AECOM
111 SW Columbia
Portland OR, 97201
USA
aecom.com

November 22, 2019

Craig Rankine, RG, LHG
Cleanup Project Manager / Hydrogeologist
Washington State Department of Ecology
Toxics Cleanup Program
12121 NE 99th Street, Suite 2100
Vancouver, WA 98682
Via electronic mail: cran461@ECY.WA.GOV

RE: Well Decommissioning Summary Letter
Former Fort Vancouver Plywood Site
Port of Vancouver USA
Vancouver, Washington
AECOM Project Number: 60519969

Dear Mr. Rankine

On behalf of Port of Vancouver USA (the Port), AECOM is pleased to provide the Washington Department of Ecology (Ecology) with this letter report summarizing the decommissioning of monitoring well C1-MW-7 at the Former Fort Vancouver Plywood (FVP) Site (herein referred to as the Site) (Figure 1). The decommissioning activities were completed following the issuance of the Washington State Department of Ecology (Ecology)'s approval memorandum dated September 16, 2019.

AECOM subcontracted with Pacific Soil and Water, Inc., (PSW) a Washington State licensed well driller, to decommission C1-MW-7 on October 8, 2019 following Ecology's well abandonment guidelines outlined in Chapter 173-360 of the Washington Administrative Code (WAC), Minimum Standards for Construction and Maintenance of Wells. AECOM provided oversight for the well abandonment.

The proposed and actual decommissioning methods are listed on the table below.

Cell #		Cell 1
Well ID		C1-MW-7
Ground Surface		Concrete
Decommissioning Plan	**Proposed Method**	Decommission in place
	Decommissioning Date	10/8/2019
	Actual Method	Decommissioned in place
	Actual Surface Patching Method	Monument left in place & filled/patched with concrete
	Cap Seal Date	10/10/2019
	Depth Measured During Decommissioning (feet bgs)	29.0
Monitoring Well Details	**Department of Ecology Notice of Intent**	AE57466
	Ecology Well Tag	AEB 484
	Install Date	4/17/1998
	Install Total Depth (feet bgs)	30.0
	Diameter (inches)	2
	Monument Type	Flush
	Screen Interval (feet bgs)	18 - 30
	State Plane X Coordinate	1080595.52
	State Plane Y Coordinate	115357.72

PSW decommissioned the well in place by filling the casing from bottom to land surface with bentonite. The Ecology well decommissioning log is attached.

According to Final Agreed Orders for the Site, a cap system was installed for the remedial design at Cells 1 and 2 at the Site. The cap system is designed to isolate contaminated residual materials from surface water, prevent infiltration through residual soils, and eliminate the potential for worker exposure to the residual contaminated material. According to the Port, the cap design consists of a 4 inch thick low-permeability asphalt or concrete layer with a maximum permeability of 1 x 10^{-7} centimeters per second (cm/s). The low-permeability has historically been achieved by the Port applying the sealant product: ARMORSEAL A-100. The former monitoring well location for C1-MW-7 was patched with concrete, and then AECOM applied a treatment of the sealant product, ARMORSEAL A-100 to the concrete patch.

An updated compliance monitoring plan (Table 1) and site map (Figure 2) both listing C1-MW-7 as decommissioned are attached.

AECOM is pleased to present this letter to Ecology on behalf of the Port. If you have any questions regarding the well decommissioning activities, please contact the undersigned at (503) 222-7200.

Yours sincerely,
AECOM

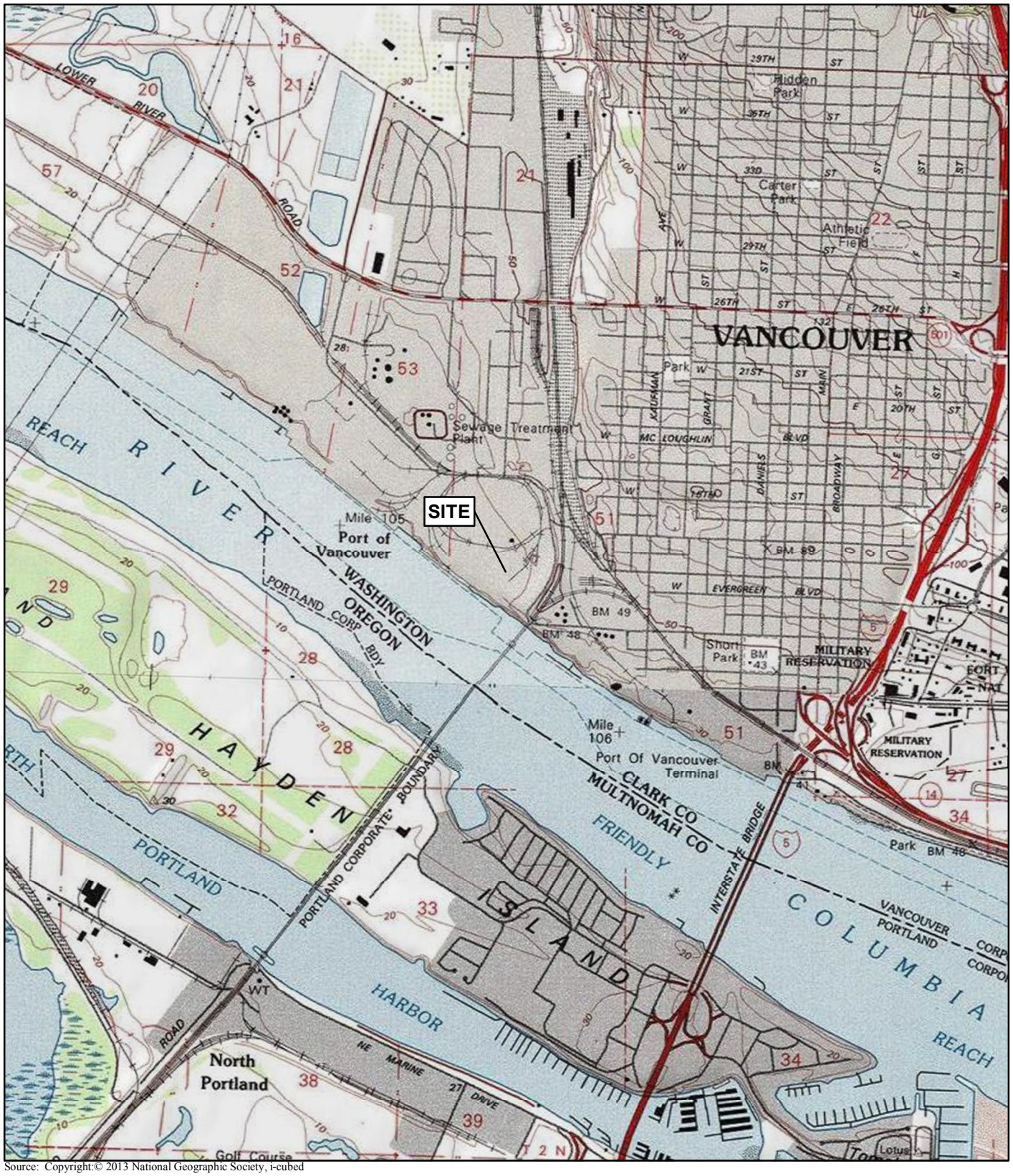
Nicky Moody
Project Manager

Jeremy Haney, L.G.
Geologist

State of Washington
2817
Licensed Geologist
JEREMY HANEY

Attachments:
Figure 1. Vicinity Map
Figure 2. Site Map
Table 1. Compliance Monitoring Plan
Ecology Well Log

cc: Mr. Matt Graves, Environmental Manager, Port of Vancouver USA, 3103 NW Lower River Road, Vancouver, Washington 98660



Source: Copyright:© 2013 National Geographic Society, i-cubed

1,000 0 1,000 2,000

SCALE IN FEET

VICINITY MAP

FORMER FORT VANCOUVER PLYWOOD SITE
PORT OF VANCOUVER USA
VANCOUVER, WA

FIGURE 1

AECOM

K:\25698089_POV\MXD\1Q2019\Figure 1 Vicinity Map.mxd

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

150 0 150 300

SCALE IN FEET

AECOM

SITE MAP

FORMER FORT VANCOUVER PLYWOOD SITE
PORT OF VANCOUVER USA
VANCOUVER, WA

FIGURE 2

K:\25698089_POV\MXD\1Q2019\Figure 2 Site Map.mxd

NOVEMBER 2019 60519969

Table 1. Compliance Monitoring Plan
Former Fort Vancouver Plywood Site

Cell #	Well ID	Aquifer	Screen Interval (feet)	Current Compliance Monitoring Plan								Recommendation
				Groundwater Monitoring & Sampling				Sampling Plan				
				Sep-17	Mar-19	Sep-20	+18 months	Sampling Method	Analytes	Containers		
Cell 1	C1-MW-4	Shallow	17-32	Complete	Complete	X	X	PP/Bailer	VOCs	6 VOAs	-	-
	C1-MW-1	Shallow	18-33	Decommissioned in December 2016 after approval from Ecology in June 2016								
	C1-MW-2	Shallow	11-21	Decommissioned in December 2016 after approval from Ecology in June 2016								
	C1-MW-3	Shallow	15-32	Decommissioned in December 2016 after approval from Ecology in June 2016								
	C1-MW-5	Shallow	16-32	Decommissioned in December 2016 after approval from Ecology in June 2016								
	C1-MW-6	Shallow	15-25	Decommissioned in 2013 after approval from Ecology in 2011								
	C1-MW-6B	Deeper	52.5-62.5	Decommissioned in 2013 after approval from Ecology in 2011								
	C1-MW-7	Shallow	15-30	Decommissioned in October 2019 after approval from Ecology in September 2019								
	C1-MW-8	Shallow	16-31	Decommissioned in 2012 after approval from Ecology in 2011								
	C1-MW-8(R)	Shallow	15-30	Decommissioned in November 2016 after approval from Ecology in June 2016								
	C1-MW-9	Shallow	20-30	Decommissioned in December 2016 after approval from Ecology in June 2016								
Cell 2	C2-MW-3	Shallow	6-16	Complete	Complete	X	X	PP/Bailer	Gx, Dx	6 VOAs	2 Ambers	-
	C2-MW-9**	Shallow	25-35	Complete	Complete	X	X	PP/Bailer	VOCs, Gx, Dx	6 VOAs	2 Ambers	-
	C2-MW-10(R2	Shallow	20-35	Complete	Complete	X	X	PP/Bailer	Gx, Dx	6 VOAs	2 Ambers	-
	C2-MW-11(R)	Shallow	15-30	Complete	Complete	X	X	PP/Bailer	VOCs, Gx, Dx	6 VOAs	2 Ambers	-
	C2-MW-12B	Deeper	40-50	Complete	Complete	X	X	Bladder	VOCs, Gx, Dx	6 VOAs	2 Ambers	-
	C2-MW-1	Shallow	5-15	Not decommissioned as paved over & not located again in December 2016								
	C2-MW-2	Shallow	6-16	Decommissioned in August 2010								
	C2-MW-4	Shallow	9-19	Not decommissioned as paved over & not located again in December 2016								
	C2-MW-5	Shallow	6-16	Decommissioned in 2012 after approval from Ecology in 2011								
	C2-MW-6	Shallow	15-20	Decommissioned in November 2016 after approval from Ecology in June 2016								
	C2-MW-7	Shallow	15-25	Not decommissioned as paved over & not located again in December 2016								
	C2-MW-8	Shallow	6-16	Decommissioned in 2012 following approval from Ecology in 2011								
	C2-MW-10(R)	Shallow	18-33	Well not locatable (unknown if damaged or paved over); replaced in 2015 with C2-MW-10(R2)								
	C2-MW-11	Shallow	15-30	Decommissioned in 2014 due to construction activities; replaced in 2014 with C2-MW-11(R)								
	C2-MW-13B	Deeper	47-57	Decommissioned in 2012 following approval from Ecology in 2011								
	C2-MW-14	Shallow	Unknown	Decommissioned in 2002 following approval from Ecology								
	C2-MW-15	Shallow	7-22	Decommissioned in December 2016 after approval from Ecology in June 2016								
	C2-MW-16	Shallow	5-20	Not decommissioned as paved over & not located again in December 2016								

Sampling Schedule (18+ months)*
September 2017
March 2019
September 2020
+18 months

Notes:
= Indicates a monitoring well that was decomissioned.
= Indicates a monitoring well that was unlocatable as paved over.
X = indicates that depth to groundwater measurements will be collected.
Red = indicates active conditional Point of Compliance (POC) well in the Agreed Orders
BTEX = benzene, toluene, ethylbenzene, and total xylenes
Dx = diesel and heavy oil range organics
Gx = gasoline range organics
MTBE = methyl tert-butyl ether
PP/Bailer = purging conducted using peristaltic pump and then sampling conducted using a double check ball disposable bailer
(R) = C1-MW-8 and C2-MW-11 were replaced in July 2014.
VOA = volatile organic analysis
VOC = volatile organic carbon
** = Collect field duplicate on C2-MW-9. If not accessible, collect the field duplicate on C2-MW-11 or C2-MW-12B.

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☐ Construction
■ Decommission ⇨ Original NOI No. R28703

Ecology Well ID Tag No. AEB 484

Site Well Name C1-MW-7

Consulting Firm _____

Was a variance approved for this well/boring? ☐ Yes ■ No

If yes, what was the variance for? _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

■ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Watson, Colin

Driller/Engineer/Trainee Signature _____

License No. 2963

Company Name Pacific Soil and Water

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE57466

Type of Well:

■ Resource Protection Well ☐ Injection Point
☐ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Port of Vancouver

Well Street Address 900 Port Way

City Vancouver County Clark

Tax Parcel No. _____

Location (see instructions): WWM ☐ or EWM ■

NE ¼-¼ NE ¼, Section 28 Town 2N Range 1

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter _____ inches Casing diameter _____ inches

Static water level 17.8 ft below top of casing Date 10/8/2019

☐ Above-ground completion with bollards ☐ Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date 10/8/2019 Completed Date 10/8/2019

Construction Design	Well Data	Driller's Log
Abandon well in place with bentonite to surface. Fill monument with concrete.	2" well, Total depth 30' Screened 20' to 30'	