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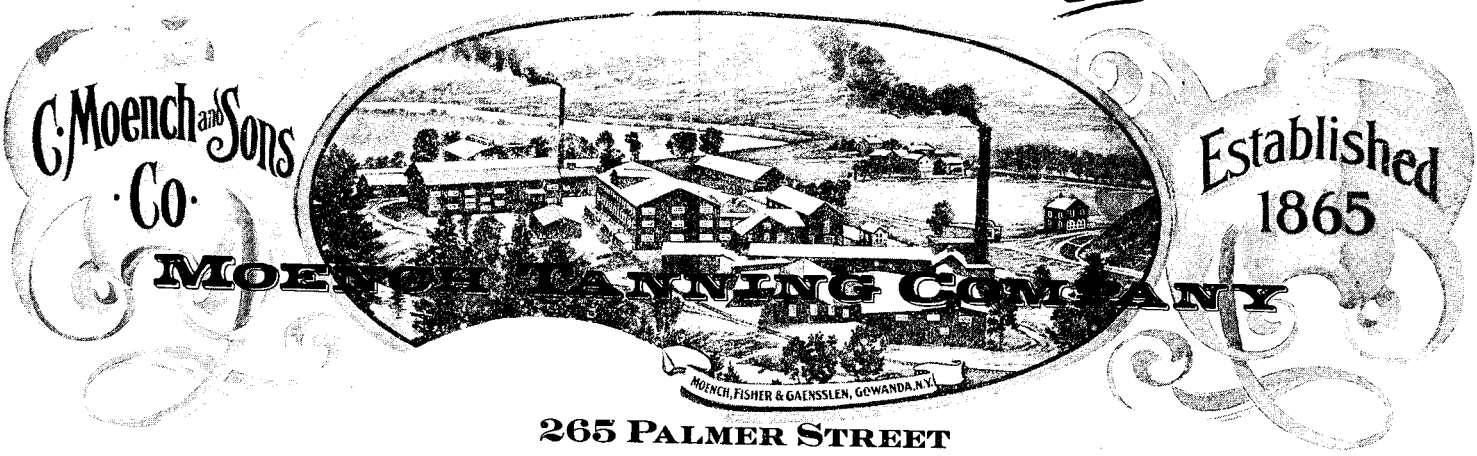

265 PALMER STREET
GOWANDA, NEW YORK 14070

TEL. 716-532-2201 **FAX 716-532-5518**

February 2, 1999

RECEIVED
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NYSDEC REG 9
FOIL
REL UNREL

MR. STAN RADON
NYS DEPT OF ENVIRONMENTAL CONSERVATION-9
270 MICHIGAN AVE.
BUFFALO, NEW YORK 14203-2999

RE: PALMER ST. ANNUAL 1998, GROUNDWATER SUMMARY.

DEAR MR. RADON:

ENCLOSED IS THE 1998 ANNUAL SUMMARY OF THE PALMER ST. LANDFILL, GROUNDWATER SAMPLING. DRY WEATHER LATE IN THE YEAR, RESULTED IN GENERALLY LOWER WATER LEVELS IN THE DEEP MONITORING WELLS. THIS USUALLY RESULTS IN SOME HIGHER CONTAMINANT CONCENTRATIONS.

SPORADIC LAB ANALYSIS PROBLEMS RESULTED IN "FALSE POSITIVES" FOR ARSENIC AT A FEW LOCATIONS. AN ARSENIC LEVEL WAS DETECTED IN MW-1D FOR NOVEMBER SAMPLE, AN UPGRADIENT WELL. WE WILL WATCH FOR THIS TREND. OTHER METAL LEVELS WERE TYPICAL, FOR THE SAMPLINGS.

ORGANICS OF ACETONE & M.E.K. WERE DETECTED IN THE UPGRADIENT WELL OF MW-1D, AND ALSO AT P6-B & P6-D. THIS COULD BE A LAB CONTAMINANT, BUT WE WILL WATCH FOR A "TREND.

PLEASE CALL ME IF YOU HAVE ANY FURTHER QUESTIONS.

SINCERELY,

J. Smith

JEFFREY SMITH
ENVIRONMENTAL ENGR

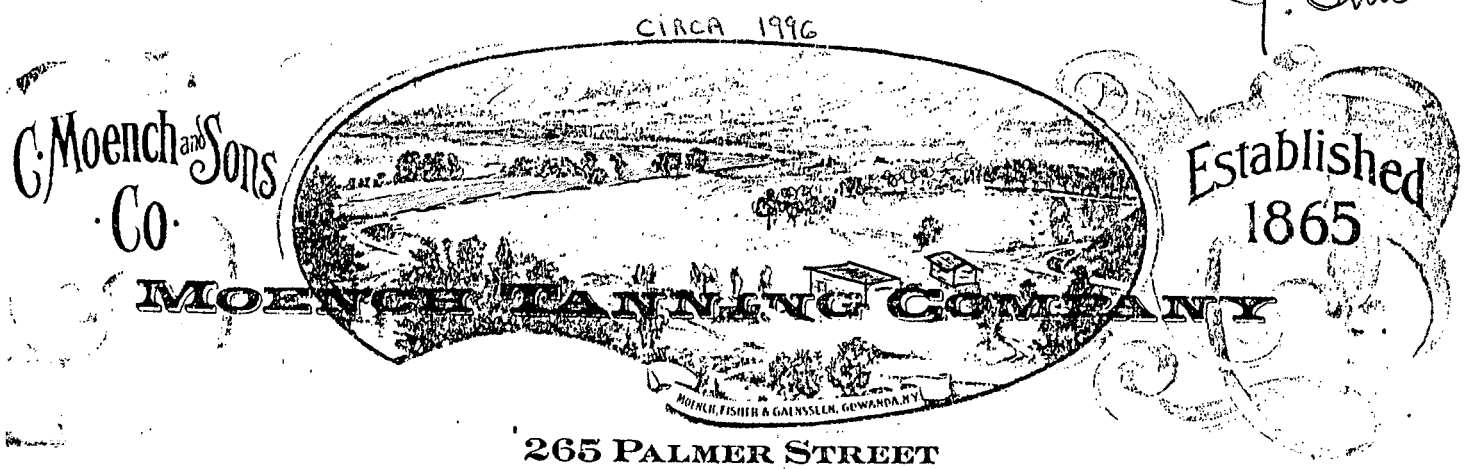
CC: ED MILES-NYSDEC, ALBANY, NY
LLOYD BRUNKHORST-BROWN GROUP, ST LOUIS,MO
KENT MC MANUS-MALCOLM PIRNIE, BUFFALO, NY

ANNUAL GROUND WATER QUALITY MONITORING REPORT FOR 1998 CALENDAR YEAR AT PALMER STREET LANDFILL

MOENCH COMPANY
GOWANDA, NEW YORK

January 1999

J. Smith



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MOENCH COMPANY
PALMER STREET LANDFILL
1998 ANNUAL GROUNDWATER MONITORING REPORT....

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ATTACHMENT	DESCRIPTION
A	INFILTROMETER DESIGN
B	GRAPH: METALS CONTENTRATION vs TIME; GROUPED BY MONITORING POINT; WHERE DETECTED.
C	GRAPH: VOLATILES vs TIME; GROUPED BY MONITORING POINT; WHERE DETECTED.
D	FIELD MEASUREMENT DATA SHEETS; SUBMITTED IN PREVIOUS TRIMESTER REPORTS OF: 4/98, 8/98, 11/98.
E	ANALYTICAL DATA FROM"COLUMBIA ANALYTICAL SERVICES". 1998 MONITORING EVENT; SUBMITTED IN PREVIOUS TRIMESTER REPORTS OF: 4/98, 8/98, 11/98.

1.0 INTRODUCTION

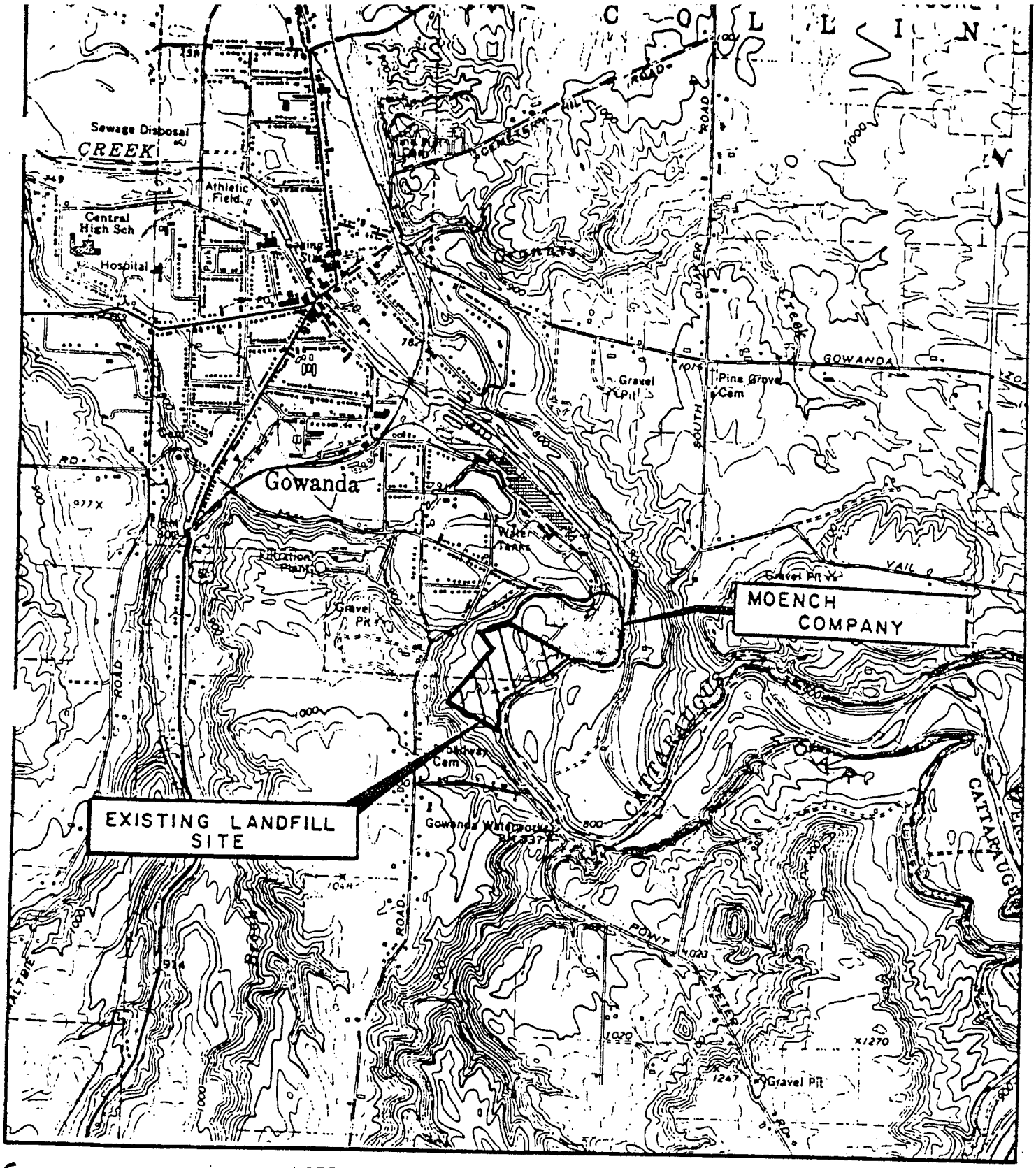
1.1 BACKGROUND

THE MOENCH COMPANY, A DIVISION OF BROWN GROUP, INC. IS LOCATED NEAR THE SOUTHEAST CORNER OF THE VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK (FIGURE 1). THE PALMER STREET LANDFILL WHICH WAS OPERATED BY MOENCH TANNING FROM 1900 THROUGH JULY 1983, LIES IMMEDIATELY SOUTHWEST OF THE FORMER SITE COMPLEX ON AN APPROXIMATELY 25-ACRE PARCEL OF LAND. A VARIETY OF WASTE GENERATED BY MOENCH TANNING WERE DISPOSED OF AT THE PALMER STREET LANDFILL SITE. THESE WASTES INCLUDED SOLE LEATHER EXTRACT, RENDERING WASTE, SPRAY BOOTH CLEAN UP WASTE, WASTE FINISH, WASTE HAIR/LEATHER SCRAPS, WASTEWATER TREATMENT PLANT SLUDGE, AND OCCASIONAL CONSTRUCTION DEBRIS.

MOENCH TANNING HAS CLOSED THE PALMER STREET LANDFILL. ACCORDINGLY, THE CLOSURE/POST-CLOSURE PLAN (REFERENCE 1), IS BEING PERFORMED. THE LONG-TERM POST CLOSURE MONITORING PROGRAM HAS BEEN APPROVED & IMPLEMENTED.
(JULY 1993, REVISED MARCH 1994)

1.2 PUPOSE AND SCOPE

SAMPLES ASSOCIATED WITH THREE ROUNDS OF WATER QUALITY MONITORING,FOR THE 1998 CALENDAR YEAR,WERE COLLECTED IN APRIL, AUGUST AND NOVEMBER OF 1998. THE PURPOSE OF THIS REPORT IS TO PROVIDE A SUMMARY OF THE DATA GENERATED FOR THE PALMER STREET LANDFILL SITE DURING THE THREE MONITORING EVENTS.



{FIGURE 1}

NOTE:
TOPOGRAPHY TAKEN FROM 1963 GOWANDA, N.Y.
U.S.G.S. QUADRANGLE 7.5 MIN. SERIES
SCALE: 1" = 2000'

QUADRANGLE LOCATION

SITE LOCATION MAP
PALMER STREET LANDFILL
GOWANDA, N.Y.

6-94

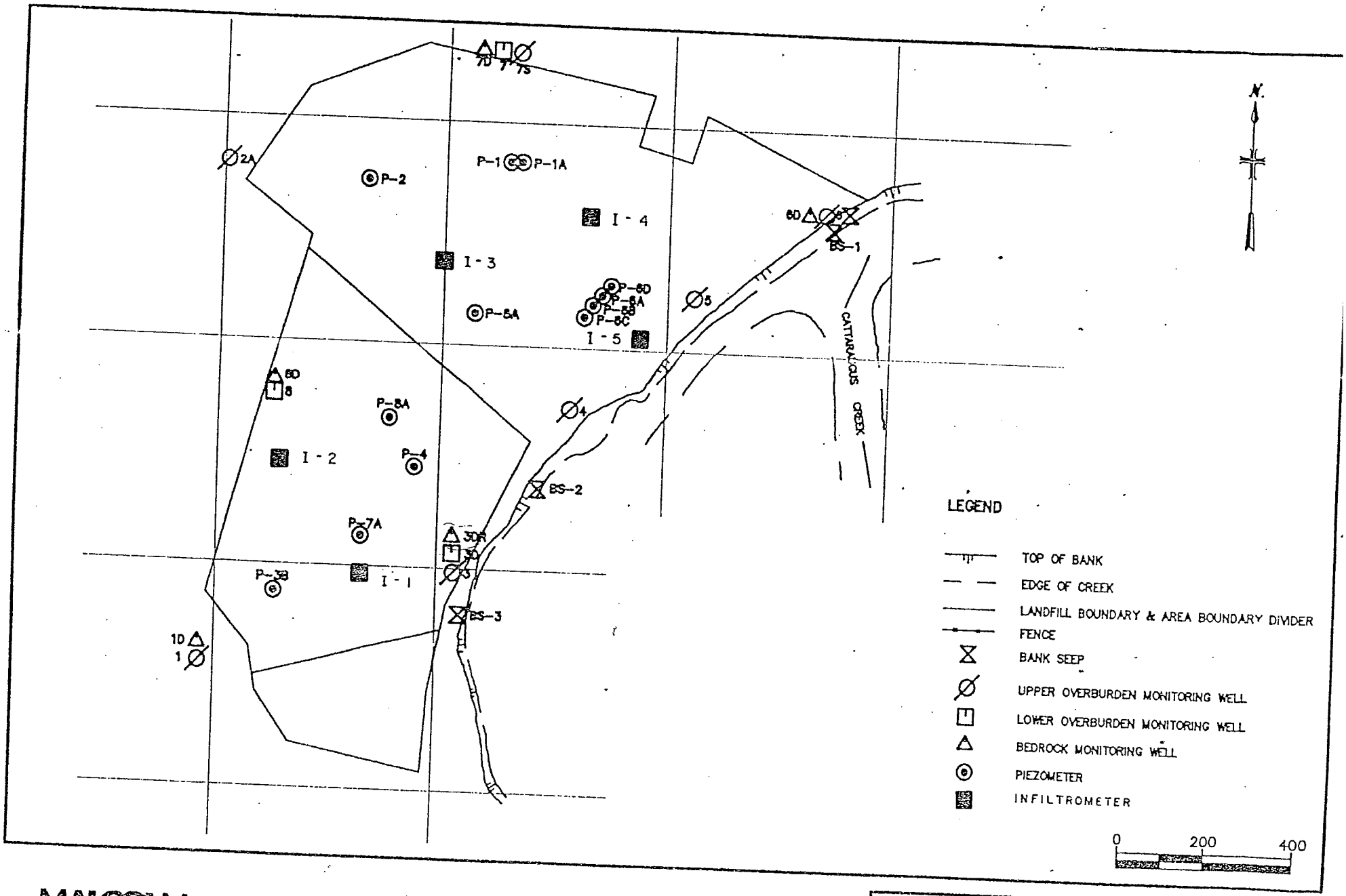
MOENCH Co.

2.0 MONITORING SYSTEM

SEVEN(7)) GROUNDWATER MONITORING WELLS AT THE PALMER STREET LANDFILL ARE MONITORED IN ACCORDANCE WITH THE LONG TERM POST CLOSURE MONITORING PLAN APPROVED FOR THE SITE. THESE WELLS ARE DESIGNATED AS FOLLOWS:

UPGRADIANT UPPER BEDROCK	DOWN GRADIANT UPPER BEDROCK	UPPER BEDROCK PIEZOMETER P-6D
MW-1D	MW-3DR	LOWER OVERBURDEN
MW-7D	MW-4D	PIEZOMETER P-6B
MW-8D(ANNUAL)	MW-6D	

IN ADDITION TO THE WELLS, NYSDEC ALSO REQUIRES THE MONITORING OF TWO (2) BANK SEEPS DESIGNATED AS BS-1 AND BS-3, RESPECTIVELY. TO AID IN THE EVALUATION OF COVER PERFORMACE, WATER LEVELS FROM FIVE (5) INFILTROMETERS ARE ALSO MONITORED. LOCATIONS OF MONITORING POINTS ARE SHOWN ON FIGURE 2.



MALCOLM PIRNIE

Figure 2

PALMER STREET LANDFILL

MONITORING LOCATIONS

MOENCH TANNING COMPANY

FIGURE 2

3.0 MONITORING METHODS

3.1 GROUNDWATER MONITORING

SAMPLES COLLECTED DURING THE THREE MONITORING EVENTS WERE COLLECTED BY MOENCH CO. PERSONNEL, IN 1998, AND ANALYZED BY COLUMBIA ANALYTICAL SERVICES . THE ANALYSIS WAS PERFORMED IN ACCORDANCE WITH THE SAMPLING PLAN/QUALITY ASSURANCE PLAN FOR THE PALMER STREET LANDFILL (REFERENCE 3). LABORATORY ANALYSES WERE PERFORMED IN ACCORDANCE WITH THE USEPA SW-846, 3RD EDITION (REFERENCE 4). THE MONITORING PARAMETERS ARE LISTED IN TABLE 1. SAMPLES WERE COLLECTED FROM EACH OF THE SEVEN (7) MONITORING LOCATIONS IDENTIFIED IN SECTION 2.0.

PRIOR TO SAMPLING, STATIC WATER LEVEL ELEVATIONS WERE MEASURED IN THE MONITORING WELLS AND THE WELLS WERE PURGED (SEE TABLE 2). GROUNDWATER ELEVATIONS WERE ALSO MEASURED IN THE PIEZOMETERS, INFILTROMETERS, AND WELLS ON-SITE.

FIELD SAMPLES WERE COLLECTED AND MEASURED FOR THE FIELD PARAMETERS IDENTIFIED IN TABLE 1. THE FIELD MEASUREMENTS ARE SUMMARIZED IN TABLE 3.

MW-4D AND MW-4SR WERE INSTALLED IN 1993. MW-4D WAS ADDED DUE TO THE NEED FOR AN ADDITIONAL DOWNGRADIANT BEDROCK WELL, AS A RESULT OF CHANGE IN GROUNDWATER FLOW. MW-4SR WAS INSTALLED TO REPLACE MW-4, WHICH WAS DAMAGED IN "CAP" CONSTRUCTION.

3.2 INFILTROMETER MONITORING

FIVE INFILTROMETERS HAVE BEEN INSTALLED BENEATH THE LANDFILL CAP TO AID IN THE ASSESSMENT OF PERFORMANCE OF THE CAP. DURING EACH TRIMESTER EVENT, WATER LEVELS IN THE INFILTROMETER ARE MEASURED AND THE AMOUNT OF WATER INFILTRATING IS CALCULATED.

THE CALCULATED INFILTRATION RATES ARE PRESENTED ON TABLE 4. CALCULATED INFILTRATION RATES ARE USUALLY WITHIN THE DESIGNED INFILTRATION RATE OF 1X10(-7) CM/SEC, EXCEPT ARE NOTED ON THE TABLE. A SCHEMATIC SHOWING THE DESIGN AND DIMENSIONS OF THE INFILTROMETERS IS PRESENTED IN ATTACHMENT B.

TABLE 1

MOENCH COMPANY
PALMER STREET LANDFILL

ROUTINE GROUNDWATER QUALITY MONITORING PARAMETERS

Soluble Arsenic
Soluble Chromium
Soluble Lead

Volatile Organics[2][3]

pH[1]

Conductivity[1]
Turbidity[1] VISUAL ONLY
Groundwater Elevation[1]
Temperature[1]

All samples collected for analysis of soluble metals will be pressure-filtered in the field immediately upon sample collection.

NOTES:

1. All field parameters (i.e., pH, specific conductance, temperature and turbidity) will be measured in the field. No analysis of these parameters will be required by the laboratory.

2. Volatile organic compounds will be those compounds determined by SW-846, Method 8260.

TABLE (2)

MOENCH COMPANY
PALMER STREET LANDFILL
4-17-98 MONITORING EVENT

INFILTROMETER MEASUREMENTS

Infiltrometer	Static Water Level 4-17-98 (ft)	Static Water Level 11-7-97 (ft)	Δ Depth (ft)	# Days Between Readings (#)	Infiltration Rate		Approx. Total Rainfall This Period (ft)	Infiltration (%)
					gal/day.ft²	(cm/sec)		
I-1	4.21	4.56	.35	161	.0019	8.96×10^{-8}	2.04	2.0
I-2	8.00	8.00	-0-	"	—	—	"	—
I-3	6.84	6.80	-0-	"	—	—	"	—
I-4	8.38	DRY (8.92)	.54	"	.0030	1.42×10^{-7}	"	3.1
I-5	6.33	6.65	.32	"	.0012	5.5×10^{-8}	"	1.8

Note:
** Negative ΔD precludes calculation of meaningful data.

TABLE ~~1~~ 2 3

MOENCH COMPANY
PALMER STREET LANDFILL
8-7-98 MONITORING EVENT

INFILTROMETER MEASUREMENTS

Infiltrometer	Static Water Level 8-7-98 (ft)	Static Water Level 4-17-98 (ft)	Δ Depth (ft)	# Days Between Readings (#)	Infiltration Rate		Approx. Total Rainfall This Period (ft)	Infiltration (%)
					gal/day.ft²	(cm/sec)		
I-1	5.58	4.21	-0-	115	—	—	1.41	—
I-2	7.90	8.00	.10	"	.0005	2.2×10^{-8}	"	.6 %
I-3	7.00	6.84	-0-	"	—	—	"	—
I-4	8.00	8.38	.38	"	.0020	1.45×10^{-7}	"	2.1 %
I-5	6.80	6.33	-0-	"	—	—	"	—

Note:
** Negative ΔD precludes calculation of meaningful data.

TABLE ~~1~~ 2 4

MOENCH COMPANY
PALMER STREET LANDFILL
11/3/98 MONITORING EVENT

INFILTROMETER MEASUREMENTS

Infiltrometer	Static Water Level 11-3-98 (ft)	Static Water Level 8-7-98 (ft)	Δ Depth (ft)	# Days Between Readings (#)	Infiltration Rate		Approx. Total Rainfall This Period (ft)	Infiltration (%)
					gal/day.ft²	(cm/sec)		
I-1	5.30	5.58	.28	88	.0015	8.1×10^{-8}	.805	1.7
I-2	7.91	7.90	-0-	"	—	—	"	—
I-3	6.95	7.00	.05	"	.0003	$.15 \times 10^{-8}$	"	.4
I-4	8.00	8.00	-0-	"	—	—	"	—
I-5	7.06	6.80	**	"	—	—	"	—

Note:
** Negative ΔD precludes calculation of meaningful data.

4.0 GROUNDWATER QUALITY MONITORING RESULTS

4.1 EVALUATION OF GROUNDWATER ELEVATION DATA:

GROUNDWATER ELEVATION MEASUREMENTS WERE TAKEN AT EACH OF THE ACCESSIBLE ONSITE MONITORING WELLS, PIEZOMETERS AND WELL POINTS DURING THE ANNUAL 1998, MONITORING EVENTS. THE DATA ARE SUMMARIZED ON TABLE #6.

PLOTS OF THE GROUNDWATER ELEVATIONS MEASURED IN THE MONITORING WELLS WITH RESPECT TO TIME, ARE PRESENTED IN FIGURE 3, 4, & 5, FOR THE "SHALLOW OVERBURDEN, DEEP OVERBURDEN AND BEDROCK WELLS, RESPECTIVELY. AS SHOWN IN FIGURES 3, AND 4, OVERBURDEN GROUNDWATER ELEVATIONS WERE GENERALLY CONSISTENT THROUGHOUT THE MONITORING PERIOD. WATER LEVELS HAVE STABILIZED, AFTER THREE YEARS OF INCREASE('92-'94). THIS OCCURRED DUE TO CESSATION OF VILLAGE AND TANNERY PUMPIMG OF THE DEEP AQUIFERS. SOME SLIGHT SEASONAL FLUCTUATION STILL OCCURS.

4.2 THE GROUNDWATER AND SURFACE WATER QUALITY RESULTS FOR THE THREE TRIMESTER MONITORINGS AT THE PALMER STREET LANDFILL ARE PRESENTED IN TABLES #7 THROUGH #10.

IT SHOULD BE NOTED THAT THRSE TABLES INCLUDES ONLY THOSE PARAMETERS WHICH WERE DETECTED ABOVE ANALYTICAL DETECTION LIMITS AT A MINIMUM OF ONE LOCATION. COMPARISON OF THE MONITORING DATA TO THE NYSDEC CLASS "GA" GROUNDWATER QUALITY STANDARDS/GUIDANCE VALUES IS ALSO PRESENTED IN THE TABLES.

BOTH THE SOIL AND WASTE AT THE PALMER STREET LANDFILL CONTAIN METALS-OF-INTEREST AS A COMPONENT OF THE SOIL OR WASTE PARTICLES (REFERENCE 5). THEREFORE, THE SEDIMENT (OR TURBIDITY) CONTENT OF ANY GROUNDWATER OR SURFACE WATER QUALITY SAMPLES WILL DIRECTLY IMPACT THE TOTAL METAL CONCENTRATION OF THE SAMPLES. THE TURBIDITY CONTENT OF THE GROUNDWATER SAMPLES COLLECTED AT THE SITE IS EXTREMELY VARIABLE AND RELATIVELY HIGH BECAUSE THE SOIL AND WASTE FILL BOTH CONTAIN HIGH PERCENTAGES OF FINE-GRAINED PARTICLES. AS NYSDEC HAS PREVIOUSLY AGREED, IN ORDER TO AVOID MISINTERPRETATION OF WATER QUALITY DATA, TOTAL METALS WILL NO LONGER SAMPLED FOR GROUNDWATER QUALITY STANDARDS OR EVALUATIONS OF GROUNDWATER QUALITY IMPACTS WILL BE BASED ON SOLUBLE METAL CONCENTRATIONS.

ALSO TOTAL NOR SOLUABLE BARIUM WILL NO LONGER BE SAMPLED FOR IN THE AGREEMENT WITH NYSDEC, AS THE ELEMENT IS NATURALLY HIGH IN CONCENTRATION IN NATIVE SOIL. 1998 ANNUAL SUMMARIES AS FOLLOWS:

-MONITOR POINT MW-1D(UPGRADIENT): ACETONE WAS DETECTED IN THE 4/98 AND 11/98 SAMPLES.(GUIDANCE VALUES)

-ARSENIC(SOLUBLE)-WAS DETECTED IN/AT BS-1, BS-3 AND MW-1D(UPGRADIENT), DURING THE 11/98 SAMPLE. A FOLLOW-UP ANALYSIS SHOWED MATRIX INTERFERENCE, FALSE POSITIVE, IN THE BS-1 LOCATION. THIS "FALSE POSITIVE" HAS BEEN OCCURRING FREQUENTLY IN THE LABS ANALYSIS.

-ACETONE WAS DETECTED AT MONITORING POINTS P6-B AND P6-D DURING THE 11/98 SAMPLE.(GUIDANCE VALUE)

-M.E.K. WAS DETECTED AT MONITORING POINTS P6-B AND P6-D DURING THE 11/98 SAMPLE.

-there were no other detections.

TABLE 5

PALMER STREET LANDFILL
SUMMARY OF GROUNDWATER ELEVATIONS[1]

Location	Dates of Measurement			
	4-17-98	8-7-98	11-2-98	
MW-1	821.55	820.67	820.63	
MW-1D	817.82	794.78	805.73	
MW-2A	808.29	807.12	807.67	
MW-3	800.14	794.11	793.91	
MW-3D	794.23	797.93	797.23	
MW-3DR	802.80	798.87	798.82	
MW-4SR	793.08	790.62	789.95	
MW-4D	795.26	793.93	792.79	
MW-5	787.02	DRY	DRY	
MW-6	784.10	783.70	783.32	
MW-6D	782.38	781.30	781.66	
MW-7S	793.38	791.68	791.68	
MW-7	793.95	794.68	795.55	
MW-7D	795.64	795.09	795.45	
MW-8D	808.80	799.89	802.69	
P-1	799.68	794.49	793.05	
P-1A	795.78	796.07	795.71	
P-2	800.35	798.94	799.04	
P-3B	818.23	817.55	817.71	
P-4	797.41	797.28	797.34	
P-6A	791.92	791.77	791.68	
P-6B	791.07	790.35	790.52	
P-6C	792.52	792.06	791.97	
P-6D	791.97	791.50	789.73	
P-7A	795.83	795.48	795.47	
P-8A	DRY	DRY	DRY	
WP-1	*	813.00	813.06	
WP-4	*	791.41	DRY	

Notes:
(1) Measured in feet; distance above sea level.
* Well locked; unable to open.
** Wells added to program prior to November 1993 event.
MW = Monitoring Well P = Piezometer WP = Well Point

EXCELL

PLRGWELV.XLC

PALMER STREET LANDFILL
MOENCH COMPANY
GROUNDWATER ELEVATION vs TIME (FEET ABOVE SEA LEVEL)
SHALLOW OVERBURDEN MONITOR WELLS

	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Oct-93
MW-1	818	819	817	817	819	817	818	818	819	820	818	820	820	821	819	820
MW-3	796	796	794	793	794	793	792	792	793	794	793	793	794	794	793	794
MW-5	785	785	784	784	786	784	782	782	783	784	784	783	783	784	782	783
MW-6	784	784	783	784	785	784	784	784	784	784	784	783	784	784	784	784
MW-7S	795	795	793	795	795	794	792	792	793	793	792	792	793	793	792	793
MW-4SR																787

	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
MW-1	821	821	822	822	823	822	821	821	821	821	822	822	821	821	821	821	821
MW-3	794	794	794	794	794	793	793	794	796	799	798	794	794	794	800	794	794
MW-5	786	783	783	784	784	784	784	782	DRY	DRY	DRY	787	787	787	787	DRY	DRY
MW-6	784	783	783	784	784	783	783	784	784	783	787	785	785	784	784	784	783
MW-7S	786	792	791	792	794	791	791	793	794	792	794	793	792	793	793	792	792
MW-4SR	792	791	789	791	791	790	790	790	790	796	791	792	791	793	793	791	790

Figure #3

PLRGWELV.XLC
- CHART 1

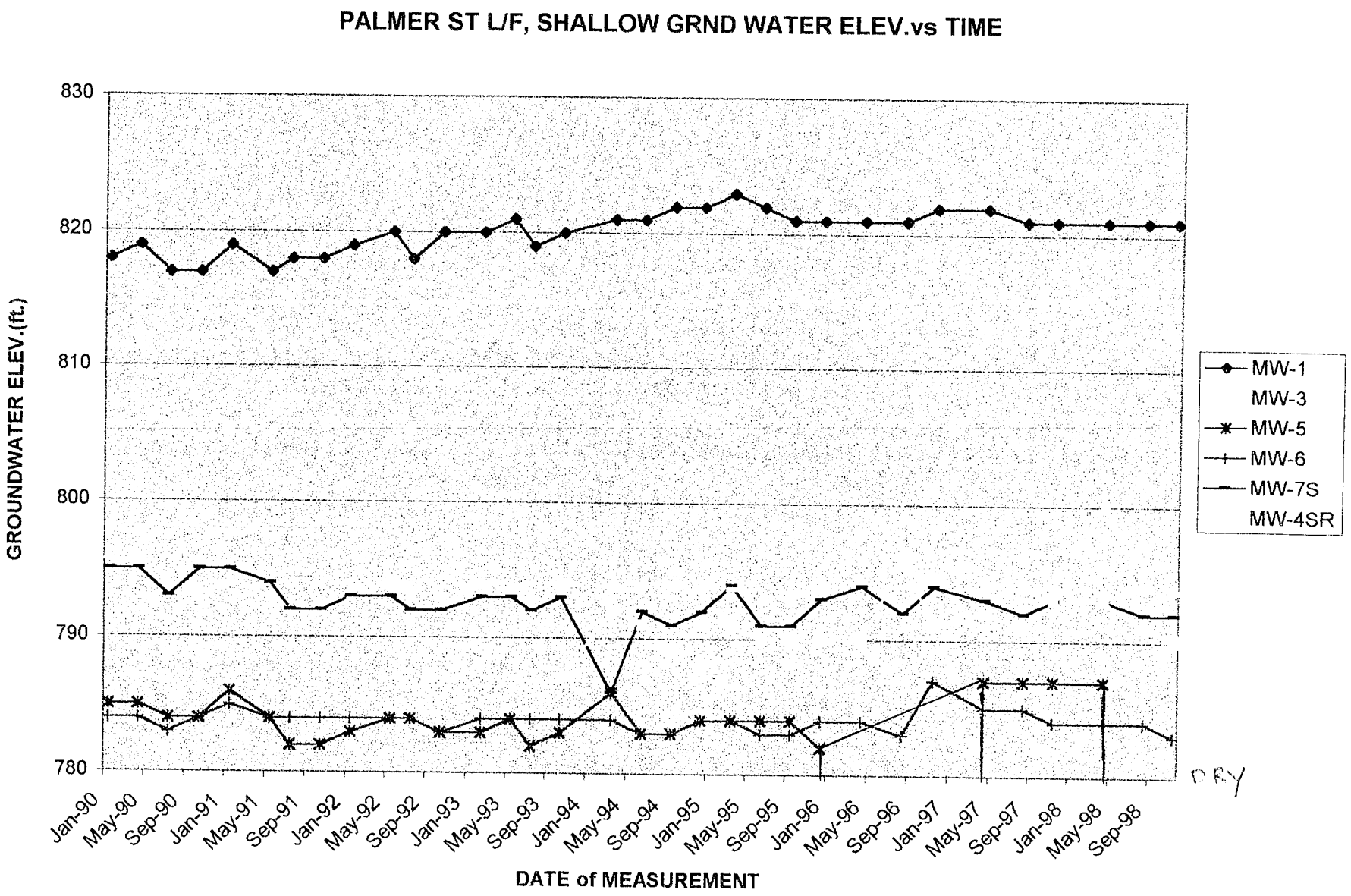


Figure #3

PALMER STREET LANDFILL
MOENCH COMPANY
GROUNDWATER ELEVATION vs TIME(FEET ABOVE SEA LEVEL)
DEEP OVERBURDEN MONITOR WELLSS

	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Oct-93
MW-3D	777	777	777	777	776	778	779	778	778	779	779	781	784	787	789	791
MW-7	794	793	793	793	794	793	793	794	793	792	793	794	793	792	792	793
MW-4D																787

	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
MW-3D	792	793	795	797	798	797	797	797	799	801	799	799	799	799	794	798	797
MW-7	792	791	793	794	793	792	794	794	794	794	794	794	794	795	794	795	796
MW-4D	790	789	791	792	793	793	793	788	795	794	794	795	795	795	795	794	793

Figure #4

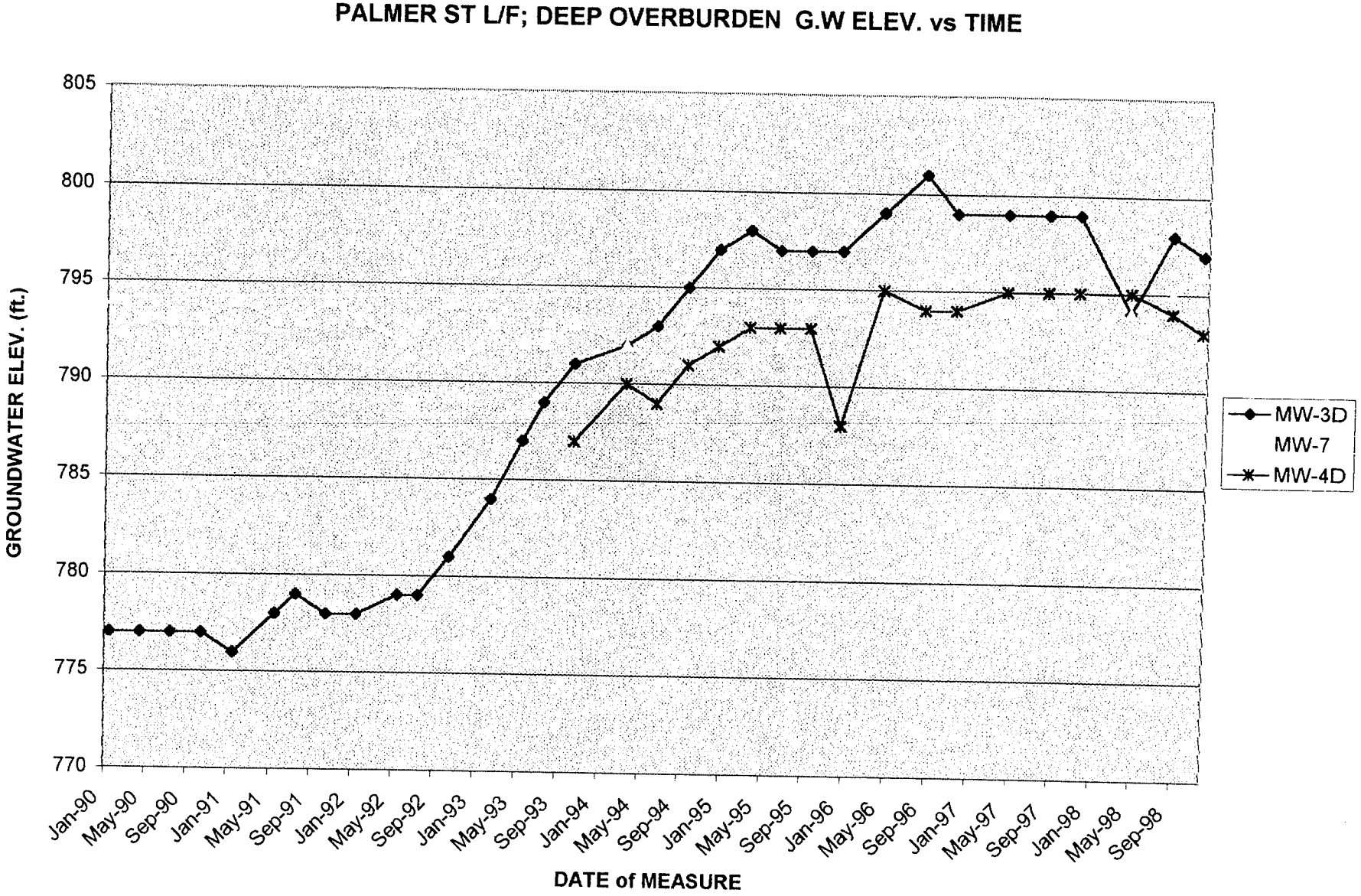

PALMER ST L/F; DEEP OVERBURDEN G.W ELEV. vs TIME
GROUNDWATER ELEV. (ft.)
805
800
795
790
785
780
775
770
Jan-90
May-90
Sep-90
Jan-91
May-91
Sep-91
Jan-92
May-92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan-95
May-95
Sep-95
Jan-96
May-96
Sep-96
Jan-97
May-97
Sep-97
Jan-98
May-98
Sep-98
DATE of MEASURE
MW-3D
MW-7
MW-4D

Figure #4

PALMER STREET LANDFILL
MOENCH COMPANY
GROUNDWATER ELEVATION vs TIME
BEDROCK MONITOR WELLS & PIEZOMETERS

	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Oct-93
MW-3DR	773	773	773	773	772	775	787	775	777	777	778	783	786	789	792	794
MW-7D	795	794	794	795	795	794	794	795	793	792	792	793	793	792	790	793
MW-8D	766	766	767	767	763	770	773	771	773	772	776	786	790	794	796	798
MW-1D					743	762	765	752	756	758	776	795	798	801	802	807
MW-6D					783	781	787	781	781	781	782	782	781	781	781	782
P-6D					790	790	790	790	790	790	790	789	789	789	789	789

	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
MW-3DR	797	797	799	799	800	800	799	798	801	800	801	801	802	802	803	799	799
MW-7D	792	791	793	794	794	793	794	795	795	794	794	795	795	796	796	795	795
MW-8D	802	803	804	804	805	805	804	805	805	805	805	806	807	808	809	800	803
MW-1D	811	810	810	813	814	809	810	812	813	813	814	815	816	816	818	795	806
MW-6D	784	780	782	782	784	781	781	779	782	782	783	782	782	783	782	781	782
P-6D	789	DRY	789	789	790	790	790	788	790	790	791	791	791	791	792	792	790

Figure #5

PLMRGW3

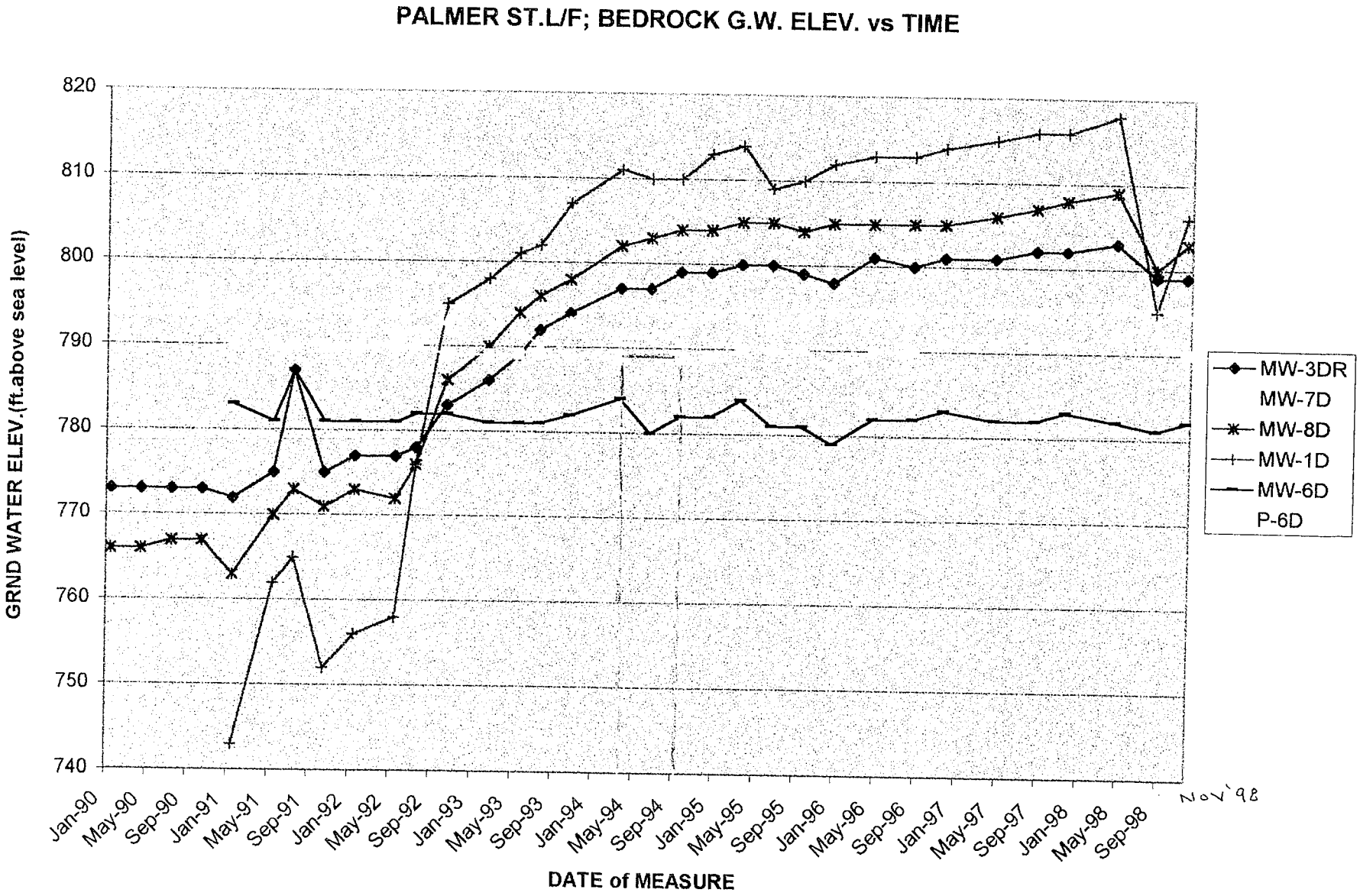


Figure #5

TABLE 6

MOENCH COMPANY
PALMER STREET LANDFILL
4/20 - 4/22/98 MONITORING EVENT[1]

SUMMARY OF ANALYTICAL RESULTS

	Quantitation Limit	MW-1D	MW-3DR	MW 4D	MW 6D	P-6B	P-6D	MW-4D BLIND DUPLICAT.	Class "GA" Std.[2]
Metals (mg/l):									
Arsenic - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	<.01	<.01	0.025
									–
Chromium - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	<.01	<.01	0.05
Lead - Soluble	0.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	0.025
Volatiles (mg/l):		–	–	<.005	<.005	<.005	<.005	<.005	.005
ACETONE		.110	.026	–	–	–	–	–	.05 GUIDANCE

TABLE 8 (Continued)
6

MOENCH COMPANY
PALMER STREET LANDFILL
4/20 - 4/22/98 MONITORING EVENT(1)

SUMMARY OF ANALYTICAL RESULTS

Parameter	Quantitation Limit	MW-7D	ANNUAL MW-8D	BS-1	BS-3	EQPMT +/OR Trip Blank(3)	Class "GA" Std.(2)
Metals (mg/l):							
Arsenic - Soluble	0.005	<.01	<.01	.01	.012	<.01	0.025
							–
							1.0
							–
Chromium - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	0.05
							–
Lead - Soluble	0.005	<.005	<.005	<.005	<.005	<.005	0.025
Volatiles (mg/l):							
		<.005	<.005	<.005	<.005	<.005	.005

NOTES:
(1) Only those parameters found at a concentration above laboratory detection limits at a minimum of one location are shown.
(2) NYSDEC Class "GA" Ground Water Quality Standards, 6NYCRR Part 703, Revised October 1993.
(3) Trip blanks were analyzed for only volatile organic compounds.
(4) MW-8D sampled only once annually (Reference 6).
(5) ~~Monitor wells 3D and 7 are monitored quarterly, sampled annually.~~
J Estimated value due to limitations identified in the quality control review.

(8) LIKELY LAB CONTAMINATION.

TABLE #7

MOENCH COMPANY
PALMER STREET LANDFILL
8/10 - 8/13/98 MONITORING EVENT[1]

SUMMARY OF ANALYTICAL RESULTS

	Quantitation Limit	MW-1D	MW-3DR	MW 4D	MW 6D	P-6B	P-6D	BLIND DUPLICAT. MW-6D	Class "GA" Std.[2]
Metals (mg/l):									
Arsenic - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	<.01	<.01	0.025
									–
Chromium - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	<.01	<.01	0.05
Lead - Soluble	0.005	<.005	<.005	<.005	<.005	<.005	<.005	<.005	0.025
Volatiles (mg/l):									
		<.005	<.005	<.005	<.005	<.005	<.005	<.005	

TABLE ~~8~~ 7 (Conti d)

MOENCH COMPANY
PALMER STREET LANDFILL
8/10-8/13/98 MONITORING EVENT(1)

SUMMARY OF ANALYTICAL RESULTS

Parameter	Quantitation Limit	MW-7D	ANNUAL MW-8D	BS-1	BS-3	EQUIPMENT ~~Trip~~ Blank(3)	Class "GA" Std.(2)
Metals (mg/l):							
Arsenic - Soluble	0.005	<.01	<.01	.011	<.01	<.01	0.025
							1.0
Chromium - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	0.05
Lead - Soluble	0.005	<.005	<.005	<.005	<.005	<.005	0.025
Volatiles (mg/l):							
		<.005	<.005	<.005	<.005	<.005	

NOTES:
(1) Only those parameters found at a concentration above laboratory detection limits at a minimum of one location are shown.
(2) NYSDEC Class "GA" Ground Water Quality Standards, 6NYCRR Part 703, Revised October 1993.
(3) Trip blanks were analyzed for only volatile organic compounds.
(4) MW-8D sampled only once annually (Reference 6).
(5) ~~Monitor wells 3D and 7 are monitored quarterly, sampled annually.~~
J Estimated value due to limitations identified in the quality control review.

(8) LIKELY LAB CONTAMINATION.

TABLE 8

MOENCH COMPANY
PALMER STREET LANDFILL
11/3 - 11/5/98 MONITORING EVENT[1]

SUMMARY OF ANALYTICAL RESULTS

	Quantitation Limit	UPGRAD. MW-1D	MW-3DR	MW 4D	MW 6D	P-6B	P-6D	BLIND DUPLICAT. MW-4D	Class "GA" Std.[2]
Metals (mg/l):									
Arsenic - Soluble	0.005	.025	<.01	<.01	<.01	<.01	<.01	<.01	0.025
Chromium - Soluble	0.005	<.01	<.01	<.01	<.01	<.01	<.01	<.01	0.05
Lead - Soluble	0.005	<.005	<.005	<.005	<.005	.013	<.005	<.005	0.025
Volatiles (mg/l):									
ACETONE		.068	<.005	<.005	<.005			<.005	
2-BUTANONE (MEK)		<.005	"	"	"	3.1	.044	"	
			"	"	"	31.0	<.005	"	

TABLE 8 (Continued)

MOENCH COMPANY
PALMER STREET LANDFILL
11/3-11/5/98 MONITORING EVENT[1]

SUMMARY OF ANALYTICAL RESULTS

Parameter	Quantitation Limit	MW-7D	ANNUAL DIO 8/98 MW-8D	CREEK SAMPLE BS-1	BS-3	Eqpm T. ~~Trip~~ Blank[3]	Class "GA" Std.[2]
Metals (mg/l):							
Arsenic - Soluble	0.005	<.01	–	<.01 .033 J8	.027	<.01	0.025
			–				1.0
Chromium - Soluble	0.005	<.01	–	<.01	<.01	<.01	0.05
Lead - Soluble	0.005	<.005	–	<.005	<.005	<.005	0.025
Volatiles (mg/l):							
		<.005	–	<.005	<.005	<.005	

NOTES:
(1) Only those parameters found at a concentration above laboratory detection limits at a minimum of one location are shown.
(2) NYSDEC Class "GA" Ground Water Quality Standards, 6NYCRR Part 703, Revised October 1993.
(3) Trip blanks were analyzed for only volatile organic compounds.
(4) MW-8D sampled only once annually (Reference 6).
(5) ~~Monitor wells 3D and 7 are monitored quarterly, sampled annually.~~
J Estimated value due to limitations identified in the quality control review. (8) LIKELY LAB CONTAMINATION.

PALMER ST L/F, MOENCH COMPANY
"PH" vs TIME
MONITOR POINTS & BANK SEEP

		Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Nov-93
MW-1D		8.2	7.5	7.7	7.9	7.4	7.9	7.8	8	7.8	7.9	7.6	8	8.3	8.3	7.3	7.5
P-6D	START 94																
MW-3DR		8.3	8	7.2	8.1	7.5	8	8.5	8.2	8.4	8	8.2	7.8	7.7	8.8	7.6	8
MW-5		7	7.3	7	7	7.2	7	7	7.1	7.3	7.1	7	6.9	7.3	7.4	6.8	7.2
MW-6D		6.6	6.7	6.7	6.7	6.7	6.7	8	6.9	6.9	6.7	6.7	6.5	6.9	7	6.6	6.7
MW-4SR	START93																
MW-4D		6.8				6.9	7	6.8									6.8

	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
W-1D	7	7.1	7	6.9	7.2	7.2	7.1	7.2	7.9	7.9	8.1	7.6	8.1	8.3	7.6	7.5	8.1
6-D	7.3		7.1	7	7.7	7.7	7.7	7.6	7.8	7.8	8.4	7.8	8.5	8.4	8.1	7.8	8.3
W-3DR	7.2	7.2	7.2	7	7.6	7.6	7.5	7.7	8.1	8.2	8.3	8.1	8.5	8.4	8.1	8	8.3
MW-6D	7.1	7.4	7.5	7.2	7.6	7.6	7.5	7.8	7.8	8.2	8.2	8	8.6	8.5	8	8.1	8.4
MW-4D	7.2	7.2	7.5	7	7.7	7.7	7.4	7.4	7.9	8.2	8.2	7.9	8.4	8.5	8.1	8	8.2

Figuer# 6

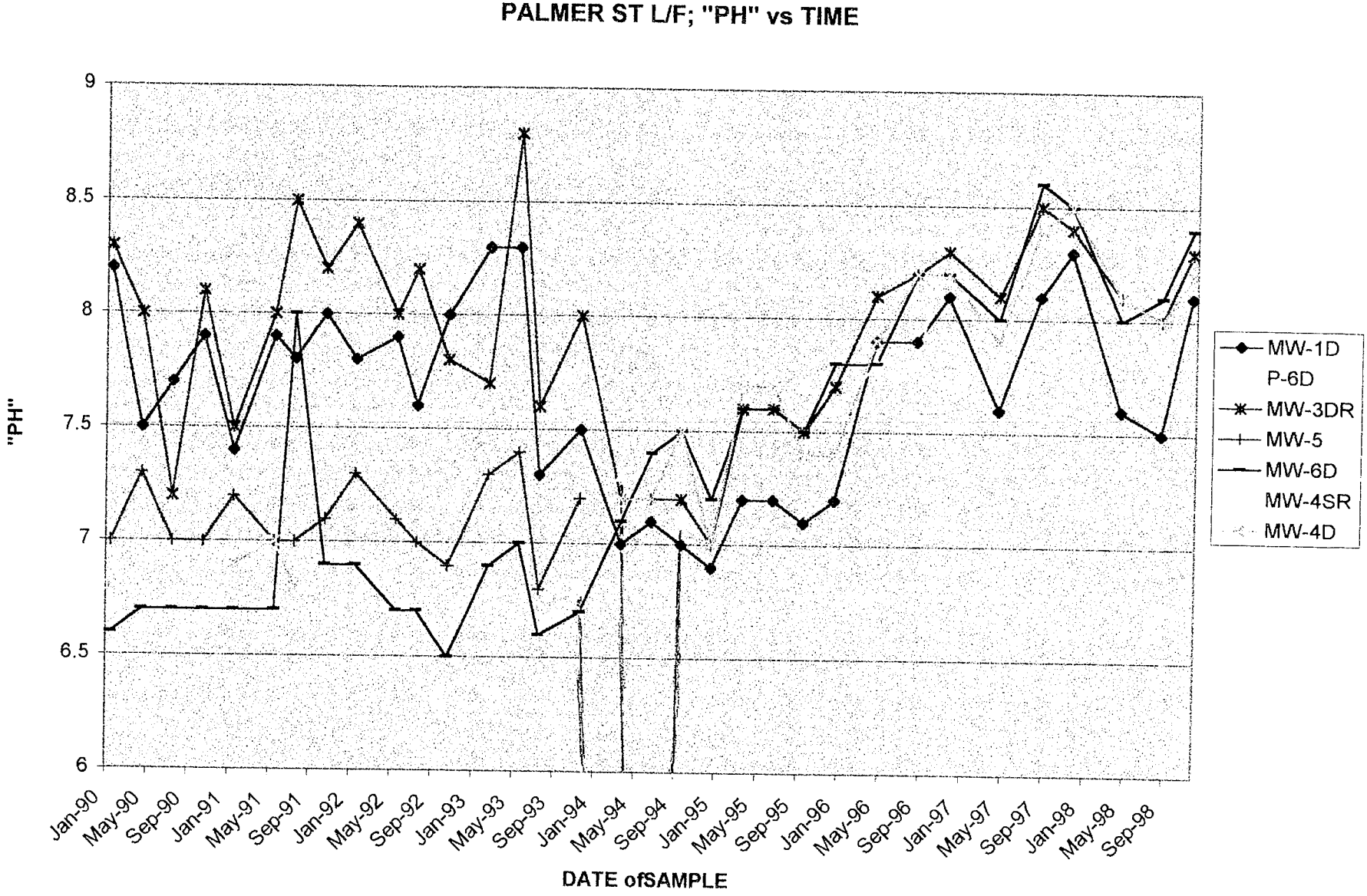

PALMER ST L/F; "PH" vs TIME
"PH"
9
8.5
8
7.5
7
6.5
6
Jan-90
May-90
Sep-90
Jan-91
May-91
Sep-91
Jan-92
May-92
Sep-92
Jan-93
May-93
Sep-93
Jan-94
May-94
Sep-94
Jan-95
May-95
Sep-95
Jan-96
May-96
Sep-96
Jan-97
May-97
Sep-97
Jan-98
May-98
Sep-98
DATE ofSAMPLE
MW-1D
P-6D
MW-3DR
MW-5
MW-6D
MW-4SR
MW-4D

Figure #6

PALMER ST L/F, MOENCH COMPANY
"PH" vs TIME
MONITOR POINTS & BANK SEEPS

P-6B	START94	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Nov-93
MW-7D	7.7	7.8	7.9	8	7.5	7.8	7.8	7.8	7.8	8.2	8.2	7.9	7.8	8.3	7.8	8.3
MW-8D	10	9.2	9	9.5	9	9.3	9.1	8.6	8.8	8.7	8.8	8.6	8.8	8.6	8.1	
BS-1	7.1	7.3	6.7	6.9	7.4	7			8.5	7.7	7.6	7.8	8.1	7.5		8.1
BS-3	7	7.3	7.1	7.3	7.1	7.3		7.9	7.6	7.2	7.1	7.4	7.1	7.8		7.9

P6-B	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
MW-7D	7.1	7.1	7	7	7.1	7.1	7.2	7.2	7.6	7.8	8.2	7.6	8.4	8.4	7.9	7.1	8.3
MW-8D	7.1	7.2	7.1	7	7.6	7.6	7.4	7.6	7.9	8.2	8.2	7.8	8.4	8.4	8	8	8.2
BS-1			7.8				7.8				8.2		8.5		8.2	7.9	
BS-3	7.7	7.1	7.1	7.1	7.2	7.1	7.1	7.1	7		9	7	8.2	8.3	8.2	7.8	7.9
	7.3	6.6	6.8	6.9	6.7	7.3	6.9	7.3	8.1		8.3	8.2	8.3	8.1	7.4	7.9	7.5

Figure #6

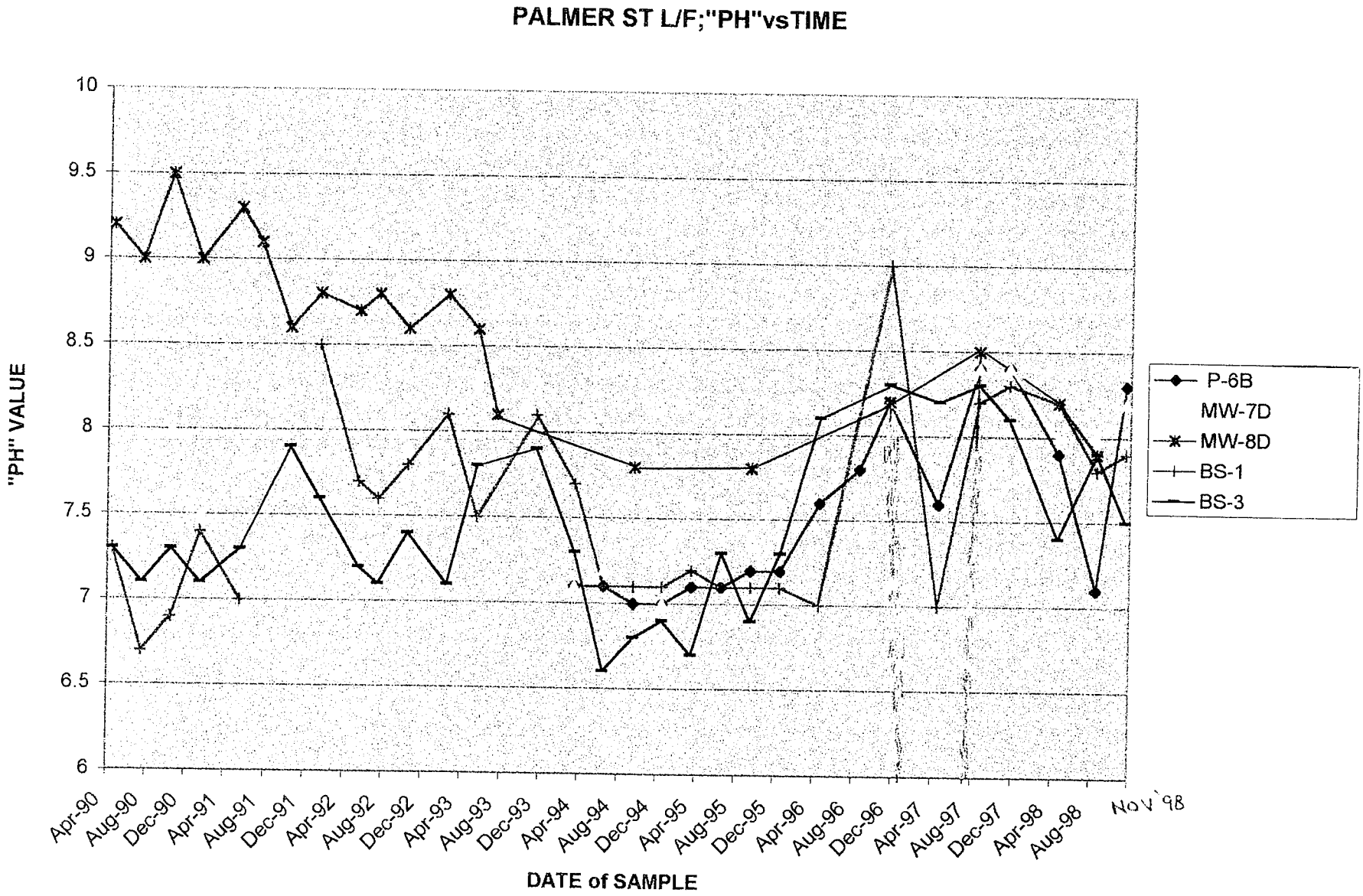

PALMER ST L/F;"PH"vsTIME
"PH" VALUE
10
9.5
9
8.5
8
7.5
7
6.5
6
Apr-90
Aug-90
Dec-90
Apr-91
Aug-91
Dec-91
Apr-92
Aug-92
Dec-92
Apr-93
Aug-93
Dec-93
Apr-94
Aug-94
Dec-94
Apr-95
Aug-95
Dec-95
Apr-96
Aug-96
Dec-96
Apr-97
Aug-97
Dec-97
Apr-98
Aug-98
Nov '98
DATE of SAMPLE
P-6B
MW-7D
MW-8D
BS-1
BS-3

Figure #6

Palmer st. Landfill; Moench Co.
Specific Conductivity vs Time
Monitor Wells & Bank Seeps

Plmrsc1.xlc

	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Nov-93
MW-1D	0.6	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
P-6B	START94															
MW-3DR	0.6	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.7
MW-5	3.8	2.7	1.5	1.7	1.9	5	3	4.2	5.8	4.2	4.1	4.2	4	6.8	3.3	3.7
MW-6D	5.3	5.4	4.9	3.1	3.5	3.6	3.2	4.9	4.1	3.3	2.8	2.8	2.7	4.3	3.8	3.3
MW-4SR	ONLY93															0.8
MW-4D																2.6

Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
1	1	0.8	0.9	0.8	0.8	0.8	0.8	1	0.8	0.9	0.9	0.9	1	0.7	0.6	1.1
0.7	0.6	0.6	0.9	0.4	0.7	0.6	0.6	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5
0.7	0.6	0.4	0.8	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.7	0.5	0.5	0.6
1	0.9	1.1	1.1	1	0.9	0.9	0.9	1	1.1	1	1.2	1	1.9	1.2	0.9	1.1
0.6	0.8	0.7	0.8	0.7	0.7	0.9	0.7	0.8	0.7	0.9	0.8	0.7	0.8	0.7	0.8	0.7

Figure #7

PLMRSC1.xls

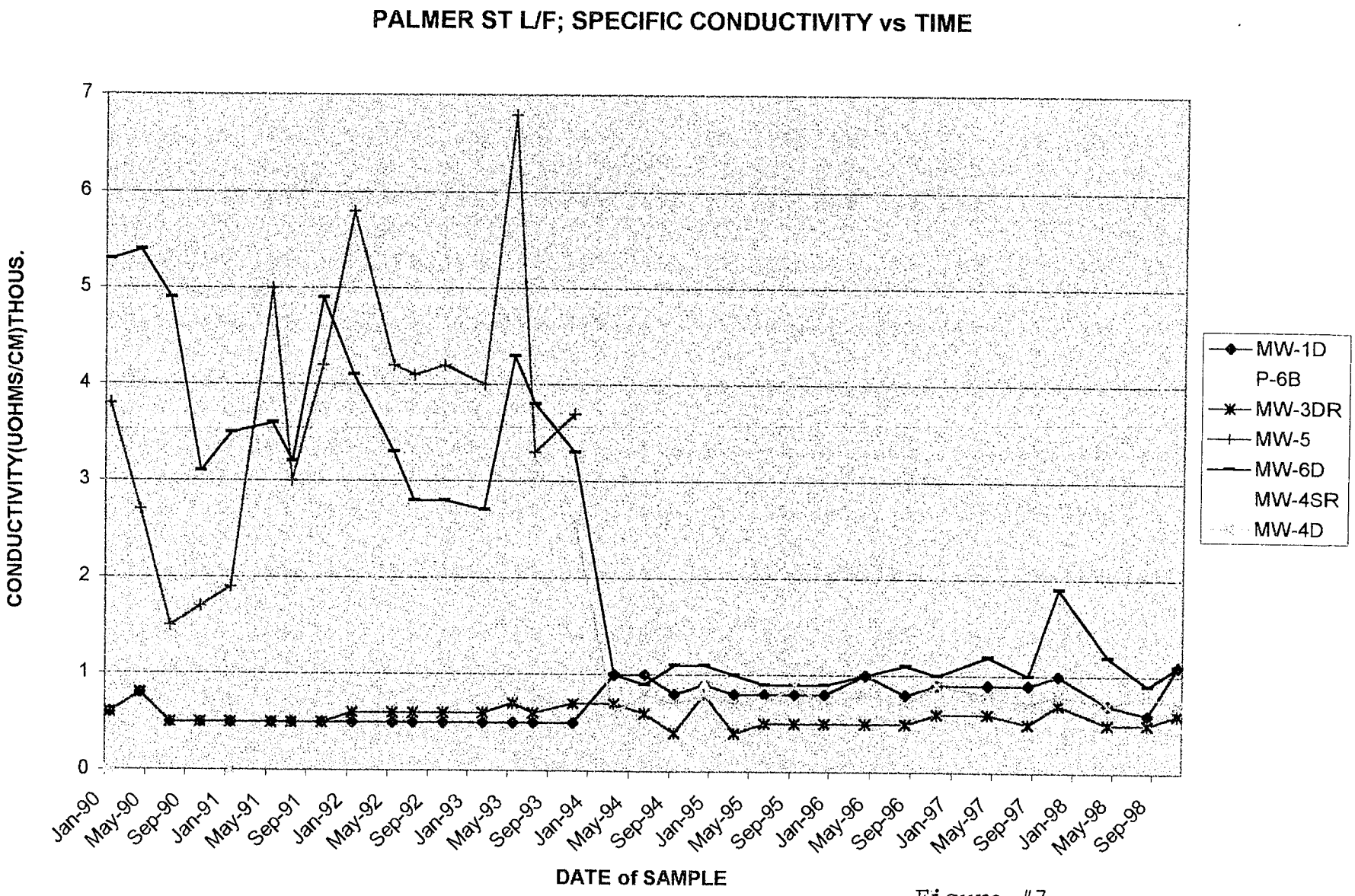


Figure #7

PALMER ST. LANDFILL, MOENCH COMPANY
SPECIFIC CONDUCTIVITY vs TIME (umhos/CM)(THOUSANDS)
MONITOR WELLS & BANK SEEPS

	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Nov-93
P-6D	STRT-94															
MW-7D	1	1	0.7	0.8	0.5	0.7	0.8	0.7	0.5	0.8	0.6	0.6	0.6	0.7	0.9	0.7
MW-8D	0.5	0.6	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.4	
BS-1	2.7	2.9	3	2.9	1	1.6		1.3	1.3	1.3	0.6	0.6	0.6	0.7		0.8
BS-3	2.8	2.9	1.8	1.8	1	1.8		1.1	0.9	0.9	1.1	0.5	0.5	0.7		0.7

	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
)-D	0.6	0.7	0.9	0.9	0.5	0.6	0.6	0.4	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.5	0.7
/-7D	0.7	0.7	0.7	1	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.6	0.7	0.6	0.7	0.7
/-8D							0.3				0.3		0.3			0.5	
)-1	0.7	0.6		0.8	1.1	0.7	1		1	0.7	0.3	1.5	0.5	0.5	0.5	0.6	0.7
-3	0.6	1	0.6	0.9	1.2	0.5	1.4	0.5	0.2	0.5	0.5	0.5	0.6	0.8	0.8	0.4	1.1

Figure #7

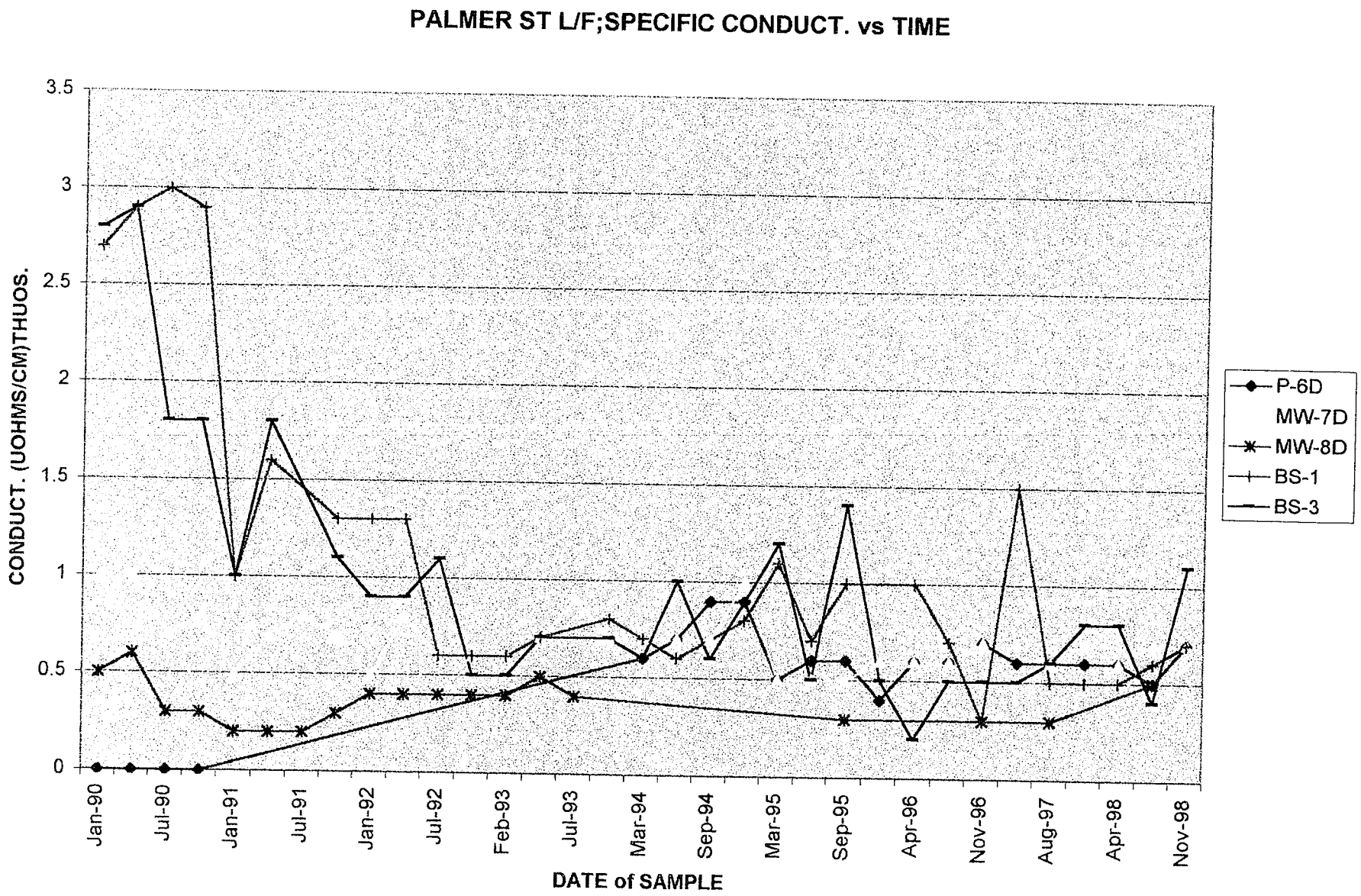

PALMER ST L/F;SPECIFIC CONDUCT. vs TIME
CONDUCT. (UOHMS/CM)THUOS.
3.5
3
2.5
2
1.5
1
0.5
0
Jan-90
Jul-90
Jan-91
Jul-91
Jan-92
Jul-92
Feb-93
Jul-93
Mar-94
Sep-94
Mar-95
Sep-95
Apr-96
Nov-96
Aug-97
Apr-98
Nov-98
DATE of SAMPLE
P-6D
MW-7D
MW-8D
BS-1
BS-3

Figure #7

4.3 RATE OF CONTAMINANT MIGRATION

Contaminant migration and potential environmental impacts for the Palmer Street Landfill are discussed in detail in the report entitled "Palmer Street Landfill - Evaluation of Alternative Cover Systems" prepared by Malcolm Pirnie, Inc., January 1989 (Reference 7). As described in the above-mentioned report, groundwater migrates from the landfill through the shallow water-bearing zone along both the eastern and northern boundaries of the waste/fill area. A reasonable assumption in determining the rate of contaminant migration across the site is the rate of contaminant migration is equivalent to the rate at which groundwater leaves the site. This latter calculation can be performed through the application of Darcy's Law which is expressed as:

$$V = \frac{ki}{\theta}$$

where: V = velocity of shallow groundwater flow (feet/day)
k = hydraulic conductivity of the shallow water bearing zone (feet/day)
i = hydraulic gradient (dimensionless)
θ = average porosity of the shallow water bearing zone (dimensionless

Values for k and θ were previously determined (see Reference 2) as 4.1 ft/day and 0.35, respectively. The hydraulic gradient (i) is measured perpendicular to the primary direction of groundwater flow (viz., to the east toward Cattaraugus Creek - see Section 5.0) using average water level elevations as measured in MW-1 and MW-3 and elevation as measured in MW-2A and MW-5 during the 1993 monitoring year. The hydraulic gradient for MW-1 and MW-3 is thus:

$$\frac{\Delta H}{\Delta X} = \frac{26.3}{600} = 0.044$$

where

Δ H = difference in average groundwater elevations between MW-1 and MW-3 (feet)
Δ X = distance between MW-1 and MW-3 (feet)

Upon inserting this value into the Darcy's Law expression for velocity, the following result is obtained:

$$V = \frac{Ki}{\theta} \quad \frac{(4.1)(0.044)}{0.35} = 0.52 \; ft/day$$

Thus, the rate of contaminant migration across the site is approximately 0.52 feet/ day between monitoring wells MW-1 and MW-3.

The hydraulic gradient for MW-2A and MW-5 is as follows:

$$\frac{\Delta H}{\Delta X} = \frac{24.5}{1085} = 0.022$$

Δ H = difference in average groundwater elevations between MW-2A and MW-5 (feet)

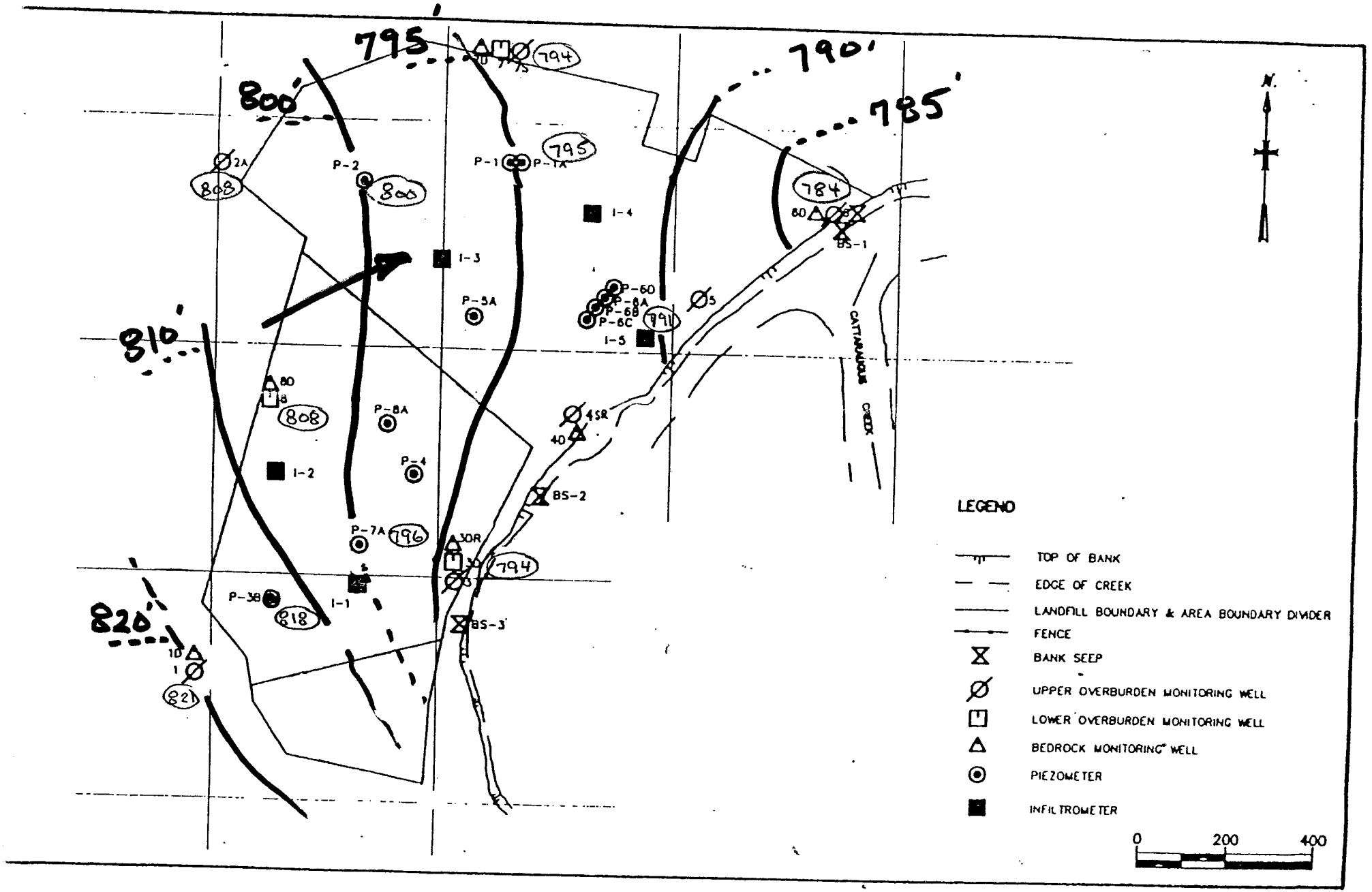
Δ X = distance between MW-2A and MW-5 (feet)

$$V = \frac{Ki}{\theta} \quad \frac{(4.1)(0.022)}{0.35} = 0.26 \; ft/day$$

The rate of contaminant migration across the site is approximately 0.26 ft/day between monitoring wells MW-2A and MW-5.

5.0 GROUNDWATER FLOW

A WATER TABLE ISOPOTENTIAL MAP, BEDROCK ISOPOTENTIAL MAP AND A BEDROCK WATER LEVEL HYDROGRAPH HAVE BEEN PREPARED FOR THE PALMER STREET LANDFILL AND ARE PRESENTED IN FIGURES 3,4 AND 5, RESPECTIVELY. GROUNDWATER ELEVATIONS MEASURED THROUGH 1998 WERE USED IN PREPARING THE WATER TABLE AND BEDROCK ISOPOTENTIAL MAP INDICATED THAT THE SHALLOW GROUNDWATER FLOW IS PRIMARILY TO THE EAST TOWARD CATTARAUGUS CREEK. THE BEDROCK ISOPOTENTIAL MAP AND THE BEDROCK WATER LEVEL HYDROGRAPH ILLUSTRATE A "LEVELING OFF" AFTER THREE YEARS ('92-'94) OF RISING LEVELS AT WELLS MW-1D, MW-3DR AND MW-8D. MW-1D AND MW-8D, WHICH WERE FORMERLY DOWNGRADIENT WELLS ARE NOW UPGRADIENT OF THE LANDFILL.



PALMER STREET LANDFILL
WATERTABLE ISOPOTENTIAL MAP
4-17-98 MONITORING EVENT

MOENCH [illegible] COMPANY JUI 1992

FIGURE

FIG. 8

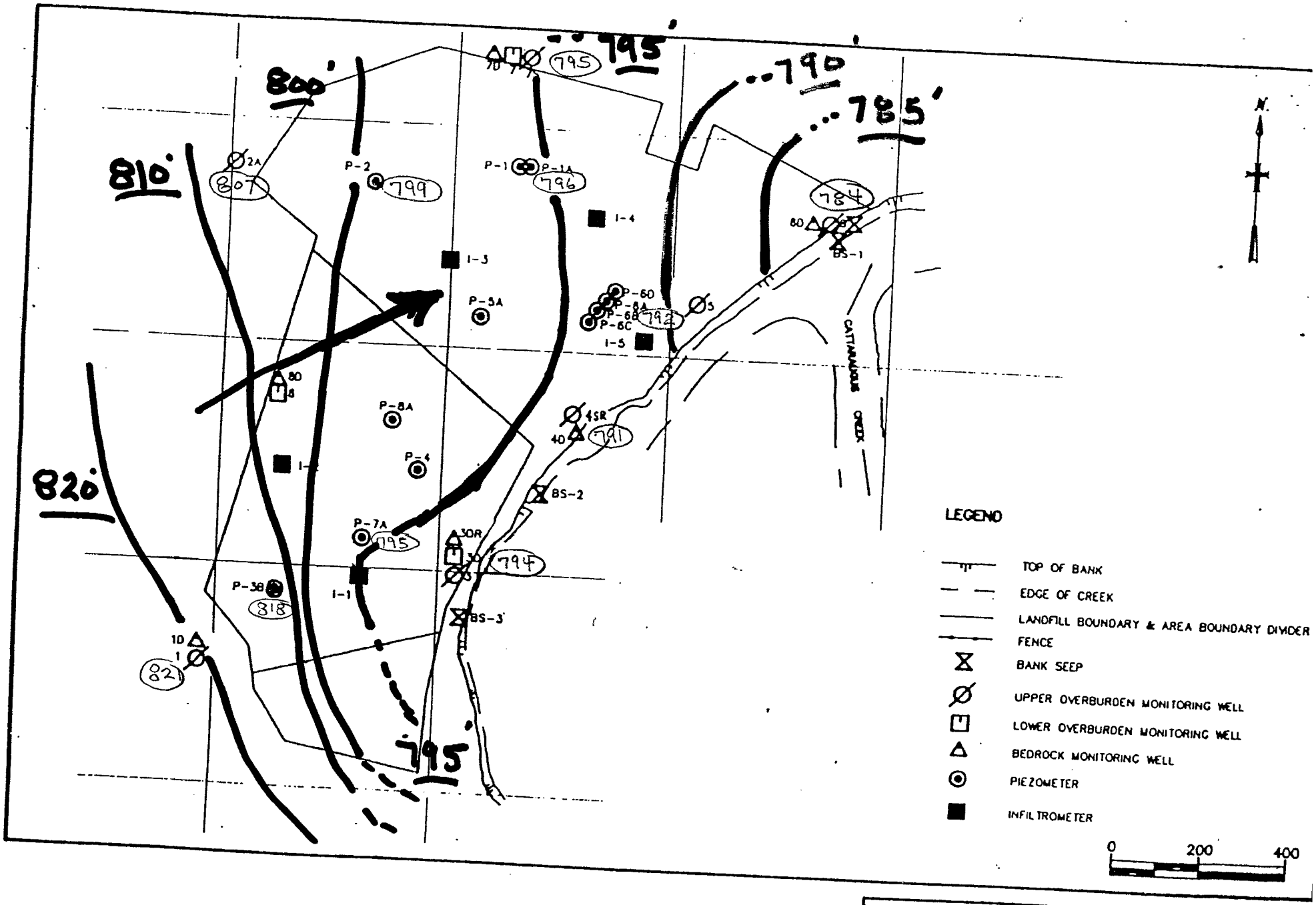
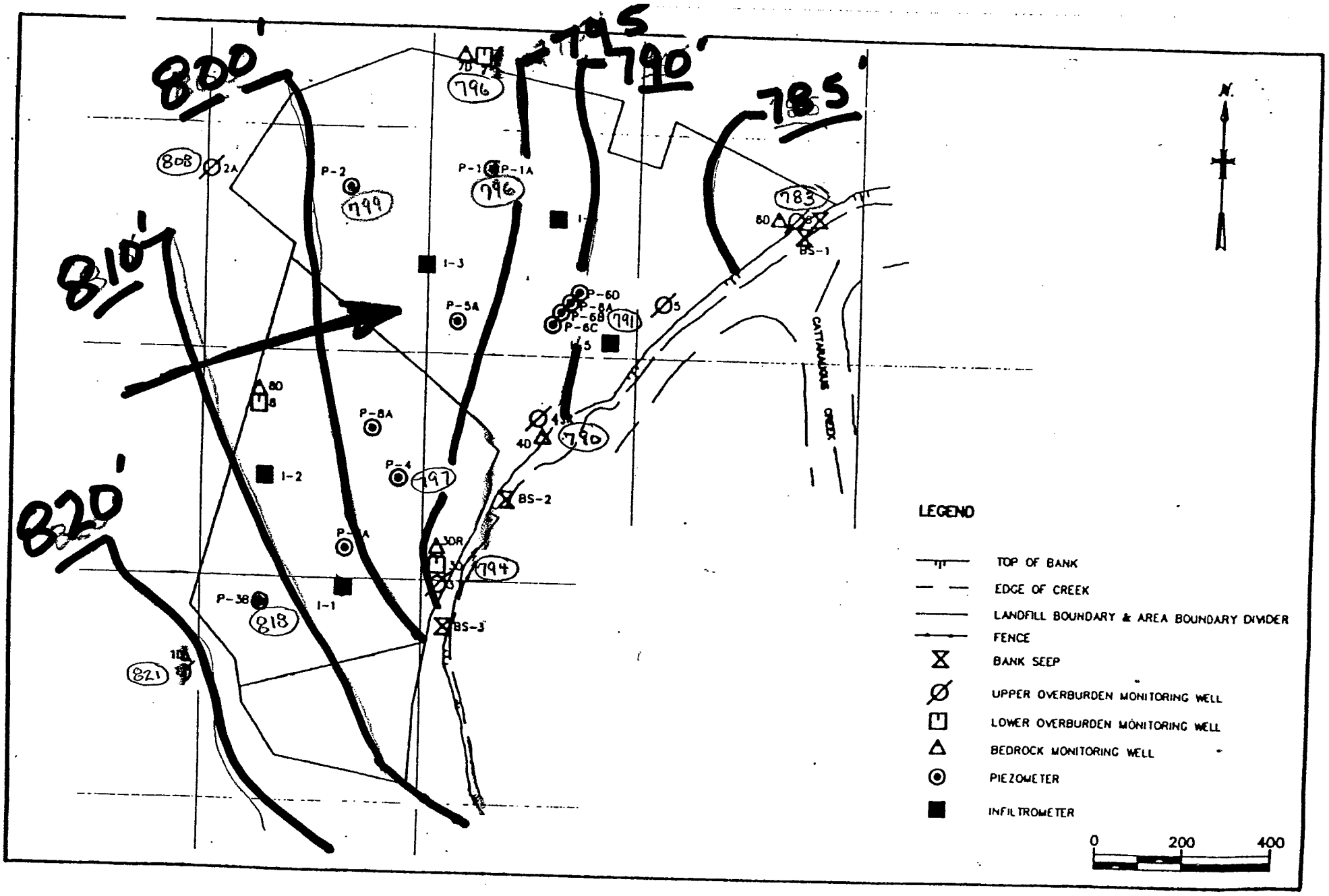


Fig. #9

PALMER STREET LANDFILL
WATER TABLE ISOPOTENTIAL MAP
8-7-98 MONITORING EVENT

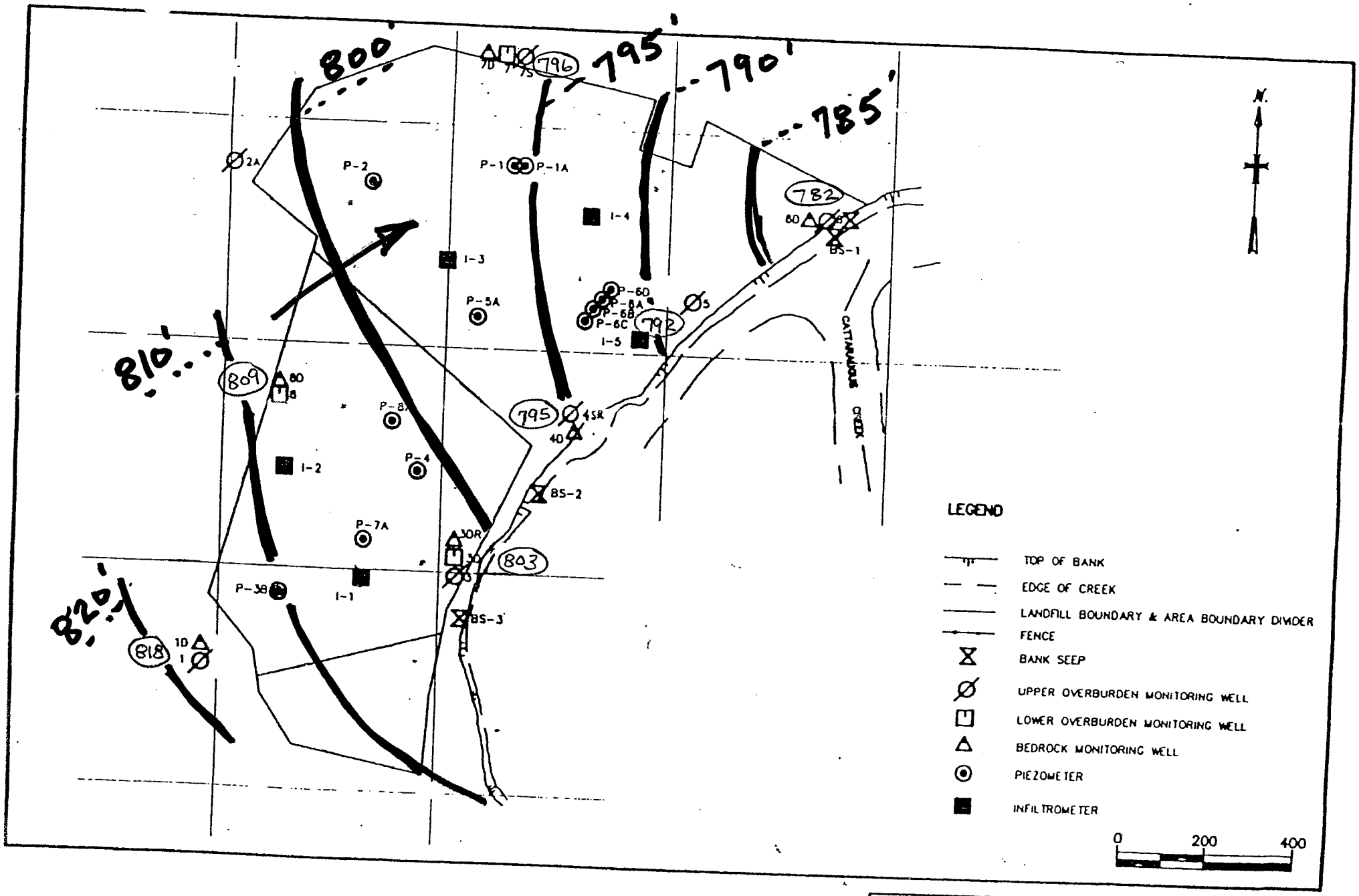
MOENCH



PALMER STREET LANDFILL
WATER TABLE Isopotential MAP
11-2-98 MONITORING EVENT

MOENCH [illegible] COMPANY JULY 1992

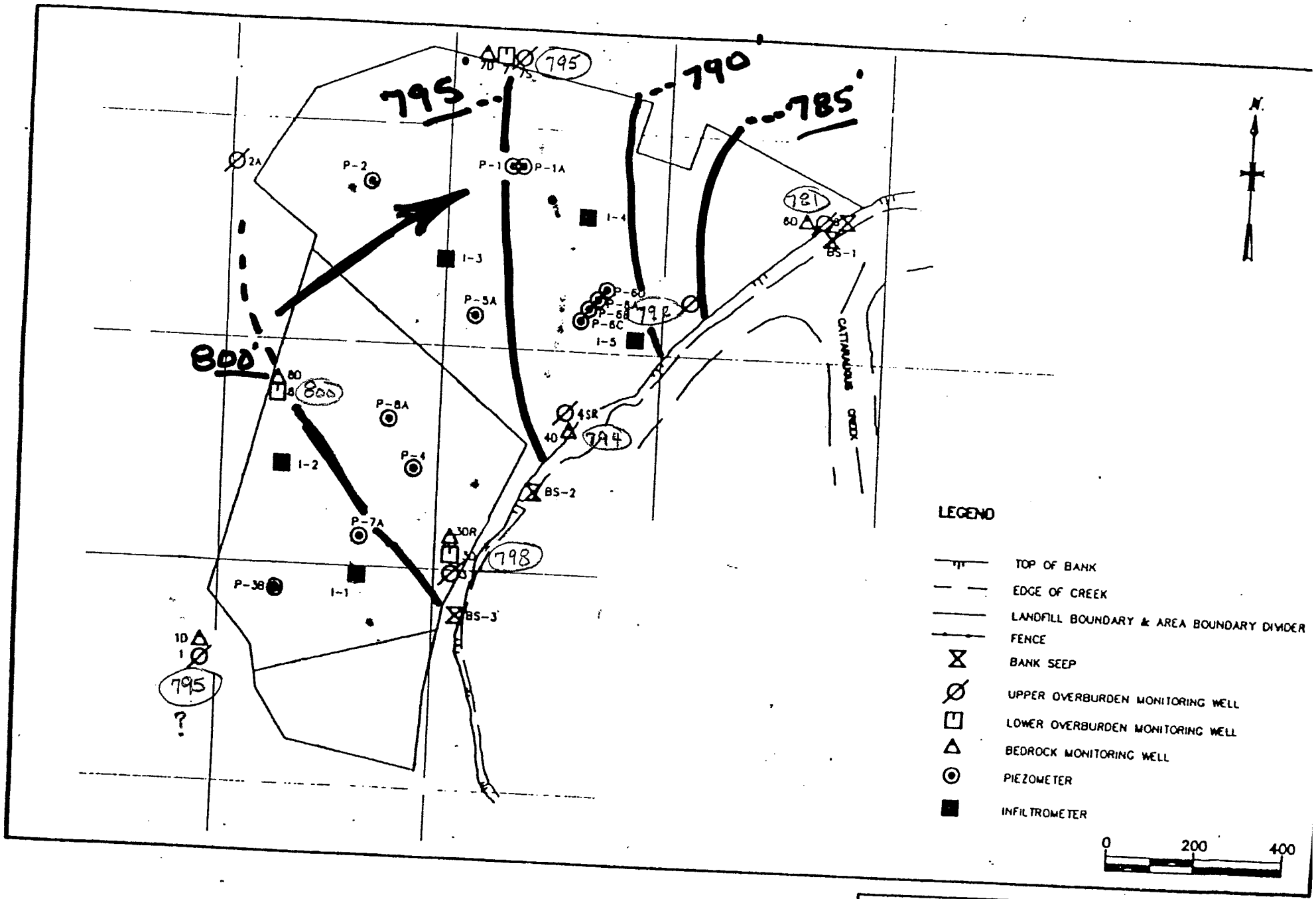
FIGURE # 10



PALMER STREET LANDFILL
BEDROCK ISOPOTENTIAL MAP
4-17-98 MONITORING EVENT
MOENCH TANNING COMPANY JU 1992

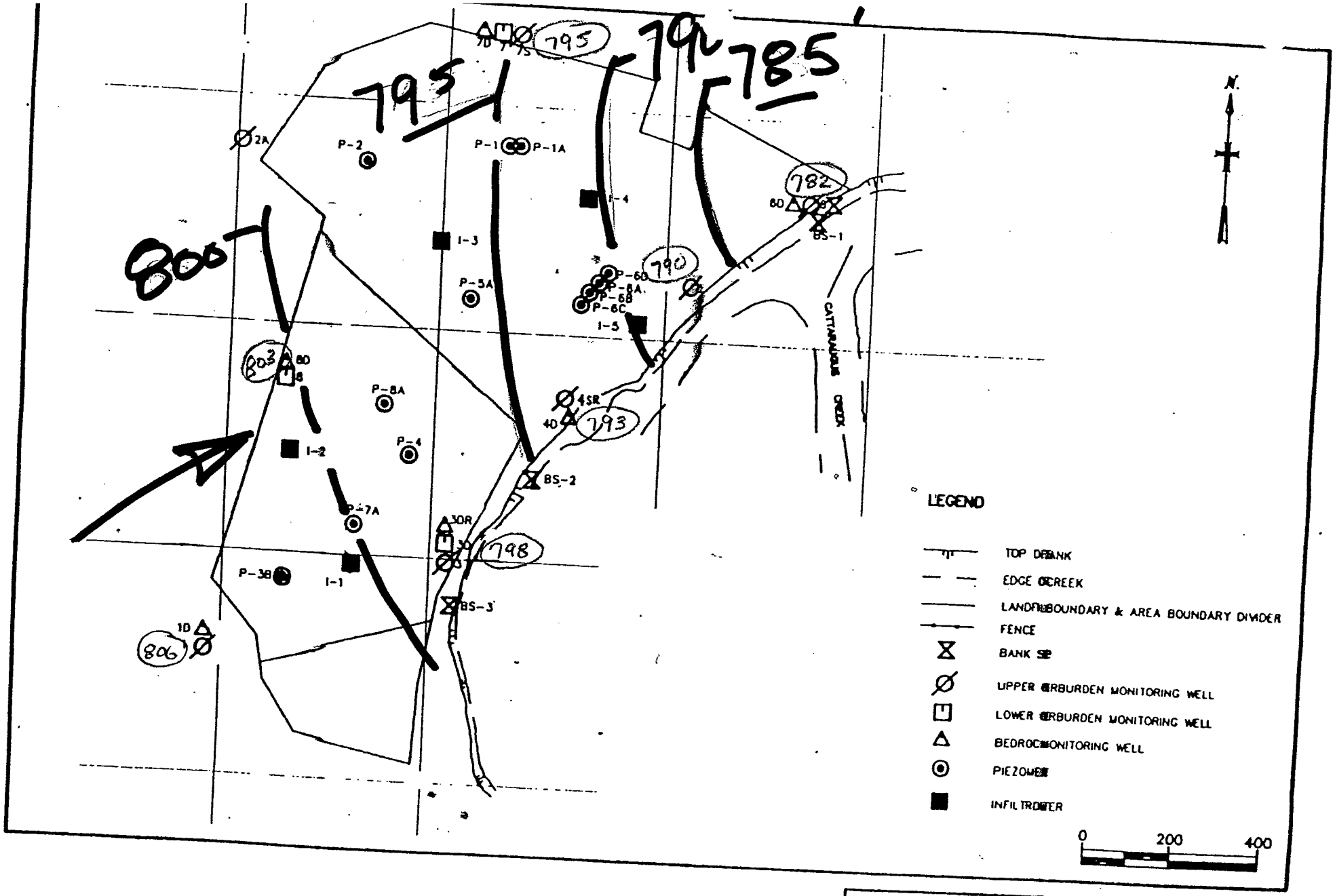
FIGURE

FIG. # 11



PALMER STREET LANDFILL
BEDROCK ISOPOTENTIAL MAP
8-7-98 MONITORING EVENT

Fig # 12



PALMER STREET LANDFILL
BEDROCK ISOPOTENTIAL MAP
11-2-98 MONITORING EVENT
MOENCH TANNING COMPANY JULY 1992

FIGURE

Fig. # 13

6.0 REFERENCES

1. Palmer Street Landfill Closure/Post-Closure Plan (EPA ID. NYD002126910), prepared by Malcolm Pirnie, Inc., revised February 1989.

2. Palmer Street Landfill, Post Closure Plan (EPA ID, NYD002126910), prepared by Malcolm Pirnie, Inc., July 1993.

3. Letter to Mr. Jeffrey Smith, Moench Tanning Company, from New York State Department of Environmental Conservation, dated August 31, 1993.

4. Palmer Street Landfill, Supplemental Hydrogeologic Investigation, prepared by Malcolm Pirnie, Inc., January 1989.

5. Sampling Plan/Quality Assurance Plan for Groundwater Monitoring - Palmer Street Landfill. Prepared by Malcolm Pirnie, Inc., August 1989.

6. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Third Edition, USEPA Office of Solid Waste and Emergency Response, November 1986.

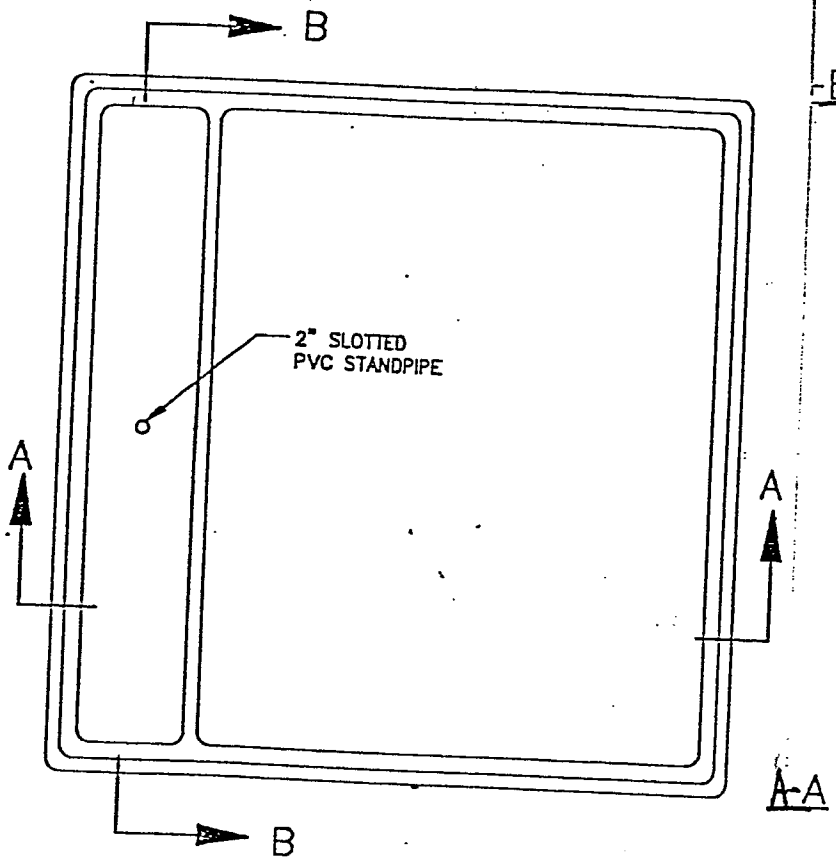
7. Palmer Street Landfill, Evaluation of Alternative Cover Systems, prepared by Malcolm Pirnie, Inc., January 1989.

8. PALMER STREET LANDFILL, COVER SYSTEM PERFORMANCE EVALUATION, prepared by MALCOLM PIRNIE INC., OCTOBER 1995.

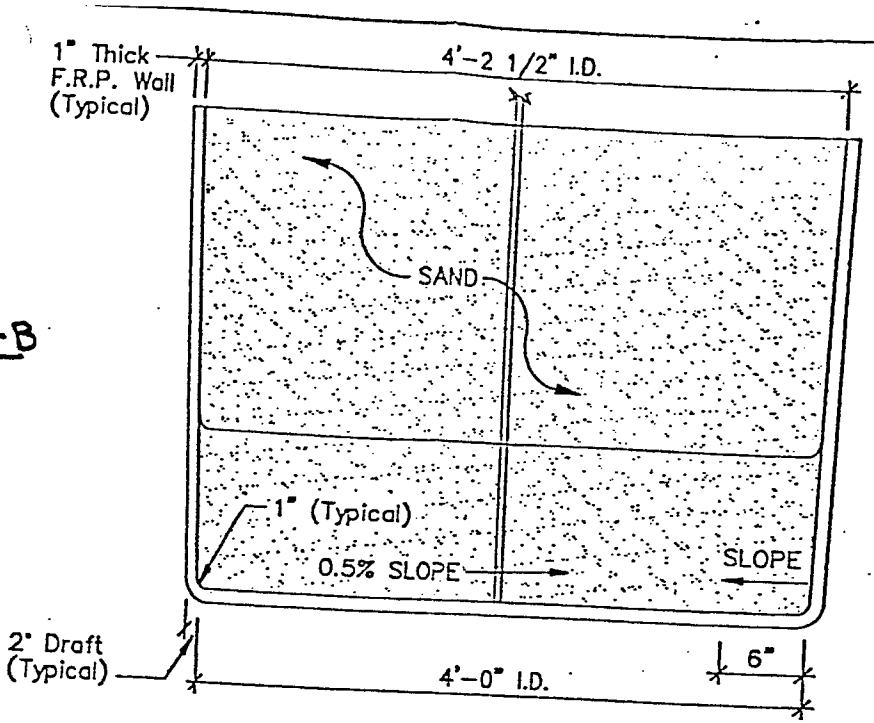
ATTACHMENT A

INFILTROMETER DESIGN

PALMER STREET LANDFILL
GROUNDWATER MONITORING REPORT...
4/98, 8/98, 11/98
SAMPLING EVENT..

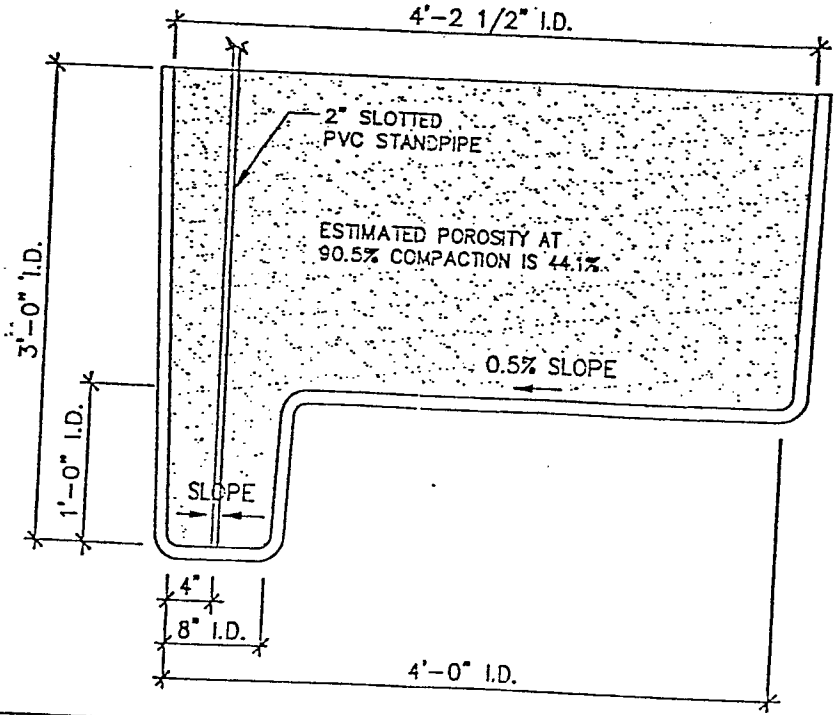


PLAN



B-B

A-A



TYPICAL INFILTROMETER BY HFY'S ENTERPRISES
AS INSTALLED AT PALMER EET LANDFILL

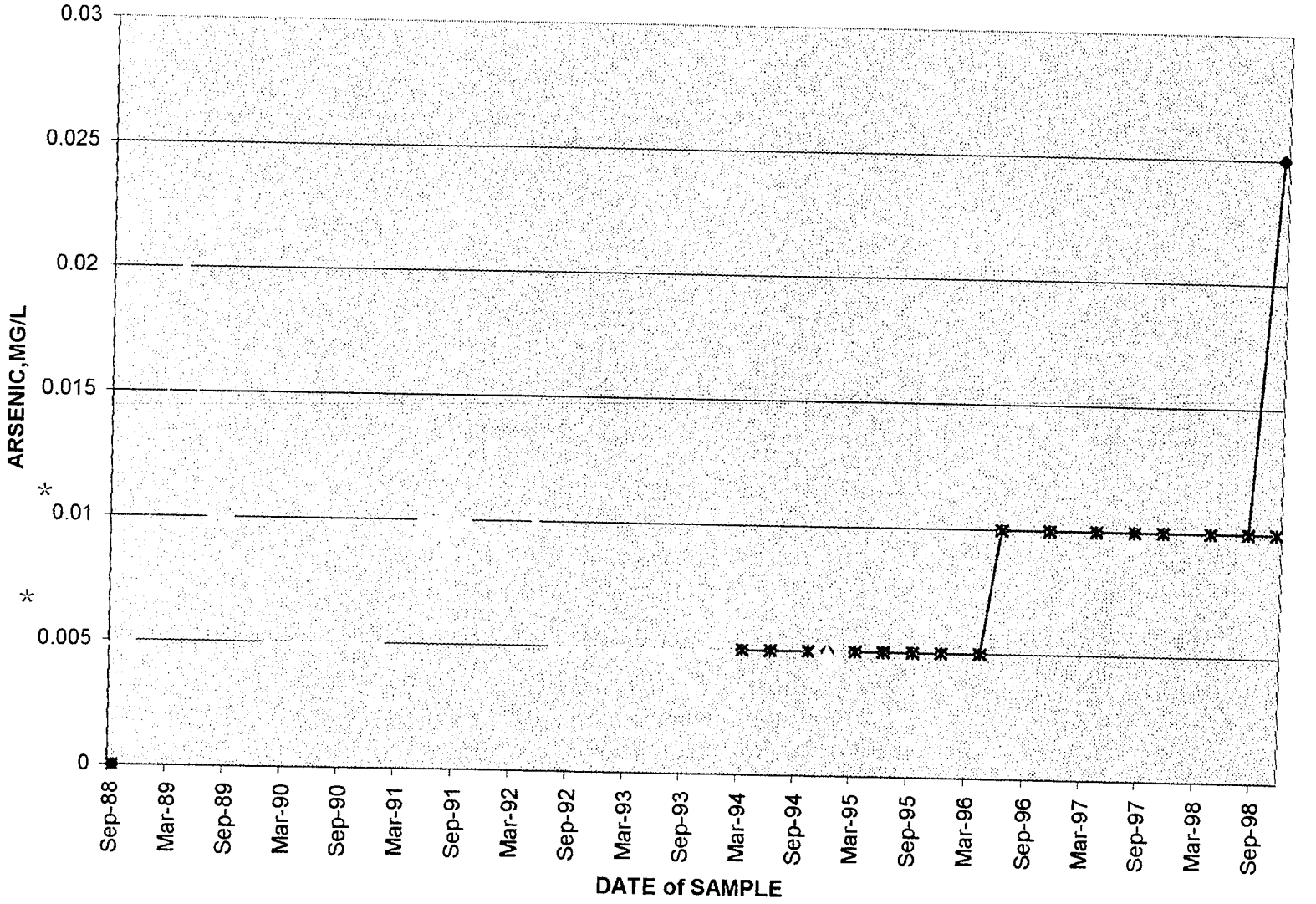
ATTACHMENT "B"

Graph, Metals concentration vs. Time;

grouped by monitoring points ....

Monitoring Events 4/98, 8/98, 11/98

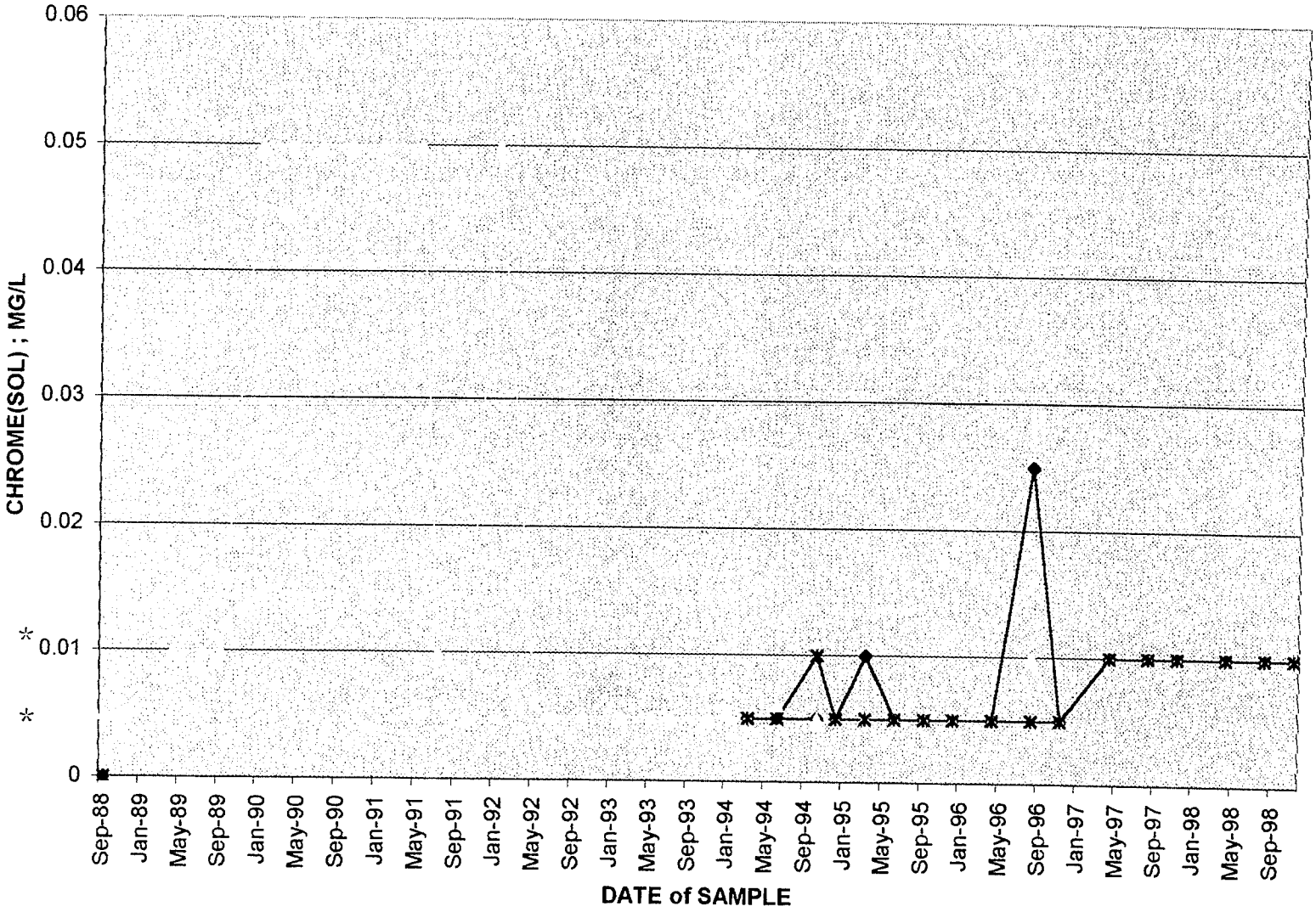
PALMER ST. L/F; ARSENIC(SOLUBLE) vs TIME



*.005 & .01 mg/l = detectic limit(s).

-.025 mg/l, NYSDEC class "GA" standards

PALMER ST. L/FILL; CHROME(SOL) vs TIME

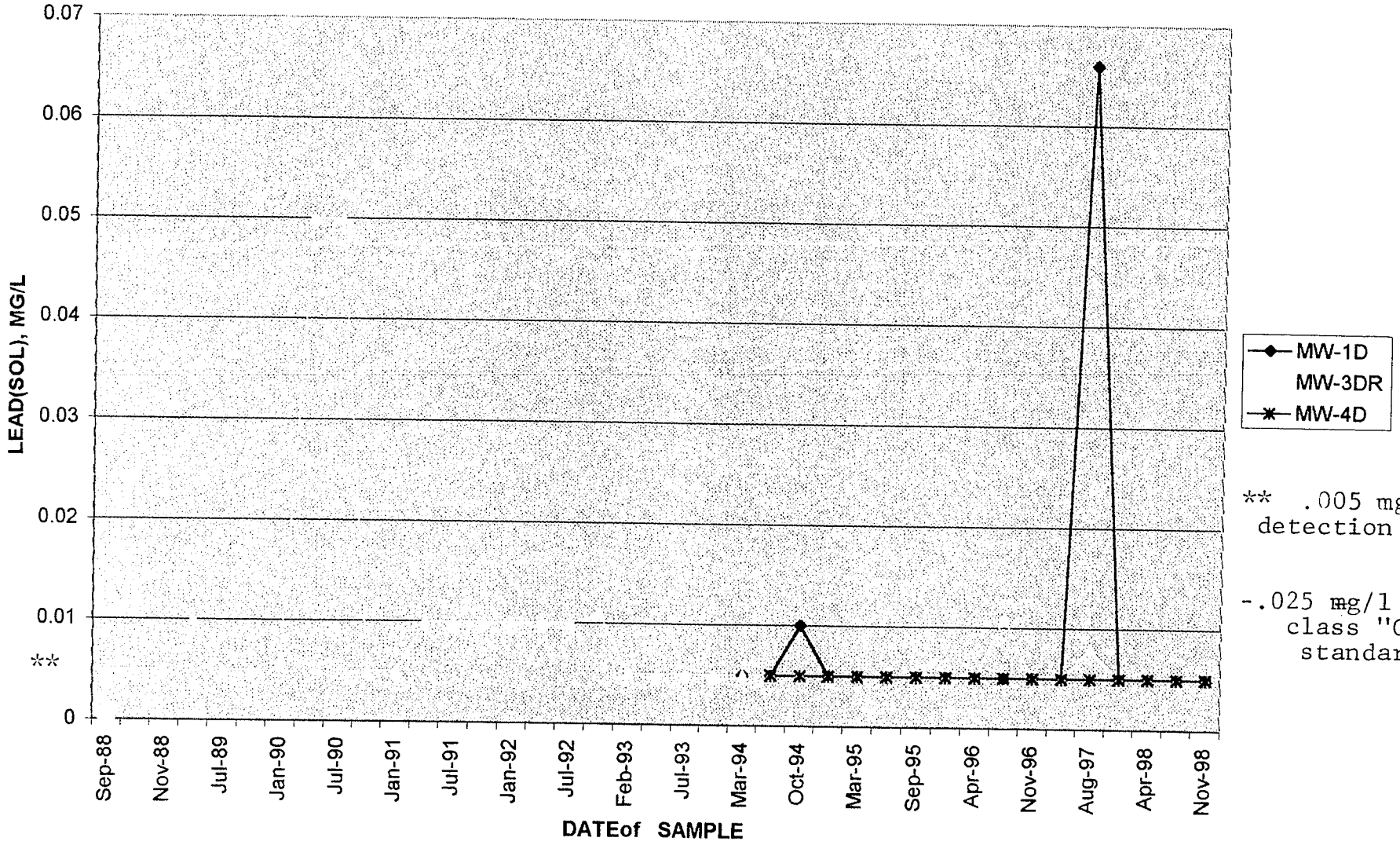


* .005 & .01 mg/l
detection limit

-.05 mg/l, NYSDEC
class "GA"
standard.

Attachment B

PALMER ST. L/FILL; LEAD(SOL) vs TIME

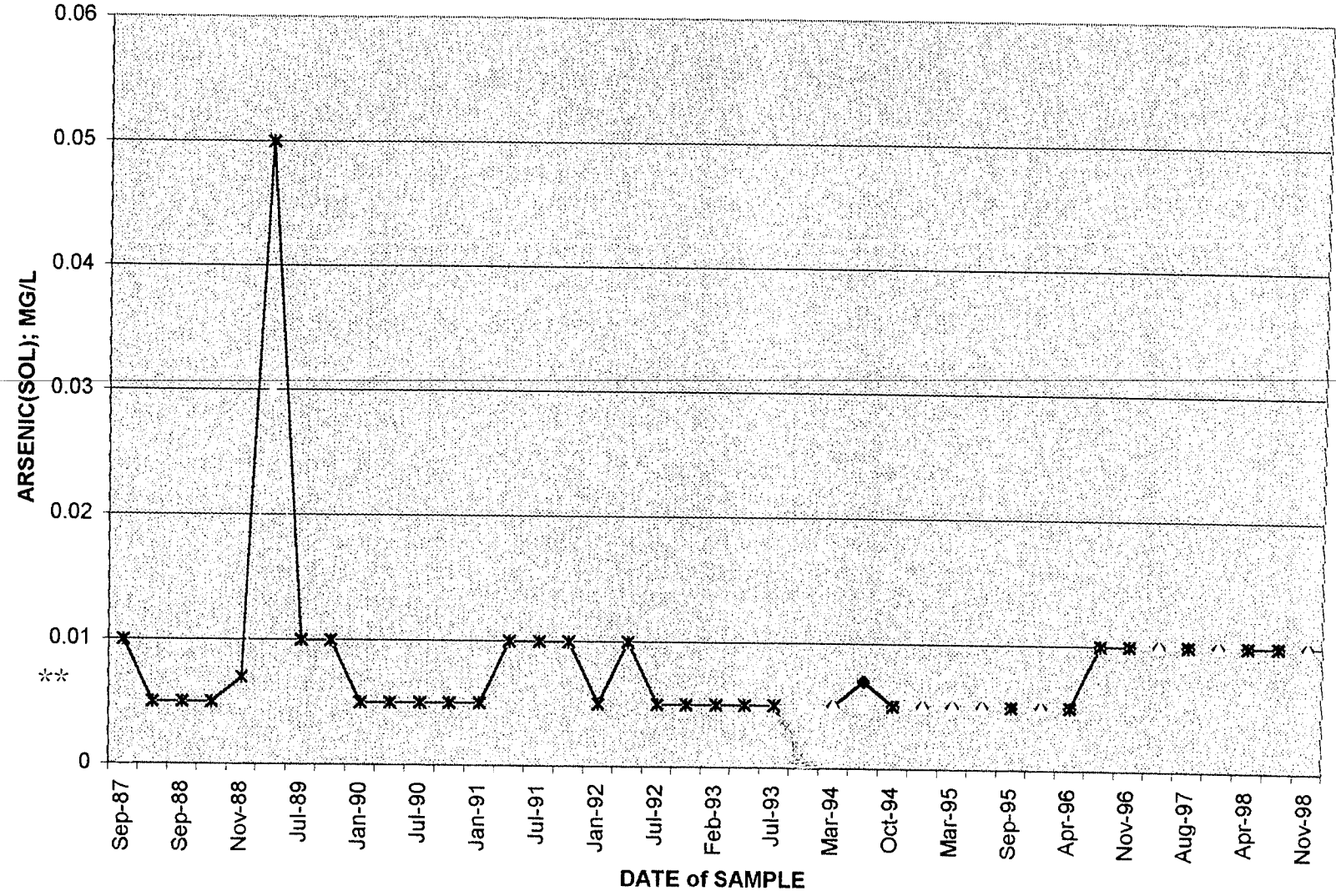


** .005 mg/l, detection limit.

-.025 mg/l NYSDEC class "GA" standard.

Attachment B

PALMER ST. L/FILL; ARSENIC(SOL)vs TIME



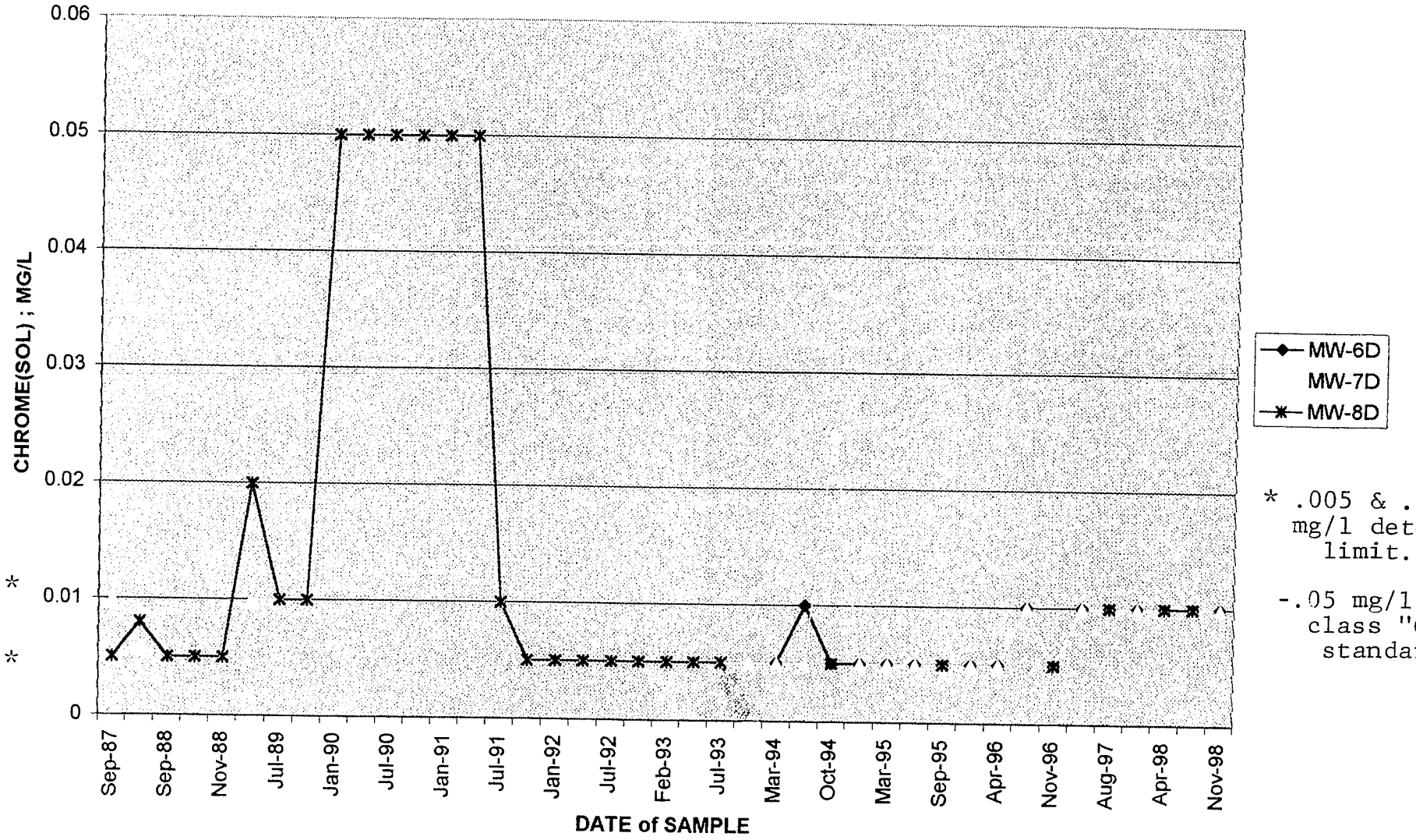
** .005 mg/l detection limit.

-.025 mg/l NYSDEC class "ga" standar

Attachment B

PLRMTL 6.XLC - CHRT_

PALMER ST. L/FILL; CHROME(SOL) vs TIME

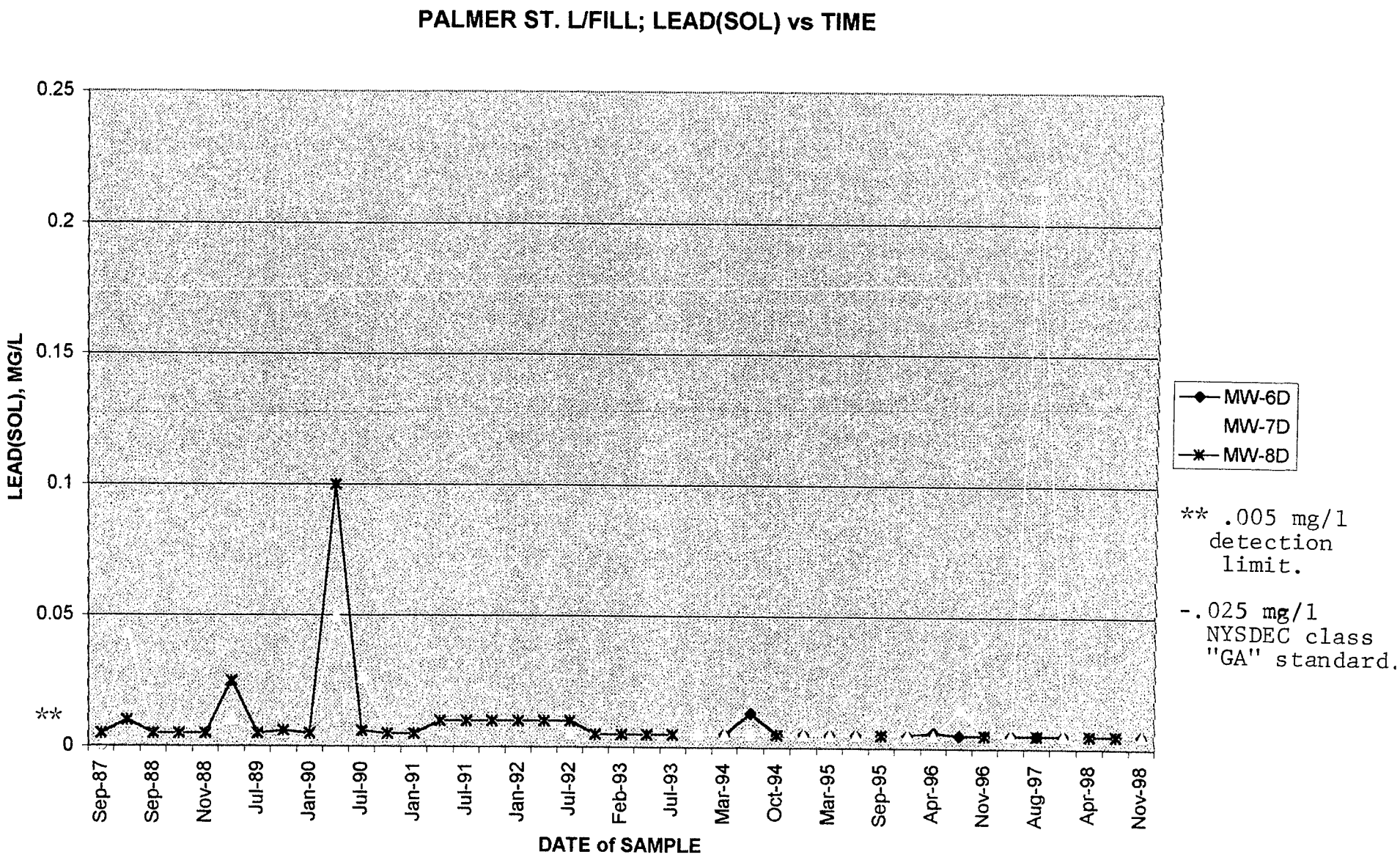


* .005 & .01 mg/l detectic limit.

-.05 mg/l NYSI class "GA" standard.

Attachment "R"

PLRMTL7.XLC-CHRT 1



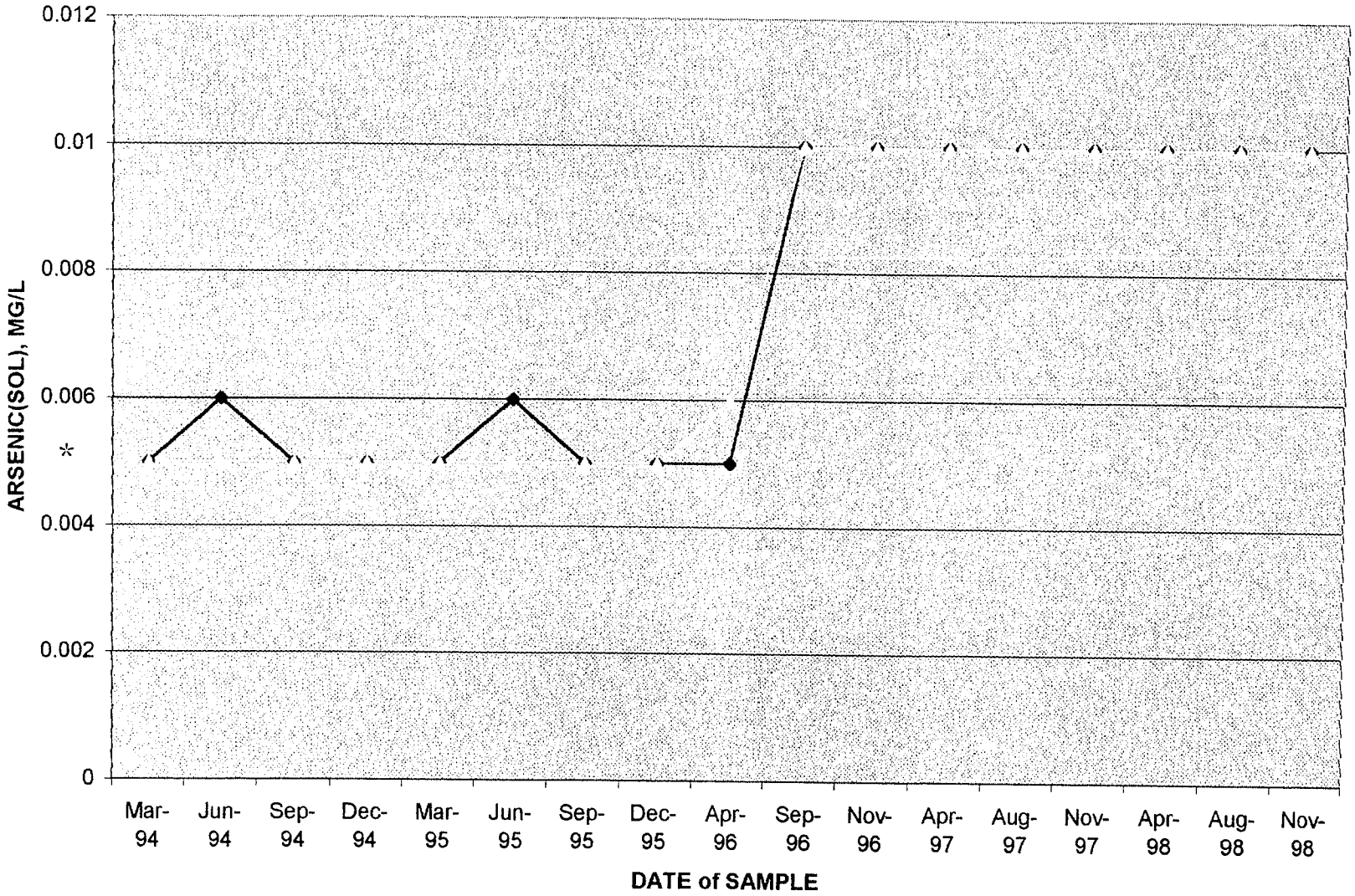
** .005 mg/l detection limit.

-.025 mg/l NYSDEC class "GA" standard.

Attachment "B"

PLRMTL9.XLC-CHRT

PALMER ST. L/FILL; ARSENIC(SOL) vs TIME

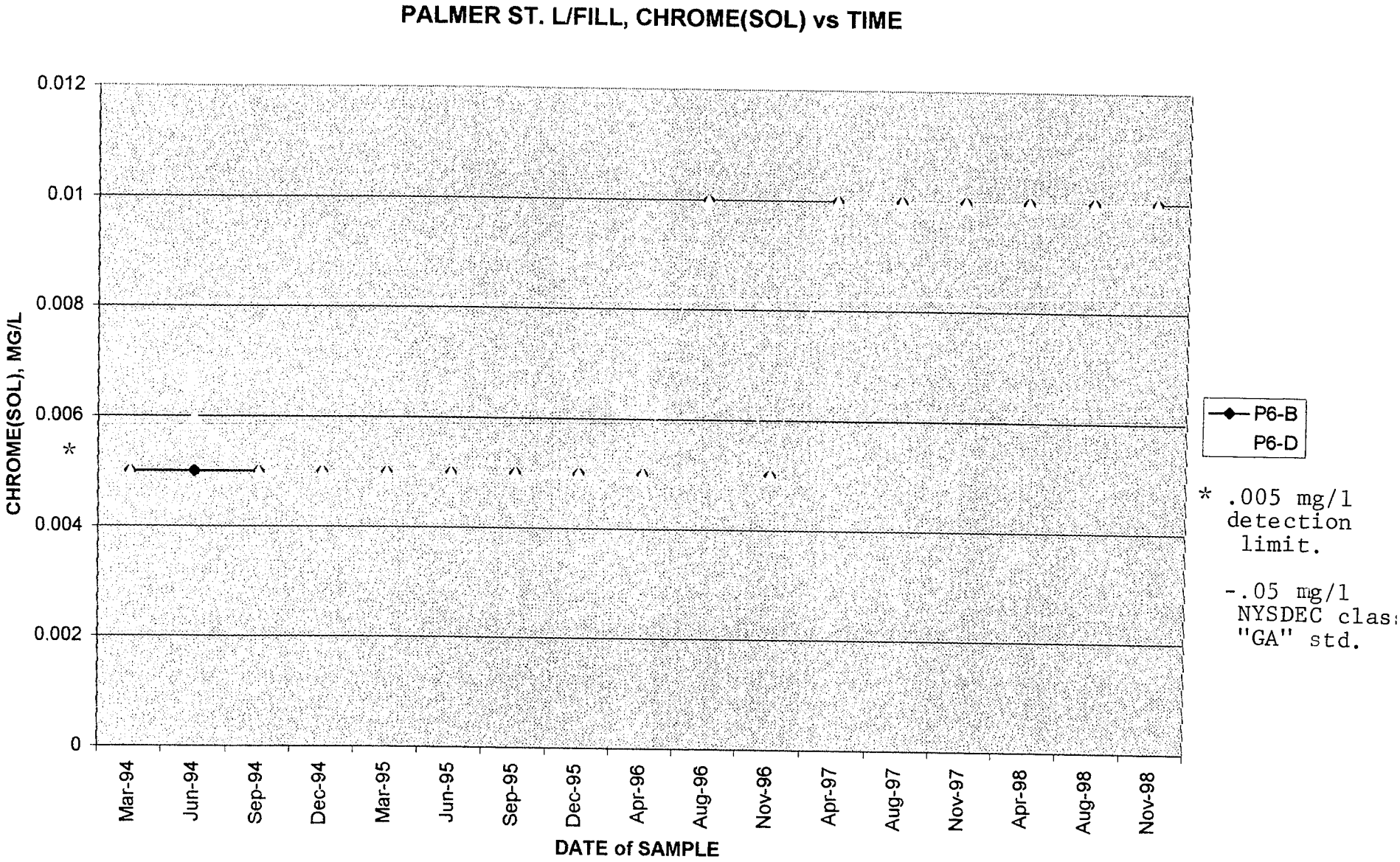


* .005 mg/l detection limit.

-.025 mg/l NYSDEC class "GA" std.

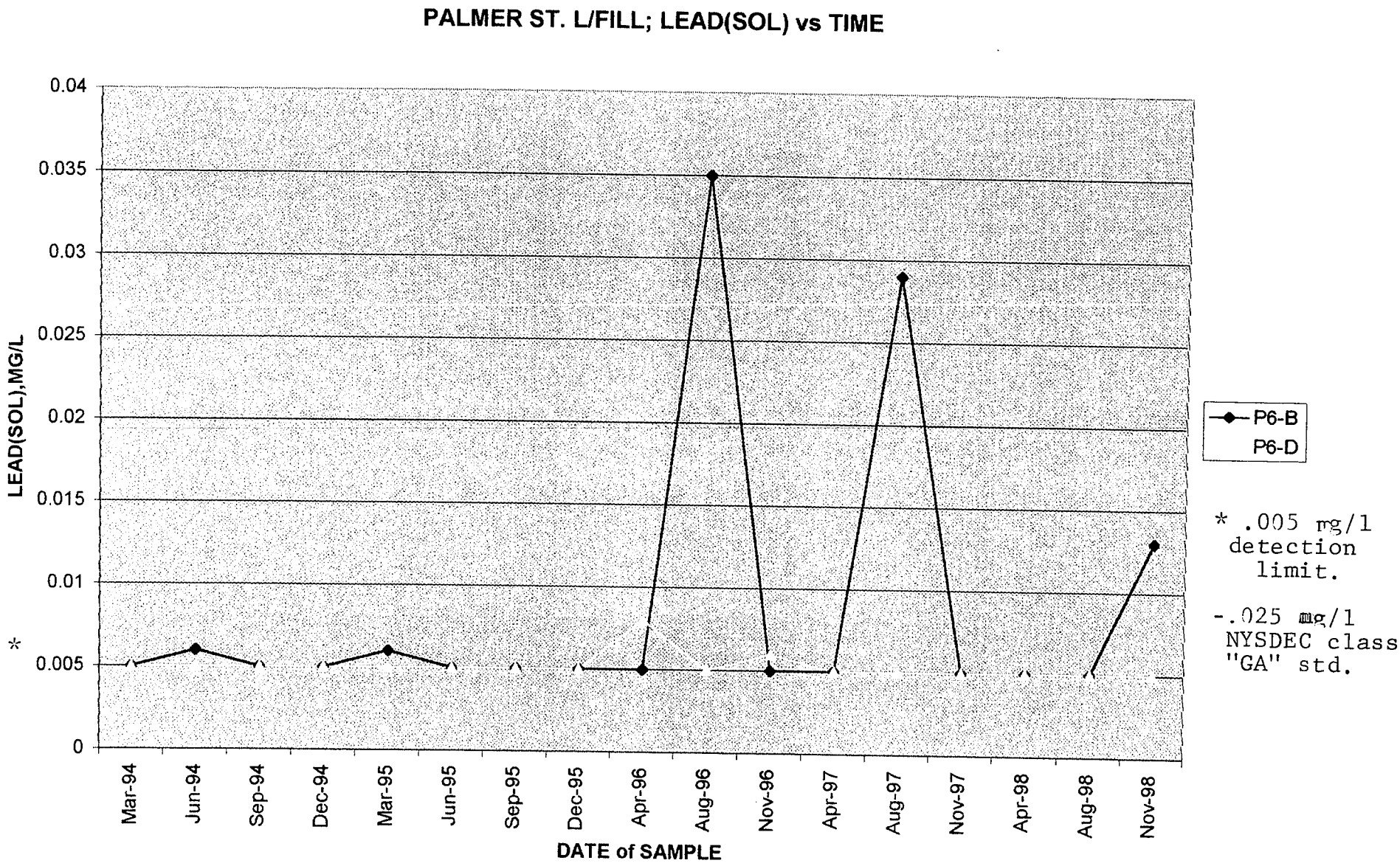
Attachment "B"

PLRMTL10.XLC - CHRT 1



Attachment "B"

PLRMTL 11.xLC-CHRT 1



Attachment "B"

PALMER ST L/F, MOENCH COMPANY
ARSENIC(SOL), CHROME(SOL), LEAD(SOL) vs TIME (MG/L)
BANK SEEPS

ARSENIC	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98
BS-1	0.005	0.005		0.005	0.005	0.005	0.005		0.005	LT .01	LT.01	0.01	0.01	0.01	0.01	0.011	0.01
BS-3	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	LT.025	LT.01	0.01	0.012	0.01	0.012	0.01	0.027
CHROME																	
BS-1	0.005	0.005		0.005	0.005	0.006	0.005		0.005	LT.025	0.005	0.01	0.01	0.01	0.01	0.01	0.01
BS-3	0.005	0.008	0.005	0.005	0.005	0.005	0.005	0.005	0.005	LT.025	0.005	0.01	0.01	0.01	0.01	0.01	0.01
LEAD																	
.BS-1	0.005	0.005		0.005	0.005	0.005	0.005		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
BS-3	0.005	0.005	0.007	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	* 0.2	0.005	0.005	0.005	0.005

-no graphes generated due to no/minimal detection.
* .2 mg/l in BS-3, August '97, exceed class "GA" std, common even in upgradient wells this sample.

ATTACHMENT "B"

ATTACHMENT C

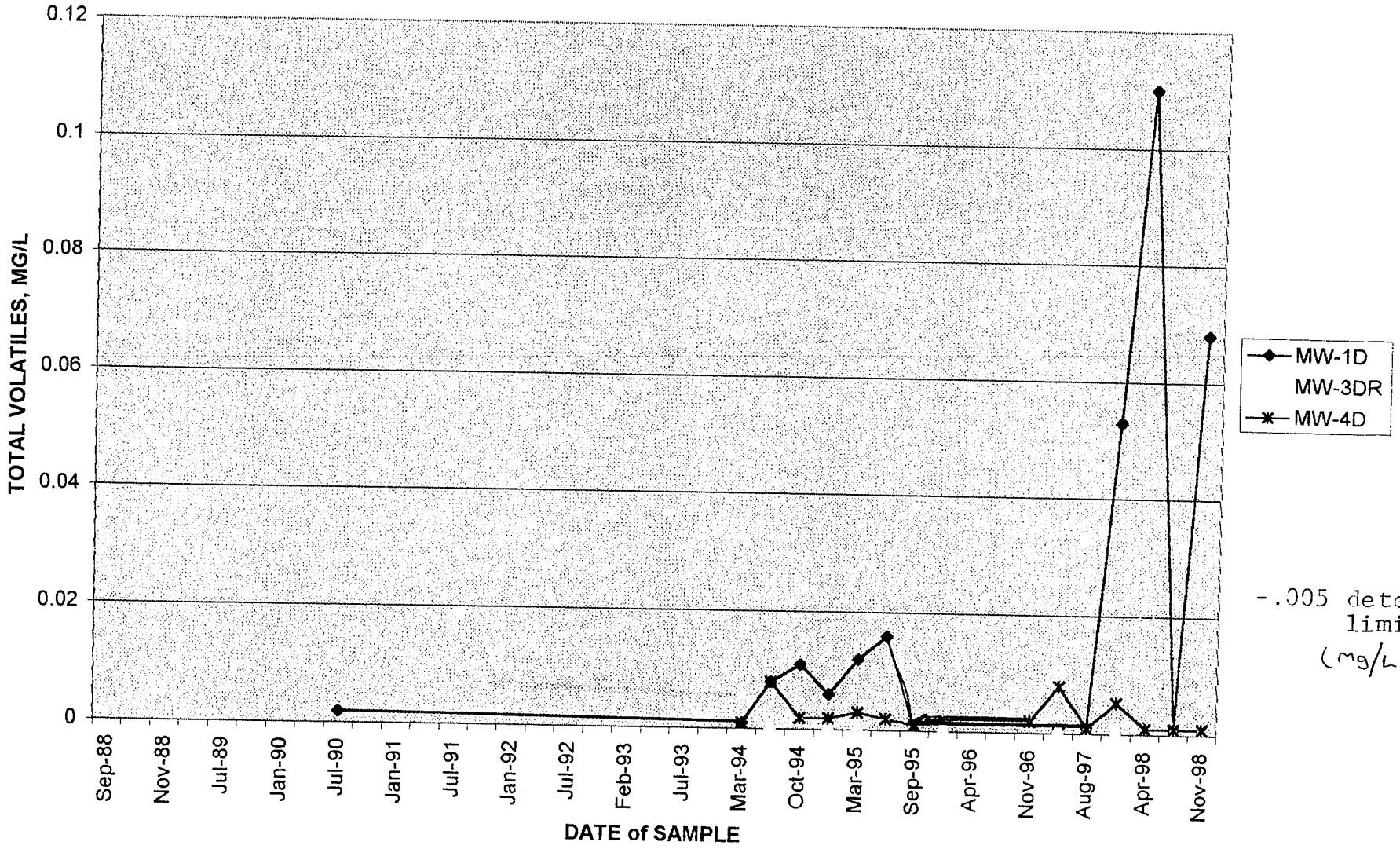
SOLUBLE METALS CONCENTRATION VS. TIME

TOTAL VOLATILES vs. TIME; grouped by monitor point.

Samples: 4/98, 8/98, 11/98...

PLRMTL4.XLC

PALMER ST.L/FILL; TOTAL VOLATILES(ORGANIC) vs TIME

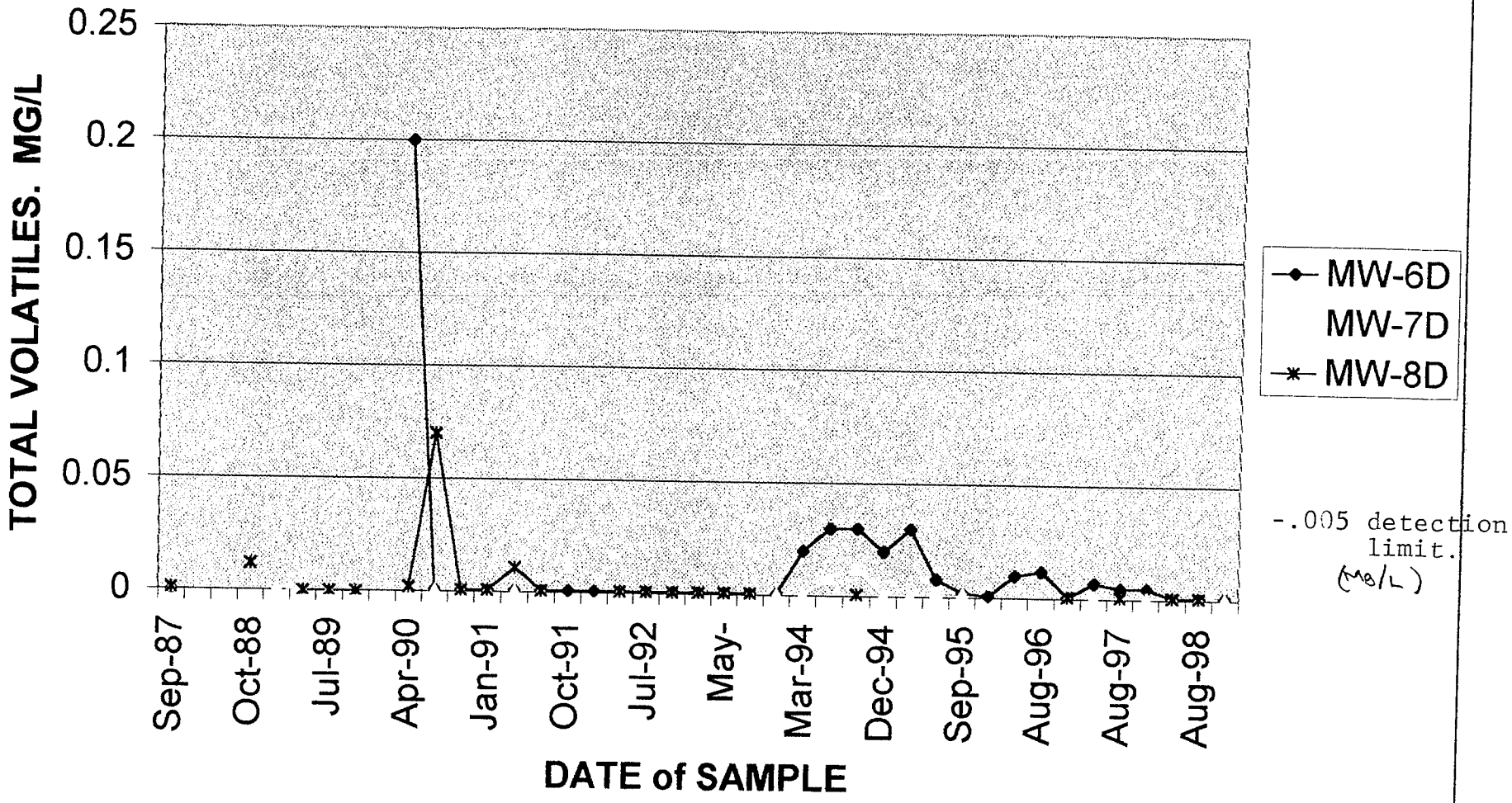


-.005 detection limit. (mg/L)

Attachment "C"

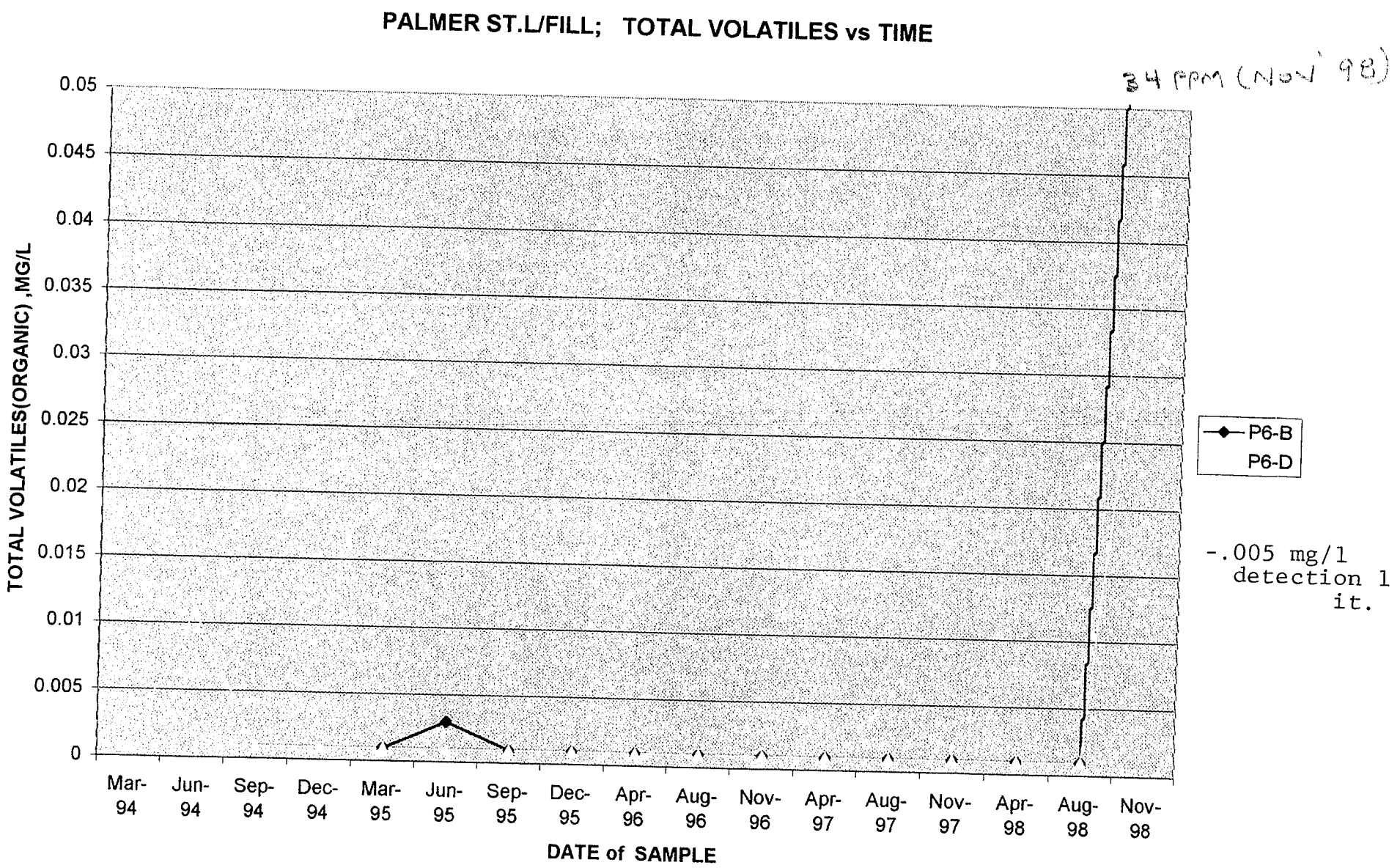
PLRVoc 8.XLC

PALMER ST. L/FILL; TOTAL VOLATILES(ORGANIC) vs TIME



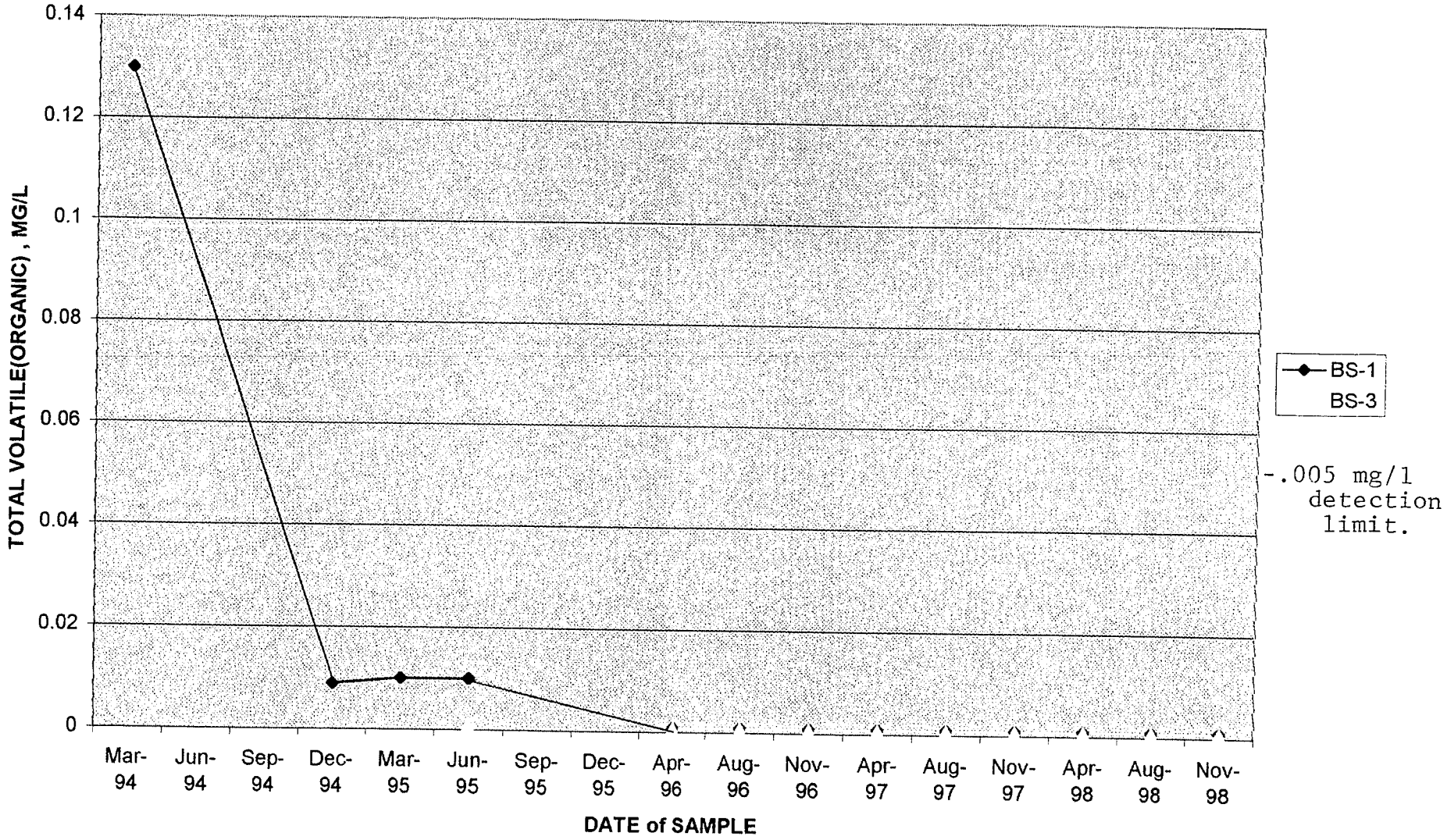
-.005 detection limit. (MG/L)

PLRVOC12.XLC



PLRVoc14.xls

PALMER ST. L/FILL; TOTAL VOLATILES(ORGANIC) vs TIME



ATTACHMENT "D"

SUMMARY OF "FIELD MEASUREMENTS",

for Trimester reports: 4/98, 8/98, 11/98.

-Individual sheets submitted in previous individual reports.

MOENCH COMPANY
PALMER STREET LANDFILL
4/20 - 4/22/98 MONITORING EVENT

SUMMARY OF FIELD MEASUREMENTS

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Conductance[1] (umhos/cm)	Turbidity (NTU)	Sample Appearance	Sample Odor
MW-1D*	4/21/98	947	11.9	7.57	680	NR	CLEAR	SULFUR
MW-3DR***	4/21/98	817	12.1	8.10	530	"	CLEAR	NONE
MW-4D	4/20/98	1121	12.3	8.14	710	"	TURBID	NONE
MW-6D	4/20/98	821	12.5	7.97	1150	"	CLEAR	NONE
MW-7D***	4/22/98	850	11.3	8.04	610	"	CLEAR	NONE
MW-8D***	4/21/98 ANNUAL	1045	13.0	8.24	320	"	SLGHT. TUR.	NONE
P-6B	4/20/98	1045	12.2	7.90	540	"	CLEAR	NONE
P-6D	4/20/98	948	12.1	8.07	610	"	CLEAR	NONE
BS-1	4/20/98	914	11.3	8.21	460	"	ALMOST CLR	NONE
BS-3	4/21/98	925	11.2	7.37	800	"	SLGHT. TUR.	NONE
				6.5 - 8.5 (CLASS "GA" STD)				

BLIND D

NOTES:
(1) Conductivity readings corrected to 25°C.
(2) MW-1 is hydraulically upgradient shallow overburden well.
(3) MW-7D is apparent hydraulically upgradient bedrock well.

* Shallow Overburden Well
** Deep Overburden Well
*** Bedrock Well
BS Bank Seep

MOENCH COMPANY
PALMER STREET LANDFILL
8/10 - 8/14/98 MONITORING EVENT {IN CONJUNCTION W/CAP EVAL}

SUMMARY OF FIELD MEASUREMENTS

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Conductance[1] (umhos/cm)	Turbidity (NTU)	Sample Appearance	Sample Odor
MW-1D*	8-11-98	955	13.4	7.47	560	NOT Req'd	CLEAR	NO
MW-3DR***	8-11-98	920	13.1	8.03	530	" "	CLEAR	NO
MW-4D	8-11-98	820	13.8	7.98	750	" "	CLEAR	NO
MW-6D	8-10-98	832	14.6	8.05	920	" "	CLEAR	NO
MW-7D***	8-13-98	916	16.5	7.98	730	" "	CLEAR	NO
MW-8D***	8-12 ANNUAL	848	12.7	7.89	450	" "	CLEAR	NO
P-6B	8-10-98	1026	21.3	7.03	480	" "	SLGHT. TUR.	NO
P-6D	8-10-98	1111	14.0	7.81	510	" "	CLEAR	NO
BS-1	8-10-98	940	22.8	7.76	640	" "	CLEAR	NO
BS-3	8-11-98	1040	21.9	7.97	400	" "	SLGHT TUR.	NO
				6.5 - 8.5 (CLASS "GA" STD)				

NOTES:
(1) Conductivity readings corrected to 25°C.
(2) MW-1 is hydraulically upgradient shallow overburden well.
(3) MW-7D is apparent hydraulically upgradient bedrock well.

* Shallow Overburden Well
** Deep Overburden Well
*** Bedrock Well
BS Bank Seep

MOENCH COMPANY
PALMER STREET LANDFILL
11/3-11/5/98 MONITORING EVENT

SUMMARY OF FIELD MEASUREMENTS

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Conductance[1] (umhos/cm)	Turbidity (NTU)	Sample Appearance	Sample Odor
(2) MW-1D*	11/4/98	1133	11.1	8.06	1100	NA	CLEAR	NO
MW-3DR***	11/4/98	1040	12.2	8.25	570	"	CLEAR	NO
MW-4D	11/4/98	946	12.1	8.19	670	"	CLEAR	NO
MW-6D	11/3/98	840	13.9	8.39	1100	"	CLEAR	NO
(3) MW-7D ***	11/5/98	916	11.7	8.23	710	"	CLEAR	NO
MW-8D**	ANNUAL	—	—	—	—	"	—	—
P-6B	11/3/98	1041	12.1	8.31	480	"	CLEAR	NO
P-6D	11/3/98	952	12.1	8.27	650	"	CLEAR	NO
(4) BS-1	11/3/98	923	7.5	7.94	680	"	CLEAR	NO
BS-3	11/3/98	1303	11.7	7.52	1100	"	Slight Tur-	NO
				6.5 - 8.5 (CLASS "GA" STD)				

NOTES:

(1) Conductivity readings corrected to 25°C.
(2) MW-1 is hydraulically upgradient shallow overburden well.
(3) MW-7D is apparent hydraulically upgradient bedrock well.
(4) BS-1 - NO BANK; TOOK CREEK SAMPLE.

* Shallow Overburden Well
** Deep Overburden Well
*** Bedrock Well
BS Bank Seep

ATTACHMENT "E"

Ananytical Data form Columbia Analytical Services
was submitted in the previous individual
Trimester reports: 4/98, 8/98, 11/98..
Contact Moench Company if you require..