SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

SITE INFORMATION:

Cleanup Site ID: 4040

Holly Park

Facility/Site ID: 8747316

7301 Martin Luther King Jr Way S

Seattle, King County, WA 98118

Section:	27	Latitude:	47.53684
Township:	24N	Longitude:	-122.28165
Range:	4E	Tax/Parcel ID:	2724049085, 2724049190, 2724049048, 3395070290, 3395070280, 3395070270, 3395070260, 3395070250, 3395070210, 3395070200, 3395070220, 3395070230, 3395070240

Site scored/ranked for the Hazardous Sites List Publication: August 2015

SITE DESCRIPTION:

The Holly Park site (Site) is a former public housing community located in Seattle, King County, Washington. The 2.73-acre property is located approximately 4,300 feet from Lake Washington, and zoned for neighborhood commercial (NC3P-85) use.

Adjacent properties include Seattle Housing Authority and residential housing to the south and west, and commercial properties to the north, consisting of a grocery store and bank. Apartment buildings are located to the east and northeast of the Site.

The Site is currently operated as a vacant property by Seattle Housing Authority.

The property is located on the southwest corner of Martin Luther King Jr Way South and South Othello Street, in the Holly Park/NewHolly neighborhood of Seattle. The property is located just south of the Othello Light Rail Station.

The Central Puget Sound Regional Transit Authority state cleanup site (Cleanup Site ID (CSID) 1050) is located approximately one block north of the Holly Park Site.

SITE BACKGROUND:

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

From	To	Operator/Tenant	Activity
1944		Union Oil Station	Gas station (tax parcel 2724049085)
1973		Phillips Petroleum Co.	Gas station (tax parcel 2724049085)
1979		Church's Fried Chicken	Fast food restaurant (tax parcel 2724049085)
2003		Honto Teriyaki	Fast food restaurant (tax parcel 2724049085)
1954	1973	Tidewater Associates Oil Co. Station	Gas station (tax parcel 2724049085)
1961	1994	Empire Properties Inc.	Empire Oil (tax parcel 2724049190)

	2002	Seattle Housing Authority	Public housing (tax parcels 2724049048, 3395070290, 3395070280, 3395070270, 3395070260, 3395070250, 3395070210, 3395070200, 3395070220, 3395070230, 3395070240)
1994	2003	Boonlieng Phavong and Keopilavong Kheuansy	Restaurant (Pizza Time) and retail store (tax parcel 2724049190)
2003	2014	Seattle Housing Authority	Unused (all tax parcels)

SITE CONTAMINATION:

In 2003 the Holly Park site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

Ecology was first notified of the Holly Park Site in 2003, and an initial site investigation was completed in September 2003. In January 2006, the Site joined the Voluntary Cleanup Program (VCP) with an ID number of NW1551. The Site was terminated from the program in March 2010 due to inactivity.

The Holly Park Site was formerly listed as two separate state cleanup sites, with tax parcel 2724049190 listed as Residence 7313 Martin Luther King Jr. Way (CSID 1582). A release at the 7313 Martin Luther King Jr. Way site was reported to Ecology in 2002, and an initial investigation was completed in 2003. The two sites were merged into one site (CSID 4040) in 2014.

Four underground storage tanks (USTs) were formerly located on the northeast corner of the Site (tax parcel ID 2724049085). Site plans in 1972 depict one 3,000-gallon UST, one 4,000-gallon UST, and one 350-gallon tank (contents unknown). The plan also shows one 10,000-gallon tank awaiting installation. A geophysical analysis indicated a possible UST was located south of the former service station building, though soil borings near the potential UST did not indicate evidence of petroleum impacts to soil.

In 2002, four geophysical anomalies were identified at tax parcel 2724049190, two of which were suspected to be USTs. In July 2002, ten borings were advanced at the Site, and seven soil samples and one groundwater sample were collected. A petroleum sheen was reportedly observed in borings B-6, B-7, and B-9, at approximately 3.5 feet below ground surface (bgs). Two soil samples collected from B-6 and B-9 at 3.5 feet bgs contained diesel-range petroleum hydrocarbons at concentrations above the Model Toxics Control Act (MTCA) Method A cleanup level. Benzene was not detected in these two samples above the laboratory reporting limit, but the reporting limit was above the MTCA Method A cleanup level. The groundwater sample, collected from B-2, contained heavy oil-range petroleum hydrocarbons at concentrations above the MTCA Method A cleanup level.

PAST REMEDIATION ACTIVITIES:

Between 2000 and 2002, the residential buildings on the western portion of the Site were demolished, leaving buildings only on tax parcels 2724049085, 3395070230, 27249190, and 2724049048. The remaining buildings were demolished between 2004 and 2005.

In 2002, a focused Phase II Environmental Site Assessment was conducted on tax parcel 2724049085, and seven borings were advanced to a depth of 9 to 13.5 feet bgs. Soil and groundwater samples were collected from the borings, and analyzed for petroleum hydrocarbons and BTEX constituents. Benzene, ethylbenzene, xylenes, and gasoline-range hydrocarbons were detected in soils at concentrations above the MTCA Method A cleanup levels. Groundwater samples contained benzene, ethylbenzene, xylenes, gasoline-range hydrocarbons, and diesel-range hydrocarbons at concentrations above MTCA Method A cleanup levels for groundwater.

In 2003, an electrical vault was installed on the north end of tax parcel 2724049085, as part of a potential property development by the Seattle Housing Authority. For the vault installation, soil was excavated to approximately 12 feet below ground surface in the vault area. During excavation, contractors encountered potential petroleum-impacted soils.The excavation was expanded to approximately 48 by 20 feet, and 9 to 13 feet deep. The vertical extent of the petroleum-impacted soils reportedly appeared to be limited to approximately 10 to 11 feet below ground surface. Approximately 350 tons of soil were excavated and removed from the Site. Visual and olfactory

evidence of petroleum products were reported in the excavation area after the removal of contaminated soils. Soil samples collected from the pit and surrounding area identified gasoline-range hydrocarbons and benzene at concentrations above the MTCA Method A cleanup levels. One groundwater sample was collected, and the reported gasoline-range hydrocarbon concentration was below the MTCA Method A cleanup level.

CURRENT SITE CONDITIONS:

Petroleum-impacted groundwater and soil were identified on tax parcel 2724049085 in 2002 and 2003 during a Phase II Environmental Site Assessment, and during installation of an electrical vault on the north edge of the Site. Petroleum-impacted soil was excavated and removed from the area of the utility vault and former UST locations, but soil borings from 2003 indicate that petroleum-impacted soil remains between the two excavation areas. On tax parcel 2724049190, petroleum-impacted soil was identified during a 2002 Phase II Environmental Site Assessment, but there is no record of any soil excavation or remediation in Ecology's files. No information was available for review regarding any potential soil or groundwater impacts on the remainder of the Site.

Since 2007, groundwater has been monitored quarterly at tax parcel 2724049085 (MW-1 through MW-3). As of the most recent sampling event on February 26, 2014, gasoline, diesel, oil, and BTEX constituents were below MTCA Method A cleanup levels at monitoring wells MW-1 and MW-3. Monitoring well MW-2 was not sampled due to the presence of separate-phase hydrocarbons.

Gasoline, benzene, ethylbenzene, xylenes, and diesel have been detected in groundwater and soils at the Site at concentrations above the MTCA Method A cleanup levels.

The approximate depth to groundwater is 4 to 7 feet below ground surface, with groundwater flowing to the northeast (based on groundwater elevations). Subsurface soils are silty sand (based on soil borings).

SPECIAL CONSIDERATIONS:

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

☐ **Surface Water**

The release likely occurred in the subsurface.

☑ **Air**

Volatile compounds were released to subsurface soil.

☑ **Groundwater**

Gasoline, diesel, and BTEX constituents have been detected in groundwater at concentrations above MTCA Method A cleanup levels.

The Site is located in a densely populated area, which influences the scoring for the air route.

ROUTE SCORES:

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	41.0	Air/ Environment:	1.5
Groundwater/ Human Health:	41.0		

Overall Rank: 1

REFERENCES:

1 GeoEngineers, 2002, Focused Phase II Environmental Site Assessment, 7301 Martin Luther King Jr. Way South, Seattle, Washington. June 20, 2002.

2 GeoEngineers, 2002, Focused Phase II Environmental Site Assessment, 7313/7315 Martin Luther King Jr. Way South, Seattle, Washington. October 16, 2002.

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

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

4 Langseth Environmental Services, Inc., 2003, Soil Characterization and Delineation Report. September 9, 2003.

5 Leidos, 2014, First Quarter 2014 Groundwater Monitoring and Sampling Report, Former Tidewater Service Station No. 303189. April 22, 2014.

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

7 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

8 Science Applications International Corporation, 2009, First Quarter 2009 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. November 16, 2009.

9 Science Applications International Corporation, 2010, First Quarter 2010 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. March 31, 2010.

10 Science Applications International Corporation, 2010, Second Quarter 2010 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. December 1, 2010.

11 Science Applications International Corporation, 2011, Second Quarter 2011 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. August 30, 2011.

12 Science Applications International Corporation, 2011, Third Quarter 2010 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. March 10, 2011.

13 Science Applications International Corporation, 2011, Third Quarter 2011 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. November 30, 2011.

14 Science Applications International Corporation, 2012, First Quarter 2012 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. July 17, 2012.

15 Science Applications International Corporation, 2012, Fourth Quarter 2011 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. March 21, 2012.

16 Science Applications International Corporation, 2012, Third Quarter 2012 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. September 13, 2012.

17 Science Applications International Corporation, 2013, First Quarter 2013 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. May 23, 2013.

18 Science Applications International Corporation, 2013, Fourth Quarter 2012 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. February 5, 2013.

19 Science Applications International Corporation, 2013, Second Quarter 2013 Groundwater Monitoring Report, Former Tidewater Service Station No. 30-3189. July 16, 2013.

20 WARM Scoring Manual

21 WARM Toxicological Database

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

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 4040 Holly Park

Facility/Site ID: 8747316

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 (benzene), ethylbenzene, xylenes

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

Presence in 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 (benzene), ethylbenzene, xylenes, diesel

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

Presence detected in groundwater

List those management units to be considered for scoring:

Groundwater

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

Prior detections in groundwater at concentrations above MTCA Method A cleanup levels

Worksheet 5

Air Route

CSID: 4040 **Site Name:** Holly Park

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 (benzene)	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 (benzene)	31947	3	4	6
Ethylbenzene	X	X	3	X
Xylenes	21714	3	3	5

Env. Final Matrix Value 6

1.6 Substance Quantity

Amount: 850 square feet

Basis: Estimated area of remaining soil contamination based on soil borings

Substance Quantity Value 4

Worksheet 5

Air Route

CSID: 4040 **Site Name:** Holly Park

2.0 Migration Potential

2.1 Containment Containment Value: 5

Explain Basis: Release occurred in the subsurface
with at least 2 feet of soil cover and no vapor collection system

3.0 Targets

3.1 Nearest Population Population Distance Value: 10

200 feet to nearest dwelling

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

525 feet to the Othello Playground

3.3 Population within 0.5 miles Population Value: 75

8,984 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}	154
REL_A = Release to Air	REL_A	0
TAR_{AH} = Nearest Population + Population within 1/2 mile	TAR_{AH}	85
	AIR_H	41.0

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}	70
REL_A = Release to Air	REL_A	0
TAR_{AE} = Nearest Sensitive Environment	TAR_{AE}	7
	AIR_E	1.5

Worksheet 6

Groundwater Route

CSID: 4040 **Site Name:** Holly Park

1.0 Substance Characteristics

1.1 Human Toxicity

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Gasoline (benzene)	8	3	X	5
Ethylbenzene	4	3	1	X
Xylenes	2	10	1	X
Diesel	4	5	3	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: 95 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 3

Silty sand

2.4 Vertical Depth to Groundwater 0 to 25 feet

Confirmed release: Yes Depth to Aquifer Value 8

3.0 Targets

3.1 Groundwater Usage Aquifer Use Value 4

Private supply, but alternate sources are available with minimum hookup requirements

3.2 Distance to Nearest Drinking Water Well >5,000 to 10,000 feet

Well Distance Value 1

3.3 Population Served within 2 Miles Population Served Value 2

3 people

Worksheet 6

Groundwater Route

CSID: 4040 **Site Name:** Holly Park

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

3 acres

4.0 Release Release to Groundwater Value 5

Explain basis for scoring a release to groundwater:

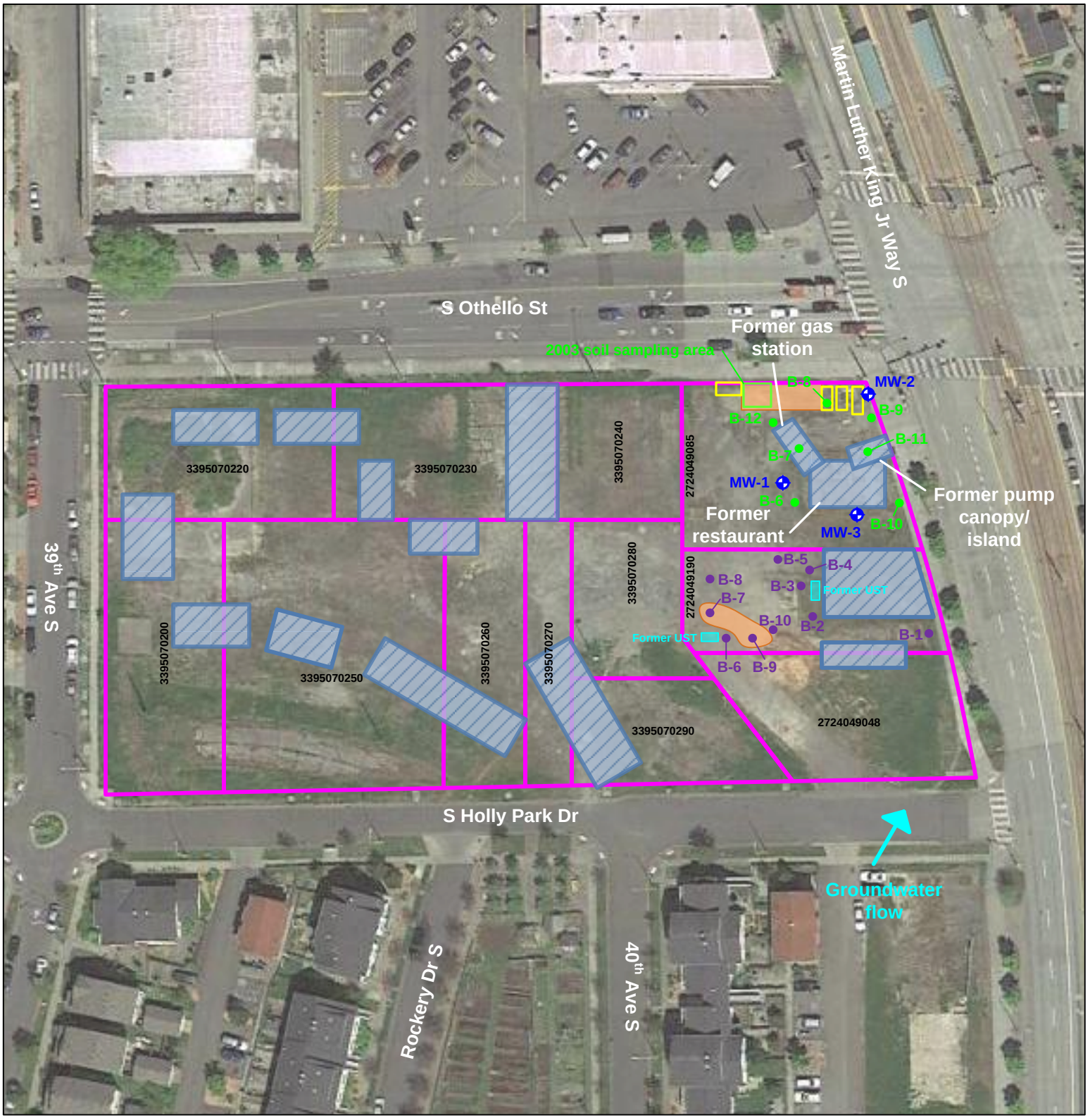
Confirmed release to groundwater

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} =(Human toxicity + mobility + 3) * (Containment + 1) + Substance Qty	SUB_{GH}	200
MIG_G=Depth to Aquifer+Net Precip + Hydraulic Conductivity	MIG_G	13
REL_G = Release to Groundwater	REL_G	5
TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated	TAR_{GH}	8.0
	GW_H	41.0



Legend:

- Property location (approximate)
- Excavation area (approximate)
- Former building location (approximate)
- Remaining soil contamination (approximate)
- Monitoring well (approximate)
- Soil sample: 7301 Martin Luther King Jr. Way South (approximate)
- Soil sample: 7313 Martin Luther King Jr. Way South (approximate)

N

Notes:

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

Holly Park
7301 Martin Luther King Jr Way South
Seattle, WA 98118

DEPARTMENT OF ECOLOGY
State of Washington

Site Overview Map

CSID 4040
CSID4040.vsd

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Holly Park **CSID:** 4040

Site Address: 7301 Martin Luther King Jr. Way South **FSID:** 8747316

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	41.0	5
Groundwater	41.0	4

H=	5
M=	4
L=	0

$$\frac{H^2 + 2M + L}{8} = \frac{25 + 8 + 0}{8}$$

Human Health Priority Bin Score: **5**

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 **1**

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 Surface Water	Air	Ground Water	Environment 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