Revised Draft Final Cleanup Action Plan
File No. 0506-141-02

April 18, 2008

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BNSF OIL PIPELINE SITE
TACOMA, WASHINGTON
FOR
BNSF RAILWAY COMPANY

1.0 INTRODUCTION

This document presents the Revised Draft Final Cleanup Action Plan (CAP) for the BNSF Oil Pipeline Site (Site) in Tacoma, Washington. The Site and surrounding area are shown on the Vicinity Map, Figure 1.

A Remedial Investigation/Feasibility Study (RI/FS) was completed pursuant to the Washington State Department of Ecology (Ecology) approved Work Plan under Agreed Order No. DE 04TCPSR-6034. The Site consists of the area in the vicinity of a pipeline that was formerly used to transport bunker oil from bulk storage tanks located north of the intersection of East 15th Street and "D" Street, to what is now the BNSF Tacoma Rail Yard, located south and east of the intersection of East 21st Street and "D" Street. The Site includes the pipeline alignment and adjacent areas as shown on Figures 2A and 2B.

Bunker-range petroleum hydrocarbons (BRPH)[1] and carcinogenic polynuclear aromatic hydrocarbons (cPAHs) have been detected in soil and groundwater beneath portions of the Site during subsurface investigations and pipeline closure activities. The BNSF Oil Pipeline (pipeline), the Washington State Department of Transportation (WSDOT) pond, underground storage tanks (USTs) located beneath the Site and local utility features are potential sources of petroleum hydrocarbons in the Site area. Ecology has named BNSF, the City of Tacoma (City), WSDOT, Home Electric, Inc. (owner of the Tacoma Fixtures property), Nichols Trucking and SuperValu as potentially liable parties (PLPs) for investigation of the Site and associated remedial activities.

This CAP was prepared in conformance with Agreed Order (AO) Number DE 04TCPSR-6034 to comply with the requirements of Washington Administrative Code (WAC) 173-340-350. BNSF entered into the AO with the State of Washington to:

- develop an Interim Action Plan,
- implement an appropriate Interim Action (IA),
- complete a Remedial Investigation (RI)/Feasibility Study (FS) at the Site, and
- prepare a Draft Final Cleanup Action Plan (CAP) for the Site.

The Ecology-approved Work Plan for the Remedial Investigation includes both the "Final Remedial Investigation Work Plan" dated March 12, 2004, and the "Final Supplemental Groundwater Investigation Work Plan" dated January 9, 2006. The results of the RI/FS are presented in the report "Final Remedial Investigation/Feasibility Study (RI/FS) BNSF Oil Pipeline Site, Tacoma, Washington" dated April 4, 2007, which Ecology accepted as final on July 24, 2007.

[1] BRPH is a site-specific term indicating a Bunker C petroleum product with both diesel- and oil-range petroleum hydrocarbons. The concentration of BRPH as discussed in this report indicates either 1) the sum of the laboratory reported concentrations of diesel- and oil-range petroleum hydrocarbons; or 2) the concentration of petroleum hydrocarbons quantified during analysis relative to a Bunker C product laboratory standard.

1.1 SITE DESCRIPTION

1.1.1 General

The Site is located as shown on Figure 1. Topography in the Site area is generally flat. The Site area is used primarily for industrial and commercial purposes. Facilities in the "D" Street area include the BNSF Tacoma Rail Yard (transportation), WSDOT (stormwater ponds), Nichols Trucking (trucking), Tacoma Fixtures (fixture manufacturing on the Home Electric property), SuperValu (grocery distributor), Johnny's Dock Restaurant and Marina, the former Pick's Cove Marina and Martinac (boat building and repair). The Thea Foss Waterway (Waterway) is located approximately 175 to 370 feet west of the alignment of the former bunker oil pipeline and unrelated underground storage tanks (USTs) located within the Site area.

The Site is approximately 2,050 feet long and was divided into four areas (WSDOT Pond Area, Nichols Trucking Area, Home Electric Area and SuperValu Area) for remedial investigation (RI) purposes. The four Site areas are shown on Figures 2A and 2B.

Four "remediation areas" (A, B, C and D) were subsequently identified during the feasibility study (FS) process and various options for remedial actions in those areas were evaluated during the FS. Area B was divided into two subareas as shown on Figure 3. Remediation areas A, B, C and D are shown on Figure 3. The relationship between the Site areas identified in the RI and the remediation areas identified in the FS is as follows:

- The WSDOT Pond Area, including remediation Area A;
- The Nichols Trucking Area, including a portion of remediation Area B2;
- The Home Electric Area, including remediation Area B1, the remainder of remediation Area B2, the 19th Street Underground Storage Tank (UST) Area and a portion of remediation Area C; and
- The SuperValu Area, including the remainder of remediation Area C and remediation Area D.

Additional details regarding these areas are provided in the RI/FS.

Stormwater drain lines are located within each area. The stormwater drain lines discharge to the Waterway via stormwater Outfalls 243, 245, 248 and 249, located as shown on Figures 2A and 2B.

1.2 SITE HISTORY

Development of the area around the Site began in the early 1900s and was associated with construction and use of the Thea Foss Waterway (formerly City Waterway). The Site was initially a tideflat area where the Puyallup River flowed into Commencement Bay. The Site was reportedly filled with sediments, wood debris, "refuse fill" and other materials as the area was developed.

The surrounding tideflat area has been historically used for industrial and commercial purposes, including lumber milling, coal gas manufacturing, bulk oil storage, shipbuilding, rail and trucking facilities and other uses. The former bunker oil pipeline appears to have been installed in the early 1900s. The former pipeline appears to have connected oil storage tanks formerly located on property now owned by JM Martinac and Company at 1501 East "D" Street, with an oil storage tank formerly located on the current BNSF Tacoma Rail Yard property. The storage tank on the Tacoma Rail Yard appears to have been removed sometime between 1954 and 1969 based on a review of historic aerial photographs. The oil storage tanks formerly located on the current JM Martinac property were removed between 1963 and

1965 based on a review of historic aerial photographs and maps. It is likely that use of the former pipeline stopped sometime before 1965 (when tanks were removed from JM Martinac property), or, at the latest, sometime before 1969 (by which time the tank had been removed from the Tacoma Rail Yard).

Portions of the former pipeline located within the Tacoma Rail Yard were removed in the late 1990s during remedial activities associated with construction of the SR 509 overpass. Portions of the former pipeline may also have been removed at other locations along the alignment during installation and/or construction of buildings and underground utilities such as City storm drains, sanitary sewers and water lines.

Construction of the WSDOT ponds occurred in the late 1990s and involved excavation to approximately 10 feet below grade in the immediate vicinity of the contamination.

1.3 SUBSURFACE CONDITIONS

1.3.1 Soil Conditions

Subsurface conditions beneath the Site generally consist of 2 to 9 feet of loose to medium dense sand with varying silt content underlain by a zone of mixed soil and wood waste fill. Where present, the wood waste fill varies from 2 to 12 feet in thickness and extends to a maximum depth of 16 feet below ground surface (bgs) based on explorations completed at the Site. Native sand with varying amounts of silt exists below the wood waste fill. Wood waste fill was not observed in the subsurface explorations located within East 18th Street.

1.3.2 Groundwater Conditions

Depth to groundwater ranges from about 5 to 8.5 feet bgs and appears to be tidally influenced. The direction of groundwater flow is generally westward, towards the Waterway, based on the results of the RI groundwater studies.

2.0 INTERIM AND SOURCE CONTROL ACTIONS PERFORMED TO DATE

As described in the RI/FS, BNSF has performed interim actions at the Site and other parties have performed source control activities.

2.1 2004 INTERIM ACTIONS BY BNSF

Subsurface soil and groundwater sampling was completed between March and May 2004. The data from these studies were used to identify portions of the Site requiring interim action and to select and plan appropriate interim activities. The portion of the Site in the vicinity of the former bunker oil pipeline and the storm drain system in the Home Electric/Nichols Trucking Area on East 19th Street was identified as appropriate for an interim action (IA). Existing site conditions and proposed interim actions were described in the "Interim Action Plan, BNSF Oil Pipeline, Tacoma, Washington, dated June 15, 2004" (IAP). Ecology approved the IAP in June 2004.

The IA was completed in July 2004 in general accordance with the IAP. The objective of the IA was to eliminate or substantially reduce the potential for BRPHs in soil in the East 19th Street Area to migrate to the Waterway via the only known pathway, the City storm drain system on East 19th Street. The IA involved excavating approximately 3,000 tons of petroleum-contaminated soil and wood waste from the vicinity of the former bunker oil pipeline and storm drain system on East 19th Street and transporting the

material off-site for disposal. The IA eliminated or substantially reduced the potential for off-site migration of BRPH through the City storm drain system.

2.2 VOLUNTARY PATHWAY AND SOURCE CONTROL - ACTIONS BY OTHER PLPS

Isolation and repair of the City storm drain line in East 19th Street, east of Manhole (MH) 394, was completed by the City in August 2004. The work consisted of replacing MH 394 and MH 396, and removing the old storm drain main line from between MH 394 to a location approximately 300 feet east of MH 396. The old storm drain line was replaced with a new polyvinyl chloride (PVC) storm drain line. Non-functioning laterals to the main line were capped, and failed piping at the functioning laterals was replaced. A section (approximately 50 feet long) of the storm drain west of MH 394 was also replaced. Petroleum-contaminated soil and wood waste encountered during the work was excavated and transported off site for disposal.

Home Electric removed one known UST and closed another known UST on their property during May and June 2004. Home Electric also completed a geophysical survey to investigate the presence of two additional suspected USTs on the property (north and east of the East 19th Street Area, as shown on Figure 3) in September 2004. One subsurface "anomaly" was identified in the gravel shoulder of East 19th Street near the southwest corner of the Home Electric building. An exploratory excavation was completed to investigate the anomaly and an UST was discovered (the "East 19th Street UST"). Upon removal of the fill port cover on the UST, the tank was observed to contain petroleum product[2] and water. The East 19th Street UST was closed in place during July 2005 by Home Electric. The geophysical survey results did not indicate that additional anomalies or other USTs were present in the Home Electric Area.

3.0 NATURE AND EXTENT OF CHEMICALS OF CONCERN

The chemical analytical data for petroleum hydrocarbons and cPAHs in soil and groundwater samples collected during this RI and during previous investigations at the Site were evaluated relative to the selected cleanup criteria to evaluate the nature and extent of contamination at the Site. The primary chemicals of concern (COC) for both soil and groundwater are BRPH and cPAHs. MTCA Method A and Method B Cleanup Levels have been selected for soil and groundwater at the Site as described in Section 4.0 of this CAP.

3.1 SOIL

Area A: The WSDOT Pond Area is located along the east side of the ponds in the area extending from approximately boring HP-33 to about 40 feet north of HP-31 as shown on Figure 4. The western limits have not been fully determined due to the presence of the ponds; it is possible that petroleum-impacted soils extend beneath the ponds. The concentrations of BRPH in soil in the WSDOT Pond Area range from about 2,520 milligrams per kilograms (mg/kg) to 53,300 mg/kg. The petroleum-contaminated soil is generally located between 5 and 12 feet bgs. It should also be noted that a white powdery substance with a pH of 13 was observed in soil at one test pit excavation completed during a study by Ecology on the northeast side of the pond. The substance was not observed in any of the borings drilled in the area and does not appear to be widespread in Area A, however, the potential presence of the white material should be addressed in the site Health and Safety Plan used during remedial activities.

[2] The product in the tank was characterized by the analytical laboratory to be a "Bunker C-type fuel" consisting of approximately 75 percent diesel-range and 25 percent heavy oil-range petroleum hydrocarbons (Robinson Noble Saltbush, 2005).

Area B: East 19th Street UST. Two sub-areas have been identified in Area B for remedial purposes and are referred to as Areas "B1" and "B2".

- Area B1 consists of the area adjacent to and east of the 2004 BNSF IA area and in the vicinity of the closed in place 19th Street UST as shown on Figure 5. Petroleum hydrocarbons have been detected at concentrations greater than the cleanup level (CUL) in soil in the vicinity of the UST, extending eastward to borings TF-5, TF-7, RI-19 and MW-6 as shown on Figure 6. The petroleum-contaminated soil is generally located between 5 and 12 feet bgs. The concentrations of BRPH in soil in the Area B1 range from about 2,214 mg/kg to 40,900 mg/kg. The highest concentrations of BRPH are located near the closed East 19th Street UST. The northern limits of the impacted area have not been fully determined due to the presence of the Tacoma Fixtures building, and it is possible that petroleum-impacted soil extends northward beneath the building. The eastern limit appears to extend to at least MW-6. The contaminated area previously extended westward on east 19th Street to about 20 to 30 feet west of the former pipeline alignment. Most of the petroleum-contaminated soil beneath East 19th Street in the vicinity of the pipeline was removed during the 2004 BNSF IA. The western limit of the impacted area is now assumed to be the 2004 BNSF IA excavation. The southern limit of Area B1 is the storm sewer line located in East 19th Street. The stormwater line was excavated and replaced by the City in 2004. The excavation was backfilled with clean imported soil.
- Area B2 appears to be a relatively localized area of petroleum-contaminated soil south of the replaced stormwater line in the vicinity of RI-16 and RI-17 on the south side of East 19th Street as shown on Figure 6. The concentrations of BRPH detected greater than the CUL in soil samples collected in this area range from 2,214 to 7,530 mg/kg.

Area C: The Home Electric/SuperValu Area is located in the parking areas east of the Tacoma Fixtures and the SuperValu Area buildings as shown on Figure 5. The area where concentrations of petroleum hydrocarbons in soil in are greater than the CUL generally extends from borings RI-31 and RI-43 at the southern limit to RI-35 at the northern limit and RI-40, RI-41 and RI-42 along the western limit. The eastern limit has not been fully determined due to the presence of the Tacoma Fixtures and SuperValu buildings, and it is possible that petroleum-contaminated soil is present beneath the buildings. The concentrations of BRPH in soil in the Home Electric/SuperValu Area range from about 3,210 mg/kg to 31,200 mg/kg. The petroleum-contaminated soil is generally located between 6 and 10 feet bgs.

Area D: The northern SuperValu Area is located near the northern boundary of the SuperValu property as shown on Figure 7. Petroleum-contaminated soil was encountered within access pit AP-5C (AP-5C) during previous closure activities in the soil immediately above and adjacent to the former pipeline between about 1.5 feet bgs to 4 feet bgs at concentrations ranging from 13,530 mg/kg to 26,000 mg/kg. Further investigation during the RI indicated that the contaminated soil is located in a very small area near AP-5C. Groundwater was not encountered within the contaminated zone.

3.2 GROUNDWATER

A summary of groundwater monitoring results to date is attached as Table 1.

Area A: MW-1, MW-12 and MW-15 are located in the vicinity of the petroleum-contaminated soil at the WSDOT Pond Area as shown on Figure 4. Petroleum hydrocarbons were detected at concentrations greater than the CUL in groundwater from MW-1 only during the January 2005 monitoring event and in groundwater from MW-12 and MW-15 only during the October 2004 and January 2005 monitoring events. The concentrations of BRPHs detected in groundwater from those wells ranged from 0.533 to

1.35 milligrams per liter (mg/l). cPAHs have not been detected in groundwater from these wells at concentrations greater than the CULs.

MW-2 and MW-3 are located in "D" Street downgradient of the contaminated soil area. BRPHs have not been detected in groundwater from MW-3 during any of the sampling events. BRPHs were only detected in groundwater from MW-2 during one of the ten sampling events (October 2004). The concentration was 0.563 mg/l (the MTCA Method A cleanup level is 0.05 mg/l). It appears that the detection at MW-2 is an anomaly, but additional monitoring and evaluation of MW-2 is appropriate to confirm that BRPHs are not present and to further evaluate potential seasonal variations. cPAHs have not been detected in groundwater samples collected from MW-3 during any of the sampling events where analyses for cPAHs were performed. cPAHS were only detected in groundwater from MW-2 during one of the 10 sampling events (May 2006) at a concentration less than the MTCA Method A Cleanup level of 0.1 µg/L.

The results of the RI indicate that groundwater quality at MW-2 and MW-3 generally meets Model Toxics Control Act (MTCA) Method A CUL for groundwater.

Area B: MW-6 is located upgradient of the majority of the petroleum-contaminated soil in the Nichols Trucking/Home Electric/19th Street UST Area and the 19th Street UST as shown on Figure 5. MW-13 is located within the backfill of the BNSF IA excavation area located downgradient of the 19th Street UST.

BRPHs were detected in groundwater samples collected from MW-6 and MW-13 at concentrations greater than the MTCA Method A CUL during the October 2004 and January 2005 monitoring events, but were not detected during the other sampling events. The concentrations of diesel-range petroleum hydrocarbons detected ranged from 0.515 to 1.02 mg/l. cPAHs were either not detected or were detected at concentrations less than the CUL in the groundwater samples collected from these wells during the events where analyses for cPAHs were performed.

MW-4 and MW-5 are located in "D" Street downgradient of the area of petroleum-contaminated soil. BRPHs and cPAHs were not detected in groundwater from either of these wells during any of the sampling events.

Area C: Monitoring wells MW-7 and MW-14 are located within the Home Electric/SuperValu petroleum-contaminated soil area as shown on Figure 5. BRPHs were detected in groundwater samples collected from MW-7 at concentrations greater than the CUL during the July 2004, October 2004 and January 2005 monitoring events and in samples collected from MW-14 during the October 2004, January 2005, April 2005, January 2006 and May 2006 events. The concentrations of BRPHs detected in groundwater during those events ranged from 0.695 mg/l to 2.87 mg/l.

cPAHs were detected at a concentration (0.291 µg/l [total]) greater than the CUL in the groundwater sample collected from MW-7 during the October 2004 monitoring event. cPAHs were detected at a concentration (0.856 µg/l [total]) greater than the CUL in the groundwater sample collected from monitoring well MW-14 during the May 2006 monitoring event.

Monitoring well MW-10 is located in East 18th Street, downgradient of the former pipeline. Petroleum hydrocarbons and cPAHs have not been detected in groundwater samples collected in MW-10 during any of the five monitoring events, indicating that the northern limit of impacted groundwater in this area does not extend beneath or beyond East 18th Street.

MW-8, MW-9 and MW-11 are located in "D" Street downgradient of the area of petroleum-contaminated soil. BRPHs have not been detected in any of these wells during any of the sampling events. cPAHs were either not detected or were detected at concentrations less than the CUL during all of the sampling events at these wells.

4.0 SITE CLEANUP STANDARDS

MTCA Method A CULs have been selected for soil and groundwater at the Site. Method B CULs have been selected where Method A CULs for groundwater have not been established. The applicable cleanup levels identified in the RI/FS are indicated below.

MTCA Cleanup Levels

Chemical of Concern	Applicable Criteria	Concentration
BRPH in soil	MTCA Method A	2,000 mg/kg
Total cPAHs[1] in soil	MTCA Method A	0.1 mg/kg (total)
BRPH in groundwater	MTCA Method A	0.5 mg/l
Naphthalene in groundwater	MTCA Method B	160 µg/l
Total cPAHs[2] in groundwater	MTCA Method A	0.1 µg/l (total)

Notes:
[1] Calculated using toxicity equivalency factor methodology per WAC 173-340-708(8) and WAC 173-340-900, Table 720-1.
[2] Calculated using toxicity equivalency factor methodology per WAC 173-340-708(8) and WAC 173-340-900, Table 740-1.

5.0 REMEDIAL ALTERNATIVE SELECTION

BRPH in soil is the primary contaminant at the Site. Other contaminants (i.e., cPAH in soil and BRPH and cPAH in groundwater) are also present at the Site and are associated with the BRPH in soil. Remedial actions at the Site are, therefore, focused on control and recovery of BRPH.

Remedial actions other than those described in the FS were dismissed from further screening because they were not considered technically possible to implement because of the relatively insoluble/immobile nature of BRPH and the complexity of Site surface and subsurface conditions.

The following remedial actions are considered potentially applicable to BRPH in soil and/or groundwater at the Site and were screened relative to MTCA requirements:

- No action;
- In-situ stabilization of BRPH-impacted soil;
- Isolation/containment of BRPH-impacted soil with in-situ treatment of BRPH-impacted groundwater;
- Excavation of contaminated soil to the maximum extent possible; and
- Complete excavation of BRPH-impacted soil.

The remedial alternatives are presented in detail in the RI/FS report.

6.0 PREFERRED REMEDIAL ALTERNATIVE

Excavation of contaminated soil to the maximum extent practicable was selected as the preferred remedial action. The Site is an active industrial and commercial area with complex subsurface conditions and multiple utilities. The data indicate that while the majority of source material appears to be located in relatively accessible areas, some soil contamination may extend beneath existing buildings, structures and utilities. Complete removal of all contaminated soil could therefore involve closure/relocation of active businesses, utility relocation and building demolition. Therefore, complete removal of all BRPH-contaminated soil at the Site is considered impracticable. The proposed removal activities will focus on removing readily accessible contaminated soil and wood waste where BRPH are present at concentrations greater than the cleanup levels.

Consistent with Chapter 70.105D RCW, "Model Toxics Control Act", as implemented by Chapter 173-340 WAC, "Model Toxics Control Act Cleanup Regulation", Ecology has determined that the selected cleanup actions are protective of human health and the environment, attain federal and state requirements which are applicable or relevant and appropriate, comply with cleanup standards, and provide for compliance monitoring. The cleanup actions satisfy the preference expressed in WAC 173-340-360 for the use of permanent solutions to the maximum extent practicable, provide for a reasonable restoration time frame, and consider public concerns raised during public comment on the draft CAP.

7.0 REMEDIAL ACTION DESIGN

Interlocking sheet piling will be used to some degree to maximize removal of BRPH-containing soil, help control groundwater flow into the remedial areas and protect existing structures or utilities adjacent to the excavation areas. The sheet piling will be installed to depths as great as approximately 47 feet bgs. The sheet piles will be left in place to reduce the potential for recontamination of the remedial areas from potential BRPH-containing soil remaining at the Site after the remedial action is completed.

Overburden soils with concentrations of COC less than cleanup levels will be removed and stockpiled for backfilling of the excavation. Additional imported soil will be needed to backfill the remedial area after contaminated soil is removed.

Excavated contaminated soil will require temporary on-site stockpiling and dewatering due to the presence of shallow groundwater at the Site. Water collected during dewatering processes will be treated and/or disposed off site. Restoration of each area will be required following completion of the remedial activities.

Soil high in total organic carbon (TOC) could be placed as backfill in excavation areas where some residual contamination will remain to enhance groundwater conditions after remedial activities, as shown in Figure 10 for illustrative purposes. The organic carbon in the soil will increase the sorptive capacity and decrease the permeability of the soil and thus reduce the potential for dissolved contaminants to migrate through the subsurface. Impermeable liners and/or backfill (such as CDF) will also be used as appropriate in the base and sidewalls of the excavations to further discourage migration of contaminated groundwater through clean backfill placed in the remedial excavations following removal of BRPH-contaminated soil and wood waste. Additional details regarding backfill materials and liners will be provided in an Engineering Design Report to be developed for the cleanup action.

7.1 AREA A

The removal of accessible BRPH-contaminated soil at Area A, using sloped excavation walls, will reduce the potential risk of future BRPH migration through the subsurface and/or migration through the storm drainage system. The BRPH-contaminated soil is located adjacent to the east side of the ponds. Although the ponds are lined with an impermeable membrane there is some potential that contaminants could potentially enter the storm drainage system. The western limit of the BRPH-containing soil has not been established, and it is possible that some BRPH is located beneath the ponds. Petroleum-contaminated soils are generally located between 5 and 12 feet bgs. The pond liners will be removed and the pond area excavated to the extent necessary to remove BHRP-containing soil as is generally shown in Figures 4 and 8. The ponds will be reconstructed after excavation of BRPH-containing soil has been completed. All sides of the excavation will be sloped. Approximately 12,200 cubic yards of contaminated soil will be excavated in Area A.

Precautions to avoid releases to the ponds (and potential subsequent releases to the discharge system) will be necessary. These precautions will include on-hand spill control and cleanup materials and placement of oil traps in the downgradient manholes.

This work would be best done during the dry season (July and August) so that the volume of water in the ponds and groundwater levels will be relatively low. A temporary stormwater handling system will be installed for use during excavation and reconstruction of the ponds.

7.2 AREA B

Removal of accessible BRPH-contaminated soil at Area B will further reduce the potential for migration of COC via groundwater or the storm drainage system. This work will be done during the dry season (July and August) so that groundwater levels will be relatively low.

Excavation and removal of all the BRPH-containing soil in Areas B1 and B2 is impractical due to existing utilities, the presence of the closed-in-place UST and the presence of the Tacoma Fixtures building, as shown on Figure 6 . Excavation will be accomplished in Areas B1 and B2 as follows:

Area B1: Sheet pile shoring will be used along the north and south sides of the remedial area as shown on Figures 6 and 9 to allow excavation of BRPH-contaminated soil to the maximum extent practical adjacent to the Tacoma Fixtures building (on the north side of the excavation) and the existing storm drain line on the south side of the excavation. Approximately 3,000 cubic yards of contaminated soil will be excavated for disposal. Petroleum-contaminated soil is generally located between 5 and 12 feet bgs.

An existing power pole would need to be relocated. A sanitary sewer lateral, a gas main, a water main and an abandoned water line are all located within the excavation area, as shown on Figure 6. These utilities will be protected and/or temporarily rerouted.

Area B2: A trench box shoring system will be used to excavate approximately 900 cubic yards of BRPH-contaminated soil in the area shown on Figures 6 and 9. Excavation in this area will be difficult due to the presence of the existing storm drain line on the north side of the remedial area, the embankment for the adjacent property and the presence of a sanitary sewer line. The trench box will allow excavation of BRPH-contaminated soil to the maximum extent practical.

7.3 AREA C

Removal of accessible BRPH-contaminated soil at Area C will reduce the potential for migration of COC via groundwater. Excavation of BRPH-containing soil in Area C is expected to be complicated by proximity of the contaminated soil to the SuperValu and Tacoma Fixtures buildings. Sheet piles will be installed adjacent to the buildings on the east side of the excavation and a portion of the west side of the excavation along "D" Street, as shown on Figures 5 and 10. The remaining sides of the excavation will be sloped. Petroleum-contaminated soil is generally located between 6 and 10 feet bgs. Approximately 22,000 cubic yards of contaminated soil will be removed for disposal.

A sanitary sewer line is located within the excavation area and would need to be protected during excavation activities. This work should be done during the dry season (July and August) when groundwater levels will be relatively low.

7.4 AREA D

Excavation and disposal of BRPH-contaminated soil in Area D will be relatively easy to implement and would reduce the potential risk of future disruption or contact. The BRPH-contaminated soil is generally located between 1.5 and 4 feet bgs. Sheet pile shoring will be used in the northwest corner of the excavation, adjacent to "D" Street as shown of Figure 7. The remaining side of the excavation will be sloped. Approximately 1,100 cubic yards of contaminated soil will be removed for disposal.

8.0 REMEDIAL ACTION SCHEDULE

The remedial action at the Site is anticipated to be conducted after entry of an appropriate Consent Decree for the Site. The specific remediation schedule will be provided in the Decree. Work should be conducted during the dry season (from July through October) when groundwater levels are relatively low.

9.0 RESIDUAL CONTAMINATION

9.1 GENERAL

Excavation of contaminated soil to the maximum extent practicable was selected through the FS as the preferred remedial action. The results of the RI/FS indicate that a majority of the contaminated soil appears to be located in relatively accessible areas. However, some contamination may extend beneath and remain beneath existing buildings. Contaminated soil located in the proximity of active utilities will also be left in place. It is not possible to precisely estimate the location and amount of contaminated soil that will be left in place because the limits of contamination are not known. The areas where contaminated soil may remain after the remedial action are described below.

9.2 AREA A

The westward limit of the contaminated soil has not been fully determined and it is possible, although unlikely, that contamination may extend beneath "D" Street. Petroleum hydrocarbons and PAHs were not detected in soil samples collected from borings RI-45, RI-46, MW-2 and MW-3, located within the "D" Street right-of-way to the west of the ponds.

BRPH was detected in one groundwater sample collected from monitoring well MW-2 in October 2004. No other contaminants of concern were detected in groundwater samples collected during any other monitoring event from monitoring wells MW-2 and MW-3, located west of and downgradient from the ponds. Soil contamination likely does not extend into "D" Street downgradient of Area A based on these results.

9.3 AREA B1

Sheet pile shoring will be used along the north and south sides of the remedial area as shown on Figure 5. It is possible that contamination may extend under the Tacoma Fixtures building on the north side of the excavation. Any contaminated soil located on the north side the sheet pile shoring will not be practicable to excavate and will be left in place.

Multiple active utilities cross the remedial area as shown on Figure 6. In addition, the large closed in place 19th Street UST is located in the remedial area. Contaminated soil located in the proximity of these utilities and beneath the UST will be left in place because it is impractical to remove/reroute the utilities or remove the UST to excavate the contaminated soil.

9.4 AREA B2

A trench box shoring system will be used to excavate contaminated soil in the area shown on Figures 6 and 9. The trench box will protect an active storm drain line to the north and an embankment for the property on the south. Any contaminated soil located to the north and south of the trench box will be impracticable to excavate and will be left in place.

An active sewer line crosses the remedial area. Contaminated soil beneath and immediately adjacent to the sewer line will need to be left in place to protect the line during remedial excavation.

9.5 AREA C

Sheet pile shoring will be used along the east and west sides of the remedial area as shown on Figures 5 and 10. It is possible that contamination may extend under the Tacoma Fixtures and/or the SuperValu buildings on the east side of the excavation or beneath "D" Street on the west side of the excavation. Any contaminated soil located on the east side the sheet pile shoring or beneath "D" Street will not be practicable to excavate and will be left in place.

9.6 AREA D

The results of the RI/FS indicate that all of the contaminated soil at Area D is accessible, and that complete excavation and removal of the contaminated soil can be accomplished.

10.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Applicable or Relevant and Appropriate Requirements (ARARs) are federal, tribal, state and local laws and regulations that apply to environmental cleanup or remedial construction activities at the Site. Identified potentially applicable state and federal laws are described in the following sections. Actions at the Site must be evaluated to assess if they are in compliance with the ARARs governing Site activities.

10.1 KNOWN ARARS

A listing of the known ARARs potentially applicable to this Site includes the following.

10.1.1 Federal Laws and Regulations

- 33 USC 1251 et. Seq. (Clean Water Act) and 40 CFR 230
- 40 CFR 131 Subpart D (Federally Promulgated Water Quality Standards); Subtitles C and D-42 USC 6921-6949a and 40 CFR Part 268 (Resource Conservation and Recovery Act-RCRA)

- 20 CFR Subpart 1910.120 (Occupational Safety and Health Act); and Executive Order 11988 (40 CFR Part 6, Appendix A – Flood Plain Management)

10.1.2 State Laws and Regulations

- Chapter 70.105D RCW (Model Toxics Control Act – MTCA), and Chapter 173-340 WAC (MTCA Regulations)
- Chapter 70.105 RCW (Washington State Hazardous Waste Management Act) and Chapter 173-303 WAC (State Dangerous Waste Regulations); Chapter 90.48 RCW (State Water Pollution Control Act); Chapter 90.70 RCW (Puget Sound Water Quality Act)
- Chapter 173-14 WAC (Shoreline Management Act)
- Chapter 70.95 (Solid Waste Management – Reduction and Recycling), Chapter 70.94 RCW (Washington Clean Air Act)
- Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Wells)
- Chapter 43.21C RCW (State Environmental Policy Act [SEPA]) and Chapter 197-11 WAC (State Environmental Policy Act Rules)
- Washington Industrial Safety and Health Act (WISHA)

10.1.3 Regional and Local

- Puget Sound Clean Air Agency (Regulations I and III)
- City of Tacoma Municipal Code – Chapter 13.10 (Shoreline Regulations)
- City of Tacoma Municipal Code – Chapter 70 (Uniform Building Code – Excavation and Grading)
- City of Tacoma Municipal Code – Chapter 12.08 City Code (Provisions for Acceptance for Discharges to Sewer System)
- Tacoma Pierce County Health Department (Waste Disposal Authorization)

The selected remedial alternatives for the Site comply with the ARARs listed above.

10.2 Other Guidance to be Considered

Potentially applicable state and federal laws provide a framework for implementation of the remedial action for the Site. Other regulations that may affect remedial activities at the Site, but are not codified as law, are to be considered when selecting and developing the Cleanup Action Plan.

10.2.1 City of Tacoma, Stormwater Management Manual

Project activities will comply with provisions of the City of Tacoma *Stormwater Management Manual* and underlying regulations for stormwater management in accordance with the National Clean Water Act, the Puget Sound Water Quality Management Plan and the National Pollutant Discharge Elimination System Stormwater Permit. Environmental cleanup and redevelopment activities must comply with Best Management Practices (BMP) identified in Section A5 of the Manual "Construction and Demolition Activities" and Section A6 "Other Activities."

10.2.2 Protection, Performance and Compliance Monitoring

Protection (worker health and safety) monitoring will be implemented during construction and will include monitoring for vapor, dust, stormwater runoff or other potential release mechanisms at the Site during implementation of the remedial action. Performance monitoring will include treatment or disposal of obvious waste material that is encountered, and confirmation sampling to evaluate the effectiveness of these treatment and disposal actions.

10.3 ARARs Substantive Requirements

Substantive requirements, which are either legally applicable or relevant and appropriate to the project, are summarized below for selected laws and regulations. This discussion focuses on substantive requirements, which are pertinent to permitting and to the implementation of the remedial action. Because the cleanup action is being performed under MTCA, the actual permitting of the Site activities is not required (as described in RCW 70.105D.090), and only the substantive provisions of the permit terms must be complied with.

10.3.1 Ecology, Chapter 90.48 RCW, Water Pollution Control

Construction design and implementation shall include measures to prevent any discharge into waters of the state of any organic or inorganic matter that shall cause or tend to cause pollution of such waters according to the determination of Ecology.

10.3.2 Ecology, Chapter 70.105 RCW, Hazardous Waste Management

Remedial action shall not allow for disposal of dangerous wastes in any manner not in compliance with regulations under Chapter 173-303 WAC.

10.3.3 State Environmental Policy Act (SEPA – Chapter 43.210 RCW) and SEPA Rules (Chapter 197-11 WAC)

Rules describing the integration of MTCA and SEPA provided in WAC 197-11-250 through -268 list applicable requirements for the project. Implementation of the Site remediation action triggers SEPA environmental review (e.g., SEPA Checklist), threshold determination and public notice. Pursuant to WAC 197-11-060(5) and WAC 197-11-630, a review will be done to ensure compliance of the remedial action with SEPA. This review will be completed concurrent with agency review of this CAP. If the responsible official issues a Determination of Nonsignificance (DNS) for the Site, the public comment period on the DNS will be the same as the public comment period for the CAP.

10.3.4 Puget Sound Clean Air Agency, Regulation I of the Puget Sound Clean Air Agency

Remedial action shall be performed so as to not allow the emission of any air contaminants in violation of the visual standard established by Section 9.03 of the regulation. Remedial actions shall be performed so as to not allow the emission of particulate matter in violation of Section 9.04 of the regulation.

Remedial action shall be performed so as not to allow the emission of air contaminants in violation of Section 9.11 of the regulation. Remedial action shall be performed so as not to allow the emission of fugitive dust in violation of Section 9.15 of the regulation. Equipment utilized on Site for the remedial action shall be maintained in such a manner as to not be in violation of Section 9.20(b) of the regulation.

10.3.5 Regulation III of the Puget Sound Clean Air Agency

The numerical standards for compliance with air emissions regulations that apply to remedial action on the Site are those listed in Appendix A, Acceptable Source Impact Levels, of the regulation. Remedial activities on the Site will be performed using construction techniques to minimize dust and particulate emissions from the Site, and maintain these emissions below standards promulgated by the Puget Sound Clean Air Agency.

10.3.6 City of Tacoma, Chapter 70, Uniform Building Code – Excavation and Grading

Grading and excavation requirements include the following.

- The non-shored slope cut surface shall be no steeper than inclinations safe for intended use, and shall be no steeper than 2H to 1V (horizontal to vertical). Detrimental amounts of organic material shall not be permitted in fills.
- No rock or similar irreducible material with a maximum dimension greater than 6 inches shall be buried or placed in fills.
- The top cut slopes shall not be made nearer to a Site boundary line than one fifth of the vertical height of the cut with a minimum of 2 feet and a maximum of 10 feet.
- Unless otherwise indicated on the approved grading plan, drainage facilities and terracing shall conform to the provisions of Section 7012 of Chapter 70, Uniform Building Code for cut or fill slopes steeper than three horizontal to one vertical.
- The faces of cut and fill slopes shall be prepared and maintained to control against erosion. The protection for slopes shall be installed as soon as practicable and prior to calling final approval.

10.3.7 City of Tacoma, Chapter 12.08, City Code

Remedial actions will comply with provisions for acceptance of any water generated by remedial action discharged into the city sewer system.

10.3.8 City of Tacoma, Chapter 8.30.030 Part D, City Code

Remedial actions will comply with provisions regarding loud or unnecessary noises.

10.3.9 Tacoma Pierce County Health Department, Waste Disposal Authorization

Remedial actions will comply with provisions for acceptance of any soils to be disposed of at the City of Tacoma Municipal Landfill according to criteria developed for the facility.

11.0 FINISHING TECHNOLOGIES

A combination of institutional controls, natural attenuation and groundwater monitoring are included as "finishing technologies" in the selected remedial action because some contaminated media may be left on Site after excavation is complete. Proposed institutional controls, natural attenuation and groundwater monitoring activities are described below. Specific institutional controls reflecting the location and extent of residual contamination after excavation will be developed as part of the Operation and Maintenance Plan.

11.1 INSTITUTIONAL CONTROLS

Institutional controls are administrative measures that are intended to limit the potential for exposure to contamination by limiting Site access and activities. Institutional controls are required where contamination at concentrations greater than cleanup levels will remain on Site. Institutional controls will be required for this Site in any areas where remediation to cleanup levels is impractical due to the presence of buildings, roads, utilities or other significant facilities (e.g., stormwater detention ponds). Common institutional controls include deed restrictions, compliance monitoring, Site use and access limitations; and zoning and ordinances regarding property usage.

Institutional controls at the Site would consist of:

- Deed restrictions that would mandate specific procedures for handling of excavation spoils or water from dewatering activities to prevent human exposure or harm to the environment during any future activities that disturb the subsurface and may potentially expose BRPH-contaminated soil and/or groundwater.
- Deed restrictions that would prohibit the installation of wells for use as a water supply. Although groundwater in the Site area is not potable due to its high salinity and TDS concentrations, the restriction would still be necessary to prevent uncontrolled withdrawals.
- Deed restrictions that would prohibit transfer of properties to another owner without notification to Ecology.
- Access to the BRPH-contaminated soil remaining on Site after completion of the remedial activities will be limited by the overlying pavement, storm pond liner and/or buildings in Areas A, B, C and D.
- Access to BRPH-contaminated soil remaining on Site after completion of the remedial activities will be limited by the overlying clean soil cover and stormwater ponds and by fencing.
- Groundwater monitoring to assess trends in the concentration of COC and natural attenuation parameters. Groundwater monitoring will be conducted annually for 5 years, at which time the monitoring scheme and data will be reviewed by Ecology.

11.2 NATURAL ATTENUATION

Natural attenuation consists of biodegradation; dispersion; dilution; sorption; volatilization; and chemical or biological stabilization, transformation, or destruction of COC. Natural attenuation is generally used where source control has been conducted to the maximum extent practicable (including the removal of "free product"); the remaining contaminants do not pose an unacceptable threat to human health or the environment; there is evidence that natural attenuation is occurring and will continue at a reasonable rate; and appropriate monitoring is conducted as described in WAC 173-340-370.

Natural attenuation processes appear to be active at the Site based on the results of the 2006 Supplemental Groundwater Investigation. Monitoring of natural attenuation parameters will be included in future groundwater monitoring at the Site.

11.3 GROUNDWATER MONITORING

Groundwater monitoring involves sampling and analysis to assess groundwater quality and the presence of chemicals of concern.

Groundwater monitoring at the Site would be conducted to assess trends in the concentrations of COC and monitor natural attenuation parameters. The concentrations of COC would be evaluated relative to specified compliance criteria to monitor Site conditions at the Conditional Point of Compliance (CPOC). The CPOC at the Site was identified as the existing wells within the "D" Street right-of-way in the RI/FS, (GeoEngineers 2007, Section 10.1.2). The CPOC was identified as protective of the Thea Foss Waterway.

Groundwater monitoring would be implemented at the CPOC by sampling and analyzing groundwater from MW-2, MW-3, MW-4, MW-5, MW-8, MW-9 and MW-11 (the "D" Street wells). The monitoring program would establish appropriate response actions that would be triggered at specific concentrations at the CPOC. Potential response actions would range from increased groundwater monitoring to additional Site investigations and evaluation of the need for more active remedial actions. A contingency action plan for the potential response actions is provided in Section 12 of this CAP.

Institutional controls, natural attenuation and groundwater monitoring will enhance the selected remedial action. The natural attenuation monitoring is scheduled to begin at the Site after the remedial action is completed in 2008. The natural attenuation and groundwater monitoring will occur annually at the Site for a period of 5 years. A summary of groundwater monitoring results to date is attached as Table 1.

12.0 CONTINGENCY PLAN

The following actions will be conducted if the groundwater monitoring results indicate that contaminants of concern are present at concentrations greater than the CUL at the CPOC "D" Street wells.

- Resampling to verify analytical results
- Resuming quarterly groundwater sampling

If contaminants of concern are detected at concentrations greater than the CUL for two consecutive quarters, the following actions will be considered.

- Installing additional monitoring wells between "D" Street and the Waterway,
- Investigating subsurface conditions in the area of concern,
- Discussing potential further actions with Ecology,
- Ecology will also conduct 5-year reviews of the monitoring scheme and data in accordance with WAC 173-340-420.

Additional details regarding the contingency plan will be provided in an Operations and Maintenance Plan to be developed and used at the Site after the remedial actions are completed.

TABLE 1
SUMMARY OF CHEMICAL ANALYTICAL DATA FOR PETROLEUM HYDROCARBONS AND cPAHS IN GROUNDWATER[1]
BNSF OIL PIPELINE SITE
TACOMA, WASHINGTON

Monitoring Well ID	Date Sampled	NWTPH- Dx[2]			Total cPAHs (µg/l)[4]
		Diesel (mg/l)	Heavy Oil (mg/l)	BRPHs[3] (mg/l)	
MW-1	4/20/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	<0.5	<0.100
	1/18/2005	--	--	**0.533**	--
	4/27/2005	--	--	<0.5	--
	7/25/2006	--	--	<0.5	<0.100
MW-2	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	**0.563**	<0.100
	1/17/2005	--	--	<0.5	<0.100
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	4/27/2005	--	--	<0.5	--
	1/25/2006	--	--	<0.5	<0.100
	5/4/2006	--	--	<0.5	0.0122
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/26/2006	<0.236	<0.5	<0.5	<0.100
	1/27/2007	--	--	<0.5	<0.100
	5/8/2007	<0.24	<0.5	<0.5	0.013
	7/12/2007	<0.25	<0.5	<0.5	<0.100
MW-3	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	<0.5	<0.100
	1/17/2005	--	--	<0.5	<0.100
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	1/25/2006	--	--	<0.5	<0.100
	5/4/2006	--	--	<0.5	<0.100
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/26/2006	<0.236	<0.5	<0.5	<0.100
	1/27/2007	--	--	<0.5	<0.100
	5/8/2007	<0.24	<0.5	<0.5	<0.100
	7/12/2007	<0.24	<0.5	<0.5	<0.100
MW-4	4/21/2004	<0.25	--	--	<0.100
	7/21/2004	<0.25	<0.5	--	<0.100
	10/19/2004	--	--	<0.5	<0.100
	1/17/2005	--	--	<0.5	<0.100
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	5/4/2006	--	--	<0.5	<0.100
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/26/2006	<0.236	<0.5	<0.5	<0.100
	1/27/2007	--	--	<0.5	<0.100
	5/8/2007	<0.24	<0.5	<0.5	<0.100
	7/11/2007	<0.25	<0.5	<0.5	<0.100
MTCA[5] Method A Cleanup Level		0.5			0.1

Notes appear on Page 4

Monitoring Well ID	Date Sampled	NWTPH- Dx[2] Diesel (mg/l)	NWTPH- Dx[2] Heavy Oil (mg/l)	BRPHs[3] (mg/l)	Total cPAHs (µg/l)[4]
MW-4A	4/21/2004	<0.25	<0.5	--	--
	1/25/2006	--	--	<0.5	<0.100
MW-5	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	--	<0.100
	1/18/2005	--	--	<0.5	--
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	1/25/2006	--	--	<0.5	<0.100
	5/4/2006	--	--	<0.5	<0.100
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/27/2006	<0.236	<0.5	<0.5	<0.100
	1/27/2007	--	--	<0.5	<0.100
	5/8/2007	<0.24	<0.5	<0.5	<0.100
	7/11/2007	<0.24	<0.5	<0.5	<0.100
MW-6	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	**0.582**	0.0928
	1/17/2005	--	--	**0.515**	--
	1/25/2006	--	--	<0.5	0.0604
MW-7	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	0.476	<0.5	**0.726**	--
	10/20/2004	--	--	**1.69**	**0.291**
	1/18/2005	--	--	**1.12**	<0.100
	5/4/2006	--	--	<0.5	0.0097
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/26/2006	<0.236	<0.5	<0.5	0.094
	1/30/2007	--	--	<0.5	<0.100
	4/24/2007	<0.24	<0.5	<0.5	<0.100
	7/12/2007	<0.25	<0.5	<0.5	<0.100
MW-7A	1/26/2006	--	--	<0.5	<0.100
MW-8	4/21/2004	<0.25	<0.5	--	<0.100
	7/21/2004	<0.25	<0.5	--	<0.100
	10/19/2004	--	--	<0.5	<0.100
	1/17/2005	--	--	<0.5	<0.100
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	1/25/2006	--	--	<0.5	0.074
	5/4/2006	--	--	<0.5	<0.100
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/27/2006	<0.236	<0.5	<0.5	<0.100
	1/27/2007	--	--	<0.5	<0.100
	5/8/2007	<0.24	<0.5	<0.5	<0.100
	7/11/2007	<0.24	<0.5	<0.5	<0.100
MTCA[5] Method A Cleanup Level		0.5			0.1

Notes appear on Page 4

Monitoring Well ID	Date Sampled	NWTPH- Dx[2]			Total cPAHs (µg/l)[4]
		Diesel (mg/l)	Heavy Oil (mg/l)	BRPHs[3] (mg/l)	
MW-9	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	<0.5	<0.100
	1/17/2005	--	--	<0.5	--
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	5/4/2006	--	--	<0.5	<0.100
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/26/2006	<0.236	<0.5	<0.5	<0.100
	1/30/2007	--	--	<0.5	<0.100
	4/24/2007	<0.236	<0.5	<0.5	<0.100
	7/11/2007	<0.24	<0.5	<0.5	0.016
MW-9A	1/25/2006	--	--	<0.5	<0.100
MW-10	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	<0.5	<0.100
	1/17/2005	--	--	<0.5	--
	1/25/2006	--	--	<0.5	<0.100
MW-11	4/21/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	<0.5	<0.100
	1/17/2005	--	--	<0.5	--
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	5/4/2006	--	--	<0.5	<0.100
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	1/27/2007	--	--	<0.5	<0.100
	5/8/2007	<0.24	<0.5	<0.5	<0.100
	7/11/2007	<0.25	<0.5	<0.5	<0.100
MW-11A	4/21/2004	<0.25	<0.5	--	--
	1/25/2006	--	--	<0.5	<0.100
MW-12	4/20/2004	<0.25	<0.5	--	--
	7/21/2004	<0.25	<0.5	--	--
	10/19/2004	--	--	0.714	<0.100
	1/18/2005	--	--	0.614	<0.100
	1/26/2006	--	--	<0.5	<0.100
MW-13	10/20/2004	--	--	1.02	<0.100
	1/18/2005	--	--	0.664	<0.100
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	1/26/2006	--	--	<0.5	0.0475
MW-13A	10/20/2004	0.341	<0.5	0.591	<0.100
MTCA[5] Method A Cleanup Level		0.5			0.1

Notes appear on Page 4

Monitoring Well ID	Date Sampled	NWTPH- Dx[2]			Total cPAHs (µg/l)[4]
		Diesel (mg/l)	Heavy Oil (mg/l)	BRPHs[3] (mg/l)	
MW-14	10/20/2004	--	--	**2.87**	<0.100
	1/18/2005	--	--	**1.32**	0.0141
	4/27/2005	--	--	**0.567**	--
	7/21/2005	--	--	<0.5	--
	1/26/2006	--	--	**0.695**	<0.100
	5/4/2006	--	--	**1.76**	**0.856**
	8/3/2006	<0.236	<0.5	<0.5	<0.100
	10/26/2006	<0.236	<0.5	<0.5	<0.100
	1/30/2007	--	--	<0.5	<0.100
	4/24/2007	<0.236	<0.5	<0.5	<0.100
	7/12/2007	<0.236	<0.5	<0.5	0.019
MW-14A	10/20/2004	1.01	<0.5	**1.26**	<0.100
MW-15	10/20/2004	--	--	**1.35**	<0.100
	1/18/2005	--	--	**0.805**	0.0108
	4/27/2005	--	--	<0.5	--
	7/21/2005	--	--	<0.5	--
	1/25/2006	--	--	<0.5	<0.100
MW-15A	10/20/2004	**0.537**	<0.5	**0.787**	<0.100
MTCA[5] Method A Cleanup Level		0.5			0.1

Notes:

[1] Samples were analyzed at North Creek Analytical of Bothell, Washington.

[2] Washington State Department of Ecology method for quantification of diesel- and heavy oil-range petroleum hydrocarbons.

[3] Quantification of petroleum hydrocarbons relative to a Bunker C standard.

[4] Total cPAHS concentrations are the sum of toxicity equivalency factor (TEF) - modified concentrations of the individual cPAHs in accordance with WAC 173-340-900, Table 720-1.

[5] Model Toxics Control Act cleanup levels for groundwater.

BRPH = Bunker C-range petroleum hydrocarbons

mg/l = milligrams per liter µg/l = micrograms per liter

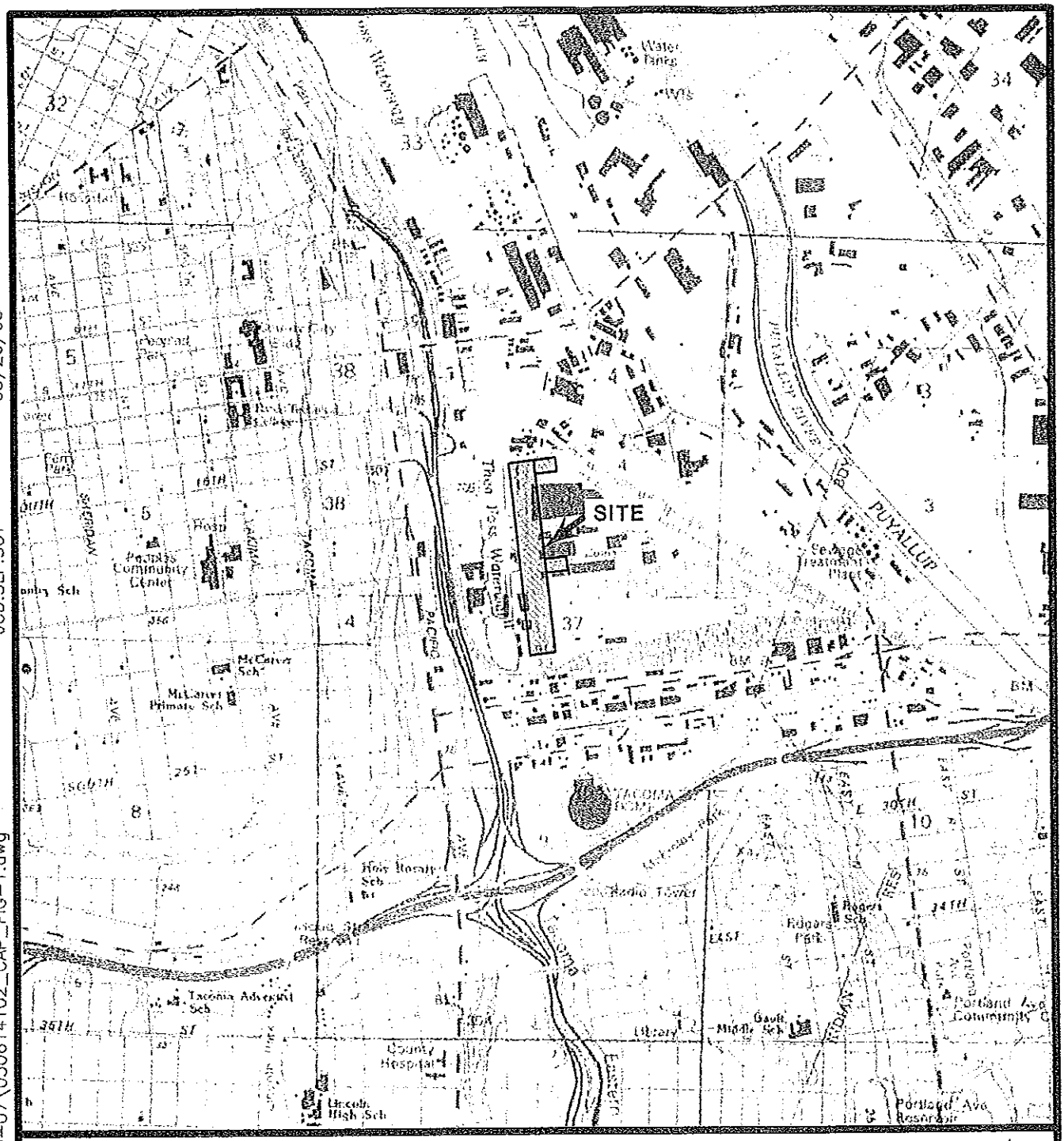
cPAHs = carcinogenic polycyclic aromatic hydrocarbons

"<" = Not detected at the indicated reporting limit.

"--" = Sample was not tested for the indicated analyte

Bold indicates that the detected concentration is greater than the MTCA Method A cleanup levels.

TACO:\0\0506141\02\Finals\Draft EDR Feb 2008\050614102_CAP_Master Historical GW Data_041808.xls



DRAFT

Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document.

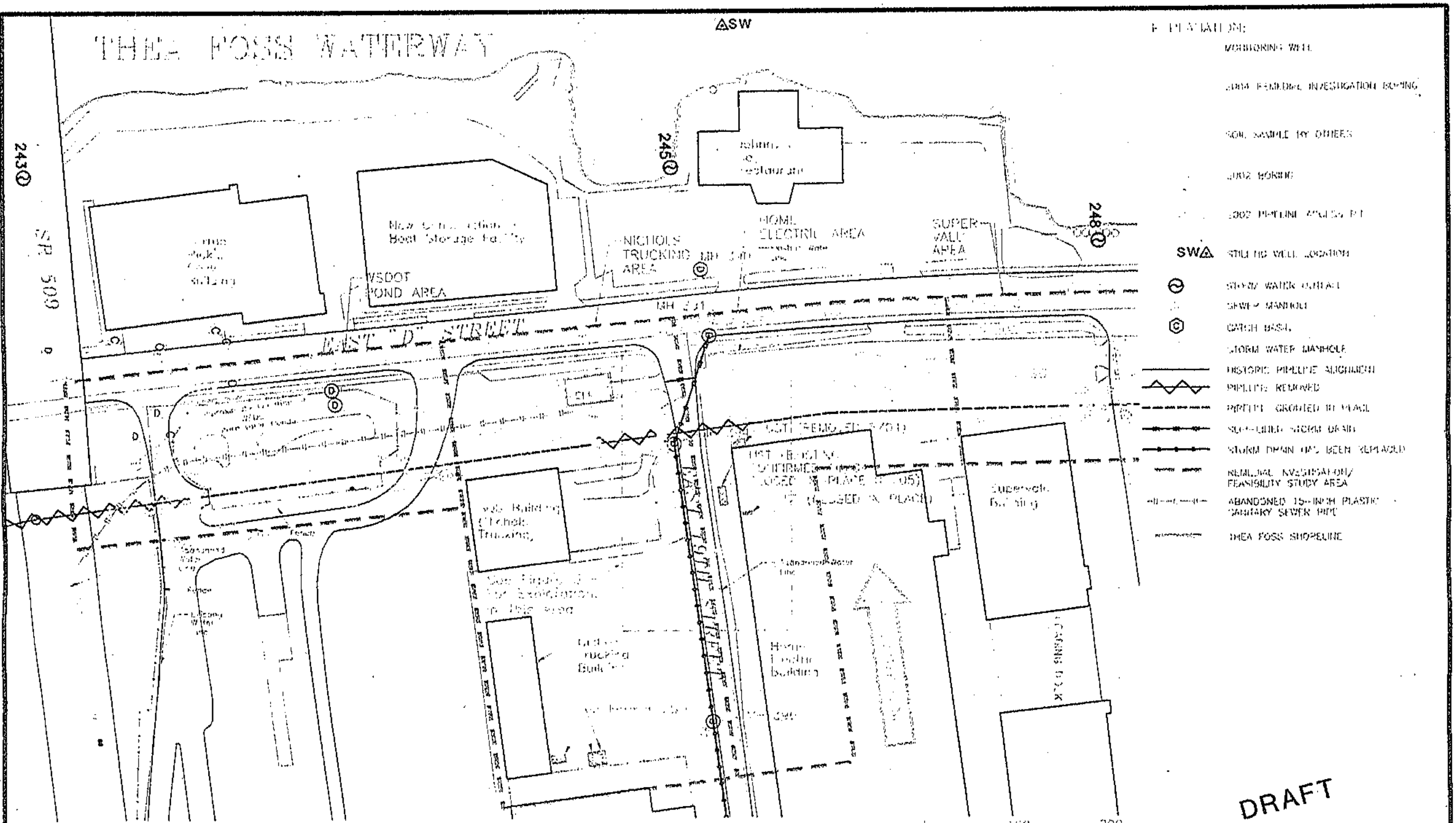
Reference: Sure Maps! Raster Maps– USGS based quadrangles.

GeoEngineers

VICINITY MAP

FIGURE 1

TACO\0\0506141\02\CAD\CAP_02-09-07\050614102_CAP_FIG-1.dwg JCD:SLF:SCY 03/26/08



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file provided by City of Tacoma.

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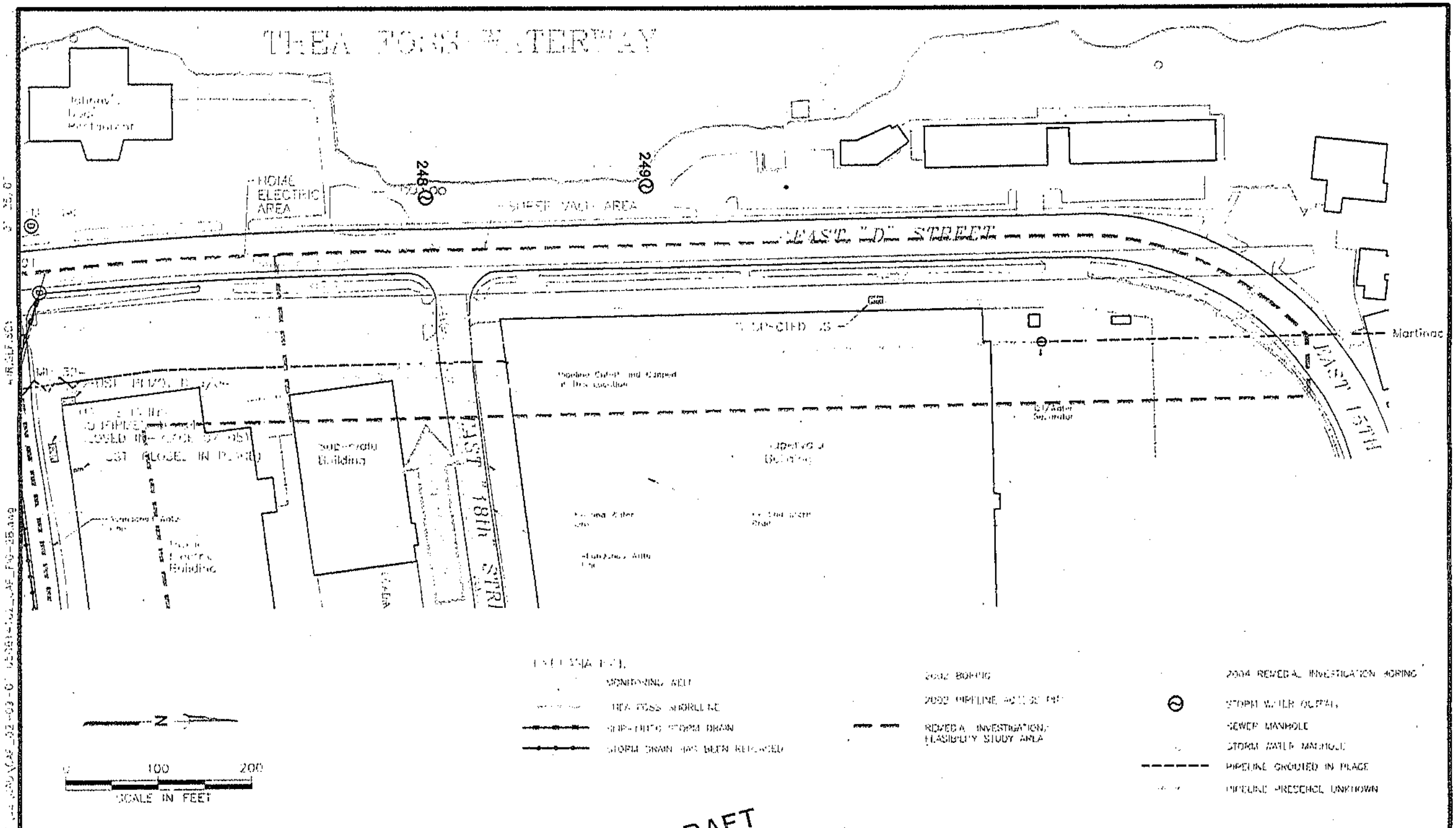
SITE PLAN A

FIGURE 2A



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, provided by Port of Tacoma.

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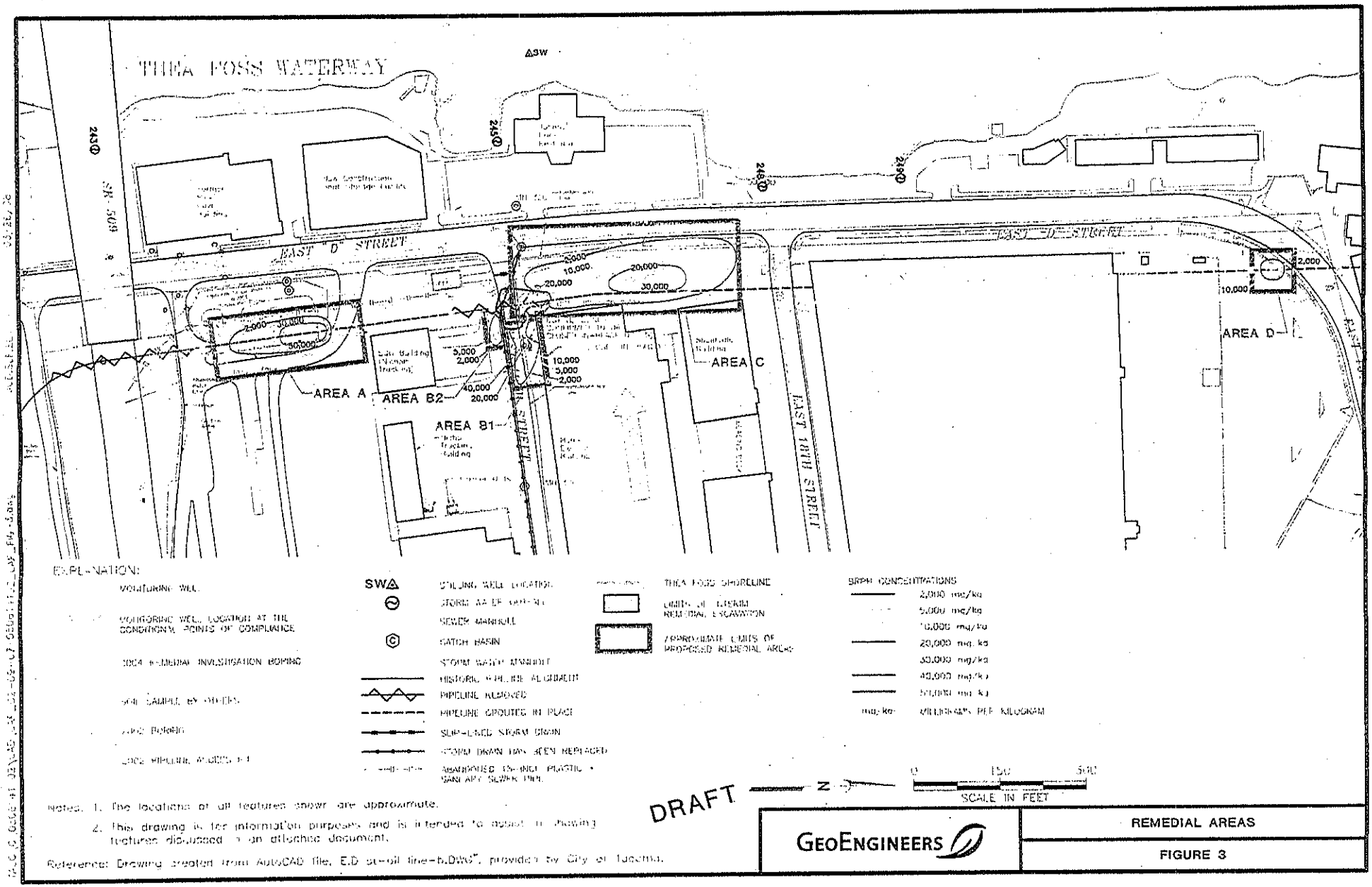
SITE PLAN B

FIGURE 2B



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in viewing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, E:\D oil-oil line-h.DWG", provided by City of Tacoma.

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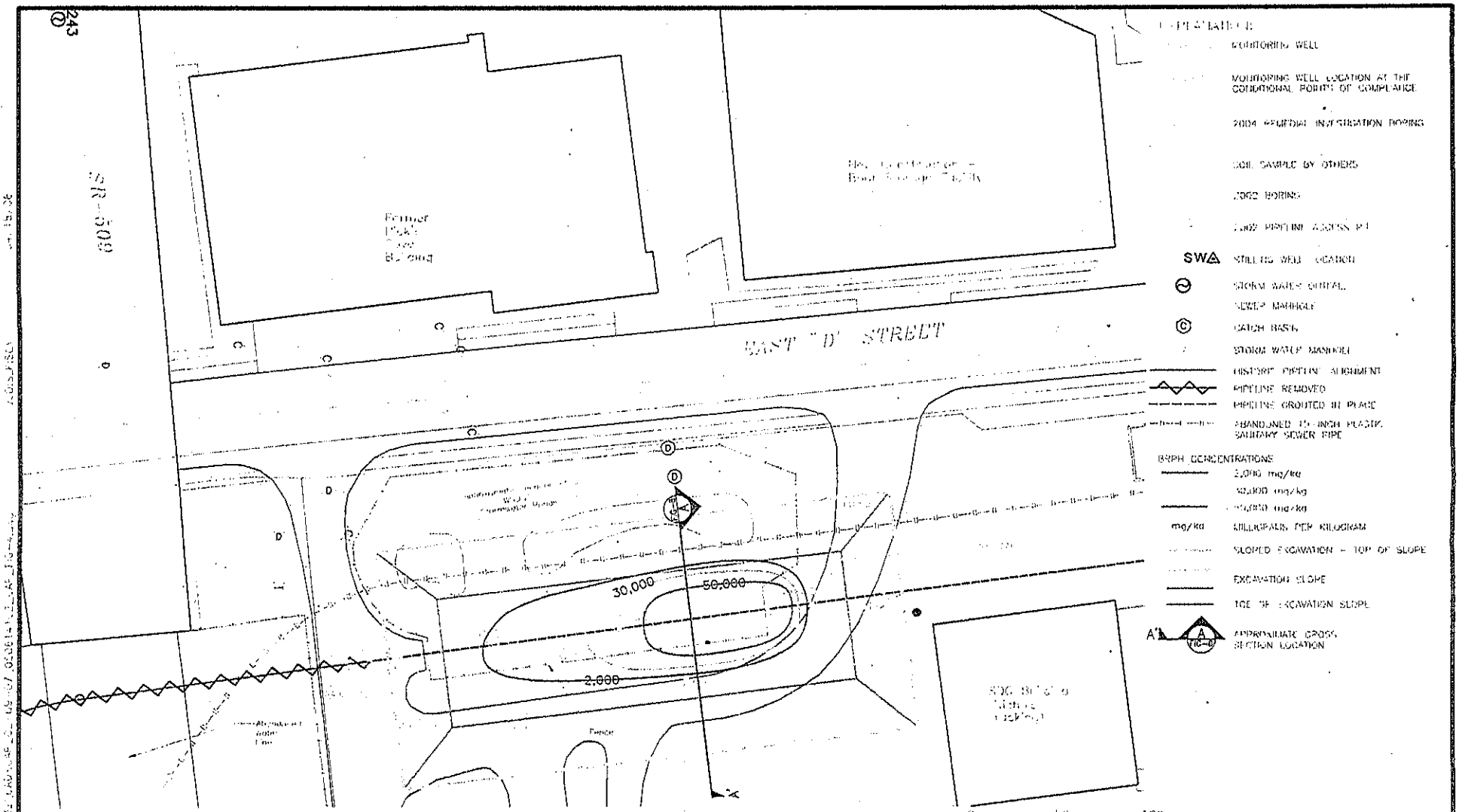
REMEDIAL AREAS

FIGURE 3



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, EE of oil line b.DWG", provided by City of Tacoma

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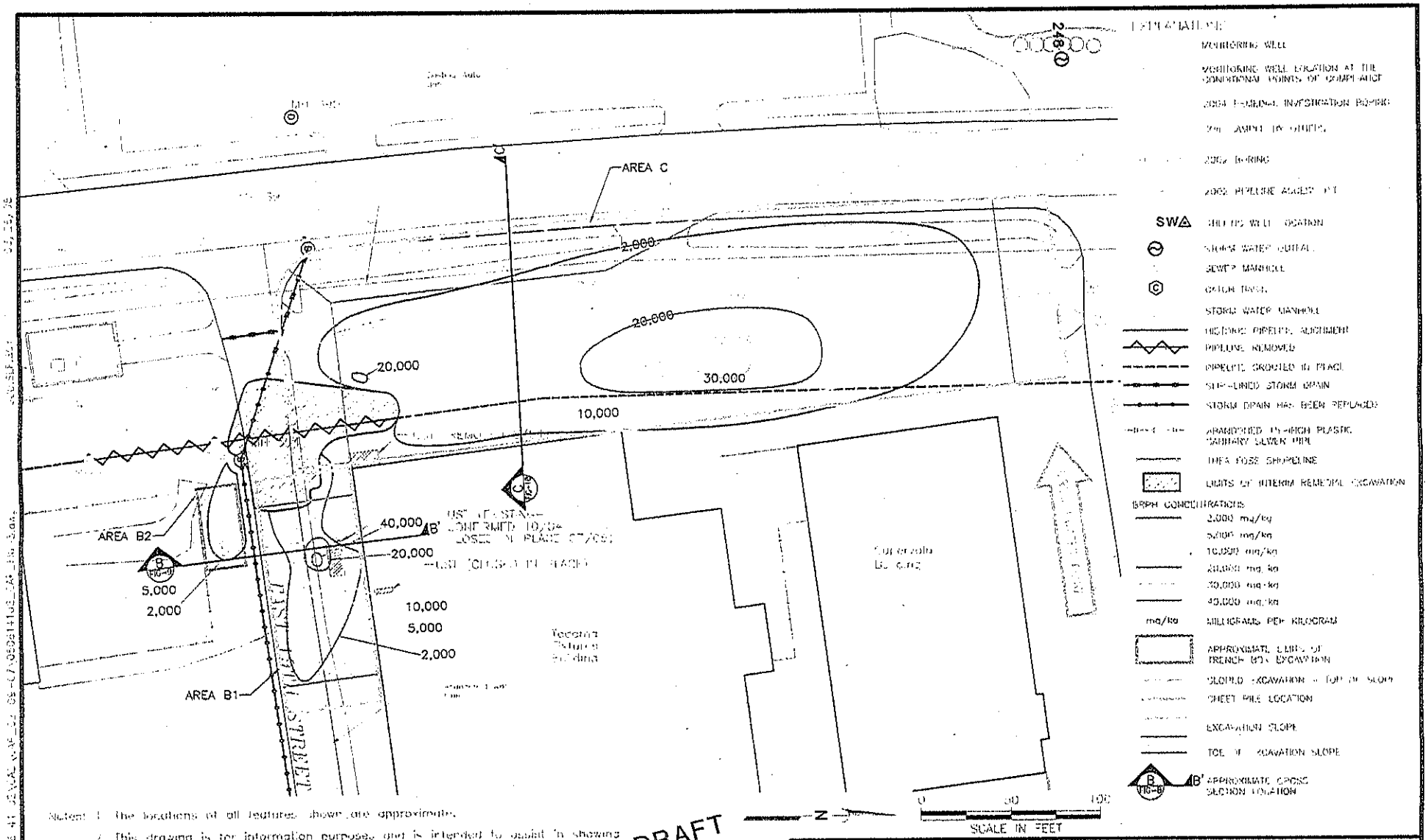
AREA A
EXCAVATION/DISPOSAL

FIGURE 4



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

References: Drawing created from AutoCAD file, S.E. at all line b.DWG", provided by City of Tacoma.

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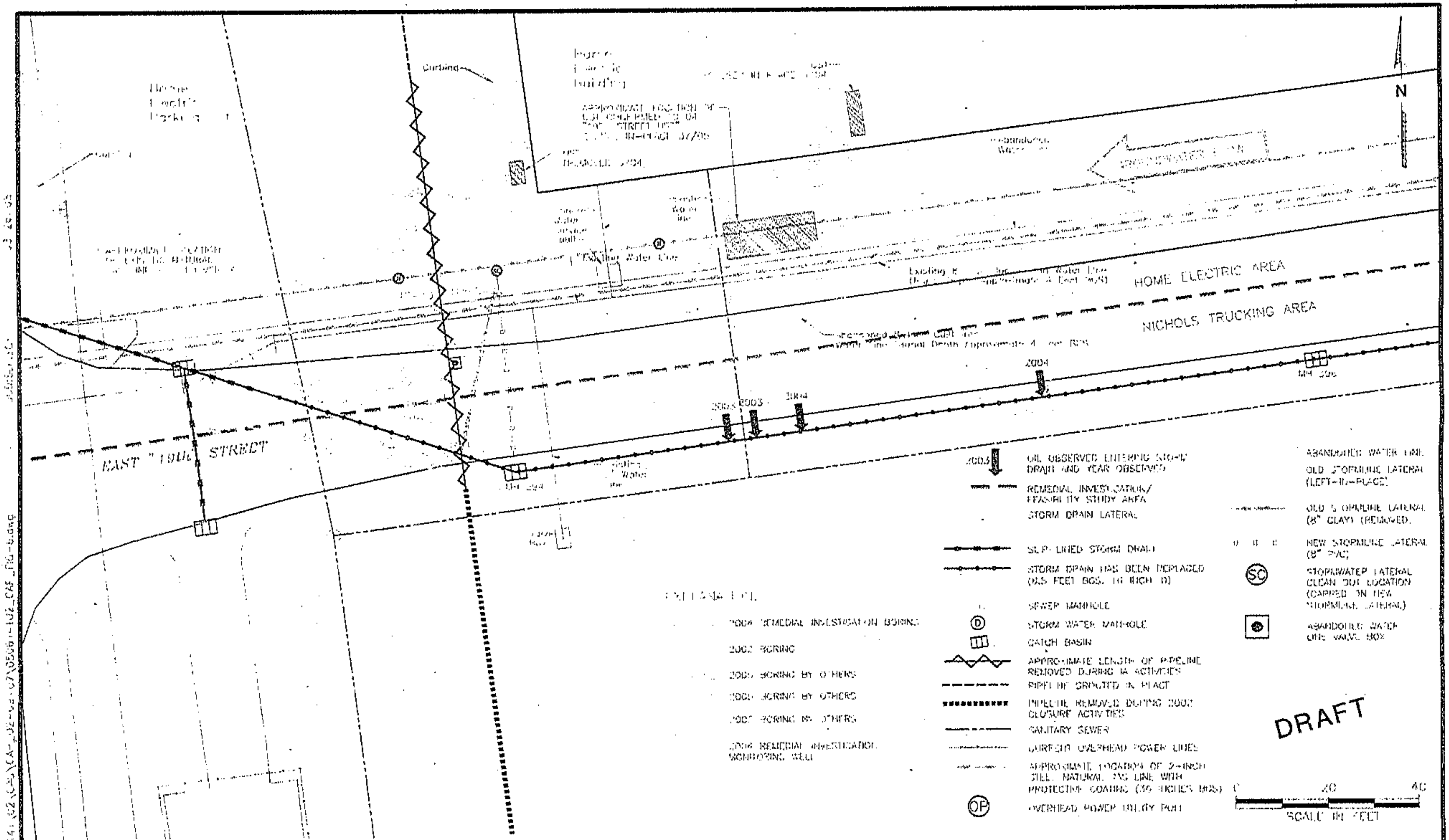
AREAS B1, B2, AND C EXCAVATION/DISPOSAL

FIGURE 5



Notes: 1. The locations of all features shown are approximate.
2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, provided by City of Tacoma.

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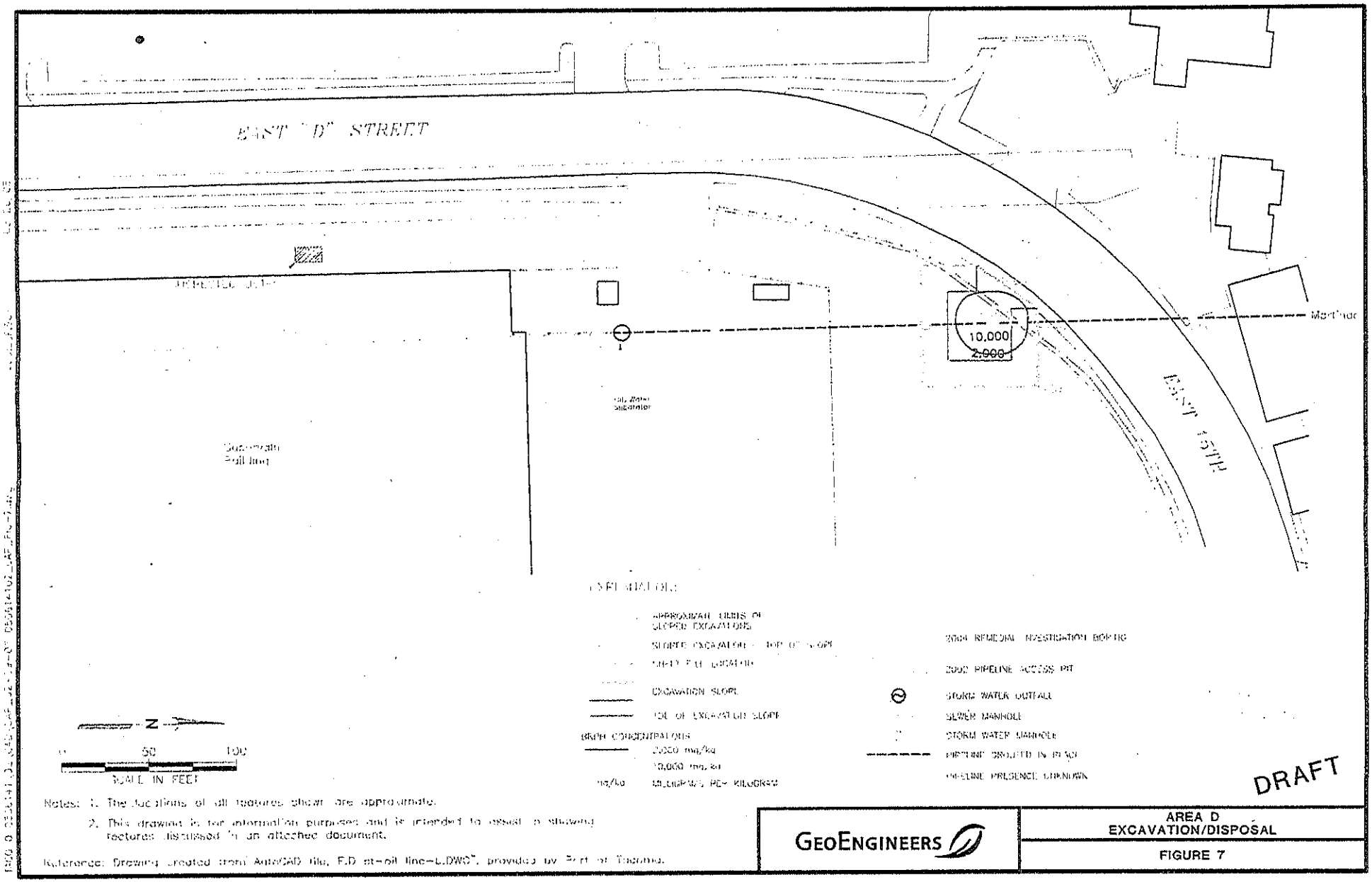
DETAIL OF A PORTION OF 19TH STREET

FIGURE 6



Notes: 1. The locations of all features shown are approximate.

2. This drawing is for information purposes and is intended to assist in showing features discussed in an attached document.

Reference: Drawing created from AutoCAD file, F:\D st-oil line-L.DWG", provided by Port of Tacoma.

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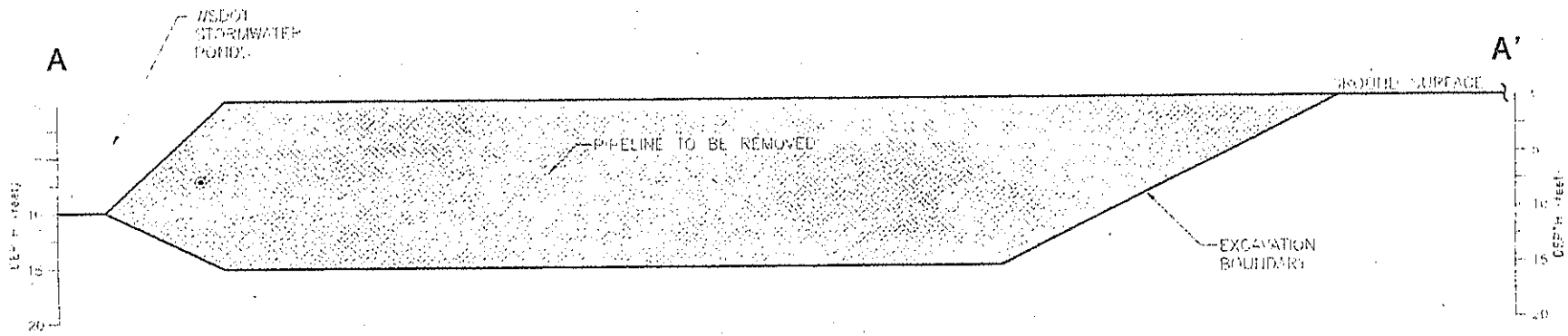
AREA D
EXCAVATION/DISPOSAL

FIGURE 7



EXPLANATION

- 6" DIESEL OIL PIPELINE (GROUTED IN PLACE)
- COMPACTED BACKFILL
- PAVEMENT
- SEWER LINE UNKNOWN DEPTH

10 20

SCALE IN FEET

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Notes: 1. The alignments of all features shown are approximate.
2. This figure is for informational purposes only, and is intended to assist in the certification of features discussed in a related document. Data were compiled from sources as listed on this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing created from sketch provided by GeoEngineers' personnel.

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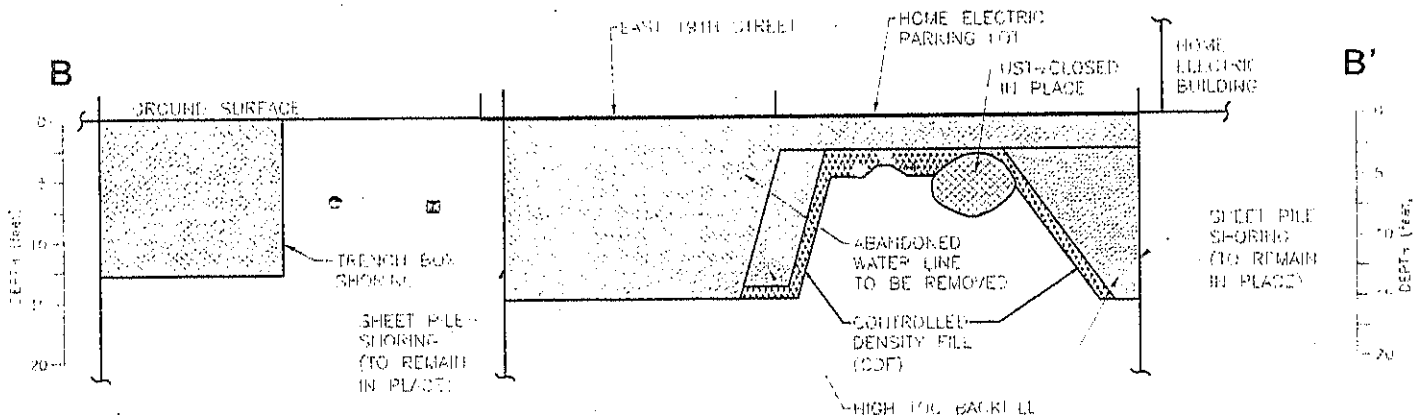
AREA A CROSS SECTION A-A'

FIGURE 8



EXPLANATION:

- 8" DUCTILE IRON WATER LINE
- 8" CAST IRON ABANDONED WATER LINE
- 2" GAS LINE
- 16" STORM LINE
- 12" SEWER LINE
- ABANDONED WATER LINE
- BACKFILL HIGH IN TOC
- PAVEMENT
- SOIL/ASLITE BACKFILL
- TOC TOTAL ORGANIC CARBON

0 10 20
SCALE IN FEET

DRAFT

Notes: 1. The locations of all features shown are approximate.
2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources listed on this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Potential Drawing created from sketch provided by GeoEngineers' personnel.

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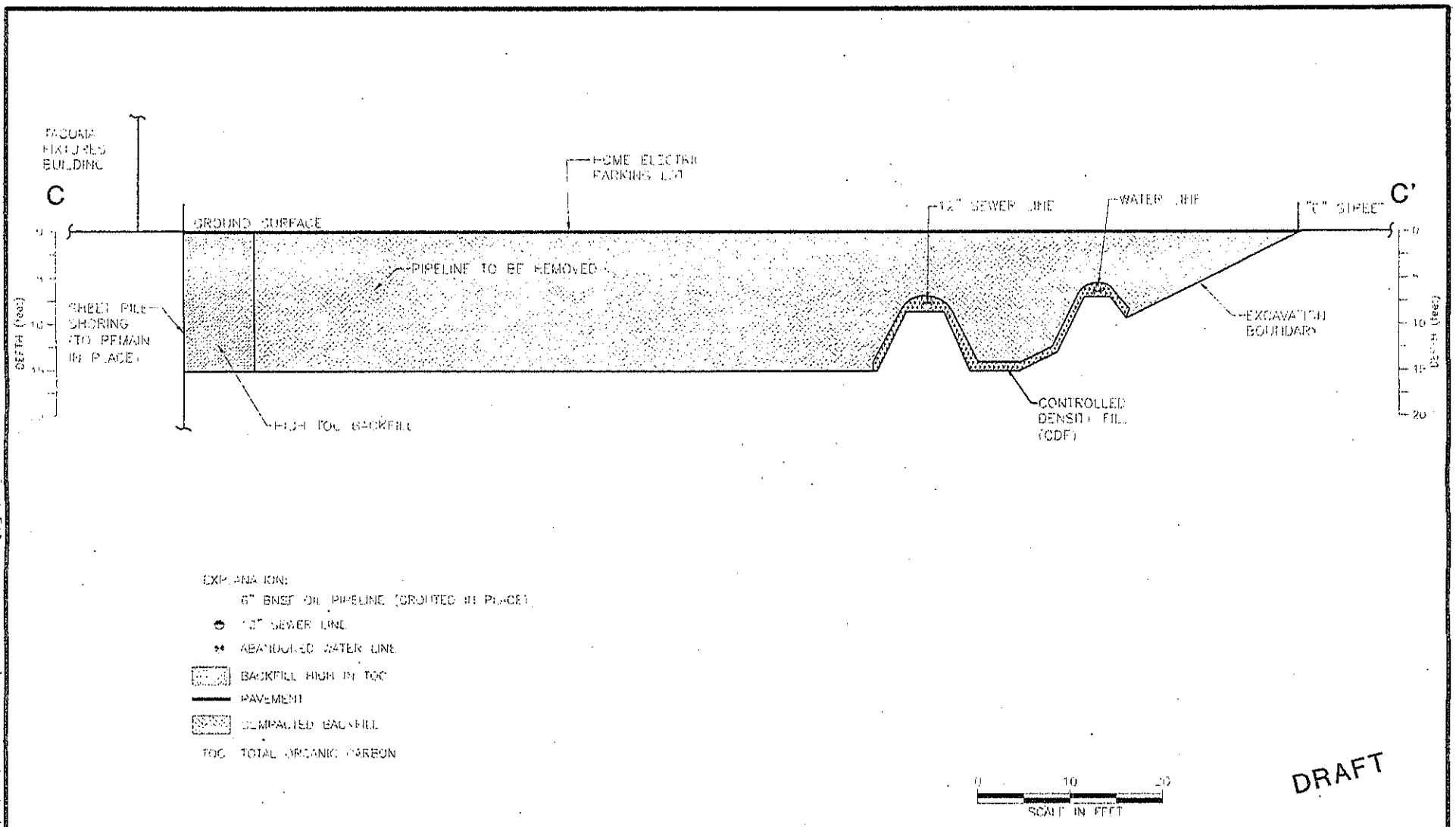
AREA B CROSS SECTION B-B'

FIGURE 9



Notes: 1. The locations of all features shown are approximate.
2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master and copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing created from sketch provided by GeoEngineers' personnel.

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AREA C CROSS SECTION C-C'

FIGURE 10

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EMAIL TRANSMITTAL

1101 Fawcett Avenue, Suite 200, Tacoma, WA 98402 TELEPHONE: (253) 383-4940, FAX: (253) 383-4923 www.geoengineers.com

To: Marv Coleman
Toxics Cleanup Program
Washington State Department of Ecology
300 Desmond Drive
Lacey, Washington 98504-7775

Date: 6/16/2008

File: 00506-141-02

Email Address: mcol461@ecy.wa.gov

Regarding: BNSF Oil Pipeline, Tacoma, Washington

Date	Description
6/16/2008	Revised Draft Final Cleanup Action Plan Addendum

Remarks: Please call if you have questions.

Signed: C. Nudaffy for

Sally L. Fisher
sfisher@geoengineers.com

GeoEngineers

June 16, 2008

Washington State Department of Ecology
Toxics Cleanup Program
Southwest Regional Office
P.O. Box 47775
Olympia, Washington 98504-7775

Attention: Marv Coleman

Subject: Revised Draft Final Cleanup Action Plan Addendum
BNSF Oil Pipeline Site (Agreed Order No. DE 04TCPSR-6034)
Tacoma, Washington
File No. 0506-141-02

The purpose of this addendum is to address data from an investigation of an underground storage tank (UST) located beneath a building within the project area that was previously not included in the Revised Draft Final Cleanup Action Plan dated (May 18, 2008). The UST is located beneath the Tacoma Fixtures building (located on Home Electric property) within the area identified in the CAP as Remedial Area B, as shown in Figure 1. The data is described in the "Tacoma Fixtures Property 1815 East D Street, Tacoma, WA Underground Storage Tank Report" dated July 2004 by Robinson & Noble, Inc. A copy of the report is attached.

Three borings were advanced to depths ranging from 14 to 16 feet below existing ground surface (bgs). Analytical results provided in the report indicate that soil from approximately 8 to 12.5 feet bgs in the immediate vicinity of the UST contains BRPHs greater than the Model Toxics Control Act (MTCA) Method A cleanup level for soil. The UST was closed-in-place. Remedial action to remove BRPH-impacted soil beneath the building was not performed.

The BRPH-contaminated soil beneath the Home Electric building from the UST beneath the building and the UST located south of the building can not be excavated and will be left in place. The remedial action for Area B as described in the CAP included placing sheet pile adjacent to the Tacoma Fixtures building to shore the excavation and to provide a barrier to reduce the potential for BRPH to migrate from beneath the building into the East 19th Street right-of-way. During the design process, it was determined that because of geotechnical considerations, sloped excavations should be employed in Area B rather than sheet pile walls.

An HDPE liner will be installed along the north side of the excavation prior to backfilling to reduce future potential migration of BRPH remaining beneath the building. The liner will be keyed into the top of the slope and anchored to the bottom of the slope with an anchor trench backfilled with CDF as shown on Figure 2.

1101 S Fawcett Ave
Suite 200
Tacoma, WA 98402

telephone 253.383.4940
facsimile 253.383.4923
website www.geoengineers.com

We trust this meets your current needs, if we can be of further assistance, please contact us.

Sincerely,

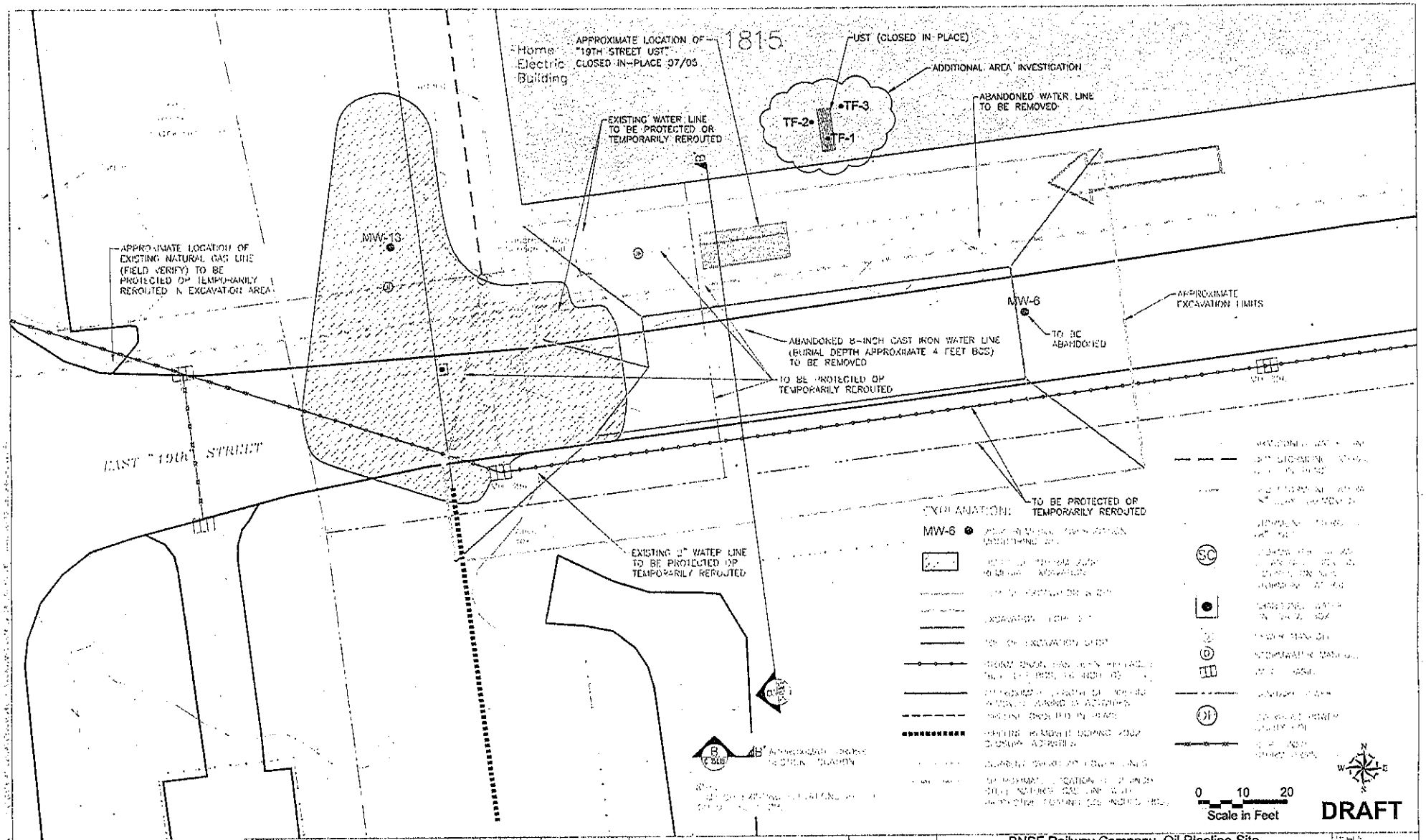
GeoEngineers, Inc.

John C. Deeds
Geoscientist

Sally L. Fisher
Associate, Senior Environmental Scientist

JCD:SLF:tt
TACO:\0\0506141\02\Finals\Cover Letters\050614102RevisedDraftFinalCAP_Addendum_061608doc.doc

Enclosures: Figure 1. Revised Final Draft Cleanup Action Plan Addendum, Area B Excavation Plan
Figure 2. Revised Final Draft Cleanup Action Plan Addendum, Remedial Area B Cross Section B-B' (Post Excavation)
Attachment A. Tacoma Fixtures Property 1815 East D Street, Tacoma, WA Underground Storage Tank Report



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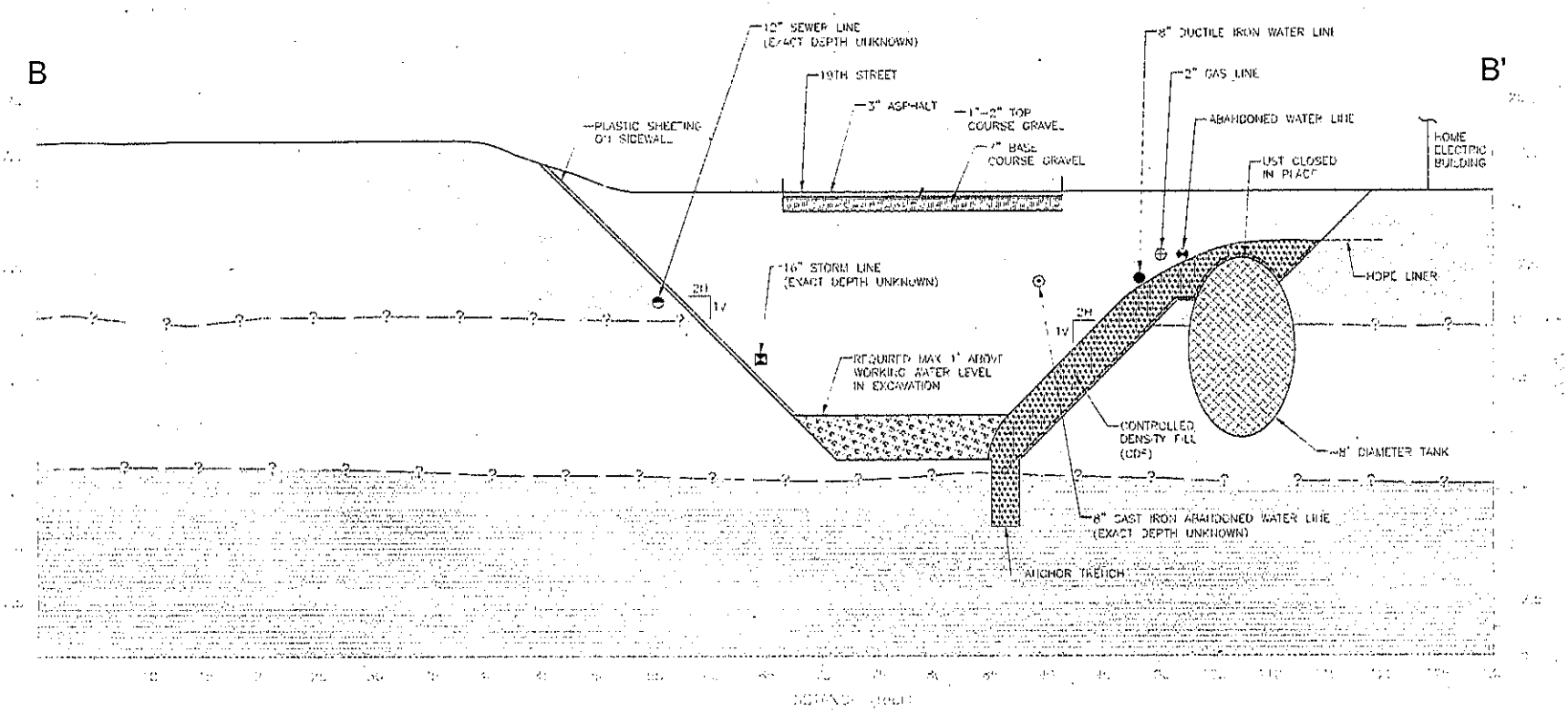
1101 S. Fawcett Avenue, Suite 200
Tacoma, WA 98402
Telephone (253) 383-4940
Fax (253) 383-4923

BNSF Railway Company, Oil Pipeline Site
Tacoma, Washington

Revised Final Draft Cleanup Action Plan Addendum
Area B Excavation Plan

0506-141-02

FIG-1



Legend

- SOIL FILL
- WOOD WASTE FILL
- NATIVE ALLUVIUM
- BANK RUN GRAVEL WSDOT 9-03.19
- GRAVEL BALLAST WSDOT 9-03.9 (1)
- CONTROLLED DENSITY FILL (CDF)
- EXISTING GROUND SURFACE
- APPROXIMATE SOIL CONTACT
- HDPE LINER
- 8" DUCTILE IRON WATER LINE
- 8" CAST IRON ABANDONED WATER LINE (EXACT DEPTH UNKNOWN)
- 2" GAS LINE
- 16" STORM LINE (EXACT DEPTH UNKNOWN)
- 12" SEWER LINE (EXACT DEPTH UNKNOWN)
- ABANDONED WATER LINE

NOTE:
1. ALL UTILITIES SHOWN ARE APPROXIMATE, CONTRACTOR TO FIELD VERIFY.

5 0 5 10
Horizontal Scale
2.5 0 2.5 5
Vertical Scale
Vertical Exaggeration: 2X

DRAFT

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Fax (253) 383-4923

BNSF Railway Company, Oil Pipeline Site
Tacoma, Washington

Revised Final Draft Cleanup Action Plan Addendum
Remedial Area B Cross Section B-B' (Post Excavation)

0506-141-02

FIG-2

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Attachment A
Tacoma Fixtures Property 1815 East D Street, Tacoma, WA Underground Storage Tank Report

TACOMA-PIERCE COUNTY
HEALTH
DEPARTMENT

Federico Cruz-Uribe, MD, MPH
Director of Health

Governed by a local
Board of Health

- Community Based
- Competitive
- Integrated
- Preventive

September 17, 2004

Clark Davis
Davis, Roberts & Johns
7525 Pioneer Way, Suite 202
Gig Harbor, WA 98335

Re: Underground Storage Tank Removal: Site Status
Site Address: 1815 E. 'D' St., Tacoma, WA
Parcel #: 6370000040
Permit #: 1910

Dear Mr. Davis:

This letter is to inform you that the Tacoma-Pierce County Health Department (TPCHD) has reviewed the July 2004 Underground Storage Tank Closure Report, submitted by Robinson and Noble, Inc., for the above-referenced property. The TPCHD has the following comments based on the status of this site:

- The owner/operator of this site is responsible to demonstrate to the TPCHD that all contamination has been remediated as per City of Tacoma Code Chapter 5.47 and TPCHD Board of Health Resolution 88-1056.
- Soil contamination exceeding MTCA cleanup standards remains in the area of the former 2,000 gallon fuel oil UST. Soil contamination on-site is in contact with groundwater.
- Please specify the depth at which groundwater samples were obtained.
- The lateral and vertical extent of soil and groundwater contamination must be defined.
- Please submit a soil/groundwater investigation workplan and a $339 workplan review fee. The TPCHD must review and approve plans for further site remediation/characterization.

Sincerely,

Rob Olsen
Environmental Health Specialist
Environmental Health Program

cc: Panjini Balaraju, Department of Ecology
Tom Smith, Robinson and Noble, Inc.
1815 E. D. St. LLC

3629 South D Street
Tacoma, WA 98418-6813

253 798-6500
TDD: 798-6050
800 992-2456

www.tpchd.org

ROBINSON & NOBLE, INC.
and
Saltbush Environmental Services
GROUNDWATER & ENVIRONMENTAL SCIENTISTS
Established 1947

TACOMA FIXTURES PROPERTY
1815 EAST D STREET, TACOMA, WA
UNDERGROUND STORAGE TANK
CLOSURE REPORT

JULY 2004

By

Thomas W. Smith
Staff Environmental Scientist, RFA I
Washington State Site Assessor

State of Washington
Hydrogeologist
306
Licensed Geologist

Joseph E. Becker

5320 Orchard Street West • Tacoma, Washington 98467 • (253) 475-7711 • Fax (253) 472-5846
e-mail: mail@robinson-noble.com

Tacoma Fixtures Site; 1815 East D Street, Tacoma, WA
Underground Storage Tank Closure Report
July 2004

1.0 Project Background

1.1 Site Description

The project site is located on the east side of the Thea Foss Waterway at the northeast corner of the East D Street and 19th Street intersection. The property has an assigned address of 1815 East D Street, Tacoma, Washington. The site is approximately 3.0 acres of land with an approximately 98,300 ft² building. This structure was constructed c.1949. The site lies in a heavily commercial and industrial area of the Port of Tacoma and is currently occupied by a cabinet manufacturer, Tacoma Fixtures.

1.2 Project Description

Robinson, Noble & Saltbush Inc. was contracted to provide assessment activities associated with the closure of two (a 300 gallon and a 2,000 gallon) underground storage tanks (UST) present on the referenced property. The assessment activities meet the requirements of the Tacoma-Pierce County Health Department (TPCHD) for UST closure. The tanks present on the subject were considered exempt as specified in WAC 173-360-110 (2) (h), with respect to closure. However, the closure of the 2,000 gallon fuel oil tank was regulated by a City of Tacoma ordinance and enforced by the TPCHD. The decommissioning of the 300-gallon UST was accomplished by removal, while the 2,000 gallon tank was abandoned in-place. For assessment purposes both tanks were evaluated in compliance with TPCHD requirements.

1.3 Tidal Information

Because of the location of the subject site, tidal information was requested by the TPCHD for placement in this report. During sampling activities conducted on June 17, 2004, the tide for the Tacoma, Commencement Bay Area was at -1.6 feet (Low). This information can be found in Appendix D of this report.

1.4 Previous Studies/Projects

Environmental Associates, Inc. conducted a series of environmental projects on the site over the period of August 2001 through January 2003. These projects were conducted to assess ground water and soil in the vicinity of the out-of-service 2,000 gallon fuel oil UST. Project activities included soil borings, collection of groundwater and soil samples, and laboratory analysis. These activities were inconclusive in determining a potential release to the surrounding area by the UST.

2.0 Physical Setting and Methodology

2.1 Underground Storage Tank (UST) Information

2.1.1 300-Gallon Heating Oil UST

The first tank removed from the subject site was an approximately 300-gallon heating-oil storage tank (see site diagram in Appendix A for all UST locations). This tank was constructed of single-wall steel. The age of the tank is unknown. An inspection of the tank did not reflect any holes or

signs of leakage. This tank was found near the surface located adjacent to the southwest corner of the building. The excavation was approximately five feet by eight feet. The tank was triple-rinsed and pumped clean as per Department of Ecology and TPCHD regulations and taken by the excavation contractor, Active Environmental, Inc., to their yard to be cut up for scrap.

2.1.2 2,000-Gallon Fuel-Oil UST

Due to this tank's location, it was determined to abandon the tank in place. The overburden was removed and the top of the tank was exposed and a portion of the top was removed for access to the interior of the tank. The tank was triple-rinsed and pumped clean as per Department of Ecology and TPCHD regulations. During cleaning, the interior of the tank was inspected for holes. Several holes were found along the western side of the tank. Prior to introducing a concrete slurry into the tank, a four-inch PVC pipe was placed in the opening to allow access to the bottom of the tank for sampling after the concrete slurry is pored. The tank was then filled with concrete slurry. The excavated soil was placed back in over the tank. Due to access issues sampling activities were not conducted at this time.

2.2 Site Geology/Soils

Soils encountered during drilling of the soil borings consisted of approximately seven to eight feet of silty sands with gravels (fill material), below which a two to three-foot layer of sandy silts (fill material) was encountered. Beginning at ten to eleven feet below the ground surface, a four to five foot thick wood layer (fill material) was encountered, below which black, clayey silt with shells and then compact silty sand was encountered. It should be noted that borings were located inside the structure with the floor being approximately four feet above the existing grade. The enclosed soil-boring logs, presented in Appendix A, shows this differential.

2.3 Soil Sampling Locations/Collection

Sampling locations, the number of samples collected, and the laboratory test methods utilized were determined utilizing the Washington Department of Ecology's Guidance for Site Assessments and guidance from the Department of Ecology and the Tacoma-Pierce County Health Department. Soils were field screened for color variations and odor that are characteristic of petroleum-contaminated soil. Samples were collected with a pre-cleaned, stainless steel spoon and then placed in factory-cleaned, 4 ounce, wide-mouth glass jars. Samples were placed into a cooler with blue ice and kept at a temperature of four degrees Celsius.

2.3.1 300-Gallon Heating-Oil UST

Five discrete samples were collected on May 17, 2004 from this excavation and one sample was collected from soils removed from the excavation. Samples were collected from the north wall (HTF-4 @ 4' bgs), the south wall (HTF-2 @ 4' bgs), the west wall (HTF-3 @ 4' bgs), the east wall (HTF-5 @ 4' bgs), the bottom (HTF-5 @ 4' bgs) and the stockpiled soil (HTF-6).

2.3.2 2,000-Gallon Fuel-Oil UST

Three soil borings were drilled on June 17, 2004, utilizing a portable limited access Strataprobe hydraulic hammer rig, in the vicinity of the fuel oil tank to determine if a release has occurred from the UST to the surrounding environment. Soil borings were located through the middle of the tank (TF-1), the northwest corner (TF-2), and the northeast corner (TF-3). Each boring was drilled to a depth of twenty feet below the ground surface. The bottoms of the borings are approximately eleven feet below the bottom of the tank. Soils were sampled using a stainless steel, split-spoon sampler in four-foot intervals. Soil samples were collected from the following intervals:

Boring Loc	Sample ID	Actual Depth	Depth from existing grade	Soil Description
TF-1				
	TF-1A	9'	5'	Sample taken just below tank, silty sand with gravel (moist)
	TF-1B	13'	9'	Sample from wood layer, odor of petroleum (saturated)
	TF-1C	18'	14'	Sample of native clayey silts with shells (saturated)
TF-2				
	TF-2A	10'	6'	Sandy silts (moist) no odor
	TF-2B	12'	8'	Wood layer (saturated) oily globules visible
	TF-2C	17'	13'	Clayey silts (saturated)
TF-3				
	TF-3A	10'	6'	Sandy silts (moist), slight petroleum odor
	TF-3B	14'	10'	Wood layer (moist) slight petroleum
	TF-3C	16'	12'	Dark clayey silts with shells (saturated)
	TF-3D	20	16'	Dark clayey silts with shells (saturated)
	TF-3BB	14.5'	10.5'	Wood layer with large globules of oil visible
	TF-3CC	16.5'	12.5'	Split sample of TF-3C

Groundwater samples were collected from borings TF-1 and TF-2. Attempts to collect a groundwater sample from boring TF-3 failed due to sediment clogging of the temporary screen. Groundwater samples were collected using a dedicated five-foot long, temporary, PVC screen that was exposed to the sediments by pulling back the probe rod. Dedicated tubing was lowered into the screen and groundwater samples were drawn with a variable-speed, peristaltic pump. The water was pumped prior to sampling until most of the suspended sediment had been removed, though this was not possible in all cases. Upon the collection of each sample into laboratory provided containers, the rods were pulled from the boreholes, and the boreholes were backfilled with granular bentonite. All equipment was thoroughly decontaminated between holes.

3.0 Sample Analysis Results

Eighteen soil and two groundwater samples were submitted to Libby Environmental, LLC, an accredited laboratory, for chemical analysis. Soil samples collected from the 300-gallon heating oil excavation (six soil samples) were analyzed utilizing Washington Department of Ecology Test Method NWTPH-Dx/Dx (diesel- and heavy oil-range petroleum hydrocarbons and EPA Test Method 8021B (benzene). Groundwater and soil samples collected from the borings drilled adjacent to the 2,000-gallon fuel oil UST were analyzed utilizing Washington Department of Ecology Test Method NWTPH-Dx/Dx (diesel- and heavy oil range petroleum hydrocarbons, EPA Test Method 8021B (benzene), and EPA Test Method 8270 (cPAH). The detection limits of all analytical procedures coincides with the detection limits for each matrix analyzed that allows for comparison of the data with cleanup levels as established by the Model Toxics Control Act (MTCA).

3.1 Laboratory Analytical Methods

Carcinogenic PAHs (cPAH's)

Method 8270 is used to determine the concentration of semivolatile organic compounds including carcinogenic PAHs by gas chromatography/mass spectrometry (GC/MS): capillary column technique in extracts prepared from all types of solid waste matrices, soils, and ground water.

Method NWTPH-Dx-Extended

Method NWTPH-Dx is the qualitative and quantitative method (extended) for semi-volatile ("diesel") petroleum products in soil and water. Petroleum products applicable for this include jet fuels, kerosene, diesel oils, hydraulic fluids, mineral oils, lubricating oils and fuel oils. NWTPH-Dx adapts Oregon's TPH, Washington's WTPH and EPA SW-846 Methods 3510, 3540/3550, and 8000 and covers the quantitative and qualitative analysis of semi-volatile petroleum products, i.e. jet fuels through heavy fuel oils, in soil and water.

Volatile Organic Compounds

Method 8021B is used to determine the concentration of volatile organic compounds by gas chromatography/mass spectrometry (GC/MS): capillary column technique in extracts prepared from all types of solid waste matrices, soils, and ground water.

3.2 Analytical Results

3.2.1 300-Gallon Heating-Oil UST

Six samples were submitted to the laboratory, five from the excavation and one from stockpiled soils. Laboratory analysis indicated concentrations of target compounds (diesel- and heavy oil range petroleum hydrocarbons and benzene) below the laboratory detection levels (Not Detected).

3.2.2 2,000-Gallon Fuel-Oil UST

Two groundwater and twelve soil samples were submitted to the laboratory for analysis. Laboratory analysis of the groundwater samples (TF-1 and TF-2) indicated concentrations below laboratory detection limits for diesel- and heavy oil-range petroleum hydrocarbons, benzene, and carcinogenic PAHs (Not Detected).

Laboratory analysis of the soil samples indicated concentrations of benzene below the laboratory detection level for all twelve samples submitted. Laboratory analysis did indicate concentrations above the laboratory detection level, but below the MTCA Method A cleanup levels for diesel- (2,000 mg/kg) and heavy oil- (2,000 mg/kg) range petroleum hydrocarbons in soil samples TF-1B (diesel 680 mg/kg), TF-2B (diesel 480 mg/kg), TF3-BB (diesel 1,600 mg/kg), TF-3C (heavy oil 1,600 mg/kg), and TF-3CC (heavy oil 200 mg/kg). However, concentrations of heavy oil-range petroleum hydrocarbons were found above the MTCA Method A cleanup level in soil samples TF-1B (9,600 mg/kg), TF-2B (8,800 mg/kg) and TF-BB (23,000 mg/kg).

Analysis for carcinogenic PAHs indicated levels above the laboratory detection levels but below the MTCA Method A cleanup level (1.0 mg/kg) in sample TF1-B (0.67 mg/kg), TF-1C (0.25 mg/kg), TF-2B (0.67 mg/kg), TF-3A (0.73 mg/kg), TF-3C (0.90 mg/kg), and TF-3CC (0.50 mg/kg). However, concentrations of carcinogenic PAHs above the MTCA Method cleanup levels were found in samples TF-3B (1.18 mg/kg) and TF-3BB (2.8 mg/kg). The following tables summarize analytical data.

Table # 1 Groundwater Sample Test Results

Analyte/ Sample ID	Diesel	Heavy Oil	Benzene	cPAH
TF-1	ND	ND	ND	ND
TF-2	ND	ND	ND	ND
MTCA A	500 µg/L	500 µg/L	5 µg/L	0.1 µg/L

ND indicates not detected

Table # 2 Soil Sample Test Results (results in mg/kg)

Analyte/ Sample ID	Diesel	Heavy Oil	Total Oil Range Hydrocarbons *	Benzene	cPAH
TF-1A	ND	ND	ND	ND	ND
TF-1B	680	9,600	10,280	ND	0.67
TF-1C	ND	ND	ND	ND	0.25
TF-2A	ND	ND	ND	ND	ND
TF-2B	480	8,800	9,280	ND	0.67
TF-2C	ND	ND	ND	ND	ND
TF-3A	ND	ND	ND	ND	0.73
TF-3B	ND	ND	ND	ND	1.18
TF-3C	ND	1,600	1,600	ND	0.90
TF-3D	ND	ND	ND	ND	ND
TF-3BB	1,600	23,000	24,600	ND	2.8
TF-3CC	ND	200	200	ND	0.50
MTCA A	2,000 mg/kg	2,000 mg/kg	2,000 mg/kg	0.003 mg/kg	1 mg/kg

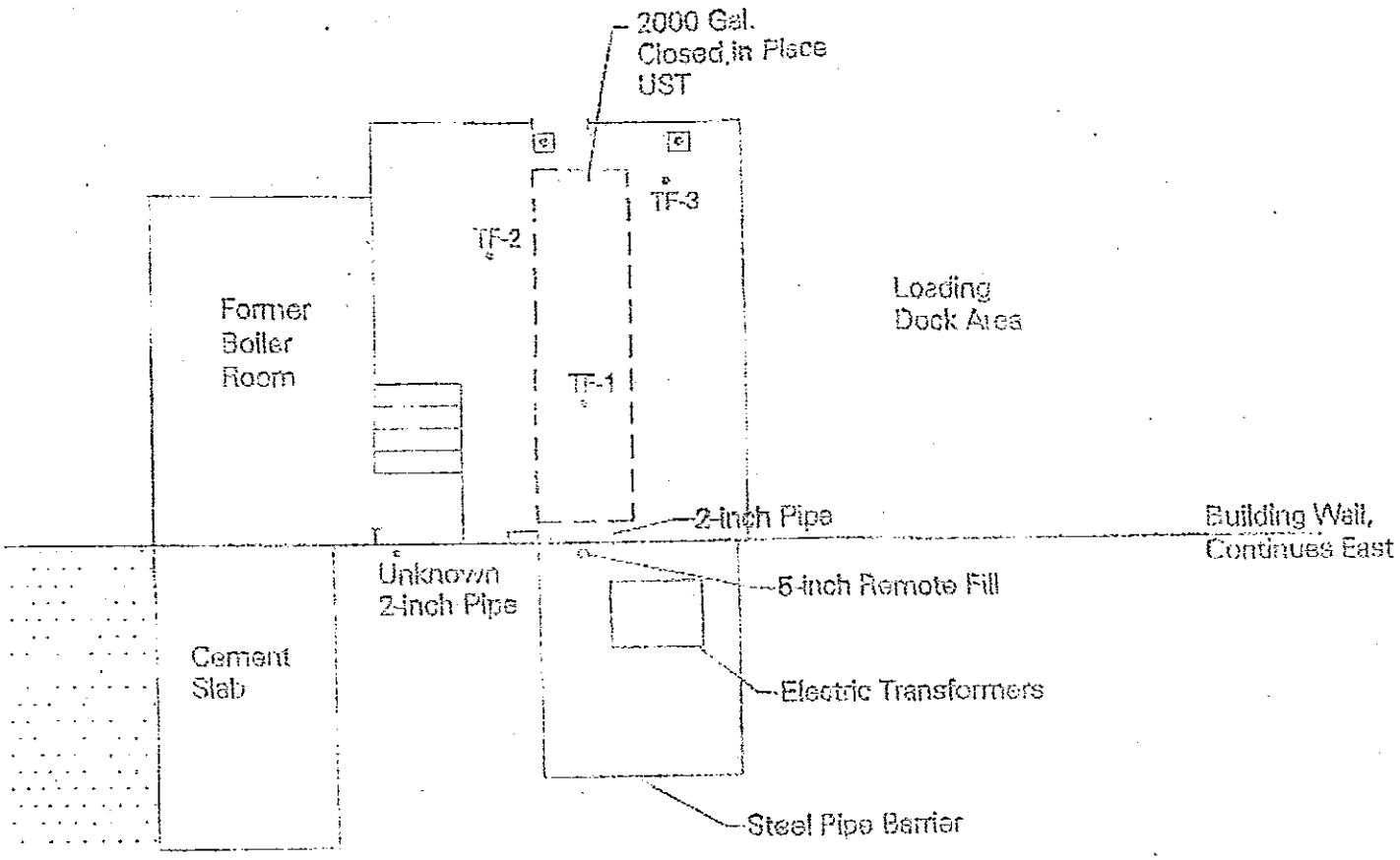
Bold type indicates concentration of analytes exceeds the MTCA Method A cleanup level for soils
ND indicated not detected
* As per Department of Ecology Implementation Memorandum # 4 dated June 2004 requirements, Laboratory indicates analyte is Bunker C fuel oil

4.0 Conclusions and Recommendations

4.1 Conclusions

This report summarizes activities related to the removal of a 300-gallon heating oil UST and the closure-in-place of a 2,000-gallon fuel oil UST at the Tacoma Fixtures site. Groundwater and soil samples were collected from each UST area according to Washington Department of Ecology and Tacoma-Pierce County Health Department regulations and on-site guidance. Soils from the 300-gallon heating oil UST excavation were analyzed for diesel- and heavy oil-range petroleum hydrocarbons and benzene. Laboratory analysis indicated concentrations of these target compounds below the laboratory detection limits (Not Detected).

Three soil borings were drilled in locations near the 2,000-gallon fuel oil UST. These borings were developed to a depth of twenty feet below the ground surface, which would place the bottoms of the borings approximately eleven feet below the bottom of the tank. Groundwater and soil samples were collected from boring TF-1 and TF-2 with only soil samples collected from TF-3. Attempts to collect a groundwater sample from boring TF-3 failed due to sediment clogging of the temporary screen (see section 2.0). Groundwater and soil samples were analyzed for diesel- and heavy oil-range petroleum hydrocarbons, benzene, and cPAHs. The groundwater samples analyzed indicated concentrations of target compounds below the laboratory detection limits (Not Detected) However, single soil samples from borings TF-1 and TF-2 and two samples collected from boring TF-3 reflected concentrations of heavy oil range hydrocarbons and cPAHs above the appropriate



Legend:

- Boring Location
- Sample Location
- Floor Drain

0' 10'

N

treet

Figure

Probe Location and Site Diagram

MTCA Method A cleanup levels. These concentrations and the fact that holes were found in the UST, indicate a material release from the 2,000-gallon fuel oil UST.

4.2 Recommendations

At the direction of our client, we have begun development of an additional investigation work plan to explore the areal and vertical extent of release for the fuel oil UST. Upon its completion, the work plan will be submitted to the TPCHD for approval. Subsequent to approval the plan will then be implemented.

5.0 Documentation Attachments Checklist

The following documents are included with this report:

- ☐ Department of Ecology Site Check/Site Assessment Checklist
- ☒ Tank Pumping Receipts
- ☒ Waste Material Analysis
- ☒ Tank Cleaning/Destruction Certificates
- ☒ Fire Department Permits
- ☒ Other Permits
- ☒ Contaminated Soil Disposal Receipts
- ☒ Analytical Results for Closure
- ☐ Other Enclosures

6.0 Limitations

The statements, conclusions, and recommendations provided in this report are to be exclusively used within the context of this document. They are based upon generally accepted hydrogeologic and environmental practices and are the result of analysis by Robinson, Noble & Saltbush Inc. staff. This report, and any attachments to it, is for the exclusive use of Mr. John Backus. Unless specifically stated in the document, no warranty, expressed or implied, is made. This concludes the investigation and presentation of material gathered on the herein-described site for the tasks described for this study.

EXHIBIT C

Exhibit C
Schedule

Action	Due Date	Comment
Submit Engineering Design Report (EDR), Construction Plans and Specifications (CPS), Compliance Monitoring Plan (CMP), Health and Safety Plan (HSP), and Institutional Controls Plan (ICP)	Within 30 days of Entry of Consent Decree	
Implement CAP	After Ecology approval of EDR and CPS, and according to schedule in Ecology-approved EDR	Timing of cleanup on properties owned by third parties contingent on obtaining access
Submit as built drawings and a Final Remedial Action Report	Not later than ninety (90) days after completion of the construction	
Submit proposed Environmental Covenants and implement Institutional Controls Plan	According to schedule in Ecology-approved EDR	

EXHIBIT D

Model Restrictive (Environmental) Covenant

After Recording Return to:

Department of Ecology
Southwest Regional Office
Toxics Cleanup Program
P.O Box 47775
Olympia, WA 98504-7775

Environmental Covenant

Grantor: [land owner]
Grantee: State of Washington, Department of Ecology
Legal: [fill in brief legal description]
Tax Parcel Nos.: [fill in]
Cross Reference: [if amendment, recording number of original covenant]

Grantor, [land owner], hereby binds Grantor, its successors and assigns to the land use restrictions identified herein and grants such other rights under this environmental covenant (hereafter "Covenant") made this ____day of _____, 200__ in favor of the State of Washington Department of Ecology (Ecology). Ecology shall have full right of enforcement of the rights conveyed under this Covenant pursuant to the Model Toxics Control Act, RCW 70.105D.030(1)(g), and the Uniform Environmental Covenants Act, 2007 Wash. Laws ch. 104, sec. 12.

This Declaration of Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g) and WAC 173-340-440 by [NAME OF PROPERTY OWNER], its successors and assigns, and the State of Washington Department of Ecology, its successors and assigns (hereafter "Ecology").

A remedial action (hereafter "Remedial Action") occurred at the property that is the subject of this Covenant. The Remedial Action conducted at the property is described in the following document[s]:

[INSERT THE DATE AND TITLE FOR CLEANUP ACTION PLAN and other documents as applicable].

These documents are on file at Ecology's Southwest Regional Office Office.

This Covenant is required because the Remedial Action resulted in residual concentrations of petroleum hydrocarbons and polynuclear aromatic hydrocarbons which exceed the Model Toxics Control Act Method A Cleanup Level(s) for soil and groundwater established under WAC 173-340-720 and -740.

The undersigned, [NAME OF PROPERTY OWNER], is the fee owner of real property (hereafter "Property") in the County of Pierce, State of Washington, that is subject to this Covenant. The Property is legally described [AS FOLLOWS: (insert legal description language)] -or- [IN ATTACHMENT A OF THIS COVENANT AND MADE A PART HEREOF BY REFERENCE (attach document containing legal description)].

[NAME OF PROPERTY OWNER] makes the following declaration as to limitations, restrictions, and uses to which the Property may be put and specifies that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereafter "Owner").

Section 1

1. If the groundwater contains hazardous substances above cleanup levels, then use the following sentence: "No groundwater may be taken for [LIST THE PROHIBITED USES, E.G., DOMESTIC, AGRICULTURAL, OR ANY USE] from the Property."

2. If the soil contains hazardous substances above cleanup levels, then describe prohibited activities as follows:

a. For contaminated soil under a structure use the following sentence: "A portion of the Property contains [SPECIFICALLY LIST SUBSTANCE(S)] contaminated soil located [SPECIFICALLY DESCRIBE WHERE THE SOIL IS LOCATED, I.E., UNDER THE SOUTHEAST PORTION OF BUILDING 10]. The Owner shall not alter, modify, or remove the existing structure[s] in any manner that may result in the release or exposure to the environment of that contaminated soil or create a new exposure pathway without prior written approval from Ecology."

b. Example language for contaminated soil under a cap: "Any activity on the Property that may result in the release or exposure to the environment of the contaminated soil that was

contained as part of the Remedial Action, or create a new exposure pathway, is prohibited. Some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any objects or use of any equipment which deforms or stresses the surface beyond its load bearing capability, piercing the surface with a rod, spike or similar item, bulldozing or earthwork."

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. The Owner of the property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 5. The Owner must restrict leases to uses and activities consistent with the Covenant and notify all lessees of the restrictions on the use of the Property.

Section 6. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, to determine compliance with this Covenant, and to inspect records that are related to the Remedial Action.

Section 8. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

[Insert the following section into any covenant for the railyard facility property: Section 9. By signing this Covenant, the Owner does not intend to affect the scope of existing federal preemption.]

[NAME OF GRANTOR]

_____
[Name of Signatory]
[Title]

Dated: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

_____
[Name of Person Acknowledging Receipt]
[Title]

Dated: _____

[INDIVIDUAL ACKNOWLEDGMENT]

STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20__, I certify that _____ personally appeared before me, and acknowledged that **he/she** is the individual described herein and who executed the within and foregoing instrument and signed the same at **his/her** free and voluntary act and deed for the uses and purposes therein mentioned.

_____
Notary Public in and for the State of Washington, residing at _____.
My appointment expires_____.

[CORPORATE ACKNOWLEDGMENT]

STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20__, I certify that _____ personally appeared before me, acknowledged that **he/she** is the _____ of the corporation that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that **he/she** was authorized to execute said instrument for said corporation.

_____
Notary Public in and for the State of Washington, residing at
_____.
My appointment
expires_____.

[REPRESENTATIVE ACKNOWLEDGEMENT]

STATE OF _____
COUNTY OF _____

On this _____ day of _____, 20__, I certify that _____ _____ personally appeared before me, acknowledged that **he/she** signed this instrument, on oath stated that **he/she** was authorized to execute this instrument, and acknowledged it as the

_____ [type of authority] of _____ [name of party being represented] to be the free and voluntary act and deed of such party for the uses and purposes mentioned in the instrument.

_____
Notary Public in and for the State of Washington, residing at _____.
My appointment expires _____.

Exhibit A
Legal Description

EXHIBIT E

Resource Contact: Policy and Technical Support Staff *Effective:* *August 1, 2005*
References: *WAC 173-340-840(5)* *Revised:* *March 31, 2008*
http://www.ecy.wa.gov/eim/
http://www.ecy.wa.gov/programs/tcp/smu/sedqualfirst.htm
http://www.ecy.wa.gov/biblio/0309043.html
Replaces: *Procedure 840*

Policy 840: Data Submittal Requirements

Purpose: Contaminated site investigations and cleanups generate a large volume of environmental monitoring data that need to be properly managed to facilitate regulatory decisions and access to this data by site owners, consultants, and the general public. The purpose of this policy is to describe the requirements for submitting environmental monitoring data generated/collected during the investigation and cleanup of contaminated sites under the Model Toxics Control Act (MTCA) and the Sediment Management Standards.

Application: This policy applies to Ecology staff, potentially liable parties, prospective purchasers, state and local agencies, and Ecology contractors that investigate or manage the cleanup of contaminated sites.

1. Unless Otherwise Specified by Ecology, All Environmental Monitoring Data Generated during Contaminated Site Investigations and Cleanups Shall Be Required to be Submitted to Ecology in both a Written and Electronic Format.

Environmental monitoring data include biological, chemical, physical, and radiological data generated during site investigations and cleanups under the Model Toxics Control Act Cleanup Regulation (WAC 173-340) and the Sediment Management Standards (WAC 173-204).

Data generated/collected during site investigations and cleanups conducted under an order, agreed order or consent decree, permit, grant, loan, contract, interagency agreement, memorandum of understanding or during an independent remedial action, are considered environmental monitoring data under this policy.

Data generated/collected for non site-specific studies, site hazard assessments that result in no further action and initial site investigations are not considered environmental monitoring data under this policy.

2. Orders, Agreed Orders, Consent Decrees, or Permits Issued After the Effective Date of this Policy Shall Include a Condition that Site-Specific Data Be Submitted in Compliance with this Policy.

Reports on such work that do not include documentation that the data have been submitted in compliance with this policy shall be deemed incomplete and a notice of such provided to the

submitter. These reports generally should not be reviewed until that information is provided. The assistant attorney general assigned to the site should be consulted in these situations.

3. Opinions on Independent Remedial Actions Submitted for Review Under Ecology's Voluntary Cleanup Program Shall Not Be Issued Until Sampling Data Have Been Submitted in Compliance with this Policy.

Ecology will not issue No Further Action (NFA) opinions under the Voluntary Cleanup Program if environmental sampling data have not been submitted in the required Environmental Information Management System (EIM) format. To avoid unreasonable delays, sampling data should be submitted in the required EIM format along with the cleanup report.

4. Grants, Contracts, Interagency Agreements or Memoranda of Understanding Issued After the Effective Date of this Policy Shall Include a Condition that Site-Specific Data Be Submitted in Compliance with this Policy.

Reports on such work shall not be accepted as complete until the data have been submitted in compliance with this policy. If a payment or transfer of funds is involved in the transaction, the relevant payment or transfer shall be withheld until this requirement has been met.

Example language to include in these documents is attached in Appendix A.

5. Data Generated During Upland Investigations and Cleanups Shall Be Submitted Electronically Using Ecology's Environmental Information Management System (EIM).

EIM is Ecology's main database for environmental monitoring data. Proper submission of data through this system meets the requirement of submitting such data in an electronic format. Electronic data shall be submitted to Ecology simultaneously with the accompanying printed report.

Additional information on EIM, including instructions for data submittal, can be found on Ecology's EIM web site at http://www.ecy.wa.gov/eim/. Toxic Cleanup Program's (TCP) EIM Coordinator also is available for technical assistance to site managers and consultants using EIM.

6. Data Generated During Sediment Investigations and Cleanups Shall Be Submitted Electronically Using Ecology's Environmental Information Management System (EIM).

Effective March 1, 2008, EIM is Ecology's data management system for sediment-related data. Proper submission of data through this system meets the requirement of submitting such data in an electronic format. Electronic data should be submitted to Ecology simultaneously with the accompanying printed report.

SEDQUAL was Ecology's data management system for sediment-related data. For a limited time, Ecology will accept electronic data in SEDQUAL format if the approved Sampling and Analysis Plan requires data submittal in that format. Beginning September 1, 2008, data submitters must contact the site manager to obtain approval to submit electronic data in SEDQUAL format.

Additional information on EIM, including instructions for data submittal, can be found on Ecology's EIM web site at http://www.ecy.wa.gov/eim/. Toxic Cleanup Program's (TCP) EIM Coordinator also is available for technical assistance to site managers and consultants using EIM.

For additional information on sediment sampling and analysis plan requirements, see Ecology publication 03-09-043 "Sediment Sampling and Analysis Plan Appendix", February, 2008. A copy of this document can be obtained from Ecology's publication office or downloaded from the following web site: http://www.ecy.wa.gov/biblio/0309043.html

TCP's EIM Aquatic Land Cleanup Unit (ALCU) Sediment Data Coordinator is also available for technical assistance.

7. Data Submitted Electronically Using EIM Shall be Checked by the Toxics Cleanup Program's (TCP) EIM Coordinator Prior to Loading the Data into EIM.

Normally, notice that data have been submitted through EIM will come to TCP's EIM Coordinator. Upon receipt of such a notice the EIM Coordinator should notify the site manager. Similarly, if the Ecology site manager receives a notice of an EIM submittal, they should notify TCP's EIM Coordinator. Upon receipt of the data, TCP's EIM Coordinator reviews the submittal for quality control and officially loads the data into the system.

Approved:

James J. Pendowski, Program Manager
Toxics Cleanup Program

Policy Disclaimer: This policy is intended solely for the guidance of Ecology staff. It is not intended, and cannot be relied on, to create rights, substantive or procedural, enforceable by any party in litigation with the state of Washington. Ecology may act at variance with this policy depending on site-specific circumstances, or modify or withdraw this policy at any time.

APPENDIX A: MODEL GRANT AND PERMIT CONDITION

The following condition is to be inserted in permits, grants, loans, contracts, interagency agreements, memorandum of understandings where site-specific environmental monitoring data is expected to be generated:

All sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840: Data Submittal Requirements. Electronic submittal of data is not required for site hazard assessments that result in no further action and initial site investigations. (FOR GRANTS & CONTRACTS ADD: Failure to properly submit sampling data will result in Ecology withholding payment and could jeopardize future grant funding.)

EXHIBIT F

PUBLIC PARTICIPATION PLAN

BNSF D Street Pipeline

Tacoma, Washington

Prepared by
Washington State Department of Ecology
Southwest Regional Office
Toxics Cleanup Program
300 Desmond Drive
Olympia, Washington 98504-7775

May 2008

TABLE OF CONTENTS

INTRODUCTION

The Washington State Department of Ecology (Ecology) has developed this public participation plan pursuant to the Model Toxics Control Act (MTCA) to promote meaningful community involvement during the investigation and cleanup of BNSF D Street Pipeline site. This plan outlines and describes the tools that Ecology uses to inform the public about site activities and identifies opportunities for the community to become involved.

Site Location

BNSF D Street Pipeline site is 1/2 mile long and is located east and parallel to East D Street, running from East 21st (now Highway 509 right-of-way) north to East 15th (See Figure 2) in Tacoma. The pipeline runs along property that is owned (or operated) by Washington State Department of Transportation, Nichols Trucking, City of Tacoma, Home Electric, 1815 E. D St. and Supervalu Holdings and is zoned as industrial and commercial. Old oil storage tanks (since removed) which once connected to the pipeline were located on property now owned by JM Martinac company and the BNSF Tacoma Rail yard.

SITE BACKGROUND

Investigations of the D Street Pipeline site began after Ecology received information from the City of Tacoma about tar-like oily globules that were found in Thea Foss Waterway during low tide. The globules were noticed near a stormwater outfall south of Johnny's Restaurant.

Excavations at the site led to a discovery of damaged portions of the pipeline where petroleum products had been released into soil and groundwater. Petroleum contamination was also found at the following locations:

- Soil and groundwater in the DOT stormwater detention pond area.
- Soil in the Supevalu parking lot.
- Soil and groundwater in the intersection of East D Street and East 19th Street (near Tacoma Fixtures).
- Soil and groundwater in parking areas between East 18th and 19th Streets.

Investigations revealed multiple sources of petroleum contamination along the Thea Foss Waterway including, underground storage tanks on the Home Electric property (deeded to 1815 E. D Street LLC) and historic fill.

In June 2004, Ecology entered into a Consent Decree with Burlington Northern and Santa Fe Railway Company (BNSF) to conduct a Remedial Investigation and Feasibility Study of the site as well as to complete interim actions. Interim actions were taken immediately to prevent the spread of further contamination into the Thea Foss Waterway.

BNSF and other PLPs completed several interim actions during 2004 and 2005. These included:

- Removal of source materials in soil and wood waste in the East 19th Street area.
- Removal of fuel oil from underground tanks located at the Tacoma Fixtures (Home Electric) property.
- Closure of two large fuel oil tanks (Tacoma Fixtures property).
- Removal of a diesel fuel tank (Tacoma Fixtures property).
- Repair and replacement of a section of storm sewer that was leaking.

Current Activity

The RI/FS has been completed and, based on these findings, a cleanup remedy has been selected. Ecology is entering into a Consent Decree with BNSF to implement the Cleanup Action Plan (CAP). As part of this agreement, BNSF will complete the following cleanup activities:

- Excavate and dispose of contaminated soils at specified locations.
- Install and sample groundwater monitoring wells to monitor contaminant concentrations.
- Use institutional controls to keep future development or activities from interfering with the site cleanup.

The draft CAP will be available for public comment. At the end of the comment period, Ecology will review and respond to all comments. The CAP will be finalized after public comment has been considered and, if necessary, incorporated into the plan. Once the CAP is finalized, the cleanup remedy will be implemented.

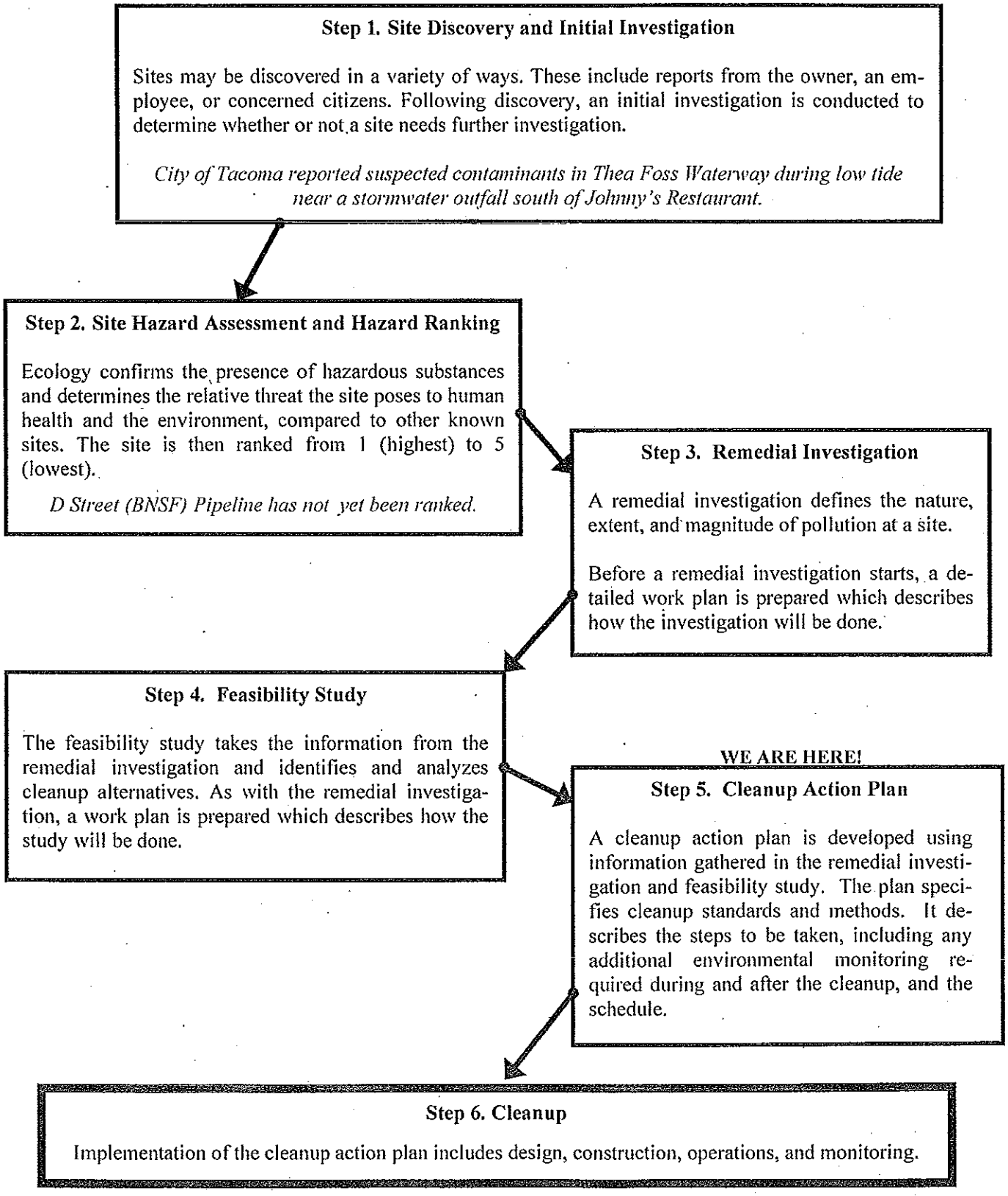
MODEL TOXICS CONTROL ACT CLEANUP STAGES

The Model Toxics Control Act (MTCA, Chapter 70.105D RCW) defines each stage of the cleanup process to protect human health and the environment. Figure 1 on page 5 details these stages.

Some steps described in the chart include Agreed Orders or Consent Decrees. These are agreements between Ecology and the parties responsible for cleanup of the pollution. In addition, Interim Actions (partial cleanup actions) may be taken to reduce or eliminate pollution that poses an immediate threat to human health or the environment.

The cleanup process is complex. Issues often arise that require more attention or evaluation, and may lead to changes in the steps or schedule. Every effort will be made to keep the public well-informed of changes.

Figure 1. Washington State Model Toxic Cleanup Process



PUBLIC PARTICIPATION ACTIVITIES AND RESPONSIBILITIES

The purpose of this Public Participation Plan is to promote public understanding and participation in the cleanup process for this site. This section of the plan addresses how Ecology will keep the public informed about site activity and provide opportunity for comment and involvement.

Ecology will use a variety of tools to facilitate public participation in the planning and cleanup of this MTCA site. Ecology will consider and implement input provided by the community whenever possible. The following is a list of the public involvement activities that Ecology will use, their purpose and a description of when and how they will be used in this site cleanup.

Formal Public Comment Period

Comment periods are the primary method Ecology uses to get feedback from the public on proposed cleanup decisions. Comment periods usually last for 30 days and are required at key points during this cleanup process before final decisions are made. During a comment period, the public can comment in writing (email or letter) or in person (during a public meeting or hearing).

Public Meetings and Hearings

Public meetings may be held at key points during the investigation and cleanup process. Ecology may also offer public meetings for actions expected to be of particular interest to the community. Also, if ten or more people request a public hearing during the 30 day comment period, Ecology will hold a public hearing for the purpose of taking oral comments on draft documents.

Responsiveness Summaries

After every public comment period, Ecology reviews and may respond to all comments received, both oral and written. This is compiled into a responsiveness summary. Ecology considers changes or revisions based on the input from the public. If significant changes are recommended, then a second comment period is held. If significant changes are recommended, then the draft documents will be finalized. The responsiveness summary will be available upon request and included with the other pertinent site documents in the Information Repositories listed below.

Information Repositories

Information repositories are convenient places where the public can go to read and review site information. The information repositories are often at libraries or community sites where public has access. During the comment period, the site documents will be available for review at each repository. Each site will have at least two repository sites established. Site information will remain at repositories for the duration of the cleanup. Ecology's Central files can also make copies of the documents for a fee.

The information repositories for this site are:

Washington State Department of Ecology
Southwest Regional Office
Toxics Cleanup Program
300 Desmond Dr.
Lacey, WA 98503
(360) 407-6365

Citizens for a Healthy Bay
917 Pacific Avenue, Suite 406
Tacoma, WA 98402-4421
(253) 383-2429

Tacoma Public Library (Main Branch)
Northwest room
1102 Tacoma Avenue South
Tacoma, WA 98402-2006

Mailing list

Ecology has compiled a list of interested parties and organizations and residents living in proximity to the cleanup site. This list will be used to disseminate information via mail (fact sheets, site updates, public notices). If you are not on a mailing list for a site but wish to be added, please contact Hannah Aoyagi at 360-407-6790 or haoy461@ecy.wa.gov.

Site Register and Public Events Calendar

Ecology's Toxics Cleanup Program uses its bimonthly Site Register and web-based Public Involvement Calendar to announce all of its public meetings and comment periods as well as additional site activities. To receive the Site Register in electronic or hard copy format, contact Linda Thompson at 360-407-6069 or by email at ltho461@ecy.wa.gov. It is also available on Ecology's website at http://www.ecy.wa.gov/programs/tcp/sites/8801/8801_hp.html.

Fact Sheets / Updates

Ecology will mail out fact sheets to persons and organizations interested in the D Street Pipeline site to inform them of public meetings and comment periods as well as important site activities. Ecology may also mail an update about the progress of site activities.

Newspaper Display Ads

Ecology may place ads in the local paper to announce public comment periods and public meetings or hearings for this site. The *Tacoma News Tribune* will be used to publish information about this site.

Ecology Web Site

Information related to this site and materials available for public comment will be posted on Ecology's web site at http://www.ecy.wa.gov/programs/tcp/sites/BNSF_oil_pipeline/BNSF_oil_pipeline_hp.htm.

Public Participation Grants

Grants may be available to neighborhood committees, non-profits, and other groups near the site. These funds may be used to provide additional public involvement, to receive technical assistance, and/or enhance the public's understanding of the cleanup process. For more information, please contact Kathy Seel at (360) 407-6061 or Ksee461@ecy.wa.gov, or visit Ecology's Solid Waste and Financial Assistance Program website: www.ecy.wa.gov/programs/swfa/grants.html

Translation Service

Ecology will provide translation services to any resident who requests them. This service can include written material, live translation during public meetings or telephone inquiries. Please contact Hannah Aoyagi, Public Involvement Coordinator at 360-407-6790 or haoy461@ecy.wa.gov for a translated copy of this or any other documents related to this site.

Plan Updates

This Public Participation Plan is meant to be a dynamic guide for informing and involving the community in the decision-making process at the Site. This plan may be updated as the project proceeds.

Technical Contact

For project-related questions, contact Marv Coleman at the Washington State Department of Ecology at 360-407-6259 or by email at mcol461@ecy.wa.gov.

Figure 2. D Street (BNSF) Pipeline

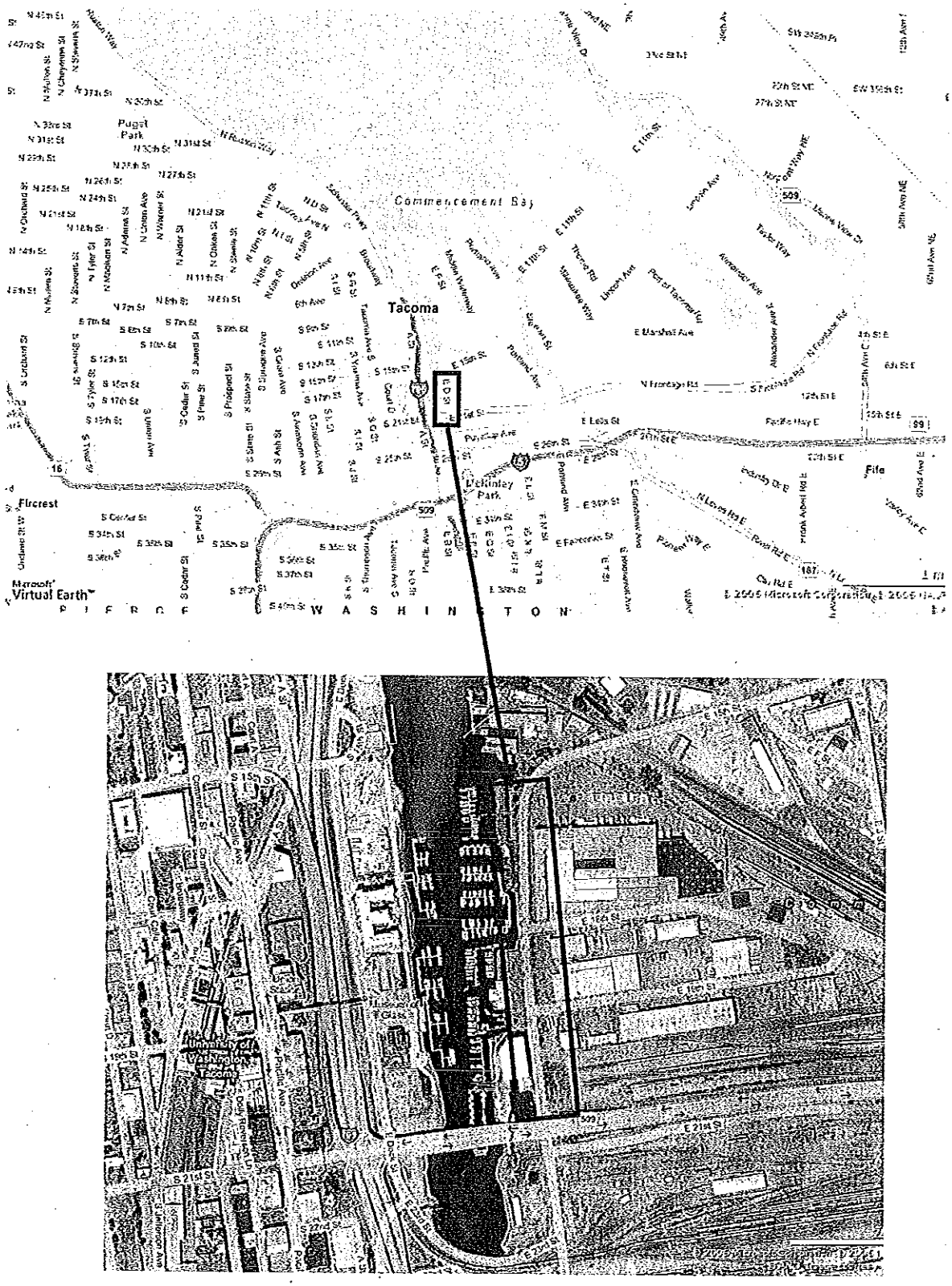
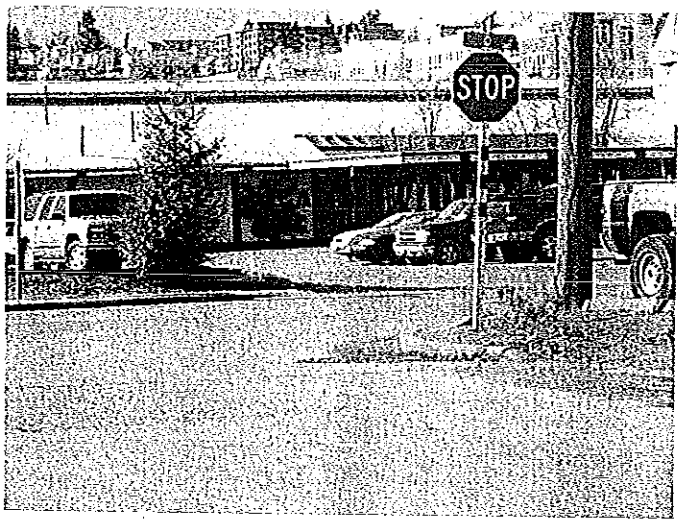
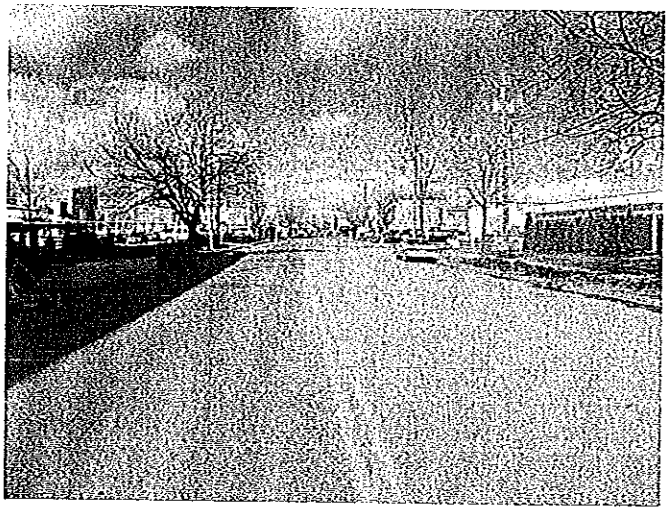


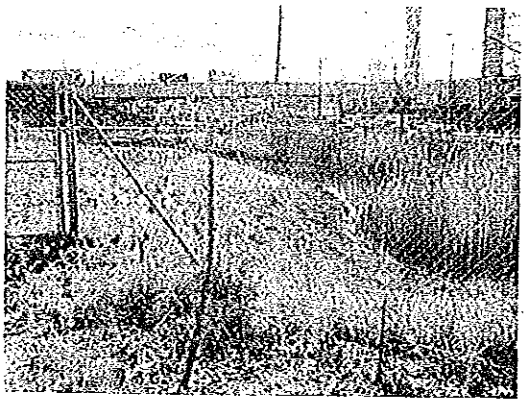
Figure 3. Additional photos taken along D Street (BNSF) Pipeline site

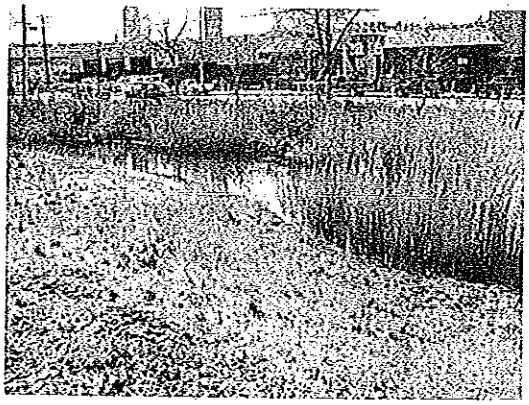


D Street and 19th Street Intersection

View of D Street facing North







Department of Transportation stormwater detention pond