

Attachment B

Meeting Handout (Revised) Dated April 11, 2003



*Integrated
Environmental
Solutions*

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April 11, 2003

Mr. Sam Nalluswami
Project Manager
USNRC, Decommissioning Branch
Office of Nuclear Materials Safety and Safeguards/Division of Waste Management
Mail Stop T-7F27
Washington, D.C. 20555-0001

**Subject: Decommissioning Plan
Hartley & Hartley Landfill, Kawkawlin, Michigan
NRC Materials License SUC-1565**

Dear Mr. Nalluswami:

We appreciated the opportunity to meet with you and other NRC personnel on April 3, 2003, to discuss issues associated with the Decommissioning Plan for the SCA Hartley & Hartley Landfill Site. Enclosed are nine copies of the materials presented by RMT, on behalf of Waste Management, Inc., during that meeting. Also enclosed are two sets of the figures on larger sized sheets.

As we discussed during the meeting, we are planning to meet with the NRC again, via conference call, on Wednesday, April 23, at 9:00 a.m. EDT, to further discuss the use of the historical data for this site. If we find that there are additional figures that we would like the NRC to have for use during that meeting, we will deliver them to you on April 17. We also agreed to a second conference call, on Monday, May 12, at 1:00 p.m. EDT, to further discuss exposure scenarios for this site.

Please call me, at (608) 662-5307, if you have any questions.

Sincerely,

RMT, Inc., Michigan

Linda E. Hicken, P.E.
Senior Project Manager

Enclosures

cc: Chris Miller, USNRC Region III
Ed Kulzer, USNRC Region III
Phill Mazor, Waste Management, Inc.
Jim Forney, Waste Management, Inc.
Jack Dowden, Waste Management, Inc.
Rachel Schneider, Quarles & Brady
Gene McLinn, RMT, Inc.
James Wedekind, RMT, Inc.
Bill Thomas, IEM, Inc.
Central Files

**Expanded Meeting Agenda
Hartley & Hartley Landfill, Kawkawlin Township, Michigan
April 3, 2003**

1. Meeting Objectives

2. Review of project history

3. Conceptual model for the site (Figures 1 and 2)

4. Results of the December 2002 background study (Figure 3)

A background study conducted in December 2002 showed higher than expected levels of Strontium-90 and Cesium-137. Cesium-137 levels in the background area were similar to the levels detected on-site. Strontium-90 was detected on-site and off-site at levels greater than background.

5. Historical site data (Figures 4 and 5)

Site data have been collected over a 20-year period. In general, these data show elevated levels (that is, levels exceeding the 95% UCL above the means for background) of the following:

- Thorium slag-related radioisotopes (thorium, uranium, and their progeny) in the Northwest Landfill and in the East Landfill
- Thorium slag-related radioisotopes in soil, sediment, and water outside the landfill containment walls/dikes
- Fission products (Strontium-90 and Cesium-137) in soil and sediment on-site and outside of SCA's property boundary
- Strontium-90 in leachate in the East Landfill
- Cesium-137 in surface water outside of SCA's property boundary

Except for the detections of slag-related radioisotopes in the Northwest Landfill, these findings are inconsistent with the disposal record for this site and with the conceptual hydrogeologic model. A review of the quality of the historical data in the context of the MARSSIM process showed the following concerns:

- DQOs followed CERCLA process (pre-MARSSIM)
- Supporting documentation are available for most of the data (~70%)
- Most of nondetect results (~60%) have effective detection limits that are less than preliminary DCGLs
- Elevated levels of Strontium-90 reported in sediment at three locations in the West Marsh Area could not be confirmed by resampling that was conducted in December 2002

6. Usability of historical data (Figure 6)

- Exclude data that are without documentation of their origin and nondetect data that have effective detection limits that are greater than the DCGLs
- Develop DCGLs for only the thorium slag-related radioisotopes
- Verify limiting isotope(s); focus on isotopes with greatest dose impact

7. Potential pathways for exposure

- Choice of exposure scenario and consistency with the MDNR's choice for the Tobico Marsh SGA site
- Institutional controls for restricted release

8. Classification of survey units

9. Schedule

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Figure 2 Conceptual Hydrogeologic Cross Section

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Table 1
Mean Background Activity Levels
of Radioisotopes of Potential Concern⁽¹⁾
Hartley & Hartley Landfill, Kawkawlin Township, Michigan

MEDIUM	ANALYSIS	MEAN	STANDARD DEVIATION	MEAN +2 95 PERCENT ABOVE THE MEAN STANDARD DEVIATIONS
Groundwater (values reported as pCi/L)	Cs-137	0.397	0.084	0.566
	Ra-226	0.311	0.108	0.528
	Ra-228	0.393	0.647	1.686
	Sr-90	3.717	2.682	9.082
	Th-228	0.478	0.506	1.489
	Th-230	0.550	0.336	1.221
	Th-232	0.305	0.116	0.536
	U-234	0.539	0.260	1.059
	U-235	0.111	0.057	0.224
	U-238	0.246	0.129	0.504
Surface Water (values reported as pCi/L)	Cs-137	0.434	0.070	0.575
	Ra-226	0.332	0.169	0.670
	Ra-228	2.349	2.359	7.067
	Sr-90	6.963	6.656	20.275
	Th-228	0.234	0.171	0.575
	Th-230	0.437	0.249	0.934
	Th-232	0.178	0.183	0.544
	U-234	0.873	0.645	2.164
	U-235	0.179	0.155	0.488
	U-238	0.614	0.475	1.564
Sediment (values reported as pCi/g)	Cs-137	0.629	0.606	1.841
	Ra-226	0.528	0.310	1.148
	Ra-228	0.675	0.290	1.255
	Sr-90	0.202	0.108	0.419
	Th-228	0.200	0.098	0.395
	Th-230	0.333	0.274	0.880
	Th-232	0.220	0.090	0.400
	Th-234	1.489	0.959	3.407
	U-234	0.733	0.557	1.847
	U-235	0.081	0.053	0.186
U-238	0.682	0.533	1.749	

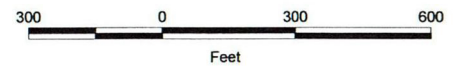
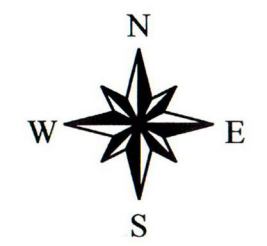
Table 1 (continued)
Mean Background Activity Levels
of Radioisotopes of Potential Concern(1)
Hartley & Hartley Landfill, Kawkawlin Township, Michigan

MEDIUM	ANALYSIS	MEAN	STANDARD DEVIATION	MEAN +2 95 PERCENT ABOVE THE MEAN STANDARD DEVIATIONS
Upland Soil (values reported as pCi/g)	Cs-137	0.647	0.190	1.028
	Ra-226	0.261	0.147	0.555
	Ra-228	0.424	0.187	0.798
	Sr-90	0.210	0.129	0.468
	Th-228	0.074	0.034	0.141
	Th-230	0.330	0.145	0.620
	Th-232	0.103	0.048	0.198
	Th-234	1.199	0.994	3.188
	U-234	0.101	0.100	0.300
	U-235	0.023	0.017	0.057
	U-238	0.071	0.057	0.184
Wetland Soil (values reported as pCi/g)	Cs-137	1.402	1.186	3.773
	Ra-226	0.261	0.147	0.555
	Ra-228	0.424	0.187	0.798
	Sr-90	0.143	0.030	0.202
	Th-228	0.161	0.159	0.478
	Th-230	0.225	0.250	0.726
	Th-232	0.138	0.132	0.401
	Th-234	2.115	1.835	5.785
	U-234	0.452	0.344	1.139
	U-235	0.052	0.037	0.126
	U-238	0.403	0.376	1.155

Notes:

UCL - Upper Confidence Limit.


(1) Calculated for samples collected in December 2002, by RMT, Inc.

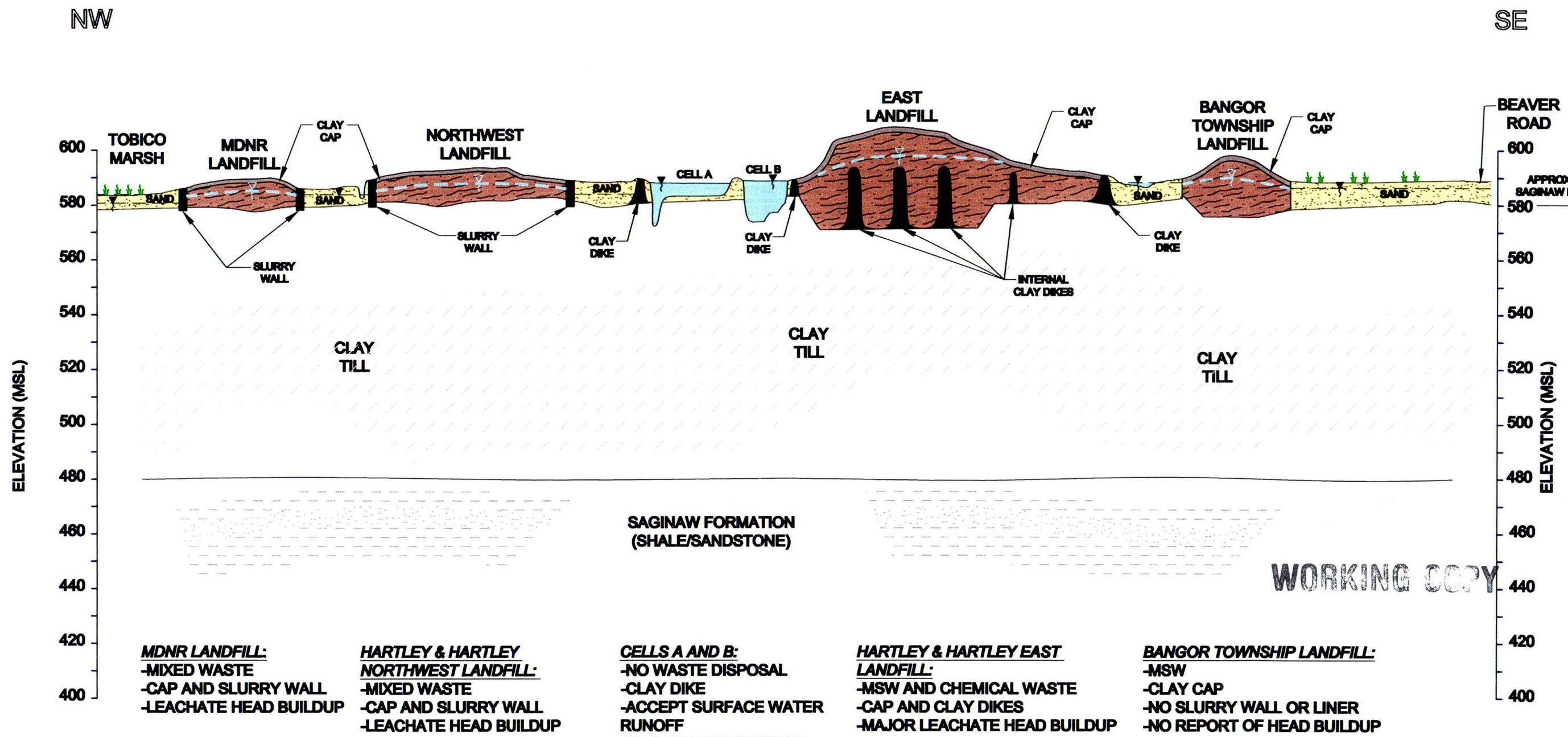


Key to Features

-  SCA Property Line
-  Property Line "Other"
-  Clay Dike
-  Slurry Wall
-  Surface Water Flow Direction
-  Groundwater Flow Direction

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PROJECT: HARTLEY & HARTLEY LANDFILL BAY COUNTY, MICHIGAN				
FIGURE 1 SITE FEATURES BASEMAP U.S.G.S. DIGITAL ORTHO PHOTO BASEMAP				
DRAWN BY: S S Wilson	SCALE AS NOTED	PROJECT NO: 00-06115.11		
CHECKED BY: J Wadekind		FILE NO: sh_basemap.mxd		
APPROVED BY: J Wadekind	DATE PRINTED:			
DATE: MARCH 2003				
		744 Heartland Trail Madison, WI 53717-1934 (800) 831-4444		



MDNR LANDFILL:
 -MIXED WASTE
 -CAP AND SLURRY WALL
 -LEACHATE HEAD BUILDUP

**HARTLEY & HARTLEY
 NORTHWEST LANDFILL:**
 -MIXED WASTE
 -CAP AND SLURRY WALL
 -LEACHATE HEAD BUILDUP

CELLS A AND B:
 -NO WASTE DISPOSAL
 -CLAY DIKE
 -ACCEPT SURFACE WATER
 RUNOFF
 -HEAD IN PONDS HIGHER
 THAN STATIC
 GROUNDWATER

**HARTLEY & HARTLEY EAST
 LANDFILL:**
 -MSW AND CHEMICAL WASTE
 -CAP AND CLAY DIKES
 -MAJOR LEACHATE HEAD BUILDUP

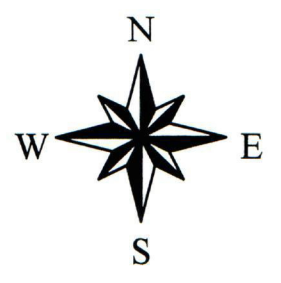
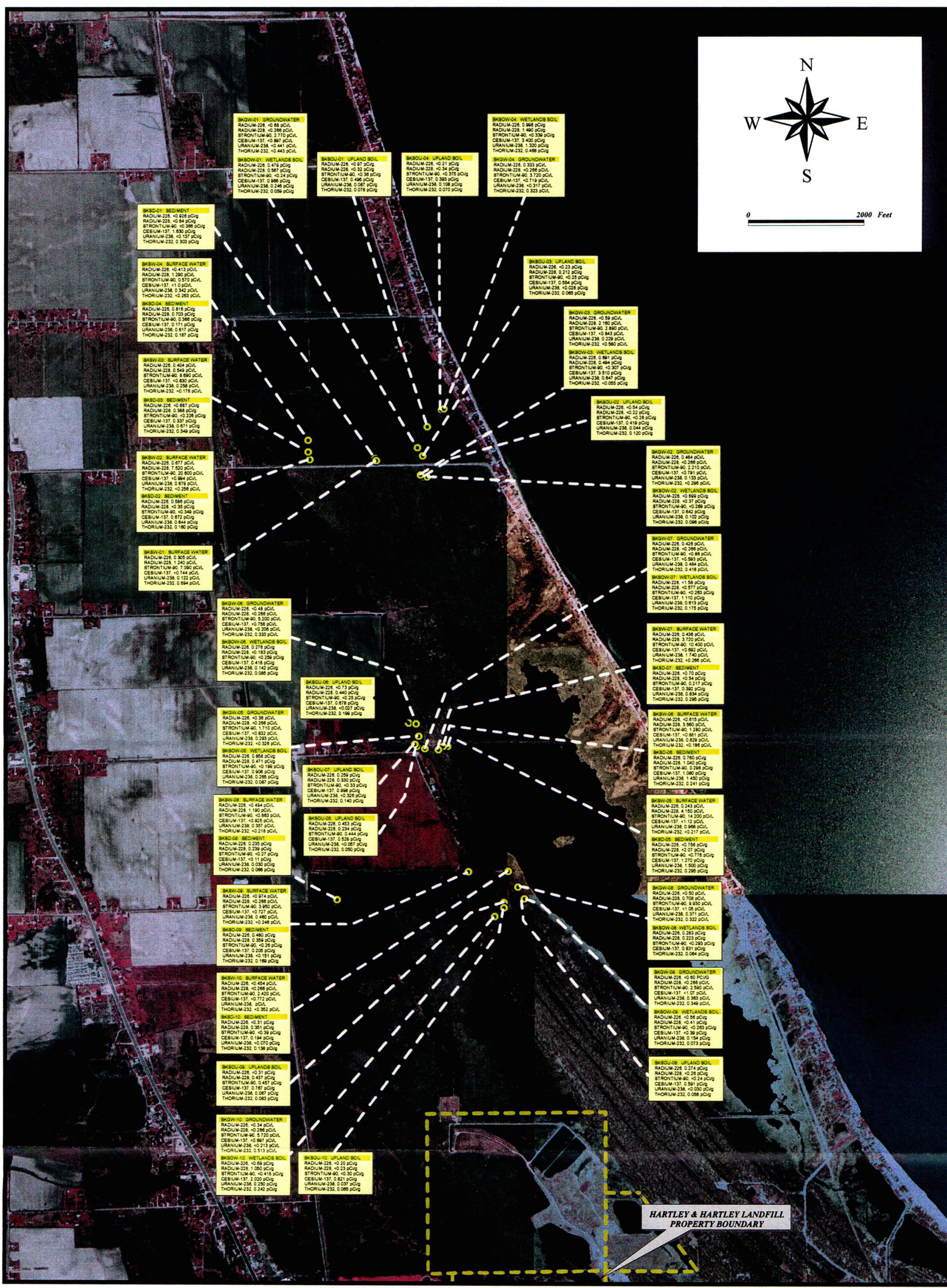
BANGOR TOWNSHIP LANDFILL:
 -MSW
 -CLAY CAP
 -NO SLURRY WALL OR LINER
 -NO REPORT OF HEAD BUILDUP

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Plot Date: Friday, April 11, 2003
 Plot Time: 07:43:14 AM
 Attached Xref's: No xref's attached.
 Attached Image's: No images attached.

J:\061115\06\FIGURE 2.dwg
 Operator Name: defoej
 Scale: 1"=600'
 Dwg Size: 499583 Bytes

PROJECT: HARTLEY AND HARTLEY LANDFILL DECOMMISSIONING PLAN		
SHEET TITLE: CONCEPTUAL HYDROGEOLOGIC CROSS SECTION		
DRAWN BY: DEFOEJ	SCALE: HORIZ. 1" = 400' VERT. 1" = 40'	PROJ. NO. 06115.06
CHECKED BY: JW		FILE NO. FIGURE 2.DWG
APPROVED BY: GM	DATE PRINTED:	FIGURE 2
DATE: APRIL 2003		
		
744 Heartland Trail Madison, WI 53717-1934 P.O. Box 8923 53708-8923 Phone: 608-831-4444 Fax: 608-831-3334		



0 2000 Feet



LEGEND
 ● Background Sampling Locations

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CESIUM-137, RADIUM-226, RADIUM-228,
 STRONTIUM-90, THORIUM-232, URANIUM-238
 BACKGROUND SAMPLE (R Data)

NO.	BY	DATE	REVISION	APP'D
1				
2				
3				

PROJECT: HARTLEY & HARTLEY LANDFILL
 BAY COUNTY, MICHIGAN

FIGURE 3
 BACKGROUND SAMPLING LOCATIONS

DRAWN BY: S B Wilson	SCALE AS NOTED	PROJECT NO.: 00-0115-11
CHECKED BY: J Wadsworth	DATE PRINTED:	FILE NO.: 00_0115_000041
APPROVED BY: J Wadsworth		
DATE: MARCH 2003		

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C03