



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 12, 2017

Mr. Paul Stemen
Stemen Environmental
PO Box 3644
Lacey WA 98509-3644

Re: No Further Action at the following Site:

- **Site Name:** Flintstone Fuel Inc.
- **Site Address:** 2840c Black Lake Blvd, Tumwater, Thurston Co., WA
- **Facility/Site No.:** 79995945
- **Cleanup Site No.:** 12365
- **VCP Project No.:** SW1563

Dear Mr. Stemen:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Flintstone Fuel Inc. 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?

NO. Ecology has determined that no 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 releases:

- Petroleum and associated constituents into the soil and groundwater
- Carcinogenic polynuclear aromatic hydrocarbons (cPAHs) soil and groundwater.

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. *Groundwater Sampling Event Report*, Stemen Environmental, Inc., June 30, 2015.
2. *Groundwater Sampling Event Report*, Stemen Environmental, Inc., September 29, 2015.
3. *Groundwater Sampling Event Report*, Stemen Environmental, Inc., January 16, 2016.
4. *Groundwater Sampling Event Report*, Stemen Environmental, Inc., May 5, 2016.
5. *Underground Storage Tank Systems Removal, Aboveground Used Oil Storage Tank Removal and Associated Remedial/Corrective Actions Report*, Stemen Environmental, Inc., November 25, 2016.
6. *Additional Environmental Investigations for the Flintstone Fuel Site*, Stemen Environmental, Inc., February 8, 2017.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You may 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 **no further remedial action** is necessary to clean up contamination at the Site. This conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action.

The Site, located on the northwest side of Black Lake Boulevard, is surrounded by commercial, residential, industrial/mining, and undeveloped land (Figure 1). The facility operated as a card lock fuel dispensary. No Site history was available for review.

Soils found at the Site consisted of dark brown gravelly soils with some larger cobbles. Wood debris was also found at various depths.

The nearest surface water body is small, unnamed pond that lies approximately 0.1 mile to the southeast of the Site. Black Lake lies nearly a mile to the south southwest of the Site.

The Site consists of two areas:

- The former fueling area, located on Thurston county tax parcel 12829130202. This parcel is 0.90 acres.
- A former above ground storage tank (AST), formerly located on Thurston county tax parcel 12829130201. This parcel is 9.10 acres.

Figure 2 shows the parcel outlines and the locations of the subject facilities.

The underground storage tank (UST) system was installed in 1987 (Figure 3). All tanks were of single wall construction. It consisted of:

- Two 10,000-gallon diesel tanks
- Two 10,000-gallon unleaded gasoline tank
- One 8,000-gallon motor oil tank
- One 8,000-gallon lube oil tank
- Three pump islands

The AST had a 500-gallon capacity and was used to store used motor oil. The tank was located at the side of a building beneath an overhang of the building's roof. The surface beneath the tank was gravel (Figure 3).

The depth to groundwater in the UST area is approximately 3 feet to 7 feet bgs, as determined when monitoring wells were installed. The flow direction was found to vary up to nearly 150 degrees but was predominantly toward the northeast. The depth to groundwater at the AST location was 5 feet bgs.

UST Discussion

A test pit was dug in April 2014 to obtain soil samples and to determine the depth to groundwater. One soil sample, collected at approximately 6 feet below ground surface (bgs) had Total Petroleum Hydrocarbons-Diesel (TPH-D) above the Method A cleanup level of 2,000 milligrams per kilogram (mg/kg). During this investigation, all USTs were found to contain residual product and water.

Demolition of the Site facilities was begun in July 2014. Before removal, all USTs were pumped of all remaining fluids, cleaned, and rendered inert. The fluids were transported to Petroleum Reclaiming Services (PRS) in Tacoma, Washington, for treatment and recycling.

The canopy, dispensers, pump islands, and surrounding concrete and asphalt surface covering were demolished prior to removal of the tanks and product delivery piping. During this work, soil having a strong odor of diesel, was found. Gasoline odors were also found during excavation work.

During the UST system removal, excavation of affected soils was begun. Once all the USTs were removed, additional excavation of affected soils commenced. Field screening was used to allow segregation of clean and contaminated soils, which were then stockpiled on Site to await disposition.

Groundwater seeping into the excavation was pumped into tanks for temporary storage until it could be transported off Site to PRS for treatment. The depth of the seepage was not noted in the report.

A heavy 2-day rain event occurred during the excavation work which resulted in a significant amount of water collecting in the excavation. A sump was dug in the southeastern portion of the excavation and the water then pumped into a storage tank. The water was later taken to the PRS treatment facility.

Once field screening indicated that all contamination was removed, a total of 54 confirmation samples were taken from the sidewalls and base of the excavation. Figure 4 shows the lateral extent of the excavation; Figure 5 shows the confirmation sampling locations. These samples were analyzed for Total Petroleum Hydrocarbons-Gasoline (TPH-G), TPH-D, Total Petroleum Hydrocarbons-Lube Oil (TPH-LO), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The only detections above the detection limits were TPH-D at 62 mg/kg, and four detections of total xylenes. The respective Method A cleanup levels for these constituents are 2,000 mg/kg and 9 mg/kg.

Since these detections therefore are well below their cleanup levels, remaining soils in excavation sidewalls and base were considered to be free of contamination.

The final size of the excavation was approximately 9,500 square feet with a depth of approximately 15 feet bgs at the deepest area. A total of 3,633.90 tons of contaminated soils were transported to the Cowlitz County Landfill in Longview, Washington. Water removed from the Site for treatment totaled 25,129 gallons.

On February 19, 2015, four groundwater monitoring wells were installed around the excavated area (Figure 6). The well screens were set at approximately 5 feet to 25 feet bgs. Four rounds of depth to groundwater measurements were taken during groundwater sample collection to determine the groundwater flow direction.

Samples were analyzed for TPH-G, TPH-D, TPH-LO, and BTEX. Samples from the first round conducted on May 21, 2015, were additionally analyzed for total lead (Pb). A total of four consecutive rounds of groundwater samples were collected. A compilation of the results are listed in Table 1.

When this data was submitted to Ecology, it was noticed that the locations of the monitoring wells were not adequately placed to intercept potential contamination from the excavated area. Figure 6 shows the locations of the wells and their relations to the predominant flow direction. Although the results were all non-detect, the well locations appeared to be cross gradient from the excavation. It was agreed that additional borings would be advanced on the north and south sides of the excavation area to collect more representative groundwater samples. Soil samples were also to be collected to be analyzed for Pb, a constituent that was not analyzed for in the confirmation samples.

On January 27, 2017, four borings were advanced at the Site (Figure 7). Borings PW1, PW2, PW3, and PW4 were situated to provide adequate data to fill the identified data gaps. Groundwater samples were collected from all four borings at depths between 2.5 feet and 5.5 feet bgs. The samples were collected from each borehole by installing a temporary well point through the drill string. All samples were analyzed for TPH-G, TPH-D, TPH-LO, BTEX, Pb and metals. The only detection was toluene at 2.3 µg/l in PW2 which is below the Method A cleanup level of 1,000 µg/l (Table 2).

AST Discussion

The AST, constructed of steel, was located adjacent to the southern wall of a metal storage shed. The surface underneath the AST was gravel and was stained with oil. The AST was protected from the elements by a metal canopy affixed to the building. The building's floor is mostly concrete although the southern 6 feet was plywood over soil.

The AST was pumped of remaining product and the water combined with the UST water. The canopy was then demolished to provide access for removal of the AST and affected gravel and soils. The AST was then removed and taken to an off-Site metal recycler.

Excavation of affected gravel and soil was then undertaken. Initial soil samples, collected at approximately 1.5 feet bgs from the western, southern, and northern sidewalls and from the eastern floor at 2.25 feet bgs, were found to have concentrations of TPH-LO above the Method A cleanup of 2,000 mg/kg. Analyses for metals found no exceedances of their Method A cleanup levels. Samples were also analyzed for PAHs.

Over excavation of remaining contamination then commenced. The sidewalls and base were excavated, and the wood floor in the building removed to allow excavation within the building footprint. The depth of the excavation was extended to approximately 3.5 feet bgs. Contamination was found to have also migrated to an area beneath the concrete floor in the building. Five soil borings were then advanced to determine the area of concrete that would need to be removed to excavate the remaining contamination.

After excavation work was completed, 15 confirmation samples were collected and analyzed for TPH-D, TPH-LO, and metals. With the exception of sample S14, all were below Method A cleanup levels. The area where S14 was collected in the northwest corner of the excavation within the building was over excavated and sample S14-2 was collected. The results indicated no contamination remained. Figure 8 shows the excavation extent and the confirmation sample locations.

A total of 97.89 tons of contaminated soil were removed from the AST location and transported to the Cowlitz County Landfill for disposal.

Since the confirmation samples were not analyzed for TPH-G, BTEX, PAHs, or polycyclic bi-phenols, two soil borings were advanced to collect soil samples (S1-6 and S2-6) and one boring to collect a groundwater sample (W1) to determine if these constituents were present (Figure 9). These samples were collected in January 2017. None of these constituents were found in either soil or groundwater at appropriate detection limits. Soil results are presented in Tables 3 and 4, groundwater results in Tables 2 and 3.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

Model Remedy 1, in the *Model Remedies for Sites with Petroleum Contaminated Soils*, Toxics Cleanup Program, September 2015, Publication No. 15-09-043, was selected to address contamination at the Site. This remedy uses Method A Soil Cleanup Levels for Unrestricted Use at sites where complete removal of the contaminated soil has taken place.

a. Cleanup levels

MTCA Method A Cleanup Levels for unrestricted land use for soil and groundwater are being used to characterize the Site.

The Method A cleanup levels used are:

Soil:

TPH-G	30 mg/kg
TPH-D	2,000 mg/kg
TPH-LO	2,000 mg/kg
Benzene	0.03 mg/kg
Toluene	7 mg/kg
Ethylbenzene	6 mg/kg
Total Xylenes	9 mg/kg
Pb	250 mg/kg

Groundwater:

TPH-G	800 µg/l
TPH-D	500 µg/l
TPH-LO	500 µg/l
Benzene	5 µg/l
Toluene	1000 µg/l
Ethylbenzene	700 µg/l
Total Xylenes	1000 µg/l
Pb	15 µg/l

b. Points of compliance

Standard points of compliance are being used for the Site.

The Points of Compliance are:

Soil -Direct Contact: For soil cleanup levels based on human exposure via direct contact, the point of compliance is: "...*throughout the Site from ground surface to 15 feet below the ground surface.*"

All contaminated soil was removed from the Site, thus this pathway is not applicable to the Site.

Soil- Leaching: For sites where soil cleanup levels are based on the protection of groundwater: "...*the point of compliance is throughout the Site*"

All contaminated soil was removed from the Site, thus this pathway is not applicable to the Site.

Groundwater: For groundwater, the standard point of compliance as established under WAC 173-340-720(8) is: "...*throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site.*"

Groundwater was monitored and no impacts were found, rendering this pathway not applicable to the Site.

Vapor: Ambient and Indoor Air throughout the site

All contaminated soil was removed from the Site, leaving this pathway incomplete and not applicable to the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

The selected remedy was excavation of affected soils with off-Site disposal. The remedy selected to determine impacts to groundwater was monitoring.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

The USTs and the AST were pumped and cleaned before decommissioning.

During excavation, water encountered in the UST pit was pumped into storage tanks. The waste water produced from remaining product removal from the tanks, tank cleaning, and water pumped from the excavation, totaled 25,129 gallons. This water was transported to PRS and appropriately disposed of at PRS for treatment.

At the UST location, all soil contamination was removed, as verified with confirmation samples from the base and sidewalls of the excavation. A total of 3,633.90 tons of petroleum contaminated soil was transported off-Site to the Cowlitz County Landfill in Longview, Washington, for proper disposal.

After completion of excavation and groundwater monitoring, due to the calculated groundwater flow direction, four additional borings were advanced to collect groundwater samples to affirm that groundwater was not impacted.

Four groundwater monitoring wells were installed at locations around the excavation. Four rounds of quarterly samples were collected and analyzed for the contaminants of concern. All results were non-detect.

The cleanup actions at the AST location consisted of excavation of affected soils. A total of 97.89 tons of soil was transported to the Cowlitz County Landfill for disposal.

After completion of soil excavation, three soil borings were advanced to collect additional soil samples and a groundwater sample to confirm that no contamination remained.

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.

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).

Mr. Paul Stemen
April 12, 2017
Page 11

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1563).

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 or the termination of the Agreement, please contact me by phone at (360) 407-6263 or e-mail at Carol.Johnston@ecy.wa.gov.

Sincerely,



Carol A. Johnston
SWRO Toxics Cleanup Program

CAJ: kb

Enclosures: A – Diagrams of the Site
 Figure 1: Location Map
 Figure 2: Thurston County Tax Parcel Map
 Figure 3: UST and AST Location Map
 Figure 4: UST Excavation Map
 Figure 5: UST Confirmation Sampling Locations
 Figure 6: UST Groundwater Monitoring Well Locations
 Figure 7: UST January 2017 Boring Locations
 Figure 8: AST Confirmation Sampling Locations
 Figure 9: AST January 2017 Boring Locations
 Table 1: Compilation of Groundwater Results from Monitoring Wells
 Table 2: UST and AST Confirmation Groundwater Results
 Table 3: AST PAH Soil and Groundwater Confirmation Results
 Table 4: AST PCB Soil results

By Certified Mail: [91 7199 9991 7037 0279 7680]

cc: Mr. Mike Parsons, Black Lake Quarry, LLC
 Mr. John Meek
 Mr. Gerald Tousley, Thurston County Environmental Health
 Mr. Nicholas Acklam, Ecology
 Mr. Mark Gordon, Ecology
 Mr. Matthew Alexander, Ecology

Enclosures

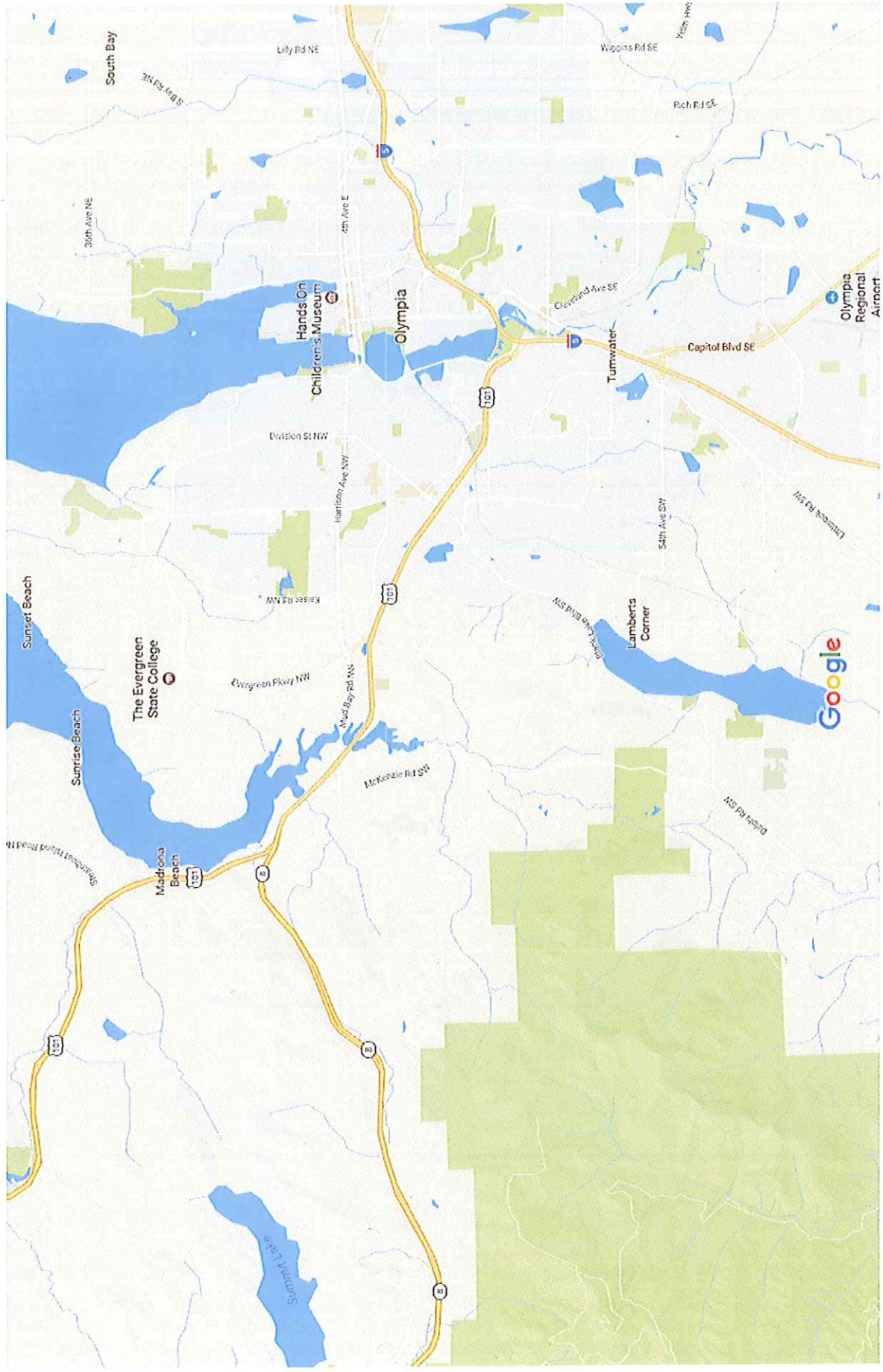
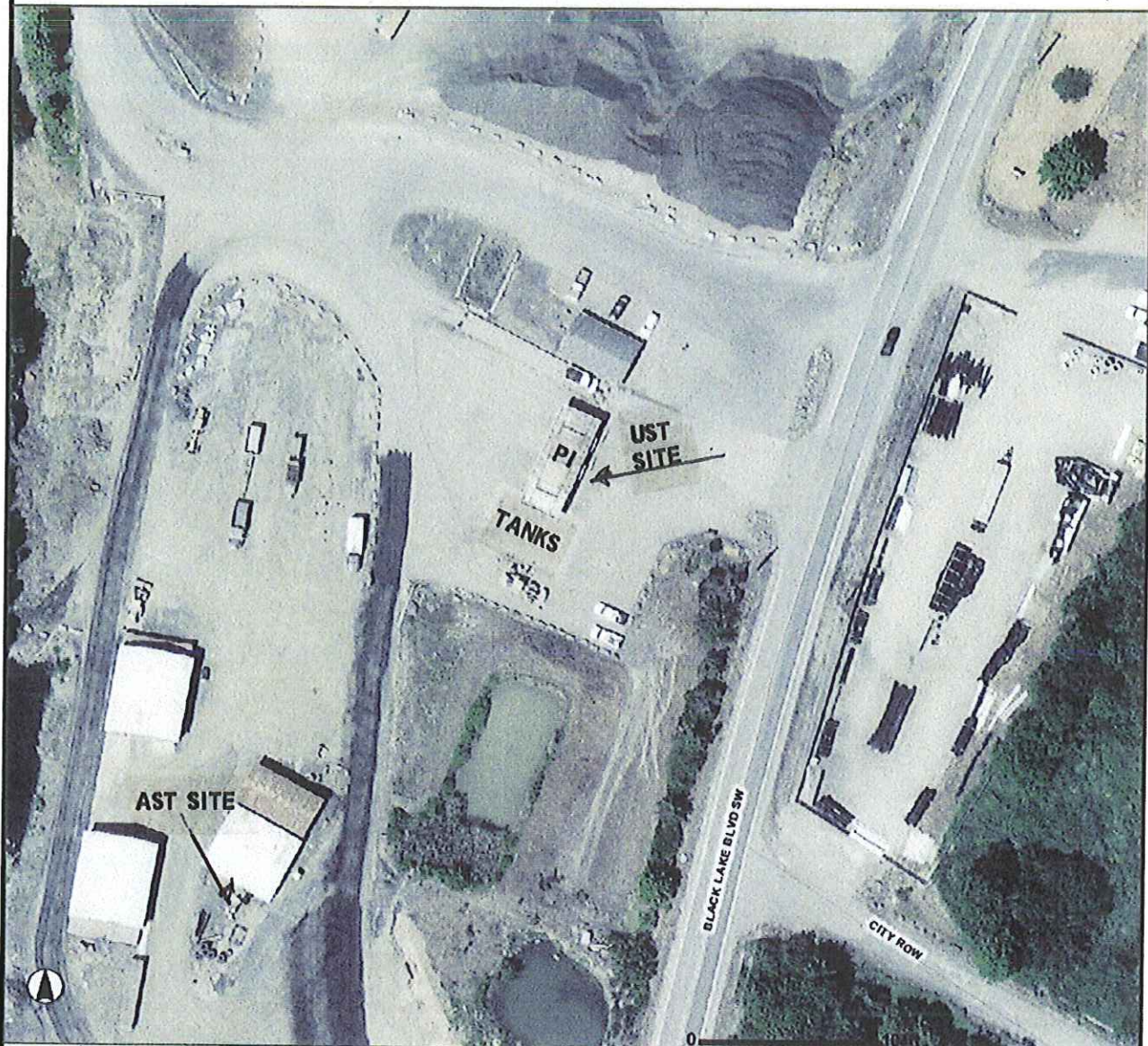


Figure 1



Figure 2

Flintstone Fuel Site



Disclaimer: Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.

To the fullest extent permissible pursuant to applicable law, Thurston County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchantability, data fitness for a particular purpose, and non-infringements of proprietary rights. Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of, or the inability to use, Thurston County materials.

Thurston
GeoData
Center

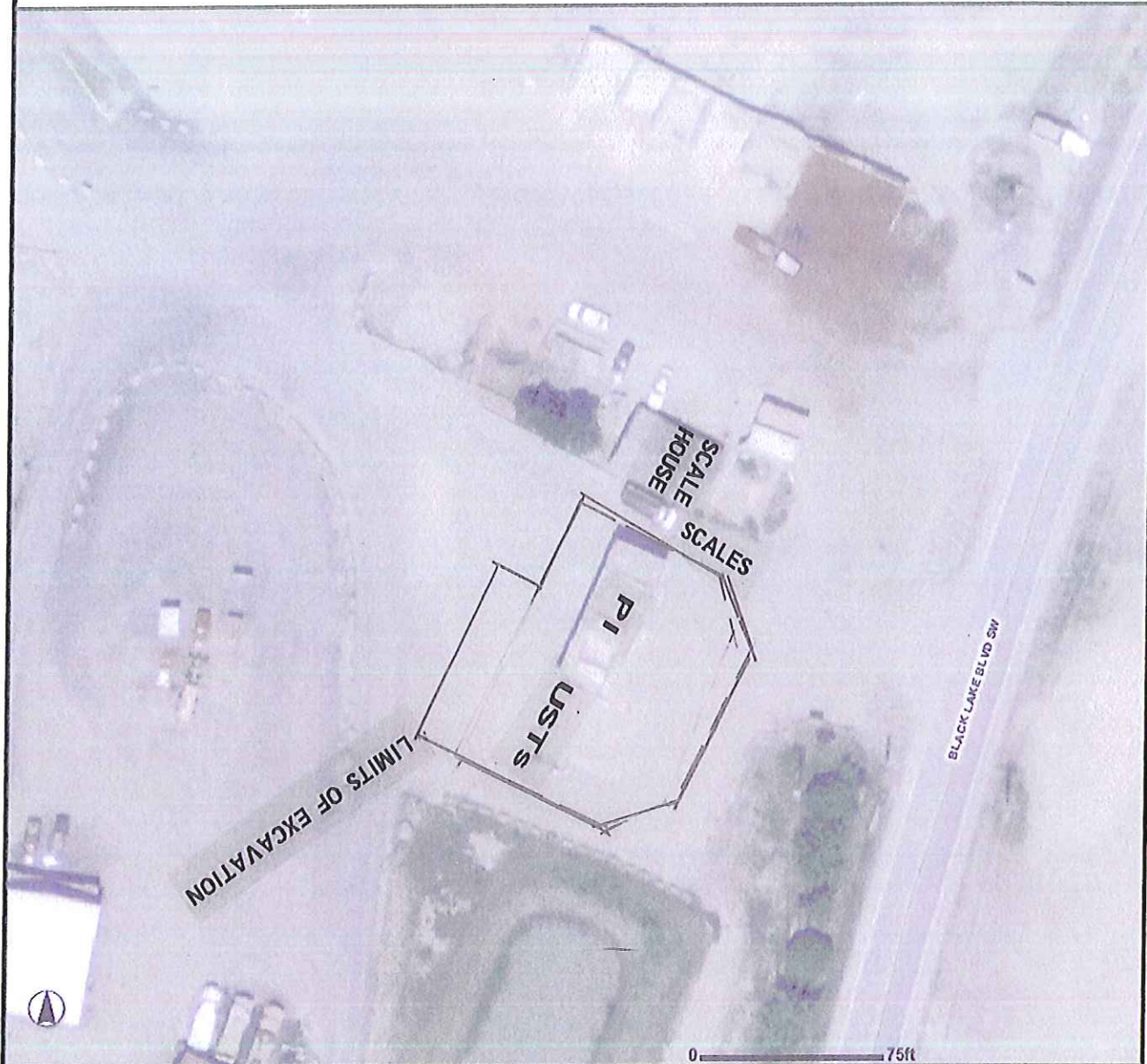
© 2014 - Thurston County GeoData Center
929 Lakeridge Drive SW, Suite 216, 2nd Floor
Olympia, WA 98502-6031

LEGEND

- | | |
|-----------------|--------------|
| Major Roads | Flood Zones |
| Roads | Water Bodies |
| Streams | Zoning |
| Contours | Cities |
| Wetlands | Parcels |
| Wetland Buffers | |

FIGURE 3

FLINTSTONE FUEL SITE



Disclaimer: Thurston County makes every effort to ensure that this map is a true and accurate representation of the work of County government. However, the County and all related personnel make no warranty, expressed or implied, regarding the accuracy, completeness or convenience of any information disclosed on this map. Nor does the County accept liability for any damage or injury caused by the use of this map.

To the fullest extent permissible pursuant to applicable law, Thurston County disclaims all warranties, express or implied, including, but not limited to, implied warranties of merchant ability, data fitness for a particular purpose, and non-infringements of proprietary rights. Under no circumstances, including, but not limited to, negligence, shall Thurston County be liable for any direct, indirect, incidental, special or consequential damages that result from the use of, or the inability to use, Thurston County materials.

Thurston
GeoData
Center

© 2016 - Thurston County GeoData Center
929 Lakeridge Drive SW, Suite 216, 2nd Floor
Olympia, WA 98502-6031

LEGEND

- | | |
|-----------------|--------------|
| Major Roads | Flood Zones |
| Roads | Water Bodies |
| Streams | Zoning |
| Contours | Cities |
| Wetlands | Parcels |
| Wetland Buffers | |

FIGURE 4

FLINTSTONE FUEL SITE UST EXCAVATION AREA	Stemen Environmental, Inc. P.O. Box 3044 Leesburg, Virginia 22079-0044 Phone: (561) 455-5521 Fax: (561) 412-1225		CRD: dcrd@stemen.com 1-800-455-5521
	CT Drafting Services LLC Architectural Drafting & Steel Detailing		

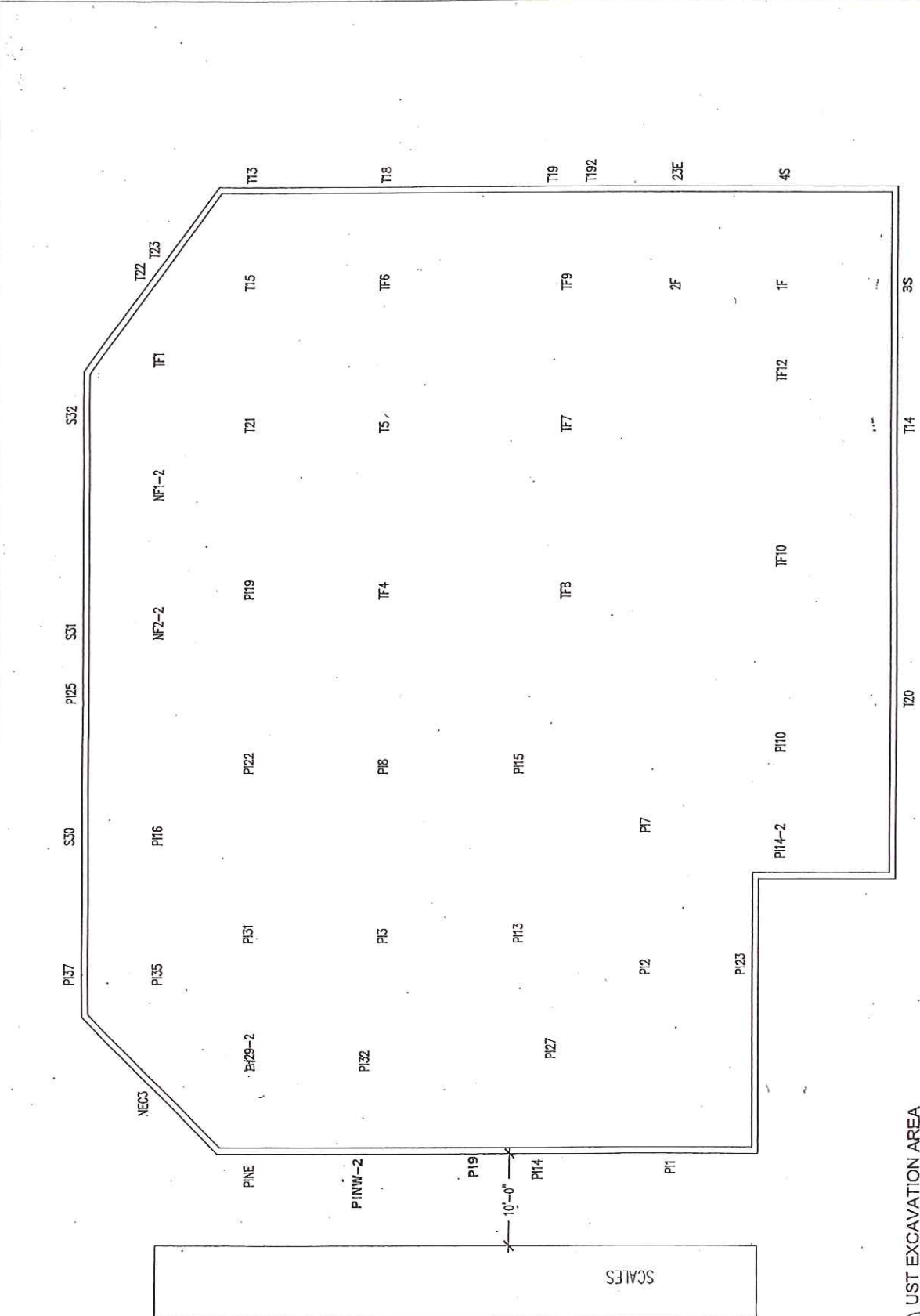
A1

REVISIONS:

DRAWN BY: CWT

DATE: 11/30/16

FIGURE 5



UST EXCAVATION AREA
 SCALE: 3/32" = 1'-0"



SCALES



LEGEND

- Approximate Property Boundary
 - Approximate Locations of Groundwater Monitoring Wells (Groundwater Elevations above Mean Sea Level)
 - Approximate Calculated Direction of Groundwater Flow (12/14/15) Based on Elevations in MW-1, MW-2, and MW-4
- 0 50 100
- Approximate Scale in Feet



JOHN R. KANE



Flintstone Fuel
2840-C Black Lake Blvd
Tumwater, Washington

Figure 6
Site Plan with
Groundwater Elevations
(12/14/2015)

FIGURE 6

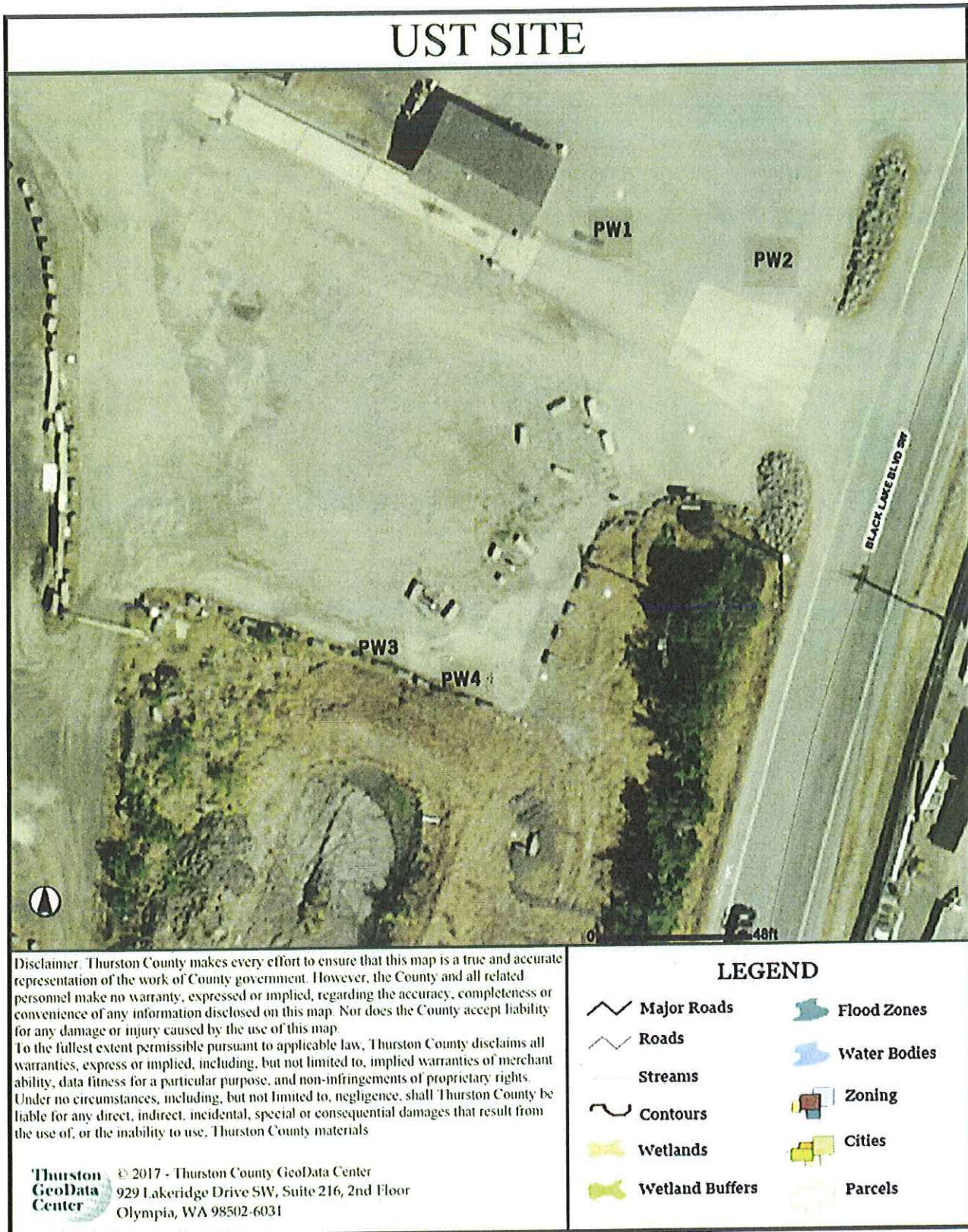
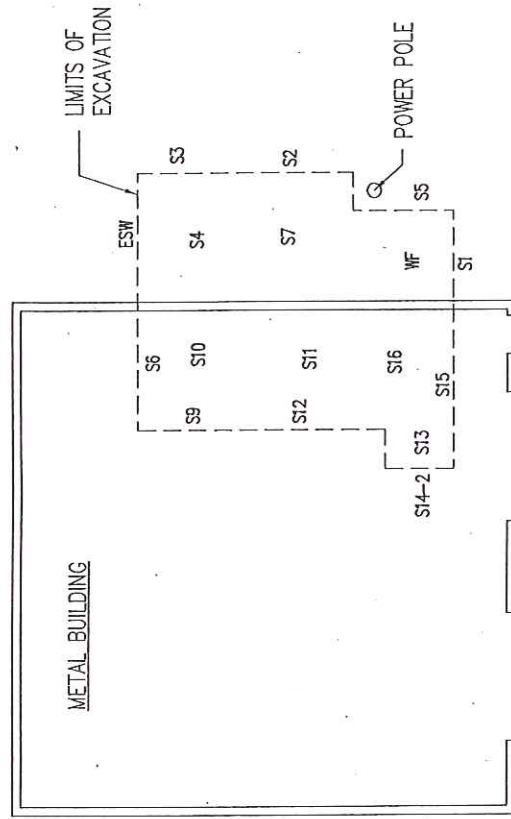


FIGURE 7

*EXCAVATION EXTENDS UNDER
SOUTHERN PORTION OF BUILDING



 NORTH
AST EXCAVATION AREA
SCALE: 3/32" = 1'-0"

Figure 8

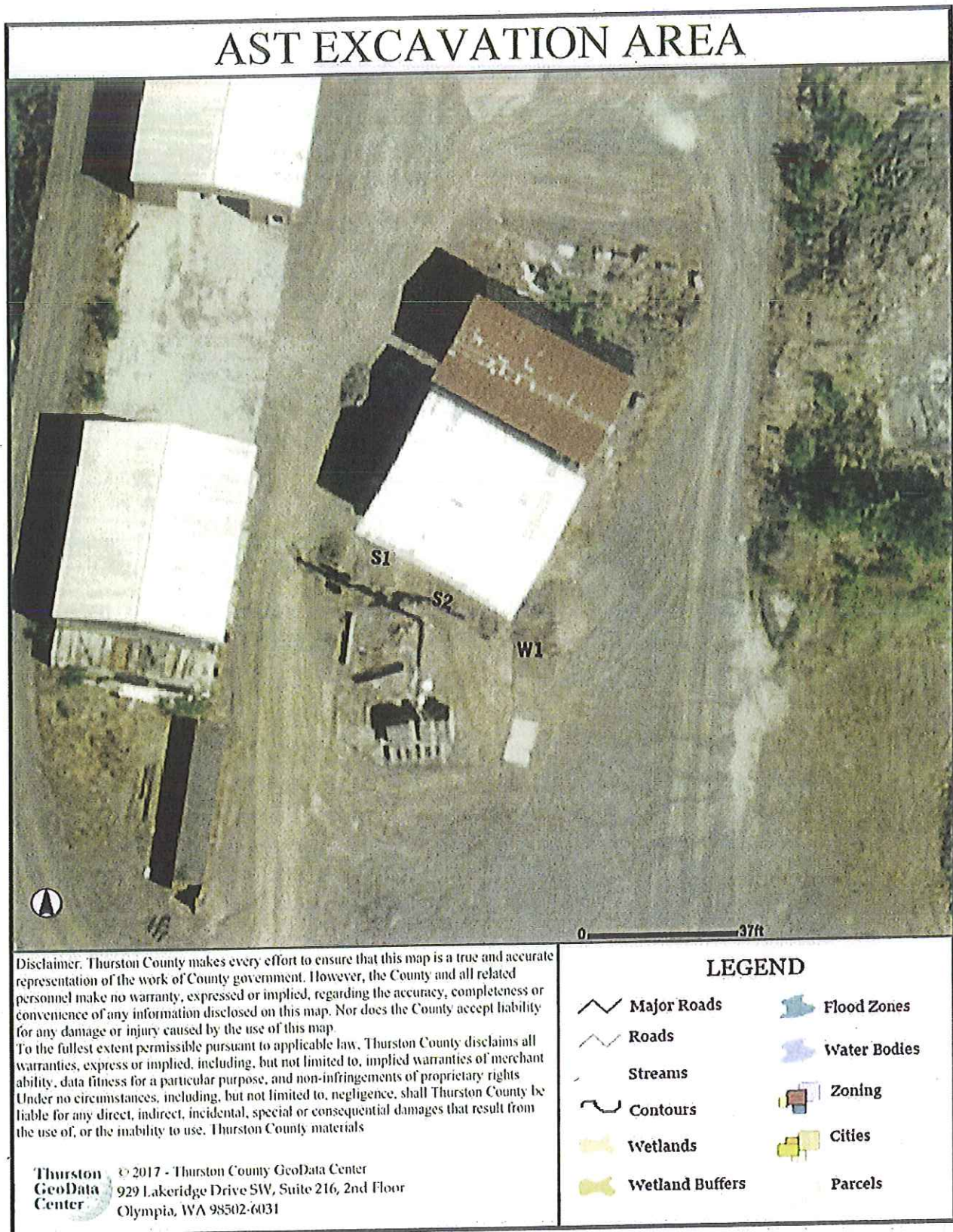


FIGURE 9

ANALYSIS OF DIESEL RANGE ORGANICS, LUBE OIL RANGE ORGANICS, GASOLINE RANGE ORGANICS & BTEX IN WATER BY METHOD NWTPH DxDx EXTENDED AND METHOD NWTPH-Gx8260											
SAMPLE NUMBER	SAMPLE DATE	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE		DIESEL		LUBE OIL	
						RANGE ORGANICS	ORGANICS	RANGE ORGANICS	ORGANICS	RANGE ORGANICS	ORGANICS
		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW1	5/21/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	8/16/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	12/17/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW1	3/2/16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	5/21/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	8/16/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	12/17/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW2	3/2/16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	5/21/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	8/16/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	12/17/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW3	3/2/16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW4	5/21/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW4	8/16/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW4	12/17/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW4	3/2/16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
REPORTING LIMITS		1	1	1	3	100	100	250	500	500	2000
METHOD "A" CLEAN UP LEVELS		5	1000	700	1000	*1000	2000	2000	2000	2000	2000
* BENZENE NOT PRESENT											

TABLE 1

UST EXCAVATION AREA WATER STORAGE TANK SAMPLES

ANALYSIS OF DIESEL RANGE ORGANICS, LUBE OIL RANGE ORGANICS, GASOLINE RANGE ORGANICS & BTX IN WATER BY METHOD NWTPH-Dx/Dx EXTENDED AND METHOD NWTPH-Gx/8260										
SAMPLE NUMBER	SAMPLE DATE	DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE RANGE ORGANICS	DIESEL RANGE ORGANICS	LUBE OIL RANGE ORGANICS	
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
W1	1/27/2017		ND	ND	ND	ND	ND	ND	ND	
PW1	1/27/2017	5'	ND	ND	ND	ND	ND	ND	ND	
PW2	1/27/2017	5.5'	ND	2.3	ND	ND	ND	ND	ND	
PW3	1/27/2017	2.5'	ND	ND	ND	ND	ND	ND	ND	
PW4	1/27/2017	5'	ND	ND	ND	ND	ND	ND	ND	
REPORTING LIMITS										
METHOD "A" CLEAN UP LEVELS			1	1	1	3	100	250	500	
			5	1000	700	1000	1000	2000	2000	

TOTAL METALS IN WATER BY EPA METHOD 6020										
SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	LEAD (Pb)	CADMIUM (Cd)	CHROMIUM (Cr)	ARSENIC (As)	MERCURY (Hg)			
			ug/L	ug/L	ug/L	ug/L	ug/L			
W1	1/27/2017	5'	4.2	2.1	9.7	3.2	ND			
PW1	1/27/2017	5'	ND	NA	NA	NA	NA			
PW2	1/27/2017	5.5'	ND	NA	NA	NA	NA			
PW3	1/27/2017	2.5'	ND	NA	NA	NA	NA			
PW4	1/27/2017	5'	ND	NA	NA	NA	NA			
NA - NOT ANALYZED										
METHOD DETECTION LEVEL			5	1	5	5	0.5			
METHOD A CLEAN UP LEVEL			14	15	50	5	2			

TABLE 2

FLINTSTONE FUEL

ANALYSIS OF POLYNUCLEAR AROMATIC HYDROCARBONS IN SOIL BY METHOD 8270				
SAMPLE-NUMBER		S1-6	S2-6	
DATE		1/27/2017	1/27/2017	
DEPTHS	REPORT LIMITS	6'	6'	
		mg/kg	mg/kg	
Naphthalene	0.02	ND	ND	
2-Methylnaphthalene	0.02	ND	ND	
1-Methylnaphthalene	0.02	ND	ND	
Acenaphthylene	0.02	ND	ND	
Acenaphthene	0.02	ND	ND	
Fluorene	0.02	ND	ND	
Phenanthrene	0.02	ND	ND	
Anthracene	0.02	ND	ND	
Fluoranthene	0.02	ND	ND	
Pyrene	0.02	ND	ND	
Benzo(a)anthracene	0.02	ND	ND	
Chrysene	0.02	ND	ND	
Benzo(b)fluoranthene	0.02	ND	ND	
Benzo(k)fluoranthene	0.02	ND	ND	
Benzo(a)pyrene	0.02	ND	ND	
Indeno(1,2,3-cd)pyrene	0.02	ND	ND	
Dibenzo(a,h)anthracene	0.02	ND	ND	
Benzo(ghi)perylene	0.02	ND	ND	
ANALYSIS OF POLYNUCLEAR AROMATIC HYDROCARBONS IN WATER BY METHOD 8270				
SAMPLE-NUMBER		W1		
DATE		1/27/2017		
DEPTHS	REPORT LIMITS	5'		
		ug/L		
Naphthalene	0.1	ND		
2-Methylnaphthalene	0.1	ND		
1-Methylnaphthalene	0.1	ND		
Acenaphthylene	0.1	ND		
Acenaphthene	0.1	ND		
Fluorene	0.1	ND		
Phenanthrene	0.1	ND		
Anthracene	0.1	ND		
Fluoranthene	0.1	ND		
Pyrene	0.1	ND		
Benzo(a)anthracene	0.1	ND		
Chrysene	0.1	ND		
Benzo(b)fluoranthene	0.1	ND		
Benzo(k)fluoranthene	0.1	ND		
Benzo(a)pyrene	0.1	ND		
Indeno(1,2,3-cd)pyrene	0.1	ND		
Dibenzo(a,h)anthracene	0.1	ND		
Benzo(ghi)perylene	0.1	ND		

TABLE 3

FLINTSTONE FUEL

POLYCHLORINATED BIPHENYLS IN SOIL BY EPA 8082A/3550C				
SAMPLE-NUMBER		S1-6	S2-6	
DATE		1/27/2017	1/27/2017	
REPORT				
DEPTHS	LIMITS	6'	6'	
		mg/Kg	mg/Kg	
A1016	0.1	ND	ND	
A1221	0.1	ND	ND	
A1232	0.1	ND	ND	
A1242	0.1	ND	ND	
A1248	0.1	ND	ND	
A1254	0.1	ND	ND	
A1260	0.1	ND	ND	
A1262	0.1	ND	ND	

TABLE 4