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NOV 06 1990

Alsy Manufacturing
NYD 981184237

PA Scoresheets

$S_{gw} = 76.92$
$S_{sw} = 0$
$S_a = 0$
$S_M = 44.46$

286063

PRELIMINARY ASSESSMENT

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CERCLIS IDENTIFICATION NUMBER	
STATE: NY	SITE NUMBER: NYD981184237

SITE LOCATION

SITE NAME: Legal, common or descriptive name of site: Alsy Manufacturing

STREET ADDRESS, ROUTE or SPECIFIC LOCATION IDENTIFIER: 770 Duffy Ave.

CITY	STATE	ZIP CODE	TELEPHONE
Hicksville	NY	11801	( )

COORDINATES: LATITUDE and LONGITUDE	TOWNSHIP, RANGE, and SECTION
40° 45' 47" 73° 31' 52"	Nassau Cty.

OWNER/OPERATOR IDENTIFICATION

OWNER	OPERATOR
Surrey Corp. (property owner)	Alsy Mfg.
OWNER ADDRESS: 6901 Jericho Turnpike	OPERATOR ADDRESS:
CITY: Syosset	CITY:
STATE: NY; ZIP CODE: 11791; TELEPHONE: ( )	STATE: ; ZIP CODE: ; TELEPHONE: ( )

TYPE OF OWNERSHIP	OWNER/OPERATOR NOTIFICATION ON FILE
[X] PRIVATE	[ ] NONE
[ ] FEDERAL: Agency name _____	[ ] CERCLA 103 C, UNCONTROLLED WASTE SITE DATE: _____
[ ] STATE	[ ] RCRA 3001 DATE: _____
[ ] COUNTY	
[ ] MUNICIPAL	
[ ] OTHER: _____	
[ ] NOT SPECIFIED	

SITE STATUS	YEARS OF OPERATION	APPROXIMATE SIZE OF SITE
[X] ACTIVE	BEGINNING YEAR: 1975	2.3 acres
[ ] INACTIVE	ENDING YEAR: _____	
[ ] UNKNOWN	[ ] UNKNOWN	

SITE EVALUATION

AGENCY / ORGANIZATION:

INVESTIGATOR:

CONTACT:

ADDRESS:

TELEPHONE: ( )

DATE:

Liam Nobile
USEPA - Region II
26 Federal Plaza
NY, NY (212) 264-1913

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Site Name:
Date:

GENERAL INFORMATION

Site Description and Operational History:

Alsy Manufacturing is located in a densely populated residental/ industrial area. The site is active, and lamps and lampshades are produced at the plant. The main processes are metal plating, finishing, and painting processes that produce solvent and heavy metal wastes. These liquid wastes are deposited in cesspools on-site. These pools when sampled had high levels of heavy metals and solvents. There is a great potential for gw contamination from the cesspools since the soil is very sandy and highly permeable. Currently wastewater is stored and treated in tanks inside the building before being discharged into the sewer system. Paints and solvents are stored in drums inside the building before hauled off-site. The site is bordered to the north by Long Island RR, to the south by Duffy Ave and ~~residential~~ residences, and to the east and west by other companies. There is no surface water within 3 miles of the site. The cesspools have been cleaned out and the contaminated soil around them removed. The main concern with this site will be the contamination caused by previous disposal ~~at the site~~ methods and the condition of the wastewater being discharged into the sewer system.

* Alsy Manufacturing no longer operates at this site. The property is divided between several different companies. *

Probable Contaminants of Concern:

(Previous investigations; analytical data)

- wastewater containing heavy metals and solvents discharged into four cesspools on-site.
- gw samples had levels of: 1,1,1-TCE, V, Hg, Cr, Cu, Ni above Fed. Stds.
- soil samples were high in organics, inorganics, cyanide, PCB, + pesticides
- no sw samples since none exist w/in 3 miles
- air monitoring w/ HNu, OVA, and Draeger systems gave no levels above background, readings detected over well and sewer that are usually kept covered
- on the site there are 3,675 gallons of hazardous waste in drums and 12,000 gal per year of waste discharged to sewer (ref. NUS HRS Report, Alsy Mfg. Waste Manifests and Nassau Cty. Sewer permit)

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Site Name:
Date:

GENERAL INFORMATION (continued)

Site Sketch:
(Show all pertinent features; indicate sources and closest targets)

- no sw w/in 3-miles
- nearest resident .02 mi
- distance to nearest drinking water well .25 mi
- bordered to north by LIRR, south Duffy Ave, east + west other industry
- Bethpage State Park is 3 mi. east of site

Site Name:
Date:

GENERAL INFORMATION (continued)

ons:

- 2.3 acres of contaminated soil
- 3,675 gallons of hazardous waste in drums

$\frac{3,675}{55} = 66.8 \approx 67$ drums

Evidence of Release? from drums

eristics (WC) Calculations:
page 5)

(1) - 2.3 acres contaminated soil

$\frac{2.3}{0.78} = \underline{WQ}\ 2.95$

(2) - 67 drums of hazardous waste on site

$\frac{67}{10} = \underline{WQ}\ 6.7$

$\sum WQ = 9.65$

$WQ > 100$

$\therefore WC = 18$

W.C = 18

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Site Name:
Date:

PA TABLE 1: WASTE CHARACTERISTICS (WC) SCORES

PA Table 1a: WC Scores for Single Source Sites and Formulas for Multiple Source Sites

TIER	SOURCE TYPE	SINGLE SOURCE SITES (assigned WC scores)			MULTIPLE SOURC . SITES
		WC = 18	*WC = 32*	*WC = 100*	Formula for Assigning Source WQ Values
CONSTITUENT	N/A	≤100 lbs	>100 to 10,000 lbs	>10,000 lbs	*lbs ÷ 1*
WASTESTREAM	N/A	≤500,000 lbs	>500,000 to 50 million lbs	>50 million lbs	*lbs ÷ 5,000*
VOLUME	Landfill	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million ft^3 to 675 million ft^3 >250,000 to 25 million yd^3	>675 million ft^3 >25 million yd^3	*ft^3 ÷ 67,500* *yd^3 ÷ 2,500*
	Surface impoundment	≤6,750 ft^3 ≤250 yd^3	>6,750 ft^3 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
	Drums	≤1,000 drums	>1,000 to 100,000 drums	>100,000 drums	*drums ÷ 10*
	Tanks and non-drum containers	≤50,000 gallons	>50,000 to 5 million gallons	>5 million gallons	*gallons ÷ 50*
	Contaminated soil	≤6.75 million ft^3 ≤250,000 yd^3	>6.75 million ft^3 to 675 million ft^3 >250,000 to 25 million yd^3	>675 million ft^3 >25 million yd^3	*ft^3 ÷ 67,500* *yd^3 ÷ 2,500*
	Pile	≤6,750 ft^3 ≤250 yd^3	>6,750 ft^3 to 675,000 ft^3 >250 to 25,000 yd^3	>675,000 ft^3 >25,000 yd^3	*ft^3 ÷ 67.5* *yd^3 ÷ 2.5*
AREA	Landfill	≤340,000 ft^2 ≤7.8 acres	>340,000 to 34 million ft^2 >7.8 to 780 acres	>34 million ft^2 >780 acres	*ft^2 ÷ 3,400* *acres ÷ 0.078*
	Surface impoundment	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres	>130,000 ft^2 >2.9 acres	*ft^2 ÷ 13* *acres ÷ 0.0002*
	Contaminated soil	≤3.4 million ft^2 ≤78 acres	>3.4 million to 340 million ft^2 >78 to 7,800 acres	>340 million ft^2 >7,800 acres	*ft^2 ÷ 34,000* *acres ÷ 0.78*
	Pile*	≤1,300 ft^2 ≤0.029 acres	>1,300 to 130,000 ft^2 >0.029 to 2.9 acres	>130,000 ft^2 >2.9 acres	*ft^2 ÷ 13* *acres ÷ 0.0002*
	Land treatment	≤27,000 ft^2 ≤0.62 acres	>27,000 to 2.7 million ft^2 >0.62 to 62 acres	>2.7 million ft^2 >62 acres	*ft^2 ÷ 270* *acres ÷ 0.0062*

1 ton = 2,000 lbs = 1 yd^3 = 4 drums = 200 gallons

* Use area of land surface under pile, not surface area of pile.

PA Table 1b: WC Scores for Multiple Source Sites

WQ Total	*WC Score*
>0 to 100	18
>100 to 10,000	32
>10,000	100

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Site Name:
Date:

GROUND WATER PATHWAY
GROUND WATER USE DESCRIPTION

Describe Ground Water Use Within 4-miles of the Site:
(Provide generalized stratigraphy; information on aquifers, municipal, and or private wells)

- gw is only source of drinking water in area
- site overlies three aquifers: Upper Glacial Aquifer, Magothy Formation, and Lloyd Aquifer
- Magothy Formation is of main use
- private wells used for water lawns, etc.
- population served by gw within 3 miles: 137,959
- nearest well .61 mi east
- gw sampling done with on-site monitoring wells
- no sampling of municipal wells
- 48 wells w/in 3 mile radius
- 137,959 people / 48 wells = 2,874 people/well

Show calculations of ground water drinking water populations:

- nearest drinking water well .61 mi east of site
- no sampling done on municipal wells
- assuming all w/in 4 miles secondary targets
- pop. served by gw in ranges of $\frac{1}{4} \to \frac{1}{2}$, $\frac{1}{2} \to 1$, $1 \to 2$, $2 \to 3$, $3 \to 4$
- between $0 \to 3$ mi there 10 quarter mile units
- $\frac{137,959}{10} = 13,796$ people served by gw per quarter mile
- estimating < 100,000 people in $3 \to 4$ mi range

Is 100,000 Valid?

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GROUND WATER PATHWAY CRITERIA LIST

Site Name:
Date:

This chart provides guidelines to assist you in hypothesizing the presence of a suspected release and identifying primary targets. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize a suspected release or to identify primary targets. This chart will record your professional judgment in evaluating these factors.

The "Suspected Release" section of the chart guides you through evaluation of some site, source, and pathway conditions to help hypothesize whether a release from the site is likely. If a release is suspected, use the "Primary Targets" section to guide you through evaluation of some conditions that will help identify targets likely to be exposed to hazardous substances. You may use this section of the chart more than once, depending on the number of targets you feel may be considered "primary." In the "Primary Targets" section on this sheet, record the responses for the well that you feel has the highest probability of being exposed to hazardous substances.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question. If you check the "Suspected Release" box as "yes", make sure that you assign a Likelihood of Release value of 550 for the pathway.

GROUND WATER PATHWAY

SUSPECTED RELEASE

Yes	No	Unknown	
X			Are sources poorly contained?
X			Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)?
X			Is waste quantity particularly large?
X			Is precipitation heavy and infiltration rate high?
	X		Is the site located in an area of karst terrain?
X			Is the subsurface highly permeable or conductive?
X			Is drinking water drawn from a shallow aquifer?
	X		Are suspected contaminants highly mobile in ground water?
	X		Does any circumstantial evidence of ground water or drinking water contamination exist?
X			Other criteria? sampling
X			**SUSPECTED RELEASE?**

PRIMARY TARGETS

Yes	No	Unknown	
X			Is any drinking-water well nearby?
	X		Is any nearby drinking-water well closed?
	X		Has foul-tasting or foul-smelling water been reported by any nearby drinking-water users?
		X	Do any nearby wells have a large drawdown or high production rate?
	X		Are drinking-water wells located between the site and other wells that are suspected to be exposed to hazardous substances?
	X		Does any circumstantial evidence of ground water or drinking water contamination exist?
X			Does any drinking-water well warrant sampling?
			Other criteria? _____
	X		**PRIMARY TARGET(S) IDENTIFIED?**

Summarize the rationale for suspected release (attach an additional page if necessary):

- wastewaters were dumped into cesspools and allowed to infiltrate to gw
- on-site monitoring wells detected 1,1,1-TCE and heavy metals above Federal Stds.

Summarize the rationale for Primary Targets (attach an additional page if necessary): none

- migration of contaminants not documented
- no sampling of municipal wells

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Site Name:
Date:

GROUND WATER PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Ground Water Pathway Criteria List, page 7)?	Yes X No ___
Is the site located in karst terrain?	Yes ___ No X
Depth to aquifer:	60 ft
Distance to the nearest drinking-water well:	3,220 ft

	A Suspected Release	B No Suspected Release	References
LIKELIHOOD OF RELEASE			
1. SUSPECTED RELEASE: If you suspect a release to ground water (see page 7), assign a score of 550, and use only column A for this pathway.	(550) 550		
2. NO SUSPECTED RELEASE: If you do not suspect a release to ground water, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Use only column B for this pathway.		(500 or 340)	
LR =	550		
TARGETS			
3. PRIMARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you suspect have been exposed to hazardous substances from the site (see Ground Water Pathway Criteria List, page 7). 0 people x 10 =	0		
4. SECONDARY TARGET POPULATION: Determine the number of people served by drinking water from wells that you do NOT suspect have been exposed to hazardous substances from the site, and assign the total population score from PA Table 2. Are any wells part of a blended system? Yes ___ No X If yes, attach a page to show apportionment calculations.	3,568		
5. NEAREST WELL: If you have identified any Primary Targets for ground water, assign a score of 50; otherwise, assign the highest Nearest Well score from PA Table 2. If no drinking-water wells exist within 4 miles, assign a score of zero.	(50, 20, 18, 9, 5, 3, 2, or 0) 18	(20, 18, 9, 5, 3, 2, or 0)	
6. WELLHEAD PROTECTION AREA (WHPA): Assign a score of 20 if any portion of a designated WHPA is within ¼ mile of the site; assign 5 if from ¼ to 4 miles.	(20, 5, or 0) 5	(20, 5, or 0)	
7. RESOURCES: A score of 5 is assigned.	(5) 5	(5) 5	
T =	3,596		
WASTE CHARACTERISTICS			
8. A. If you have identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 or 32)		
B. If you have NOT identified any Primary Targets for ground water, assign the waste characteristics score calculated on page 4.	(100, 32, or 18) 18	(100, 32, or 18)	
WC =	18		

GROUND WATER PATHWAY SCORE: $\frac{LR \times T \times WC}{82,500}$ (adjust to a maximum of 100) 100 (43.52)

Is this a WHPA?

Site Name:
Date:

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PA TABLE 2: VALUES FOR SECOND, PY GROUND WATER TARGET POPULATIONS

PA Table 2a: Non-Karst Aquifers

Distance from Site	Population	Nearest Well (choose highest)	Population Served by Wells Within Distance Category										Population Value
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	
0 to ¼ mile	N/A	20	1	2	5	16	52	163	521	1,633	5,214	16,325	
> ¼ to ½ mile	13,796	18	1	1	3	10	32	101	323	1,012	3,233	10,121	1,012
> ½ to 1 mile	13,796	9	1	1	2	5	17	52	167	522	1,668	5,224	522
> 1 to 2 miles	55,184	5	1	1	1	3	9	29	94	294	939	2,938	939
> 2 to 3 miles	55,184	3	1	1	1	2	7	21	68	212	678	2,122	678
> 3 to 4 miles	<100,000	2	1	1	1	1	4	13	42	131	417	1,306	417

Nearest Well = 18

Score = 3,568

PA Table 2b: Karst Aquifers

Distance from Site	Population	Nearest Well (use 20 for karst)	Population Served by Wells Within Distance Category										Population Value
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	
0 to ¼ mile		20	1	2	5	16	52	163	521	1,633	5,214	16,325	
> ¼ to ½ mile		20	1	1	3	10	32	101	323	1,012	3,233	10,121	
> ½ to 1 mile		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 1 to 2 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 2 to 3 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	
> 3 to 4 miles		20	1	1	3	8	26	82	261	816	2,607	8,162	

Nearest Well =

Score =

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Site Name:
Date:

SURFACE WATER PATHWAY
- MIGRATION ROUTE SKETCH

Provide a Sketch of the Surface Water Migration Route:
(include runoff route, probable point of entry, 15-mile target distance limit, intakes, fisheries, and sensitive environments)

- no sw on-site or w/in 3 miles of site
- four cesspools have been drained

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SURFACE WATER PATHWAY CRITERIA LIST

Site Name:
Date:

This chart provides guidelines to assist you in hypothesizing the presence of a suspected release and identifying primary targets. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize a suspected release or to identify primary targets. This chart will record your professional judgment in evaluating these factors.

The "Suspected Release" section of the chart guides you through evaluation of some site, source, and pathway conditions to help hypothesize whether a release from the site is likely. If a release is suspected, use the "Primary Targets" section to guide you through evaluation of some conditions that will help identify targets likely to be exposed to hazardous substances. You may use this section of the chart more than once, depending on the number of targets you feel may be considered "primary." In the "Primary Targets" section on this sheet, record the responses for the target that you feel has the highest probability of being exposed to hazardous substances.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question. If you check the "Suspected Release" box as "yes", make sure that you assign a Likelihood of Release value of 550 for the pathway.

SURFACE WATER PATHWAY

SUSPECTED RELEASE

Yes	No	Unknown	
☐	☒	☐	Is surface water nearby?
☒	☐	☐	Is waste quantity particularly large?
☐	☐	☒	Is the drainage area large?
☐	☒	☐	Is precipitation heavy or infiltration rate low?
☐	☒	☐	Are sources poorly contained or prone to runoff or flooding?
☐	☒	☐	Is a runoff route well defined (e.g., ditch or channel leading to surface water)?
☐	☐	☒	Is vegetation stressed along the probable runoff path?
☒	☐	☐	Are suspected contaminants highly persistent in surface water?
☐	☐	☒	Are sediments/water unnaturally discolored?
☐	☐	☒	Is wildlife unnaturally absent?
☐	☒	☐	Has deposition of waste into surface water been observed?
☐	☐	☒	Is ground water discharge to surface water likely?
☐	☒	☐	Is there any circumstantial evidence of surface water contamination?
☐	☐		Other criteria? _____
☐	☒		**SUSPECTED RELEASE?**

PRIMARY TARGETS

Yes	No	Unknown	
☐	☒	☐	Is any target nearby? If yes:
			☐ Drinking-water intake
			☐ Fishery
			☐ Sensitive environment
☐	☒	☐	Has an intake, fishery, or recreational area been closed?
☐	☒	☐	Is there any circumstantial evidence of surface water contamination at or downstream of a target?
☐	☒	☐	Does any target warrant sampling? If yes:
			☐ Drinking-water intake
			☐ Fishery
			☐ Sensitive environment
☐	☐		Other criteria? _____
☐	☒		**PRIMARY INTAKE(S) IDENTIFIED?**
☐	☒		**PRIMARY FISHERY IDENTIFIED?**
☐	☒		**PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED?**

Summarize the rationale for suspected release (attach an additional page if necessary):

- no sw within 3 miles of site

Summarize the rationale for Primary Targets (attach an additional page if necessary):

No primary targets

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Site Name:
Date:

SURFACE WATER PATHWAY
LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Surface Water Pathway Criteria List, page 11)?	Yes ___ No X
Distance to surface water:	>15,840ft
Flood Frequency:	500 yrs.
What is the downstream distance to the nearest drinking-water intake?	>3 miles
nearest fishery? >3 miles nearest sensitive environment? >3 miles	

LIKELIHOOD OF RELEASE

	A Suspected Release	B No Suspected Release	References
1. SUSPECTED RELEASE: If you suspect a release to surface water (see page 11), assign a score of 550, and use only column A for this pathway.	(550)		
2. NO SUSPECTED RELEASE: If you do not suspect a release to surface water, and the distance to surface water is 2,500 feet or less, assign a score of 500; otherwise, assign a score from the table below. Use only column B for this pathway.		(500,400,300 or 100) 100	
LR =	(550)	(500,400,300 or 100) 100	

Floodplain	Score
Site in annual or 10-yr floodplain	500
Site in 100-yr floodplain	400
Site in 500-yr floodplain	300
Site outside 500-yr floodplain	100

DRINKING WATER THREAT TARGETS

no sw w/in 3 miles

	A	B	References
3. Determine the water body types, flows (if applicable), and number of people served by all drinking-water intakes within the 15-mile target distance limit. If there are no drinking-water intakes within the target distance limit, assign a total Targets score of 5 at the bottom of this page (Resources only) and proceed to page 14.			
4. PRIMARY TARGET POPULATION: If you suspect any drinking-water intake listed above has been exposed to hazardous substances from the site (see Surface Water Pathway Criteria List, page 11), list the intake name(s) and calculate the factor score based on the number of people served. ___ people x 10 =			
5. SECONDARY TARGET POPULATION: Determine the Secondary Target Population score from PA Table 3 based on the populations using drinking-water from intakes that you do NOT suspect have been exposed to hazardous substances from the site. Are any intakes part of a blended system? Yes ___ No ___ If yes, attach a page to show apportionment calculations.			
6. NEAREST INTAKE: If you have identified any Primary Targets for the drinking water threat (Factor 4), assign a score of 50; otherwise, assign the Nearest Intake score from PA Table 3. If no drinking-water intake exists within the 15-mile target distance limit, assign a score of zero.	(50,30,10,2,1, or 0)	(X) 0	
7. RESOURCES: A score of 5 is assigned.	(5) 5	5	
T =		5	

Intake Name	Water Body Type	Flow	People Served
NONE		cfs	
		cfs	
		cfs	

Site Name:
Date:

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N/A

PA TABLE 3: VALUES FOR SECONDARY SURFACE WATER TARGET POPULATIONS

Surface Water Body Flow Characteristics (see PA Table 4)	Population	Nearest Intake (choose highest)	Population Served by Intakes Within Flow Category: 1 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	Population Value
<10 cfs	_____	20	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,246	_____
10 to 100 cfs	_____	2	1	1	2	5	16	52	163	521	1,633	5,214	16,325	_____
>100 to 1,000 cfs	_____	1	0	0	1	1	2	5	16	52	163	521	1,633	_____
>1,000 to 10,000 cfs	_____	0	0	0	0	0	1	1	2	5	16	52	163	_____
>10,000 cfs or Great Lakes	_____	0	0	0	0	0	0	0	1	1	2	5	16	_____
3-mile Mixing Zone	_____	10	1	3	8	26	82	261	816	2,607	8,162	26,068	81,663	_____

Nearest Intake = _____

Score = _____

PA TABLE 4: SURFACE WATER TYPE / FLOW CHARACTERISTICS WITH DILUTION WEIGHTS FOR SECONDARY SURFACE WATER SENSITIVE ENVIRONMENTS

Type of Surface Water Body: Water Body Type	OR	Flow Characteristics	Dilution Weight
minimal stream		flow less than 10 cfs	1
small to moderate stream		flow 10 to 100 cfs	0.1
moderate to large stream		flow greater than 100 to 1,000 cfs	N/A
large stream to river		flow greater than 1,000 to 10,000 cfs	N/A
large river		flow greater than 10,000 cfs	N/A
3-mile mixing zone of quiet flowing streams or rivers		flow 10 cfs or greater	N/A
coastal tidal water (harbors, sounds, bays, etc.), ocean, or Great Lakes		N/A	N/A

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Site Name:
Date:

SURFACE WATER PATHWAY (continued)
HUMAN FOOD CHAIN THREAT SCORESHEET

LIKELIHOOD OF RELEASE	A Suspected Release	B No Suspected Release	References
	(550)	(500,400,300 or 100)	
Enter the Surface Water Likelihood of Release score from page 12. LR =		100	

HUMAN FOOD CHAIN THREAT TARGETS

8. Determine the water body types and flows (if applicable) for all fisheries within the 15-mile target distance limit. If there are no fisheries within the target distance limit, assign a Targets score of 0 at the bottom of this page and proceed to page 15.

Fishery Name	Water Body Type	Flow
		cfs
		cfs
None		cfs
		cfs
		cfs

9. PRIMARY FISHERIES: If you suspect any fishery listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 10. List the Primary Fisheries:

_____, _____,
_____, _____.

(300 or 0)

10. SECONDARY FISHERIES: If you have not identified any Primary Fisheries, assign a Secondary Fisheries score from the table below using the LOWEST flow at any fishery within the 15-mile target distance limit.

Lowest Flow	Secondary Fisheries Score
< 10 cfs	210
10 to 100 cfs	30
>100 cfs, coastal tidal waters, oceans, or Great Lakes	12

(210,30,12 or 0) | (210,30,12 or 0) | 0

	A	B
T =	(300,210,30,12 or 0)	(210,30,12 or 0) 0

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Site Name:
Date:

SURFACE WATER PATHWAY (continued)
ENVIRONMENTAL THREAT SCORESHEET

	A Suspected Release	B No Suspected Release	Reference
LIKELIHOOD OF RELEASE			
Enter the Surface Water Likelihood of Release score from page 12. LR =	(550)	(500,400,300 or 100) 100	
ENVIRONMENTAL THREAT TARGETS			
11. Determine the water body types and flows (if applicable) for all surface water sensitive environments within the 15-mile target distance limit (see PA Tables 4 and 5). If there are no sensitive environments within the 15-mile target distance limit, assign a Targets score of 0 at the bottom of this page, and proceed to page 17.			
12. PRIMARY SENSITIVE ENVIRONMENTS: If you suspect any sensitive environment listed above has been exposed to hazardous substances from the site (see Surface Water Criteria List, page 11), assign a score of 300 and do not evaluate Factor 13. List the Primary Sensitive Environments:	(300 or 0)		
13. SECONDARY SENSITIVE ENVIRONMENTS: A. For Secondary Sensitive Environments on surface water bodies with flows of 100 cfs or less, assign scores as follows, and do not evaluate part B of this factor:		0	
B. If NO Secondary Sensitive Environments are located on surface water bodies with flows of 100 cfs or less, assign a score of 10.	(10 or 0)	(10 or 0) 0	
T =		0	

Environment Name	Water Body Type	Flow
		cfs
		cfs
NONE		cfs
		cfs
		cfs

Flow	Dilution Weight (PA Table 4)	Environment Type and Value (PA Tables 5 and 6)	Total
cfs	x	=	
cfs	x	=	
cfs	x	=	
cfs	x	=	
cfs	x	=	

Sum =

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Site Name:
Date:

PA TABLE 5: SURFACE WATER AND AIR SENSITIVE ENVIRONMENTS VALUES

Sensitive Environment	*Assigned Value*
Critical habitat for Federally designated endangered or threatened species	100
Marine Sanctuary	
National Park	
Designated Federal Wilderness Area	
Ecologically important areas identified under the Coastal Zone Wilderness Act	
Sensitive Areas identified under the National Estuary Program or Near Coastal Water Program of the Clean Water Act	
Critical Areas Identified under the Clean Lakes Program of the Clean Water Act (subareas in lakes or entire small lakes)	
National Monument	
National Seashore Recreation Area	
National Lakeshore Recreation Area	
Habitat known to be used by Federally designated or proposed endangered or threatened species	75
National Preserve	
National or State Wildlife Refuge	
Unit of Coastal Barrier Resources System	
Federal land designated for the protection of natural ecosystems	
Administratively Proposed Federal Wilderness Area	
Spawning areas critical for the maintenance of fish/shellfish species within a river system, bay or estuary	
Migratory pathways and feeding areas critical for the maintenance of anadromous fish species in a river system	
Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding	
National river reach designated as recreational	
Habitat known to be used by State designated endangered or threatened species	50
Habitat known to be used by a species under review as to its Federal endangered or threatened status	
Coastal Barrier (partially developed)	
Federally designated Scenic or Wild River	
State land designated for wildlife or game management	25
State designated Scenic or Wild River	
State designated Natural Area	
Particular areas, relatively small in size, important to maintenance of unique biotic communities	
State designated areas for the protection/maintenance of aquatic life under the Clean Water Act	5
Wetlands	See PA Table 6 (Surface Water Pathway) or PA Table 9 (Air Pathway)

PA TABLE 6: SURFACE WATER WETLANDS FRONTAGE VALUES

Total Length of Wetlands	*Assigned Value*
Less than 0.1 mile	0
0.1 to 1 mile	25
Greater than 1 to 2 miles	50
Greater than 2 to 3 miles	75
Greater than 3 to 4 miles	100
Greater than 4 to 8 miles	150
Greater than 8 to 12 miles	250
Greater than 12 to 16 miles	350
Greater than 16 to 20 miles	450
Greater than 20 miles	500

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Site Name:
Date:

SURFACE WATER PATHWAY (concluded)
WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

WASTE CHARACTERISTICS

	A Suspected Release	B No Suspected Release
14. A. If you have identified ANY Primary Targets for surface water (pages 12, 14, or 15), assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 or 32)	
B. If you have NOT identified any Primary Targets for surface water, assign the waste characteristics score calculated on page 4.	(100,32, or 18)	(100,32, or 18) 18
WC =		18

SURFACE WATER PATHWAY THREAT SCORES

Threat	Likelihood of Release (LR) Score (from page 12)	Targets (T) Score	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score LR x T x WC / 82,500
Drinking Water	100	5	18	(subject to a maximum of 100) 0.11
Human Food Chain	100	0	18	(subject to a maximum of 100) 0
Environmental	100	0	18	(subject to a maximum of 60) 0

SURFACE WATER PATHWAY SCORE
(Drinking Water Threat + Human Food Chain Threat + Environmental Threat)

(subject to a maximum of 100) 0.11

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SOIL EXPOSURE PATHWAY CRITERIA LIST

Site Name:
Date:

This chart provides guidelines to assist you in hypothesizing the presence of a resident population. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize resident populations. This chart will record your professional judgment in evaluating this factor.

Use the resident population section to guide you through evaluation of some site and source conditions that will help identify targets likely to be exposed to hazardous substances. You may use this section of the chart more than once, depending on the number of nearby people you feel may be considered part of a resident population. Record the responses for the resident population target that you feel has the highest probability of being exposed to hazardous substances.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question.

SOIL EXPOSURE PATHWAY				
SUSPECTED CONTAMINATION	*RESIDENT POPULATION*			
	Yes	No	Unknown	
Surficial contamination is assumed.	X	~~X~~	☐	Are there residences, schools, or day care facilities on or within 200 feet of areas of suspected contamination?
	☐	X	☐	Are residences, schools, or day care facilities located on adjacent land previously owned or leased by the site owner/operator?
	☐	☐	X	Is there an overland migration route that might spread hazardous substances near residences, schools, or day care facilities?
	☐	X	☐	Are there any reports of adverse health effects from onsite or adjacent residents or students, exclusive of apparent drinking water or air contamination problems?
	☐	☐	X	Does any offsite property warrant sampling?
	☐	☐		Other criteria? _____
	X	~~X~~		**RESIDENT POPULATION IDENTIFIED?**

Summarize the rationale for resident population (attach an additional page if necessary):

- ~~close proximity of residences to site~~
- nearby residental area could become contaminated via run-off from site
- lack of a defined stormwater run-off route on site
- workers at site could come in contact w/ contaminated site
- estimated 10 houses w/in 200ft.

10 x 3.8 = 38

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Site Name:
Date:

1.

SOIL EXPOSURE PATHWAY SCORESHEET

Pathway Characteristics		
Do any people live on or within 200 ft of areas of suspected contamination?	Yes X	No ___
Do any people attend school or day care on or within 200 ft of areas of suspected contamination?	Yes ___	No X
Is the facility active? Yes X No ___ If yes, estimate the number of workers: approx. 300		

	A Suspected Contamination	B No Suspected Contamination	Reference
LIKELIHOOD OF EXPOSURE			
1. SUSPECTED CONTAMINATION: Surficial contamination is assumed. A score of 550 is assigned. LE =	(550) 550		
RESIDENT POPULATION THREAT TARGETS			
2. RESIDENT POPULATION: Determine the number of people occupying residences or attending school or day care on or within 200 feet of areas of suspected contamination (see Soil Exposure Pathway Criteria List, page 18). 38 people x 10 =	380		
3. RESIDENT INDIVIDUAL: If you have identified any Resident Population (Factor 2), assign a score of 50; otherwise, assign a score of 0.	(50 or 0) 50		
4. WORKERS: Assign a score from the following table based on the total number of workers at the facility and nearby facilities with suspected contamination:	(15, 10, 5, or 0) 10		
5. TERRESTRIAL SENSITIVE ENVIRONMENTS: Assign a value from PA Table 7 for each terrestrial sensitive environment that is located on an area of suspected contamination: Sum =	0		
6. RESOURCES: A score of 5 is assigned.	(5) 5		
T =	445		
WASTE CHARACTERISTICS			
7. Assign the waste characteristics score calculated on page 4. WC =	(100, 32, or 18) 18		

Number of Workers	Score
0	0
1 to 100	5
101 to 1,000	10
>1,000	15

Terrestrial Sensitive Environment Type	Value
None	

RESIDENT POPULATION THREAT SCORE: $\frac{LE \times T \times WC}{82{,}500}$ (subject to a maximum of 100) 53.4

NEARBY POPULATION THREAT SCORE:
Assign a score of 2 2

SOIL EXPOSURE PATHWAY SCORE:
Resident Population Threat + Nearby Population Threat (subject to a maximum of 100) 55.4

PA TABLE 7: SOIL EXPOSURE PATHWAY TERRESTRIAL SENSITIVE ENVIRONMENT VALUES

vironment	*Assigned Value*
tat for Federally designated endangered or threatened species lderness Area	100
wn to be used by Federally designated or proposed threatened or endangered species estrial) strial Wildlife Refuge d for protection of natural ecosystems sed Federal Wilderness Area d by large or dense aggregations of animals (vertebrate species) for breeding	75
d by State designated endangered or threatened species d by species under review for Federally designated endangered or threatened status	50
d for wildlife or game management ral Areas vely small in size, important to maintenance of unique biotic communities	25

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AIR PATHWAY CRITERIA LIST

Site Name:
Date:

This chart provides guidelines to assist you in hypothesizing the presence of a suspected release. It is expected that not all of this information will be available during the PA. Also, these criteria are not all-inclusive; list any other criteria you use to hypothesize a suspected release. This chart will record your professional judgment in evaluating this factor.

The "Suspected Release" section of the chart guides you through evaluation of some conditions to help hypothesize whether a release from the site is likely. For the Air Pathway, if a release is suspected, "Primary Targets" are any residents, workers, students, or sensitive environments within ¼ mile of the site.

Check the boxes to indicate a "yes", "no", or "unknown" answer to each question. If you check the "Suspected Release" box as "yes", make sure that you assign a Likelihood of Release value of 550 for the pathway.

AIR PATHWAY

SUSPECTED RELEASE				PRIMARY TARGETS
Yes	No	Unknown		
☐	☒	☐	Have odors been reported?	*If you suspect a release to air, evaluate all populations and sensitive environments within ¼ mile (including those onsite) as Primary Targets.*
☐	☒	☐	Has a release of hazardous substances to the air been directly observed?	
☐	☒	☐	Are there any reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air?	
☐	☒	☐	Is there any circumstantial evidence of an air release?	
☐	☒		Other criteria? sampling	
☐	☒		**SUSPECTED RELEASE?**	

Summarize the rationale for suspected release (attach an additional page if necessary):

- HNu, OVA, and Draeger monitoring yielded no readings above background level
- readings above background were observed in a well and sewer that are usually kept covered

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Site Name:
Date:

AIR PATHWAY SCORESHEET

Pathway Characteristics	
Do you suspect a release (see Air Pathway Criteria List, page 21)?	Yes ___ No X
Distance to the nearest individual:	0 ft

	A Suspected Release	B No Suspected Release	References
LIKELIHOOD OF RELEASE			
1. SUSPECTED RELEASE: If you suspect a release to air (see page 21), assign a score of 550, and use only column A for this pathway.	(550)		
2. NO SUSPECTED RELEASE: If you do not suspect a release to air, assign a score of 500, and use only column B for this pathway.		(500) 500	
LR =		500	
TARGETS			
3. PRIMARY TARGET POPULATION: Determine the number of people subject to exposure from a release of hazardous substances through the air (see Air Pathway Criteria List, page 21). ___ people x 10 =			
4. SECONDARY TARGET POPULATION: Determine the number of people within the 4-mile target distance limit, and assign the total population score from PA Table 8.		110	
5. NEAREST INDIVIDUAL: If you have identified any Primary Targets for the air pathway, assign a score of 50; otherwise, assign the highest Nearest Individual score from PA Table 8.	(50,20,7,2,1, or 0)	(20 7,2 1, or 0) 20	
6. PRIMARY SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (PA Table 5) and wetland acreage values (PA Table 9) for environments subject to exposure from air hazardous substances (see Air Pathway Criteria List, page 21).			
Sum =			
7. SECONDARY SENSITIVE ENVIRONMENTS: Use PA Table 10 to determine the score for secondary sensitive environments.		0	
8. RESOURCES: A score of 5 is assigned.	(5) 5	5	
T =		135	135
WASTE CHARACTERISTICS			
9. A. If you have identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4, or a score of 32, whichever is GREATER; do not evaluate part B of this factor.	(100 or 32)		
B. If you have NOT identified any Primary Targets for the air pathway, assign the waste characteristics score calculated on page 4.	(100,32, or 18)	(100 32 or 18) 18	
WC =		18	

AIR PATHWAY SCORE: $\frac{LR \times T \times WC}{82{,}500}$ = 14.73

GEMS data?

Site Name:
Date:

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PA TABLE 8: VALUES FOR SECONDARY AIR TARGET POPULATIONS

Distance from Site	Population	Nearest Individual (choose highest)	Population Within Distance Category: 1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	Population Value
Onsite	<300 598	20	1	2	5	16	52	163	521	1,633	5,214	16,325	52,136	163,246	16
>0 to ¼ mile	2294	20	1	1	1	4	13	41	130	408	1,303	4,081	13,034	40,811	13
> ¼ to ½ mile	15,099	2	0	0	1	1	3	9	28	88	282	882	2,815	8,815	9
> ½ to 1 mile	39,353	1	0	0	0	1	1	3	8	26	83	261	834	2,612	26
> 1 to 2 miles	76,140	0	0	0	0	0	1	1	3	8	27	81	266	833	27
> 2 to 3 miles		0	0	0	0	0	1	1	1	4	12	38	120	376	12
> 3 to 4 miles		0	0	0	0	0	0	1	1	2	7	23	73	229	7
SI by NUS	79,779														

why?

Nearest Individual = 20

Score = 110

PA TABLE 9: AIR PATHWAY VALUES FOR WETLAND AREA

Wetland Area	Assigned Value
Less than 1 acre	0
1 to 50 acres	25
Greater than 50 to 100 acres	75
Greater than 100 to 150 acres	125
Greater than 150 to 200 acres	175
Greater than 200 to 300 acres	250
Greater than 300 to 400 acres	350
Greater than 400 to 500 acres	450
Greater than 500 acres	500

PA TABLE 10: DISTANCE WEIGHTS AND CALCULATIONS FOR AIR PATHWAY SECONDARY SENSITIVE ENVIRONMENTS

Distance	Distance Weight	Sensitive Environment Type and Value (from PA Table 6 or 9)	Product
Onsite	0.10	x	
		x	
0-1/4 mi	0.025	x	
		x	
		x	
1/4-1/2mi	0.0054	x	
		x	
		x	
		x	

Total Environments Score =

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Site Name:
Date:

SITE SCORE CALCULATION

	S	S^2
GROUND WATER PATHWAY SCORE (S_{gw}):	100	10,000
SURFACE WATER PATHWAY SCORE (S_{sw}):	0.11	.0121
SOIL EXPOSURE PATHWAY SCORE (S_{se}):	55.40	3069.16
AIR PATHWAY SCORE (S_a):	14.73	216.89
SITE SCORE: $\sqrt{\frac{S_{gw}^2+S_{sw}^2+S_{se}^2+S_a^2}{4}}$ =		57.63

RECOMMENDATION

- soil sampling needs to be conducted at nearby residences
- municipal wells should be sampled
- Groundwater site

SUMMARY

	YES	NO
1. Is there a high possibility of a threat to nearby drinking water wells by migration of hazardous substances in ground water?	X	
A. If yes, identify the wells recommended for sampling during the SI. nearby municipal wells should be sampled		
B. If yes, how many people are served by these threatened wells? over 100,000		
2. Are any of the following suspected to have been exposed to hazardous substances through surface water migration from the site?		
A. Drinking water intake		X
B. Fishery		X
C. Sensitive environment: wetland, critical habitat, others		X
D. If yes, identify the targets recommended for sampling during the SI.		
3. Do people reside or attend school or day care on or within 200 ft of any area of suspected contamination?	X	
4. Are there public health concerns at this site that are not addressed by PA scoring considerations? If yes, explain:		X

GW