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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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July 28, 2015

Mr. Troy Eaton
Eaton Family LLC
4724 Steilacoom Blvd SW
Lakewood WA 98499

Re: Partial Sufficiency and Further Action at the following Site:

- **Site Name:** Metal Marine Pilot Inc.
- **Site Address:** 2119 Mildred Street West
- **Facility/Site No.:** 84252573
- **VCP Project No.:** SW1442

Dear Mr. Eaton:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the Metal Marine Pilot 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.

This letter replaces the Ecology No Further Action (NFA) determination of March 6, 2001 for soil contamination at the Site. Ecology's NFA determination of March 6, 2001 issued to this Site is hereby rescinded while you conduct the necessary administrative actions at the Site to address the MTCA substantive requirements for the arsenic contamination.

Issue Presented and Opinion

1. Does your cleanup meet some cleanup standards at the Site?

YES. Ecology has determined that your cleanup meets the following cleanup standards at the Site:

- Tetrachloroethylene (PCE) in Soil.
- Total Petroleum hydrocarbons as heavy oil (TPH-O), gasoline (TPH-g), and volatile organic compounds as benzene, ethyl benzene, toluene and xylenes (BTEX) in Soil.

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2. Is further remedial action still necessary to meet other cleanup standards at the Site?

YES. Further remedial action is still necessary to meet the following cleanup standards at the Site:

- Metals (Arsenic) in the Soil and Groundwater.

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:

- Tetrachloroethylene (PCE) in Soil.
- Total Petroleum hydrocarbons as heavy oil (TPH-O) gasoline (TPH-G) and volatile organic compounds as benzene, ethyl benzene, toluene and xylenes (BTEX) in the Soil.
- Metals (Arsenic) in the Soil and Groundwater.

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

Please note the parcel(s) of real property associated with this Site are also located within the projected boundaries of the Tacoma Smelter Plume facility #89267963. At this time, we have no information that those parcel(s) are actually affected. This opinion does not apply to any contamination associated with the Tacoma Smelter Plume facility.

Basis for the Opinion

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

1. Sound Environmental Strategies Inc. Underground Storage Tank Decommissioning and Soil Remediation Report. May 2002.
2. Kleinfelder Inc. Phase I Environmental Site Assessment. May 2005.
3. Kleinfelder Inc. Limited Phase II Environmental Site Assessment. June 2005.

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4. Kleinfelder Inc. Supplemental Phase II Environmental Site Assessment Report. September 2005.
5. Terracon. Phase I Environmental Site Assessment. June 2008.
6. EcoCon, Inc. Focused Subsurface Investigation. March 2012.
7. EcoCon, Inc. Remedial Excavation Soil Sampling. September 5, 2012.

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

This opinion 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 is described below.

The Site consists of a single tax parcel (Pierce County #0220112005) which occupies approximately 9.49 acres of land. The Property is improved with two buildings and a storage shed, which are approximately 25,000 square feet (ft²), 600 ft², and 80 ft² in size, respectively. The larger of the two buildings was reportedly used as an office space and sales room, the smaller was used as a painting shed, and the shed was used to store paint. Previous environmental investigations also suggested the former presence of two 700 ft² buildings, one used to clean parts and equipment, and the other for cardboard storage.

In February 2000, four soil samples were collected along the northern Property boundary where previous samples, associated with a heavy-oil (ORO) release from the adjacent property to the north, indicated ORO concentrations above the MTCA Method A Cleanup Level (CUL) of 2000 mg/kg. The laboratory reported one soil sample with a ORO concentration of 35,000 mg/kg.

In February 2000, twenty-five direct push borings were advanced on the Property to evaluate areas of potential concern. Soil samples collected within an area near the paint

shed contained concentrations of tetrachloroethylene (PCE) above the MTCA Method A Cleanup Level (CUL) of 0.05 mg/kg.

In August 2000, surface soil samples were collected along the east end of the Property where a red-colored stain was observed. The soil samples were analyzed for PCE and total metals. Two soil samples indicated concentrations of arsenic and/or cadmium above their respective MTCA Method A CULs.

In May and September 2005, numerous areas with potential contamination were identified and evaluated. Laboratory analysis reported three soil samples with ORO concentrations and two soil samples with PCE concentrations in the drain field area exceeding their respective MTCA Method A CULs. Perched groundwater was encountered at 16.6 to 19.6 feet below ground surface (bgs). A perched water sample was collected and indicated arsenic at a concentration of 9.47 µg/L, exceeding the MTCA Method A CUL of 5 µg/L.

In September 2005, additional soil samples were collected from the central portion of the property. Laboratory analysis reported PCE and ORO concentrations in excess of their respective MTCA Method A CULs. One groundwater sample collected from a new groundwater monitoring well contained an arsenic concentration of 14.6µg/L, exceeding the MTCA Method A CUL, but the concentration is reported to fall within the natural background concentrations of arsenic within the Tacoma Smelter Plume.

In September and October 2011, soil samples were collected from approximately twenty soil borings at depths ranging from 5 to 25 feet bgs, and analyzed for ORO, diesel-range organics (DRO), gasoline-range organics (GRO), polyaromatic hydrocarbons (PAHs), VOCs, total Arsenic, chromium, and hexavalent chromium. The soil samples indicated exceeding the MTCA Method A CUL concentrations of PCE (0.09 mg/kg), benzene (0.03 mg/kg), toluene (7 mg/kg), ethylbenzene (6 mg/kg) and xylenes (9 mg/kg) (BTEX), and naphthalene (VOC) at 5 mg/kg. The benzene concentration was recommended to be further evaluated during subsequent remedial activities.

In August 2012, soil samples were collected from an area that had been identified as the location where fill material was imported onto the property. Soil samples from both the fill material (between 0 and 20 feet bgs), and the native material (below 20 feet bgs). Three soil samples collected from the fill material and one soil sample from the native material contained concentrations of arsenic above the MTCA Method A CUL of 20 mg/kg. The extent of contamination at the site is depicted by ECI Figure No. 11 as Enclosure A.

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.

MTCA Method A Cleanup levels for unrestricted land use were used for the Site.

The proposed Method A cleanup levels are:

Soil:

Arsenic	20 mg/kg
TPH-Gasoline	30 mg/kg
Benzene	0.03 mg/kg
Toluene	7 mg/kg
Ethylbenzene	6 mg/kg
Total Xylenes	9 mg/kg
TPH-Oil	2000 mg/kg
PCE	0.05 mg/kg

Groundwater:

Arsenic	5 µg/l
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The proposed 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.*”

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

3. Selection of cleanup action.

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

Cleanup actions at the Site to date have included decommissioning and off-site removal of USTs, and the excavation and off-site disposal of 250 cubic yards of PCE contaminated soil and 80 cubic tons of petroleum contaminated soil.

4. **Cleanup.**

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

- PCE in the Soil
- Petroleum hydrocarbons as TPH-O in the Soil

However, Ecology has determined the cleanup you performed does not meet the following cleanup standards for the Site:

- Metals as Arsenic in the Soil and Groundwater.

Cleanup actions performed at the Site to date have included:

In 1994, two underground storage tanks were decommissioned and removed from the Site. Confirmation soil samples and stockpile samples collected during the removal action had no detectable of DRO, GRO, or BTEX.

In April 1996, Pace Industries, located on the adjacent property to the north, suffered equipment failure that caused a pressure release of ORO fluids on the Site. An estimated eighty cubic tons of impacted soil was removed from the Site. All confirmation samples reported ORO concentrations below laboratory minimum reporting limits except those collected on the northern Property boundary.

In September 2000, the PCE impacted soil identified during the February 2000 investigation was excavated and disposed off Site. Confirmation soil samples confirmed that the PCE concentrations in soil were below the MTCA Method A CUL. No additional investigation or remediation was recommended at that time and the Washington State Department of Ecology provided a No Further Action opinion letter dated March 6, 2001.

In May 2002, two 80-gallon kerosene USTs located on the western side of the main building were decommissioned and removed off Site. Soil samples were collected from the excavation and analyzed for total petroleum hydrocarbons and VOCs. All confirmation soil samples collected and analyzed for kerosene or VOCs were below the MTCA Method A CUL.

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In August 2012, approximately 250 cubic yards of soil was excavated and removed from the area identified in September 2005. All confirmation soil samples reported concentrations of PCE and associated degradation compounds below their respective laboratory reporting limits and/or MTCA Method A.

In summary, Arsenic soil contamination appears to be fairly widespread throughout the Site, and does not appear to be associated with any specific point release. The source of the arsenic is likely attributable to the former operation of the Tacoma Asarco Smelter Plant, and the fill material that was imported to the property as part of historical grading activities. On the eastern half of the Site, soil with concentrations of arsenic above MTCA Method A CUL of 20 mg/kg were identified from ground surface to approximately 26 feet bgs. Arsenic concentrations in soil samples collected during sub-surface investigations completed between 2011 and 2012, range from a low of 5.1 mg/kg in boring AB7 at a depth of 8 to 9 feet bgs, to a high of 49 mg/kg in boring AB11 at a depth of 11 to 12 feet bgs.

As part their May 2015 Limited Feasibility Study (LFS)/Disproportionate Cost Analysis (DCA), ECI Environmental Consulting (ECI) evaluated two potential cleanup alternatives for the Site:

1. Excavation and Disposal
2. Leaving Contamination in Place with Institutional Controls

Upon evaluating the costs and benefits of the alternatives using the DCA, ECI selected Leaving Contamination in Place with Institutional Controls as their preferred alternative. This alternative includes placing a deed restriction on the Site (in the form of an Environmental Covenant [EC]) that restricts certain uses of the Site (such as excavation of capped areas and groundwater usage).

Ecology has reviewed the evaluation of cleanup alternatives and concurs with the selection of Institutional Controls. Next steps include the need to draft an EC for Ecology review. **In addition to identifying areas of the Site where residual soil, groundwater are present, the EC should summarize the Institutional Controls to be placed on the Site, including restrictions on intrusive activities, groundwater usage and monitored as appropriate, and building of structures without proper vapor protection.** The process for drafting and filing the EC is as follows:

1. Conduct a title search to identify all persons holding an interest in the real property subject to the covenant. To save time later, you should conduct the search as early in the process as possible. Generally, Ecology will not sign the covenant unless all interest holders are willing to sign on as grantors or subordinate their interests. See step 5 below.

2. Draft the covenant using the boilerplate document available on the VCP web site: www.ecy.wa.gov/programs/tcp/vcp/vcp2008/vcpRequirements.html. Please note any changes to the boilerplate language in the covenant the Attorney General's Office must approve.
3. Submit the draft covenant for review and comment to the appropriate land use planning authority in your jurisdiction. When requesting such review, please do the following:
 - Send a copy of your written request.
 - Provide the authority with my contact information.
 - Request that the authority send me a copy of any written response.

Ecology will not approve the covenant unless the authority has been adequately consulted.

4. Upon completing your consultations with the local land use planning authority, submit the draft covenant to Ecology for review and approval. Unless already submitted, also submit to Ecology any comments provided by the planning authority or, if none were provided, documentation of your consultation.
5. Upon Ecology approval, obtain the signatures of all grantors of the covenant and obtain subordination agreements with any persons holding an interest in the real property subject to the covenant who are not signing the covenant as a grantor.
6. Upon obtaining the signatures of the grantors and any necessary subordination agreements, submit the covenant to Ecology for its signature as the grantee.
7. Upon obtaining Ecology's signature, record the covenant in every county where the real property subject to the covenant is located. For detailed recording instructions, please refer to Chapter 65.04 RCW.
8. Upon recording, return the original signed and recorded covenant to Ecology and provide a copy of the recorded covenant to the following persons:
 - Each person that signed the covenant.
 - Each person holding a recorded interest in the real property subject to the covenant.
 - Each person in possession of the real property subject to the covenant at the time the covenant is executed.

- Each municipality or other unit of local government in which real property subject to the covenant is located.
- Any other persons Ecology requires.

The copy must be legible and the recording number must be evident.

9. 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>.
10. 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.

For more information on how to create an environmental covenant, please refer to the Uniform Environmental Covenants Act (UECA), Chapter 64.70 RCW, and WAC 173-340-440 of the MTCA Cleanup Regulation.

Listing of the Site

Based on this opinion, Ecology will update the status of remedial action at the Site on our database of hazardous waste sites. However, because further remedial action is still required at the Site, we will not remove the Site from our lists of hazardous waste sites.

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 proposed will be substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. Opinion is limited to proposed cleanup.

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Site upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the VCP.

4. 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).

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Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). As you conduct your cleanup, please do not hesitate to request additional services. 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) 407-6265 or e-mail at john.rapp@ecy.wa.gov.

Sincerely,



John F. Rapp, LHG
VCP Site Manager
SWRO Toxics Cleanup Manager

JFR: knf

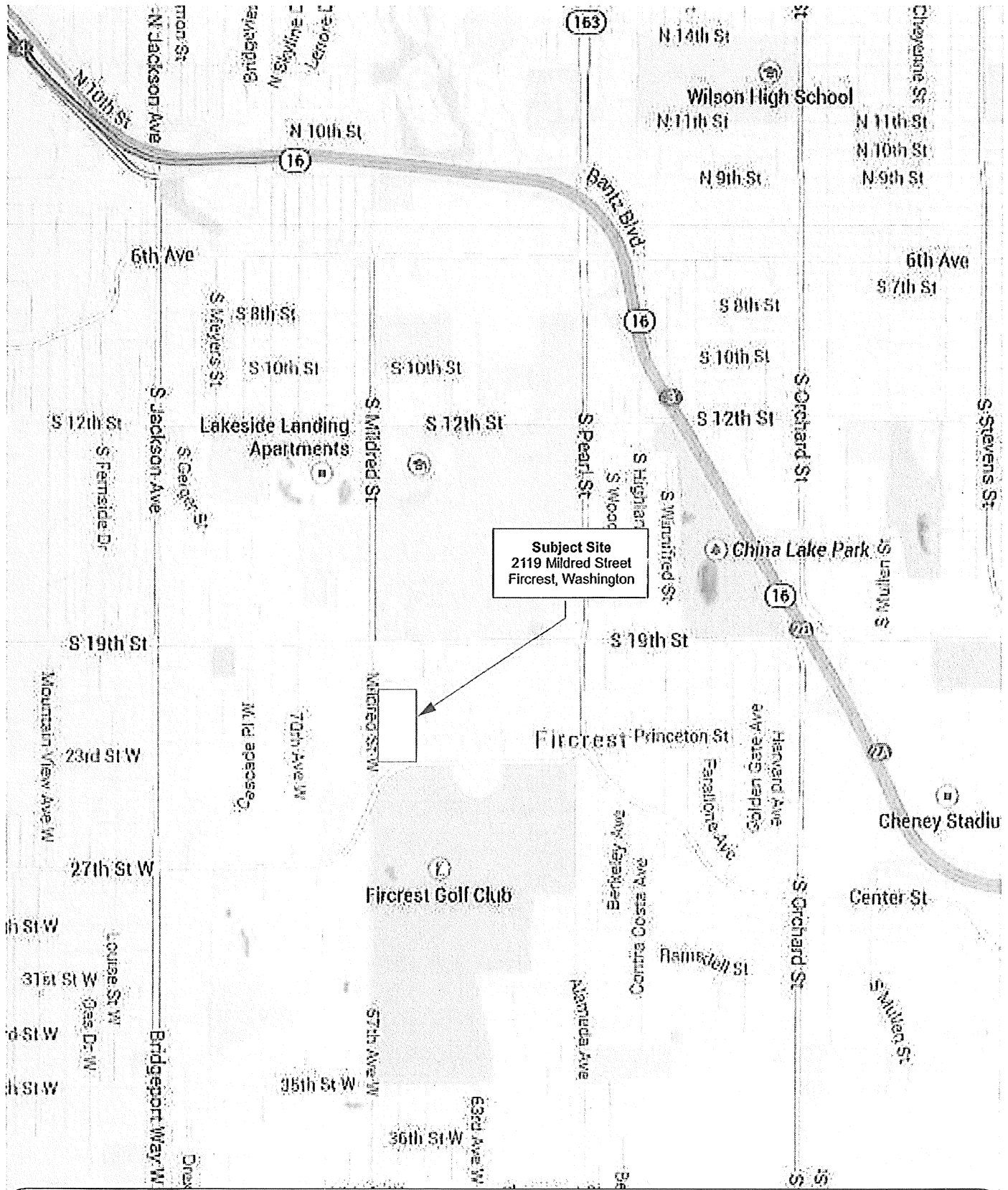
Enclosures: A – Description and Diagrams of the Site

By certified mail: 9171082133393970426134

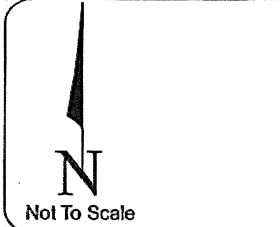
cc: Mr. Brian Dixon, ECI Environmental Consulting
Ms. Richelle Perez, Ecology
Ms. Dolores Mitchell, Ecology
Mr. Nnamdi Madakor, Ecology

Enclosure A

Description and Diagrams of the Site

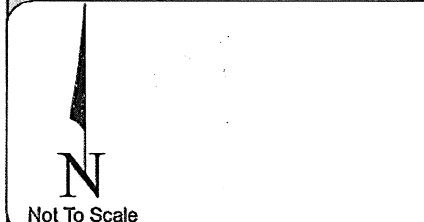
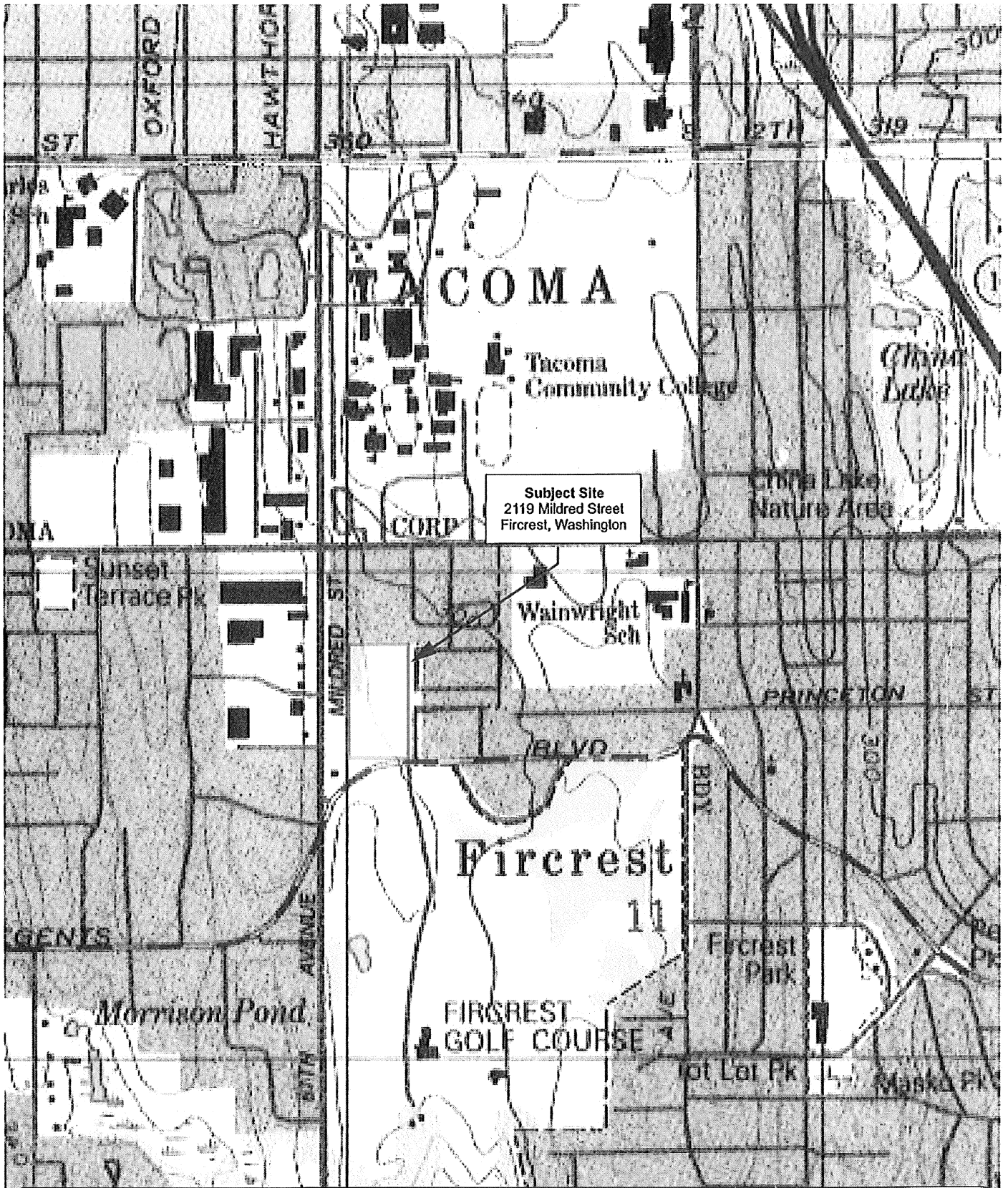


Subject Site
 2119 Mildred Street
 Fircrest, Washington



Site Location Map
FS/DCA
2119 Mildred Street
Fircrest, Washington

Date:	May 13, 2015	Figure No.:	01
Completed By:	K.Spencer		
Reviewed By.:	B. Dixon		
Version:	ECI-001		
Project No.:	0422-05		
			Sheet 01 of 13

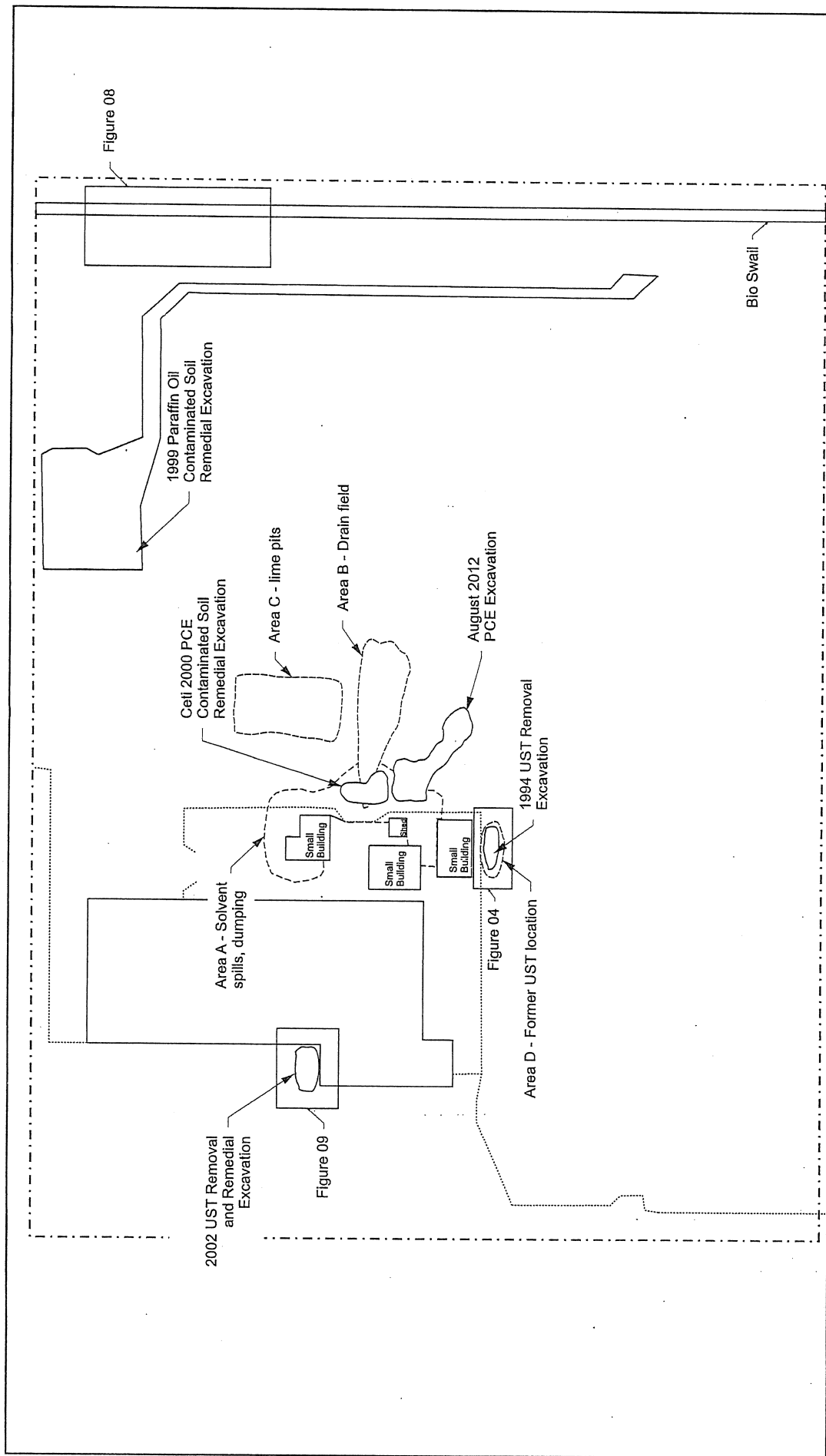


Site Topographic Map
FS/DCA
2119 Mildred Street
Fircrest, Washington

Date: May 13, 2015
Completed By: K.Spencer
Reviewed By: B. Dixon
Version: ECI-001
Project No.: 0422-05

Figure No.:
02
Sheet 02 of 13

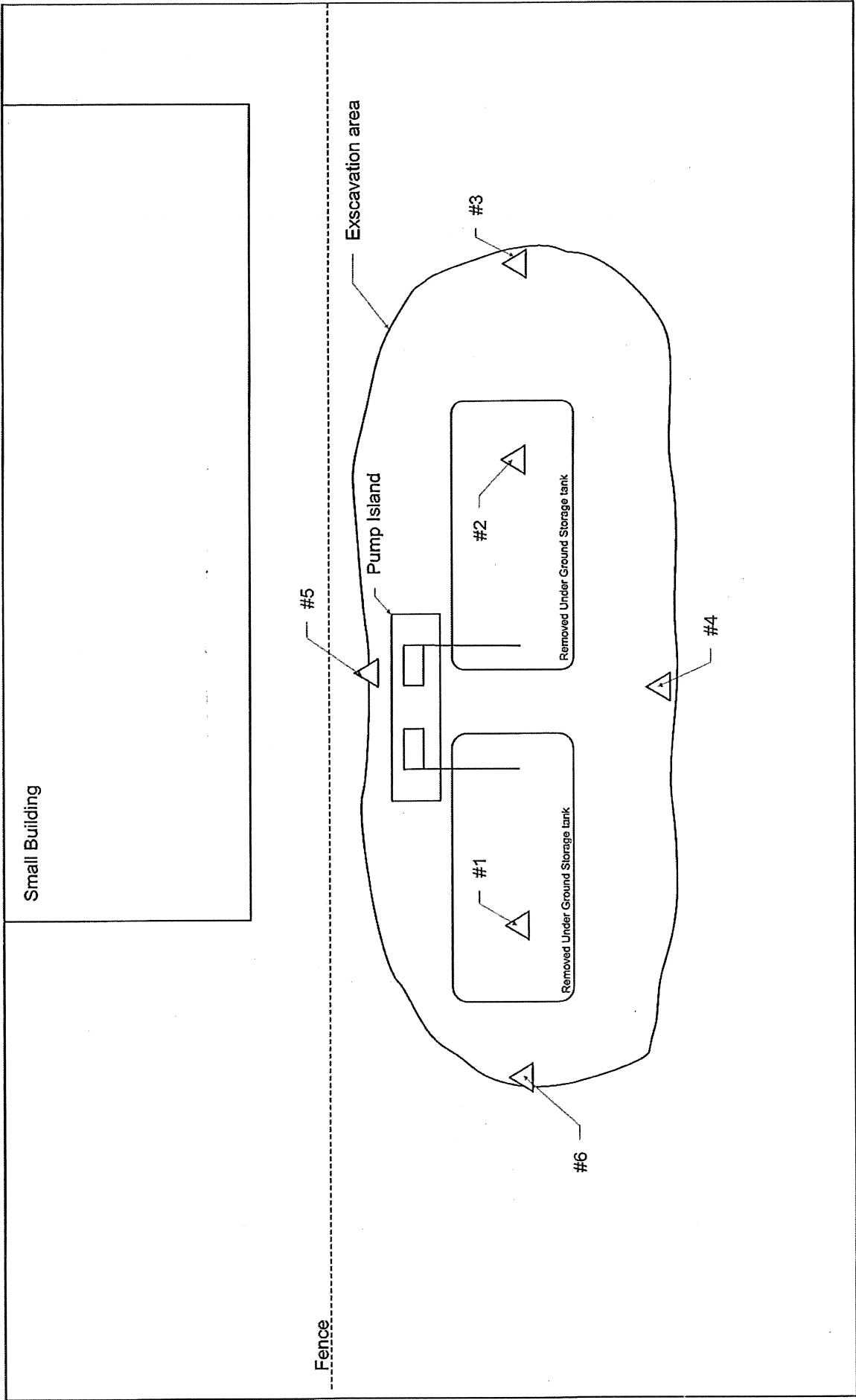




Date:	May 13, 2015	Figure No.:	03
Completed By:	K. Spencer	Reviewed By:	B. Dixon
Version:	ECL-001	Project No.:	0422-05
			Sheet 03 of 13

Site Historical Overview Map
 FS/DCA
 2119 Mildred Street
 Fircrest, Washington



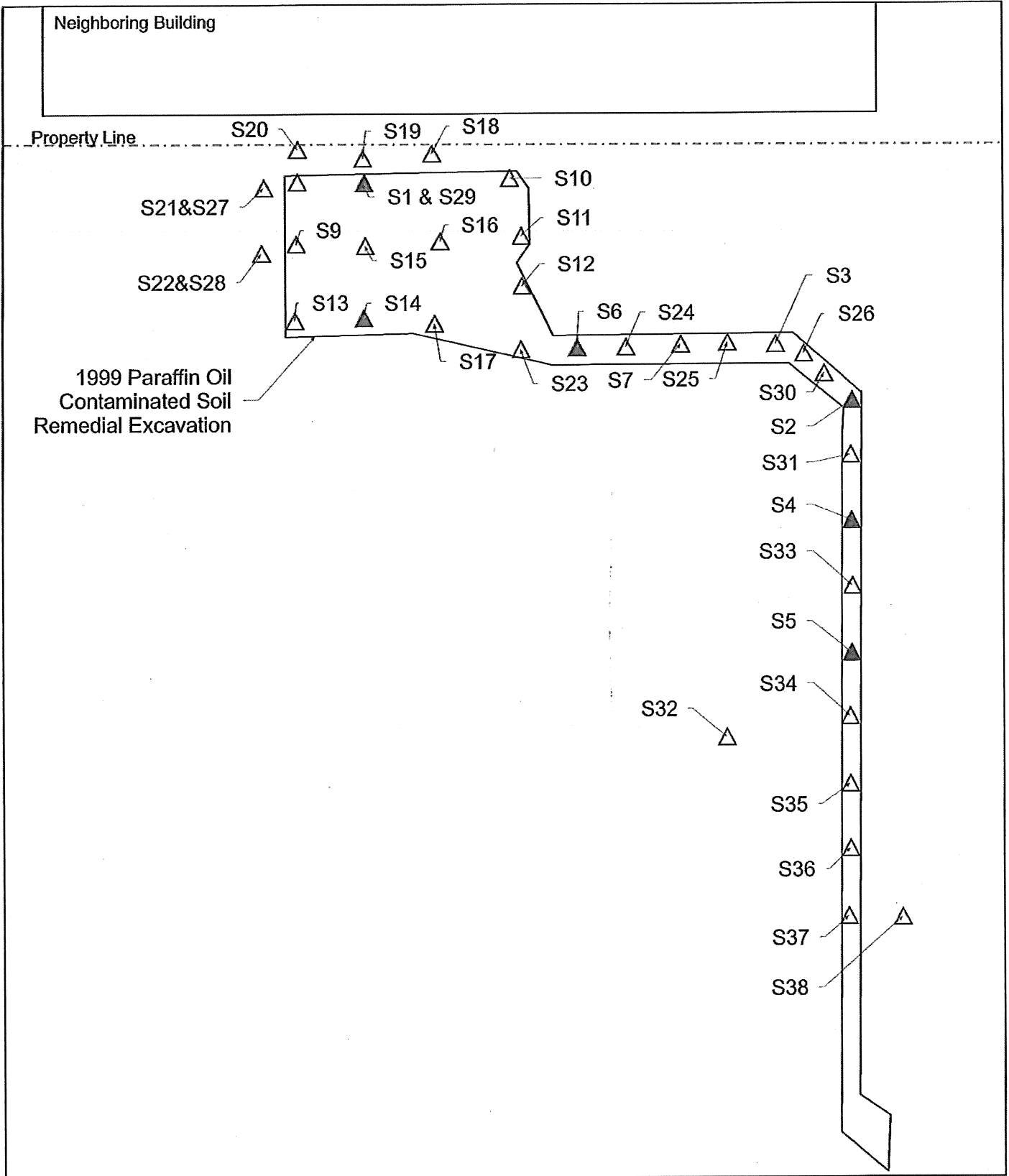




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Reviewed By:	B. Dixon	Project No.:	Sheet 04 of 13
ECI environmental consulting	www.ecionline.com		

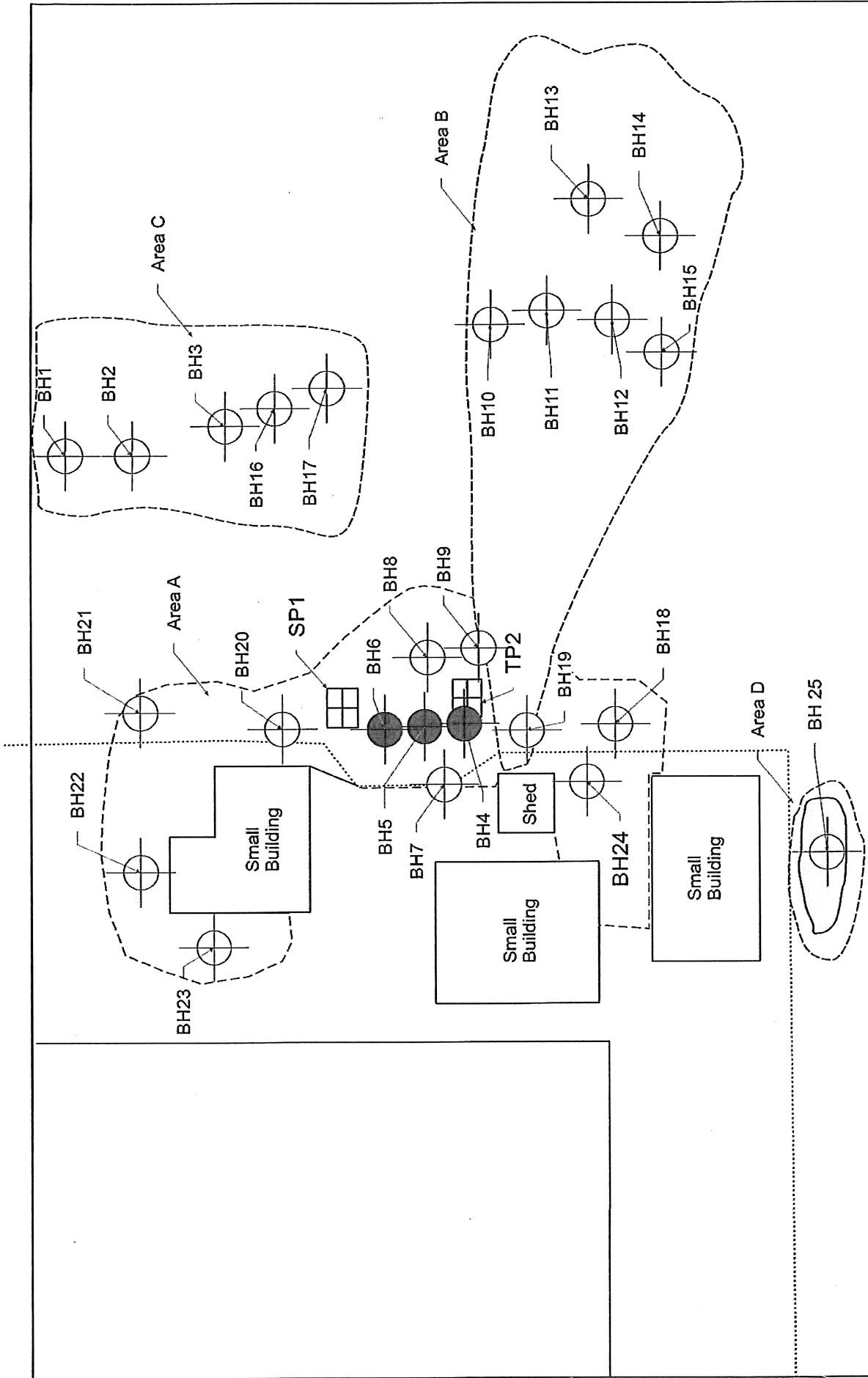
Golden 1994 UST Removal Sample Locations
 FS/DCA
 2119 Mildred Street
 Fircrest, Washington

Legend



- Confirmation Sample Location
- Performance Soil Sample Location Exceeding MTCA-A CULs




 Not To Scale	Legend △ Confirmation Sample Location ▲ Performance Soil Sample Location Exceeding MTCA-A CULs	CETI 1999 Paraffin Oil Remedial Excavation FS/DCA 2119 Mildred Street Fircrest, Washington		Date: May 13, 2015 Completed By: K.Spencer Reviewed By: B. Dixon Version: ECI-001 Project No.: 0422-05	Figure No.: <h1 style="font-size: 2em;">05</h1> Sheet 05 of 13
		 www.ecoonline.com			

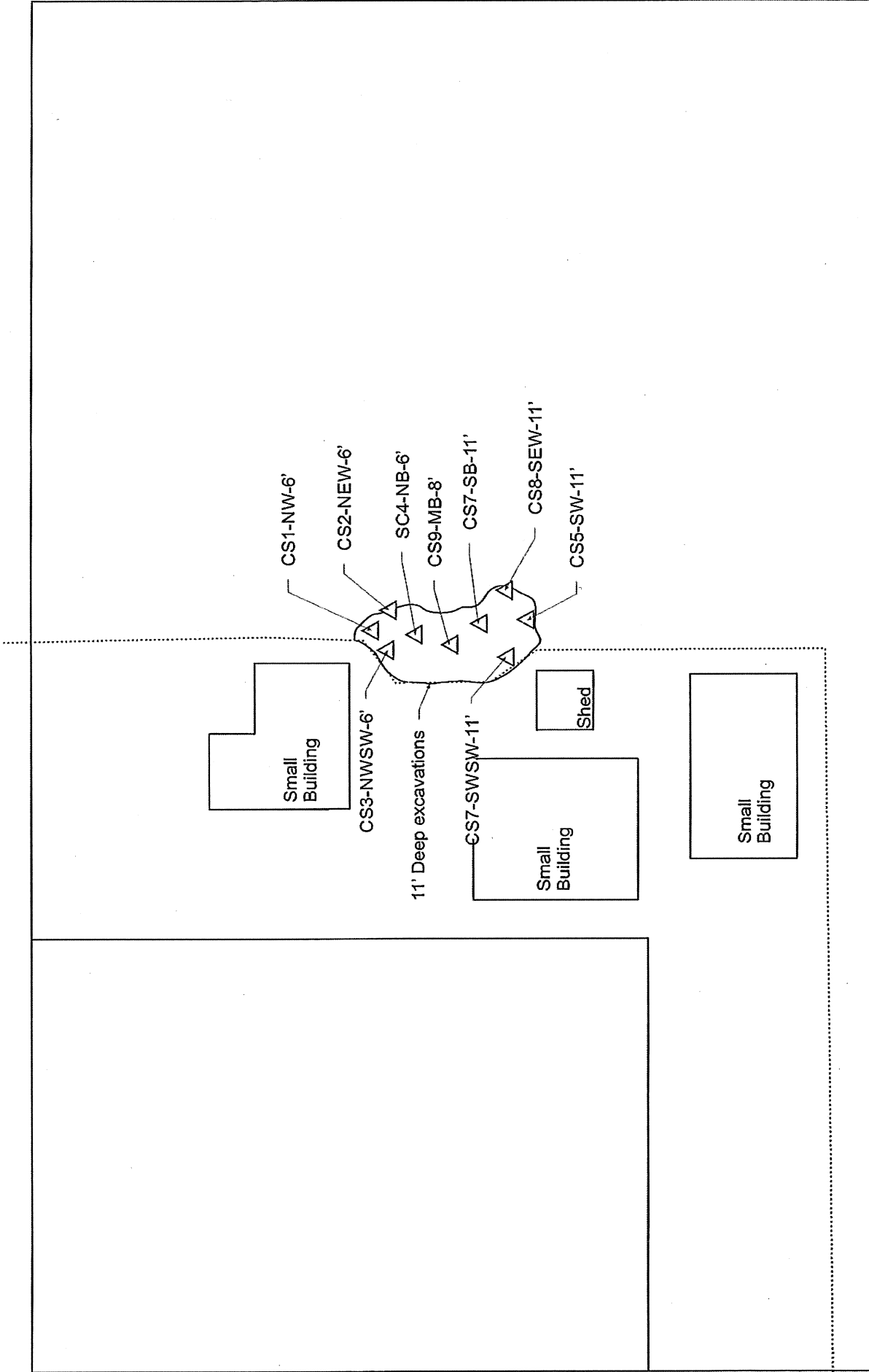


Legend

-  Boring Locations
-  Boring With Soil Sample Exceeding MTCA-A CULs

CETI 2000 Phase II Boring Locations
FS/DCA
 2119 Mildred Street
 Fircrest, Washington

Date:	May 13, 2015	Figure No.:	06
Completed By:	K. Spencer	Version:	0422-05
Reviewed By:	B. Dixon	Project No.:	ECI-001
		Sheet 06 of 13 www.eciconline.com	





Date: May 13, 2015
 Completed By: K. Spencer
 Reviewed By: B. Dixon
 Version: ECI-001
 Project No.: 0422-05

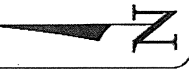
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 Sheet 07 of 13

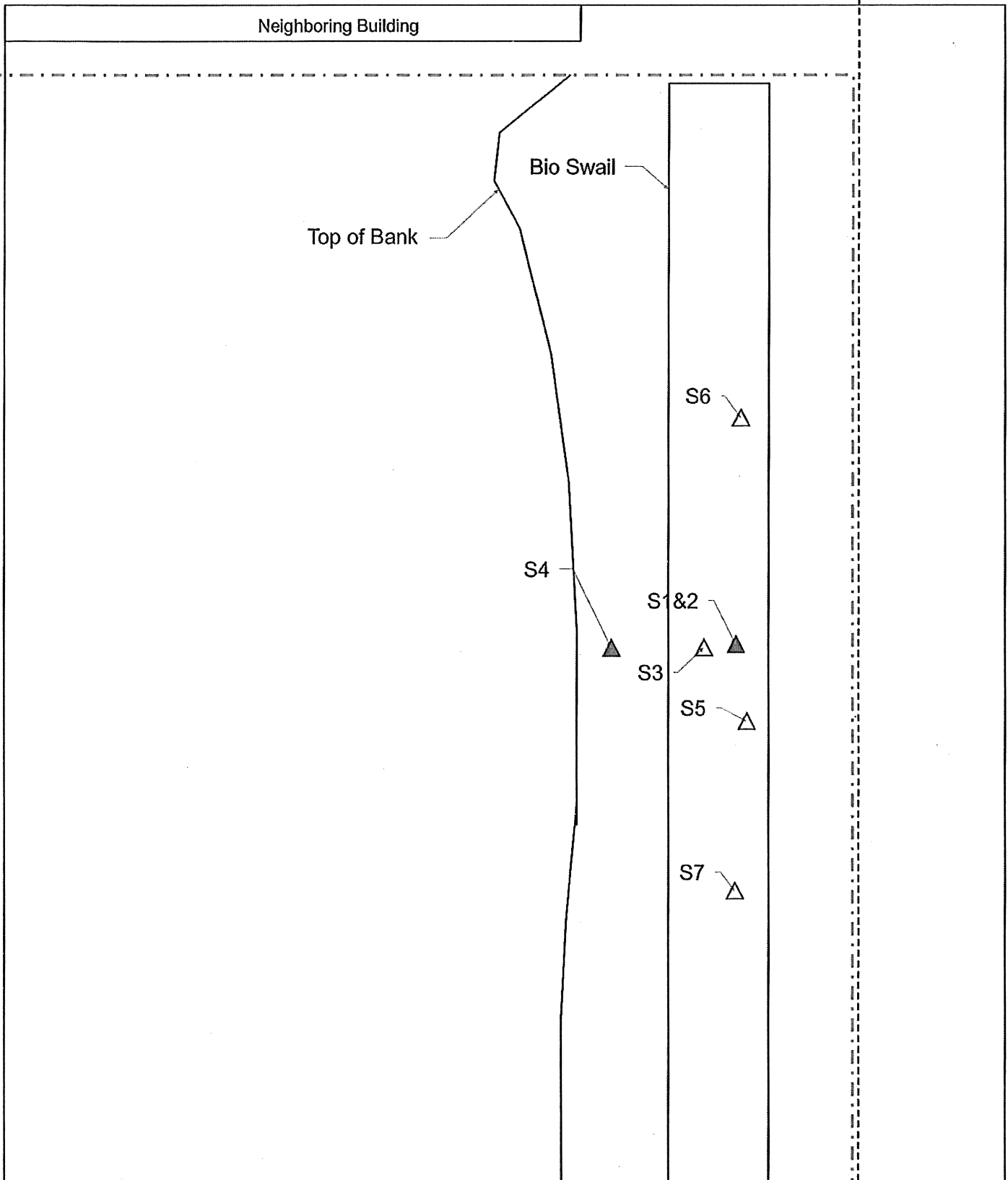
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CETI 2000 PCE Remediation Sample Locations
 FS/DCA
 2119 Mildred Street
 Fircrest, Washington

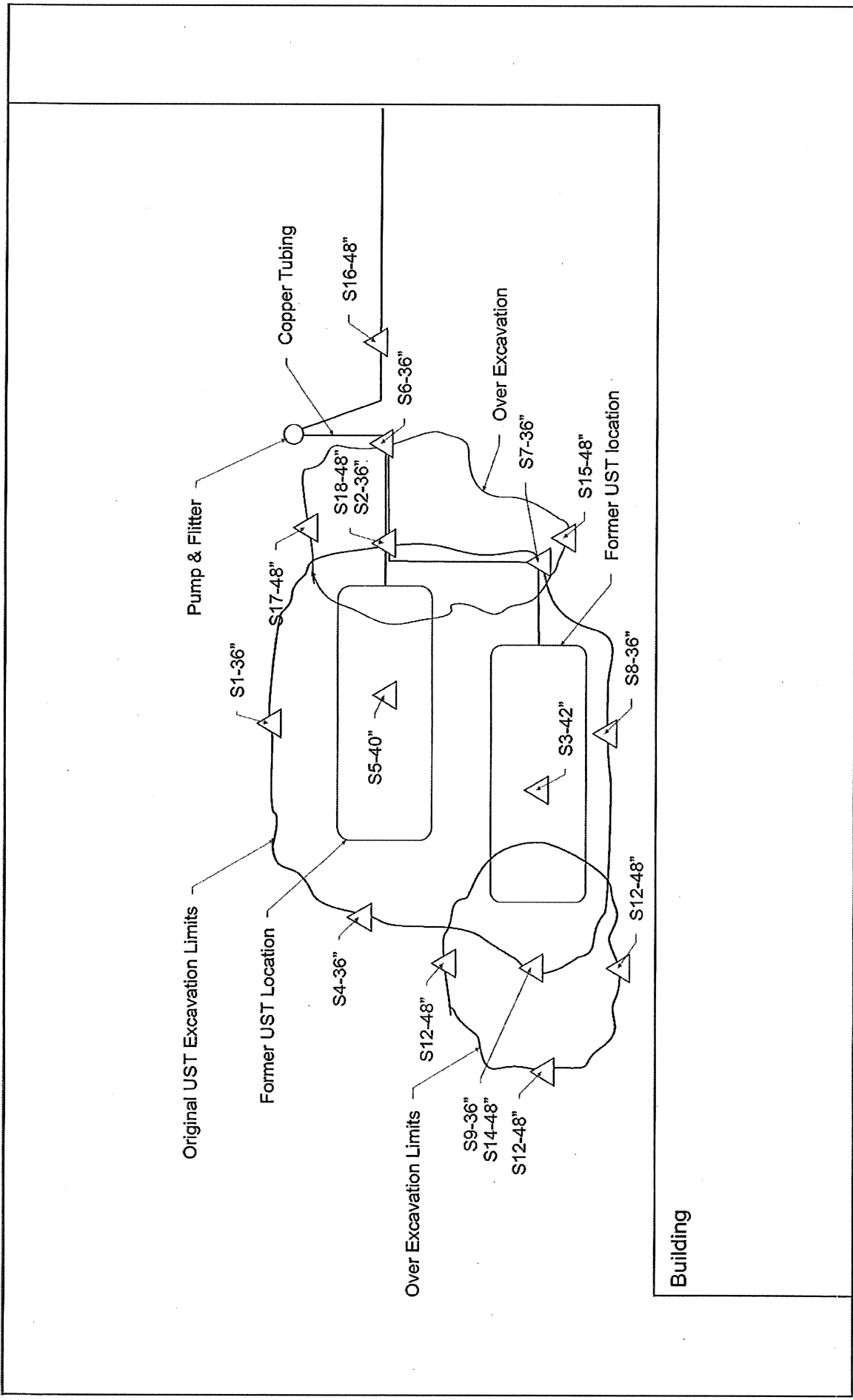
Legend

-  Confirmation Sample Location
-  Performance Soil Sample Location Exceeding MTC/A-CULs





 Not To Scale	<p>Legend</p> <p> Confirmation Sample Location</p> <p> Performance Soil Sample Location Exceeding MTCA-A CULs</p>	<p>SES 2000 Investigation Samples FS/DCA 2119 Mildred Street Fircrest, Washington</p>	Date: May 13, 2015	Figure No.: 08
			Completed By: K.Spencer	Sheet 8 of 13
			Reviewed By.: B. Dixon	
			Version: ECI-001	
			Project No.: 0422-05	



Legend

- △ Confirmation Sample Location
- ▲ Performance Soil Sample Location Exceeding MTCA-A CULs

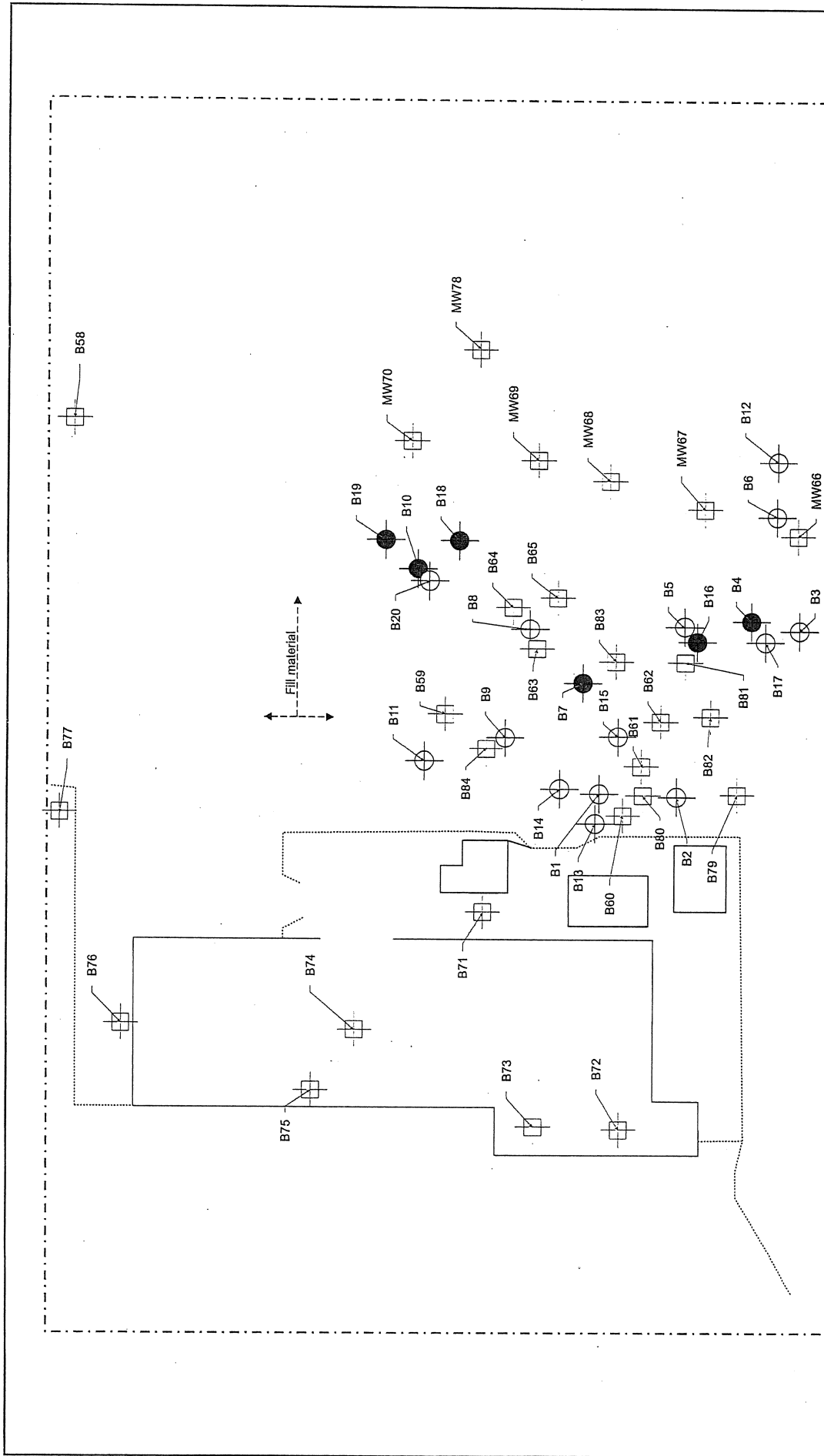
Figure No. 09

Date: May 13, 2015
Completed By: K. Spencer
Reviewed By: B. Dixon
Version: ECI-001
Project No.: 0422-05

Sheet 9 of 13

ECI environmental consulting
 402.275.6600
 www.eciconline.com

SES 2002 UST Removal & Remedial Sample Locations
 FS/DCA
 2119 Mildred Street
 Fircrest, Washington



Legend

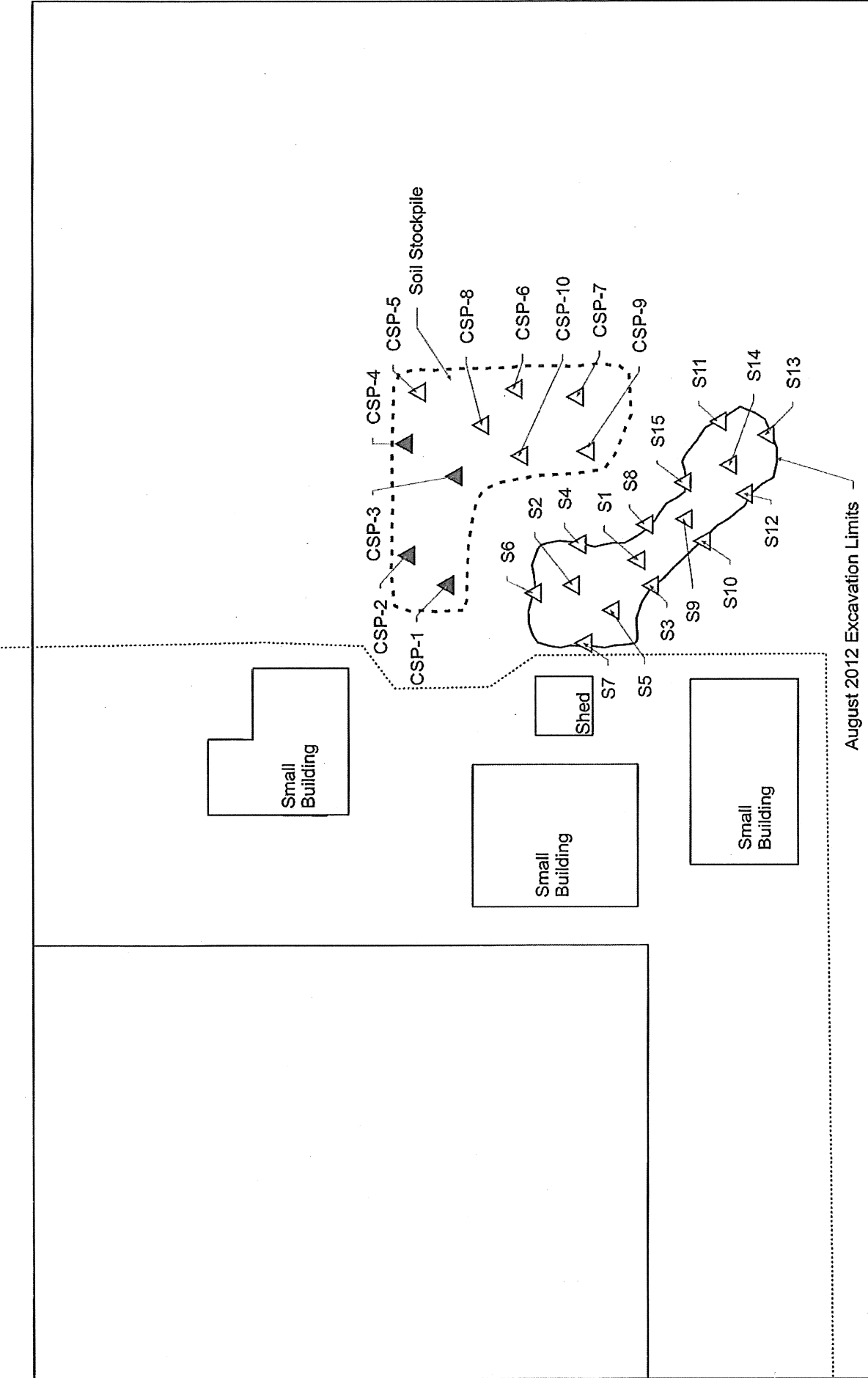
- ECI 2011 Boring
- ECI 2011 Boring Sample With Soil Sample Exceeding MTC/A-CULs for Arsenic
- Keller/Edler 2005 Boring
- Keller/Edler 2005 Boring With Soil Sample Exceeding MTC/A-CULs for Arsenic

Arsenic Boring Location Map
FS/DCA
2119 Mildred Street
Fircrest, Washington

Date: May 13, 2015
 Completed By: K. Spier
 Reviewed By: B. Dier
 Version: ECI-001
 Project No.: 0422-05

Figure No.: **11**
 Sheet 11 of 13

ECI environmental consulting
 www.eciconline.com



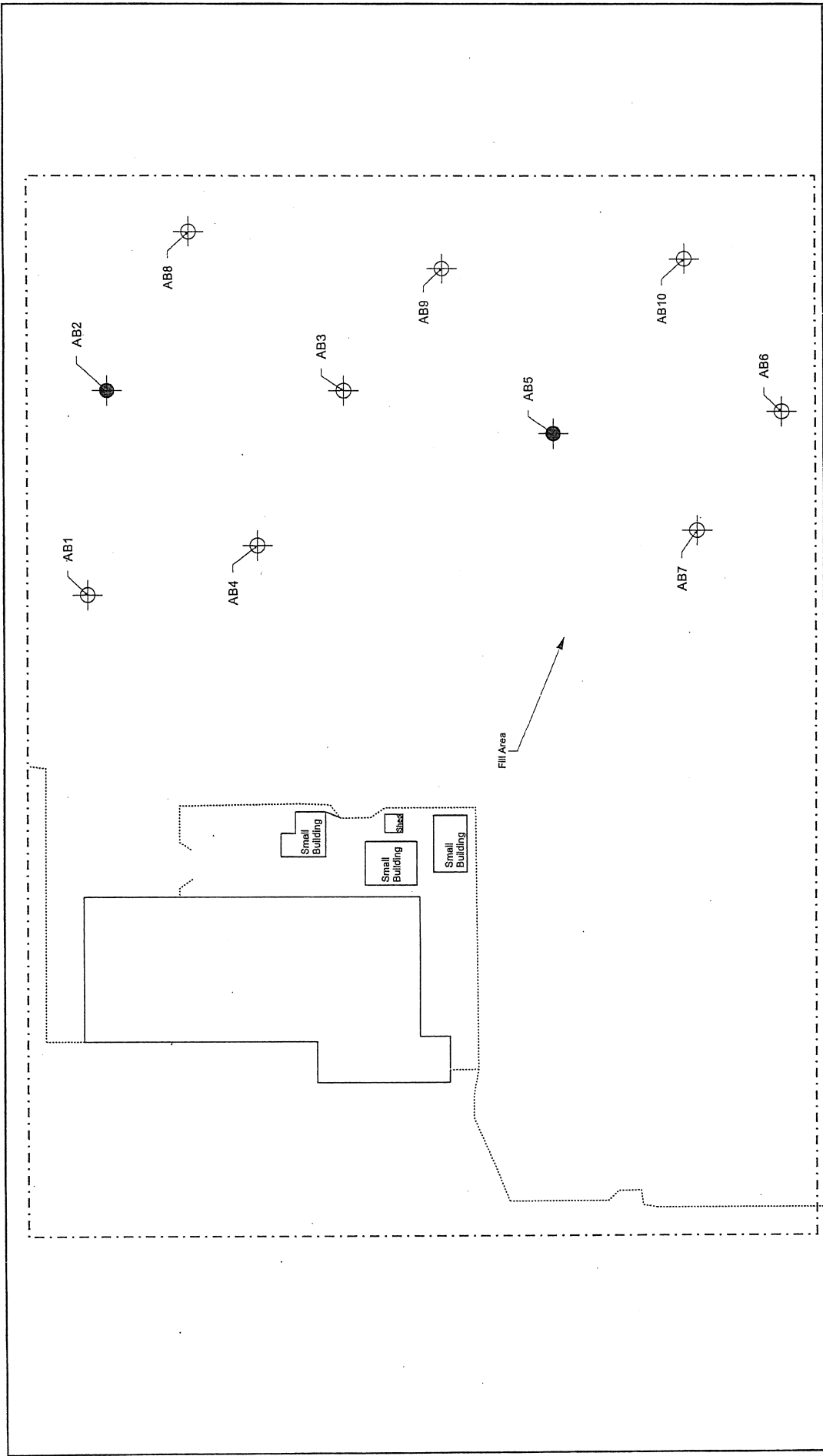
August 2012 Excavation Limits

Date:	May 13, 2015	Figure No.:	12
Completed By:	K. Spencer	Reviewed By:	B. Dixon
Version:	ECI-001	Project No.:	0422-05
			Sheet 12 of 13

ECI 2012 PCE Remediation Sample Locations
 FS/DCA
 2119 Mildred Street
 Fircrest, Washington

Legend

- Conformation Sample Location
- Performance Soil Sample Location Exceeding MTCA-A CULs



Date:	May 13, 2015	Figure No.:	13
Completed By:	K. Spencer	Reviewed By:	B. Dixon
Version:	ECI-001	Project No.:	0422-05
			Sheet 13 of 13
			environmental consulting www.eciconsulting.com

Arsenic Soil Sample Location Map
 FS/DCA
 2119 Midred Street
 Fircrest, Washington

Legend
 ECI 2011 Boring
 ECI 2011 Boring With Soil Sample Exceeding ATCA-A CULC for Arsenic

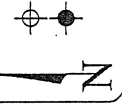


Table 1: Summary of Soil Analytical Results

Sample Location	Sample Name	Sample Date	Sample Depth	Sample Type	PCE (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Total Petroleum Hydrocarbons (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
											Gasoline-Range	Diesel-Range	Motor Oil-Range				
Don Golden Inc. - 1994																	
West Floor	#1	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
East Floor	#2	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
East Wall	#3	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
East Wall	#4	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
North Wall	#5	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
North Wall	#6	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
North Wall	#7	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	ND	ND	ND	ND
Comp. West Small Pile Excav	#8	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	---	---	---	---
Comp. West Large Pile Excav	#9	3/7/1994	Unknown	Confirmation	---	---	---	---	---	---	<20	<50	<100	---	---	---	---
Creative Environmental Technologies (CET) - 1999 through 2001																	
Paraffin Oil Spill - S1	S1-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	<25	14,000	---	---	---	---
Paraffin Oil Spill - S2	S2-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	<25	1,000	---	---	---	---
Paraffin Oil Spill - S3	S3-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	74	81,000	---	---	---	---
Paraffin Oil Spill - S4	S4-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	<25	3,900	---	---	---	---
Paraffin Oil Spill - S5	S5-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	<25	1,800	---	---	---	---
Paraffin Oil Spill - S6	S6-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	<25	1,400	---	---	---	---
Paraffin Oil Spill - S7	S7-42799	4/27/1999	Unknown	Performance	---	---	---	---	---	---	---	<25	1,100	---	---	---	---
Paraffin Oil Spill - S10	S10-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S11	S11-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S12	S12-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S13	S13-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S14	S14-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S15	S15-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S16	S16-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S17	S17-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S23	S23-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S24	S24-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S25	S25-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S26	S26-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S27	S27-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S28	S28-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S29	S29-42899	4/28/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	5,800	---	---	---	---
Paraffin Oil Spill - S30	S30-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S31	S31-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S32	S32-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S33	S33-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S34	S34-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S35	S35-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S36	S36-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S37	S37-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
Paraffin Oil Spill - S38	S38-43099	4/30/1999	Unknown	Confirmation	---	---	---	---	---	---	---	<25	<100	---	---	---	---
BH4 - Area A	51-13100	1/31/2000	2-4'	Exploratory	1.26	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH5 - Area A	54-13100	1/31/2000	4-8'	Exploratory	0.64	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH6 - Area A	56-13100	1/31/2000	0-4'	Exploratory	2.22	<5	<0.3	21	9	0.09	---	---	---	<0.25	<0.25	<0.25	<0.25
BH7 - Area A	58-13100	1/31/2000	4-8'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH8 - Area A	59-13100	1/31/2000	0-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH9 - Area A	511-13100	1/31/2000	0-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	---	---	---	---
BH10 - Area A	517-13100	1/31/2000	0-4'	Exploratory	---	<5	<0.3	38	8	<0.05	---	---	---	---	---	---	---
BH11 - Area B	524-13100	1/31/2000	9-10'	Exploratory	---	<5	<0.3	62	28	0.07	---	---	---	---	---	---	---
BH12 - Area B	525-13100	1/31/2000	11-12'	Exploratory	---	<5	<0.3	21	5	<0.05	---	---	---	---	---	---	---
BH13 - Area C	526-13100	1/31/2000	3-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH14 - Area A	527-13100	1/31/2000	3-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH15 - Area A	529-13100	1/31/2000	3-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH16 - Area A	51-2100	2/1/2000	2-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH17 - Area A	53-2100	2/1/2000	0-4'	Exploratory	<0.25	---	---	---	---	---	---	---	---	<0.25	<0.25	<0.25	<0.25
BH18 - Area A	56-2100	2/1/2000	2-4'	Exploratory	---	12	<0.3	16	39	<0.05	---	---	---	<0.25	<0.25	<0.25	<0.25

Sample Location	Sample Name	Sample Date	Sample Depth	Sample Type	PCE (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Total Petroleum Hydrocarbons (mg/kg)			Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
											Gasoline-Range	Diesel-Range	Motor Oil-Range			
B5	B-1620 (6-5)	10/3/2011	20	Exploratory	-	29	-	-	-	-	-	<25	<40	-	-	-
	B-1623 (6-5)	10/3/2011	23	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	B-1815	10/3/2011	15	Exploratory	-	47	-	-	-	-	-	-	-	-	-	-
	B-1820	10/3/2011	20	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
B18	B-1915	10/3/2011	15	Exploratory	-	43	-	-	-	-	-	-	-	-	-	-
	B-1920	10/3/2011	20	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
B19	B-2020 (6-10)	10/3/2011	20	Exploratory	-	6	-	-	-	-	-	-	-	-	-	-
B10	B-2020 (6-10)	10/3/2011	20	Exploratory	-	6	-	-	-	-	-	-	-	-	-	-
PCE Excavation - S1	S11-11'	8/8/2012	11-12'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S21-11'	8/8/2012	11-12'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S37-8'	8/8/2012	7-8'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S47-8'	8/8/2012	7-8'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S51-13'	8/8/2012	11-12'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S67-8'	8/8/2012	7-8'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S88-9'	8/8/2012	8-9'	Confirmation	0.021	-	-	-	-	-	-	-	-	-	-	-
	S91-11'	8/8/2012	11-12'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S10-8-9'	8/8/2012	8-9'	Confirmation	0.027	-	-	-	-	-	-	-	-	-	-	-
	S11-8-9'	8/8/2012	8-9'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S12-12-13'	8/8/2012	12-13'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S13-7-8'	8/8/2012	7-8'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S14-7-8'	8/8/2012	7-8'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	S15-11-12'	8/8/2012	11-12'	Confirmation	<0.02	-	-	-	-	-	-	-	-	-	-	-
	Stockpile	SP1	8/8/2012	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-
Stockpile	SP2	8/8/2012	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-	
Stockpile	SP3	8/8/2012	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-	
Stockpile	SP4	8/8/2012	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-	
Stockpile	SP5	8/8/2012	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-	
AB1	AB1-3-4	8/8/2012	3-4'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB1-6-7	8/8/2012	6-7'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB1-9-10	8/8/2012	9-10'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB2-4-5	8/8/2012	3-4'	Exploratory	-	5.9	-	-	-	-	-	-	-	-	-	-
	AB2-8-9	8/8/2012	6-9'	Exploratory	-	7.1	-	-	-	-	-	-	-	-	-	-
	AB2-13-14	8/8/2012	13-14'	Exploratory	-	7.1	-	-	-	-	-	-	-	-	-	-
	AB2-16-17	8/8/2012	16-17'	Exploratory	-	34	-	-	-	-	-	-	-	-	-	-
	AB3-3-4	8/8/2012	3-4'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB3-11-12	8/8/2012	11-14'	Exploratory	-	9.3	-	-	-	-	-	-	-	-	-	-
	AB3-19-20	8/8/2012	19-20'	Exploratory	-	7.1	-	-	-	-	-	-	-	-	-	-
AB3	AB3-25-26	8/8/2012	25-26'	Exploratory	-	37	-	-	-	-	-	-	-	-	-	-
	AB4-3-4	8/8/2012	3-4'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB4-11-12	8/8/2012	11-12'	Exploratory	-	8.4	-	-	-	-	-	-	-	-	-	-
	AB4-19-20	8/8/2012	19-20'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB4-27-28	8/8/2012	27-28'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB5-3-4	8/8/2012	3-4'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB5-11-12	8/8/2012	11-12'	Exploratory	-	49	-	-	-	-	-	-	-	-	-	-
	AB5-19-20	8/8/2012	19-20'	Exploratory	-	35	-	-	-	-	-	-	-	-	-	-
	AB5-24-25	8/8/2012	24-25'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB6-2-3	8/8/2012	2-3'	Exploratory	-	9.9	-	-	-	-	-	-	-	-	-	-
AB6	AB6-6-7	8/8/2012	6-7'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB6-8-9	8/8/2012	8-9'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB7-3-4	8/8/2012	3-4'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB7-8-9	8/8/2012	8-9'	Exploratory	-	5.1	-	-	-	-	-	-	-	-	-	-
	AB7-10-11	8/8/2012	10-11'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB7-18-19	8/8/2012	18-19'	Exploratory	-	7.4	-	-	-	-	-	-	-	-	-	-
	AB8-2-3	8/23/2015	2-3'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB8-5-6	8/23/2015	5-6'	Exploratory	-	5.2	-	-	-	-	-	-	-	-	-	-
	AB9-2-3	8/23/2015	2-3'	Exploratory	-	8.9	-	-	-	-	-	-	-	-	-	-
	AB9-5-6	8/23/2015	5-6'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
AB10	AB10-2-3	8/23/2015	2-3'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	AB10-4-5	8/23/2015	4-5'	Exploratory	-	<5	-	-	-	-	-	-	-	-	-	-
	CSP-1	8/23/2015	NA	Stockpile	0.36	-	-	-	-	-	-	-	-	-	-	-
	CSP-2	8/23/2015	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-	-
Stockpile	CSP-1	8/23/2015	NA	Stockpile	0.82	-	-	-	-	-	-	-	-	-	-	-
Stockpile	CSP-2	8/23/2015	NA	Stockpile	<0.02	-	-	-	-	-	-	-	-	-	-	-
Stockpile	CSP-3	8/23/2015	NA	Stockpile	0.1	-	-	-	-	-	-	-	-	-	-	-

Sample Location	Sample Name	Sample Date	Sample Depth	Sample Type	PCE (mg/kg)	Arsenic (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Total Petroleum Hydrocarbons (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)
											Gasoline-Range	Diesel-Range	Motor Oil-Range				
Stockpile	CSP-3	8/30/2015	NA	Stockpile	<0.02	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-4	8/30/2015	NA	Stockpile	0.064	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-4	8/30/2015	NA	Stockpile	<0.02	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-5	8/30/2015	NA	Stockpile	0.041	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-6	8/30/2015	NA	Stockpile	0.042	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-7	8/30/2015	NA	Stockpile	<0.02	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-8	8/30/2015	NA	Stockpile	0.021	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-9	8/30/2015	NA	Stockpile	<0.02	---	---	---	---	---	---	---	---	---	---	---	---
Stockpile	CSP-10	8/30/2015	NA	Stockpile	<0.02	---	---	---	---	---	---	---	---	---	---	---	---
	MTCA Method A Cleanup Level (mg/kg)				0.05	20	2	2,000	250	2	100/30	2,000	2,000	0.03	7	6	9

* Reported as intermediate range hydrocarbons.

Table 2: Remedial Alternative Assessment and Disproportionate Cost Analysis

Alternative Name/Description Evaluation Criteria	Excavation and Disposal				Left in Place			
	Score	Weighting Factor	Weighted Score	Weighted Score	Score	Weighting Factor	Weighted Score	Weighted Score
Overall Protectiveness	10	0.3	3		8	0.3	2.4	
Permanence	10	0.2	2		5	0.2	1	
Long Term Effectiveness	10	0.2	2		8	0.2	1.6	
Manageability of Short Term Risk	5	0.1	0.5		10	0.1	1	
Implementability	5	0.1	0.5		10	0.1	1	
Consideration of Public Concerns	10	0.1	1		9	0.1	0.9	
Comparative Benefit Score			9				7.9	
Estimation of Cost								
Permitting			\$ 2,500				\$ 1,000	
Excavation, Transport and Disposal - 82,500 tons @ \$65/ton			\$ 5,362,500				\$ -	
Environmental Oversight and Sampling			\$ 25,000				\$ -	
Site Prep Work, Grading, Compaction, and Capping - \$5/square foot			\$ -				\$ 750,000	
Total			\$ 5,390,000				\$ 751,000	
Cost to Benefit Ratio (Divided by 100,000)			5.99				0.95	