Johns-Manville, Waukegan, Illinois (05IL016)

137661

Comment #

63 Letter and Attachments from Schiff, Hardin and Waite, Attorneys for Johns-Manville to R.H. Wyer, USEPA. 37 + about 70 pages. 2/28/83.

Johns-Manville, Waukegan, Illinois (OSILO16)

Bulletized Summary of Comments

Technical

1 • The ground water route is mis-scored because asbestos shows very little migration through the soil. The site is underlain by dense beach sand, not [illegible] the source used by the commentor [illegible] site. Further, [illegible] (which have not been verified) cannot be invoked as a measure of containment.

2 • Likewise, the asbestos which is disposed in conformity with NESHAP of containment is not likely to migrate out of containment to surface water. The cover material used on site contains asbestos and does not completely cover the friable asbestos waste on site according to the evidence. Exposed asbestos is well known to migrate via surface water.

3 • The air-sampling and analysis procedures are challenged and it is noted that no data was included with HRS to indicate that the air samples were significantly above background. See attached sheet

4 • Toxicity is scored "3" instead of "2". That is correct. - Sax (ed 4th) sets asbestos at level 3 for chronic exposure (see HRS Users Guide)

5 • Containment is in accordance with NESHAP. The HRS score on containment is based on the absence of a clay liner or synthetic liner and on inadequate cover.

Policy

Even if the site is not eliminated from the NPL because of improper scoring, it should be eliminated because it is operated in conformity to NESHAP.

1 The site is underlain by dense beach sand, not soil. Beach sand has a high permeability therefore the source used by the commentor is inappropriate. No known liner or clay barrier exists beneath the site. Further, reported physical characteristics of asbestos (which have not been verified) cannot be invoked as a measure of containment.

2 The cover material used on site contains asbestos and does not completely cover the friable asbestos waste on site according to the evidence. Exposed asbestos is well known to migrate via surface water.

3 See attached sheet.

4 That is correct - Sax (ed 4th) sets asbestos at level 3 for chron exposure (see HRS Users Guide).

5 The HRS score on containment is based on the absence of a clay liner or synthetic liner and on inadequate cover.

NOTE The composite list score (S_m) for Johns-Manville was computed incorrectly from correct components. Change to 38.31

Responses to the Johns-Manville Critique of Asbestos Sampling Method

1. The dichotomous sampling was executed properly. The filters were not switched because the samples were taken one at a time (Don Woods, Ecology and Environment (312) 663-9415 personal communication 4/4/83).

2. For the purpose of determining asbestos release, dichotomous sampling was sufficient (Don Woods, Ecology and Environment (312) 663-9415 personal communication 4/4/83). Johns-Manville asserts that composite sampling would have been the preferred method.

3. The upwind coarse filter was slightly cracked as it was removed however, it is unlikely that any fibers were dislodged due to the strong electrostatic attraction generated by the filter and the very minor damage involved (Don Woods, Ecology and Environment (312) 663-94 personal communication 4/4/83, 4/5/83). The upwind sample is the backgr

4. Because of the myriad of fiber types present in the site area, TEM was selected over optical methods because its superior resolution permits unambiguous fiber identification. Fiberglass and other fibrous materials would not then be erroneously counted as asbestos (Airborne Asbestos Survey the Johns-Manville Site 4/28/82 Ecology + Environment).

Facility name: Johns-Manville Site

Location: Waukegan, Illinois

EPA Region: V

Person(s) in charge of the facility: Norm Niedergang, On-Scene Coordinator

Name of Reviewer: Kenneth V. Jennings Date: 4/4/83

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.)

Landfill bordering Lake Michigan on Manville property into which is placed both friable and consolidated asbestos and other manufacturing wastes. The landfill has been in use since about 1920.

Scores: S_M = 38.31 (S_{gw} = 4.90 S_{sw} = 9.70 S_a = 65.38

S_{FE} =

S_{DC} =

Scores obtained by N. Niedergang 8/12/82 Sm = 38.31 (S_{gw} = 4.89 S_{sw} = 9.70 S_a = 65.38)

FIGURE 1
HRS COVER SHEET

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	6	6	
Net Precipitation	0 1 2 3	1	1	3	
Permeability of the Unsaturated Zone	0 1 2 3	1	3	3	
Physical State	0 1 2 3	1	2	3	
Total Route Characteristics Score			12	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	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3	3	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			3	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			2808	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 4.90			

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	6	6	
Physical State	0 1 (2) 3	1	2	3	
	Total Route Characteristics Score		10	15	
3 Containment	0 1 (2) 3	1	2	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	8	8	
	Total Waste Characteristics Score		26.	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 (3)	2	6	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score		12	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			6240	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	9.70		

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		45	5.1
Date and Location: 4/28/82 Upwind, midsite, downwind					
Sampling Protocol: 8-hour samples collected at above locations on 37mm MCE filters then analyzed by electron microscopy.					
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	0	3	
Toxicity	0 1 2 (3)	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score		17	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
Distance to Sensitive Environment	0 1 2 (3)	2	6	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		30	39	
4 Multiply 1 x 2 x 3			22950	35,100	
5 Divide line 4 by 35,100 and multiply by 100			S_a = 65.38		

FIGURE 9
AIR ROUTE WORK SHEET

	s	s^2
Groundwater Route Score (S_{gw})	4.90	24.01
Surface Water Route Score (S_{sw})	9.70	94.09
Air Route Score (S_a)	65.38	4275.15
$s_{gw}^2 + s_{sw}^2 + s_a^2$		4393.25
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2}$		66.28
$\sqrt{s_{gw}^2 + s_{sw}^2 + s_a^2} / 1.73 = S_M =$		38.31

FIGURE 10
WORKSHEET FOR COMPUTING S_M

OFFICIAL DOCKET

Facility name: MANVILLE SITE

Location: WAUKEGAN, ILLINOIS

EPA Region: V

Person(s) in charge of the facility: NORM NIEDERGANG, ON-SCENE COORDINATOR

Name of Reviewer: NORM NIEDERGANG Date: AUG. 12, 1982.

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.)

LANDFILL BORDERING LAKE MICHIGAN ON MANVILLE PROPERTY INTO WHICH IS PLACED BOTH FRIABLE AND CONSOLIDATED ASBESTOS AND OTHER MANUFACTURING WASTES. THE LANDFILL HAS BEEN IN USE SINCE ABOUT 1920.

Scores: S_M = 38.31 (S_{gw} = 4.69 S_{sw} = 9.70 S_a = 65.36)

S_{FE} = 0

S_{DC} = 37.50

FIGURE 1
HRS COVER SHEET

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	6	6	
Net Precipitation	0 (1) 2 3	1	1	3	
Permeability of the Unsaturated Zone	0 1 2 (3)	1	3	3	
Physical State	0 1 (2) 3	1	2	3	
Total Route Characteristics Score			12	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	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					3.5
Ground Water Use	0 (1) 2 3	3	3	9	
Distance to Nearest Well/Population Served	(0) 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			3	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			2808	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 4.89			

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	6	6	
Physical State	0 1 (2) 3	1	2	3	
Total Route Characteristics Score			10	15	
3 Containment	0 1 (2) 3	1	2	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	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	0 1 2 (3)	2	6	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10; 12 16 18 20; 24 30 32 35 40	1	0	40	
Total Targets Score			12	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			6240	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} = 9.70		

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	45	45	5.1
Date and Location: 4/28/82 UPWIND, MIDSITE AND DOWNWIND					
Sampling Protocol: 8-HR SAMPLES COLLECTED AT ABOVE LOCATIONS ON 37MM MCE FILTERS, THEN ANALYSED BY ELECTRON MICROSCOPY.					
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	0	3	
Toxicity	0 1 2 3	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	8	8	
	Total Waste Characteristics Score		17	20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 / 21 24 27 30	1	21	30	
Distance to Sensitive Environment	0 1 2 3	2	6	6	
Land Use	0 1 2 3	1	3	3	
	Total Targets Score		30	39	
4 Multiply 1 x 2 x 3			22950	35,100	
5 Divide line 4 by 35,100 and multiply by 100			S_a = 65.38		

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	4.89	23.91
Surface Water Route Score (S_{sw})	9.70	94.09
Air Route Score (S_a)	65.38	4274.54
$S_{gw}^2 + S_{sw}^2 + S_a^2$		4392.54
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		66.28
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		38.31

FIGURE 10
WORKSHEET FOR COMPUTING S_M

-NOT APPLICABLE-

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} =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

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	12	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			12	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			8100	21,600	
7 Divide line 5 by 21,600 and multiply by 100			S_{DC} = 37.50		

FIGURE 12
DIRECT CONTACT WORK SHEET

August 16, 1982

FIT QUALITY ASSURANCE TEAM

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 500 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: Johns-Manville

LOCATION: Waukegan, Illinois

DATE SCORED: April 4, 1983

PERSON SCORING: Kenneth V.B. Jennings

PRIMARY SOURCE(S) OF INFORMATION (e.g., EPA region, state, FIT, etc.):
EPA Region, FIT (Don Woods, Ecology & Environment)

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

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: JOHNS - MANVILLE

LOCATION: WAUKEGAN, ILLINOIS (S1/2, SEC 10, R45N, T23E

10.-: THE WASTE DISPOSAL AREA IS LOCATED ON AN AREA WHICH HAS BEEN BUILT UP BY WASTES* ACCUMULATING SINCE ABOUT 1920 TO A HEIGHT OF APPROXIMATELY 50 TO 60 FT. ABOVE THE NATURAL GROUND SURFACE. THEREFORE, ANY CITED REFERENCE WHICH DISCUSSES "LANDFILL" OR "LANDFILLED AREA" IS ACTUALLY REFERING TO THE AREA WHICH HAS BEEN FILLED FROM THE NATURAL GROUND SURFACE UP TO A HEIGHT OF 50 TO 60 FT. TO THE BEST OF MY ESTIMATION, NO LANDFILLING HAS EVER OCCURED BELOW THE NATURAL GROUND SURFACE. THEREFO A MORE CORRECT WAY TO DESCRIBE THE METHOD OF DISPOSAL AT THIS SITE IS "WASTE PILE".
FURTHERMORE, CURRENT DISPOSAL OF FRIABLE ASBESTOS OCCURS IN AN EXCAVATED PIT ABOUT 150 FT. IN DIAMETER AND APPROXIMATELY 50 FT DEEP: FROM THE TOP OF THE BUILT UP AREA TO THE NATURAL GROUND SURFACE.

1

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

— NO DOCUMENTED RELEASE —

Rationale for attributing the contaminants to the facility:

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

GROUNDWATER DISCHARGE ZONE (0-50 FEET BELOW NATURAL GROUND SURFACE)

(LETTER FROM ILLINOIS STATE GEOLOGICAL SURVEY TO ROBERT WENGROW DATED 2/23/78.)

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

TOP OF THE ZONE OF SATURATION IS AT OR NEAR THE NATURAL GROUND SURFACE.

(SEE LETTER REFERENCED ABOVE)

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

LOWEST POINT OF WASTE DISPOSAL/STORAGE IS AT THE NATURAL GROUND SURFACE (SEE p1. OF THIS FORM FOR FURTHER EXPLAINATION)

Net Precipitation

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

MEAN ANNUAL PRECIPITATION = 32 INCHES

(FROM THE MODEL)

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

MEAN ANNUAL EVAPORATION = 30 INCHES

(FROM THE MODEL)

Net precipitation (subtract the above figures):

NET PRECIPITATION = +2 INCHES

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

SURFICIAL BEACH SAND WHICH IS DENSE AND MEDIUM GRAINED.

(FROM: LETTER FROM ILLINOIS STATE GEOLOGICAL SURVEY TO ROBERT WENGROW DATED 2/23/78)

Permeability associated with soil type:

$> 10^{-3}$ cm/sec.

(FROM THE MODEL AND FREEZE & CHERRY, 1979, GROUNDWATER.)

Physical State

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

FINE MATERIAL (FRIABLE ASBESTOS)

(IEPA DIVISION FILE MEMO FROM MARY SCHROEDER DATED 1/13/8[illegible]

* * *

See ATTACHED QA COMMENTS 4/5/83

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

WASTE PILE

(SEE p1 OF THIS FORM FOR FURTHER EXPLANATION OF WASTE MANAGEMENT METHOD CHOSEN)

Method with highest score:

SINCE THE BUILT UP AREA IS LIKELY TO CONTAIN FRIABLE ASBE WASTE AS WELL AS CONSOLIDATED ASBESTOS WASTE MATERIAL (FROM EARLY WASTE DISPOSAL TECHNIQUES) AND THE PILES ARE NOT COVER WITH AN APPROPRIATE COVER MATERIAL (ie-EARTHEN MATERIAL) AND NO LINER REPORTEDLY EXISTS (I EPA DIVISION FILE MEMO FROM MARY SCHROE DATED 2/8/80) - THIS WOULD RATE A 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

FRIABLE ASBESTOS

(MEMO CITED ABOVE)

Compound with highest score:

FRIABLE ASBESTOS; TOXICITY → SAX LEVEL 3

PERSISTENCE → HIGHLY PERSISTENT; LEVEL 3

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):

(SEE ATTACHED MEMO)

Basis of estimating and/or computing waste quantity:

(SEE ATTACHED MEMO)

* * *

4/5/83

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Scoring the site as a waste pile yields the same score as landfill designation. The site, in fact, has elements of both (from IEPA Div. File memo Mary Schroeder 2/8/80 1/13/82)

The reviewer scores the site as a landfill

Method with highest score:

Landfill Containment score = 3 no liner (see Schroeder memo)

Waste pile score = 3 inadequate cover (see Schroeder memo)

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Friable asbestos

Compound with highest score:

Toxicity → Sax level 3 (4th edition chronic exposure as per HRS Users Manual Guidelines

Persistence remains 3

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):

Score is based on landfill capacity. It is evident that waste volume exceeds generation rate used per the facility Part A RCRA Permit) 1/13/82 Div. File MEMO Mary Schroeder IEPA

Basis of estimating and/or computing waste quantity:

Landfill capacity = 600 AF = 96,800 yd^3

HRS score 8

See also 4/7/83

* * *

Response to Request for Information Concerning Waste Disposal Practices at the site from Schiff Hardin & Waite to EPA KVB 4/12/83

5 TARGETS

Ground Water Use

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

NOT USED, BUT USABLE

(LETTER FROM ISGS TO ROBERT WENDROW DATED 2/23/78)

Distance to Nearest Well

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

NONE

(LETTER CITED ABOVE)

Distance to above well or building:

- NOT APPLICABLE -

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:

NONE

(TOPOGRAPHIC MAP; CITY OF WAUKEGAN PUBLIC WORKS)

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):

NONE

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

NONE

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

— NONE

Rationale for attributing the contaminants to the facility: DOCUMENTED —

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain *

Average slope of facility in percent:

VARIES CONSIDERABLY HOWEVER, SLOPE FROM TOP OF SITE TO NATURAL GROUND LEVEL IS ≥ 8%.

(ON-SITE INSPECTION OBSERVATIONS BY ECOLOGY & ENVIRONMENT, INC - FIT PICTURES INCLUDED

Name/description of nearest downslope surface water:

LAKE MICHIGAN

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

~ 15 FT / 800 TO 1000 FT = 1.5% TO 1.9% SLOPE

(ON-SITE INSPECTION OBSERVATIONS BY ECOLOGY & ENVIRONMENT, INC - FIT AND TOPO MAP MEASUREMENT)

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

NO

(ON-SITE INSPECTION BY ECOLOGY & ENVIRONMENT, INC (FIT))

Is the facility completely surrounded by areas of higher elevation?

NO

1-Year 24-Hour Rainfall in Inches

BETWEEN 2.0 TO 2.5 INCHES

(FROM MODEL)

Distance to Nearest Downslope Surface Water

<1000 FT.

(DIRECT MEASUREMENT FROM TOPO MAP)

Physical State of Waste

FINE MATERIAL (FRIABLE ASBESTOS)

(SEE p. 3 OF THIS FORM FOR REFERENCE)

* * *

3 CONTAINMENT

See attached QA COMMENTS 4/5/83

Containment

Method(s) of waste or leachate containment evaluated:

WASTE PILES

(SEE p. 1 OF THIS FORM FOR FURTHER EXPLAINATION OF WASTE MANAGEMENT METHOD CHOSEN)

Method with highest score:

SINCE THE BUILT UP AREA IS LIKELY TO CONTAIN FRIABLE ASBESTOS WASTE AS WELL AS CONSOLIDATED ASBESTOS WASTE MATERIAL (FROM EARLY WASTE DISPOSAL TECHNIQUE AND THE PILES ARE NOT COVERED WITH AN APPROPRIATE COVER MATERIAL (ie - EARTHEN MATERIAL AND THE CONTAINMENT / DIVERSION SYSTEM IS POTENTIALLY UNSOUND (INADEQUATE COVER OF BUILT UP AREA) - THIS WOULD RATE A (2).

(IEPA LETTER FROM JOE PETRILLI TO J-M CORP. DATED 11/9/77 AND

Is the facility completely surrounded by areas of higher elevation?

1-Year 24-Hour Rainfall in Inches

Distance to Nearest Downslope Surface Water

Physical State of Waste

* * *

3 CONTAINMENT

Containment 4/5/83

Method(s) of waste or leachate containment evaluated:

Landfill, but one which has been built up over 50 feet above ground surface and which is inadequately covered.

Method with highest score:

Landfill not covered adequately + diversion system potentially unsound. HRS → 2

See Mary Schroeder IEPA Div File Memo 1/13/82

SEE ATTACHED
PA COMMENTS
4/5/83

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated
FRIABLE ASBESTOS

— SEE P4 OF THIS FORM —

Compound with highest score:

FRIABLE ASBESTOS

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):

UNKNOWN

Basis of estimating and/or computing waste quantity:

— SEE p. 4 OF THIS FORM —

* * *

5 TARGETS

Surface Water Use

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

RECREATION - FISHING, BOATING, SWIMMING, etc

4/5/83

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Friable asbestos

Compound with highest score:

Toxicity Sax level 3 (from 4th ed) Chronic exposure as per guidelines of HRS User's Manual

Persistence = 3

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):

See groundwater explanation

96,800 yd^3

Basis of estimating and/or computing waste quantity:

Landfill Capacity See Groundwater explanation

* * *

5 TARGETS

Surface Water Use

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

Is there tidal influence?

— NOT APPLICABLE —

Distance to a Sensitive Environment

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

— NOT APPLICABLE —

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

WETLANDS IMMEDIATELY ADJACENT TO SITE (<100 FT.)

(TOPO MAP - WAUKEGAN QUAD)

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

NONE KNOWN

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

NOTE: INTAKE LOCATED SEC. 22, T45N, R23E IS ONLY USED 1-2 DAYS A YEAR AND ACCORDING TO BOB BARTHOLOMEW (FIT) THEREFORE IS NOT REPRESENTATIVE OF THE WATER SUPPLIED TO THE POPULATION ON A DAY-TO-DAY BASIS.

INTAKES SERVING THE POPULATION ARE WELL OUTSIDE THE 1-MILE PERSCRIBED RADIUS (STATIC WATER BODY

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

NONE

Total population served:

NONE

Name/description of nearest of above water bodies:

LAKE MICHIGAN

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

SURFACE WATER
INTAKE LOCATED JUST OVER 4 MILES DOWNSTREAM

(DIRECT MEASUREMENT - TOPO MAP, WAUKEGAN QUAD)

AIR ROUTE

SEE ATTACHED QA COMMENTS 4/4/83

1 OBSERVED RELEASE

Contaminants detected:

ASBESTOS

Date and location of detection of contaminants

4/28/82 UPWIND, MIDSITE, AND DOWNWIND SAMPLES

Methods used to detect the contaminants:

8-HOUR SAMPLES COLLECTED AT ABOVE LOCATIONS ON 37mm. MCE FILTERS THEN ANALYZED (FIBER COUNT) BY ELECTRON MICROSCOPSY.

Rationale for attributing the contaminants to the site:

KNOWN ASBESTOS DISPOSAL SITE AND NATURE OF SAMPLE COLLECTION METHOD.

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

ASBESTOS → "0" (NFPA)

Most incompatible pair of compounds:

NO INCOMPATIBLE PAIRS

AIR ROUTE 4/4/83

1 OBSERVED RELEASE

Contaminants detected:

Asbestos

Date and location of detection of contaminants

4/28/82 Upwind, Mid site, and downwind samples

Methods used to detect the contaminants:

8-hour samples collected at above locations on 37 mm. MCE filters then analyzed (fiber count) by electron microscopy.

Rationale for attributing the contaminants to the site:

G.A. Jones, Chief, Superfund Implementation Group, cites in a Review of Data Manville Site memo to Peter McCumiskey, Public Health Advisor EPA Region 5 (12/3/82) that asbestos fibers are apparently being released from the site.

Four questions were raised pertaining to the sampling technique (see attached page)

***

The reviewer concurs with the original evaluation.

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

4/4/83

Responses to the Johns-Manville Critique of Asbestos Sampling Method

1. The dichotomous sampling was executed properly. The filters were not switched because the samples were taken one at a time (Don Woods, Ecology and Environment (312) 663-9415 personal communication 4/4/83).

2. For the purpose of determining asbestos release, dichotomous sampling was sufficient (Don Woods, Ecology and Environment (312) 663-9415 personal communication 4/4/83). Johns-Manville asserts that composite sampling would have been the preferred method.

3. The upwind coarse filter was slightly cracked as it was removed however, it is unlikely that any fibers were dislodged due to the strong electrostatic attraction generated by the filter and the very minor damage involved (Don Woods, Ecology and Environment (312) 663-94 personal communication 4/4/83, 4/5/83). The upwind sample is the backgr

4 Because of the myriad of fiber types present in the site area, TEM was selected over optical methods because its superior resolution permits unambiguous fiber identification. Fiberglass and other fibrous materials would not then be erroneously counted as asbestos (Airborne Asbestos Survey the Johns-Manville Site 4/28/82 Ecology + Environment).

Toxicity

Most toxic compound:

FRIABLE ASBESTOS → SAX LEVEL 2

Hazardous Waste Quantity

Total quantity of hazardous waste:

UNKNOWN

SEE ATTACHED QA COMMENTS 4/5/83

Basis of estimating and/or computing waste quantity:

(SEE ATTACHED MEMO)

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

CITY OF WAUKEGAN ALONE IS 67,653 PEOPLE ACCORDING TO THE 1980 CENSUS WHICH MAX'S THE POPULATION IN THIS RADIUS. (SMALLER RADIIS' EXCLUDE THE MAJOR POPULATION AREAS AND WOULD RESULT IN AN OVERALL LOWER SCORE.) – FROM TOPO MAP – WAUKEGAN QUAD. AND CITY OF WAUKEGAN PLANNING DEPT. –

Distance to a Sensitive Environment

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

NOT APPLICABLE

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

SEE p. 9 OF THIS FORM

Toxicity

Most toxic compound:

Friable asbestos Sax level 3 for chronic exposure as per HRS Users Manual Guidelines.

Hazardous Waste Quantity

Total quantity of hazardous waste: 4/5/83

96,800 yd^3

Basis of estimating and/or computing waste quantity:

Landfill Capacity (see groundwater explanation)

* * *

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

Distance to a Sensitive Environment

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

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

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

NONE KNOWN

Land Use

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

INDUSTRIAL AREA ADJACENT (< 1/4 MILE)

(AERIAL PHOTO'S ; TOPO MAP - WAUKEGAN QUAD)

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

ILLINOIS - BEACH STATE PARK ADJACENT (< 1/4 MILE)

(TOPO MAP - WAUKEGAN QUAD)

Distance to residential area, if 2 miles or less:

RESIDENTIAL AREA (1/4 - 1/2 MILE)

(TOPO MAP - WAUKEGAN QUAD)

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

NONE

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

NONE

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

NONE

OBSERVED INCIDENT

— NONE DOCUMENTED —

ACCESSIBILITY

AS PER DON WOODS (FIT - SITE INSPECTION TEAM MEMBER) - BARRICE AROUND SITE DOES NOT EXTEND ALONG THE ENTIRE EASTERN EDGE OF THE SITE (LAKESIDE) AND ACCESS IS POSSIBLE FROM THAT SIDE.

CONTAINMENT

PILES, NOT COVERED WITH PROPER COVER MATERIAL (ie - EARTHEN MATERIAL) - PILES SUSPECT TO CONTAIN FRIABLE ASBESTOS DUE TO EARLY DISPOSAL TECHNIQUE

WASTE CHARACTERISTICS - TOXICITY

FRIABLE ASBESTOS → SAX LEVEL 3

TARGETS

POPULATION (1-MILE RADIUS): ① INDUSTRIAL AREA (WEST AND SOUTHWEST)
② HEAVIER RESIDENTIAL AREA (WEST)
PLUS ② 65 STRUCTURES x 3.8 = >247 PEOPLE
TOTAL: 1000 - 5000 EST'D
(FROM AERIAL PHOTO'S / TOPO MAP)

DISTANCE TO A CRITICAL HABITAT:

NO KNOWN ENDANGERED SPECIES

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 12 AUG 1982

SUBJECT: Calculation of Waste Volume for Manville Site, Waukegan, Illinois

FROM: Norman Niedergang
Environmental Engineer

TO: File

Three alternative techniques have been used to calculate the waste quantity at the above subject site:

1. Landfill capacity (per the facility Part A RCRA Permit Application)

   =600 ac. ft. = 96,800 cu. yd.

   This would score an 8 by the HRS.

2. Waste generation volume (per the facility Part A RCRA Permit Application)

   = 5 tons/yr. X 60 yrs. = 300 tons

   This would score a 5 by the HRS.

3. Wastepile volume using physical description which includes a 50 ft. height with 2:1 sideslopes:

   = 19390 cu. yd.

   This would score an 8 by the HRS.

Based on the above, I have assigned a score of 8 for the waste quantity.