

State of Oregon
Department of Environmental Quality

Memorandum

Date: January 8, 2025

To: FILE

Through: Amanda Wozab, Cleanup Program Manager, Northwest Region
Wes Thomas, Leadworker, Northwest Region

From: Katie Daugherty, Cleanup Project Manager
Northwest Region

Subject: Fabmark Industrial Products (former) – 1989 Spill
ECSI No. 920
Staff Memorandum in support of a No Further Action determination

This document presents the basis for the Oregon Department of Environmental Quality's (DEQ's) recommended No Further Action (NFA) determination for the former Fabmark Industrial Products site located at 2630 SE 39th Loop in Hillsboro, Washington County. As discussed in this report, contaminant concentrations are less than acceptable risk levels. This No Further Action determination only applies to the 1989 release and no other condition at the property.

The proposed NFA determination meets the requirements of Oregon Administrative Rules (OAR) Chapter 340, Division 122, Sections 010 to 0140; and Oregon Revised Statutes (ORS) 465.200 through 465.455.

The proposal is based on information documented in the administrative record for this site. A copy of the administrative record index is presented at the end of this report.

1. BACKGROUND

Site location.

The site's location can be described as follows:

- Address: 2630 SE 39th Loop, Hillsboro, Washington County, Oregon.
- Latitude 45.5001 degrees North; Longitude 122.9427 degrees West
- Tax Lot 1502, Township 1 South, Range 2 West, Section 9BD, Willamette Baseline and Meridian.

Site setting.

The former Fabmark Industrial Products facility is located in the D&G Industrial Park (see Figure 1). The light industrial facility covers 1.48 acres, and is located east of SE 39th Loop road. Additional areas of the industrial park are located to the east and south of the facility. A pressure treating and fabricated wood products facility (Permapost, ECSI No. 148) is located to the west

of the facility. A property used for outdoor storage is located to the north. The property is about 170 feet above mean sea level and generally flat.

Site history.

The property was developed in 1979 with a single story 20,160 square foot building. Various businesses have occupied the building over the years. Prior to development, the property was part of a filbert orchard.

Fabmark occupied a portion of the property from 1980 until 1989. Fabmark conducted chrome conversion processes on site from 1986 through 1989 using aboveground dip tanks.

Geology, hydrogeology, and surface water setting.

Investigations performed at the adjacent Permapost site (ECSI 148) and include the property directly north of the site indicate the area may have up to eight feet in imported fill and is underlain by 55 feet to 70 feet of Willamette Silt.

Groundwater sampling has been performed as part of Permapost's efforts since 1982. Depth to water has ranged from approximately 5 feet to 20 feet below ground surface. Shallow groundwater has consistently flowed to the west northwest at gradients ranging from 0.01 to 0.04.

Rock Creek is a small tributary of the Tualatin River with headwaters in the Tualatin Mountains. The creek is approximately 15 feet wide with waters levels fluctuating several feet seasonally. In the vicinity of the site, the creek banks are typically steep and overgrown dropping approximately 5 feet to 10 feet.

The Rock Creek flood plain nearest the site is approximately 3.5 acres where stormwater from a ditch and outfalls discharges during rain events.

2. BENEFICIAL LAND AND WATER USE DETERMINATIONS

Land use.

The site is zoned Industrial Park (I-P) by the City Hillsboro. Properties to the north, west, and south are also zoned I-P. The property to the east is zoned Industrial – General (I-G). The Rock Creek flood plain area is zoned as floodplain use per the Hillsboro comprehensive plan.

Groundwater use.

Several beneficial water use evaluations have been performed as part of the Permapost (ECSI 148) cleanup effort over a large area (approximately 1 mile) that includes the site, the discharge area of the outfall, and both sides of Rock Creek. Several wells within the survey area were present and used for irrigation or industrial process. The City of Hillsboro provides water to all locations within the survey area. The City of Hillsboro obtains its municipal water supply from the Tualatin River, Barney Reservoir, and Hagg Lake.

Surface water use.

Rock Creek is about a quarter mile west of the site. The creek flows south approximately one half mile before discharging to the Tualatin River. Surface water in this area is used for irrigation, fish and aquatic life, wildlife, and fishing.

Stormwater at the facility is routed to a stormwater conveyance system and discharges to an outfall in the Rock Creek flood plain approximately 580 feet west of the property (see Figure 2). The flood plain receives stormwater from multiple sources including the entire industrial park, right-of ways, railroad, and Permapost.

Rock Creek flood plain area.

The Rock Creek flood plain area consists of native and non-native plant species with Cattails, grasses, and snowberry bushes identified. Trees observed included Oregon ash, Pacific willow, Balsam poplar, and Black hawthorn. Shrubs that were identified included Himalayan blackberry, cat's ear/flatweed, Scotch broom, and various grass species. Additionally, horsetail was observed in the low area near Rock Creek.

A variety of mammals likely utilize the Rock Creek floodplain area. Common birds observed include song sparrows, killdeer, and Western scrub-jay. Ducks (species unknown) have been observed in pooled water in the area during rainy periods.

There are no known rare, sensitive, or threatened/endangered species or habitats in the upland area from Rock Creek. The low area near Rock Creek may serve as a seasonal habitat for a limited number of birds and likely serve as year-round habitat for some birds and mammals.

Wetlands have not been identified in the area reasonably likely to be impacted by discharges from the outfall. Figure 3 shows wetlands mapped in the vicinity of the Rock Creek flood plain.

3. INVESTIGATION AND CLEANUP WORK

Initial Release (1989)

Fabmark Industrial Products performed chrome plating using dip tanks located on a cement pad withing a six inch concrete berm. The company was in the process of relocating to a new facility in July 1989. The dip tanks had been sold and the tank purchaser removed one end of the concrete berm to create access to the tanks. Equipment used to remove the tanks tracked residue from the bermed area to adjoining concrete surfaces creating a slip hazard. The tank purchaser rinsed the floor surface and the rinsate flowed outside to the stormwater drain. This drain is part of a larger stormwater system discharging from an outfall into a flood plain area.

A complaint of a possible release was filed with DEQ on July 20, 1989. DEQ visited the site. The local fire department had also been notified and observed workers hosing material into the storm sewer drain. An unknown amount of rinsate was discharged however, DEQ calculated a worst case scenario of 1,800 gallons having been released based on information gather during their investigation.

Pegasus Environmental Management Services (Pegasus) recovered approximately 300 gallons of liquid and sludge from the catch basin and associated stormwater line on July 20, 1989 and drummed the material on-site for later disposal. The paved parking lot was scrubbed on September 8, 1989 with rinse waters captured and drummed on-site.

In August 1989, Pegasus collected soil samples in the vicinity of the stormwater outfall. Three soil samples within five feet of the outfall and two soil samples within 115 feet of the outback were analyzed for the following total metals: chromium, aluminum, zinc, copper, lead, and nickel. Four soil samples located 15 feet from the outfall were analyzed for total chromium. Sample locations are shown on Figure 4.

Total chromium was detected in all nine soil samples at levels ranging from 25.6 milligrams per kilogram (mg/kg) to 89.2 mg/kg. Only one soil sample slightly exceeded the regional background level of 76 mg/kg. This sample ("G") was collected 15 feet from the outfall. Detected concentrations of aluminum, copper, lead, and nickel were all less than their respective background concentrations. Zinc was detected at levels ranging from 40.7 mg/kg to 301.3 mg/kg. One zinc soil sample concentration was above the regional background level of 180 mg/kg. This sample represents a localized, limited, and defined area within the large Rock Creek floodplain area. In addition, the concentration is less than screening levels for non-threatened and endangered (non-T&E) ecological receptors with screening levels greater than the regional background level (e.g., non-T&E ground feeding mammals [980 mg/kg], non-T&E bird top consumers [590 mg/kg], and non-T&E mammal top consumers [30,000 mg/kg]). Analytical results are shown on Table 1.

Preliminary Assessment (1991)

DEQ's contractor, PTI Environmental Services, completed a preliminary assessment in June 1991. The PA summarize releases to date, evaluated potential receptors, and recommended additional evaluation of contamination in area of the stormwater outfall.

Permapost Related Sampling (2017-2018)

Stormwater from several sources discharge into the Rock Creek flood plain area, including stormwater from Permapost (ECSI 148). Stormwater from the Permapost facility discharges via a ditch parallel to the railroad tracks along the northern boundary of the flood plain property. The ditch itself is located at a higher elevation than the flood plain area and is not considered part of the flood plain area where the outfall discharges. Permapost performed several sampling events in the flood plain area, including sediment sampling in Rock Creek Select. Select samples were analyzed for total chromium and hexavalent chromium.

Permapost defined a portion of the flood plain area as an incremental decision unit in May 2017 (see Figure 5 – Decision Unit A). Total chromium was detected at 41.1 mg/kg in the Decision Unit A soil sample. This soil sample was also analyzed for hexavalent chromium and was non-detect. Sample results are summarized on Table 2.

This decision unit was further sub-divided in August 2018 (see Figure 6). The soil samples collected from sub-units R1 and R2, located along the creek bank, included total chromium

analysis. Total chromium was detected at 12.1 mg/kg and 12.3 mg/kg. None of these samples exceed the regional background level of 76 mg/kg for total chromium. Sample results are summarized on Table 3.

Five sediment samples were collected from Rock Creek in October 2018 (see Figure 7). Four of the sediment samples directly west of the flood plain area. Detected total chromium concentrations ranged from 18 mg/kg to 23.8 mg/kg. All detected concentrations are less than the sediment screening value of 37 mg/kg. Sample results are summarized on Table 4.

Catch Basin Area Sampling (2024)

Five soil borings (CB-N, CB-W, CB-S, CB-E, and BG-E) were advanced at the site in January 2024. One from each side of the catch basin and one from 25 feet east of the catch basin (see Figure 8). One soil sample was collected from each boring at 3.5 feet bgs and analyzed for hexavalent chromium and total chromium. Hexavalent chromium was not detected. Concentrations of total chromium were detected at concentrations ranging from 14.9 mg/kg and 20.2 mg/kg. None of these samples exceed the regional background level of 76 mg/kg for total chromium. Sample results are summarized on Table 5.

4. RECOMMENDATION

Sampling was performed adjacent to the catch basin, stormwater outfall, and the larger Rock Creek flood plain area. Detected concentrations of metals related to the 1989 release were less than applicable background levels or acceptable risk levels. A No Further Action determination is recommended for this site. The No Further Action determination will be recorded in Your DEQ Online (YDO) under Environmental Cleanup Site Information (ECSI) No. 920.

5. ATTACHMENTS

Figures

Figure 1 – Site Location Map

Figure 2 – Site and Vicinity Features

Figure 3 – Wetlands

Figure 4 – August 1989 Soil Sample Locations

Figure 5 – Incremental Sampling Method – Decision Units

Figure 6 – AOI-1 Subunits Sampling Areas and Soil Sample Results

Figure 7 – Surface Water and Sediment Sampling Locations

Figure 8 – Soil Sample Results

Tables

Tables 1 – August 1989 Soil Results near Rock Creek Flood Plain Outfall

Tables 2 – Shallow Soil Integrated Sampling Results – May 2017

Tables 3 – Shallow Soil Sampling Results – Decision Unit A Subunits

Tables 4 – Rock Creek Sediment Sampling Results – October 2018

Tables 5 – 2024 Soil Results near Onsite Catch Basin

6. ADMINSTRATIVE RECORD

DEQ, 1989, *Complaint Investigation* memorandum, July 21.

Bridgewater Group, 2024, *Independent Cleanup Pathway Final Report*, September 23.

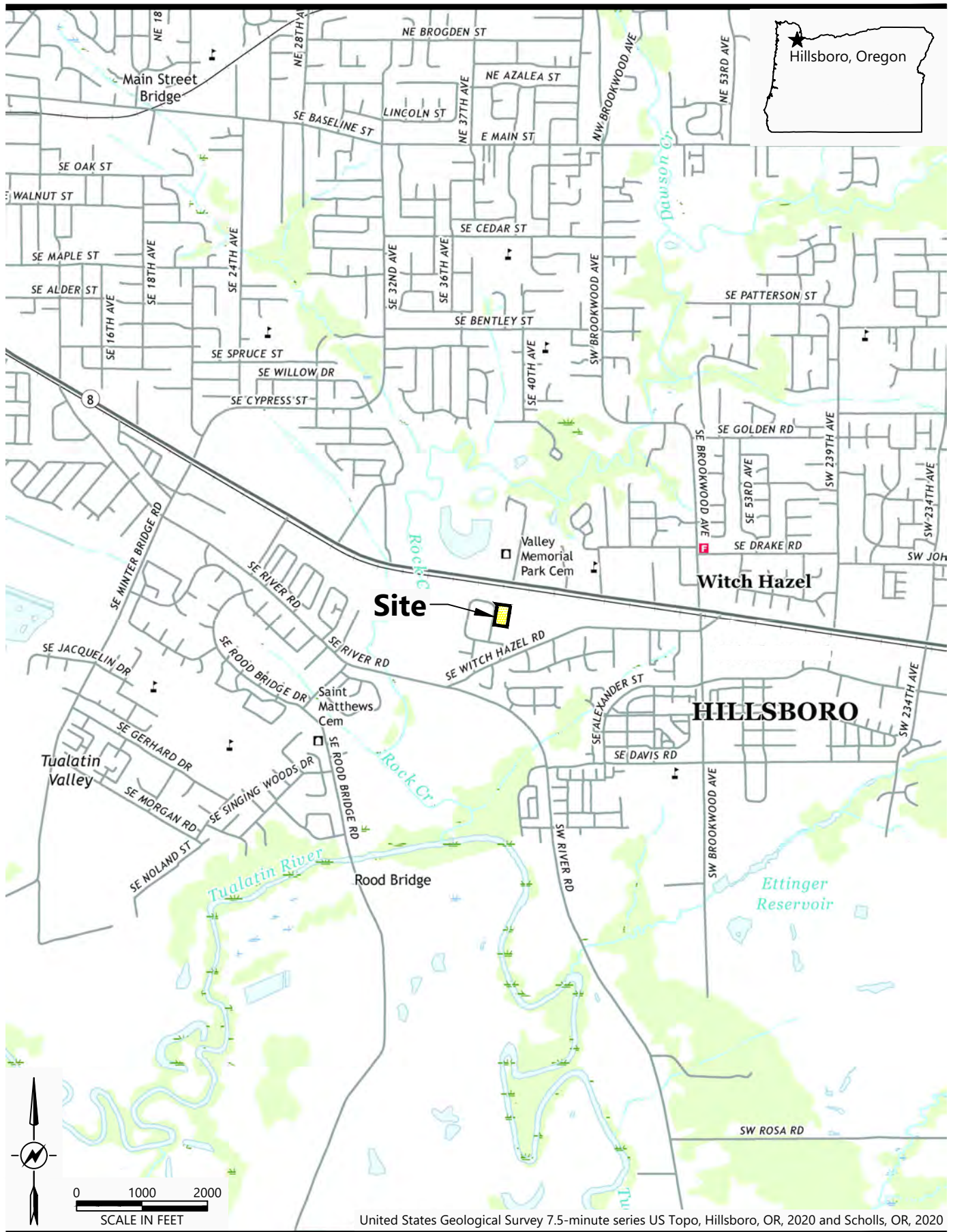
Maul Foster Alongi, 2012, Permapost ECSI 148, *Supplemental Groundwater Beneficial Use Evaluation Update*, February 13.

Maul Foster Alongi, 2017, Permapost ECSI 148, *Focused Ecological Risk Assessment Report*, October 27.

McKenna Environmental, LLC, 1999, Permapost ECSI 148, *Preliminary Beneficial Use Study*, May 13.

Permapost Products, Inc., 2019, Permapost ECSI 148, *RCRA Permit Focused Remedial Investigation Report*, June 25.

PTI Environmental Services, 1991, *Preliminary Assessment*, June.



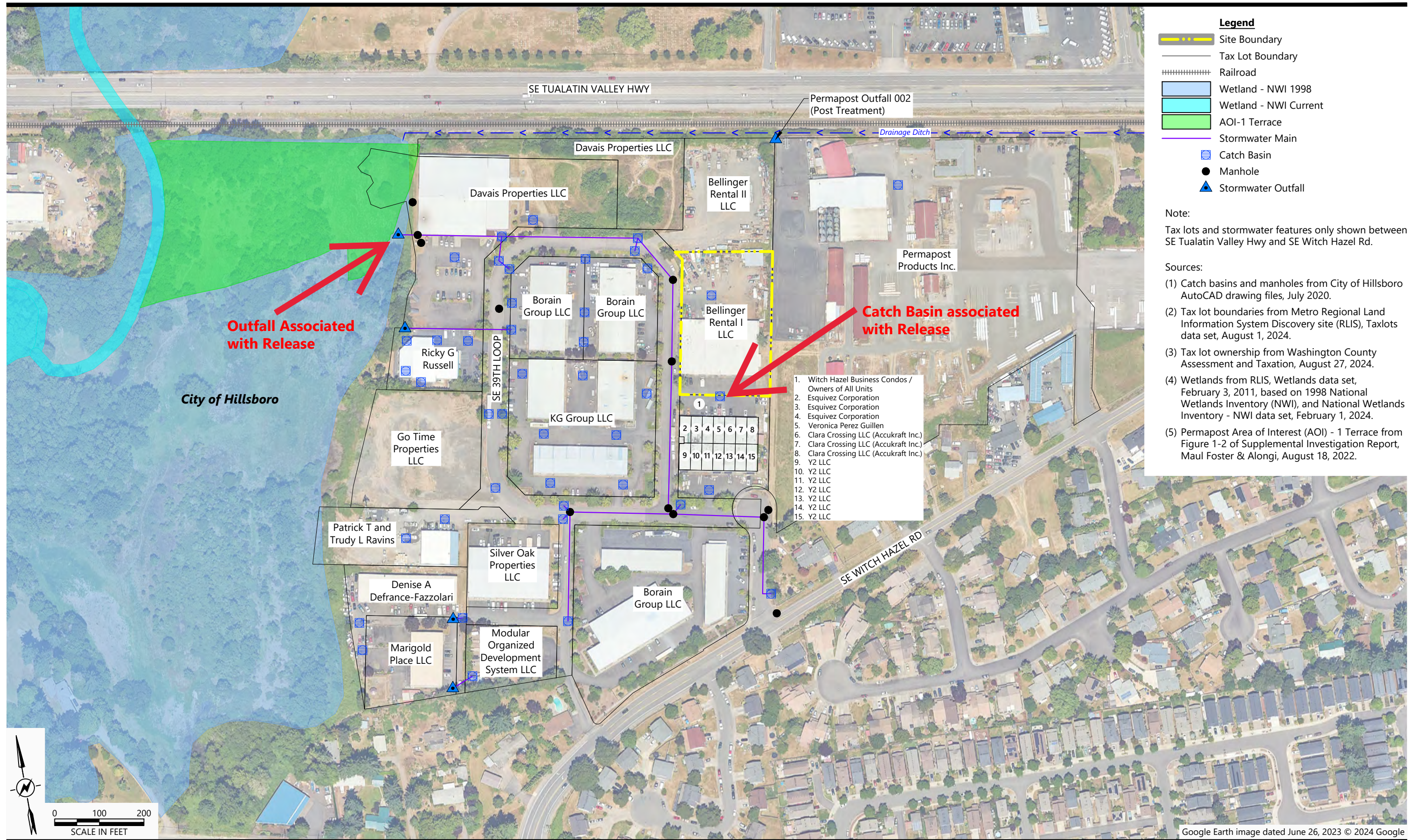


Figure 3 - Wetlands

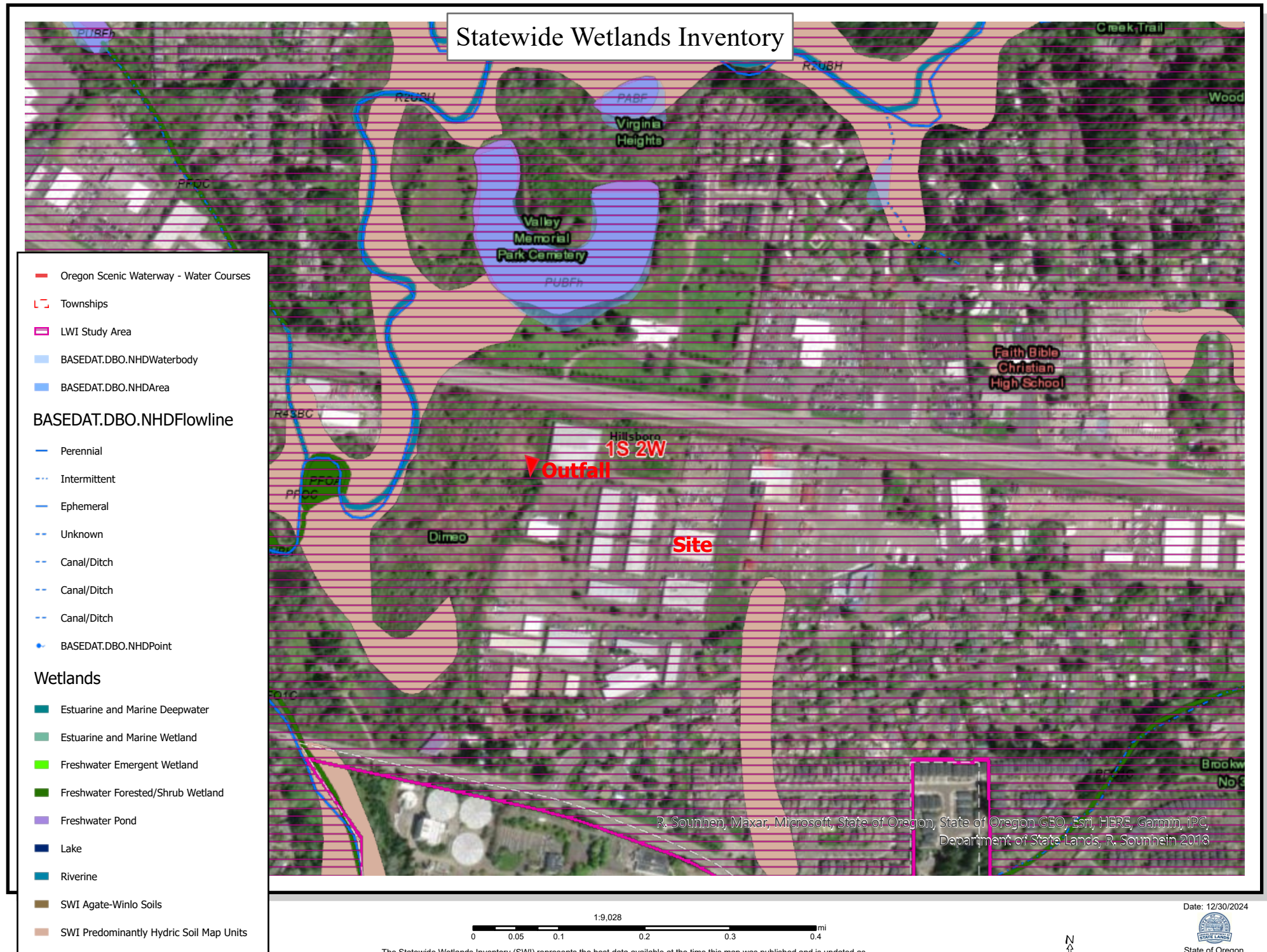
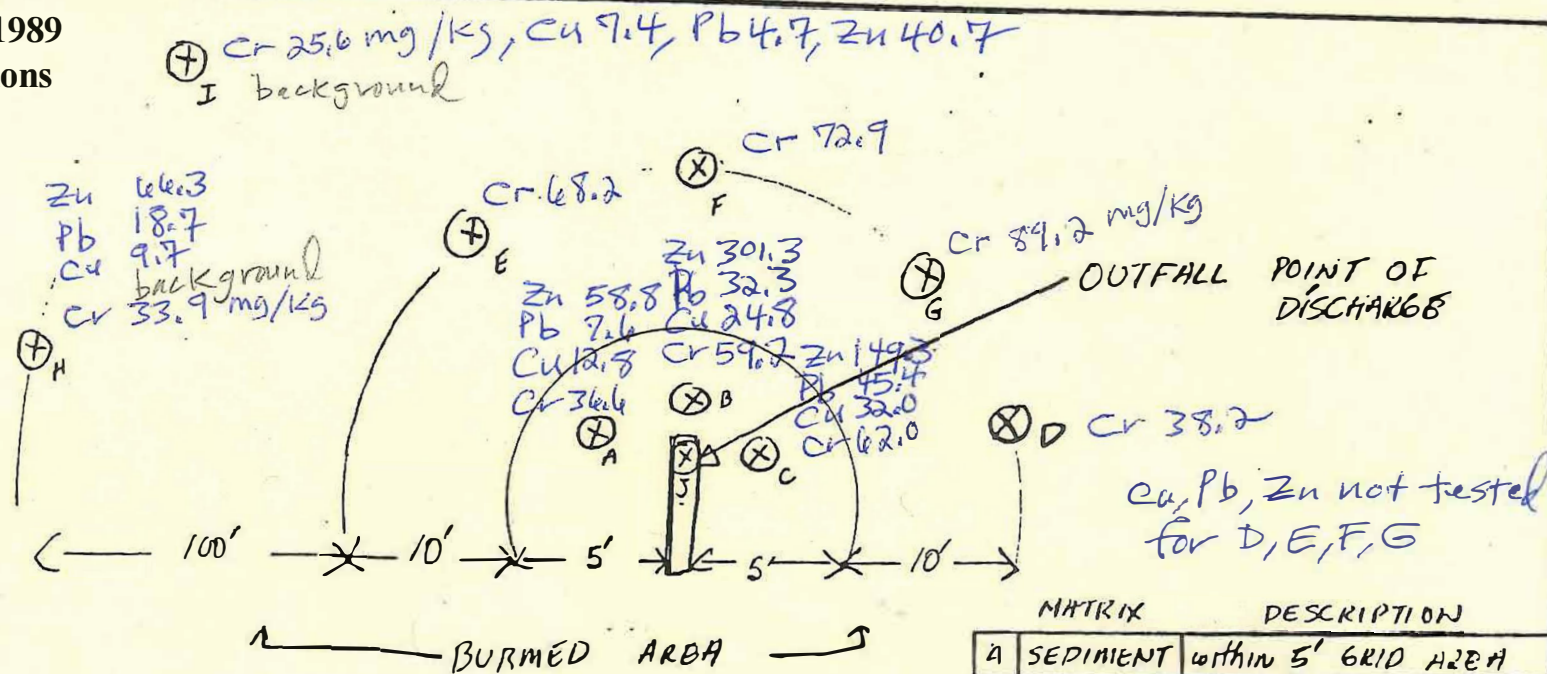


Figure 4 - August 1989
Soil Sample Locations



GRASSY PLAIN AREA
(NOT SAMPLED ON FABMARK)
SIDE OF THE BURM.

	MATRIX	DESCRIPTION
A	SEDIMENT	WITHIN 5' GRID AREA
B	SEDIMENT	WITHIN 5' GRID AREA
C	SEDIMENT	WITHIN 5' GRID AREA
D	SOIL	AT 15' FROM DISCHARGE
E	SOIL	AT 15' FROM DISCHARGE
F	SOIL	AT 15' FROM DISCHARGE
G	SOIL	AT 15' FROM DISCHARGE
H	SOIL	BACKGROUND
I	SOIL	BACKGROUND
J	WATER	STANDING WATER

*ALL AT DEQ DESIRED ANALYSIS

1989
FABMARK
2630 S.E. 39th LOOP
Stormwater Release
< 1800 gallons

PEGASUS WASTE MANAGEMENT
SITE PLAN GRID AREA #3
FAB MARK
OUTFALL AREA ILLUSTRATION
REVISED 8/22/89 J.O.C.

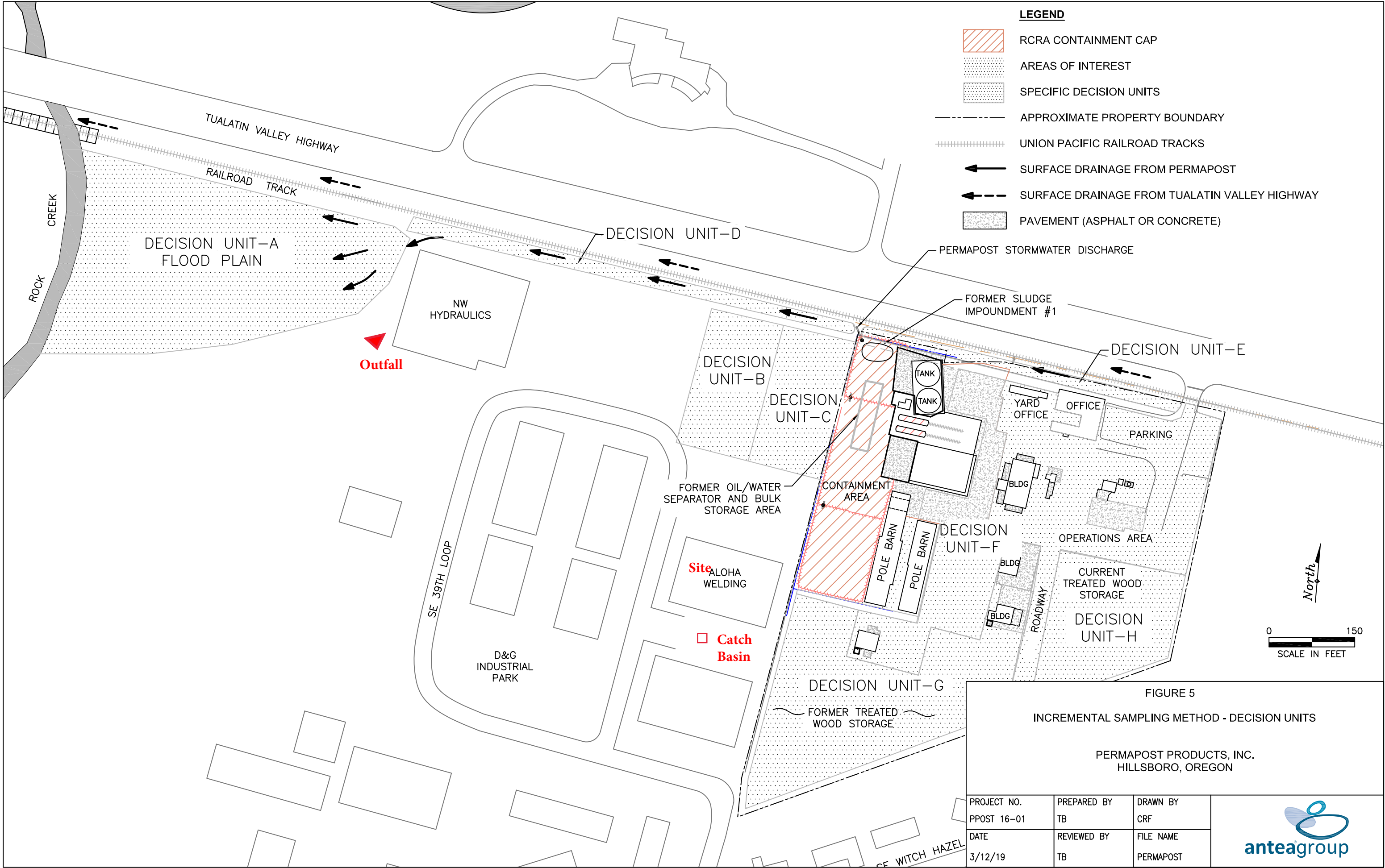
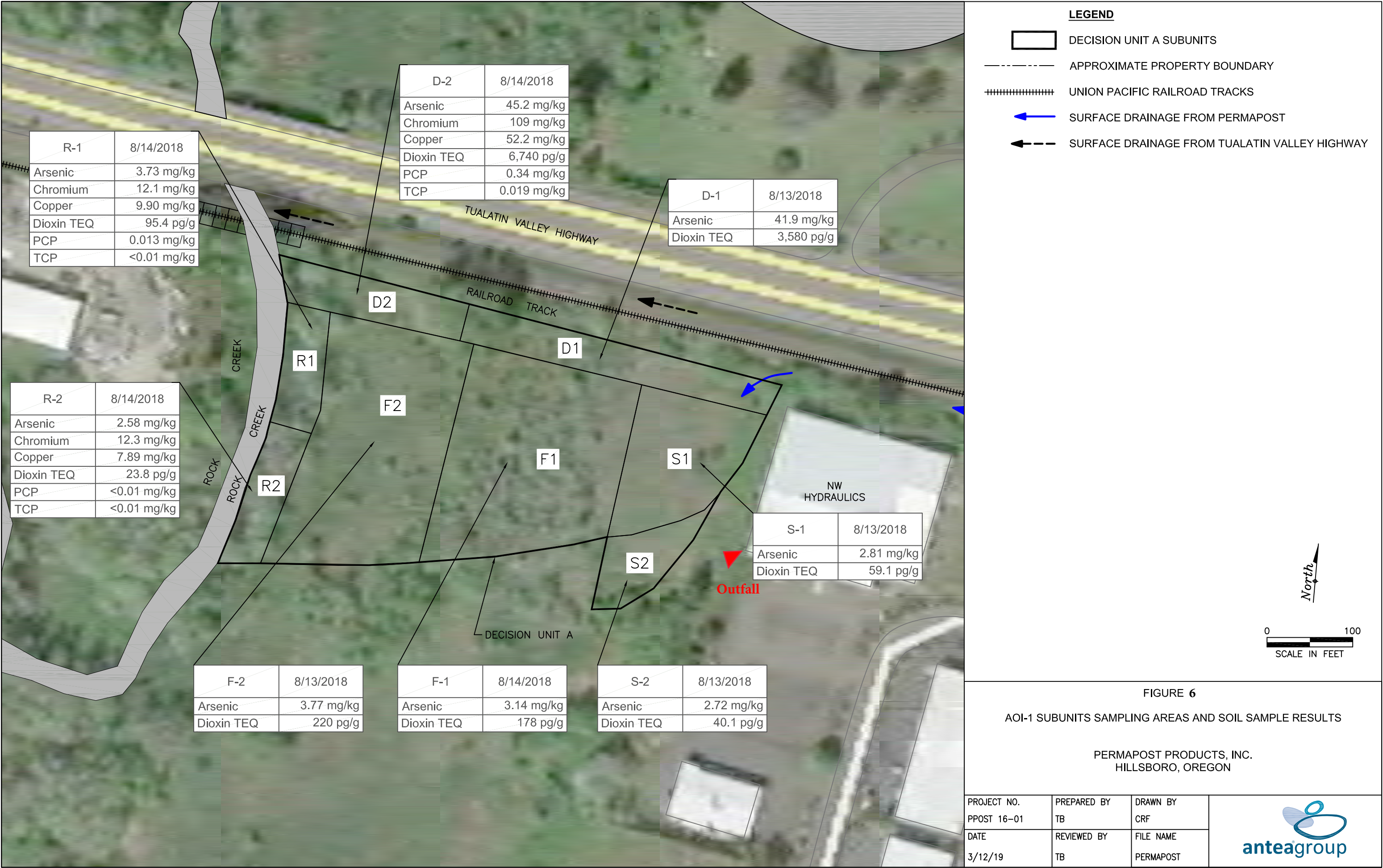


FIGURE 5
INCREMENTAL SAMPLING METHOD - DECISION UNITS

PERMAPOST PRODUCTS, INC.
HILLSBORO, OREGON

PROJECT NO. PPOST 16-01	PREPARED BY TB	DRAWN BY CRF
DATE 3/12/19	REVIEWED BY TB	FILE NAME PERMAPOST





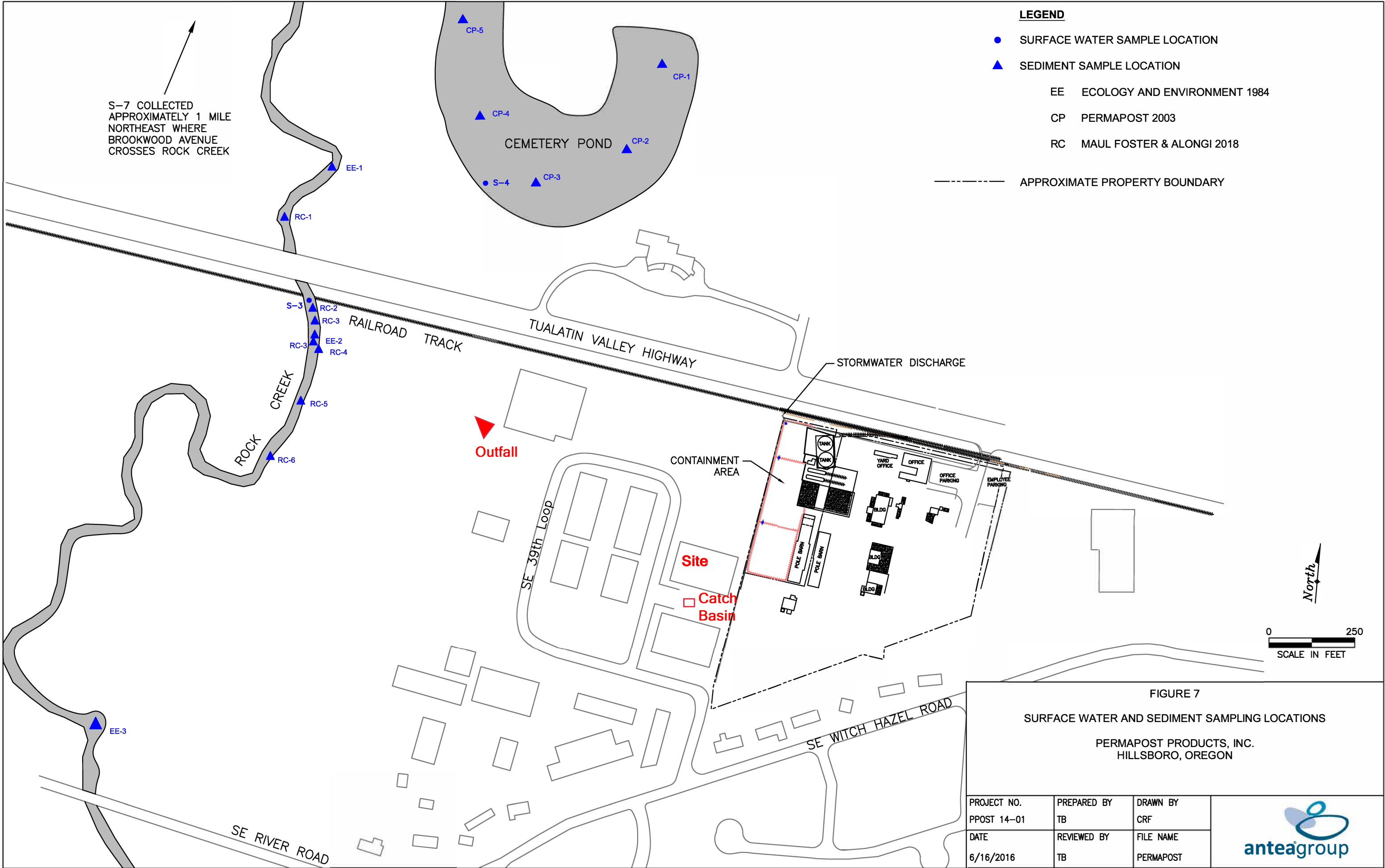
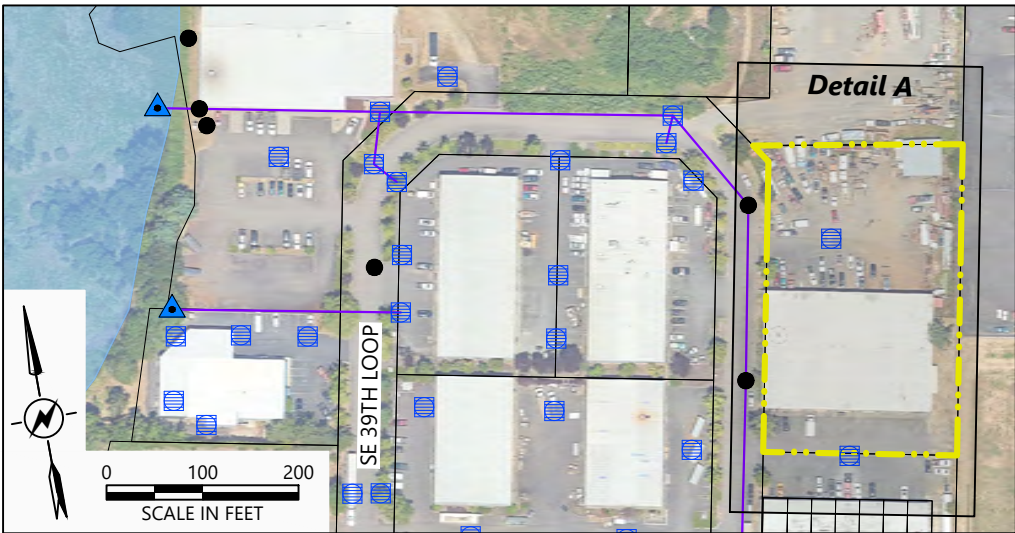


FIGURE 7
SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS
PERMAPOST PRODUCTS, INC.
HILLSBORO, OREGON

PROJECT NO. PPOST 14-01	PREPARED BY TB	DRAWN BY CRF
DATE 6/16/2016	REVIEWED BY TB	FILE NAME PERMAPOST

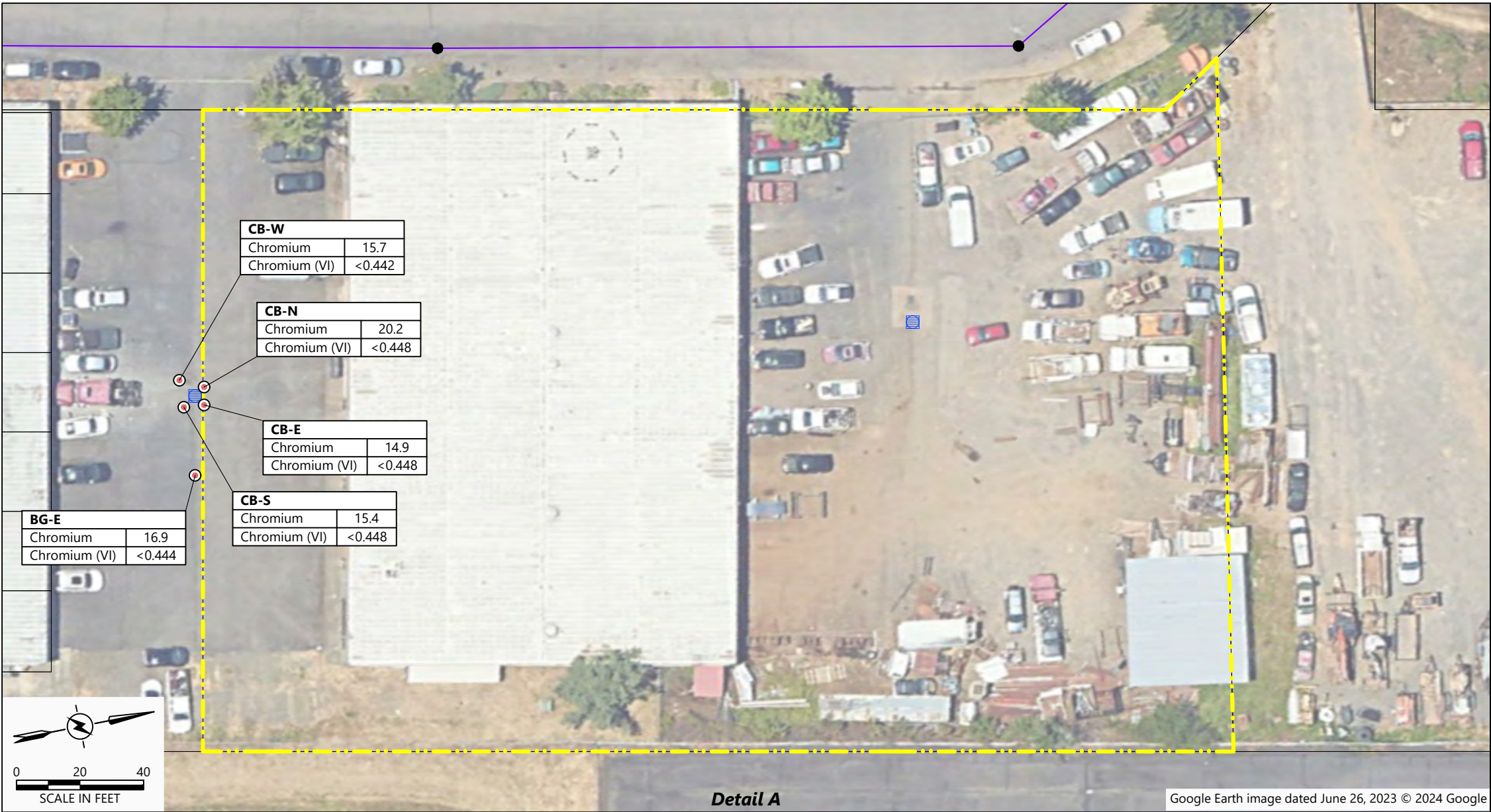




- Legend**
- Site Boundary
 - Tax Lot Boundary
 - Wetland - NWI 1998
 - Stormwater Main
 - Catch Basin
 - Manhole
 - Outfall
 - Catch Basin Soil Sample

- Notes:
- (1) Concentrations in milligrams per kilogram (mg/kg)
 - (2) < = Not Detected at the stated reporting limit

- Sources:
- (1) Catch basins and manholes from City of Hillsboro AutoCAD drawing files, July 2020.
 - (2) Tax lot boundaries from Metro Regional Land Information System Discovery site (RLIS), Taxlots data set, August 1, 2024.
 - (3) Wetlands from RLIS, Wetlands data set, February 3, 2011, based on 1998 National Wetlands Inventory (NWI).



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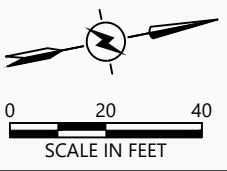


Table 1
August 1989 Soil Results near Rock Creek Flood Plain Outfall

Background Concentration Ecological RBC for Freshwater Sediment		All Measurements in Milligrams per Kilogram (mg/kg)					
		76	--	180	34	79	47
Sample ID		37	--	123	36	35	18
	Distance from Outfall (feet)	Chromium	Aluminum	Zinc	Copper	Lead	Nickel
A	<5	36.6	15700	58.8	12.8	7.6	10.9
B	<5	59.2	5485	301.3	24.8	32.3	7.1
C	<5	62.0	6965	149.3	32.0	45.4	7.9
D	15	38.2	--	--	--	--	--
E	15	68.2	--	--	--	--	--
F	15	72.9	--	--	--	--	--
G	15	89.2	--	--	--	--	--
H	115	33.9	15600	66.3	9.7	18.7	14.2
I	115	25.6	8775	40.7	7.4	4.7	6.7

Table 2
Shallow Soil Integrated Sampling Results - May 2017
Decision Units A, B, and C
Permapost Products, Inc.
Hillsboro, Oregon

PARAMETER	Decision Unit A	MDL	Decision Unit B	MDL	Decision Unit C-1	MDL	Decision Unit C-2	MDL	Decision Unit C-3	MDL	Screening Values*		Regional Background
	Flood Plain Area										Human Health	Ecological	
Arsenic	16.4	0.781	4.9	0.732	12.6	0.750	14.1	0.750	14.2	0.733	420	10	8.8
Chromium, Hexavalent	ND	0.400	ND	0.400	ND	0.400	--	--	--	--	1,400	410	--
Chromium, total	41.1	0.781	18.5	0.244	23.4	0.250	28.2	0.250	27.1	0.258	>max Cr+3	0.4	76
Copper	28.8	0.521	21.4	0.488	24.4	0.500	27.9	0.500	31.3	0.515	390,000	50.0	34
Pentachlorophenol	0.62	0.50	ND	0.50	ND	0.50	--	--	--	--	960	2.5	--
2,3,4,6-Tetrachlorophenol	0.071	0.010	ND	0.0099	ND	0.010	--	--	--	--	--	20	--
2,4,5-Trichlorophenol	ND	0.010	ND	0.0099	ND	0.010	--	--	--	--	980,000	4	--
2,4,6-Trichlorophenol	ND	0.010	ND	0.0099	ND	0.010	--	--	--	--	63,000	10	--
2,4-Dichlorophenol	ND	0.010	ND	0.0099	ND	0.010	--	--	--	--	29,000	20	--
2-Chlorophenol	ND	0.010	ND	0.0099	ND	0.010	--	--	--	--	49,000	60	--
Phenol	ND	0.010	ND	0.0099	ND	0.010	--	--	--	--	>max	30	--
2,3,7,8-TCDD	3.18	0.0315	0.577	0.0315	1.70	0.0315	1.94	0.0315	2.53	0.0315	--	--	--
1,2,3,7,8-PeCDD	64.2	0.0468	2.36	0.0468	7.91	0.0468	13.2	0.0468	19.9	0.0468	--	--	--
1,2,3,4,7,8-HxCDD	252	0.0503	4.03	0.0503	18.7	0.0503	36.0	0.0503	49.6	0.0503	--	--	--
1,2,3,6,7,8-HxCDD	1,230	0.0490	10.7	0.0490	129	0.0490	338	0.0490	302	0.0490	--	--	--
1,2,3,7,8,9-HxCDD	496	0.0488	7.57	0.0488	38.3	0.0488	78.4	0.0488	99.3	0.0488	--	--	--
1,2,3,4,6,7,8-HpCDD	31,000	0.0541	191	0.0541	2,470	0.0541	6,000	0.0541	5,170	0.0541	--	--	--
OCDD	225,000	0.0888	1,190	0.0888	15,600	0.0888	46,600	0.0888	36,500	0.0888	--	--	--
2,3,7,8-TCDF	8.21	0.0243	0.378	0.0243	1.37	0.0243	4.03	0.0243	3.15	0.0243	--	--	--
1,2,3,7,8-PeCDF	31.4	0.0285	0.699	0.0285	4.77	0.0285	13.4	0.0285	12.3	0.0285	--	--	--
2,3,4,7,8-PeCDF	32.6	0.0298	0.700	0.0298	4.40	0.0298	16.3	0.0298	13.8	0.0298	--	--	--
1,2,3,4,7,8-HxCDF	233	0.0255	2.47	0.0255	22.5	0.0255	59.6	0.0255	58.4	0.0255	--	--	--
1,2,3,6,7,8-HxCDF	167	0.0253	2.83	0.0253	21.1	0.0253	43.6	0.0253	49.8	0.0253	--	--	--
2,3,4,6,7,8-HxCDF	278	0.0279	3.43	0.0279	26.5	0.0279	72.1	0.0279	75.4	0.0279	--	--	--
1,2,3,7,8,9-HxCDF	63	0.0367	1.22	0.0367	7.69	0.0367	26.3	0.0367	22.5	0.0367	--	--	--
1,2,3,4,6,7,8-HpCDF	5,280	0.0321	43.6	0.0321	499	0.0321	1,080	0.0321	986	0.0321	--	--	--
1,2,3,4,7,8,9-HpCDF	424	0.0396	3.85	0.0396	36.1	0.0396	81.3	0.0396	83.5	0.0396	--	--	--
OCDF	16,900	0.0843	101	0.0843	2,130	0.0843	4,050	0.0843	2,870	0.0843	--	--	--
2,3,7,8-TCDD TEQ	790	NA	9.20	NA	73	NA	173	NA	167	NA	4,800	55	--

NOTES:

All units in mg/kg, parts per million (ppm) except Dioxin/furan congener units are in pg/g (10 E-06 ppm)

All data is reported as dry weight basis, corrected for % solids measured by Frontier Laboratory (91.54% DU-A, 94.02% DU-B, and 92.68% DU-C).

>max = RBC is greater than 1,000,000 mg/kg and deemed to not pose a risk

* = Screening values represent the most stringent applicable soil Risk Based Concentration (RBC) shown in Table 1 in Permapost 2016 and DEQ 2016.

Human Health = Excavation Worker receptor. Construction worker pathway is not applicable in flood plain (DU-A) and unlikely in DU-B and DU-C.

Ecological = Most stringent of Plant, Invertebrates, Birds, Mammals receptors

"--" = RBC not available or not applicable

MDL = Method Detection Limit

2,3,7,8-TCDD TEQ from United States Environmental Protection Agency, 2010, Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorobenzo-p-dioxin and Dioxin-Like Compounds, EPA/100R 10/005, December 2010.

J = Estimated

Bold highlighted detected value indicates measured concentration exceeds a screening level and regional background concentration.

ND = Parameter not detected at the MRL or MDL

Table 3
Shallow Soil Sampling Results - Decision Unit A Subunits
Permapost Products, Inc.
Hillsboro, Oregon

PARAMETER	Decision Unit A	MDL	Sub-unit S1	MDL	Sub-unit S2	MDL	Sub-unit D1	MDL	Sub-unit D2	MDL	Sub-unit F1	MDL	Sub-unit F2	MDL	Sub-unit R1 Flood Plain Area	MDL	Sub-unit R2 Flood Plain Area	MDL
Arsenic	16.4	0.781	2.81	1.00	2.72	1.00	41.9	1.00	45.2	1.00	3.14	1.00	3.77	1.00	3.73	1.00	2.58	1.00
Chromium, Hexavalent	ND	0.400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium, total	41.1	0.781	--	--	--	--	--	--	109	1.00	--	--	--	--	12.1	1.00	12.3	1.00
Copper	28.8	0.521	--	--	--	--	--	--	52.2	5.00	--	--	--	--	9.90	5.00	7.89	5.00
Pentachlorophenol	0.62	0.50	--	--	--	--	--	--	0.34	0.01	--	--	--	--	0.013	0.01	ND	0.01
2,3,4,6-Tetrachlorophenol	0.071	0.010	--	--	--	--	--	--	0.019	0.01	--	--	--	--	ND	0.01	ND	0.01
2,4,5-Trichlorophenol	ND	0.010	--	--	--	--	--	--	ND	0.01	--	--	--	--	ND	0.01	ND	0.01
2,4,6-Trichlorophenol	ND	0.010	--	--	--	--	--	--	ND	0.01	--	--	--	--	ND	0.01	ND	0.01
2,4-Dichlorophenol	ND	0.010	--	--	--	--	--	--	ND	0.02	--	--	--	--	ND	0.02	ND	0.02
2-Chlorophenol	ND	0.010	--	--	--	--	--	--	ND	0.01	--	--	--	--	ND	0.01	ND	0.01
	ND	0.010	--	--	--	--	--	--	ND	0.01	--	--	--	--	ND	0.01	ND	0.01
2,3,7,8-TCDD	3.18	0.0315	0.630	J 0.0315	1.03	0.0315	13.0	0.0315	31.1	0.0315	1.37	0.0315	1.25	0.0315	1.18	0.0315	0.589	J 0.0315
1,2,3,7,8-PeCDD	64.2	0.0468	7.26	0.0468	5.86	0.0468	281	0.0468	473	0.0468	19.0	0.0468	18.2	0.0468	7.79	0.0468	2.61	J 0.0468
1,2,3,4,7,8-HxCDD	252	0.0503	22.9	0.0503	13.0	0.0503	873	0.0503	2,030	0.0503	68.6	0.0503	74.9	0.0503	30.6	0.0503	7.89	0.0503
1,2,3,6,7,8-HxCDD	1,230	0.0490	92.8	0.0490	69.8	0.0490	6,760	0.0490	10,000	0.0490	262	0.0490	331	0.0490	151	0.0490	38.3	0.0490
1,2,3,7,8,9-HxCDD	496	0.0488	46.1	0.0488	25.0	0.0488	1,950	0.0488	3,730	0.0488	136	0.0488	155	0.0488	63.4	0.0488	16.2	0.0488
1,2,3,4,6,7,8-HpCDD	31,000	0.0541	1,890	0.0541	1,170	0.0541	138,000	0.0541	294,000	0.0541	6,430	0.0541	8,320	0.0541	3,670	0.0541	805	0.0541
OCDD	225,000	0.0888	12,300	0.0888	7,540	0.0888	841,000	0.0888	2,010,000	0.0888	42,500	0.0888	57,300	0.0888	24,400	0.0888	5,690	0.0888
2,3,7,8-TCDF	8.21	0.0243	1.11	0.0243	1.02	0.0243	48.6	0.0243	61.1	0.0243	2.00	0.0243	2.88	0.0243	1.72	0.0243	0.965	J 0.0243
1,2,3,7,8-PeCDF	31.4	0.0285	3.33	J 0.0285	3.20	J 0.0285	240	0.0285	215	0.0285	7.67	0.0285	9.32	0.0285	4.63	J 0.0285	1.49	J 0.0285
2,3,4,7,8-PeCDF	32.6	0.0298	3.05	J 0.0298	3.11	J 0.0298	209	0.0298	285	0.0298	6.54	0.0298	9.19	0.0298	4.84	J 0.0298	1.91	J 0.0298
1,2,3,4,7,8-HxCDF	233	0.0255	20.2	0.0255	13.1	0.0255	1,140	0.0255	1,620	0.0255	54.5	0.0255	70.3	0.0255	27.3	0.0255	7.26	0.0255
1,2,3,6,7,8-HxCDF	167	0.0253	16.6	0.0253	11.5	0.0253	951	0.0253	1,220	0.0253	42.6	0.0253	52.8	0.0253	20.2	0.0253	5.16	0.0253
2,3,4,6,7,8-HxCDF	278	0.0279	26.8	0.0279	16.8	0.0279	1,550	0.0279	2,160	0.0279	67.8	0.0279	80.7	0.0279	34.3	0.0279	8.53	0.0279
1,2,3,7,8,9-HxCDF	63	0.0367	6.47	0.0367	5.48	0.0367	455	0.0367	422	0.0367	19.2	0.0367	27.3	0.0367	8.52	0.0367	2.47	J 0.0367
1,2,3,4,6,7,8-HpCDF	5,280	0.0321	368	0.0321	224	0.0321	17,700	0.0321	40,000	0.0321	1,170	0.0321	1,470	0.0321	602	0.0321	135	0.0321
1,2,3,4,7,8,9-HpCDF	424	0.03																

Table 4
Rock Creek Sediment Sampling Results - October 2018
Permapost Products, Inc.
Hillsboro, Oregon

PARAMETER	RC-1*	Qual	RL	MDL	RC-2*	Qual	RL	MDL	RC-3	Qual	RL	MDL	RC-4	Qual	RL	MDL	RC-5	Qual	RL	MDL	RC-6	Qual	RL	MDL	Sediment Screening Values** Table II	Regional Background
Arsenic III	8.76		0.50		17.1		0.50		4.92		0.50		7.74		0.50		9.45		0.50		--		--		6	8.8
Chromium, total	18.7		0.50		18.4		0.50		18.8		0.50		18		0.50		23.8		0.50		--		--		37	76
Copper	14.4		0.50		14.3		0.50		13.5		0.50		14.9		0.50		19.4		0.50		--		--		36	34
Total Organic Carbon	0.978		0.0750		0.949		0.0750		1.17		0.0750		0.518		0.0750		1.07		0.0750		--		--		--	--
Pentachlorophenol	ND		0.01		ND		0.01		ND		0.01		ND		0.01		ND		0.01		--		--		0.25	--
2,3,4,6-Tetrachlorophenol	ND		0.01		ND		0.01		ND		0.01		ND		0.01		ND		0.01		--		--		--	--
2,4,5-Trichlorophenol	ND		0.01		ND		0.01		ND		0.01		ND		0.01		ND		0.01		--		--		--	--
2,4,6-Trichlorophenol	ND		0.01		ND		0.01		ND		0.01		ND		0.01		ND		0.01		--		--		--	--
2,4-Dichlorophenol	ND		0.02		ND		0.02		ND		0.02		ND		0.02		ND		0.02		--		--		--	--
2-Chlorophenol	ND		0.02		ND		0.02		ND		0.02		ND		0.02		ND		0.02		--		--		--	--
Phenol	ND		0.01		0.029		0.01		ND		0.01		ND		0.01		ND		0.01		--		--		0.049	--
2,3,7,8-TCDD	ND		0.196	0.0315	ND		0.228	0.0315	1.04			0.0315	ND		0.189	0.0315	ND		0.189	0.0315	0.392	J		0.0315	--	--
1,2,3,7,8-PeCDD	ND		0.420	0.0468	0.624	J		0.0468	2.28	J		0.0468	0.666	J		0.0468	0.942	J		0.0468	0.738	J		0.0468	--	--
1,2,3,4,7,8-HxCDD	ND		0.372	0.0503	0.734	J		0.0503	7.02			0.0503	2.53	J		0.0503	3.32	J		0.0503	1.29	J		0.0503	--	--
1,2,3,6,7,8-HxCDD	0.690	J		0.0490	2.42	J		0.0490	24.9			0.0490	15.7			0.0490	17.5			0.0490	7.4			0.0490	--	--
1,2,3,7,8,9-HxCDD	0.579	J		0.0488	1.53	J		0.0488	14.0			0.0488	5.89			0.0488	6.51			0.0488	2.57	J		0.0488	--	--
1,2,3,4,6,7,8-HpCDD	11.3			0.0541	44.6			0.0541	613			0.0541	387			0.0541	408			0.0541	148			0.0541	--	--
OCDD	90.6			0.0888	288			0.0888	3,750			0.0888	2,760			0.0888	2,690			0.0888	1,000			0.0888	--	--
2,3,7,8-TCDF	0.305	J		0.0243	0.610	J		0.0243	0.688	J		0.0243	ND		0.182	0.0243	0.458	J		0.0243	0.935	J		0.0243	--	--
1,2,3,7,8-PeCDF	ND		0.254	0.0285	0.433	J		0.0285	1.130	J		0.0285	0.803	J		0.0285	0.739	J		0.0285	0.662	J		0.0285	--	--
2,3,4,7,8-PeCDF	0.815	J		0.0298	7.33			0.0298	3.85	J		0.0298	1.79	J		0.0298	1.96	J		0.0298	5.38			0.0298	--	--
1,2,3,4,7,8-HxCDF	ND		0.247	0.0255	1.05	J		0.0255	5.14			0.0255	3.83	J		0.0255	3.68	J		0.0255	1.60	J		0.0255	--	--
1,2,3,6,7,8-HxCDF	ND		0.257	0.0253	2.07	J		0.0253	7.14			0.0253	2.74	J		0.0253	2.90	J		0.0253	1.25	J		0.0253	--	--
2,3,4,6,7,8-HxCDF	0.499	J		0.0279	4.39	J		0.0279	6.91			0.0279	4.01	J		0.0279	4.44	J		0.0279	2.96	J		0.0279	--	--

				All Measurements in Milligrams per Kilogram (mg/kg)		
				Background Concentrations		
				RBCss - Construction Worker		
Sample Name	Location	Collection Date	Depth (feet)	Total Chromium	Chromium VI	pH
CB-W-3/4	< 5 feet west of catch basin	1/19/2024	3.5	15.7	<0.442	7.2
CB-N-3/4	< 5 feet north of catch basin	1/19/2024	3.5	20.2	<0.448	7.3
CB-E-3/4	< 5 feet east of catch basin	1/19/2024	3.5	14.9	<0.448	7.2
CB-S-3/4	< 5 feet south of catch basin	1/19/2024	3.5	15.4	<0.448	7.0
BG-E-3/4	25 feet east of catch basin	1/19/2024	3.5	16.9	<0.444	7.1