

SITE HAZARD ASSESSMENT

Worksheet 1

Summary Score Sheet

SITE INFORMATION:

American Linen Supply Co. Dexter Ave.
700 Dexter Ave. North
Seattle, King County, WA 98109

Cleanup Site ID: 12004

Facility/Site ID: 3573

Section:	30	Latitude:	47.62560
Township:	25N	Longitude:	-122.34120
Range:	04E	Tax/Parcel ID:	224900-0285

Site scored/ranked for the Hazardous Sites List Publication: February 2018

SITE DESCRIPTION:

The American Linen Supply Co. Dexter Ave. site (Site) is a former industrial laundry and dry cleaning facility located in Seattle, King County, Washington. The 1.4-acre property is located approximately 500 feet from Lake Union, and zoned for mixed (SM-85) use.

The property is on the northeast corner of the intersection of Roy Street and Dexter Avenue North in an area of mixed industrial, office, and commercial uses. To the north is a mixed use commercial/apartment building; to the east is a maintenance facility owned by Seattle City Light; to the south across Roy Street are vacant parcels owned by the Seattle Department of Transportation and used for parking and storage; to the west across Dexter Avenue North are apartment buildings.

The Site is currently operated as a vacant property by BMR Dexter LLC 732163 (c/o Paradigm Tax Group LLC).

The property was occupied by residences until it was developed into a laundry facility in 1925. By 1947, the laundry contained washers, tumblers, a starch cooker, extractors, tubs, and a bleach machine. One 500-gallon and two 1,000-gallon underground storage tanks (USTs) were reportedly present, contents not specified. A chemical pump and a UST of unknown capacity were present and there were multiple USTs below the boiler rooms, presumably used to store fuel. Dry cleaning operations ceased in the mid-1990s.

Between approximately 1930 and 1966, a refueling station operated in the northwest portion of the property. The service station was equipped with as many as two 5,000-, two 1,400-, four 3,500-, and one 550-gallon USTs. An additional refueling station with as many as three USTs operated on the northeast portion of the property between approximately 1947 and 1966.

In 1986, a wastewater treatment system was constructed, including a dry coagulant tank, an acid tank, a sludge storage tank, a caustic tank, and a propane tank.

During the mid to late 1990s, a variety of businesses operated at the property, including an autobody shop, a bakery, a tire store, and a rental car operation.

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>
1924	2015	American Linen Supply	Industrial laundry and dry cleaning, petroleum service station
2015	2017	700 Dexter LLC	None
2017	2017	BMR-Dexter LLC	None

SITE CONTAMINATION:

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In 2012 the American Linen Supply Co. Dexter Ave. site was reported to Washington State Department of Ecology (Ecology) and placed on the Confirmed and Suspected Contaminated Sites List (CSCSL).

Releases from historical dry cleaning and service station operations caused soil and ground water contamination at and down-gradient (east) of the property.

The following environmental investigations have been conducted at the property and in the vicinity:

- 1992 Phase I and Phase II environmental site assessments (ESAs)
- 1997 Phase II ESA
- 2000 subsurface investigation
- 2001 supplemental remedial investigation
- 2004 and 2009 ground water sampling events
- Subsurface investigations and remedial actions conducted on east-adjointing properties in 1992 through 2002
- Environmental investigation conducted upgradient in 2008
- 2010 and 2011 ground water sampling events
- 2012 subsurface soil and ground water investigations
- 2011 and 2012 preferred pathway investigation.

The maximum concentrations of analytes detected in soil and ground water within the property boundaries are summarized in Table 1.

REMEDIATION ACTIVITIES:

In March 2013, four 6,000-gallon USTs and one 500- to 600-gallon UST that previously contained diesel or oil were removed from the central portion of the property. Four of the tanks were in good condition and one was in poor condition. All of the tanks appeared empty. Soil samples from the limits of the excavations did not exceed CULs. The excavations were backfilled with recycled concrete.

In January 2014, a partial cleanup was conducted at the property. Electrical resistance heating was used to heat the soil to a depth of 40 feet bgs throughout the property, causing the contamination in the soil to volatilize into a vapor. A soil vapor extraction system was used to capture and treat the vapors. Over 12,000 pounds of VOCs were reportedly removed from the soil.

CURRENT SITE CONDITIONS:

There are a total of 29 sites listed on Ecology's Confirmed and Suspected Contaminated Sites List within a quarter mile of the property. The closest are Seattle SD 1 Facilities Building across Valley Street to the north of the property, Seattle Roy Aloha Shops across 8th Avenue North to the east of the property, and Auto Service Europa across Dexter Avenue North to the west of the property.

There are 18 active monitoring wells on or within 100 feet of the property. The Washington State Department of Health has no records of ground water used as a drinking water source within Section 30/Township 25N/Range 04E or any of the neighboring sections. One well used for irrigating 20.5 acres is 3,200 feet northwest of the property.

The property itself and those located west, north, and east are covered by pavement. The property to the south is a construction staging area and is largely bare dirt.

The approximate depth to groundwater is 10-20 feet below ground surface, with groundwater flowing to the east and southeast. Subsurface soils are up to 30 feet of fill, consisting of gravel, cobbles, concrete, asphalt, metal, glass, and wood debris, overlaying lacustrine deposits consisting of soft to medium stiff clay and silt.

SPECIAL CONSIDERATIONS:

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

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

Surface Water

No documented releases to surface water.

Air

Volatile chemicals are present in soil and ground water.

Groundwater

Documented releases of VOCs and petroleum to ground water.

ROUTE SCORES:

Surface Water/ Human Health:

Surface Water/ Environment:

Air/ Human Health: 47.9

Air/ Environment: 2.1

Groundwater/ Human Health: 41.3

Overall Rank: 1

REFERENCES:

- 1 iMap. King County iMap Interactive Mapping Tool. Available at:
<http://www.kingcounty.gov/services/gis/Maps/imap.aspx>.
- 2 MO CDC. Missouri Census Data Center. Circular Area Profiles (CAPS) - Version 10C.
Available at: <http://mcdc.missouri.edu/websas/caps10c.html>.
- 3 SoundEarth. 2013. Remedial Investigation Report, 700 Dexter Property, 700 Dexter Avenue North, Seattle, Washington. Prepared for: Frontier Environmental Management LLC, Denver, Colorado. Prepared by: SoundEarth Strategies, Seattle, Washington.
- 4 WARM Scoring Manual. Washington Ranking Method Scoring Manual. Ecology publication number 90-14. Revised April 1992.
- 5 WARM Toxicity Database. Toxicology Database for Use in Washington Ranking Method Scoring. Ecology publication number 92-37. Updated by P. Tomlinson, July 2017.
- 6 WDOH. Washington State Department of Health, Division of Environmental Health, Office of Drinking Water, Water System Database. Available at:
<https://fortress.wa.gov/doh/eh/portal/odw/si/Disclaimer.aspx?Page=FindWaterSystem.aspx>

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 12004

American Linen Supply Co. Dexter Ave.

Facility/Site ID: 3573

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

None

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

No documented release

List those management units to be considered for scoring:

None

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

None

2. AIR ROUTE

List those substances to be considered for scoring:

PCE, TCE, benzene

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

Detected above CULs in soil and ground water

List those management units to be considered for scoring:

Soil

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

Shallow soil concentrations exceeding CULs.

3. GROUNDWATER ROUTE

List those substances to be considered for scoring:

PCE, TCE, benzene

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

Detected above CULs in ground water

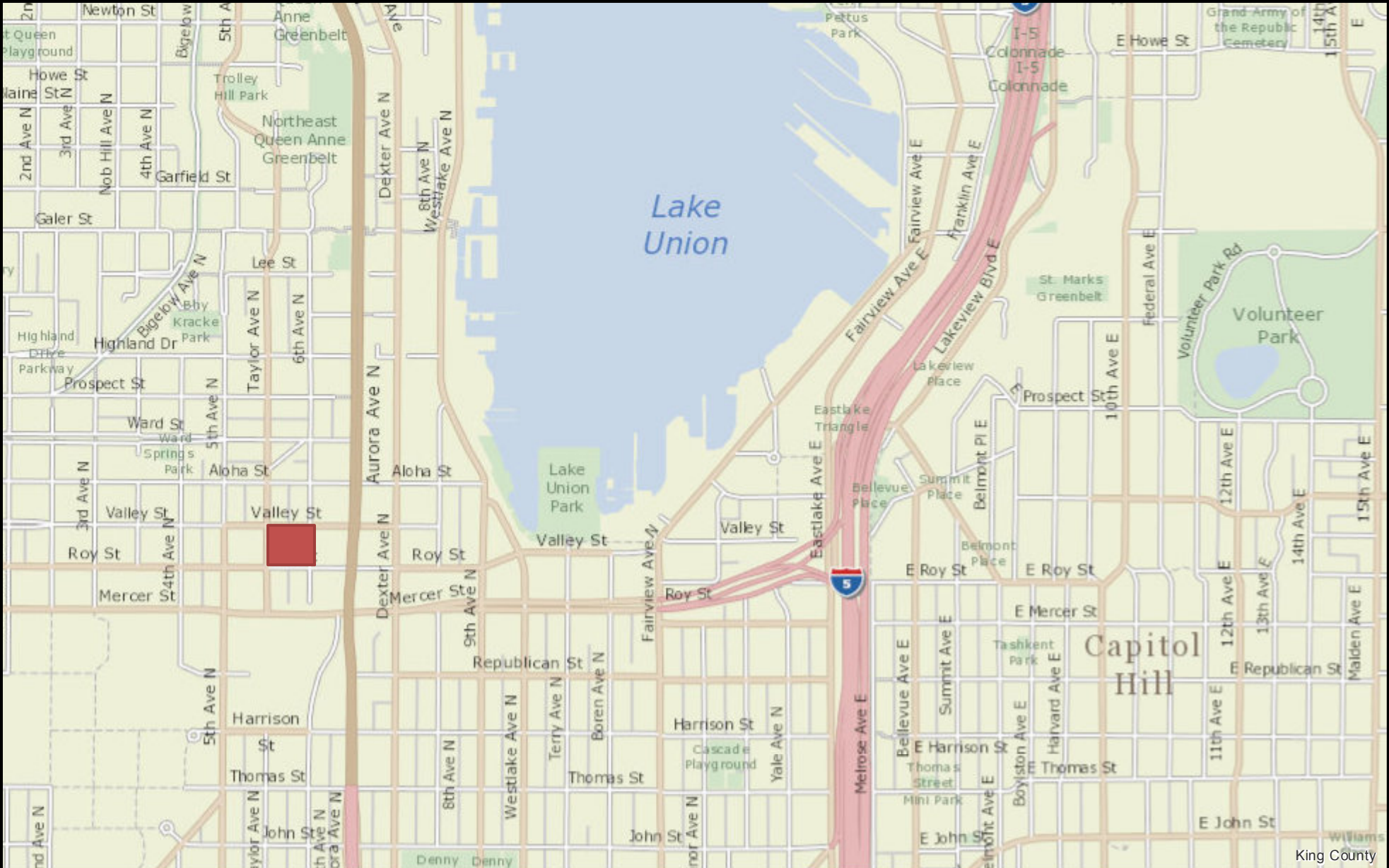
List those management units to be considered for scoring:

Ground water

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

Ground water concentrations exceeding CULs

American Linen Location Map



King County

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Date: 8/30/2017

Notes:



American Linen Vicinity Map



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Date: 8/30/2017

Notes:



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Historical Structures at American Linen



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Date: 8/30/2017

Notes:

Blue indicates historical service station structures

Red indicates historical dry cleaning structures

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Table 1. Maximum Concentrations in Soil at American Linen

Analyte	Maximum Concentration (mg/kg)	Location	Depth (feet bgs)	Method A (mg/kg)
GRO	260	DB14	10	30
Benzene	0.059	DB14	10	0.03
PCE	170	B-9	4	0.05
TCE	2.3	P-08/W-MW-04	9-9.5	0.03
VC	0.71	P-08/W-MW-04	9-9.5	0.67

Table 2. Maximum Concentrations in Ground Water at American Linen in 2013

Analyte	Maximum Concentration (µg/L)	Location	Method A (µg/L)
GRO	7,200	DB14	800
Benzene	100	DB14	5
PCE	230,000	DB05A	5
TCE	4,800	DB12	5
cis-DCE	3,100	DB12	16
VC	140	DB14	0.2

Worksheet 4

Surface Water Route

CSID: 12004

Site: American Linen

Surface water route not scored.

Worksheet 5

Air Route

CSID: 12004

Site: American Linen

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction

No scoring in Section 1.1.

1.2 Human Toxicity

Substance	Amb. Air Stnd. Value		Acute Toxicity Value		Chronic Toxicity Value		Carcinogenicity	
	(ug/m ³)	Score	(mg/m ³)	Score	(ug/m ³)	Score	WOE	Score
Benzene	0.0345	10	31947	3	8.57E-03	8	2.73E-02	5
PCE	0.169	10	4000	5	1.14E-02	5	7.28E-04	3
TCE	0.5	10	15583	3	5.71E-04	10	1.44E-02	5

Maximum score: 10

Bonus points: 2

Source: WARM Toxicity Database

Human Toxicity Score: 12

Range: 1-12

1.3 Mobility

Gaseous Mobility

Substance	Vapor Pressure		Henry's Law Value	
	Value (mm Hg)	Score	(atm-m ³ /mol)	Score
Benzene	95	4	0.00556	4
PCE	18	4	0.0182	4
TCE	58	4	0.0103	4

Maximum score: 4

Source: WARM Toxicity Database

Particulate Mobility

Soil type: Surface covered by pavement

Erodibility factor:

Climatic factor:

Mobility value:

Source: iMap

Mobility Score: 4

Range: 0-4

1.4 Human Toxicity/Mobility

Source: WARM Scoring Manual

Human Tox/Mobil Score: 24

Range: 1-24

1.5 Environmental Toxicity/Mobility

Substance	Acute	
	Value (ug/m ³)	Score
Benzene	3.19E+04	3
PCE	4.00E+03	5
TCE	1.56E+04	3
Maximum score	5	
Source:	WARM Toxicity Database	

Environmental Toxicity Score: 5
Range: 1-10

Environmental Tox/Mobil Score: 10
Range: 1-24

1.6 Substance Quantity

Quantity: 63,000 ft²
Basis: Approximate size of property
Source: iMap

Substance Quantity Score: 6
Range: 1-10

2.1 Containment

Description: Concrete cover less than two feet thick
Basis: SoundEarth (2013)

Containment Score: 5
Range: 0-10

SUBSTANCE PARAMETER CALCULATIONS

Human Health Pathway

SUBh (Human Tox/Mobil + 5) x (Containment +1) + Substance Quantity 180.0

Environmental Pathway

SUBe (Environ. Tox/Mobil + 5) x (Containment +1) + Substance Quantity 96.0

3.0 TARGETS

3.1 Nearest Population

Description: Apartments to west
Distance (ft): 75
Source: iMap

Nearest Population Score: 10
Range: 0-10

3.2 Nearest Sensitive Environment

Description: Lake Union
Distance (ft): 615
Source: iMap

Nearest Sensitive Environment Score: 7
Range: 0-7

3.3 Population within One-Half Mile

Number: 6,112
Source: MO CDC

Population within Half Mile Score: 75.0
Range: 0-75

TARGET PARAMETER CALCULATIONS

Human Health Pathway

TARh= Nearest Population + Population within Half Mile 85.0

Environmental Pathway

TARe Nearest Sensitive Environment 7.0

4.0 RELEASE

Evid. of release? No
Source: No observations of particulate or gaseous releases

Release Score (REL): 0.0
Range: 0 or 5

AIR ROUTE CALCULATIONS

Human Health Pathway

AIRh = (SUBh x 60/329) x {REL + (TARh x 35/85)} / 24 47.9

Environmental Pathway

AIRe = (SUBe x 60/329) x {REL + (TARe x 35/85)} / 24 2.1

Range: 0-100

Worksheet 6 Groundwater Route

CSID: 12004

Site: American Linen

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human toxicity

Substance	Drink. Wat. Std		Acute Toxicity		Chronic Toxicity		Carcinogenicity	
	Value (ug/L)	Score	Value (ug/L)	Score	Value (ug/L)	Score	WOE	Score
Benzene	5	8	3,306	3	4.00E-03	3	5.50E-02	5
PCE	5	8	800	5	6.00E-03	3	1.68E-03	3
TCE	5	8	2,402	3	5.00E-04	5	4.64E-02	5

Maximum score: 8
 Bonus points: 2
 Source: WARM Toxicity Database

Human Toxicity Score: 10
 Range: 1-12

1.2 Mobility

Substance	Solubility	
	Value (ug/L)	Score
Benzene	1.75E+03	3
PCE	2.00E+02	2
TCE	1.10E+03	3

Maximum value: 3
 Source: WARM Toxicity Database

Mobility Score: 3
 Range: 1-3

1.3 Substance quantity

Quantity: 7,000 yd³
 Basis: Property is approximately 7,000 yd³; assumed 1 yd thickness
 Source: iMap

Substance Quantity Score: 8
 Range: 1-10

2.1 Containment

Description: Contaminated soil in contact with ground water
 Source: SoundEarth (2013)

Containment Score: 10
 Range: 0-10

SUBSTANCE PARAMETER CALCULATION

SUB = (Human Toxicity + Mobility + 3) x (Containment + 1) + Substance Quantity

184.0

2.0 MIGRATION POTENTIAL

2.2 Net precipitation

Amount (in.): 40
Source: King County

Net Precipitation Score: 4
Range: 0-5

2.3 Subsurface Hydraulic Conductivity

Description: Sandy silt and silty sand
Source: SoundEarth (2013)

Hydraulic Conductivity Score: 3
Range: 1-4

2.4 Vertical Depth to Aquifer

Depth (ft): 10-20
Source: SoundEarth (2013)

Depth to Aquifer Score: 8
Range: 1-8

MIGRATION PARAMETER CALCULATION

MIG = Depth to Aquifer + Net Precipitation + Hydraulic Conductivity

15.0

3.0 TARGETS

3.1 Aquifer Usage

Description: Ground water not used but useable
Source: iMap, WDOH Water System Database

Aquifer Use Score: 2
Range: 1-10

3.2 Distance to Nearest Drinking Water Well

Distance (ft): >10,000
Source: iMap, WDOH Water System Database

Well Distance Score: 0
Range: 0-5

3.3 Population Served by Drinking Water Wells within Two Miles

No. of people: 0
Source: WDOH Water System Database

Population Served Score: 0.0
Range: 0-100

3.4 Area Irrigated by Wells within Two Miles

Area (acres): 20.5
Source: Water Resources Explorer

Area Irrigated Score: 3.4
Range: 0-50

TARGET PARAMETER CALCULATION

5.4

TAR = Aquifer Use + Well Distance + Population Served + Area Irrigated

4.0 RELEASE

Evid. of release? Concentrations above CULs in ground water
Source: SoundEarth (2013)

Release Score (REL):
Range: 0 or 5

GROUND WATER ROUTE CALCULATION

$$GW = (SUB \times 40/208) \times \{(MIG \times 25/17) + REL + (TAR \times 30/165)\} / 24$$

Range: 0-100

Washington Ranking Method

Route Scoring Summary and Ranking Calculation

Site Name: American Linen
Site Address: 5040 148th Avenue NE, Redmond, WA 98052
CSID: 12004
FSID: 36542815

Human Health Route Scores		
Pathway	Score	Quintile
Surface water	0.0	
Air	47.9	5
Ground water	41.3	4

Quintile	Value
High (H)	5
Middle (M)	4
Low (L)	

Human Health Pathway Quintiles - February 2015							
Quintile	Surface Water		Air		Ground Water		
1	<=	7.9	<=	8.3	<=	23.9	
2		8.0		15.7		33.0	
3		15.5		24.9		40.2	
4		21.4		39.0		50.2	
5	>=	29.8	>=	39.1	>=	50.3	

$$(H^2 + 2M + L) / 8$$

Human Health Priority Bin Score: 4.1

Environmental Route Scores		
Pathway	Score	Quintile
Surface water	0.0	
Air	2.1	3

Quintile	Value
High (H)	3
Low (L)	

Environmental Pathway Quintiles - February 2015				
Quintile	Surface Water		Air	
1	<=	11.5	<=	1.2
2		11.6		1.5
3		24.2		15.2
4		32.1		27.7
5	>=	49.7	>=	27.8

$$(H^2 + 2L) / 7$$

Environmental Priority Bin Score: 1.3

FINAL MATRIX RANKING

Human Health Priority	Environmental 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

n/a - not applicable

NFA - no further action

Site Rank: 1