Underground Product Piping Removal Work Plan

Former Amoco Terminal
Barge Dock Property
Superior, Wisconsin

Prepared by:

Delta Environmental Consultants, Inc.
17500 West Liberty Lane, Suite A
New Berlin, Wisconsin 53146

Delta No.: AMG0-06N

Prepared for:

Group Environmental Management
P.O. Box 642
Chanhassen, Minnesota 55317

October 16, 2003

List of Tables

List of Figures

Appendices

List of Acronyms

APR	Air Purifying Respirator
BWT	Basic Work Team
EM	Electromagnetic
FPH	Free-phase Hydrocarbon
HASMP	Health and Safety Management Plan
HASP	Health and Safety Plan
HDPE	High Density Polyethylene
HSE	Health, Safety and Environment
IDLH	Immediately Dangerous to Life and Health
NAPL	Non-Aqueous Phase Liquid
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
SHSP	Site Health and Safety Plan
VOCs	Volatile Organic Compounds
WDNR	Wisconsin Department of Natural Resources

1 Introduction

This work plan has been developed by Delta Environmental Consultants (Delta) to provide a scope of work for the removal of inactive underground product distribution pipe on the Barge Dock property north of the former Amoco Terminal in Superior, Wisconsin (Figure 1). This work plan provides BP's current understanding of pipe locations at the Barge Dock property (Figure 2) and provides the processes to be implemented for exposing, draining, excavating, removing, and disposing of the pipe. Also addressed are the procedures for managing pipe contents and concrete/debris encountered during the removal, and verification procedures for pipe removal. It is BP's belief that the processes and criteria described in this work plan will produce an appropriate degree of confidence that all pipes associated with petroleum conveyance on the Barge Dock property have been removed from the subsurface.

The objectives of the removal activities include:

- Eliminating potential contaminant sources to soil and ground water through future releases from the pipes;
- Reducing the potential for contact with pipes and contents during property reuse activities;
- Manage impacted soil around the pipes consistent with regulatory limits established by the Wisconsin Department of Natural Resources (WDNR);
- Providing additional observations and data to verify that the risk associated with the underground pipes, as identified in this work plan, has been reduced to acceptable limits or eliminated.

1.1 Work Plan Objectives

The objectives of this work plan are to:

- Outline the major components of inactive pipe removal from the Barge Dock property;
- Establish performance criteria for each of the major components of pipe removal that will establish general guidelines for the contractor performing the work, but will not specify methods to perform the work;
- Comply with applicable requirements of Wisconsin Administrative Code NR 700 that address the investigation, remediation and closure of environmental sites;
- Ensure that pipe removal is protective of worker safety, the public, and the environment by developing safe performance criteria through a Site Health and Safety Plan (SHSP);
- Establish verification procedures for pipe removal to gain an appropriate degree of confidence that all pipes have been removed from the subsurface;
- Define the information to be collected during pipe removal and procedures for reporting the information.

As noted in the work plan objectives, this work plan provides performance criteria for the pipe removal activities at the Barge Dock property. As it affects the pipe removal operations, procedures for concrete removal are included in this work plan. Detailed procedures are not included, as different contractors qualified to perform the work may have different approaches for removal activities. After contractor procurement is completed, detailed procedures will be developed by the contractor to meet the performance criteria established in this work plan.

1.2 Report Organization

This report is organized as follows:

- **Section 1: Introduction**

- **Section 2: Background** -- This section provides BP's current understanding of the inactive pipelines remaining at the Barge Dock property and summarizes previous work, which has been conducted to characterize piping at the site.

- **Section 3: Pipe Removal Performance Criteria** -- This section provides the performance criteria for each of the components of pipe removal including site preparation, exposing pipes, soil management, pipe handling, pipe disposal/recycling, and verification of pipe removal.

- **Section 4: Concrete Removal Performance Criteria** – This section provides the performance criteria for the removal of concrete that impedes or obstructs the piping removal activities, including slab-on-grade pavement, structural foundations, or other concrete structures designed as pump foundations or railroad track stops.

- **Section 5: Health, Safety and Environment (HSE)** – This section provides the minimum requirements to protect worker safety including personal protective equipment, training, monitoring, and engineering controls to be implemented during pipe and concrete removal activities. Requirements to protect personnel outside the work area and the general public in off-site areas and methods to protect the environment are also included.

- **Section 6: Documentation Requirements** – This section provides information required to be documented during the pipe removal work and included in the final report.

- **Section 7: References** – This section provides a listing of all documents referenced in this work plan.

2 Background

In preparing this work plan Delta reviewed historical piping and facility maps, piping schematics, Sanborn® maps, and aerial photography for the Barge Dock property. The results of this review, as it pertained to potential source areas, were presented in ***Source Area Investigation of Barge Dock Property – 3rd and 4th Quarters 2001*** (Delta, 2002). This document provided:

- A general understanding of pipe corridors, facility structures, and storage or tank locations,
- Descriptions of potential source areas, petroleum delivery operations, and maintenance operations, and
- Identification of surface geophysics results.

Additional information about out-of-service underground utilities, piping, tanks, structures and operations was revealed during the limited pipe evaluation, tank removal and soil excavation, as documented in Delta's report ***UST Removal and Soil Excavation – October 2002*** (Delta, 2003). This report documents the removal of a 550-gallon underground storage tank (UST) at the Barge Dock (Boat Slip) Area and a 2100-gallon UST at the Oil-Water Separator Area, as well as an assessment of a concrete separator tank that provided final processing of collected spillage from the Railroad Loading Rack Area.

Piping beneath the surface of the Barge Dock property consists of 4-inch, 6-inch, 8-inch, and 10-inch steel pipe for transporting petroleum products, ceramic pipe for sewer and water, and conduit for electrical lines. This work plan addresses the identification, exposure and removal of inactive petroleum pipes. Figures 3 through 6 provide compilations of petroleum piping maps for the Barge Dock property. These figures depict piping dimensions, layout, and compositions as determined from historical plans for four areas identified on the Barge Dock property as follows: Barge Slip Area, Oil-Water Separator Area, Railroad Loading Rack Area, and the Old AST/ Manifold Areas. For the purposes of this work plan the Old AST Area and the Manifold Area are combined into one area due to their proximity.

3 Pipe Removal Performance Criteria

This section of the work plan provides the performance criteria for pipe removal activities and the basis within which the work will be performed. It was developed using the results of the map review, field investigations, and removal activities, as described in Section 2. Pipe removal components include site preparation, exposing pipe, soil management, pipe draining, recovered material management, pipe handling, pipe disposal/recycling, and verification of pipe removal. Performance criteria for each of these components are discussed in the following sections.

3.1 Site Preparation

Site preparation activities will be conducted prior to initiation of pipe removal. Site preparation will include establishing an impacted soil storage area and relocation of active utilities, if necessary. The location and size of the soil storage area will be coordinated with the piping removal contractor to efficiently perform the work. In addition, active pipes and utilities will be moved or protected.

Soil Storage Area

The impacted soil storage area, shown in Figure 2, will contain impacted materials as defined in Section 3.3. This area will serve as a centralized storage location where soils containing free-phase hydrocarbon (FPH) can be temporarily stockpiled, tested (if required), and staged prior to being treated at the site. The Soil Storage Area will be constructed if necessary to supplement existing off-site soil storage at the licensed treatment facility, which has a storage capacity of 3,000 cubic yards.

If constructed, the impacted soil storage area will be approximately 75 feet by 150 feet, with an approximate capacity for 1,000 cubic yards. While it is difficult to predict the quantity of soil containing FPH that will be generated during site preparation, pipe exposure and pipe removal activities, this area will be large enough to provide flexibility for the contractor to handle these uncertainties.

The impacted soil storage area has been designed with a perimeter berm to serve as a surface-water diversion, preventing overland flow into and runoff from the impacted material. The area was designed to store runoff from a 25-year, 24-hour storm event (11.72 inches). Impacted soils will not be stockpiled within 15 feet of the perimeter berm, providing storm-water storage in this area. The area has been designed to drain to a low point in the southeast corner, allowing water to accumulate for collection, transport and off-site treatment.

As shown in Figure 7, the impacted soil storage area will be constructed with a minimum 20-mil thick, high-density polyethylene (HDPE) liner in the bottom of the area to protect underlying soils from stockpiled soil that contains FPH. The liner will be a synthetic polyethylene material due to its exceptional chemical resistance to hydrocarbon compounds. A thin cover of sand (3 to 6 inches) will be placed in the bottom of the soil storage area prior to installing the HDPE liner to protect the liner from roots or other objects remaining in the base soil. The liner will be protected with a 6-inch layer of sand on the liner followed by a 6-inch layer of coarse aggregate above the sand, providing a stable working surface for material handling equipment. FPH-impacted soil contained in the soil storage area will be covered with an HDPE sheet with a minimum thickness of 6 mils. Details of the storage area are shown on Figure 7. A water-collection system will be constructed within the impacted material storage area to collect water that falls or drains within the area. The water will be vacuumed from the collection system and transferred to an off-site treatment facility as needed.

Pipe Removal Sequence

A systematic approach for pipe removal will be used to document completed portions of the removal process, allowing additional characterization sampling after pipe removal, if required, and commencement of additional remediation. To accomplish this and assure that piping has been adequately removed, the site will be divided into areas. Each area corresponds with a functional area of the Barge Dock property and varies in size and configuration depending upon the density of piping in the area and location of surrounding features. In general, the removal will occur from north to south along the Barge Dock property.

Active utilities and remediation piping (such as the interim product recovery system in the Manifold Area) will be protected or relocated within each grid. Relocation or protection will be performed and sequenced for continuous operation of the remediation system(s) and active utilities. Table 2 provides additional details for these active utilities and remediation system(s).

3.2 Exposing Pipes

Process piping corridors and sewer piping, as shown on Figures 3 through 6, within each removal area will be identified in the field through the use of information in ***Source Area Investigation of Barge Dock Property – 3rd and 4th Quarters 2001*** (Delta, 2002) and historical piping maps. Historical piping maps are retained at Delta's office in New Berlin, Wisconsin and copies will be at the site during piping removal activities. Using this information, the main piping corridor, which runs along the western edge of the Barge Dock property, will serve as the starting point for excavation due to the large number of pipes expected within this corridor.

The main corridor will be excavated to expose the piping and locate feeder corridors. After a segment of piping is exposed, the pipes will be drained, as discussed in Section 3.4. Following draining and collection of flowable liquids using a vacuum recovery truck, the pipe will be cut using a cold cutting technique appropriate for cutting pipes that may be under pressure or contain flammable liquids (see Appendix A for procedure). The contractor will provide Delta with a current procedure for safely cutting pipes containing flammable petroleum products and contingency plans in the event that soil or petroleum ignites.

Excavation of the main corridor will continue throughout the area or until no more piping is apparent in the corridor. Pipes will be marked within each area and at the area boundaries so they are located during removal efforts in subsequent grids. See Section 3.8 for verification of pipe removal performance criteria.

Pipes in the feeder corridors that are identified during excavation of the main corridor will be exposed similar to the pipes in the main corridor. These pipes will also be excavated to the limits of the area or until the ends of the pipes are located. Pipes will be marked at the area boundaries so they are located for removal activities in subsequent areas. See Section 3.8 for verification of pipe removal performance.

Unless approved by Delta, excavation to remove piping will continue to a depth necessary for pipe removal but not to exceed five feet below ground surface or until ground water is encountered, whichever is less. It is the goal of this project to remove all inactive petroleum pipes. However, where further excavation below five feet or the ground-water table may cause undesirable spread of impacted materials or unacceptable worker safety conditions, removal of pipes or impacted soil below this depth will be reviewed and authorized by Delta on a case-by-case basis. For pipes located deeper than five feet below the ground surface, confined-space entry procedures developed by the contractor must be followed should entry into the excavation be required.

Criteria for consideration that would not allow excavation and removal of piping at any depth can be segregated into unacceptable environmental conditions and unacceptable safety conditions. If unacceptable safety conditions exist for workers and the piping contains liquids that can be drained without removing the pipe, thereby eliminating a source, the liquids will be drained prior to removing the pipe.

Unacceptable environmental conditions would include:

- Noting that this area has been used for heavy industry since the late 1800s, there is a chance that unknown chemicals or residues may be encountered that require special handling beyond the scope of this work plan. Examples of these instances may include waste products from manufactured-gas plants, briquette plants, coal processing, railroads, or other facilities that may have operated in this area over the last century, and

- Buried drums, which may still contain toxic or hazardous substances which if released into the environment could cause harm to the environment.

Unacceptable safety conditions would include:

- Workers need to enter the excavation to remove the pipe and proper shoring or sloping of the excavation can not be achieved in accordance with requirements established by the Occupational Safety and Health Administration (OSHA), and

- Excavation into impacted soil causes air emissions at or above the Permissible Exposure Limit (PEL) for unprotected personnel or atmospheres at or above the Immediately Dangerous to Life and Health (IDHL) Limit established by the National Institute for Occupational Safety and Health (NIOSH) for

personnel in Level B Personal Protective Equipment (PPE). Pipe excavation **will not** proceed where air emissions would require Level B PPE.

3.3 Soil Management

Based on information from ***Source Area Investigation of Barge Dock Property – 3rd and 4th Quarters 2001*** (Delta, 2002) and ***UST Removal and Soil Excavation – October 2002*** (Delta, 2003), impacted soil may be encountered during excavation and pipe removal. Three categories of soil will need to be managed:

- Soil where a calibrated photoionization (PID) registers less than 200 instrument units (IUs) will be considered unimpacted;
- Soil where a calibrated PID registers greater than 200 IUs will be considered impacted with residual hydrocarbon, and
- Soil containing process residuals or saturated with free-phase hydrocarbon (FPH).

Unimpacted Soil

A substantial volume of soil is expected to register less than 200 IUs on a calibrated PID. This soil will be returned directly to the excavation following pipe removal with no processing.

Soil Containing Residual Hydrocarbon

Soil considered impacted with residual hydrocarbon within the upper five feet will be excavated and stockpiled near the excavation for ex-situ processing prior to returning it to the excavation.

As an additional interim action (as defined in NR 708), for source removal and to limit direct contact, soil impacted with residual petroleum will be treated within the pipe excavation trench by placing soil venting lines into each excavation. Each soil venting line will be constructed of slotted, two-inch polyvinyl chloride (PVC) pipe terminated at each end with a passive wind turban. All petroleum-impacted soil and process residuals that **do not** contain FPH will be temporarily stockpiled next to excavation, mixed with wood chips (in a 3:1 to 2:1 ratio of soil to wood chips) and returned to the excavation as cover for the passive soil venting system. Mixing the soil with wood chips provides additional porosity and air pathways to promote volatilization and biodegradation of the residual petroleum. In areas where soil excavation has proceeded beyond the extent of the original pipe trench, the passive soil venting pipes will be placed into the excavation on ten-foot centers, though excavation further than 20 feet beyond the pipe will only occur after consultation with the Basic Work Team (BWT), which includes representatives from

Delta and BP. Cross-section schematics of a typical passive soil venting system are shown in Figure 9.

Soil Containing Process Residuals or Saturated with Free-Phase Hydrocarbon

Soil encountered during pipe removal that contains process residuals (non-soil solids) or soil saturated with free-phase hydrocarbon (FPH) will require excavation and ex-situ processing. Ex-situ processing for these categories of soil is described later in this section. Process residuals will be identified by visual classification as non-soil solid material, such as coal granules, vermiculite, bricks and concrete.

FPH-saturated soil will be identified as soil containing non-aqueous phase liquid (NAPL) which freely drains from the soil matrix. NAPL saturation will be confirmed using the Paint Filter Test (Method 9095, as described in Appendix A).

Soil saturated with FPH will be removed from the pipeline area (trench) to reduce the potential for future exposure and eliminate potential sources. As described in Section 3.1, soil saturated with FPH will be transported directly to the off-site thermal treatment facility, or stored and covered in the Soil Storage Area prior to treatment. As an interim action to perform a source removal, as defined in Wisconsin Administrative Code NR 708, the FPH-saturated soil will be transported off-site for thermal treatment, thermally treated at the site using a portable "soil flaring" unit provided by the contractor, or disposed of at a licensed recycling and disposal facility (RDF), depending on the total volume of FPH-saturated soil excavated. The purpose of the thermal soil treatment, whether on-site or off-site, is to destroy FPH in the soil. The thermal soil unit must be capable of achieving and holding a treatment temperature of 1200 °F. Soil handling is summarized in BP's Excavation Management Plan (Appendix B) for this project. Soil treated through the thermal soil unit will be used for final grading.

It should be noted that the material management strategy and confirmation sampling requirements will be further developed in the Excavation Management Plan for the Barge Dock property. As required in NR 708.11 (4) (c), the WDNR will be notified in advance of the proposed pipe removal and limited interim actions to address soil impacts. Compliance with environmental standards developed for industrial sites (as cited in Wisconsin Administrative Code NR 746) will be demonstrated through collection and analysis of soil samples at a future date. Specific requirements of the Excavation Management Plan will be incorporated into this Work Plan in Appendix B.

3.4 Pipe Draining

Prior to draining pipes containing liquids, an evaluation of historical maps was performed to identify potential contents of pipes, as tabulated in Table 1. Evaluating the pipe contents prior to removal will allow, to the extent possible, identification of health and safety issues, including use of the correct PPE and distinguishing between incompatible liquids. For safety, it will be assumed that all pipes contain hydrocarbon products unless

there is specific information to the contrary (such as, the pipe is observed to be dry or its contents are listed on a historical map).

Spill Prevention Units

Following excavation of a corridor and exposing the pipes, the topographically lowest accessible point on a pipe run will be located and the area below the pipes will be excavated to install a spill-prevention unit. A spill-prevention unit will consist of a containment device (such as, a trough) and a vacuum truck. The capacity of the spill prevention unit plus the vacuum truck will be checked prior to draining a pipe to assure that this capacity exceeds the maximum volume of liquids being drained from the pipe. For estimating purposes, note that each foot within the pipe diameters listed below contain the following volume of liquid when the pipe is completely full:

- 2-inch pipe: 0.16 gallons/lineal foot
- 4-inch pipe: 0.65 gallons/lineal foot
- 6-inch pipe: 1.47 gallons/lineal foot
- 8-inch pipe: 2.61 gallons/lineal foot
- 10-inch pipe: 4.08 gallons/lineal foot
- 12-inch pipe: 5.87 gallons/lineal foot

Pipe Draining

The liquids in the pipe will be drained in as follows: Using the cold cutting procedures cited earlier, the pipe will be drilled followed by cutting a larger hole in the pipe to allow the liquids to be vacuumed directly from the pipe. If the liquids in the pipe are released into the excavation, the liquids will be removed by vacuum truck for proper off-site disposal and any impacted soil will be excavated and transported to the soil storage area for thermal treatment as described in Section 3.3. The pipe may also be raised to allow contents to be more thoroughly drained. Care will be taken to prevent spills from occurring while cutting or draining the pipe.

Spill Management

Measures will be taken to manage spills of liquids during pipe removal activities. During all work activities, a spill-response kit will be available consisting of oil-absorbent pads, oil-resistant gloves, oil-absorbent booms, large garbage bags and/or drums for containment and shovels. If a leak is encountered in a pipe, a vacuum truck will be immediately brought to the spill location. The spilled liquid will be recovered by the vacuum truck. Soil impacted by the spilled liquids will be excavated and managed in accordance with soil management criteria for FPH-saturated soil as discussed in Section 3.3.

3.5 Recovered Material Management

Recovered material from the pipes will be segregated, to the extent possible, using process knowledge, historical maps, and visual observation of the liquids, into three categories:

- Hydrocarbons (refined products or intermediates)
- Water (including water impacted by hydrocarbons)
- Other chemicals and unknowns

This segregation will reduce the amount of treatment and management involved with the recovered material. Refined products or intermediates will be transported to the on-site oil-storage tank(s) provided by the contractor, or transported to an off-site storage facility on a daily basis. At the end of the project, or as required by storage limitations, the collected petroleum products will be transported off-site for recycling or disposal. The removal contractor will visually segregate hydrocarbons from other liquids during pipe evacuation and transport the segregated liquids to the on-site oil-storage tanks(s). Sludge and product containing significant water will transferred to designated containers or tanks at the site for processing and separation of the water. Product or intermediates will be stored in a separate tank, or tanks, for further processing, recycling or disposal. All transfers of liquids will be coordinated with Delta. The removal contractor will maintain records of the quantity of liquid hydrocarbons transferred to the on-site oil-storage tank(s).

Water mixed with hydrocarbons will be separated and stored in the designated tank supplied by the contractor. Hydrocarbon-impacted water will be transported off-site for proper disposal. All transfers of hydrocarbon-impacted water will coordinated through Delta. The removal contractor will maintain records of the quantity of hydrocarbon-impacted water that transferred to the storage tank(s) and eventually removed to an off-site treatment facility.

Other chemicals or unknowns shall be defined as material other than hydrocarbons or hydrocarbon/water mixtures. It is unknown if any non-hydrocarbon chemicals were or are present at the site, but if so, they potentially pose corrosive, reactive, or health risks. A hazcat chemical identification kit will be used to identify the unknown recovered material. The hazcat chemical identification kit provides the reagents and materials necessary to perform chemical identification and categorization field tests. The test kit can identify or categorize over 1000 hazardous and non-hazardous substances, including flammables, corrosives, caustics, poisons, metals, paints, plastics, pesticides, oxidizers, explosives, water-reactives and asbestos. Most single component unknowns can be identified in less than ten minutes. Unknown material will be identified to evaluate disposal options for these liquids in accordance with applicable regulations. By identifying the unknown materials, the removal contractor can categorize them such that incompatible materials are not mixed. The removal contractor will maintain an approved screening program for chemicals and unknowns and shall segregate incompatible chemicals. Reports of these unknown materials will be made to Delta to determine the most expedient disposition.

3.6 Pipe Handling

Once the pipes have been drained, they will be removed from the excavation. The pipes will be cold cut into manageable lengths (20 to 40 feet) to allow for appropriate loading and transport to the recycling/disposal facility on a flat-bed truck. Each section will be loaded directly from the trench to the flat-bed truck.

3.7 Pipe Disposal/Recycling

Depending on the recycle value, the piping will be divided into categories based on the following material compositions:

- Cast iron
- Hard steel
- Stainless steel
- Concrete/Clay pipes

If appropriate, metallic pipes will be shipped off-site and processed as recyclable materials. Reuse of the pipes will not be approved or permitted. Concrete and clay pipes do not have recycle value and will remain at the Barge Dock property following completion of this project. Plugged lines that would require an excessive amount of cleaning will be disposed of at Waste Management's Timberline Trail RDF in accordance with the Material Management Plan.

3.8 Verification of Pipe Removal

Pipe removal will be verified as a final step in the removal process for both metallic and non-metallic pipes. Verification will include:

- Review of historical piping maps for the Barge Dock property
- Electromagnetic (EM) survey

As the piping is being removed from each area, the historical piping maps will be reviewed and the mapped lines will be investigated. If pipes identified as "underground" on the historical piping maps have not been located during the removal process, a test trench will be excavated across the area of the suspected pipe. The location of the mapped pipe will be scaled from the drawings and marked in the field using measurements from other pipes or remaining structures/foundations. A test trench will be excavated 15 feet perpendicular, on either side of the suspected pipe to a depth of 6 feet for petroleum or process pipe. A test trench will be installed for every 100 feet of pipe not located from the historical maps or drawings.

An electromagnetic (EM) survey will be conducted throughout each removal area across the Barge Dock property after all identified piping has been removed. The EM

technology proposed for the site should be capable to detecting metallic objects to a maximum depth of 10 feet, and a nominal depth of 8 feet depending on soil conditions. The EM survey will be performed following rough grading after all the pipes are believed to have been removed from an area. The EM data will be collected along a traverse with a maximum spacing of 6 feet between each traverse. The ends of each traverse will be surveyed to locate it within the coordinate system used for the site. Coordinate accuracy using a hand-held Geographic Positioning System (GPS) instrument is sufficient for this project. Trends or persistent anomalies in the EM data will be investigated by excavating test pits to a depth of 8 feet in the suspected area(s). If pipes are found they will be marked and located by GPS coordinates. The pipes may be removed following the performance criteria listed in this work plan after consultation with the BWT.

The EM survey can also detect anomalies from steel-reinforced junction boxes typically associated with non-metallic piping systems. These junction boxes, if found, will be uncovered, marked and located using GPS coordinates.

4 Concrete and Structure Removal Performance Criteria

As part of the remediation and overall reuse of the Barge Dock property, concrete foundations, revetments, pump stands, tank bases, and railroad tracks, may be removed if they impede or obstruct removal of the petroleum pipelines. This work plan was not specifically developed to guide the removal of concrete unless it obstructs the removal of petroleum pipes. Any concrete encountered and removed will remain at the Barge Dock property. Any ferrous metal (such as railroad tracks) incidentally removed during the pipe excavation process will be recycled or disposed of with the recovered steel pipe.

Concrete removal will benefit reuse by reducing interference with future development and eliminating potential sources from associated piping within the concrete (typically slab-on-grade concrete). Previous work at the Barge Dock property has identified several types of concrete structures, including structural foundations, slab-on-grade floors, curbing, pump stanchions, and railroad track stops.

Slab-on-grade concrete is defined as concrete, which is 8 inches thick or less that was placed as pavement around process units (such as loading racks) or supported light structures. All slab-on-grade concrete encountered during pipe removal, including associated drains, will be removed.

Structural foundations are defined as concrete that supported large structures, process equipment or tanks. Excavation will occur around the perimeter of these foundations to locate potential piping, which will be removed if located. Removal of structural foundations will be undertaken at Delta's direction. Structural foundations that are not removed will be mapped, using the hand-held GPS unit, for future reference during redevelopment.

Structures that may require removal during the pipe removal project will include steel tanks, concrete tanks, and sumps. Steel tanks, if encountered during pipe removal, will be decommissioned in the following manner:

- Liquids, if present, will be pumped or vacuumed from the tank with the liquids being handled in accordance with the procedures for liquid management provided in Section 3.5 of this work plan;

- The tank will be rendered inert and cleaned by a qualified tank remover, as certified under Wisconsin Administrative Code Comm 5 administered by the Wisconsin Department of Commerce; and

- Render tank unusable, dismantle and remove from site to a qualified tank disposal facility.

5 Health, Safety, and Environment

Health, safety, and environment (HSE) issues were identified for the protection of on-site personnel, visitors, and the public from known or unforeseen health, safety, and environmental hazards. Specific criteria that will develop the health and safety procedures will be outlined in the Site Health and Safety Plan (SHSP), including procedures to be followed in the event that a fire occurs. For intrusive work a special project-specific binder ("Red Book") will be maintained at the site that contains and summarizes the following information:

- Project contact names with telephone numbers
- Maps
  - Hospital
  - Site (Roadmap)
  - Site (Detailed)
  - Landfill
- Excavation Management Plan (BP version)
- Pre-drilling/Subsurface Checklist (BP version)
- "What-if" Checklist (BP version)
- Intrusive Work Checklist (Delta version)
- Scope of Work
- "If Asked" Statement
- Right of Entry Documents and Permits
- Certification Copies
  - Bovis training
  - 8-hour OSHA HAZWOPER refresher
  - First Aid/CPR
- As-built Plans

The objective of this section is to provide the minimum requirements to protect worker safety, the public, and the environment during pipe and concrete removal. These requirements include personal protective equipment (PPE), training, monitoring, and engineering controls to be implemented during removal activities.

5.1 Personal Protective Equipment

PPE will be used to protect personnel from exposure to site contaminants or physical hazards that may be encountered during the pipe and concrete removal. Different PPE will be required for different components and different activities of removal. Level D protection will be required at all times on site, which includes:

- Hard hat
- Steel-toed boots
- Safety glasses with side shields
- Work clothes
- Work gloves
- Woven reflective safety vest
- Hearing protection (as appropriate)

Components of removal activities which involve the potential for contact with or exposure to pipe contents or highly impacted soil will require additional protection. Modified Level D PPE, which provides a greater degree of skin protection, includes:

- Hard hat
- Disposable protective coveralls
- Disposal cotton or leather gloves (with inner/outer chemical resistant gloves)
- Chemical resistant steel-toed and steel-shanked boots
- Safety glasses with side shields
- Woven reflective safety vest
- Hearing protection (as appropriate)
- Full face shield (as appropriate)
- Welding leathers and appropriate eye protection and gloves when performing hot work

Additional protection may also be required primarily while handling pipe contents and highly impacted soil based on ambient monitoring criteria. Level C PPE includes vapor protection and consists of Level D protection with the following additions:

- Half-face, air-purifying respirator (APR) or full-face APR respirator (depending on required protection factor) with organic vapor/acid gas high

efficiency particulate air cartridges meeting NIOSH, Mine Safety and Health Administration specifications
- Disposable chemical protective coveralls
- Disposable chemical resistive outer gloves (such as, neoprene or nitrile)
- Disposable chemical resistive inner gloves (such as, nitrile)
- Chemical-resistant, steel-toed and steel-shanked boots

5.2 Training

All personnel performing field tasks for the piping, tank or concrete removal will have had the 40-hour HAZWOPER training and annual 8-hour refreshers thereafter as required by OSHA CFR 1910.120. In addition, each site worker will receive site orientation training and project-specific training, such as the safety training developed for BP by Bovis. Daily safety meetings will be conducted for all pipe removal personnel. These meetings will identify task-specific safety practices for each of the day's planned activities. In addition, all personnel will receive task-specific training or instruction related to the pipe removal.

5.3 Monitoring

Air monitoring will be performed on a daily basis. It is expected that the contractor will perform air monitoring continuously within the immediate work area whenever pipes are being exposed or soil excavated. Monitoring should occur in the vicinity of the actual work location and along the perimeter of the property downwind of the work area. Air monitoring at the perimeter of the property will be conducted by Delta each hour by taking a background (upwind) readings for the parameters listed below followed immediately by taking readings at the property perimeter downwind of the current work area. Additional readings may be collected if there is a change in work or weather conditions; such as a change in wind direction or work conditions. Air monitoring will consist of the following direct readings:

- Volatile organic compounds (VOCs) with a photoionization detector
- Lower Explosive Limit (LEL) with an explosimeter

Action levels and responses for each of these parameters will be described in the SHSP. This monitoring program will provide a real-time analysis on a daily basis to verify that work is being performed safely. If air monitoring indicates conditions that allow workers to remain in Level D PPE, no additional action will be taken. If air monitoring indicates conditions that require workers to upgrade to Level C PPE, work will be paused and the potential impact to the community evaluated.

Collection of industrial hygiene samples will be performed as directed by the Health, Safety and Environment Manager. Appropriate medical monitoring protocols may also be established based on monitoring results.

5.4 Engineering Controls

Engineering controls will be used to protect personnel at the site, the general public in off-site area, and to minimize impacts to the environment. Engineering controls include:

- Sloping of trenches
- Trench boxes
- Fencing
- Restricted areas
- Dust control
- Barricading
- Spill containment

Engineering controls will be used mainly to provide safety during trenching activities. All excavations must be completed in accordance with the requirements in the SHSP. The criteria to designate the use of engineering controls will be outlined in the SHSP.

5.5 Erosion Controls

Erosion control measures will be implemented to protect environmental conditions at the site and prevent impacts to off-site areas. The pipe and concrete removal activities will create significant disturbance to existing vegetation at the site, which increases the potential for erosion. Prior to initiating intrusive work or disturbance of existing vegetation, a silt fence will be installed around the work area to prevent migration of sediments from the site during storm events. Grading will be maintained for the site at all times to prevent runoff from the site. After removal activities in an area are complete, wind fences will be constructed to prevent dust and soil from blowing off site until vegetation is re-established.

6 Documentation Requirements

Upon completion of the pipe and concrete removal project a report will be prepared to document the removal activities and accomplishments. Information to be documented in this report will include:

- Location of active utilities relocated or protected
- Location of pipe corridors where pipe was removed
- Location and configuration of in-situ passive soil venting pipes
- Location of any piping that is not removed

- Location of all subsurface structures (tanks, separators, and sumps) left in place
- Analytical results of unknown pipe contents
- Results of test trenches used to locate pipes
- Results of the EM survey and interpretation of data
- Results of the investigation(s) of EM anomalies
- Air monitoring results
- Personnel training
- Quantity (tons) of FPH-saturated soil and process residual excavated and final disposition of material
- Quantity (tons, footage) of pipe removed and final disposition of pipe
- Quantity (tons) of concrete removed and final disposition of concrete
- Quantity (gallons) of liquids removed and final disposition of liquids

7 References

Delta Environmental Consultants (2002) ***Source Area Investigation of Barge Dock Property – 3rd and 4th Quarter 2001***: March 7, 2002

Delta Environmental Consultants (2002) ***Subsurface Investigation Work Plan and Interim Remedial Response***: September 20, 2002

Delta Environmental Consultants (2003) ***Report on Ground-Water Quality, Hydrostratigraphy and Free-Phase Hydrocarbon Delineation – October 2002***: May 20, 2003

Delta Environmental Consultants (2003) ***Barge Dock Area Closure Report***: July 3, 2003

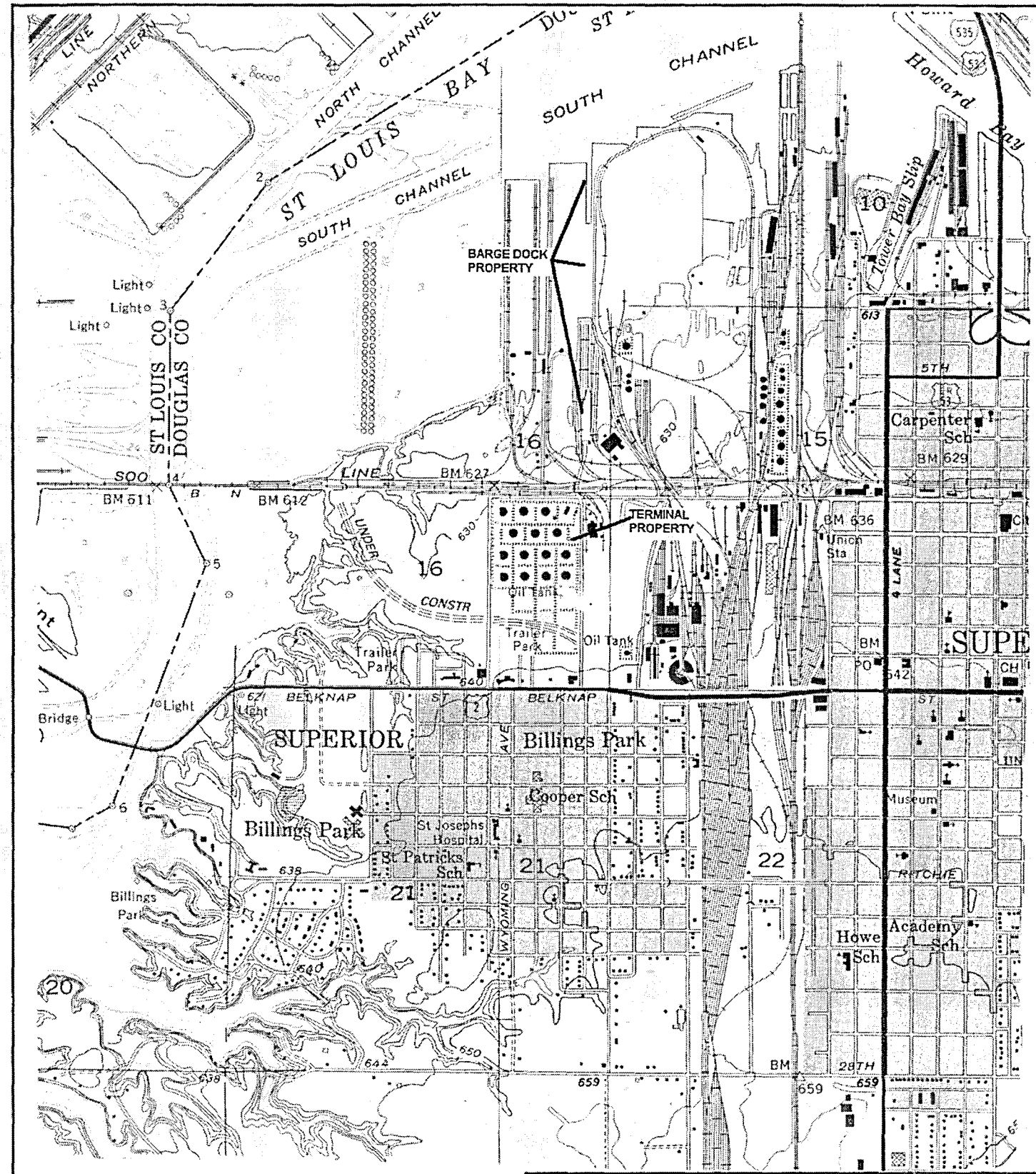
Table 1
Summary of Piping Corridors
Barge Dock Property
Superior, Wisconsin

				Number of Pipes Pipe Diameter (inches)					Contents
Piping Designation	Figure Number	Number of Corridors	Nominal Length of Corridor (feet)	4	6	8	10	Total Pipes	
Barge Slip	3	1	1900				4	4	Gasoline, Tractor Fuel, Heating Oil
Oil Water Separator	4	2*	110				4	4	Gasoline, Tractor Fuel, Heating Oil
Railroad Loading Rack	5	2*	190	2	3		4	9	Gasoline, Tractor Fuel, Heating Oil
Manifold/AST Area	6	3	580			7	4	11	Gasoline, Tractor Fuel, Heating Oil

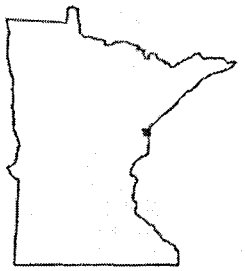
* Additional corridors serving as facility connections may exist. These additional corridors would exist for short distances from the main piping corridor.

Table 2
Utilities Present and Associated Protective Activities
Barge Dock Property
Superior, Wisconsin

Utility	Description	Action
Electrical	All electrical conduit is overhead. Electrical lines onsite service the remediation shed and also cross the site to service an air monitoring station on the Burlington Northern property east of the site.	Overhead line locations will be made known to subcontractors. Equipment reaching the height of the electric line will not be used in it's near vicinity.
Water Hydrant	An 8-inch water line runs along the east side of the property servicing a fire hydrant near the oil-water separator. The water line has been shut off indefinitely at Winter Street as the hydrant is no longer in use.	The contractor will ensure waterline is shut off prior to starting work.
Sewer	An 18-inch storm sewer line on the C. Reiss Coal Property runs just west of the Barge Dock Property. The storm sewer crosses underground pipes near the Oil/Water Separator and empties into a ditch on the Barge Dock Property	The sewer line will be protected. Product lines running beneath the sewer line will not be removed to ensure the integrity of the sewer line.
Monitoring Wells and Recovery Wells	Several monitoring wells and recovery wells exist onsite.	All wells will be protected and their locations will be made known to the subcontractor



WEST DULUTH QUADRANGLE
MINNESOTA
7.5 MINUTE SERIES (TOPOGRAPHIC)



NORTH

0 2000

SCALE IN FEET

FIGURE 1

SITE LOCATION MAP
FORMER AMOCO TERMINAL AND BARGE DOCK PROPERTIES
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY
10-88-457	
DATE	REVIEWED BY
4/1/91	

Delta Environmental Consultants, Inc.

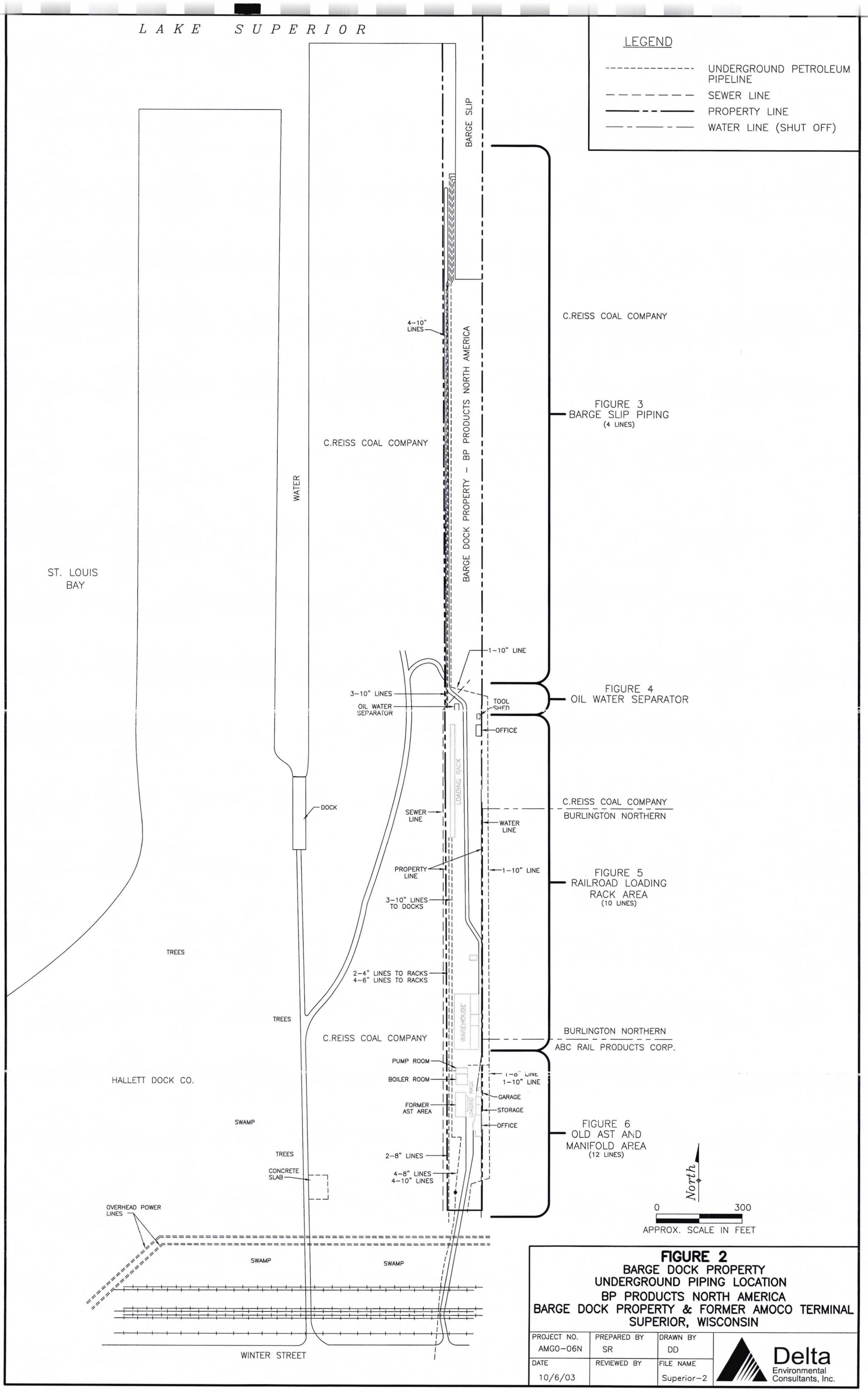


FIGURE 2
BARGE DOCK PROPERTY
UNDERGROUND PIPING LOCATION
BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY & FORMER AMOCO TERMINAL
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY
AMGO–06N	SR	DD
DATE	REVIEWED BY	FILE NAME
10/6/03		Superior–2

Delta Environmental Consultants, Inc.

LEGEND

UNDERGROUND PETROLEUM PIPELINE

PROPERTY LINE

LAKE SUPERIOR (WATER)

DOCK

BARGE SLIP (WATER)

GRAVEL ROAD

PROPERTY LINE

PROPERTY LINE

DRAINAGE DITCH

4–10" LINES

TREES

C.REISS COAL COMPANY

C.REISS COAL COMPANY

BP PRODUCTS NORTH AMERICA – BARGE DOCK PROPERTY

DRAINAGE DITCH

TREES

4–10" LINES FROM OIL/WATER SEPARATOR AREA

North

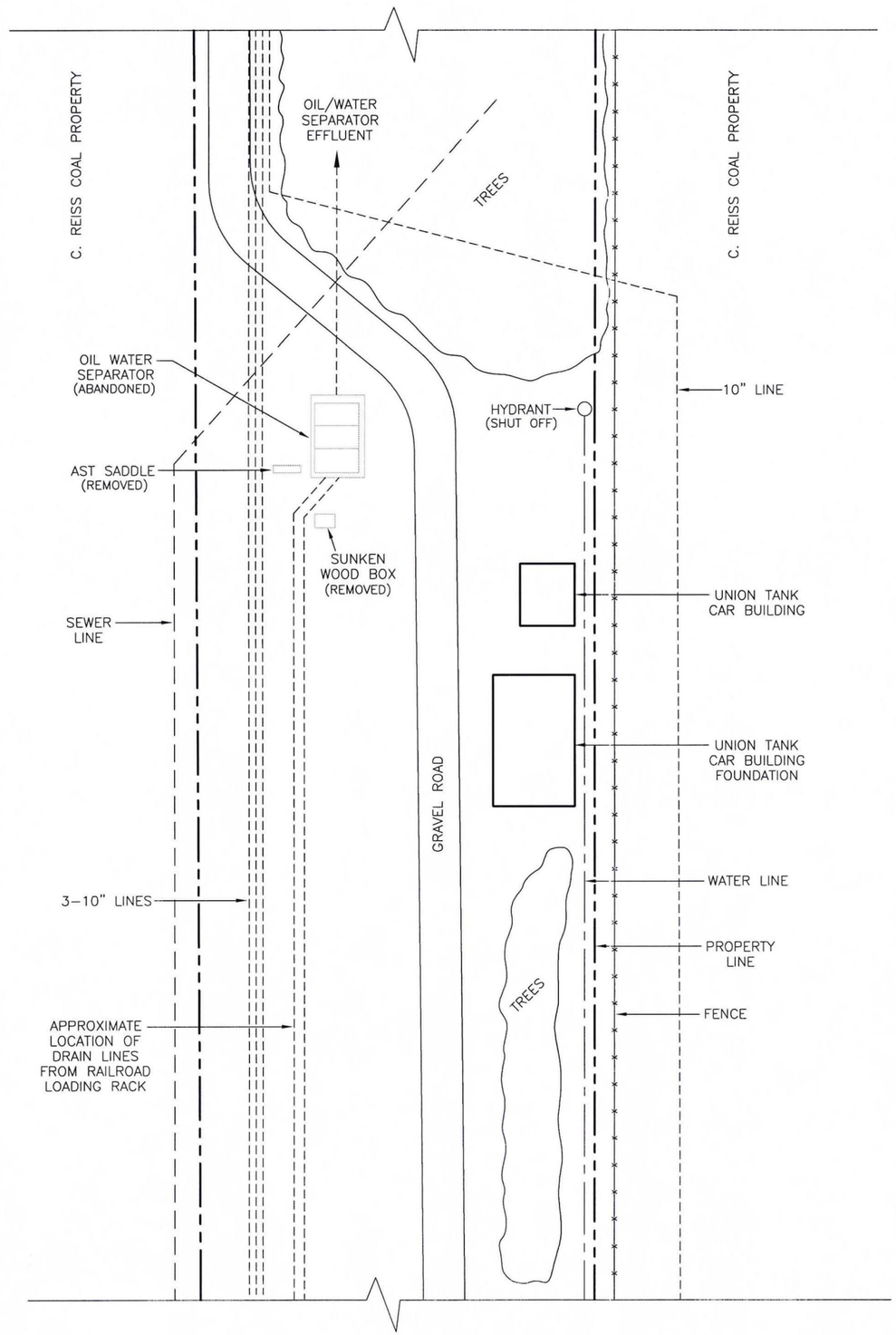
0 150

APPROX. SCALE IN FEET

FIGURE 3

BARGE SLIP
UNDERGROUND PIPING LOCATION
BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY & FORMER AMOCO TERMINAL
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY	
AMGO–06N	SR	DD	Delta Environmental Consultants, Inc.
DATE	REVIEWED BY	FILE NAME	
10/1/03		Superior–3	



LEGEND

- UNDERGROUND PETROLEUM PIPELINE
- SEWER LINE
- PROPERTY LINE
- WATER LINE (SHUT OFF)

North

0 40

SCALE IN FEET

FIGURE 4

OIL WATER SEPARATOR
UNDERGROUND PIPING LOCATION
BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY
AMGO-06N	SR	DD
DATE	REVIEWED BY	FILE NAME
10/1/03		Superior-4

Delta Environmental Consultants, Inc.

LEGEND

UNDERGROUND PETROLEUM PIPELINE

SEWER LINE

PROPERTY LINE

WATER LINE (SHUT OFF)

C. REISS COAL PROPERTY

LOADING RACK

GRAVEL ROAD

TREES

1–10" LINE

PROPERTY LINE

WATER LINE

FENCE

TREES

C. REISS COAL PROPERTY

BURLINGTON NORTHERN PROPERTY

TREES

SUNKEN PIPING BOX

3–10" LINES TO DOCKS

2–4" LINS TO RACKS
4–6" LINES TO RACKS

SEWER LINE

TREES

TREES

WAREHOUSE

TREES

North

0 80

SCALE IN FEET

FIGURE 5

RAILROAD LOADING RACK
UNDERGROUND PIPING LOCATIONS
BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY
AMG0–06N	SR	DD
DATE	REVIEWED BY	FILE NAME
10/6/03		Superior–5

Delta Environmental Consultants, Inc.

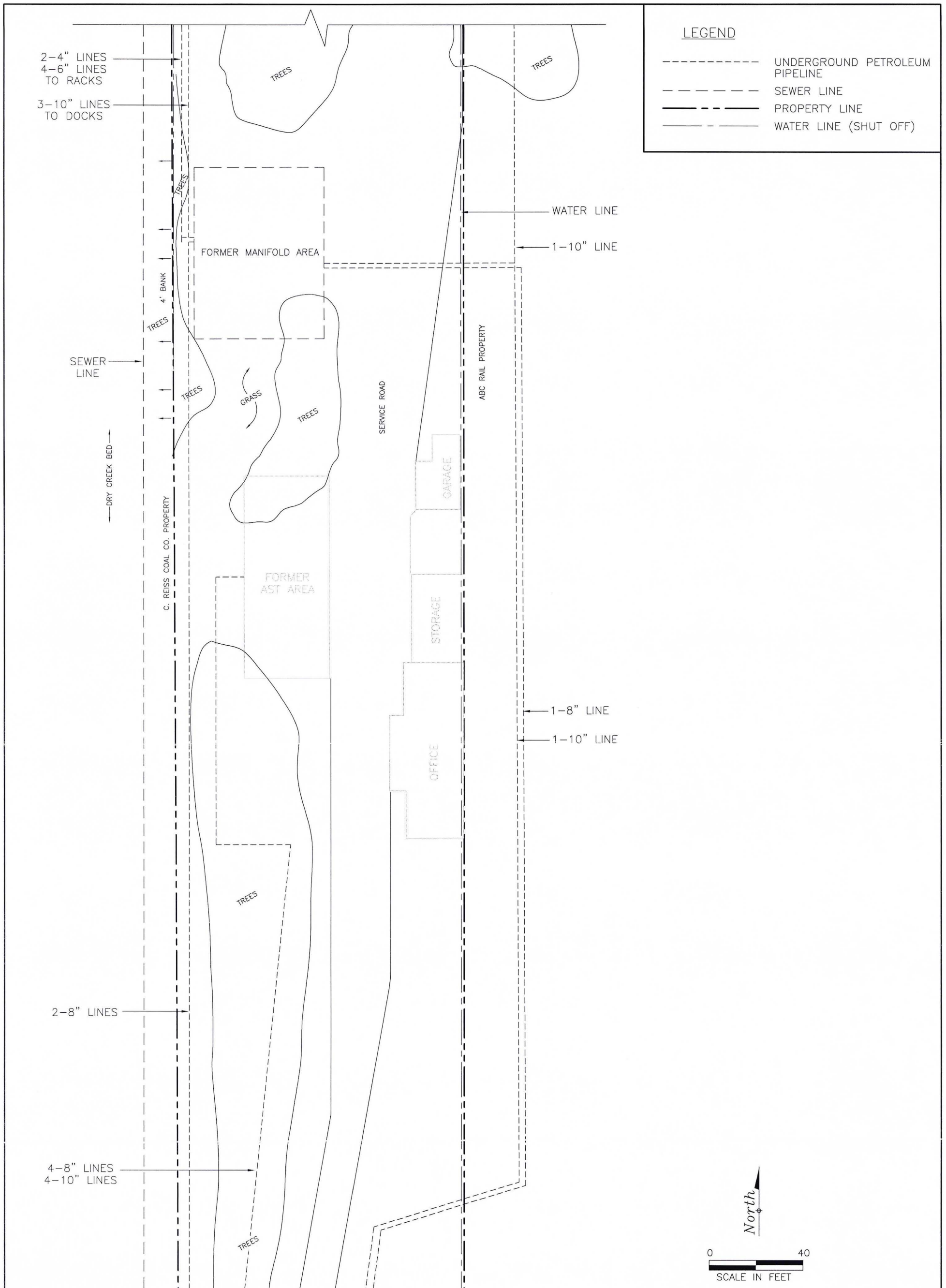


FIGURE 6
MANIFOLD AND AST AREA
UNDERGROUND PIPING LOCATION
BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY
AMG0–06N	SR	DD
DATE	REVIEWED BY	FILE NAME
9/30/03		Superior–6

Delta Environmental Consultants, Inc.

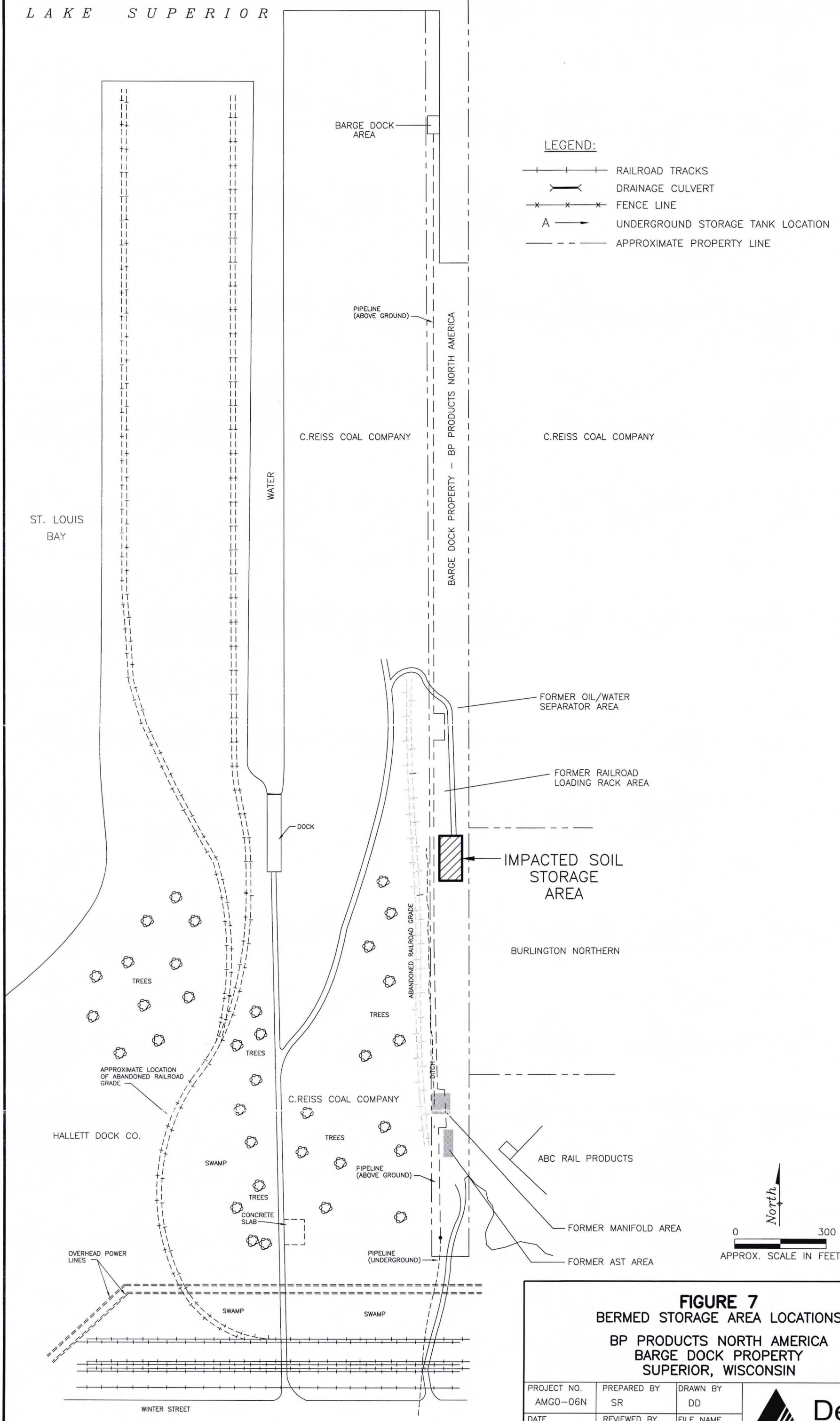
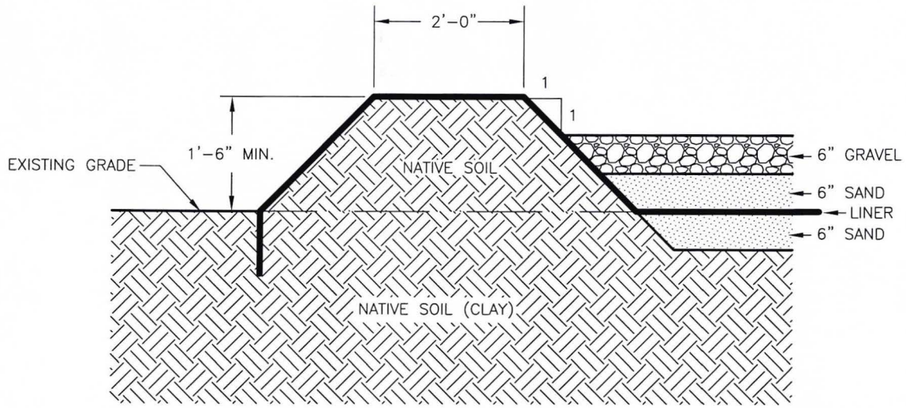


FIGURE 7
BERMED STORAGE AREA LOCATIONS

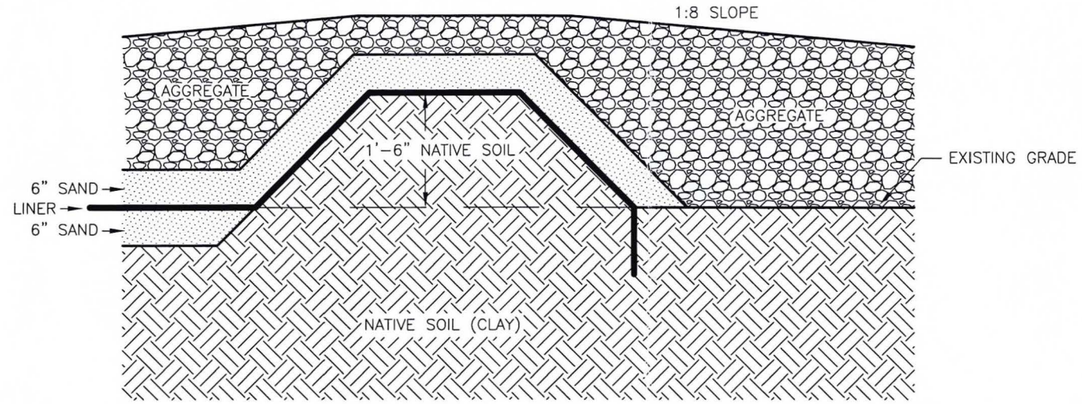
BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY	
AMG0-06N	SR	DD	Delta Environmental Consultants, Inc.
DATE	REVIEWED BY	FILE NAME	
10/6/03		Superior-7	



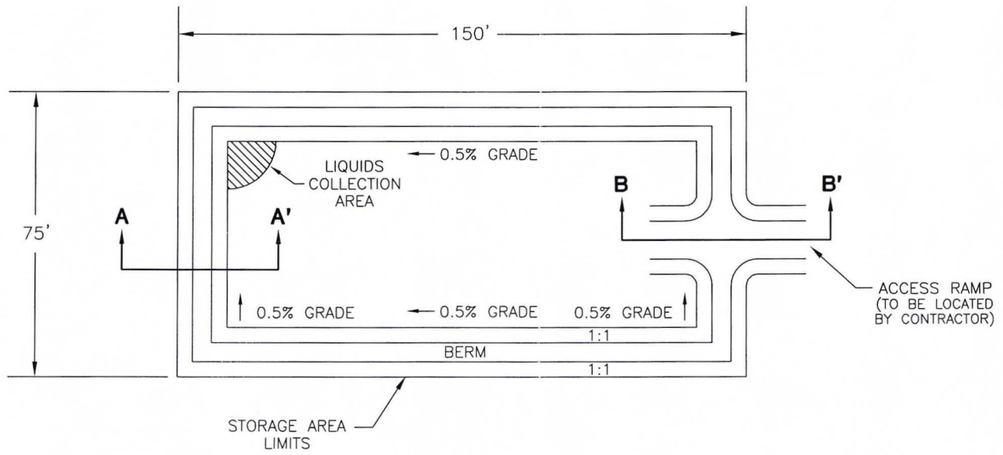
BERM A–A'

SCALE: 1/2" = 1'-0"



ACCESS RAMP B–B'

SCALE: 1/2" = 1'-0"



PLAN VIEW

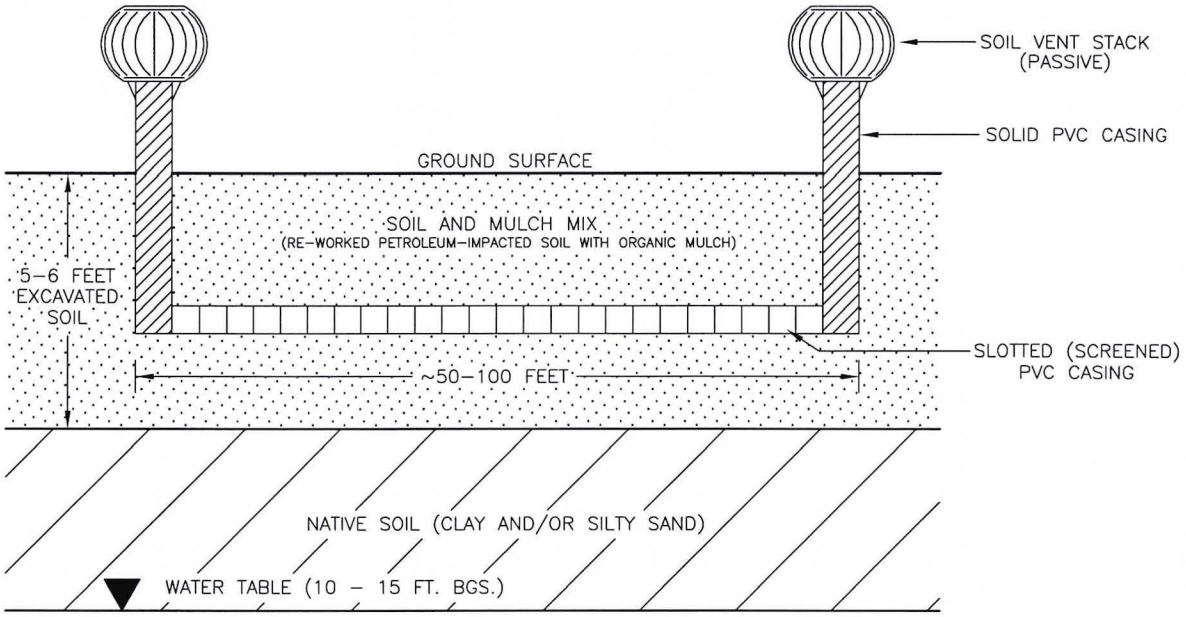
SCALE: 1" = 40'-0"

FIGURE 8
BERMED STORAGE AREA DETAILS

BP PRODUCTS NORTH AMERICA
BARGE DOCK PROPERTY
SUPERIOR, WISCONSIN

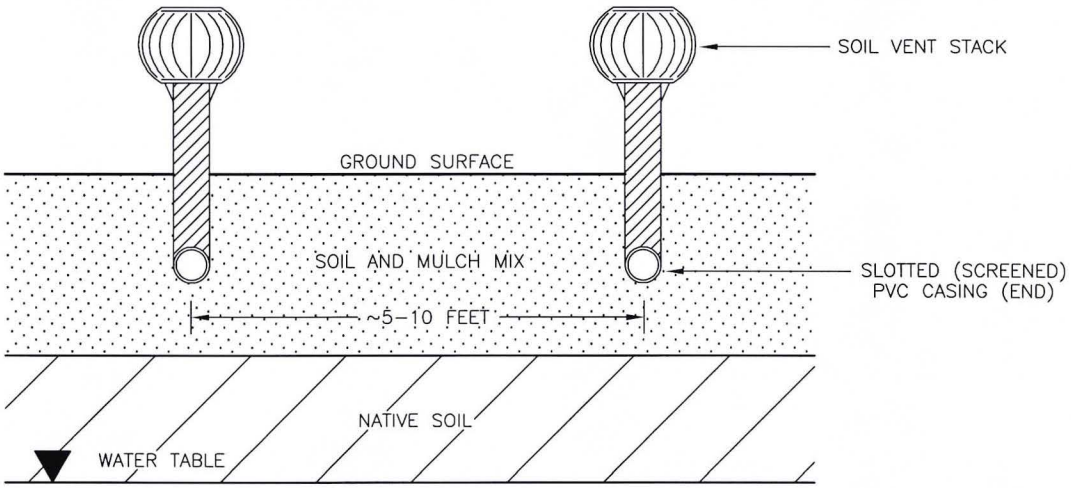
PROJECT NO.	PREPARED BY	DRAWN BY
AMGO-06N	SR	DD
DATE	REVIEWED BY	FILE NAME
10/6/03		Superior-8

Delta Environmental Consultants, Inc.



SIDE VIEW (NORTH TO SOUTH)

NOT TO SCALE



END VIEW

NOT TO SCALE

NOTES:

DRAWINGS NOT-TO-SCALE.

ALL DEPTHS ARE APPROXIMATE.

ALL DESIGNS ARE CONCEPTUAL.

SOME TRENCH (EXCAVATED) AREAS MAY INCLUCE SINGLE OR MULTIPLE (MORE THAN TWO) VENT LINES.

FIGURE 9

CONCEPTUAL PASSIVE SOIL VENTING SYSTEM

BP PRODUCTS NORTH AMERICA
SUPERIOR TERMINAL
SUPERIOR, WISCONSIN

PROJECT NO.	PREPARED BY	DRAWN BY	
AMGO-06N	TM	DD	Delta Environmental Consultants, Inc.
DATE	REVIEWED BY	FILE NAME	
10/3/03		Superior-CSV	

COLD CUTTING PIPE

Purpose: Cold cut pipe for or modifications or abandoning

General: The contractor is responsible for implementing and enforcing the Cold Cutting Pipe program. Cold cutting is a technique used to cut pipelines, vessels or tanks and involves cutting on pipe that may be under pressure, contain flammable or other hazardous materials or liquids.

Pre-cutting Procedures:

1. Obtain permission from proper authority before cutting pipe
2. Proper fire prevention and fire fighting equipment must be nearby and readily available during the cutting operation.
3. Before starting the cut, the pipeline should be:

    a. Taken out of service and all appropriate persons notified
    b. Pipeline to be drained and emptied
    c. Pipeline to be cleaned, flushed and steam or purged when necessary
    d. Gas tested and approved by drilling a pilot hole and testing lower explosive limit (LEL)
    e. Blocked out, tagged out and blocked off

4. A repair clamp will be prepared and placed on the pipe adjacent to the pilot hole to be used if product is present.
5. The pipeline will be cut with a hydraulic cutter (such as, Wachs saw or similar tool) that does not use flame or cause sparking of the pipe.

Special Equipment: Wachs saw, cold cutters

Pre-operational checks:

Before operating cold cutters and saws, check;

1. for loose, missing or broken parts,
2. condition of cutter wheel,
3. operation of wheels and rollers
4. and verify that cutter has all parts, spare parts and accessories

Procedure:

1. Excavate site and install pipe supports, as necessary;
2. Attach slings to control pipe movement, as necessary;
3. Evacuate the pipeline using the nitrogen purge method;
4. Prepare to make the cut:

a. Determine where cold cuts will be made on the pipeline and allow extra cuts for fit-ups and hot shots;
b. Remove coating and clean immediate area, as necessary;
c. Install the bonding cables between both sections of pipeline (bonding for static electricity)

5. Cold cut the pipeline

WARNING: The pipeline may spring suddenly as the cut is completed. Watch both sections of pipeline for movement or binding

Note: Mainline Pipe is subject to compressive forces. The section may be securely bonded through frictional forces. Additional cuts may be necessary to obtain the necessary clearance.

6. Complete cut and remove pipe section;
7. Complete draining of any product;
8. Make additional cuts as necessary to remove pipeline section;
9. Roll pipe section sideways out of position;
10. Remove bonding cables, and
11. Lift pipe section, place in a safe location and tag pipeline section.

METHOD 9095A

PAINT FILTER LIQUIDS TEST

1.0 SCOPE AND APPLICATION

1.1 This method is used to determine the presence of free liquids in a representative sample of waste.

1.2 The method is used to determine compliance with 40 CFR 264.314 and 265.314.

2.0 SUMMARY OF METHOD

2.1 A predetermined amount of material is placed in a paint filter. If any portion of the material passes through and drops from the filter within the 5-min test period, the material is deemed to contain free liquids.

3.0 INTERFERENCES

3.1 Filter media were observed to separate from the filter cone on exposure to alkaline materials. This development causes no problem if the sample is not disturbed.

3.2 Temperature can affect the test results if the test is performed below the freezing point of any liquid in the sample. Tests must be performed above the freezing point and can, but are not required to, exceed room temperature of 25° C.

4.0 APPARATUS AND MATERIALS

4.1 Conical paint filter: Mesh number 60 +/- 5% (fine meshed size). Available at local paint stores such as Sherwin-Williams and Glidden.

4.2 Glass funnel: If the paint filter, with the waste, cannot sustain its weight on the ring stand, then a fluted glass funnel or glass funnel with a mouth large enough to allow at least 1 in. of the filter mesh to protrude should be used to support the filter. The funnel should be fluted or have a large open mouth in order to support the paint filter yet not interfere with the movement, to the graduated cylinder, of the liquid that passes through the filter mesh.

4.3 Ring stand and ring, or tripod.

4.4 Graduated cylinder or beaker: 100-mL.

5.0 REAGENTS

5.1 None.

6.0 SAMPLE COLLECTION, PRESERVATION, AND HANDLING

6.1 All samples must be collected according to the directions in Chapter Nine of this manual.

6.2 A 100-mL or 100-g representative sample is required for the test. If it is not possible to obtain a sample of 100 mL or 100 g that is sufficiently representative of the waste, the analyst may use larger size samples in multiples of 100 mL or 100 g, i.e., 200, 300, 400 mL or g. However, when larger samples are used, analysts shall divide the sample into 100-mL or 100-g portions and test each portion separately. If any portion contains free liquids, the entire sample is considered to have free liquids. If the sample is measured volumetrically, then it should lack major air spaces or voids.

7.0 PROCEDURE

7.1 Assemble test apparatus as shown in Figure 1.

7.2 Place sample in the filter. A funnel may be used to provide support for the paint filter. If the sample is of such light bulk density that it overflow the filter, then the sides of the filter can be extended upward by taping filter paper to the inside of the filter and above the mesh. Settling the sample into the paint filter may be facilitated by lightly tapping the side of the filter as it is being filled.

7.3 In order to assure uniformity and standardization of the test, material such as sorbent pads or pillows which do not conform to the shape of the paint filter, should be cut into small pieces and poured into the filter. Sample size reduction may be accomplished by cutting the sorbent material with scissors, shears, knife, or other such device so as to preserve as much of the original integrity of the sorbent fabric as possible. Sorbents enclosed in a fabric should be mixed with the resultant fabric pieces. The particles to be tested should be reduced smaller than 1 cm (i.e., should be capable of passing through a 9.5 mm (0.375 inch) standard sieve). Grinding sorbent materials should be avoided as this may destroy the integrity of the sorbent and produce many "fine particles" which would normally not be present.

7.4 For brittle materials larger than 1 cm that do not conform to the filter, light crushing to reduce oversize particles is acceptable if it is not practical to cut the material. Materials such as clay, silica gel, and some polymers may fall into this category.

7.5 Allow sample to drain for 5 min into the graduated cylinder.

7.6 If any portion of the test material collects in the graduated cylinder in the 5-min period, then the material is deemed to contain free liquids for purposes of 40 CFR 264.314 and 265.314.

8.0 QUALITY CONTROL

8.1 Duplicate samples should be analyzed on a routine basis.

9.0 METHOD PERFORMANCE

9.1 No data provided.

10.0 REFERENCES

10.1 None provided.

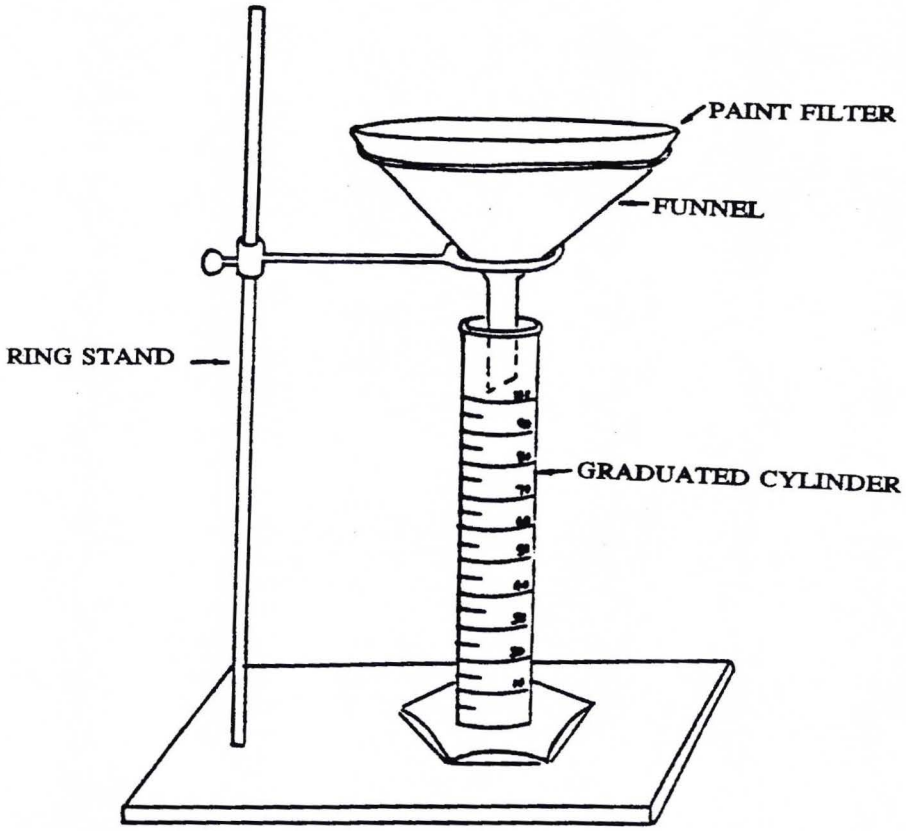
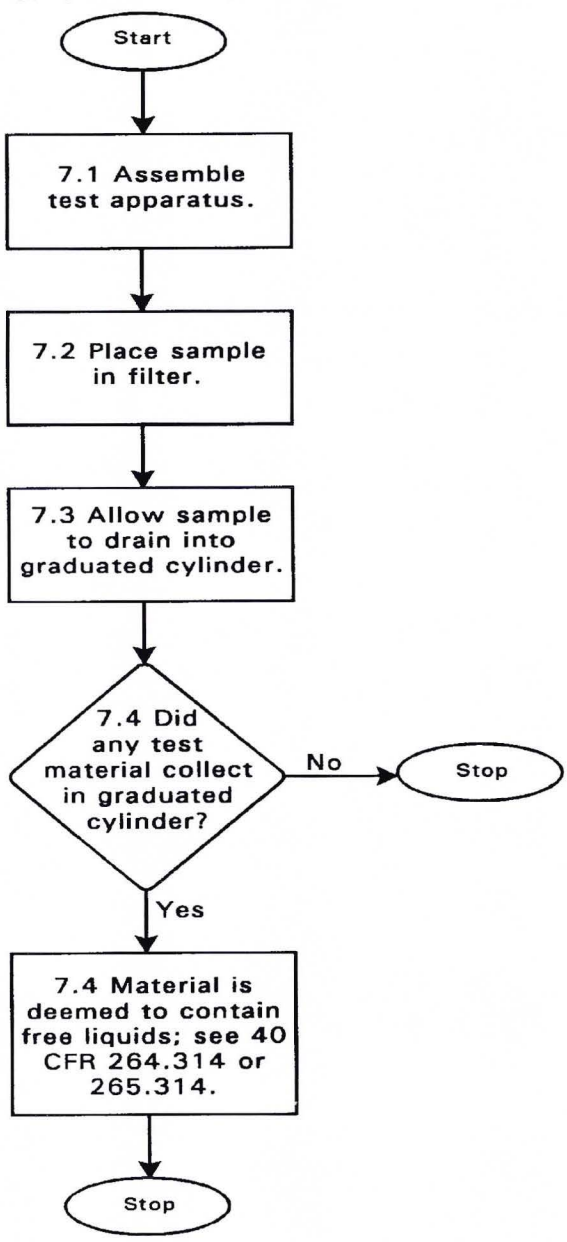


Figure 1. Paint filter test apparatus.


Start
7.1 Assemble test apparatus.
7.2 Place sample in filter.
7.3 Allow sample to drain into graduated cylinder.
7.4 Did any test material collect in graduated cylinder?
No
Stop
Yes
7.4 Material is deemed to contain free liquids; see 40 CFR 264.314 or 265.314.
Stop

BP Amoco

Delta Environmental Consultants, Inc.

BP Amoco Soil Management Plan

SS #:	00406	Construction Start Date:	3 November 2003
Facility #:	816009920	Property Ownership:	BP Products North America
Address:	2904 Winter Street		
City, State:	Superior, Wisconsin		

BP Amoco Contractor Information:

General Co.:	Stack Brothers	Contact & Phone #	Bill Stack (715) 398-2964
Excavator:	Stack Brothers	Contact & Phone #	Bill Stack (715) 398-2964
Trucking Co.:	Stack Brothers	Contact & Phone #	Bill Stack (715) 398-2964
Plumbing / Sewer	N/A	Contact & Phone #	
Concrete	N/A	Contact & Phone #	
Landscaping	Stack Brothers	Contact & Phone #	Bill Stack (715) 398-2964
Asphalt	Kimmes Asphalt	Contact & Phone #	Joe Kimmes (715) 394-4233
Sawcutting	N/A	Contact & Phone #	
Fence	Stack Brothers	Contact & Phone #	Bill Stack (715) 398-2964
Electrical:	N/A	Contact & Phone #	
Other:	N/A	Contact & Phone #	

Property Owner Contractor Information (if applicable):

General Co.:		Contact & Phone #	
Excavator:		Contact & Phone #	
Trucking Co.:		Contact & Phone #	
Electrical:		Contact & Phone #	
Other:		Contact & Phone #	

Soil Management Details (attach sales agreement if applicable):

Area(s) of the property to be excavated (attach plan if available): Barge Dock Property along pipeline corridors

Party responsible for securing an excavation contractor: Delta Environmental Consultants

Party responsible for soil excavation costs: BP Products North America, Inc

Party responsible for securing a trucking company: Delta Environmental Consultants

Party responsible for soil transportation costs: BP Products North America, Inc

Party responsible for "petroleum impacted" soil disposal costs: BP Products North America, Inc

Party responsible for "non-petroleum impacted" soil disposal costs: BP Products North America, Inc

What criteria must be met for soil to be removed from the property: Fail Paint Filter Test (Method 9095); Obvious FPH-saturated soil

What, if any, soil sampling will be conducted during the excavation activities: Spot sidewall samples

Party responsible for ground water disposal, if necessary for construction purposes: OSI Environmental

Party responsible for backfilling and compaction (if required): Stack Brothers

Describe in detail any other covenants or agreements, with regard to the excavation activities, not fully covered above: _____

Soil and Water Disposal information:

BP Amoco Approved Soil Disposal Facility:	Kimmes Asphalt
Contact & Phone No:	Joe Kimmes (715) 394-4233
"Petroleum Impacted" Soil Criteria & Unit Cost:	Fail Paint Filter Test; $45/ton
"Landfill Cover" Soil Criteria & Unit Cost:	
Transportation Contractor:	Kimmes Trucking
Contact & Phone No:	Joe Kimmes (715) 392-1989
Cost, per semi truck, per day:	Included in unit soil treatment cost
Water Disposal Contractor:	OSI Environmental, Inc.
Contact & Phone No:	Pat Tracy (218) 744-3064
"Petroleum Impacted" Water Unit Cost:	$0.65/gallon
"Non-Petroleum Impacted" Water Unit Cost:	---
"Product/Sludge" Unit Cost:	$2.60/gallon
Excavation Contractor:	Stack Brothers
Contact & Phone No:	Bill Stack (715) 398-2954
Excavation equipment to be used:	

Agreement:

This Soil Management Plan has been developed based on existing environmental information and construction plans dated 10/16/03(attach if available). In the event site plans change or unanticipated conditions are encountered, this agreement shall be revised to determine roles and responsibilities for such changes or conditions.

Ray Stoelting	BP Amoco Environmental Business Manager	
(please print)		(signature/date/phone number)
Rick Carney	Delta Environmental Project Manager	
(please print)		(signature/date/phone number)
	Property Owner	
(please print)		(signature/date/phone number)
	BP Amoco Attorney (if applicable)	
(please print)		(signature/date/phone number)
	Property Owner's Attorney (if applicable)	
(please print)		(signature/date/phone number)

Distribution:

Delta Project File