June 28, 1982

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

US EPA RECORDS CENTER REGION 5
449956

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Lo Bue #2

LOCATION: Chicago Heights, Illinois

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

No Release Observed

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

See following page

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

31.5 feet Water level readings at time of drilling indicated a depth to water of 31.5 feet. This is the same depth at which the aquifer of concern (dolomite) was reached. (REF 14 p20).

Depth from the ground surface to the lowest point of waste disposal/storage:

10 feet (REF 14 p 19, 28)

HRS = 2 47FR 31224

Route Characteristics

In the area of this site four major aquifers exist (REF 1 p 17). The glacial material of the Pleistocene system consist mostly of clay with small amounts of sand and gravel mixed in or in narrow isolated lenses (REF 14 p 19-22; 13; 5; 6). It is not used as an aquifer in the area of this site (REF 6 p 1; 12). Depths of the glacial material vary greatly and are from 15 to 95 feet thick (REF 5; 6). One on site boring log indicates depth to bedrock to be 31.5 feet (REF 14 p 20). Another boring reaches a depth of 62.5 feet and does not clearly indicate that it reached bedrock (REF 14 p 22). Silurian dolomite is in contact with the glacial drift (REF 1 p 6, 17) and is the primary aquifer in the area of the site (REF 2 p 4, 5, 9, 17, 18, 22, 23; 3 p 4, 5; 12; 13; 5 p 2). Depths of this aquifer range from 425 (REF 6) to 450 feet (REF 5). The glacial and Silurian aquifers are hydrolically connected (REF 1 p 17). The Cambrian-Ordivician aquifer is utilized by one well from East Chicago. It's depth is 1800 feet (REF 7). Two wells from Chicago Heights utilize this aquifer. Their depths are 1800 and 1897 feet (REF 3 p 4, 5). Depths of this system are to 1755 feet (REF 6 p 2). This aquifer is seperated from the overlying aquifers by the Maquoketa shale which acts as a confining layer (REF 1 p 17; 5; 6). These aquifers are shown in profile (REF 1 p 2) and are described fully in reference 1 p 3-11. Since the greatest population utilizes the Silurian dolomite aquifer and it is at greatest risk it will be considered the aquifer of concern for the purpose of HRS scoring.

Net Precipitation

Mean annual ~~or seasonal~~ precipitation (list months for seasonal):

33.57 inches (REF 24)

Mean annual lake or seasonal evaporation (list months for seasonal):

30.00 inches (REF 24)

Net precipitation (subtract the above figures):

3.57 inches

HRS = 1 47FR 31224

Permeability of Unsaturated Zone

Soil type in unsaturated zone: On site well logs (REF 14 p 19-22) show extensive clay layer with only trace amounts of sand or gravel: Thickness ranges from 14 (REF 14 p 19) to 49 feet (REF 14 p 21). Additional well logs for the area (REF 13) show clay layers ranging in thickness from 13 (REF 13 p 8) to 40 feet (REF 13 p 7). This clay layer appears to be continuous throughout the area.

Permeability associated with soil type: Permeability tests were done on these clays and results ranged from 2×10^{-7} cm/sec to 5×10^{-7} cm/sec (REF 14 p 13). This falls within the range of $< 10^{-6}$ cm/sec to $> 10^{-9}$ cm/sec (REF 26, 47FR 31224).

HRS = 1 47FR 31224

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Foundry sand — Solid (REF 22 p 2)
Filter Ash

Paint
Solvents > Liquid (REF 21 p 2,5; 29 p 2)

* * *

HRS = 3 47FR 13229

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Solid waste disposal facility (landfill) (REF 17p1; 21p2; 22p1,2; 29p1,2). Landfill cross-sections indicate no liner present (REF 14p28,29,40). Ponding of leachate on surface (REF 22p1; 29p1).

Method with highest score:

Landfill with no liner and surface ponding of water/leachate (REF 26, 47FR31229)

HRS = 3 47FR 31229

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:	TOXICITY	PERSISTENCE	MATRIX VALUE
Copper	3 (REF 27p 806)	3 (REF 26, 47FR 31230)	18
Nickel	3 (REF 27p 1892)	3 (REF 26, 47FR 31230)	18
Beryllium	3 (REF 27p 422)	3 (REF 26, 47FR 31230)	18
Cadmium	3 (REF 27p 612)	3 (REF 26, 47FR 31230)	18

REF 20p3-7

Compound with highest score:

Nickel - Lab analysis data is provided in REF 19 and REF 20 and summarized in REF 17p3. Sample locations are indicated in REF 18p15. The above listed contaminants were not found in background sample (REF 20p3).

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Quantity unknown - will assume a value of 1 (one) (REF 23p4,5 #11)

HRS = 1

Basis of estimating and/or computing waste quantity:

N/A

* * *

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

See following pages

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

South Chicago Heights well #3 is located at Butler and Sauk Trail road located southwest of site (REF 8; 4).

Distance to above well or building:

1,497 feet (REF 4) HRS = 4 47FR 31231

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

24,888 people (see following pages) HRS = 5 47FR31234

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

All recorded irrigation wells are used watering golf courses or nurseries. (REF 16).

Total population served by ground water within a 3-mile radius:

24,888

HRS = 40 47FR31231

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

REFERENCE 17
SITE NAME LoBue #2
SITE ID ILD 980502050

MEMORANDUM

DATE: March 7, 1986
TO: File
FROM: Suzanne Kozlowski/Steve Nelson SK
SUBJECT: Illinois/R05-8303-01F/IL0244
Chicago Heights/LoBue #2
ILD 980902050

LoBue #2 is an active open dump/landfill that has operated since approximately 1970. The site is located on the north side of Sauk Trail Road south of Chicago Heights. The site is permitted to accept foundry sand, slag, cinders, concrete, brick, asphalt and cardboard. LoBue #2 also accepted empty drums which were believed to contain paint and solvents. The site was identified by the Illinois EPA in the form of a Preliminary Assessment, submitted to the U.S. EPA.

On October 25, 1984, Ecology and Environment FIT members conducted a site inspection and interview. Five soil samples were later collected on July 2, 1985 to obtain waste characteristics. The analytical data is summarized in Table 1. The background sample, MEF 231, contained low levels of arsenic (As), lead (Pb), and vanadium (V). Three soil samples contained beryllium (Be), cadmium (Cd), copper (Cu), mercury (Hg) and nickel (Ni) as well as lead at levels ten times above background. Sample MEF 234 showed no contamination. Sample MEF 235 contained polyaromatic hydrocarbons and pesticides while no other samples showed any organic contamination.

Soils in the area are predominantly clays above ten feet of silty loam overlying bedrock. Contaminants can reach the Silurian-Dolomite bedrock aquifer by migrating through fractures and solution cavities. However, the potential for contaminant migration appears quite low. Furthermore, little or no groundwater flow occurs through the soil zone as evidenced by the monitoring wells present. Inspections by the Illinois EPA found little water in the southwest monitoring well, and no water in the southeast monitoring well. The FIT inspection on 10/25/84 found the same conditions even though surface conditions were very wet at the time. Thus, the potential for groundwater contamination appears quite low.

81E:4X

Table 1
LoBue #2
Summary of Analytical Data

Metals Detected (1)	Soil Sample Locations			
	MEF 231	MEF 232	MEF 233	MEF 235
As	9.3	104	20	14
Be	--	4	6	--
Cd	--	--	3	5
Cu	--	128	56	33
Pb	9.2	173	89	177
Hg	--	0.14	0.20	0.16
Ni	--	100	90	41
V	29	47	40	--

Sample MEF 234 showed no contamination. (S-4 on map)

Organics (2) Detected	MEF 235
Phenathrene	540
Fluoranthene	1000
Pyrene	610
Chrysene	360
Benzo(b)fluoranthene	530
Benzo(K)fluoranthene	530
4-4'DDE	31
4-4'DDT	49

Legend:
MEF 231 - Background sample
MEF 232 - SE edge of foundry sand pile (S-2 on map)
MEF 233 - W edge of foundry sand pile (S-3 on map)
MEF 235 - N edge of foundry sand pile (S-5 on map)
(1) reported in parts per million
(2) reported in parts per billion

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

LOW CONCENTRATION SOIL SAMPLES.

CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: RS-8303-1F
PROJECT NAME: LOBUE #2 CASE 4652
SAMPLERS: (Signature) Daniel R. Sewell

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	SOIL - METALS							REMARKS LTR #	REMARKS CTR #
S-1	7-2-85	1130		X	BACKGROUND	1	1							MEF 231	EF 394
S-2	7-2-85	1215		X	SE FOUNDRY SAND PILE	1	1							MEF 232	EF 395
S-3	7-2-85	1230		X	W FOUNDRY SAND PILE	1	1							MEF 233	EF 396
S-4	7-2-85	1250		X	SOIL - NW CORNER	1	1							MEF 234	EF 397
S-5	7-2-85	1300		X	SOIL - NE CORNER	1	1							MEF 235	EF 901

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Daniel R. Sewell	7-2-85 1500	FEDERAL EXPRESS			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks SHIPPED FEDERAL EXPRESS TO STC. AIRBILL - 276073162 CUSTODY SEALS - 36440, 36441	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

RS-8303-1F

T-02244-21

5-05428

Facility name: LoBue #2

Location: Sauk Trail Road. West of State Street

EPA Region: 05

Person(s) in charge of the facility: Nick LoBue - part owner
344 E. 16th St. Chicago Hgts, IL
(312) 797-6666

Name of Reviewer: John Geiger (FIT) Date:

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

LoBue #2 is a 25 acre solid waste disposal site located in Southern Chicago Heights. This site recieved an operating permit in 1975 which allowed for the storage of recycled sand and cinders. Additional permits for waste disposal were issued in 1975, 1978 and 1977. Many violations have occured throughout the history of this site. Violations included ponding of water on site, accepting of

Scores: S_M = 38.16 (S_{gw} = 48.72 S_{sw} = 0 S_a = 0)

S_{FE} = 0

S_{DC} = 62.5

FIGURE 1
HRS COVER SHEET

unpermitted wastes such as paints and solvents, inadequate cover and leachate problems. The primary aquifer for a population in excess of 34,000 is the Silurian aged dolomite which is overlain by clay tills ranging in depth from 15 to 95 feet.

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2	4	6	
Net Precipitation	0 1 2 3	1	1	3	
Permeability of the Unsaturated Zone	0 1 2 3	1	1	3	
Physical State	0 1 2 3	1	3	3	
	Total Route Characteristics Score		10	15	
3 Containment	0 1 2 3	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	40	40	
	Total Targets Score		49	49	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			27,930	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 48.72			

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 2 3	1	2	3	
Distance to Nearest Surface Water	0 1 2 3	2	0	6	
Physical State	0 1 2 3	1	3	3	
	Total Route Characteristics Score		5	15	
3 Containment	0 1 2 3	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	1	8	
	Total Waste Characteristics Score		19	26	
5 Targets					4.5
Surface Water Use	0 1 2 3	3		9	
Distance to a Sensitive Environment	0 1 2 3	2		6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1		40	
	Total Targets Score		0	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{SW} = 0			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5. If line 1 is 45, then proceed to line 2.					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a =	0		

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	48.72	2373.64
Surface Water Route Score (S_{sw})	0	—
Air Route Score (S_a)	0	—
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2373.64
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		48.72
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		28.16

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1	3	3	8.2
3 Containment	0 15	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4	20	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			20	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			13,500	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = 62.5			

FIGURE 12
DIRECT CONTACT WORK SHEET

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1	—	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = 0			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

GROUND WATER USE

There are seven towns either totally or partially within the three mile radius of LaBue #2 (REF 4). They are Chicago Heights, East Chicago Heights, South Chicago Heights, Sauk Village, Crete, Steger and Park Forest. Each has its own municipal water system utilizing groundwater as a source of drinking water (REF 2). An exception to this is Chicago Heights which is on lake Michigan water but whose wells are on standby (REF 3; 10; 11). Included in the three mile radius are sections of Bloom and Crete townships whose residents utilize private wells as a source of drinking water (REF 12).

Chicago Heights - This city has a 1980 population of 37,026 (REF 25), with approximately 85% of it within the Three mile radius (REF 4). The city is supplied by Lake Michigan water (ref 10; 11) but keeps it's 15 production wells on standby (REF 3 p 5-7; 10; 11). All of the wells are located within the 3-mile radius (Indicated by red circles on REF 4). Well logs for some of the wells is provided in (REF 30 p 1-12). In Chicago Heights the population utilizing municipal water do have "alternate, unthreatened sources presently available." (REF 26, 47 FR 31231).

South Chicago Heights - This city has a 1980 population of 3,932 (REF 25 p 2). Three wells provide water for a population of approximately 3,800 (REF 8). The location of these wells (REF 8) is shown on (REF 4). A well log for one municipal well is provided in (REF 30 p 14). Since all wells are within the Three mile radius the entire population is potentially affected.

East Chicago Heights - This municipal system has seven wells serving a population of 5,437 (REF 7) which is the 1980 population for the town (REF 25 p 2). Well information is provided in (REF 2 p 1-6). All wells are within the Three mile radius (REF 4) with the entire population potentially affected.

Sauk Village – This city has a population of 10,906 (1980) approximately half of which are located within the three mile radius (REF 4; 25 p 2). Three wells service the entire population (REF 2 p 10-13). All three wells are outside the 3 mile radius (REF 4) and so the population will not be considered.

Park Forest – The city of Park Forest occupies parts of four townships. The populations in each are: Bloom - 4,744; Rich - 18,167 and Crete - 941 (REF 25 p 2-4). The population of the fourth township, Monee, is 2,370 (REF 25 p 5). The total population for Park Forest is 26,222. Seven wells service this population (REF 2 p 14-18). Well numbers 2, 3, 4 and 5 are located within the three mile radius (REF 4; 2 p 16). Well number 1, 6 and 7 can produce 2,800 gpm (REF 2 p 15) or 4,032,000 gallons per day (2,800 x 60 minutes/hour x 24 hours/day). Even if well number 1 or 6 were shut down 2,592,000 gallons per day could still be produced by the two remaining wells. With an average Daily Pumpage of 2,440,000 gallons these three wells would be adequate for average needs (REF 2 p 14). Because of this "alternate, unthreatened sources" are available (REF 26, 47FR 31231) and the population will not be considered at risk.

Steger – Steger has a total population of 9,269 (REF 25 p 2,4). The entire city and all three of its municipal wells are located within the three mile radius (REF 4; 9; 2 p 6-9). One municipal well log is provided in (REF 30 p 16). The entire population will considered at risk.

Crete – This town has a population of 5,417 (REF 25 p 4). Three wells service a population estimated at 5,090 (REF 2 p 18-23). Well number 5 is out side the three mile radius (REF 2 p 21; 4) and produces 290 gpm or 417,600 gallons per day (REF 2 p 20). The capacity of this well is not quite adequate to meet the 450,000 gallon average pumping rate (REF 2 p 19) and so the entire population will be considered at risk.

Bloom and Crete Townships – A total of 340 well logs for private wells have been verified (REF 12) within the three mile radius of this site (REF 4). At 3.8 persons per well (REF 26, 47FR 31234) a total population of 1,292 is potentially at risk.

Location	Population at Risk
Chicago Heights	alternate supply available
South Chicago Heights	3,800
East Chicago Heights	5,437
Sauk Village	not at risk
Park Forest	alternate supply available
Steger	9,269
Crete	5,090
Bloom + Crete Townships	1,292

24,888 Total population within 3-miles potentially at risk.

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No Release observed

Rationale for attributing the contaminants to the facility:

N/A

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Well #2 located at the northwest corner is at 694.9 feet } (REF 15)
well #4 located at the southeast corner is at 712.6 feet }
approximately 1,000 feet between (REF 4)

$712.6 - 694.9 = 17.7/1000 = .0177 \times 100\% = 1.8\%$

Name/description of nearest downslope surface water:

Un-named drainage ditch running through south west corner of site. Both ends stopped without draining into any other water body (REF 4). Site inspection indicated ditch running along northern perimeter of property (REF 18, p 15).

Average slope of terrain between facility and above-cited surface water body in percent:

Ditch does not run into any surface water body (REF 4)

HRS = 0 47FR 31234

Is the facility located either totally or partially in surface water?

No (REF 4)

Is the facility completely surrounded by areas of higher elevation?

No (REF 4)

1-Year 24-Hour Rainfall in Inches

The site lays 15/17ths of the distance between the 2.0 inch and 2.5 inch contours. 2.0 inches + $(\frac{15}{17} \times .5)$ = 2.71 inches
(REF 26, 47FR 31235)

HRS = 2 47FR 31234

Distance to Nearest Downslope Surface Water

None (REF 4)

HRS = 0 47FR 31236

Physical State of Waste

Solid - (REF 22 p 2)
Liquid - (REF 21 p 2,5; 29 p 2)

HRS = 3 47FR 31229

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill was noted on more than one inspection as not recieving covering material after deposition of wastes. Leachate observed running into ponded water on site. (REF 22; 29)

Method with highest score:

Landfill not covered and no diversion system in place (REF 26, 47FR 31236).

HRS = 3 47FR 31236

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated	TOXICITY	PERSISTENCE	MATRIX VALUE
REF 20 p 3-7 Copper	3(REF 27p 806)	3(REF 26, 47FR31230)	18
Nickel	3(REF 27p 1992)	3(REF 26, 47FR31230)	18
Beryllium	3(REF 27p 482)	3(REF 26, 47FR 31230)	18
Cadmium	3(REF 27p 612)	3(REF 26, 47FR 31230)	18

Compound with highest score:

Nickel

HRS = 18

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Quantity unknown - assume a value of 1 (REF 23, p 4,5 #11)

Basis of estimating and/or computing waste quantity:

N/A

HRS = 1

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Chicago Heights is on surface water (REF 10;11) whose intakes are in Lake Michigan which is outside of three mile radius (REF 4).

HRS = 0 47FR31236

Is there tidal influence?

N/A (REF 4)

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A (REF 4)

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

None within one mile (REF4)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None (REF 31)

HRS = 0 47FR31236

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None

HRS = 0 47FR31236

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

- Only groundwater irrigation wells (REF 16)

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

No air monitoring undertaken

Date and location of detection of contaminants

N/A

Methods used to detect the contaminants:

N/A

Rationale for attributing the contaminants to the site:

N/A

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

N/A

Most incompatible pair of compounds:

N/A

Toxicity

Most toxic compound:

N/A

Hazardous Waste Quantity

Total quantity of hazardous waste:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

N/A

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

N/A

Distance to critical habitat of an endangered species, if 1 mile or less:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

No past or present problems reported (REF 32)

Type of containment, if applicable:

N/A

* * *

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

N/A

Ignitability

Compound used:

N/A

Reactivity

Most reactive compound:

N/A

Incompatibility

Most incompatible pair of compounds:

* * *

N/A

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

N/A

Basis of estimating and/or computing waste quantity:

N/A

* * *

3 TARGETS

Distance to Nearest Population

N/A

Distance to Nearest Building

N/A

Distance to Sensitive Environment

Distance to wetlands:

N/A

Distance to critical habitat:

N/A

Land Use

Distance to commercial/industrial area, if 1 mile or less:

N/A

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

N/A

Distance to residential area, if 2 miles or less:

N/A

Distance to agricultural land in production within past 5 years, if 1 mile or less:

N/A

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

N/A

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

N/A

Population Within 2-Mile Radius

N/A

Buildings Within 2-Mile Radius

N/A

5 TARGETS

Population within one-mile radius

N/A

Distance to critical habitat (of endangered species)

N/A

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None on Record.

* * *

2 ACCESSIBILITY

Describe type of barrier(s):

Site is Fenced only along the Southern boundry. A rail line and drainage ditches are located along other boundries. (REF 18, p 3,15).

* * *

3 CONTAINMENT

Type of containment, if applicable:

Landfill not covered. Leachate observed ponding on site (REF 22; 29)

* * *

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated: TOXICITY

Nickel (REF 20 p 3-7) 3 (REF 27 p 1992)
Copper (REF 20 p 3-7) 3 (REF 27 p 806)
Beryllium (REF 20 p 3-7) 3 (REF 27 p 432)
Cadmium (REF 20 p 3-7) 3 (REF 27 p 612)

Compound with highest score:

Nickel

* * *

5 TARGETS

Population within one-mile radius

10,694 (see below)

Distance to critical habitat (of endangered species)

None in area of site (REF 31)

Population within one mile:

REF 4
REF 25

15% of Chicago Hgts. = .15 × 37,026 = 5,554
60% of S. Chicago Hgts = .60 × 3,932 = 2,359
30% of Steger = .30 × 9,269 = 2,781
10,694