



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

April 25, 2011

Mr. Kip Summers
City of Olympia
222 Columbia Ave NE
Olympia, WA 98501

Re: Further Action at the following Site:

- **Site Name:** Former Unocal Hulco Bulk Plant
- **Site Address:** 301 N Columbia, Olympia
- **Facility/Site No.:** 58484616
- **VCP Project No.:** SW1146

Dear Mr. Summers:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Former Unocal Hulco Bulk Plant facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

YES. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Petroleum hydrocarbons and related constituents into the Soil and Groundwater.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.



Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Draft Upland Investigation Data Report, Percival Landing, dated January 2011 by Anchor QEA, LLC.
2. Letter to Dr. Mark Brearley (Unocal Corporation) from Mr. Chuck Cline (Ecology), RE: No Further Action, dated October 10, 2003.
3. Final Cleanup Report, Supplemental Remedial Investigation, Former Unocal Bulk Plant 0828 and Hulco Property, 301 North Columbia Street and 206/216 Olympia Avenue West, Olympia, Washington, dated April 5, 2002 by GeoEngineers.
4. Results of Groundwater Sampling and Free Product Recovery, July and August 1998, Former Unocal Bulk Plant 0828 and Adjacent Former Hulco Property, 301/307 North Columbia Street and 206/216 Olympia Avenue Northwest, Olympia, Washington, dated October 7, 1998 by GeoEngineers.
5. Report of Environmental Services, Remedial Excavation Monitoring, Former Unocal Bulk Plant 0828 and Hulco Property, Olympia, Washington, dated December 19, 1995 by GeoEngineers.
6. Cleanup Action Plan, Unocal Olympia Bulk Plant and Hulco Property, Olympia, Washington, dated August 16, 1995 by GeoEngineers.
7. Risk Assessment, Development of Target Cleanup Levels, and Feasibility Study for Former Unocal Olympia Bulk Plant/Hulco Property, dated June 1995 by ICF Kaiser Engineers, Inc.
8. Report of Environmental Services, Subsurface Contamination Assessment and Ground Water Monitoring, Hulco Property and Unocal Bulk Plant 0828, Olympia, Washington, dated May 16, 1995 by GeoEngineers.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action.

The Site comprises Thurston County Tax Parcel Nos. 78507100200 (former Unocal property) and 78507100100 (former Hulco property), which are both currently owned by the City of Olympia (City). In addition, a portion of the Site along the shoreline is owned by the State of Washington and managed by the Department of Natural Resources. The Unocal Bulk Plant operated on the Site from about 1910 to 1993. The Hulco property was a bulk fuel storage facility operated by different companies, including Shell Oil Company (Shell) and Atlantic Richfield Company (ARCO). The Shell/ARCO bulk plant operated from about 1924 to about 1980. The Site is currently occupied by a portion of Percival Landing Park (park); however, a major redevelopment of the park is currently underway as part the current investigation and cleanup (*see the top half of attached Figure 2*).

Characterization activities were conducted at the Site between 1988 and 1995. Contamination above MTCA cleanup levels was identified in both soil and groundwater. Contaminants were predominantly gasoline-, diesel-, and oil-range petroleum hydrocarbons (TPH-G, TPH-D, and TPH-O, respectively), and benzene. Free product was also present in some wells. In addition, halogenated volatile organic compounds (HVOCs) such as vinyl chloride, tetrachloroethylene (PCE), and trichloroethylene (TCE) were reportedly present in groundwater on the southern portion of the Site.

In 1995, a sizable cleanup was conducted on both parcels when the bulk plants ceased operations. Additional soil was removed in 2001. Please see Section 4 (Cleanup) for further details on this cleanup action. Following the cleanup, on October 20, 2003, Ecology issued a No Further Action (NFA) letter for the Site. However, the NFA stated that contaminated soils remained in the west wall of the excavated portion of the Site below the boardwalk, and in the northwest section adjacent a retaining wall (*see attached Figures 3, 7, and 8*). These soils were left in place due to concerns over compromising

the structural integrity of the boardwalk and retaining wall. Reportedly, soil contamination was also left in place along the common boundary of the former Unocal and Hulco properties in the center of the Site, and along the southern boundary of the properties (*see attached Figure 4*). Five monitoring well locations (MW-12 through MW-15, and B-7) located along the western boundary of the Site, adjacent to the boardwalk, were used to demonstrate compliance for groundwater, which was reportedly achieved sometime in 2002.

In September 2010, during shoreline excavation as part of park redevelopment, petroleum contamination was identified that resulted in a visible sheen on the waterway. This release occurred when the contractor encountered and removed a timber cribwall that was buried in the shoreline embankment. The release was reported to Ecology and was assigned Environmental Report Tracking System (ERTS) #622261. The Ecology Spills Team responded and contained the release to the waterway.

Following the incident, the City initiated an upland investigation to determine the source of the petroleum contamination. Between September and December 2010, numerous soil samples were collected from 30 soil borings and nine test pits in the upland area. Analytical results identified concentrations of TPH-G, TPH-D, TPH-O, benzene, and ethyl benzene in soil above MTCA Method A cleanup levels. The contamination was primarily located on the properties adjacent to the shoreline. One of the areas identified included the former Unocal and Hulco properties. Another area of contamination was identified south of Olympia Avenue. However, based on data collected to date, this source area appears to be different and separate from the Unocal/Hulco area, and is being addressed as a separate site.

As part of park redevelopment, the City had originally proposed to install sheet piling along a portion of the shoreline following the completion of in-water activities. However, since contamination was identified, the City altered their plans and installed sheet piling along the entire shoreline following the excavation of contaminated material (*the sheet pile wall is illustrated on Figures 2 and 3*). This was done to provide a more substantial barrier to prevent upland contamination from further migrating to the waterway. A total of 19 confirmation soil samples (*CS sample series on attached figures*) were collected from the in-water excavation area. Analytical results indicated that contamination was successfully removed from areas adjacent to the former Unocal/Hulco properties.

Further characterization of the upland is currently being done by the City. No groundwater data has been collected to date as part of the City's investigation. Based on a review of the information provided to date, Ecology has the following comments:

1. Contamination above MTCA cleanup levels on the Site was identified in sample locations TP-2, BH-11, BH-24, and BH-28 (*see attached Figures 5 and 6*). Concentrations of contaminants identified included TPH-G (783 milligrams per kilogram [mg/kg] in TP-2, and 1,230 mg/kg in BH-28) and TPH-D/TPH-O (3,152 mg/kg in TP-2, 5,863 mg/kg in BH-11, and 2,159 mg/kg in BH-24). Contamination is generally located between 5 and 10 feet below ground surface (bgs). The vertical distribution of contamination at these locations was adequately defined. However, further characterization is warranted to determine the areal extent. Also, Figure 1 illustrates areas of the Site where contamination was reportedly left in place. These areas, including the southern end of the park lawn and to the east-southeast of the playground, do not appear to have been investigated.
2. As stated above, monitoring wells formerly located along the western boundary of the Site were used to demonstrate compliance for groundwater following the 1995 and 2001 cleanup actions. However, it is unknown to what extent groundwater throughout the Site, particularly in areas where soil contamination persists, complies with cleanup standards. Groundwater data should be collected throughout the Site, with permanent monitoring wells being installed as appropriate to monitor impacts. Cleanup levels for groundwater should be protective of surface water (*please see Section 2 for further discussion*). In addition to petroleum-related constituents, groundwater should be analyzed for HVOCs.
3. As part of characterizing the Site, especially if a non-permanent cleanup is implemented, the soil to vapor pathway will need to be evaluated. Please see WAC 173-340-740(3)(b)(iii)(C) for details on this requirement. The need for this evaluation would be triggered by the presence of volatile contaminants, such as TPH-G, benzene, and/or HVOCs, in soil and/or groundwater above MTCA Method A cleanup levels. Please refer to Ecology's Guidance for Evaluating Soil Vapor Intrusion in Washington State for guidance on evaluating this pathway. The guidance can be found on Ecology's website at http://www.ecy.wa.gov/programs/tcp/policies/VaporIntrusion/VI_guid_rev5_final_10-9-09.pdf. Ecology recommends that vapor samples be analyzed for volatile organic compounds (VOCs) and air-phase petroleum hydrocarbons (APH), and the results run through Ecology's four-phase model to determine cleanup levels protective of this pathway.
4. Ecology recommends providing a work plan for review for the activities noted above to ensure any additional work is likely to meet the substantive requirements of MTCA.

5. Once the Site has been adequately characterized, a comprehensive Remedial Investigation/Feasibility Study (RI/FS) report should be provided to Ecology for review. The RI/FS should include a Conceptual Site Model, with the extent of contamination illustrated on Site figures and an explanation of established cleanup levels, as well as a presentation of cleanup alternatives identified to address residual contamination at the Site. Please note that if contamination above established cleanup levels is proposed to be left in place using institutional controls, an Environmental Covenant will need to be filed with the county.
6. The City's draft report concludes that the sheet pile wall serves as a boundary between contaminated soils and non-contaminated soils, and will inhibit migration of buried petroleum products into Budd Inlet. In the RI/FS noted above, please provide further information to support how this engineered control is expected to provide a barrier to contamination, particularly to impacted groundwater that may be present.
7. A Terrestrial Ecological Evaluation (TEE) needs to be completed for the Site. Please fill out the form on our website and submit it to Ecology (along with any supporting documentation, as appropriate) for review. The form can be found at: <http://www.ecy.wa.gov/biblio/ecy090300.html>.
8. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website <http://www.ecy.wa.gov/eim>. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit all soil and groundwater data collected to date, as well as any future data, in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

MTCA Method A cleanup levels for soil and groundwater for unrestricted land uses have been used initially to characterize the Site. However, due to the Site's proximity to Budd Inlet, groundwater would not be considered a potable source of drinking water and groundwater cleanup levels protective of surface water should be established. In addition, cleanup levels for soil need to be established that are protective of surface water and direct contact. The more stringent value should be used.

Previous work at the Site utilized a "remedial action" level of 3,000 mg/kg (originally proposed to be 5,000 mg/kg but Ecology agreed on 3,000 mg/kg). To be clear, using MTCA terminology, this is a Remediation Level and not a Cleanup Level. According to the April 2002 GeoEngineers report, any contamination exceeding this level was excavated, and anything below was capped. Utilizing this cleanup plan, an Environmental (Restrictive) Covenant should have been placed on the property to document the institutional controls in place for the capped soil; however, that was never done.

Standard points of compliance are being used for the Site. The point of compliance for protection of groundwater shall be established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance shall be established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater shall be established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

Cleanup actions conducted at the Site to date have included the excavation and off-Site disposal of contaminated soil, free product recovery, and natural attenuation of groundwater. The extent of residual contamination at the Site is currently being characterized, and will need to be sufficiently defined before a final cleanup action can be identified.

4. Cleanup.

Ecology has determined the cleanup you performed does not meet any cleanup standards at the Site.

In 1995, a substantial cleanup was conducted at the Site. An estimated 9,438 tons of petroleum-contaminated soil were excavated and disposed of at the Kitsap County Sanitary Landfill. About 55% of this soil originated from the Hulco property and 45% from the Unocal property. Also, about 60,000 gallons of treated wastewater was discharged to nearby catchbasins per Ecology guidance. Confirmation soil samples collected from the base and sidewalls of the excavation indicated the presence of residual contamination in some areas (*see attached Figure 4*).

In 2001, an additional 890 tons of petroleum-contaminated soil was excavated from the Site and disposed of at Olympic View Landfill. Also, about 63,000 gallons of water from dewatering activities was discharged to the sanitary sewer per LOTT approval. Confirmation soil samples collected from the limits of the excavation identified residual contamination adjacent to the boardwalk and a retaining wall (*see attached Figures 3, 7, and 8*).

The extent of residual contamination at the Site is currently being characterized, and will need to be sufficiently defined before a final cleanup action can be identified.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

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3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at (360) 407-6347 or by e-mail at scott.rose@ecy.wa.gov.

Sincerely,



Scott Rose, L.G.
VCP Unit Manager
SWRO Toxics Cleanup Program

SIR/ksc:Unocal Hulco Site Further Action

Enclosures: A – Description and Diagrams of the Site

By certified mail: (7009 1410 0002 4421 6021)

cc: Tom Morrill – City of Olympia
Mike Riley – Anchor QEA
Shannon Soto – WADNR
Gerald Tousley – Thurston County Health Department
Carol Johnston – Ecology
Dolores Mitchell – Ecology

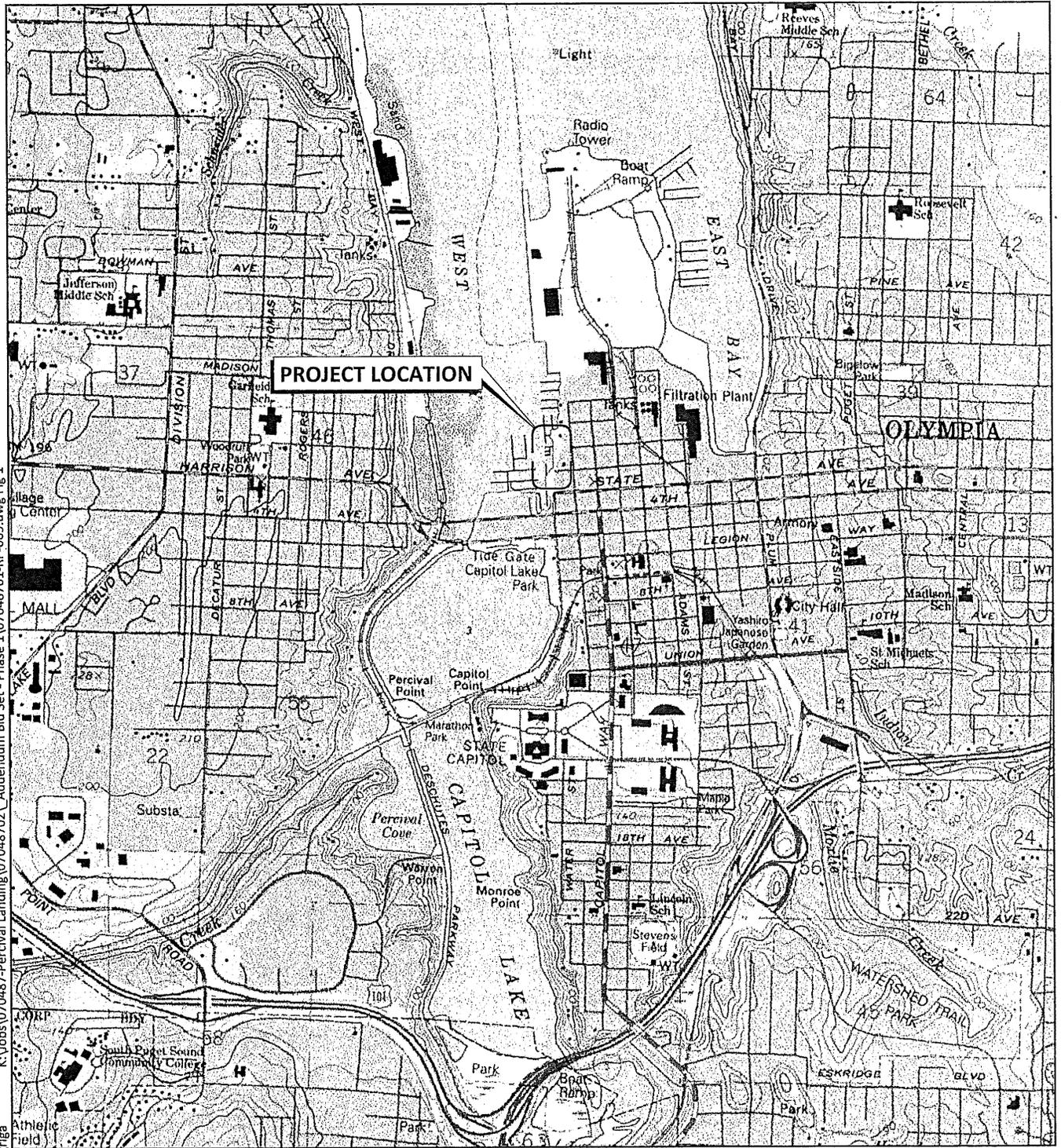
Enclosure A

Description and Diagrams of the Site

Site Description

The former Unocal/Hulk Bulk Plant Site is located at 301 N Columbia Street in Olympia, Washington. The Site is bounded to the west by Budd Inlet, to the south by Olympia Avenue NW, to the east by N Columbia Street, and to the north by paved parking. The Site comprises Thurston County Tax Parcel Nos. 78507100200 (former Unocal property) and 78507100100 (former Hulco property), which are both currently owned by the City of Olympia (City). In addition, a portion of the Site along the shoreline is owned by the State of Washington and managed by the Department of Natural Resources. The Unocal Bulk Plant operated on the Site from about 1910 to 1993. The Hulco property was a bulk fuel storage facility operated by different companies, including Shell Oil Company (Shell) and Atlantic Richfield Company (ARCO). The Shell/ARCO bulk plant operated from about 1924 to about 1980. The Site is currently occupied by a portion of Percival Landing Park (park); however, a major redevelopment of the park is currently underway as part the current investigation and cleanup.

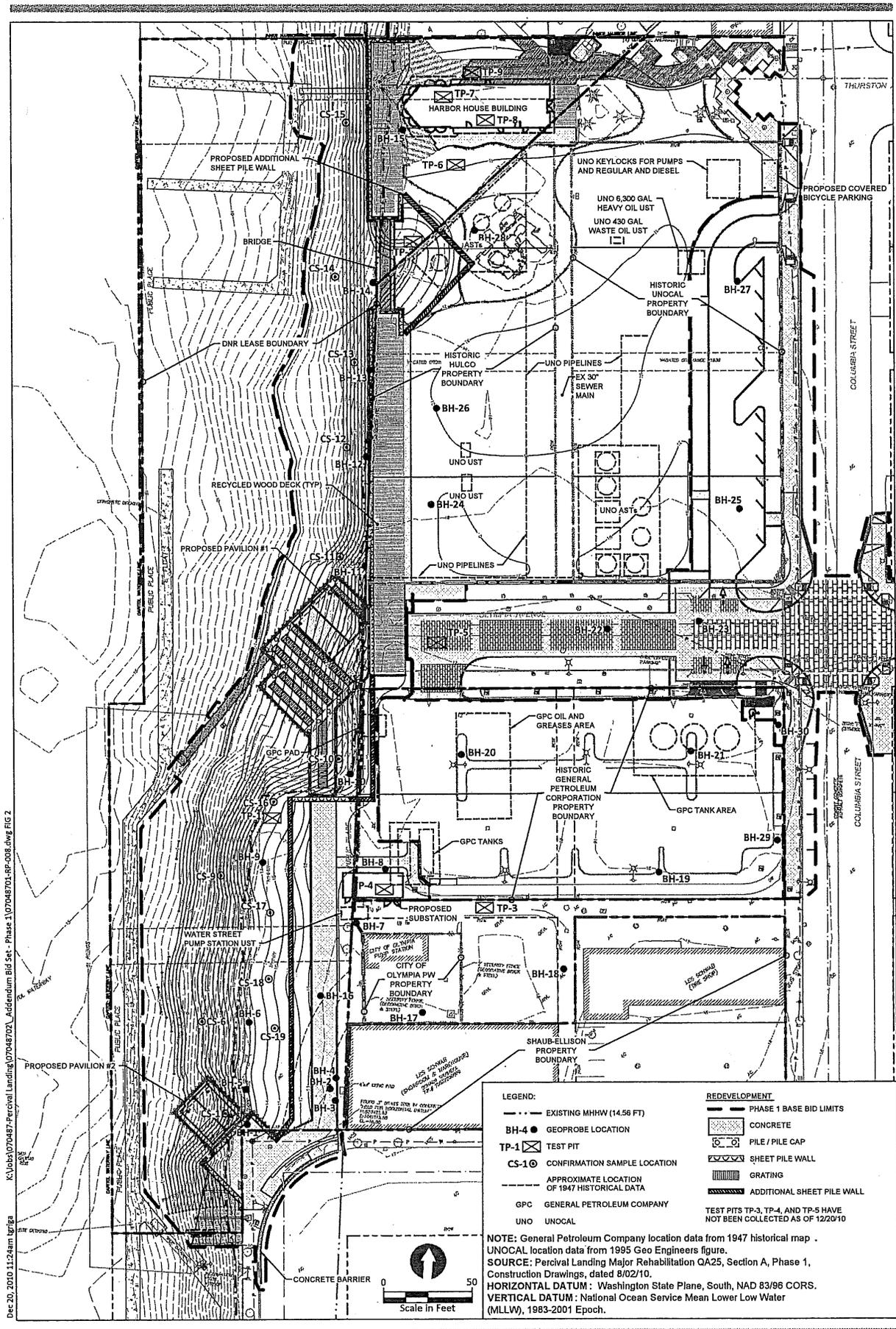
K:\Jobs\070487_Percival Landing\07048702_Addendum Bid Set - Phase 1\07048701-RP-009.dwg Fig 1
Dec 16, 2010 3:44pm teriga



SOURCE: Base map prepared from Terrain Navigator Pro
USGS 7.5 minute quadrangle map(s) of Tumwater, WA.



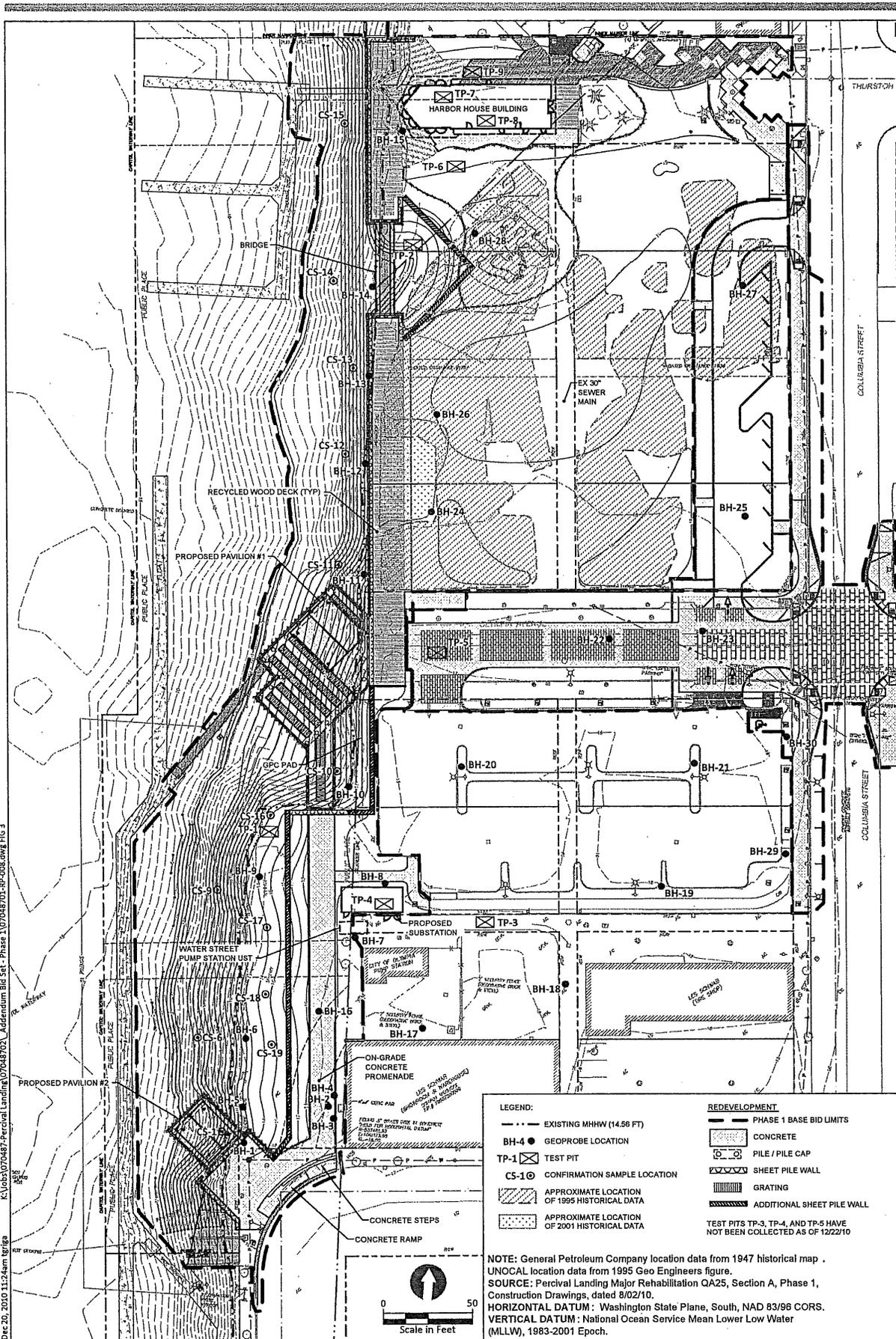
Figure 1
Site Vicinity
Draft Upland Investigation Data Report
Percival Landing



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 K:\Users\1072497-Percival Landing\070487021_Addendum Bid Set-Phase 1\07048701-SP-008.dwg FIG 2



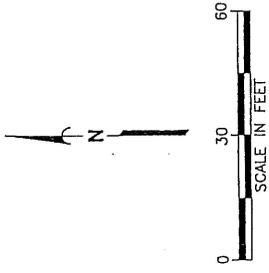
Figure 2
 Current and Historical Property Boundaries and Features
 Draft Upland Investigation Data Report
 Percival Landing



K:\Jobs\070487_Percival Landing\07048702_Addendum Bldg Set - Phase 1\07048701-SP-005.dwg FIG 3
Dec 20, 2010 11:24am by rga



Figure 3
Historical Excavation Areas
Draft Upland Investigation Data Report
Percival Landing



EXPLANATION:

▲ SOIL SAMPLE OBTAINED FROM EXCAVATION LIMITS IN WHICH PETROLEUM COMPOUNDS WERE DETECTED AT CONCENTRATIONS EXCEEDING THE REMEDIAL ACTION LEVEL (3,000 mg/kg); SAMPLE DATE SHOWN. SAMPLE DEPTH IN FEET BELOW GROUND SURFACE IS LAST PART OF SAMPLE NAME

- B BENZENE (mg/kg) BY EPA METHOD 8020
- G GASOLINE-RANGE HYDROCARBONS (mg/kg) BY WTPH-G
- D DIESEL-RANGE HYDROCARBONS (mg/kg) BY WTPH-D EXTENDED
- O HEAVY OIL-RANGE HYDROCARBONS (mg/kg) BY WTPH-D EXTENDED

AREA WHERE CHEMICAL ANALYTICAL RESULTS INDICATED REMAINING SOIL CONTAINS PETROLEUM CONCENTRATIONS EXCEEDING REMEDIAL ACTION LEVEL

--- LIMIT OF 1995 REMEDIAL EXCAVATION

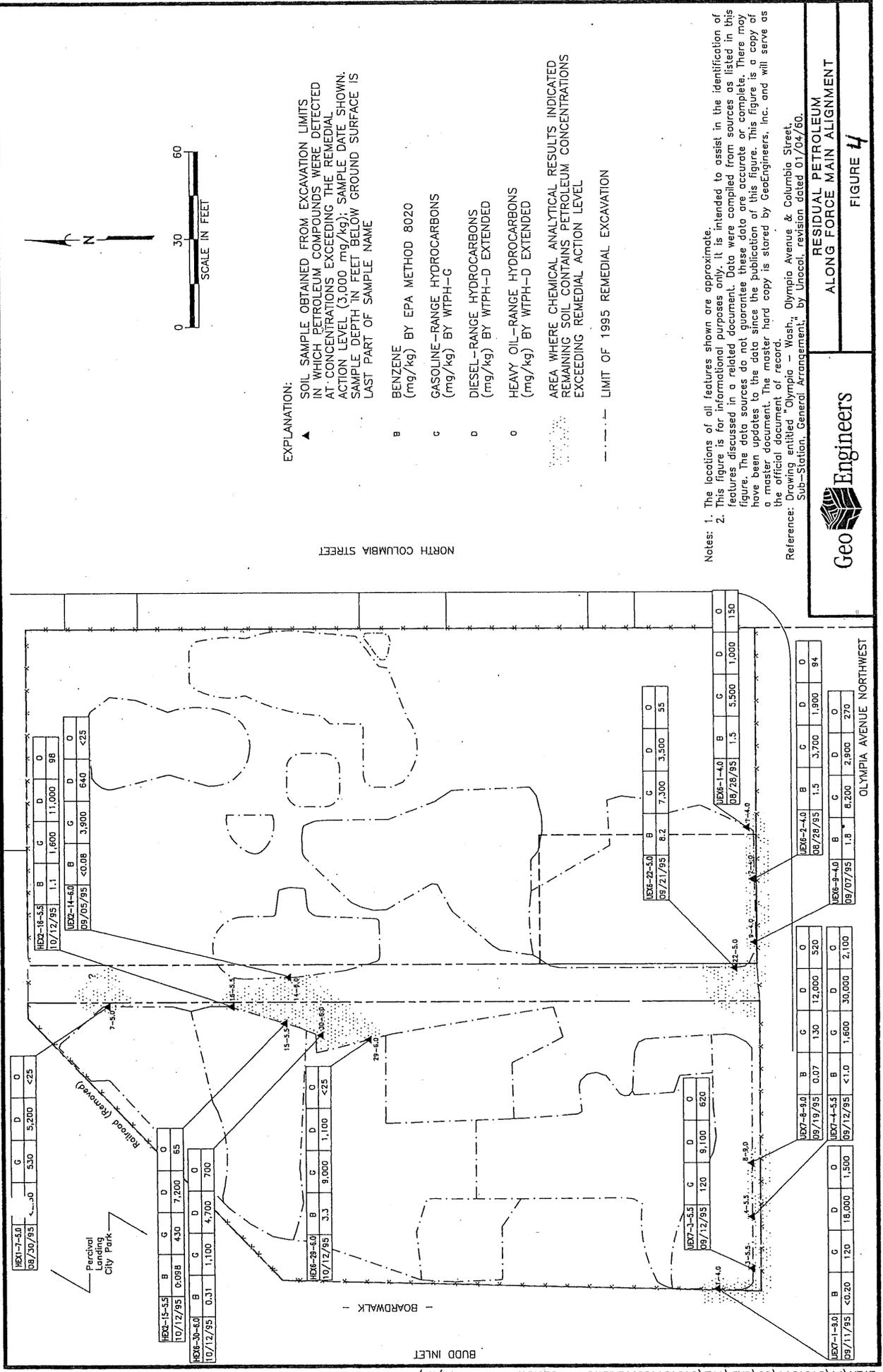
Notes: 1. The locations of oil features shown are approximate.
 2. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these 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 hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing entitled "Olympia - Wash.; Olympia Avenue & Columbia Street, Sub-Station, General Arrangement," by Unocal, revision dated 01/04/60.



RESIDUAL PETROLEUM ALONG FORCE MAIN ALIGNMENT

FIGURE 4



HE20-15-5.5	B	G	D	O
10/12/95	0.098	4.30	7.200	85

HE20-16-6.0	B	G	D	O
10/12/95	0.31	1.100	4.700	700

HE20-18-5.5	B	G	D	O
10/12/95	1.1	1.600	11,000	98

HE20-14-6.0	B	G	D	O
09/05/95	<0.08	3.900	640	<25

HE20-28-6.0	B	G	D	O
10/12/95	3.3	9.000	1,100	<25

HE20-30-6.0	B	G	D	O
10/12/95	0.07	1.30	12,000	520

HE20-34-5.5	G	D	O	O
09/12/95	120	9,100	620	

HE20-38-4.0	B	G	D	O
09/19/95	0.07	1.30	12,000	520

HE20-40-5.5	B	G	D	O
09/12/95	<1.0	1,600	30,000	2,100

HE20-42-5.0	B	G	D	O
09/21/95	6.2	7,300	3,500	55

HE20-44-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-46-4.0	B	G	D	O
09/07/95	1.8	8,200	2,900	270

HE20-48-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-50-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-52-5.0	B	G	D	O
09/21/95	6.2	7,300	3,500	55

HE20-54-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-56-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-58-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-60-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-62-5.0	B	G	D	O
09/21/95	6.2	7,300	3,500	55

HE20-64-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-66-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-68-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-70-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-72-5.0	B	G	D	O
09/21/95	6.2	7,300	3,500	55

HE20-74-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-76-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-78-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-80-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-82-5.0	B	G	D	O
09/21/95	6.2	7,300	3,500	55

HE20-84-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-86-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-88-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-90-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

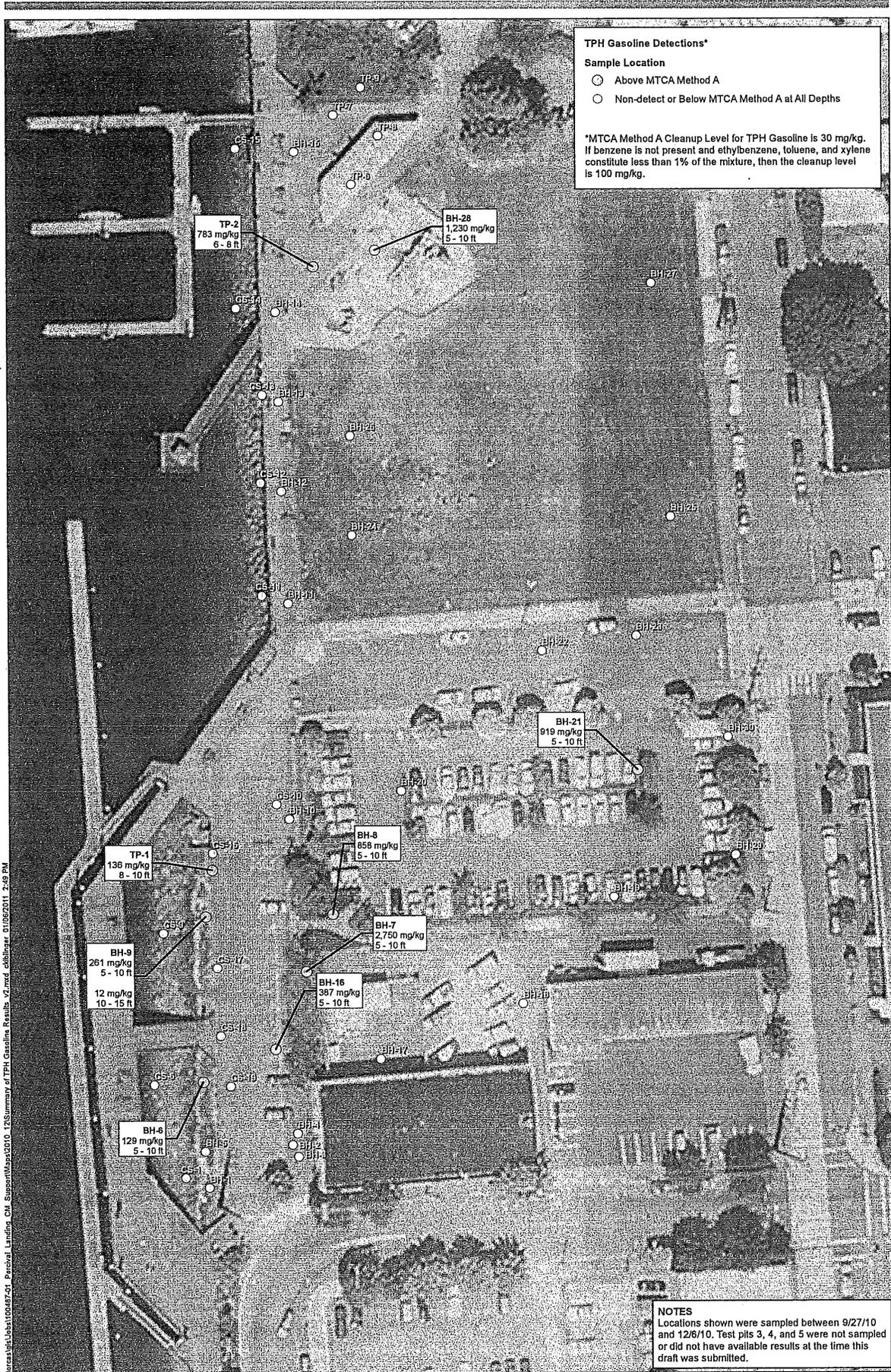
HE20-92-5.0	B	G	D	O
09/21/95	6.2	7,300	3,500	55

HE20-94-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-96-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-98-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84

HE20-100-4.0	B	G	D	O
08/28/95	1.5	3,700	1,900	84



TPH Gasoline Detections*

Sample Location

- Above MTCA Method A
- Non-detect or Below MTCA Method A at All Depths

*MTCA Method A Cleanup Level for TPH Gasoline is 30 mg/kg. If benzene is not present and ethylbenzene, toluene, and xylene constitute less than 1% of the mixture, then the cleanup level is 100 mg/kg.

NOTES
 Locations shown were sampled between 9/27/10 and 12/8/10. Test pits 3, 4, and 5 were not sampled or did not have available results at the time this draft was submitted.

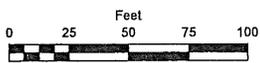
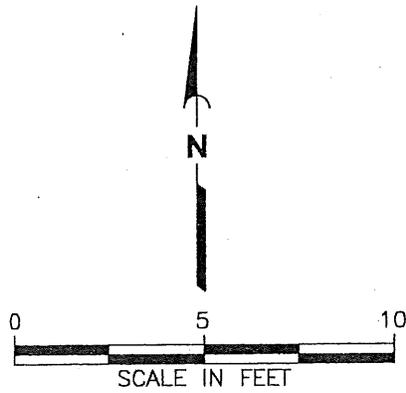


Figure 5
 Sample Locations with Gasoline Range Organics MTCA Method A Exceedances
 Draft Upland Investigation Data Report
 Percival Landing



Figure 6
Sample Locations with Diesel Range Organics and Oil Range Organics MTCA Method A Exceedances
Draft Upland Investigation Data Report
Percival Landing



EXCAVATION BASE AT APPROXIMATELY 10.5 FEET bgs

CONCRETE RETAINING WALL FOOTING

EX2-3-6.0

SIDEWALK

MW-11
(Removed)

EX2-1-10.5

EX2-4-7.0

EX2-2-6.0

EXPLANATION:

- MW-11 COMPLIANCE MONITORING WELL
- EX1-2-5.0 SOIL SAMPLE WITH PETROLEUM HYDROCARBON CONCENTRATION LESS THAN THE SITE SPECIFIC REMEDIATION LEVEL
- EX1-2-5.0 SOIL SAMPLE WITH PETROLEUM HYDROCARBON CONCENTRATION EXCEEDING THE SITE SPECIFIC REMEDIATION LEVEL
- LIMIT OF EXCAVATION
- bgs BELOW GROUND SURFACE

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 hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing created from sketch provided by GeoEngineers' staff, December 2001.

Ever\p:\0161314\CAD\05\016131405F.DWG LJB:HLA 02/13/02



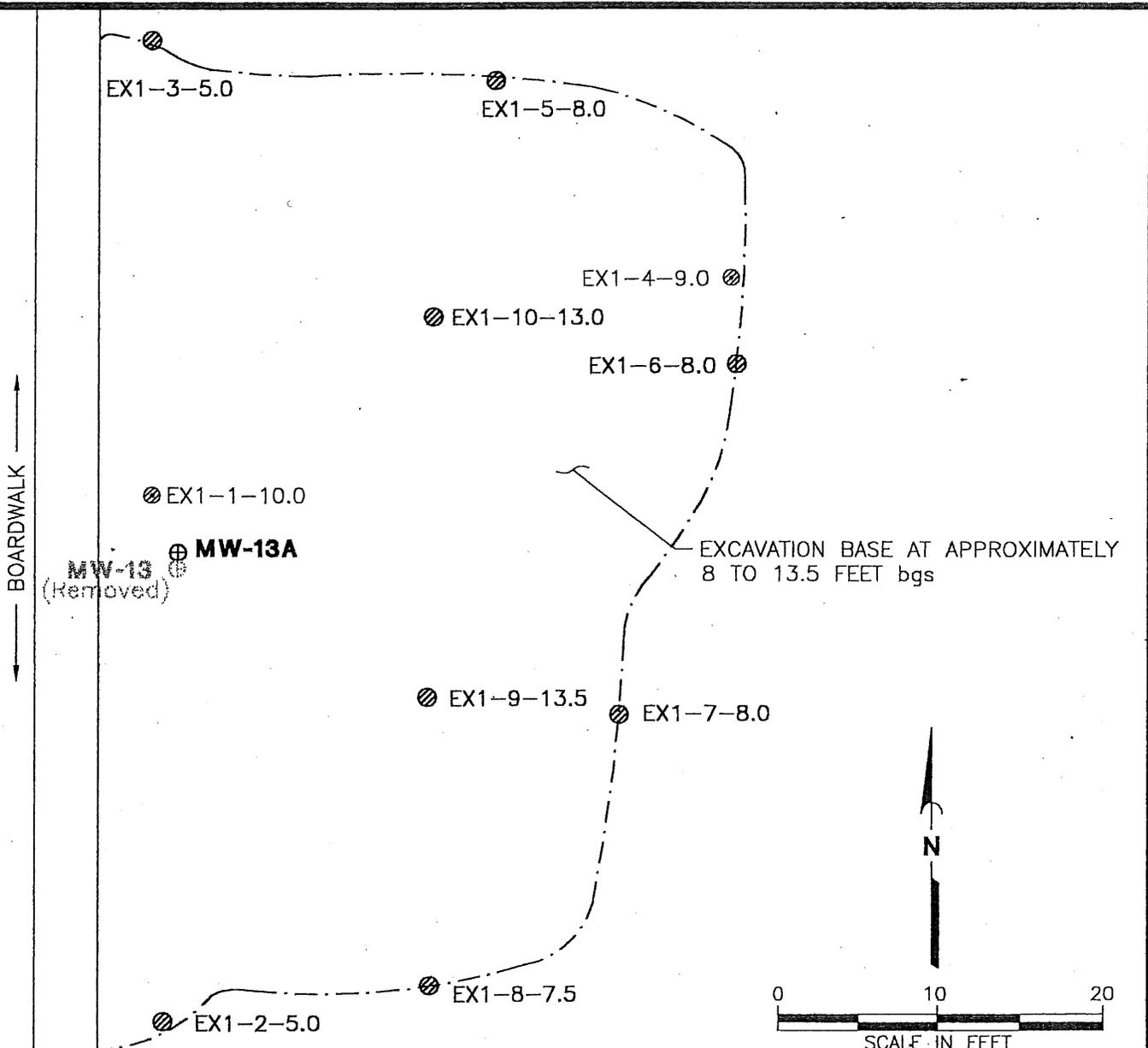
**EX2 REMEDIAL EXCAVATION LIMITS
NOVEMBER 2001**

FIGURE 7

02/13/02

LJB:HLA

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- EXPLANATION:
- MW-13A** ⊕ COMPLIANCE MONITORING WELL
 - EX1-2-5.0 ⊗ SOIL SAMPLE WITH PETROLEUM HYDROCARBON CONCENTRATION LESS THAN THE SITE SPECIFIC REMEDIATION LEVEL
 - EX1-2-5.0 ⊗ SOIL SAMPLE WITH PETROLEUM HYDROCARBON CONCENTRATION EXCEEDING THE SITE SPECIFIC REMEDIATION LEVEL
 - LIMIT OF EXCAVATION
 - bgs BELOW GROUND SURFACE

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 hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing created from sketch provided by GeoEngineers' staff, December 2001.



**EX1 REMEDIAL EXCAVATION LIMITS
 NOVEMBER 2001**

FIGURE #8

