SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

SITE INFORMATION:

Cleanup Site ID: 8732

Seattle School District - Cooper Elementary

Facility/Site ID: 33133593

1901 SW Genesee

Seattle, King County, WA 98106

Section:	13	Latitude:	47.56301
Township:	24N	Longitude:	-122.35787
Range:	3E	Tax/Parcel ID:	1324039116

Site Scored/ranked for the February 2015 Hazardous Sites List Publication

SITE DESCRIPTION:

The Seattle School District - Cooper Elementary site (Site) is a former army signal corps transmission facility located in Seattle, King County, Washington. The 13.93-acre property is located approximately 1,700 feet from the Duwamish River, and zoned for single family (SF 7200) use.

Adjacent properties include Pigeon Point Park to the south, east, and west. Beyond the park to the north and west are single family residences. The Site is located south of Southwest Genesee Street, between 19th Avenue Southwest and 21st Avenue Southwest.

The Site is currently operated as a Pathfinder K-8 school by Seattle Public Schools.

Current activities at the Site include the operation of a school, including several outdoor playfields.

The City of Seattle reported a transformer spill at Pigeon Point Park to the Washington State Department of Ecology in 2006. Pigeon Point Park is located adjacent to the Site. According to documentation by the City of Seattle, a transformer containing polychlorinated biphenyls (PCBs) spilled onto soil at the park, however the impacted soil was reportedly cleaned up.

SITE BACKGROUND:

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

From	To	Operator/Tenant	Activity
	1998	Board of Regents of the University of Washington	
1998	2014	Seattle Public Schools	Cooper Elementary School/Pathfinder K-8

SITE CONTAMINATION:

In 1998 the Seattle School District - Cooper Elementary site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

In June 1998, two underground storage tanks (USTs) and associated piping were excavated and removed from the south end of the Site. The USTs were associated with former Site activities, and included one 1,000-gallon gasoline UST and one 500-gallon used oil UST. These USTs were removed from one excavation, along with approximately 590 tons of petroleum-impacted soil, which was disposed of offsite. The excavation was approximately 60 feet by 35 feet, and 13 feet deep. Confirmation soil samples were collected from the excavation sidewalls and base.

Seven of the eleven soil confirmation samples collected contained concentrations of gasoline (ranging from 100 milligrams per kilogram (mg/kg) to 7,600 mg/kg) above the Model Toxics Control Act (MTCA) Method A cleanup level for soil with no benzene present. Ethylbenzene and xylenes were detected at concentrations above the MTCA Method A cleanup levels in sample SW-2, along the south side of the excavation, and xylenes were detected at a concentration above the MTCA Method A cleanup level in FL-1, a floor sample from the northwest corner. Confirmation samples indicated that petroleum-impacted soil is present in the northwest and southeast

corners of the excavation.

The excavation was lined with plastic, and approximately 100 cubic yards of stockpiled soil were used to backfill the excavation, along with reportedly clean imported fill. The stockpiled soils used to fill the excavation contained concentrations of gasoline ranging from 76 mg/kg to 100 mg/kg. Benzene was not detected at or above laboratory detection limits in samples from the stockpiled soils.

The excavation reportedly stopped at the southern property line due to financial constraints, and petroleum-impacted soil is suspected to be present to the south across the property line.

PAST REMEDIATION ACTIVITIES:

No information regarding further remedial actions was available for review at Ecology.

CURRENT SITE CONDITIONS:

Soils at the Site contain concentrations of gasoline, ethylbenzene, and xylenes above MTCA Method A cleanup levels. Groundwater was not encountered in the excavation, so groundwater conditions at the Site have not been characterized.

The approximate depth to groundwater is 25 feet below ground surface, with groundwater flowing to the east (based on surface topography). Subsurface soils are sand and gravel underlain by glacial till (based on the UST excavation observations reported in the Agra Earth and Environmental Site Assessment).

SPECIAL CONSIDERATIONS:

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

☐ **Surface Water**

Release occurred in the subsurface.

☑ **Air**

Release of volatile compounds occurred to subsurface soil.

☑ **Groundwater**

Site soils contain concentrations of gasoline, ethylbenzene, and xylenes at concentrations above MTCA Method A cleanup levels, and have the potential to impact groundwater.

Groundwater has not been encountered at the Site, however shallow groundwater is suspected to be present within 25 feet of the ground surface.

ROUTE SCORES:

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	26.7	Air/ Environment:	1.5
Groundwater/ Human Health:	29.1		

Overall Rank: 4

REFERENCES:

1 Agra Earth and Environmental, 1998, UST Site Assessment Addendum at Cooper Elementary 1901 S.W. Genesee Seattle, Washington. September 9, 1998.

2 Defense Environmental Restoration Program, 1990, Site Survey Report Alaska Communications System (Seattle) King County, Washington.

3 Ecology Water Resources Explorer, accessed June 2014. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

4 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed March 2014. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx

5 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. Http://mcdc.missouri.edu/websas/caps10c.html. Accessed March 2014.

6 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

7 WARM Scoring Manual

8 WARM Toxicological Database

9 Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update. http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIspoluvials.pdf

10 Washington State Department of Ecology, 2002, Letter Re: Cooper Elementary, 1901 SW Genesee Street, Seattle/Ecology UST #459326; requesting additional information regarding site cleanup activities. September 3, 2002.

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 8732 Seattle School District - Cooper Elementary

Facility/Site ID: 33133593

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:

2. AIR ROUTE

List those substances to be considered for scoring:

Gasoline, ethylbenzene, xylenes

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

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

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, ethylbenzene, xylenes

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

Prior detection in Site soil at concentrations above 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:

Potential for transport to groundwater

Worksheet 5

Air Route

CSID: 8732 **Site Name:** Seattle School District - Cooper Elementary

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
Ethylbenzene	1	X	X	X
Xylenes	1	3	1	X

Highest Value 10

Bonus Points? 0

Toxicity Value 10

1.3 Mobility

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

Mobility Value 4

1.4 Final Human Health Toxicity/Mobility Matrix Value **HH Final Matrix Value** 20

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
Ethylbenzene	X	X	3	X
Xylenes	21714	3	3	5

Env. Final Matrix Value 6

1.6 Substance Quantity

Amount: 500 square feet

Basis: Estimated extent of remaining petroleum-impacted soil

Substance Quantity Value 3

Worksheet 5

Air Route

CSID: 8732 **Site Name:** Seattle School District - Cooper Elementary

2.0 Migration Potential

2.1 Containment Containment Value: 5

Explain Basis: At least 2 foot soil cover
but no vapor collection system present

3.0 Targets

3.1 Nearest Population Population Distance Value: 10

Approximately 650 feet to the nearest residence; Site is a school

3.2 Distance to and name of nearest sensitive environments Sensitive Environment Value: 7

Less than 100 feet to Pigeon Point Park

3.3 Population within 0.5 miles Population Value: 46

2,097 population

4.0 Release Release to Air Value: 0

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} =(Human toxicity + 5) * (Containment + 1) + Substance Qty	SUB_{AH}	153
REL_A = Release to Air	REL_A	0
TAR_{AH} = Nearest Population + Population within 1/2 mile	TAR_{AH}	55.8
	AIR_H	26.7

Pathway Scoring - Air Route, Environmental Pathway

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

Where:

SUB_{AE} =(Environmental Toxicity Value +5)*(Containment +1) +Substance Qty	SUB_{AE}	69
REL_A = Release to Air	REL_A	0
TAR_{AE} = Nearest Sensitive Environment	TAR_{AE}	7.0
	AIR_E	1.5

Worksheet 6

Groundwater Route

CSID: 8732 **Site Name:** Seattle School District - Cooper Elementary

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
Ethylbenzene	4	3	1	X
Xylenes	2	10	1	X

Highest Value 10

Bonus Points? 2

Toxicity Value 12

1.2 Mobility

Cations/Anions Max Value:

Solubility Max Value: 3 Mobility Value 3

1.3 Substance Quantity

Amount: 60 cubic yards

Basis: Estimated volume of remaining petroleum-impacted soil

Substance Quantity Value 2

2.0 Migration Potential

2.1 Containment Containment Value 10

Explain Basis: Contaminated soil

2.2 Net Precipitation >10 to 20 inches Net Precipitation Value 2

2.3 Subsurface Hydraulic Conductivity Conductivity Value 2

Glacial till with sand and gravel on top

2.4 Vertical Depth to Groundwater 25 feet

Confirmed release: No Depth to Aquifer Value 8

3.0 Targets

3.1 Groundwater Usage Aquifer Use Value 2

Irrigation of non-food crops

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

Well Distance Value 0

3.3 Population Served within 2 Miles Population Served Value 0

0 people

Worksheet 6

Groundwater Route

CSID: 8732 **Site Name:** Seattle School District - Cooper Elementary

3.4 Area Irrigated by GW Wells within 2 miles Area Irrigated Value 1

1 acres

4.0 Release Release to Groundwater Value 0

Explain basis for scoring a release to groundwater:

No 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} =(Human toxicity + mobility + 3) * (Containment + 1) + Substance Qty	SUB_{GH}	200
MIG_G=Depth to Aquifer+Net Precip + Hydraulic Conductivity	MIG_G	12
REL_G = Release to Groundwater	REL_G	0
TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated	TAR_{GH}	2.8
	GW_H	29.1

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Seattle School District - Cooper Elementary **CSID:** 8732

Site Address: 1901 Southwest Genesee **FSID:** 33133593

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	26.7	4
Groundwater	29.1	2

H= 4
M= 2
L= 0

$$\frac{H^2 + 2M + L}{8} = \frac{16 + 4 + 0}{8}$$

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	1.5	1

H= 1
L= 0

$$\frac{H^2 + 2L}{7} = \frac{1 + 0}{7}$$

Environment Priority Bin Score: **1**

rounded up to next whole number

Comments/Notes:

FINAL MATRIX RANKING **4**

FOR REFERENCE:

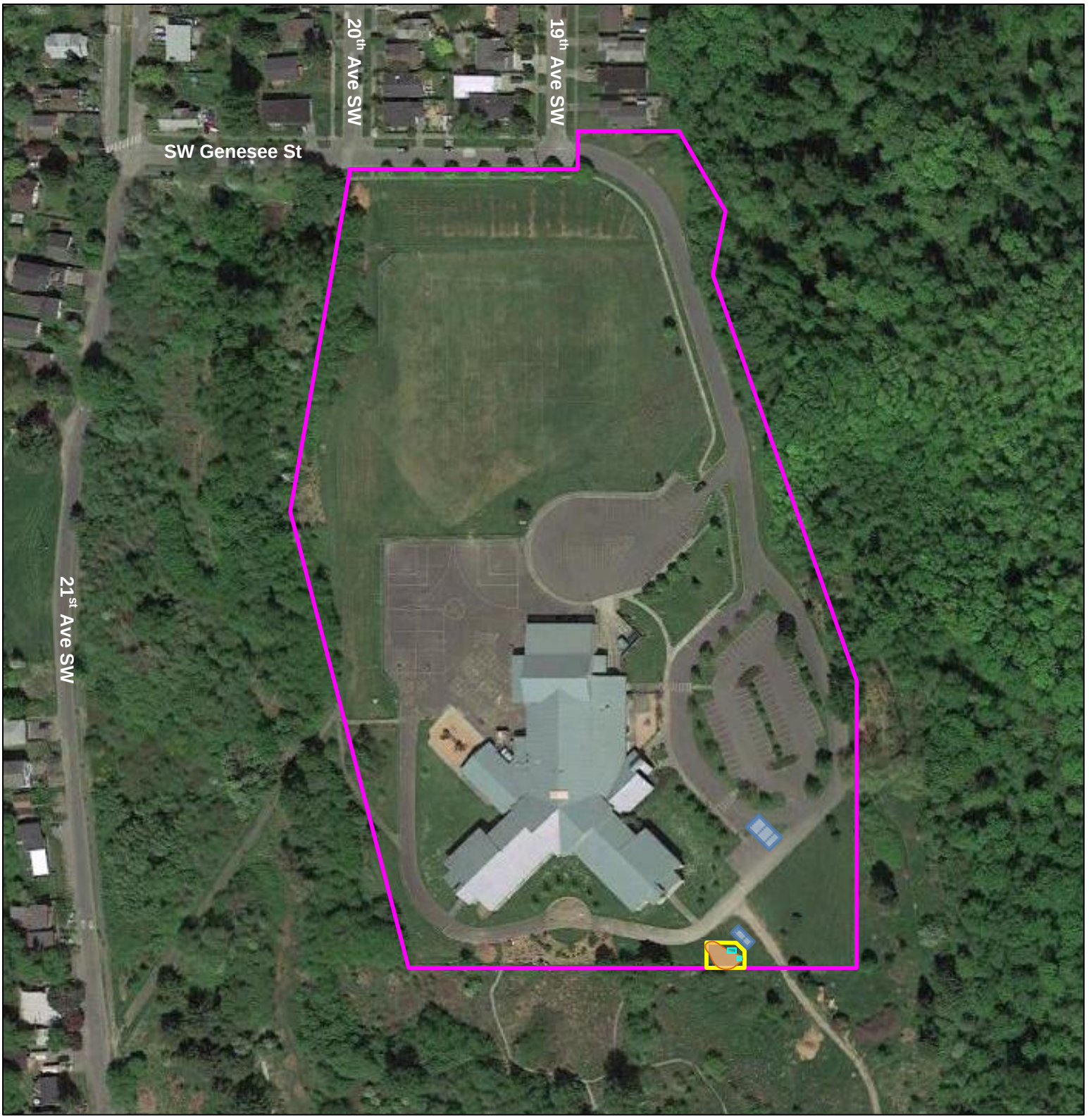
Final WARM Bin Ranking Matrix

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 - August 2014 Values

Quintile	Human Health: Surface Water	Human Health: Air	Human Health: Ground Water	Environment: Surface Water	Environment: Air
5	>= 30.7	>= 37.3	>= 51.9	>= 49.8	>= 30.3
4	>= 22.5	>= 23.0	>= 41.0	>= 30.9	>= 23.0
3	>= 13.0	>= 14.5	>= 33.1	>= 23.2	>= 14.1
2	>= 6.8	>= 8.1	>= 23.5	>= 10.7	>= 1.6
1	<= 6.7	< 8.1	<= 23.4	<= 10.6	<= 1.5

Quintile value associated with each route score entered above



Legend:

- Property location (approximate)
- Excavation area (approximate)
- Remaining soil contamination (approximate)
- Former building location (approximate)
- Former UST location (approximate)

Notes:

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

N

Seattle SD Cooper Elementary
1901 Southwest Genesee Street
Seattle, WA 98106

DEPARTMENT OF ECOLOGY
State of Washington

Site Overview Map

CSID 8732
CSID8732.vsd