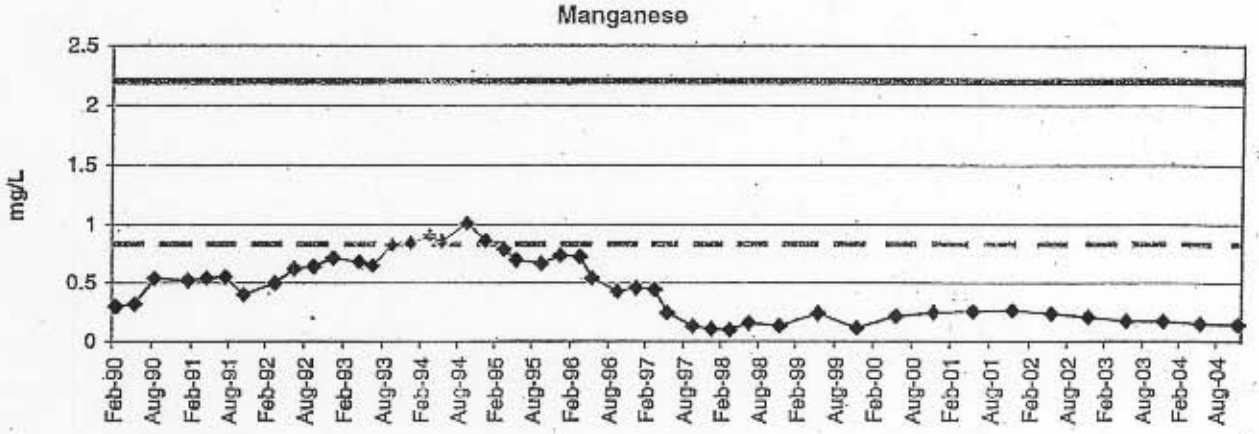
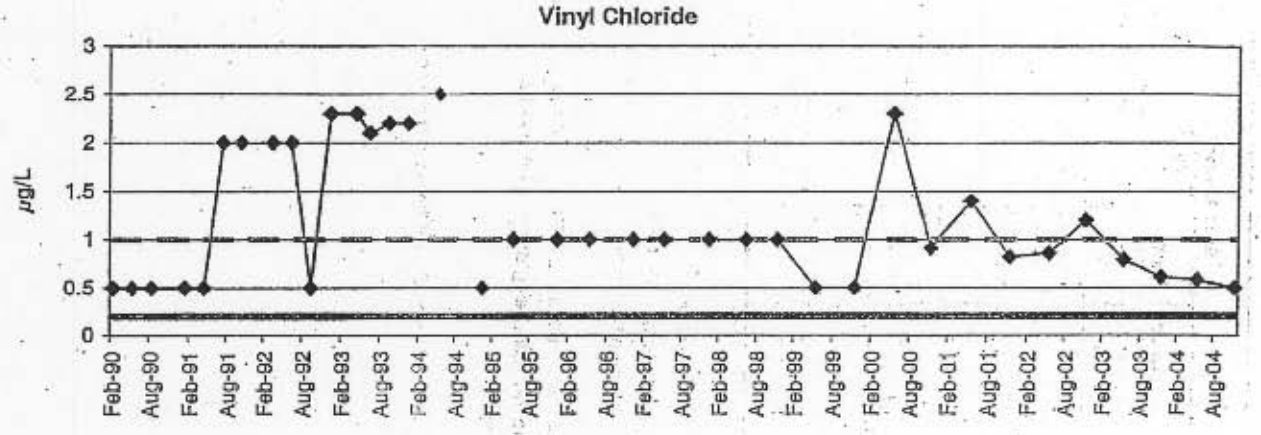
Appendix D

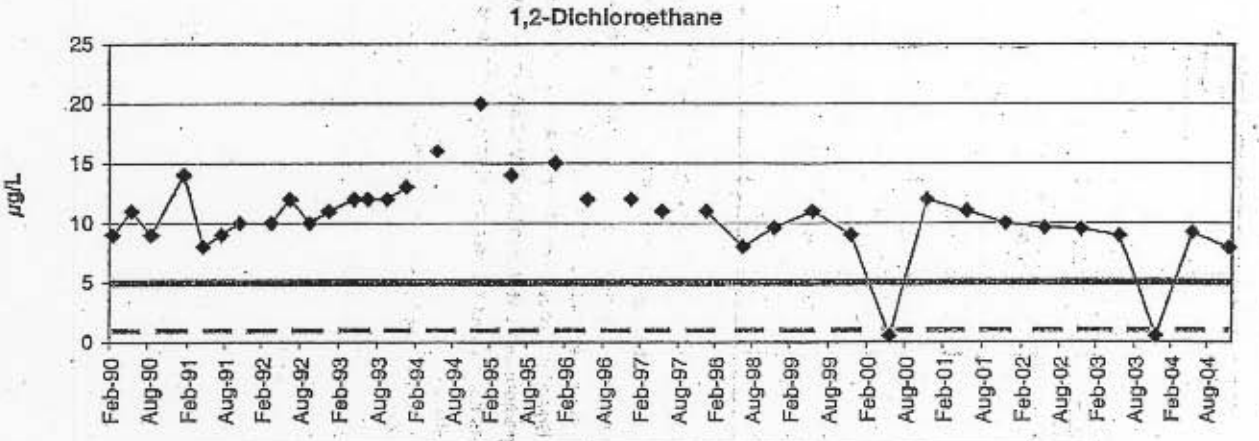
Concentration versus time plots for ground-water parameters.

Midway Landfill
ROD Contaminants of Concern

Sand Aquifer
MW-17B



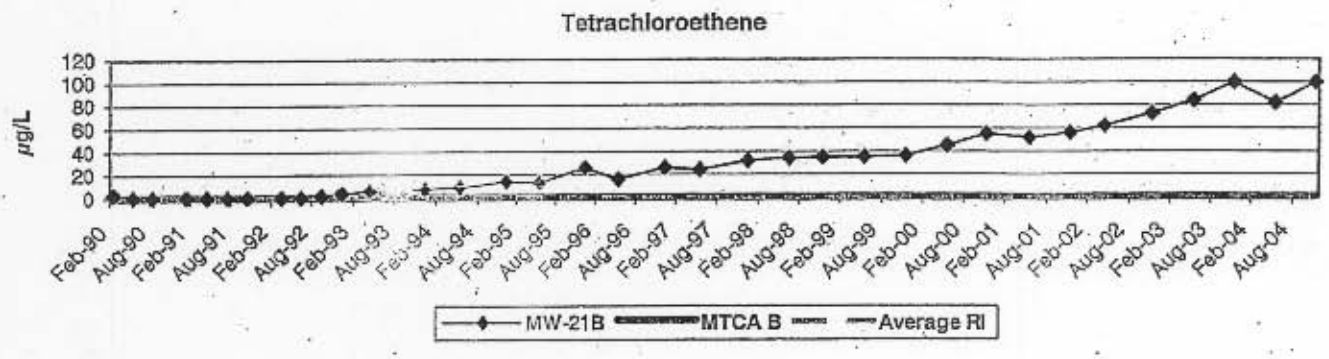


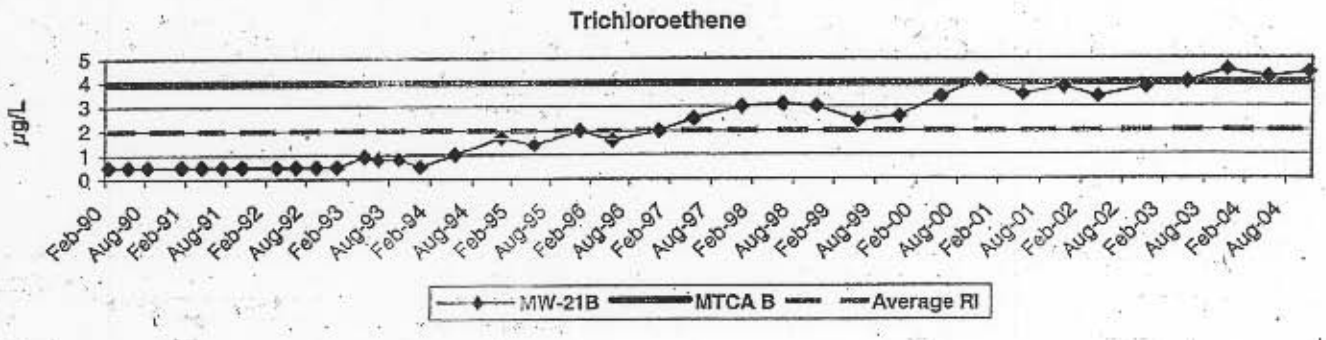


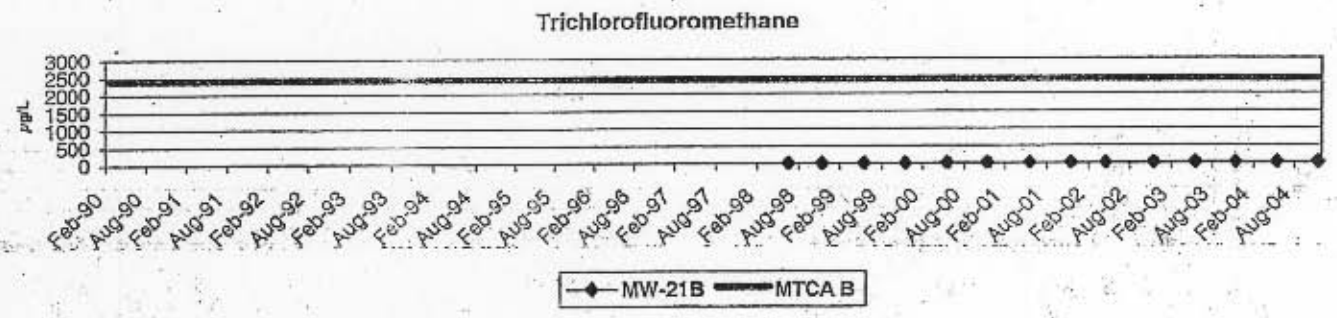
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

Midway Landfill
Ground..ater Quality Parameters Not Included in the ROD

Sand Aquifer
MW-21B



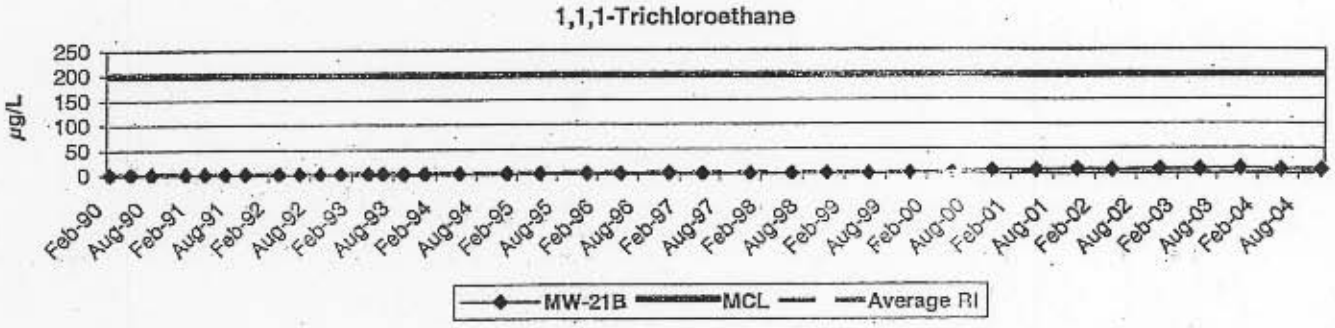


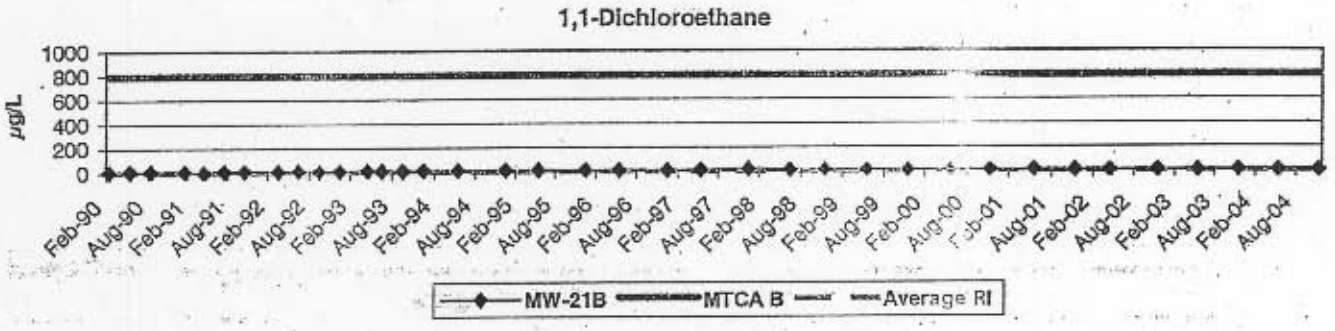


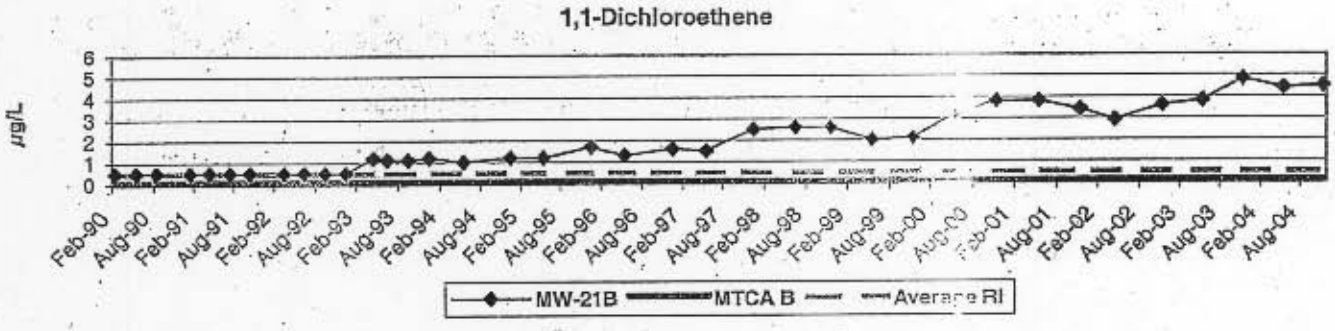
Non-detected values are shown as 1/2 the detection limit.
MCL = Primary of secondary maximum contaminat level standard.
MTCA B = MTCA B/Model Toxics Control Act (WAC 173-340) Method B cleanup level.
RI = Remedial Investigation

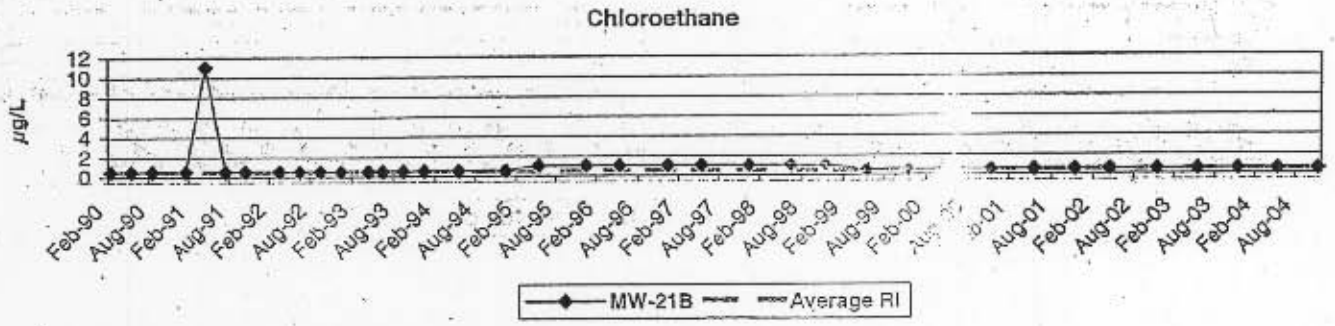
Midway Landfill
Groundwater Quality Parameters Not Included in the ROD

Sand Aquifer
MW-21B





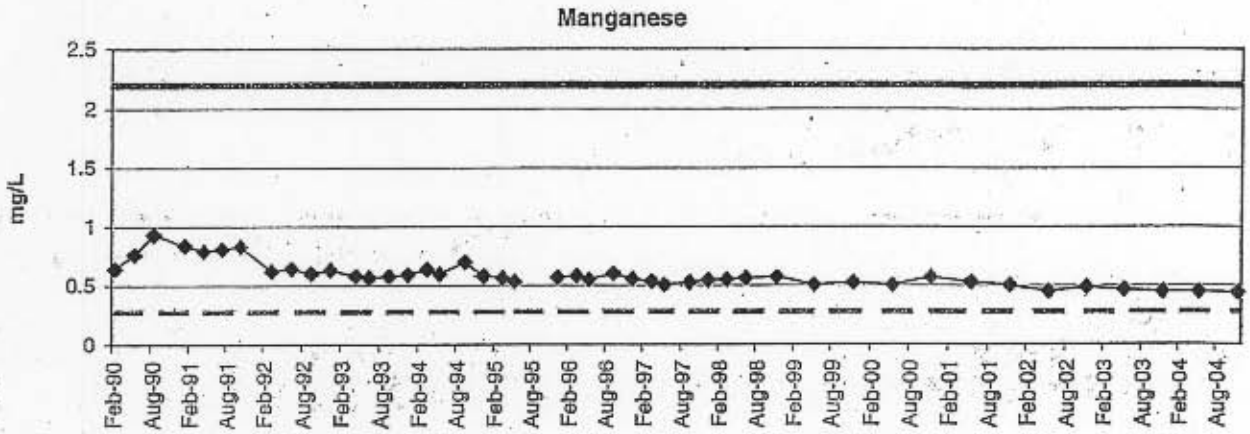


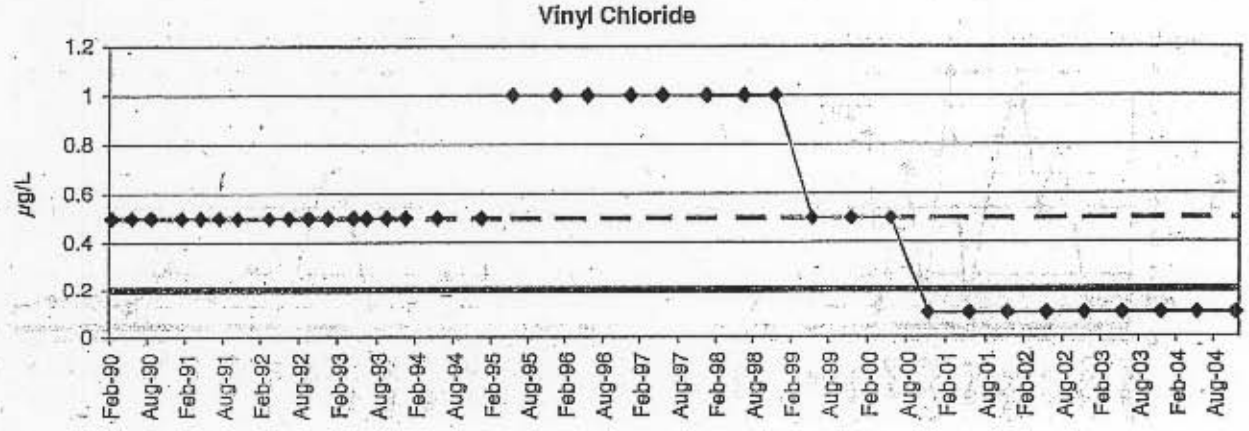


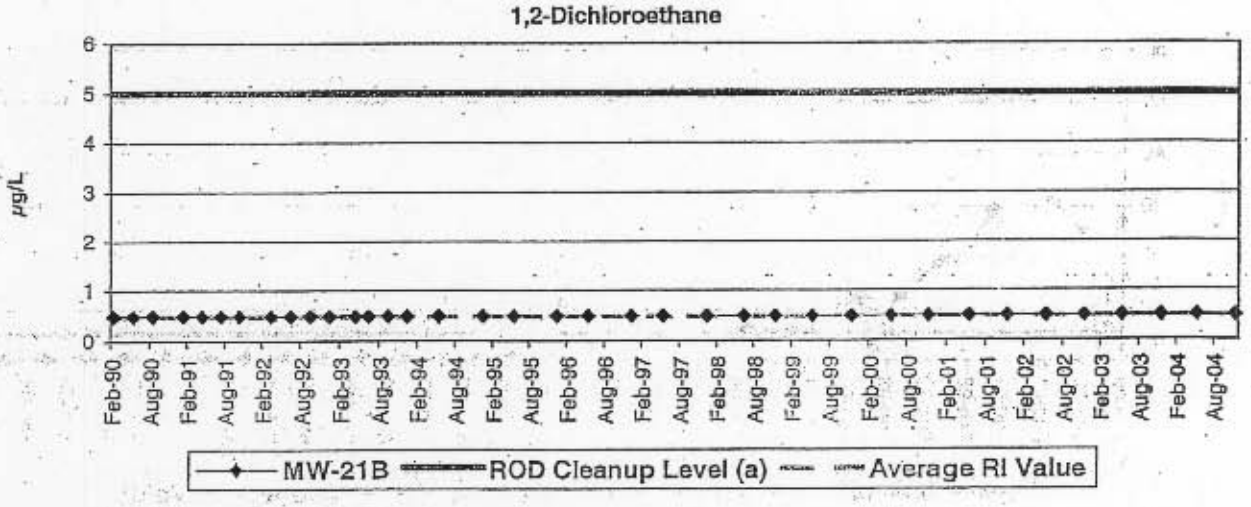
Non-detected values are shown as 1/2 the detection limit.
MCL = Primary or secondary maximum contaminant level standard.
MTCA B = MTCA B/Model Toxics Control Act (WAC 173-340) Method B cleanup level.
RI = Remedial Investigation

Midway Landfill
ROD Contaminants of Concern

Sand Aquifer
MW-21B



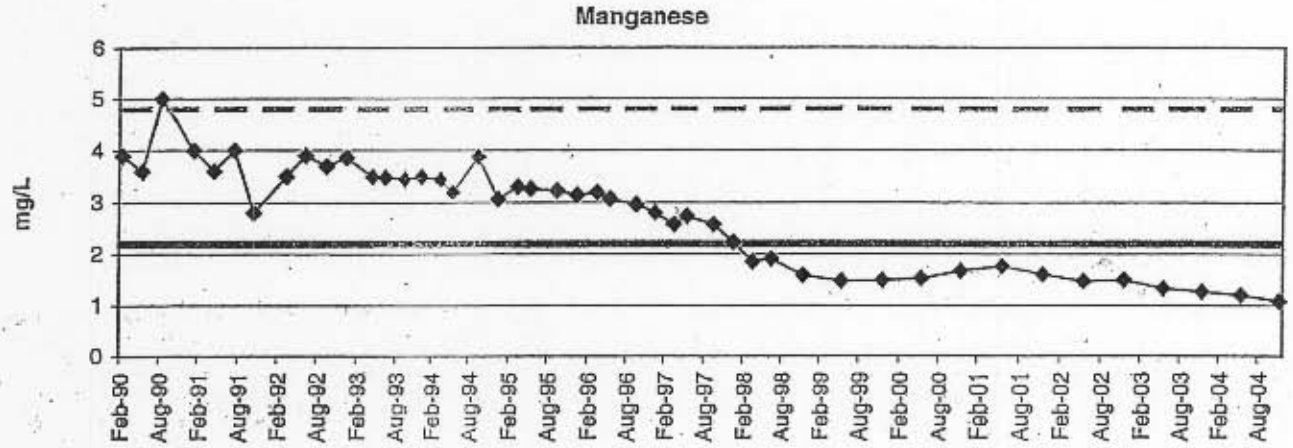


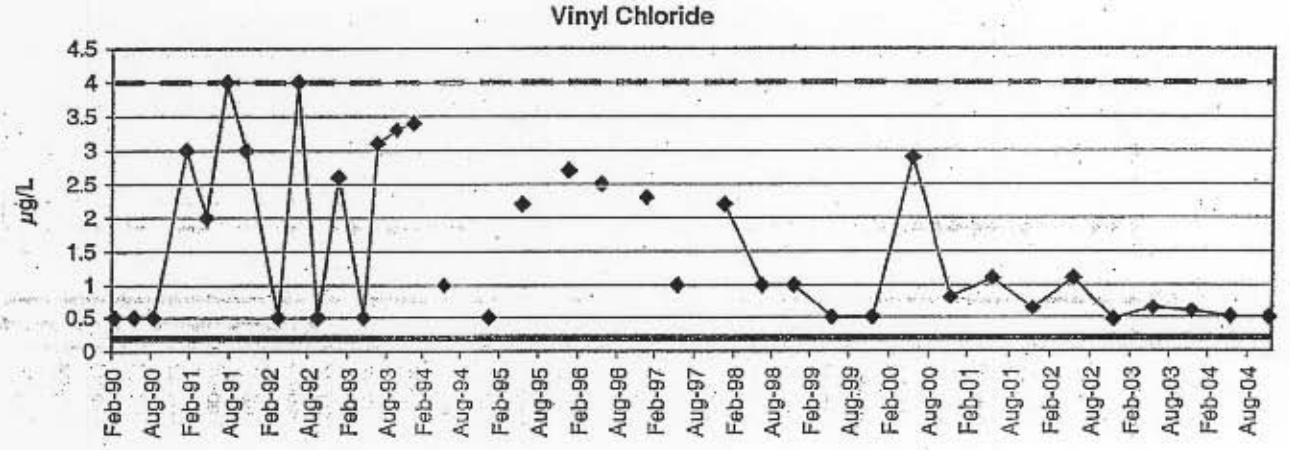


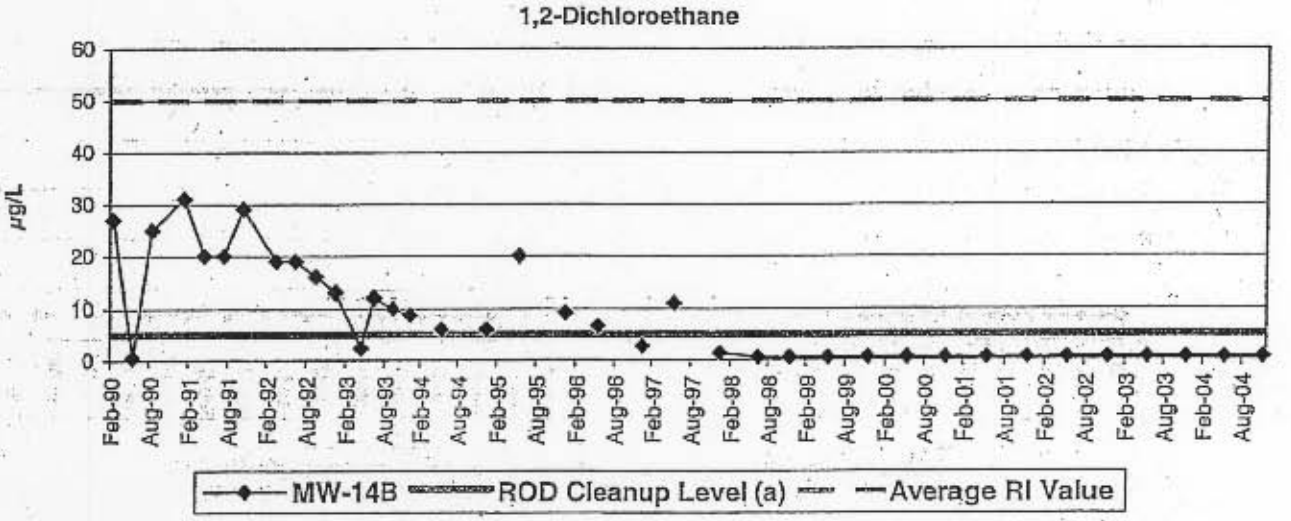
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

Midway Landfill
ROD Contaminants of Concern

Southern Gravel Aquifer
MW-14B





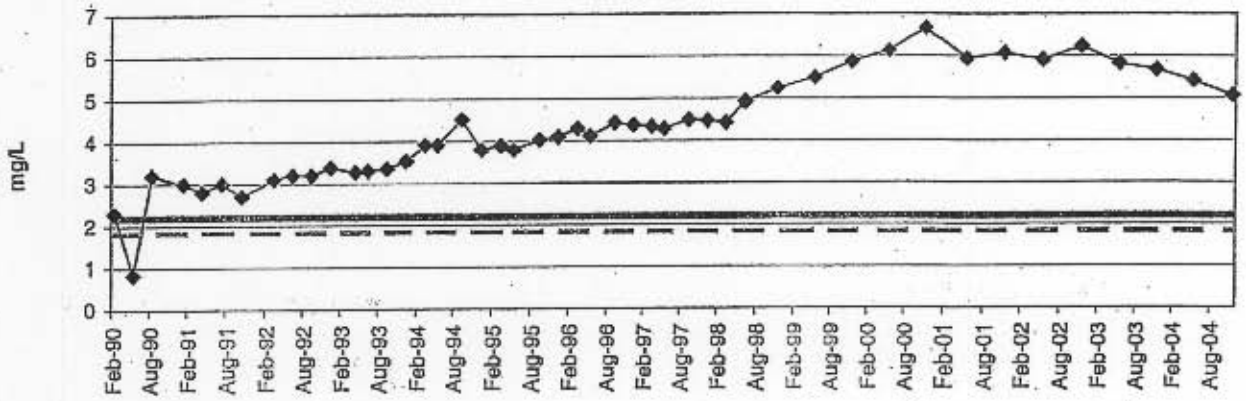


(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

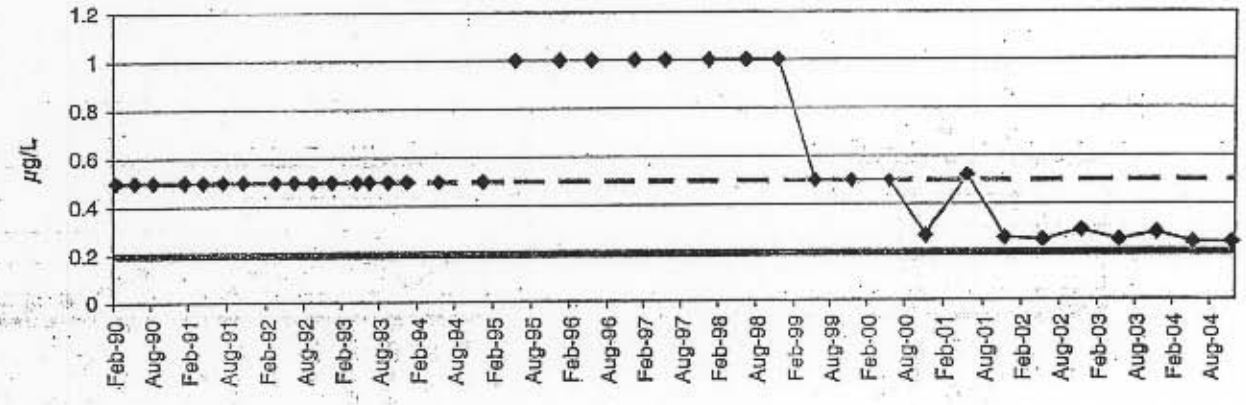
Midway Landfill
ROD Contaminants of Concern

Southern Gravel Aquifer
MW-20B

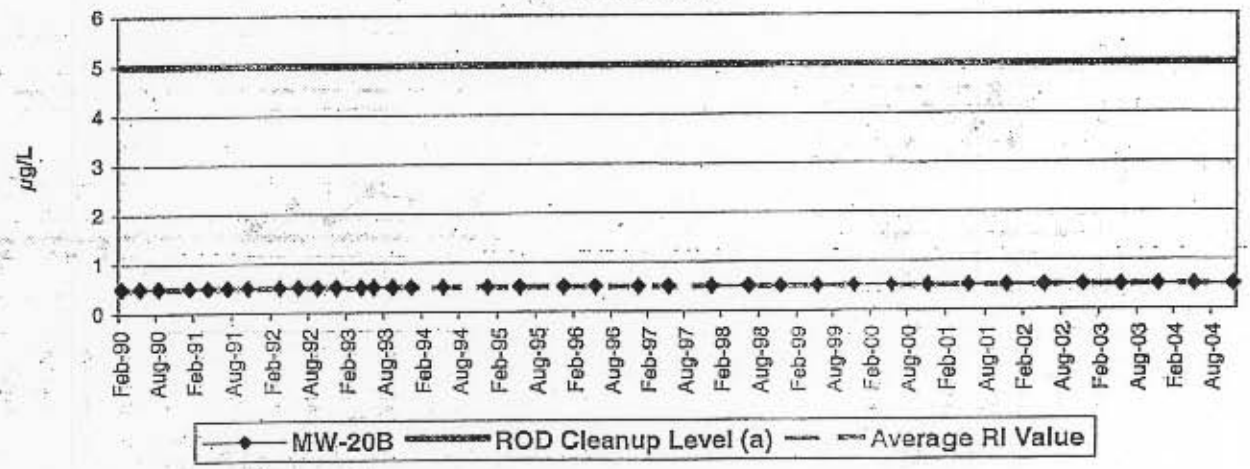
Manganese



Vinyl Chloride



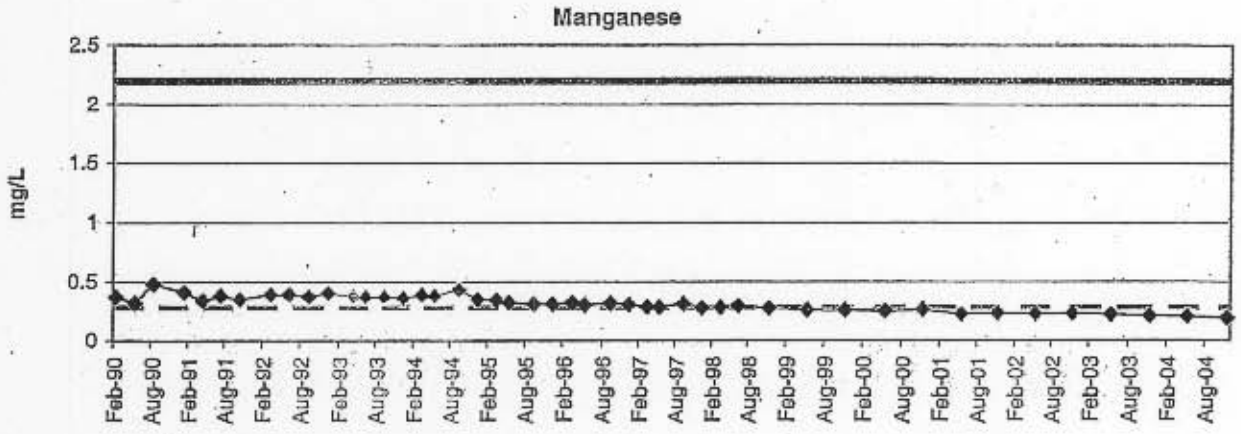
1,2-Dichloroethane

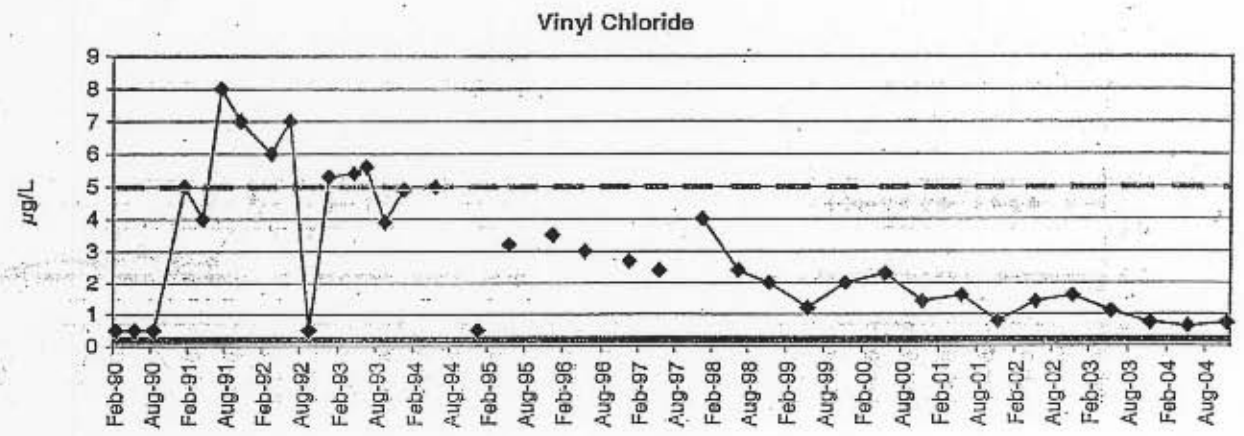


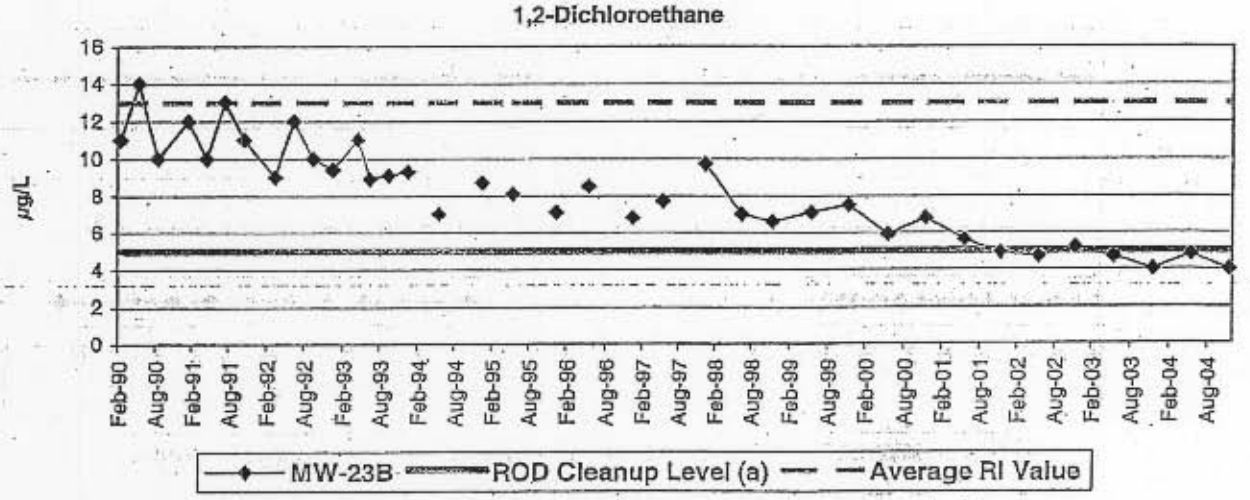
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

Midway Landfill
ROD Contaminants of Concern

Southern Gravel Aquifer
MW-23B



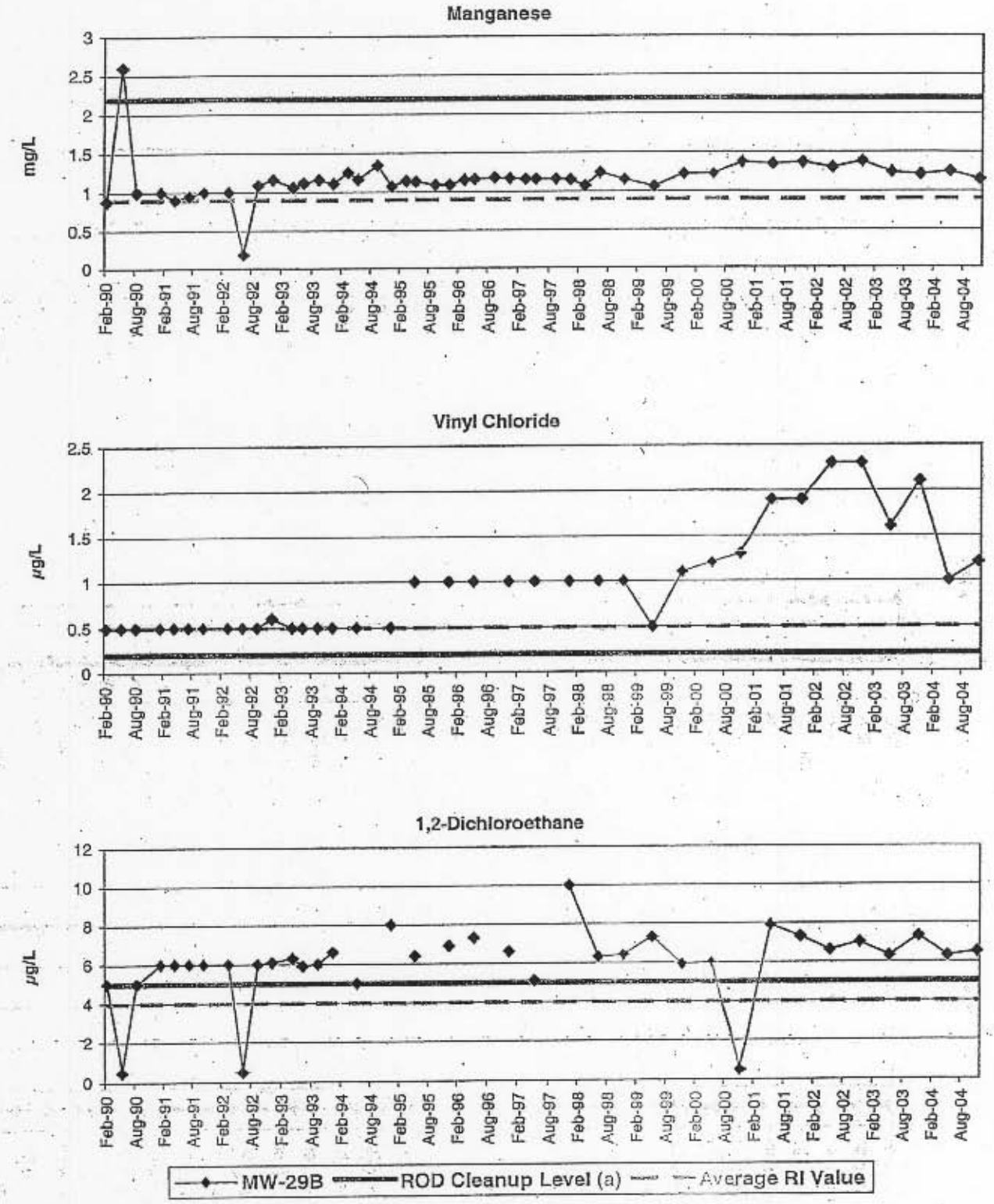




(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

Midway Landfill
ROD Contaminants of Concern

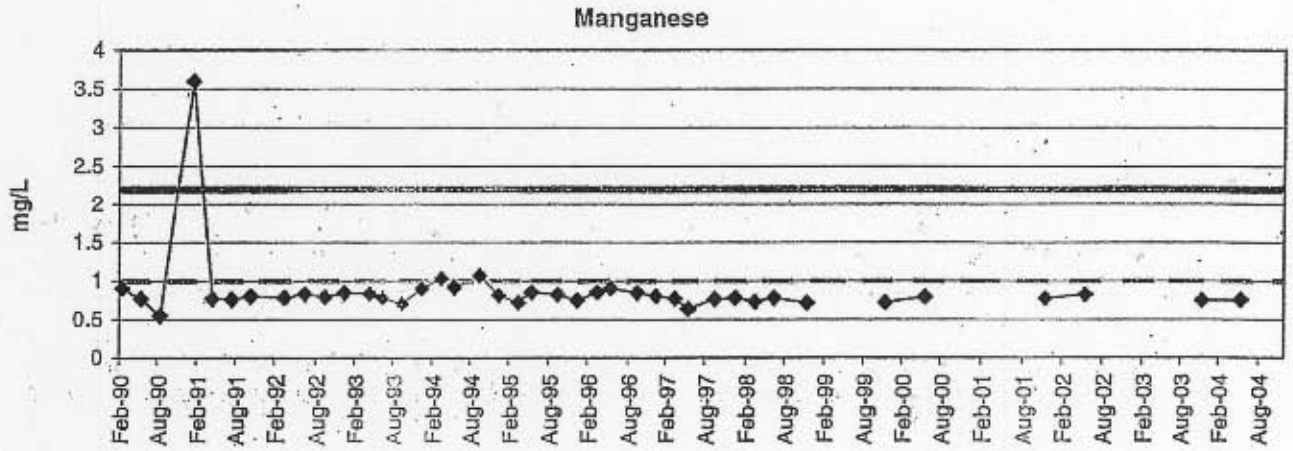
Southern Gravel Aquifer
MW-29B

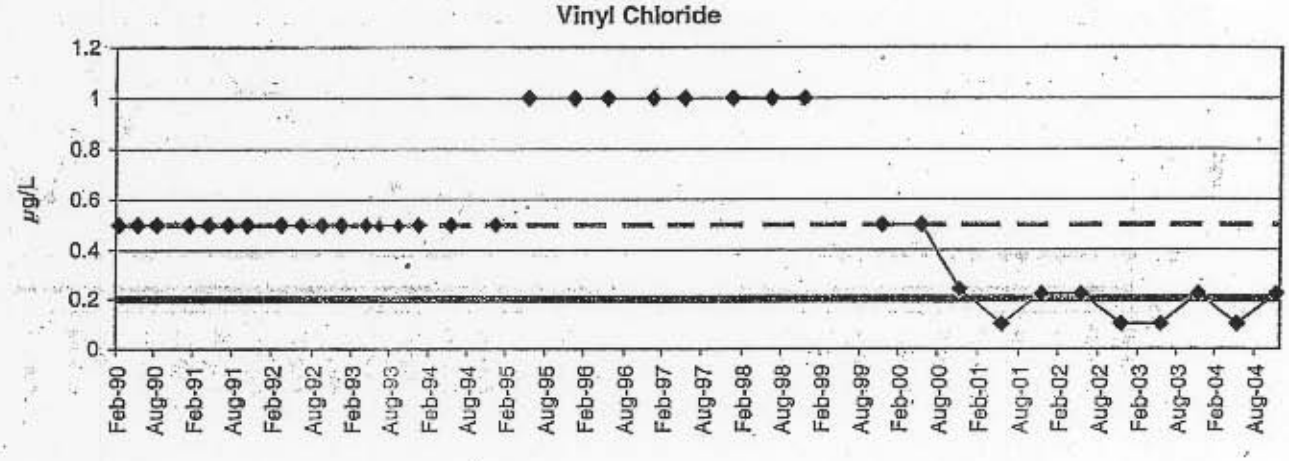


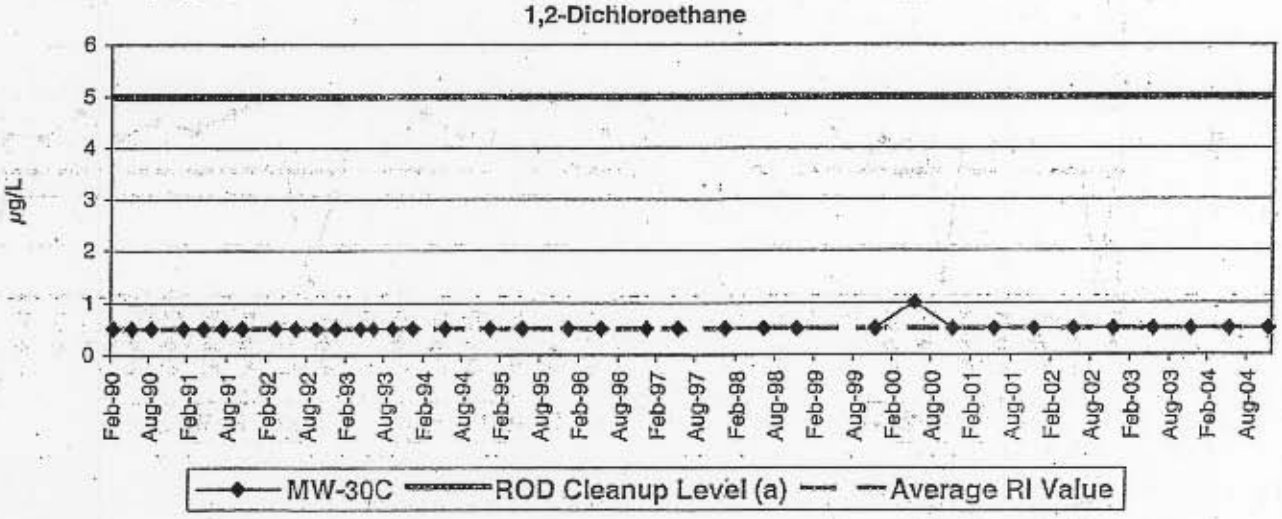
(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

Midway Landfill
ROD Contaminants of Concern

Southern Gravel Aquifer
MW-30C







(a) Cleanup level established in the final EPA Record of Decision for the Midway Landfill, September 6, 2000.
Non-detected values are shown as 1/2 the detection limit.
RI = Remedial Investigation

Table 3-1. Comparison of Contaminants of Concern in Groundwater to ROD Cleanup Levels

				Upper Gravel Aquifer		Sand Aquifer						Southern Gravel Aquifer					
		Clean up	Round	MW-16	MW-21A	MW-8B	MW-8B (DUP)	MW-17B	MW-17B (DUP)	MW-21B	MW-21B (DUP)	MW-14B	MW-14B (DUP)	MW-20B	MW-23B	MW-29B	MW-30C
Analyte	Units	Level*	ID	UP	UP	UP	UP	UP	UP	UP	UP	DOWN	DOWN	DOWN	DOWN	DOWN	DOWN
Manganese	mg/L	2.2	R-45	0.082	0.082	0.176	0.175	0.149	0.151	0.445		1.20		5.42	0.203	1.25	0.753
			R-46					0.144		0.437	0.432	1.08	1.09	5.07	0.192	1.15	
1,2-Dichloroethane	µg/L	5	R-45	1 U	1 U	1 U	1 U	9.2	9.3	1 U		1 U		1 U	4.8	6.3	1 U
			R-46					7.9		1 U	1 U	1 U	1 U	1 U	4	6.5	1 U
Vinyl Chloride	µg/L	0.2*	R-45	0.2 U	0.2 U	0.2 U	0.2 U	0.58	0.59	0.2 U		0.51		0.24	0.62	1.0	0.2 U
			R-46					0.5		0.2 U	0.2 U	0.5	0.54	0.24	0.73	1.2	0.22

ROD= Record of decision

R-45= Round 45, May 2004

R-46= Round 46, November 2004

a = Clean up levels established in the Final EPA Record of Decision for the Midway Landfill Site, September 6, 2000.

[ ] = Exceeds cleanup level established in the Final EPA Record of Decision for the Midway Landfill, September 6, 2000.

U = Indicates the compound was undetected at the reported concentration

DUP= Duplicate.

* The actual cleanup level in the ROD (USEPA 2000) is 0.02 µg/L. However, pursuant to WAC 173-340-707(2), Ecology utilizes the practical quantitation limit (PQL) of 0.2 µg/L to determine compliance with this cleanup standard because the cleanup standard is lower than the PQL.

Notes: Up or Down in column title denotes whether the well is located upgradient or downgradient of the landfill's influence.

Table 3-2. Summary of Detected Groundwater Quality Parameters Not Included in the ROD and Comparison to Regulatory Standards

Analyte	Units	MCL*	MTCA B*	Round ID	Upper Gravel Aquifer				Sand Aquifer*												Southern Gravel Aquifer									
					MW-16		MW-21A		MW-8B		MW-8B (DUP)		MW-17B		MW-17B (DUP)		MW-21B		MW-21B (DUP)		MW-14B		MW-14B (DUP)		MW-20B		MW-23B		MW-29B		MW-30C	
					UP		UP		UP		UP		UP		UP		UP		UP		DOWN		DOWN		DOWN		DOWN		DOWN		DOWN	
Field Parameters																																
pH		6.5-8.5*		R-45	7.97		7.07		7.73				6.85				7.14				6.7				6.92		6.69		6.67		7.29	
				R-46									6.62				6.97				6.51				6.77		6.41		6.5		7.08	
Specific Conductivity	µmhos/cm			R-45	220		377		170				656				749				861				1964		712		839		347	
				R-46									613				755				828				1920		704		819		337	
Temperature	C			R-45	11.1		11.3		10.8				11.3				10.9				13.6				11		11.6		10.1		10.9	
				R-46									11.3				10.7				12.9				10.3		11.4		9.7		9.2	
Conventional Parameters																																
Chloride	mg/L	250**		R-45	8.2		8.6		5.8		5.7		19		18.3		21.8				30.2				111		17.4		58.4		14.9	
				R-46									18				19.7		19.4		24.1		24		107		15.6		52.3			
COD	mg/L			R-45	5	U	5	U	5	U	5	U	5	U	5	U	7.68				11.3				37.6		5	U	10		6.18	
				R-46									5	U			5	U	5	U	11.6		9.3		32.3		5.96		6.97			
Sulfate	mg/L	250**		R-45	18.7		43.6		15.8		15.8		31.3		31.6		160				22.2				8.4		24.6		14.7		9.1	
				R-46									29				153		154		23.8		24.1		6.5		25.3		15.1			
TOC	mg/L			R-45	1.5	U	1.5	U	1.5	U	1.5	U	2.19		2.21		1.68				3.87				11.8		2.56		3.52		1.5	
				R-46									1.88				1.5	U	1.5	U	2.69		2.5		9.45		1.79		3.22			
Dissolved Metals																																
Iron	mg/L	0.3**		R-45	0.22		0.05	U	0.05	U	0.05	U	0.1		0.11		0.05	U			14.4				15.3		12.7		18.6		2.87	
				R-46									0.08				0.05	U	0.05	U	12.9		13		14		11.6		17.2			
Volatile Organics																																
1,1,1-TCA	µg/L	200*	7200	R-45	1	U	1	U	1	U	1	U	1	U	1	U	7.2				1	U			1	U	1	U	1	U	1	U
				R-46									1	U			6.2		6.1		1	U	1	U	1	U	1	U	1	U	1	U
1,1-DCA	µg/L		800	R-45	1	U	1	U	1	U	1	U	76		83		6.3				1.7				1	U	1.2		1		1	U
				R-46									68				6.1		5.9		1.6		1.5		1	U	1.1		1.1		1	U
1,1-DCE	µg/L	7*	0.0729	R-45	1	U	1	U	1	U	1	U	4.8		5.1		4.4				1	U			1	U	1	U	1	U	1	U
				R-46									4.6				4.5		4.7		1	U	1	U	1	U	1	U	1	U	1	U
cis-1,2 DCE	µg/L	70*	80	R-45	1	U	1	U	1	U	1	U	4.3		4.4		1	U			4.8				1	U	5.6		1	U	1	U
				R-46									4.3				1	U	1	U	5		5		1	U	6		1		1	U

Table 3-2. Summary of Detected Groundwater Quality Parameters Not Included in the ROD and Comparison to Regulatory Standards (continued)

Analyte	Units	MCL[a]	MTCA B[b]	Round ID	Upper Gravel Aquifer				Sand Aquifer[c]												Southern Gravel Aquifer											
					MW-16		MW-21A		MW-8B		MW-8B (DUP)		MW-17B		MW-17B (DUP)		MW-21B		MW-21B (DUP)		MW-14B		MW-14B (DUP)		MW-20B		MW-23B		MW-29B		MW-30C	
					UP		UP		UP		UP		UP		UP		UP		UP		DOWN		DOWN		DOWN		DOWN		DOWN		DOWN	
Volatile Organics (continued)																																
Chloroethane	µg/L			R-45	1	U	1	U	1	U	1	U	6.7		8.1		1	U			1	U			1	U	1	U	1	U	1	U
				R-46									5				1	U	1	U	1	U	1	U	1	U	1	U	1	U	1	U
PCE	µg/L	5*	0.856	R-45	1	U	1	U	1	U	1	U	1	U	1	U	82				1	U			1	U	1	U	1	U	1	U
				R-46									1	U			100		100		1	U	1	U	1	U	1	U	1	U	1	U
TCE	µg/L	5*	3.98	R-45	1	U	1	U	1	U	1	U	1	U	1	U	4.2				1	U			1	U	1	U	1	U	1	U
				R-46									1	U			4.4		4.3		1	U	1	U	1	U	1	U	1	U	1	U
Trichlorofluoro-methane	µg/L		2400	R-45	1	U	3.8		1	U	1	U	1	U	1	U	6.7				1	U			1	U	1	U	1	U	1	U
				R-46									1	U			7.2		7.5		1	U	1	U	1	U	1	U	1	U	1	U

[ ] = Exceeds Federal MCLs or MTCA Method B Groundwater Cleanup Level.

[a] = Primary MCL Standards; EPA National Primary Drinking Water Regulations (40 CFR 141 59 FR 34322).

** = Secondary MCL Standards; EPA National Primary Drinking Water Regulations (40 CFR 141 59 FR 34322).

[a] = MCL/Federal maximum contaminant level.

[b] = MTCA B/Model Toxics Control Act (WAC 173-340) Method B Cleanup Level. CLARC II Database, Ecology, February 1996.

[c] = Downgradient wells MW-20A and MW-23A not sampled due to the wells being dry or insufficient water for sample collection.

U = Indicates the compound was undetected at the reported concentration.

DUP= Duplicate.

Note: Up or Down in column title denotes whether the well is located upgradient or downgradient of the landfill's influence.