SDMS US EPA REGION V -1

SOME IMAGES WITHIN THIS DOCUMENT MAY BE ILLEGIBLE DUE TO BAD SOURCE DOCUMENTS.

Narrative Summary

Site Name: Dead Creek

Location: [redacted] and Cahokia, Illinois (St. Clair County)

Size: Area bounded by Route 3, Quenny Avenue, Falling Springs Road, and Judith Lane equals 92 acres, but actual area requiring remedial activities probably much larger.

Nature of Operations: The creekbed has received direct industrial discharges and surrounding area has been used for direct dumping of materials. Landfills in area reportedly used for hazardous waste dumping from 1927 to 1960's.

History of ownership/operations. The affected area is entirely privately owned with individual lots in ownership. Lots "back-up" to center-line of creek.

Wastes Present: High levels of organics including PCB's and high levels of metals including white phosphorous have been detected at the site. Quantity has not been fully determined due to large area of contamination.

Media Affected: Known releases have been documented for groundwater, surface water, soil, and air.

Demographics: The site is in a highly urbanized area with population greater than 10,000 within 1-mile radius.

Geography: Site located within 1 mile of Mississippi River.

Clean-up Actions: Fence installed by USEPA in 1981. IEPA procurement of interim clean-up contractor in December, 1984, but project postponed for safety considerations.

Enforcement Actions: Project under review at Illinois Attorney General's office.

SKD:bv/24060/03

Facility name: Cahokia / Dead Creek

Location: Sauget / Cahokia, Illinois (St. Clair County)

EPA Region: 5

Person(s) in charge of the facility: N/A ; property under control of multiple private ownerships.

Name of Reviewer: S. Dunn Date: 3/21/85

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.)

Unlined creekbed and surrounding area. Creekbed has received direct industrial discharges and surrounding area has been used for direct dumping of materials. Landfills adjacent to creek have received waste including hazardous waste since 1927.

Scores: S_M = 24.23 S_{gw} = 5.65 S_{sw} = 100 S_a = 49.23

S_{FE} = 52.5

S_{DC} = 50.0

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	45	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	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score		—	15	
3 Containment	0 1 2 3	1	—	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	6	8	
	Total Waste Characteristics Score		24	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	—	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			3,240	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = 5.65		

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	45	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		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score		—	15	
3 Containment	0 1 2 3	1	—	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	6	8	
	Total Waste Characteristics Score		24	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	
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		6	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			6,480	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} = 10.07		

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: 3/23/82 Dead Creek creekbed					
Sampling Protocol: HNU pli, OVA, explosimeter, O_2 meter, rad. met					
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	1	3	
Toxicity	0 1 2 (3)	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 (6) 7 8	1	6	8	
	Total Waste Characteristics Score		16	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	0	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		24	39	
4 Multiply 1 x 2 x 3			17,280	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a = 49.23			

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	5.65	31.92
Surface Water Route Score (S_{sw})	10.07	101.40
Air Route Score (S_a)	49.23	2,423.59
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2,556.91
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		50.57
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		29.23

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1	3	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1	3	3	
Ignitability	0 1 2 3	1	3	3	
Reactivity	0 1 2 3	1	1	3	
Incompatibility	0 1 2 3	1	1	3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	6	8	
Total Waste Characteristics Score			14	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1	3	5	
Distance to Nearest Building	0 1 2 3	1	2	3	
Distance to Sensitive Environment	0 1 2 3	1	0	3	
Land Use	0 1 2 3	1	3	3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1	5	5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1	5	5	
Total Targets Score			18	24	
4 Multiply 1 x 2 x 3			756	1,440	
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} = 52.5		

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	45	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	8.2
3 Containment	0 15	1	—	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	16	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			16	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			10,800	21,600	
7 Divide line 6 by 21,600 and multiply by 100			SDC = 50.00		

FIGURE 12
DIRECT CONTACT WORK SHEET

Documentation Records for Hazardous
Ranking System

Facility Name: Cahokia/Dead Creek
Location: Sauget, Illinois (St. Clair County)

A. Groundwater Route (SGW = 5.65)

1. Observed Release - Score 45

a. Contaminants deteted offsite: PCB's, chloroaniline, dichlorobenzene, copper, manganese, lead, cyclohexane, chlorophenol, aliphatic hdyrocarbons, silver, nickel, arsenic, cadmium, phosphorous.

b. Dccumented by Attachment A

2. Route Characteristics
-- N/A: observed release

3. Containment
-- N/A: observed release

4. Waste Characteristics -- Score 24

a. Toxicity/Persistence -- Score 18

	Toxicity	Persistence
PCB's	3	3
Chloroaniline	3	1
Dichlorobenzene	2	2
Cyclohexane	2	2

b. Hazardous Waste Quality -- Score 6
-- in excess of 1,084 cubic yards documented by Attachment B

5. Targets -- Score 3

a. Groundwater Use -- Score 1
-- industrial use only

b. Distance to Nearest Will/Population Served -- Score 0
-- no use for potable water

B. Surface Water Route (SSW = 10.07)

1. Observed Release -- Score 45

   a. contaminants deposited directly in water

   b. documented in Ron St. John Report (04/81)

2. Route Characteristics

   -- N/A: observed release

3. Containment

   -- N/A: observed release

4. Waste Characteristics -- Score 24

   -- refer to Groundwater Route

5. Targets -- Score 6

   a. Surface water use -- Score 6

      -- Creek flows through residential areas and is used for recreational purposes, particularly by children.

   b. Distance to a Sensitive Environmental -- N/A

   c. Population Served/Distance to Water Intake Downstream -- N/A

C. Air Route (SA = 49.23)

1. Observed Release -- Score 45

   a. Date and Location: March 23, 1982 -- In creek.

   b. Sampling Protocol: Organic Vapor Analyzer (OVA) and HNU, Photo-Ionizer with 10.2 ev and 11.7 ev lamps. Also explosimeter, radiation survey meter, O_2 indicator

   c. Documentation provided by Attachment D

2. Waste Characteristics -- Score 16

   a. Reactivity and Compatibility -- Score 1

      -- Phosphorous, Arsenic

   b. Toxicity -- Score 9

      -- PCB's 3
      -- Dichlorophenol 3
      -- Chloroaniline 3

   c. Hazardous Waste Quantity -- Score 6

3. Targets -- Score 24

   a. Population within 4-mile radius -- Score 21

      -- 6,100 people within 0.5-1.0 mile of site

   b. Distance to Sensitive Environment -- Score 0

      -- greater than 2 miles

   c. Land Use -- Score 3

      -- agricultural, residential, and industrial areas within 0.25 mile

D. Direct Contact and Fire and Explosion Work Sheets documented by Attachment E.

SD:dks/585e, 81-83

DRAFT-SUBJECT TO CHANGE

WORKSHEET FOR HAZARDOUS WASTE
SITE RANKING MODEL

FIT QUALITY ASSURANCE TEAM

GENERAL

Site name and location: Cahokia/Dead Creek
St. Clair County: Sauget, IL

Date(s) of site scoring: 3/22/85

Primary source(s) of information (e.g., EPA region, state, FIT, etc.):
- IEPA file - Cahokia/Dead Creek General file
- IEPA Report: "A Preliminary Hydrogeologic Investigation in the Northern Portion of Dead Creek & Vicinity" Ron St. John (4/81)

Factors not scored (assigned 0 for additive and 1 for multiplicative) due to insufficient information:

Comments or qualifications:

DRAFT RESPONSE CHANGE

GROUND [illegible] - PATHWAY

[1] Measured Level or Evidence of Release

Describe substance(s) and nature of release:

Corresponds to general waste characteristics of area industries

— PCB's, Chloroaniline, Dichlorobenzene, Copper, Manganese, Lead, Cyclohexane, Chlorophenol, aliphatic hydrocarbons, silver, nickel, arsenic, cadmium — found in monitoring wells by IEPA.

Describe method of measurement or observation:

Lab analysis in report "A Preliminary Hydrogeologic Investigation in the Northern Portion of Dead Creek & Vicinity" by Ron St. John - 4/81 (pp.) Attachment A

[2] Depth to Aquifer of Concern

Describe/name aquifer of concern:

N/A - observed release (O.R.)

Why is above aquifer of concern?

N/A - O.R.

Depth and how determined, including source(s):

N/A - O.R.

Net Precipitation

Net precipitation and how determined, including source(s):

N/A - O.R.

Permeability of Unsaturated Zone

Soil type(s) in unsaturated zone:

N/A - O.R.

Permeability and how determined, including source(s):

N/A - O.R

NEW PAGE

CHANGE

[3] Containment

Method of waste management (e.g., surface impoundment, landfill, etc) of extreme case:

N/A - O.R.

Describe basis for selecting extreme case:

N/A - O.R.

Describe method(s) of waste or leachate containment for above extreme case:

N/A - O.R.

Cite source(s) of information:

N/A - O.R.

[6] Physical State

Physical state of waste and source of information:

Liquid - Run St. John report

Persistence

Most persistent compound subject to transport via ground water:

PCB's

Basis for selecting compound, including source(s):

Lab Analyses from H_2O & soil samples taken in the area of concern

Basis for selecting persistence rating score:

Mitre persistence

Toxicity/Infectiousness

Toxic materials subject to transport via ground water and Sax or NFPA level for each:

PCB → Sax toxicity

CHANGE

Cite source(s) of information indicating toxics present on site:

Ron St John Report

Infectious materials present on site and source(s) of information:

—

Basis for selecting CDC classification of infectious materials:

—

7 Total Waste Quantity

Total waste quantity present, including unit of measurement (e.g., tons, cubic yards drums):

> 1,084 cubic yards → IEPA documentation Attachment B

Basis for estimating or computing quantity, including source(s) of information:

8 Ground Water Use

Use(s) of aquifer of concern and source(s) of information:

- industrial use only : ISWS
- municipal water taken from Mississippi upstream in area of Granite City

Distance to Nearest Well Downgradient

Distance to nearest well downgradient:

- Monsanto (Raney) well causes cone of depression

How was downgradient direction(s) established, including source(s) of information:

- ISWS → West South West

How was distance determined?:

—

Is nearest building known to be using ground water? Source of information: No

CHANGE

Is most well known to be drawing from aquifer of concern? Source of information: Yes - ISWS, Henry Formation is major aquifer of American Bottoms

Population Served by Ground Water Within 3-Mile Radius

Population served with 3-mile radius: N/A, no use for drinking water

How was population counted or computed, including source(s) of information: ——

Is population known to be served by aquifer of concern? Source of information: ——

DRAFT - SUBJECT TO CHANGE

SURFACE WATER PATHWAY

1 Measured Level or Evidence of Release

Describe substances and nature of release: Contaminants deposited directly in creek Lab analysis of water samples (soil samples) in creek, pond, and * Cerro Copper ponds.

Describe method of measurement or observation:

Ron St Johns report (4/81) Attachment C

2 Site Slope and Terrain

Computation of slope and description of points of measurement:

N/A - O.R.

Cite source(s) of information (topo maps, etc.):

N/A - O.R.

1-Year 24-Hour Rainfall

Amount of rainfall and source of information:

N/A - O.R.

Distance to Surface Water

Distance and description of points of measurement:

N/A - O.R.

Cite source(s) of information:

N/A - O.R.

Flood Potential

In what flood plain, if any, is the site located?:

N/A - O.R.

Cite source(s) of information:

N/A - O.R.

CHANGE

[3] [illegible]ment

Describe basis for selecting extreme waste management case:

N/A - O.R.

Describe method(s) of waste or leachate containment for extreme case:

N/A - O.R.

Cite source(s) of information:

N/A - O R.

[8] Surface Water Use

Use(s) of downstream surface water and sources of information:

Creek flows through residential areas. Direct contact possible; particularly by children

Critical Habitats

Location and descritpion of downstream critical habitat, if any:

N/A

Distance and description of points of measurement:

N/A

Cite source(s) of information:

N/A

Population Served By Surface Water with Water Intake Within 3 Miles Downstream from Site

Population served by water intake(s): N/A

Is surface water within 3 miles in a tidal estuary?: No

CHANGE

Description(s) and location(s) of intake(s) and corresponding population served by each:

—

~~How~~ was population counted or computed?:

—

Cite source(s) of water-intake and population information:

ISWS

DRAFT - SUBJECT TO CHANGE

AIR PATHWAY

[1] Evidence of Release

Describe contaminant and monitoring which reveal that background levels have been exceeded?:

- Organic vapors (uncharacterized) detected in creekbed

Cite source(s) of information:

- April 14, 1982 monitoring [Attachment D]
- Creek now has standing water; additional (current) sampling not possible.

[3] Physical State/Volatility

Physical state of waste and source(s) of information:

- Liquid in creek bed (residue)

Vapor pressure of waste and source(s) of information:

N/A - O.R.

Reactivity

Reactive substances and source(s) of information:

N/A - O.R.

NFPA level for each and basis of selection:

N/A - O.R.

Incompatability

Incompatible substances which are present and source(s) of information:

N/A - O.R.

Basis for selecting incompatibility score:

N/A - O.R.

CHANGE

[5] Distance to Nearest Population

Distance and description of points of measurement:

N/A - O.R.

Cite source(s) of information:

N/A - O.R.

Population Within 1-Mile Radius

Population and how counted or computed:

>10,000 - Towns of Cahokia, Centreville, and Sauget w/in 1-mile radius

Cite source(s) of information:

Topo map and census info

Land Use

Location and type of determining land use:

- Agricultural
- Industrial
- Residential

} All in general vicinity of creek.

Distance to determining land use:

- Adjacent -

Cite source(s) of information:

IEPA files

D035438

COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
0-Dichlorobenzene	ND	2-Chlorophenol	ND
Bis(2-chloroethyl)ether	"	2-Nitrophenol	"
Nitrobenzene	"	Phenol	"
Hexachlorobutadiene	"	2,4-Dimethylphenol	"
1,2,4-Trichlorobenzene	"	2,4-Dichlorophenol	"
Isophorone	"	2,4,6-Trichlorophenol	"
Naphthalene	"	4-Chloro-3-methyphenol	"
Methylnaphthalene	"	2,4-Dinitrophenol	"
Dimethylnaphthalene	"	2-Methyl-4,6-dinitrophenol	"
Trimethylnaphthalene	"	4-Nitrophenol	"
Hexachlorocyclopentadiene	"		
Acenaphthylene	"		
Dibenzofuran	"		
Acenaphthene	"		
Fluorene	"		
2,4-Dinitrotoluene	"		
Phenanthrene	"		
Anthracene	"		
Fluoranthene	"		
Pyrene	"		
Benzidine	"		
Chrysene	"		
Benzo(a)anthracene	"		
3,3'-Dichlorobenzidine	"		
Chlorobenzene	5X		
Aliphatic Hydrocarbons	523C		
Other Organics	4CC (GE)		
Detection Limit	25C		
Units	ug/L (PPB)		
			RECEIVED
			DEC 07 [illegible]
			IEPA-DLPC

11/26/84
[illegible]

Attachment C.

Table 1. Chemical analysis of soils (in ppm, dry weight material)

Parameters	Sample number X101	X102	X103	X104	X105	X106	X107
Aluminum	12,000	NA	NA	NA	NA	NA	NA
Arsenic	26.0	NA	NA	NA	NA	NA	6,000
Barium	1,300	4,700	210	390	475	NA	4,800
Berylium	<4.0	3.0	<0.5	2.0	<1.0	NA	<1.0
Boron	<10.0	76.0	<10.0	<10.0	<10.0	NA	NA
Cadmium	<40.0	50.0	8.0	31.0	2.0	NA	70.0
Calcium	24,000	5,300	210,000	16,000	13,000	NA	11,000
Chromium	400	50.0	60.0	50.0	<50.0	NA	360
Cobalt	40.0	32.0	6.0	8.0	9.0	NA	30.0
Copper	15,000	17,200	320	1,800	360	NA	32,000
Iron	57,000	110,000	11,000	19,000	18,000	NA	70,000
Lead	800	1,300	260	250	75.0	NA	2,400
Magnesium	7,100	2,000	10,000	5,100	3,300	NA	2,900
Manganese	600	170	210	160	200	NA	150
Mercury	1.2	NA	NA	NA	NA	NA	NA
Nickel	2,000	2,300	45.0	600	<50.0	NA	3,500
Phosphorus	NA	6,200	720	1,200	4,200	NA	7,040
Potassium	2,400	900	1,400	2,100	1,400	NA	1,200
Silver	<100	45.0	10.0	<10.0	<10.0	NA	40.0
Sodium	800	1,100	100	190	125	NA	1,700
Strontium	100	140	210	47.0	43.0	NA	180
Vanadium	<80.0	50.0	22.0	31.0	35.0	NA	60.0
Zinc	12,000	21,000	900	5,600	780	NA	25,000
PCB	.120	.120	2.8	2.0	<.050	5,200	120
Aliphatic hydrocarbons	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Alkylbenzenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloronitrobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dichlorophenol	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Hydrocarbons	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalenes	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Table 1. Chemical analysis of soils (in ppm, dry weight material) (cont)

Parameters	Sample number						
	X108	X109	X110	X111	X112	X113	X114
Aluminum	8,000	9,100	7,000	8,000	6,600	10,000	6,400
Arsenic	44.0	25.0	67.0	80.0	50.0	300	23.0
Barium	3,800	1,600	4,300	1,800	8,000	2,400	1,600
Berylium	<4.0	<4.0	<4.0	<5.0	<5.0	<5.0	<3.0
Boron	<10.0	<10.0	<10.0	<15.0	<15.0	NA	<7.0
Cadmium	<30.0	200	40.0	100	100	400	<10.0
Calcium	10,000	24,000	16,000	13,000	30,000	11,000	14,000
Chromium	300	<40.0	140	50.0	50.0	250	400
Cobalt	30.0	20.0	<20.0	<30.0	30.0	100	<20.0
Copper	31,000	7,700	22,000	15,000	41,000	3,800	4,800
Iron	58,000	75,000	67,000	68,000	52,000	365,000	55,000
Lead	2,000	1,700	2,000	2,000	5,100	3,600	2,000
Magnesium	3,900	3,600	4,100	4,000	4,000	4,000	2,800
Manganese	150	300	200	160	300	120	130
Mercury	1.7	3.0	3.3	3.2	6.0	30	1.7
Nickel	3,000	900	1,900	2,000	2,700	2,500	1,700
Phosphorus	NA	NA	NA	NA	NA	NA	NA
Potassium	1,500	1,700	1,300	1,600	1,200	1,400	1,300
Silver	<80.0	<50.0	<90.0	<50.0	<100	<100	<70.0
Sodium	900	900	700	1,000	1,600	2,800	700
Strontium	200	130	160	160	430	180	140
Vanadium	<70.0	<80.0	70.0	100	<50.0	<100	<50.0
Zinc	22,000	27,000	25,000	47,000	52,000	61,000	20,000
PCB	NA	NA	NA	NA	NA	NA	NA
Aliphatic hydrocarbons	NA	NA	NA	NA	NA	NA	NA
Alkylbenzenes	NA	NA	NA	NA	NA	NA	NA
Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA
Dichlorophenol	NA	NA	NA	NA	NA	NA	NA
Hydrocarbons	NA	NA	NA	NA	NA	NA	NA
Naphthalenes	NA	NA	NA	NA	NA	NA	NA
Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA

Table 1. Chemical analysis of soils (in ppm, dry weight materials) (cont)

Parameters	Sample number						
	X115	X116	X117	X118	X119	X120	X121
Aluminum	9,000	9,000	1,300	1,200	NA	NA	NA
Arsenic	18.0	9.0	16.0	15.0	NA	NA	NA
Barium	3,400	300	400	1,600	510	1,200	230
Berylium	<7.0	<2.0	<2.0	<2.0	1.0	1.0	<1.0
Boron	<20.0	<20.0	<10.0	6.0	<10.0	<10.0	<10.0
Cadmium	120	<20.0	<30.0	<20.0	7.0	3.0	1.0
Calcium	11,000	5,000	1,600	6,000	7,300	72,000	11,000
Chromium	120	130	<40.0	<30.0	36.0	38.0	<10.0
Cobalt	40.0	<10.0	<20.0	<4.0	9.0	10.0	9.0
Copper	22,000	270	160	1,000	100	150	100
Iron	40,000	12,000	2,400	4,300	17,500	16,200	16,500
Lead	3,200	80.0	<40.0	100	43.0	60.0	<20.0
Magnesium	5,000	2,600	1,200	1,000	4,500	4,300	5,900
Manganese	150	60	40.0	50.0	260	350	370
Mercury	4.0	0.2	2.0	2.0	NA	NA	NA
Nickel	2,400	140	<20.0	<15.0	<10.0	80.0	120
Phosphorus	NA	NA	NA	NA	NA	NA	NA
Potassium	1,500	2,300	850	1,200	1,800	1,200	1,500
Silver	<100	<50.0	50.0	<50.0	<10.0	<10.0	<10.0
Sodium	1,100	360	150	180	110	225	80.0
Strontium	200	40.0	<30.0	<30.0	42.0	140	32.0
Vanadium	150	<50.0	<40.0	<50.0	27.0	27.0	25.0
Zinc	71,000	2,500	<50.0	300	2,000	700	230
PCB	NA	NA	NA	NA	1.1	80.0	<.05
Aliphatic hydrocarbons	NA	NA	NA	NA	BDL	BDL	BDL
Alkylbenzenes	NA	NA	NA	NA	BDL	BDL	BDL
Dichlorobenzene	NA	NA	NA	NA	BDL	BDL	BDL
Dichlorophenol	NA	NA	NA	NA	BDL	BDL	BDL
Hydrocarbons	NA	NA	NA	NA	BDL	BDL	BDL
Naphthalenes	NA	NA	NA	NA	BDL	BDL	BDL
Trichlorobenzene	NA	NA	NA	NA	BDL	BDL	BDL

Table 1. Chemical analysis of soils (in ppm, dry weight materials) (cont)

Parameters	Sample number							
	X122	X123	X124	X125	X126	X127	X128	X129
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	NA	NA	NA	29.5	95.8
Barium	5,500	4,400	350	2,500	5,000	2,500	NA	NA
Berylium	2.0	3.0	1.0	<1.0	2.0	2.0	NA	NA
Boron	<10.0	<10.0	25.0	<10.0	76.0	<10.0	NA	NA
Cadmium	35.0	40.0	4.0	6.0	70.0	50.0	50.6	22.11
Calcium	15,000	12,500	4,500	6,900	19,000	8,000	NA	13,095
Chromium	50.0	150	50.0	50.0	100	340	140	491
Cobalt	15.0	15.0	7.0	9.0	50.0	30.0	NA	NA
Copper	21,900	18,700	4,500	1,000	44,800	28,000	5.5	24,324
Iron	50,000	49,000	13,500	7,000	107,000	63,000	29,535	51,911
Lead	1,700	1,400	130	260	2,000	1,700	843	2,604
Magnesium	3,800	3,400	3,500	380	3,700	2,700	NA	2,088
Manganese	190	200	80.0	45.0	280	150	141	245
Mercury	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1,700	1,600	590	130	3,000	NA	569	1,474
Phosphorus	NA	NA	NA	2,000	8,900	4,700	NA	NA
Potassium	960	950	1,000	770	860	1,000	NA	NA
Silver	30.0	30.0	6.0	<10.0	100	40.0	29.0	98.0
Sodium	630	650	100	80	1,400	700	NA	NA
Strontium	190	175	27.0	50.0	300	130	NA	NA
Vanadium	45.0	42.0	19.0	13.0	85	45.0	NA	NA
Zinc	19,900	17,700	2,600	1,500	62,000	28,000	NA	NA
PCB	540	1,100	24.0	10,000	350	73.0	2.2	13.0
Aliphatic hydrocarbons	BDL	BDL	BDL	BDL	BDL	BDL	13.0	26.0
Alkylbenzenes	BDL	BDL	BDL	370	BDL	BDL	BDL	BDL
Dichlorobenzene	0.35	23.0	BDL	660	BDL	BDL	BDL	1.7
Dichlorophenol	BDL	BDL	BDL	170	BDL	BDL	BDL	BDL
Hydrocarbons	BDL	BDL	BDL	21,000	BDL	BDL	BDL	BDL
Naphthalenes	BDL	BDL	BDL	650	BDL	BDL	BDL	BDL
Trichlorobenzene	BDL	BDL	BDL	78	BDL	BDL	BDL	BDL

NA - not attempted
BDL - below detection limit
All samples taken between 9/8/80 and 11/26/80

Attachment D.

SEP 13 '84

IEPA-DLPC

DATE: April 14, 1982
TO: Rene' Van Someran
FROM: Donald Woods
SUBJECT: TDD F5-8203-2-09 (Dead Creek)

This memo is to review and discuss the findings of an air monitoring survey conducted March 23, 1982, at Cahokia Dead Creek - TDD #F5-8203-02-09. The purpose of this survey was to determine if fugitive emissions are leaving this site (useful for Mitre modeling).

This survey involved the use of an Organic Vapor Analysizer (OVA) and HNU, Photo-ionizer, with a 10.2ev and 11.7ev lamps. In addition drager detector tubes for phosphine gas where used, along with standard site entry equipment (Explosimeter, Oxygen Indicator, Radiation Survey Meter, and Radiation Dosimeters). The team consisted of Eileen Black, April Richards, Claude Mays, and Don Woods.

Survey findings would indicate that a small, but measurable, concentration of organic vapors, and gases are present in the breathing zone (approximately 5' above ground) when on dead creek bed. This concentration increases as you near the creek bed. HNU Readings, with 11.7ev probe, where approximately 4-5ppm above background in the breathing zone area. In the same area, the HNU with the 10.2ev probe, showed a 0.2ppm increase, and the OVA had an increase of 0.2ppm to 0.5ppm. Phosphine gas was not detected.

Near the north end of Dead Creek, just south of Queeny, and adjacent to Ruan Transport Co. a 3" buried pipe was noted to enter and empty into the side of the creek slope. A small stream of colorless, turbit and oily liquid came from this pipe, and formed a small pool.

Instruments showed the following: (At Breathing Zone) HNU/11.7ev = 9ppm; HNU/10.2ev = 2ppm; OVA = 0.3ppm. (6" from the Liquids' Surface) HNU/11.7ev = 400ppm; HNU/10.2ev = 900ppm; OVA = 350ppm. Samples where taken and the OVA Chromatograph showed a very high retention time. It was also noted that the outside of the sample bottle had a fuel oil smell. Therefore, truck fuel (#2 diesel) seems to be one probable component.

This site strongly appears to release fugitive organic vapors and gases. However, concentrations seem low, and volumes are unmeasured. This site should be considered for a positive scope in mitre modeling.

DW:rp Donald B Woods

DATE March 23, 1982

TIME 9:10 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW (NNW)

WEATHER Sunny, slight wind from S (~5mph), Temp. ~50°F

SITE Sauget IL / Dead Creek

TDD# F5-8203-02

PHOTOGRAPHED BY:

Claude E. Mays, III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens

Picture #12 ~ corresponds to number on negatives

DESCRIPTION: Looking up (northerly) Dead Creek from Judith Lane towards Monsanto and Cerro Corporation

DATE March 23, 1982

TIME 9:40 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget IL / Dead Creek

TDD# F5-8203-02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens as above

Picture # 13

DESCRIPTION: Eileen Black and April Richards preparing to go "on-site."

DATE March 23, 1982

TIME 9:56 (A.M.) P.M.

DIRECTION: N NNE (NE) ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, Slight wind from S (~5mph), Temp ~50°F

SITE Sauget II / Dead Creek

TDD# FS-8203-02

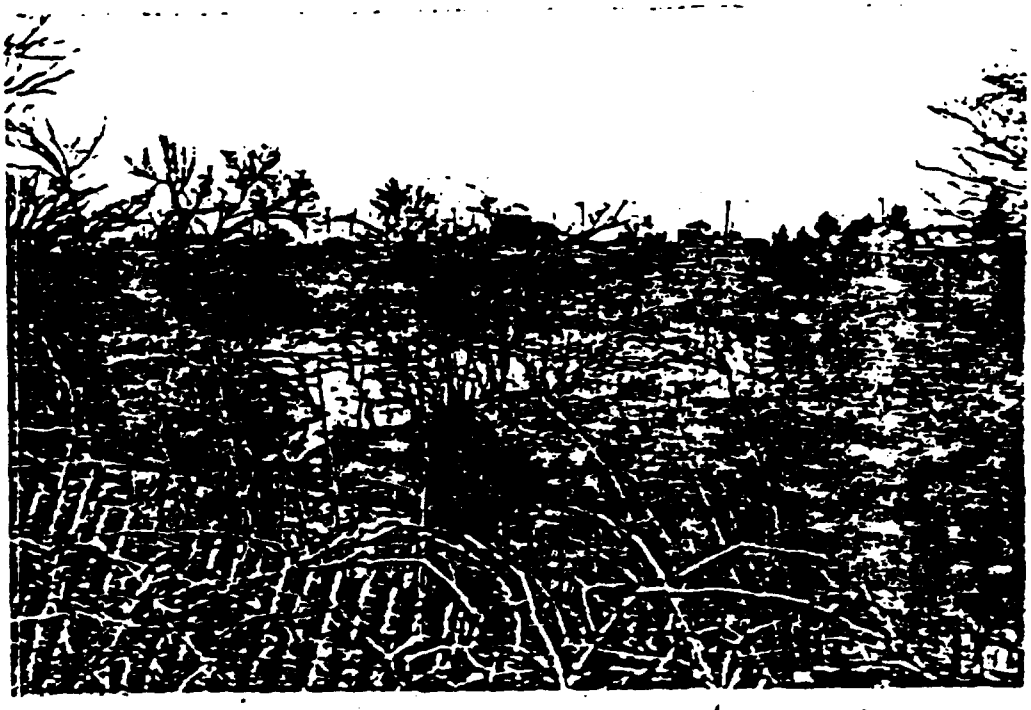
PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens



Picture #16

DESCRIPTION: Shows lake formed on Walnut Grove Subdivision property by Dead Creek

DATE March 23, 1982

TIME 9:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, II / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #17

DESCRIPTION: Shows spot #3 - readings with H-Nu (11.7 lamp) at breathing height 5ppm.

DATE March 23, 1982

TIME 10:05 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
~~W WNW~~ NW NNW

WEATHER Sunny, slight-wind from S (~5mph), Temp. ~50°F

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 -02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens

Picture #20

DESCRIPTION: Shows spots #5 & #6 - readings with 14-NU (11.7 lamps) 8 and

DATE March 23, 1982

TIME 10:10 (A.M.) P.M.

DIRECTION: N NNE NE (ENE)
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget IL / Dead Creek

TDD# FS - 8203 - 02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #21

DESCRIPTION: Shows snow fence (placed there by the I.E.P.A.) on far side torn down for easy access to creek.

DATE March 23, 1982

TIME 11:40 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, slight wind from S (~5mph), Temp. ~50°F

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Charles E. Hays, III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens

Picture #1

DESCRIPTION: Shows Dead Creek and surrounding area south of Judith Lane.

DATE March 23 1982

TIME 11:55 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, wind from S-SW @ ~5-10mph, Temp ~60°F

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Canon AE-1 camera
zoom - f: 90mm ~ 230mm
1:4.5 lens

Picture #2.

DESCRIPTION: Showing area of seepage near land leased to Ruan Transport Co

DATE March 23, 1982

TIME 11:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, wind from S-SW

@ 5-10 mph, Temp. ~60°F

SITE Sauget, IL / Dead Creek

TDD# F5 - 8203 - 02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ zoom f: 90mm ~ 230mm 1:4.5 lens

Picture #5

DESCRIPTION: Showing seepage from bank (pipe w/ inside diameter of 3 inches)

DATE March 23, 1982

TIME 11:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# F5 - 8203 - 02

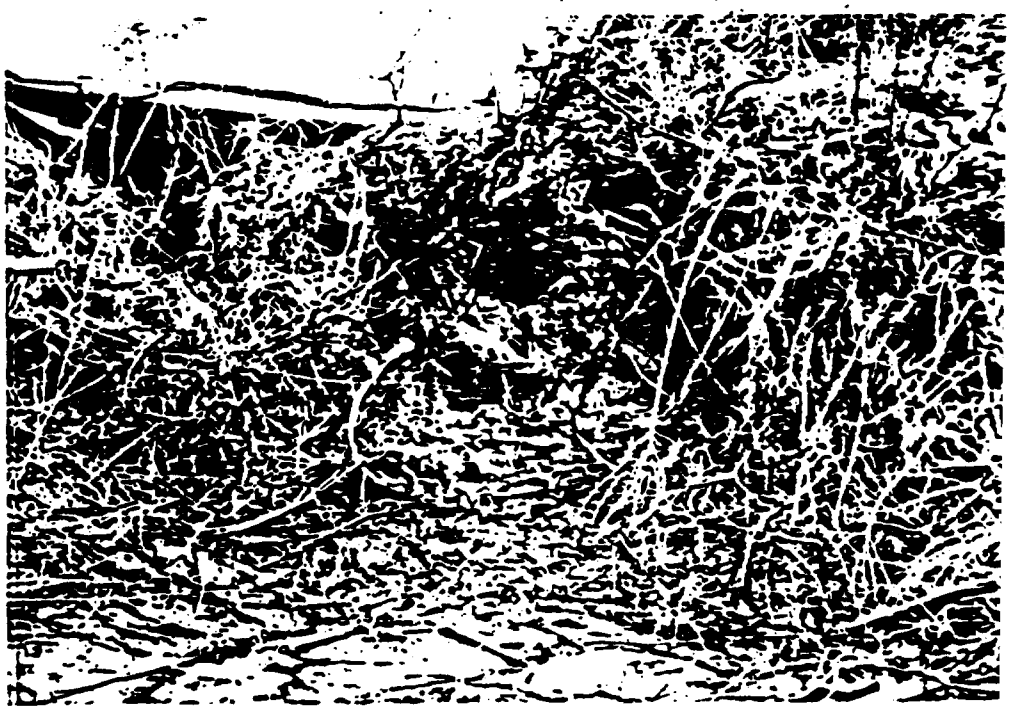
PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above



Picture #6

DESCRIPTION: Close-up of pipe which seems to be the source of seepage

PHOTOGRAPHY LOG SET

DATE March 23, 1982

TIME 12:00 noon A.M. (P.M.)

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W (WNW) NW NNW

WEATHER Sunny, wind from S-SW @ 5-10 mph, Temp. ~60°F

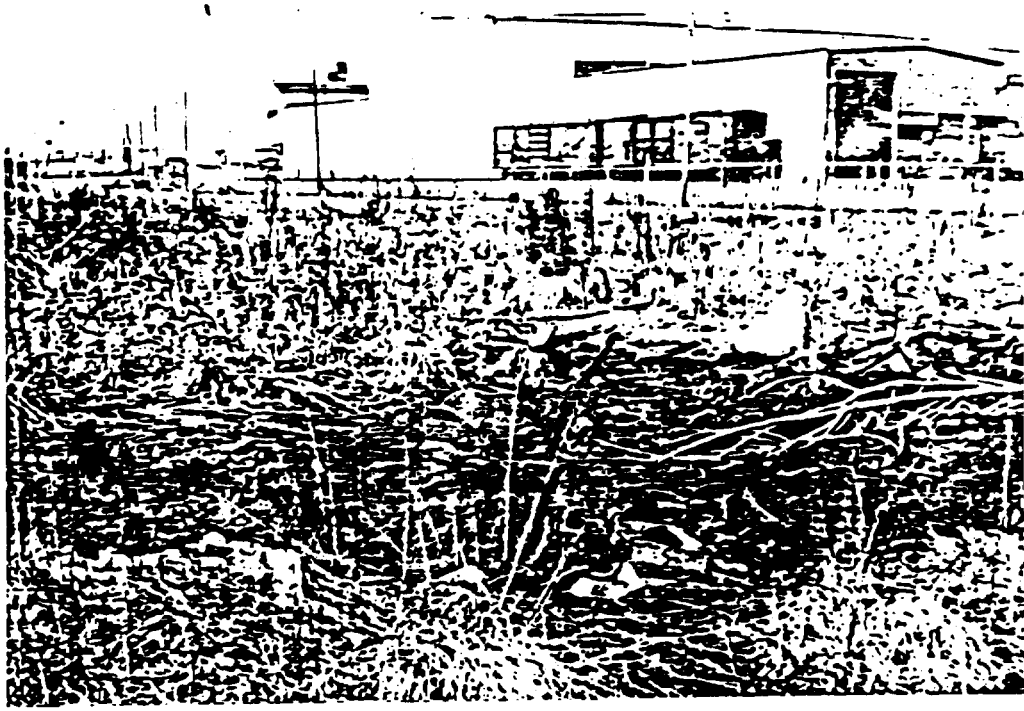
SITE Sauget IL/Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY: Don Weeds

SAMPLE ID# (if applicable) N/A

Camera: Canon AE-1 w/ Canon FD 50 mm f:1-1.8 lens



Picture # 9

DESCRIPTION: Another pit with drums and "oily" substance on Cerro Corp. property

DATE

TIME A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER

SITE

TDD#

PHOTOGRAPHED BY:

SAMPLE ID# (if applicable)

PHOTO

DESCRIPTION:

FIRE AND EXPLOSION - PICTURES FROM DEPA FILE OF CREEK BED ON FIRE.

CONTAINMENT → WASTE DUMPED WITH NO SEGREGATION
SCORES A (3)

Attachment E

WASTE CHARACTERISTICS

DIRECT EVIDENCE → no measurements, but photographs of creek bed on fire
SCORES A (3)

IGNITABILITY → SCORES A (3)

	TOXICITY	PERSISTENCE	IGNITABILITY	REACTIVITY
Chlorobenzene	2	2	3	0
Dichlorophenol	3	1	0	0
Chloroaniline	3	1	1	0
PCB	3	3	0	0
Phosphorous	3	1	3	1
Arsenic	2	1	0	1
Cyclohexane	2	2	3	0

SOURCE: SAX AND NFPA DATA

REACTIVITY → SCORES A (1)

INCOMPATIBILITY → SCORES A (1)

HAZ. WASTE QUANTITY → UNKNOWN : SCORES A (0)

TARGETS

DIST. TO NEAREST POP.

201 ft - 2640 ft SCORES A (3)

SOURCE: U.S.G.S. TOPO MAP (DIST ~ 500 ft)

DIST. TO NEAREST BLDG.

51 - 200 ft SCORES A (2)

SOURCE: U.S.G.S. TOPO MAP (DIST ~ 55 ft)

DIST TO SENSITIVE ENVIR. → SCORES A (0)

LAND USE → SCORES A (3) (see air section)

POP. W/IN 2 MILE RADIUS → 12,239 : 1/8 of E St Louis + 1520 bldgs counted off of map × 3.6 people
(E St. Louis : 5700 pop)
5700/8 = 6463 people SCORES A (5)

BLDGS. W/IN 2 MI. RAD. → 1520 counted ; 6463/3.6 = 1700 TOTAL: 322

DIRECT CONTACT

OBSERVED INCIDENT → Yes, resident's dog rolled in ditch and died of apparent chemical burns in Aug. 1980 SOURCE: ST JOHN'S REPORT

WASTE CHARACTERISTICS : TOXICITY - PCB's = 3 SCORES A (3)

TARGETS : POP W/IN 1 MI. RAD. - 6,100 SCORES A (4)

DIST. TO CRITICAL HABITAT : SCORES A (0)

NATIONAL PRIORITIES LIST

REGIONAL SUBMISSION CHECKLIST FORM

SITE NAME Cahokia Dead Creek STATE IL

EPA I.D. NUMBER

ON-SCENE COORDINATOR MICHAEL O'TOOLE

HRS SCORE ~~8.70~~ 18.48

PATHWAYS: GROUNDWATER 4.24

SURFACE WATER 7.55

AIR ~~12.31~~ 30.77

FIRE & EXPLOSION 30.00

DIRECT CONTACT 50.00

INFORMATION REQUIRED FOR SUBMISSION

DOCUMENTATION RECORDS X

EPA FORM 2070 X

SUMMARY SHEET

PHOTOGRAPHS (OPTIONAL) X

SUMMARY, PAST/FUTURE ACTIONS

ENFORCEMENT SUMMARY

COMMENTS:

Facility Name: CAHOKIA / DEAD CREEK

Location: SAUGET, IL. (ST CLAIR COUNTY)

EPA Region: 5

Person(s) in Charge of the Facility:

Name of Reviewer: C. E. Mays III Date: 7/20/82

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.)

Unlined creek bed - the surrounding area had several landfills operating in the creek's vicinity since 1927 to the 1960's. Site is surrounded on the north by several large companies which have been operating since the 1900's.

Scores: S_M = ~~8.70~~ 18.48 (S_{gw} = 4.24 S_{sw} = 7.55 S_a = ~~12.51~~ 30.77)

S_{FE} = 30.00

S_{DC} = 50.00

Figure 1

HRS COVER SHEET

RECEIVED
SEP 25 1984
IEPA-DLPC

GC
Math error under air pathway
[illegible]
[illegible]

Attachment A.

Table 3. Ground water quality in private wells (background), concentrations in ppm except where noted

Parameters	Ground water standards	Collection date and well number			
		9/16/80 G501	9/16/80 G502	9/16/80 G503	9/23/80 G504
Arsenic	0.05	0.008	0.004	0.001	< 0.001
Barium	1.0	0.2	0.16	0.39	0.05
Boron	1.0	0.28	0.27	0.25	0.58
Cadmium	0.01	<0.001	< 0.005	< 0.002	< 0.002
Chromium	1.05	<0.01	< 0.005	< 0.01	NA
Copper	0.02	0.02	< 0.005	< 0.005	0.06
Iron	1.0	4.6	19.0	17.7	0.73
Lead	0.05	< 0.02	< 0.02	< 0.05	< 0.04
Magnesium	NE	33.0	39.0	36.0	30.0
Manganese	0.15	1.02	1.26	0.79	0.65
Mercury	0.0005	< 0.0001	< 0.0001	< 0.0001	0.0001
Nickel	1.0	< 0.005	< 0.0005	< 0.01	0.02
Phosphorus	0.05	< 1.0	< 1.0	< 1.0	0.2
Potassium	NE	6.6	5.7	4.5	6.0
Silver	0.0005	< 0.005	< 0.005	< 0.005	< 0.01
Sodium	NE	21.0	24.0	12.0	26.0
Zinc	1.0	0.85	NA	0.18	0.8
PCB (ppb)	NE	NA	NA	NA	< 0.1

NE - Not established
NA - Not attempted

Table 4a. Analysis of ground water samples from the IEPA monitoring wells on 10/23/80 in ppm except when noted

PARAMETERS	STANDARDS	G101	G102	G103	G104	G105	G106	G107	G108	G109	G110	G111	G112
Alkalinity	NE	362	410	336	406	271	387	552	375	287	210	302	699
Ammonia	1.5	0.3	1.6 ✓	1.7 ✓	0.4	0.9	2.9 ✓	0.5	0.3	4.5 ✓	1.2	0.1	1.5
Arsenic	.05	.023	.023	.043	.049	.067 ✓	.16 ✓	.043	.008	.085 ✓	.053 ✓	.008	.019
Barium	1.0	1.3 ✓	0.8	2.9 ✓	2.2 ✓	2.0 ✓	0.6	2.1 ✓	0.3	0.2	0.5	0.2	0.5
Boron	1.0	0.5	0.4	0.5	0.6	0.4	0.5	0.5	0.4	0.4	0.5	0.5	5.6 ✓
Cadmium	.01	0.0	0.0	.03 ✓	0.0	0.0	0.0	0.0	0.0	0.0	1.5 ✓	0.0	.06 ✓
Calcium	NE	180	210	210	210	340	185	500	140	380	500	110	242
C.O.D.	NE	237	160	244	206	473	115	1070	298	275	780	79	162
Chloride	250	48	103	56	52	65	109	132	79	69	61	32	363 ✓
Chromium (total)	1.05	.04	.02	.09	.04	.12	.01	.07	0.0	0.0	.38	0.0	.01
Chromium (+6)	.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Copper	.02	.46 ✓	.13 ✓	1.1 ✓	.31 ✓	.73 ✓	.44 ✓	.68 ✓	.04 ✓	.13 ✓	2.3 ✓	.04 ✓	1.2 ✓
Cyanide	.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0
Fluoride	1.4	0.4	0.7	0.7	0.3	1.0	0.7	0.7	0.3	1.2	0.8	0.3	0.5
Hardness	NE	501	884	549	630	528	637	777	496	1664	279	419	1080
Iron	1.0	51.0 ✓	39.5 ✓	86 ✓	89 ✓	18 ✓	62 ✓	13 ✓	4.1 ✓	39.0 ✓	340 ✓	5 ✓	18 ✓
Lead	.05	.19 ✓	.15 ✓	0.26 ✓	0.2 ✓	0.31 ✓	0.0	0.27 ✓	0.0	0.0	7.3 ✓	0.07 ✓	0.44 ✓
Magnesium	NE	69	90	79	72	100	49	205	24	100	209	24	82.5
Manganese	.15	5.1 ✓	3.8 ✓	4.2 ✓	3.4 ✓	4.2 ✓	1.9 ✓	9.8 ✓	0.98 ✓	4.5 ✓	8.8 ✓	1.1 ✓	3.9 ✓
Mercury	.0005	0.0	0.0	.0002	0.0	0.0	0.0	0.0	.0001	0.0	0.0	0.0	.0001
Nickle	1.0	0.1	0.1	0.9	0.1	0.8	0.1	0.3	0.0	0.5	1.9 ✓	0.0	0.3
Nitrate-nitrite	10.0	0.1	0.1	0.1	0.4	0.0	0.1	0.1	1.1	0.0	0.4	0.5	0.0
pH	6.5-9.0	6.6	6.6	6.5	6.6	6.6	6.5	6.4 ✓	6.6	6.3 ✓	6.7	7.0	6.4 ✓
Phenolics	.001	0.0	.01 ✓	0.0	.005 ✓	0.0	.065 ✓	2.5 ✓	.01 ✓	.45 ✓	.015 ✓	0.0	.875 ✓
Phosphorus	.05	2.9 ✓	1.2 ✓	3.3 ✓	2.7 ✓	6.0 ✓	1.8 ✓	9.4 ✓	.18 ✓	.72 ✓	16 ✓	.24 ✓	.69 ✓
Potassium	NE	10.6	13.1	13.4	12.3	22	7.7	15.2	13.7	14.9	29	4.9	58
R.O.E.	500	650 ✓	1230 ✓	765 ✓	790 ✓	824 ✓	1020 ✓	1230 ✓	704 ✓	2460 ✓	508 ✓	512 ✓	2190 ✓
Selenium	.01	.003	.001	.004	.01	.008	.001	.004	.001	.001	.005	.002	.001
Silver	.005	.01 ✓	0.0	.02 ✓	0.0	0.0	0.0	0.0	.01 ✓	0.0	0.0	.02 ✓	.11 ✓
Sodium	NE	24	60	40	29	57	96	NA	40	40	53	24	260
S.C.	NE	870	1560	1050	1080	1040	1340	1430	960	2470	720	490	NA
Sulfate	250	132	434 ✓	230	204	296 ✓	281 ✓	201	103	1348 ✓	93	104	518 ✓
Zinc	1.0	0.6	0.4	6.2 ✓	0.3	3.7 ✓	0.1	0.8	0.0	0.1	9.0 ✓	0.0	7.8 ✓
PCB (ppb)	NE	1.0 ✓	1.2 ✓	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	2.7 ✓	< 0.1	< 0.1
Chlorophenol (ppb)	NE	BDL	1200 ✓	BDL	BDL	BDL	BDL	630 ✓	BDL	19 ✓	BDL	BDL	BDL
Chlorobenzene (ppb)	NE	BDL	BDL	BDL	BDL	BDL	BDL	19 ✓	BDL	BDL	BDL	BDL	100 ✓
Dichlorobenzene (ppb)	NE	BDL	BDL	BDL	BDL	BDL	BDL	25 ✓	BDL	BDL	BDL	BDL	65 ✓
Dichlorophenol (ppb)	NE	BDL	BDL	BDL	BDL	BDL	BDL	890 ✓	BDL	BDL	BDL	BDL	BDL
Cyclohexanone (ppb)	NE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	120 ✓	5.9 ✓	BDL	BDL
Chloroaniline (ppb)	NE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3500 ✓

✓ indicates above standard amounts NA = Not Attempted NE = Not Established BDL = Below Detectable Limit

Table 4b. Analysis of ground water samples from the IEPA monitoring wells on 1/28/81 in ppm except when noted

PARAMETERS	STANDARDS	G101	G102	G103	G104	G105	G106	G107	G108	G109	G110	G111	G112
Alkalinity	NE	447	421	266	520	363	556	621	448	18	308	394	619
Ammonia	1.5	0.3	0.0	1.4	0.2	0.7	3.3✓	1.0	0.0	17✓	0.2	0.1	0.5
Arsenic	0.05	0.015	0.016	0.018	0.002	0.037	0.11	0.021	0.004	7.5✓	0.013	0.014	0.027
Barium	1.0	0.9	1.2✓	0.9	0.3	1.8✓	1.0	3.2✓	0.5	0.2	1.0	0.7	0.5
Boron	1.0	0.3	0.4	0.4	0.7	0.4	0.5	0.5	0.2	0.8	0.2	0.6	0.9
Cadmium	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14✓	0.00	0.00	0.00
Calcium	NE	220.0	328.9	176.3	218.0	319.2	225.5	1169.5	205.5	466.7	169.4	181.4	198.3
C.O.D.	NE	45	93	56	9	143	212	635	8	1315	37	28	47
Chloride	250	20	128	64	29	59	156	201	76	32	36	18	210
Chromium (total)	1.05	0.02	0.02	0.02	0.00	0.03	0.00	0.09	0.00	0.04	0.02	0.02	0.00
Chromium (+6)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	0.02	0.59✓	0.79✓	0.36✓	0.14✓	0.43✓	0.29✓	0.97✓	0.00	94.1✓	0.11✓	0.04✓	0.28✓
Cyanide	0.025	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Fluoride	1.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hardness	NE	554	1072	490	717	764	617	960	564	2144	447	530	486
Iron	1.0	30.4✓	16.5✓	20.8✓	1.4✓	60.8✓	67.5✓	172✓	0.3	198✓	19.1✓	10.7✓	18.9✓
Lead	0.05	0.17✓	0.08✓	0.00	0.00	0.07✓	0.00	0.32✓	0.00	0.00	0.00	0.00	0.00
Magnesium	NE	48.2	78.0	46.3	49.1	73.6	49.1	288.1	34.3	184.4	43.5	37.9	54.0
Manganese	0.15	3.02✓	3.15✓	3.07✓	1.41✓	4.10✓	2.13✓	9.64✓	0.34✓	8.30✓	0.77✓	1.76✓	2.78✓
Mercury	.0005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0004	0.0	0.0	0.0
Nichel	1.0	0.1	0.1	0.4	0.0	0.2	0.0	0.5	0.0	176✓	0.9	0.0	0.0
Nitrate - nitrite	10.0	0.0	2.5	0.1	0.5	0.0	0.0	0.2	3.5	0.3	18✓	0.5	0.0
pH	6.5 - 9.0	7.0	7.0	7.1	7.2	7.0	6.9	6.9	7.1	4.1✓	6.9	7.0	6.9
Phenolics	.001	0.0	0.0	0.0	0.0	0.0	1.46✓	0.5✓	0.01✓	1.86✓	0.02✓	0.015✓	0.05✓
Phosphorous	0.05	0.91✓	0.88✓	0.41✓	0.06✓	3.6✓	2.1✓	10✓	0.03	3.7✓	1.0✓	0.51✓	0.53✓
Potassium	NE	6.4	12	8.8	6.0	13	6.2	20	16	18	7.5	4.2	20
R.O.E.	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.01	0.002	0.002	0.002	0.002	0.003	0.002	0.011✓	0.004	0.006	0.016✓	0.002	0.0
Silver	.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sodium	NE	13	63	48	15	50	94	60	30	37	13	14	18
S.C.	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate	250	129	583✓	256✓	265✓	468✓	143	276✓	86	3371✓	57	153	212
Zinc	1.0	0.3	1.2✓	1.8✓	0.1	1.5✓	0.1	1.5✓	0.0	10.1✓	2.0✓	0.1	2.8✓
PCB (ppb)	NE	0.22✓	3.9✓	NA	0.3✓	BDL	NA	0.4✓	BDL	NA	NA	NA	BDL
Chlorobenzene (ppb)	NE	NA	NA	NA	NA	NA	NA	63✓	BDL	BDL	NA	NA	25✓
Dichlorophenol (ppb)	NE	NA	NA	NA	NA	NA	NA	560✓	BDL	BDL	NA	NA	BDL
Chloroaniline (ppb)	NE	NA	NA	NA	NA	NA	NA	90✓	BDL	BDL	NA	NA	21✓

✓ indicates above standard amounts

Below D

Attachment B

Hazardous Waste Quantity

In the fall of 1984, IEPA did an interim clean-up project at the site. Immediately prior to construction initiation IEPA was alerted to the possibility of waste containing drums existing in the clean-up area at very shallow depth. Because such drums would have significantly affected the clean-up action and for safety considerations, IEPA did not proceed with the clean-up action and deemed further investigation was required. The documented waste quantities for the interim clean-up action were did as follows: The quantities do not include the suspected drums.

1. Two "oil pools" estimated at 51 cubic yards - Analyses attached.

2. Debris in and heavily contaminated soil underlying oil pools estimated at 153 cubic yards.

3. Surficial drums estimated at 40 cubic yards.

4. Solidified spill material with estimated volume of 23 cubic yards - Analyses attached.

The Ron St. John report documents the existence and effects of a previous truck washing impoundment adjacent to Dead Creek. The estimated waste volume disposed of in the impoundment equals 815 cubic yards. The quantity estimation and adjacent well sampling analysis are attached.

The quantities described above are documentable estimates of waste quantity. Their total allows a score of 6 to be assigned for Hazardous Waste Quantity. Other known areas of hazardous waste exist at the site but have not been quantified. They include:

1. The creekbed itself with high levels of organic compounds and metals.

2. Suspected drums buried in large quantities in the vicinity of the site.

3. Contaminated water in the creek between Queeny Avenue and Judith Lane and the pond north of Judith Lane.

4. Highly contaminated soil north of Queeny Avenue on Cerro Copper property.

In short, it is IEPA's belief that the quantified waste volumes cited above represent a very small percentage of the waste volume existing at the site and that the revision of Hazardous Waste Quantity to 6 is conservative.

SKD:mgg0642e/16

(1)

DO 35935

Time Collected: 7:15 P.M.

Date Collected: OCT. 1, 84

Lab # [illegible] cmc

SPECIAL ANALYSIS FORM

Date Received [illegible]

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA / DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS COLLECTED FROM A BLACK OILY PIT JUST WEST OF THE NORTHWEST CORNER OF DEAD CREEK.

PHYSICAL OBSERVATIONS, REMARKS: JUST WEST OF SAMPLE #2. VERY THICK BLACK OILY MATERIAL DUMPED ON THE GROUND.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KEN MENSING MIKE GRANT

TRANSPORTED BY: KEN MENSING

LABORATORY

RECEIVED BY: Hoaji D. Kathia

DATE COMPLETED: 11/26/84

DATE FORWARDED: 11/26/84

PCBs < 16 mg/g

RECEIVED
~~DEC 07 1984~~
~~IEPA-DLPC~~

LPC-8A 4/77

(NOT FOR DATA PROCESSING)

35937 cmc

cmc

Cahokia, Dead Creek

(#1) from oily pit just west of #2
Very thick black oily material

D035435

COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
0-Dichlorobenzene	ND	2-Chlorophenol	ND
Bis(2-chloroethyl)ether	"	2-Nitrophenol	"
Nitrobenzene	"	Phenol	"
Hexachlorobutadiene	"	2,4-Dimethylphenol	"
1,2,4-Trichlorobenzene	"	2,4-Dichlorophenol	"
Isophorone	"	2,4,6-Trichlorophenol	"
Naphthalene	"	4-Chloro-3-methyphenol	"
Methylnaphthalene	"	2,4-Dinitrophenol	"
Dimethylnaphthalene	"	2-Methyl-4,6-dinitrophenol	"
Trimethylnaphthalene	"	4-Nitrophenol	"
Hexachlorocyclopentadiene	"		
Acenaphthylene	"		
Dibenzofuran	"	PCBs	< 16 ug/g
Acenaphthene	"		
Fluorene	"		
2,4-Dinitrotoluene	"		
Phenanthrene	"		
Anthracene	"		
Fluoranthene	"		
Pyrene	610		
Benzidine	ND		
Chrysene	"		
Benzo(a)anthracene	"		
3,3'-Dichlorobenzidine	"		
Phenyl Indene	320		
Dimethyl Phenanthrene	3100		
Trimethyl Phenanthrene	1400		
Aliphatic Hydrocarbons	14,200		
Other Organic Compounds	1200 (est.)		
Detection Limit	400		
Units	mg/kg (ppm)		

RECEIVED
DEC 07 1984
IEPA-DLPC

11/26/84

(3)

35941 cmc

Time Collected: 7:40 P.M.

Lab # [illegible] cmc

SPECIAL ANALYSIS FORM

Date Collected: OCT. 1, 84

Date Received [illegible]

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA/DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS A COMPOSITE OF SOIL AND/OR WASTE MATERIALS IN THE GENERAL AREA OF SAMPLES #1 AND #2.

PHYSICAL OBSERVATIONS, REMARKS:

SEVERAL MATERIALS FROM A WHITISH SUBSTANCE TO A DARK BROWN FINE POWDER LIKE MATERIAL WERE OBTAINED.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KENNETH MENSING TRANSPORTED BY: KEN MENSING
MIKE GRANT

LABORATORY

RECEIVED BY: Harji D. Kulthia DATE COMPLETED: 11/26/84 DATE FORWARDED: 11/26/84

PCBs = 18 µg/g (PPM)
(Aroclor 1260)

RECEIVED
DEC 07 1984
IEPA-DLPC

IL 532-0314
LPC 8A 4/77

(NOT FOR DATA PROCESSING)

35941
cmc

D035941

COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
0-Dichlorobenzene	ND	2-Chlorophenol	ND
Bis(2-chloroethyl)ether	"	2-Nitrophenol	"
Nitrobenzene	"	Phenol	"
Hexachlorobutadiene	"	2,4-Dimethylphenol	"
1,2,4-Trichlorobenzene	"	2,4-Dichlorophenol	"
Isophorone	"	2,4,6-Trichlorophenol	
Naphthalene	"	4-Chloro-3-methyphenol	"
Methylnaphthalene	"	2,4-Dinitrophenol	"
Dimethylnaphthalene	"	2-Methyl-4,6-dinitrophenol	"
Trimethylnaphthalene	"	4-Nitrophenol	"
Hexachlorocyclopentadiene	"		
Acenaphthylene	"		
Dibenzofuran	"		
Acenaphthene	"		
Fluorene	"		
2,4-Dinitrotoluene	"		
Phenanthrene	"		
Anthracene	"		
Fluoranthene	"		
Pyrene	"		
Benzidine	"		
Chrysene	"		
Benzo(a)anthracene	"		
3,3'-Dichlorobenzidine	"		
OTHER ORGANICS	4070		
DETECTION LIMIT	10		
UNITS	mg/kg (PPM)		
			RECEIVED
			DEC 1 [illegible]
			[illegible]

11/26/84

(7)

D035938 cmc

Time Collected: 7:30 P.M.

Lab # ~~[illegible]~~ cmc

SPECIAL ANALYSIS FORM

Date Collected: OCT. 1, 84

Date Received ~~[illegible]~~

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA / DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS COLLECTED FROM A BLACK OILY PIT JUST WEST OF THE NORTHWEST CORNER OF DEAD CREEK.

PHYSICAL OBSERVATIONS, REMARKS: JUST EAST OF SAMPLE # 1. VERY THICK BLACK OILY MATERIAL FLOATING ON WATER. SAMPLE CONSISTED OF BOTH THE OILY MATERIAL AND WATER.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KEN MENSING MIKE GRANT TRANSPORTED BY: KEN MENSING

LABORATORY

RECEIVED BY: Harji D. Kalthia DATE COMPLETED: 11/26/84 DATE FORWARDED: 11/26/8 J. Hunt

PCBs < 5 ug/l

RECEIVED
DEC 07 1984
IEPA-DLPC

LPC-8A 4/77 (NOT FOR DATA PROCESSING)

~~[illegible]~~ cmc 35938 c

GROUND WATER ROUTE WORK SHEET					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 OBSERVED RELEASE	0 45	1	45	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	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score			N/A	15	
3 CONTAINMENT	0 1 2 3	1	N/A	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	0	8	
Total Waste Characteristics Score			18	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				57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = 4.24		

Figure 2

Ground Water Route Work Sheet

45 x 18 x 3 = 2430 = GW

$\frac{GW}{57330} \times 100 = 4.24$

SURFACE WATER ROUTE WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section
1 OBSERVED RELEASE	0 (45)	1	45	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		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score			N/A	15	
3 CONTAINMENT	0 1 2 3	1	N/A	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	0	8	
Total Waste Characteristics Score			18	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	0	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			6	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				64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} = 7.55		

Figure 7

Surface Water Route Work Sheet

$45 \times 18 \times 6 = 4860 = Sw$

$\frac{Sw}{64350} \times 100 = 7.55$

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:	3/23/82 Northern Dead Creek				
Sampling Protocol:	Check for spots above background 2- HNU photo-ionizers & 1- OVA.				
If line 1 is 0, then S = 0. Enter on line 6. If line 1 is 45, then proceed to line 2.					
2 WASTE CHARACTERISTICS					5.2
Reactivity and Incompatibility	0 (1) 2 3	1	1	3	
Toxicity	0 1 2 (3)	3	~~3~~ 9	9	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
			10		
Total Waste Characteristics Score			~~4~~	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	0	6	
Land Use	0 1 2 (3)	1	3	3	
Total Targets Score			24	39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100			S_a = ~~12.31~~ 30.77		

Figure 9

Air Route Work Sheet

$$45 \times \overset{10}{\cancel{4}} \times 24 = \overset{10000}{4320} = \overset{38}{A}$$

$$\frac{A}{35\,100} \times 100 = \overset{30.77}{12.31}$$

	S	S^2
Groundwater Route Score (S_{gw})	4.24	17.98
Surface Water Route Score (S_{sw})	7.55	57.00
Air Route Score (S_a)	~~12.37~~ 30.72	946.80 ~~151.84~~
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1021.78 ~~226.82~~
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		31.97 15.05
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73$		18.48 S_M = ~~8.70~~

Figure 10

WORKSHEET FOR COMPUTING S_M

FIRE AND EXPLOSION WORK SHEET					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1	3	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1	3	3	
Ignitability	0 1 2 3	1	3	3	
Reactivity	0 1 2 3	1	1	3	
Incompatibility	0 1 2 3	1	1	3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			8	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1	3	5	
Distance to Nearest Building	0 1 2 3	1	2	3	
Distance to Sensitive Environment	0 1 2 3	1	0	3	
Land Use	0 1 2 3	1	3	3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1	5	5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1	5	5	
Total Target Score			18	24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 5 by 1,440 and multiply by 100			S_{FE} = 30.0		

Figure 11

Fire and Explosion Work Sheet

$3 \times 8 \times 18 = 432 = FE$

$$\frac{FE}{1440} \times 100 = 30$$

DIRECT CONTACT WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	45	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	8.2
3 Containment	0 15	1		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	16	20	
Distance to a critical habitat	0 1 2 3	4	0	12	
Total Targets Score			16	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				21,600	
7 Divide line 6 by 21,600 and multiply by 100			S_{DC} = 50		

$45 \times 15 \times 16 = 10800 = DC$

$\frac{DC}{21600} \times 100 = 50$

Figure 12

Direct Contact Work Sheet

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 site. The source of information should be provided for each entry and should be a bibliographic-type reference that will allow anyone to find the document used for a given data point. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review by any interested party.

FACILITY NAME: CAHOKIA / DEAD CREEK

LOCATION: SAUGET, IL. (ST. CLAIR COUNTY)

RECEIVED
SEP 25 1984
IEPA-DLPC

recycled paper

ecology and environment

1 OBSERVED RELEASE

Contaminants detected off site (5 maximum):

PCB's, chloroaniline, dichlorobenzene, copper, manganese, lead, cyclohexane, chlorophenol, aliphatic hydrocarbons, silver, nickel, arsenic, cadmium, phosphorous

Reasoning by which the presence of the detected contaminants can be attributed to the facility:

Found in IEPA monitoring wells surrounding the site
Wastes corresponds to waste of several industries in the area
Site is surrounded by various industries
SOURCE: "A Preliminary Hydrogeologic Investigation in the Northern Portion of Dead Creek & Vicinity" By Ron St. John, 4/81, IEPA Report pp. 34-39

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

NOT APPLICABLE (N/A) - OBSERVED RELEASE (O.R.)

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

N/A - O.R.

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

N/A - O.R.

recycled paper

ecology and environment

Net Precipitation

Mean annual or seasonal precipitation:

N/A - O.R.

Mean annual lake or seasonal evaporation:

N/A - O.R.

Net precipitation (subtract the above figures):

N/A - O.R.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

N/A - O.R.

Permeability associated with soil type:

N/A - O.R.

Physical State

Physical state of waste at time of disposal (or generated gases):

N/A - O.R.

* * *

recycled paper

ecology and environment

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

N/A - O.R.

Method with highest score:

N/A - O.R.

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:	TOXICITY	PERSISTENCE
PCB's	3	3
Chloroaniline	3	1
dichlorobenzene	2	2
cyclohexane	2	2

Compound with highest score:

SOURCE: SAX & NFPA DATA

SCORES A (18)

Hazardous Waste Quantity

Total quantity of hazardous waste at the facility (excluding those with a containment score of 0):

UNKNOWN - AREA HAS BEEN USED AS SEVERAL LANDFILLS SINCE A37 AND NO RECORDS ON AMOUNT HAS BEEN KEPT

Basis of estimating and/or computing waste quantity:

SOURCE: "A Preliminary Hydrogeologic Investigation in the Northern Portion of Reed Creek & Vicinity" By Ron St John, 4/81, DEPA Report

* * * SCORES A (0)

recycled paper

ecology and environment

Ground Water Use

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

Industrial / Commercial - SOURCE: IL. STATE WATER SURVEY
Mississippi River is major water source in the area

Distance to Nearest Well

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

< 2000 ft : Monsanto well upgradient to GW flow but causes cone of depression in water table → contaminated well

Distance to above well or building:

< 2000 ft SCORES A (4)

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

Identified public-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius:

NONE

Private - industrial → Trade Supply Inc → used bottled H_2O for drinking
Amoco
Cerro Corp

Population served by each above public-supply well and how computed:

PSW - 0 SOURCE: ISWS

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):

N/A

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

0
Industrial use only SCORES A (0)

1 OBSERVED RELEASE

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

PCB's, Chloroaniline, dichlorobenzene, cyclohexane, Chlorophenol

Reasoning by which the presence of the detected contaminants can be attributed to the facility:

Contaminants deposited directly into waters - Lab. analysis of creek downstream & certain company holding ponds show waste analysis of the same type

SOURCE: ST. JOHN'S REPORT

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

N/A - O.R.

Name/description of nearest downslope surface water:

N/A - O.R.

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

N/A - O.R

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

N/A - O.R.

recycled paper

ecology and environment

Is the facility completely surrounded by areas of higher elevation?

N/A -OR

1-Year 24-Hour Rainfall in Inches

N/A - O.R.

Distance to Nearest Downslope Surface Water

N/A - O.R.

Physical State of Waste

N/A - O.R.

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

N/A - O.R.

Method with highest score:

N/A - O.R.

recycled paper

ecology and environment

4 WASTE CHARACTERISTICS

Refer to Ground Water Route

* * *

5 TARGETS

Surface Water Use

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

Recreation - children play in creek

SCORES A (2)

Is there tidal influence?

NO

Distance to a Sensitive Environment

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

> 2 mile

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

> 1 mile

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

> 1 mile SCORES A (0)

recycled paper

ecology and environment

Population Served by Surface Water

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

None

Population served by each above public-supply intake:

None

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

N/A

Total population served:

0

Name/description of nearest of above water bodies:

Dead Creek

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

N/A

TOTAL: SCORES A (0)

recycled paper

ecology and environment

DRAFT-SUBJECT TO CHANGE

[3] Containment

Describe basis for selecting extreme waste management case:

Describe method(s) of waste or leachate containment for extreme case:

Cite source(s) of information:

[8] Surface Water Use

Use(s) of downstream surface water and sources of information:

Recreation - children play in creek

Critical Habitats

Location and descritpion of downstream critical habitat; if any:

w/in 100 yr floodplain

Distance and description of points of measurement:

Cite source(s) of information:

USGS floodprone maps

Population Served By Surface Water with Water Intake Within 3 Miles Downstream from Site

Population served by water intake(s): 0

Is surface water within 3 miles in a tidal estuary?: No

DRAFT-SUBJECT TO CHANGE

Description(s) and location(s) of intake(s) and corresponding population served by each:

—

How was population counted or computed?:

—

Cite source(s) of water-intake and population information:

IL. Public Water Supply

DRAFT-SUBJECT TO CHANGE

AIR PATHWAY

[1] Evidence of Release

Describe contaminant and monitoring which reveal that background levels have been exceeded?:

No air sampling done

Cite source(s) of information:

IEPA file has pictures of smoldering creek bed, but no air quality data

[3] Physical State/Volatility

Physical state of waste and source(s) of information:

Liquid - St John's report

Vapor pressure of waste and source(s) of information:

Reactivity

Reactive substances and source(s) of information:

Dichlorobenzene from NFPA = 0 react.

NFPA level for each and basis of selection:

Incompatability

Incompatible substances which are present and source(s) of information:

None that were found in analysis - still unknowns

Pictures of smoldering creek bed in IEPA file

Basis for selecting incompatibility score:

St John's Report 4/81

IEPA file

DRAFT-SUBJECT TO CHANGE

5 Distance to Nearest Population

Distance and description of points of measurement:
w/in ¼ - houses adjacent to creek on the SE

Cite source(s) of information:
Topo map & 4/81 IEPA report (cited)

Population Within 1-Mile Radius

Population and how counted or computed:
≥10,000 : towns of Cahokia, Centreville, & Sauget
w/in 1mile radius

Cite source(s) of information:
topo map & pop. Chart

Land Use

Location and type of determining land use:
Ag. adjacent creek bed on west side
Ind. - " north < ¼ mile
Res. - " SE

Distance to determining land use:
Topo map, IEPA photo

Cite source(s) of information:
IEPA photo & files

ROUTE - FIRE AND EXPLOSION

Rating Factor	Basis of Information	Site Rating (Circle One)	Multiplier	Site Score	Maximum Possible Score
1 ROUTE CHARACTERISTICS* (ref FE 1)					
Ignition Source	IEPA file photos	0 (15)	1	15	15
2 CONTAINMENT[1,2] (ref FE 2)					
Containment	IEPA file	0 (3)	1	3	3
3 POTENTIAL FOR RELEASE					
Multiply site score from 1 by site score from 2. The product is site rating for this route.			1	45	45
4 RELEASE					
Enter site score from 3				45	45
5 WASTE CHARACTERISTICS[1,3] (ref FE 3)					
Ignitability	Chlorobenzene	0 1 (2) 3	1	2	3
Reactivity		(0) 1 2 3	1	0	3
Incompatibility	IEPA file	0 1 (2) 3	1	2	3
			Subtotal	4	9
6 HAZARDOUS WASTE QUANTITY[1] (ref FE 4)					
Total Waste Quantity	UNKNOWN	0 (1) 2 3 4 5	1	1	5
(by Superfund definition) excluding waste that is totally contained.					
7 TARGETS[1,2] (ref FE 5)					
Distance to Nearest Population	USGS topo map	0 1 2 (3) 4 5	1	3	5
Distance to Nearest Off Site Building	" "	0 (1) 2 3	1	1	3
Distance to Environmentally Sensitive Area	" "	(0) 1 2 3	1	0	3
Land Use	" "	0 1 2 (3)	1	3	3
Population Within 2 Mile Radius	" "	0 1 2 3 4 (5)	1	5	5
Number of Buildings Within 2 Mile Radius	" "	0 1 2 3 4 (5)	1	5	5
			Subtotal	17	24
8 FIRE AND EXPLOSION ROUTE SUBTOTAL					
A. Multiply 4 x 5 x 6 x 7	45 x 4 x 1 x 17			3060	48,600
B. Multiply (A) by normalization factor of 2.0 and divide by 1,000			2.0	6.12 (B) Route Subtotal	97.2

*The fire and explosion route will be considered only if a state or local fire marshall has certified that the site represents a significant fire and explosion threat to the public and to sensitive environment. However, any demonstrated fire and explosion threat based on field observation (e.g., explosivity meter readings) will also be considered as sufficient evidence.

RECEIVED
SEP 25 1984
IEPA-DLPC

ROUTE - DIRECT CONTACT

Rating Factor	Basis of Information	Site Rating (Circle One)	Multiplier	Site Score	Maximum Possible Score
1 OBSERVED RELEASE (see 3c 1)					
Evidence of Contact	DEPA file	0 | (45)	1	45	45
If the site score is zero, go to step 2. Otherwise go to step 5				or	
2 ROUTE CHARACTERISTICS (see 3c 2)					
Accessibility of Waste	DEPA file	0 | (15) |	1	15	15
3 CONTAINMENT[1,2] (see 3c 3)					
Containment	DEPA file	0 | 1 | 2 | (3)	1	3	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	45
5 RELEASE					
Enter site score from 1 or 4				45	45
6 WASTE CHARACTERISTICS[1,3] (see 3c 4)					
Toxicity/Infectiousness	PCBs	0 | 1 | 2 | (3)	5	15	15
7 TARGETS[1] (see 3c 5)					
Population Within 1 Mile Radius	U.S.G.S topo map	0 | 1 | 2 | 3 | (4) | 5	4	16	20
Critical Habitat	Floodplain map	0 | 1 | (2) | 3	2	4	6
Land Use		0 | 1 | 2 | (3)	2	6	6
			Subtotal	26	32
8 DIRECT CONTACT ROUTE SUBTOTAL					
A. Multiply 5 x 6 x 7	45 x 15 x 26			17550	21,600
B. Multiply (A) by Normalization Factor of 4.5 and divide by 1,000			4.5	78.98 B. Route Subtotal	97.2

[1] Basis for each rating must be documented and/or cite data sources as supporting evidence.

EPA

POTENTIAL HAZARDOUS WASTE SITE
FINAL STRATEGY DETERMINATION

REGION	SITE NUMBER

File this form in the regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency, Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335), 401 M St., SW, Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME	B. STREET	E. ZIP CODE
Dead Creek	East Walnut Street	
C. CITY	**D. STATE**	
Sauget	IL	

II. FINAL DETERMINATION

Indicate the recommended action(s) and agency(ies) that should be involved by marking 'X' in the appropriate boxes.

RECOMMENDATION	MARK 'X'	ACTION AGENCY: EPA	STATE	LOCAL	PRIVATE
A. NO ACTION NEEDED					
B. REMEDIAL ACTION NEEDED, BUT NO RESOURCES AVAILABLE (If yes, complete Section III.)	X	X			
C. REMEDIAL ACTION (If yes, complete Section IV.)	X	X			
D. ENFORCEMENT ACTION (If yes, specify in Part E whether the case will be primarily managed by the EPA or the State and what type of enforcement action is anticipated.)					

E. RATIONALE FOR FINAL STRATEGY DETERMINATION

Potential Superfund Site.

RECEIVED
SEP 25 1984
IEPA-DLPC

F. IF A CASE DEVELOPMENT PLAN HAS BEEN PREPARED, SPECIFY THE DATE PREPARED (mo., day, & yr.)

G. IF AN ENFORCEMENT CASE HAS BEEN FILED, SPECIFY THE DATE FILED (mo., day, & yr.)

H. PREPARER INFORMATION

1. NAME	2. TELEPHONE NUMBER	3. DATE (mo., day, & yr.)
S. Lozus	886-6714	7/9/81

III. REMEDIAL ACTIONS TO BE TAKEN WHEN RESOURCES BECOME AVAILABLE

List all remedial actions, such as excavation, removal, etc. to be taken as soon as resources become available. See instructions for a list of Key Words for each of the actions to be used in the spaces below. Provide an estimate of the approximate cost of the remedy.

A. REMEDIAL ACTION	B. ESTIMATED COST	C. REMARKS
	$	
	$	
	$	
	$	
	$	
	$	
	$	
	$	
D. TOTAL ESTIMATED COST	$	

Continue On Reverse

Continued From Front

IV. REMEDIAL ACTIONS

A. SHORT TERM/EMERGENCY ACTIONS *(On Site and Off-Site)*: List all emergency actions taken or planned to bring the site under immediate control, e.g., restrict access, provide alternate water supply, etc. See instructions for a list of Key Words for each of the actions to be used in the spaces below.

1. ACTION	2. ACTION START DATE *(mo, day, & yr)*	3. ACTION END DATE *(mo, day, & yr)*	4. ACTION AGENCY *(EPA, State, Private Party)*	5. COST	6. SPECIFY 311 OR OTHER ACTION. INDICATE THE MAGNITUDE OF THE WORK REQUIRED.
				$	
				$	
				$	
				$	
				$	
				$	

B. LONG TERM STRATEGY *(On Site and Off-Site)*: List all long term solutions, e.g., excavation, removal, ground water monitoring wells, etc. See instructions for a list of Key Words for each of the actions to be used in the spaces below.

1. ACTION	2. ACTION START DATE *(mo, day, & yr)*	3. ACTION END DATE *(mo, day, & yr)*	4. ACTION AGENCY *(EPA, State Private Party)*	5. COST	6. SPECIFY 311 OR OTHER ACTION. INDICATE THE MAGNITUDE OF THE WORK REQUIRED.
				$	
				$	
				$	
				$	
				$	
				$	

C. MANHOURS AND COST BY ACTION AGENCY

1. ACTION AGENCY	2. TOTAL MAN-HOURS FOR REMEDIAL ACTIVITIES	3. TOTAL COST FOR REMEDIAL ACTIVITIES
a. EPA		$
b. STATE		$
c. PRIVATE PARTIES		$
d. OTHER *(specify)*:		$

EPA

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION

REGION: 5 | SITE NUMBER:

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

A. SITE NAME: Dead Creek

B. STREET (or other identifier): East Walnut Street

C. CITY: Sauget

D. STATE: Ill

E. ZIP CODE:

F. COUNTY NAME:

G. OWNER/OPERATOR (if known)

1. NAME:

2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP (if known)

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☐ 5. PRIVATE ☑ 6. UNKNOWN

I. SITE DESCRIPTION

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.): ERS

K. DATE IDENTIFIED (mo., day, & yr.): 10/20/80

L. SUMMARY OF POTENTIAL OR KNOWN PROBLEM

M. PREPARER INFORMATION

1. NAME: S. Fogg

2. TELEPHONE NUMBER: 886-6714

3. DATE (mo., day, & yr.): 10/21/80

EPA Form 2070-8 (5-80)

1 OBSERVED RELEASE

Contaminants detected:

No specifics - just a survey to get a plus or minus reading (check for spots above background)

Source - FIT memo 4/14/82 by Don Woods

Date and location of detection of contaminants

3/23/82

North end of Dead Creek - just south of Queeny Ave.

Methods used to detect the contaminants:

Organic Vapor Analysizer
2 - HNU photo-ionizer 10.2 ev lamp
11.7 ev lamp
Explosimeter, Radiation survey meter, O_2 Indicator

Reasoning by which the presence of the detected contaminants can be attributed to the site:

Absorption of contaminants with the soil, a buried pipe was found entering the creek with a turbid & oily liquid coming from it. Midwest Rubber use to pipe their waste into the creek (creek bed is spongy when you walk on it)

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Three most reactive compounds (indicate one used):

Phosphorous
Arsenic SCORES A (1)

Three most incompatible pairs of compounds (indicate one used):

recycled paper

ecology and environment

Toxicity

Three most toxic compounds (indicate one used):

PCB's 3
Dichlorophenol 3
Chloroaniline 3

Hazardous Waste Quantity

Total quantity of hazardous waste:

UNKNOWN

Basis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

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

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

6,100 people

Scores A 21

Distance to a Sensitive Environment

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

> 2 miles

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

> 1 mile

recycled paper

ecology and environment

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

> 1 mile SCORES A (0)

Land Use

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

< 1/4 mile (~2000 ft) Topo map & FIT inspection

SCORES A (3)

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

None

Distance to residential area, if 2 miles or less:

< 1/4 mile topo map & FIT inspection

SCORES A (3)

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

< 1/4 mile topo map & FIT inspection

SCORES A (3)

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

< 1/2 mile topo map & FIT inspection

SCORES A (3)

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

No - only the St. Louis Arch

FIRE AND EXPLOSION - PICTURES FROM DEPA FILE OF CREEK BED ON FIRE.

CONTAINMENT → WASTE DUMPED WITH NO SEGREGATION
SCORES A (3)

WASTE CHARACTERISTICS

DIRECT EVIDENCE → no measurements, but photographs of creek bed on fire
SCORES A (2)

IGNITABILITY → SCORES A (3)

	TOXICITY	PERSISTENCE	IGNITABILITY	REACTIVITY
Chlorobenzene	2	2	3	0
Dichlorophenol	3	1	0	0
Chloroaniline	3	1	1	0
PCB	3	3	0	0
Phosphorous	3	1	3	1
Arsenic	2	1	0	1
Cyclohexane	2	2	3	0

SOURCE: SAX AND NFPA DATA
REACTIVITY → SCORES A (1)
INCOMPATIBILITY → SCORES A (1)

HAZ. WASTE QUANTITY → UNKNOWN: SCORES A (0)

TARGETS

DIST. TO NEAREST POP.
201 ft - 2640 ft SCORES A (3)
SOURCE: U.S.G.S. TOPO MAP (DIST ~ 500 ft)

DIST. TO NEAREST BLDG.
51 - 200 ft SCORES A (2)
SOURCE: U.S.G.S. TOPO MAP (DIST ~ 55 ft)

DIST TO SENSITIVE ENVIR. → SCORES A (0)
LAND USE → SCORES A (3) (see air section)
POP W/IN 2 MILE RADIUS → 12,239: ½ of E St Louis & 1520 bldgs counted off of map × 3.8 people/bldg
(E St Louis: 5700 pop)
5700/2 = 6463 people SCORES A (5)

BLDGS. W/IN 2 MI. RAD. → 1520 counted; 6463/3.8 = 1700 TOTAL: 3220

DIRECT CONTACT

OBSERVED INCIDENT → Yes, resident's dog rolled in ditch and died of apparent chemical burns in Aug. 1980 SOURCE: ST JOHN'S REPORT

WASTE CHARACTERISTICS: TOXICITY - PCB's = 3 SCORES A (3)
TARGETS: POP W/IN 1 MI. RAD - 6,100 SCORES A (4)

DIST. TO CRITICAL HABITAT: SCORES A (0)

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. Mays III

Site Overall Score: 8.87 F&E = 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

RECEIVED
SEP 25 1984
IEPA-DLPC

ROUTE - GROUND WATER

Rating Factor	Basis of Information	Site Rating (Circle One)	Multiplier	Site Score	Maximum Possible Score
1 OBSERVED RELEASE per GW②					
Measured Level of 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] per GW②					
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] per GW②					
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] per GW②					
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] per GW②					
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] per GW②					
Ground Water Use	DEPA file	0 (1) 2 3	3	3	9
Distance to Nearest Well Downgradient	DEPA file	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 (9 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, containment, 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 Johns 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 WRA Water Intake Within 3 Miles Downstream From Site	Pot. Pub: No Surf	(0) 1 2 3 4 5	5	0	25
			Subtotal	10	40
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 9)					
Evidence of Release	Don Woods' 4/14/82 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.

10

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.

DRAFT-SUBJECT TO CHANGE

WORKSHEET FOR HAZARDOUS WASTE
SITE RANKING MODEL

RECEIVED
SEP 25 1984
IEPA-DLPC

GENERAL

Site name and location: Cahokia / Dead Creek
St Clair Co., Sauget, IL

Date(s) of site scoring: 2/16 - 2/17/82

Primary source(s) of information (e.g., EPA region, state, FIT, etc.):
IEPA file - Cahokia / Dead Creek General file
IEPA report - "A Preliminary Hydrogeologic Investigation in the Northern Portion of Dead Creek & Vicinity" Ron St John (4/81)

St John has copy @ office

Factors not scored (assigned 0 for additive and 1 for multiplicative) due to insufficient information:
Waste quantity - could estimate the depth of contaminated soil, length of creek bed in hydrogeologic study, along with average width - because contaminated soil would be remove in clean up operation
Creek SW intake from Mississippi w/in 3 mi. downstream
Air sampling needed

Comments or qualifications:
- Need Air quality work done (may or may not be fruitful)
- Need further GW study in area to determine depth of contamination, determine leachate plumes, etc in total area
- Need Hazardous waste quantity (do not think it is possible due to past history of the area)
- Creek does not always flow due to road construction upstream; see IEPA report of 4/81 - St John's
  - if possible take further SW samples up & down stream

DRAFT-SUBJECT TO CHANGE

GROUND WATER PATHWAY

[1] Measured Level or Evidence of Release

Describe substance(s) and nature of release:

Corresponds to waste of several industries in the area

PCB's, Chloroaniline, Dichlorobenzene, Copper, Manganese, Lead, Cyclohexane, Chlorophenol, aliphatic hydrocarbons, Silver, [illegible] arsenic, cadmium - Found in monitoring wells placed by Ittf

Describe method of measurement or observation:

Lab analysis in report "A Preliminary Hydrogeologic Investigation in the Northern Portion of Dead Creek & Vicinity" by Ken St John - 4/81 Analysis pp 34-39

[2] Depth to Aquifer of Concern

Describe/name aquifer of concern:

Why is above aquifer of concern?

Depth and how determined, including sources:

Net Precipitation

Net precipitation and how determined, including source(s):

Premeability of Unsaturated Zone

Soil type(s) in unsaturated zone:

Permeability and how determined, including source(s):

DRAFT-SUBJECT TO CHANGE

[3] Containment

Method of waste management (e.g., surface impoundment, landfill, etc) of extreme case:

Describe basis for selecting extreme case:

Describe method(s) of waste or leachate containment for above extreme case:

Cite source(s) of information:

[6] Physical State

Physical state of waste and source of information:
Liquid - St John's report

Persistence

Most persistent compound subject to transport via ground water:
PCB's

Basis for selecting compound, including source(s):
Lab Analysis from H_2O & soil samples taken in the area of concern

Basis for selecting persistence rating score:
Mike persistence report

Toxicity/Infectiousness

Toxic materials subject to transport via ground water and Sax or NFPA level for each:

PCB → Sax's toxicity

DRAFT-SUBJECT TO CHANGE

Cite source(s) of information indicating toxics present on site:

St Johns report

Infectious materials present on site and source(s) of information:

—

Basis for selecting CDC classification of infectious materials:

—

7 Total Waste Quantity

Total waste quantity present, including unit of measurement (e.g., tons, cubic yards drums): 0-3ft deep in contaminated soil
2000 ft length of crack
8 ft width
$3 \times 2000 \times 8 = 48{,}000\ ft^3$
$= 1777.8$ cu. yds.

Basis for estimating or computing quantity, including source(s) of information: from St John's report - depth of contaminated soil
length & depth from topo map (if you use soil as waste)

UNKNOWN - AREA HAS BEEN USED AS SEVERAL LANDFILLS SINCE 1937 AND NO RECORDS ON AMOUNT HAS BEEN KEPT.

8 Ground Water Use

Use(s) of aquifer of concern and source(s) of information:

Industrial use - IL. Water Survey
Mississippi River another source (i.e. limited H2O sources)

Distance to Nearest Well Downgradient

Distance to nearest well downgradient:
Adjacent - Monsanto well upgradient to GW flow but causes cone depression in water table, thus contaminated well

How was downgradient direction(s) established, including source(s) of information:

IL State Water Survey (ISWS)

W to SW

How was distance determined?:

ISWS

Is nearest building known to be using ground water? Source of information:

No, not nearest bldg.

DRAFT-SUBJECT TO CHANGE

Is nearest well known to be drawing from aquifer of concern? Source of information: Yes. ISWS

Population Served by Ground Water Within 3-Mile Radius

Population served with 3-mile radius: 14

How was population counted or computed, including source(s) of information: Drinking well was drilled for Industrial Track Supply E. St. Louis 1980 per ISWS

Is population known to be served by aquifer of concern? Source of information: Yes, ISWS

DRAFT-SUBJECT TO CHANGE

SURFACE WATER PATHWAY

[1] Measured Level or Evidence of Release

Describe substances and nature of release:
Contaminants deposited directly into creek-waters - lab analysis of creek downstream & certain company holding ponds show contamination of the same type

Describe method of measurement or observation:
St. John's report of 4/81 previously cited

[2] Site Slope and Terrain

Computation of slope and description of points of measurement:

Cite source(s) of information (topo maps, etc.):

1-Year 24-Hour Rainfall

Amount of rainfall and source of information:

Distance to Surface Water

Distance and description of points of measurement:

Cite source(s) of information:

Flood Potential

In what flood plain, if any, is the site located?:

Cite source(s) of information:

Superfund
4/15

REGION V
HAZARDOUS MATERIAL ENFORCEMENT AND RESPONSE PROGRAM

SITE NAME "Dead Creek"
SITE ADDRESS East of Walnut St, North of Judith Lane
HOW/DATE IDENTIFIED Sauget/Cahokia, Illinois
SITE DESCRIPTION IEPA Emergency Response Section
Ditch running in a north-south direction
containing high concentrations of heavy metals
WASTE RELATED INFORMATION and hazardous materials
HAZARD IDENTIFICATION Ditch undergoes self-combustion at
times; probably due to chronic, uncontrolled
~~DATE~~ ~~COMMENT~~ dumping & NPDES discharges

- concentrations of heavy metals as follows (in the ditch), 120,000 ppm phosphorous
  20,000 ppm zinc
  PCB's at 5300 ppm
- Nearby resident's dog wandered there area and died next day; severe burns covered its body.
- This is Coast Guard area of response. They have made initial determination that the site is not all actionable. They will finalize their determination on 9/17/80.
- IEPA is assessing site and gathering data. They have requested no federal actions until they have had opportunity to formalize their position. They will then contact us.

10-7 SPA to follow up on site, call emergency response Team and find out what is happening at site.

10-20 Illinois will follow [illegible]
track & conference call

11-12 "

11-24 the state expects that all sample results will be ~~done~~ ready within a couple of weeks. then they will discuss what course of action they want to pursue.

12/1/10 Track at CC

1-20 candidate for superfund. FIT met with state. The State will
2-24-81 — " " provide report to be reviewed by superfund

3 " track & call

HMJ

REGION V
HAZARDOUS MATERIAL ENFORCEMENT AND RESPONSE PROGRAM

SITE NAME "Dead Creek"
SITE ADDRESS East of Walnut St, North of Judith Lane
HOW/DATE IDENTIFIED Sauget / Cahokia, Illinois
SITE DESCRIPTION IEPA Emergency Response Section
Ditch running in a north-south direction containing high concentrations of heavy metals
WASTE RELATED INFORMATION and hazardous materials
HAZARD IDENTIFICATION Ditch undergoes self-combustion at times; probably due to chronic, uncontrolled dumping & haz discharges

- concentrations of heavy metals as follows (in the ditch) 120,000 ppm phosphorous
  20,000 ppm zinc
  PCB's at 5300 ppm

- Nearby resident's dog wandered there area and died next day; severe burns covered its body.
- This is Coast Guard area of response. They have made initial determination that the site is not 311 actionable. (9/4/80) They will finalize their determination on 9/17/80.
- IEPA is assessing site and gathering data. They have requested no federal actions until they have had opportunity to formalize their position. They will then contact us.

Cahokia/Prairie Creek ILD980792006

1. b) What are wells used for if not for drinking?

Overall I approve the SI.

Already on the ERRIS list

R.G.

RECEIVED
SEP 25 1984
IEPA-DLPC

EPA ID# ILD 980792006

SITE NAME Dead Creek

NORLING FACTOR _____ (>15 PTS.=HIGH MITRE POTENTIAL)

WASTE TYPE

PESTICIDES	(5)
→ HEAVY METALS	(5)
→ PCB's	(5)
ORGANICS	(4)
SOLVENTS	(4)
INORGANICS	(3)
ACIDS	(3)
BASES	(3)
MIXED MUNI-WASTES	(2)
UNKNOWN	(1)

WASTE QUANTITY
(1 ton = ½ cu.yd.=13.5 cu.ft.=4 drums = 220 gals.)

TONS	CU.YDS.	CU. FT.	DRUMS	GALLONS	PTS.
>875	>437	>11,799	>3500	>192,500	(5)
875	437	11,799	3500	192,500	
251	126	3,402	1001	55,055	(4)
250	125	3,375	1000	55,000	
163	82	2,214	651	35,805	(3)
162	81	2,187	650	35,750	
76	38	1,026	301	16,555	(2)
75	37	999	300	16,500	
21	11	297	81	4,455	(1)
<20	<10	<270	<80	<4,400	(0)

FACILITY TYPE

PILES	(5)
DRUMS BELOW GROUND	(4)
DRUMS ABOVE GROUND	(3)
SURFACE IMPOUNDMENTS	(3)
TANKS	(3)
LANDFILLS	(2)
LAND TREATMENT	(2)
UNDERGROUND INJECTION	(1)

POPULATION

10,000 or more	(5) ←
3,000 - 9,999	(4)
1,000 - 2,999	(3)
101 - 999	(2)
1 - 100	(1)

RECEIVED
SEP 25 1984
IEPA-DLPC

_____ NOT A HAZARDOUS WASTE SITE

✓ INFORMATION MISSING

COMMENTS: _____

REVIEWER: Sth

U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION V
HAZARDOUS MATERIAL ENFORCEMENT AND RESPONSE PROGRAM

IL0 986 792 00

SITE NAME "Dead Creek"
SITE ADDRESS East of Walnut St, North of Judith Lane
HOW/DATE IDENTIFIED Sauget/Cahokia, Illinois
SITE DESCRIPTION IEPA Emergency Response Section
Ditch running in a north-south direction containing high concentrations of heavy metals
WASTE RELATED INFORMATION and hazardous materials
HAZARD IDENTIFICATION Ditch undergoes self-combustion at times; probably due to chronic, uncontrolled ~~[illegible]~~ ~~[illegible]~~ dumping & illegal discharges

- concentrations of heavy metals as follows (in the ditch) 120,000 ppm phosphorous
  20,000 ppm zinc
  PCB's at 5300 ppm

RECEIVED
SEP 25 1984
IEPA-DLPC

- Nearby resident's dog wandered there area and died next day; severe burns covered its body.
- This is Coast Guard area of response. They have made initial determination that the site is not 311 actionable. (9/11/80) They will finalize their determination on 9/17/80.
- IEPA is assessing site and gathering data. They have requested no federal actions until they have had opportunity to formalize their position. They will then contact us.

10-7 SEA to follow up on site, call emerging response team and find out what is happening at site

10-20 Illinois will " " " thru on this one
track at conference call

11-12 "

11-24 the state expects that all sample results will be ~~done~~ ready within a couple of weeks, then they will discuss what course of action they want to pursue

12/2/10 Track at CC

1-20 Candidate for Superfund.

3/4 AG looking for responsible parties. Trying to get evidence that Monsanto & other companies in the area may be discharging.

3/31 Truce at C.C. Drop if under control

4/15 S&A to check w/ Superfund to see if report required.
Suggest we refer to Enforcement Division to help State with case.
Drop

DATE March 23, 1982

TIME 9:10 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW (NNW)

WEATHER Sunny, slight wind from S (~5mph), Temp. ~50°F

SITE Sauget, IL / Dead Creek

TDD# F5-8203-02

PHOTOGRAPHED BY:

Claude E. Mays, III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens

Picture #12 ~ Corresponds to number on negatives

DESCRIPTION: Looking up (northerly) Dead Creek from Judith Lane towards Monsanto and Cerro Corporation.

DATE March 23, 1982

TIME 9:40 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# F5-8203-02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens as above

Picture # 13

DESCRIPTION: Eileen Black and April Richards preparing to go "on-site."

RECEIVED
SEP 25 1984
IEPA-DLPC

DATE March 23, 1982

TIME 9:50 (A.M.) P.M.

DIRECTION: (N) NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, slight wind from S (~5mph), Temp. ~50°F

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 - 02

PHOTOGRAPHED BY:

Claude E. Mays, III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon lens FD 50mm f 1:1.8

Picture #14

DESCRIPTION: On-site work crew beginning air monitoring in Dead Creek.

DATE March 23, 1982

TIME 9:55 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 - 02

PHOTOGRAPHED BY:

Claude E. Mays, III

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #15

DESCRIPTION: Spot #2: readings at breathing height H-NU (11.7 lamp) 5ppm or H-NU (10.2 lamp) .2ppm

DATE March 23, 1982

TIME 9:56 (A.M.) P.M.

DIRECTION: N NNE (NE) ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, Slight wind from S (~5mph), Temp. ~50°F

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens

Picture #16

DESCRIPTION: Shows lake formed on Walnut Grove Subdivision property by Dead Creek

DATE March 23, 1982

TIME 9:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #17

DESCRIPTION: Shows spot #3 - readings with H-Nu (11.7 lamp) at breathing height 5ppm.

DATE March 23, 1982

TIME 10:00 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE (SE) SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, slight wind from S (~5mph), Temp. ~ 50°F

SITE Sauget, IL. / Dead Creek

TDD# F5 - 8203 -02

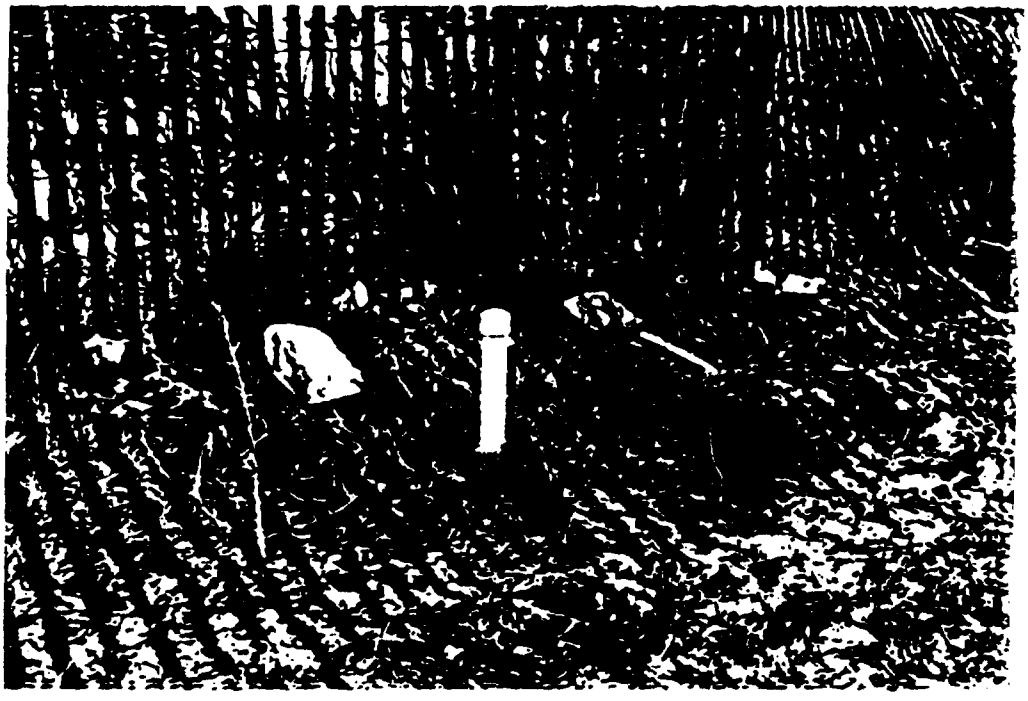
PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens



Picture #18

DESCRIPTION: Shows ground water well put in by Ron St. John while working with the Illinois E.P.A. for the Northern Dead Creek Study.

DATE March 23 1982

TIME 10:02 (A.M.) P.M.

DIRECTION: N NNE (NE) ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# F5 - 8203 -02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens as above.

Picture #19

DESCRIPTION: Spot #4 - readings with H-Nu (11.7 lamp) 4 to 5pm

DATE March 23, 1982

TIME 10:05 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, slight wind from S (~5mph), Temp. ~50°F

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 -02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f 1:1.8 lens

Picture #20

DESCRIPTION: Shows spots #5 & #6 - readings with H-NU (11.7 lamps) B and

DATE March 23, 1982

TIME 10:10 (A.M.) P.M.

DIRECTION: N NNE NE (ENE)
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 - 02

PHOTOGRAPHED BY:

Claude E. Mays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #21

DESCRIPTION: Shows snow fence (placed there by the I.E.P.A.) on far side torn down for easy access to creek.

DATE March 23 1982

TIME 10:15 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, Slight wind from S (~5mph), Temp ~50°F

SITE Sauget, IL / Dead Creek

TDD# F5-8203-02

PHOTOGRAPHED BY:

Claude E. Hays III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 with Canon FD 50mm f1:1.8 lens

Picture # 22

DESCRIPTION: Shows polyethylene acid container in creek.

DATE March 23 1982

TIME 10:30 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# F5-8203-02

PHOTOGRAPHED BY:

Claude E. Hays III

SAMPLE ID# (if applicable)

N/A

Same camera and lens as used above

Picture # 23

DESCRIPTION: Taking sample of seepage and placing it into a V.O.A. bottle for later analysis with O.V.A.

DATE March 23, 1982

TIME 11:40 (A.M.) P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, slight wind from S (~5mph), Temp ~50°F

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Charles E. Mays, III

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens

Picture #1

DESCRIPTION: Shows Dead Creek and surrounding area south of Judith Lane.

DATE March 23, 1982

TIME 11:55 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, wind from S-SW @ ~5-10mph, Temp ~60°F

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Canon AE-1 camera
Zoom - f: 90mm ~ 230mm
1:4.5 lens

Picture #2.

DESCRIPTION: Showing area of seepage near land leased to Ruan Transport Co.

...D PHOTOGRAPHY LOG SHEET

DATE March 23, 1982

TIME 11:56 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, wind from S-SW @ 5-10mph, Temp ~ 60°F

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 - 02

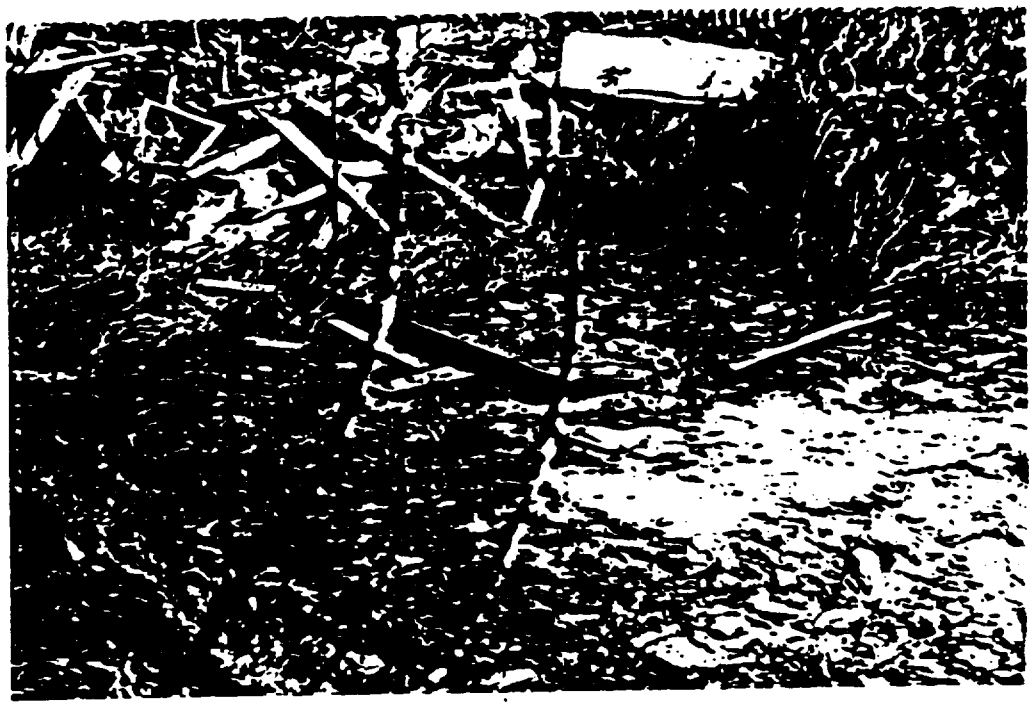
PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Zoom f: 90mm ~ 230mm 1:4.5 lens



Picture #3

DESCRIPTION: Area of seepage just south of Cerro Corporation and Queeny Ave in Dead Creek

DATE March 23, 1982

TIME 11:57 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# FS - 8203 - 02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #4

DESCRIPTION: Closer up of drums on Ruan Transport Co. property. Hoping to see a label some kind on drums.

DATE March 23, 1982

TIME 11:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, wind from S-SW @ 5-10 mph, Temp. ~60°F

SITE Sauget, IL / Dead Creek

TDD# F5 - 8203 - 02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ zoom f: 90mm ~ 230mm 1:4.5 lens

Picture #5

DESCRIPTION: Showing seepage from bank (pipe w/ inside diameter of 3 inches)

DATE March 23, 1982

TIME 11:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# F5 - 8203 - 02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Same camera and lens used as above

Picture #6

DESCRIPTION: Close-up of pipe which seems to be the source of seepage

DATE March 23 1982

TIME 11:58 (A.M.) P.M.

DIRECTION: N NNE NE ENE
(E) ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Sunny, wind from S-SW (@) 5-10mph. Temp ~60°F

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

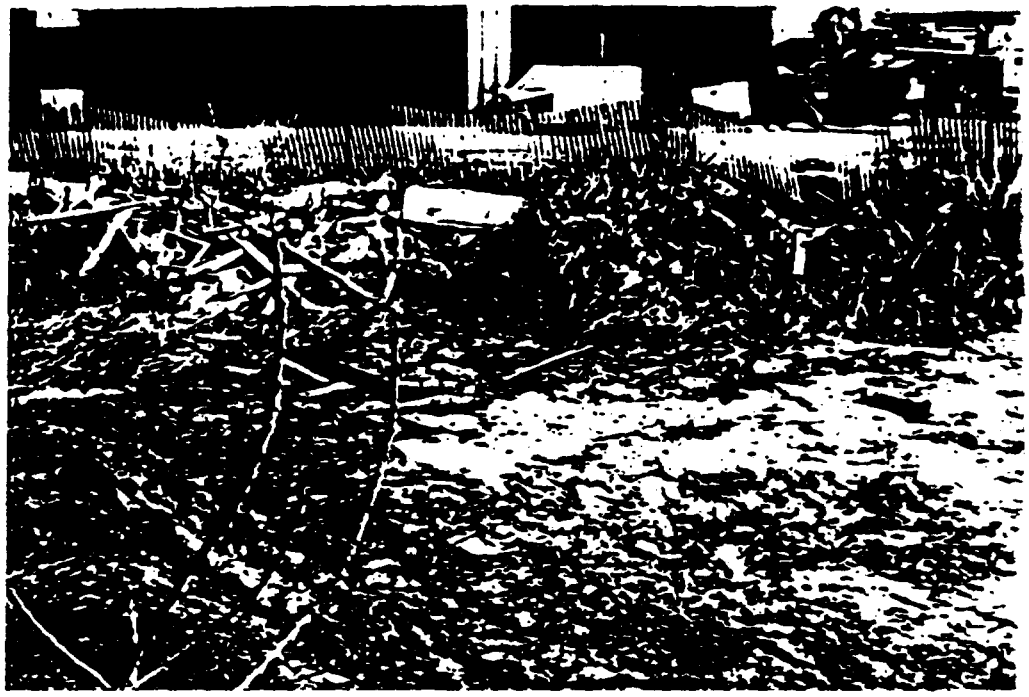
PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50mm f1:1.8 lens



Picture #7

DESCRIPTION: Area of seepage in northern portion of Dead Creek near Cerro Corp.

DATE March 23, 1982

TIME 11:59 (A.M.) P.M.

DIRECTION: (N) NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER Same as above

SITE Sauget, IL / Dead Creek

TDD# FS-8203-02

PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Same camera and lens as used above

Picture #8

DESCRIPTION: Drums and "oily" substance in pit on Cerro Corp. property. Readings with O.V.A. - 0ppm, H-NU (11.7 lamp) - 3-4ppm.

DATE March 23, 1982

TIME 12:00 noon A.M. (P.M.)

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W (WNW) NW NNW

WEATHER Sunny, wind from S-SW @ 5-10 mph, Temp. ~60°F

SITE Sauget, IL/Dead Creek

TDO# FS-8203-02

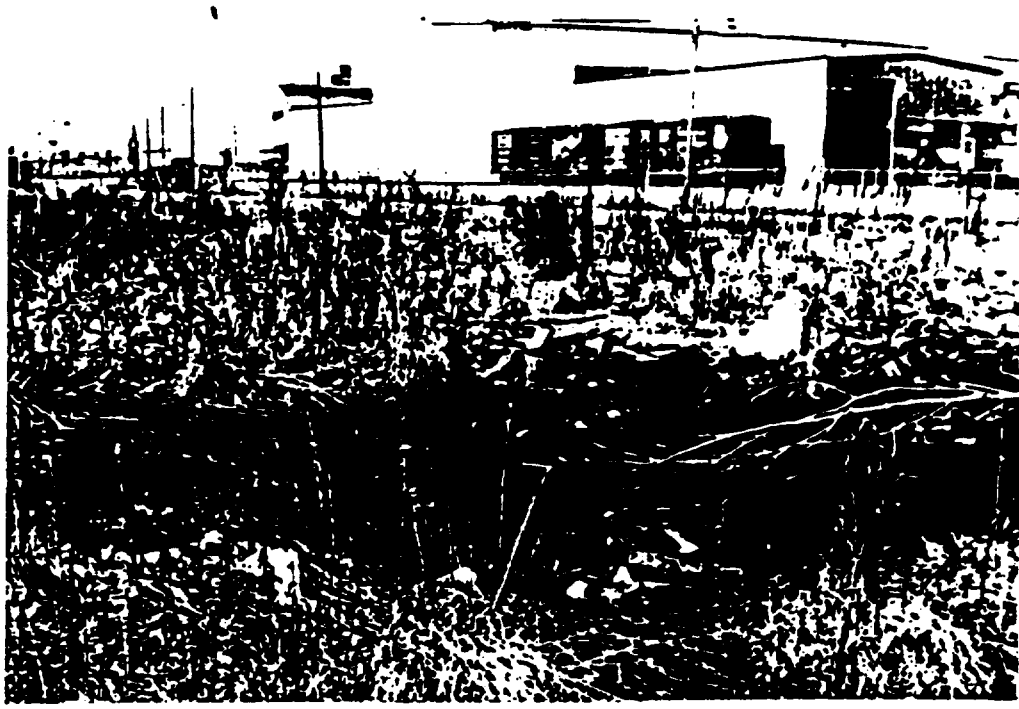
PHOTOGRAPHED BY:

Don Woods

SAMPLE ID# (if applicable)

N/A

Camera: Canon AE-1 w/ Canon FD 50 mm f:1:1.8 lens



Picture # 9

DESCRIPTION: Another pit with drums and "oily" substance on Cerro Corp. property

DATE _____

TIME _____ A.M. P.M.

DIRECTION: N NNE NE ENE
E ESE SE SSE
S SSW SW WSW
W WNW NW NNW

WEATHER _____

SITE _____

TDO# _____

PHOTOGRAPHED BY:

SAMPLE ID# (if applicable)

PHOTO

DESCRIPTION: _____

EPA

POTENTIAL HAZARDOUS WASTE SITE
CURRENT DISPOSITION
PART 1 - SITE STATUS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR OTHER SPECIFIC LOCATION IDENTIFIER				
Dead Creek	E. Walnut St N of Judith				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Sauget	IL	62201	St. Clair	163	23

III. CURRENT SITE STATUS

01 REPORTING DATE 01 04 83 (MONTH DAY YEAR)

02 TRACKING COMPLETED (Check one if applicable)

☐ A. SITE REQUIRED NO RESPONSE — DATE CLOSED ___ / ___ / ___ (MONTH DAY YEAR)

☐ B. ALL GOVERNMENT FINANCED ACTIVITIES COMPLETED — DATE COMPLETED ___ / ___ / ___ (MONTH DAY YEAR)

☐ C. ALL PRIVATELY FINANCED ACTIVITIES COMPLETED — DATE COMPLETED ___ / ___ / ___ (MONTH DAY YEAR)

☐ D. SITE CLOSED — DATE CLOSED ___ / ___ / ___ (MONTH DAY YEAR)

TOTAL COST _____

03 PENDING (Check if applicable)

☐ FURTHER RESEARCH AND ANALYSIS REQUIRED — EXPECTED COMPLETION DATE ___ / ___ / ___ (MONTH DAY YEAR)

REFERENCE

04 MONITORING (Check if applicable)

☐ SITE REQUIRES CONTINUED SURVEILLANCE/MONITORING — SCHEDULE ☐ A. MONTHLY ☐ B. SEMI ANNUALLY ☐ C. QUARTERLY ☐ D. ANNUALLY

REFERENCE

05 FULL FIELD INVESTIGATION (Check one if applicable)

☐ A. NEEDED ☐ B. IN PROGRESS ☐ C. COMPLETED — DATE COMPLETED ___ / ___ / ___ (MONTH DAY YEAR)

06 REMEDIAL RESPONSE (Check one if applicable)

☐ A. NEEDED ☐ B. IN PROGRESS ☐ C. COMPLETED — DATE COMPLETED ___ / ___ / ___ (MONTH DAY YEAR)

07 PLANNED REMOVAL (Check one if applicable)

☐ A. NEEDED ☐ B. IN PROGRESS ☐ C. COMPLETED — DATE COMPLETED ___ / ___ / ___ (MONTH DAY YEAR)

08 IMMEDIATE REMOVAL (Check one if applicable)

☐ B. IN PROGRESS ☐ C. COMPLETED — DATE COMPLETED ___ / ___ / ___ (MONTH DAY YEAR)

09 RESPONSIBLE PARTIES (Check if applicable)

☐ RESPONSE/REMOVAL ACTIVITIES UNDER CONTROL OF RESPONSIBLE PARTIES

10 ENFORCEMENT (Privately financed removal response activities linked to enforcement are carried in the Enforcement Docket System.)

☐ A. ADMINISTRATIVE ORDER ISSUED — DATE ISSUED ___ / ___ / ___ (MONTH DAY YEAR) — COMPLIANCE DATE ___ / ___ / ___ (MONTH DAY YEAR)

☐ B. CIVIL/CRIMINAL LITIGATION FILED — DATE FILED ___ / ___ / ___ (MONTH DAY YEAR) — WHERE FILED _____ (Judicial District) — JUDGEMENT/SETTLEMENT DATE ___ / ___ / ___ (MONTH DAY YEAR)

IV. SITE RANKING

01 SITE RANKING AVAILABLE (Check one)

☑ A. YES RANKING 18.48 ☐ B. NO ☐ C. PLANNED ☐ D. UNNECESSARY ☐ E. UNKNOWN

02 STATE PRIORITY _____

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

VI. INFORMATION AVAILABLE FROM

01 PREPARED BY	02 AGENCY	03 ORGANIZATION	04 TELEPHONE NO	05 DATE
A. Vogus	USEPA	ERB FSS	( ) 886-0358	01 28 83 (MONTH DAY YEAR)

EPA FORM 2070-14 (7-81)

Illinois Environmental Protection Agency · 2200 Churchill Road, Springfield, IL 62706

217/782-6760

Refer to: L1630200005 - St. Clair County
Cahokia/Dead Creek
Superfund/HRS

December 26, 1984

Jeanne Griffin, NPL Coordinator
USEPA, Region V
230 South Dearborn Street
Chicago, Illinois 60604

Dear Ms. Griffin:

Enclosed you will find information which we believe supports re-scoring of the subject site. We are forwarding the information now in an effort to allow listing on the proposed NPL update #3.

In reviewing the previous scoring package, we noted that no value was assigned for Hazardous Waste Quantity. It is our opinion that a value should be assigned for this category; a score not previously assigned probably due to insufficient data. The following quantities of waste have been identified and documented.

1. Two "oil pools" on site estimated at 51 cubic yards.

   - Analyses for constituents: Attachments A, B.

2. Debris in and heavily contaminated soil underlying oil pools estimated at 153 cubic yards.

3. Surficial drums estimated at 40 cubic yards.

4. Solidified spill material with estimated volume of 21 cubic yards.

   - Analyses for constituents: Attachment C.

5. Truck washing impoundment with estimated waste receipt of 163,800 gallons (819 cubic yards).

   a. quantity estimation from Ron St. John report: Attachment D

   b. adjacent well sampling analysis: Attachment E.

The first four waste volumes above were identified in preparation for an interim remedial clean-up activity by IEPA.

The clean-up activity was postponed due to information becoming available which lead us to believe the particular area may be underlain by a large number of drums very close to the surface. For the safety of those involved it was decided further investigative work should be performed.

The above listed quantities of waste are documentable estimates of waste quantity. Their total allows a score of 6 to be assigned for Hazardous Waste Quantity. Other known areas of hazardous waste exists at the site, but have not been quantified. They include:

1. The creekbed itself with high levels of organic compounds and metals.

2. Suspected drums buried in large quantities in the vicinity of the site.

3. Contaminated water in the creek between Queeny Avenue and Judith Lane.

4. Highly contaminated soil north of Quenny Avenue in Cerro Copper property.

In short, we believe that the quantified waste volumes that we are requesting be utilized in re-scoring actually represent a small percentage of the waste volume in existence at the site.

Enclosed with this letter please find the following documents:

1. The previous score package including HRS score sheets and documentation.

2. A revised score package, documentation consisting of the previous score package, this letter and attachments to this letter.

3. A narrative summary in accordance with your December 14, 1984 guidance.

You will find that our only change in the scoring of the project is in waste quantity. No other values have been changed. Revision of waste quantities results in scores of 29.23 (Sm), 52.5 (Sfe), and 50.0 (Sdc).

If you have any questions please feel free to contact the assigned project manager, Steven K. Dunn, at the telephone number indicated above.

Sincerely,

Robert K Carlin

for James F. Frank, Manager
Hazardous Substance Control Section
Division of Land Pollution Control

JFF:SKD:bv/2406D/90-91

Enclosures

cc: Collinsville - FOS
Steve Dunn
Carrie Luly
File

Narrative Summary

Site Name: Dead Creek

Location: Sauget and Cahokia, Illinois (St. Clair County)

Size: Area bounded by Route 3, Quenny Avenue, Falling Springs Road, and Judith Lane equals 92 acres, but actual area requiring remedial activities probably much larger.

Nature of Operations: The creekbed has received direct industrial discharges and surrounding area has been used for direct dumping of materials. Landfills in area reportedly used for hazardous waste dumping from 1927 to 1960's.

History of ownership/operations: The affected area is entirely privately owned with individual lots in ownership. Lots "back-up" to center-line of creek.

Wastes Present: High levels of organics including PCB's and high levels of metals including white phosphorous have been detected at the site. Quantity has not been fully determined due to large area of contamination.

Media Affected: Known releases have been documented for groundwater, surface water, soil, and air.

Demographics: The site is in a highly urbanized area with population greater than 10,000 within 1-mile radius.

Geography: Site located within 1 mile of Mississippi River.

Clean-up Actions: Fence installed by USEPA in 1981. IEPA procurement of interim clean-up contractor in December, 1984, but project postponed for safety considerations.

Enforcement Actions: Project under review at Illinois Attorney General's office.

SKD:bv/2406D/93

Facility name: Cahokia / Dead Creek

Location: Sauget, IL. (St. Clair County)

EPA Region: V

Person(s) in charge of the facility:

Name of Reviewer: 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.)

Unlined creekbed and surrounding area - Creekbed has received direct industrial discharges and surrounding area has been used for direct dumping of materials. Landfills in area reportedly used for haz. waste dumping since 1927 to 1960's.

Scores: $S_M = 29.23$ $S_{gw} = 5.65$ $S_{sw} = \cancel{5.65}\ 10.07$ $S_a = 49.23$

$S_{FE} = 52.5$

$S_{DC} = 50.0$

FIGURE 1
HRS COVER SHEET

BILLING CODE 6560-50-C

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max Score	Ref. (Section)
1 Observed Release	0 45	1	45	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	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score			15	
3 Containment	0 1 2 3	1		3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score		24	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			3,240	57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 5.65			

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	45	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		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		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	6	8	
Total Waste Characteristics Score			24	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	0	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			6	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			6,480	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{sw} = 10.07		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	45	5.1
Date and Location: 3/23/82 Northern Dead Creek					
Sampling Protocol: Checked for spots above background 2 HNU photo-ionizers & 1 - OVA					
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	1	3	
Toxicity	0 1 2 (3)	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 (6) 7 8	1	6	8	
	Total Waste Characteristics Score		16	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	0	6	
Land Use	0 1 2 (3)	1	3	3	
	Total Targets Score		24	39	
4 Multiply 1 x 2 x 3			17,280	35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a = 49.23			

FIGURE 9
AIR ROUTE WORK SHEET

BILLING CODE 6560-50-C

four-mile radius as well as transients such as workers in factories, offices, restaurants, motels, or students. It excludes travelers passing through the area. If aerial photography is used in making the count, assume 3.5 individuals per dwelling unit. Select the highest value for this rating factor as follows:

DISTANCE TO POPULATION FROM HAZARDOUS SUBSTANCE

Population	0-4 miles	0-1 mile	0-2 miles	0-3 miles
0	0	0	0	0
1 to 100	0	12	15	18
101 to 1,000	12	15	18	21
1,001 to 3,000	15	18	21	24
3,001 to 10,000	18	21	24	27
More than 10,000	21	24	27	30

Distance to sensitive environment is an indicator of the likelihood that a region that contains important biological resources or that is a fragile natural setting would suffer serious damage if hazardous substances were to be released from the facility. Assign a value from Table 10.

Land use indicates the nature and level of human activity in the vicinity of a facility. Assign highest applicable value from Table 13.

6.0 Computing the Migration Hazard Mode Score, S_M

To compute S_M, complete the work sheet (Figure 10) using the values of S_{gw}, S_{sw} and S_a obtained from the previous sections.

7.0 Fire and Explosion

Compute a score for the fire and explosion hazard mode, S_{fe}, when either a state or local fire marshall has certified that the facility presents a significant fire or explosion threat to the public or to sensitive environments or there is a demonstrated fire and explosion threat based on field observations (e.g., combustible gas indicator readings). Document the threat.

7.1 Containment. *Containment* is an indicator of the measures that have been taken to minimize or prevent hazardous substances at the facility from catching fire or exploding. Normally it will be given a value of 3 on the work sheet (Figure 11). If no hazardous substances that are individually ignitable or explosive are present and those that may be hazardous in combination are segregated and isolated so that they cannot come together to form incompatible mixtures, assign this factor a value of 1.

7.2 Waste Characteristics. *Direct evidence* of ignitability or explosion potential may exist in the form of measurements with appropriate instruments. If so, assign this factor a value of 3; if not, assign a value of 0.

TABLE 13.—VALUES FOR LAND USE (AIR ROUTE)

Assigned value—	0	1	2	3
Distance to Commercial-Industrial	> 1 mile	0.5 to 1 mile	0.5 to 0.5 mile	< 0.5 mile.
Distance to National/State Parks, Forests, Wildlife Reserves, and Residential Areas.	> 2 miles	1 to 2 miles	0.5 to 1 mile	< 0.5 mile.
Distance to Agricultural Lands (in Production within 5 years):				
Ag land	> 1 mile	0.5 to 1 mile	0.5 to 0.5 mile	< 0.5 mile.
Prime Ag Land [1]	> 2 miles	1 to 2 miles	0.5 to 1 mile	< 0.5 mile.
Distance to Historic/Landmark Sites (National Register of Historic Places and National Natural Landmarks).				Within view of site or 0 site is subject to significant impacts.

[1] Defined in the Code of Federal Regulations, 7 CFR 657.5, 1981.

	S	S^2
Groundwater Route Score (S_{gw})	5.65	31.92
Surface Water Route Score (S_{sw})	10.07	101.40
Air Route Score (S_a)	49.23	2,423.59
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2,556.91
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		50.57
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		29.23

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 (3)	1	3	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 (1)	1	3	3	
Ignitability	0 1 2 (3)	1	3	3	
Reactivity	0 (1) 2 3	1	1	3	
Incompatibility	0 (1) 2 3	1	1	3	
Hazardous Waste Quantity	0 1 2 3 4 5 (6) 7 8	1	6	8	
Total Waste Characteristics Score			14	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 (3) 4 5	1	3	5	
Distance to Nearest Building	0 1 (2) 3	1	2	3	
Distance to Sensitive Environment	(0) 1 2 3	1	0	3	
Land Use	0 1 2 (3)	1	3	3	
Population Within 2-Mile Radius	0 1 2 3 4 (5)	1	5	5	
Buildings Within 2-Mile Radius	0 1 2 3 4 (5)	1	5	5	
Total Targets Score			18	24	
4 Multiply 1 x 2 x 3			756	1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =	~~35.0~~ 52.5		

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

BILLING CODE 6560-50-?

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	45	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	8.2
3 Containment	0 15	1	–	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	16	20	
Distance to a Critical Habitat	0 1 2 3	4	0	12	
Total Targets Score			16	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			10,800	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} = 50.0			

FIGURE 12
DIRECT CONTACT WORK SHEET

BILLING CODE 6560-50-C

(1)

Time Collected: 7:15 P.M.

Date Collected: OCT. 1, 94

Lab # [illegible] 5 — 35937 cmc

SPECIAL ANALYSIS FORM

Date Received [illegible]

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA / DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS COLLECTED FROM A BLACK OILY PIT JUST WEST OF THE NORTHWEST CORNER OF DEAD CREEK.

PHYSICAL OBSERVATIONS, REMARKS: JUST WEST OF SAMPLE #2. VERY THICK BLACK OILY MATERIAL DUMPED ON THE GROUND.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KEN MENSING MIKE GRANT

TRANSPORTED BY: KEN MENSING

LABORATORY

RECEIVED BY: Harji D. Kadhia

DATE COMPLETED:

DATE FORWARDED:

Cd	0.1
Cr	24.4
Cu	101.4
Fe	106
Pb	26.6
Mn	<0.1
Zn	101.4
Hg	0.36
As	

IEPA - CHAMPAIGN OCT - 5 1994
Rec'd. 803906

LPC-8A 4/77

(NOT FOR DATA PROCESSING)

[illegible] 35937 cmc

(1)

DO 35935

Time Collected: 7:15 P.M.

Lab # [illegible] 3 — 35937 cmc

SPECIAL ANALYSIS FORM

Date Collected: OCT. 1, 84

Date Received [illegible]

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA / DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS COLLECTED FROM A BLACK OILY PIT JUST WEST OF THE NORTHWEST CORNER OF DEAD CREEK.

PHYSICAL OBSERVATIONS, REMARKS: JUST WEST OF SAMPLE #2 VERY THICK BLACK OILY MATERIAL DUMPED ON THE GROUND.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KEN MENSING MIKE GRANT

TRANSPORTED BY: KEN MENSING

LABORATORY

RECEIVED BY: Harji D. Kalthia

DATE COMPLETED: 11/26/84

DATE FORWARDED: 11/26/84

PCBs < 16 mg/g

LPC-8A 4/77

(NOT FOR DATA PROCESSING)

35937 c

[illegible] 35937

Cahokia / Dead Creek

(#1) from oily pit just west of #2
Very thick black oily material

D035435

COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
0-Dichlorobenzene	ND	2-Chlorophenol	ND
Bis(2-chloroethyl)ether	"	2-Nitrophenol	"
Nitrobenzene	"	Phenol	"
Hexachlorobutadiene	"	2,4-Dimethylphenol	"
1,2,4-Trichlorobenzene	"	2,4-Dichlorophenol	"
Isophorone	"	2,4,6-Trichlorophenol	"
Naphthalene	"	4-Chloro-3-methyphenol	"
Methylnaphthalene	"	2,4-Dinitrophenol	"
Dimethylnaphthalene	"	2-Methyl-4,6-dinitrophenol	"
Trimethylnaphthalene	"	4-Nitrophenol	"
Hexachlorocyclopentadiene	"		
Acenaphthylene	"		
Dibenzofuran	"	PCBs	< 16 mg/g
Acenaphthene	"		
Fluorene	"		
2,4-Dinitrotoluene	"		
Phenanthrene	"		
Anthracene	"		
Fluoranthene	"		
Pyrene	610		
Benzidine	ND		
Chrysene	"		
Benzo(a)anthracene	"		
3,3'-Dichlorobenzidine	"		
Phenyl Indene	320		
Dimethyl Phenanthrene	3100		
Trimethyl Phenanthrene	1400		
Aliphatic Hydrocarbons	14,200		
Other Organic Compounds	1200 (est.)		
Detection Limit	400		
Units	mg/kg (PPM)		

(7)

Time Collected: 7:30 P.M.

Date Collected: OCT. 1, 84

SPECIAL ANALYSIS FORM

Lab # ~~[illegible] 3~~ cmc

Date Received

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA / DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS COLLECTED FROM A BLACK OILY PIT JUST WEST OF THE NORTHWEST CORNER OF DEAD CREEK.

PHYSICAL OBSERVATIONS, REMARKS: JUST EAST OF SAMPLE # 1. VERY THICK BLACK OILY MATERIAL FLOATING ON WATER. SAMPLE CONSISTED OF BOTH THE OILY MATERIAL AND WATER.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KEN MENSING TRANSPORTED BY: KEN MENSING
MIKE GRANT

LABORATORY

RECEIVED BY: Hedji D. Kadhim DATE COMPLETED: DATE FORWARDED:

Cd	0.8
Cr	27.2
~~Cu~~	~~509.0~~
Fe	151
Pb	52.1
Mn	<0.1
~~Zn~~	~~339~~
Hg	0.46
As	

IEPA - CHAMPAIGN LAB
Rec'd.
OCT - 5 1984

LPC-8A 4/77 (NOT FOR DATA PROCESSING)

~~[illegible] 3~~ cmc

(7)

D035938 cmc

Time Collected: 7:30 P.M.

Lab # ~~[illegible]~~ cmc

SPECIAL ANALYSIS FORM

Date Collected: OCT. 1, 84

Date Received

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA / DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS COLLECTED FROM A BLACK OILY PIT JUST WEST OF THE NORTHWEST CORNER OF DEAD CREEK.

PHYSICAL OBSERVATIONS, REMARKS: JUST EAST OF SAMPLE # 1. VERY THICK BLACK OILY MATERIAL FLOATING ON WATER. SAMPLE CONSISTED OF BOTH THE OILY MATERIAL AND WATER.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KEN MENSING MIKE GRANT TRANSPORTED BY: KEN MENSING

LABORATORY

RECEIVED BY: Harji D. Kulthia DATE COMPLETED: 11/26/84 DATE FORWARDED: 11/26/84 J. Hurle

PCBs < 5 ug/l

LPC-8A 4/77 (NOT FOR DATA PROCESSING)

~~[illegible]~~ 3.5938 cr

D03:5438

COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
0-Dichlorobenzene	ND	2-Chlorophenol	ND
Bis(2-chloroethyl)ether	"	2-Nitrophenol	"
Nitrobenzene	"	Phenol	"
Hexachlorobutadiene	"	2,4-Dimethylphenol	"
1,2,4-Trichlorobenzene	"	2,4-Dichlorophenol	"
Isophorone	"	2,4,6-Trichlorophenol	"
Naphthalene	"	4-Chloro-3-methyphenol	"
Methylnaphthalene	"	2,4-Dinitrophenol	"
Dimethylnaphthalene	"	2-Methyl-4,6-dinitrophenol	"
Trimethylnaphthalene	"	4-Nitrophenol	"
Hexachlorocyclopentadiene	"		
Acenaphthylene	"		
Dibenzofuran	"		
Acenaphthene	"		
Fluorene	"		
2,4-Dinitrotoluene	"		
Phenanthrene	"		
Anthracene	"		
Fluoranthene	"		
Pyrene	"		
Benzidine	"		
Chrysene	"		
Benzo(a)anthracene	"		
3,3'-Dichlorobenzidine	"		
CHLOROBENZENE	580		
ALIPHATIC HYDROCARBONS	5230		
OTHER ORGANICS	400 (est.)		
DETECTION LIMIT	250		
UNITS	ug/l (PPB)		

11/26/84

(3)

Time Collected: 7:40 P.M. Lab # [illegible] cmc

SPECIAL ANALYSIS FORM

Date Collected: OCT. 1, 84 Date Received OCT 2 1984

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA/DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS A COMPOSITE OF SOIL AND/OR WASTE MATERIALS IN THE GENERAL AREA OF SAMPLES #1 AND #2.

PHYSICAL OBSERVATIONS, REMARKS:
SEVERAL MATERIALS FROM A WHITISH SUBSTANCE TO A DARK BROWN FINE POWDER LIKE MATERIAL WERE OBTAINED.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KENNETH MENSING TRANSPORTED BY: KEN MENSING
MIKE GRANT

LABORATORY

RECEIVED BY: Harji D. Kulthia DATE COMPLETED: DATE FORWARDED:

Cd 16.8
Cr 30.0
Cu ~~7.2~~
Fe ~~6025~~ 6025
Pb 337
Mn 9.9
Zn 104100
Hg 1.99
As

IEPA - CHAMPAIGN LAB
Rec'd.
OCT 5 1984

IL 532-0314
LPC 8A 4/77

(NOT FOR DATA PROCESSING)

[illegible] cmc

(3)

35941 cmc

Time Collected: 7:40 P.M. Lab # [illegible] cmc

SPECIAL ANALYSIS FORM

Date Collected: OCT. 1, 84 Date Received OCT 2 1984

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND/NOISE POLLUTION CONTROL

COUNTY:	FILE HEADING:	FILE NUMBER:
ST. CLAIR	CAHOKIA/DEAD CREEK	1630700005

SOURCE OF SAMPLE: (Exact Location) SAMPLE WAS A COMPOSITE OF SOIL AND/OR WASTE MATERIALS IN THE GENERAL AREA OF SAMPLES #1 AND #2.

PHYSICAL OBSERVATIONS, REMARKS:

SEVERAL MATERIALS FROM A WHITISH SUBSTANCE TO A DARK BROWN FINE POWDER LIKE MATERIAL WERE OBTAINED.

TESTS REQUESTED: PCB'S, ORGANIC SCAN, HEAVY METALS

COLLECTED BY: KENNETH MENSING TRANSPORTED BY: KEN MENSING
MIKE GRANT LABORATORY

RECEIVED BY: Hasji D. Kulthia DATE COMPLETED: 11/26/84 DATE FORWARDED: 11/26/84 [illegible]

PCBs = 18 ug/g (PPM)
(Aroclor 1260)

IL 532-0314
LPC 8A 4/77

(NOT FOR DATA PROCESSING)

35941
[illegible] cmc

D035941

COMPOUND	CONCENTRATION	COMPOUND	CONCENTRATION
0-Dichlorobenzene	ND	2-Chlorophenol	ND
Bis(2-chloroethyl)ether	"	2-Nitrophenol	"
Nitrobenzene	"	Phenol	"
Hexachlorobutadiene	"	2,4-Dimethylphenol	"
1,2,4-Trichlorobenzene	"	2,4-Dichlorophenol	"
Isophorone	"	2,4,6-Trichlorophenol	"
Naphthalene	"	4-Chloro-3-methyphenol	"
Methylnaphthalene	"	2,4-Dinitrophenol	"
Dimethylnaphthalene	"	2-Methyl-4,6-dinitrophenol	"
Trimethylnaphthalene	"	4-Nitrophenol	"
Hexachlorocyclopentadiene	"		
Acenaphthylene	"		
Dibenzofuran	"		
Acenaphthene	"		
Fluorene	"		
2,4-Dinitrotoluene	"		
Phenanthrene	"		
Anthracene	"		
Fluoranthene	"		
Pyrene	"		
Benzidine	"		
Chrysene	"		
Benzo(a)anthracene	"		
3,3'-Dichlorobenzidine	"		
OTHER ORGANICS	4070		
DETECTION LIMIT	10		
UNITS	mg/kg (PPM)		