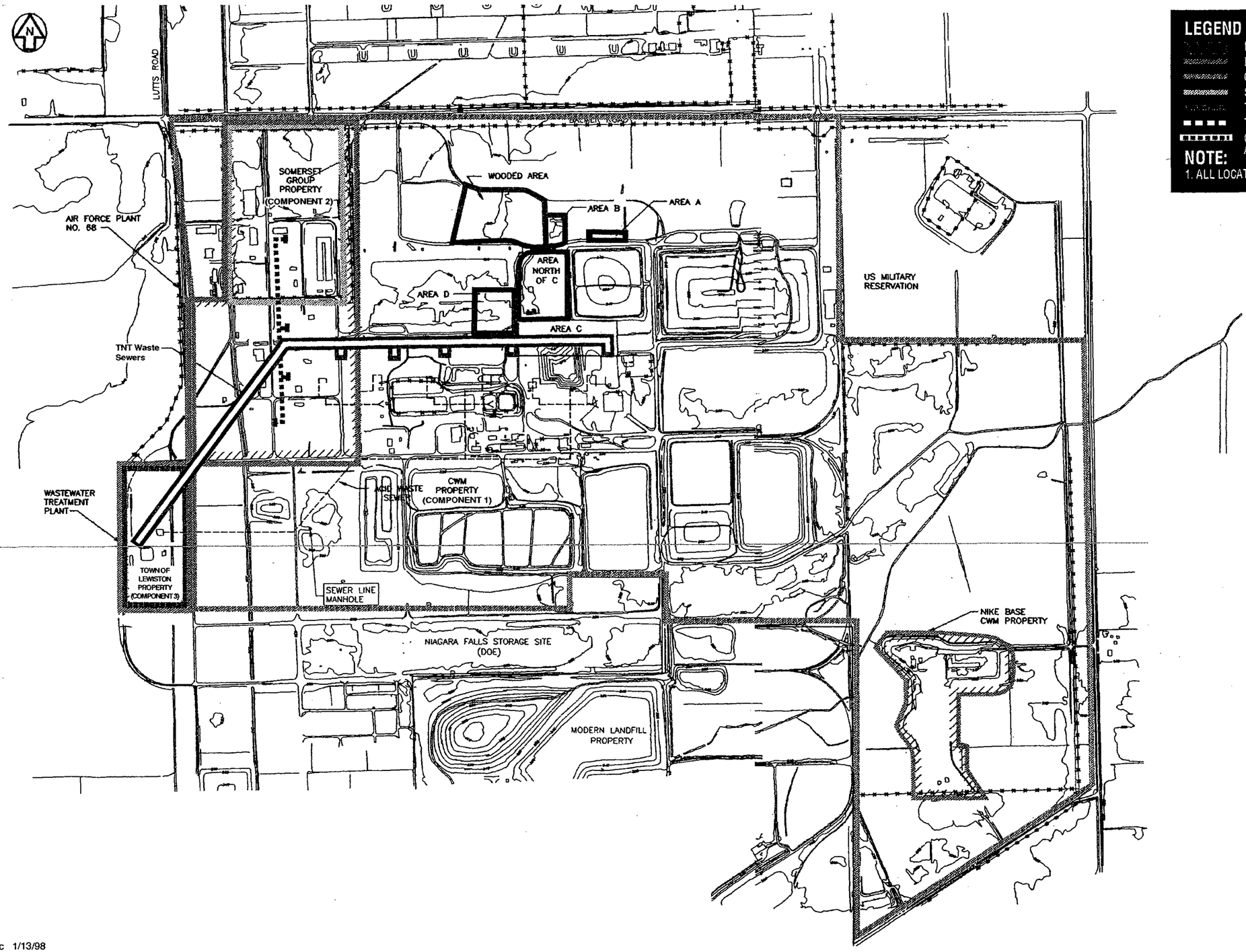
1.2.2 Areas of Concern

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).

Operable Unit No. 1

OU No. 1 consists of the following seven areas located 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.



LAKE ONTARIO ORDNANCE WORKS

ACRES

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FIGURE 1-2 LOOW STUDY AREA LOCATION MAP

- 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 to contain 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.

RIs 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 were 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 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. The 30% Design, including the DAR, was submitted on 16 April 1997 to NYSDEC. Since the submittal of the 30% Design, the 60% Design and the Supplement to the 60% Design have been prepared for designated portions, as discussed in Subsection 1.3 of this DAR. Response to comments received from NYSDEC and USACE reviewers are provided in Appendix D of this report.

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 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 addition, an Asbestos Survey Report, Somerset Group Property, was issued in January 1998. This report provided the findings of an asbestos survey conducted in the northern AFP-68 area in November 1997.

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 subject areas covered in this DAR is presented in Subsection 1.4.

1.3 OBJECTIVE AND SCOPE OF THE DESIGN ANALYSIS REPORT

A meeting was held on 16 April 1998 to discuss the new phasing of IRA due to funding constraints, division of Remedial Design according to the new phasing, and project schedule. In attendance were representatives from CENAB and WESTON. The meeting minutes, along with previous meeting minutes, which include the list of attendees, are provided as Appendix C. At the meeting it was announced that, due to further funding constraints, the IRA is now planned to be completed in two components with five separate phases (i.e., Component 1 with three phases and Component 2 with two phases).

It was proposed at the 16 April meeting that the design submittal Component 1 (Phases 1, 2, and 3) will be completed as a Supplement to the 60% Design level since the Component 1 phases will be performed under a PRAC time and materials contract. The remediation to be performed under the PRAC will include the TNT pipeline, chemical waste sewer, Area A, and Area B.

This submittal of the DAR is part of the 100% Design and includes the areas under Component 2:

- Phase 1—Asbestos removal inside of Buildings 6-01, 6-02, 6-03, and 30A (includes debris outside of 30A); asbestos removal from Building 6-01 courtyard (Area A-1) and surrounding soils (approximately 10 ft around the courtyard); asbestos panel removal, cleaning of concrete pads, and asbestos/soil removal surrounding T-1 and T-2 foundations; asbestos insulation removal at pipe bridge and removal of surrounding asbestos/soils; and removal/disposal of miscellaneous chemicals.
- Phase 2—Removal of asbestos/soils and outdoor debris at Areas A-2, B, C, D, E, and F.

Response to Comments on previous designs (e.g., 30%, 60%, etc.) are provided in Appendix D. No written comments on the 90% Design were received.

Although ACM was identified in Buildings 30, 31, and 41 on the Somerset Property, these buildings will not be included in the removal actions since these buildings have been designated beneficial use structures.

Section 2 of this DAR presents the general design concepts to the IRA of the containerized material (Somerset Property), based on the results of the PRDI and comments received on the previous design submittals. The results of the asbestos survey performed in November 1997 are summarized in Section 2. The Final Asbestos Survey Report, which includes recommendation for the removal of the loose asbestos material, is provided as Attachment 1 of Section 02080 of the specifications. Based on the recommendations presented in the Asbestos Survey Report and the comments received on these recommendations, the design approach to the IRA for asbestos removal is provided in Section 2.

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 Title 6 New York Codes, Rules, and Regulations (6NYCRR) Part 360-permitted landfill.

Based on the results of the PRDI, alternative approaches to complete removal may be more applicable. A discussion and evaluation of potential alternatives for the remediation of the TNT pipelines were presented in the 30% DAR and revised in this 60% DAR in accordance with the comments received from USACE and NYSDEC.

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 competitively bid, 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 DOCUMENT OUTLINE

This DAR has been prepared in accordance with the CENAB SOW dated 23 May 1996. The document has been organized as follows:

- Section 1—Introduction
- Section 2—General Design Concepts

2. GENERAL DESIGN CONCEPTS

2.1 REMOVAL OF ASBESTOS MATERIAL/CONTAINERIZED MATERIAL

2.1.1 Site Background

Loose ACM identified on the Somerset Property with the former AFP-68 will be removed as part of the IRA. A preliminary estimate of the amount of ACM was made during the USACE Reconnaissance Survey in 1988 conducted by Acres (EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). ACM found on the Somerset Property within the former AFP-68 includes pipe and hopper insulation, corrugated asbestos panels, and bags of asbestos mortar. At the time of the survey, the materials were identified as suspected ACM. Analyses of representative samples of these materials were performed during the Preliminary Contamination Assessment completed by Acres in 1992 (EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). The analyses indicated that most, but not all, of the materials did contain asbestos.

The ACM found throughout the former AFP-68 occur in four main varieties: corrugated panels, pipe insulation, hopper insulation, and bags of asbestos-containing mortar (see Figures 2-1 through 2-6 presented at the end of this section). The corrugated panels had functioned as exterior walls and roofs of some of the process area structures. Most of these panels were removed from the structures during the decommissioning of AFP-68 and can currently be found throughout the former plant area. On the Somerset Property, the current Owner had most of the loose panels collected and placed in stacks throughout the property. The corrugated panels are generally nonfriable, but, because of past site activities, there is an abundance of broken and crushed panels throughout the area. The areal and subsurface extent of broken and crushed ACM, predominantly around Building #6-01, had not been defined during previous investigations.

Many of the buildings and process area structures had asbestos-insulated pipes. Because many of these buildings and structures are in various states of deterioration, much of the pipe insulation has been exposed to the elements and has significantly deteriorated. As a result, pipe insulation can be found on the ground surface, primarily beneath the overhead piping, but also spread

throughout the surrounding areas. The quantity of loose deteriorated pipe insulation and intact insulation has not been estimated during previous investigations. Two asbestos-insulated hoppers exist in the salt electrolysis building in Area 6. The insulation is generally nonfriable and is somewhat contained on the hoppers.

Bags of asbestos mortar are located on the lower level of the salt electrolysis building in Area 6 and in the combustibles warehouse in Area 30A. There are an estimated twenty 94-lb bags of mortar in Area 6, some of which are partially opened (Acres, EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). Because the exterior walls of the building no longer exist, the bags of mortar are exposed to the weather, resulting in the spread of asbestos-containing dust throughout the area.

There are about ten 94-lb bags of asbestos mortar in the combustibles warehouse in Area 30A (Acres, EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). This building is in fair structural condition, and the bags of mortar are fairly well protected from the weather.

To quantify and qualify the extent of ACM on the Somerset Property for the purpose of determining an accurate estimate for the remedial design, an asbestos survey was performed in November 1997 by Acres International, Inc., under subcontract to WESTON. The survey investigated potential asbestos-containing materials (PACMs) within all readily accessible building spaces. Soil samples were also collected around buildings in which PACM was observed, to identify the presence and extent of asbestos in the soils across the site. Acres also conducted a sitewide visual survey to estimate the quantities of bulk ACMs found scattered across the site. Video and photo documentation of the property and buildings was also included as part of the field inspection.

The Asbestos Survey Report of the Somerset Property is provided in Attachment 1 of Section 02080 of the specifications. The results of this asbestos survey are summarized in this report, which includes recommendations for the IRA and estimated quantities. Figure 3-1 of the Asbestos Survey Report presents the bulk asbestos sampling location plan for the November 1997 asbestos survey. The Soil Sampling Plan is provided in Figure 3-2 of the Asbestos Survey Report. The results of this asbestos survey are summarized as follows:

- Area 3—Building 3-01: Analysis of light gray window glazing from inside structure indicated no asbestos detected.

- Area 3—Process Area and Tank Farm: Only one of numerous soil samples in this area indicated the presence of <1% chrysotile asbestos.

- Area 5—Building 5-01: No asbestos was detected in window glazing samples.

- Area 5—Process Area and Tank Farm: No ACM detected in soil and debris samples from this area.

- Area 6—Building 6-01: Removed intact and broken pieces of corrugated transit panels found throughout the building and on the ground surface surrounding this building. Asbestos-containing pipe insulation was found throughout this building on former steam pipes, which had predominantly fallen on the floor of the building and surrounding ground surface. Miscellaneous ACM was also sampled and confirmed from previous investigations.

- Area 6—Buildings 6-02 and 6-03: Fibrous insulation material scattered across the floor was analyzed and determined to contain asbestiform minerals. No asbestos was detected in the wipe sample of the wall near the doorway.

- Area 18N—Tank Farm: Asbestos was detected at concentrations of 2 to 3% in soil samples from this area.

- Area 21—Electrical Substation: Soil samples from this area contained <1% chrysotile.

- Building 27—Guard House: No asbestos detected in interior window glazing samples. Soil samples surrounding this building contained <1% chrysotile.

- Building 30—Noncombustibles Warehouse: Pipe insulations that had fallen on the floor continued 39 and 43% asbestiform materials. Soil samples surrounding the building contained <1% chrysotile.

- Building 30A—Combustibles Warehouse: Pipe insulation from inside the building, scattered on the floor, was determined to contain 46% asbestiform materials. Bagged asbestos mortar was also found in this building. It has also been spread out across the floor. Transite duct work also encountered. Wipe samples of interior walls indicated both detection and nondetection of asbestos.

- Building 31—Laboratory: Soil samples around this building contained asbestos. Pipe insulation that has fallen on the floor was found to contain ACM. This building has been and is currently used by the property owner.

- Building 41—Maintenance Garage: Asbestos was detected in floor tile and water tank insulation. This building has been and is currently used by the property owner.

- Temporary Buildings T-1, T-2, and T-3: Transite panels are stacked near T-1 and T-2. Soil samples west of T-1 and T-2 contained <1% chrysotile. No asbestos detected inside Building T-3. Only concrete floor foundations of T-1 and T-2 exist.

- Pipe Bridge 3—Northwest of Temporary Building 03: Insulation, in poor condition and falling off the pipe, was found to contain asbestiform materials.

A summary of the results in tabular form is provided in Section 3 of the Asbestos Survey Report. Lead paint sampling and analysis was also conducted as part of the asbestos survey. The results of the Lead Paint Sampling Program are presented in Section 4 of the Asbestos Survey Report. Lead-based paint was detected in a number of buildings on the Somerset Property. Because of the low volume of lead-based paint chips that may be mixed with ACM during the IRA, it is not anticipated that the ACM waste will require disposal as a RCRA hazardous waste.

Miscellaneous Liquids and Oils

Several containers of miscellaneous liquids and oils have been identified throughout the Somerset portion of AFP-68 (Acres, EE/CA for Removal Actions in Operable Units 1 and 2, March 1995). These miscellaneous liquids and oils will be removed as part of the IRA. One 55-gallon open-top drum of oil is located in Building 6-02 in Area 6. Approximately 16 gallons of miscellaneous laboratory chemicals are located in the combustibles warehouse in Area 30A. Some labels still present on some of the bottles of chemicals identified hydrochloric acid, pentane, and sodium hydroxide. Finally, there are two 5-gallon metal containers and sixteen 1-gallon glass containers of chromic acid on the foundation of former Temporary Building No. 1. These latter containers are open to the weather, and the metal containers are showing signs of corrosion.

2.1.2 Preferred Removal Action

Asbestos

The removal action recommended in the EE/CA is the removal of loose ACM by a licensed asbestos Contractor and disposal at a 6NYCRR Part 360-permitted landfill to accept ACM. Requirements for asbestos removal and disposal are provided in the contract specifications (Section 02080: Asbestos Abatement).

Loose ACM identified within buildings will be removed following applicable New York Department of Labor Industrial Code 56 and Occupational Safety and Health (OSHA) regulations (29 CFR 1910.1001, Occupational Safety and Health Standards, Asbestos, including Appendices A through I and 29 CFR 1926.1101, Safety and Health Regulations for Construction, Asbestos, including Appendices A through K, for ACM). The Contractor will be required to be licensed to perform asbestos work in the State of New York and comply with all licensing regulations. Other applicable regulations include:

- 34 CFR, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos.
- 40 CFR Part 61, Subpart M: U.S. Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos.
- 29 CFR 1910.134: OSHA General Industry Respirator Requirements.
- New York Department of Labor Industrial Code Rule 56.

The Contractor will be responsible for personal air sampling of personnel and an independent Contractor will be responsible for conducting clearance sampling of the individual areas in compliance with all OSHA regulations.

Removal and containerization of ACM outside existing buildings will require controlled wetting down of the ACM to control potential admissions. A personnel air monitoring program in accordance with the applicable regulation will be required to ensure dust control measures are effective.

Recommendations for the remediation of the loose asbestos, based on the November 1997 asbestos survey, are presented in Section 5 of the Asbestos Survey Report (Acres, 1998), provided as Attachment 1 of Section 02080 of the specifications. These recommendations were reviewed by USACE and NYSDEC as part of the supplement to the 60% Design Submittal. The scope of the IRA for the asbestos removal for Component 2, Phases 1 and 2, as presented in the design drawings and specifications, is as follows:

Phase 1: Removal of Loose ACM within Buildings/Focused Soil Removal

Building 6-01 and Area A1

- Prior to start of asbestos abatement work, Contractor shall decontaminate and remove all items and equipment stored within Building 6-01 that are non-asbestos. Contractor shall initially clean and decontaminate a laydown area within Building 6-01 where existing building items and equipment can be wet wiped and/or washed down. The laydown area shall be constructed at the first floor area of Building 6-01 and shall be capable of holding runoff water from the equipment wipe down. The laydown area shall have, at a minimum, three layers of 6-mil polyethylene within a berm. All contaminated wash water shall be filtered through a HEPA filter prior to discharge to the sewer or to grade.

- Non-asbestos items and equipment shall include, but not be limited to:

  - Vitreous piping.
  - Electrical insulators within drums.
  - Metal shelving checker plate.
  - Electrical insulators on floor, which must be placed into drums.
  - Window frames.
  - Steel and metal pallets at first floor.
  - Machinery.
  - Loose piping.
  - Bags of mortar (to be placed in drums).
  - Building materials.

- Non-asbestos items to be moved from Building 6-01 shall be brought to the laydown area within Building 6-01, wet wiped on all exterior and interior surfaces (as feasible), labeled or tagged (equipment and machinery to be returned only), and then transported to a temporary storage area. The storage area shall be located at least 100 ft from any soil removal areas and shall be free of asbestos. Removed items shall be tarped.

- After non-asbestos items and equipment have been removed, Contractor shall commence work at the second floor level and work its way to the first floor.

- ACM to be removed at Building 6-01 shall include, but not be limited to:

  - All TSI on piping on both floor areas (500 linear ft).

  - All TSI on floors along with miscellaneous debris, which includes all loose friable and non-friable asbestos materials, contaminated soils, leaves, and gravel within building and courtyard (<1.0 cu yd).

  - All transite panels located in stacks inside and outside the building (870 panels).

- Bagged and loose mortar situated in piles (32- to 50-lb bags).
- All transite panel pieces inside and outside the building including those partially covering scrap steel or beneath scrap steel (18.5 cu yd).
- Roof flashing at second floor level (130 linear ft).
- Transite panel caulking which is loose.
- Bituminous expansion joint at second floor level (60 linear ft).
- TSI covering hoppers at second floor level (10 cu yd).
- Removal of asbestos contaminated soils to a depth of 6 inches within Area A (810 cu yd).

- The courtyard area between the east and west wings of Building 6-01 and the areas within 10 ft of the building concrete pad (designated as A-1 on the Drawings) shall be cleared and grubbed prior to the removal of up to 6 inches of soil. Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil. The area shall then be seeded and mulched as per Section 02935: Turf.

- After all ACM has been removed from the building (as noted above) and soil has been excavated, Contractor shall HEPA vacuum, wet wipe, and/or wash down surfaces within the building to a height of 10 ft at each floor to remove residual asbestos fibers. Contractor shall collect all wash water and HEPA filter prior to discharge to the sewer or to grade.

- Contractor shall perform clearance testing by collecting swipe tests of building interior to determine if asbestos fibers are present. Swipe tests shall be performed using approved swabs or adhesive strips and analyzed for asbestos using polarized light microscopy (PLM) in accordance with "Interim Method for Determination of Asbestos in Bulk Insulation Samples" EPA-66-M4-82-020 dated December 1982 and New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) Method 198.1. All areas found to be contaminated shall be wiped and/or washed and swipe testing repeated after surfaces have dried for at least 12 hours.

- Contractor shall retrieve all equipment and machinery from the temporary storage area and return them to Building 6-01 only after all soil has been removed from Area A-1.

- All miscellaneous scrap metal and other non-asbestos items following decontamination shall be disposed of as non-hazardous waste or recycled as scrap metal, wherever possible.

- Contractor shall be aware of numerous openings at the second floor level and shall be fully responsible to protect its workers and others from falling through the openings. Contractor shall be fully responsible to also protect its workers and others at sidewall areas where siding has been removed from both overhead dangers (i.e., falling objects) and falls.

Buildings 6-02 and 6-03

- Contractor shall remove piles of transite panels stacked between Buildings 6-02 and 6-03 (138 panels).

- Remove all fallen piping TSI within Buildings 6-02 and 6-03 (2 cu yd).

- Obtain clearance samples for Buildings 6-02 and 6-03.

Building 30-A

- Prior to start of asbestos abatement work, Contractor shall temporarily remove all items and equipment stored within Building 30-A that are non-asbestos. Contractor shall initially clean and decontaminate a laydown area within Building 30-A where Contractor abatement equipment and existing building items and equipment can be wet wiped and/or washed down. The laydown areas shall be constructed at the end of Building 30-A and shall be capable of holding runoff water from the equipment wipe down. The layout area shall have, at a minimum, three layers of 6-mil polyethylene within a berm.

- Non-asbestos items and equipment to be removed shall include, but not be limited to:

  - Items in boxes.
  - Power equipment/tools.
  - Benches/furniture/wood panels.
  - Conveyors.
  - Stacked ceiling tile (to be HEPA vacuumed).
  - All other equipment and items stored on the floor or shelves.

- Non-asbestos items to be removed from Building 30-A shall be brought to the laydown area within Building 30-A, wet wiped on all exterior and interior surfaces (as feasible), labeled and/or tagged, and then transported to a temporary storage area. The storage area shall be located at least 100 ft from any soil removal areas and shall be free of asbestos. Removed items shall be stored so that they are out of the weather or covered so they are protected from damage.

- After non-asbestos items and equipment have been removed, Contractor shall commence work at Building 30-A.

- ACM to be removed at Building 30-A shall include, but not be limited to:
  - All transite panels (including fallen pieces), which are stacked at grade and near Building 30-A (5 panels).
  - All TSI located within Building 30-A at grade or elevated (100 linear ft).
  - Removal of bags of asbestos-containing mortar mix (five 50-lb bags) and wood paneling with attached asbestos mastic (200 sq ft).
  - Removal of steam line pipe insulation outside building (200 linear ft).
  - Removal of transite duct work outside building and in piles (100 linear ft).
- After Contractor has removed all ACM from Building 30-A, Contractor shall HEPA vacuum, wet wipe, and/or wash down all interior building surfaces to remove residual asbestos fibers. Contractor shall collect all wash water and HEPA filter prior to discharge to the sewer or to grade.
- Contractor shall perform clearance tests of building interior to determine if asbestos fibers are present. All areas found to be contaminated shall be washed and swipe testing repeated after surfaces have dried for at least 12 hours.
- Contractor shall retrieve all tagged equipment and machinery from the storage area and return them to Building 30-A after clearance is achieved. All other miscellaneous non-asbestos material shall be disposed of as non-hazardous waste.

Areas T-1 and T-2

- Removal of transite panels piled in stacks adjacent to Areas T-1 and T-2 (116 sheets).
- Removal of semi-circular transite lap panels in piles at Areas T-1 and T-2 (estimated 15 pieces).
- Removal of all soils surrounding the T-1 and T-2 concrete pads to a distance of 10 ft from the pad and a depth of 6 inches (40 cu yd).

Pipe Bridge

Perform the following asbestos abatement at the pipe bridge that spans the drainage ditch along the west side of the property:

- Remove all TSI from piping attached to pipe bridge (100 linear ft).
- Remove all soil at west side of bridge where pipe daylights to a depth of 6 inches (4 cu yd).

Phase 2: Removal of Loose ACM Debris and Contaminated Soils in Areas A2, B, C, D, E, and F

Area A2

- Removal of asbestos-contaminated soils to a depth of 6 inches within Area A2.
- Backfill excavated area with clean fill and grade to establish positive drainage and seed.

Area B

- Removal of asbestos-contaminated soils to a depth of 6 inches within Area B (830 cu yd).
- Removal of transite panels located in stacks at grade level in Area B (55 panels).
- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

Area C

- Removal of asbestos-contaminated soils to a depth of 6 inches within Area C (1,815 cu yd).
- Removal of transite panels located in stacks at grade level in Area C (187 panels).
- Removal of ACM debris mixed with scrap metal and piping at grade (20 cu yd).
- Removal of TSI within tank farm area adjacent to Building 3-01 (10 cu yd).
- Removal of non-asbestos items and scrap materials for off-site disposal (20 cu yd).
- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

Area D

- Removal of asbestos-contaminated soils to a depth of 6 inches within Area D (300 cu yd).
- Removal of transite panels located in stacks at grade level in Area D (5 panels).

- Removal of ACM debris at grade (<5 cu yd).
- Removal of two boxes of asbestos floor tiles currently located on shelves at the front section of Building 27.
- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

Area E

- Removal of asbestos-contaminated soils to a depth of 6 inches within Area E (1,010 cu yd).
- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

Area F

- Removal of asbestos-contaminated soils to a depth of 6 inches within Area F (333 cu yd).
- Removal of ACM debris at grade (<5 cu yd).
- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

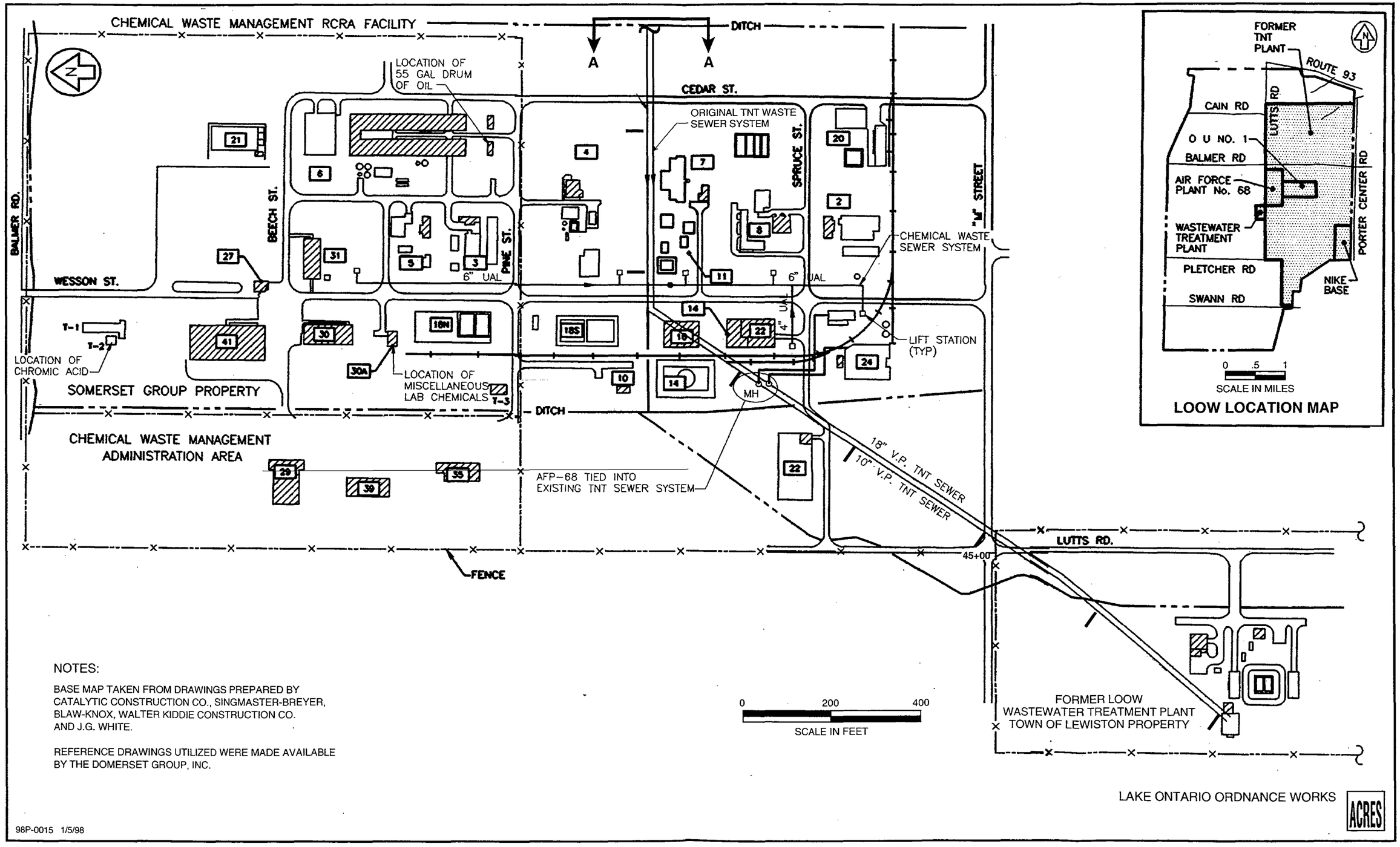
Miscellaneous Liquids and Oils

The chosen removal action is transfer of the liquids to approved containers and transport by land to a permitted off-site facility for recycling or treatment and disposal. All miscellaneous liquids and oils will be collected and containerized, as specified in Section 02144: Miscellaneous Liquids and Oils, and transported and disposed of in accordance with Section 02120: Transportation and Disposal of Hazardous and Non-Hazardous Materials.

2.2 APPLICABLE PERMITS

The Contractor will be required to obtain all necessary permits to conduct/complete removal actions. Potentially applicable permits include, but are not limited to, the following:

- Excavation/utility clearance permit, as required.
- Erosion and sedimentation control permit.
- Construction permit.
- New York Department of Labor permit for asbestos abatement.



NOTES:

BASE MAP TAKEN FROM DRAWINGS PREPARED BY CATALYTIC CONSTRUCTION CO., SINGMASTER-BREYER, BLAW-KNOX, WALTER KIDDIE CONSTRUCTION CO. AND J.G. WHITE.

REFERENCE DRAWINGS UTILIZED WERE MADE AVAILABLE BY THE DOMERSET GROUP, INC.

LAKE ONTARIO ORDNANCE WORKS

98P-0015 1/5/98

FIGURE 2-1 AFP-68 AREA

DRC026

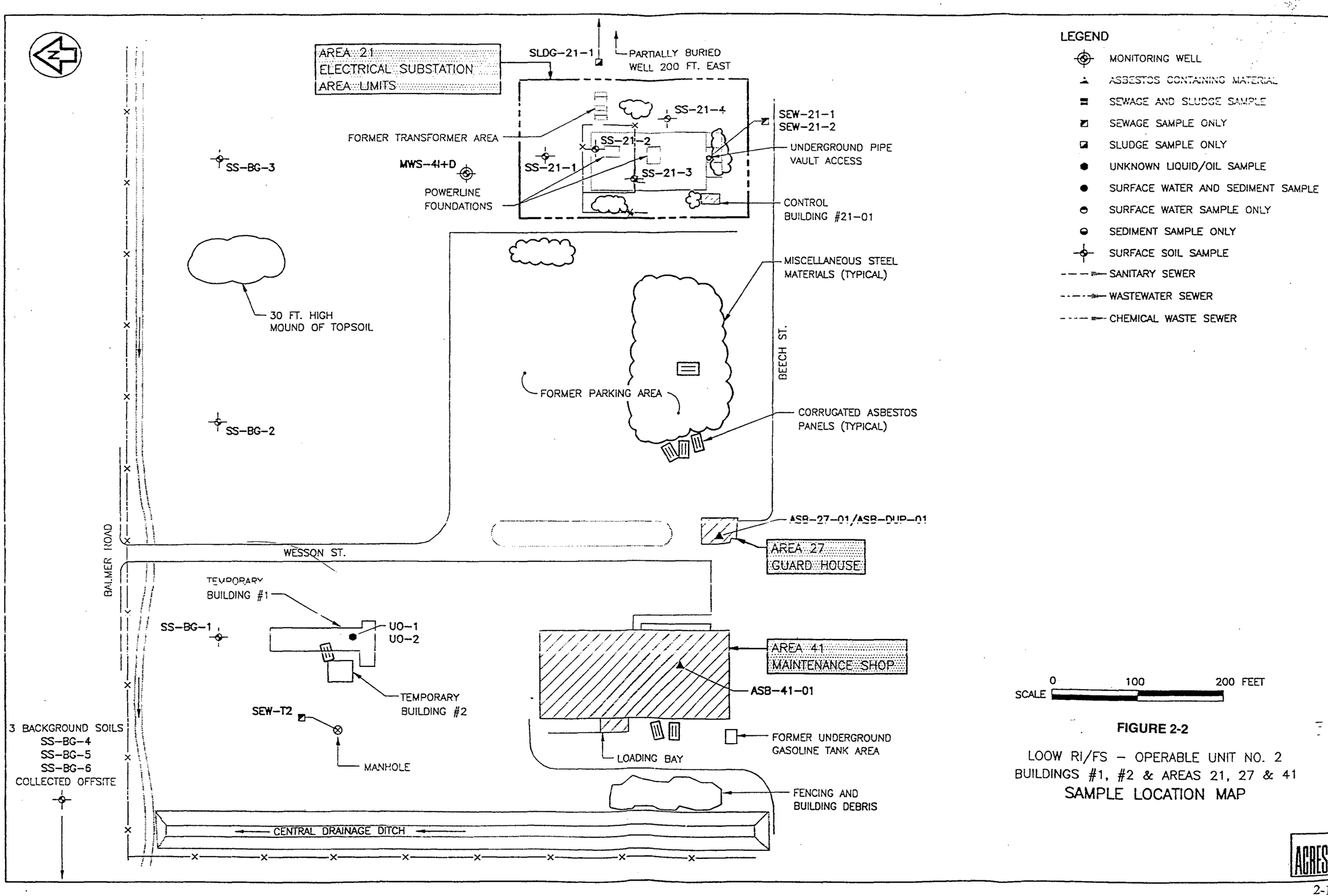
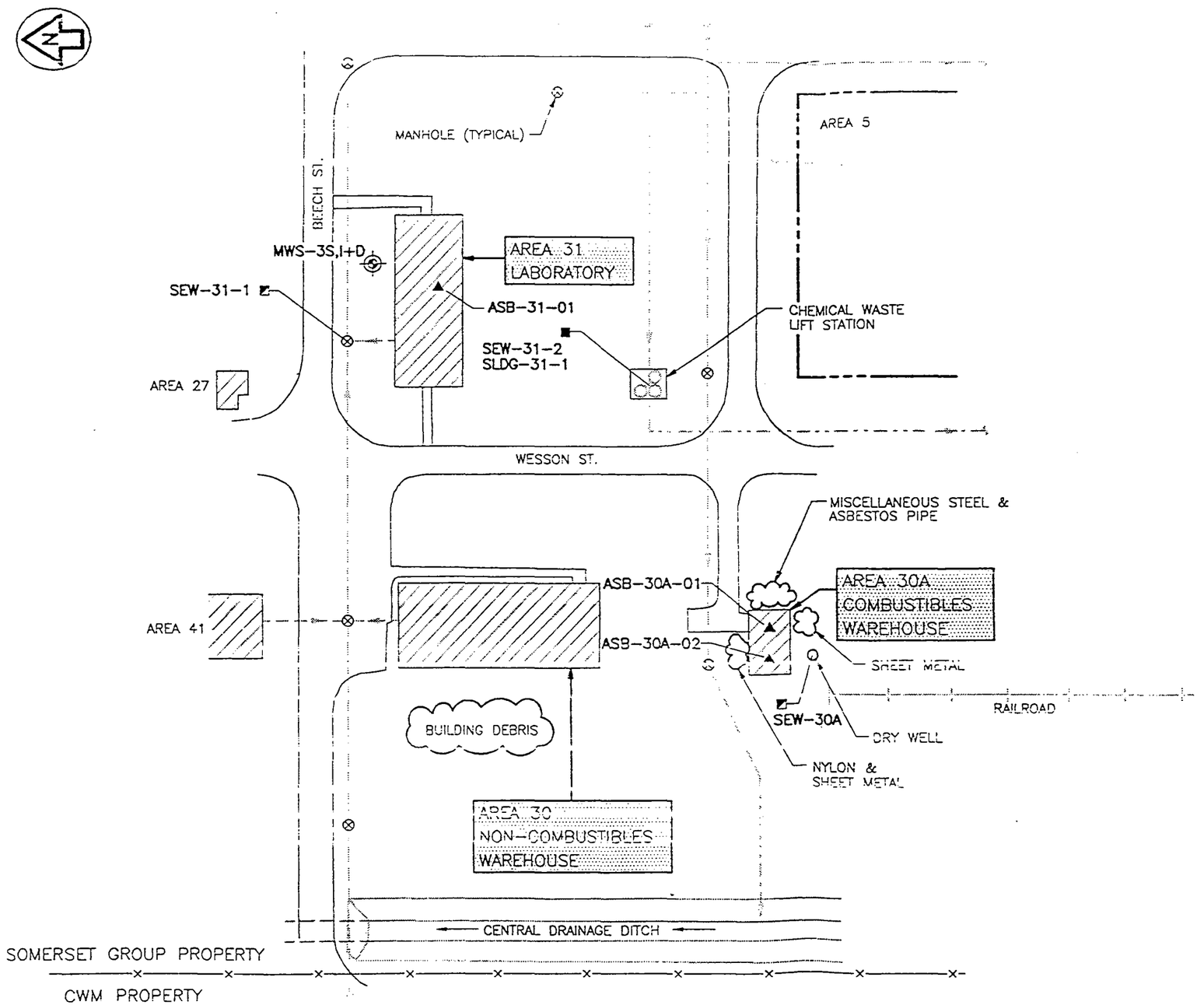


FIGURE 2-2

LOOW RI/FS – OPERABLE UNIT NO. 2
BUILDINGS #1, #2 & AREAS 21, 27 & 41
SAMPLE LOCATION MAP

ACRES



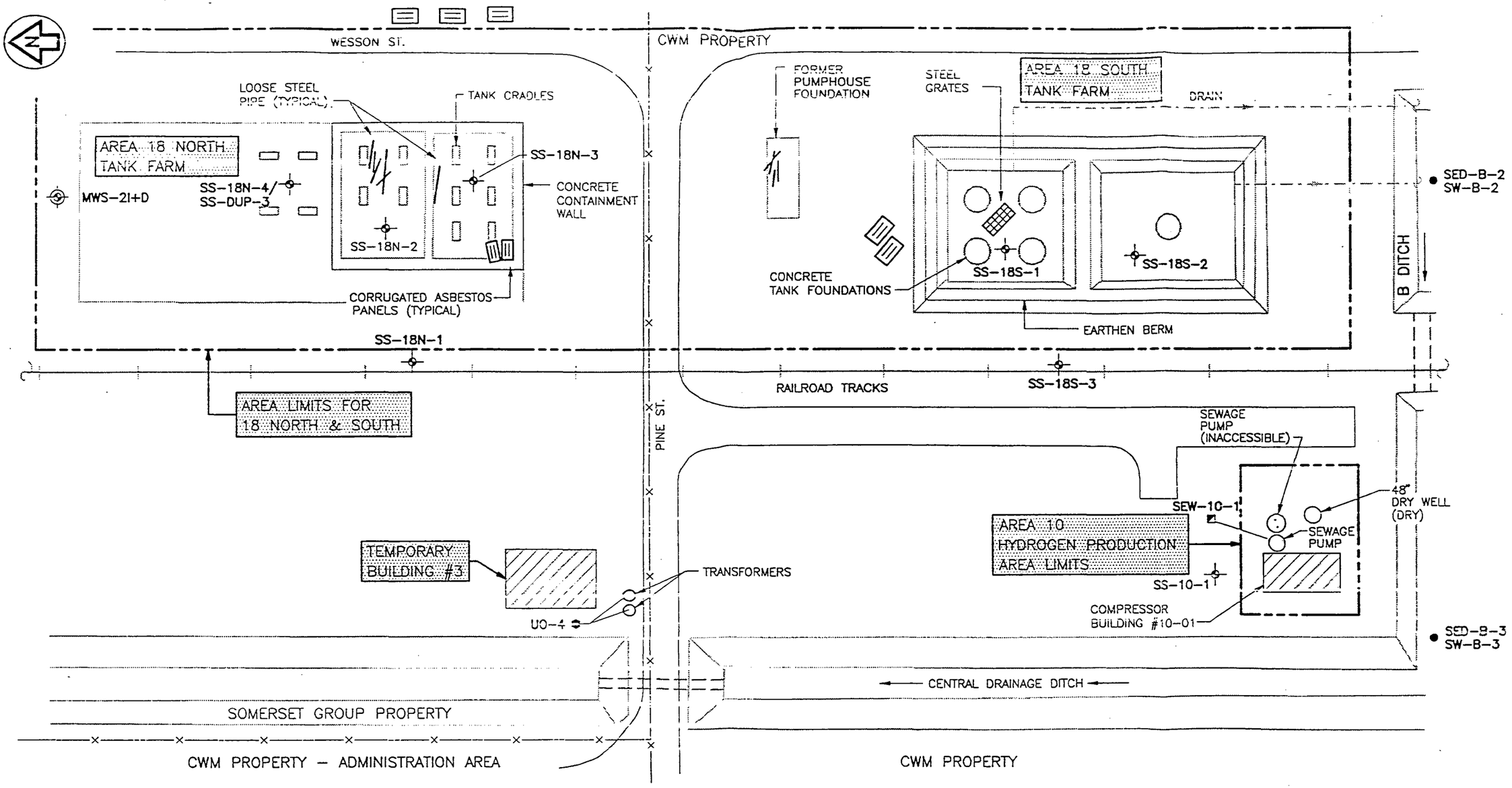
LEGEND

- MONITORING WELL CLUSTER
- ASBESTOS CONTAINING MATERIAL
- SEWAGE AND SLUDGE SAMPLE
- SEWAGE SAMPLE ONLY
- SLUDGE SAMPLE ONLY
- UNKNOWN LIQUID/OIL SAMPLE
- SURFACE WATER AND SEDIMENT SAMPLE
- SURFACE WATER SAMPLE ONLY
- SEDIMENT SAMPLE ONLY
- SURFACE SOIL SAMPLE
- SANITARY SEWER
- WASTEWATER SEWER
- CHEMICAL WASTE SEWER

FIGURE 2-3

LOOW RI/FS – OPERABLE UNIT NO. 2
AREAS 30, 30A & 31
SAMPLE LOCATION MAP

ACRES



LEGEND

- MONITORING WELL
- ASBESTOS CONTAINING MATERIAL
- SEWAGE AND SLUDGE SAMPLE
- SEWAGE SAMPLE ONLY
- SLUDGE SAMPLE ONLY
- UNKNOWN LIQUID/OIL SAMPLE
- SURFACE WATER AND SEDIMENT SAMPLE
- SURFACE WATER SAMPLE ONLY
- SEDIMENT SAMPLE ONLY
- SURFACE SOIL SAMPLE
- SANITARY SEWER
- WASTEWATER SEWER
- CHEMICAL WASTE SEWER

SCALE 0 50 100 FEET

FIGURE 2-4

LOOW RI/FS – OPERABLE UNIT NO. 2
TEMPORARY BUILDING #3,
AREAS 10 & 18 NORTH & SOUTH
SAMPLE LOCATION MAP

ACRES

DRG028

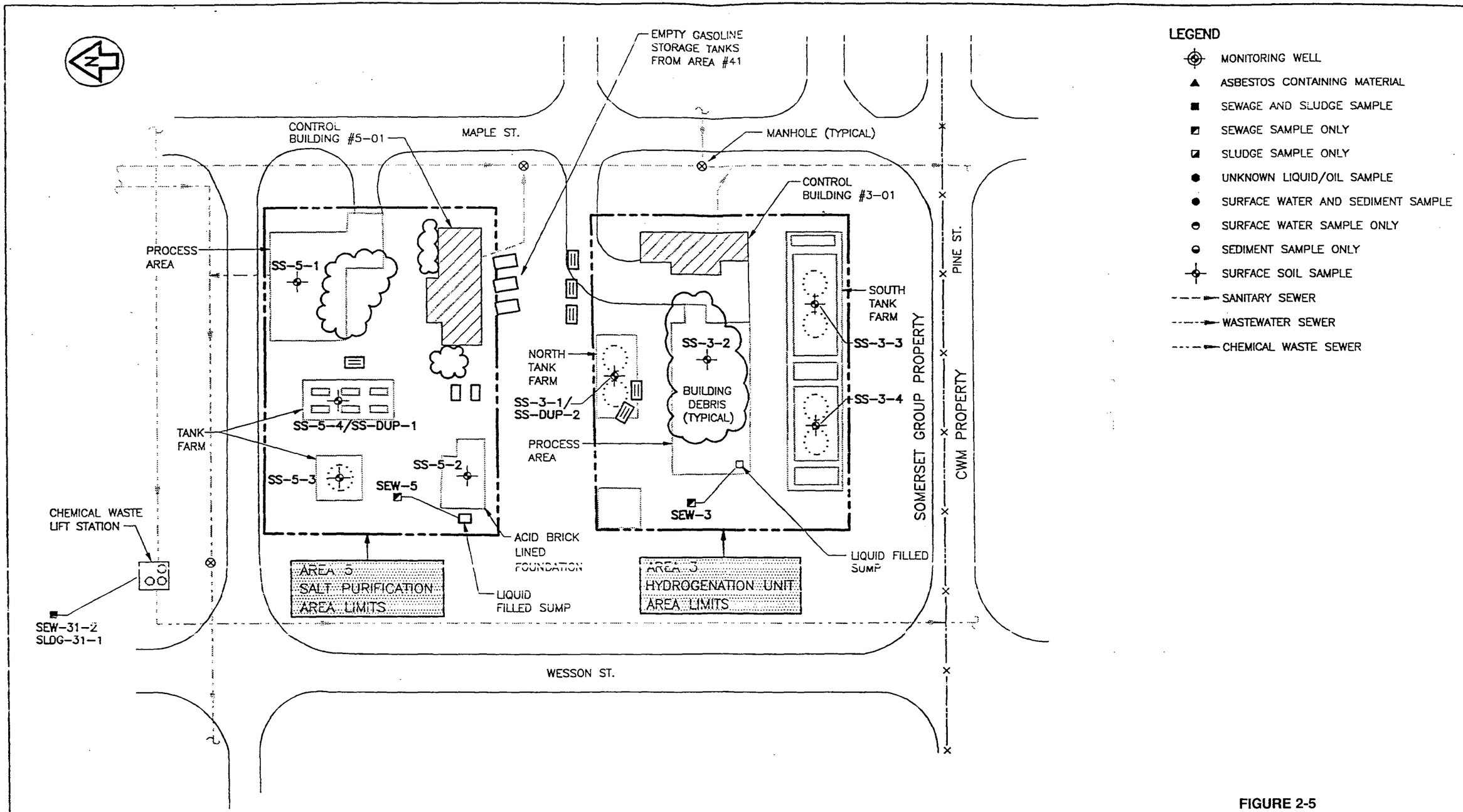
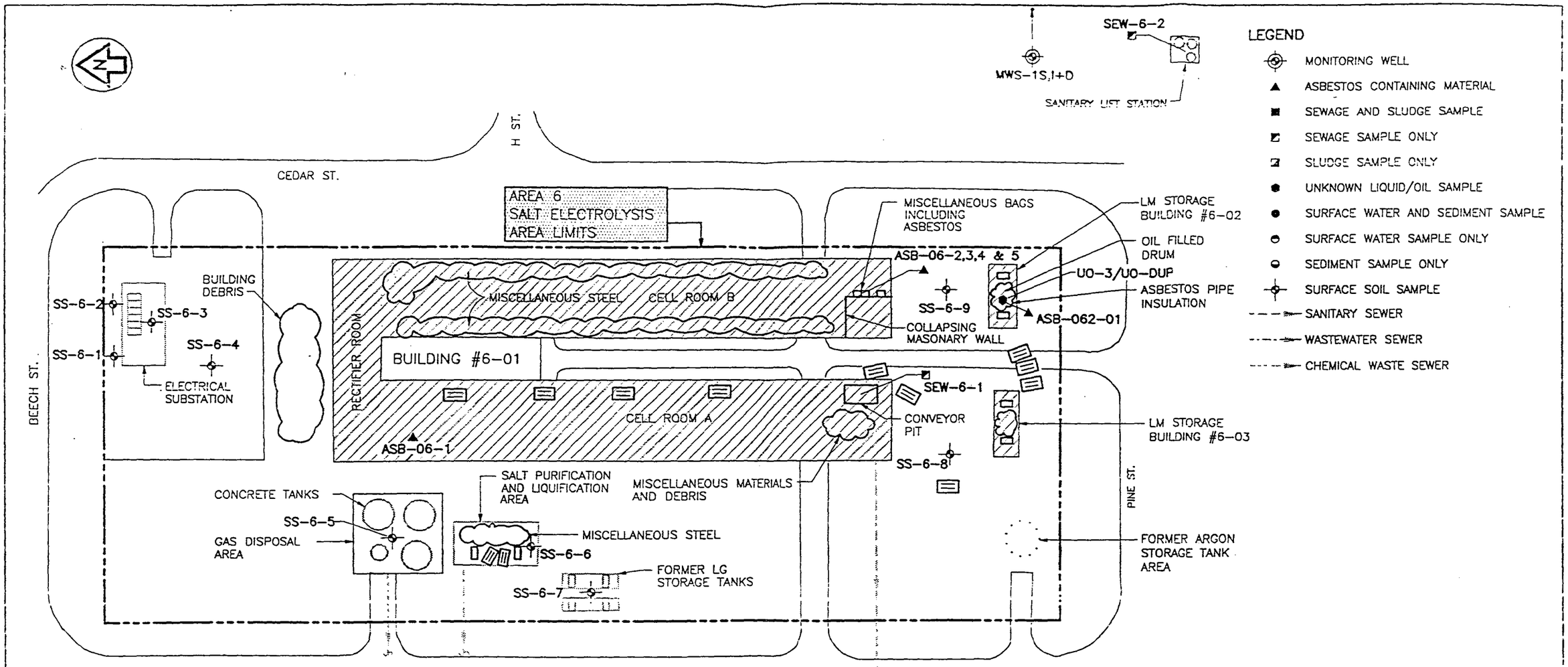


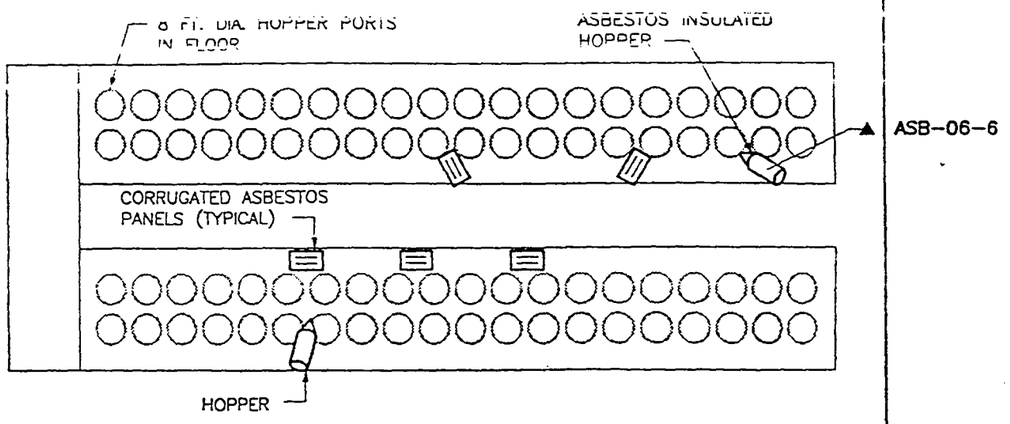
FIGURE 2-5

LOOW RI/FS – OPERABLE UNIT NO. 2
AREAS 3 & 5
SAMPLE LOCATION MAP

ACRES

DRG029





0 60 120 FEET
SCALE

FIGURE 2-6

LOOW RI/FS – OPERABLE UNIT NO. 2
AREA 6 SALT ELECTROLYSIS AREA
SAMPLE LOCATION MAP

ACRES

APPENDIX A

INDEX OF PLANS AND SPECIFICATIONS

Lake Ontario Ordnance Works (LOOW)
Component 2—Phases 1 and 2
Index of Specifications

APPENDIX C

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 striked-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 directed 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 review 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 review 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.

APPENDIX D

SUPPLEMENT TO 60% DESIGN, 60% DESIGN, AND 30% DESIGN COMMENT RESPONSES

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: This comment does not apply for Component 2, Phases 1 and 2. The document reference will be revised for Component 1.

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: This comment does not apply for Component 2, Phases 1 and 2 and will be addressed in the Component 1 document.

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: This comment does not apply for Component 2, Phases 1 and 2 and will be addressed in the Component 1 document.

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: This comment does not apply for Component 2, Phases 1 and 2 and will be addressed in the Component 1 document.

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: This comment does not apply for Component 2, Phases 1 and 2 and will be addressed in the Component 1 document.

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 section was deleted as discussed at 16 April 1998 meeting for Component 2, Phases 1 and 2.

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

Response: See response to 2) A).

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

Response: See response to 2) A).

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

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

File: 65398SMB.DBF

#	Temp ID	Last Name	Office Symbol	Discipline	Page/Sheet	Room Dtl	Post IT

1 62366-463 BUTLER CENWO-HX-G GEO Spec 02271 Para 1.5

Don't omit this paragraph heading. You are requesting submittals from the contractor.

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

2. 62366-464 BUTLER CENWO-HX-G GEO Spec 02271 Para 1.5

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

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

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.

The detail will be revised to call for NYSDOT Type 1A aggregate (100% passing ½") 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: Owing the fact that the 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.

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 0214 3.1.4

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

Response: *This comment is not applicable to Component 2, Phases 1 and 2.*

14. There is no comment 14

15. 62366-477 BUTLER CENWO-HX-G GEO Spec 0214 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.

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 subsection has been deleted since it pertains to a lump sum contract.

17. 62366-479 BUTLER CENWO-HX-G GEO Spec 02222 2.1.1

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

Response: This comment does not apply for Component 2, Phases 1 and 2 and will be addressed in the Component 1 document.

18. 62366-480 BUTLER CENWO-HX-G GEO Spec 02222 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: This comment does not apply for Component 2, Phases 1 and 2 and will be addressed in the Component 1 documents.

19. 62366-481 BUTLER CENWO-HX-G GEO Spec 02222 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 2210. 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

20. 62366-482 BUTLER CENWO-HX-G GEO Spec 02222 3.3.3

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: No testing of soils below asbestos containing soil stockpiles, if used, are required since asbestos does not migrate through soil and little infiltration would be expected since they will be covered. The specification require the use of roll offs and direct placement of excavated materials into dump trucks. The staging area shown on the drawings is only temporary if roll off or dump truck are temporarily unavailable. The subgrade of the decon pad will be tested because water will be used for decontamination.

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
1	2994995-891	TATE	CENWO-HX-G				

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: *This comment does not apply for Component 2, Phases 1 and 2.*

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
1	853027-11	HANSON	CENWO-HX-T	EST			

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. Since 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
599304-592	DOLTON	CEMRO-HX-H	SAF & HEA	pg 01110-47	tbl 0110-2		

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: *This comment does not apply to Component 2, Phases 1 and 2.*

Number **Location** **Comment**

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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 Asbestos Survey Report is referenced for surfical soil data. This report is provided as an attachment to Section 02080.

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 comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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 comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions. 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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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

Response: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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 comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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 does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

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: This comment does not apply to for Component 2, Phases 1 and 2 and will be addressed for Component 1 revisions.

LAKE ONTARIO ORDNANCE WORKS RD AT LEWISTON/PORTER, NY-60% REMEDIAL DESIGN

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

The following comments pertain to the Draft LTMP for CWM Property:

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.

Response: The paragraph noted refers to the shallow wells to be installed; the LTMP will be revised to make this clear.

2	422241-24	WARMI Sam	CENAB-EN-HI	CHM	3-1	Sec 3

Sampling and Analysis Plan.

a. The latest edition of ER 1110-1-263 is 1 April 1996. FYI: This ER is currently undergoing a revision and a new edition is due out at the end of this year.

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.

Response:

a. Comment acknowledged; the Sampling and Analysis Plan Section of the LTMP will be revised as noted in this comment.

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

The following comments pertain to the Intermediate Design Analysis Report (CWM Property):

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); 12,4-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 suvey 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, Specifcations, 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 post 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 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 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 ft^2 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 ft^2.

45 422241-73 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.

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.

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:

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

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

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, which ever 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.

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.

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 yd^3 based on a 24,500 ft^2 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 yd^3 (based on 33,000 ft^2 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 yd^3 (based on a 7,150 ft^2 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 yd^3 (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).

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:

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 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 then 500 ft and at 500 ft intervals for sections greater then 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.

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:

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.

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.

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.

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 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.

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 then 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.

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.

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.