C.3
N.P.
153433

APPENDIX E
MODEL WORKSHEETS

Site Name: CAHOKIA / DEAD CREEK

Location: St. Clair Co. - Sauget, IL.

EPA Region: V

Person(s) in Charge of the Site: Unknown (various owners)

Name of Reviewer: C. E. Mayo III

Site Overall Score: 8.87 FTE = 6.12 D.C = 81.26

General Description of the Site:

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

Creek bed unlined

Waste disposed - liquids, sludges, some solids

Site boundaries: Queen Ave on the north & Judith Lane on the South - Dead Creek ravine bed

G.W. major concern

Waste Quantity Analysis: UNK - need amount

→ Area had several landfills operating since 1937 until 1960's

Surrounded on the North by several large companies which have been operating since the 1900's

ROUTE - GROUND WATER

Rating Factor	Basis of Information	Site Rating (Circle One)	Multiplier	Site Score	Maximum Possible Score
1 OBSERVED RELEASE (ref GW 1)					
Measured Level or Evidence of Release	St. John report	0 (45)	1	45	45
If the site score is zero, go to step 2 otherwise, go to step 5					
2 ROUTE CHARACTERISTICS[1] (ref GW 2)					
Depth to Aquifer of Concern		0 1 2 3	2		6
Net Precipitation		0 1 2 3	1		3
Permeability of Unsaturated Zone		0 1 2 3	2		6
			Subtotal		15
3 CONTAINMENT[1,2] (ref GW 3)					
Containment		0 1 2 3	1		3
4 POTENTIAL FOR RELEASE					
Multiply site score from 2 by site score from 3. The product is site rating for this route.			1		45
5 RELEASE					
Enter site score from 1 or 4				45	45
6 WASTE CHARACTERISTICS[1,3] (ref GW 4)					
Physical State	PCB's	0 1 2 (3)	1	3	3
Persistence		0 1 2 (3)	2	6	6
Toxicity/ Infectiousness		0 1 2 (3)	2	6	6
			Subtotal	15	15
7 HAZARDOUS WASTE QUANTITY[1] (ref GW 5)					
Total Waste Quantity	Unknown	0 (1) 2 3 4 5	1	1	5
(by Superfund definition) excluding waste that is totally contained					
8 TARGETS[1] (ref GW 6)					
Ground Water Use	DEPA files	0 (1) 2 3	3	3	9
Distance to Nearest Well Downgradient	DEPA files	0 1 2 (3)	3	9	9
Population Served by Ground Water Within 3 Mile Radius	ISWS	0 (2) 2 3 4 5	6	6	30
			Subtotal	18	48
9 GROUND WATER ROUTE SUBTOTAL					
A. Multiply 5 x 6 x 7 x 8	45 x 15 x 1. x 18			12150	162,000
B. Multiply [A.] by Normalization Factor of 0.6 and Divide by 1,000			0.6	7.29 [B.] Route Subtotal	97.2

[1]A rating of zero should be entered when data is unavailable to rate an additive factor. A rating of 1 should be entered when data is unavailable to rate a multiplicative category such as the waste quantity or containment. A total of 5% missing data for the entire site is allowed when rating a site.

[2]If the site has more than one type of containment (e.g., surface impoundment, landfill, containers), consider all cases separately and enter the score from the worst case.

[3]Rate the five most hazardous wastes. Select the one with the highest subtotal score and enter that score.

ROUTE - SURFACE WATER

Rating Factor	Basis of Information	Site Rating (Circle One)				Multiplier	Site Score	Maximum Possible Score
1 OBSERVED RELEASE (ref SW 1)								
Measured level or evidence of release	St John's report	0		(45)		1	45	45
If the site score is zero, go to step 2 otherwise, go to step 5								
2 ROUTE CHARACTERISTICS[1] (ref SW 2)								
Site Slope and Terrain		0	1	2	3	1		3
1 Year 24 Hour Rainfall		0	1	2	3	1		3
Distance to Surface Water		0	1	2	3	1		3
Flood Potential		0	1	2	3	2		6
						Subtotal		15
3 CONTAINMENT[1,2] (ref SW 3)								
Containment		0	1	2	3	1		3
4 POTENTIAL FOR RELEASE								
Multiply site score from 2 by site score from 3. The product is site rating for this route.						1		45
5 RELEASE								
Enter site score from 1 or 4							45	45
6 WASTE CHARACTERISTICS[1,3] (ref SW 4)								
Physical State	PCB's	0	1	2	(3)	1	3	3
Toxicity/ Infectiousness	↓	0	1	2	(3)	2	6	6
Persistence	↓	0	1	2	(3)	2	6	6
						Subtotal	15	15
7 HAZARDOUS WASTE QUANTITY[1] (ref SW 5)								
Total Waste Quantity	Unknown	0	(1)	2	3	4	5	1	1	5
(by Superfund definition) excluding waste that is totally contained										
8 TARGETS[1] (ref SW 6)										
Surface Water Use	Recreation	0	1	(2)	3			3	6	9
Critical Habitats	100 yr. floodplain	0	1	(2)	3			2	4	6
Population Served by Surface Water With Water Intake Within 3 Miles Downstream From Site	No. Public Ad Supply	(0)	1	2	3	4	5	6	0	30
								Subtotal	10	45
9 SURFACE WATER ROUTE SUBTOTAL										
A. Multiply 5 x 6 x 7 x 8	45 x 15 x 1 x 10								6750	151,875
B. Multiply [A.] by normalization factor of 0.64 and divide by 1,000								0.64	4.32 [B.] Route Subtotal	97.2

ROUTE - AIR

Rating Factor	Basis of Information	Site Rating (Circle One)	Multiplier	Site Score	Maximum Possible Score
1	**OBSERVED RELEASE*** (ref A 1)				
Evidence of Release	Don Woods' 4/14/88 memo	0 (45)	1	45	45
If the site score is zero, the route subtotal score is zero, otherwise, go to Step 2					
2	**RELEASE**				
Enter site score from 1				45	45
3	**WASTE CHARACTERISTICS**[1,3] (ref A 2)				
Physical State/ Volatility	St John's report	0 1 (2) 3	1	2	3
Reactivity	Dichlorobenzene	(0) 1 2 3	1	0	3
Incompatibility		0 1 (2) 3	1	2	3
Toxicity/ Infectiousness	PCB's	0 1 2 (3)	2	6	6
			Subtotal	10	15
4	**HAZARDOUS WASTE QUANTITY**[1] (ref A 3)				
Total Waste Quantity	UNKNOWN	0 (1) 2 3 4 5	1	1	5
(by Superfund definition) excluding waste that is totally contained					
5	**TARGETS**[1] (ref A 4)				
Distance to Nearest Population	St. John's report	0 1 2 (3)	2	6	6
Population Within 1 Mile Radius	topo & pop. chart	0 1 2 3 4 (5)	5	25	25
Critical Environments	w/in 100yr floodplain	0 1 (2) 3	2	4	6
Land Use	Topo map	0 1 2 (3)	1	3	3
			Subtotal	38	40
6	**AIR ROUTE SUBTOTAL**				
A. Multiply 2 x 3 x 4 x 5	45 x 10 x 1 x 38 = 17100			17100	135,000
B. Multiply [A.] by normalization factor of 0.72 and divide by 1,000			0.72	12.31 [B.] Route Subtotal	97.2

*Only air monitoring data will be considered as evidence of release.

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AGGREGATE SITE RATING

Route	Route Subtotal from 6 or 9	Route Subtotal Squared	Maximum Possible Score
Ground Water	7.29	53.14	$(97.2)^2 = 9447.84$
Surface Water	4.32	18.66	$(97.2)^2 = 9447.84$
Air	12.31	151.54	$(97.2)^2 = 9447.84$
Sum		223.34	28,343.52
Square Root of Sum		14.94	168.36
Overall Score* = $\frac{\text{sum} \times 100}{168.36}$		8.87	100

FIRE AND EXPLOSION

Route Subtotal from 8	Maximum Possible Score
6.12	97.2

Adjusted Score = $\frac{\text{Route Subtotal} \times 100}{97.2} = \frac{6.12 \times 100}{97.2} = 6.29$

DIRECT CONTACT

Route Subtotal from 8	Maximum Possible Score
78.98	97.2

Adjusted Score = $\frac{\text{Route Subtotal} \times 100}{97.2} = \frac{78.98 \times 100}{97.2} = 81.26$

*The overall and adjusted scores will be between 0 and 100. The maximum overall score for a site with only one exposure route is 57.7.