REMEDIAL SITE ASSESSMENT DECISION - EPA REGION II

Site Name: CANADIAN RADIUM & URANIUM **EPA ID#:** NYD987001468 **State ID#:**

Alias Site Names:

City: **County or Parish:** WESTCHESTER **State:** NY

Refer to Report Dated: 93/1/7 **Report type:** PA

Report developed by: PIRNIE

RECEIVED
AUG 27 1993
NEW YORK STATE DEPARTMENT OF HEALTH
BUREAU OF ENVIRONMENTAL
RADIATION PROTECTION

DECISION:

| | **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**

| | 1a. Site does not qualify for further remedial site assessment under CERCLA (Site Evaluation Accomplished - SEA)

| | 1b. Site may qualify for further action, but is deferred to:

|X | **2. Further Assessment Needed Under CERCLA:**

2a. Priority: |X | Higher | | Lower

2b. Other: (recommended action) SI

DISCUSSION/RATIONALE:

aka - Former International Rare Metals Refinery; Pregel's Mt. Kisco refinery. Site used for recovery of uranium from sludges and instrument/watch dials. Ceased operations in 1966, but later site surveys indicate soil contaminated with radionucleides. Releases to all 4 pathways suspected. GW - 13,000 people obtain DW within 4 miles; WHPA. SW - DW intake 10 miles downstream, but heavily dilution-weighted; fisheries and wetlands. Soil - 7 houses (18 people) live within 200 feet of site boundary and 3 workers onsite. air - suspected radioactive particulate release. Primary targets in soil and air pathways. Recommend a high-priority SSI due to primary targets.

Site Decision Made by: Amy Brochu Signature: Amy J. Brochu Date: 93/3/16

EPA Form # 9100-3

(2nd Q beer)

SITE RECORD REGION II FY: 93	DATES----WAM:	TDM:	DUE:

NAME: Canadian Radium + Uranium EPA ID: NYD982730468 STATE ID:
EVENT TYPE: PA EVENT DATE: 1/7/93 LEAD: MPI COUNTY: Westchester ST: NY
EVENT QUALIFIER: SSI RECOMMENDED ACTION: SSI - high priority
(PA,SI,ESI,HRS,RA,RI/FS,DEFER TO RCRA OR NRC,OTHER)
PATHWAY SCORES GW: 22.50 SW: 26.70 AIR: 68.91 SE/DC: 29.30 TOTAL: 41.32
COMMENTS:
aka - Foster International Rare Metals Refinery
- Riegel's Mt. Kisco Refinery
PATHWAYS OF CONCERN: soil + air
LIKELIHOOD OF SCORING:
i.Actual/Obs. release: suspected release to all 4 pathways
ii.Targets (primary, secondary): 1° R soil + air; 2° - GW + SW
iii.Hazardous Waste Characteristics: radionuclide
Additional information requirements:
Adequacy of information: (H=able to score, M=maybe, L=unlikely)
Notification of:
(Removal, Remedial, State, Fed. Facility, RCRA, NRC, Other)
REVIEWER: Amy Brecher SIGNATURE Amy J. Brecher COMP. DATE: 3/16/93
POST REVIEW EVENTS--RCRA CHECK: STATE CONCURS:

Site used for recovery of uranium from sludges + instrument/watch dials. Ceased operations in 1966, but later site surveys indicate soil contaminated w/ radionuclide release to all 4 pathways suspected.

GW - 13,000 people w/in DW w/in 4 miles; NRPA; SW - DW intake 15 miles downstream, but heavily dilution-weighted factors + wetlands; soil - 7 homes (18 people) live w/in 200 ft of site boundary + 3 workers on-site; air - suspected radioactive particulate release. Primary targets in soil + air pathways. Recommend a high-priority SSI due to primary targets

This Report was conducted under the following USEPA Documentation Procedure

Guidance for Performing Preliminary Assessments Under CERCLA Publication 9345.0-01A

Y095-PA

V AQ3
3/16/93

FINAL DRAFT
PRELIMINARY ASSESSMENT REPORT
CANADIAN RADIUM & URANIUM CORP.
MT. KISCO, NEW YORK

PREPARED UNDER

WORK ASSIGNMENT NO. 019-2JZZ
CONTRACT NO. 68-W9-0051

JANUARY 7, 1993

SUBMITTED BY:

Thomas A. Varner

THOMAS A. VARNER
SITE MANAGER

Charles LoBue

CHARLES LOBUE
ASSIGNMENT MANAGER

D. Stainken

DENNIS STAINKEN, Ph.D.
WORK ASSIGNMENT MANAGER

SITE SUMMARY

The Canadian Radium and Uranium Corporation (CR&UC) Site is located at 69 Kisco Avenue, Mt. Kisco, Westchester County, New York. The site is approximately 0.85 acre in size, and is bordered by a Conrail railroad right-of-way to the east, the Richards Home and Lumber Co. to the north, Homarus, Inc. (a small business) to the west, and the St. Francis AME Zion Church to the southwest. CR&UC is located in a commercial area of Mt. Kisco with the nearest residence located approximately 200 feet to the east.

From 1943 to approximately 1966, CR&UC recovered uranium and other radioactive elements from uranium-bearing sludge and old instrument and watch dials for the federal government's Manhattan Engineering District (MED), also known as the Manhattan Project. Prior to the 1950s, CR&UC's primary product, uranium, was processed from uranium sludge. However, from the 1950s until closure, the majority of the uranium was processed/recovered from instrument and watch dials. Under the contracts let by the federal government, any materials recovered other than uranium were the property of the processor. In addition to uranium, radium, radium-D, radon, polonium, and actinium were recovered at this facility.

In 1966, all recovery operations were discontinued, and in November and December 1966 the building was demolished and the site decontaminated. Demolition waste/debris and soil were disposed of at the Croton Point Sanitary Landfill, while materials too contaminated for disposal at the landfill were sealed in drums and disposed of by the Nuclear Diagnostic Laboratories of Peekskill, NY. During the 1966 cleanup it was determined that a portion of the south wall of the then James A. Haggerty Lumber and Millwork Inc. property north of the site, across Railroad Avenue, was contaminated. The contaminated wall was covered with plaster until radiation levels were acceptable.

On April 5, 1979, a local newspaper reported the death of the CR&UC plant manager of leukemia and cited high radioactivity levels in his body. Following this, the Assistant Commissioner of the Westchester County Department of Health and the Mt. Kisco Village Engineer conducted a field investigation of the site. Readings obtained during the investigation are reported to have ranged from background (0.015 mR/hour) to 0.35 mR/hour (three feet above the ground). It is reported that at that time it was felt that there was no health hazard present to the general public since the area exhibiting the highest dose rates was surrounded by a high chain link fence with a locked gate.

Documentation indicates that the Mt. Kisco Sewage Plant processed wastewater bearing radium and/or other radioactive materials. A May-June 1951 United States Atomic Energy Commission (USAEC) report indicated that approximately 60 percent of the radium in the sewage water was removed in passage through the treatment plant. There is no indication of the recovered sludge's concentrations or disposal.

An off-site reconnaissance was conducted on October 26, 1992. The entire site was observed to be surrounded by a six-foot stockade fence. Most of the site is devoid of vegetation. Vehicles and building materials apparently belonging to the lumber company bordering the site to the north were observed on the site property. Lumber company employees were also observed entering and leaving the area through the open gate, moving trucks and materials and stirring up dust in the process. No signs of waste were noted.

Although cleanup activities have occurred, soil contaminated by radioactive materials remains at the site. A release to groundwater is suspected. The underlying unconsolidated surficial and bedrock aquifers serve almost 13,000 people with drinking water drawn from within 4 miles of the site. The site also lies within the boundaries of a designated wellhead protection area. A release to surface water is also suspected. One drinking water intake is located 10.2

miles downstream, but the population served (over 800,000) is dilution-weighted by the 15,500 cfs flow into the reservoir. Fisheries and wetlands also exist. Seven homes are located within 200 feet of the site boundary; therefore, 18 primary targets are estimated for the soil exposure pathway. Based on historical information and recent observations related to on-site conditions, a release of hazardous substances to air in the form of contaminated particulates is also suspected. An estimated 21 (18 residents and 3 workers) people are in close proximity to the site for the air pathway, and an additional 24,540 people live within 4 miles of the site. Also, based on the presence of contaminated, uncontained soils and a distinct overland migration route, a release of hazardous substances to surface water is suspected.

SITE ASSESSMENT REPORT: SITE INSPECTION

PART I: SITE INFORMATION

1. Site Name/Alias Canadian Radium and Uranium Corp.
a.k.a. Former International Rare Metals Refinery
a.k. a. Pregel's Mt. Kisco Refinery

Street 69 Kisco Avenue

City Town of Mt. Kisco State NY Zip 10549

2. County Westchester County County Code 119 Cong. Dist. 20

3. CERCLIS ID NO. NYD987001468

4. Block No. 1 Lot No. 8

5. Latitude 41° 12' 39.60" N. Longitude 73° 43' 41.30" W.

USGS Quad. Mount Kisco, N.Y.

6. Approximate size of site 0.85 acre

7. Owner Village/Town of Mt. Kisco Telephone No. 914-241-0500

Street 104 Main Street

City Town of Mt. Kisco State N.Y. Zip 10549

8. Operator Village/Town of Mt. Kisco Telephone No. 914-241-0500

Street 104 Main Street

City Town of Mt. Kisco State N.Y. Zip 10549

9. Type of Ownership

___ Private ___ Federal ___ State

___ County X Municipal ___ Unknown ___ Other ____

10. Owner/Operator Notification on File

___ RCRA 3001 ___ Date _____ ___ CERCLA 103c Date ____

___ None X Unknown

11. Permit Information

Permit	Permit No.	Date Issued	Expiration Date	Comments
None				

12. **Site Status**

XX Active ___ Inactive ___ Unknown

13. **Years of Operation** Canadian Radium: 1943 to 1966
Town of Mt. Kisco: 1966 to Present

14. **Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.**

(a) **Waste Sources**

Waste Unit No.	Waste Source Type	Facility Name for Unit
1	Contaminated soil	Contaminated soil

(b) **Other Areas of Concern**

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

Sewage water from the facility was passed to and processed by the Mt. Kisco sewage treatment facility. A USAEC report indicated that the radium in the sewage water was removed in passage through the treatment plant. There is no documentation indicating the amount of radiation in the recovered sewage sludge or the method of disposal.

Ref. Nos. 1; 2; 4; 5; 12

15. **Information available from**

Contact Sandy Foose **Agency** U.S. EPA **Tel. No.** (908) 906-6808

Preparer Thomas A. Varner **Date** December 4, 1992

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following items.

Waste Unit ___1___ - ___Contaminated soil___

Source Type

___	Landfill	___	Land Treatment
___	Surface Impoundment	___	Chemical Waste Pile
___	Drums	___	Scrap Metal or Junk Pile
___	Tanks/Containers	___	Tailings Pile
X	Contaminated Soil	___	Trash Pile
___	Pile	___	Other

Description:

A field investigation of the site was conducted on April 20, 1979, by C. E. Weber, P.E., Assistant Commissioner of Health for Environmental Quality (Westchester County Department of Health), Joseph Bierwith, P.E., Mt. Kisco Village Engineer, and Ms. Ruth Boice, a reporter for a local newspaper. The survey was performed using a Thyac III Geiger counter and an Eberline Instrument Corp. Geiger counter. Duplicate readings were recorded with both instruments at 17 locations on the site at a height of 3 feet above the ground. Readings ranging from 0.015 mR/hour to 0.35 mR/hour with the Thyac III instrument and ranging from 0.015 mR/hour to 0.27 mR/hour with the Eberline instrument were recorded. It is not possible to correlate the sample location sketch with the site.

Hazardous Waste Quantity:

The 1979 investigation reported that the high readings were obtained from an area covering approximately one square yard of the property.

Hazardous Substances/Physical State:

The hazardous substances consist of unspecified radioactive materials which were deposited in a solid state.

Ref. Nos. 3; 5, pp. 1-11

PART III. SAMPLING RESULTS

EXISTING ANALYTICAL DATA

On May 28, 1952, a health and safety survey of the facility was conducted by the Health and Safety Division of the Radiation Branch of the U.S. Atomic Energy Commission and the New York State Department of Labor. Smear samples for measuring removable alpha contamination, general air and localized air radon samples, ambient air dust samples, and room air dust samples were collected. Surface contamination was measured with a Juno SIC-17C scintillation counter (for low range) and a Juno SIC-17D scintillation counter (for high range). On several surfaces alpha activities were found to be greater than 30×10^6 disintegrations per minute per 100 cubic centimeters, with localized gamma readings of 2000 mR/hour, and an air radon level of 800×10^{-12} curies per liter in the general workroom.

Prior to 1966, the radium recovery operations were discontinued and the building and premises were decontaminated under the supervision of the New York State Department of Labor. In November and December of 1966 further decontamination was conducted and the building demolished, and the demolition waste and contaminated materials disposed of off site.

In April 1979, a reporter from a local newspaper surveyed the site and reported measuring levels of 0.3 to 0.35 mR/hour. A subsequent field investigation of the site conducted by the Assistant Commissioner of the Westchester County Department of Health and the Mt. Kisco Village Engineer in 1979 obtained readings that ranged from background (0.015 mR/hour) to 0.35 mR/hour (three feet above the ground) using a Thyac III Model 490 Geiger counter and an Eberline Instrument Corp. Geiger counter.

No quality assurance data is available for any of the measurements described above.

Ref. Nos. 3; 5, pp. 1-11, 27, 30-38, 60-64

PART IV. HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

   Due to the lack of groundwater sampling data an observed release cannot be documented. Due to the presence of contaminated soil on site, however, a release of contaminants to the groundwater is suspected.

   Ref. Nos. 3; 5, pp. 1-11

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, areas of karst terrain, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

   The Canadian Radium & Uranium Corp. Site overlies unconsolidated fluvial sands and gravels of glacial outwash origin. These materials comprise a water table aquifer with a saturated zone of unknown thickness. The depth to the water table is approximately 24 feet beneath the site. The sand and gravel aquifer is assumed to have moderate to high permeability based on estimated well yields of 10 to 100 gpm. Groundwater flow direction in the sand and gravel aquifer is unknown, but is presumed to be roughly south or southwest based upon the general topographic trend.

   The glacial deposits lie within a northeast-southwest trending valley defined by a syncline in the underlying bedrock, with the centerline of the valley roughly coinciding with the axis of the syncline. The bedrock consists of Manhattan Schist, which unconformably overlies Inwood Marble, which in turn unconformably overlies Fordham Gneiss. The Canadian Radium and Uranium Corp. Site lies near the center of the valley. It is not known which bedrock type or types directly underlay the site, but the Manhattan Schist, Inwood Marble, and Fordham Gneiss each outcrop or subcrop nearby.

   The Manhattan Schist is present as a narrow band oriented beneath the valley. This rock is comprised of muscovite-biotile-garnet schist, gneiss, intertwining schist, and marble. This bedrock unit is younger than the Inwood Marble which subcrops in an even thinner band immediately northwest of the Manhattan Schist. The Inwood Marble consists of pure calcite marble, dolomite units containing calcite marble layers, and coarse dolomite containing actinolite-tremolite and other siliceous minerals. Together, the Manhattan Schist and Inwood Marble comprise much of the valley floor in the vicinity of the site. The valley walls and surrounding uplands are underlain almost entirely by Fordham Gneiss, which contains amphibolite, paragneiss, quartzite, and schist members. Dominant minerals of the Fordham Gneiss include biotite, hornblende, quartz, and feldspar.

   The relative thicknesses and hydrogeologic characteristics of each of the bedrock types is unknown. The bedrock of the area presumably contains water-bearing fractures, though it is unclear to what degree these fractures are hydraulically connected to the sand and gravel

aquifer. Karst terrain is known in the area of the site, though dissolution of calcite in the Manhattan Schist and Inwood Marble occurs only in isolated areas.

Ref. Nos. 2, 14

3. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

The depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern is unknown; however, this depth is assumed to be less than 24 feet based upon the estimated depth to the water table.

Ref. Nos. 5, pp. 1-11; 14

4. **Identify and determine the distance to and depth of the nearest well that is currently used for drinking purposes?**

The nearest well currently used for drinking purposes is located approximately 3,300 feet northwest (upgradient) of the site and is owned by the Ramleh Water Corporation. The Ramleh Water Corporation provides water to approximately 34 people in the Ramleh Condominiums. There are actually two wells, 225 and 305 feet deep, respectively, near the condominiums. These wells are presumably completed in the uppermost (unconsolidated) aquifer consisting of glacial outwash sand and gravel.

Ref No. 2; 7, pp. 11, 12; 14

5. **If a release to groundwater is observed or suspected, determine the number of people that obtain drinking water from wells that are documented or suspected to be located within the contamination boundary of the release.**

There are no drinking water wells that are expected to lie within the contamination boundary of the suspected release.

Ref. Nos. 2; 7

6. **Identify the population served by wells that are not expected to be contaminated located within 4 miles of the site that draw from the aquifer of concern.**

Distance	Population
0 - ¼ mi	0
>¼ - ½ mi	0
>½ - 1 mi	550
>1 - 2 mi	1,360
>2 - 3 mi	4,470
>3 - 4 mi	6,610

State whether groundwater is blended with surface water, groundwater, or both before distribution.

Groundwater drawn from municipal supply wells within 4 miles of the site is blended. A municipal water supply system that distributes water to the Town of Bedford blends water from wells at three locations within the 4-mile radius. No single well contributes greater than 40 percent of the distribution, therefore populations are apportioned equally among the blended wells.

Ref. Nos. 2; 7

Is there a wellhead protection area within 4 miles of the site?

The site overlies a designated wellhead protection area.

Ref. No. 13

Does a waste source overlie a designated or proposed wellhead protection area? If a release to groundwater is observed or suspected, does a designated or proposed wellhead protection area lie within the contaminant boundary of the release?

The waste source overlies a designated wellhead protection area.

Ref. No. 13

7. **Identify uses of groundwater within 4 miles of the site (i.e. private drinking source, municipal source, commercial, irrigation, unusable).**

Groundwater within 4 miles of the site is used for public and private potable supply.

Ref. Nos. 2; 7; 8

SURFACE WATER ROUTE

8. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

A release to surface water of contaminants attributable to the site is suspected because of the presence of contaminated, uncontained soils and a distinct overland migration route. Hazardous substances suspected to have been released consist of unspecified radionuclides.
Ref. Nos. 2-4; 5, pp. 1-11

9. **Identify the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.**

Site runoff drains toward the north and east portions of the site. Runoff toward the north enters the south gutter of Railroad Avenue which abuts the site to the north, and flows easterly approximately 50 feet to the Conrail (Harlem Division) property, a railroad right-of-way. The Conrail right-of-way abuts the site on its easterly border. Similarly, any site surface water runoff to the east would be to this railroad property. Flow would be southerly, parallel to the tracks, until the West Main Street storm drain, located 500 feet south of the site. The storm drain discharges into Tributary 8 of the Kisco River 1,000 feet to the east (probable point of entry). The in-water segment then continues for 0.9 mile along Tributary 8 until it meets Kisco River. After 3.1 miles the Kisco River discharges into New Croton Reservoir (part of Croton River). The New Croton Dam lies 6.3 miles downstream of the mouth of the Kisco River, at which point the in-water segment continues with the Croton River for 3.4 miles until it reaches Croton Bay. Croton Bay extends for 1 mile, where it meets the Hudson River. The in-water segment then ends in the Hudson River 0.3 mile downstream from Croton Bay.

Ref. Nos. 2; 3; 7, pp. 5; 8

10. **What is the distance in feet to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.**

The nearest downslope body of water is Tributary 8 of the Kisco River which is located approximately 1,500 feet from of the site as measured along the overland migration route.

Ref. Nos. 2; 3; 7, pp. 5; 8

11. **Determine the type of floodplain that the site is located within.**

Available information indicates that the site is located outside the 500-year floodplain.

Ref. Nos. 2; 9

12. **Identify drinking water intakes in surface waters within 15 miles downstream of the point of surface water entry. For each intake identify: the name of the surface water body in which the intake is located, the distance in miles from the point of surface water entry, population served, and stream flow at the intake location.**

Intake	Distance	Population Served	Flow (cfs)
New Croton Reservoir	10.2 miles	831,000 people	15,500 cfs

Ref. Nos. 2; 7, pp. 1-5, 13, 16; 8

13. **Identify fisheries that exist within 15 miles downstream of the point of surface water entry. For each fishery specify the following information:**

Fishery Name	Water Body Type	Flow (cfs)	Saline/Fresh/Brackish
Kisco River	Moderate Stream	10-100	Fresh
New Croton Reservoir	Large River	15,500	Fresh
Croton River	Large Stream	612	Fresh
Croton Bay	River	612	Fresh

Ref. Nos. 2; 8; 10; 11

14. **Identify surface water sensitive environments that exist within 15 miles of the point of surface water entry. For each sensitive environment specify the following:**

Sensitive Environment	Water Body Type	Flow (cfs)	Wetland Frontage (miles)
Wetland	Moderate Stream	10-100	0.83 miles

Ref. No. 2

15. **If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 12-14 that are or may be located within the contamination boundary of the release.**

A release of contaminants to the surface water is suspected, however, there are no intakes, fisheries, or sensitive environments within the contamination boundary of the release.

Ref. No. 2

SOIL EXPOSURE PATHWAY

16. **Determine the number of people that occupy residences or attend school or day care on or within 200 feet of the site property.**

There are seven residences within 200 feet of the site property, housing an estimated 18 people. There are no schools or daycare centers on or within 200 feet of the site property.

Ref. Nos. 2; 4; 12; 15

17. **Determine the number of people that regularly work on or within 200 feet of the site property.**

Based on visual observation, there are approximately three on-site workers.

Ref. No. 4

18. **Identify terrestrial sensitive environments on or within 200 feet of the site property.**

There are no known terrestrial sensitive environments located on or within 200 feet of the site property.

Ref. No. 2

AIR ROUTE

19. **Describe the likelihood of release of contaminants to air as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release define the supporting analytical evidence.**

Due to the lack of appropriate sampling data, a release of contamination from the facility to the ambient air is not observed. Although no releases of contaminants to the ambient air have been documented since remediation of the site in 1966, a release of contaminants to the ambient air is suspected as a result of fugitive particulates originating from the site.

During the 1966 site cleanup, it was determined that a portion of the south wall of what was then the James A. Haggerty Lumber and Millwork Co. (now the Richards Home and Lumber Co.) located north of the site was contaminated. That contamination was corrected by covering a portion of the wall with plaster until radiation levels were acceptable.

During the site reconnaissance, people moving vehicles and building materials stored on the site, apparently owned by the neighboring lumber company, were observed on the site. Dust generated by the moving vehicles was observed rising from the site. Because the wind was light and the quantity of dust generated small, migration of the dust off-site was not confirmed.

Ref. Nos. 4; 5, pp. 2, 3, 33, 40, 41

20. **Determine populations that reside within 4 miles of the site.**

Distance	Population
0 - ¼ mi	1,830
>¼ - ½ mi	2,060
>½ - 1 mi	3,160
>1 - 2 mi	6,680
>2 - 3 mi	4,910
>3 - 4 mi	5,920

Ref. No. 6, p. 2

21. **Identify sensitive environments, including wetlands and associated wetlands acreage, within ½ mile of site.**

0 - ¼ mile	¼ - ½ mile
Sensitive Environments/Wetland Acreage	Sensitive Environments/Wetland Acreage

There are no known sensitive environments within 0.5 mile of the site.

Ref. Nos. 2; 3; 4

22. **If a release to air is observed or suspected, determine the number of people that reside or are suspected to reside within the area of air contamination from the release.**

There are seven residential properties within 200 feet of the eastern site boundary. Under favorable meteorological conditions it is possible that contaminated fugitive dusts from the site will be carried from the site to these residential properties.

Ref. Nos. 2; 12

23. **If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 21, that are or may be located within the area of air contamination from the release.**

There are no known sensitive environments within 0.5 mile of the site.

Ref. Nos. 2; 3; 4