# SITE HAZARD ASSESSMENT
# Worksheet 1
# Summary Score Sheet

## SITE INFORMATION:

Cleanup Site ID: 7791

Henry Bacon Building Materials

Facility/Site ID: 8428648

5210 East Lake Sammamish Pkwy SE

Issaquah, King County, WA 98027

| | | | |
|---|---|---|---|
| Section: | 21 | Latitude: | 47.55432 |
| Township: | 24N | Longitude: | -122.04290 |
| Range: | 6E | Tax/Parcel ID: | 0095000030 |

*Site Scored/ranked for the August 2013 Hazardous Sites List Publication*

## SITE DESCRIPTION:

The Henry Bacon Building Materials site is a former a retail lumber yard located in Issaquah, King County, Washington. The 15.15-acre property is located approximately 1200 feet from Issaquah River, and zoned for retail (R) use.

Adjacent properties include a mix of industrial and commercial uses. A former big box grocery store and McDonald's restaurant are located to the south of the property. Situated immediately north of the site are private residences, a church, and a bible institute. A large residential apartment development abuts the east property line of the site. West of the site is East Lake Sammamish Parkway Southeast, railroad tracks, and then several industrial structures.

Lake Sammamish State Park is located approximately 1/4 mile west of the site, while Lake Sammamish is located approximately 3/4 mile northwest of the site. The Issaquah River, which drains into Lake Sammamish, flows from the southeast to the northwest and is located about 1/4 mile southwest of the site.

The site is currently operated as a BMC West Building Materials by BMC West.

Current activities at the site include retail lumber activities, lumber storage, and millworks.

The former Henry Bacon Building Materials site is situated near the northeast corner East Lake Sammamish Parkway SE and SE 56th Street in Issaquah, approximately 15 miles east of Seattle. The site consists of parking lot and paved yard areas covered by asphalt and concrete aprons. One large structure, approximately 60,000 square feet, including offices, a retail store, and millwork activities, is located on the east side of the site. Several storage sheds and a maintenance shop are located around the property.

A gasoline pump station was located approximately where BMC West installed a storm water catchment basin, just south of the main driveway entrance to the facility from East Lake Sammamish Parkway SE. Three USTs and associated dispensers and piping were also located in this area, approximately 50 feet to the northeast of the stormwater catchment basin.

## SITE BACKGROUND:

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

| From | To | Operator/Tenant | Activity |
|---|---|---|---|
| | | Henry Bacon Building Materials | retail lumber activities |
| | 2013 | BMC West Building Materials | retail lumber activities |

## SITE CONTAMINATION:

In 1996 the Henry Bacon Building Materials site was reported to Washington Department of Ecology and placed on the LUST list with ID number 4844.

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A gasoline pump station was located in the storage yard area near the storm water catchment basin, just south of the main driveway entrance to the facility from East Lake Sammamish Parkway SE. Three USTs and associated dispensers and piping were located in this area, approximately 50 feet to the northeast of the stormwater catchment basin. The USTs and associated dispensers and piping were removed from this area in January 1989.

One soil sample was collected from the excavated soil while removing the tanks. Results indicated that soil contained concentrations of gasoline-range TPH and toluene above MTCA Method A cleanup levels at 31 mg/kg and 22 mg/kg, respectively. The area is currently paved with asphalt with surface water runoff to the west toward a drainage ditch that borders the west side of the site. During construction of the basin in 1996, petroleum impacts were observed in the subsurface soil and groundwater. An environmental investigation was then conducted to determine the nature and extent of the petroleum contamination.

TRC Environmental Corporation conducted an investigation at the site in 1996 to determine if soil and groundwater petroleum contamination were present, and to characterize the potential contamination near the storm water basin. TRC focused the subsurface investigation in the area of the catchment basin and the approximate location of the former USTs. Ten boreholes were advanced and soil samples were collected from each location. Concentrations of benzene and TPH in soils were as high as 0.076 mg/kg and 99 mg/kg, respectively, exceeding the MTCA Method A cleanup levels. Groundwater samples were also collected from four of the ten borehole locations using temporary groundwater monitoring points. Concentrations of benzene and TPH in groundwater were as high as 7.3 ug/L and 3,000 ug/L, respectively, also exceeding the MTCA Method A cleanup levels.

In 1997, TRC conducted a second phase of investigation to further evaluate the on-site extent of soil and groundwater petroleum contamination, and to monitor potential changes in petroleum concentrations in the area of the catchment basin and the former USTs. Six boreholes were advanced and soil and groundwater samples were collected from each. Concentrations of BTEX and volatile petroleum hydrocarbons (VPH) in soils were as high as 15 mg/kg, 8.8 mg/kg, 24 mg/kg, 280 mg/kg (total xylenes), and 2,200 mg/kg, respectively, exceeding the MTCA Method A cleanup levels. Concentrations of benzene, xylenes and VPH in groundwater were as high as 170 ug/L, 1,600 ug/L, and 13,000 ug/L, respectively, also exceeding the MTCA Method A cleanup levels.

## PAST REMEDIATION ACTIVITIES:

According to Ecology's records, no remedial activies have occurred at the site since investigation activities by TRC in 1997.

## CURRENT SITE CONDITIONS:

Soil contamination remains at the site in the area of the former pump station and USTs removed from the site in 1989. During investigation activities in 1996 and 1997, soil and groundwater samples were collected and contained gasoline range hydrocarbons. Concentrations of BTEX and TPH in soil exceeded the MTCA Method A cleanup levels. Concentrations of benzene, xylenes, and TPH in groundwater exceeded the MTCA Method A cleanup levels.

A drinking water well is located approximately 1,500 feet northwest of the site, and is completed to a depth of 200 feet.

The approximate depth to groundwater is 4.5 feet below ground surface, with groundwater flowing to the west northwest (assumed based on regional topography). Subsurface soils are clayey sand to sandy clay.

## SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for WARM scoring

☐ **Surface Water**

Not applicable, release is believed to have occurred in the subsurface.

☑ **Air**

Benzene, toluene, ethylbenzene, xylenes, and gasoline-range hydrocarbons are present in soil and/or

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groundwater above MTCA Method A cleanup levels

☑ **Groundwater**

Benzene, toluene, ethylbenzene, xylenes, and gasoline-range hydrocarbons are present in soil and/or groundwater above MTCA Method A cleanup levels

## ROUTE SCORES:

| | | | |
|---|---|---|---|
| Surface Water/ Human Health: | | Surface Water/ Environment: | |
| Air/ Human Health: | 20.0 | Air/ Environment: | 1.3 |
| Groundwater/ Human Health: | 74.2 | | |

**Overall Rank: 3**

## REFERENCES:


TRC Environmental Corporation, 1998, Environmental Investigation Results, 5210 East Lake Sammamish Parkway Southeast, Issaquah, Washington. 6 April.

WARM Toxicological Database

WARM Scoring Manual

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

King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed January 2013. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx

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

Washington State Department of Health Source Water Assessment Maps. March 2011 update. https://fortress.wa.gov/doh/eh/dw/swap/maps/

Ecology Water Resources Explorer, accessed January 2013. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx

FEMA Map Service Center, accessed January 2013. https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1

Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. Http://mcdc.missouri.edu/websas/caps10c.html. Accessed February 2013

# SITE HAZARD ASSESSMENT
# Worksheet 2
# Route Documentation

Cleanup Site ID: 7791 Henry Bacon Building Materials

Facility/Site ID: 8428648

## 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:**

Benzene, toluene, ethylbenzene, xylenes, and gasoline-range hydrocarbons

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

Present in soil and/or groundwater 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 to nearby structures

## 3. GROUNDWATER ROUTE

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

Benzene, xylenes, and gasoline-range hydrocarbons

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

Present in groundwater 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:**

Shallow depth to groundwater

**Worksheet 5**

**Air Route**

**CSID:** 7791 **Site Name:** Henry Bacon Building Materials

**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 | 4 |
| Ethylbenzene | 1 | x | x | x |
| Toluene | 1 | x | 1 | 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 |
| Xylenes | 21714 | 3 | 3 | 5 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Env. Final Matrix Value 6

**1.6 Substance Quantity**

Amount: >2,700 - 13,500 sq. ft.

Basis: Est. surface area of contaminated soil remaining in former UST area

Substance Quantity Value 5

**Worksheet 5**

**Air Route**

**CSID:** 7791 **Site Name:** Henry Bacon Building Materials

**2.0 Migration Potential**

**2.1 Containment** Containment Value: 5

Explain Basis: Assume 2' thick cover, no vapor collection system

**3.0 Targets**

**3.1 Nearest Population** Population Distance Value: 10

Approx. 800 feet

**3.2 Distance to and name of nearest sensitive environments** Sensitive Environment Value: 6

Approx. 1,200 feet to Issaquah River

**3.3 Population within 0.5 miles** Population Value: 31

973 population

**4.0 Release** Release to Air Value: 0

Explain basis for scoring a release to air: No confirmed release to ambient 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 | $SUB_{AH}$ | 155 |
| $REL_A$ = Release to Air | $REL_A$ | 0 |
| $TAR_{AH}$ = Nearest Population + Population within 1/2 mile | $TAR_{AH}$ | 41 |
| | $AIR_H$ | 20.0 |

**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 | $SUB_{AE}$ | 71 |
| $REL_A$ = Release to Air | $REL_A$ | 0 |
| $TAR_{AE}$ = Nearest Sensitive Environment | $TAR_{AE}$ | 6 |
| | $AIR_E$ | 1.3 |

**Worksheet 6**

**Groundwater Route**

**CSID:** 7791 **Site Name:** Henry Bacon Building Materials

**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 |
| 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: Approx 100 - 1,000 cubic yards

Basis: Estimated volume of impacted soil remaining in-place

Substance Quantity Value 3

**2.0 Migration Potential**

**2.1 Containment** Containment Value 10

Explain Basis: Contaminated subsurface soil

**2.2 Net Precipitation** 10-20 inches Net Precipitation Value 2

**2.3 Subsurface Hydraulic Conductivity** Conductivity Value 3

clayey sand

**2.4 Vertical Depth to Groundwater** Depth to Aquifer Value 8

0 - 25 feet; confirmed release to groundwater

**3.0 Targets**

**3.1 Groundwater Usage** Aquifer Use Value 9

Municipal, domestic (general and multi-tenant), commercial/industrial, irrigation

**3.2 Distance to Nearest Drinking Water Well** Well Distance Value 4

Approx. 1,000 feet

**3.3 Population Served within 2 Miles** Population Served Value 100

>10,000 people

**Worksheet 6**

**Groundwater Route**

**CSID:** 7791 **Site Name:** Henry Bacon Building Materials

**3.4 Area Irrigated by GW Wells within 2 miles** Area Irrigated Value 7.8

109 acres

**4.0 Release** Release to Groundwater Value 5

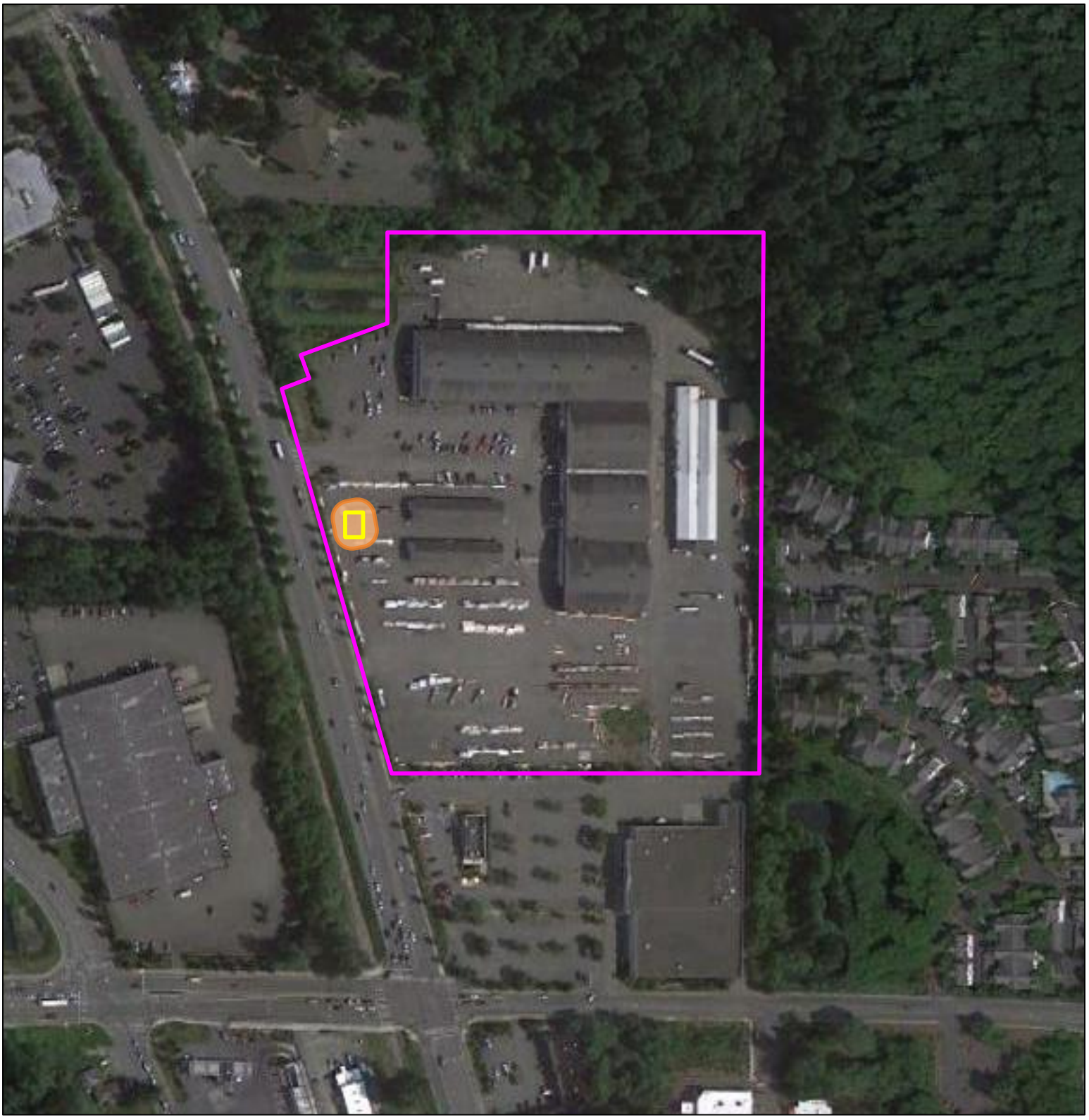
Explain basis for scoring a release to groundwater: Confirmed release to groundwater.

**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 | $SUB_{GH}$ | 201 |
| $MIG_G$=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 | $TAR_{GH}$ | 120.8 |
| | $GW_H$ | 74.2 |



Legend:

- Property location (approximate)
- Excavation area (approximate)
- Contaminated soil remaining (approximate)

Notes:

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

N

**Henry Bacon Building**
**5210 East Lake Sammamish Parkway SE**
**Issaquah, WA 98029**

DEPARTMENT OF ECOLOGY
State of Washington

## Site Overview Map

**CSID 7791**
CSID7791.vsd

## Washington Ranking Method
## Route Scores Summary and Ranking Calculation Sheet

**Site Name:** Henry Bacon Building Materials **CSID:** 7791

**Site Address:** 5210 East Lake Sammamish Pkwy SE, Issaquah, WA **FSID:** 8428648

**HUMAN HEALTH ROUTE SCORES**

Enter Human Health Route Scores for all Applicable Routes:

| Pathway | Route Score | Quintile Group |
|---|---|---|
| Surface Water | ns | 0 |
| Air | 20.0 | 3 |
| Groundwater | 74.2 | 5 |

| | |
|---|---|
| H= | 5 |
| M= | 3 |
| L= | 0 |

$$\frac{H^2 + 2M + L}{8} = \frac{25 + 6 + 0}{8}$$

**Human Health Priority Bin Score:** **4** (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 |

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

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

**Comments/Notes:**

**FINAL MATRIX RANKING** **3**

**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 2013 Values**

| | Human Health | | | Environment | |
|---|---|---|---|---|---|
| Quintile | Surface Water | Air | Ground Water | Surface Water | Air |
| 5 | >= **27.0** | >= **32.0** | >= **50.1** | >= **47.0** | >= **32.0** |
| 4 | >= **18.5** | >= **21.1** | >= **40.4** | >= **30.3** | >= **26.1** |
| 3 | >= **12.4** | >= **13.1** | >= **31.6** | >= **21.4** | >= **21.1** |
| 2 | >= **7.5** | >= **7.1** | >= **22.4** | >= **11.0** | >= **14.6** |
| 1 | < **7.5** | < **7.1** | < **22.4** | < **11.0** | < **14.6** |

Quintile value associated with each route score entered above