ECOLOGY AND ENVIRONMENT, INC.

FIELD INVESTIGATION TEAM

SITE INSPECTION PLAN

US EPA RECORDS CENTER REGION 5

484662

A. GENERAL INFORMATION

SITE: Birmingham Bolt & Steel Co, Inc.

TDD NO.: F05 8612 073

LOCATION: Rt 50 + McKnight Rd.
Bourbonnais, IL
Kankakee County

U.S. EPA NO.: ILD980996862

SSID NO.:

WSTS NO.: FIL0495

PLAN PREPARED BY: Jeff Swano

DATE:

APPROVED BY:

DATE:

OBJECTIVE (including description of work to be performed): To perform a site inspection and hold interviews with site representatives, visual inspection, but no sampling at this time.

DESIRED REPORT FORM: SI REPORT (2070-13) X HRS REPORT

OTHER (EXPLAIN)

PROPOSED DATE OF INVESTIGATION:

BACKGROUND REVIEW: Complete: X Preliminary:

HRS PRELIMINARY SCORE OF ROUTES: GW 37.14 SW 0 AIR 0
(NO FIELD WORK)

DIRECT CONTACT 0 FIRE AND EXPLOSION 0

TOTAL PRELIMINARY HRS SCORE VALUE (NO FIELD WORK) 21.47

PROJECTED HRS SCORE: GW 37.14 SW 0 AIR 0
(WITH FIELD WORK)

DIRECT CONTACT 0 FIRE AND EXPLOSION 0

TOTAL PROJECTED HRS SCORE 21.47 * see comment P. 4

IF NO SAMPLING, EXPLAIN ON PAGE 3.

INSPECTION PRIORITY (BASED ON PROJECTED HRS SCORE): LOW: X MEDIUM: HIGH:

B. SITE/WASTE CHARACTERISTICS

WASTE TYPE(S): Liquid X Solid X Sludge Gas

CHARACTERISTIC(S): Corrosive X Ignitable Radioactive Volatile

Toxic X Reactive Unknown Other (Name) Persistent

FACILITY DESCRIPTION: The Site is a steel mini-mill located in a rural area north of Kankakee, Illinois. Birmingham Bolt bought the property from Kankakee Steel in 1981.

Principal Disposal Method (type and location): Baghouse dust was disposed in an above-ground dirt mound into which 5 cells were dug.

Unusual Features (dike integrity, power lines, terrain, etc.):

Status: (active, inactive, unknown) The waste mound was closed in 1985 and the dust removed to Joliet Disposal. Three lagoons for cooling water remain in use and have been reported to be heavy with oil floating on top.

History: (worker or non-worker injury; complaints from public; previous agency action): Although the lagoons have an NPDES permit, the company violated several requirements, according to a compliance memo dated 6-13-85. According to an IEPA observation report, the company had nine various violations on 7-13-84. In 1983, two electric arc furnaces were shut down for non-compliance.

C. HAZARD EVALUATION

(Use Hazard Evaluation of Chemicals sheets for specific or representative chemicals present.): Baghouse dust generated at the site but no longer stored there has high levels of lead and cadmium and could possibly be present outside of controlled areas (The company has a record of non-compliance violations). The cooling ponds are heavy with oil and have been known to discharge.

LEVEL OF PROTECTION: A ___ B ___ C ___ D X

MODIFICATIONS: Level D with possible upgrade to level C if monitoring equipment levels for upgrading are met.

SITE SAFETY PLAN ON FILE AT E & E: YES ___ NO ✓

D. FIELD WORK REQUIRED

PERIMETER ESTABLISHMENT: MAP/SKETCH ATTACHED? YES X NO ___

Perimeter Identified? YES ___ NO X

Zone(s) of Contamination Identified? YES ___ NO X

Geophysical Work: YES ___ NO X

Type: Magnetometry ___ Seismic Refraction ___ GPR ___ Resistivity ___ Other___

Comments: none

Drilling: YES ___ NO X

Well Location Identified: YES ___ NO ___ NA

Drill Plan/Well Installation Plan Attached: YES ___ NO ___ NA

Sampling Required: YES ___ NO X

Type: GW ___ SW ___ Air ___ Soil ___ Waste ___ Other ___

Sampling Locations Identified: YES ___ NO X

SUMMARY OF SAMPLING PROCEDURES: (Special Equipment, Facilities, or Procedures)

No sampling on initial inspection.

E. ANALYTICAL SERVICES REQUIRED

RAS ___ SAS ___ CRL ___

F. QAPP

REQUIRED: YES ___ NO X

IF NO, EXPLAIN: No sampling during initial site inspection.

G. SI WORK TEAM SIZE/LIMITATION

TEAM MEMBER	DISCIPLINE	RESPONSIBILITY
Dave Curnock	Biologist/Agronomist	Team Leader, Site Safety Officer
Jeff Savano	Environmental Specialist	Team Member.

WORK LIMITATIONS (Time of day, etc.): Work daylight hours only. Monitor symptoms for heat/cold stress. Follow buddy system.

COMMENTS: During the interview, inquire about the seasonality of the stream near the lagoons. An observed release will only reach a score of 25.56, therefore, no sampling.

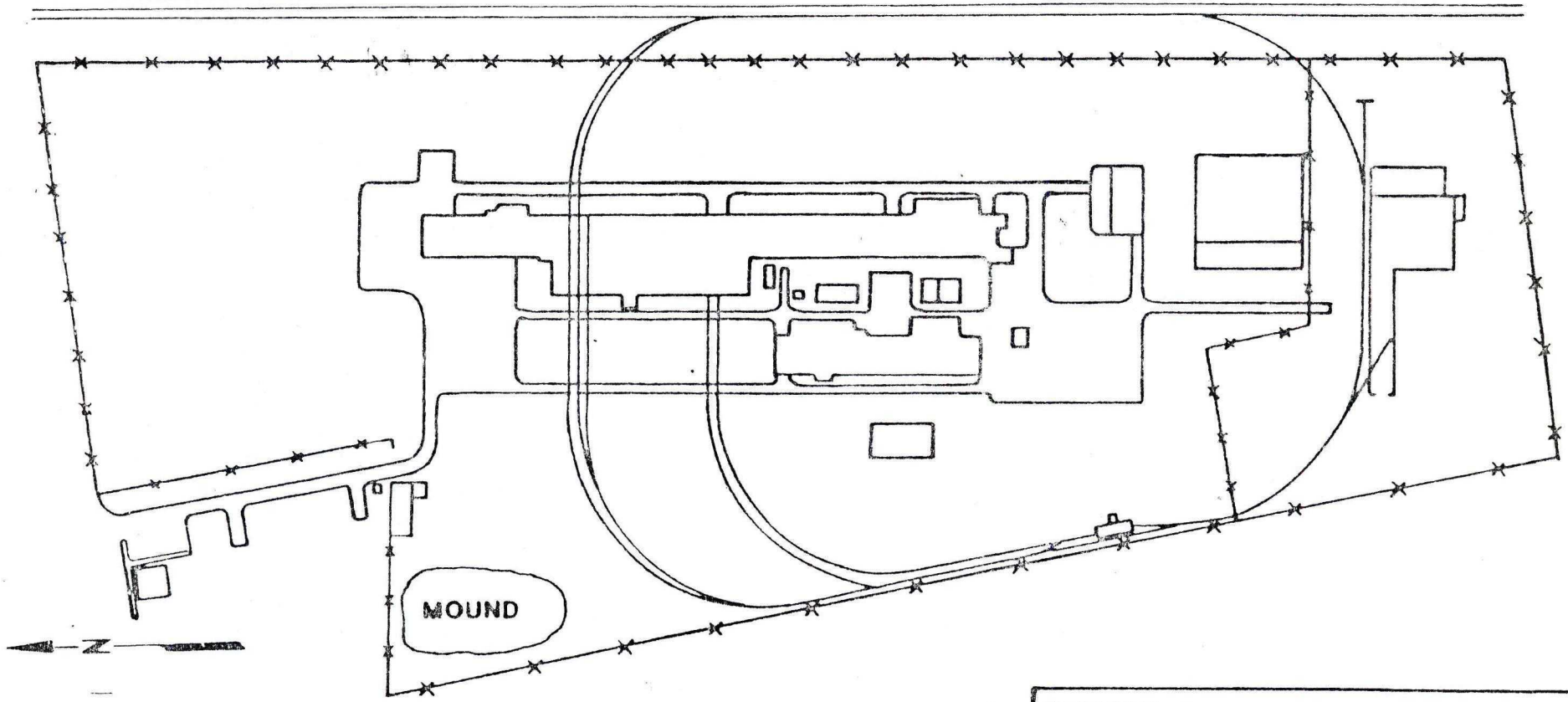
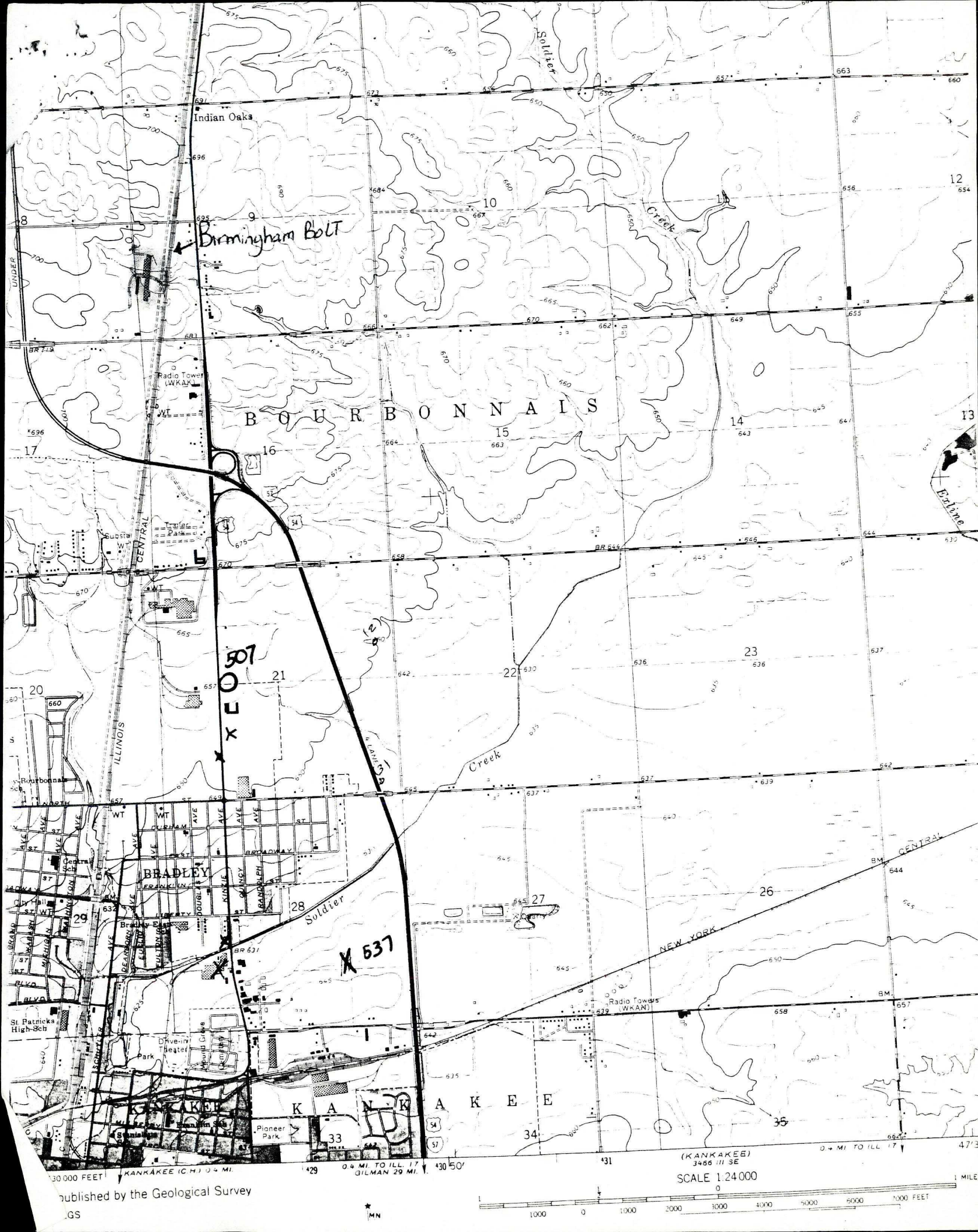


FIGURE 1

PLANT LAYOUT

ILLINOIS STEEL DIVISION
BIRMINGHAM BOLT COMPANY, INC


Indian Oaks
Birmingham Bolt
Soldier
Creek
BOURBONNAIS
Radio Towers (WKAN)
Tuley Park
CENTRAL
ILLINOIS
Rourbonnais Sch
BRADLEY
Central Sch
City Hall
Bradley Park
Soldier
Creek
NEW YORK
CENTRAL
Radio Towers (WKAN)
St Patricks High Sch
Drive-in Theater
Park
KANKAKEE
Pioneer Park
Eline
KANKAKEE (C.H.) 0.4 MI.
0.4 MI. TO ILL. 17
GILMAN 29 MI.
(KANKAKEE)
3466 III SE
0.4 MI. TO ILL. 17
SCALE 1:24000
1 MILE
7000 FEET
published by the Geological Survey
GS
MN

PRE-HRS

Facility name: Birmingham Bolt & Steel Co., Inc.

Location: Route 50 & McKnight Road, Bourbonnais, IL

FACILITY DESCRIPTION Birmingham Bolt manufactures steel products from scrap. Between 1981 & 1985, the company stored 5560 cubic yards of K061 baghouse dust in an on-site waste pile. This pile was a dirt mound into which 5 cells were excavated and then filled with the dust. The cells, however, remained uncovered until completely full. In September of 1985, the dust was transferred to Peoria Disposal in Peoria, Illinois, and the pile was declared officially closed.

Three lagoons are currently used on-site which are reported to be heavy with oil floating on top. The company has an NPDES permit for the ponds but has violated many of its requirements.

Within a three-mile radius of the site, most of the population gets its drinking water from the Kankakee River, which is unthreatened by the site. Groundwater from a shallow limestone aquifer is used for (see attachment)

POTENTIAL SW + GW Scores: S_M = 18.29 (S_{gw} = 31.43 S_{sw} = 3.64 S_a = 0) S_{FE} = 0 S_{DC} = 0	OBS. RELEASE SW + GW S_M = 25.56 (S_{gw} = 42.86 S_{sw} = 10.91 S_a = 0) S_{FE} = 0 S_{DC} = 0
Potential SW OBS. RELEASE GW S_M = 24.86 (S_{gw} = 42.86 S_{sw} = 3.64 S_a = 0) S_{FE} = 0 S_{DC} = 0	Potential GW OBS RELEASE SW S_M = 18.34 (S_{gw} = 31.43 S_{sw} = 10.91 S_a = 0) S_{FE} = 0 S_{DC} = 0

drinking purposes and is potentially threatened by the site. This threat to health and the environment would come from the previously used K061 waste pile and from the current operation of the lagoons.

PRE-HRS
WORKSHEET
-GW & SW

Groundwater Route

Depth to aquifer of concern	(2)	32 feet
Net precipitation	(1)	2.00"
Perneability (material type)	(3)	Gravel + sands $>10^{-3}$ cm/sec
Physical state	(3)	liquid
Containment (type, degree)	(3)	piles uncovered, waste unstabilized, no liner
Toxicity; persistence (compounds)	(18)	lead, cadmium
quantity	(8)	5,560 cu.yds = 22,240 drums
Groundwater use	(3)	Drinking with no alternate
Population served 154x3.8 =	(2)	585.2
Nearest well	(2)	5975 feet

(12) <

Surface Water Route

Slope and terrain	(0)	facility = 1.01% terrain = .52%
24 hr rainfall	(2)	2.44"
Nearest Surface water 2.33 stream miles away	(0)	Soldier Creek
Physical state	(3)	liquid
Containment (type, degree)	(3)	Piles not covered, wastes unconsolodated
Toxicity; persistence (compounds)	(18)	Lead, cadmium
quantity	(8)	22,240 drums
Surface water use	(2)	recreation
Sensitive environment	(0)	none
Intake distance	(0)	None
Population served	(0)	0

05T:2T

	S	S^2
Groundwater Route Score (S_{gw})	31.43	987.84
Surface Water Route Score (S_{sw})	3.64	13.25
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1001.09
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		31.64
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		18.29

OBSERVED RELEASE

	S	S^2
Groundwater Route Score (S_{gw})	42.86	1836.98
Surface Water Route Score (S_{sw})	10.91	119.03
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1956.01
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		44.23
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		25.56

OBSERVED RELEASE GW ONLY

	S	S^2
Groundwater Route Score (S_{gw})	42.86	1836.98
Surface Water Route Score (S_{sw})	3.64	13.25
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1850.23
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		43.01
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		24.86

OBSERVED RELEASE SW ONLY

	S	S^2
Groundwater Route Score (S_{gw})	31.43	987.84
Surface Water Route Score (S_{sw})	10.91	119.03
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1006.87
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		31.73
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		18.34

Ground Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	OBS. RELEASE
1 Observed Release	0 45	1	0	45	3.1	45
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2						
2 Route Characteristics					3.2	
Depth to Aquifer of Concern	0 1 2 3	2	4	6		
Net Precipitation	0 1 2 3	1	1	3		
Permeability of the Unsaturated Zone	0 1 2 3	1	3	3		
Physical State	0 1 2 3	1	3	3		
	Total Route Characteristics Score		11	15		
3 Containment	0 1 2 3	1	3	3	3.3	
4 Waste Characteristics					3.4	
Toxicity/Persistence	0 3 6 9 12 15 18	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1	8	8		
	Total Waste Characteristics Score		26	26		26
5 Targets					3.5	
Ground Water Use	0 1 2 3	3	9	9		
Distance to Nearest Well/Population Served	0 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	12	40		
	Total Targets Score		21	49		21
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			18018	57,330		24570
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} = 31.43				42.86

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)	OBS. RELEASE
1 Observed Release	(0) 45	1	0	45	4.1	45
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2						
2 Route Characteristics					4.2	
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3		
1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3		
Distance to Nearest Surface Water	(0) 1 2 3	2	0	6		
Physical State	0 1 2 (3)	1	3	3		
Total Route Characteristics Score			5	15		
3 Containment	0 1 2 (3)	1	3	3	4.3	
4 Waste Characteristics					4.4	
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8		
Total Waste Characteristics Score			26	26		26
5 Targets					4.5	
Surface Water Use	0 1 (2) 3	3	6	9		
Distance to a Sensitive Environment	(0) 1 2 3	2	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
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			2340	64,350		7020
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} = 3.64				10.91

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

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

FIGURE 9
AIR ROUTE WORK SHEET

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

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	OBS. RELEASE
1 Observed Incident	(0) 45	1	0	45	8.1	45
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2						
2 Accessibility	0 1 2 (3)	1	3	3	8.2	
3 Containment	(0) 15	1	0	15	8.3	
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4	15
5 Targets					8.5	
Population Within a 1-Mile Radius	0 1 (2) 3 4 5	4	8	20		
Distance to a Critical Habitat	(0) 1 2 3	4	0	12		
Total Targets Score			8	32		8
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600		5400
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0					25

FIGURE 12
DIRECT CONTACT WORK SHEET

SITES
D → C
HMS, OLO

ECOLOGY AND ENVIRONMENT, INC.

FIELD INVESTIGATION TEAM

SITE INSPECTION PLAN

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Kankakee County WSTS NO.: FIL0495

PLAN PREPARED BY: Jeff Swano DATE: (2-5-87)

APPROVED BY: [signature] DATE: 2-6-87

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WASTE TYPE(S): Liquid X Solid X Sludge Gas

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