ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK
PHASE I INVESTIGATIONS

BENDIX LANDFILL
GREEN ISLAND, ALBANY COUNTY, NEW YORK
Site Code: 401005

MAY 1987

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD, ALBANY, NEW YORK 12233
HENRY G. WILLIAMS, COMMISSIONER

Division of Solid and Hazardous Waste
NORMAN H. NOSENCHUCK, P.E. DIRECTOR

WEHRAN ENGINEERING, P.C.
Middletown & Grand Island, New York

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DIVISION OF SOLID AND HAZARDOUS WASTE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 WOLF ROAD
ALBANY, NEW YORK 12233-0001

Prepared by

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WE Project No. 06281

May 1987

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BENDIX LANDFILL

1.0 EXECUTIVE SUMMARY

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The Bendix Landfill (New York Site Code 401005) is a six-acre site located between Cohoes and Tibbetts Avenue, Green Island, Albany County, New York (Figure 1).

The site was formerly owned by the Bendix Corporation and is currently owned by NYSDOT. This open dump was active between 1937 and 1975 and received asbestos based auto brake lining dust and pellets, brake lining, scrap, and rejected brake linings. An estimated 350,000 tons of wastes were disposed. This waste was estimated to be composed of 50-60 percent asbestos, 10-15 percent resin, 15-33 percent fillers and friction modifiers, and between 1971 and 1976, 5.9 percent iron powder and 1.3 percent zinc powder.

In September 1979, Bendix retained Residuals Management Technology, Inc. (RMT) to conduct an assessment of the site. A hydrogeologic investigation was initiated in 1980 which included sampling groundwater, surface water, and composite waste samples.

Results of analysis showed degradation of ground and surface water. The results of leaching tests indicated there is still potential for contaminants to leach from the wastes.

In 1982, the Department of Environmental Conservation, Division of Solid Waste Management, approved closure plans for the landfill. These plans included dredging, filing, capping, fencing, and stabilizing the slope of the landfill. All work was completed in December 1982. Prior to completion, erosional problems existed on the slopes of the open dump.

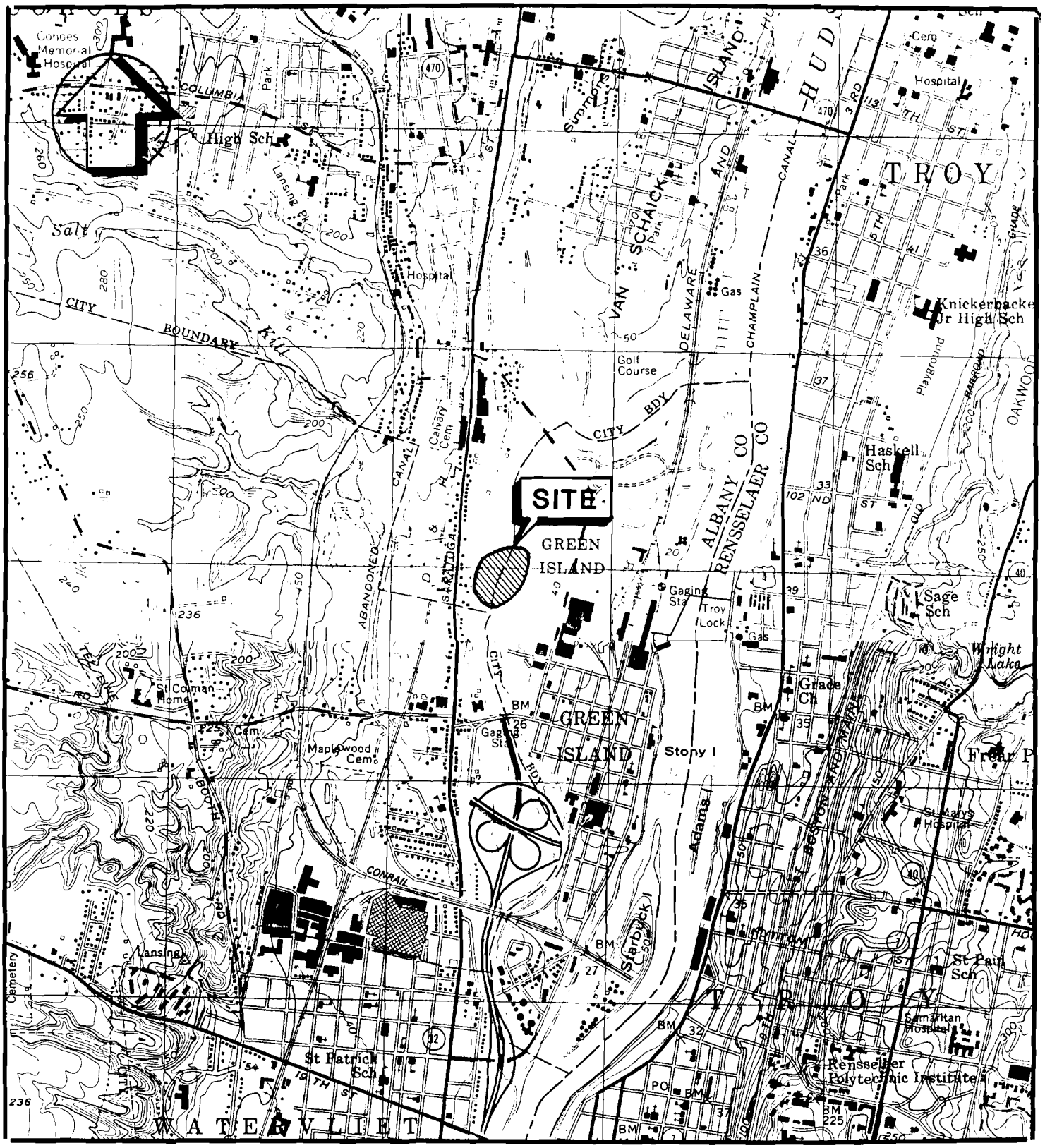
The site is located in a wetland adjacent to a turning basin in the tail waters of the Mohawk River. The water table at the site is found within the waste. Groundwater is flowing from the center of the site towards the north, west, and south. The aquifer of concern consists of the unconsolidated deposits overlying the Snake Hill formation. At the site these deposits consist of silt and sand. There is not enough information available to conclude a hydraulic connection between the bedrock and unconsolidated deposits. Potential targets include approximately 1,300 residents of Green

Island. This drinking water is obtained from an infiltration gallery that is situated in a bed of sand and gravel, located 1-1/2 miles from the site.

The preliminary Hazard Ranking System (HRS) scores for this site are $S_M = 40.13$, ($S_{gw} = 67.35$, $S_{sw} = 16.78$, $S_a = 0$), $S_{FE} = 0$ and $S_{DC} = 25.00$.

A Phase II work plan has been proposed which includes geophysics, monitoring well installation, surface water sampling, and laboratory analysis to determine if the site is still impacting groundwater, surface water and air.

The estimated cost for this work is $140,000.



SCALE: 1" 2000'

TOPOGRAPHY TAKEN FROM
1954 TROY NORTH, N.Y.
1953 TROY SOUTH, N.Y.
U.S.G.S. QUADRANGLE
7.5 MIN. SERIES
(BOTH PHOTOREVISED 1980)

MAP LOCATION

FIGURE 1-1

SITE LOCATION MAP

BENDIX LANDFILL

GREEN ISLAND, N.Y.

LAT. 42 45' 10" N. LONG. 73 41' 55" W.

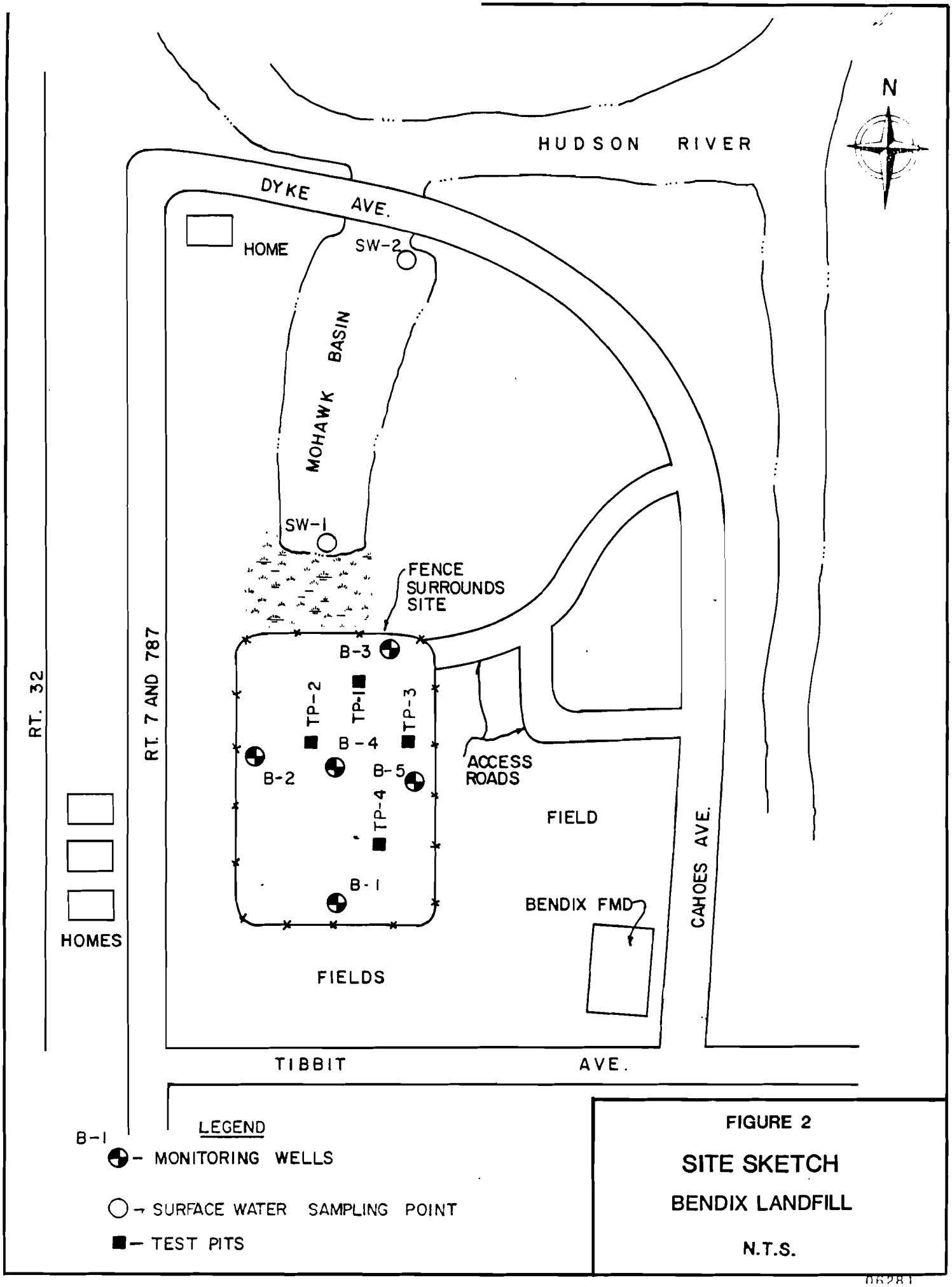


FIGURE 2

SITE SKETCH

BENDIX LANDFILL

N.T.S.

06281

2.0 PURPOSE

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This Phase I investigation was conducted under contract to the New York State Department of Environmental Conservation Superfund Program to evaluate the potential environmental or public health hazard associated with past disposal activities at the Bendix Landfill. Divided into two parts, this initial investigation consisted of a detailed file review of available information and an initial site investigation. The culmination of this phase is the development of a preliminary Hazard Ranking System (HRS) score.

Where information is lacking and a final score cannot be computed, recommendations will be made for a Phase II investigation designed to verify the assumptions made in the preliminary scoring and to collect the additional data needed to complete the site assessment.

3.0 SCOPE OF WORK

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To complete the preliminary HRS score for Bendix Landfill, the following scope of work was conducted:

- A search of the following:
  - Available file information from federal, state, and municipal agencies
  - Published documents and maps from the U.S. Geological Survey, Soil Conservation Service and state agencies for geological, hydrological and topographical data
  - Available files, reports and drawings provided by site owners, operators and other knowledgeable parties.
- Interviews with individuals having knowledge of the site

Information searched includes well logs, land use data, water usage patterns, critical habitats and endangered species data, meteorological data, hydrological, geological and topographical data, waste characteristics and demographic information.

Following the initial record search, a site inspection was conducted. The intent of the inspection is to verify existing file information and to conduct an HNU survey to screen for potential air releases. Items of specific interest in the site investigation include:

- Overall site environmental conditions
- The presence of disturbed areas
- Visual signs of waste materials (drums, sludges, etc.)
- The occurrence of leachate
- Site topography

A detailed analysis was performed on all data collected in preparation of a preliminary HRS score. Where information was lacking and a final HRS score could not be computed, recommendations were made for a Phase II investigation. This investigation was designed to verify the assumptions made in the preliminary scoring and to collect the additional data needed to complete the site assessment. A summary of agencies contacted, contact person, address and information obtained follows.

SOURCES -- BENDIX LANDFILL SITE
(Page 1)

Name/Address/Phone	Type of Contact	Date	Information Provided
Mr. John Czapor, Environmental Engineer USEPA, Region II 26 Federal Plaza New York, New York 10278 (212) 264-1573	Letter Office Visit	1/3/86 1/14/86 1/24/86	USEPA file information
Mr. Richard D. Spear, Chief Surveillance & Monitoring Branch USEPA, Region II Woodbridge Avenue Edison, New Jersey 08817 (201) 321-6685	Letter	1/3/86	None available
Mr. Lawrence A. Martens, District Chief U.S. Department of the Interior U.S. Geological Survey Albany District Office P.O. Box 1669 U.S. Post Office and Court House Albany, New York 12201 (518) 472-3107	Letter Telephone Call	1/3/86	Roger Waller responded - list of available county groundwater reports
Mr. Paul Dodd, State Conservationist U.S. Department of Agriculture Soil Conservation Service 771 James M. Hanley Federal Building 100 South Clinton Street Syracuse, New York 13260 (315) 423-5521	Letter Telephone Call	1/3/86 1/13/86	Fred Gilbert responded - list of available county soil surveys
Mr. Carl B. Sciple, Division Engineer Army Corps of Engineers New England Division 424 Trapelo Road Waltham, Massachusetts 02154 (617) 894-2400	Letter	1/3/86	None available
Mr. Frederick J. Scullin, Jr. U.S. Department of Justice U.S. Attorney, Northern District of New York 369 Federal Building 100 South Clinton Street Syracuse, New York 13260 (315) 423-5165	Letter	1/3/86	Craig Benedict responded - No information available

SOURCES -- BENDIX LANDFILL SITE
(Page 2)

Name/Address/Phone	Type of Contact	Date	Information Provided
Mr. Conrad Simon, Director Air and Waste Management Division United States Environmental Protection Agency Region 2 26 Federal Plaza New York, New York 10278	Letter	1/24/86	None available
Mr. Marsden Chen, Supervisor Division of Solid and Hazardous Waste New York State Department of Environmental Conservation 50 Wolf Road Albany, New York 12233 (518) 457-0639	Office Visit	12/4/85	NYSDEC file information
Mr. Ronald Tramontano, P.E. Chief, Surveillance and Investigation Division Bureau of Toxic Substance Assessment Surveillance and Investigation Section Empire State Plaza Corning Tower, Room 372 Albany, New York 12237	Letter Office Visit	1/3/86 1/9/86	File information
Robert H. Fakundiny, State Geologist Geological Survey of New York State State Education Department Division of Museum Services Albany, New York 12230 (518) 474-5816	Letter	1/3/86	County Groundwater Reports
Mr. Robert Abrams, Attorney General New York State Attorney General Department of Law State Capitol, Room 221 Albany, New York 12224 (581) 474-7330	Letter	1/3/86	No information
Mr. Geoff Bornemann, Principal Planner Capital District Regional Planning Commission 251 River Street, Monument Square Troy, New York 12180 (518) 272-1414	Letter	1/3/86	Rocco Ferraro responded with list of contact persons for sites

SOURCES -- BENDIX LANDFILL SITE
(Page 3)

Name/Address/Phone	Type of Contact	Date	Information Provided
Dr. Ian Loudon, Regional Health Director New York State Northern Regional Office New York State Department of Health 9 Market Street Amsterdam, New York 12010 (518) 843-3520	Letter	1/3/86	No information
Angelo Marcuccio Environmental Analyst NYSDEC Region 4 2176 Guilderland Avenue Schenectady, New York 12306 (518) 382-0680	Letter	7/28/86	Wetlands information
Larry Brown NYSDEC Wildlife Resources Center Delmar, New York 12054 (518) 439-7486	Letter	10/3/86	Endangered species information
Stephen S. Lukowski, P.E. Albany County Health Department Division of Environmental Health Services P.O. Box 685 Albany, New York 12201 (518) 445-1201	Office Visit	1/9/86	File information
Jeffrey A. Choroser Assistant Sanitary Engineer NYSDEC Region 4 2176 Guilderland Avenue Schenectady, New York 12306 (518) 382-0680	Office	1/9/86	File information

4.0 SITE ASSESSMENT

4.0 SITE ASSESSMENT

4.1 SITE HISTORY

The Bendix Landfill site was used for industrial disposal by the Bendix Corporation, Friction Materials Division from 1937 until 1975. This six-acre inactive site was formerly owned by the Bendix Corporation and is currently owned by NYSDOT. It has been estimated that 350,000 tons of waste were disposed at the site. These wastes consisted of grinding dust, lining scrap, rejected linings, brake lining dust, and brake lining pellets.

According to the Initial Evaluation of Industrial and Hazardous Waste Sites, between 1937 and 1941, woven and extruded brake linings were produced at the Bendix plant. Approximately four times as much dust was produced than solid waste.

From 1942 through 1945, extruded brake lining was produced, the entire output being used for war time jeeps. The dust to solid waste ratio was also approximately four to one.

Production from 1946 through April 1969 included extruded, dry mix and compression mold lining along with some disc pads. The dust to solid waste ratio was two to one.

Between May 1969 and October 1973, large holes were dug at the site and the brake lining dust was dumped and sprayed with water having a wetting agent. The brake lining production consisted of extruded, compression mold and dry mix types of lining. Disc pad lining was also produced. The daily brake lining dust production was about twice the solid waste production.

During the period November 1973 through November 1975, pelletizing equipment was installed to pelletize loose grinding dust into round wet balls. Approximately five percent cement was added to harden the pellets. Because of the volume reduction accomplished when pelletizing the dust, the volume ratio of pellets to solid waste became approximately one to one. Brake lining production consisted of extruded, dry mix, disc pad and compression molded.

Between 1937 and 1946, the composition of the woven brake lining was mostly asbestos, which was dipped in a resin and baked. The composition of the extruded lining was as follows:

Asbestos	50 - 60 percent
Resin	10 - 15 percent
Fillers & Friction Modifiers	15 - 30 percent

The brake lining composition from 1946 to 1976 was as follows:

Asbestos	50 - 60 percent
Resin	10 - 15 percent
Friction Modifiers and Fillers	18 - 33 percent
Iron Powder	5.9 percent
Zinc Powder	1.3 percent

Prior to 1971, iron powder and zinc powder were not used.

Other wastes disposed at the site included:

- Scrap wood
- Scrap metal, tin cans, covers and strapping
- Scrap grinding stones
- Floor sweeping
- Occasional rubble from construction of building additions

In 1979, Bendix retained Residuals Management Technology, Inc. (RMT) to conduct an assessment of the inactive site. In 1980, a hydrogeologic investigation was initiated. The results showed the site has impacted groundwater and surface water quality.

Closure plans submitted to the Department of Environmental Conservation in February 1982 were approved in March 1982. Closure construction work began in August and was completed in December 1982. This construction included dredging around the toe of the landfill, including 0.8 acres of wetland TN-6 and spreading the dredge material on the top of the landfill. The side slope and top were graded and covered with two feet of clay and four inches of topsoil that was then seeded and mulched to slope away from the wetland. The area was then fenced.

4.2 SITE TOPOGRAPHY

Albany County is located at the junction of the Mohawk and Hudson Rivers in east central New York. The site is located in the northeastern section of the County in Green Island. The site is located in a wetland at an elevation of 20 feet above sea level. The site is bounded on the east and south by the Village of Green Island, on the west by Route 787 and an area used for disposal of demolition debris, and on the north by the Mohawk Basin. The Hudson River is located 2,200 feet east of the site.

4.3 SITE HYDROGEOLOGY

A subsurface investigation of the site was conducted by RMT, Inc. in 1980. A total of five test borings were advanced during this investigation. According to the Summary of Hydrogeologic Analysis of Abandoned Asbestos Waste Disposal Site, July 1980, all borings except B-2 were extended to the bedrock.

Wastes at the site were deposited on black organic silt, except in the extreme eastern edge where they were deposited over sand. The black organic silt contained root fragments, indicating a possible wetland. The NYSDEC Region 4 has indicated this area is a Class I wetland. Groundwater is found within the wastes at the site. Approximately three feet of organic silt is found beneath the waste. In the center and southern portions of the site, the silty layer directly overlies shale. At B-2 and B-3, there is a layer of sand between the silt and shale. The permeability of the sand was calculated to be 3×10^{-3} cm/sec and the permeability of both the sand and silt was measured to be 1×10^{-4} cm/sec. The permeability of the waste is 5×10^{-5} cm/sec. Due to the low permeability of the wastes compared to the underlying sand, a slight groundwater mound has formed in the waste and groundwater is flowing from the center of the landfill towards the north, west, and south. The velocity of groundwater flow is assumed to be greatest to the west since the water table gradient is steepest towards this direction.

Bedrock beneath the unconsolidated deposits is shale of the Snake Hill Formation of Middle Ordovician Age. This formation is folded and the thickness has been estimated to be at least 3,000 feet. Dark gray to black

clayey shale with beds of sandy limestone are characteristic of this formation. Water is recovered from the joints, cleavage, and bedding planes. The beds of sandy limestone are believed to be responsible for the larger yields occasionally obtained from wells completed in this formation. Average yields from this formation is about 15 gpm. The water quality is generally poor and a high sulfate content is often present.

The aquifer of concern consists of the unconsolidated deposits. Approximately 1,300 residents from Green Island obtained drinking water from an infiltration gallery that is situated in a bed of sand and gravel in Magills Island, about 1-1/2 miles south of the site. The gallery is 22 feet below ground surface and 12 feet below the normal stage of the Hudson River. It is assumed the unconsolidated deposits are in hydraulic connection, however, to confirm this and determine if a hydraulic connection exists between the unconsolidated and consolidated aquifers, further investigation is needed.

4.4 SITE CONTAMINATION

Concerns at the Bendix Landfill site include groundwater, surface water, and air contamination. The site, a previous open dump, was active for 38 years. It is located in a wetland adjacent to a turning basin in the tail waters of the Mohawk River. The water table is found within the waste. Leachate from the site travels into the Mohawk Basin. Unconsolidated deposits underlying the wastes consist of 3 to 10 feet of silt and sand. Bedrock underlying these deposits consists of shale.

Prior to closure in 1982, erosional problems and the possibility of air-borne contamination from asbestos-related materials existed at the site.

In 1979, Bendix-FMD retained RMT, Inc. to assist in closure of the site. A hydrogeologic study was conducted in 1980. This investigation included analyzing groundwater and surface water samples and composite waste samples (sample results are summarized in Table 1, sampling locations in Figure 2). Borings and test pits were used to collect samples of wastes, determine waste depth, and characteristics and determine geologic conditions. Leaching tests were conducted on three composite waste samples.

During this investigation, five monitoring wells were installed. Groundwater was sampled two times downgradient of the site (B-1, B-2, B-3), within the wastes (B-4) and upgradient (B-5). Boring B-5, although considered the upgradient well, is completed in the wastes and, therefore, does not give a true indication of upgradient water quality. The results of analyses indicated that phenols, chloride, iron, zinc, and lead were found in the downgradient wells at concentrations five times or more than the concentrations in the upgradient well and at concentrations above the New York State Groundwater Quality Standards. These parameters meet the NYSDEC criteria for an observed release. Phenols were also found in the upgradient well in concentrations above the groundwater standards, however, the concentrations were increased in the downgradient well.

Surface water samples taken at two locations from the Mohawk Basin indicated the presence of phenols during one (May 29, 1980) of the two sampling events. Surface water samples were also analyzed for chrysotile asbestos concentrations. The results showed that erosion of asbestos into the Mohawk Basin has occurred.

Verticle composite samples from three test pits were subjected to the EP leaching test to determine if the wastes could be expected to release higher concentrations of constituents than are currently found in the leachate. The results showed concentrations of copper, barium and lead were higher in the leaching tests than measured in groundwater.

A review of Federal, State, and local files does not indicate any sampling has occurred since the site was closed in 1982.

Table I

RESULTS FROM WATER ANALYSIS AND LEACHING TESTS

PARAMETER	SAMPLING LOCATION							LEACHING TESTS[1]		
	B4	B1	B2	B3	B5	SW1	SW2	PIT 1	PIT 3	PIT 4
pH	8.3	8.1	7.4	8.2	7.9	7.6	7.7	9.2	8.8	8.5
	8.0	8.0	7.2	8.0	7.6	7.8	7.6			
TDS	3260	1850	4000	2080	363	280	277	218	300	146
	3410	2360	3980	1460	719	395	320			
Alkalinity	1800	1460	1560	1590	150	102	121	99	130	94
	1920	1660	1510	1020	104	144	135			
Hardness	2400	1630	3130	1750	272	188	170	170	270	150
	2660	2160	3280	1320	495	200	196			
TOC	280	120	120	110	9	12	13	3.7	1.3	4.4
	120	110	35	33	3	35	10			
Phenols	77.0	0.020	0.012	0.042	0.016	0.005	0.010	0.012	0.013*	0.014
	55.0	2.35	0.006	0.045	0.011	<.004	4.25			
Chloride	550	127	750	260	70	38	24	<5	<5	<5
	550	140	833	160	54	32	28			
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.2	0.1	0.1
	<0.01	-	-	-	-	-	-			
Copper	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.007	0.014	1.4
	<0.1	-	-	-	-	-	-			
Iron	0.35	0.85	25	0.45	0.20	0.25	0.25	0.005	0.006	1.0
	0.25	0.55	0.20	<0.1	<0.1	0.02	0.03			
Zinc	0.02	0.08	0.03	0.01	0.03	0.01	<0.61	0.011	0.015	0.11
	0.03	0.15	0.03	0.02	<0.01	<0.01	<0.01			
Lead	0.15	-	-	-	-	-	-	<0.05	0.06	0.33
	0.20	0.55	0.20	<0.1	<0.1	<0.1	<0.1			
Manganese	0.08	-	-	-	-	-	-	0.008	0.007	0.045
	0.05	0.59	1.5	0.40	3.7	0.02	0.03			

Results in mg/l except pH.

[ ] sample from 5/7/80

[ ] sample from 5/29/80

1 Leaching test results are for the highest concentration of the parameter in all three elutions. Except for phenols, in Pit 3, the highest concentration was in the first elution.

* This concentration was in the second elution.

\- No analysis for this parameter

Source: Residuals Waste Management Technology, Inc., Summary Report of Hydrogeologic Analysis of Abandoned Asbestos Waste Disposal Site Green Island, New York, July 1980.

5.0 PRELIMINARY APPLICATION OF THE HAZARD RANKING SYSTEM

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5.1 NARRATIVE SUMMARY

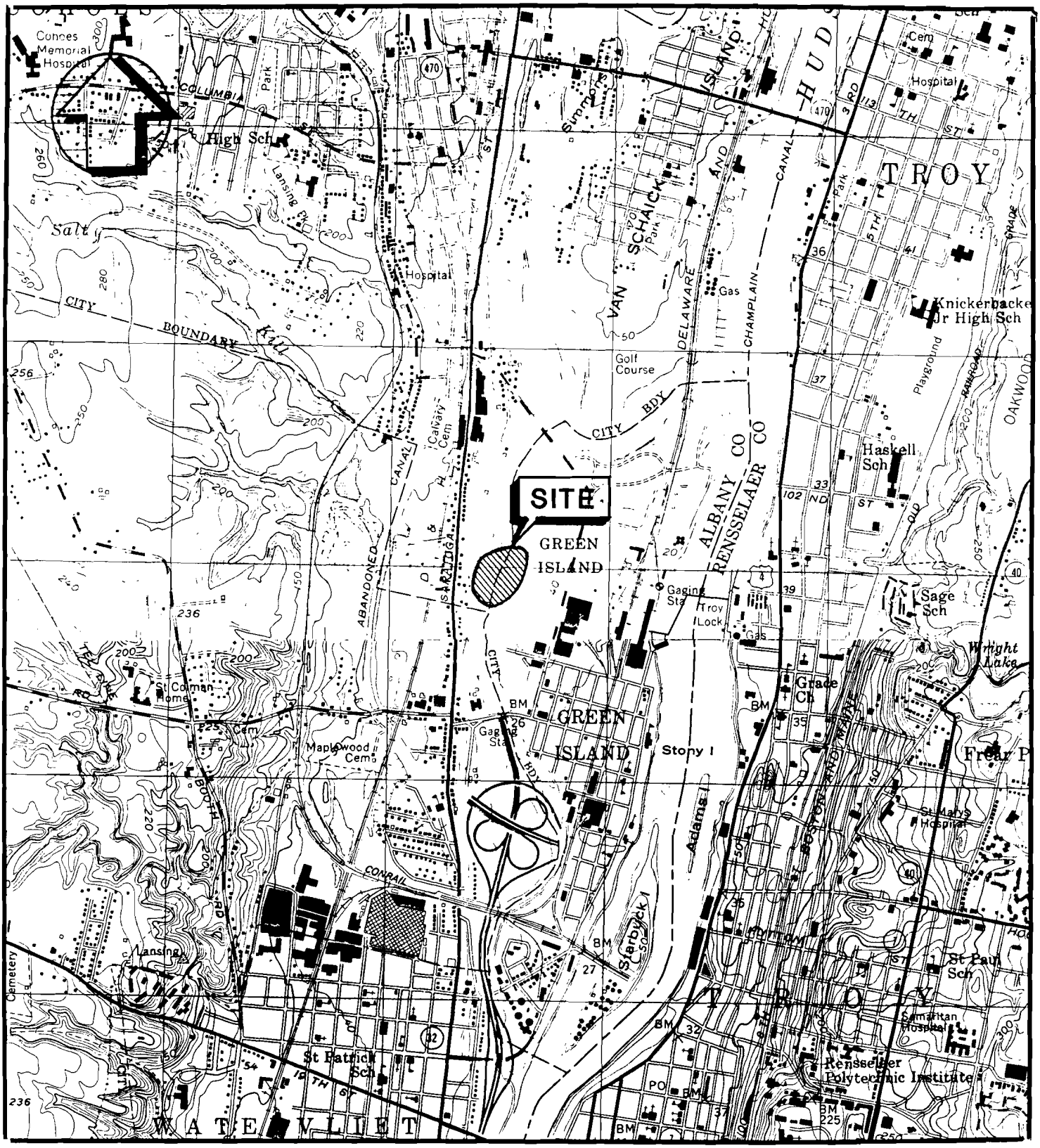
The Bendix Landfill site is a six-acre site located in Green Island, Albany County, New York. The Bendix Corporation, Friction Materials Division generated wastes containing asbestos residuals from the manufacture of friction materials. Approximately 350,000 tons of wastes were disposed in a wetland between 1937 and 1975.

Between 1979 and 1980, RMT, Inc. conducted an assessment of the site to determine the effects of the past disposal activities. The water table is found within the wastes at the site and flows north, west, and south. Analysis of groundwater and surface water sample indicated degradation has occurred due to infiltration of the dump site by seasonal high waters and direct discharge of leachate into the Mohawk Basin. Compounds found in groundwater in elevated concentrations downgradient of the site include phenol, chloride, iron, zinc, and lead. Asbestos and elevated concentrations of phenols were found in the surface water. No methods of containment were originally used at the site, however, in 1982, closure plans were approved by the NYSDEC and closure construction was completed. This included dredging, filling, capping, grading, and fencing the site. Prior to capping, the possibility of air-borne contamination from asbestos was a concern.

The residents of Green Island obtain drinking water from an infiltration gallery located 1-1/2 miles south of the site and, therefore, are potential targets. The closest surface water is the Mohawk Basin which borders the site to the north. The intervening terrain is 30 percent. The Mohawk Basin is used for recreation only.

Preliminary HRS score for the Bendix Landfill is 40.13. A Phase II investigation is recommended for the site.

LOCATION



SCALE: 1" 2000'

TOPOGRAPHY TAKEN FROM
1954 TROY NORTH, N.Y.
1953 TROY SOUTH, N.Y.
U.S.G.S. QUADRANGLE
7.5 MIN. SERIES
(BOTH PHOTOREVISED 1980)

MAP LOCATION

FIGURE 1-1

SITE LOCATION MAP

BENDIX LANDFILL

GREEN ISLAND, N.Y.

LAT. 42 45' 10" N. LONG. 73 41' 55" W.

HRS WORKSHEETS

Facility Name: Bendix Landfill

Location: Cohoes and Tibbetts Avenue, Green Island, New York

EPA Region: 2

Person(s) in Charge of the Facility: NYSDOT
Albany, New York 12208

Name of Reviewer: Karen Maloy **Date:** 9/20/86

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.)

Between 1937 and 1975, this site received asbestos based auto lining dust and pellets, brake lining scrap, and rejected brake linings. Surface and groundwater sampling show the site has impacted both. Closure plans were approved and completed in 1982. Air-borne contamination from asbestos related materials prior to capping was a concern.

Scores: $S_M = 40.13$ ($S_{gw} = 67.35$ $S_{sw} = 16.78$ $S_a = 0$)

$S_{FE} = 0$

$S_{DC} = 25$

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	8	8	
	Total Waste Characteristics Score			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	24	40	
	Total Targets Score			33	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			38,610	57,330	
7	Divide line 6 by 57,330 and multiply by 100	S_{gw} = 67.35				

SURFACE WATER ROUTE WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multiplier	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	12	18	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score			20	26	
5	Targets					4.5
	Surface Water Use	0 1 (2) 3	3	6	9	
	Distance to a Sensitive Environment	0 1 2 (3)	2	6	6	
	Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score			12	55	
6	If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			10,800	64,350	
7	Divide line 6 by 64,350 and multiply by 100	S_{sw} = 16.78				

AIR ROUTE WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S = 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				

	S	S^2
Groundwater Route Score (S_{gw})	67.35	4,536.02
Surface Water Route Score (S_{sw})	16.87	284.60
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		4,820.62
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		69.43
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73$		S_M = 40.13

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	0	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 5 by 1,440 and multiply by 100	$S_{FE} = 0$				

DIRECT CONTACT WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 (2) 3	1	2	3	8.2
3 Containment	0 (15)	1	15	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 (3) 4 5	4	12	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			12	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			5,400	21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{OC} = 25				

HRS DOCUMENTATION RECORDS

June 28, 1982

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Bendix Landfill

LOCATION: Green Island, Albany County, New York

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

Lead
Chloride
Zinc
Iron
Phenols

Score = 45

Source: Reference 1.4, 1.5, 1.14, 1.19, 19

Rationale for attributing the contaminants to the facility:

Results from RMT hydrogeologic investigation showed these contaminants in elevated concentrations (five times or more) in downgradient wells as compared to upgradient wells.

Source: Reference 1

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

The aquifer of concern consists of the unconsolidated deposits overlying the Snake Hill formation. At the site, these deposits consist of up to 30 feet of silt and sand. The depth to bedrock of a well located 3/4 mile south of the site is 39 feet. One and one-half miles south of the site is an infiltration gallery supplying water for Green Island. The gallery is situated in a bed of sand and gravel on Magills Island and is 22 feet below the ground surface and 12 feet below the normal stage of the Hudson River. The gallery supplies 250,000 gpd and river recharge may be involved. It is assumed that the river does not completely transect the aquifer of concern and that the unconsolidated deposits are in hydraulic connection; however, there is not enough information to conclude a hydraulic connection between the bedrock and unconsolidated deposits.

Source: References 1.9, 1.10, 1.35, 2.5, 13.3

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

Zero. Wastes deposited in wetland, water table is found within the waste at the disposal site.

Source: References 1.7, 8, 9, 11, 20

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

19.5 feet - contamination found in groundwater from Well B(2) is where water table was recorded at 19.5 feet.

Score = 3

Source: References 1 (Well Log B-2)

Net Precipitation

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

37 inches

Source: Reference 2

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

27 inches

Source: Reference 3

Net precipitation (subtract the above figures):

10 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Wastes deposited in wetland, therefore, no unsaturated zone. However, soils underlying wastes include sand and organic silt

Source: References 1 (Well Log B-1), 7

Permeability associated with soil type:

$3 \times 10^{-3} - 1 \times 10^{-4}$

Score = 2

Source: Reference 7

Physical State

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

Solid

Powder and fine material (asbestos brake lining dust, zinc, and iron powder)

Score = 2

Source: References 4, 18, 20

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill - no liner, no run-on control.

Source: References 5, 20

Method with highest score:

Score = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Chloride
Lead (18)
Iron (18)
Sulfate (9)
Phenols (12)
Zinc (18)

Source: References 1, 18

Compound with highest score:

Lead, Iron, Zinc

Source: Reference 6

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

55,224 tons

Score = 8

Source: References 4, 5.5, 18, 21

Basis of estimating and/or computing waste quantity:

A total of 350,000 tons of wastes are deposited at the site (Reference 18). The exact amount of waste deposited each year is unknown (Reference 21.3). For purposes of scoring, assume same amount deposited for each year over the 28-year period (1937-1975) or 9,459.5 tons per year.

Waste Composition (Reference 21):

15% resin, 9,459.5 tons x .15 x 37 years = 52,500 tons
5.9% iron powder, 9,459.5 tons x .059 x 4 years (1971-1975) = 2,232.4 tons
1.3% zinc powder, 9,459.5 tons x .013 x 4 years (1971-1975) = 492 tons
Estimated total hazardous waste at facility = 55,224 tons.

Source: References 18, 21

5 TARGETS

Ground Water Use

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

Domestic drinking water

Score = 3

Sources: References 2, 13

Distance to Nearest Well

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

South

Source: Reference 13

Distance to above well or building:

One and one-half miles

Score = 2

Source: Reference 13

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

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

Green Island Village - population 3,100

Source: Reference 13

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):

Unknown, assume none within three miles.

Source: Reference 17

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

3,100

Score = 4

Matix Score = 24

SURFACE WATER ROUTE

1 OBSERVED RELEASE

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

Phenols

Score = 45

Source: References 1.14, 1.15

Rationale for attributing the contaminants to the facility:

Results from RMT hydrogeologic investigation showed phenol concentrations in surface water downstream of site is elevated.

Source: References 1.14, 1.15

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

10 percent

Source: Reference 8

Name/description of nearest downslope surface water:

Mohawk Basin

Source: References 8, 9

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

20 percent

Score = 3

Source: Reference 8

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

Yes, site is located in wetland and site boundary extends to surface water (confirmed release to surface water).

Source: References 8, 9, 1.7 (Figure 4), 11.2

Is the facility completely surrounded by areas of higher elevation?

No

Source: Reference 8

1-Year 24-Hour Rainfall in Inches

2.25

Score = 2

Source: Reference 3

Distance to Nearest Downslope Surface Water

Adjacent

Score = 3

Source: References 8, 9, 11.2

Physical State of Waste

Solid
Powder and fine material (asbestos brake lining dust, zinc, and iron powder).

Score = 2

Source: References 4, 18, 20

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill - prior to 1982, site was uncovered, no diversion system.

Source: References 5, 18, 20

Method with highest score:

Score = 3

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Phenols (12)
Asbestos

Source: References 1, 14

Compound with highest score:

Phenol (12)

Source: Reference 6

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum);

55,224 tons

Score = 8

Source: References 4, 5.5, 18, 27

Basis of estimating and/or computing waste quantity:

A total of 350,000 tons of wastes are deposited at the site (Reference 18). The exact amount of waste deposited each year is unknown (Reference 21.3). For purposes of scoring, assume same amount deposited for each year over the 28-year period (1937-1975) or 9,459.5 tons per year.

Waste Composition (Reference 21):

15% resin, 9,459.5 tons x .15 x 37 years = 52,500 tons
5.9% iron powder, 9,459.5 tons x .059 x 4 years (1971-1975) = 2,232.4 tons
1.3% zinc powder, 9,459.5 tons x .013 x 4 years (1971-1975) = 492 tons
Estimated total hazardous waste at facility = 55,224 tons.

Source: References 18, 21

5 TARGETS

Surface Water Use

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

Recreation

Score = 2

Source: References 5.7, 18.1

Is there tidal influence?

Not applicable

Distance to a Sensitive Environment

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

Not applicable

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

Site is in a wetland.

Distance = 0

Score = 3

Source: References 8, 11

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

None within one mile. The NYSDEC Significant Habitat Unit reports that the only significant habitat within one mile is No. 1-13. No endangered species are documented.

Source: Reference 16

Population Served by Surface Water

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

None within three miles downstream (Cohoes City Water Supply is located upstream of site).

Source: Reference 13

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

No irrigation.

Source: Reference 17

Total population served:

Zero.

Source: References 13, 17

Name/description of nearest of above water bodies:

Not applicable

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

Not applicable

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

Prior to capping, the possibility of air-borne contamination due to asbestos particles existed; however, there is no score for asbestos. To score an air release, qualitative air sampling is required along with details on the sampling protocol and the meteorological conditions during the time of sampling. No qualitative air sampling has been performed.

Score = 0

Source: File Review and Reference 14

Date and location of detection of contaminants:

Not applicable

Methods used to detect the contaminants:

Not applicable

Rationale for attributing the contaminants to the site:

Not applicable

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Not applicable

Most incompatible pair of compounds:

Not applicable

Toxicity

Most toxic compound:

Not applicable

Hazardous Waste Quantity

Total quantity of hazardous waste:

Not applicable

Basis of estimating and/or computing waste quantity:

Not applicable

3 TARGETS

Population Within 4-Mile Radius

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

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

Not applicable

Distance to a Sensitive Environment

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

Not applicable

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

Not applicable

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

Not applicable

Land Use

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

Not applicable

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

Not applicable

Distance to residential area, if 2 miles or less:

Not applicable

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

Not applicable

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

Not applicable

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

Not applicable

FIRE AND EXPLOSION

1 CONTAINMENT

Hazardous substances present:

To score the fire and explosion hazard mode either a state or local fire marshall must have certified that the facility presents a significant fire or explosion threat to the public or to a sensitive environment, or there must be a demonstrated threat based on field observations (e.g. combustible gas indicator readings). The available records give no indication that either one of these tasks has been done. Further, the available data do not suggest any imminent threat of fire and explosion at this site. Therefore the route score cannot be completed.

Type of containment, if applicable:

2 WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

Ignitability

Compound used:

Reactivity

Most reactive compound:

Incompatibility

Most incompatible pair of compounds:

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

Not applicable

Basis of estimating and/or computing waste quantity:

Not applicable

3 TARGETS

Distance to Nearest Population

Not applicable

Distance to Nearest Building

Not applicable

Distance to Sensitive Environment

Distance to wetlands:

Not applicable

Distance to critical habitat

Not applicable

Land Use

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

Not applicable

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

Not applicable

Distance to residential area, if 2 miles or less:

Not applicable

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

Not applicable

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

Not applicable

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

Not applicable

Population Within 2-Mile Radius

Not applicable

Buildings Within 2-Mile Radius

Not applicable

DIRECT CONTACT

1 OBSERVED INCIDENT

Date, location, and pertinent details of incident:

No incidents documented.

Score = 0

Source: File Review

2 ACCESSIBILITY

Describe type of barrier(s):

A fence surrounds the facility; however, there are no separate means to control entry.

Score = 2

Source: Reference 8

3 CONTAINMENT

Type of containment, if applicable:

Site has been covered; however, site extends into nearby surface water because contamination has been documented. This water is used for recreation.

Score = 15

Source: References 1, 5

4 WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

Lead (3)
Phenol (3)
Sulfate (0)
Asbestos
Iron (3)

Source: Reference 1

Compound with highest score:

Lead, phenol, and iron

Score = 3

Source: Reference 10

5 TARGETS

Population within one-mile radius

1,444

Score = 3

Source: Reference 15

Distance to critical habitat (of endangered species)

None within one mile. (Duck wintering area within one mile of site is a significant habitat; however, no endangered species documented there.)

Score = 0

Source: Reference 16

RMT RESIDUALS MANAGEMENT TECHNOLOGY, I
1406 EAST WASHINGTON AVENUE • SUITE 122
MADISON, WISCONSIN 53703 • 608-255-2134

SUMMARY REPORT OF HYDROGEOLOGIC ANALYSIS OF ABANDONED ASBESTOS WASTE DISPOSAL SITE GREEN ISLAND, NEW YORK

JULY 1980

Marjory B. Rinaldo-Lee
Hydrogeologist

Thomas P. Kunes, P.E.
Executive Vice President

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APPENDICES

1. EXECUTIVE SUMMARY

Bendix-FMD, Troy, New York, retained Residuals Management Technology, Inc. to assist in closure of an abandoned waste disposal site on Green Island, New York. To develop criteria for closure design, a hydrogeologic study of the impact of the waste disposal site on surrounding ground and surface waters was implemented. This report presents the results of the hydrogeologic investigation and a preliminary design concept for closure based on those results.

The hydrogeologic investigation included sampling ground water from wells within the waste disposal area and around the perimeter of the site, and surface water in the Mohawk Basin[1] adjacent to the site. Borings and test pits were also used to define geologic conditions beneath the site. In addition, leaching tests were conducted on waste samples taken from the test pits to assess the remaining leaching potential of the wastes.

Results from our investigation show that erosion of asbestos into the Mohawk Basin has been the main impact of the site. Although ground water quality downgradient of the site has been affected by leachate from the waste disposal area, water quality in the Mohawk Basin has not been affected. The extent of ground water contamination by the waste disposal area is limited both vertically and horizontally by geologic conditions beneath the site. Ground water discharges into the Mohawk Basin and restricts the lateral extent of leachate movement, and shale beneath the site limits the vertical movement of leachate to a shallow zone of permeable deposits.

---

[1] Mohawk Basin refers to the slough between the northern end of the landfill and Cohoes Avenue.

The only parameter found in the ground water downgradient of the site in concentrations above primary drinking water standards was lead. The two wells in which concentrations of lead were elevated are downgradient of the old portion of the landfill where wastes containing lead from an old brake lining process are found. Since lead is relatively immobile in ground water, lead contamination should be very localized. However, to substantiate that ground water contamination with lead is limited to the area immediately adjacent to the site, we recommend installing two additional wells further from the site.

On the basis of the water quality results, we recommend a partial enclosure design for closure of the waste disposal site. This design would primarily cover the asbestos, create a stable landform, and prevent further erosion of the waste. A clay cap over the area will prevent surface water from entering the site, but allow water to move in and out of the landfill through the underlying soils.

1.5

2. INTRODUCTION

2.1 Purpose and Scope

RMT, Inc. has been retained by Bendix-FMD, Troy, New York, to investigate ground and surface water quality at an abandoned asbestos waste disposal site on Green Island, and to recommend design concept alternatives for closure based on the findings of the hydrogeologic investigation. This report presents the results of the hydrogeologic investigation and discusses preliminary design concepts for closure based on these results. Our analysis is limited to data obtained during the hydrogeologic investigation and readily obtainable published material.

2.2 Conclusions and Recommendations

The results of the hydrogeologic investigation indicate that the waste disposal site has had a limited effect on the surrounding ground and surface waters. The main impact from the site is erosion of asbestos into the adjacent surface water of the Mohawk River. Leachate from the landfill has not affected water quality of the Mohawk Basin. Ground water quality downgradient of the site has been affected by the waste disposal site. However, due to the shallow depth of permeable deposits beneath the site, the ground water contaminated by leachate is confined to a small vertical zone.

The discharge point for ground water beneath the site appears to be the Mohawk Basin, further limiting the extent of ground water contamination. Although concentrations of lead in the ground water downgradient of the site are above primary drinking water standards, this effect should be quite localized because of the relative immobility

of lead in ground water. In order to substantiate the limited extent of ground water contamination downgradient of the landfill, we recommend that two additional wells be placed west of the landfill: one west of B2 and one southwest of B1.

Based on the water quality results, we recommend that a design for closure be implemented primarily to cover the asbestos, create a stable landform, and prevent further erosion of the waste. The design will encapsulate the site surface with clay to prevent surface water from entering the site during periods of high water, but allow drainage of water in and out of the landfill through the underlying soils.

3. METHODOLOGY

In order to assess the environmental impact of the abandoned waste disposal site on the surrounding ground and surface waters, backhoe pits, borings, observation wells, and staff gages were employed (Figure 1). Soil samples from the borings, waste samples, and water samples from the wells and surface water were analyzed.

The first phase of the investigation involved excavating backhoe pits into the landfill at various locations within the waste disposal site (Figure 1) to collect samples of the waste, determine waste depth and characteristics, and observe subsurface conditions. In addition, backhoe pits were excavated around the site to determine the nature of the soils surrounding the site. Composite waste samples of three of the test pits in the waste (TP1, TP3, TP4) were then analyzed using the EP test with distilled water to estimate the remaining leaching potential of the waste (Appendix F).

Following the backhoe investigation, 5 borings were augured around the site and observation wells installed in the borings (Figure 1). All the borings except B2 extend down to the shale, where they were terminated (Appendix A).

In order to estimate how quickly leachate from the landfill would move through the underlying sediments, hydraulic conductivity tests were performed on 3 wells and soil samples from the borings were analyzed for grain size distribution (Appendices B and E).

Staff gages were placed at 3 locations in surface water around the site to record surface water elevations (Figure 1). However, the staff gages were destroyed, so surface water elevations were estimated from river elevations measured by N.Y.S. Department of Transportation.

Elevations from surface water and water levels within the wells were used to determine the direction of ground water flow (Appendix C).

The observation wells were used to sample ground water both downgradient of the waste and within the waste. Ground water within the waste was sampled at B4. Ground water beneath the waste or outside of the waste disposal area was sampled at the other wells (Appendices A and D).

Two rounds of water samples were taken from the observation wells and two surface water points to determine the effect of the landfill on ground and surface waters (Appendix H).

The ground water samples and surface water samples were analyzed for a number of chemical parameters. In addition, the surface water samples were analyzed for chrysotile asbestos concentrations.

4. HYDROGEOLOGIC ENVIRONMENT

The waste disposal site is located in the Mohawk Basin in the Village of Green Island. The eastern edge of the landfill is adjacent to Green Island. The Mohawk Basin abuts the northern edge of the site and surface water at times extends along the western edge of the site to the southwestern corner. The Village of Green Island landfill is south of the site. West of the landfill is an area used for disposal of demolition debris (Figure 1).

Except on the extreme eastern edge of the fill where waste was deposited over sand, the waste was deposited on top of a black organic silt (Figure 2, Appendix A). Root fragments found within this layer indicate that it was probably an old wetland. Grain size analysis indicates this material is predominantly silt (49%) with a high percentage (45%) of clay size particles (Appendix B). Approximately 3 feet of this organic silt is found beneath the waste. In the center (B4) and south (B1) of the landfill, the silty layer directly overlies shale. However, at B2 and B3, there is a layer of sand between the black organic silt and shale (Figure 2, Table I).

The permeability of the sediments underlying the waste was measured at B2 and B3 (Appendix D). At B2 the well point is in sand so the permeability measured at this well is that of the sand (Figure 2, Table I). Since the well point at B3 is in both sand and organic silt, the permeability measured there was lower than at B2. The permeability of the waste was measured at B4. The permeability of the waste is lower than that of the underlying sediments.

Bedrock beneath the unconsolidated deposits is shale. The shale is part of the Snake Hill Shale of Middle Ordovician age (Ruedemunn, 1930).

TABLE I

ELEVATION OF WELL POINTS IN RELATION
TO WASTE AND GEOLOGY

	B1	B2	B3	B4	B5
Waste/Fill	22-16	37-17	22.3-14.8	38.5-15.5	37.8-24.8
Organic Silt	16-13	17-14.5	14.8-11.8	15.5-12.5	-
Sand	-	14.5-7.5	11.8-8.3	-	24.8-9.3
Shale	13	<7.5	8.3	12.5	9.3
Well Point	13.8-18.8	8.4-13.4	9.3-14.3	12.5-17.5	12.5-17.5

Note: All elevations are in feet above MSL.

This very thick formation, possibly greater than 2000 feet thick, is a dark gray to black clayey shale (Ruedemunn, 1930).

In order to determine the direction of ground water flow beneath the landfill, a ground water table map was drawn from water level elevations measured in the observation wells (Figure 3). Due to the low permeability of the waste compared to the underlying soils, a slight ground water mound has formed in the waste. Ground water is flowing from the center of the landfill towards the north, west and south. The gradient is steepest towards the west, so assuming uniform permeability beneath the landfill, the velocity of ground water flow in this direction is the greatest. The velocity of ground water flow in the sand can be estimated with Darcy's law. Assuming a specific yield of 0.1, the seepage velocity of ground water flow in the sand layer at B2 is approximately 350 ft/year. The velocity of ground water flow toward the north is less, due to the lower water table gradient in this direction. The velocity of ground water flow toward B3 in the sand layer is estimated to be about 100 ft/year.

The water table is found within the waste at the disposal site. Although leachate may travel through the waste directly into the Mohawk Basin, leachate movement into ground water is restricted due to geologic conditions beneath the landfill. Shale restricts the downward movement of leachate and confines it to the 3-10 ft. of unconsolidated materials between the base of the landfill and the shale. In addition, the organic silt below the refuse serves as a filter for the leachate. Thus, the impact of leachate on ground water is confined to a thin layer of sediments directly beneath the landfill.

Since the underlying bedrock is shale, the only deposits capable of yielding water for use in this area would be the sand deposits. According to the Albany County Health Department (July 1980), there is no known use of ground water in either the Village of Green Island or the City of Cohoes. An infiltration gallery receiving water from the Hudson River on the eastern edge of the island supplies water to the Village of Green Island. The City of Cohoes gets water from the Mohawk River above the falls (Albany County Health Department 1980).

The discharge area for ground water in the sand at B1 and B2 is into the Mohawk Basin. Due to the limited thickness of these deposits downgradient of the landfill and the proximity of the discharge area for these deposits, the landfill's effect on ground water appears to be confined to a small area.

5. WATER QUALITY RESULTS

To define the effect of the waste disposal site on ground water beneath the site and surface water in the Mohawk Basin, water samples were taken from wells surrounding the site and at 2 locations in the Mohawk Basin. In addition, vertical composite samples from 3 test pits in the waste disposal site were subjected to a leaching test (Appendix F) to estimate the remaining leaching potential of the waste. The leaching tests were performed to determine if the wastes could be expected to release higher concentrations of constituents than are currently found in the leachate. The results of the leaching tests and water quality analysis are summarized in Table II and Appendices G and H.

The EP leaching test with distilled water was used on the waste sample (Appendix F). The test, which was run with 3 elutions and distilled water, indicates that the remaining leaching potential of the waste is very low. The leaching tests show no appreciable amounts of organics or metals, except for lead, remaining to be leached. Although concentrations of copper and barium were higher in the leaching tests than measured in ground water, the concentrations of barium are well below primary drinking water standards and the concentration of copper in only one pit was slightly above secondary drinking water standards.

The leaching tests did show that on 2 of the samples from the pits (TP3 and TP4), there was a large drop in pH in the second and third elutions (Appendix G), probably due to removal of soluble constituents with a buffering capacity in the first elution. With little material left for buffering (as indicated by 0 alkalinity in the second and third elutions of TP3 and TP4), a low concentration of organic acids could

TABLE II
RESULTS FROM WATER ANALYSIS AND LEACHING TESTS

PARAMETER	SAMPLING LOCATION							LEACHING TESTS[1]		
	B4	B1	B2	B3	B5	SW1	SW2	PIT 1	PIT 3	PIT 4
pH	8.3	8.1	7.4	8.2	7.9	7.6	7.7	9.2	8.8	8.5
	8.0	8.0	7.2	8.0	7.6	7.8	7.6			
TDS	3260	1850	4000	2080	363	280	277	218	300	146
	3410	2360	3980	1460	719	395	320			
Alkalinity	1800	1460	1560	1590	150	102	121	99	130	94
	1920	1660	1510	1020	104	144	135			
Hardness	2400	1630	3130	1750	272	188	170	170	270	150
	2660	2160	3280	1320	495	200	196			
TOC	280	120	120	110	9	12	13	3.7	1.3	4.4
	120	110	35	33	3	35	10			
Phenols	77.0	0.020	0.012	0.042	0.016	0.005	0.010	0.012	0.013*	0.014
	55.0	2.35	0.006	0.045	0.011	<.004	4.25			
Chloride	550	127	750	260	70	38	24	<5	<5	<5
	550	140	833	160	54	32	28			
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.2	0.1	0.1
	<0.01	-	-	-	-	-	-			
Copper	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.007	0.014	1.4
	<0.1	-	-	-	-	-	-			
Iron	0.35	0.85	25	0.45	0.20	0.25	0.25	0.005	0.006	1.0
	0.25	0.55	0.20	<0.1	<0.1	0.02	0.03			
Zinc	0.02	0.08	0.03	0.01	0.03	0.01	<0.61	0.011	0.015	0.11
	0.03	0.15	0.03	0.02	<0.01	<0.01	<0.01			
Lead	0.15	-	-	-	-	-	-	<0.05	0.06	0.33
	0.20	0.55	0.20	<0.1	<0.1	<0.1	<0.1			
Manganese	0.08	-	-	-	-	-	-	0.008	0.007	0.045
	0.05	0.59	1.5	0.40	3.7	0.02	0.03			

Results in mg/l except pH.

[ ] sample from 5/7/80

[ ] sample from 5/29/80

1 Leaching test results are for the highest concentration of the parameter in all three elutions. Except for phenols, in Pit 3, the highest concentration was in the first elution.

* This concentration was in the second elution.

\- No analysis for this parameter

TABLE II (cont.)

RESULTS FROM WATER ANALYSIS AND LEACHING TESTS

PARAMETER	SAMPLING LOCATION	LEACHING TESTS[1]		
	B4	PIT 1	PIT 3	PIT 4
Arsenic	<0.01	0.025	0.005	<0.001
	<0.01			
Cadmium	<0.01	<0.01	<0.01	<0.01
	<0.01			
Chromium	<0.05	0.003	0.002	0.022
	<0.05			
Mercury	<0.001	<0.002	<0.002	<0.002
	0.001			
Selenium	<0.006	0.029	0.019	0.036
	0.006			
Silver	<0.01	<0.05	<0.05	<0.05
	0.01			
Nitrate as N	0.02	0.25	0.37	0.37
	<0.02			
Sulfate as SO_4	450	53	110	25
	515			
Fluoride	0.1	<0.01	0.10	<0.01
	0.17			
Color Pt-CoStd.	>70	-	-	-
	>70			
Threshold odor	none detected	-	-	-
	35			

Results in mg/l except pH.

[ ] sample from 5/7/80

[ ] sample from 5/29/80

[1] Leaching test results are for the highest concentration of the parameter in all three elutions. Except for phenols, in Pit 3, the highest concentration was in the first elution.

- No analysis for this parameter

cause the low pH observed. Since the background alkalinity of ground water measured at B5 is as high as the alkalinity measured in the first elution before the pH drop, a pH drop in the leachate of the waste in the landfill is extremely unlikely. Moreover, even with the lowered pH, the concentration of metals released in these elutions was lower than the first elution (Appendix G). It appears that the waste has essentially been leached of the contaminants available for leaching. Thus, the leachate should not increase in strength from current concentrations measured in the waste disposal site.

Samples of ground water were tested at 4 wells surrounding the landfill: B1, B2, B3 and B5. B4 was placed within the waste to sample leachate ground water and concentration. B1, B2 and B3 are downgradient of the landfill, while B5 is upgradient of the landfill. The results of 2 rounds of water samples (Table II) show that generally, the higher concentration of constituents are found in B4. However, if the organic constituents are not considered, B2 appears to have the highest concentration of constituents. The concentration of constituents at B2 is expected to be high for several reasons. B2 is sampling water from directly below the edge of the landfill and ground water is moving fairly rapidly from the center of the landfill in this direction, in addition, B2 is located close to the area of the landfill where the wastes were first deposited. Although the inorganic constituents at B2 are similar in concentration to those found in the leachate at B4, the concentrations of phenols and TOC are significantly lower. Apparently, the organic silt layer is effectively filtering out organic constituents.

Several of the parameters measured in the ground water downgradient of the landfill are above the New York State Ground Water Standards (N.Y. 1978) in Table III. However, the concentrations of these parameters are well within values reported for municipal leachate (Armon et. al., 1976). The only parameter tested in the wells which is above the primary drinking water standards (Federal Register, 1975) is lead. TP4 is in the older portion of the landfill, where many broken brake linings are found. Lead was used to make brake linings, so it would be expected to be found in this area of the landfill. The highest concentration of lead found in the leaching tests was from TP4. The ground water wells which show elevated concentrations of lead, B1 and B2, are downgradient of the old portion of the landfill.

Although the concentration of lead in the leachate and at wells B1 and B2 is above drinking water standards, the mobility of lead in ground water is quite low. Armon et. al. (1976) found that metals (including lead) "even though toxic, represent a minimal pollution hazard in municipal leachate because they are attenuated very strongly." In Armon's study, the concentration of lead in municipal leachate was 9 times greater than the highest concentration found in ground water at the landfill edge, but "even small amounts of clay resulted in almost total removal." Thus, the concentration of lead above drinking water standards is expected to be confined to an area immediately adjacent to the landfill.

Although the concentration of phenols in leachate (B4, Table II) is quite high, the organic silt layer appears to be filtering out the phenols very well. The concentration of phenols at the downgradient wells, B1, B2, and B3, is essentially at the background level measured

TABLE III

COMPARISON OF NEW YORK STATE GROUND WATER STANDARDS
AND RESULTS FROM GROUND AND SURFACE WATER ANALYSIS

PARAMETER	NY STATE EFFLUENT STANDARDS	B4*	MUNICIPAL* LEACHATE	NY STATE GROUND WATER QUALITY STANDARDS	B1*	B2*	B3*	B5*	SW1*	SW2*
Phenols	.002	77	-	0.001	2.35	0.012	0.045	0.016	0.005	4.25
Chloride	500	550	34-2,800	250	140	833	260	70	38	28
Iron	-	-	0-5, 500	0.30	0.85	25	0.45	0.2	0.25	0.25
Lead	0.05	0.20	0-5	0.025	0.55	0.20	<0.1	<0.1	<0.1	<0.1
Manganese	-	-	0-1, 400	0.30	0.59	1.5	0.40	3.7	0.02	0.03
Sulfate	500	515	1-1, 826	250	515	-	-	-	-	-

* highest concentration measured

concentration above standard

\- no analysis for this parameter

* from Armon et. al., 1976

at B5. The reason for higher concentration of phenols at B1 in the second round of water samples is unknown. Since the results from the rest of the ground water samples are quite similar for the 2 sampling periods, this result could have been an analytical error.

Although even in the background well phenol concentrations are above the NYS Ground Water Standards, all concentrations in the downgradient wells are below the proposed EPA Water Quality Criteria of 3.4 mg/l (Federal Register, 1979). EPA is proposing this criterion on the basis of human health. Therefore, we do not think the concentrations of phenols measured in the ground water downgradient of the landfill are at problem levels.

The other parameters in the ground water samples which were above the NYS Ground Water Standards were chloride, iron, ~~manganese~~ and sulfate. Since the concentrations of manganese was highest at B5, the upgradient well, the landfill is not increasing the concentration of manganese in the ground water. Although the concentrations of the other paramters measured in the downgradient wells were higher than the upgradient well and the standards, these parameters do not pose a health risk.

In addition to ground water samples, surface water samples were taken at two locations to assess the landfill's effect on the Mohawk Basin (Figure 4). Although SW1 was taken right next to the landfill, concentrations of the parameters measured are not any different from SW2, which was taken near the culvert to the Mohawk River. The concentration of phenols at SW2 was high in the second round of water samples, probably due either to a discharge upstream on the Mohawk River or to analytical error.

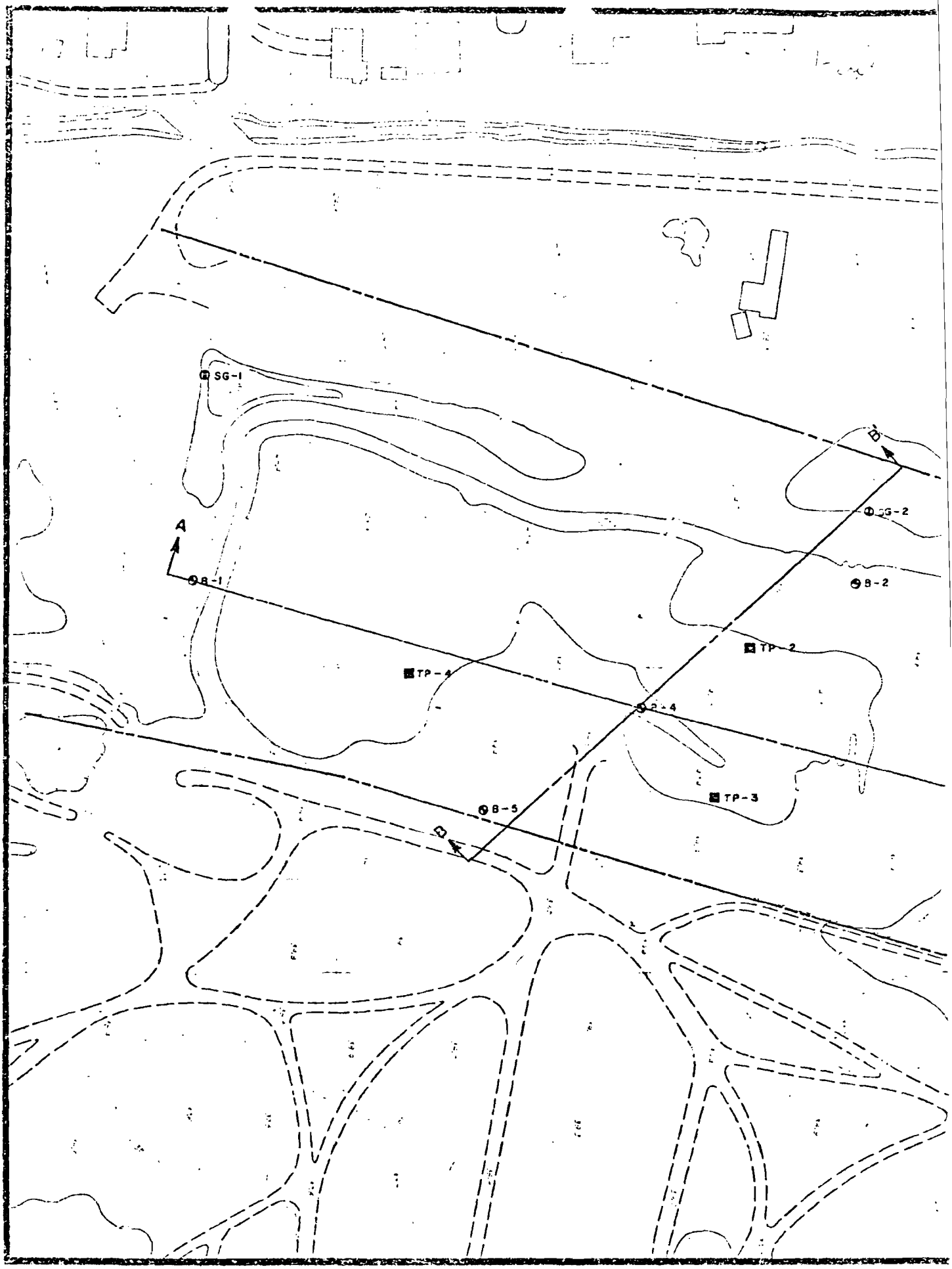
Surface water in the Mohawk Basin has not been affected by leachate from the waste disposal site. Concentrations of lead and phenols in the surface water samples (the 2 parameters of concern in the leachate) do not appear to be elevated. Except for the anomalous concentration of phenol at SW2 on May 28, phenol concentrations in the surface water are lower than those found in B5 which measured background water quality (Table II). Thus, the landfill has not affected the chemical water quality of the Mohawk River.

However, the waste disposal site has added asbestos fibers to the surface water. Water samples taken at SW1 and SW2 (Appendix I) indicate that high concentrations of asbestos are found next to the landfill at SW1. The waste sample from SW1 showed bundles of large chrysotile fibers; at SW2, however, the number and size of fibers had decreased. The number of fibers counted at SW2 was about 1/3 of that counted at SW1.

6. PRELIMINARY DESIGN CONCEPTS

The water quality results indicate that the primary water quality concern is preventing further erosion of asbestos from the site; therefore, we recommend Alternative I for site design as presented in our June 1980 report Summary Report of Preliminary Design Alternatives and Preliminary Range of Construction Costs Associated with Closure of the Abandoned Asbestos Waste Disposal Site, Green Island, New York. The water quality analyses do not indicate a need to isolate leachate from ground water. Thus, a partial enclosure option is recommended.

The primary objective of the design is to encapsulate and stabilize the surface with clay to limit the amount of surface water entering the site during periods of heavy rain and high water, but to allow contained draining of water in and out of the landfill through the underlying soils. This preliminary design concept is presented in Figure 5. Sand and gravel will be placed to form a stable base for the clay side walls. The actual method for placing of the sand and gravel will be selected after the stability of the underlying soils is determined. An extensive subsurface soils investigation will be performed around the base of the landfill to determine the stability of the underlying soils. Clayey side walls will be placed on top of the sand and gravel base to limit infiltration from rainfall and to prevent surface water from entering the landfill during periods of high water. In addition, drainage features will be designed to prevent erosion of wastes and ponding of water on the site surface. Vegetative cover will be established to stabilize the surface.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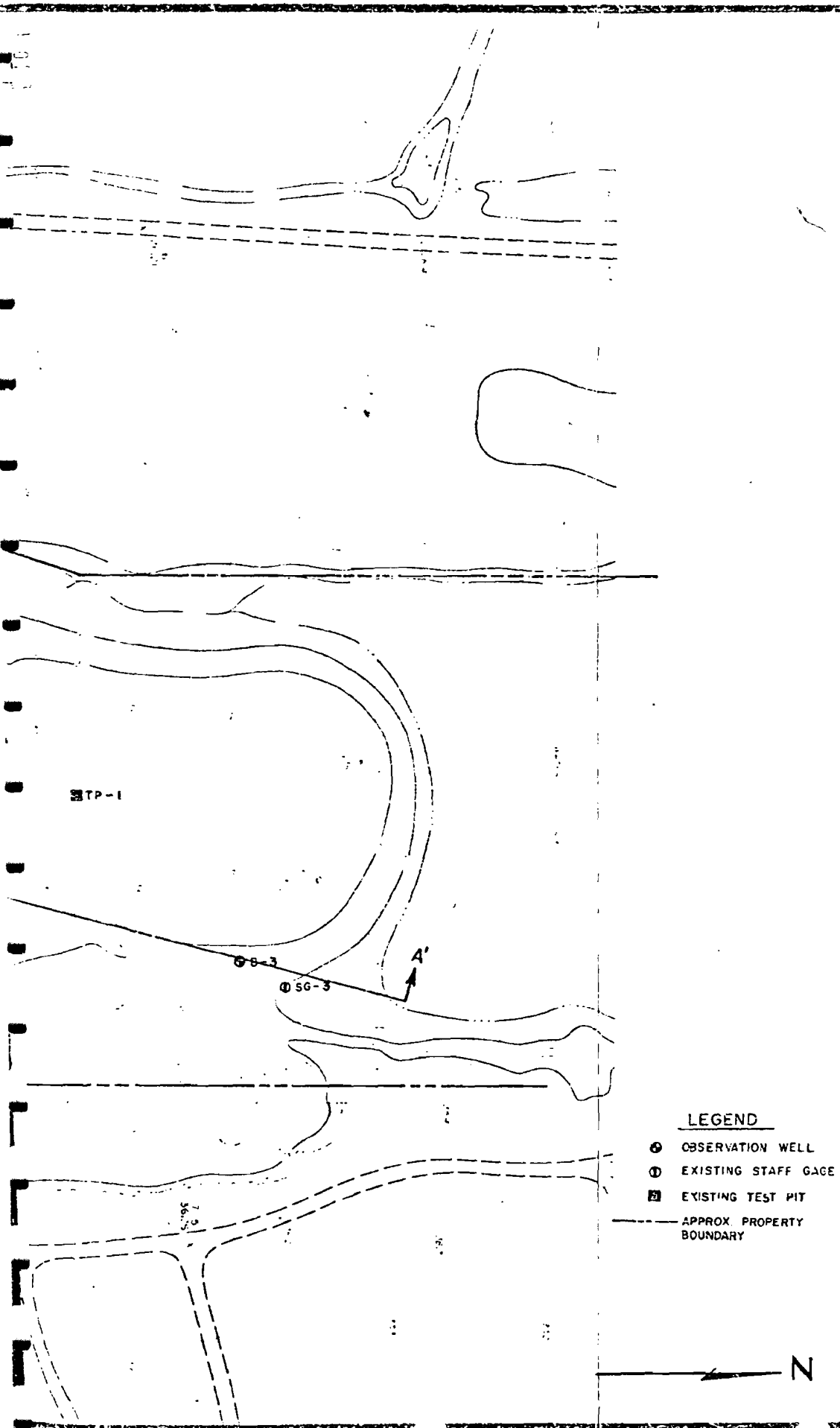
B-2
TP-2
TP-4
B-4
TP-3
B-5



RMT

RESIDUALS MANAGEMENT TECHNOLOGY, INC.

CONSULTANTS IN INDUSTRIAL SOLID AND HAZARDOUS WASTE MANAGEMENT

PROJECT:

GREEN ISLAND LANDFILL CLOSURE

PREPARED FOR:

BENDIX – FMD
TROY, N.Y.

REVISIONS:

NO.	BY	DATE

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CHECKED: [illegible]
APPROVED: [illegible]
DATE PRINTED: 7/18/80

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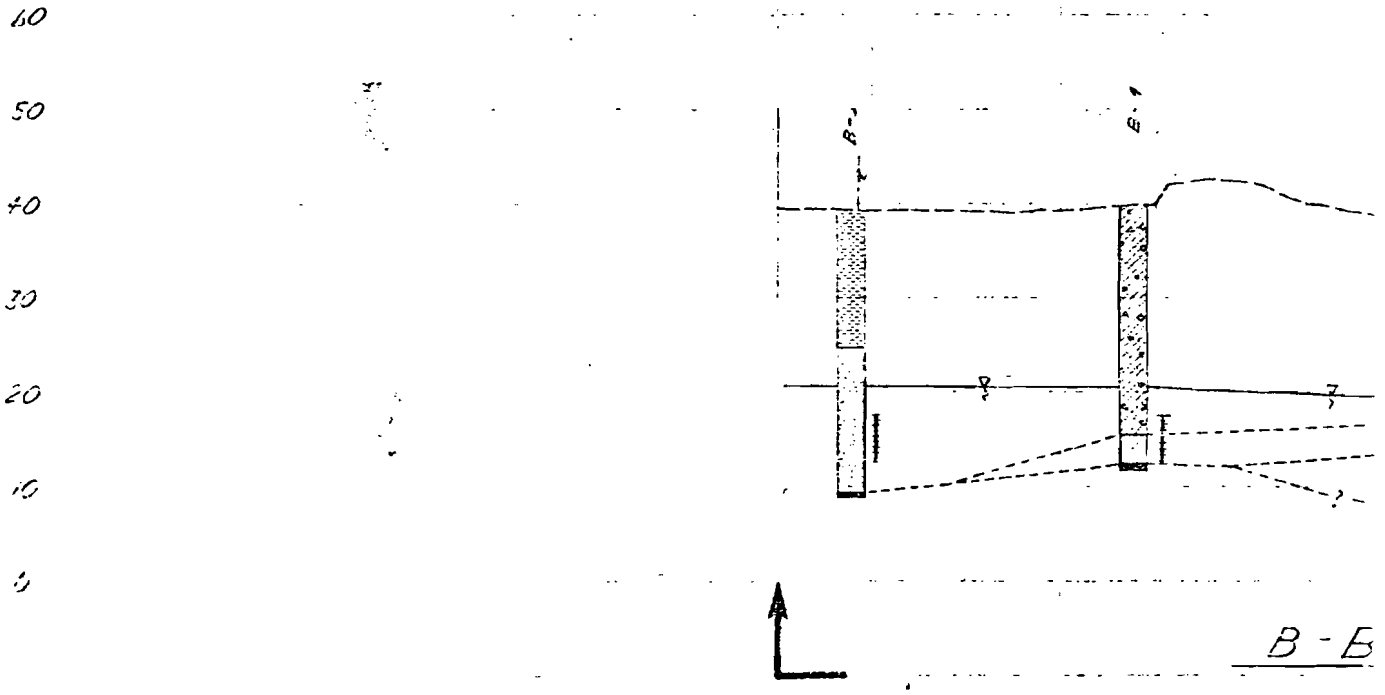
DATE: 7-18-80

SHEET TITLE:
OBSERVATION WELL, STAFF GAGE, TEST PIT, CROSS SECTION, LOCATIONS

PROJECT NO.: 5009X
SHEET 1 **OF** 5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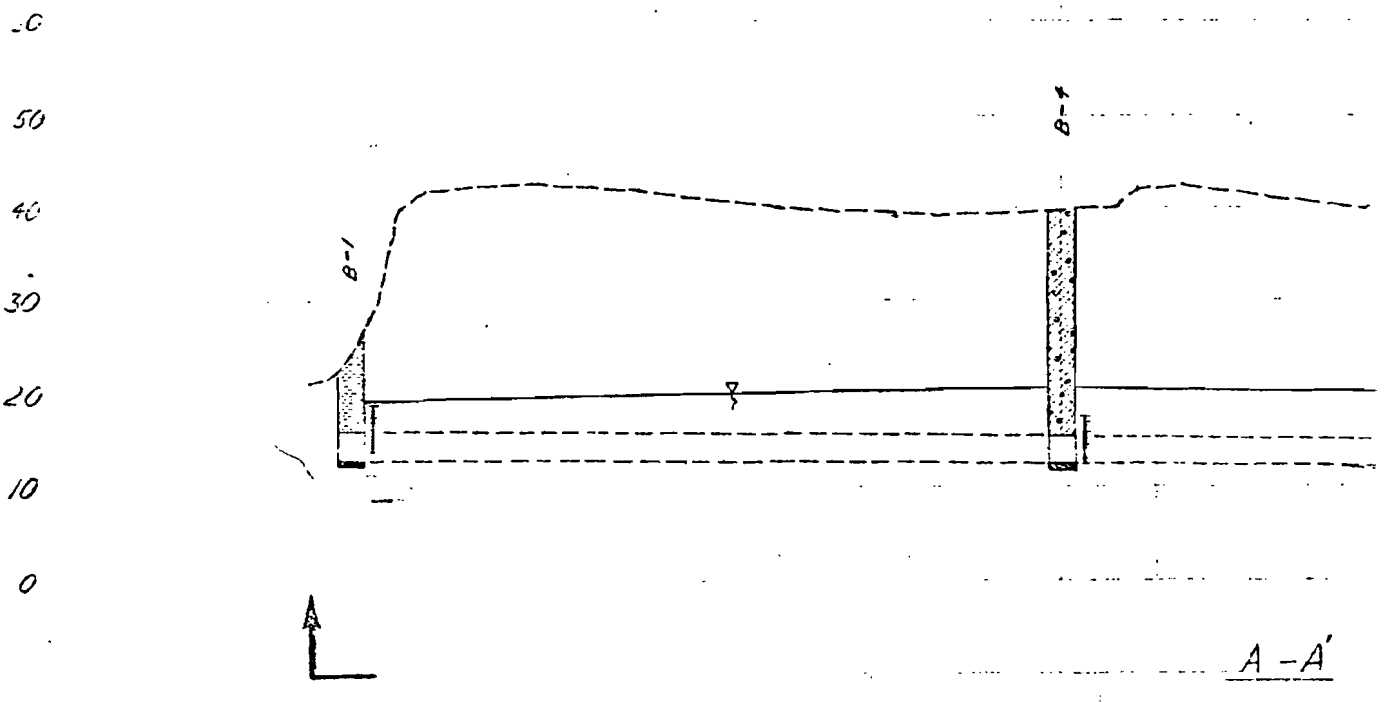
B - B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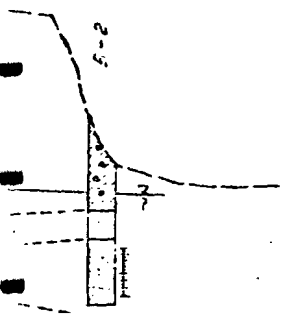
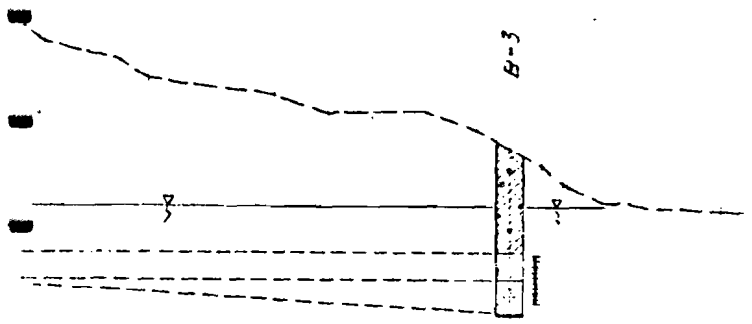
B-1
A - A'





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40
30
20
10
0

LEGEND

- WATER TABLE
- GROUND LINE
- INFERRED BOUNDARY
- WELL POINT
- FILL
- SAND
- SHALE
- ORGANIC SILT
- WASTE

60
50
40
30
20
10
0

RMT

RESIDUALS MANAGEMENT TECHNOLOGY, INC.

MADISON, WISCONSIN

CONSULTANTS IN INDUSTRIAL SOLID AND HAZARDOUS WASTE MANAGEMENT

PROJECT:

GREEN ISLAND
LANDFILL
CLOSURE

PREPARED FOR:

BENDIX — FMD
TROY, N.Y.

REVISIONS:

NO	BY	DATE

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CHECKED: —
APPROVED: —
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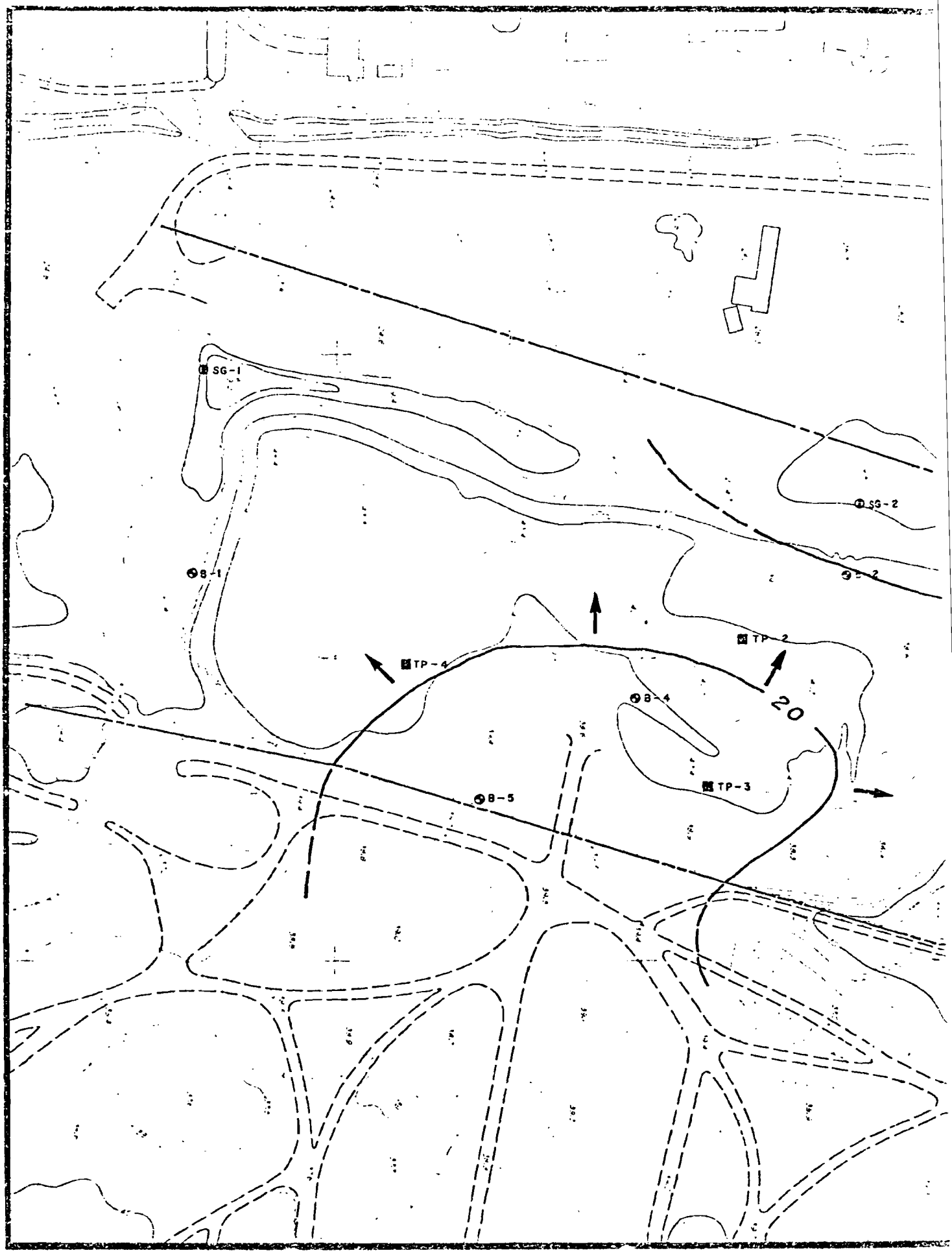
VERT: 1" = 10'
DATE: 7-18-80

SHEET TITLE:
GEOLOGIC
CROSS-SECTIONS
A — A'
B — B'

PROJECT NO.: 5009X
SHEET 2 **OF** 5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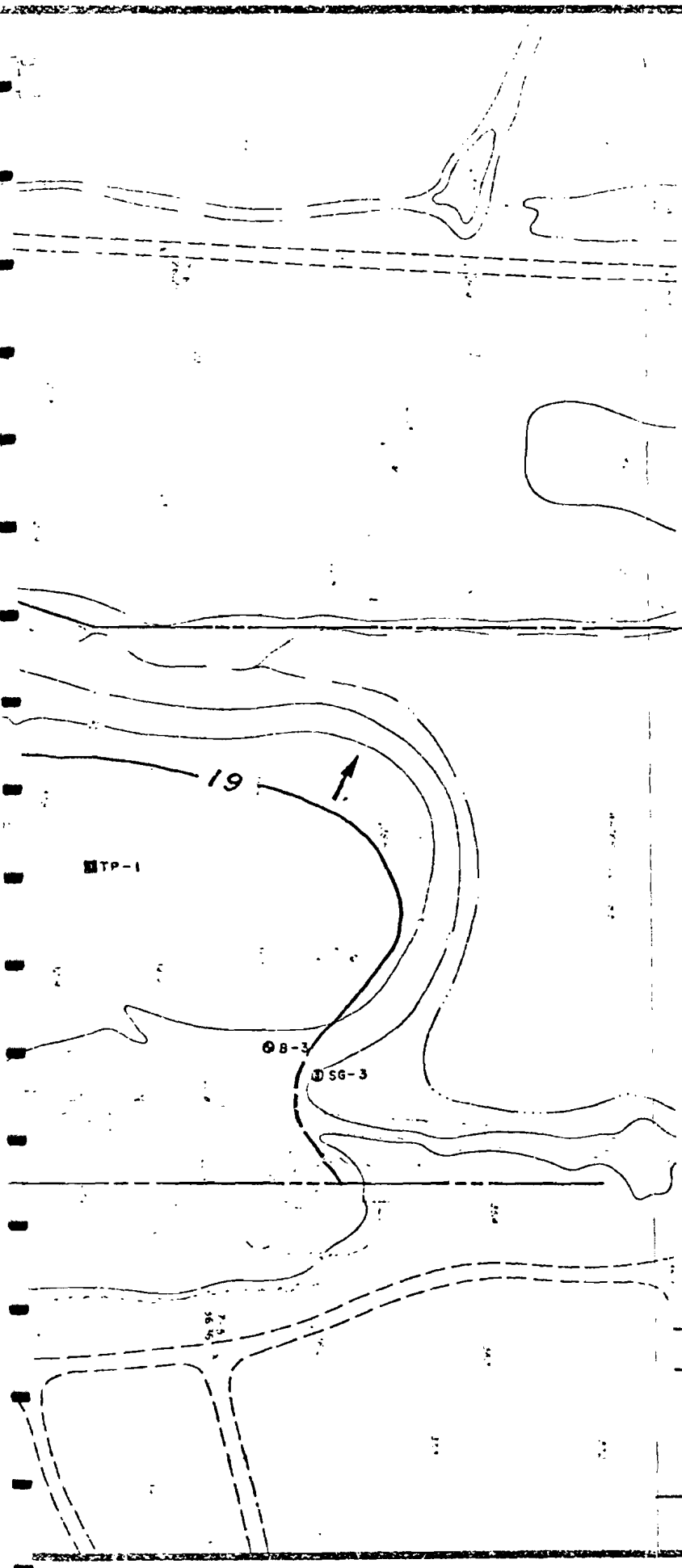
SG-2
B-1
B-2
TP-4
TP-2
B-4
20
TP-3
B-5



RMT

RESIDUALS MANAGEMENT TECHNOLOGY, INC.

CONSULTANTS IN INDUSTRIAL SOLID AND HAZARDOUS WASTE MANAGEMENT

PROJECT:

GREEN ISLAND LANDFILL CLOSURE

PREPARED FOR:

BENDIX – FMD
TROY, N.Y.

REVISIONS:

NO		BY	DATE

DRAWN: alp
CHECKED: RC
APPROVED: RC
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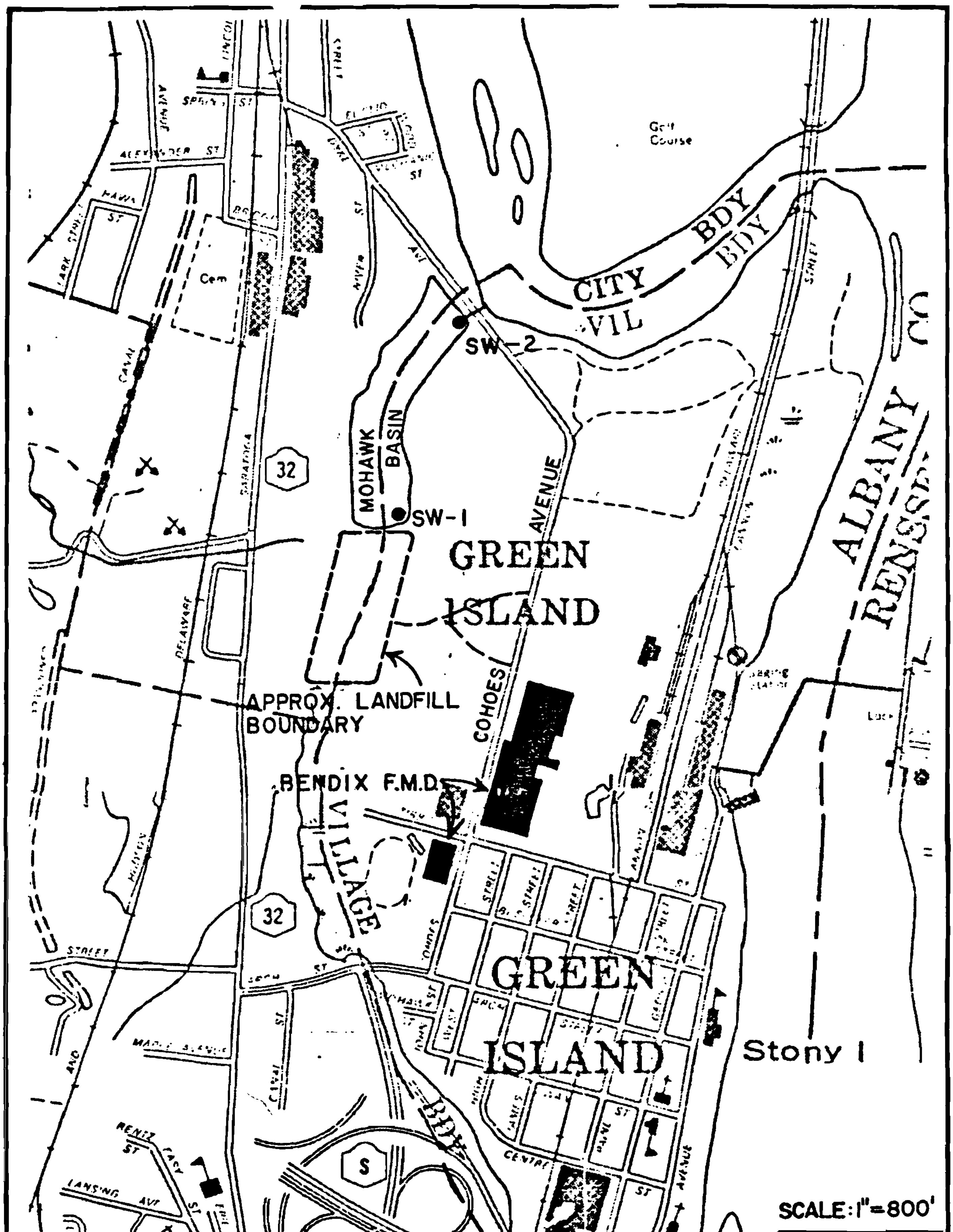
SCALE: 1" = 50'
DATE: 7-18-80

SHEET TITLE:

WATER TABLE MAP

PROJECT NO.: 5009X
SHEET 3 **OF** 5



SURFACE WATER SAMPLING POINT LOCATIONS (SW-)

FIGURE 4

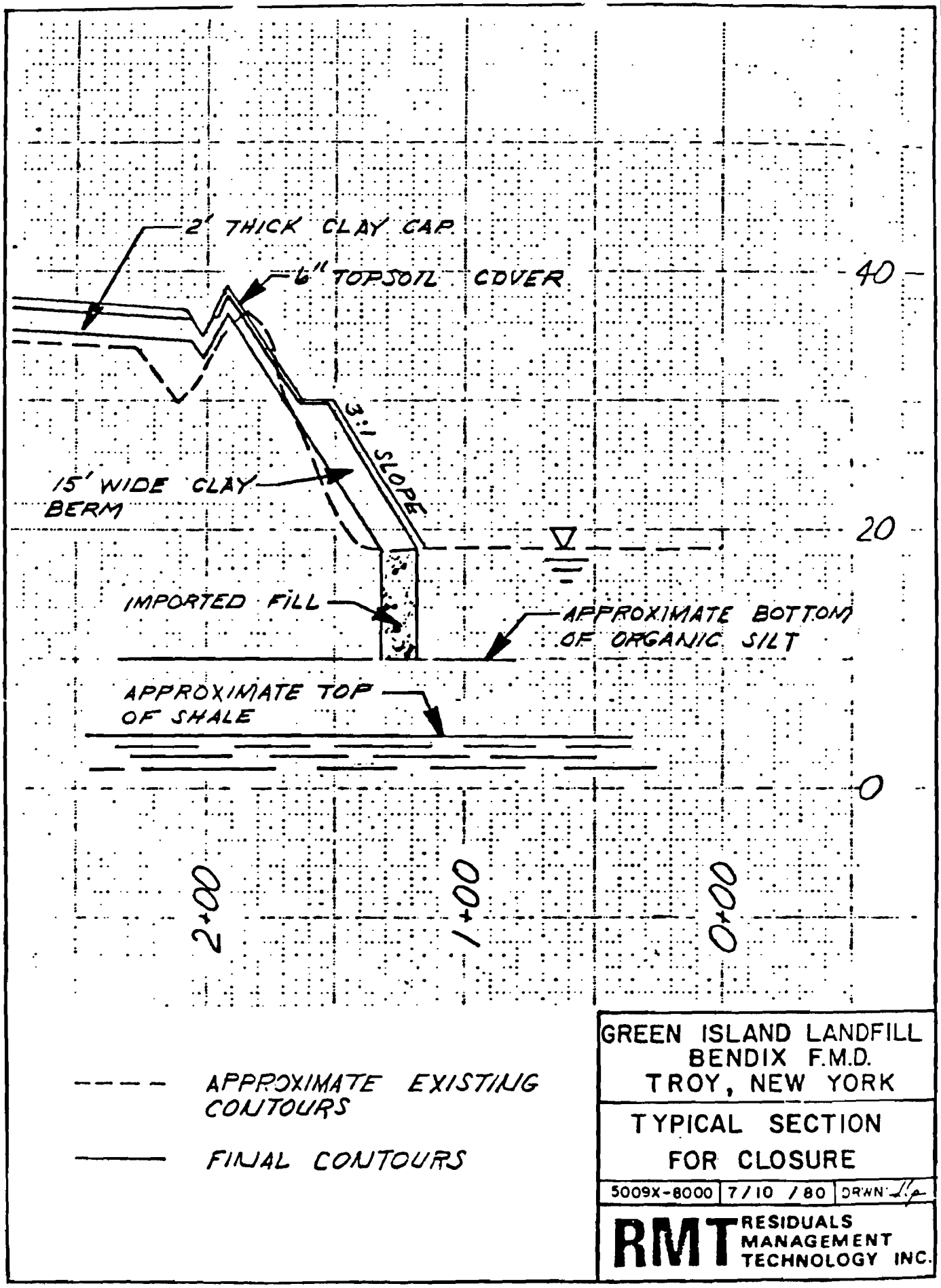

2' THICK CLAY CAP
6" TOPSOIL COVER
3:1 SLOPE
15' WIDE CLAY BERM
IMPORTED FILL
APPROXIMATE BOTTOM OF ORGANIC SILT
APPROXIMATE TOP OF SHALE
40
20
0
2+00
1+00
0+00
APPROXIMATE EXISTING CONTOURS
FINAL CONTOURS
GREEN ISLAND LANDFILL
BENDIX F.M.D.
TROY, NEW YORK
TYPICAL SECTION
FOR CLOSURE
5009X-8000
7/10/80
DRWN
RMT
RESIDUALS MANAGEMENT TECHNOLOGY INC.

FIGURE 5

APPENDIX A

BORING LOGS

1-31

SUBSURFACE INVESTIGATION REPORT

BENDIX LANDFILL

GREEN ISLAND, NEW YORK

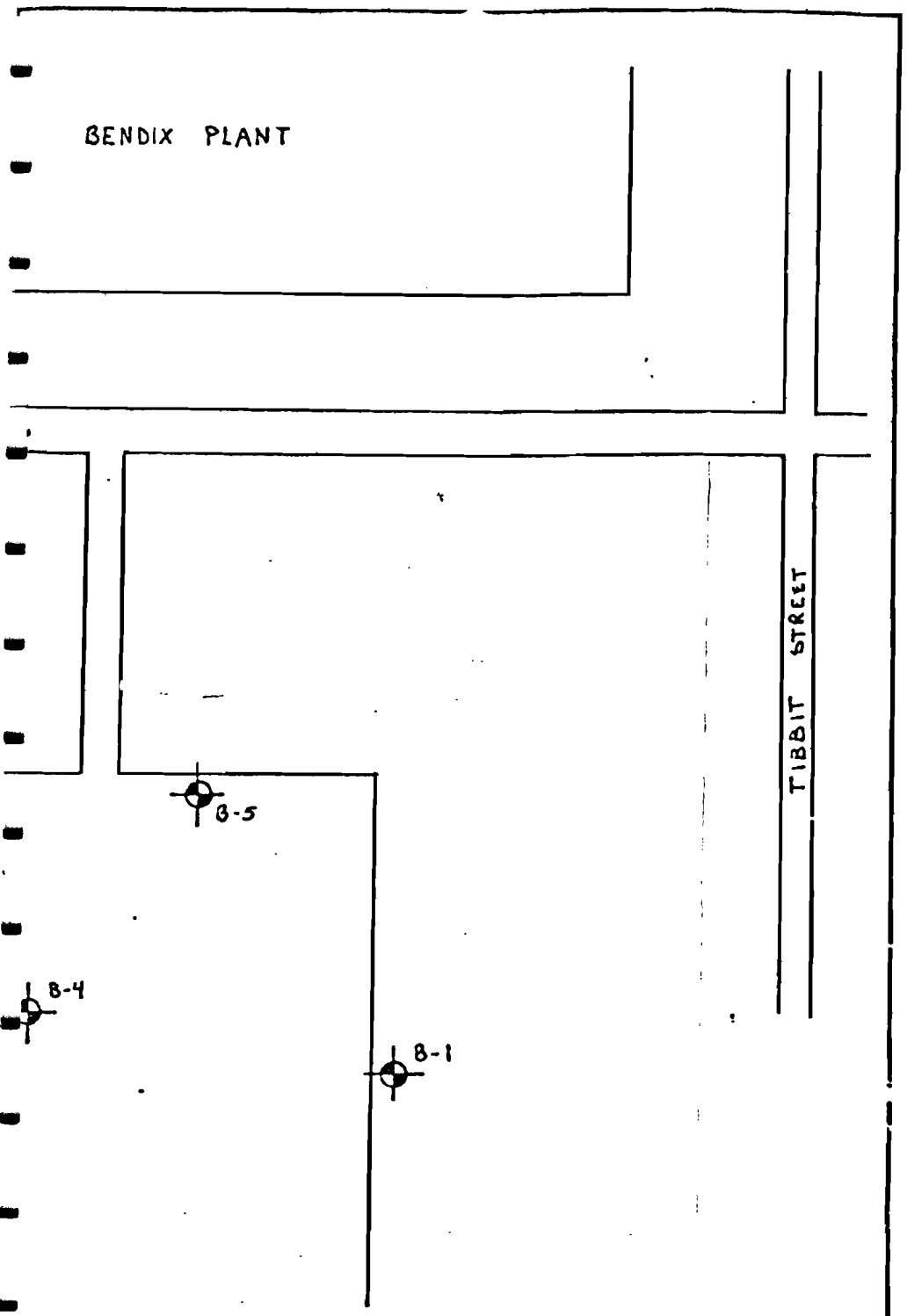
I. INTRODUCTION

This report presents the results of the Subsurface Investigation conducted on March 31 through April 2, 1980 at the Bendix Corp. Landfill in the City of Green Island, New York. A total of five (5) test borings were advanced at those locations as shown on the attached Site Plan. The location of the borings was determined by Residuals Management Technologies.

II. METHOD OF INVESTIGATION

A trailer mounted drill rig and standard boring methods were used to advance 3¼" I.D. hollow stem auger casing into overburden soils. The borings were advanced with representative samples obtained at intervals of five (5) feet and continuously. Sampling was performed in accordance with ASTM D-1586-67: Standard Penetration Test, which incorporates a two (2) inch O.D. split barrel sampler driven into the overburden by a 140 pound weight free falling 30 inches. All samples were boxed and returned to our laboratory. Slotted PVC observation wells were installed at each boring to the depths noted on the logs.

The attached Subsurface Logs have been prepared on the basis of the driller's field logs and visual classification of the recovered



REFERENCE

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE INVESTIGATION PLAN

BENDIX LANDFILL
GREEN ISLAND, NEW YORK

DR BY: D.P.	SCALE: NO SCALE	PROJ NO AD-80-1
CK'D BY: F.A.D.	DATE: 4-3-80	DRWG NO ONE

COHOES

B-2

B-3

NOTE: FOR BORING LOCATION ONLY; NO SCALE.

DS-4

DATE
STARTED 4-1-80
FINISHED 4-1-80
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-1
SURF ELEV
C W DEPTH See Note #1

PROJECT Bendix Landfill
LOCATION Green Island, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	5	3	8		FILL: Brown fine to coarse SAND, little silt, Some fne to coarse Gravel	Note #1: Groundwater in augers @ 6.0'
			7						
									Groundwater after pulling augers @ 2.5'
5		2	6	5	3	8		-no recovery @ 4.0-6.0'	
			1					(Moist-Loose)	Placed well @ 8.5'
		3	2	1	1	2	✓	Dark grey organic SILT, little organics & roots trace clay	
			2					(Moist-Loose)	
10		4	100/.5					Dark grey SHALE fragments, trace trace silt (Wet-Very Compact)	
								END OF BORING @ 9.5'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive "casing "with lb. weight falling "per blow.
METHOD OF INVESTIGATION 2¼" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geologist

DS-4

DATE
STARTED 4/1/80
FINISHED 4/1/80
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-2
SURF ELEV
G W DEPTH See Note #1

PROJECT Bendix Landfill
LOCATION Green Island, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18-	N	BLOW UN CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	4	5	9		FILL: Brown SILT & Orange ASBESTOS, trace fine gravel, trace roots	Note #1 Groundwater in augers @ 19.5'.
			3						
5		2	4	3	4	7		FILL: Brown fine to coarse SAND, Some Silt, Some Asbestos, little fine to coarse gravel, trace wood	
			4						
10		3	7	5	4	9		(no orange)	
			5						
15		4		1	1	2		-grades AND Orange ASBESTOS DUST, wet	
			1					-no recovery 16 - 18.0'	Note #2 wh-weight of hammer
		5	wh		1				
			1					-Black, Orange, Lt. Grey ASBESTOS Dust (Moist to Wet-Loose)	
20		6		1	1	2			
			1						
		7	2	1	2	3	✓	Dark Grey organic SILT, little organics & roots, trace shells, trace wood, trace clay	
			2						
		8	2	7	10	17		-grades little fine to coarse sand & fine gravel @ 22.0' (Moist-Loose to Firm)	
			7						
25		9	8	4	4	8	✓	Grey fine to coarse SAND, Some Silt, trace fine gravel	
			5					-grades trace silt @ 24.0'.	
								-gravel fragment in end of spoon	
30		10	100/.3					(Wet-Firm to Loose to V. Compact)	
								END OF BORING @ 29.3'	
35									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive "casing "with lb. weight falling "per blow.
METHOD OF INVESTIGATION 2¼" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geologist

DS-4

DATE
STARTED 4/1/80
FINISHED 4/1/80
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-3
SURF ELEV
G W DEPTH See Note #1

PROJECT Bendix Landfill
LOCATION Green Island, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	wh	wh	wh			FILL: Brown SILT, Some Orange Asbestos, little fine to coarse sand & fine gravel	Note #1 Groundwater in augers @ 2.5'.
			2						
		2	wh					-no recovery 4 - 6.0'	Note #2 wh-weight of hammer
5			1					-grades little orange asbestos (Moist to Wet-Loose)	
		3	-	1	-				Note #3 Placed well @ 13.5'.
			1					Dark grey organic SILT, little organics & roots, trace clay, trace fine gravel & fine to coarse sand, trace asbestos (Moist-Firm)	
		4	wr	wh	11		✓		Note #4 wr-weight of rod
10			16						
								Grey fine to coarse SAND, little silt, little fine to coarse gravel trace asbestos. (Moist-Firm)	
15		5	100/.2					Dk Grey SHALE fragments (Moist-Very Compact)	
								END OF BORING @ 14.2'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive "casing "with lb. weight falling "per blow.
METHOD OF INVESTIGATION: 2¼" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geologist

1-37

DS-4

DATE
STARTED 4-2-80
FINISHED 4-2-80
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-4
SURF ELEV
G W DEPTH See Note #1

PROJECT Bendix Landfill
LOCATION Green Island, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18-	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	3	4	7		Brown ASBESTOS pellets	Note #1: Groundwater encountered @ 19.3'
			4						Placed well @ 26.0'
5		2	1	1	2	3		-trace fine to coarse sand noted	
			2					-changes to red-brown ASBESTOS pellets	
10		3		1				-orange & tan ASBESTOS dust	
			1						
15		4	woh	woh	1			-lite grey	Note #2: woh= weight of hammer
			1						
		5	1	1	2	3		-light grey & dark brown	
			2						
		6	woh	woh	woh			-black & light brown, wet	Note #3: wor= weight of rod
20			woh						
		7	wor	wor	wor			-light brown	
			wor						
		8	1	1	1	2		-black,orange,light grey,dark brown (Moist to Wet-Loose)	
			2						
25		9	2	3	2	5		Black organic SILT, little organics & roots	
			3						
		10	75	100/.2				-no recovery @ 24.0-26.0',gravel piece in end of spoon (Moist-Loose)	
30								Dark grey weathered SHALE (Moist-Very Compact)	
								END OF BORING @ 26.7'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 2¼" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geologist

1-38

DS-4

DATE
STARTED 3-31-80
FINISHED 3-31-80
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-5
SURF ELEV
G W DEPTH See Note #1

PROJECT Bendix Landfill
LOCATION Green Island, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	6	5	11		FILL: Dark brown SILT, little fine to coarse sand, trace cinders, trace fine gravel	Note #1: Groundwater @ 17.5' with 20' of casing.
			4						
		2	1	1	1	2		-no recovery @ 4.0-6.0'	Placed well @ 24.0'
5			1						
		3	2	1	4	5		-Dark brown ASBESTOS	
			4						
		4	10	8	5	13		-no recovery @ 9.0-11.0'	
10			5						
		5	5	6	6	12		-no recovery @ 11.0-13.0', gravel piece noted in end of spoon (Moist-Loose to Firm)	
			5						
		6	12	14	19	33		Brown fine to coarse SAND, little fine gravel, trace silt	
15			18						
		7	12	16	13	29		-no recovery @ 15.0-17.0'	
			18						
		8	21	29	31	60			
			35					-wet @ 18.5'	
		9	19	21	17	38		-grades Some fine Gravel @ 19.0'	
20			15						
								(Moist to Wet-Firm to Comp. to V.Comp.)	
		10	13	21	14	35			
25			7						
								(Moist-Hard)	
		11	130/.5					Dark grey weathered SHALE	
30								(Wet-Very Compact)	
								END OF BORING @ 29.0'	

N = No blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive "casing "with lb. weight falling "per blow.
METHOD OF INVESTIGATION 2¼" I.D. Hollow Stem Auger Casing

CLASSIFICATION Visual by Geologist

GENERAL INFORMATION & KEY TO SUBSURFACE LOGS

The Subsurface Logs attached to this report present the observations and mechanical data collected by the driller while at the site, supplemented by classification of the materials removed from the borings as determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Subsurface Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded data and their significance relative to each other. Often analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of this report and the recovered samples must be performed by Professionals having experience in Soil Mechanics and Foundation Engineering. The information presented in the following defines some of the procedures and terms used on the Subsurface Logs to describe the conditions encountered.

① The figures in the Depth column defines the scale of the Subsurface Log

② The Sample column shows, graphically, the exact depth range from which a sample was recovered. See Table I for a description of the symbols used to signify the various types of samples

③ The Sample No is used for identification on sample containers and/or Laboratory Test Reports

④ Blows on Sampler – shows the results of the "Penetration Test", recording the number of blows required to drive a split spoon sampler into the soil beneath the casing. The number of blows required for each six inches penetration is recorded. The total number of blows required for the last 12 inches of penetration are summarized in the "N" column. The outside diameter of the sampler, the hammer weight and the length of drop are noted at the bottom of the Subsurface Log

⑤ Blows on Casing – shows the number of blows required to advance the casing a distance of 12 inches. The casing size, the hammer weight and the length of drop are noted at the bottom of the Subsurface Log. If the casing is advanced by means other than driving, the method of advancement will be indicated in the Notes column or under Method of Investigation at the bottom of the Subsurface Log

⑥ All recovered soil samples are reviewed in the laboratory by technicians. The visual descriptions are made on basis of the sample as recovered and in accordance with the Unified Classification System Guide Lines for the terms used in descriptions are presented in Tables II and III. The description of the relative soil compactness or consistency is based upon the penetration records as defined in Table IV. The description of the soil moisture is based upon the condition of the sample as recovered. The moisture condition is described as dry, damp, moist or wet. Water used to advance the boring may have affected the moisture content of the sample. Special terms are used as required to describe materials in greater detail, several such terms are listed in Table V. When sampling gravelly soils with a standard two-inch diameter split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders and large gravel is sometimes, but not necessarily, detected by an evaluation of the casing and sampler blows or through the "action" of the drill rig as reported by the driller

⑦ The description of rock shown is based upon the recovered rock core. Terms frequently used in the description are included in Table VI

⑧ Miscellaneous observation and procedures noted by the driller are shown in this column, including water level observations. It is important to realize that the reliability of the water level observations depend upon the soil type (water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the borings may have influenced the observations. The ground water level typically will fluctuate seasonally. One or more perched or trapped water levels may exist in the ground seasonally. All the available readings should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or water observation installations

⑨ The length of core run is defined as length of penetration between retrievals of the core barrel from the bore hole, expressed in feet and tenths of feet. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is also noted. The more commonly used sizes of core barrels are denoted "AX" and ... core, being larger in diameter than "AX" core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties ... The "NX" core barrel requires the use of four inch diameter casing

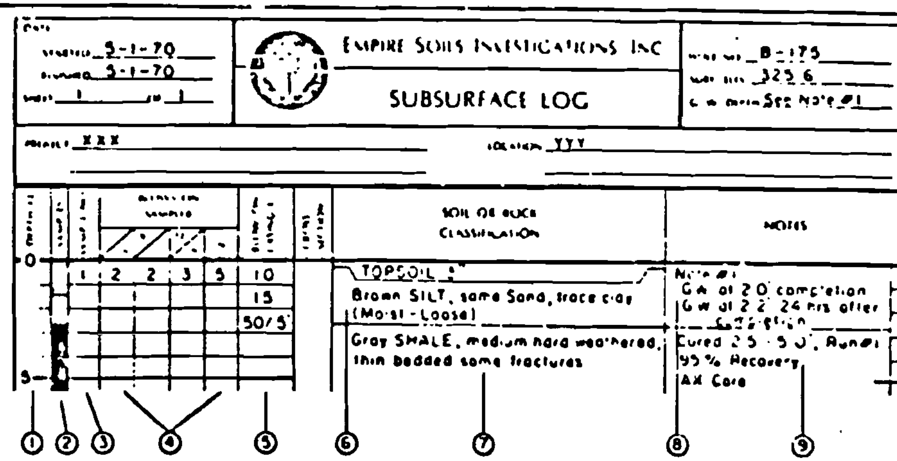


TABLE I

Symbol	Sample
▨	Split Spoon Sample
▮	Shelby Tube Sample
⇕	Auger or Pit Sample
■	Rock Core

TABLE II

Identification of soil type is made on basis of an estimate of particle sizes, and in the case of fine grained soils also on basis of plasticity

Soil Type	Soil Particle Size	
Boulder	>12"	
Cobble	3" – 12"	
Gravel – Coarse	3" – 3/4"	Coarse Grained (Granular)
– Fine	3/4" – #4	
Sand – Coarse	#4 – #10	
– Medium	#10 – #40	
– Fine	#40 – #200	
Silt – Non Plastic (Granular) / Clay – Plastic (Cohesive)	< #200	Fine Grained

TABLE III

The following terms are used in classifying soils consisting of mixtures of two or more soil types. The estimate is based on weight of total sample

Term	Percent of Total Sample
"and"	35 – 50
"some"	20 – 35
"little"	10 – 20
"trace"	less than 10

(When sampling gravelly soils with a standard two-inch split spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter.)

TABLE IV

The relative compactness or consistency is described in accord with the following terms

Granular Soils: Term	Blows per Foot, N	Cohesive Soils: Term	Blows per Foot, N
Loose	< 10	Very Soft	< 2
Firm	11 – 30	Soft	3 – 5
Compact	31 – 50	Medium	6 – 15
Very Compact	> 51	Stiff	16 – 25
		Hard	> 26

(Large particles in the soil will often significantly influence the blows per foot recorded during the Penetration Test)

TABLE V

Varved –	Alternating layers, seams, and partings of each
Layer –	Soil deposit more than 6" thick
Seam –	Soil deposit less than 6" thick
Parting –	Soil deposit less than 1/8" thick
Uniform –	All grains are of about the same diameter

TABLE VI

Rock Classification Terms

Term		Meaning
Hardness	Soft	Scratched by fingernail
	Medium Hard	Scratched easily by penknife
	Hard	Scratched with difficulty by penknife
	Very Hard	Cannot be scratched by penknife
Weathering	Very Weathered	Judged from the relative amounts of disintegrating, iron staining, core recovery, clay seams, etc
	Weathered	
	Sound	
Bedding	Laminated	Natural breaks in Rock Layers: < 1"
	Thin bedded	1" – 4"
	Bedded	4" – 12"
	Thick bedded	12" – 36"
	Massive	> 36"

(Fracturing refers to natural breaks in the rock oriented at some angle to the rock layers)

DS-12

APPENDIX B

SOILS ANALYSES

1-7

EMPIRE SOILS INVESTIGATIONS, INC.

MAIN OFFICE ☐ 607 898-5881 105 Corona Avenue Groton, N.Y. 13073

BUFFALO OFFICE ☐ 716-649-8110 P.O. Box 229 Orchard Park, N.Y. 14127

ROCHESTER OFFICE ☐ 716-342-5320 1164 Ridge Road East Rochester, N.Y. 14621

SYRACUSE OFFICE ☐ 315-475-0717 6309 Jarden Road E. Syracuse, N.Y. 13057

ALBANY OFFICE X 518 783-1555 8 Northway Lane Latham, N.Y. 12110

WASHINGTON OFFICE ☐ 202 423 2900 4400 Stamo Road Temple Hills, Md 20031

TRANSMITTAL

DATE May 19, 1980

NAME Residuals Management Technology, Inc.

ADDRESS 1406 E. Washington Avenue, Suite 122

Madison, Wisconsin 53703

ATTENTION OF: Ms. Marjory Rinaldo-Lee

RE: Bendix Co. Landfill JOB NO.: AD-80-1

Green Island, NY

WE ARE SENDING YOU: (X) Herewith ( ) Under Separate Cover

(X) Report ( ) Subsurface Logs ( ) Brochures

( ) Drawings ( ) Samples ( )

No. Copies	Title or Description
2	Grain Size Analysis including Hydrometer Analysis
1	Invoice #151 for laboratory testing work enclosed.

THESE ARE: ( ) For Your Information (X) Per Your Request ( ) Other

REMARKS:

SENT BY:

(X) First Class Mail
( ) Certified Mail # _____
( ) United Parcel Service
( ) Messenger
( ) _____

Very truly yours,

EMPIRE SOILS INVESTIGATIONS, INC.

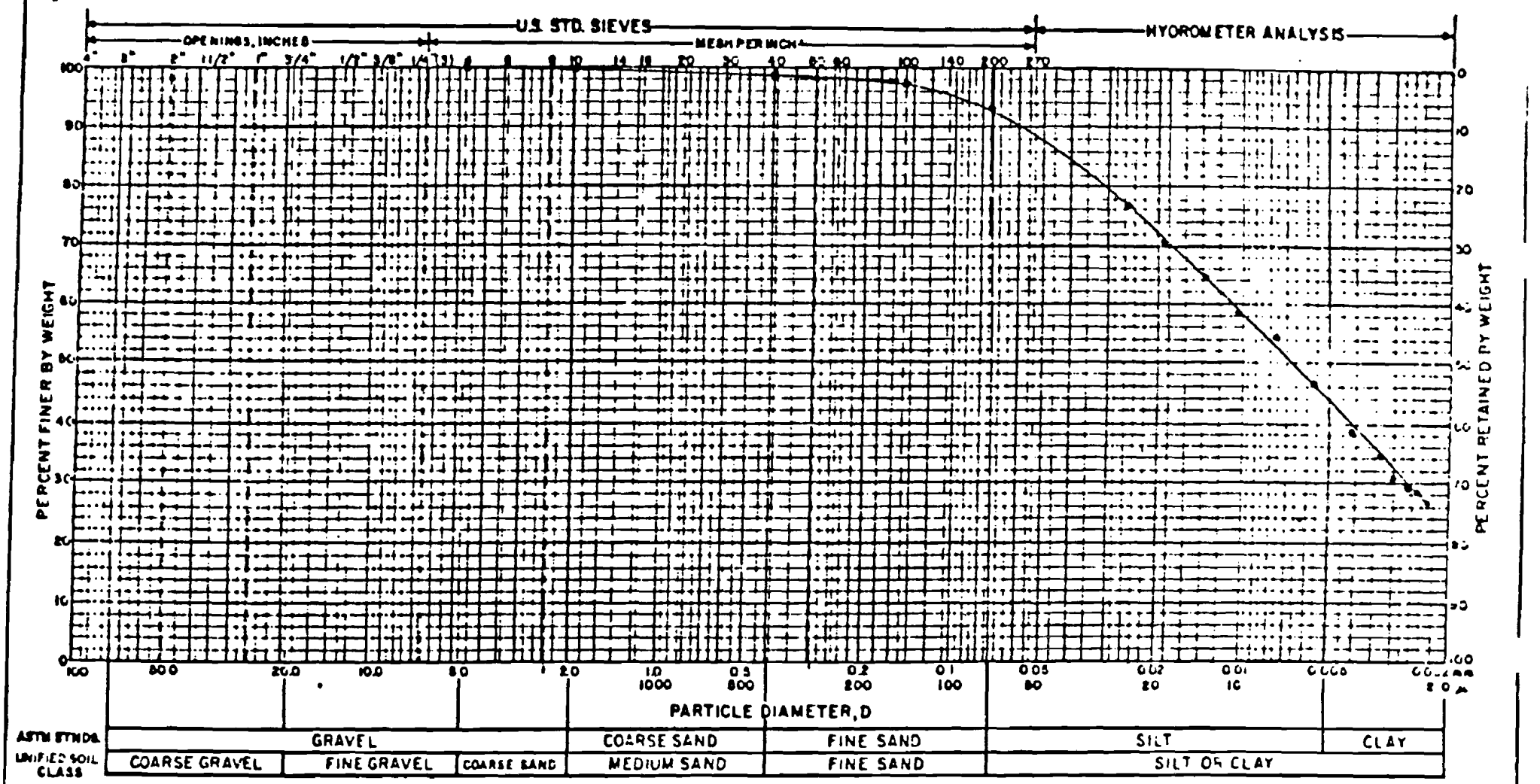
BY: _____

Fred A. Dente, C.E.

A-004

AN EQUAL OPPORTUNITY EMPLOYER

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION Boring No. 1, Sample #3, Depth 6.0 - 8.0'

Brown SILT & CLAY, trace sand

NOTE VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOGS ARE BASED ON THE U.S.D.A. SOILS TEXTURAL SYSTEM

EMPIRE SOILS INVESTIGATIONS, INC.

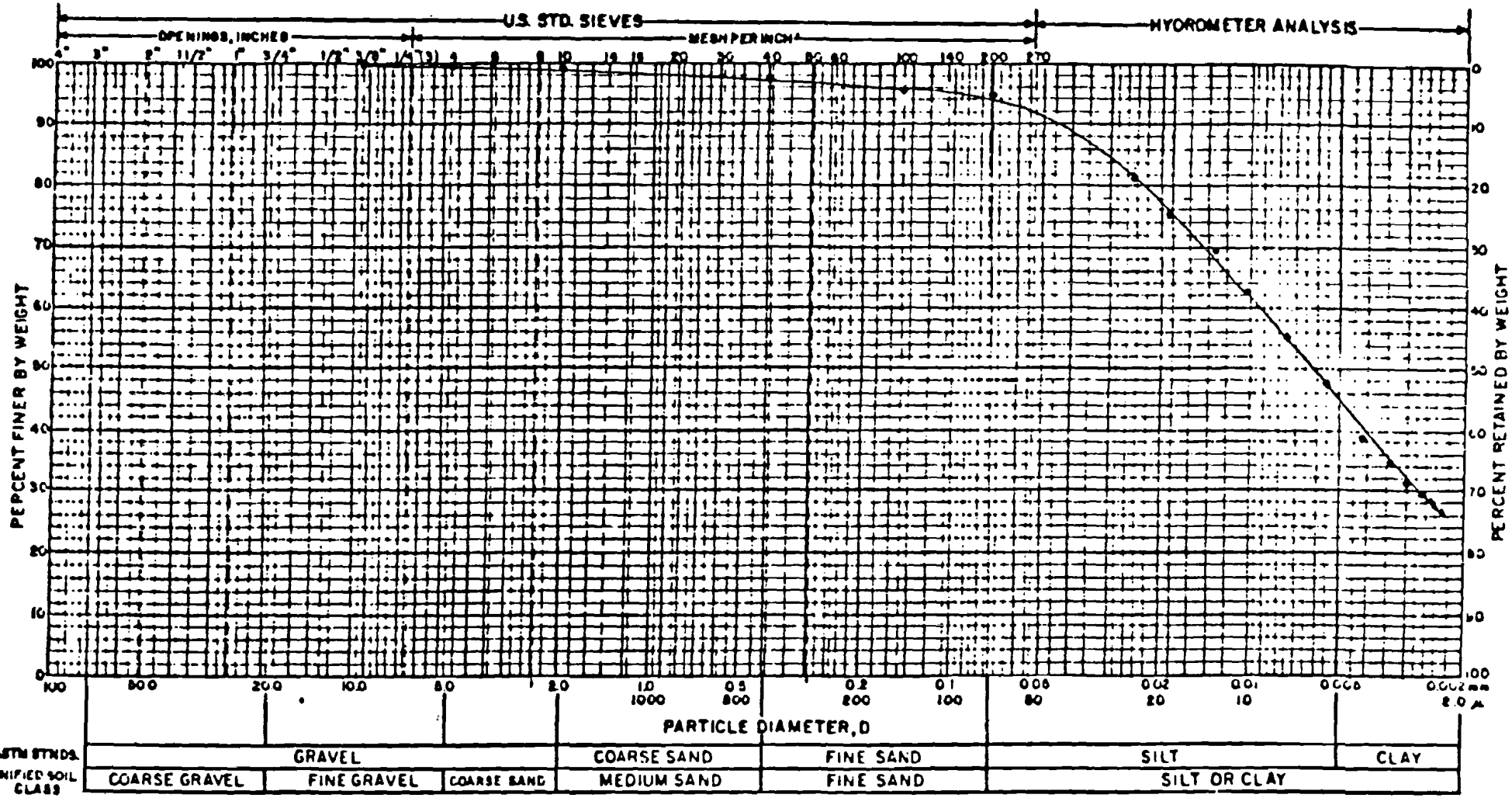
MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

BY DP | CHK'D EAD | DATE 5/13/80 | PROJ NO AD-80-1

1-7d

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION: Boring No. 2, Sample #7, Depth 20.0 - 22.0'

Brown SILT & CLAY, trace sand

NOTE VISUAL MC CLASSIFICATIONS ON E & I SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM

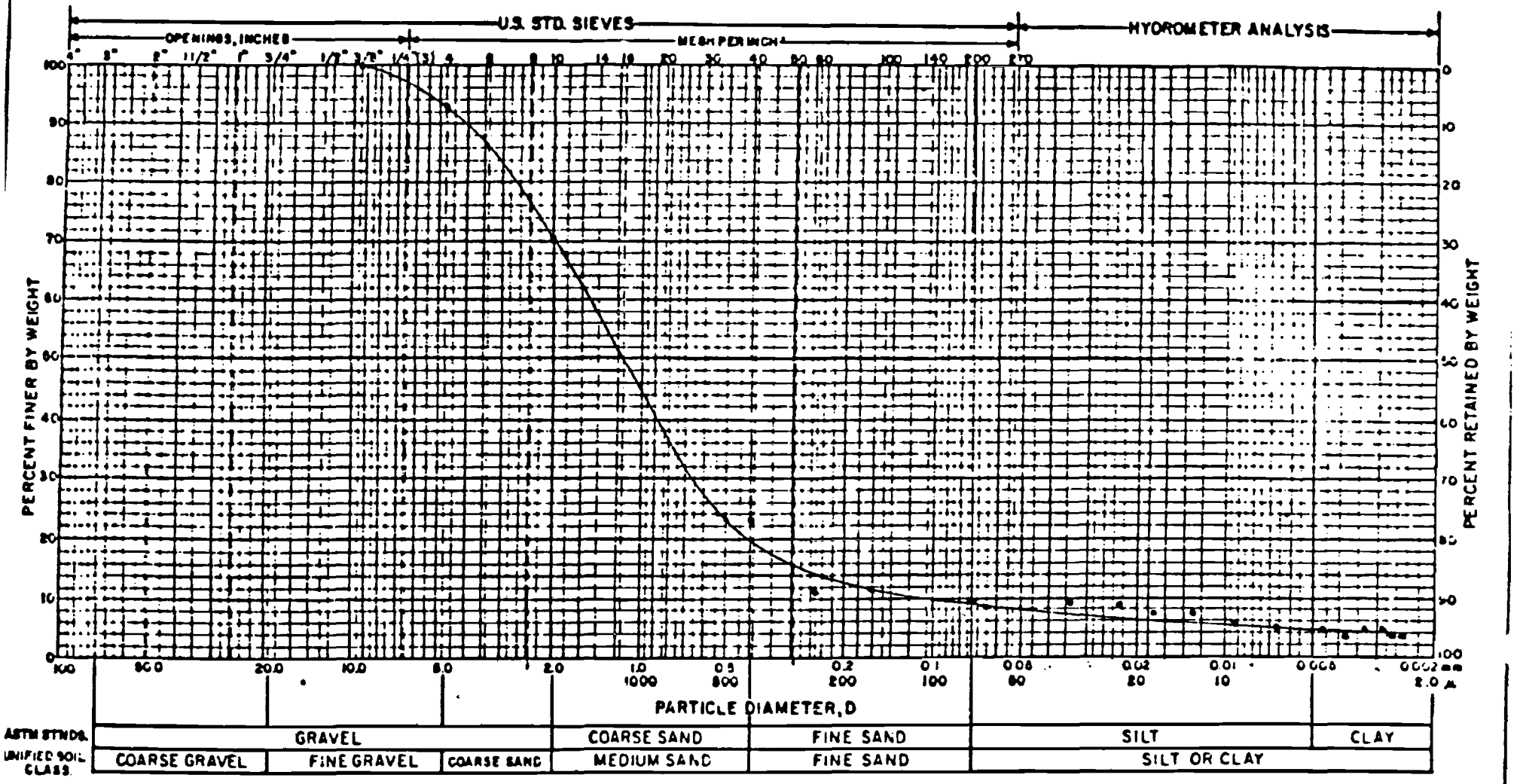
EMPIRE SOILS INVESTIGATIONS, INC.

MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

DP | FAD | DATE 5/13/80 | PROJ NO AD-80-1

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION: Boring No. 2, Sample #9, Depth 24.0 - 26.0'

Brown SAND, little gravel, trace silt, trace clay

NOTE VISUAL [illegible] ASSIFICATIONS ON E & I SUBSURFACE LOGS

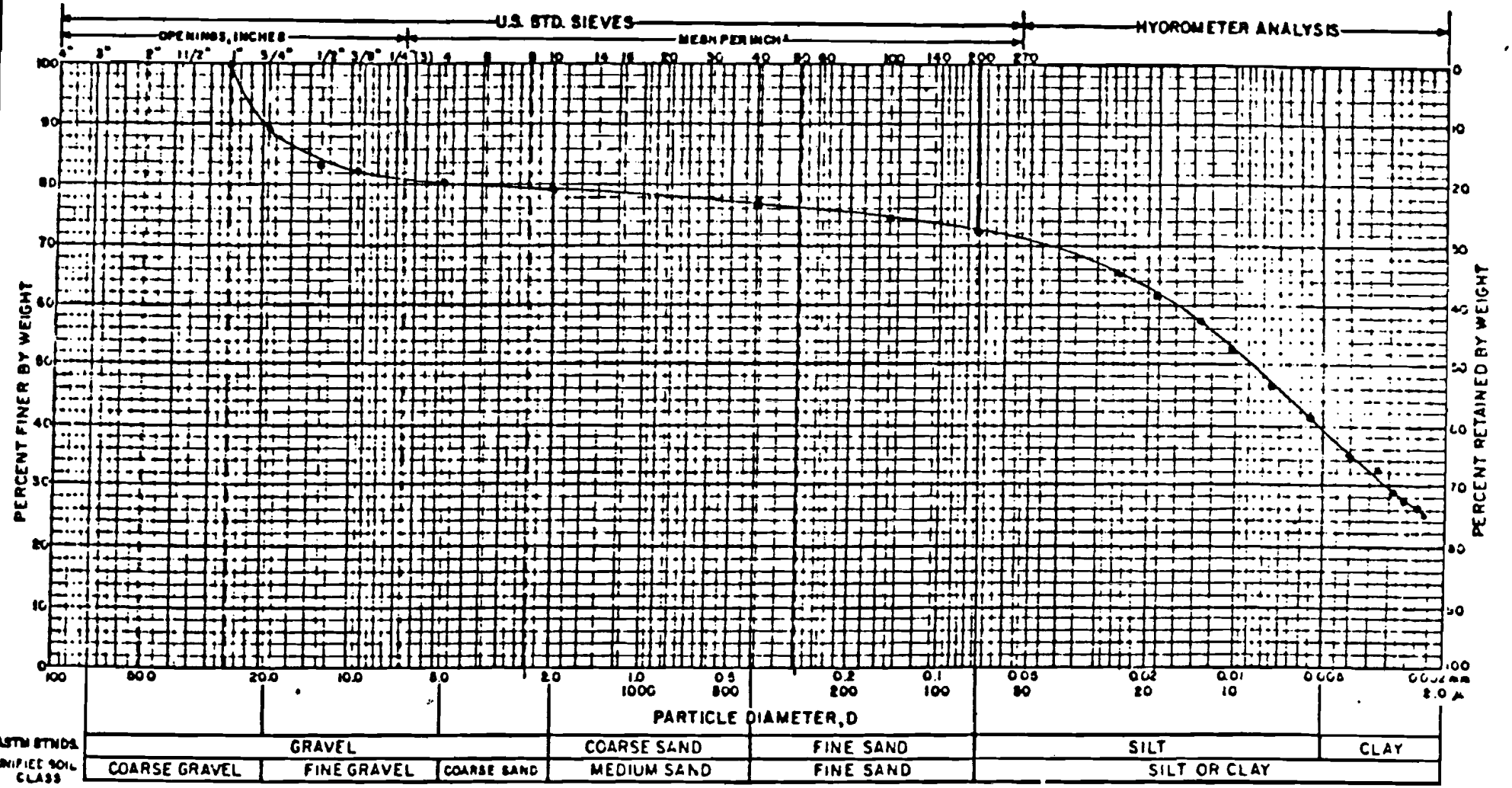
EMPIRE SOILS INVESTIGATIONS, INC.

MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

BY DP | CK'D FAD | DATE: 5/13/80 | PROJ NO AD-80-1

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION: Boring #3, Sample #4, Depth 9.0 - 11.0' (TOP)

Brown CLAY & SILT, little gravel, trace sand

NOTE VISUAL SOIL CLASSIFICATIONS ON E & I SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM

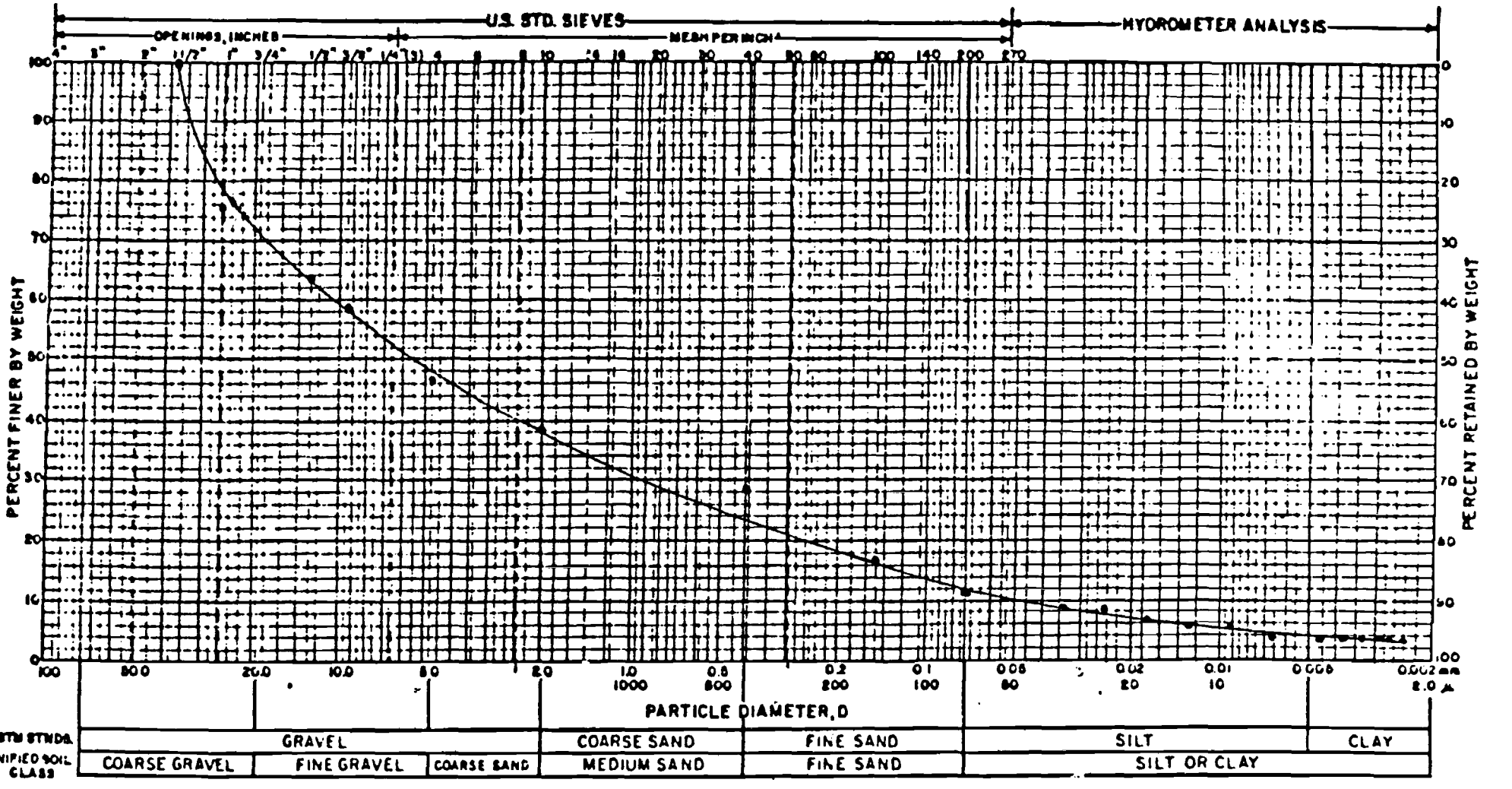
EMPIRE SOILS INVESTIGATIONS, INC.

MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

DR BY: DP | CK'D: FAD | DATE: 5/13/80 | PROJ NO: AD-80-1

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION: Boring #3, Sample #4, Depth 9.0 - 11.0' (BOTTOM)

Brown GRAVEL, Some Sand, little silt & clay

NOTE: VISUAL CLASSIFICATIONS ON E & I SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM

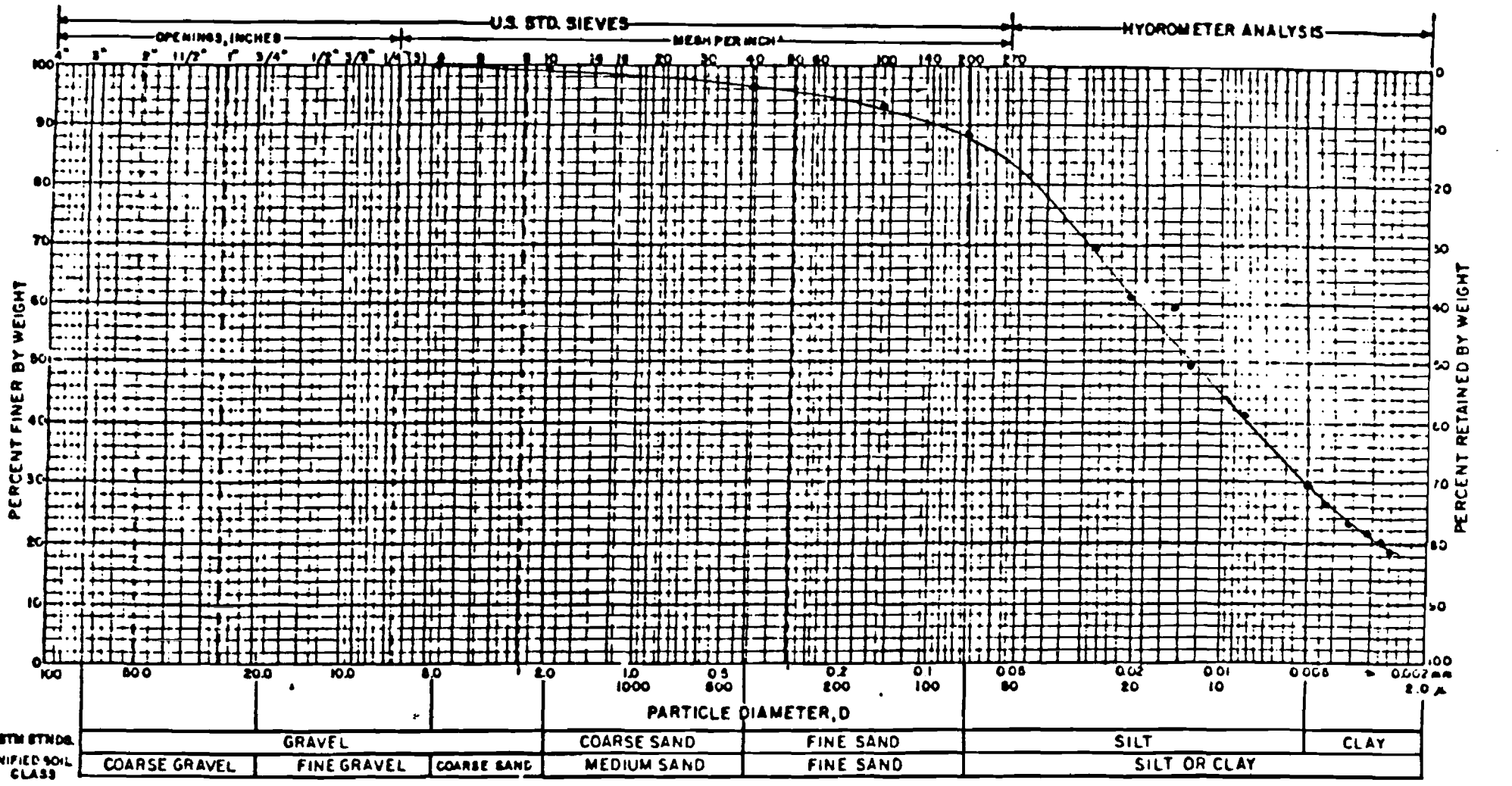
EMPIRE SOILS INVESTIGATIONS, INC.

MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

BY	CK'D	DATE	PROJ NO
DP	FAD	5/13/80	AD-80-1

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION: Boring No. 4, Sample #8, Top, Depth 22.0 - 24.0'

Brown SILT, Some Clay, little sand

NOTE VISUAL SOIL CLASSIFICATIONS ON E.S.I. SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM

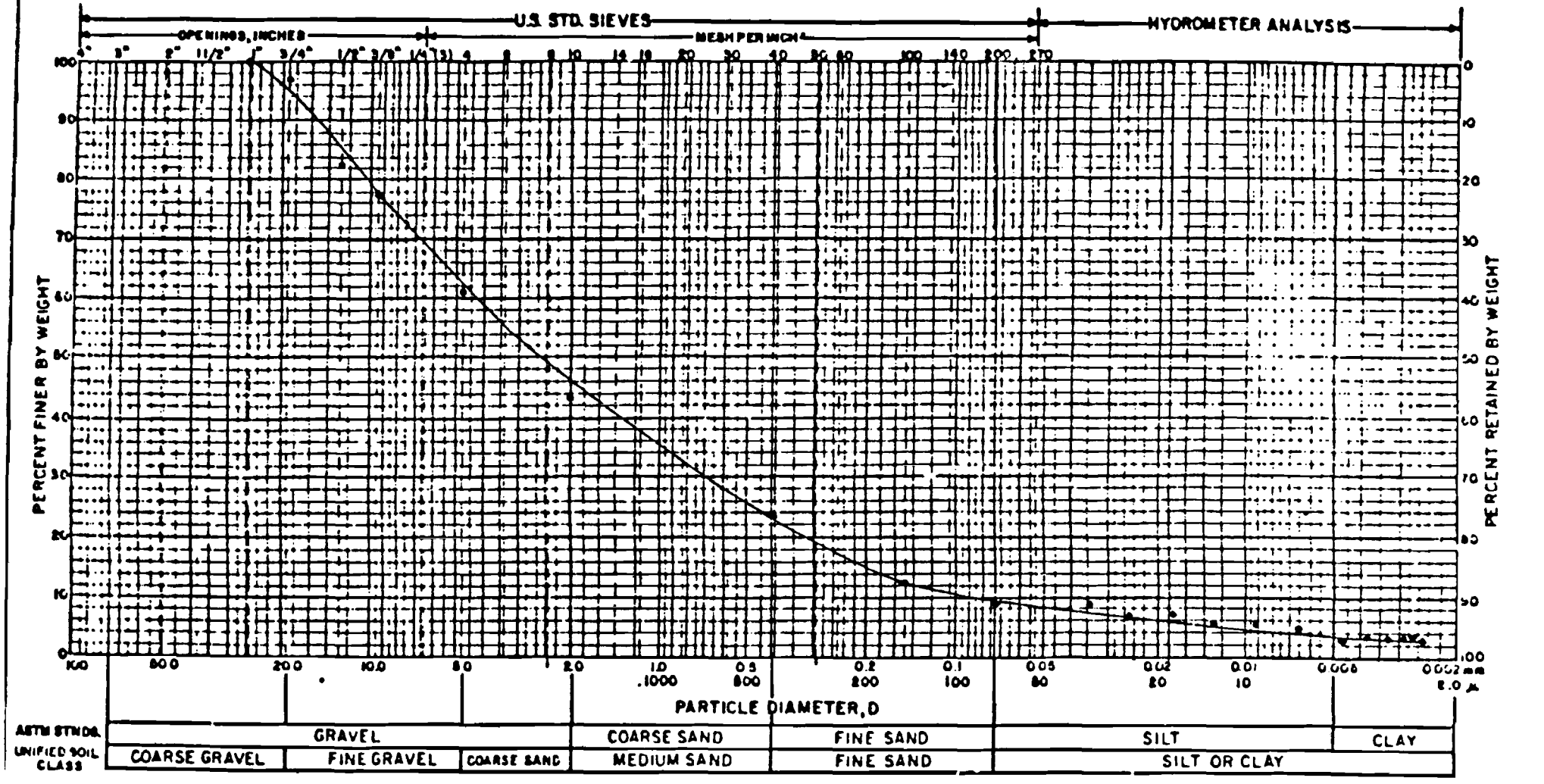
EMPIRE SOILS INVESTIGATIONS, INC.

MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

BY DP | CK'D FAD | DATE 5/13/80 | PROJ NO AD-80-1

GRAIN SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION Boring No. 5, Sample #9, Depth 19.0 - 21.0'

Brown GRAVEL & SAND, trace silt, trace clay

NOTE: VISUAL SOIL CLASSIFICATIONS ON E & I SUBSURFACE LOGS ARE BASED ON THE UNIFIED SOIL CLASSIFICATION SYSTEM

EMPIRE SOILS INVESTIGATIONS, INC.

MECHANICAL ANALYSIS

Bendix Co. Landfill
Residuals Management Technology, Inc.

DR BY: DP | CK'D: FAD | DATE: 5/13/80 | PROJ NO: AD-80-1

APPENDIX C

GROUND WATER ELEVATIONS

STATION #	REFERENCE ELEVATION	4/9	4/16	4/23	4/30	5/6	5/28	7/7
1	23.95	19.4	19.6	19.39	19.26	19.13	18.59	18.66
2	38.99	19.13	19.34	19.03	19.03	18.87	18.37	18.62
3	24.66	19.63	20.01	19.49	19.46	19.09	18.24	18.33
4	40.93	20.56	20.73	20.50	20.43	20.11	19.70	20.01
5	39.16	20.58	20.72	20.70	20.48	18.68	19.07	19.49
SG1	921.7							
SG2	922.3							
SG3	921.9							<19.20

Datum: mean sea level

APPENDIX D

WELL CONSTRUCTION DATA

SUMMARY OF WELL CONSTRUCTION DATA

WELL #	TOP CASING ELEVATION	TOP OF UPPER BENTONITE SEAL/ GROUND SURFACE	BOTTOM OF UPPER BENTONITE SEAL ELEVATION	TOP OF LOWER BENTONITE SEAL ELEVATION	BOTTOM OF LOWER BENTONITE SEAL ELEVATION	TOP OF WELL POINT ELEVATION	BOTTOM OF WELL POINT ELEVATION	BOTTOM OF BORING ELEVATION	BOTTOM OF GRAVEL PACK	TOP OF LOWEST BENTONITE SEAL	BOTTOM OF LOWEST BENTONITE SEAL
1	23.95	22.0	20.0	---	---	18.8	13.8	12.5	12.5	---	---
2	38.99	37.0	35.0	18.0	17.0	13.4	8.4	7.7	8	---	---
3	24.66	22.3	20.3	---	---	14.3	9.3	8.1	8.1	---	---
4	40.93	38.5	36.5	---	---	17.5	12.5	11.8	11.8	---	---
5	39.16	37.8	35.8	---	---	17.5	12.5	8.8	8.8	---	---

APPENDIX E

HYDRAULIC CONDUCTIVITY RESULTS

WELL	HYDRAULIC CONDUCTIVITY
B2	3×10^{-3}cm/sec
B3	1×10^{-4}cm/sec
B4	5×10^{-5}cm/sec

All tests were run according to Bouwer and Rice (1976)

APPENDIX F

PROCEDURE FOR LEACHING TEST

I-56

RMT RESIDUALS MANAGEMENT TECHNOLOGY, INC.
1406 EAST WASHINGTON AVENUE • SUITE 122
MADISON, WISCONSIN 53703 • 608-255-2134

March 21, 1980

Mr. Thomas Putkey, Ph.D.
Director of Chemistry
Hazelton Environmental Sciences Corporation
1500 Frontage Road
Northbrook, IL 60062

Dear Mr. Putkey:

As we discussed on the telephone today, I would like to have three samples of waste from a landfill subjected to the EP (Extraction Procedure) using distilled water to estimate their leaching potential. The EP test is the method proposed by the EPA in the December 18, 1978 Federal Register to determine the toxicity of wastes. Since the wastes are non-homogeneous it may be difficult to select a representative sample of the waste to subject to the test. Generally, the wastes have some large pieces of brake linings and dusts. I would like some of each type of waste, dusts, brake linings, and pieces of metal included in the test.

The EP specifies analyzing the filtrate after one shaking period. However, I would like this procedure repeated two times so there are a total of three extracts analyzed. Following the initial extract, the solids should be returned to the flask and deionized or distilled water added and the procedure repeated. The parameters to be analyzed in the extract are listed in the attached table. In the first extraction of each waste, all the parameters will be analyzed. If the concentration of some of the parameters is below the listed criteria, the parameter will not be analyzed in the succeeding extracts. However, the parameters with an asterisk on the list will be analyzed in all three extracts. The third extract will have the parameters with an asterisk analyzed and those parameters that were above the listed criteria in the second extract.

I will send you a purchase order for this work after I receive an estimate from you on the testing costs. If you have any questions about the testing, please call me at 608-255-2134.

Very truly yours,

Marjory B. Rinaldo-Lee

Marjory B. Rinaldo-Lee
Hydrogeologist

MRL:cc
Enc.

PARAMETER	CRITERIA	
Arsenic	0.05	mg/l
Barium	1.0	mg/l
Cadmium	0.01	mg/l
Chromium	0.05	mg/l
Copper	1.0	mg/l
Iron	0.3	mg/l
Lead	0.05	mg/l
Manganese	0.05	mg/l
Mercury	0.002	mg/l
Selenium	0.01	mg/l
Silver	0.05	mg/l
Zinc	.5	mg/l
Nitrate (N)	1	mg/l
Sulfate	10	mg/l
Chloride	10	mg/l
Fluoride	1	mg/l
TDS	*	
Total Alkalinity	*	
Total Hardness	*	
Phenol	*	
TOC	*	
pH	*	

*This parameter will be analyzed in every elution.

APPENDIX G

RESULTS FROM LEACHING TESTS

I-59

MAY 12 1980

HAZLETON
ENVIRONMENTAL SCIENCES CORPORATION
1500 FRONTAGE ROAD, NORTHBROOK, ILLINOIS 60062, U.S.A.

May 8, 1980

Ms. Marjory B. Rinaldo-Lee
Residuals Management Technology, Inc.
Suite 122, Washington Square
1406 West Washington Avenue
Madison, Wisconsin 53703

Dear Ms. Rinaldo-Lee:

Enclosed are the results of the analyses of water extracts obtained from solid waste materials submitted to Hazleton Environmental Sciences on March 26, 1980. The extraction procedures utilized and the parameters measured from the extracts were in accordance with your letter of March 21, 1980. A bill for this work will follow under separate cover.

Hazleton Environmental Sciences has been pleased to perform these analytical services for you. If you have further need for analytical work, we would like to be of service. Please feel free to call on me should you have any questions regarding the data or the analytical methodologies used.

Sincerely,

Robert N. Bucaro

ROBERT N. BUCARO
Group Leader, Chemistry

RNB:nmc
Enclosures

PHONE (312) 564-0700 ◻ TELEX 28-9483 (HAZES NBRK)

Table 1. Results of the chemical analyses of the first water extracts from solid wastes, Residuals Management Technology, Inc., March 26, 1980.

Sample Number	Pit 1	Pit 3	Pit 4
Arsenic (mg/l)	0.025	0.005	<0.001
Barium (mg/l)	0.2	0.1	0.1
Cadmium (mg/l)	<0.01	<0.01	<0.01
Chromium (mg/l)	0.003	0.002	0.022
Copper (mg/l)	0.007	0.014	1.4
Iron (mg/l)	0.005	0.006	1.0
Lead (mg/l)	<0.05	0.06	0.033
Manganese (mg/l)	0.008	0.007	0.045
Mercury (mg/l)	<0.0002	<0.0002	<0.0002
Selenium (mg/l)	0.029	0.019	0.036
Silver (mg/l)	<0.05	<0.05	<0.05
Zinc (mg/l)	0.011	0.015	0.11
Nitrate-N (mg/l)	0.25	0.37	0.37
Sulfate (mg/l)	53	110	25
Chloride (mg/l)	<5	<5	<5
Fluoride (mg/l)	<0.01	0.10	<0.01
TDS (mg/l)	218	300	146
Alkalinity, total (mg/l $CaCO_3$)	99	130	94
Hardness, total (mg/l $CaCO_3$)	170	270	150
Phenol (mg/l)	0.012	0.008	0.014
TOC (mg/l)	3.7	1.3	4.4
pH (units)	9.2	8.8	8.5

Table 2. Results of the chemical analyses of the second water extracts from solid wastes, Residuals Management Technology, Inc., March 26, 1980.

Sample Number	Pit 1	Pit 3	Pit 4
Copper (mg/l)	-	-	0.026
Iron (mg/l)	-	-	0.003
Lead (mg/l)	-	<0.05	<0.05
Selenium (mg/l)	0.021	0.019	0.033
Sulfate (mg/l)	<10	<10	<10
TDS (mg/l)	66	134	104
Alkalinity, total (mg/l $CaCO_3$)	48	0	0
Hardness, total (mg/l $CaCO_3$)	67	86	66
Phenol (mg/l)	0.007	0.013	0.014
TOC (mg/l)	1.4	0.44	2.4
pH (units)	8.0	3.0	2.9

1-62

Table 3. Results of the chemical analyses of the third water extracts from solid wastes, Residuals Management Technology, Inc., March 26, 1980.

Sample Number	Pit 1	Pit 3	Pit 4
Selenium (mg/l)	0.003	0.012	0.024
TDS (mg/l)	58	92	82
Alkalinity, total (mg/l $CaCO_3$)	44	0	0
Hardness, total (mg/l $CaCO_3$)	52	65	53
Phenol (mg/l)	0.006	0.002	0.013
TOC (mg/l)	0.58	0.29	1.8
pH (units)	8.2	2.8	2.8

APPENDIX H

RESULTS FROM WATER QUALITY ANALYSIS

May 30, 1980

Reference: PO #335

Subject: Analysis of Water

RESIDUALS MANAGEMENT TECHNOLOGY, INC.
1406 Washington Avenue
Suite 122
Madison, Wisconsin 53703

Attention: Ms. Marjory B. Rinaldo-Lee

Dear Ms. Rinaldo-Lee:

The following results were obtained when your samples, received on May 7, 1980, were analyzed following procedures outlined in the 14th Edition of "Standard Methods".

	Results, mg/l except pH					
Parameter	SW-1	SW-2	B-1	B-2	B-3	B-5
pH	7.6	7.7	8.1	7.4	8.2	7.9
Barium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Copper	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Iron	0.25	0.25	0.85	25	0.45	0.20
Zinc	0.01	<0.01	0.08	0.03	0.01	0.03
Chloride	38	24	127	750	260	70
Total Dissolved Solids	280	277	1850	4000	2080	363
Total Alkalinity, as $CaCO_3$, to pH 4.5	102	121	1460	1560	1590	150
Hardness, as $CaCO_3$	188	170	1630	3130	1750	272
Phenols	0.005	0.010	0.020	0.012	0.042	0.016
Total Organic Carbon	12	13	120	120	110	9

RESIDUALS MANAGEMENT TECH., INC.
Ref: PO #335

Sample B-4

Parameter	Result, mg/l except as noted
pH	8.3
Barium	< 0.5
Copper	< 0.1
Iron	0.35
Zinc	0.02
Chloride	550
Total Dissolved Solids	3260
Total Alkalinity, mg/l as $CaCO_3$, to pH 4.5	1800
Hardness, as $CaCO_3$	2400
Phenols	77.0
TOC	280
Arsenic	< 0.01
Cadmium	< 0.01
Chromium	< 0.05
Lead	0.15
Manganese	0.08
Mercury	< 0.001
Selenium	< 0.006
Silver	< 0.01
Nitrate, as N	0.02
Sulfate, as SO_4	450
Fluoride	0.1
Color Pt-Co Std.	> 70
Threshold odor	none detected

Sincerely,

Alison E. Carter

Alison E. Carter, Ph.D.
Laboratory Supervisor
Measurement Services Division

Approved

M. Kawahata, Ph.D.
Manager
Measurement Services Division

538-1080.

environment one
CORPORATION

1-66

JUN 23 1980

PROTECTING MAN'S ENVIRONMENT

MSD-3476-80

June 20, 1980

Reference: PO #0153

Subject: Analytical Results

RESIDUALS MANAGEMENT TECHNOLOGY, INC.
1406 East Washington Avenue
Suite 122
Madison, Wis. 53703

Attention: Ms. Marjory B. Rinaldo-Lee

Dear Ms. Rinaldo-Lee:

The following results were obtained when your samples, received on May 29, 1980, were analyzed following procedures outlined in the 14th Edition of "Standard Methods".

	Results, mg/l except as noted.					
Parameter	SW - 1	SW - 2	B - 1	B - 2	B - 3	B - 5
pH su	7.8	7.6	8.0	7.2	8.0	7.6
Aklalinity, as $CaCO_3$, pH 4.5	144	135	1660	1510	1020	104
Total Dissolved Solids	395	320	2360	3980	1460	719
Total Phenols	<0.004	4.25	2.35	0.006	0.045	0.011
Hardness, as $CaCO_3$	200	196	2160	3280	1320	495
Iron	0.20	0.20	0.10	12.5	<0.1	0.25
Lead	<0.1	<0.1	0.55	0.20	<0.1	<0.1
Manganese	0.02	0.03	0.59	1.5	0.40	3.7
Zinc	<0.01	<0.01	0.15	0.03	0.02	<0.01
Chloride	32	28	140	833	160	54

2773 BALLTOWN ROAD P.O. BOX 773 SCHENECTADY, NEW YORK 12301 TELEPHONE 518 346 6161

Sample B-4

Parameter	Result, mg/l except as noted
pH	8.0
Alkalinity, as $CaCO_3$ pH 4.5	1920
Color, Pt-Co. visual	>70
Odor, threshold	35
Total Dissolved Solids	3410
Chloride	550
Fluoride	0.17
Sulfate, as SO_4	515
Nitrate, as N	<0.02
Total phenols	55.0
Hardness, as $CaCO_3$	2660
Arsenic	<0.01
Barium	<0.01
Cadmium	<0.01
Chromium	<0.05
Copper	<0.1
Iron	0.25
Lead	0.20
Manganese	0.05
Mercury	0.001
Selenium	0.006
Silver	<0.01
Zinc	0.03

Replacement part on order for TOC analyzer. Results will follow.

GC/MS still inoperative.

Sincerely,

Alison E. Carter (nop)

Alison E. Carter, Ph.D.
Laboratory Supervisor
Measurement Services Division

Approved M. Kawahata (3/6)

M. Kawahata, Ph.D.
Manager
Measurement Services Division

558-1080.0

APPENDIX I

ASBESTOS ANALYSIS

1-67

JUN 27 1980

UNIVERSITY OF MINNESOTA
DULUTH

Lake Superior Basin Studies Center
Duluth, Minnesota 55812

June 25, 1980

Ms. Marjory Rinaldo-Lee
Residuals Management Technology, Inc.
1406 East Washington Avenue
Suite 122
Madison, Wisconsin 53703

Dear Ms. Rinaldo-Lee:

The enclosed report covers the electron microscope results for the two samples we received from you dated 5-7-80.

Also enclosed are computer analysis output data for each sample. This data should give additional information useful in characterizing the samples.

The analysis on the second set of samples is continuing on schedule. Preliminary results indicate that:

SW-1 contains bundles of large chrysotile fibers.

SW-2 contains moderately sized chrysotile fibers

Leachate is similar to the 5-7-80 sample

After reviewing the data, please inform me of any questions or additions you may have.

Sincerely,

David R. Marklund, Supervisor
Environmental Services Laboratory
Lake Superior Basin Studies Center

Water Sample Analysis for Asbestos Mineral Fiber Identification

by
David R. Marklund
Sarah W. Kohlbry
Environmental Services Laboratory
Lake Superior Basin Studies Center
University of Minnesota-Duluth
Duluth, MN 55812

for
Residuals Management Technology, Inc.
1406 East Washington Avenue
Suite 122
Madison, Wisconsin 53703

Introduction

The two water samples received from you labeled Leachate and SW-1 and dated 5-7-80 have been analyzed by Transmission Electron Microscopy for their mineral fiber content.

Methods

To eliminate contamination from tracer minerals, preparation is carried out in a particle free environment. As an additional measure, blanks are employed to monitor background levels of contamination.

Due to the high turbidities, small volumes of each sample were analyzed (Table 1). Sample turbidities are taken to determine the volume of sample to be filtered for analysis. Because excessive debris increases the possibility of interference in obtaining distinctive electron diffraction patterns, small representative volumes assure that fiber identification is not interfered with.

The transmission electron miscroscope analysis of the samples and blanks (Table II) is accomplished by systematically scanning all the fields of view (at 10,000X) present in a representative number of grid squares per sample. The length and width of each inorganic particle with an aspect ratio greater than or equal to 3:1 is measured and classified according to the selected area electron diffraction identification (SAD). Higher magnification is used for detailed observation of fiber morphology.

Fibers are counted as amphibole, non-amphibole, or chrysotile only if a distinct characteristic electron diffraction is obtained. In cases where fibers cannot be identified due to interfering debris or indistinguisable diffraction patterns, they are classified as ambiguous. Fibers which give no diffraction pattern are recorded as No SAD. The majority of particles in this classification are organic in nature.

Energy dispersive X-Ray analysis is used to determine the elemental composition of the various particles. This analysis is used for (SAD) varification and particle species identification.

Fiber concentrations are calculated as the number of fibers per liter. In computing fiber concentration, a laboratory background concentration representing the level observed in the corresponding sample blank is established using the concentration factors of the individual water samples.

Results

The Leachate sample is comprised of a great deal of blocky mineral and organic debris. This correlates with the high sample turbidity. The fibrous material is almost entirely non-amphibole or ambiguous. The number of ambigous particles is due to the complex nature of the minerals and the interference from debris material. A few chrysotile fibers were detected; however, the blank associated with the sample also showed a small number of chrysotile fibers. The detection of chrysotile in the blank is not suprising because of the ubiquitous nature of chrysotile. In establishing a chrysotile concentration it is necessary to consider the fibers found in the blank. The actual chrysotile concentration can be considered at or close to the detection limit. The detection limit is the ability to find 1 fiber. Because of the great deal of debris, a small volume is analyzed which gives a high detection limit.

The SW-1 sample contains a small amount of debris material but has many diatoms and diatom fragments. This would explain the high sample turbidity. The fibrous material is nearly all chrysotile. Some of the chrysotile fibers are long and thin resulting in a large average aspect ratio.

Table 1.

Sample Turbidities and Electron Microscope (E.M.) Volumes

Sample	Collection date	Turbidity (NTU)	Volume (ml)
SW-1	5-7-80	17.0	1.0
Leachate	5-7-80	93.0	0.5

Table II.

Sample Fiber Concentrations (Fibers/Liter)

Sample	Amphibole	Non-Amphibole	Chrysotile	Total
SW-1	$2.02 \times 10^{7*}$	$< 2.02 \times 10^{7*}$	2.79×10^{9}	3.33×10^{9}
Leachate	$2.02 \times 10^{7*}$	2.20×10^{9}	1.01×10^{8}	4.33×10^{9}

* Detection Limit

Table III.

Sample Fiber Numbers

Sample	Amphibole	Non-Amphibole	Chrysotile	Ambiguous	NoSAD	Total
SW-1	1	0	137	23	4	165
Leachate	1	109	5	95	4	214
Blanks						
SW-1	0	0	0	3	0	3
Leachate	0	1	2	2	0	5

Ref 2

STATE OF NEW YORK

DEPARTMENT OF CONSERVATION

WATER POWER AND CONTROL COMMISSION

THE GROUND-WATER RESOURCES OF ALBANY COUNTY, NEW YORK

By

THEODORE ARNOW

Prepared by the

U. S. GEOLOGICAL SURVEY IN COOPERATION WITH THE WATER POWER AND CONTROL COMMISSION

BULLETIN GW-20

ALBANY, N. Y.

1949

for Switz Kill and Fox Creek, which form part of the Mohawk drainage, all the larger streams flow in a southeasterly direction toward the Hudson River. The only large natural lakes in Albany County are in the Helderberg area. There are five small lakes, averaging about an eighth of a square mile in area, near Rensselaerville, and farther north are two lakes about a quarter of a square mile in area. One of the latter, Thompsons Lake, lies in a sinkhole in the Onondaga limestone[2] and is an outstanding example of the karst topography that has been developed over some of the limestone terrane in this region. The largest bodies of water in the county are the Alcove Reservoir and Basic Creek Reservoir, near the Greene County boundary. Together they cover over 2½ square miles and constitute part of the water supply of the city of Albany.

The younger peneplain stretches from the Helderberg escarpment east to the Hudson River. At its southern extremity, near Ravena, the plain is narrow and attains a maximum altitude of about 200 feet above sea level. Extending northward the plain broadens, the altitude increases, and in the northeastern and northwestern parts of the county is as much as 400 feet above sea level. The underlying bedrock consists of Ordovician sandstones and shales, which are flat lying in the west but greatly disturbed toward the east. As the whole area, however, has been thickly covered by glacial deposits, most of which were laid down in standing lake waters, the region presents a generally flat, uniform appearance. This flatland has been dissected by several southeast-flowing tributaries of the Hudson River. The most important of these are Normans Kill, Onesquethaw Creek, Coeymans Creek, and Vlaanman Kill. The only large body of water in this area is a reservoir which covers almost half a square mile and is used as a source of supply by the city of Watervliet.

East of the younger peneplain, bounded by steep clay banks rising over 100 feet, lies the valley of the Hudson River. The present stream flows over a bed of glacial fill which has buried an old rock gorge formed during pre-Pleistocene time.[3]

The tributaries of the Hudson occupy postglacial channels and have less erosive power. Thus they have not been able to erode their beds to grade level and many of them now reach the Hudson over a series of waterfalls. These falls serve as an excellent source of water power and have influenced the location of some settlements, particularly Cohoes (on the Mohawk River) and Normansville and Kenwood (on the Normans Kill).

CLIMATE

Meterological records have been maintained at the city of Albany since 1795 and they indicate that the mean annual temperature is 48° F. January is the coldest month, with a mean temperature of 24°, and July the warmest, with a mean of 72°. The highest and lowest temperatures recorded were 104° F. on July 4, 1911, and -24° F. on January 5, 1904. The average date of the last killing frost is April 24, and that of the first is October 16.

The mean annual precipitation in the area is 37 inches. It is fairly evenly distributed throughout the year, with the heaviest precipitation occurring during June, July, and August. These months constitute over half of the growing season, which averages 175 days. The greatest annual precipitation recorded is 56.76 inches, in 1871, and the least is 24.58 inches, in 1941. The mean annual snowfall for the area, included in the foregoing annual precipitation figures, is 50 inches, with almost all of it falling during the months of November to April, inclusive. The heaviest snowfall ever recorded, 110.0 inches, occurred during the winter of 1887-88, and the lightest, 13.8 inches, during the winter of 1912-13.

These precipitation records are compiled from observations taken in the City of Albany and are fairly representative of conditions in the eastern part of Albany County, from the Hudson River to the Helderberg escarpment, where the elevation exceeds 400 feet in only a few places. In the western part of the county where altitudes are higher, reaching a maximum of 2,110 feet, and where the topography is rolling and hilly, the temperatures are lower and the precipitation is somewhat greater.

[2] Goldring, Winifred, Guide to the geology of John Boyd Thacher Park (Indian Ladder region) and vicinity: New York State Mus. Handbook 14, p. 31, 1933.

[3] Cook, J. H., Glacial geology of the Capital district: New York State Mus. Bull. 285, p. 188, 1930.
Berkey, C. P., Geology of the New York City aqueduct: New York State Mus. Bull. 146, p. 95, 1911.

2-3

ment are particularly evident in Albany County where fine water-bearing sands are so widespread. Without development these sands yield very little or no water, and in the past drillers have often passed through them in search of water in the rock below.

Springs.—Some ground water in Albany County is recovered from springs. They are all gravity springs of either the contact or the depression type. In the former the water issues through permeable material because an underlying horizon of impermeable or less permeable material prevents further downward percolation. In the depression type, the water flows out of permeable material where the water table intersects the ground surface. Springs are scattered throughout the county and generally are of fifth magnitude,[43] 10 to 100 gallons per minute, or lower. A zone of larger springs, however, is present along the face of the Helderberg cliffs, where soluble limestones are underlain by impervious shale beds. One of these, A 11Sp (table 2), which forms part of the public supply for the town of Voorheesville, has a reported maximum flow of 1,000 gallons per minute. This spring issues through the Rondout limestone at the contact with the underlying impervious Brayman shale. A 12Sp, also part of the Voorheesville supply, issues through a joint plane in the Esopus shale and is reported to yield a maximum of 250 gallons per minute. Both these springs are subject to marked seasonal fluctuation dependent directly upon the amount of rainfall.

Infiltration galleries.—Two infiltration galleries have been constructed in Albany County, one supplying water for Green Island, and the other serving the Bethlehem water district. Basically, an infiltration gallery is a long shallow horizontal well dug into the zone of saturation for the purpose of collecting ground water. The Green Island gallery is 117 feet long, 6.5 feet high, and 6 feet wide at the base. It is situated in a bed of sand and gravel and terminates in a large-diameter shallow dug well. From there the water flows to another dug well from which it is pumped to the filter plant. The gallery is located in the middle of Magills Island and is about 22 feet below the ground surface. It is 12 feet below the normal stage of the Hudson River and approximately 32 feet below river flood level. The large amount of water supplied by the gallery, 250,000 gallons per day, coupled with the relatively small catchment area of the island, indicates that considerable river recharge might be involved.

The gallery serving the Bethlehem Water District is of somewhat different construction. Located at New Salem, across the highway from well A 82, it consists of a 105-foot long concrete wall, packed with gravel and cobblestone, which retains the ground water that seeps from a hillside. The water then flows to a large collecting basin from which it is distributed to the water system. The water from this source serves as an auxiliary to the main supply obtained from wells A 82 and A 83.

UTILIZATION

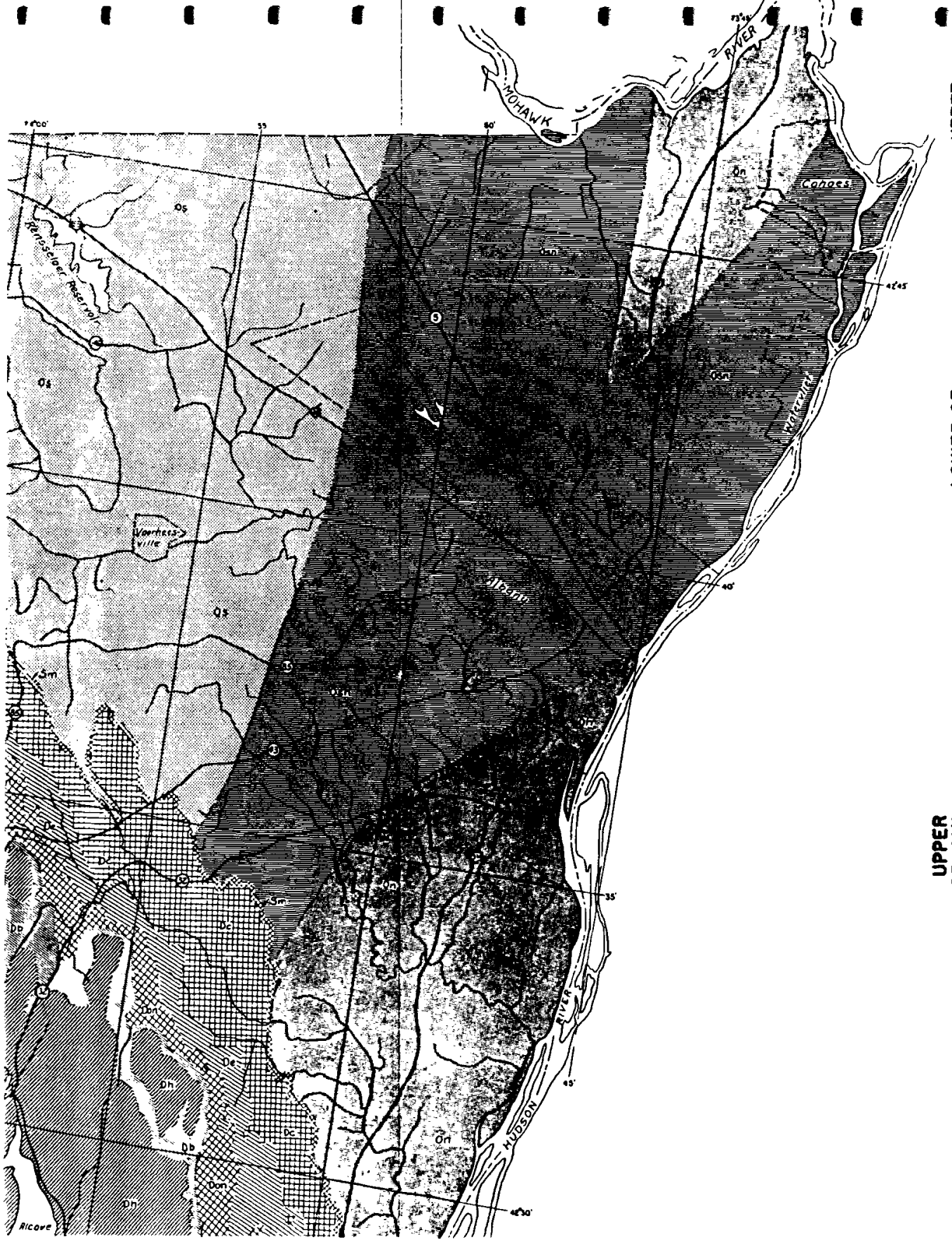
Tabulation of 492 wells, borings, and springs in Albany County for which records are available shows that about 80 percent of those in use are being pumped for domestic or farm purposes (table 5). Of the remainder, 7 wells supply water for drinking purposes at schools; 15 wells are utilized by hotels, restaurants, or garages for drinking, washing, and related purposes; 2 wells are used for swimming pools; 16 wells and 2 springs are used for industrial purposes; and 25 wells and 2 springs are used as public supplies.

Domestic supplies.—In areas not served by a public system, domestic water supplies throughout the county are obtained almost exclusively from wells and springs. The domestic uses of water include drinking, cooking, washing, and sewage disposal, and these needs are normally met by dug or drilled wells of low yield. Water for cattle and other farm animals is also obtained by the same method, and in many cases where the number of stock to be cared for is small one well suffices for both the farm and the household. The average consumption from this type of well is generally less than 500 gallons per day.

Records were obtained for 7 wells at schools. Water is used at these institutions almost wholly for drinking and sanitary purposes and the total consumption, therefore, is small.

Commercial supplies.—Records are available for 15 hotels, roadside restaurants, and garages which use ground water for drinking, washing, and other similar purposes. Estimates of usage indicate that the average consumption is less than 1,000 gallons per day.

[43] Meinzer, O. E., Outline of ground-water hydrology, with definitions: op. cit., p. 53.



EXPLANATION

UPPER DEVONIAN

Dq — ONTEORA FORMATION

MIDDLE DEVONIAN

HAMILTON GROUP

Dh — KISKATOM, ASHOKAN, AND MOUNT MARION FORMATIONS

Db — BAKOVEN SHALE

LOWER OR MIDDLE DEVONIAN

Dg — ONONDAGA LIMESTONE AND SCHOHARIE GRIT

LOWER DEVONIAN

De — ESOPUS SHALE AND ORISKANY SANDSTONE

Dc — PORT EWEN, ALSEN, BECRAFT, NEW SCOTLAND KALKBERG, AND COEYMANS LIMESTONES

Sm — MANLIUS, RONDOUT, AND COBLESKILL LIMESTONES

UPPER ORDOVICIAN

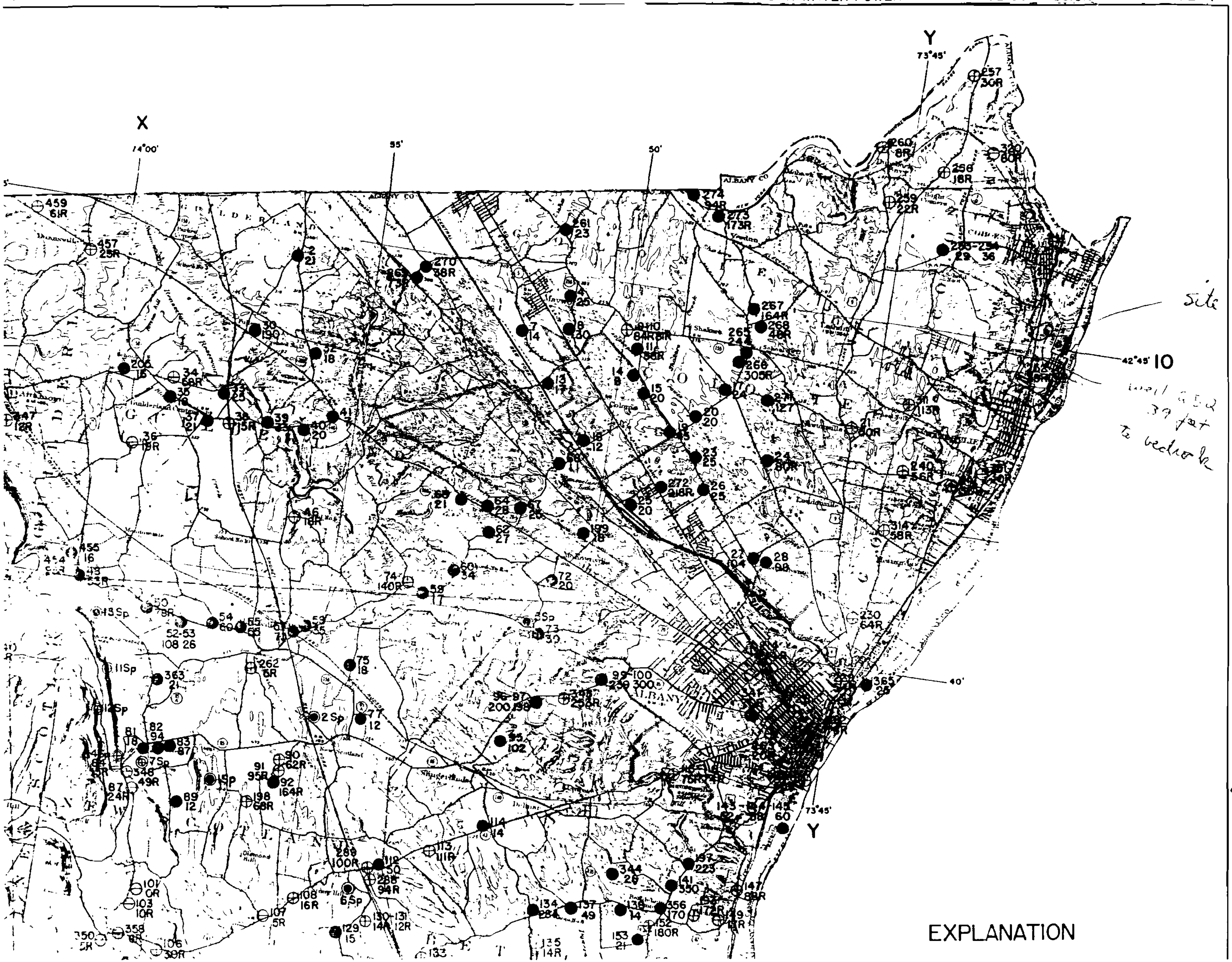
Os — INDIAN LADDER AND SCHENECTADY FORMATIONS (INCLUDING THE SILURIAN BRAYMAN SHALE)

MIDDLE ORDOVICIAN

Osn — SNAKE HILL FORMATION (INCLUDING THE CANAJOHARIE SHALE)

On — NORMANSKILL SHALE

h-2



EXPLANATION

Ref 3

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

TABLE 2

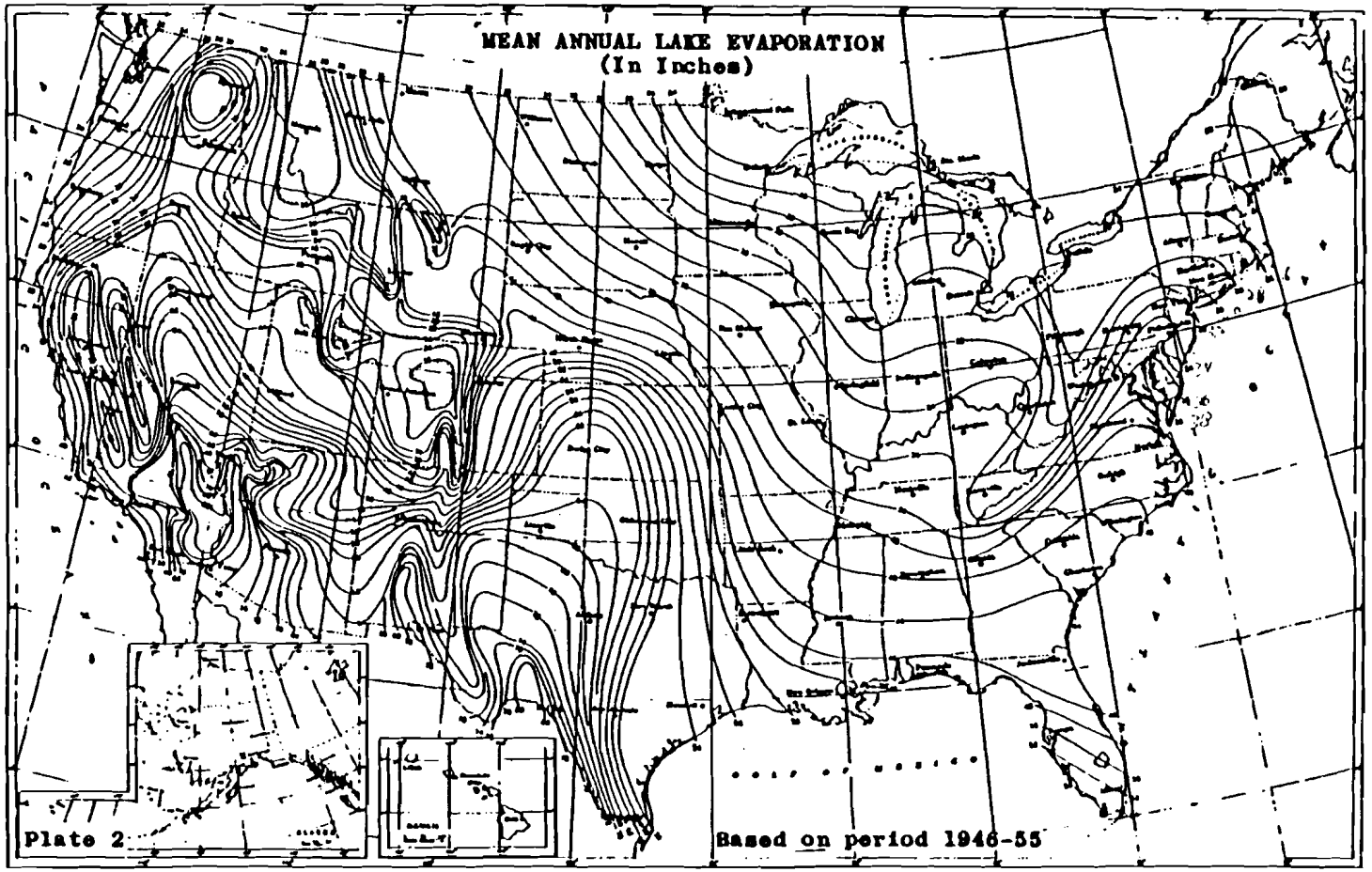
PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

FIGURE 4
MEAN ANNUAL LAKE EVAPORATION
(IN INCHES)

TABLE 9

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

A. Surface Impoundment

	Assigned Value
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3

B. Containers

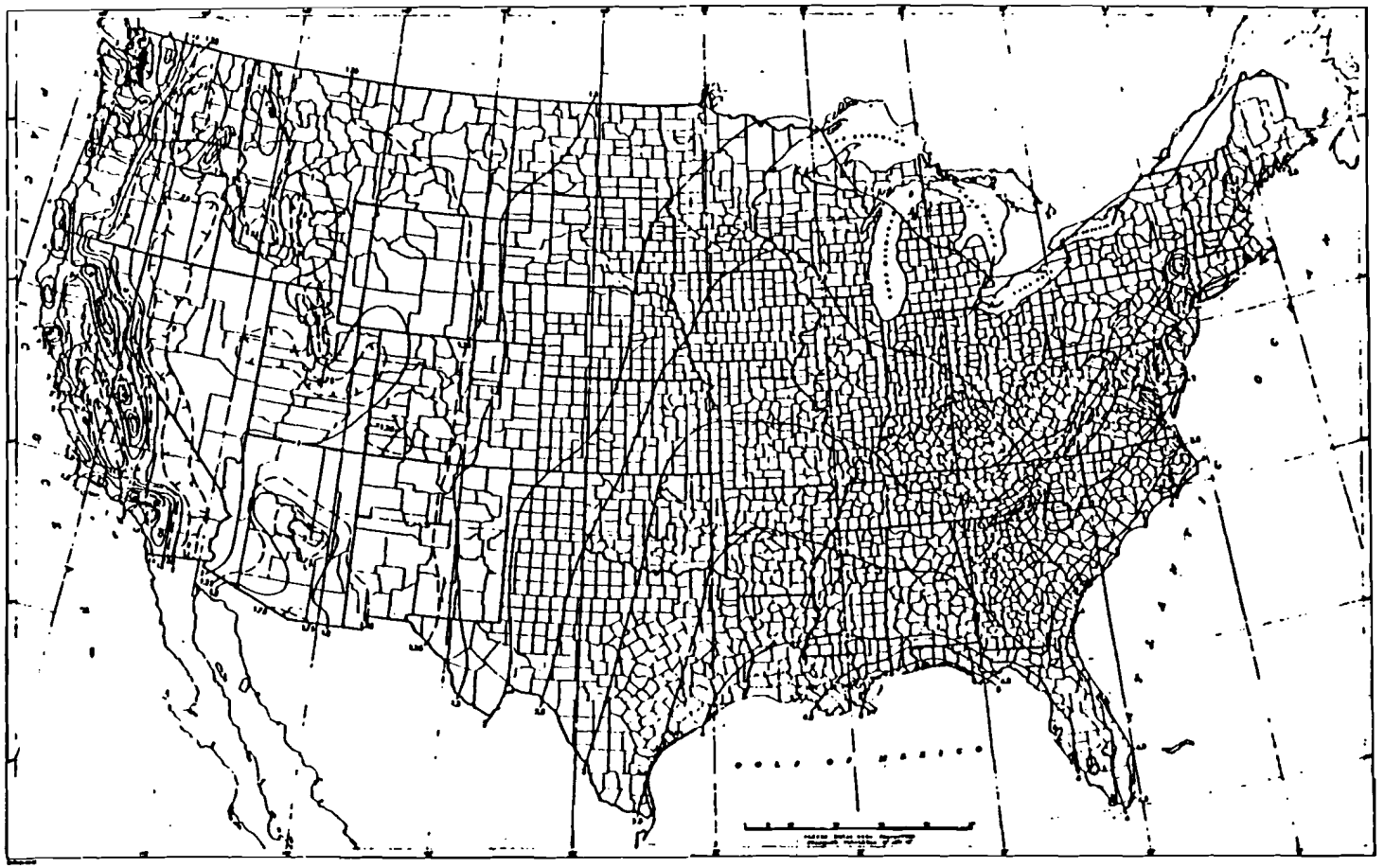
	Assigned Value
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3

C. Waste Piles

	Assigned Value
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3

D. Landfill

	Assigned Value
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

FIGURE 8
1-YEAR 24-HOUR RAINFALL
(INCHES)

EPA

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REG... NUMBER (to be as...) Ref 4

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (*Preliminary assessment*). 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: FORMER BENDIX CORP. LANDFILL

B. STREET (or other identifier): CONDES & TIBBITTS AVE.

C. CITY: VILLAGE OF GREEN ISLAND

D. STATE: NEW YORK

E. ZIP CODE: 12183

F. COUNTY NAME: ALBANY

G. OWNER/OPERATOR (If known)

1. NAME OF CURRENT OWNER OF SITE: NYS DOT (ADDRESS: ADJACENT TO THE BARGE CANAL)

2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP

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

I. SITE DESCRIPTION: THIS IS A 6 ACRES INACTIVE SITE. ACTIVE LIFE: 1937 - 1975. SITE RECEIVED ASBESTOS BASED BRAKE LINING DUST & PELLETS, BRAKE LINING SCRAP, REJECTED BRAKE LININGS. ALLEGEDLY AN ESTIMATED 350000 TONS OF WASTE WERE DISPOSED. THERE IS NO COVER.

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.): SITE CAME TO THE ATTENTION OF NYDEC

K. DATE IDENTIFIED (mo., day, & yr.): 1977

L. PRINCIPAL STATE CONTACT

1. NAME: G. DAVID KNOWLES, P.E.; H.W., NYDEC, ALBANY

2. TELEPHONE NUMBER: 8 567-3254

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☒ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE ☐ 5. UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED (*no hazard*)

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☒ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR:
b. WILL BE PERFORMED BY:

☐ 4. SITE INSPECTION NEEDED (*low priority*)

C. PREPARER INFORMATION

1. NAME: GEORGE B. RADAN

2. TELEPHONE NUMBER: 212 264-1576

3. DATE (mo., day, & yr.): 6/3/1980

III. SITE INFORMATION

A. SITE STATUS

☐ 1. ACTIVE (*Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.*)

☒ 2. INACTIVE (*Those sites which no longer receive wastes.*)

☐ 3. OTHER (*specify*): (*Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.*)

B. IS GENERATOR ON SITE? GENERATOR IS ADJACENT TO THE DISPOSAL AREA

☐ 1. NO ☒ 2. YES (*specify generator's four-digit SIC Code*): 3292

C. AREA OF SITE (*in acres*): 6 ACRES

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES
1. LATITUDE (*deg.—min.—sec.*)
2. LONGITUDE (*deg.—min.—sec.*)

E. ARE THERE BUILDINGS ON THE SITE?

☒ 1. NO ☐ 2. YES (*specify*):

T2070-2 (10-79)

Continue On Reverse

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

4-2

X	A. TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSAL
	1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION	X	3. OPEN DUMP
X	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		DISPOSED IN BULK

SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

SITE WAS ACTIVE FROM 1937 THROUGH NOVEMBER 1975. SITE RECEIVED ASBESTOS-BASED AUTO BRAKE LINING DUST AND PELLETS, BRAKE LINING SCRAP AND REJECTED BRAKE LININGS.

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1. UNKNOWN ☐ 2. LIQUID ☒ 3. SOLID ☐ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☐ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5 HIGHLY VOLATILE
☒ 6. TOXIC ☐ 7. REACTIVE ☐ 8. INERT ☐ 9. FLAMMABLE

☐ 10. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

NO

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT UNKNOWN	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD SOLVENTS	(2) PICKLING LIQUORS	X (2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			ZINC POWDER (10) METALS IRON POWDER		
			(11) OTHER (specify) RESINS		

Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

4-3

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard)

ASBESTOS

(BRAKE LINING COMPOSITION: ASBESTOS 55%; RESIN 10%; FRICTION MODIFIERS AND FILLERS 20%; IRON POWDER 6%; ZINC POWDER 9%)

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

IT IS ESTIMATED THAT 350000 TONS OF WASTE WERE DISPOSED AT THIS SITE AND NO COVER MATERIAL WAS PLACED OVER DISPOSED MATERIAL. THE SITE IS LOCATED ADJACENT TO A WETLAND IN A TURNING BASIN IN THE TAIL WATERS OF THE MOHAWK RIVER.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH	X			UNTIL THE SITE IS CAPPED THERE IS DANGER FROM ASBESTOS PARTICLES
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY	X			SITE IS LOCATED ON THE BANKS OF THE MOHAWK RIVER AND
6. CONTAMINATION OF FOOD CHAIN				IS ADJACENT TO WETLANDS
7. CONTAMINATION OF GROUND WATER	X			SEE ABOVE
8. CONTAMINATION OF SURFACE WATER	X			SEE ABOVE
9. DAMAGE TO FLORA/FAUNA	X			THERE IS VERY LITTLE VEGETATION ON SITE
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS	X			EROSIONAL PROBLEMS EXIST ON THE SLOPES
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

VII. PERMIT INFORMATION

4-4

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

☐ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☐ 3. STATE PERMIT (specify):
☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER
☐ 7. RCRA STORER ☐ 8. RCRA TREATER ☐ 9. RCRA DISPOSER
☐ 10. OTHER (specify): SITE IS INACTIVE SINCE NOVEMBER 1975

B. IN COMPLIANCE?

☐ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number):

VIII. PAST REGULATORY ACTIONS

☒ A. NONE ☐ B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

☐ A. NONE ☒ B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
SITE INSPECTION (WITH OCCASIONAL SAMPLING)	2/28/80	ACHD	PERIODIC INSPECTION (BUT NO FIRM DATES) - UNTIL THE SITE IS CAPPED

X. REMEDIAL ACTIVITY (past or on-going)

☐ A. NONE ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
MONITORING WELLS INSTALLATION	Mid-1980	NYSDOT	1-UPGRADIENT & 2 DOWNGRADIENT PLANNED MID-SUMMER 1980
CAPPING OF SITE	ASAP	"	PLANNED, DATE NOT ESTABLISHED

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

4-5

VII. PERMIT INFORMATION

INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

☐ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☒ 3. STATE PERMIT (specify): PART 360, PERMIT # 0817
☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER
☐ 7. RCRA STORER ☐ 8. RCRA TREATER ☐ 9. RCRA DISPOSER (EXPIRATION DATE NOV. 3, 1980)
OPERATION OF SANITARY LANDFILL
01-S-02
☐ 10. OTHER (specify):

IN COMPLIANCE?
☒ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number):

VIII. PAST REGULATORY ACTIONS

☒ A. NONE ☐ B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

☐ A. NONE ☒ B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
VISUAL INSPECTION ONLY - AT PRESENT TIME	9/1980	STATE & ACHD	- 4 x / YEAR - BIMONTHLY

X. REMEDIAL ACTIVITY (past or on-going)

☐ A. NONE ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
SAMPLING PLANNED SHORTLY		CITY OF ALBANY	MONITORING WELLS INSTALLED RECENTLY (6);

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

alb

RECORD OF COMMUNICATION

☐ PHONE CALL ☐ DISCUSSION ☐ Ref 5

☐ OTHER (SPECIFY)

(Record of item checked above)

TO:	FROM:	DATE
Dr. Richard Spear	James E. Shirk	8/27/80
		TIME

SUBJECT: Bendix Asbestos Landfill, Green Island N.Y.

SUMMARY OF COMMUNICATION

This six acre asbestos landfill is a land owned by the New York State Department of Transportation.

The site is affected by erosion of cover material, possible leading to loss of asbestos in surface runoff. Although the site is not lined, impervious clays used originally for lining canals may limit losses to groundwater downstream from this site, several communities use the Hudson River as a raw water source. Also, site security is poor. The NYSDOT and Bendix are currently in litigation regarding the remedial action necessary.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

Because of the potential for exposed asbestos causing chronic respiratory disease, the site should only be sampled during or shortly after a rain. Surface runoff samples should be analyzed both for asbestos and for metals and organics

INFORMATION COPIES TO:

EPA Form 1300-6 (7-72) REPLACES EPA HQ FORM 8300-3 WHICH MAY BE USED UNTIL SUPPLY IS EXHAUSTED.

5-2

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as tion on this form to develop a Tentative Disposition *(Section II)*. File this form in its entirety in th File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the form ... tection 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 *(or other identifier)*		
FORMER BENDIX CORP. LANDFILL (Asbestos)	Cohoes & Tibbitts Ave.		
C. CITY	**D. STATE**	**E. ZIP CODE**	**F. COUNTY NAME**
Village of Green Island	N.Y.	12183	Albany

G. SITE OPERATOR INFORMATION

1. NAME	2. TELEPHONE NUMBER		
Bendix Corporation, Friction Materials Division	518-273-6550		
3. STREET	**4. CITY**	**5. STATE**	**6. ZIP CODE**
P.O. Box 238	Troy	N.Y.	12181

H. REALTY OWNER INFORMATION *(if different from operator of site)*

1. NAME	2. TELEPHONE NUMBER		
N.Y.S. Dept of Transportation	518-474-6715		
3. CITY	**4. STATE**	**5. ZIP CODE**	
Albany	N.Y.	12208	

I. SITE DESCRIPTION

6 Acre inactive open dump for asbestos based dust and pellets with no cover

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☒ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☐ 5. PRIVATE

II. TENTATIVE DISPOSITION *(complete this section last)*

A. ESTIMATE DATE OF TENTATIVE DISPOSITION *(mo., day, & yr.)*	B. APPARENT SERIOUSNESS OF PROBLEM			
11-6-80	☐ 1. HIGH	☒ 2. MEDIUM	☐ 3. LOW	☐ 4. NONE

C. PREPARER INFORMATION

1. NAME	2. TELEPHONE NUMBER	3. DATE *(mo., day, & yr.)*
Edward L. Moore	201-621-6800	8-11-80

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME	2. TITLE	
Edward L. Moore	Sr. Geotechnical Engineer	
3. ORGANIZATION	**4. TELEPHONE NO. *(area code & no.)***	
Fred C. Hart Associates, Inc.	201-621-6800	

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
P. Parekh	Fred C. Hart Associates	201-621-6800
C. Forando	Environmental Health Services	518-445-7835
J. Huntington	N.Y.S. Dept. of Transportation	518-474-6715

C. SITE REPRESENTATIVES INTERVIEWED *(corporate officials, workers, real. etc)*

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
D. Stone	Staff Engineers	Bendix Corp.
W. Brown	518-273-6550	Troy, New York 12181

D. GENERATOR INFORMATION (source of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
Bendix Corp.	518-273-6550	P.O. Box 238, Troy, N.Y. 12181	Asbestos
			5-3

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
N/A			

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS
N/A		

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
8-6-80	8:30 - 9:30 a.m.	☒ 1. PERMISSION ☐ 2. WARRANT

J. WEATHER (describe)
Mostly cloudy, Middle 80's

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when results will be available. No samples taken

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify)			

FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.) No measurements taken

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS

Continue On Page

Continued from page 2

IV. SAMPLING INFORMATION (continued)

5-4

C. PHOTOS

1. TYPE OF PHOTOS: [ ] a. GROUND [X] b. AERIAL

2. PHOTOS IN CUSTODY OF: Fred C. Hart Associates.

D. SITE MAPPED?

[X] YES. SPECIFY LOCATION OF MAPS: Fred C. Hart Associates

E. COORDINATES

1. LATITUDE (deg.-min.-sec.): 73° 42' 00"

2. LONGITUDE (deg.-min.-sec.): 42° 38' 00"

V. SITE INFORMATION

A. SITE STATUS

[ ] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.)

[X] 2. INACTIVE (Those sites which no longer receive wastes.)

[ ] 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

[ ] 1. NO [X] 2. YES (specify generator's four-digit SIC Code): 3292

C. AREA OF SITE (in acres): 6

D. ARE THERE BUILDINGS ON THE SITE?

[X] 1. NO [ ] 2. YES (specify): _____

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
		X	X
1. RAIL	1. PILE	1. FILTRATION	1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	X 3. OPEN DUMP
4. TRUCK	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS./TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		X 9. OTHER (specify): Open burning	

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

[ ] 1. STORAGE [ ] 2. INCINERATION [ ] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL

[ ] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [X] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLER/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

[ ] 1. LIQUID [X] 2. SOLID [ ] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS

[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE

[ ] 5. TOXIC [ ] 6. REACTIVE [X] 7. INERT [ ] 8. FLAMMABLE

[ ] 9. OTHER (specify):

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Continue On Reverse

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT 350,000*
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE Tons
	(1) OILY WASTES	(1) HALOGENATED SOLVENTS	(1) ACIDS	X (1) FLYASH
	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	X (2) ASBESTOS
		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS
			(4) PESTICIDES	(4) FERROUS SMELTING WASTES
			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES
			(6) CYANIDE	X (6) OTHER (specify):
			(7) PHENOLS	Asbestos based material (50+% asbestos)
			(8) HALOGENS	*Alleged
			(9) PCB	10-15% Resin
			(10) METALS	5.9% iron powder
			(11) OTHER (specify):	1.3% zinc powder

(1) PAINT, PIGMENTS	(1) LABORATORY, PHARMACEUT.
(2) METALS SLUDGES	(2) HOSPITAL
(3) POTW	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE	(4) MUNICIPAL
(5) OTHER (specify):	(5) OTHER (specify)

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (*place in descending order of hazard*)

1. SUBSTANCE	2. FORM (*mark 'X'*) a. SOLID	b. LIQ.	c. VAPOR	3. TOXICITY (*mark 'X'*) a. HIGH	b. MED.	c. LOW	d. NONE	4. CAS NUMBER	5. AMOUNT	6. UNIT
Asbestos	X					X			350,000	Tons

VII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

X A. HUMAN HEALTH HAZARDS

Potential hazard from airborne asbestos particles because site has no cover material.

☐ B. NON-WORKER INJURY/EXPOSURE

5-6

☐ C. WORKER INJURY/EXPOSURE

☒ D. CONTAMINATION OF WATER SUPPLY

Site is located on pond that flows into Mohawk River
Site is located adjacent to Wetlands

☐ E. CONTAMINATION OF FOOD CHAIN

☒ F. CONTAMINATION OF GROUND WATER

Site has no bottom lining and unknown depth to groundwater

☒ G. CONTAMINATION OF SURFACE WATER

Site has no cover so surface runoff has direct contact with asbestos

[X] H. DAMAGE TO FLORA/FAUNA

5-7

Only spotty vegetation on older section of site

[ ] I. FISH KILL

[X] J. CONTAMINATION OF AIR

Potential hazard from airborne asbestos because site has no cover material

[ ] K. NOTICEABLE ODORS

[ ] L. CONTAMINATION OF SOIL

[ ] M. PROPERTY DAMAGE

Continue On Page 7

☐ N. FIRE OR EXPLOSION

5-7

☐ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

☐ P. SEWER, STORM DRAIN PROBLEMS

☒ Q. EROSION PROBLEMS

Erosion occurring on surface and three (3) sides of site

☒ R. INADEQUATE SECURITY

Children play in water at the base of fill material

☐ S. INCOMPATIBLE WASTES

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

5-8

☐ U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS				
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
Unknown	Northerly	None
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
Unknown	One (1) mile	Up gradient

G. TYPE OF DRINKING WATER SUPPLY

☐ 1. NON-COMMUNITY < 15 CONNECTIONS* ☒ 2. COMMUNITY (specify town): > 15 CONNECTIONS Village of Green Island

☐ 3. SURFACE WATER ☐ 4. WELL

Continue On Page 9

Continued From Page 8

5-9

X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')

I. RECEIVING WATER

1. NAME

☐ 2. SEWERS ☐ 3. STREAMS/RIVERS

☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify):

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN near

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☒ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☐ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. OVERBURDEN	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
	1. SAND			X	Sandy loam throughout area
	2. CLAY				
	3. GRAVEL				

XIII. SOIL PERMEABILITY

☒ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)

☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

H. DISCHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

I. SLOPE

1. ESTIMATE % OF SLOPE: $< 30^0$ from vertica

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.: Erosion in all directions

J. OTHER GEOLOGICAL DATA

Continue On Reverse

5-10

XIV. PERMIT INFORMATION

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X')		
					1. YES	2. NO	3. UNKNOWN
None							

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

☐ NONE ☒ YES (summarize in this space)

State has recommended monitering wells and capping

(a) Monitoring wells in place *

(b) Capping being delayed due to litigation

* (3-4" diameter wells, 20' - 30' depth)

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition *(Section II)* information on the first page of this form.

Ref 6

TABLE I

EPA Hazard Ranking System Waste Characteristics Values
(Toxicity/Persistence Matrix)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Acenapthene	9	3
Acetaldehyde	6	6
Acetic Acid	6	6
Acetone	6	6
2-Acetylaminoflourene	18	9
Aldrin	18	9
Ammonia	9	9
Aniline	12	9
Anthracene	15	9
Arsenic	18	9
Arsenic Acid	18	9
Arsenic Trioxide	18	9
Asbestos	15	9
Barium	18	9
Benzene	12	9
Benzidine	18	9
Benzoapyrene	18	9
Benzopyrene, NOS	18	9
Beryllium & Compounds NOS	18	9
Beryllium Dust, NOS	18	9
Bis (2-Chloroethyl) Ether	15	9
Bis (2-Ethylhexyl Phthalate	12	3
Bromodichloromethane	15	6
Bromoform	15	6
Bromomethane	15	9
Cadmium	18	9
Carbon Tetrachloride	18	9
Chlordane	18	9
Chlorobenzene	12	6
Chloroform	18	6
3-Chlorophenol	12	6
4-Chlorophenol	15	9
2-Chlorophenol	12	6
Chromium	18	9
Chromium, Hexavalent (Cr^{+6})	18	9

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Fluorine	18	9
Formaldehyde	9	9
Formic Acid	9	6
Heptachlor	18	9
Hexachlorobenzene	15	6
Hexachlorobutadiene	18	9
Hexachlorocyclohexane, NOS	18	9
Hexachlorocyclopentadiene	18	9
Hydrochloric Acid	9	6
Hydrogen Sulfide	18	9
Indene	12	6
X Iron & Compounds, NOS	18	9
Isophorone	12	6
Isopropyl Ether	9	3
Kelthane	15	6
Kepone	18	9
X Lead	18	9
Lindane	18	9
Magnesium & Compounds, NOS	15	6
Manganese & Compounds, NOS	18	9
Mercury	18	9
Mercury Chloride	18	9
Methoxychlor	15	6
4, 4-Methylene-Bis-(2-Chloroaniline)	18	9
Methylene Chloride	12	6
Methyl Ethyl Ketone	6	6
Methyl Isobutyl Ketone	12	6
4-Methyl-2-Nitroaniline	12	9
Methyl Parathion	9	9
2-Methylpyridine	12	6
Mirex	18	9

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Naphthalene	9	6
Nickel & Compounds, NOS	18	9
Nitric Acid	9	9
Nitroaniline, NOS	18	9
Nitrogen Compounds, NOS	12	0
Nitroguanidine	12	9
Nitrophenol, NOS	15	9
m-Nitrophenol	15	
o-Nitrophenol	12	
p-Nitrophenol	15	
Nitrosodiphenylamine	12	6
Parathion	9	9
Pentachlorophenol (PCP)	18	9
Pesticides, NOS	18	9
Phenanthrene	15	9
X Phenol	12	9
Phosgene	9	9
Polybrominated Biphenyl (PBB), NOS	18	9
Polychlorinated Biphenyls (PCB), NOS	18	9
Potassium Chromate	18	9
Radium & Compounds, NOS	18	9
Radon & Compounds, NOS	15	9
RDX (Cyclonite)	15	
2, 4-D, Salts & Esters	18	9
Selenium	15	9
Sevin (Carbaryl)	18	9
Sodium Cyanide	12	9
Styrene	9	6
X Sulfate	9	0
Sulfuric Acid	9	9
2, 4, 5-T	18	9
1, 1, 2, 2-Tetrachloroethane	18	9
Tetrachloroethane, NOS	18	9
1, 1, 2, 2-Tetrachloroethene	12	6

P. McCarthy
JAS
Ref 7

Bendix
Friction Materials Division
Troy, New York 12181
Tel (518) 273-6550
The Bendix Corporation

Mr. Irving Bonsel
Region 4 Engineer
Division of Solid Waste
N.Y.S.D.E.C.
2176 Guilderland Avenue
Schenectady, N.Y. 12306

[redacted]

Dear Mr. Bonsel:

In my letter to you on June 22, 1981 concerning the Green Island landfill, there were two errors in Paragraph No. 3. Below is corrected paragraph with changes marked in yellow.

3. Field permeability tests were run according to standard practice following the method of Bouwer and Rice (1976). The well screen at B-2 is completely in sand, so this permeability reflects the permeability of the sand. The well point at B-3 is in both sand and organic silt. Since the permeability test will measure the combined permeability of the silt and sand layers, the two layers together should be less permeable than the sand layer alone at B-2. As expected, the permeability measured at B-2 was 3×10^{-3} cm/sec. while that measured at B-3 was 1×10^{-4} cm/sec. The combined permeability of the organic silt layer and the waste was measured at B-4. At B-4, the bottom 3.0 feet of the well were in the silt layer and the top 2 feet were in the waste. At B-3, the bottom 2.5 feet of the well point were in the sand and the top 2.5 feet were in the silt layer. Since the permeability at B-4 was lower than that at B-3 (B-4 was 5×10^{-5} cm/sec.), the waste must be less permeable than the sand. The statement on page 7 should be changed to read that the permeability of the waste is lower than that of the sand, rather than the underlying sediments.

Confirming our conversation on 6/29/81, we will attend a meeting on July 9, 1981 at 9:00 A.M. at your office in Schenectady, N.Y. to discuss issues and technical details of Green Island landfill closure.

Very truly yours,

D. E. Stone

David E. Stone
Staff Engineer

cc: J. Herman C. Ledoux J. Riopelle
T. Kunes (RMT) R. Michaud

WEHRAN
ENGINEERS
& SCIENTISTS
666 EAST MAIN STREET
P.O. BOX 2006
MIDDLETOWN, NY 10940

Reference 9

WEHRAN ENGINEERING - SITE INSPECTION FORM

1. IDENTIFICATION

Bendix Landfill — Site Name
Albany — County
401005 — NY Number
4 — NYSDEC Region

2. LOCATION

Cohoes and Tibbitts Ave — Street/Route No.
Green Island — Town
— City
— Village
Troy North and Troy South — USGS Quadrangle

3. INSPECTION

7/14/86 — Date of Inspection
2 PM — Time of Inspection
Sunny, Breezy, 75° — Weather Conditions and Snow Cover

WE Inspectors (Name)	Title	Phone Number
KAREN MALOY	Environmental Scientist	(914) 343-0660
DAVID Tompkins	Environmental Scientist	(914) - 343-0660

Other Inspectors (Name)	Affiliation	Phone Number

Reference 8-2

Site Reps. Interviewed	Affiliation	Phone Number

4. SITE DESCRIPTION

4.1 Site History Active ___ Inactive X

Years of Operation: 1937-1975

Owner(s): Formerly owned by The Bendix Corp
Currently owned by NYSDOT

4.2 Storage/Disposal (Check all that apply)

		Size/Amount	Unit of Measure
__	A. Surface Impoundment		
__	B. Piles	X	
__	C. Drums, Above Ground		
__	D. Tank, Above Ground		
__	E. Tank, Below Ground		
__	F. Landfill	X	6 acres, 350T Tons
__	G. Landfarm		
__	H. Open Dump		
__	I. Spill		
__	J. Well Field		
__	K. Other (_____)		

Reference 8-3

4.3 Treatment (Check all that apply)

__	A. Burning	__	E. Waste Oil Processing
__	B. Incineration	__	F. Solvent Recovery
__	C. Underground Injection	__	G. Other Recycling/Recovery
__	D. Chemical/Physical/Biological	__	H. Other (_____)

4.4 Waste Substances Observed (include hazardous)

None observed, site is covered

4.5 Containment of Wastes (describe)

no liner
Site is covered

4.6 Accessibility of Public to Wastes (describe)

- Site is fenced in w/ signs

5. ENVIRONMENTAL MEASUREMENTS (DURING INSPECTION)

5.1 HNU/OVA Readings (Note locations on site sketch)

Location	Value (ppm)	Classification
Background		
No readings above background		

Method/Instrument: TIP Photovac

5.2 Site Topography (Describe relative to regional features)

Site is near industrial and residential properties.

Reference 8-5

5.3 Site Slope (percent)

	Reading (Percent)
Read from highest disposal area surface to edge of disposal area.	30%
If disposal area is within enclosed basin, report as zero.	20%
	2%
Average	10%

5.4 Prevailing Direction of Site Slope N, S, E and West

5.5 Distance to Nearest Downslope Surface Waters (from edge of disposal area)

Name/Description	Distance	Units	Permanent/Intermittent
Mohawk Basin	Adj		Permanent

5.6 Intervening Terrain Slope to Nearest Downslope Waters (from edge of disposal area)

Name/Description	Reading (Percent)
Mohawk Basin - Adj	

5.7 Distance to Nearest Downslope Wetlands (5-acre minimum)

Size (Acres)	Distance	Units
Site is in a wetland		

Reference 8-6

5.8 Distance to Critical Habitat (endangered species)

Name/Location	Distance	Units

5.9 Observed Site Geology (Describe from visual observations)

Overburden (soils) _____

Bedrock _____

Depth to Rock _____

5.10 Distance to Nearest Potable Well (Identify on topographic map)

Type (Private/Community/Municipal)	Distance	Units

5.11 Distance to Nearest Off-Site Building

1000 ft ~~miles.~~

5.12 Describe Source and Use of Water on Site

Site is abandoned

6.0 LAND USE

6.1 Distance to Nearest:

Residential Area	100ft	miles
Commercial/Industrial	1000ft	miles
Recreation Use	Adj	miles
Forest		miles
Wildlife Reserve		miles
Historic/Landmark Site		miles
Prime Agricultural Land		miles
Agricultural Land		miles

7.0 SITE EVALUATION

7.1 Landfills/Open Dumps/Piles (Use N/A if not applicable)

Adequacy of Cover: site is presently capped

Adequacy of Runoff Diversion:

Potential/Observed Ponding: none observed

Waste Piles Stabilized/Unstabilized: Unstabilized

Permeability/Compatibility of Liner: no liner

Observed Seeps: none observed

Adequacy of Leachate Collection: none present

Adequacy of Run-On Controls:

7.2 Surface Impoundments Size/Capacity

Adequacy of Diking/Diversion Structures: _____

_____

Adequacy of Freeboard: _____

_____

Potential/Observed Leaking: _____

_____

Permeability/Compatibility of Liner: _____

_____

Adequacy of Run-On Control: _____

_____

Adequacy of Leachate Collection System: _____

_____

7.3 Containers

Number and Type of Containers Observed: _____

_____

Container Condition: _____

_____

Observed Leaking (during inspection): _____

_____

Evidence of Previous Ground Spills: _____

_____

Evidence of Underground Tank Leaking: _____

_____

Adequacy of Containment/Diversion Structures: _____

_____

Reference 8-9

8.0 MONITORING/OBSERVATION WELLS

8.1 Number of On-Site Wells: _____

Diameter and Materials: _____

8.2 Number of Off-Site Wells: _____

Diameter and Materials _____

8.3 Well Identification and Inspection (Include on-site sketch)

					Water Level (ft)[1]		
Well No.	Location/ Gradient	Total Depth	Screen Interval	Top of Water	- Stickup	=	Depth to Water
B-1					-	=	
B-2					-	=	
B-3					-	=	
B-4					-	=	
B-5					-	=	
					-	=	
					-	=	
					-	=	
					-	=	

[1]Measurements taken during site inspection to accuracy of 0.01 ft.

8.4 Water Level Instrument/Method:

_____

_____

Reference 8-10

8.5 Condition of Wells/Seals:

_____

_____

_____

8.6 Well Records (from site owner, operator, or contractor)

Wells Installed by (Driller): _____

Installed for: _____

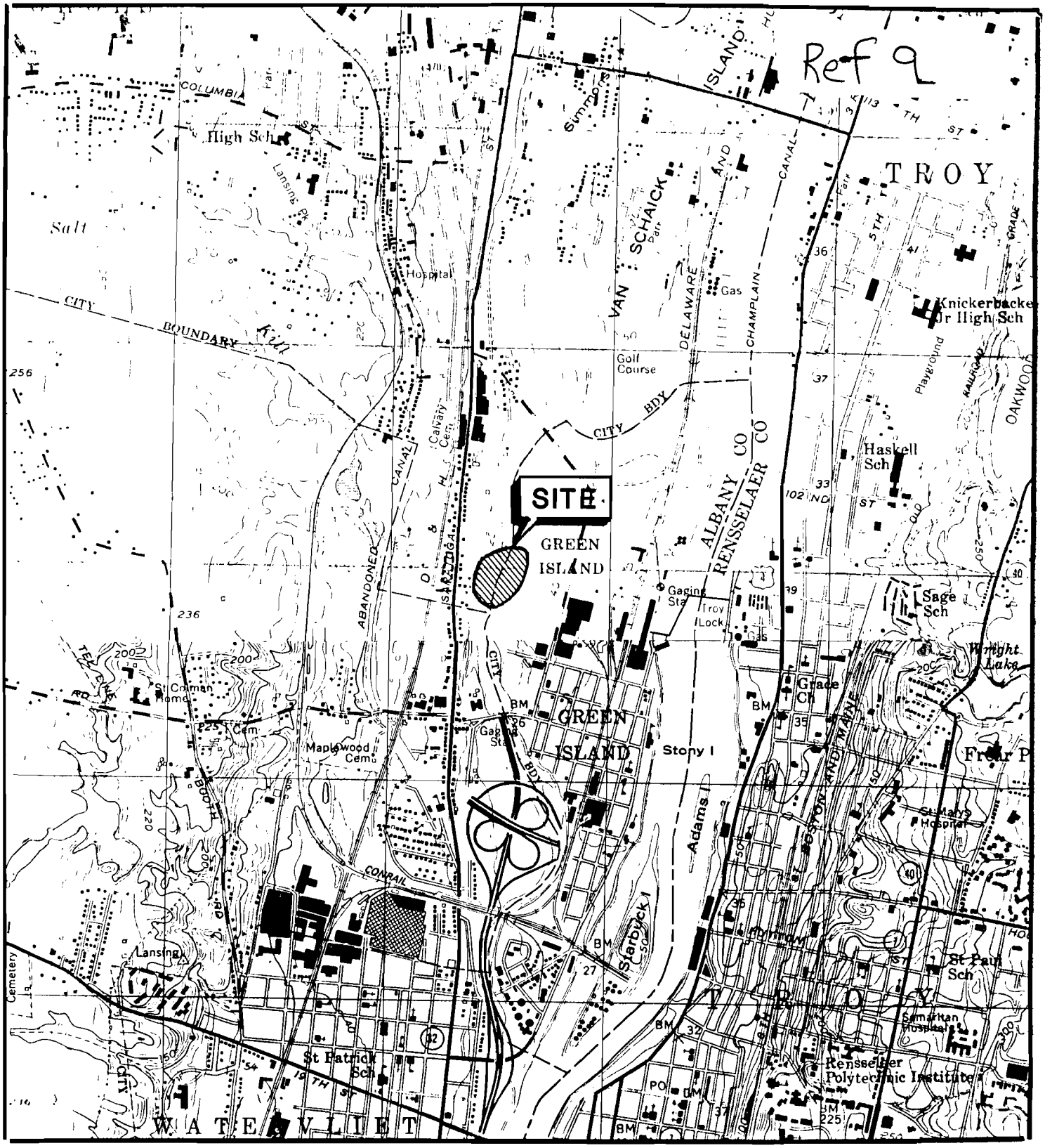
Tested by (lab): _____

Data Obtained by WE (yes/no): _____

Boring Logs Obtained by WE (yes/no): _____

8.7 Headspace HNU/OVA Readings

Well No.	Reading (ppm)	Classification
Background		



SCALE: 1" 2000'

TOPOGRAPHY TAKEN FROM
1954 TROY NORTH, N.Y.
1953 TROY SOUTH, N.Y.
U.S.G.S. QUADRANGLE
7.5 MIN. SERIES
(BOTH PHOTOREVISED 1980)

MAP LOCATION

FIGURE 1-1

SITE LOCATION MAP

BENDIX LANDFILL

GREEN ISLAND, N.Y.

LAT. 42 45'10"N, LONG. 73 41'55"W.

Ref 10

DRAFT
1/11/84

TABLE 4

Waste Characteristics Values

Chemical/Compound	Toxicity/ Persistence[1]	Toxicity[2]	Reactivity[2]
Acenapthene	9	3	0
Acetaldehyde	6	6	2
Acetic Acid	6	6	1
Acetone	6	6	0
2-Acetylaminoflourene	18	9	0
Aldrin	18	9	0
Ammonia	9	9	0
Aniline	12	9	0
Anthracene	15	9	0
Arsenic	18	9	0
Arsenic Acid	18	9	0
Arsenic Trioxide	18	9	0
Asbestos	15	9	0
Barium (Ba)	18	9	2
Benzene	12	9	0
Benzidine	18	9	0
Benzoapyrene	18	9	0
Benzopyrene, NOS	18	9	0
Beryllium & Compounds NOS (Be)	18	9	0
Beryllium Dust, NOS	18	9	0
Bis (2-Chloroethyl) Ether	15	9	0
Bis (2-Ethylhexyl Phthalate	12	3	0
Bromomethane	15	9	0
Cadmium (Cd)	18	9	0
Carbon Tetrachloride	18	9	0
Chlordane	18	9	0
Chlorobenzene	12	6	0
Chloroform	18	9	0
3-Chlorophenol	12	6	0
4-Chlorophenol	15	9	0
2-Chlorophenol	12	6	0
Chromium (Cr)	18	9	0
Chromium, Hexavalent (Cr^{+6})	18	9	0

DRAFT
1/11/84

Table 4 (cont.)

Chemical/Compound	Toxicity/ Persistence[2]	Toxicity[2]	Reactivity[2]
Chromium, Trivalent (Cr^{+3})	15	6	0
Copper & Compounds, NOS (Cu)	18	9	0
Creosote	15	6	0
Cresols	9	9	0
Cyanides (soluble salts), NOS	12	9	0
Cyclohexane	12	6	0
DDE	18	9	0
DDT	18	9	0
Diaminotoluene	18	6	0
1, 2-Dibromo 3 chloropropane	18	9	0
Di-N-Butyl-Phthalate	18	6	0
1, 4-Dichlorobenzene	15	6	0
Dichlorobenzene, NOS	18	6	0
1, 1-Dichloroethane	12	6	0
1, 2-Dichloroethane	12	9	1
1, 1-Dichloroethene	15	9	2
1, 2-trans-Dichloro-ethylene	12	3	2
Dichloroethylene, NOS	12	3	2
2, 4-Dichlorophenol	18	6	0
2, 4-Dichlorophenoxyacetic Acid	18	9	0
Dicyclopentadiene	18	9	1
Dieldrin	18	9	0
2, 4-Dinitrotoluene	15	9	3
Dioxin	18	9	0
Endosulfan	18	9	0
Endrin	18	9	0
Ethylbenzene	9	6	0
Ethylene dibromide	18	9	0
Ethylene Glycol	9	6	0
Ethyl Ether	18	6	1
Ethylmethacrylate	12	6	0
Fluorine (F)	18	9	4
Formaldehyde	9	9	0
Formic Acid	9	6	0

Table 4 (cont.)

Chemical/Compound	Toxicity/ Persistence[1]	Toxicity[2]	Reactivity[2]
Heavy Metals, NOS	18	9	0
Heptachlor	18	9	0
Hexachlorobenzene	18	6	0
Hexachlorobutadiene (C_{16})	18	9	1
Hexachlorocyclohexane, NOS	18	9	0
Hexachlorocyclopentadiene ($C_{5,6}$)	18	9	2
Hydrochloric Acid	9	6	2
Hydrogen Sulfide	18	9	0
Indene	12	6	2
Iron & Compounds, NOS (Fe)	18	9	0
Isophorone	12	6	0
Isopropyl Ether	9	3	1
Kelthane	15	6	0
Kepone	18	9	0
Lead (Pb)	18	9	0
Lindane	18	9	0
Magnesium & Compounds, NOS (Mg)	15	6	0
Manganese & Compounds, NOS (Mn)	18	9	0
Mercury (Hg)	18	9	0
Mercury Chloride	18	9	0
Methoxychlor	15	6	0
4, 4-Methylene-Bis-(2-Chloroaniline)	18	9	0
Methylene Chloride	12	6	1
Methyl Ethyl Ketone	6	6	0
Methyl Isobutyl Ketone	12	6	0
4-Methyl-2-Nitroaniline	12	9	3
Methyl Parathion	9	9	0
2-Methylpyridine	12	6	0
Mirex	18	9	0
Napthalene	9	6	0
Nickel & Compounds, NOS (Ni)	18	9	0

Table 4 (cont.)

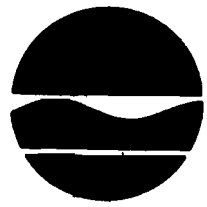
Chemical/Compound	Toxicity/ Persistence[1]	Toxicity[2]	Reactivity[2]
Nitric Acid	9	9	2
Nitroaniline, NOS	18	9	3
Nitrogen Compounds, NOS	12	0	
Nitroguanidine	12	9	3
Nitrophenol, NOS	15	9	2
Parathion	9	9	0
Pentachlorophenol (PCP)	18	9	0
Pesticides, NOS	18	9	0
Phenanthrene	15	9	0
Phenol	12	9	2*
Phosgene	9	9	1
Polybrominated Biphenyl (PBB), NOS	18	9	0
Polychlorinated Biphenyls, NOS	18	9	0
Potassium Chromate	18	9	0
Radium & Compounds, NOS (Ra)	18	9	2
Radon & Compounds, NOS (Rn)	15	9	0
2, 4-D, Salts & Esters	18	9	0
Selenium (Se)	18	9	0
Sevin (Carbaryl)	18	9	0
Sodium Cyanide	12	9	0
Styrene	9	6	1
Sulfate	9	0	0
Sulfuric Acid	9	9	2
1, 1, 2, 2-Tetrachloroethane	18	9	0
Tetrachloroethane, NOS	18	9	0
1, 1, 2, 2-Tetrachloroethene	12	6	0
Tetraethyl Lead	18	9	0
Tetrahydrofuran (I)	~~18~~ 15	6	0
Thorium & Compounds, NOS (Th)	18	9	2
Toluene	9	6	0
Toxaphene	18	9	0
Tribromomethane	18	9	1
1, 2, 4-Trichlorobenzene	15	6	0
1, 1, 1-Trichloroethane	12	6	0

Bendix

Ref 11

New York State Department of Environmental Conservation

Region 4 Headquarters
2176 Guilderland Ave.
Schenectady, NY 12306
(518) 382-0680



Henry G. Williams
Commissioner

July 28, 1986

Ms. Karen E. Maloy
Wehran Engineers & Scientists
666 East Main Street
P.O. Box 2006
Middletown, NY 10940

Dear Ms. Maloy:

As per your letter of July 22, enclosed are photocopies of the wetland map areas your requested. According to our maps only 2 of the 5 sites you indicated have wetlands within 1 mile of the sites.

Wetland TN-6, near the Bendix site on the Troy North Quad is Class I and Wetland HN 106 near the American Valve Mfg. site on the Hudson North Quad is also Class I.

Please refer to the enclosed page for a description of the wetland classes as they pertain to permit issuance.

Further questions regarding wetland matters may be directed to Arthur Henningson of this office.

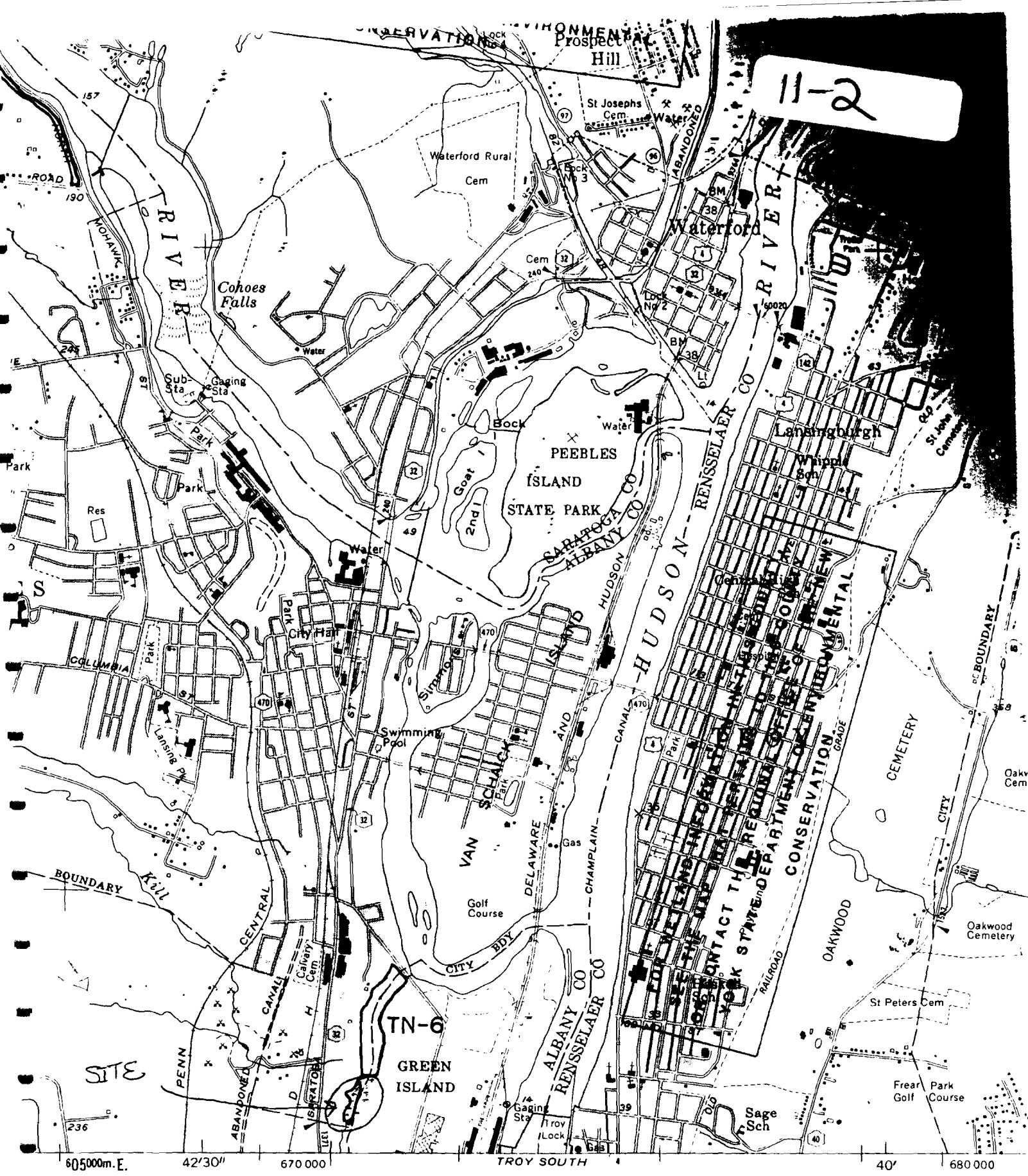
Sincerely,

Angelo Marcuccio

Angelo Marcuccio
Environmental Analyst
Region 4

AM/djp

Enc.


11-2
Prospect Hill
St Josephs Cem
Water
ABANDONED
Waterford Rural Cem
Lock No 3
Waterford
BM
38
Cem
Lock No 2
Cohoes Falls
MOHAWK
RIVER
Water
Sub-Sta
Gaging Sta
Park
Res
Lansingburgh
Whipple Sch
St Johns Cemetery
PEEBLES ISLAND STATE PARK
Goat
2nd I
SARATOGA CO
ALBANY CO
HUDSON
RENSSELAER CO
City Hall
COLUMBIA
Lansing Pk
Swimming Pool
SCHAACK
Park
VAN
DELAWARE AND
HUDSON CANAL
CHAMPLAIN
Gas
Golf Course
CENTRAL
BOUNDARY
Kill
CITY BDY
Calvary Cem
CANAL
PENN
ABANDONED
ISRATOM
TN-6
GREEN ISLAND
SITE
Gaging Sta
Troy Lock
Sage Sch
OAKWOOD
CEMETERY
Oakwood Cemetery
St Peters Cem
Frear Park Golf Course
RAILROAD
GRADE
CITY
BOUNDARY
FOR MEETING THE REQUIREMENTS OF THE CAMP LEJEUNE ACT CONTACT THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
605000m.E.
42'30"
670 000
TROY SOUTH
40'
680 000
SCALE 1 24 000
1 MILE
7000 FEET
1 KILOMETER
INDEX TO
1:9600 (1" = 800')

New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

SCHENECTADY
ALBANY
RENSSELAER
COLUMBIA
GLENVILLE
CLIFTON PARK
HALFMOON
ROTTERDAM
PRINCETOWN
DUANESBURG
NISKAYUNA
COLONIE
GUILDERLAND
KNOX
BETHLEHEM
NEW SCOTLAND
COEYMANS
WESTERLO
RENSSELAERVILLE
BERNE
BRUNSWICK
PITTSTOWN
GRAFTON
POESTENKILL
NORTH GREENBUSH
EAST GREENBUSH
SCHODACK
NASSAU
WATERFORD
Cohoes
Green Island
GREEN ISLAND
Troy
Watervliet
ALBANY
Rensselaer
Menands
Loudonville
Roessleville
McKownville
Westmere
Altamont
Guilderland Center
Voorheesville
New Salem
Slingerlands
Elmsere
Delmar
Clarksville
Feura Bush
Selkirk
South Bethlehem
Ravena
Coeymans
Coeymans Hollow
Castleton-on-Hudson
Brookview
East Schodack
Braeside
Nassau Lake
Wynantskill
Sand Lake
Averill Park
Snyders Lake
Poestenkill
Center Brunswick
Cropseyville
Eagle Mills
Melrose
Valley Falls
Schaghticoke
Mechanicville
Clifton Knolls
Clifton Gardens
Groom Corners
Crescent
Halfmoon
Elnora
Scotia
East Glenville
Rotterdam Junction
Pattersonville
Mariaville
Duanesburg
Delanson
Knox
Rensselaerville
Westerlo
Maywood
Verdoy
KNOLLS ATOMIC POWER LABORATORY (FEDERAL)
WATERVLIET ARSENAL (U.S. ARMY)
Watervliet Reservoir
Thompson Lake
Tomhannock Reservoir
JOHN BOYD THACHER STATE PARK
THOMPSONS LAKE CAMPING AREA STATE PARK
KNOX STATE WILDLIFE MANAGEMENT AREA
BLACK CREEK STATE WILDLIFE MANAGEMENT AREA
LOUISE E KEIR STATE WILDLIFE MANAGEMENT AREA
FIVE RIVERS STATE ENVIRONMENTAL EDUCATION CENTER
GRAFTON LAKES STATE PARK
PEEBLES ISLAND STATE PARK
CAPITAL DISTRICT WILDLIFE MANAGE
CASTLETON ISLAND STATE PARK (Undeveloped)
Latham Water District (See Saratoga Co. page 54)
Ravena Village (See Greene Co. page 54)
HELDERBERG MOUNTAINS
DELAWARE AND HUDSON
CONRAIL
AMTRAK
NEW YORK STATE THRUWAY
site
13-3

ALBANY COUNTY

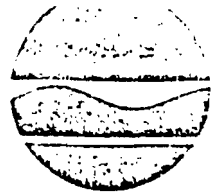
ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
1	Albany City	101767	Alcove Reservoir
2	Altamont Village	1518	Altamont Reservoirs 1 & 2, Wells
3	Bethlehem Water District #1	24000	Vly Creek Reservoir, Wells
*4	Cohoes City	18144	Mohawk River
5	Fort Hunter Water District	500	Wells
*6	Green Island Village	3100	Wells (Infiltration Gallery)
7	Guilderland Water District	450	Wells
8	Latham Water District (See also No 17 Saratoga Co, Page 54)	69688	Mohawk River, Wells
9	Lone Pine Water District	125	Wells
10	Northside Water District	90	Wells
	Ravena Village (See No 8 Greene Co, Page 64)	3100	
11	Rensselaerville Water District	114	Myosotis Lake
12	South Albany Water District	40	Wells
13	Voorheesville Village	3320	Wells
14	Watervliet City	11300	Watervliet Reservoir
15	Westmere Water District	15000	Watervliet Reservoir, Wells
	Non-Municipal Community		
16	Bremildan House For Senior Living	50	Wells
17	Carmen Courts	80	Wells
18	Country Manor	30	Wells
19	Edward R. Cass Youth Camp	70	Wells
20	Flemings Mobile Home Park	136	Wells
21	Green Acres	50	Wells
22	Isacsen Mobile Home Park	40	Wells
23	Kountry Knolls	50	Wells
24	Mapletree Apartments	58	Wells
25	Meilak's Mobile Home Park	350	Wells
26	Old Orchard Estates	45	Wells
27	Pantages Mobile Home Park	200	Wells
28	Pine Mobile Home Park	90	Wells
29	Twenty Acres, Inc	60	Wells
30	Warren's Mobile Home Park	51	Wells
31	Whitestone Mobile Home Park	76	Wells

RENSSELAER COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	S
	Municipal Community		
1	Battisti Public Water Supply	135	
2	Berlin Water District #2	655	
3	Castleton-on-Hudson Village	2105	
4	East Greenbush Water Company	180	
5	Hampton Manor-Hillview Water District #4	2241	
6	Hoosick Falls Village	4100	
7	Maple Hill Water Company	91	
8	Nassau Village Public Water Supply	1306	
9	Petersburg Water District	400	
10	Schaghticoke Village Public Water Supply	860	
11	Schodack Water District #1	375	
12	Schodack Water District #2	120	
13	Troy City Public Water Supply	55000	
	Non-Municipal Community		
14	Bon Acre Trailer Park	120	
15	Byers Apartments	28	
16	Caprons Mobile Home Park	30	
17	Cedar Acres Trailer Park	63	
18	Charles Land Apartments	28	
19	Chuckleberry Park	120	
20	Country Acres Mobile Home Park	192	
21	Country Village Apartments	50	
22	Creekside Park	230	
23	Curtis Mobile Homes	230	
24	Drake Trailer Park	20	
25	Drop Realty Mobile Home Park	27	
26	Hoosac Meadows	65	
27	Hoosac School	110	
28	KAJ Trailer Park	24	
29	Kingsley Arms	NA	
30	Lakeside Grove	80	
31	Lakeside Mobile Home Park	30	
32	Leavenworth Trailer Park	60	
33	Lochvue Apartments	45	
34	Maple Lane Apartments	NA	
35	Mores Coach Sites	24	
36	Pine Haven Mobile Court	300	
37	Pirri Apartments	72	
38	Ravenwood Estates	200	
39	Rensselaer Mobile Homes Inc	212	
40	Sundown Mobile Home Court	24	
41	Sykes Trailer Park	25	
42	Tamarac Apartments	36	
43	Terrace Haven	112	
44	Terry-Lynn Apartments	36	
45	Vanderheyden Hall, Inc	115	
46	Walter J. Smith Apartments	34	
47	Willowbrook Apartments	28	

Ref 14

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-0001



Henry G. Williams
Commissioner

MAR 2 6 1986

Mr. William Soukup
Wehran Engineering
666 East Main Street
P.O. Box 2006
Middletown, New York 10940

Dear Mr. Soukup:

Re: HRS Air Release Scoring Guideline

Please find enclosed a copy of a letter from Mr. Perry Katz, of the United States Environmental Protection Agency, on the above-referenced subject. The main gist of the letter is that an HRS air release cannot be scored based on a high HNU or OVA reading alone.

Any questions you may have should be directed to Mr. Katz.

Sincerely,

Marsden Chen

Marsden Chen, P.E.
Supervisor
Eastern Investigation Section
Division of Solid and Hazardous Waste

Enclosure

LA/MC:cl

14-2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

5 MAR 1986

RECEIVED

MAR 11 1986

Marsden Chen, P.E.
Bureau of Hazardous Site Control
Division of Solid & Hazardous Waste
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233-0001

Dear Mr. Chen:

I am writing in response to your letter inquiry of January 23, 1986 concerning analytical instruments utilized to evaluate air releases for purposes of the Hazard Ranking System (HRS).

Your letter states that EPA requirements under the HRS preclude the use of monitoring instruments other than an HNu for site investigations which are undertaken to gather HRS information. As you should be aware from our previous conversations on this subject, EPA does not endorse any specific monitoring instrument for use in obtaining HRS information. In addition, HRS guidance does not recommend or endorse the use of specific brands of analytical instruments. Therefore, your reference to a change in EPA policy in this regard is incorrect.

We have verbally discussed the use of an OVA to evaluate air releases for purposes of the HRS. I have also discussed the use of the Photovac with your consultants who have called seeking guidance on this matter. In both instances, I have emphatically stated that EPA does not endorse or recommend specific brands of analytical instruments.

To mitigate the confusion you have concerning evaluating air releases for purposes of the HRS, please be advised of the following information:

For an air release to be counted, the sampling procedures/ protocol must be reported in detail. These procedures must include continuous monitoring of wind direction through-out the monitoring period. This approach is not valid if there is any significant change in wind direction. Upwind and downwind measurements must be taken. Procedures should also specify collection of air samples or measurement in the breathing zone. The measurements must be taken at a reasonable distances from sources (e.g. drums), and no disturbance of the site is allowed. It also must be clear that the

releases reported are not methane releases. Methane is specifically precluded from consideration under CERCLA. Therefore, monitoring instruments not sensitive to methane or procedures to evaluate whether the releasing compound(s) is methane should be used. For example, the OVA has a carbon filter diversion feature that can be used to determine if the substance being released is methane. Samples of the waste should be taken to show that it contains a specific hazardous volatilizing compound. This will further substantiate that the release of measure is a hazardous compound. This procedure for identifying a specific volatilizing hazardous compound in the source material is necessary because the portable instruments do not distinguish between volatile compounds; they merely tell the user that some volatile compound is present, not its identity or its absolute concentration. An appropriate analytical instrument that can fulfill the requirements of the aforementioned paragraph can be utilized.

EPA appreciates that DSHW wishes to conform with policies for the HRS. However, EPA has no list of approved analytical instruments for use in evaluating air releases for purposes of the HRS. As I stated previously, EPA does not endorse or recommend specific brands of analytic instruments.

I hope this information adequately answers your inquiry. Feel free to contact me at (212) 264-8678 if you have any further questions.

Sincerely yours,

Perry Katz

Perry Katz, Environmental Scientist
Site Investigation & Compliance Branch

Ref 15

POPULATION COUNT

Population within a 3-mile radius of each Phase I site is determined using the coordinate system illustrated below. The number of residences for each quadrant and section is determined by overlaying this pattern onto a U.S.G.S. 7.5 minute topographic map. A multiplier of 3.8 persons per residence is used to determine population in accordance with Mitre Model 1985.

Bendix Landfill

Quads used

Troy South, NY

Albany NY

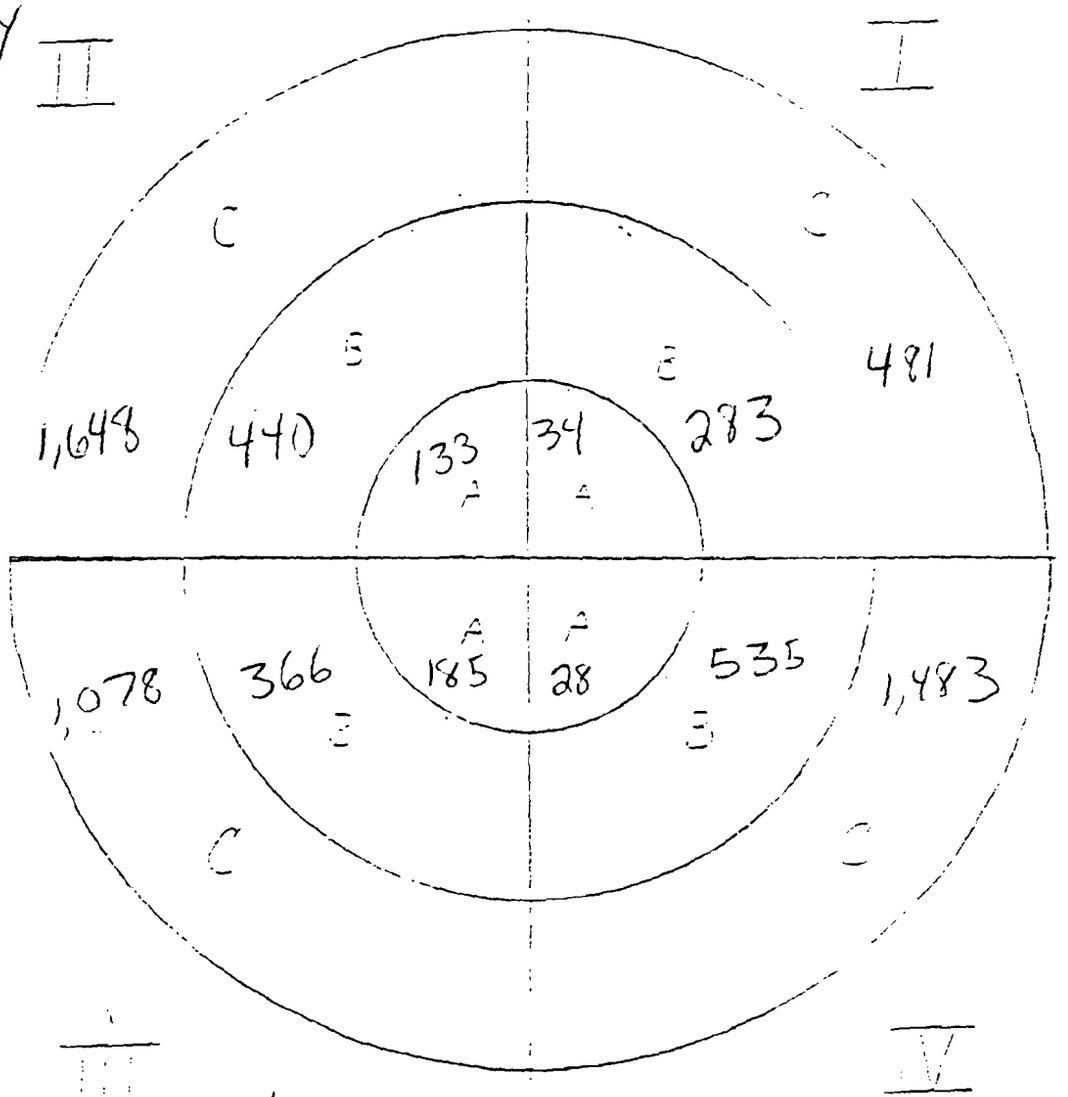
Troy North, NY

A = 1 mile radius

B = 2 mile radius

C = 3 mile radius

(Figure not To Scale)



A = 380 × 3.8 = 1,444

B = 1,624 × 3.8 = 6,171

C = 4,690 × 3.8 = 17,882

1444 A

6171 B

7,615

17,822 C

25,437 Total

00-17-1 (10/83)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

TRANSMITTAL SLIP

Ref 16

TO: Karen Maloy

DATE: 10/3/86

FROM: Larry Brown

RE: Your telephone request for copies of Significant Habitat Reports Nos. 42-3 and 13.

Since there is no report No. 42-13, I am assuming you were referring to No. 1-13 which is a duplicate report of 42-13 for Albany County (since the report encompasses 2 counties). This report documents winter waterfowl use of the open waterareas from the Colver Dam to the Troy Dam & below. Substantial numbers of mallard & black ducks as well as smaller numbers of other species depend on this area for winter feeding.

FOR ACTION AS INDICATED:

- ☐ Please Handle
- ☐ For Your Information
- ☐ Comments
- ☐ Approval/Signature
- ☐ File
- ☐ Return to me by _____
- ☐ Prepare Reply for _____ Signature
- ☐ _____

SIGNIFICANT HABITAT REPORT

16-2

***
1-13 ◪ 42-3

1. Name of area: Troy Dam & Mohawk Confluence Duck Wintering Area

2. Location of area:

   a) Distance and direction from known location (e.g., "one-half mile northwest of Centertown"): [illegible] Colors, Town of [illegible]

   b) County and town: Albany, Co. Rensselaer Co. City, [illegible]

   NOTE: If possible, attach map (e.g., USGS 7½' topographic quad) showing location of area

3. Approximate size, if known:

4. Reason for considering significant: Duck wintering area for Black, Mallard, some Goldeneye.

	Mallard	Black	Goldeneye
1976	155	891	4

5. Other information about area (e.g., vegetation, water chemistry, soils, ownership, vulnerability, recommended action), if known:

6. More information on this area is available from the following source(s):

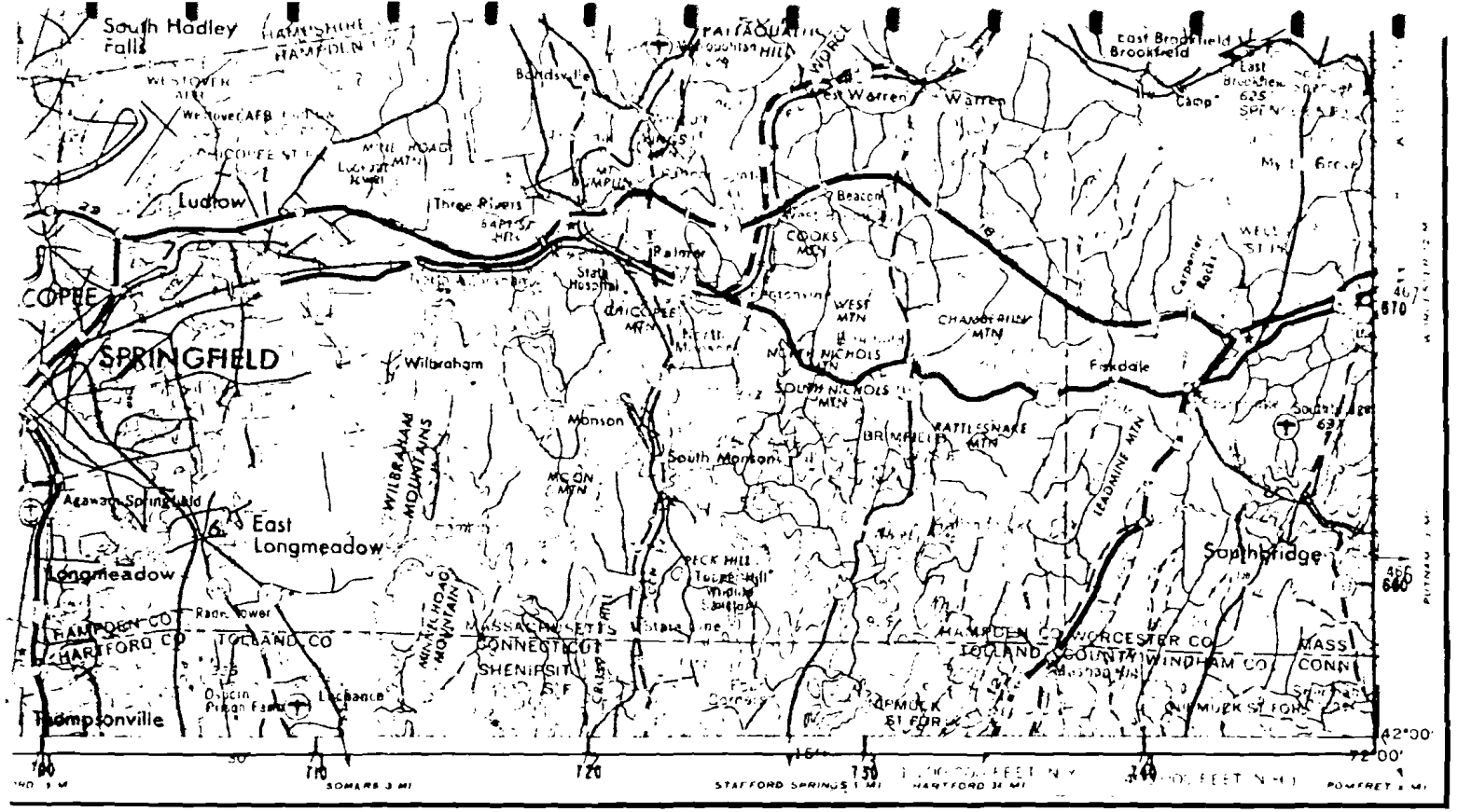
Date of Report:

Submitted by: Aerial Survey by Fish, Game, Johnny Martin

Affiliation:

-Use reverse side for continuations, if needed-
-If available, enclose other material on this area -


16-3
COHOES
WATERFORD
GREEN ISLAND
TROY
HUDSON - RENSSELAER CO
ALBANY CO
SARATOGA CO
RIVER
CANAL
Peebles Island
Waterford Rural Cem
St Josephs Cem
Cohoes Falls
Gaging Sta
Water
Lock No 1
Lock No 2
Lock No 3
Lock No 4
Lock No 5
Lock No 6
Reservoir
Res
Hospital
Central High Sch
Haskell Sch
Sage Sch
Knickerbocker Jr High Sch
Lansingh Sch
Golf Course
Playground
Park
Cem
Gas
BM
ROAD
AVE
BLVD
CITY BOUNDARY
MOHAWK
DELAWARE & HUDSON
CHAMPLAIN
VAN SCHAICK ISLAND
ABANDONED
NEW YORK CENTRAL
42°30"
WATERVLIET 1.3 MI.
ALBANY (STATE CAPITOL) 8.2 MI.
(TROY SOUTH)
6969 II NW
TROY (COURTHOUSE) 1.6 MI.
II MI. TO U.S. 9 & 20
SCALE 1:24000
8039
gical Survey
mmetric
ck 1954
MN
GN
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET



SIGNIFICANT HABITAT OVERLAY NO. 1 OF 2

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF FISH AND WILDLIFE
BUREAU OF WILDLIFE

PREPARED FOR: SIGNIFICANT HABITAT UNIT
WILDLIFE RESOURCES CENTER
DELMAR, NEW YORK 12054
(518) 457-5782

PREPARED BY: HABITAT INVENTORY UNIT

WC XC YC
WB XB YB

QUAD: ALBANY

SCALE: 1:250,000

ALBANY, N.Y., CONN., MASS., N.H., VT.

FEBRUARY 1987

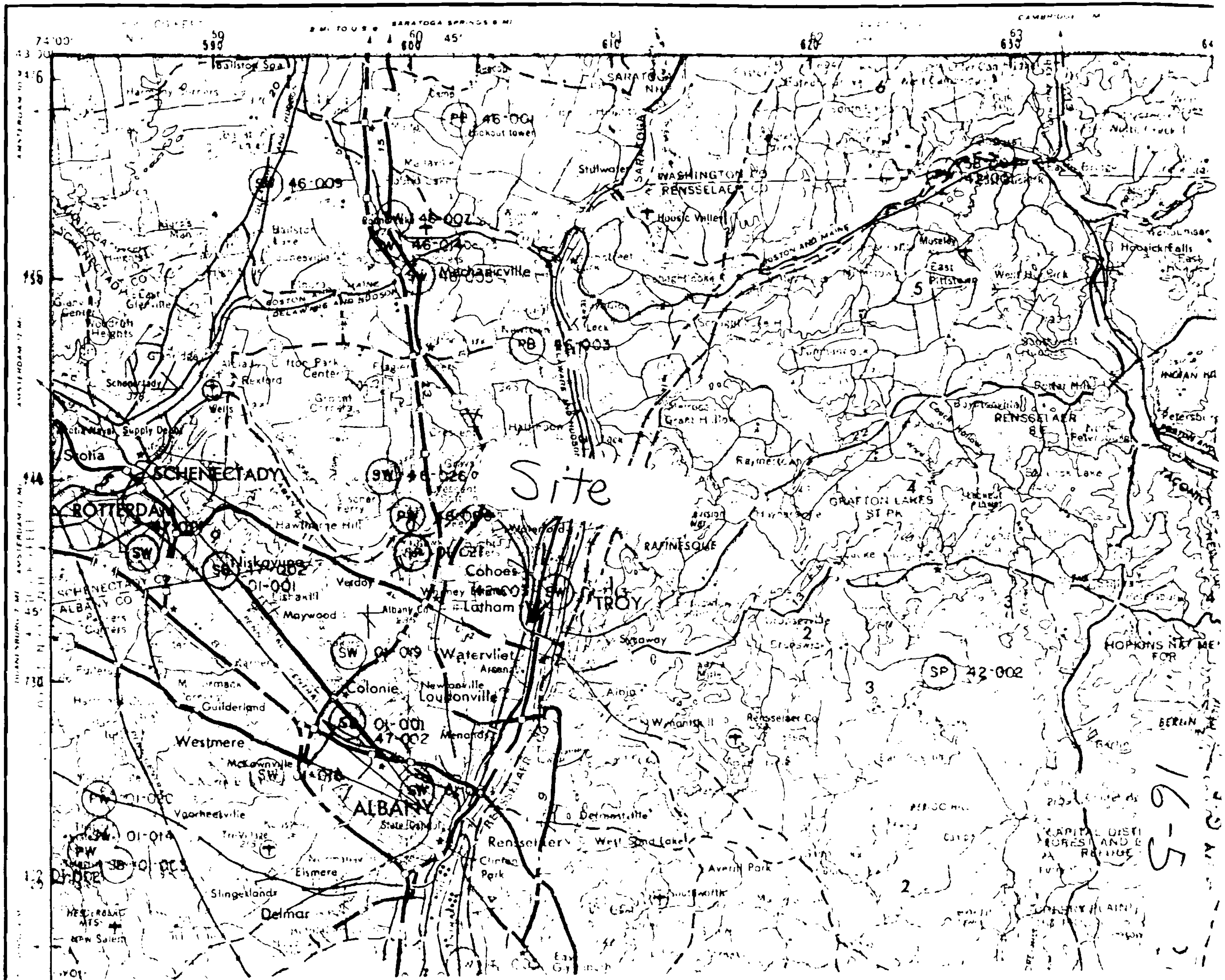
REVISED: 12/31/85

STOCK NO. V501XNK186***05

AIRANY 12346

191

EASTERN UNITED STATES 1:250,000



TELEPHONE CONVERSATION MEMORANDUM

Ref 17

CLIENT NYSDEC Phase I Round 4 PROJ. No. 06281

PROJECT Al Tech Site, Bendix Site DATE 10/1/86

TIME A.M.

CALL TO/FROM Mark Franze REPRESENTING Albany County SCS

PHONE No. 518 - 765 - 3560

SUMMARY OF CONVERSATION:

Irrigation practices within three miles of the Al Tech Specialty Steel site and Bendix Landfill site are unknown.

COPIES TO: _____

BY: Karen E Maloy

Karen Maloy

WEHRAN ENGINEERING
CONSULTING ENGINEERS

George B. Radan
June 4, 1980

Ref 18

HAZARDOUS WASTE SITE DOSSIER

I. Site Name and Location:

Former Bendix Corp. Landfill
Cohoes and Tibbetts Ave.
Village of Green Island, Albany County, New YOrk 12183

II. Background to Investigation and Source of Initial Referral:

The site came to the attention of NYSDEC in 1977.

III. Site Description:

This is a 6 acre inactive site, formerly owned by the Bendix Corp, The current owner is NYSDOT. The site, an open dump, was active between 1937 and November 1975. The site is located adjacent to wetlands in a turning basin in the tail waters of the Mohawk River.

Alluvial material forms most of the underlying geology. There are neither residences nor private wells in the vicinity of the former Bendix site. (Distance is at least one mile.) Depth of the underlying aquifer is unknown to us at this time. Access to the site is controlled by a fence.

IV. Allegations of "Imminent Hazard" Pollution:

This site received asbestos based auto brake lining dust and pellets, brake lining scrap and rejected brake linings. Allegedly some 350,000 tons of waste were disposed at this site. No cover material was placed over disposed material.

As long as there is no covering of the open dump, there always exists the possibility of air/borne contamination from the asbestos related materials. There is very little vegetation on site. Erosional problems exist on the slopes. There are no known health problems associated with this site at the present time.

V. Current Involvement and Remedial Measures:

The Albany County Health Department conducts periodic site inspections. The last visit took place on February 28, 1980, samples were taken. Remedial action was proposed, consisting of installing at least 3 monitoring wells, (one upgradient and two downgradient), taking and analyzing samples and capping the site.

There were no legal actions undertaken in the past or presently against this site.

VI. Information Still Needed:

Further study needed.

VII. Conclusion and Recommendation:

The Task Force considers this to be a medium/priority/seriousness site. An inspection is recommended.

Continued From Front

VII. PERMIT INFORMATION

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

18-2

☐ 1. NPDES PERMIT ☐ 2. SPCC PLAN ☐ 3. STATE PERMIT (specify): _____

☐ 4. AIR PERMITS ☐ 5. LOCAL PERMIT ☐ 6. RCRA TRANSPORTER

☐ 7. RCRA STORER ☐ 8. RCRA TREATER ☐ 9. RCRA DISPOSER

☐ 10. OTHER (specify): SITE IS INACTIVE SINCE NOVEMBER 1975

B. IN COMPLIANCE?

☐ 1. YES ☐ 2. NO ☐ 3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): _____

VIII. PAST REGULATORY ACTIONS

☒ A. NONE ☐ B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

☐ A. NONE ☒ B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2 DATE OF PAST ACTION (mo., day, & yr.)	3 PERFORMED BY: (EPA/State)	4. DESCRIPTION
SITE INSPECTION (WITH OCCAS. SAMPLING)	2/28/80	ACHD	PERIODIC INSPECTION - (BUT NO FIRM DATES) - UNTIL THE SITE IS CAPPED

X. REMEDIAL ACTIVITY (past or on-going)

☐ A. NONE ☒ B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
MONITORING WELLS INSTALLATION	MID-1980	NYSDOT	1-UPGRADIENT & 2 DOWNGRADIENT PLANNED MID-SUMMER 1980
CAPPING OF SITE	ASAP	"	PLANNED, DATE NOT ESTABLISHED

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment *(Section II)* information on the first page of this form.

Continued From Page 2

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

ASBESTOS 18-3

(BRAKE LINING COMPOSITION: ASBESTOS 55%; RESIN 10%; FRICTION MODIFIERS AND FILLERS 20%; IRON POWDER 6%; ZINC POWDER 9%)

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

IT IS ESTIMATED THAT 350000 TONS OF WASTE WERE DISPOSED AT THIS SITE AND NO COVER MATERIAL WAS PLACED OVER DISPOSED MATERIAL. THE SITE IS LOCATED ADJACENT TO A WETLAND IN A TURNING BASIN IN THE TAIL WATERS OF THE MOHAWK RIVER.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH	X			UNTIL THE SITE IS CAPPED THERE IS DANGER FROM ASBESTOS PARTICLES
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY	X			SITE IS LOCATED ON THE BANKS OF THE MOHAWK RIVER AND
6. CONTAMINATION OF FOOD CHAIN				IS ADJACENT TO WETLANDS
7. CONTAMINATION OF GROUND WATER	X			SEE ABOVE
8. CONTAMINATION OF SURFACE WATER	X			SEE ABOVE
9. DAMAGE TO FLORA/FAUNA	X			THERE IS VERY LITTLE VEGETATION ON SITE
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS	X			EROSIONAL PROBLEMS EXIST ON THE SLOPES
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

Continue On Reverse

IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
		1. FILTRATION	1. LANDFILL
		2. INCINERATION	2. LANDFARM
		3. VOLUME REDUCTION	X 3. OPEN DUMP
X 4. TRUCK	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	6. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	DISPOSED IN BULK

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

SITE WAS ACTIVE FROM 1937 THROUGH NOVEMBER 1975, SITE RECEIVED ASBESTOS-BASED AUTO BRAKE LINING DUST AND PELLETS, BRAKE LINING SCRAP AND REJECTED BRAKE LININGS.

V. WASTE RELATED INFORMATION

A. WASTE TYPE

☐ 1 UNKNOWN ☐ 2. LIQUID ☒ 3. SOLID ☐ 4. SLUDGE ☐ 5. GAS

B. WASTE CHARACTERISTICS

☐ 1. UNKNOWN ☐ 2. CORROSIVE ☐ 3. IGNITABLE ☐ 4. RADIOACTIVE ☐ 5 HIGHLY VOLATILE
☒ 6. TOXIC ☐ 7 REACTIVE ☐ 8. INERT ☐ 9. FLAMMABLE

☐ 10. OTHER (specify): _____

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

NO

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT UNKNOWN	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	X (2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			ZINC POWDER (10) METALS IRON POWDER		
			(11) OTHER (specify) RESINS		

18-5

POTENTIAL HAZARDOUS WASTE SITE
IDENTIFICATION AND PRELIMINARY ASSESSMENT

EPA

REGION: II

SITE NUMBER (to be assigned by Hq): NY000010008

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II *(Preliminary Assessment)*. 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: FORMER BENDIX CORP. LANDFILL

B. STREET *(or other identifier)*: COHOES & TIBBITTS AVE.

C. CITY: VILLAGE OF GREEN ISLAND

D. STATE: NEW YORK

E. ZIP CODE: 12183

F. COUNTY NAME: ALBANY

G. OWNER/OPERATOR *(If known)*

1. NAME OF CURRENT OWNER OF SITE: NYS DOT (ADDRESS: ADJACENT TO THE BARGE CANAL)

2. TELEPHONE NUMBER:

H. TYPE OF OWNERSHIP

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

I. SITE DESCRIPTION: THIS IS A 6 ACRES INACTIVE SITE. ACTIVE LIFE: 1937 - 1975. SITE RECEIVED ASBESTOS-BASED BRAKE LINING DUST & PELLETS, BRAKE LINING SCRAP, REJECTED BRAKE LININGS. ALLEGEDLY AN ESTIMATED 350000 TONS OF WASTE WERE DISPOSED. THERE IS NO COVER.

J. HOW IDENTIFIED *(i.e., citizen's complaints, OSHA citations, etc.)*: CITE CAME TO THE ATTENTION OF NYDEC

K. DATE IDENTIFIED *(mo., day, & yr.)*: 1977

L. PRINCIPAL STATE CONTACT

1. NAME: G. DAVID KNOWLES, P.E.; H.W., NYDEC, ALBANY

2. TELEPHONE NUMBER: 8 567-3254

II. PRELIMINARY ASSESSMENT *(complete this section last)*

A. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☒ 2. MEDIUM ☐ 3. LOW ☐ 4 NONE ☐ 5. UNKNOWN

B. RECOMMENDATION

☐ 1. NO ACTION NEEDED *(no hazard)*

☒ 3. SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: _____
b. WILL BE PERFORMED BY: _____

☐ 2. IMMEDIATE SITE INSPECTION NEEDED
a. TENTATIVELY SCHEDULED FOR: _____
b. WILL BE PERFORMED BY: _____

☐ 4. SITE INSPECTION NEEDED *(low priority)*

C. PREPARER INFORMATION

1. NAME: GEORGE B. RADAN

2. TELEPHONE NUMBER: 212 264-1576

3. DATE *(mo., day, & yr.)*: 6/3/1980

III. SITE INFORMATION

A. SITE STATUS

☐ 1. ACTIVE *(Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)*

☒ 2. INACTIVE *(Those sites which no longer receive wastes.)*

☐ 3. OTHER *(specify)*: _____ *(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)*

B. IS GENERATOR ON SITE? GENERATOR IS ADJACENT TO THE DISPOSAL AREA

☐ 1. NO ☒ 2. YES *(specify generator's four-digit SIC Code)*: 3292

C. AREA OF SITE *(in acres)*: 6 ACRES

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES

1. LATITUDE *(deg.-min.-sec.)*:

2. LONGITUDE *(deg.-min.-sec.)*:

E. ARE THERE BUILDINGS ON THE SITE?

☒ 1. NO ☐ 2. YES *(specify)*: _____

T2070-2 (10-79)

Continue On Reverse

15 (12/75)

Ref 19

New York State Department of Environmental Conservation

MEMORANDUM

TO: Irving Bonsel, Region 4
FROM: Richard Dana, James Sanford and Robert Olazagasti, Remediation Section
SUBJECT: Summary Report, Asbestos Waste Disposal Site, Green Island, New York, July, 1980

DATE: May 1, 1981

In general, the study appears to have been hastily conceived and hastily written.

Though we agree, in general, with the basic conclusions of the report, there are a number of deficiencies and examples of faulty reasoning that we note below:

First and foremost, the "upgradient", "background", B-5 well is neither upgradient from the site nor does it appear to measure background. The well is in the southeast corner of the dump and contains "dark brown asbestos" in the 13 feet of fill. Well B-5 has been used erroneously to demonstrate: 1) that the site has had a "limited" effect on the surrounding groundwater (page 3); and 2) that the landfill has not raised concentration levels of manganese in the groundwater (page 17). We recommend that a true upgradient well be installed as a permanent background monitoring well.

Second, the statement on page 3 that "the discharge point for groundwater beneath the site appears to be the Mohawk Basin", does not agree with the directions of ground water flow and the water level contours shown on the Water Table Map (Sheet 3). This map shows movement to the southwest and west, as well as north into the Mohawk Basin. Groundwater to the west and southwest should be tested for possible contamination, especially since groundwater velocities are highest to the west (350 feet/year in sand). We agree with Residual Management Technology's recommendation (page 4) that "two additional wells be placed west of the landfill: one west of B-2 and one southwest of B-1", in order to further define the groundwater regime at the site. Groundwater samples should be analyzed at these locations. It should be noted that on-site phenols, chloride, iron, manganese and sulphate are all above New York State groundwater quality standards.

Third, the drilling of all but one of the wells to and into bedrock is excellent practice at such a site. However, the specific placement of piezometers in these wells could have been more thoughtfully done. Despite the statement to the contrary on page 7, the permeability of the waste could not have been measured in B-4 with the piezometer placed as it is, more than half (3 feet) in the underlying organic silts. Similarly, the piezometer in Well B-3 is half in sand and half in silt. The only soil type for which a true number for hydraulic conductivity has been obtained is the sand unit. For this reason, we do not see how the conclusion was reached that the waste itself is less permeable than the "underlying sediments" assuming the organic silts constitute these "underlying sediments".

There are several minor comments having to do with Table III. Table III is confusing for several reasons: it is not clear why iron and manganese of New York State Effluent Standards were omitted; it is not clear what the

"Armon et al., 1976" reference is referring to; there is no symbol for the footnote "concentration above standard"; furthermore, it is not clear what this standard is in reference to.

As a final comment, we cannot make a judgment as to the choice of the "partial enclosure option" (page 19) over the other alternatives. To date, we have not been able to obtain a copy of the June 1980 report on "Design Alternatives". The brief description of this partial closure option presented on page 19 is confusing. It is not at all clear how placing "clay side walls.... on top of the sand and gravel base" will "prevent surface water from entering the landfill during periods of high water".

RD/JS/RO:cl

cc: R. McCarty

RECORD OF COMMUNICATION	☐ PHONE CALL ☐ DISCUSSION [Ref 20 NCE ☐ OTHER (SPECIFY) Amended 10 (Record of item checked above)	
TO: Dr. Richard Spear	FROM: Edward L. Moore	DATE January 12,1981 TIME

SUBJECT: BENDIX ASBESTOS LANDFILL, GREEN ISLAND, N.Y. TDD# 02-8007-01/5

SUMMARY OF COMMUNICATION

Most of the changes suggested by Mr. Stone of Bendix Corp. in his letter dated November 18, 1980 have been made. However, the subject title was not changed. Although Bendix is not the owner, Bendix was the operator. The major point of concern was the asbestos and it was felt that that word should remain in the subject title.

Resubmitted

CONCLUSIONS, ACTION TAKEN OR REQUIRED

Bendix Corp. should be made aware of this amended form because they initiated the changes.

INFORMATION COPIES TO:

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible ... tion on this form to develop a Tentative Disposition (Section II). File this form in its entirety i... File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the ... tection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 40 ... Form Log Pro- .0460.

20-2

I. SITE IDENTIFICATION

A. SITE NAME: Former Bendix Corp. Landfill (Asbestos)	B. STREET (or other identifier): Cohoes & Tibbitts Ave

C. CITY: Village of Green Island	D. STATE: N.Y.	E. ZIP CODE: 12183	F. COUNTY NAME: Albany

G. SITE OPERATOR INFORMATION

1. NAME: Bendix Corporation Friction Materials Division		2. TELEPHONE NUMBER: 518-273-6550		
3. STREET: P.O. Box 238	4. CITY: Troy	5. STATE: N.Y.	6. ZIP CODE: 12181	

H. REALTY OWNER INFORMATION (if different from operator of site)

1. NAME: N.Y.S. Dept. of Transportation	2. TELEPHONE NUMBER: 518-474-6715		
3. CITY: Albany	4. STATE: N.Y.	5. ZIP CODE: 12208	

I. SITE DESCRIPTION

6 Acre inactive open landfill with no cover for the exposed friction materials waste containing asbestos.

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☒ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☐ 5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.): 11-6-80	B. APPARENT SERIOUSNESS OF PROBLEM: ☐ 1. HIGH ☒ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME: Edward L. Moore	2. TELEPHONE NUMBER: 201-621-6800	3. DATE (mo., day, & yr.): 8-11-80 Amended 1-7-80

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME: Edward L. Moore	2. TITLE: Sr. Geotechnical Engineer
3. ORGANIZATION: Fred C. Hart Associates, Inc.	4. TELEPHONE NO. (area code & no.): 201-621-6800

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
P. Parekh	Fred C. Hart Associates	201-621-6800
C. Forando	Environmental Health Services	518-445-7835
J. Huntington	N.Y.S. Dept of Transportation	518-474-6715

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, resi... nts)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
D. Stone	Staff Engineers	Bendix Corp.
W. Brown	518-273-6550	Troy, New York 12181

D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	GENERATED
Bendix Corp.	518-273-6550	P.O. Box 238, Troy, N.Y. 12181	20-3
			waste containing
			asbestos

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
N/A			

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS
N/A		

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
8/6/80	8:30 - 9:30 a.m.	[X] 1. PERMISSION [ ] 2. WARRANT

J. WEATHER (describe)
Mostly cloudy, middle 80's

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available. No samples taken

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
OTHER (specify)			

FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.) No measurements taken

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS

Continue On Page 3

Continued From Page 2

20-4

IV. SAMPLING INFORMATION (continued)

C. PHOTOS
1. TYPE OF PHOTOS: [XX] a. GROUND [X] b. AERIAL
2. PHOTOS IN CUSTODY OF: Fred C. Hart Associates

D. SITE MAPPED?
[X] YES. SPECIFY LOCATION OF MAPS. Fred C. Hart Associates

E. COORDINATES
1. LATITUDE (deg.-min.-sec.): 73° 42' 00"
2. LONGITUDE (deg.-min.-sec.): 42° 38' 00"

V. SITE INFORMATION

A. SITE STATUS
[ ] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)
[X] 2. INACTIVE (Those sites which no longer receive wastes.)
[ ] 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?
[ ] 1. NO [X] 2. YES (specify generator's four-digit SIC Code): 3292

C. AREA OF SITE (in acres): 6

D. ARE THERE BUILDINGS ON THE SITE?
[XX] 1. NO [ ] 2. YES (specify):

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER	B. STORER	C. TREATER	D. DISPOSER
[ ] 1. RAIL	[ ] 1. PILE	[ ] 1. FILTRATION	[ ] 1. LANDFILL
[ ] 2. SHIP	[ ] 2. SURFACE IMPOUNDMENT	[ ] 2. INCINERATION	[ ] 2. LANDFARM
[ ] 3. BARGE	[ ] 3. DRUMS	[ ] 3. VOLUME REDUCTION	[X] 3. OPEN DUMP
[ ] 4. TRUCK	[ ] 4. TANK, ABOVE GROUND	[ ] 4. RECYCLING/RECOVERY	[ ] 4. SURFACE IMPOUNDMENT
[ ] 5. PIPELINE	[ ] 5. TANK, BELOW GROUND	[ ] 5. CHEM./PHYS./TREATMENT	[ ] 5. MIDNIGHT DUMPING
[ ] 6. OTHER (specify):	[ ] 6. OTHER (specify):	[ ] 6. BIOLOGICAL TREATMENT	[ ] 6. INCINERATION
		[ ] 7. WASTE OIL REPROCESSING	[ ] 7. UNDERGROUND INJECTION
		[ ] 8. SOLVENT RECOVERY	[ ] 8. OTHER (specify):
		[X] 9. OTHER (specify): Spontaneous combustion (eliminated in 1973)	

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

[ ] 1. STORAGE [ ] 2. INCINERATION [ ] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL
[ ] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [XX] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLER/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE
[ ] 1. LIQUID [X] 2. SOLID [ ] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS
[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE
[ ] 5. TOXIC [ ] 6. REACTIVE [XX] 7. INERT [ ] 8. FLAMMABLE
[ ] 9. OTHER (specify):

C. WASTE CATEGORIES
1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

VII. WASTE RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present

20-5

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e.
AMOUNT	AMOUNT	AMOUNT	AMOUNT 350,000*	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
(1) PAINT, PIGMENTS	(1) OILY WASTES	(1) HALOGENATED SOLVENTS	(1) ACIDS	(1) FLYASH
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	X (2) ASBESTOS
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES
			(6) CYANIDE	(6) OTHER (specify): friction material waste containing 50+% asbestos *Alleged. 10-15% Resin 5.9% iron powder 1.3% Zinc powder
			(7) PHENOLS	
			(8) HALOGENS	
			(9) PCB	
			(10) METALS	
			(11) OTHER (specify):	

f.
(1) LABORATORY PHARMACEUT
(2) HOSPITAL
(3) RADIOACTIVE
(4) MUNICIPAL
(5) OTHER (specif

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X') a. SOLID	b. LIQ.	c. VAPOR	3. TOXICITY (mark 'X') a. HIGH	b. MED.	c. LOW	d. NONE	4. CAS NUMBER	5. AMOUNT	6. UNIT
friction material waste containing asbestos	X					X			350,000	tons

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

[X] A. HUMAN HEALTH HAZARDS

Potential hazard from airborne asbestos particles because site has no cover material.

☐ B. NON-WORKER INJURY/EXPOSURE

20-6

☐ C. WORKER INJURY/EXPOSURE

☒ D. CONTAMINATION OF WATER SUPPLY

X

Site is located on pond that flows into Mohawk River.
Site is located adjacent to Wetlands.

☐ E. CONTAMINATION OF FOOD CHAIN

☒ F. CONTAMINATION OF GROUND WATER

X

Site has no bottom lining and unknown depth to groundwater.

☐ G. CONTAMINATION OF SURFACE WATER

Site has no cover so surface runoff has direct contact with friction material waste containing asbestos.

☐ H. DAMAGE TO FLORA/FAUNA

20-7

☐ I. FISH KILL

☒ J. CONTAMINATION OF AIR

Potential hazard from airborne asbestos particles because site has no cover material.

☐ K. NOTICEABLE ODORS

☐ L. CONTAMINATION OF SOIL

☐ M. PROPERTY DAMAGE

Continue On Page 7

☐ N. FIRE OR EXPLOSION

20-8

☐ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

☐ P. SEWER, STORM DRAIN PROBLEMS

☒ Q. EROSION PROBLEMS

Erosion occurring on surface and three (3) sides of site.

☒ R. INADEQUATE SECURITY

Children play in water at the base of fill material.

☐ S. INCOMPATIBLE WASTES

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

20-9

☐ U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS				
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
unknown	Northerly	None
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
unknown	one (1) mile	up gradient

G. TYPE OF DRINKING WATER SUPPLY

☐ 1. NON-COMMUNITY < 15 CONNECTIONS ☒ 2. COMMUNITY > 15 CONNECTIONS (specify town): Village of Green Island

☐ 3. SURFACE WATER ☐ 4. WELL

Continue On Page 9

Continued From Page 8

X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

20-10

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)		(mark X')

I. RECEIVING WATER

1. NAME

☐ 2. SEWERS ☐ 3. STREAMS/RIVERS

☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify):

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☐ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. OVERBURDEN	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
	1. SAND			x	sandy loam throughout area
	2. CLAY				
	3. GRAVEL				

XIII. SOIL PERMEABILITY

☒ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)

☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

H. DISCHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

I. SLOPE

1. ESTIMATE % OF SLOPE	2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.
< 30° from veritcal	Erosion in all directions

J. OTHER GEOLOGICAL DATA

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRAT DATE (mo., day, &	20-11		
None							

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

☐ NONE ☐ YES (summarize in this space)

During an inspection by the Albany County Health Dept. in 1979, remedial actions were discussed but not required. The remedial action included monitoring wells and capping the site. Bendix proposed wells in Feb. 1980 and installed them soon after. The site has not been capped.

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition *(Section II)* information on the first page of this form.

HISTORICAL BACKGROUND

Ref 21

INACTIVE INDUSTRIAL WASTE
DISPOSAL SITE USED BY BENDIX

The existing waste disposal site was started in 1937, at which time most of the production facilities were confined in the Plant I area which is on the South-West corner of Cohoes Avenue and Tibbits Avenue. The following outline shows the historical background from 1937 till the dumping operations stopped in 1975.

1. 1937 through 1941
   Lining types produced were woven and extruded. Approximately four times as much dust was produced than solid waste. Production was based on a four or five day week. Material going to the dump each day consisted of grinding dust, lining scrap and reject linings.

2. 1942 through 1945
   Extruded lining was produced, the entire output being used for war time jeeps. Production was on a seven day operation. The dust to solid waste ratio was approximately four to one. Material dumped was lining scrap, rejected lining and brake lining dust.

3. 1946 through April, 1969
   Extruded, dry mix and compression mold lining were produced along with some disc pads. The dust to solid waste ratio was two to one. Brake lining dust, lining scrap and rejected lining were disposed of in the site on a daily basis.

   Early in 1969, Albany County Department of Health ordered that the fire be extinguished at the disposal site.

4. May, 1969 through October, 1973
   Large holes were dug at the site and the brake lining dust was dumped into the holes and sprayed with water having a wetting agent. The brake lining production consisted of extruded, compression mold and dry mix types of lining. Disc pad lining was also produced. The daily brake lining dust production was about twice the solid waste consisted of rejected brake lining, brake lining scrap and grinding dust.

5. November, 1973 through November, 1975
   Pelletizing equipment was installed and started up in November, 1973 to pelletize loose grinding dust into round wet balls. Approximately five percent cement is added to harden the pellets. This satisfies the EPA requirements for no visable emissions for transporting and dumping of asbestos waste at the landfill. Because of the volume reduction accomplished when pelletizing the dust, the volume ratio of pellets to solid waste became approximately one to one.

5. November, 1973 through November, 1975 (cont'd)
Brake lining production consisted of extruded, dry mix, disc pad and compression molded. Brake lining pellets, rejected brake lining and brake lining scrap were dumped daily. Dumping operations ceased during November, 1975.

The brake lining composition from 1937 to 1946 was as follows:

Woven Lining - Mostly asbestos, which was dipped in a resin and baked.

Extruded Lining -

Asbestos	50 - 60%
Resin	10 - 15%
Fillers & Friction Modifiers	15 - 30%

The brake lining composition from 1946 through 1975 was as follows:

Asbestos	50 - 60%
Resin	10 - 15%
Friction Modifiers and Fillers	18 - 33%
* iron powder	5.9%
* zinc powder	1.3%

* Prior to 1971, iron powder and zinc powder were not used.

Included in the solid waste taken to the site were the following:

1. scrap wood - small amount
2. scrap metal, tin cans, covers and strapping
3. scrap grinding stones
4. Floor sweepings
5. Occasional rubble from construction of building additions

Since April, 1969, scrap metal and wood were separated and not put in landfill. Also as far as it can be determined, no drums of liquid or solid waste were put in the landfill.

It was difficult to determine the exact amount of waste put into the landfill each year, however, based on dimensions taken from the attached site survey and assuming fill starting five feet below water line, it is estimated that approximately 250,000 cubic yards of asbestos containing waste was deposited in the landfill.

EPA FORMS 2070-12 AND 2070-13

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Bendix Landfill	between Cohoes and Tibbetts Avenue

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Green Island	NY	12183	Albany		

09 COORDINATES LATITUDE	LONGITUDE
42° 45' 10" N	73° 41' 55" W

10 DIRECTIONS TO SITE

From village of Green Island take Route 7 and 787 North. Right onto Dyke Avenue to Cahoes Avenue. Site is on the right.

III. RESPONSIBLE PARTIES

01 OWNER	02 STREET
NYSDOT	

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Albany	NY	12208	(518) 474-6715

07 OPERATOR	08 STREET
Bendix Corporation FMD	P.O. Box 238

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Troy	NY	12181	(518) 273-6550

13 TYPE OF OWNERSHIP
☐ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☒ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE 7 / 14 / 86 (MONTH DAY YEAR)

BY
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): Wehran Engineering

02 SITE STATUS	03 YEARS OF OPERATION		
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1937 (BEGINNING YEAR)	1975 (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Site received asbestos based auto brake lining dust and pellets, brake lining scrap, and rejected brake linings.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Before capping, possibility of air borne contamination from the asbestos related materials. Groundwater and surface water quality have been impacted.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION
☐ A. HIGH ☐ B. MEDIUM ☐ C. LOW ☐ D. NONE

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Dennis G. Fenn	Wehran Engineering	(914) 343-0660

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Karen E. Maloy		Wehran Eng.	(914)343-0660	10 / 21 / 86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [X] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: 350,000
- CUBIC YARDS:
- NO. OF DRUMS:

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS X			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Asbestos				
	Zinc				
	Iron				
	Phenols				
	Lead				
	Sulfate				
	Chloride				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling analyses, reports)

NYSDEC Region 4 Files
DOH Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 7/'80) — ☐ POTENTIAL — ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Results from RMT hydrogeologic investigation showed concentrations of lead, chloride, iron, phenols, and sulfate in downgradient wells were above NYS Groundwater Standards.
Although phenols were found above standard in upgradient wells, they were found in increased levels downgradient.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 7/'80) — ☐ POTENTIAL — ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Results from RMT hydrogeologic investigation showed erosion of asbestos into the Mohawk Basin has occurred. Elevated concentrations of phenol were also present.

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Site was uncovered, potential contamination of air with asbestos dust.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None documented

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Potential existed before site was covered and fenced.

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

None documented

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None documented
Municipal well located 1.5 miles form the site potentially affected.

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None documented

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

25,400 people live within three miles of the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None documented

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names(s) of species)

None documented

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None documented

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: 7/'81) ☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Degradation of ground and surface water has occurred. Erosion of asbestos into surface water has occurred.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: 7/'81) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

Erosion of asbestos into Mohawk Basin has occurred.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None documented

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 25,400

IV. COMMENTS

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

NYSDEC Region 4 Files

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Bendix Landfill	Cohoes and Tibbetts Avenue				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Green Island	NY	12183	Albany		

09 COORDINATES		10 TYPE OF OWNERSHIP (Check one)
LATITUDE	LONGITUDE	☐ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
42° 45' 10" N	73° 41' 55" W	☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION	
7 / 14 / 86 (MONTH DAY YEAR)	☐ ACTIVE ☐ INACTIVE	1937 (BEGINNING YEAR)	1975 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☒ F. STATE CONTRACTOR Wehran Engineering (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Karen E. Maloy	Environmental Scientist	Wehran Eng.	(914) 343-0660
09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
David B. Tompkins	Environmental Scientist	Wehran Eng.	(914) 343-0660
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
			( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT		70° Sunny

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Dennis G. Fenn	Wehran Engineering	(914) 343-0660

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Karen E. Maloy		Wehran Eng.	(914) 343-0660	10 / 21 / 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☒ A. SOLID
- ☒ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: 350,000
- CUBIC YARDS: _____
- NO. OF DRUMS: _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS X			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Asbestos				
	Zinc				
	Iron				
	Phenols				
	Lead				
	Sulfate				
	Chloride				

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

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

NYSDEC Region 4 Files
DOH Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	000010008

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION
02 ☐ OBSERVED (DATE: 7/'80) ☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

Results from RMT hydrogeologic investigation showed concentrations of lead, chloride, iron, phenols, and sulfate in downgradient wells were above NYS Groundwater Standards.
Although phenols were found above standard in upgradient wells, they were found in increased levels downgradient.

01 ☐ B. SURFACE WATER CONTAMINATION
02 ☐ OBSERVED (DATE: 7/'80) ☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

Results from RMT hydrogeologic investigation showed erosion of asbestos into the Mohawk Basin has occurred. Elevated concentrations of phenol were also present.

01 ☐ C. CONTAMINATION OF AIR
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

Site was uncovered, potential contamination of air with asbestos dust.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

None documented

01 ☐ E. DIRECT CONTACT
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

Potential existed before site was covered and fenced.

01 ☐ F. CONTAMINATION OF SOIL
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres)
04 NARRATIVE DESCRIPTION

None documented

01 ☐ G. DRINKING WATER CONTAMINATION
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

None documented
Municipal well located 1.5 miles form the site potentially affected.

01 ☐ H. WORKER EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

None documented

01 ☐ I. POPULATION EXPOSURE/INJURY
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION

25,400 people live within three miles of the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None documented

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include names of species)

None documented

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None documented

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: 7/'80) ☐ POTENTIAL ☒ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Degradation of ground and surface water has occurred. Erosion of asbestos into surface water has occurred.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: 7/'80) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

Erosion of asbestos into Mohawk Basin has occurred.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None documented

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 25,400

IV. COMMENTS

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

NYSDEC Region 4 Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☒ G. STATE (Specify)	40-81-0042	3/25/82	9/30/82	Dredge, fill etc. for closure
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☒ H. OPEN DUMP	350	Tons
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

☐ A. BUILDINGS ON SITE

None

06 AREA OF SITE

6 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☒ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

No liner present at the site.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS Site closure completed in 1982 at which time site was capped and fenced (with signs)

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

NYSDEC Region 4 Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as appropriate)	SURFACE	WELL	02 STATUS: ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
COMMUNITY	A. ☐	B. ☒	A. ☐	B. ☐	C. ☐	A. 1½ (mi)
NON-COMMUNITY	C. ☐	D. ☐	D. ☐	E. ☐	F. ☐	B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER: 1,300

03 DISTANCE TO NEAREST DRINKING WATER WELL: 1½ (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
0 (ft)	N, W, and S	_____ (ft)	_____ (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including acreage, depth, and location relative to population and buildings)

Infiltration gallery

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES	COMMENTS	☒ YES	COMMENTS
☐ NO		☐ NO	

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Mohawk Basin (north)	X	adjacent (mi)
Hudson River (east)	☐	.4 (mi)
unnamed surface water (west)	☐	adjacent (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE	02 DISTANCE TO NEAREST POPULATION
A. 1,444 NO. OF PERSONS	B. 7,615 NO. OF PERSONS	C. 25,437 NO. OF PERSONS	100 ft (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
1,700	100 ft (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

There are 1,444 residents within one mile of the site.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} – 10^{-8} cm/sec ☐ B. 10^{-4} – 10^{-6} cm/sec ☒ C. 10^{-4} – 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE (10^{-4} – 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-2} – 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
3 (ft)	(ft)		

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
10 (in)	2.25 (in)	10 %	N,S, E, and W	30 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

site is in a wetland

ESTUARINE	OTHER
A. (mi)	B. 0 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

(mi)

ENDANGERED SPECIES: none within one mile

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 1,000 ft. (mi)	B. 100 ft. (mi)	C. (mi)	D. (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is located in northeastern section of the county. The site is located in a wetland at an elevation of 20 feet above sea level. The site is bounded on the east and south by the Village of Green Isalnd, on the west by Route 787 and another disposal area, and on the north by the Mohawk Basin. The Hudson River is located 2,200 feet east of the site.

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

NYSDEC Region 4 Files
Wehran Engineering Site Investigation 7/14/86

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	000010008

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	10		7/'80
SURFACE WATER	4		7/'80
WASTE	1		7/'80
AIR			
RUNOFF			
SPILL			
SOIL	5		7/'80
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
HNU Photoionizer	No readings above background

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Wehran Engineering
(Name of organization or individual)

03 MAPS
☒ YES
☐ NO

04 LOCATION OF MAPS
Wehran Engineering

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

NYSDEC Region 4 Files

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE SITE INSPECTION REPORT PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. CURRENT OWNER(S) / **PARENT COMPANY** (If applicable)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
NYSDOT			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**10 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**11 SIC CODE**
05 CITY / 06 STATE / 07 ZIP CODE		**12 CITY / 13 STATE / 14 ZIP CODE**	
Albany / NY / 12208			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**10 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**11 SIC CODE**
05 CITY / 06 STATE / 07 ZIP CODE		**12 CITY / 13 STATE / 14 ZIP CODE**	

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**10 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**11 SIC CODE**
05 CITY / 06 STATE / 07 ZIP CODE		**12 CITY / 13 STATE / 14 ZIP CODE**	

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**10 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**11 SIC CODE**
05 CITY / 06 STATE / 07 ZIP CODE		**12 CITY / 13 STATE / 14 ZIP CODE**	

III. PREVIOUS OWNER(S) (List most recent first) / **IV. REALTY OWNER(S)** (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Bendix Corporation FMD			
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**04 SIC CODE**
P.O. Box 238			
05 CITY / 06 STATE / 07 ZIP CODE		**05 CITY / 06 STATE / 07 ZIP CODE**	
Troy / NY / 12181			

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**04 SIC CODE**
05 CITY / 06 STATE / 07 ZIP CODE		**05 CITY / 06 STATE / 07 ZIP CODE**	

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**03 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**04 SIC CODE**
05 CITY / 06 STATE / 07 ZIP CODE		**05 CITY / 06 STATE / 07 ZIP CODE**	

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

NYSDEC Region 4 Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	000010008

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
05 CITY	**06 STATE** / **07 ZIP CODE**	**14 CITY**	**15 STATE** / **16 ZIP CODE**
08 YEARS OF OPERATION	**09 NAME OF OWNER**		

OPERATOR'S PARENT COMPANY (If applicable)

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

01 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
Bendix FMD			
STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
P.O. Box 238			
05 CITY / **06 STATE** / **07 ZIP CODE**		**14 CITY** / **15 STATE** / **16 ZIP CODE**	
Troy / NY / 12181			
08 YEARS OF OPERATION	**09 NAME OF OWNER DURING THIS PERIOD**		

NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
05 CITY / **06 STATE** / **07 ZIP CODE**		**14 CITY** / **15 STATE** / **16 ZIP CODE**	
YEARS OF OPERATION	**09 NAME OF OWNER DURING THIS PERIOD**		

11 NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	**04 SIC CODE**	**12 STREET ADDRESS** (P.O. Box, RFD #, etc.)	**13 SIC CODE**
CITY / **06 STATE** / **07 ZIP CODE**		**14 CITY** / **15 STATE** / **16 ZIP CODE**	
8 YEARS OF OPERATION	**09 NAME OF OWNER DURING THIS PERIOD**		

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

NYSDEC Region 4 Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	000010008

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Bendix Corporation FMD			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
P.O. Box 238			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Troy	NY	12181			

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

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

NYSDEC Region 4 Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	000010008

PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	000010008

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ S. CAPPING/COVERING — 02 DATE 1982 — 03 AGENCY _____
04 DESCRIPTION
24" clayey soil. Permeability — 10^{-7}cm/sec

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE 1982 — 03 AGENCY _____
04 DESCRIPTION
site is fenced and posted

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
Unknown

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE 1982 — 03 AGENCY _____
04 DESCRIPTION
Landfill closed by dredging 10,000 cubic yards (0.8 acres of Freshwater Wetland TN-6) around the toe of the existing fill and out 40 feet or less with a backhoe or dragline, by placing a minimum of 10,000 cubic yards of clay soil in a two foot cover over the top, on the cut slope of 3 on 1, and in dredged areas, by placing 200 cubic yards of crushed rock riprap slope protection for about six feet above low water level, and by grading dredged spoil capped with clay and six inches of topsoil, seeded and mulched to slope away from wetland TN-6, with a sodded spillway to the Mohawk Basin on the northwest side.

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

NYSDEC Region 4 Files

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	000010008

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ■ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

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

6.0 ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

6.0 ASSESSMENT OF DATA ADEQUACY AND RECOMMENDATIONS

6.1 GROUNDWATER ROUTE

The preliminary groundwater route score for this site was computed to be 67.35. This high score is attributable to the fact that a direct release of contaminants to groundwater has occurred. The site is in a wetland and the water table is found within the wastes. Also, a large quantity of wastes were disposed. Although site closure plans were completed in 1982, further investigation to determine if the site is still impacting groundwater is necessary. Phase II objectives should include the following:

- Determine extent of groundwater contamination.
- Determine if hydraulic connection exists between unconsolidated and consolidated deposits.
- Determine water quality upgradient of the site.
- Determine discharge point(s) for groundwater beneath the site.

6.2 SURFACE WATER ROUTE

The preliminary surface water route score for this site was computed to be 16.78. A direct release of phenol from the site was documented; however, surface water near the site is suitable for recreation only. Phase II objectives should include the following to determine if site closure plans were adequate to prevent surface water form infiltrating the wastes and generating leachate:

- Determine extent of surface water contamination.
- Sample surface water sediment.
- Determine integrity of cap.

6.3 AIR ROUTE

No measurable readings of organic vapors were detected with the HNU Photoionizer during the site inspection. To score an air release, qualitative sampling is required along with details on the sampling protocol and the

meteorological conditions during the sampling event. Additional monitoring should be performed during the Phase II investigation to check for possible contamination, including asbestos contamination resulting from disturbance of the ground by subsurface drilling and also as a standard safety measure for personnel involved in the investigation.

6.4 FIRE AND EXPLOSION

To score the fire and explosion hazard mode either a state or local fire marshall must have certified that the facility presents a significant fire or explosion threat to the public or to a sensitive environment, or there must be a demonstrated threat based on field observations (e.g., combustible gas indicator readings). The available records give no indication that either one of these tasks has been done. Further, the available data do not suggest any imminent threat of fire and explosion at this site. Therefore, the route score cannot be completed.

6.5 DIRECT CONTACT

There are no confirmed instances in which contact with hazardous substances at this site have caused any injury or death. A site investigation by Wehran Engineering has indicated that the disposal area is fenced and posted. The site was capped in 1982. However, surface water contamination attributable to leachate leaving the site has been documented in an area, outside of the fence, where children swim.

Phase II work plans should include an evaluation of surface water contamination, and determination of the integrity of the cap.

A preliminary score (S_{DC}) of 25 has been computed for this site.

7.0 PHASE II WORK PLAN

7.0 PHASE II WORK PLAN

7.1 INTRODUCTION

The objective of the Phase II investigation of the Bendix Landfill site is to generate a sufficient quality and quantity of data, through sampling and analysis of the site environment, to satisfactorily complete a National Priorities List (NPL) site nomination package, including final Hazard Ranking System (HRS) scores and complete documentation records. Additionally, preliminary remedial cost estimates are developed for use by NYSDEC in establishing remedial program budgets.

The specific objectives of the Phase II investigation at the Bendix Landfill site are as follows:

- Identify the types and quantities of allegedly disposed hazardous wastes, if practical.
- Characterize the subsurface hydrogeologic conditions at the site, with respect to aquifers of concern, through geophysical studies, test borings, and aquifer permeability testing.
- Determine the presence or absence of contamination in the groundwater and surface water in the vicinity of the site, through sampling and analysis.
- If deemed necessary from the results of the Phase I investigation, or the Phase II site reconnaissance, develop and conduct an investigation of contaminant releases to air.
- Evaluate site contamination and determine if there is sufficient data to prepare a final HRS score.
- Complete a Phase II report with final NPL nomination package, preliminary remedial cost estimates, and all supporting data generated in the Phase II investigation.

The following tasks are designed to meet these objectives.

7.2 SCOPE OF WORK

TASK 1 - SITE RECONNAISSANCE/WORK PLAN

This task includes a visit to the site by NYSDEC and Wehran prior to commencing any Phase II field work, to evaluate erosion of the existing cap, access for vehicles and drilling rigs, potential sampling points, geophysical survey lines, off-site property access, availability of potable water for drilling, local emergency services, and health and safety considerations including Level C protection utilizing OSHA approved equipment to be determined by the contractor for various aspects of the field work. Respiratory protection shall include full-face air purifying respirators equipped with high efficiency particulate cartridges, NIOSH approved for asbestos, during this evaluation and all on-site work. The following activities will be generally performed during site reconnaissance:

1. Conduct a volatile organic compound (VOC) emissions survey of the site, where applicable, with a photoionization detector (HNU Systems) or a flame ionization detector (Century OVA with methane filter) to identify the need for additional respiratory protection during field work, and to determine the need for an air monitoring study as part of the Phase II investigation.
2. Conduct a visual site inspection to verify previous reports of waste disposal and to identify current site conditions.
3. Identify preliminary soil boring and monitoring well locations, and determine where limited site clearance activities (e.g., bulldozer, chain saw, gravel bed) will be needed to provide access to drill rigs.
4. Determine where permission for access or easements will be needed from adjacent landowners for off-site sampling.
5. Select preliminary sampling locations, where applicable, for surface water, sediments, leachate, and exposed waste for inclusion in the site work plan.

Following site reconnaissance, a preliminary work plan will be developed for the Phase II investigation. The work plan will include a scope

of work for record search/data compilation, geophysical surveys, a preliminary sampling plan, a preliminary health and safety plan, and an initial cost estimate.

TASK 2 - RECORD SEARCH/DATA COMPILATION

In order to develop an up-to-date data base to support the design of on-site investigations and provide sufficient data to fullfill the requirements of an NPL nomination package, Wehran will review existing data and update the information on this site. Wehran will contact pertinent agencies and obtain additional regional literature and data where available. Data will be compiled and used to complete the documentation records for the HRS score.

TASK 3 - GEOPHYSICAL SURVEY/FINAL SAMPLING PLAN

Non-disruptive geophysical techniques will be used in order to generate preliminary information regarding the hydrogeologic conditions at the site. The primary objective for Phase II geophysics is to detect and evaluate variations in the earth's conductivity or resistivity, as measured using an induced magnetic field or direct electrical current, which may reflect changes in groundwater quality.

Perimeter surveys will be conducted to provide sufficient data to make an informed judgement on the placement of monitoring wells at locations with the highest probability of intercepting potentially contaminated groundwater plumes. Secondarily, geophysical techniques may be used to characterize hydrogeologic conditions between test borings, or define the boundaries of buried waste materials where necessary and practical.

The following geophysical surveys will be conducted at the Bendix Landfill site:

1. Terrain conductivity surveys around the site perimeter for plume identification.
2. Back-up resistivity surveys, in areas with high magnetic interference, for plume identification.
3. Optional resistivity soundings between test borings to confirm continuity of any significant geologic units, as a contingency task subject to NYSDEC approval.

Upon completion of Tasks 1 through 3, the data collected will be evaluated with the intention of developing a final sampling plan and budget. Final proposed locations and estimated depths of borings will be presented. The location and number of surface water, sediment, and leachate samples will also be finalized. A site sketch delineating final proposed sampling points will developed and included in the final plan along with a summary of the interpreted results of the geophysical survey.

TASK 4 - DRILLING AND WELL INSTALLATION

Task 4.1 - Test Borings

The Phase II test boring investigation will be focused on evaluating the presence of contamination in the unconsolidated aquifer and the shale aquifer and determining the hydraulic connection between aquifers. In order to define the hydrogeology beneath the subject site, the following borings are proposed:

1. Two in the overburden to an approximate depth of 15 feet.
2. Three in the bedrock to an approximate depth of 30 feet.

These borings will be drilled under the continuous observation of a geologist from Wehran Engineering. Based on the available file information, it is assumed, for the purpose of determining boring depths, that depth to bedrock would be 20 feet.

The borings would be advanced using hollow stem augers to refusal upon bedrock. Split-spoon samples will be collected at standard five-foot intervals within the overburden in accordance with the procedures of the Standard Penetration Test. Soils will be visually classified in the field for color, grain size, lithology, and relative density and moisture content. Representative portions of each sample will then be placed in moisture-tight jars and stored at Wehran for future reference.

Three borings would be continued approximately 10 feet into bedrock using NX core. Rock Quality Determination (RQD) would be recorded for all

core samples in accordance with standard ASTM procedures. Core samples will be secured in specially prepared wooden core boxes and transported to Wehran Engineering for future reference.

If a confining layer or other strata determined to be of particular significance to the migration of contamination is encountered, additional investigations may be recommended. These additional contingency investigations would be subject to NYSDEC approval in the field, and may include the collection of undisturbed soil samples using Shelby tubes, continuous split-spoon sampling, and laboratory permeability testing. All drilling tools and sampling equipment will be decontaminated according to consultant/NYSDEC protocols.

Task 4.2 - Monitoring Well Installation

Monitoring wells will be installed in each of the five test borings. All wells will be constructed using two-inch diameter, Schedule 40, threaded flush-joint PVC pipe, and 15-foot long, factory-slotted PVC screens. Two-inch diameter casing would facilitate the use of either bailers or small diameter stainless steel pumps to facilitate groundwater collection and minimize costs. The screened interval will be determined in the field according to the hydrologic conditions encountered. However, it is anticipated that the screened interval in an unconfined aquifer would extend from five feet above the groundwater table to 10 feet below. This interval would optimize the collection of "free floating" contaminants which may be present.

A sand pack will be placed around each screen to prohibit clogging of the screen openings. A two- to three-foot thick bentonite pellet seal will be placed at the top of the sand via the Tremie method, to isolate it from upper soil zones. The annular space will be filled to the surface with a bentonite-cement grout using the "Tremie" method. A steel protective casing with lock will then be set into a concrete collar in order to prevent vandalism. Each well would be properly developed using bailing, compressed air or other accepted methods in order to maximize the hydraulic connection between the well screen and the adjacent formation.

Task 4.3 - Survey Well Locations and Elevation

A survey will be conducted by a licensed land surveyor in order to determine the elevations (±0.01 foot) of both ground surface and "top of casing" at each boring location relative to a project-specific datum. The location of each well will also be determined with sufficient accuracy for plotting on a site map. These data would then be used in the evaluation of groundwater level measurements for the purposes of estimating flow direction. Horizontal surveying of well points will be tied to two permanent benchmarks if possible. Elevation of pertinent surface water bodies would also be determined.

Task 4.4 - Field Permeability Testing

In situ permeability tests would be performed to evaluate the horizontal permeability of the screened interval of each monitoring well. The proposed technique is to conduct a recovery type variable head borehole test. This test will involve recording the recovery of water level after bailing. Prior to the procedure, the static water level will be measured and recorded to facilitate a determination of groundwater flow direction.

TASK 5 - SAMPLING

Task 5.1 - Soil Sampling

It is assumed that eight samples from split spoons will be subjected to grain-size and hydrometer analyses (where appropriate), plus Atterberg limits on those samples from cohesive units.

Task 5.2 - Groundwater Sampling

All groundwater samples will be obtained by NYSDEC from monitoring wells previously established at the site and those proposed for the Phase II effort for laboratory analysis according to NYSDEC protocols for sample retrieval, preservation, and storage. Samples will be analyzed by an NYSDEC laboratory. There will be no costs incurred by Wehran in this subtask.

Task 5.3 - Surface Water, Sediment, and Leachate Sampling

All surface water, sediment and leachate samples shall be obtained by NYSDEC for analysis according to NYSDEC protocols for sample retrieval, preservation, and storage. Samples will be analyzed by an NYSDEC laboratory. No costs will be incurred by Wehran in this subtask.

Grab samples of surface water and sediments will be collected at the following locations upstream and downstream of the site from Mohawk Basin. Grab samples are collected at one particular point and time. Leachate from different seeps may be composited. If no leachate is present, a sample of leachate-stained soil may be substituted for a leachate sample.

Task 5.4 - Analysis Plan

Based on the available data, the proposed analyses of samples collected during the Phase II investigation are listed in Table 1.

Task 5.5 - Qualitative Air Monitoring

Throughout all Phase II activities conducted at the site, air monitoring will be performed by Wehran at regular intervals using the HNU Systems Photoionizer, both upwind and downwind. If consistent, unusually high values are observed (five to ten ppm above background) with the HNU, a more quantitative air analysis may be recommended as a contingency task, subject to NYSDEC approval. The HNU will be calibrated at the beginning of each day of use.

TASK 6 - PHASE II REPORT PREPARATION

Upon completion of the Phase II field investigation, Wehran will evaluate all collected data and prepare a site assessment. This assessment will determine the relative nature and on-site extent of surface water, groundwater, soil, and air contamination. This assessment will be applied to the HRS model.

Wehran will develop preliminary estimates of cost for future remedial investigations, engineering plans and specifications, and the potential remediation anticipated for the site. A range of possible remedial costs will

be developed using best engineering judgement and previous experience with possible feasible remedial schemes. This task is not intended to perform a cost-effectiveness analysis of feasible remedial alternatives but rather to provide a cost range estimate adequate for NYSDEC.

Under this task, Wehran will prepare a final report to present all the information and data collected during the Phase I and II efforts. This report will be presented to NYSDEC in the format presented in the RFP.

TASK 7 - PROJECT MANAGEMENT

Wehran will provide supervision, direction, and quality review of all work conducted by Wehran staff and subcontractors, to ensure that all work is performed in a professional manner and in accordance with all NYSDEC Phase II program specifications. Wehran's project team will adhere to the Project QA/QC plan prepared in accordance with USEPA's Guidance for Preparation of Combined Work/Quality Assurance Project Plans for Water Monitoring (OWRS QA-1), May 27, 1983, as updated. All field work will be performed under an NYSDEC approved health and safety plan prepared by Wehran.

7.3 COST ESTIMATE

The estimated cost to complete the scope of services described in this work plan for the Bendix Landfill site is provided in Table 2.

TABLE 1

ANALYSIS PLAN

Samples		Analyses
6	Groundwater	Groups 1, 2, 3
2	Surface water (stream)	Groups 1, 2, 3
2	Sediments (stream bottom)	Groups 1, 2, 4
1	Trip blank	Volatile Organics (VOA)
1	Field blank (groundwater)	Groups 1, 2, 3

Group 1	Complete Hazardous Substance List (HSL) of 130 organic compounds as specified in NYSDEC's Superfund Contract Laboratory Protocol (CLP), January 1985, as updated. Analyses will include forward library search of up to 30 non-HSL substances of greatest apparent concentration in the GC/MS sample spectra (10 volatile and 20 base/neutral/acid).
Group 2	Complete CLP list of inorganics (24 metals plus cyanide).
Group 3	pH (field), pH (lab), specific conductance (field), specific conductance (lab), temperature (field), total organic carbon (TOC), total dissolved solids (TDS), and total suspended solids (TSS).
Group 4	Total solids, specific gravity, TOC.

TABLE 2

NYSDEC SUPERFUND INVESTIGATIONS

PHASE II - TOTAL PROJECT COST SUMMARY[1]

SITE: BENDIX LANDFILL

Wehran's Labor and Expenses	$	53,000
Driller		63,000
Laboratory		24,000
TOTAL ESTIMATED COST	$	140,000*

[1]This cost estimate does not include any provisions for inflation and salary adjustments and can be considered current for approximately three months.

*Note: This cost estimate has been developed for budgeting purposes only. Should this site be selected for Phase II investigation, Wehran will develop a detailed cost estimate for NYSDEC approval.

APPENDIX

15 (12/75)

F. S. RAO Pg 4

New York State Department of Environmental Conservation

MEMORANDUM

TO: Charles N. Goddard, Director, Bureau of Hazardous Waste
FROM: G. David Knowles, Chief, Remediation Section G. David Knowles
SUBJECT: Meeting with Bendix Corporation Concerning Green Island Disposal Site, February 18, 1981
DATE: February 23, 1981

On February 18, 1981, a meeting was held with members of Bendix Corporation, New York State Department of Transportation, Albany County Health Department, and New York State Department of Environmental Conservation representatives from Region 4 and Central Office. An attendance list of those present is attached.

The meeting followed the agenda as outlined in the attached document with Mr. James Herman acting as the lead for the Bendix Corporation.

An engineering report prepared by Residuals Management Technology, Inc. of Madison, Wisconsin, was submitted to DEC, DOT and the Albany County Health Department. We had mutually agreed that a 60 day review of this report could be accomplished.

DOT will need to determine the implementation schedule of the plans and construction of the extension of Route 787 through this general area, and the horizontal alignment and vertical control of such a route, to determine if the proposed remedial action plan would interfere with the construction plans. In addition, the U.S. Corps of Engineers will probably need to be involved since the toe of the disposal site is adjacent to the Mohawk River.

It was mutually agreed that Irv Bonsel from the Region 4 office would be lead individual for this Department and that Mr. David Stone would be the contact in Bendix Corporation. A meeting will need to be established with DOT to determine if the concerns that DEC have for remediation at this site are addressed in the engineering report, and whether DOT can allow such a remedial plan to be implemented. Mr. Robert Olazagasti has the engineering report and will review the report with the assistance of Richard Dana, Jim Sanford, and the Civil Technology Section.

GDK:cl
Attachments

cc: I. Bonsel w/attach
R. Olazagasti w/attach
R. Murphy w/attach
J. Greenthal w/ attach
G.D.K. w/attach
R. Dana w/attach
J. Sanford w/attach

ATTENDANCE LIST

2/18/81
1:30 P.M.

A. David Knowles	N.Y.S.D.E.C.	457-6605
Cheryl A. Ledoux	Bendix Corp.	[illegible]
JOHN RIOPELLE	BENDIX	273-6550
DAVID E. STONE	BENDIX	[illegible]
James F. Herman	Bendix	313-827-6352
John Hulchanski	DOT, Region 1 Waterways	474-6715
Wm. Schollenberger	DOT M.O. Waterways	457-1187
Clifford Foraudo	Albany Co. Health Dept	445-7535
Gary Johnston	DEC Region 4	382 0680
[illegible]	ALBANY COUNTY HEALTH DEPT	445-7835

2/17/81

AGENDA

DEC/BENDIX MEETING

FEBRUARY 18, 1981

GREEN ISLAND LANDFILL

Project Objectives - To properly close the Green Island Landfill.

Meeting Objectives

- Review project background (history/status)
- Present "Report of Hydrogeologic Analysis".
- Secure D.E.C. support in obtaining cooperation/assistance from site owner (DOT) to proceed with site closure.
- Determine specific regulatory steps necessary to facilitate site closure.

Project Background (History/Status)

- Bendix awareness and concern: New state and federal regulations; desire to comply and secure
- RMT involvement: 1 1/2 years
  - Initial on-site assessment
    - site requires final cover, and drainage and erosion control
  - Evaluation of in-field conditions: Backhoe pits, leaching tests, monitoring well(s) and borings to assess ground and surface water conditions.
    - Limited effect on surrounding ground and surface waters; erosion needs to be controlled.
  - Preliminary Closure Design - encapsulate and stabilize surface with clay
- Status: Require DEC comments, guidance and assistance in soliciting cooperation and support from DOT in order to meet project objective

Unresolved Issues

1. Role of DOT (as site owner):
   - financial
   - long-term monitoring
   - maintenance
   - future land use
2. Required permits and approvals:
   - Army Corps.
   - Dept. of Transportation
   - Albany County Health Dept.
   - Others
3. US EPA Involvement
4. Public Relations Concerns - sensitivity to adverse press.
5. Specific regulatory steps for closure.

2/17/81

GREEN ISLAND LANDFILL CLOSURE

I. Background

The Bendix Corporation, Friction Materials Division in Green Island, New York, generates wastes containing asbestos residuals from the manufacture of friction materials. From the 1930's until 1975, approximately 250,000 yd^3 of waste was disposed in accordance with all applicable rules and regulations. This waste consisted of: bagged asbestos waste, scrap brake lining, pelletized asbestos and scrap phenolic resins, and was disposed in a company-operated landfill on land owned by the State of New York and controlled by the N.Y.S. Department of Transportation.

The five acre waste disposal site is located between Cohoes and Tibbitts Ave. in the Mohawk Basin in the Village of Green Island. The eastern edge of the landfill is adjacent to Green Island. The Mohawk Basin abuts the northern edge of the site; and the Village of Green Island is south of the site. West of the landfill is an area used for disposal of demolition debris by others. Cover soil has been placed on side slopes along the southern and southwest faces of the fill and volunteer vegetative cover has developed. Final cover soil has not been placed on top slopes and other side slope areas.

In December, 1975, Albany County and the Department of Environmental Conservation closed this disposal site because of its location at the end of a backwater stretch of the Mohawk River.

II. Site Assessment

In September, 1979, Bendix retained Residuals Management Technology, Inc. (RMT) to conduct an assessment of the inactive landfill. The initial phase of the project consisted of a two-day on-site visit and meetings with state regulatory agency staff. This initial assessment concluded that public access and long-term instability of the landfill appeared to be the most serious problems at the site. Also, the effect of past disposal activities on ground and surface water quality would have to be examined to determine if problems exist which must be corrected in order to properly close and stabilize the landfill.

In order to assess the environmental impact of the closed waste disposal site on the surrounding ground and surface waters a hydrogeologic investigation was initiated in January, 1980. This involved excavating backhoe pits into the landfill at various locations to collect samples of the waste, determine waste depth and characteristics, and observe subsurface conditions. Leaching tests were conducted on composite waste samples taken from the test pits to assess the remaining leaching potential of the waste. Following the backhoe investigation, five borings were augured around the site and observation wells installed in the borings. The observation wells were used to sample groundwater both downgradient of the waste and within the waste. Two rounds of water samples were taken from the observation wells and two surface water points to determine the effect of the landfill on both ground and surface waters. The groundwater samples and surface water samples were analyzed for a number of chemical parameters and compared with New York State Ground Water Quality Standards. In addition, the surface water samples were analyzed for chrysotile asbestos concentrations.

The results of the hydrogeologic investigation are discussed in the RMT July, 1980 report "Summary Report of Hydrogeologic Analysis of Abandoned Asbestos Waste Disposal Site at Green Island, New York" - attached as Appendix A and summarized below.

III. Results

The effect of the waste disposal area on ground water is limited both vertically and horizontally by geologic conditions beneath the site. Shale beneath the site restricts the downward movement of leachate and confines it to the 3-10 ft. of silt and sand between the base of the landfill and the shale. Horizontal movement of leachate is limited to the Mohawk Basin, which acts as the discharge point for groundwater beneath the site.

Although concentrations of lead in the groundwater downgradient of the site are above primary drinking water standards, this effect is believed to be localized because of the relative immobility of lead in groundwater.

Surface water in the Mohawk Basin has not been affected by leachate from the waste disposal site. Concentrations of lead and phenols (the two parameters of concern from leachate tests) in the surface water samples do not appear to be significantly elevated.

Surface water samples indicate that asbestos fibers are present in the adjacent surface water. Although asbestos fibers are found in water samples taken next to the landfill, the number and size of fibers decreases by about 2/3 as the water enters the Mohawk River through a culvert on the north end of the basin.

Results of the leaching tests indicate that essentially all of the contaminants available for leaching have been leached out of the waste without observable effects. Thus, it is believed that the leachate will not increase in strength from current concentrations measured in the waste disposal site. In addition, the organic silt below the site serves as a filter for the leachate.

IV. Conclusions

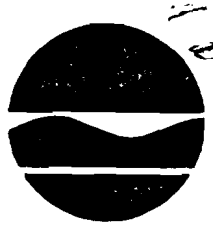
- Preventing future erosion of the landfill is the major concern.
- An enclosure design consisting of a clay cap over the area will prevent future erosion and will assure no future affect on water quality.
- The waste disposal site has had a limited effect on the surrounding ground and surface waters.

V. Closure Concept

The primary objective of the design is to: 1)encapsulate and stabilize the surface with clay to limit the amount of surface water entering the site during periods of heavy rain and high water, and 2) to allow continued draining of water in and out of the landfill through the underlying soils.

The design concept consists of a two foot thick clay cap covered with six inches of topsoil and seeded to stabilize the site surface. Sand and gravel will be placed to form a stable base for the clay side walls which will be graded to a 3:1 slope to prevent erosion. In addition, drainage features will be designed to prevent ponding of water on the site surface.

New York State Department of Environmental Conservation
Region IV
2176 Guilderland Avenue, Schenectady, NY 12306



Robert F. Flacke
Commissioner

May 13, 1981

Mr. David Stone
Bendix Corporation
Friction Materials Division
P.O. Box 238
Troy, NY 12181

Re: Bendix Landfill Closure

Dear Mr. Stone:

This Department along with the Department of Transporation and the Albany County Health Department have reviewed the July 1980 closure plan for the Bendix Asbestos Landfill as proposed by Residuals Management Technology, Inc. The following comments were raised.

1. The "upgradient, background" well #B-5 is neither upgradient nor does it appear to measure background. The well is located in the southeast corner of the fill area where, according to the boring log, it was drilled thru asbestos waste. Therefore, we believe that well B-5 cannot be used for background comparison. A new well should be drilled for this purpose.

2. Sheet 3, the Water table contour map shows groundwater flow to the west, southwest and north toward the Mohawk Basin. This contradicts the statement on page 3 that the discharge point for groundwater appears to be the Mohawk Basin. We agree with the recommendation that two additional wells be placed west of the landfill: one west of B-2 and one southwest of B-1, in order to further define the groundwater regime at the site. Samples should be taken and analyzed at these locations.

3. The measurement of permeability in the underlying soil and of the waste itself was not adequately done. The placement of the piezometers in the wells was such that the permeability of two different soil layers was measured. The only soil type for which a true hydraulic conductivity was obtained was the sand layer. Therefore, the conclusion that the waste is less permeable than the underlying sediments is only partially correct.

4. Table III is a bit confusing. It is not clear why iron and manganese were omitted in the New York State standards. Also, it is not clear what report is being referenced and no symbol is given for the footnote "concentration above standards."

5. The Department would like to obtain a copy of the June, 1980 "Design Alternatives" report. It is not clear how placing clay side walls on top of a sand and gravel base will prevent surface water from entering the landfill during periods of high water from the brief description given.

Should you have any questions, please feel free to call me at 518-382-0680.

Sincerely yours,

Irving L. Bonsel, P.E.
Associate Sanitary Engineer
Region IV

ILB/vav

cc: Mr. McCarty
Mr. Svenson
Mr. Hulchanski

Bendix

Friction Materials Division

Troy, New York 12181
Tel (518) 273-6550

The Bendix Corporation

Mr. Irving Bonsel
Region 4 Engineer
Division of Solid Waste
N.Y.S.D.E.C.
2176 Guilderland Avenue
Schenectady, N.Y. 12306

June 22,1981

Dear Mr. Bonsel:

We have reviewed the comments raised in your May 13, 1981 letter in reply to the proposed Green Island Landfill closure project.

The following points should help clarify the technical issues raised in your letter:

1. The background well B-5 was located in the best position within the property for a background well. It is not possible to put a well further upgradient of the landfill within the property. Bendix tried to obtain permission to put the well on the adjacent property, but was not able to get permission to install the well further upgradient. As shown on the water table map, any position further upgradient would be on the adjacent property, to the east. Since groundwater flows away from B-5 toward the center of the landfill, the majority of water flowing into the well point will be from the east. Since the well point is in sand with fairly rapid movement of flow from the east, B-5 should be measuring as close as possible to background water quality, even though the well penetrated some waste.

2. The water table map, which was drawn using the available monitoring wells, shows a slight mound beneath the landfill. Due to topography and surface water drainage, we expect that the ground water contours would bend around and show ground

water discharge into the swale west of the landfill and thence into the Mohawk Basin. South of the Bendix Landfill is a municipal landfill. On the south side of the landfill, a 19.5 foot water table contour would show discharge from both the Bendix landfill and the municipal landfill into the drainage swale between the landfills, and thence a general flow north toward the Mohawk Basin. Despite local variations in flow direction, the ultimate discharge point for ground water flowing beneath Green Island Landfill is the Mohawk Basin.

3. Field permeability tests were run according to standard practice following the method of Bouwer and Rice (1976). The well screen at B-2 is completely in sand, so this permeability reflects the permeability of the sand. The well point at B-3 is in both sand and organic silt. Since the permeability test will measure the combined permeability of the silt and sand layers, the two layers together should be less permeable than the sand layer alone at B-2. As expected, the permeability measured at B-2 was 3×10^{-3} cm/sec, while that measured at B-3 was 1×10^{-4} cm/sec. The combined permeability of the organic silt layer and the waste was measured at B-4. At B-3, the bottom 2.5 feet of the well were in the silt layer and the top 2 feet were in the waste. At B-3, the bottom 2.5 feet of the well point were in the sand and the top 2.5 feet were in the silt layer. Since the permeability at B-4 was lower than that at B-3 (B-4 was 5×10^{-5} cm/sec), the waste must be less permeable than the sand. The statement on page 7 should be changed to read that the permeability of the waste is lower than that of the sand, rather than the underlying sediments.

4. We have enclosed a revised version of Table III. To clarify the table, we added shading and references to New York State Standards.

5. The primary purpose of the design concept is to isolate the asbestos waste and stabilize the surface of the landfill. The leaching potential remaining in the fill is not substantial. Furthermore, analysis of surface water quality near the fill face reveals no measureable impact of leaching from the fill. Hence, the

most critical aspects of site closure design are to structurally stabilize the fill, prevent physical washout of the asbestos, and handle surface runoff and drainage. The clay cover will reduce rainfall infiltration through the fill surface while the sand and gravel will provide a structural foundation along the sides. This type of construction is planned in order to prevent problems with hydraulic head build up within the landfill and blow out of the side clay walls.

Based on the findings and conclusions of the "Report of Hydrogeologic Analysis", Bendix-Friction Materials Division (FMD) requests that the Department confirm preliminary feasibility of the proposed closure plan. If feasibility is confirmed Bendix will proceed with the next steps in the closure process, including preparation of detailed design and construction plans.

However, before proceeding, several substantive issues, which were not addressed in your letter but which were brought forth during our last meeting on February 18.1981, need to be resolved.

* Since Bendix does not own the Green Island site, is N.Y.S. Department of Transportation prepared to assist in the closure project?

* What is the impact of the proposed 787 arterial on the project?

* What approvals or permits are necessary before construction can commence?

* What is the next step(s) necessary to facilitate closure?

Your prompt review of the above questions and comments would be appreciated. As mentioned previously Bendix is anxious to finalize the site closure design plans so that construction can begin during the current construction season.

Accordingly, we would appreciate the opportunity to meet with you at the plant to tour the landfill and discuss the project in detail with our consultant (RMT). I will contact you on 6/29/81 to discuss dates for such a meeting and to answer any additional questions you may have.

Very truly yours,

D. E. Stone

David E. Stone
Staff Engineer

DES
sb

cc: J. Herman
T. Kunes (RMT)
C. Ledoux
R. Michaud
J. Riopelle

TABLE III

COMPARISON OF NEW YORK STATE GROUND WATER STANDARDS
AND RESULTS FROM GROUND AND SURFACE WATER ANALYSIS

PARAMETER	NY STATE[1] EFFLUENT STANDARDS	B4*	MUNICIPAL[2] LEACHATE	NY STATE[3] GROUND WATER QUALITY STANDARDS	B1*	B2*	B3*	B5*	SW1*	SW2*
Phenols	.002	77	-	0.001	2.35	0.012	0.045	0.016	0.005	4.25
Chloride	500	550	34-2,800	250	140	833	260	70	38	28
Iron	0.60**	-	0-5,500	0.30	0.85	25	0.45	0.2	0.25	0.25
Lead	0.05	0.20	0-5	0.025	0.55	0.20	<0.1	<0.1	<0.1	<0.1
Manganese	0.60**	-	0-1,400	0.30	0.59	1.5	0.40	3.7	0.02	0.03
Sulfate	500	515	1-1,826	250	515	-	-	-	-	-

All results are in mg/l

* highest concentration measured in the well.
** combined concentration of iron and manganese shall not exceed 1.0 mg/l.
" concentration above standard
- no analysis for this parameter

[1]New York State Department of Environmental Conservation, 1978, Ground Water Classifications, Quality Standards and Effluent and/or Limitations, Schedule I for Class GA Waters

[2]from Armon et. al., 1976

[3]New York State Department of Environmental Conservation, 1978, Ground Water Classifications, Quality Standards and Effluent and/or Limitations, Class GA.

15 (12/75)

New York State Department of Environmental Conservation

F6

Reg 4

MEMORANDUM

TO: Robert P. McCarty, Supervisor, Remediation Section
FROM: James A. Sanford, Senior Sanitary Engineer, Remediation Section
SUBJECT: Meeting at Region 4 Offices with Representatives of Bendix Corporation and their Consultant to Discuss Remedial Action at the Green Island Asbestos Dump Site
DATE: July 9, 1981

As requested, on July 9, 1981, I attended the subject meeting. (Attendance list attached). We had previously reviewed an engineering report on the Green Island dump site and visited the site. Our concerns with the Engineering Report were submitted via the May 1, 1981 memo to Irving Bonsel, Regional Solid Waste Engineer for Region 4 under the signatures of Richard Dana, Robert Olazagasti and the writer. Mr. Bonsel forewarded these concerns to Bendix and a response was prepared by their consultant. At the meeting, the following remaining concerns were expressed:

1. The well used for up-gradient background monitoring was drilled through waste deposits. Arrangements should be made to install a well that would give a true indication of up-gradient ground water quality.

2. The cover, or cap, which was proposed to provide the necessary remediation of the problems associated with the dumpsite would not prevent surface water from infiltrating the waste at times of high water, and generating leachate which would be released to ground and surface waters when the water level subsided.

3. The so called "partial enclosure option" was selected in the Engineering Report. However, we have yet to see any evaluation of or description of other options considered.

The following responses were given to our concerns:

1. At present there is no need for a background well. Bendix feels their dumpsite is the source of the contaminants detected in the groundwater. However, a background well may be established for post-closure monitoring.

2. Bendix feels the leaching potential of the waste at present is quite low. As a result, once the partial enclosure has been completed only a small amount of contaminants will be released by surface water infiltration of the waste, and in a short period of time, all contaminants which can be naturally removed from the dumpsite will be washed away, preventing subsequent groundwater degradation. Any leachate from the site is expected to be diluted by the groundwater and the waters of the Mohawk Basin to the point where it does not create a significant environmental effect.

3. Bendix did not feel it was appropriate to provide us with descriptions of the other remedial options considered. They feel the option presented is the only feasible course of action.

Mr. Bonsel apparently feels these responses are satisfactory, since he announced his intention to approve the concept of "partial enclosure" and allow Bendix to prepare detailed plans and specifications.

The writer expressed the opinion that we should not readily accept the continued degredation of ground and surface waters due to infiltration of the dumpsite by seasonal high waters. However, Mr. Bonsel does not consider this continued release of contaminants to be significant. One can not help wondering why the Department has developed groundwater and effluent standards, to protect our resources if it's representatives can chose to allow these regulations to be violated in any case where an imminent threat to the environment is not obvious. It would be of great assistance to all of us in performing our assigned duties if some Departmental Policy on this issue was developed.

JAS:cl

cc: C. Goddard
R. Dana
R. Olazagasti

Attendance Sheet 7-9-81

David Stone	Bendix	518-273-6550
Ira Bonsel	DEC Reg IV	382-0680
John Holchanski	DOT Reg 1	474-6715
Cheryl Ledoux	Bendix	273-6550
Richard W. Svenson	Albany Co. Health Dept	445-7855
Jim Sanford	DEC Albany Office	457-7434
Tom Kunes	RMT for Bendix	(608) 255-2134

ALBANY REGIONAL OFFICE - TRANSMITTAL SLIP Date: 4/23/69

TO: MR. QUINN - ALBANY CTY HD.

[ ] Urgent [X] Routine

FROM Jack D. Lauber Due Date: [ ] Tickler Date

SUBJECT: BENDIX GREEN ISL. DUMP ANALYSIS OF DUST SAMPLES

- [ ] Follow up and report
- [ ] For your approval
- [ ] For your comment
- [X] For your reference
- [X] Note and File
- [ ] Note and Return
- [ ] Note, see or call me about this
- [ ] Per your request
- [ ] Phone inquirer and advise
- [ ] Please answer, cc to ______
- [ ] Prepare reply for _____ signature
- [ ] Return with more details
- [ ] Signature
- [X] Take appropriate action
- [ ] Take up with ______

File - Bendix Case R.D.A.

COMMENTS: Note, 92% less than 50 microns, 46% less than 10 microns indicates airborne dust problems as well as smoldering problem.

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ALBANY, NEW YORK, 12201

April 22, 1969

To: Mr. Lauber, Albany Regional Office

From: Mr. Sherer, Environmental Health Center

Subject: Dust Samples from Bendix Corporation, Green Island Solid Waste Disposal Area

The three bottles of dust, originating from grinding of brake-shoe friction materials, were received 3/18/69.

Spectrographic analysis showed iron to be the principle constituent, with estimates of the following also present:

Chromium	0.3 to 3%
Aluminum	0.3 to 3%
Barium	0.1 to 1%
Zinc	0.1 to 1%
Titanium	0.1 to 1%
Vanadium	0.03 to 0.3%
Copper	0.01 to 0.1%

Traces of the following were also found: magnesium, silica, cadmium, nickel, and silver.

Particle sizing was very difficult due to conglomeration of particles. Of 212 particles sized the breakdown is as follows:

1.6 micron	= 33 particles (16%)
less than 10 micron	= 97 particles (46%)
10 micron to 20 micron	= 57 particles (27%)
20 micron to 134 micron	= 58 particles (27%)
less than 50 microns	= 194 particles (92%)

Five grams of the material is equal to 40 cc volume.

The pyrophoric nature of the material was tested as follows: 2 grams of the dust was placed into a muffle furnace at 100°C. Temperature was increased in 50°C increments. Charring started at 300°C, slight smoking occurred at 350°C, from 400°C to 500°C the material changed from dark gray to light gray, and above 500°C no additional change occurred. Approximately one-third of the sample was volatile at 600°C.

To further study the pyrophoric nature of the material, a paste of dust and water was prepared and dried into flakes. These flakes when held in a flame did not burst into flame but smoldered.

No attempt to study the material under degrees of compaction was made.

Considering the various findings, I think one could conclude:

1. Considerable amounts of the material could become airborne.

2. The material will smolder, giving off smoke, if subjected to increased temperature.

3. Due to the high iron content, some reaction is conceivable whereby oxidation of iron occurs with a build-up of heat, especially if under pressure.

I hope this information is helpful.

RJS

RJS:mgd

STATE OF NEW YORK
DEPARTMENT OF HEALTH

MEMORANDUM

May 29, 1969

To: Dr. Lyons - Albany County Health Department ATTN: Mr. Quinn

From: Mr. O'Connor - Division of Air Resources

Subject: Complaint 69-85, Bendix Dump, T - Green Island, Co - Albany

Enclosed is a copy of a letter of complaint from relative to waste disposal, water and air pollution apparently caused by the operation of the dump by the above corporation.

Please arrange to have an investigation made by personnel of your office in accordance with EHM-51 and document this activity if warranted.

Enclosure

WLO'C/doh

cc: Albany Regional Office
Division of General Engineering

3 Copies
Please

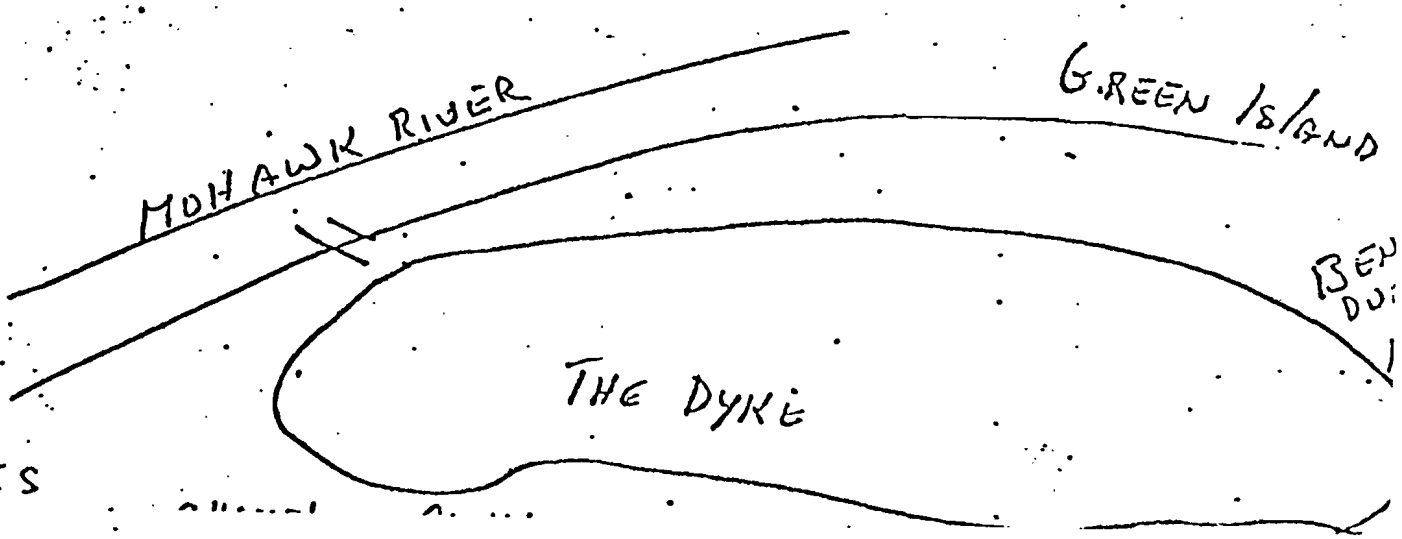
Re: Pollution in the Dyke-Green Island, N.Y.

Gentlemen:

I went fishing in the Dyke on Sunday, April 27th for bullheads. This is an old fishing spot and apparently still has an abundance of fish, but not for too long.

A south wind came up and the water became covered with all little particles of dust blowing from the pile of asbestos grindings dumped right at the waters' edge by Bendix Corp. of Green Island. It not only sticks to everything, but the smell is unbearable. Needless to say, I practically had to sand blast my canoe when I got back home.

Fishing spots are getting scarcer all the time. Why is a large company like Bendix allowed to pollute this way? Both air and water! Can something be done?



INITIAL EVALUATION OF INDUSTRIAL AND HAZARDOUS WASTE SITES

I. General Site Information

1. Site Location Green Island, Mohawk Basin, adjacent and West of N.Y.S. dot blut line points 58 and 60.

2. Current owners ☐ or operators ☐ : Owner: New York State

Previous Operator: Bendix Corporation, Friction Materials Division

Address P.O. Box 238 - Troy, New York 12181

Contact David E. Stone, Manager - Mfg. Engineering Phone (518) 273-6550

3. Time during which site was used: 1937 to November, 1975

4. Type of Site: Industrial Disposal [x] Mixed Disposal Area ☐

Drum Storage ☐ Lagoon ☐ Other (specify) ☐

5. Size of Site (approx.) _____ acres, and/or dimensions 300' x 900'

6. Exposed waste: yes [x] no ☐

II. Waste Characterization (See Section III for more details.)

1. Generator (see attached historical background) Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

2. Generator Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

3. Generator Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

4. Generator Waste Types

Composition Total Quantity Bulk ☐ Drum ☐

Report prepared by: David E. Stone Phone 273-6550

William F. Brown Phone 273-6550

IV. Owners/Operators (Specify) During Use

1. Name ~~Bendix Corp.~~ Friction Materials Div. Time Period 1937 to November, 1975

Address P.O. Box 238 - Troy, New York 12181

Contact David E. Stone, Manager - Mfg. Engineering Phone (518) 273-6550

2. Name _____ Time Period _____ to _____

Address _____

Contact _____ Phone _____

3. Name _____ Time Period _____ to _____

Address _____

Contact _____ Phone _____

V. Sketch of Site

See attached survey map of June 4, 1979

U.S.G.S. Quadrangle Troy North

____ Lat. ____ Long.

(attach photocopy of appropriate area)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION | 40-81-0042

PERMIT

Dw Bonsel

UNDER THE ENVIRONMENTAL CONSERVATION LAW

- [X] ARTICLE 15, (Protection of Water)
- [X] ARTICLE 24, (Freshwater Wetlands)
- [ ] ARTICLE 25, (Tidal Wetlands)
- [ ] ARTICLE 36, (Construction in Flood Hazard Areas)

PERMIT ISSUED TO
The Bendix Corporation, Friction Materials Division

ADDRESS OF PERMITTEE
William C. King, V.P. & General Manager, P.O. Box 238, Troy, N.Y. 12181

LOCATION OF PROJECT (Section of stream, tidal wetland, dam, building)
Bendix Landfill on Lands of State of New York, Green Island

DESCRIPTION OF PROJECT
Close the landfill by dredging 10,000 cubic yards (0.8 acres of Freshwater Wetland TN-6) around the toe of the existing fill and out 40 feet or less with a backhoe or dragline, by placing a minimum of 10,000 cubic yards of clay soil in a two foot cover over the top, on the cut and fill slope of 3 on 1, and in dredged areas, by placing 200 cubic yards of crushed rock riprap slope protection for about six feet above low water level, and by grading dredged spoil capped

COMMUNITY NAME (City, Town, Village)	TOWN		
Village of Green Island	continued on reverse		
COUNTY	**FIA COMMUNITY NO.**	**DAM NO.**	**PERMIT EXPIRATION DATE**
Albany			September 30, 1982

GENERAL CONDITIONS

1. The permittee shall file in the office of the appropriate Regional Permit Administrator, a notice of intention to commence work at least 48 hours in advance of the time of commencement and shall also notify him promptly in writing of the completion of the work.

2. The permitted work shall be subject to inspection by an authorized representative of the Department of Environmental Conservation who may order the work suspended if the public interest so requires.

3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomsoever suffered, arising out of the project described herein and has agreed to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from the said project.

4. Any material dredged in the prosecution of the work herein permitted shall be removed evenly, without leaving large refuse piles, ridges across the bed of the waterway or flood plain or deep holes that may have a tendency to cause injury to navigable channels or to the banks of the waterway.

5. Any material to be deposited or dumped under this permit, either in the waterway or on shore above high-water mark, shall be deposited or dumped at the locality shown on the drawing hereto attached, and, if so prescribed thereon, within or behind a good and substantial bulkhead or bulkheads, such as will prevent escape of the material into the waterway.

6. There shall be no unreasonable interference with navigation by the work herein authorized.

7. That if future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State; and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

8. That the State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

9. That if the display of lights and signals on any work hereby authorized is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the owner.

10. All work carried out under this permit shall be performed in accordance with established engineering practice and in a workmanlike manner.

11. If granted under Articles 24 or 25, the Department reserves the right to reconsider this approval at any time and after due notice and hearing to continue, rescind or modify this permit in such a manner as may be found to be just and equitable. If upon the expiration or revocation of this permit, the modification of the wetland hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

12. This permit shall not be construed as conveying to the applicant any right to trespass upon the lands or interfere with the riparian rights of others to perform the permitted work or as authorizing the impairment of any rights, title or interest in real or personal property held or vested in a person not a party to the permit.

13. The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way which may be required for this project.

14. If granted under Article 36, this permit is granted solely on the basis of the requirements of Article 36 of the Environmental Conservation Law and Part 500 of 6 NYCRR (Construction in Flood Plain Areas having Special Flood Hazards – Building Permits) and in no way signifies that the project will be free from flooding.

15. By acceptance of this permit the permittee agrees that the permit is contingent upon strict compliance with the special conditions on the reverse side.

(SEE REVERSE SIDE)

IAL NOTE:

Based upon a review of this project and a request for water quality certification pursuant to Section 401 of the Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500 (the "Act") public notice for which has been duly given, the Department of Environmental Conservation hereby certifies that the applicant will comply with applicable provisions of Sections 301, 302, 306 and 307 of the Act, provided that:

1. There are no future changes in any of the following that would result in non-compliance with Sections 301, 302, 306 and 307 of the Act:
   a. The project as modified herein.
   b. The water quality criteria applicable to such waters, or
   c. Applicable effluent limitations or other requirements; and

2. The applicable provisions of State law and regulation are complied with.

Project Description continued -
with clay and six inches of topsoil, seeded and mulched to slope generally away from TN-6 with a sodded spillway to the Mohawk Basin on the northwest side. The above construction work will be performed in accordance with the January 1982 Site Closure Plan Report and fourteen drawings dated 11/18/81 prepared by Residuals Management Technology, Inc. and contrary to a footnote on the first sheet of the plans.

SEQR NOTE: The review of this project has included consideration of its total impact on the environment. This Department as lead agency declares the project will have no significant detrimental effect on the environment.

Condition 16: The exterior of the closure will be monitored for any stability problems for as long as a NYS Department of Transportation revocable permit 81-1-10-69 is in effect. Timely corrective measures will be taken if necessary.

Condition 17: In creating the new 3 on 1 slope from the existing waste-materials any asbestos dust created will be sprayed with water to retain it on the site.

Condition 18: The final seed mixture will be modified to add either birdsfoot trefoil or crownvetch to assure a thatched root system.

Condition 19: Measures will be taken to assure motorcycle use will not occur on the closed landfill, if necessary, including complete fencing.

Condition 20: If the dredged spoil is trucked by public roadway to top of the landfill water tight truck boxes will be used. This is to prevent asbestos dust from roadway sediment entering the air.

Condition 21: Hydraulic dredging is not permitted.

Condition 22: A groundwater monitoring program will be designed in agreement with the Region 4 Office of Solid Waste to detect any migration of elements from the site and into the waters of the Mohawk Basin (and the Hudson River) that could contravene Federal Drinking Water standards. The monitoring results will be submitted to Region 4 Office of Solid Waste semiannually for at least 5 years.

E IIT ISSUE DATE	PERMIT ADMINISTRATOR	ADDRESS
March 25, 1982	George B Elliott	Schenectady NY

ONS

dition 23: The Dredged Spoil Containment Berm shall be of a water tight soil or be provided with a water tight liner.

Condition 24: The siltation fence with geotextile fabric will be installed before any excavation or slope adjustment occurs and will be removed only after the closed site has established a deep rooted cover, but in no case earlier than June 15, 1983.

Condition 25: Notify at least 48 hours before start of and upon completion of the project:

George B. Elliott
Regional Permit Administrator
NYS Department of Environmental Conservation
2176 Guilderland Avenue
Schenectady, N.Y. 12306
(518) 382-0680

AND

Kenneth Holle
Environmental Conservation Officer
325 Kenwood Avenue
Delmar, N.Y. 12054
(518) 439-0494

xc: ECO Holle
William J. Clarke
Ed Meiser (2 copies)
Irv Bonsel
Michael McNulty
(Mayor of Green Island)
Mark E. Smith, RMT Inc.
David Stone, Bendix
Joseph Stellato, DOT R1, Waterways
Steven Szanto, DOT RI Design
Steve Lukowski, Albany Co. DOH
R. Michaud, Bendix Attorney
J. Hulchanski, DOT R1, Waterways

UMIT ISSUE DATE	PERMIT ADMINISTRATOR	ADDRESS
March 25 1982	George B Elliott	Schenectady NY

Region IV
2176 Guilderland Avenue
Schenectady, New York 12306
(518) 382-0680

March 24, 1982

The Bendix Corporation
Friction Materials Division
P.O. Box 238
Troy, New York 12181

Attention: Mr. David E. Stone

Re: Green Island Landfill
Closure Plan

Gentlemen:

Department of Environmental Conservation, Division of Solid Waste Management approval is hereby given for closure of the Green Island Landfill in accordance with plans and reports submitted February 16, 1982, and the Departmental Freshwater Wetlands Permit, forthcoming.

Please notify this Department when construction is to start and at completion. If there are any questions, feel free to call at the above number.

Sincerely,

Irving L. Bonsel, P.E.
Associate Sanitary Engineer
Region IV

ILB:vav

cc: G. Elliott
C. Goddard
S. Lukowski
J. Hulchanski, D.O.T.
M. Smith, R.M.T.
J. Stellato, D.O.T.

Bendix
Friction Materials Division
Troy, New York 12181
Tel (518) 273-6550
The Bendix Corporation

Mr. Irving Bonsel
Region 4 Engineer
Division of Solid Waste
N.Y.S. Department of Environmental Conservation
2176 Guilderland Avenue
Schenectady, New York 12306

August 2, 1982

Dear Mr. Bonsel:

Re: Closure of Green Island Landfill

This letter is our notification to you that we plan to start closure construction work on or about August 2, 1982. We have received all the required permits now including Corps of Engineers permit and Village of Green Island Planning Board approval.

If there are any questions, feel free to call me at 518-273-6550.

Very truly yours,

D. E. Stone

David E. Stone
Staff Engineer

cc: George B. Elliot, D.E.C.
Kenneth Holle, D.E.C. Conservation Officer
S. Lukowski, A.C.H.D.
J. Stellato, D.O.T.
J. Herman
R. Michaud
W. King
J. Riopelle
J. Parry
M. Smith, R.M.T.

File

Bendix
Friction Materials Division

Troy, New York 12181
Tel (518) 273-6550
The Bendix Corporation

Mr. David Stout
Environmental Analyst
N.Y.S. D.E.C., Region IV
2176 Guilderland Avenue
Schenectady, N.Y. 12306

November 12, 1982

Dear Mr. Stout:

Re: Green Island Landfill Closure Plan
D.E.C. #40-81-0042

The status of the closure construction work is as follows:

All dredging work, clay cover, topsoil and riprap is in place and complete. Seeding, fertilizing and mulching is complete except for crownvetch seed which will be placed as recommended during the spring of 1983. Fencing is on order to completely enclose the landfill.

Since the fencing will not be complete until early December, we are requesting an extension of the permit expiration date to 12/15/82.

If you have any questions feel free to call me at 518-273-6550.

Very truly yours,

D. E. Stone
David E. Stone
Staff Engineer

cc: G. Elliott, D.E.C.
I. Bonsel, D.E.C.
J. Hulchanski, D.O.T.
S. Lukowski, A.C.H.D.
M. Smith, R.M.T.
J. Herman, Bendix
W. King, Bendix
R. Michaud, Bendix
J. Parry, Bendix
J. Riopelle, Bendix

NEW YORK STATE REGISTRY FORM

HAZARDOUS WASTE DISPOSAL SITES REPORT
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Code: _____

Site Code: 401005

Name of Site: Bendix Landfill Region: 4

County: Albany Town/City Green Island

Street Address Cohoes and Tibbetts Avenue

Status of Site Narrative:

This site is a six acre inactive site, formerly owned by the Bendix Corporation and currently owned by NYSDOT. The site was closed in 1982. This included capping, fencing site, and stabilizing slope.

Type of Site: Open Dump ☐ Treatment Pond(s) ☐ Number of Ponds _____
Landfill ☒ Lagoon(s) ☐ Number of Lagoons _____
Structure ☐

Estimated Size 6 Acres

Hazardous Wastes Disposed? Confirmed ☒ Suspected ☐

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
Asbestos based auto brake lining dust, and	350,000 Tons
pellets, brake lining scrap and rejected brake	
linings	

* Use additional sheets if more space is needed.

Name of Current Owner of Site: NYS Department of Transportation

Address of Current Owner of Site: Albany, New York 12208

Time Period Site Was Used for Hazardous Waste Disposal:

, 19 37 To , 19 75

Is site Active ☐ Inactive ☒
(Site is inactive if hazardous wastes were disposed of at this site and site was closed prior to August 25, 1979)

Types of Samples: Air ☐ Groundwater ☒ None ☐
Surface Water ☒ Soil ☒

Remedial Action: Proposed ☐ Under Design ☐
In Progress ☐ Completed ☒
Nature of Action: Site capped with 24" soil (10^{-7}) and 4" topsoil; 5 monitoring wells installed.

Status of Legal Action: State ☐ Federal ☐

Permits Issued: Federal ☐ Local Government ☐ SPDES ☐
Solid Waste ☐ Mined Land ☐ Wetlands ☐ Other ☐

Assessment of Environmental Problems:

Results from RMT hydrogeologic investigation (7-'80) showed elevated concentrations of lead, chloride, iron, phenols and sulfate in groundwater, and elevated concentration of phenol in surface water. Erosion of asbestos into the Mohawk Basin has also occurred.

Assessment of Health Problems:

Potential hazard of air borne asbestos particles because site was not capped until 1982.

Persons Completing this Form:

Karen E. Maloy	Wehran Engineering
New York State Department of Environmental Conservation	New York State Department of Health
Date October 21, 1986	