

**Final Remedial Investigation Report
Volume I**

Pfohl Brothers Landfill

**Cheektowaga, New York
Site Number 9-15-043**



Prepared For:

**New York State
Department Of Environmental Conservation
50 Wolf Road, Albany, New York 12233**

**Thomas C. Jorling
Commissioner**

Division Of Hazardous Waste Remediation

**Michael J. O'Toole, Jr., P.E.
Director**

**Camp Dresser & McKee
New York, New York**

February, 1992

RECEIVED

MAR 17 1992

N.Y.S. DEPT. OF
ENVIRONMENTAL CONSERVATION
REGION 9



environmental engineers, scientists,
planners, & management consultants

CAMP DRESSER & McKEE

One Wall Street Court
New York, New York 10005
212 943-1000

February 13, 1992

Mr. A. Joseph White, P.E.
Sanitary Engineer
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation
New York State Department of
Environmental Conservation
50 Wolf Road
Albany, New York 12233

Project: Pfohl Brothers Landfill RI/FS
NYSDEC No. D-001894
CDM No. 897-12-RF-FRIR

Subject: Final Remedial Investigation Report

Dear Mr. White:

Please find enclosed 25 copies of an errata to the Pfohl Brothers Landfill Draft Remedial Investigation Report, dated February 1992. This errata addresses public comments received during the period of March to December 1991. The Draft Remedial Investigation Report and this errata constitute the Final Remedial Investigation Report. Revised figures and tables are attached.

If you have any questions or comments, please do not hesitate to call.

Very truly yours,

CAMP DRESSER & McKEE

Lee Guterman
Project Manager

Attachment

(PBLF90/8)

ERRATA TO DRAFT REMEDIAL INVESTIGATION REPORT
FOR PFOHL BROTHERS LANDFILL RI/FS

1. For treatability purposes, ground water from several monitoring wells was collected and analyzed for conventional water quality parameters during the RI. These data are provided in Table 1.
2. Page ES-2, 3rd paragraph, 10th and 11th lines: The statement "Many seeps also have a sheen that is most likely attributable to oil and metals" should read "Many seeps exhibited an oily sheen."
3. Page ES-3, 3rd paragraph, last line: The word "open" should be inserted before the word "fractures".
4. Page ES-3, last paragraph, 2nd line: The text on page ES-2 and 2-14 should read 37 inches per year of precipitation instead of 36 inches.
5. Page ES-5, first paragraph, 7th line: The word "found" should be inserted before the word "stacked".
6. Page 2-2, top of page: The statement "Oil slicks that have been noted on the water surface in the wetland area parallel to Aero Drive near the intersection with Transit Road..." should read "Oily sheens that have been noted on the water surface in the wetland area parallel to Aero Drive near the intersection with Transit Road..."
7. Page 3-10, third paragraph, 3rd line: The word "feet" should be inserted after "300".
8. Page 3-15, top of page: The following statement should be added: "One drum was labeled "R30 8/19/68; ICC 2SI-TD; Wilmington Delaware Plastics-Hydrogen Peroxide 35%".
9. Page 4-36, second paragraph. The following sentence should be added before the last sentence: The detected concentrations of each of these organic compounds correspond to 3.2%, 8.3% and 2.1% of pure product, by weight, respectively.
10. Figure 3-6 has been revised to show a clay unit at B7.
11. Boring location 34+50, 900'N on Figure 3-7, should be revised to read B-17. The interval of non-recovered material at B-17 between 10 and 12 feet bgs has been included on Figure 3-7.
12. Figure 3-8 has been revised to include B-14. The clay unit in 9S presented in Figure 3-8 has been replaced with till.
13. Figure 3-10 has been revised to include an interval of non-recovered material between 10 to 12 foot bgs.
14. Page 3-30, first paragraph, second to last line: insert the word "found" between "were" and "stacked".

15. Page 3-30, third paragraph, (page ES-5, second paragraph): Insert "approximately 40 leachate seeps were flowing at the time. A large number of seeps were also observed during the following fall and the following spring. A few of these seeps flow year-round".
16. Page 3-31, last sentence: The word "creek" should be replaced by "Ellicott Creek".
17. The terms "shallow" and "deep" should be replaced in the text with the terms "overburden" and "upper bedrock".
18. Page 4-6, Table 4-1. The last column should be headed "Minimum Concentration of Either Background Well 6S or 6D".
19. The title of Table 4-5, page 4-13 should read "Concentration Ranges For Each Group of Organic Contaminants In Various Sample Media Exceeding Background Levels".
20. Table 4-8, page 4-46: A footnote "D" should be added to the tables which indicates that the results are from a diluted sample.
21. Page 4-70, last sentence: The following statement should be added, "The elevated concentrations of sodium in the drainage ditches along Transit and Aero Drive are attributable, at least in part, to runoff of salts from the roads."
22. Page 4-65, paragraphs 1 and 2: Insert the "estimated" before the word "concentrations".
23. Page 5-7, first full paragraph, last sentence: The last sentence of the first full paragraph should be deleted.
24. Page 5-9, first full paragraph, last sentence: The word "17" and "7" should be inserted before "shallow" and "deep", respectively.
25. Page 6-1, first sentence: The sentence should be reworded to read "The Pfohl Brothers Landfill site is a source of hazardous substances. These hazardous substances are also present in the leachate seeps and sediments, and surface water and sediments".
26. The mean hydraulic conductivity data presented in Appendix G of the Draft RI Report was multiplied by the saturated thickness of the bedrock aquifer which was based on the length of the well screen extending into the bedrock aquifer. Table G-1 (attached) replaces the original table entitled "Specific Capacity Test Results-Bedrock Wells", in Appendix G of the Draft RI Report. All references to hydraulic conductivity and specific capacity tests should be deleted from the text.
27. Table H-1 of Appendix H should be evaluated in terms of the physical-chemical properties of chemicals detected in the surface samples. These data are provided in Table 2-29 of the Draft Baseline Human Health Risk Assessment, Volume II, dated November 1991.

28. Page H-6, second line: The statement should be modified to read "They have the highest retardation factors with migration rates much slower than that of water."
29. Page H-9, top of page, last sentence of paragraph: The statement should be modified to read "However, lead does not appear in any other media while elevated concentrations of nickel have been detected in bedrock wells both on- and offsite of Area B".
30. Page H-9, last paragraph, fifth line: The statement should be modified to read "Offsite, the soils containing elevated concentrations of lead serve as a source of contamination."
31. Water level data provided in Appendix F (Table F-1) have been revised to include data collected during August 1990.

(PBLF90/5)lg

GROUNDWATER QUALITY DATA FROM SELECTED WELLS
PFOHL BROS LANDFILL

TABLE 1
Conventional Parameters

PARAMETERS	GROUNDWATER WELLS (ppm)									
	MW-2S	MW-2D	MW-3D	MW-5S	MW-5D	MW-6S	MW-6D	MW-9S	MW-9S*	MW-12S
Acidity	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity	580.00	65.60	273.00	141.00	364.00	364.00	224.00	570.00	562.00	703.00
Ammonia	6.00	<1.0	<1.0	<1.0	1.93	<1.0	<1.0	11.80	10.70	<1.0
Ca as CaO3	861.00	312.00	227.00	70.60	288.00	277.00	172.00	390.00	351.00	862.00
Chloride	58.30	117.00	94.70	40.80	414.00	55.40	228.00	88.60	33.00	877.00
COD	275.00	51.20	38.00	26.00	18.00	80.00	40.00	64.00	55.30	26.00
Hardness	818.00	194.00	306.00	173.00	522.00	405.00	340.00	494.00	422.00	1740.00
MBAS	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrate/Nitrite	<0.02	0.029	0.094	<0.02	0.023	0.512	3.54	<0.02	<0.02	0.069
Oil & Grease	<6.0	<5.0	<6.0	<6.0	<6.0	<7.0	<6.0	<6.0	<6.0	<6.0
Phenol	<0.005	<0.005	<0.005	0.02	0.02	0.098	0.007	0.087	<0.005	0.259
Phosphate	0.48	<0.1	<0.1	0.64	<0.1	0.172	0.431	0.12	0.24	0.127
Sulfate	1810.00	1710.00	49.00	25.00	32.00	455.00	42.50	11.00	770.00	280.00
Suspended Solids:										
Total	640.00	225.00	512.00	78.00	620.00	8.00	10.00	682.00	391.00	140.00
Fixed	564.00	202.00	324.00	55.00	518.00	6.00	<1.0	564.00	359.00	121.00
Volatile	76.00	23.00	188.00	23.00	102.00	2.00	10.00	118.00	32.00	19.00
Sulfide	<1.0	<1.0	<1.0	<1.0	1.31	<1.0	<1.0	<1.0	<1.0	<1.0
TKN	8.10	<1.0	522.00	816.00	1420.00	3860.00	807.00	782.00	8.10	3740.00
TOC	46.10	8.00	<1.0	<1.0	2.60	<1.0	<1.0	11.80	11.80	<1.0
Total Solids	2360.00	621.00	4.62	2.59	3.80	7.35	5.26	10.20	6.10	9.02
Petroleum Hydrocarbons			<0.6	0.61	<0.6	<0.63	<0.56	<0.60	1030.00	<0.62
BOD5			<1.0	1.12	3.15		<1.0	<1.0		7.50

disk:PFOHLE01
file :tab1conv

NOTE: * Round 2 data

APPENDIX F

Table F-1

PFOHL BROTHERS LANDFILL WATER LEVEL MEASUREMENTS

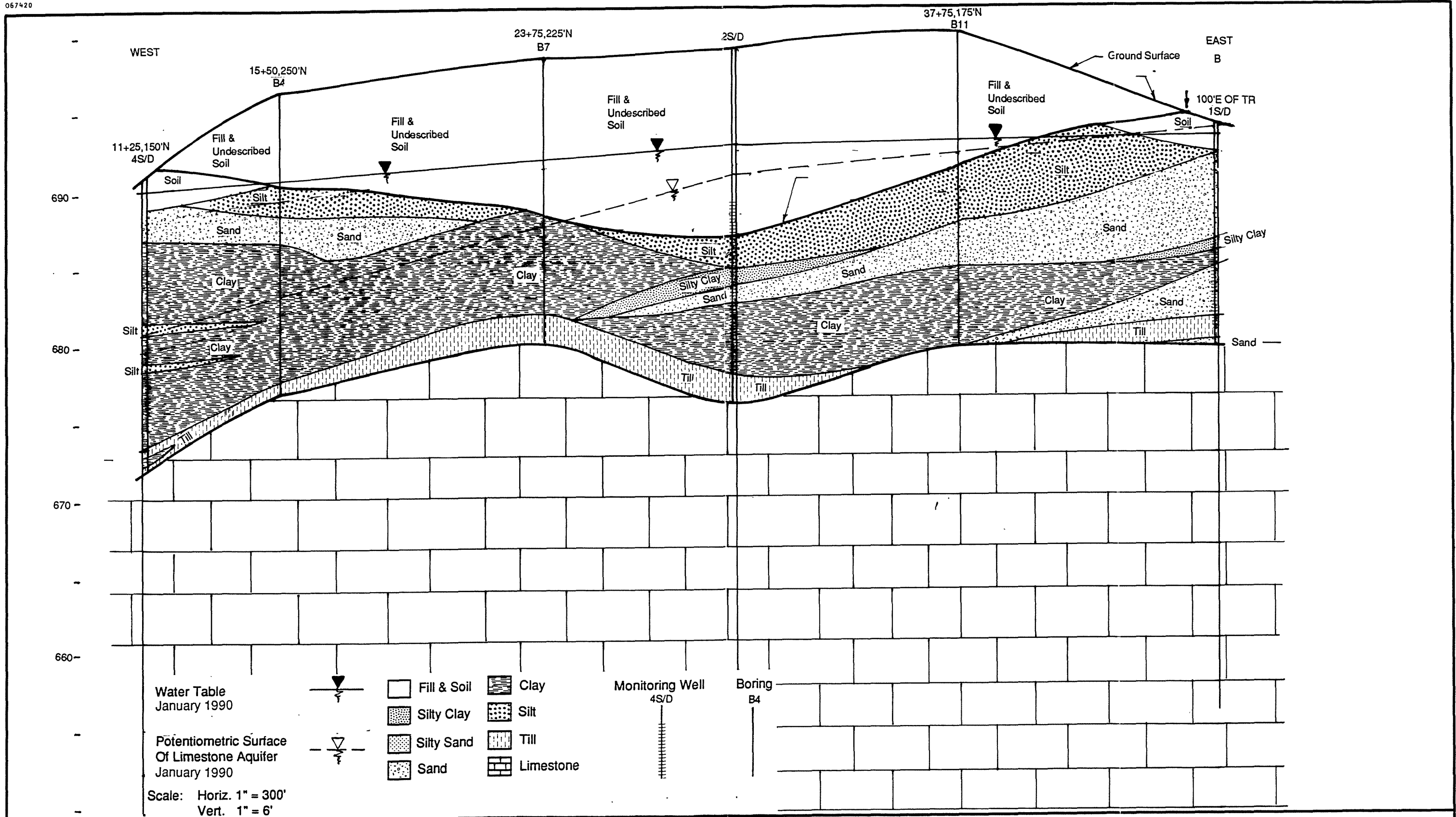
WELL	ELEVATION (TOC)	DEPTH-TO-WATER						
		JAN. '89	AUG. '89	DEC. '89	JAN. '90	MAY '90	JUNE '90	AUG. '90
MW-1S	695.95	2.30	5.83	3.00	2.10	2.48	2.99	3.54
MW-1D	695.86	2.47	4.00	2.65	1.65	3.09	2.45	2.9
MW-2S	701.00			7.70	7.70	6.35	6.56	7.76
MW-2D	701.57			10.80	10.35	10.48	10.41	10.67
MW-3S	693.29	1.93	16.69	4.33	2.55	4.63	3.45	7.76
MW-3D	693.28	1.92	10.15	2.35	2.00	2.19	1.20	2.35
MW-4S	692.72	2.96	5.25		2.70	3.10	2.90	3.1
MW-4D	692.75	11.40	12.25		12.00	11.23	11.09	12.17
MW-5S	696.14	3.30	4.88	3.95	3.65	2.80	3.05	4.53
MW-5D	696.06	5.40	5.94	5.00	4.55	4.90	4.81	5.11
MW-6S	700.33		7.00		4.75	6.73	5.49	5.84
MW-6D	701.57		7.10	5.10	3.70	5.87	4.68	5.52
MW-7S	698.73		7.65	5.68	7.05	6.39	5.36	5.98
MW-7D	699.19		21.20	15.95	20.10	14.43	13.74	13.8
MW-8S	696.57		7.30		4.20	6.19	4.80	-
MW-9S	701.46		8.20		8.10	6.87	7.01	-
MW-10S	699.50		9.55		6.50	6.75	6.77	-
MW-11S	693.30				2.85	2.91	3.01	-
MW-12S	702.49		9.10		8.90	9.34	8.18	-
MW-13S	705.01			10.64	10.5	9.58	9.71	10.55
MW-14S	702.51			8.15	8.55	7.20	7.38	-
MW-15S	699.26			7.30	6.75	6.11	6.14	-
MW-16S	701.46			7.02	6.95	4.60	-	-
MW-17S	698.79					3.80	3.90	5.69

Disk: Pfohl Bros L.F 5/1/90
File: PBMWDTW

APPENDIX G

Table G-1

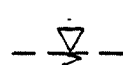
Well	Mean Hydraulic Conductivity (ft/day)	Saturated Thickness (ft)	Transmissivity (ft ² /day)
1D	14.86	21.5	319.5
2D	160.32	23.0	3687.4
3D	76.87	21.0	1614.3
4D	00.0066	22.0	000.15
5D	119.30	10.5	1252.70
6D	19.27	20.2	389.20



Water Table
January 1990

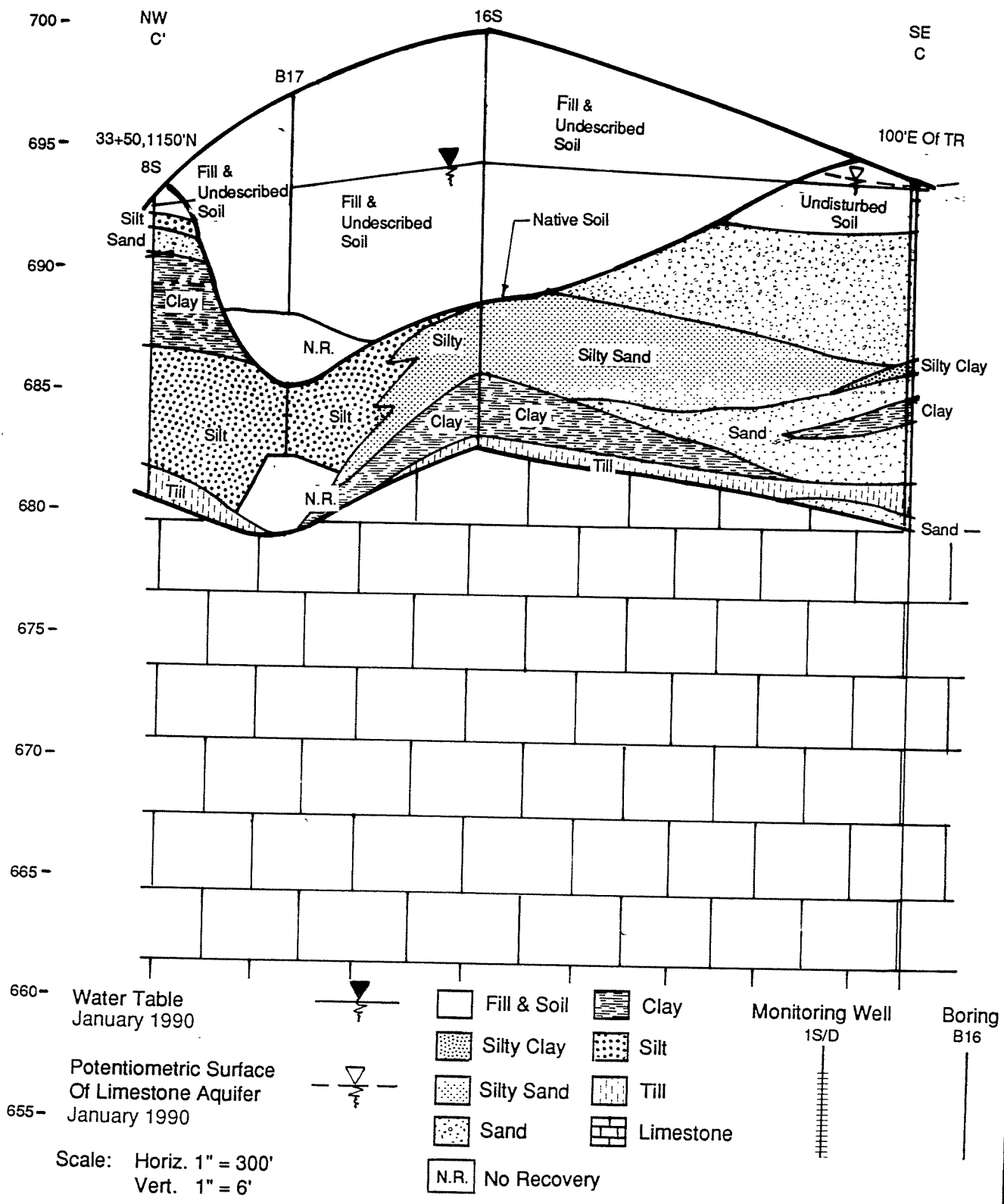
Potentiometric Surface
Of Limestone Aquifer
January 1990

Scale: Horiz. 1" = 300'
Vert. 1" = 6'



- Fill & Soil
- Silty Clay
- Silty Sand
- Sand
- Clay
- Silt
- Till
- Limestone

- Monitoring Well
4S/D
- Boring
B4



CDM

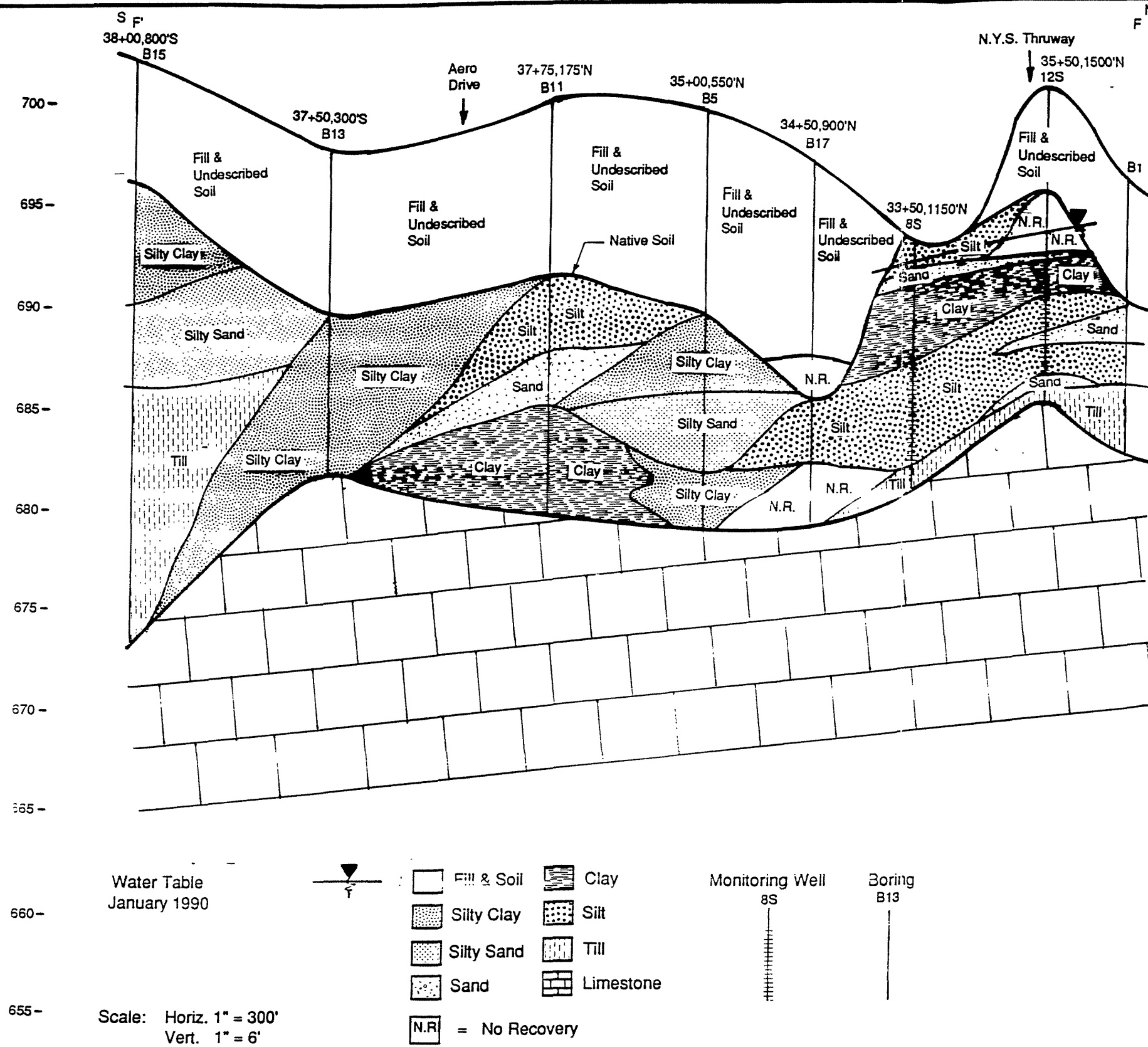
environmental engineers, scientists,
planners & management consultants

Figure 3-7

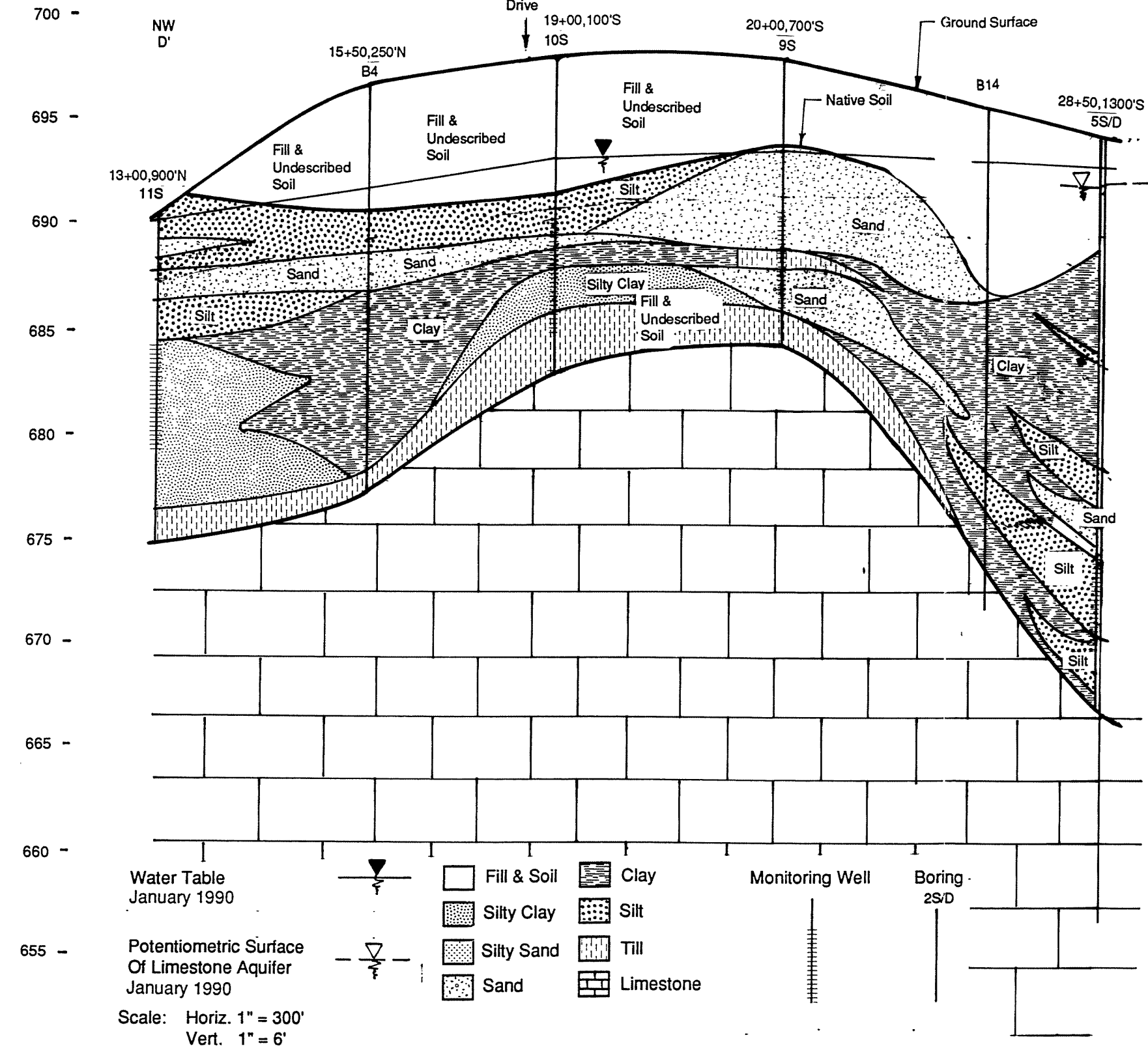
Geologic Cross Section C-C'

Pfohl Brothers Landfill, Cheektowaga, New York

058530



ELEV. ABOVE MSL



CDM

environmental engineers, scientists
planners & management consultants

Figure 3-8

Geologic Cross Section D-D'

Pfohl Brothers Landfill, Cheektowaga, New York