

# SITE HAZARD ASSESSMENT

## Worksheet 1

### Summary Score Sheet

#### SITE INFORMATION:

Rainier Brewery

3100 Airport Way S

Seattle, King County, WA 98134

Cleanup Site ID: 5478

Facility/Site ID: 9192461

Section: 8

Latitude: 47.57555

Township: 24N

Longitude: -122.32073

Range: 4E

Tax/Parcel ID: 7666203110, 7135400000

*Site Scored/ranked for the August 2015 Hazardous Sites List Publication*

#### SITE DESCRIPTION:

The Rainier Brewery site (Site) is a former brewery and bottling plant located in Seattle, King County, Washington. The 23.28-acre property is located approximately 5,300 feet from the Lower Duwamish Waterway (LDW), and zoned for industrial (IG2 U/85) use.

Adjacent properties include a machine shop, warehouse, and vacant lot to the south, Alaska Copper Works to the west, and an elevated roadway (Interstate 5 offramp) to the north. To the east of the Site is Interstate 5.

The Site is currently operated as a complex of condominiums and artists lofts and coffee roasting plant by Rainier Commons LLC.

The Rainier Brewery plant formerly occupied two parcels, one located along the west and one along the east side of Airport Way South. The parcel located along the west side of Airport Way South is currently operated by Sound Transit as part of their light rail yard. The portion of the Site located to the east of Airport Way South is partially operated by Tully's as a coffee roasting plant and coffee shop, and partially operated as living and working spaces for rent.

While in operation as a brewery, the facility operated under a National Pollution Discharge Elimination System (NPDES) permit.

#### SITE BACKGROUND:

A summary of prior operations/tenants at the subject property is presented below.

<u>From</u>	<u>To</u>	<u>Operator/Tenant</u>	<u>Activity</u>
1883	1977	The Rainier Brewing Company	Beer brewing and packaging plant
1977	1990	G. Heileman Company	Rainier Brewery: Beer brewing and packaging plant
1990	1996	Arthur Bond	Rainier Brewery
1996	1999	Stroh Brewing Company	Rainier Brewery
1999	2003	Benaroya Foundation	Tully's Coffee plant
2003	2014	Sound Transit	Light rail yard (parcel 7666203110)
2003	2014	Rainier Commons	Condominiums, artist lofts, and restaurants (parcel 7135400000)

#### SITE CONTAMINATION:

In 1989 the Rainier Brewery site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

Ecology was notified of a release at the Site in 1989, when former underground storage tanks (USTs) were removed from the Site. During excavation of the tanks, visual evidence of diesel, heating oil, and gasoline was

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observed in soil surrounding the tanks. Petroleum-impacted soil appeared to be limited vertically by a layer of clay observed at the Site above groundwater.

In November and December 1989, seven USTs were removed from the Site, and one UST was closed-in-place. These USTs included one 4,000-gallon heating oil tank (UST-1), one 10,000-gallon unleaded gasoline UST (UST-2), one 10,000-gallon diesel UST (UST-3), one 10,000-gallon heating oil or motor oil UST (UST-4), two 10,000-gallon USTs of unknown contents (UST-5 and UST-7), one 1,000-gallon used oil UST (UST-6), and one 2,000-gallon heating oil UST (UST-8; closed-in-place).

Soil from each UST location was overexcavated until analytical soil results indicated concentrations of undifferentiated total petroleum hydrocarbons (TPH) below the Model Toxics Control Act (MTCA) Method A cleanup level for the type of petroleum product associated with each tank, with the exception of the excavations for UST-3, UST-6, and UST-7. In the UST-3 excavation, one soil sample along the west sidewall contained TPH (likely diesel) above the MTCA Method A cleanup level for diesel and gasoline, and soil and groundwater (grab sample) concentrations of TPH from the UST-7 excavation were also above the MTCA Method A cleanup levels for diesel and gasoline. The UST-6 excavation was confirmed to contain concentrations of TPH above the MTCA Method A cleanup levels for diesel and gasoline, which may be due to used oil residue within former municipal garbage discovered at approximately 10 feet bgs. Reportedly, a portion of the impacted stockpiled soil was replaced in the gasoline and diesel excavations for remediation via biological treatment, including aeration and nutrient application, though some of the excavated soil remained stockpiled onsite. Aeration at these soil treatment areas was reportedly continued until 1995. An additional system was planned to remediate the used oil-impacted soil at the Site, however it is unclear whether this system was constructed. One report notes that the system was never operated.

In 1990, a Toxic Substances Control Act (TSCA) inspection was conducted at the Site to evaluate whether transformers containing polychlorinated biphenyls (PCBs) were present at the Site. The facility had previously removed two PCB-containing transformers, and had replaced them with dry-type transformers. One Seattle City Light transformer was present on the property, and had a label indicating PCB concentrations of less than 50 parts per million (ppm). No violations of PCB regulations were noted.

In October 1992, a METRO inspector documented non-contact cooling water which was entering the storm drain at the Site, which is part of the Duwamish/Diagonal combined sewer system. The facility was inspected in 1994, and the water was identified as wash water from the bottling plant, which contained a soapy lubricant. Cooling water from the canning system was also being discharged to the storm drain. Stormwater runoff issues were also reportedly noted in the mash area. Water was being discharged into the storm drain at a maximum rate of 236,500 gallons per day.

### **PAST REMEDIATION ACTIVITIES:**

In 1996, a release at the Site was reported to Ecology when a contractor excavated soil and remediation piping in the area of the 1989 UST excavations.

In 2000, following a remedial action completed under the Voluntary Cleanup Program (VCP) (VCP ID NW0435) for impacted soil associated with the former USTs located on parcel 7666203110, Ecology determined that No Further Action (NFA) regarding soil in the UST area was necessary at the Site. However, this report on the 2000 remedial action was not available for review. Reportedly, a restrictive covenant was filed, and four consecutive quarters of groundwater monitoring was required demonstrating concentrations below MTCA Method A cleanup levels in order to receive an NFA determination for groundwater. However, it is unclear if these monitoring requirements were satisfied. The site was terminated from the VCP in 2007.

During the most recent groundwater sampling event on file at Ecology (April 2000) from the former point-of-sales (POS) building (currently Sound Transit), petroleum hydrocarbons (as gasoline, diesel, and motor oil) were present in groundwater at concentrations above the MTCA Method A cleanup levels in MW-5 (diesel and motor oil), MW-7 (diesel and motor oil), and MW-8 (gasoline, diesel, and motor oil). Reportedly, polycyclic aromatic hydrocarbons (PAHs) have also been detected in groundwater on this portion of the Site.

In 2000, the treatment system ports for the soil remediation system were abandoned. Soil stockpiles remaining from the 1990 soil excavation were sampled and analyzed for diesel, gasoline, PCBs, volatile organic compounds (VOCs), PAHs, and metals. Stockpiled soil contained TPH in the motor oil range, at concentrations ranging from

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100 milligrams per kilogram (mg/kg) to 690 mg/kg, below the MTCA Method A cleanup level. Leachable lead (as analyzed by the toxicity characteristic leaching procedure) was also reportedly detected in stockpiled soil above the regulatory limit for hazardous waste. The stockpiled soil was removed from the Site in April 2000.

Seattle Public Utilities (SPU) conducted inspections at the Site in 2003 and 2005. During the 2005 inspection, accumulated solids were collected from storm drains and catch basins in the tank area, parking lot, and north of the loading dock area. PCBs were detected at concentrations up to 2,200 mg/kg in these storm drain solids samples, above the MTCA Method A cleanup level for PCBs in soil. SPU suggested that the storm drain system at the Site be cleaned and re-sampled.

In 2003 and 2004, a Phase I Environmental Site Assessment (ESA) and a limited subsurface investigation were conducted at the Site by Farallon Consulting. At least three USTs were identified at the Site, and included one 15,000-gallon fuel oil UST west of building 13, a UST to the north of building 13, and one 1,000-gallon gasoline UST located on the southeastern portion of the Site. In June 2003, eight soil borings and one test pit were completed at the Site to assess the potential for soil and groundwater impacts from these USTs. Soil samples contained gasoline, diesel, oil, PCBs, or VOCs but concentrations were below the MTCA Method A cleanup levels. Groundwater samples were analyzed for TPH as gasoline, diesel, and oil, benzene, toluene, ethylbenzene, and xylenes (BTEX), and VOCs, and the reported concentrations were below respective MTCA Method A cleanup levels.

In 2008, SPU sampled storm drain solids from catch basins along the north end of the Rainier Commons property, and identified PCBs at concentrations ranging from 8.4 mg/kg to 189 mg/kg, corrected for dry weight. In addition to PCBs, 4-methylphenol, dibenzofuran, PAHs, carbazole, and phthalates were detected in storm drain solid samples. Following jet cleaning of the storm drains, accumulated solids from one catch basin along Airport Way South and South Stevens Street was sampled in February 2009. PCBs were detected in storm drain solids at a concentration of 0.5 parts per million (ppm).

In March 2009, the Environmental Protection Agency (EPA) conducted a PCB compliance inspection at the Site. No PCB-containing transformers were identified at the Site, however oil leaking from an elevator gearbox contained PCBs (8.9 micrograms per kilogram (ug/kg)) and chlordane. A storm drain solids sample was collected from a catch basin between buildings 3 and 13, and contained PCBs at a concentration of 105 mg/kg. Paint samples collected from the exterior of building 13 and paint chips collected from the building driveway contained PCBs at concentrations up to 10,000 mg/kg. Reportedly, in 2005, the exterior of the former Rainier Brewery building had been painted in an attempt to encapsulate paint containing PCBs.

In 2010, EPA conducted indoor air sampling at the Site, as well as surface wipe and vacuum dust samples. Air samples did not contain PCBs at or above the laboratory detection limit (0.015 micrograms per cubic meter to 0.025 micrograms per cubic meter), however the detection limit is above the MTCA Method B cleanup level (carcinogenic) for PCBs in air. The Washington State Department of Health evaluated these results in 2013, and concluded that touching, breathing, or accidentally ingesting PCBs from dust and air inside the Rainier Commons buildings was not expected to harm people's health.

In 2013, EPA approved a general work plan for the former Rainier Brewery to remove PCB-containing paint at the Site. The first phase of the project reportedly began on June 11, 2014.

In September 2014, a complaint was filed with Ecology regarding the PCB mitigation project occurring at the Old Rainier Brewery. Further information regarding the specifics of this cleanup action were not available for review. The complainant reported that the proper cleanup measures were not being followed at the Site, and that paint debris and dust containing PCBs was left uncontained at the Site, and exposed to air and water. Additionally, scaffolding erected at the Site was made from wood planks, which was not approved in the work plan due to concerns regarding PCB particles being absorbed into the wood. The complainant also reported that construction workers were not properly certified or wearing the correct protective equipment.

### **CURRENT SITE CONDITIONS:**

As of the most recent storm drain solids sampling event, PCBs were present in storm drain solid samples at concentrations above the MTCA Method A cleanup level for PCBs in soil. PCBs were not detected in indoor air samples above the laboratory detection limit, however the detection limit is above the MTCA Method B cleanup level for PCBs in air. Cleanup of PCB paint at the Site is currently ongoing.

# SITE HAZARD ASSESSMENT

## Worksheet 1

### Summary Score Sheet

Groundwater at the POS building (former UST area), on tax parcel 7666203110, contained concentrations of gasoline, diesel, and motor oil above the MTCA Method A cleanup levels in 2000, however additional monitoring reports were not available for review in Ecology's files.

The approximate depth to groundwater is 7 to 11 feet below ground surface, with groundwater flowing to the northwest or southwest (estimated based on surface topography). Subsurface soils are fill on top of silty sand (based on test pits, UST excavations, and boring logs).

#### SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for Washington Ranking Method (WARM) scoring

☐ **Surface Water**

PCBs were detected in storm drain solids samples from onsite catch basins (exact locations unknown) at concentrations above the MTCA Method A cleanup level for PCBs in soil. However, stormwater at the Site discharges to a combined sewer system, and stormwater is assumed to be treated through the sewer treatment facility.

☒ **Air**

PCBs were not detected in indoor air samples, however the detection limit was above the MTCA Method B cleanup level (carcinogenic) for PCBs in air. Gasoline was detected in Site groundwater as recently as 2000 at concentrations above the MTCA Method A cleanup level. Diesel and oil were also detected in groundwater, but are not expected to impact the air route due to low volatility.

☒ **Groundwater**

In 2000, gasoline, diesel, and oil were detected in groundwater samples collected from the UST area at concentrations above the MTCA Method A cleanup levels.

The UST area received an NFA for TPH in soil in 2000, however separate NFA determinations for soil and groundwater at the same site are no longer the procedure under the VCP. It is unclear whether the NFA for soil was recinded when the Site was terminated from the VCP in 2007, when it may have been replaced with a letter indicating partial sufficiency of the cleanup action.

Lead is suspected in Site soil and groundwater based on prior detection of lead in stockpiled soil removed from the UST area. Groundwater should be sampled for lead during future site characterization or remediation work.

The Site is currently undergoing cleanup of PCB-containing paint under EPA oversight. The Site Hazard Assessment (SHA) and ranking under the Washington Ranking Method (WARM) are reflective of information available regarding the Site at the time of ranking.

#### ROUTE SCORES:

Surface Water/ Human Health:

Surface Water/ Environment:

Air/ Human Health: 29.3

Air/ Environment: 1.3

Groundwater/ Human Health: 31.1

**Overall Rank: 4**

#### REFERENCES:

- 1 Enviros, 1989, Notification of Petroleum Product Release from Underground Storage Tanks Rainier Brewing Company Seattle Washington. November 21, 1989.
- 2 Enviros, 1990, Rainier Brewing Company Report of Findings and Proposed Remediation Plan for Treatment of Contaminated Soil Associated with Underground Storage Tanks. March 7, 1990.

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- 3 Enviro, 1990, Rainier Brewing Company Report of Findings and Proposed Remediation Plan for Waste Oil Contaminated Material. November 28, 1990.
  - 4 Farallon Consulting, 2004, Limited Subsurface Investigation Letter Report Fomer Rainier Brewery Property 3100 Airport Way South, Seattle, Washington. Prepared for Rainier Commons, LLC. April 14, 2004.
  - 5 Farallon Consulting, 2004, Phase I Environmental Site Assessment Former Rainier Brewery 3100 Airport Way South Seattle, Washington. Prepared for Rainier Commons, LLC. April 14, 2004.
  - 6 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed October 2014.  
<http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx>
  - 7 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. <http://mcdc.missouri.edu/websas/caps10c.html>. Accessed October 2014.
  - 8 National Climatic Data Center 2011 Local Climatological Data for Seattle, Seattle Tacoma Airport. <http://www1.ncdc.noaa.gov/pub/orders/IPS-90B1F39F-6CFA-4A6B-AA82-5ED1FF897CCC.pdf>
  - 9 Parametrix, Inc., 2000, Abandonment of Treatment System Piping and Disposal of Soil and Miscellaneous Materials, POS Warehouse, Rainier Brewery Site, 3100 Airport Way South, Seattle, Washington. Prepared for the Stroh Brewery Company. May 10, 2000.
  - 10 Parametrix, Inc., 2000, Letter Re: Results of April 2000 Groundwater Monitoring, Rainier Brewery Site. Prepared for the Stroh Brewery Company. May 15, 2000.
  - 11 Parametrix, Inc., 2000, Voluntary Cleanup Report Rainier Brewery POS Warehouse Seattle, Washington. Prepared for the Stroh Brewery Company. January 2000.
  - 12 Science Applications International Corporation, 2009, Lower Duwamish Waterway Early Action Area 1 Duwamish/Diagonal Way (RM 0.1 to 0.9 East) Summary of Existing Information and Identification of Data Gaps for the Duwamish/Diagonal CSO/SD Basin. Prepared for Washington State Department of Ecology. August 2009.
  - 13 United States Environmental Protection Agency Region 10, 2014, Rainier Commons PCB Project. [yosemite.epa.gov/R10/OWCM.NSF/pcb/rainier-commons](http://yosemite.epa.gov/R10/OWCM.NSF/pcb/rainier-commons) Updated October 13, 2014. Accessed October 13, 2014.
  - 14 United States Environmental Protection Agency, 1990, Letter Re: January 19, 1990 Environmental Protection Agency (EPA) inspection. June 26, 1990.
  - 15 WARM Scoring Manual
  - 16 WARM Toxicological Database
  - 17 Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update. <http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIsopluvials.pdf>
  - 18 Washington State Department of Ecology, 1990, TSCA Inspection Report Rainier Brewing Company Seattle, Washington. January 19, 1990.
  - 19 Washington State Department of Ecology, 1996, Environmental Report Tracking System Incident ID:N23447. March 13, 1996.
  - 20 Washington State Department of Ecology, 2014, Environmental Report Tracking System ERTS# 651827. September 25, 2014.
  - 21 Washington State Department of Health, 2013, Health Consultation Rainier Commons LLC Polychlorinated Biphenyls (PCBs) Exposure Seattle, King County, Washington. April 16, 2013.
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# **SITE HAZARD ASSESSMENT**

## **Worksheet 2**

### **Route Documentation**

Cleanup Site ID: 5478

Rainier Brewery

Facility/Site ID: 9192461

#### **1. SURFACE WATER ROUTE**

**List those substances to be considered for scoring:**

Not applicable

**Explain the basis for choice of substances to be used in scoring:**

**List those management units to be considered for scoring:**

**Explain basis for choice of unit to be used in scoring:**

Stormwater discharges to a combined sewer system. Stormwater from the Site is assumed to be treated through the sewer treatment facility.

#### **2. AIR ROUTE**

**List those substances to be considered for scoring:**

Gasoline

**Explain the basis for choice of substances to be used in scoring:**

Prior detection in Site groundwater and soil

**List those management units to be considered for scoring:**

Soil vapor

**Explain basis for choice of unit to be used in scoring:**

Potential for vapor transport

#### **3. GROUNDWATER ROUTE**

**List those substances to be considered for scoring:**

Gasoline, diesel, oil

**Explain the basis for choice of substances to be used in scoring:**

Prior detection in Site groundwater at concentrations above the MTCA Method A cleanup levels

**List those management units to be considered for scoring:**

Groundwater

**Explain basis for choice of unit to be used in scoring:**

Presence in Site groundwater (2000)

**Worksheet 5****Air Route**

CSID: 5478

Site Name: Rainier Brewery

**1.0 Substance Characteristics****1.1 Introduction (WARM Scoring Manual) - Please Review before scoring****1.2 Human Toxicity**

Substance	Ambient Air Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Gasoline	10	3	X	5

Highest Value 10

Bonus Points? 0

Toxicity Value **1.3 Mobility**

Gaseous Mobility	Max Value:	4
Particulate Mobility	Soil Type:	
	Erodibility:	
	Climatic Factor:	

Mobility Value **1.4 Final Human Health Toxicity/Mobility Matrix Value**HH Final Matrix Value **1.5 Environmental Toxicity/Mobility**

Substance	Non-human Mammalian Inhalation Toxicity (mg/m3)	Acute Value	Mobility Value	Table A-7 Matrix Value
Gasoline	31947	3	4	6

Env. Final Matrix Value **1.6 Substance Quantity**

Amount: Less than 100 square feet

Basis: Estimated extent of petroleum-impacted soil

Substance Quantity Value

**Worksheet 5****Air Route**

CSID: 5478

Site Name: Rainier Brewery

**2.0 Migration Potential****2.1 Containment**Containment Value 

Explain Basis: Soil cover of at least 2 feet but  
no vapor collection system present

**3.0 Targets****3.1 Nearest Population**Population Distance Value 

Approximately 500 feet to the nearest dwelling

**3.2 Distance to and name of nearest sensitive environments**Sensitive Environment Value 

Approximately 1,300 feet to the 12th Avenue South Viewpoint Park

**3.3 Population within 0.5 miles**Population Value 

2,696 population

**4.0 Release**Release to Air Value 

Explain basis for scoring a release to air:

No confirmed release to air

**Pathway Scoring - Air Route, Human Health Pathway**

$$AIR_H = (SUB_{AH} * 60/329) * [REL_A + (TAR_{AH} * 35/85)] / 24$$

Where:

$$SUB_{AH} = (\text{Human toxicity} + 5) * (\text{Containment} + 1) + \text{Substance Qty}$$

$$REL_A = \text{Release to Air}$$

$$TAR_{AH} = \text{Nearest Population} + \text{Population within 1/2 mile}$$

SUB <sub>AH</sub>	151
REL <sub>A</sub>	0
TAR <sub>AH</sub>	61.9
AIR <sub>H</sub>	29.3

**Pathway Scoring - Air Route, Environmental Pathway**

$$AIR_E = (SUB_{AE} * 60/329) * [REL_A + (TAR_{AE} * 35/85)] / 24$$

Where:

$$SUB_{AE} = (\text{Environmental Toxicity Value} + 5) * (\text{Containment} + 1) + \text{Substance Qty}$$

$$REL_A = \text{Release to Air}$$

$$TAR_{AE} = \text{Nearest Sensitive Environment}$$

SUB <sub>AE</sub>	67
REL <sub>A</sub>	0
TAR <sub>AE</sub>	6.0
AIR <sub>E</sub>	1.3



**Worksheet 6**  
**Groundwater Route**

**CSID:** 5478

**Site Name:** Rainier Brewery

**1.0 Substance Characteristics**

**1.1 Human Toxicity**

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Gasoline	8	3	X	5
Diesel	4	5	3	X

Highest Value 8

Bonus Points? 0

Toxicity Value

**1.2 Mobility**

Cations/Anions Max Value:

Solubility Max Value: 3

Mobility Value

**1.3 Substance Quantity**

Amount: Less than 100 cubic yards

Basis: Estimated volume of remaining petroleum-impacted soil

Substance Quantity Value

**2.0 Migration Potential**

**2.1 Containment**

Containment Value

Explain Basis: Contaminated soil

**2.2 Net Precipitation**

>10 to 20 inches

Net Precipitation Value

**2.3 Subsurface Hydraulic Conductivity**

Silty sand

Conductivity Value

**2.4 Vertical Depth to Groundwater** 7 feet

Confirmed release: Yes

Depth to Aquifer Value

**3.0 Targets**

**3.1 Groundwater Usage**

Irrigation and Industrial

Aquifer Use Value

**3.2 Distance to Nearest Drinking Water Well** >10,000 feet

Well Distance Value

**3.3 Population Served within 2 Miles**

0 people

Population Served Value

**Worksheet 6**  
**Groundwater Route**

**CSID:** 5478

**Site Name:** Rainier Brewery

**3.4 Area Irrigated by GW Wells within 2 miles**

Area Irrigated Value

2 acres

**4.0 Release**

Release to Groundwater Value

Explain basis for scoring a release to groundwater:

Confirmed release to groundwater

**Pathway Scoring - Groundwater Route, Human Health Pathway**

$$GW_H = (SUB_{GH} * 40 / 208) * [(MIG_G * 25 / 17) + REL_G + (TAR_{GH} * 30 / 165)] / 24$$

Where:

$SUB_{GH} = (\text{Human toxicity} + \text{mobility} + 3) * (\text{Containment} + 1) + \text{Substance Qty}$

$MIG_G = \text{Depth to Aquifer} + \text{Net Precip} + \text{Hydraulic Conductivity}$

$REL_G = \text{Release to Groundwater}$

$TAR_{GH} = \text{Aquifer Use} + \text{Well Distance} + \text{Population Served} + \text{Area Irrigated}$

$SUB_{GH}$	156
$MIG_G$	13
$REL_G$	5
$TAR_{GH}$	4.1
$GW_H$	31.1

## Washington Ranking Method

### Route Scores Summary and Ranking Calculation Sheet

**Site Name:** Rainier Brewery

**CSID:** 5478

**Site Address:** 3100 Airport Way South

**FSID:** 9192461

#### HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	29.3	4
Groundwater	31.1	2

H=	4
M=	2
L=	0

$$\begin{array}{c} H^2 \\ 16 \end{array} + \begin{array}{c} 2M \\ 4 \end{array} + \begin{array}{c} L \\ 0 \end{array} = \frac{\quad}{8}$$

**Human Health  
Priority Bin Score:**  
**3**  
rounded up to next  
whole number

#### ENVIRONMENT ROUTE SCORES

Enter Environment Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	1.3	1

H=	1
L=	0

$$\begin{array}{c} H^2 \\ 1 \end{array} + \begin{array}{c} 2L \\ 0 \end{array} = \frac{\quad}{7}$$

**Environment  
Priority Bin Score:**  
**1**  
rounded up to next  
whole number

**Comments/Notes:**

**FINAL MATRIX  
RANKING**

**4**

#### FOR REFERENCE:

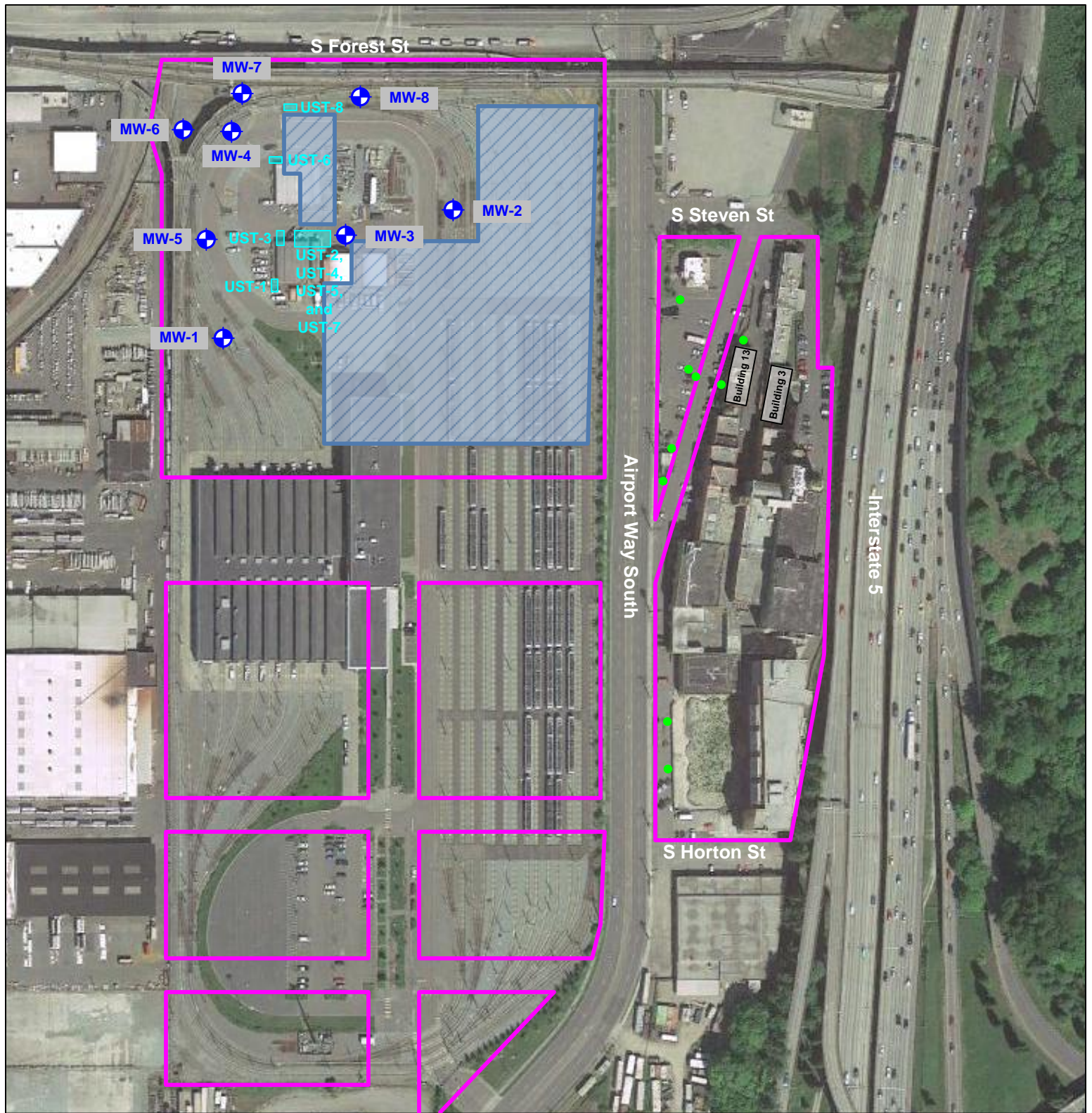
##### Final WARM Bin Ranking Matrix

Human Health Priority	Environment Priority					
	5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
N/A	3	4	5	5	5	NFA

##### Quintile Values for Route Scores - February 2015 Values

Quintile	Human Health			Environment	
	Surface Water	Air	Ground Water	Surface Water	Air
5	>= 30.7	>= 37.6	>= 51.6	>= 50.9	>= 29.9
4	>= 23.1	>= 23.8	>= 40.9	>= 31.2	>= 22.5
3	>= 14.1	>= 15.5	>= 33.2	>= 23.6	>= 14.0
2	>= 7.0	>= 8.5	>= 23.5	>= 11.0	>= 1.6
1	<= 6.9	<= 8.4	<= 23.4	<= 10.9	<= 1.5

Quintile value associated with each route score entered above



**Legend:**

- Property location (approximate)
- Former UST location (approximate)
- Former building location (approximate)
- ⊕ Monitoring well (approximate)
- 2003/2004 Soil sample (approximate)

**Notes:**

1. All locations are approximate, and not to scale.



**Rainier Brewery**  
**3100 Airport Way South**  
**Seattle, WA 98134**

**Site Overview Map**

**CSID 5478**  
 CSID5478.vsd