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Municipal Brownfields - B

Superfund - HW

Spills - SP

ERP - E

VCP - V

BCP - C

Phase II RCRA Facility Investigation

Report Appendices

Prepared for:



AKZO NOBEL

**Akzo Nobel Polymer Chemicals LLC
2153 Lockport-Olcott Road
Burt, New York**

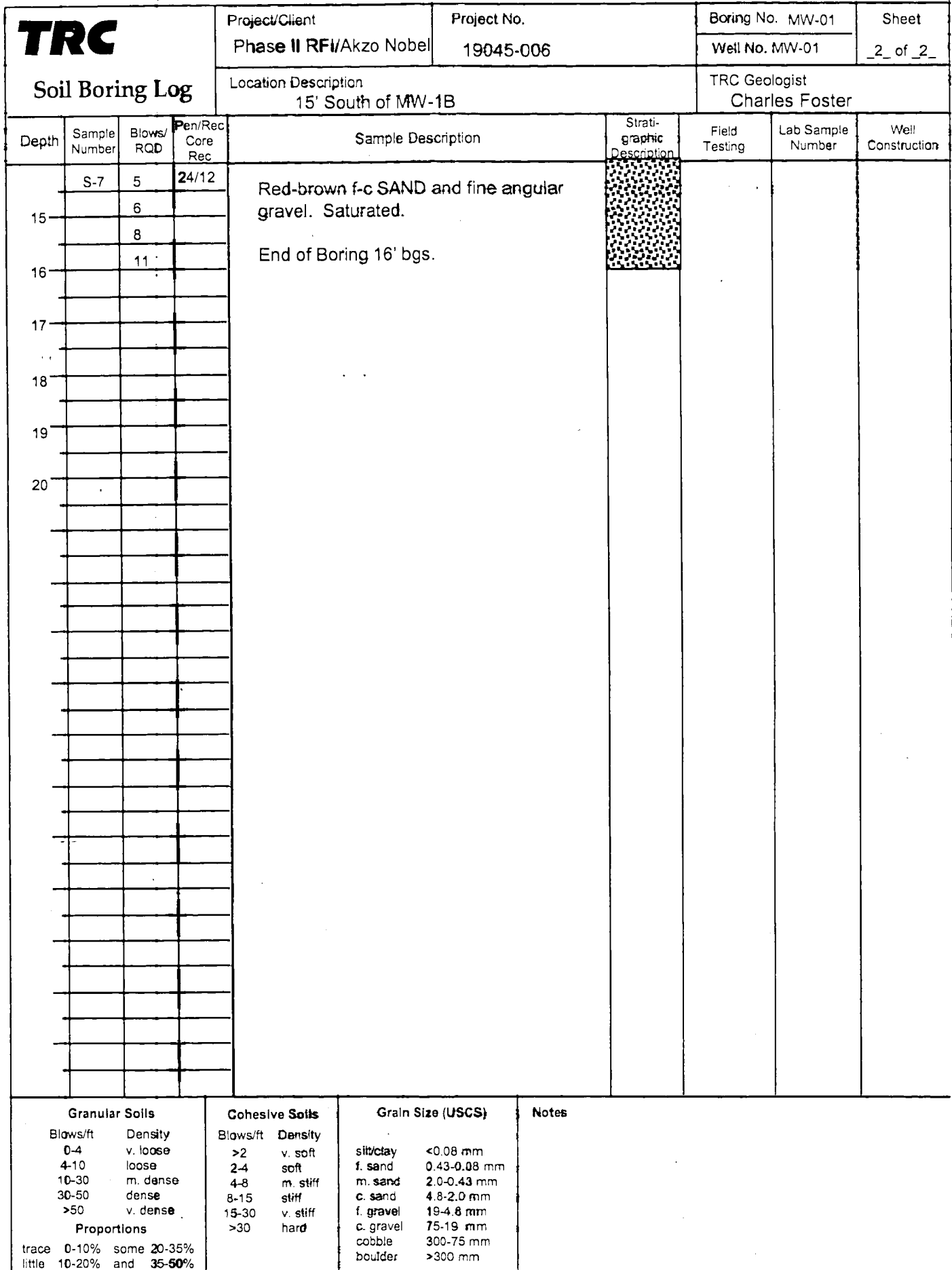
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December 2000

APPENDIX A
SOIL BORING LOGS

TRC Soil Boring Log	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. MW-01	Sheet 1 of 2			
	Location Description 15' south of MW-1B				TRC Geologist Charles Foster				
	Drilling Contractor/Foreman SJB/ Chris Ackley		Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA				
Sampler Description Continuous 2 ft split spoon			Drilling Method HSA continuous sampling		Coordinates X= Y=				
Filter Seal Amount/Type: 2-feet/Bentonite chips			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El.:				
Sand Pack Amount/Type: 12-feet/ #0 Sand			Hammer Weight/Fall: 140/30		Riser Stick Up:				
Screen Length/Type: 10-feet/sch 40 PVC/10 slot			Water Table Depth: ~ 7'		Surface Elevation: NA				
Riser Length/Type: 8.5 feet/sch. 40 PVC			Total Depth: 16' bgs.		Date Start: 7/26/99	Date Finish: 7/26/99			
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction	
1				6" Brown organic topsoil, roots, and grass. Light brown dry Silt.					
2	S-1	2	24/14	10" Red-brown SILT, some fine Sand, trace clay. 4" Tan-brown fine SAND and Silt.					
3		4							
		9							
4		11							
4	S-2	14	24/18	10" Tan-brown fine SAND and Silt. 8" Brown Silt and fine SAND, trace clay. Moist.					
5		17							
		17							
		18							
6	S-3	9	24/16	Tan-brown fine SAND and Silt, trace clay. Moist/Wet.					
7		11							
		12							
		12							
8	S-4	8	24/22	Brown changing to grey fine SAND and Silt. Moist/Wet.					
9		16							
		22							
		30							
10	S-5	11	24/16	Grey fine SAND and Silt, trace clay. Wet.					
11		9							
		15							
		14							
12	S-6	5	24/18	Grey fine SAND and Silt, some clay. Saturated.					
13		6							
		6							
		8							
Granular Soils Blows/ft Density 0-4 v. loose 4-10 loose 10-30 m. dense 30-50 dense >50 v. dense Proportions trace 0-10% some 20-35% little 10-20% and 35-50%				Cohesive Soils Blows/ft Density >2 v. soft 2-4 soft 4-8 m. stiff 8-15 stiff 15-30 v. stiff >30 hard		Grain Size (USCS) silty/clay <0.08 mm f. sand 0.43-0.08 mm m. sand 2.0-0.43 mm c. sand 4.8-2.0 mm f. gravel 19-4.8 mm c. gravel 75-19 mm cobble 300-75 mm boulder >300 mm		Notes 1) Three inch split-spoon used to collect soil sample from 8-10 bgs for TOC/pH/Grain Size. 2) Double volume provided for MS/MSD for TOC.	



TRC	Project/Client Phase II RFI/Akzo Nobel	Project No. 19045-006	Boring No. MW-01B	Sheet 1 of 2				
	Soil Boring Log			Well No. MW-01B				
				TRC Geologist Charles Foster				
Drilling Contractor/Foreman SJB/ Chris Ackley		Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 6 1/4 " ID HSA				
Sampler Description Continuous 5 ft split spoon		Drilling Method HSA/Casing/Coring		Coordinates X= Y=				
Filter Seal Amount/Type:		Drill Bit/Auger Diameter: 6 1/4" ID		Ref. EL:				
Sand Pack Amount/Type: NA		Hammer Weight/Fall: 140/30		Riser Stick Up: ~3				
Screen Length/Type: 15-feet/sch 40 PVC/10 slot		Water Table Depth: ~ 9'		Surface Elevation: NA				
Riser Length/Type: 30 feet/sch. 40 PVC		Total Depth: 45' bgs.		Date Start: 7/26/99	Date Finish: 7/27/99			
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers Light brown Silt, trace fine sand, trace organic roots.				
2								
3								
4								
5	S-1	8	24/16	Tan-brown fine SAND and Silt. Moist.				
6		9						
7		10						
8		10						
9								
10	S-2	9	24/20	Brown changing to grey fine SAND and Silt. Wet.				
11		9						
12		18						
13		18						
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes 1) Seasonal water table is likely higher due to severe drought.		
Blows/ft	Density	Blows/ft	Density					
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm			
4-10	loose	2-4	soft	f. sand	0.43-0.08 mm			
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm			
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm			
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm			
Proportions		>30	hard	c. gravel	75-19 mm			
trace	0-10%	some	20-35%	cobble	300-75 mm			
little	10-20%	and	35-50%	boulder	>300 mm			



Project/Client
Phase II RFI/Akzo Nobel

Project No.
19045-006

Boring No. MW-01B

Sheet

Well No. MW-01B

2 of _2_

Soil Boring Log

Location Description
312' East of Plant Road.

TRC Geologist
Charles Foster

Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
15	S-3	14	12/14	4" Grey coarse Sand.				
16		14		10" Red-brown f-c SAND and angular gravel, some Silt, trace clay. Saturated.				
17		14						
18		23						
19								
20	S-4	16	12/20	Red-brown fine SAND and Silt, angular gravel throughout. Saturated.				
21		18						
22		20						
23								
24								
25	S-5	50/1	0/01	Spoon refusal - weathered rock in nose of split-spoon. Augers seated in weathered rock surface. Casing set and grouted to 30' bgs.				
				See Rock Core for details from 30-45'.				

Granular Soils		Cohesive Soils		Grain Size (USCS)	Notes
Blows/ft	Density	Blows/ft	Density		
0-4	v. loose	>2	v. soft	silt/clay <0.08 mm	1) Roller-bit from 25'-30' bgs.
4-10	loose	2-4	soft	f. sand 0.43-0.08 mm	
10-30	m. dense	4-8	m. stiff	m. sand 2.0-0.43 mm	
30-50	dense	8-15	stiff	c. sand 4.8-2.0 mm	
>50	v. dense	15-30	v. stiff	f. gravel 19-4.8 mm	
Proportions		>30	hard	c. gravel 75-19 mm	
trace	0-10% some			cobble 300-75 mm	
little	10-20% and			boulder >300 mm	
	20-35% and				
	35-50%				

TRCProject/Client
Phase II RFI/Akzo
NobelProject No.
19045-006

Boring No. MW-02

Sheet

Well No. MW-02

1 of 1

Soil Boring LogLocation Description
3' North of loading dock to building 2C.TRC Geologist
Charles FosterDrilling Contractor/Foreman
SJB/ Chris AckleyDrill Rig Make/Model
CME 85Auger/Drive Casing Size/Type
4 1/4" ID HSASampler Description
Continuous 2 ft split spoon/3 ft at water tableDrilling Method
HSA continuous samplingCoordinates
X= Y=

Filter Seal Amount/Type: .5 Feet/ Bentonite Chips

Drill Bit/Auger Diameter: 4 1/4" ID

Ref. EL:

Sand Pack Amount/Type: 10.5 Feet/ #0 Filter Sil Sand

Hammer Weight/Fall: 140/30

Riser Stick Up: ~2.5'

Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC

Water Table Depth: ~4.5'

Surface Elevation: NA

Riser Length/Type: 2 Feet/ Sch. 40 PVC

Total Depth: 12' bgs.

Date Start: 7/27/99

Date Finish: 7/27/99

Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1				5" of Concrete				
2	S-1	1	24/14	Brown Silt, trace gravelly Fill.				
3		2						
4	S-2	8	24/10	Grey brown Silt and fine SAND. Wet at bottom of spoon.		220 ppm open spoon		
5		9						
6	S-3	11	24/18	2" Grey brown silt, some fine SAND.		400 ppm open spoon		
7		15		8" Brown f-c SAND, trace fine gravel. Wet.				
8	S-4	8	24/10					
9		10						
10	S-5	20	24/16	Brown-black stained f-c SAND and fine gravel. Saturated. Mild fuel odor and other odors.		>300 ppm open spoon	MW-2-8 TOC & pH - 6-7 grain size	
11		39						
12		28						
13		37						
				Brown-red fine SAND and Silt, some fine sub-angular gravel.		>500 ppm open spoon		
				Red-brown Silt and fine SAND, some sub-angular and rounded gravel.		>100 ppm open spoon		
				End of Boring @ 12' bgs.				

Granular Soils

Blows/ft	Density
0-4	v. loose
4-10	loose
10-30	m. dense
30-50	dense
>50	v. dense

Proportions

trace	0-10%	some	20-35%
little	10-20%	and	35-50%

Cohesive Soils

Blows/ft	Density
>2	v. soft
2-4	soft
4-8	m. stiff
8-15	stiff
15-30	v. stiff
>30	hard

Grain Size (USCS)

silt/clay	<0.08 mm
f. sand	0.43-0.08 mm
m. sand	2.0-0.43 mm
c. sand	4.8-2.0 mm
f. gravel	19-4.8 mm
c. gravel	75-19 mm
cobble	300-75 mm
boulder	>300 mm

Notes

- 1) Three inch spoon collected 6-8' bgs.
- 2) MW-2 is in a low area beneath loading dock.

TRCProject/Client
Phase II RFI/Akzo
NobelProject No.
19045-006

Boring No. MW-03

Sheet

Well No. MW-03

1 of 1

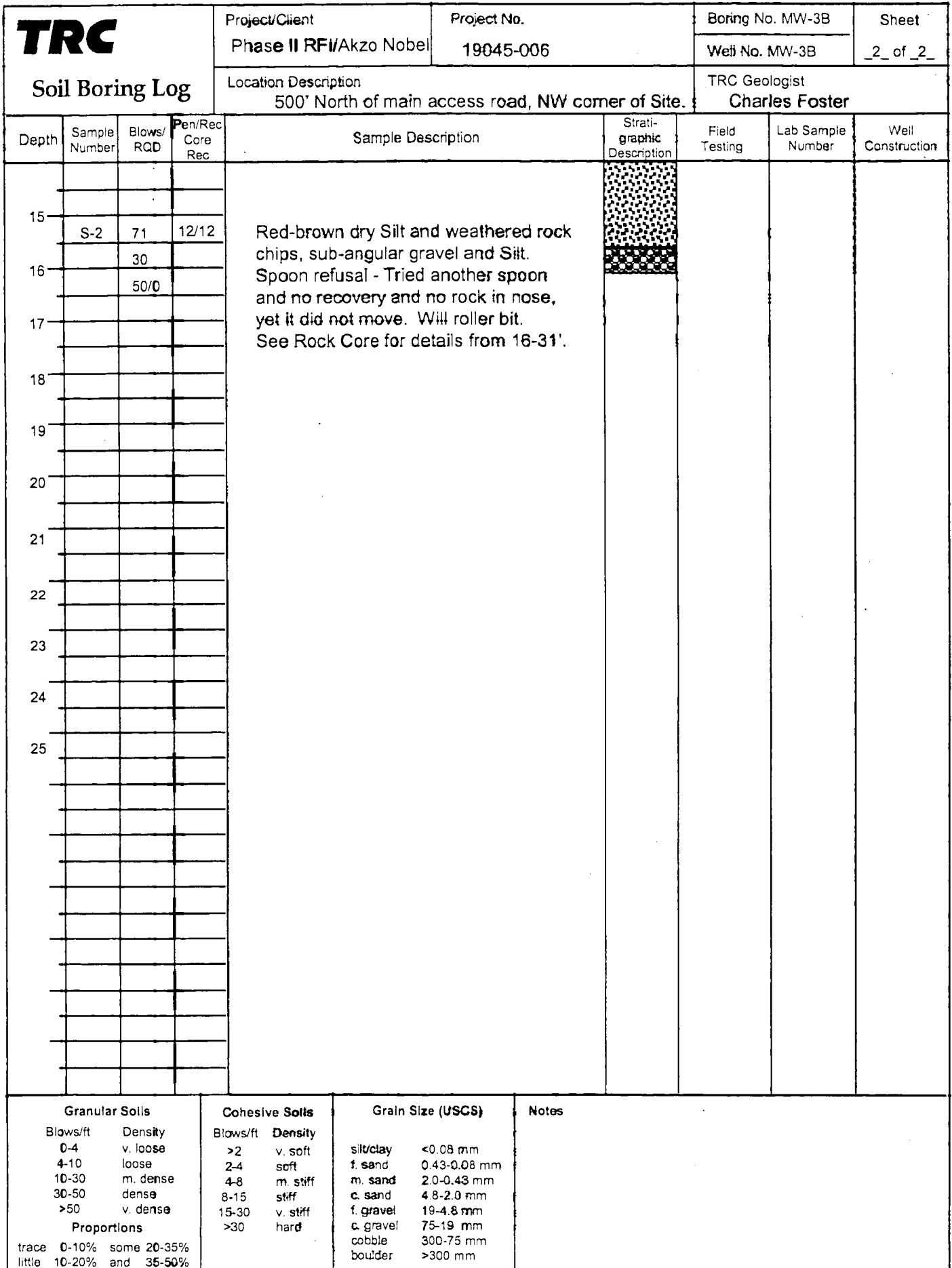
Soil Boring LogLocation Description
~12 ft. South of MW-3BTRC Geologist
Charles Foster

Drilling Contractor/Foreman SJB/ Tom Farrel			Drill Rig Make/Model CME 550		Auger/Drive Casing Size/Type 4 1/4" ID HSA		
Sampler Description Continuous 2 ft split spoon/3 ft at water table			Drilling Method HSA continuous sampling		Coordinates X= Y=		
Filter Seal Amount/Type: 1 Feet/ Bentonite Chips			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. EL:		
Sand Pack Amount/Type: 11 Feet/ #0 Filter Sil Sand			Hammer Weight/Fall: 140/30		Riser Stick Up: ~2.0'		
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~ 7.5'		Surface Elevation: NA		
Riser Length/Type: 6 Feet/ Sch. 40 PVC			Total Depth: 14' bgs.		Date Start: 7/22/99		Date Finish: 7/22/99

Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers 6" Brown organic topsoil and roots. Light brown Silt and fine Sand, trace gravel.				
2	S-1	4	24/18					
		6		Dark brown Silt and fine SAND, some sub-angular gravel. One non-native granite clast.				
3		13						
4	S-2	11	24/16					
		12		6" - Same as above.				
5		18		10" - Brown to grey fine SAND and Silt, trace clay.				
		12						
6	S-3	14	24/20					
		16		8" - Brown fine SAND and Silt.				
7		24		12" - Grey fine SAND, trace fine sub-angular gravel. Wet.				
		33						
8	S-4	16	24/22					
		22		Grey fine SAND, some Silt, some fine sub-angular gravel. Wet.		pH=6-7	MW-3-10	
9		21						
		21						
10	S-5	12	24/16					
		12		6" - Grey fine SAND, some Silt, some fine gravel. Wet.				
11		21		10" - Brown f-c Sand and Silt, some fine sub-angular gravel. Dry.				
		23						
12	S-6	23	24/12					
		35		Brown f-c SAND and Silt, some fine sub-angular gravel. Dry.				
13		55						
		50/4		End of Boring @ 14' bgs.				

Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes 1) Sample collected from 8-10' bgs, for TOC, pH, and Grain Size from a 3" split-spoon. 2) Sub-Till unit is dry and dense.
Blows/ft	Density	Blows/ft	Density			
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm	
4-10	loose	2-4	soft	f. sand	0.43-0.85 mm	
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm	
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm	
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm	
Proportions		>30	hard	c. gravel	75-19 mm	
trace	0-10%	some	20-35%	cobble	300-75 mm	
little	10-20%	and	35-50%	boulder	>300 mm	

TRC	Project/Client Phase II RFI/Akzo Nobel	Project No. 19045-006	Boring No. MW-3B	Sheet 1 of 2					
	Soil Boring Log		Location Description 500' North of plant access road.						
Drilling Contractor/Foreman SJB/ Tom Farrel		Drill Rig Make/Model CME 85	Auger/Drive Casing Size/Type 6 1/4" ID HSA						
Sampler Description Off Augers then spooned.		Drilling Method HAS/Casing	Coordinates X= Y=						
Filter Seal Amount/Type: Open Hole		Drill Bit/Auger Diameter: 6 1/4" ID	Ref. EL:						
Sand Pack Amount/Type: Open Hole		Hammer Weight/Fall: 140/30	Riser Stick Up: ~2						
Screen Length/Type: 15 feet/sch 40 PVC/10 slot		Water Table Depth: ~ 9'	Surface Elevation: NA						
Riser Length/Type: 18 feet/sch. 40 PVC		Total Depth: 31' bgs.	Date Start: 7/21/99	Date Finish: 7/27/99					
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction	
1				Off Augers 6" Brown organic topsoil, grass, and roots.					
2				Light brown dry SILT.					
3									
4				Brown fine SAND and Silt.					
5									
6				Same as Above.					
7									
8				Gravel layer, trace rounded gravel. Soil cuttings are moist.					
9									
10									
11				Dark brown Silt and SAND, trace rounded cobbles. Moist.					
12									
13	S-1	36	18/16	Dark brown Silt, fine SAND and angular gravel, dense. Wet.					
		49							
		50/3							
Granular Soils Blows/ft Density 0-4 v. loose 4-10 loose 10-30 m. dense 30-50 dense >50 v. dense Proportions trace 0-10% some 20-35% little 10-20% and 35-50%				Cohesive Soils Blows/ft Density >2 v. soft 2-4 soft 4-8 m. stiff 8-15 stiff 15-30 v. stiff >30 hard		Grain Size (USCS) silt/clay <0.08 mm f. sand 0.43-0.08 mm m. sand 2.0-0.43 mm c. sand 4.8-2.0 mm f. gravel 19-4.8 mm c. gravel 75-19 mm cobble 300-75 mm boulder >300 mm		Notes 1) See MW-3 log for continuous stratigraphic description.	

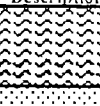
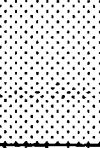
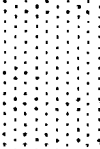
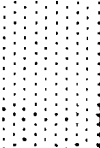
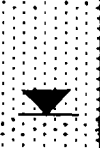
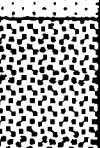
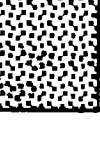


TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. MW-04	Sheet 1 of 1		
	Soil Boring Log				TRC Geologist Charles Foster			
Location Description Western end of the site adjacent to Route 78.								
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon/3 ft at water table			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: 1 Foot/ Bentonite Chips			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El:			
Sand Pack Amount/Type: 11.5 Feet/ #0 Filter Sil Sand			Hammer Weight/Fall: 140/30		Riser Stick Up: 2.5'			
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~ 7.0'		Surface Elevation: NA			
Riser Length/Type: 6.5 Feet/ Sch. 40 PVC			Total Depth: 13' bgs.		Date Start: 7/23/99		Date Finish: 7/23/99	
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers 6" Brown Organic top Soil and Roots, thin gravel layer.				
2	S-1	7	24/14	Brown fine SAND and Silt, some sub-angular gravel/cobbles.				
3		10						
4		21						
5		23		Red-Brown Silt and fine SAND, trace fine gravel				
6	S-2	12	24/16					
7		18						
8		20						
9		16		Red-Brown Silt and fine SAND, some sub-angular gravel throughout. Wet at bottom of spoon.				
10	S-3	27	24/18					
11		30						
12		35						
13		29						
14	S-4	8	24/16	Red-Brown Silt and fine SAND, some sub-angular gravel. Wet at bottom of spoon.		pH=6-7	MW-4-10 TOC	
15		15						
16		24						
17		22						
18	S-5	27	15/0	No Recovery. Spoon Refusal.				
19		50/3						
20								
21								
22								
23	S-6	18	10/08	Red-Brown Shale fragments, some Silt, trace clay				
24		50/4		Weathered Rock Zone.				
25								
				End of Boring @ 13' bgs.			MW-4-14 Grain Size	
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density					
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm	1) Three inch spoon from 10-12' bgs, No Recovery.		
4-10	loose	2-4	soft	f. sand	0.43-0.08 mm	2) Augered to 12' bgs to try again.		
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm	3) TOC and Ph collected from 8-10' bgs.		
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm	4) Grain size collected from 12-14' bgs.		
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm	5) Very little ground water potential.		
Proportions		>30	hard	c. gravel	75-19 mm			
trace	0-10%	some	20-35%	cobble	300-75 mm			
little	10-20%	and	35-50%	boulder	>300 mm			

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. MW-05	Sheet 1 of 1		
	Soil Boring Log				Well No. MW-05			
	Location Description 100 ft. Downgradient of SWMU 23/24				TRC Geologist Charles Foster			
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon/3 ft at water table			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: 1 Foot/ Bentonite Chips			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El:			
Sand Pack Amount/Type: 11 Feet/ #0 Filter Sil Sand			Hammer Weight/Fall: 140/30		Riser Stick Up: ~2.5'			
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~ 6'		Surface Elevation: NA			
Riser Length/Type: 5.5 Feet/ Sch. 40 PVC			Total Depth: 14' bgs.		Date Start: 7/26/99		Date Finish: 7/26/99	
Depth	Sample Number	Blows/ RQD	Per/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers 6" Brown Organic Silt and Roots.				
2	S-1	6	24/6	Dry brown silt, pushed cobbles. Brown SILT, some fine Sand, trace clay, dry.				
3		5						
4		4						
5		3						
6	S-2	2	24/16	Brown SILT, some fine Sand, trace clay. Moist.				
7		3						
8		4						
9	S-3	10	24/20	10" - Brown SILT and Sand, trace clay. 10" - Brown f-c SAND, some Silt, trace fine gravel, trace clay. Wet.				
10		15						
11		12						
12	S-4	13	24/18	Brown f-c SAND and fine Gravel, some silt, a few large cobbles. Saturated.		pH=6-7	MW-5-10	
13		18						
14		14						
15	S-5	7	24/14	Brown fine gravel clasts pushed. Saturated.				
16		9						
17		10						
18		12						
19	S-6	12	24/12	Brown f-c SAND and fine gravel, trace silt, trace clay.				
20		15						
21		14						
22		12		End of Boring @ 14' bgs.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density	silt/clay	<0.08 mm	1) Sample collected from 8-10' bgs. For TOC/pH/Grain Size.		
0-4	v. loose	>2	v. soft	f. sand	0.43-0.08 mm			
4-10	loose	2-4	soft	m. sand	2.0-0.43 mm			
10-30	m. dense	4-8	m. stiff	c. sand	4.8-2.0 mm			
30-50	dense	8-15	stiff	f. gravel	19-4.8 mm			
>50	v. dense	15-30	v. stiff	c. gravel	75-19 mm			
Proportions		>30	hard	cobble	300-75 mm			
trace	0-10%	some	20-35%	boulder	>300 mm			
little	10-20%	and	35-50%					

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. MW-06	Sheet 1 of 1		
	Soil Boring Log				TRC Geologist Charles Foster			
Location Description ~100 ft. Northeast of MW-08								
Drilling Contractor/Foreman SJB/ Tom Farrel			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon/3 ft at water table			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: 1 Foot/ Bentonite Chips			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El.:			
Sand Pack Amount/Type: 12.5 Feet/ #0 Filter Sil Sand			Hammer Weight/Fall: 140/30		Riser Stick Up: ~2.5'			
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~ 7'		Surface Elevation: NA			
Riser Length/Type: 4 Feet/ Sch. 40 PVC			Total Depth: 14.8' bgs.		Date Start: 7/25/99		Date Finish: 7/25/99	
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers 6" Organic topsoil and Roots. Tan-brown fine Sand, some Silt, trace clay.				
2	S-1	5	24/14	Tan-brown fine SAND, some Silt, trace clay.				
3		5						
4	S-2	6	24/20	6" - Brown Silt and fine SAND, trace clay. 4" - Brown fine SAND, some Silt.				
5		7		4" - Brown Silt, fine SAND, trace clay. 6" - Brown fine SAND, some Silt. Moist.				
6	S-3	14	24/16	10" - Brown fine SAND and Silt, trace clay. Moist				
7		15		6" - Brown f-c SAND and fine gravel. Wet.				
8	S-4	14	24/12	Red-brown f-c SAND and f-m gravel with rounded cobbles.		pH=6-7	MW-6-10	
9		11						
10	S-5	14	24/14	Red-brown fine SAND, some Silt, some fine sub-angular gravel, trace weathered rock - dryer at bottom of spoon.				
11		13						
12	S-6	38	9/06	6" - Grey sub-angular gravel, trace Silt, trace f-c SAND. Saturated.				
13		50/3		End of Boring @ 14' bgs. Augered to 14.8' in weathered rock.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density	silt/clay	<0.08 mm	1) Sample collected from 8-10' bgs, for TOC, pH, and Grain Size from a 3" split-spoon. 2) Alternating bands of fine sand and silty clay layers at 4-6'.		
0-4	v. loose	>2	v. soft	f. sand	0.43-0.88 mm			
4-10	loose	2-4	soft	m. sand	2.0-0.43 mm			
10-30	m. dense	4-8	m. stiff	c. sand	4.8-2.0 mm			
30-50	dense	8-15	stiff	f. gravel	19-4.8 mm			
>50	v. dense	15-30	v. stiff	c. gravel	75-19 mm			
Proportions		>30	hard	cobble	300-75 mm			
trace	0-10%	some	20-35%	boulder	>300 mm			
little	10-20%	and	35-50%					

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. MW-07		Sheet 1 of 1	
	Well No. MW-07							
Soil Boring Log		Location Description 60' Downgradient of SWMU's 5/6				TRC Geologist Charles Foster		
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon/3 ft at water table			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: 1 Feet/ Bentonite Chips			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El.:			
Sand Pack Amount/Type: 11 Feet/ #0 Filter Sil Sand			Hammer Weight/Fall: 140/30		Riser Stick Up: ~2.5'			
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~ 6'		Surface Elevation: NA			
Riser Length/Type: 5.5 Feet/ Sch. 40 PVC			Total Depth: 13' bgs.		Date Start: 7/26/99		Date Finish: 7/26/99	
Depth	Sample Number	Blows/ RQD	Per/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers 6" Brown surface Organic, roots, and grass. 18" Light brown fine SAND, trace Silt.				
2	S-1	7	24/20	Light Brown fine SAND, some Silt, and trace clay.				
3		7						
		8						
		12						
4	S-2	7	24/20	6" Brown SILT, trace fine sand, trace clay. 6" Brown fine SAND and Silt.				
5		7		8" Red-brown SILT, some fine Sand, some clay.				
		9						
		16						
6	S-3	14	24/16	2" Red-brown SILT, some fine Sand, trace clay. 6" Grey fine SAND, trace Silt. WET.		HS- >100 ppm open spoon		
7		20		8" Dark Brown odorous and saturated f-c SAND, some Silt, some gravel. Saturated.				
		15						
		18						
8	S-4	10	24/18	Black f-c SAND and f-m gravel. Saturated.		HS- >200 ppm open spoon	MW-7-8 TOC & pH - 6-7	
9		11						
		14						
		16						
10	S-5	5	24/14	4" Black stained f-c SAND and fine gravel. 10" Red-brown fine SAND and Silt, some fine sub-angular gravel. Black stringers staining throughout last 10".		HS- >300 ppm open spoon	MW-7-10 Grain size	
11		9						
		13						
		19						
12								
13				End of Boring @ 13' bgs.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density	silt/clay	<0.08 mm	1) Three inch spoon collected 8-10' bgs for Grain Size.		
0-4	v. loose	>2	v. soft	f. sand	0.43-0.08 mm			
4-10	loose	2-4	soft	m. sand	2.0-0.43 mm			
10-30	m. dense	4-8	m. stiff	c. sand	4.8-2.0 mm			
30-50	dense	8-15	stiff	f. gravel	19-4.8 mm			
>50	v. dense	15-30	v. stiff	c. gravel	75-19 mm			
Proportions		>30	hard	cobble	300-75 mm			
trace	0-10%	some	20-35%	boulder	>300 mm			
little	10-20%	and	35-50%					

TRC	Project/Client Phase II RFL/Akzo Nobel	Project No. 19045-006	Boring No. MW-08	Sheet 1 of 1				
	Soil Boring Log Location Description 150 ft. North of Main Access Road		TRC Geologist Charles Foster					
Drilling Contractor/Foreman SJB/ Chris Ackley		Drill Rig Make/Model CME 85	Auger/Drive Casing Size/Type 4 1/4 " ID HSA					
Sampler Description Continuous 2 ft split spoon/3 ft at water table		Drilling Method HSA continuous sampling	Coordinates X= Y=					
Filter Seal Amount/Type: 2 Feet/ Bentonite Chips		Drill Bit/Auger Diameter: 4 1/4" ID	Ref. El.:					
Sand Pack Amount/Type: 12 Feet/ #0 Filter Sil Sand		Hammer Weight/Fall: 140/30	Riser Stick Up: ~2.5'					
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC		Water Table Depth: ~ 10'	Surface Elevation: NA					
Riser Length/Type: 8.5 Feet/ Sch. 40 PVC		Total Depth: 16' bgs.	Date Start: 7/23/99	Date Finish: 7/23/99				
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers 6" Brown Organic top Soil and Roots. Brown Silt and fine Sand.				
2	S-1	6	24/20	Brown SILT, some fine Sand, trace clay.				
3		9						
		11						
4		11						
	S-2	5	24/20	8" - Brown SILT, some fine Sand, trace clay. Moist.				
		9						
5		12		12" - Brown fine SAND and Silt, trace clay. Moist.				
		15		2" - Mottled clay lense.				
6		13	24/24	4" - Brown fine SAND and Silt.				
	S-3	16		20" - Brown Silt and fine SAND, trace clay. Moist.				
7		21						
		22						
8		9	24/24	8" - Brown fine SAND and Silt, trace clay.				
	S-4	13		16" - Grey fine SAND, some silt. Wet.				
9		11						
		10						
10		14	24/20	4" - Grey fine SAND, some Silt.				
	S-5	17		16" - Brown/Red sub-angular Gravel, some fine to coarse SAND, trace Silt.				
11		18		Some rounded gravel. Saturated.				
		17						
12		8	24/14	Red Brown f-m Gravel and f-c SAND, some silt. Saturated.				
	S-6	19						
13		33		End of Boring @ 16' bgs, pulled augers back to set well from 3-13' bgs.				
		45						
Granular Soils Blows/ft Density 0-4 v. loose 4-10 loose 10-30 m. dense 30-50 dense >50 v. dense Proportions trace 0-10% some 20-35% little 10-20% and 35-50%		Cohesive Soils Blows/ft Density >2 v. soft 2-4 soft 4-8 m. stiff 8-15 stiff 15-30 v. stiff >30 hard		Grain Size (USCS) silt/clay <0.08 mm f. sand 0.43-0.08 mm m. sand 2.0-0.43 mm c. sand 4.8-2.0 mm f. gravel 19-4.8 mm c. gravel 75-19 mm cobble 300-75 mm boulder >300 mm		Notes 1) Sample collected from 10-12' bgs, for TOC, pH, and Grain Size from a 3" split-spoon. 2) The thin mottled clay lense was located in a sandy lense at 4-6'.		

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. RB-01	Sheet 1 of 1		
	Soil Boring Log				Location Description 56.3 feet East of SWMU 17 (OS-1)			
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: NA			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El.:			
Sand Pack Amount/Type: NA			Hammer Weight/Fall: 140/30		Riser Stick Up:			
Screen Length/Type: NA			Water Table Depth: ~ 7'		Surface Elevation: NA			
Riser Length/Type: NA			Total Depth: 14' bgs.		Date Start: 7/28/99	Date Finish: 7/28/99		
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers, Roots, grass and brown organic topsoil. Some gravelly fill then brown fine SAND, some Silt.				
2	S-1	3	24/18	Brown fine SAND, some Silt. Moist.		HS=BKG		
3		4						
4		3						
5	S-2	1	24/14	Red-brown fine SAND and Silt, gravel fill pulverized. Moist.		HS=2 ppm		
6		2						
7		45						
8		23						
9	S-3	21	24/12	Red-brown f-c SAND, some fine sub-angular gravel, some Silt. Saturated.		HS=1 ppm		
10		14						
11		9						
12		7						
13	S-4	2	24/10	Red-brown f-c SAND and fine sub-angular, some Silt. Saturated.		HS=3 ppm	RB-1-10 8100	
14		3						
15		3						
16		2						
17	S-5	5	24/0	No Recovery.				
18		6						
19		6						
20		2						
21	S-6	3	24/01	Brown fine sub-angular gravel and f-c SAND. No odor or sheen. Saturated.		HS=BKG		
22		4						
23		5						
24		7		End of Boring @ 14' bgs.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density	silt/clay	<0.08 mm	1) Soil sample collected 8-10' bgs for Mod. 8100. 2) HS=Headspace, BKG=Background. 3) No odor or sheen observed on any samples.		
0-4	v. loose	>2	v. soft	f. sand	0.43-0.88 mm			
4-10	loose	2-4	soft	m. sand	2.0-0.43 mm			
10-30	m. dense	4-8	m. stiff	c. sand	4.8-2.0 mm			
30-50	dense	8-15	stiff	f. gravel	19-4.8 mm			
>50	v. dense	15-30	v. stiff	c. gravel	75-19 mm			
Proportions		>30	hard	cobble	300-75 mm			
trace	0-10%	some	20-35%	boulder	>300 mm			
little	10-20%	and	35-50%					

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. RB-02	Sheet 1 of 1		
	Soil Boring Log				Location Description 36.2 feet southwest of SWMU 17 (OS-1)			
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: NA			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. EL:			
Sand Pack Amount/Type: NA			Hammer Weight/Fall: 140/30		Riser Stick Up:			
Screen Length/Type: NA			Water Table Depth: ~ 6'		Surface Elevation: NA			
Riser Length/Type: NA			Total Depth: 14' bgs.		Date Start: 7/28/99	Date Finish: 7/28/99		
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers, grass and 6" Brown organics and roots than changes to Brown fine SAND and Silt.				
2	S-1	4	24/16	Brown fine SAND and Silt.		HS=BKG		
3		3						
4	S-2	2	24/14	Brown Silt and fine SAND, trace clay. Moist.		HS=.5 ppm		
5		3						
6	S-3	7	24/18	Brown Silt and fine SAND, trace clay. Moist		HS=10 ppm		
7		10						
8	S-4	8	24/14	10" Brown Silt and fine SAND. Wet.		HS=85 ppm	RB-2-10	
9		12		4" Brown f-c SAND and gravel, mild fuel oil odor.			8100	
10	S-5	14	24/10	Brown fine gravel, some f-c SAND, and some Silt. Mild fuel oil odor. Saturated.		HS=40 ppm		
11		9						
12	S-6	8	24/6	Brown fine sub-angular gravel, some f-c SAND, and some Silt. No fuel oil odor. Saturated.		HS=.5 ppm		
13		9						
		11		End of Boring @ 14' bgs.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density	silt/clay	<0.08 mm	1) Soil sample collected 8-10' bgs for Mod. 8100. 2) HS=Headspace, BKG=Background.		
0-4	v. loose	>2	v. soft	f. sand	0.43-0.06 mm			
4-10	loose	2-4	soft	m. sand	2.0-0.43 mm			
10-30	m. dense	4-8	m. stiff	c. sand	4.8-2.0 mm			
30-50	dense	8-15	stiff	f. gravel	19-4.8 mm			
>50	v. dense	15-30	v. stiff	c. gravel	75-19 mm			
Proportions		>30	hard	cobble	300-75 mm			
trace	0-10%	some	20-35%	boulder	>300 mm			
little	10-20%	and	35-50%					

TRC		Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. RB-03		Sheet 1 of 2	
		Well No. NA		TRC Geologist Charles Foster					
Soil Boring Log		Location Description In roadway 54.8 feet South of SWMU 17 (OS-1)							
		Drilling Contractor/Foreman SJB/ Chris Ackley		Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4 " ID HSA			
Sampler Description Continuous 2 ft split spoon				Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: NA				Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El.:			
Sand Pack Amount/Type: NA				Hammer Weight/Fall: 140/30		Riser Stick Up:			
Screen Length/Type: NA				Water Table Depth: ~ 7'		Surface Elevation: NA			
Riser Length/Type: NA				Total Depth: 20' bgs.		Date Start: 7/28/99		Date Finish: 7/28/99	
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction	
1				6" Asphalt and road sub-base. Brown f-m SAND.					
2	S-1	2	24/18	Brown fine SAND, some Silt, trace fine gravel.		HS=BKG			
3		3							
4		4							
5		3							
6	S-2	2	24/18	Brown fine SAND and Silt. Moist.		HS=BKG			
7		3							
8		4							
9		6							
10	S-3	4	24/16	12" Red-brown fine SAND and Silt. Moist.		HS=BKG			
11		8		4" Brown f-c SAND, some fine gravel, some Silt.					
12		8							
13		8							
14	S-4	4	24/10	Red-brown fine gravel and f-c SAND, some Silt. Saturated.		HS=2 ppm	RB-3-10 Mod. 8100		
15		7							
16		6							
17		5							
18	S-5	1	24/08	Red-brown fine gravel, some f-c SAND, some Silt, sub-angular rock clast. Saturated.		HS=BKG			
19		7							
20		6							
21		5							
22	S-6	8	24/10	Red-brown f-c SAND, fine gravel, some SILT. Saturated.					
23		8							
24		5							
25		6							

Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes
Blows/ft	Density	Blows/ft	Density			
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm	
4-10	loose	2-4	soft	f. sand	0.43-0.08 mm	
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm	
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm	
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm	
Proportions		>30	hard	c. gravel	75-19 mm	
trace	0-10%	some	20-35%	cobble	300-75 mm	
little	10-20%	and	35-50%	boulder	>300 mm	

1) Soil sample collected from 8-10' bgs for Mod. 8100.
2) HS=Headspace, BKG=Background.



Project/Client
Phase II RFI/Akzo Nobel

Project No.
19045-006

Boring No. RB-03

Sheet

Well No.

2 of _2_

Soil Boring Log

Location Description
In roadway 54.8 feet South of SWMU 17 (OS-1)

TRC Geologist
Charles Foster

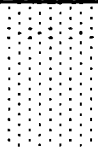
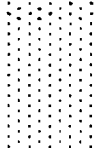
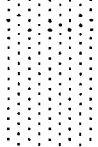
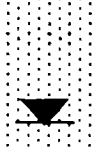
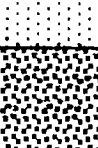
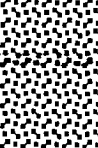
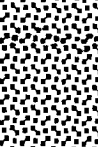
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
15	S-7	2	24/0	Loose saturated f-c SAND, wash came out of spoon.				
		3						
		3						
16		4						
	S-8	7	24/4	Brown f-c SAND and Silt, some fine sub-angular gravel, Saturated. Wash.				
		8						
17		14						
		11						
18	S-9	11	24/10	Brown fine SAND and Silt, some fine sub-angular gravel. Saturated.				
		16						
19		10						
		28						
20		50/2		No Recovery, Split-Spoon Refusal. End of Boring 20' bgs.				

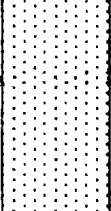
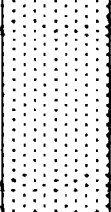
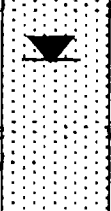
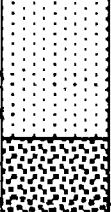
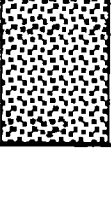
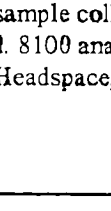
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes
Blows/ft	Density	Blows/ft	Density			
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm	
4-10	loose	2-4	soft	f. sand	0.43-0.08 mm	
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm	
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm	
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm	
		>30	hard	c. gravel	75-19 mm	
				cobble	300-75 mm	
				boulder	>300 mm	
Proportions						
trace	0-10%	some	20-35%			
little	10-20%	and	35-50%			

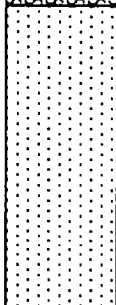
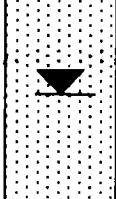
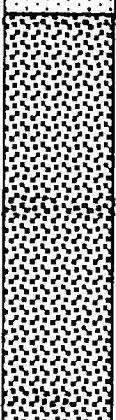
TRC	Project/Client Phase II RFI/Akzo Nobel	Project No. 19045-006	Boring No. RB-05 Well No. NA	Sheet 1 of 1
	Soil Boring Log Location Description 65' Southwest of RB-02, South of Building 2A.		TRC Geologist Charles Foster	
Drilling Contractor/Foreman SJB/ Chris Ackley		Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA
Sampler Description Continuous 2 ft split spoon		Drilling Method HSA continuous sampling		Coordinates X= Y=
Filter Seal Amount/Type: NA		Drill Bit/Auger Diameter: 4 1/4" ID		Ref. EL.:
Sand Pack Amount/Type: NA		Hammer Weight/Fall: 140/30		Riser Stick Up:
Screen Length/Type: NA		Water Table Depth: ~ 7'		Surface Elevation: NA
Riser Length/Type: NA		Total Depth: 14' bgs.		Date Start: 7/28/99 Date Finish: 7/28/99

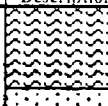
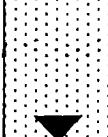
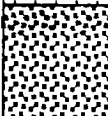
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction	
1				Augers to 4' through asphalt and sub-base. Fine brown Silt and Sand, trace gravelly fill.					
2									
3									
4	S-1	2	24/18	Brown fine SAND and Silt, trace clay. Moist.			HS=BKG		
5		2							
6		3							
7		4							
8	S-2	11	24/16	Brown fine SAND and Silt, some clay. Wet.			HS=4 ppm		
9		12							
10		15							
11		16							
12	S-3	8	24/20	Brown fine SAND and Silt, trace clay. Wet.			HS=18 ppm	RB-5-10	
13		8						Mod. 8100	
14		12							
15		15							
16	S-4	8	24/14	4" Red-brown fine SAND, some Silt.		HS=16 ppm			
17		14		10" Red-brown f-c SAND, some fine sub-angular gravel, some Silt. Saturated.					
18		10							
19		14							
20	S-5	7	24/02	Saturated fine Gravel and f-c SAND.		HS=10 ppm			
21		11		Sub-angular rock frags.					
22		5							
23		5		End of Boring @ 14' bgs.					

Granular Soils <table style="width: 100%;"> <tr> <th>Blows/ft</th> <th>Density</th> </tr> <tr> <td>0-4</td> <td>v. loose</td> </tr> <tr> <td>4-10</td> <td>loose</td> </tr> <tr> <td>10-30</td> <td>m. dense</td> </tr> <tr> <td>30-50</td> <td>dense</td> </tr> <tr> <td>>50</td> <td>v. dense</td> </tr> </table> Proportions trace 0-10% some 20-35% little 10-20% and 35-50%	Blows/ft	Density	0-4	v. loose	4-10	loose	10-30	m. dense	30-50	dense	>50	v. dense	Cohesive Soils <table style="width: 100%;"> <tr> <th>Blows/ft</th> <th>Density</th> </tr> <tr> <td>>2</td> <td>v. soft</td> </tr> <tr> <td>2-4</td> <td>soft</td> </tr> <tr> <td>4-8</td> <td>m. stiff</td> </tr> <tr> <td>8-15</td> <td>stiff</td> </tr> <tr> <td>15-30</td> <td>v. stiff</td> </tr> <tr> <td>>30</td> <td>hard</td> </tr> </table>	Blows/ft	Density	>2	v. soft	2-4	soft	4-8	m. stiff	8-15	stiff	15-30	v. stiff	>30	hard	Grain Size (USCS) <table style="width: 100%;"> <tr> <td>silt/clay</td> <td><0.08 mm</td> </tr> <tr> <td>f. sand</td> <td>0.43-0.08 mm</td> </tr> <tr> <td>m. sand</td> <td>2.0-0.43 mm</td> </tr> <tr> <td>c. sand</td> <td>4.8-2.0 mm</td> </tr> <tr> <td>f. gravel</td> <td>19-4.8 mm</td> </tr> <tr> <td>c. gravel</td> <td>75-19 mm</td> </tr> <tr> <td>cobble</td> <td>300-75 mm</td> </tr> <tr> <td>boulder</td> <td>>300 mm</td> </tr> </table>	silt/clay	<0.08 mm	f. sand	0.43-0.08 mm	m. sand	2.0-0.43 mm	c. sand	4.8-2.0 mm	f. gravel	19-4.8 mm	c. gravel	75-19 mm	cobble	300-75 mm	boulder	>300 mm	Notes 1) Soil sample collected from 8-10' bgs for Mod. 8100. 2) HS=Headspace, BKG=Background. 3) No odor or sheen observed on any samples.
Blows/ft	Density																																												
0-4	v. loose																																												
4-10	loose																																												
10-30	m. dense																																												
30-50	dense																																												
>50	v. dense																																												
Blows/ft	Density																																												
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c. gravel	75-19 mm																																												
cobble	300-75 mm																																												
boulder	>300 mm																																												

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. SB-19-E1	Sheet 1 of 1		
	Soil Boring Log				Location Description 20 feet East of SWMU 19			
Drilling Contractor/Foreman SJB/ Chris Ackley				Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4" ID HSA		
Sampler Description Continuous 2 ft split spoon				Drilling Method HSA continuous sampling		Coordinates X= Y=		
Filter Seal Amount/Type: NA				Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El.:		
Sand Pack Amount/Type: NA				Hammer Weight/Fall: 140/30		Riser Stick Up: NA		
Screen Length/Type: NA				Water Table Depth: ~ 7'		Surface Elevation: NA		
Riser Length/Type: NA				Total Depth: 14' bgs.		Date Start: 7/28/99	Date Finish: 7/28/99	
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1	S-1	3	24/18	Light brown dry Silt and fine SAND.		HS=BKG		
		4						
		4						
		4						
2	S-2	5	24/16	Brown fine SAND, some Silt. Moist		HS=BKG	E-19-2 pH-6.7	
		5						
		6						
		5						
4	S-3	3	24/16	Red-brown fine SAND and Silt, trace clay. Moist.		HS=BKG		
		3						
		5						
		5						
6	S-4	6	24/16	Brown fine SAND and Silt, trace clay, wet lense.		HS=2 ppm	E-19-8 pH-6.7	
		13						
		11						
		13						
9	S-5	12	24/14	8" Brown fine SAND and Silt, trace clay. 6" Red-brown f-c SAND, some fine gravel, trace grey pulverized stone. Wet.		HS=400 ppm		
		12						
		14						
		20						
11	S-6	10	24/10	Brown f-c SAND, some fine gravel. Saturated.		HS=140 ppm		
		7						
		7						
		10						
12	S-7	9	24/16	Brown f-c SAND and fine gravel. Saturated.		HS=16 ppm		
		12						
		10						
		12						
End of Boring @ 14' bgs.								
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density	silt/clay	<0.08 mm	1) Soil sample collected 0-2' and 8-10' bgs sent to lab for analysis 8260B (Low and High Concentrations). 2) HS=Headspace, BKG=Background, OS=Open Spoon. 3) From 10-14' open spoon readings not duplicated on higher scale. 4) 6-8' sample collected above the apparent wet lense.		
0-4	v. loose	>2	v. soft	f. sand	0.43-0.08 mm			
4-10	loose	2-4	soft	m. sand	2.0-0.43 mm			
10-30	m. dense	4-8	m. stiff	c. sand	4.8-2.0 mm			
30-50	dense	8-15	stiff	f. gravel	19-4.8 mm			
>50	v. dense	15-30	v. stiff	c. gravel	75-19 mm			
Proportions		>30	hard	cobble	300-75 mm			
trace	0-10%	some	20-35%	boulder	>300 mm			
little	10-20%	and	35-50%					

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. OS-01	Sheet		
					Well No. OS-01	1 of 1		
Soil Boring Log		Location Description Rear of Building 2C, 13.2 feet South of Building 2C			TRC Geologist Charles Foster			
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 6 1/4" ID HSA			
Sampler Description Continuous 2 ft split spoon			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: 1-foot/ Bentonite			Drill Bit/Auger Diameter: 6 1/4" ID		Ref. El.:			
Sand Pack Amount/Type: 13-feet/ #0 Sand			Hammer Weight/Fall: 140/30		Riser Stick Up: ~3'			
Screen Length/Type: 10 feet/ 4" sch 40 PVC			Water Table Depth: ~ 7'		Surface Elevation: NA			
Riser Length/Type: 7 feet/ 4" sch. 40 PVC			Total Depth: 14' bgs.		Date Start: 7/27/99		Date Finish: 7/27/99	
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				Off Augers, Brown surface organics and grass. Brown Silt and rounded gravel fill.				
2	S-1	1	24/18	Red-brown fine SAND and Silt.		HS=BKG		
3		2						
4		3						
5		4						
6	S-2	1	24/18	Red-brown fine SAND and Silt. Moist.		HS=BKG		
7		2						
8		3						
9		3						
10	S-3	4	24/16	Red-brown fine SAND and Silt. 4" Black f-c SAND and fine gravel. Some fuel oil odor. Wet.		HS=900 ppm		
11		6						
12		9						
13		4						
14	S-4	2	24/10	Brown-black stained f-c SAND and fine gravel. Strong oily odor. Wet		HS= >1000 ppm	OS-1-10 Mod. 8100	
15		3						
16		5						
17		6						
18	S-5	5	24/10	Red-brown f-c SAND, some fine gravel, trace silt. Oily odor. Wet.		HS= >1000 ppm		
19		7						
20		7						
21		6						
22	S-6	7	24/08	Red-brown f-c SAND and fine rounded gravel, trace silt. Mild oily odor. Saturated.		HS=80 ppm		
23		7						
24		5						
25		5		End of Boring @ 14' bgs.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes 1) Soil sample collected 8-10' bgs sent to lab for Mod. 8100 analysis due to appearance. 2) HS=Headspace, BKG=Background.		
Blows/ft	Density	Blows/ft	Density					
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm			
4-10	loose	2-4	soft	f. sand	0.43-0.88 mm			
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm			
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm			
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm			
Proportions		>30	hard	c. gravel	75-19 mm			
trace	0-10%	some	20-35%	cobble	300-75 mm			
little	10-20%	and	35-50%	boulder	>300 mm			

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. PZ-02	Sheet 1 of 1		
	Well No. PZ-02							
Soil Boring Log		Location Description SW corner of Facility - edge of grassy field.			TRC Geologist Charles Foster			
Drilling Contractor/Foreman SJB/ Chris Ackley			Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4 " ID HSA			
Sampler Description No Sampling, Piezometer			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: Native Soil			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. El:			
Sand Pack Amount/Type: Native Soil			Hammer Weight/Fall: 140/30		Riser Stick Up: ~5'			
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~6'		Surface Elevation: NA			
Riser Length/Type: ~5 Feet/ Sch. 40 PVC			Total Depth: 13' bgs.		Date Start: 7/28/99		Date Finish: 7/28/99	
Depth	Sample Number	Blows/RQD	Pen/Rec Core Rec	Sample Description	Stratigraphic Description	Field Testing	Lab Sample Number	Well Construction
1				0-5' Organic layer of brown fine SAND and Silt				
2								
3								
4								
5								
6				5-10' Dark brown fine SAND and Silt. ~6' Moist.				
7								
8				Brown-red fine SAND and Silt, some fine sub-angular gravel.				
9								
10				10-13' Dark brown fine SAND and Silt, trace sub-angular gravel.				
11								
12								
13				End of Boring @ 13' bgs.				
Granular Soils		Cohesive Soils		Grain Size (USCS)		Notes		
Blows/ft	Density	Blows/ft	Density					
0-4	v. loose	>2	v. soft	silt/clay	<0.08 mm			
4-10	loose	2-4	soft	f. sand	0.43-0.08 mm			
10-30	m. dense	4-8	m. stiff	m. sand	2.0-0.43 mm			
30-50	dense	8-15	stiff	c. sand	4.8-2.0 mm			
>50	v. dense	15-30	v. stiff	f. gravel	19-4.8 mm			
Proportions		>30	hard	c. gravel	75-19 mm			
trace	0-10%	some	20-35%	cobble	300-75 mm			
little	10-20%	and	35-50%	boulder	>300 mm			

TRC	Project/Client Phase II RFI/Akzo Nobel		Project No. 19045-006		Boring No. PZ-03	Sheet 1 of 1		
	Well No. PZ-03							
Soil Boring Log		Location Description SE corner of Facility, Located in grassy field.			TRC Geologist Charles Foster			
		Drilling Contractor/Foreman SJB/ Chris Ackley		Drill Rig Make/Model CME 85		Auger/Drive Casing Size/Type 4 1/4 " ID HSA		
Sampler Description No Sampling , Piezometer			Drilling Method HSA continuous sampling		Coordinates X= Y=			
Filter Seal Amount/Type: Native Soil			Drill Bit/Auger Diameter: 4 1/4" ID		Ref. E.:			
Sand Pack Amount/Type: Native Soil			Hammer Weight/Fall: 140/30		Riser Stick Up: ~5'			
Screen Length/Type: 10 Feet/ 10 Slot Sch. 40 PVC			Water Table Depth: ~7'		Surface Elevation: NA			
Riser Length/Type: ~8 Feet/ Sch. 40 PVC			Total Depth: 13' bgs.		Date Start: 7/29/99		Date Finish: 7/29/99	
Depth	Sample Number	Blows/ RQD	Pen/Rec Core Rec	Sample Description	Strati-graphic Description	Field Testing	Lab Sample Number	Well Construction
1				0-5' Organic layer of grass and roots Brown-yellow fine SAND and Silt				
2								
3								
4								
5								
6				5-8' Dark brown fine SAND and Silt. Moist at 7'.				
7								
8				Brown-red fine SAND and Silt.				
9				8" layer fine sub-angular gravel. Saturated				
10								
11				10-13' Dark brown fine SAND and Silt, trace sub-angular gravel.				
12								
13				End of Boring @ 13' bgs.				
Granular Soils Blows/ft Density 0-4 v. loose 4-10 loose 10-30 m. dense 30-50 dense >50 v. dense Proportions trace 0-10% some 20-35% little 10-20% and 35-50%				Cohesive Soils Blows/ft Density >2 v. soft 2-4 soft 4-8 m. stiff 8-15 stiff 15-30 v. stiff >30 hard		Grain Size (USCS) silt/clay <0.08 mm f. sand 0.43-0.08 mm m. sand 2.0-0.43 mm c. sand 4.8-2.0 mm f. gravel 19-4.8 mm c. gravel 75-19 mm cobble 300-75 mm boulder >300 mm		Notes

APPENDIX B

ROCK CORE LOGS

TRC Rock Core Log		Project: Akzo Nobel Project No. Phase II- RFI 19045-0060-00000		Date/Time 7/29/99		Sheet <u>1</u> of <u>1</u>				
		Contractor Personnel: SJB Drilling				TRC Oversight Personnel: Todd Majer				
Boring/Well Number: MW-1B		Driller/Equipment: Chris Ackley/CME-85 HQ-Core Barrel				Elevation: Orientation: Time Start: Time Finish:				
Depth	Comments	Core Run Length and Recovery (%)	Core Loss Zone	Box Number	Discontinuities			Lithology		Graphic Log
	Tests Instrumentation Coring Rate and Smoothness Coring Fluid Loss				RQD	Fractures Per Foot	Description Tightness Planarity Smoothness Filling, Staining Orientation	Mineralogy Classification Color Grain Size Alteration	Cementation Hardness Weathered State	
30	2:05 min/ft, no H ₂ O loss.	10ft 97.5%		1	30.8%	1		Very fine grain shale (Queen stone shale).		
31	3:00 min/ft, no H ₂ O loss.					5		Brown in appearance.		
32	2:35 min/ft, ~20gallons of H ₂ O loss.		X			8		Weathered fractures in the next 4ft.		
33	2:15 min/ft, no H ₂ O loss.		X			9				
34	2:05 min/ft, no H ₂ O loss.		X			9				
35	2:05 min/ft, no H ₂ O loss.		X			10				
36	2:35 min/ft, ~20gallons H ₂ O loss.		X			5	Last 4" - very rough.	Very fine grain shale (Queen stone shale).		
37	2:05 min/ft, no H ₂ O loss.					1				
38	2:35 min/ft, ~20gallons H ₂ O loss.					2	Last 6" - very rough.			
39	2:15 min/ft, no H ₂ O loss.					2				
40	2:15 min/ft, no H ₂ O loss.	5ft 100%		1/2	73.3%	3		Last 5ft of core, very competent rock.		
41	2:10 min/ft, no H ₂ O loss.		X			4				
42	2:25 min/ft, no H ₂ O loss.		X			0				
43	2:30 min/ft, no H ₂ O loss.					1	1/4" Clay layer with fine SAND, silt, and gravel.			
44	2:40 min/ft, no H ₂ O loss.					3				
45										

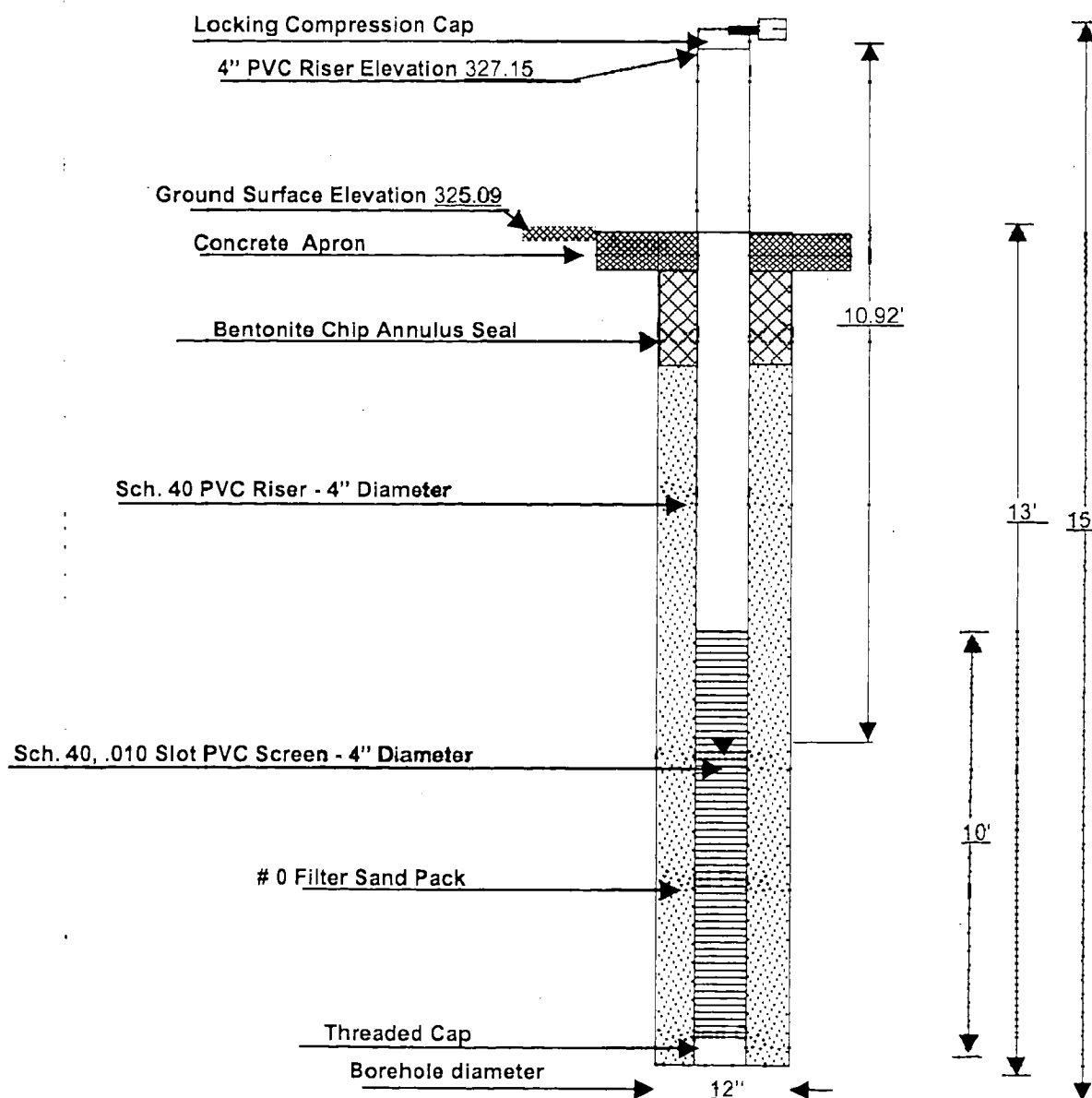
TRC Rock Core Log		Project: Akzo Nobel Project No. Phase II-RFI 19045-0060-00000		Date/Time 7/29/99		Sheet <u>1</u> of <u>1</u>				
		Contractor Personnel: SJB Drilling		TRC Oversight Personnel: Charles Foster						
Boring/Well Number: MW-3B		Driller/Equipment: Chris Ackley/CME-85 HQ - Core Barrel		Elevation: Orientation: Time Start: 1435 Time Finish: 1525						
Depth	Comments	Core Run Length and Recovery (%)	Core Loss Zone	Box Number	Discontinuities			Lithology		Graphic Log
	Tests Instrumentation Coring Rate and Smoothness Coring Fluid Loss				RQD	Fractures Per Foot	Description Tightness Planarity Smoothness Filling, Staining Orientation	Mineralogy Classification Color Grain Size Alteration	Cementation Hardness Weathered State	
21	3:00min/ft, no H ₂ O loss.	10ft 93.3%		3	37.5%	3		Very fine grain shale and/or siltstone (Queenstone shale).		
22	2:30 min/ft, no H ₂ O loss.					6		Few weathered fractures in bedding planes.		
23	2:25 min/ft, little H ₂ O loss.		X			3	Filled fractures at 23ft.	3" Blue lense of queenstone shale.		
24	2:45 min/ft, no H ₂ O loss.					3		Shale with weathering.		
25	2:30 min/ft, no H ₂ O loss.					4				
26	2:00 min/ft, no H ₂ O loss.					5				
27	2:00 min/ft, no H ₂ O loss.					1		Last four feet of core is more competent rock.		
28	1:30 min/ft, no H ₂ O loss.					1				
29	2:15 min/ft, no H ₂ O loss.					2				
30	2:45 min/ft, no H ₂ O loss.					2	3" Clay filled fracture.			
31	2:00 min/ft, no H ₂ O loss.	5ft 93.3%		2	56.6%	2		Very fine grained shale (Queenstone shale).		
32	2:30 min/ft, no H ₂ O loss.					5				
33	2:00 min/ft, no H ₂ O loss.					3	2" Clay filled weathered fracture zone.			
34	2:30 min/ft, no H ₂ O loss.		X			2				
35	2:30 min/ft, no H ₂ O loss.					3		Vertical fracture over the last foot of core.		
36										

APPENDIX C
WELL CONSTRUCTION DIAGRAMS

TRC**Overburden Observation Well
Construction Log**

Well No.

OS-01

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 333.42Client: Pam Cook Date Completed: 07/27/99Reference Description: Top of PVC riserLocation: 10 feet South of building 2C in SWMU-17Depth to Water: 14.29 ftDrilling Contractor: SJB Services Method: HSADevelopment Date: N/ATRC Geologist: Charles FosterDevelopment Method: N/A

TRC**Overburden Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-01

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 327.90Client: Pam Cook Date Completed: 07/26/99Reference Description: Top of PVC riserLocation: East end of plant 312 ft. from plant roadDepth to Water: 11.82 ftDrilling Contractor: SJB Services Method: HSADevelopment Date: 07/27/99TRC Geologist: Charles FosterDevelopment Method: Whale Pump4" Diameter Steel Standpipe- Rim Elevation 328.01

Locking Compression Cap

PVC Inner Casing Elevation 327.90Ground Surface Elevation 325.68

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

8"

11.82'

16'

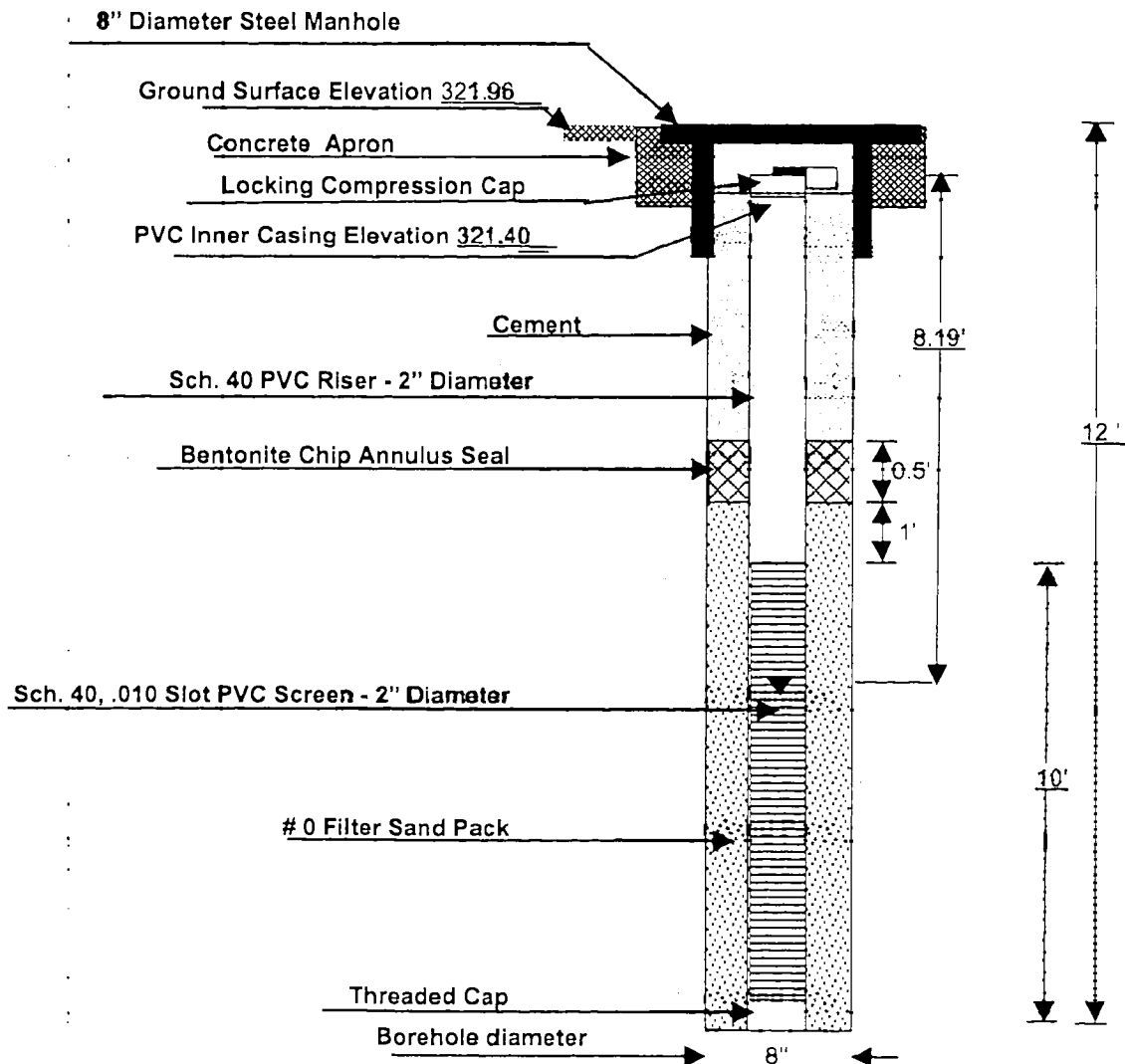
18.5'

10'

TRC**Overburden Flushmount Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-02

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 321.40Client: Pam Cook Date Completed: 07/26/99Reference Description: Top of PVC riserLocation: 10 feet North of Building 2C in loading dock areaDepth to Water: 8.19 ftDrilling Contractor: SJB Services Method: HSADevelopment Date: 07/27/99TRC Geologist: Charles FosterDevelopment Method: Whale Pump

TRC**Overburden Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-03

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 322.10Client: Pam Cook Date Completed: 07/22/99Reference Description: Top of PVC riserLocation: Northwest corner of plant 500 ft. north of main plant roadDepth to Water: 8.29 ft. bgsDrilling Contractor: SJB Services Method: HSADevelopment Date: 07/26/99TRC Geologist: Charles FosterDevelopment Method: Whale Pump4" Diameter Steel Standpipe- Rim Elevation 322.24

Locking Compression Cap

PVC Inner Casing Elevation 322.10Ground Surface Elevation 319.61

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

8"

8.29'

14.2'

16.7'

10'

TRC**Overburden Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-04

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 322.59Client: Pam Cook Date Completed: 07/26/99Reference Description: Top of PVC riserLocation: 150 feet North and 120 ft East of main entrance to plantDepth to Water: 12.05Drilling Contractor: SJB Services Method: HSADevelopment Date: 07/26/99TRC Geologist: Charles FosterDevelopment Method: Bailer4" Diameter Steel Standpipe- Rim Elevation 322.75

Locking Compression Cap

PVC Inner Casing Elevation 322.59Ground Surface Elevation 320.24

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

8"

12.05'

16.5'

14'

10'

TRC**Overburden Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-05

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Client: Pam Cook Date Completed: 07/26/99Location: 125 feet North of main plant road, NW of SWMU 23/24Drilling Contractor: SJB Services Method: HSATRC Geologist: Charles FosterReference Elevation: 324.19Reference Description: Top of PVC riserDepth to Water: 7.41Development Date: 07/27/99Development Method: Whale Pump4" Diameter Steel Standpipe- Rim Elevation 324.26

Locking Compression Cap

PVC Inner Casing Elevation 324.19Ground Surface Elevation 322.26

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

8"

7.41'

16.5'

14'

13'

10'

TRC

Overburden Monitoring Well Construction Log with Protective Casing

Well No.

MW-06

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Client: Pam Cook Date Completed: 07/23/99Location: ~ 350 feet North of main plant road, NW Sentinel WellDrilling Contractor: SJB Services Method: HSATRC Geologist: Charles FosterReference Elevation: 324.80Reference Description: Top of PVC riserDepth to Water: 8.17Development Date: 07/26/99Development Method: Whale Pump4" Diameter Steel Standpipe- Rim Elevation 324.95

Locking Compression Cap

PVC Inner Casing Elevation 324.80Ground Surface Elevation 322.28

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

Bedrock

8.17'

2'

1'

14'

10'

14.8'

16.5'

8"

TRC**Overburden Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-07

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Client: Pam Cook Date Completed: 07/26/99Location: 60 feet NW SWMU 24Drilling Contractor: SJB Services Method: HSATRC Geologist: Charles FosterReference Elevation: 323.61Reference Description: Top of PVC riserDepth to Water: 7.01Development Date: 07/27/99Development Method: Whale Pump4" Diameter Steel Standpipe- Rim Elevation 323.85

Locking Compression Cap

PVC Inner Casing Elevation 323.61Ground Surface Elevation 321.27

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

8"

7.01'

13'

15.5'

10'

TRC**Overburden Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-08

Project: Akzo-Nobel Phase II RFJ No.: 19045-006-00000Client: Pam Cook Date Completed: 07/23/99Location: 150 feet North of Main Road between buildings 1 & 18Drilling Contractor: SJB Services Method: HSATRC Geologist: Charles FosterReference Elevation: 325.76Reference Description: Top of PVC riserDepth to Water: 9.04Development Date: 07/2699Development Method: Whale Pump4" Diameter Steel Standpipe- Rim Elevation 326.0

Locking Compression Cap

PVC Inner Casing Elevation 325.76Ground Surface Elevation 323.39

Concrete Apron

Cement/grout

Sch. 40 PVC Riser - 2" Diameter

Bentonite Chip Annulus Seal

Sch. 40, .010 Slot PVC Screen - 2" Diameter

0 Filter Sand Pack

Threaded Cap

Borehole diameter

8"

9.04'

2'

2'

10'

16'

18.5'

TRC**Bedrock Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-1B

Project: Akzo-Nobel Phase II REI No.: 19045-0060-00000Reference Elevation: 327.79Client: Pam Cook Date Completed: 07/23/99Reference Description: Top of PVC RiserLocation: East end of plant 312 ft. east of nearest plant roadDepth to Water: 37.08 ft. bgsDrilling Contractor: SJB Services Method: Casing/coringDevelopment Date: 07/30/99TRC Geologist: Charles FosterDevelopment Method: Whale Pump4" Diameter Steel Casing/ Standpipe- Rim Elevation 328.05

Locking Compression Cap

PVC Inner Casing Elevation 327.79Ground Surface Elevation 326.16

Concrete Apron

Sch. 40 PVC Riser - 2" Diameter

Cement Bentonite Grout

Bentonite Chip Annulus Seal

0 Filter Sand Pack

Sch. 40, .010 Slot PVC Screen - 2" Diameter

#0 Fil Sand Pack

Threaded Cap

Borehole diameter

Bedrock

4"

32'

37.08'

25'

48'

2'

2'

15'

TRC**Bedrock Monitoring Well
Construction Log with Protective Casing**

Well No.

MW-3B

Project: Akzo-Nobel Phase II RFI No.: 19045-0060-00000Client: Pam Cook Date Completed: 07/30/99Location: Northwest corner of site, 500 feet from plant roadDrilling Contractor: SJB Services Method: Casing/coringTRC Geologist: Charles FosterReference Elevation: 321.39Reference Description: Top of PVC RiserDepth to Water: 14.03 ft. bgsDevelopment Date: 07/30/99Development Method: Whale Pump4" Diameter Steel Casing/ Standpipe- Rim Elevation 321.46

Locking Compression Cap

PVC Inner Casing Elevation 321.39Ground Surface Elevation 319.73

Concrete Apron

Sch. 40 PVC Riser - 2" Diameter

Cement Bentonite Grout

Sch. 40, .010 Slot PVC Screen - 2" Diameter

Threaded Cap

Borehole diameter

Bedrock

4"

23'

14.03

16'

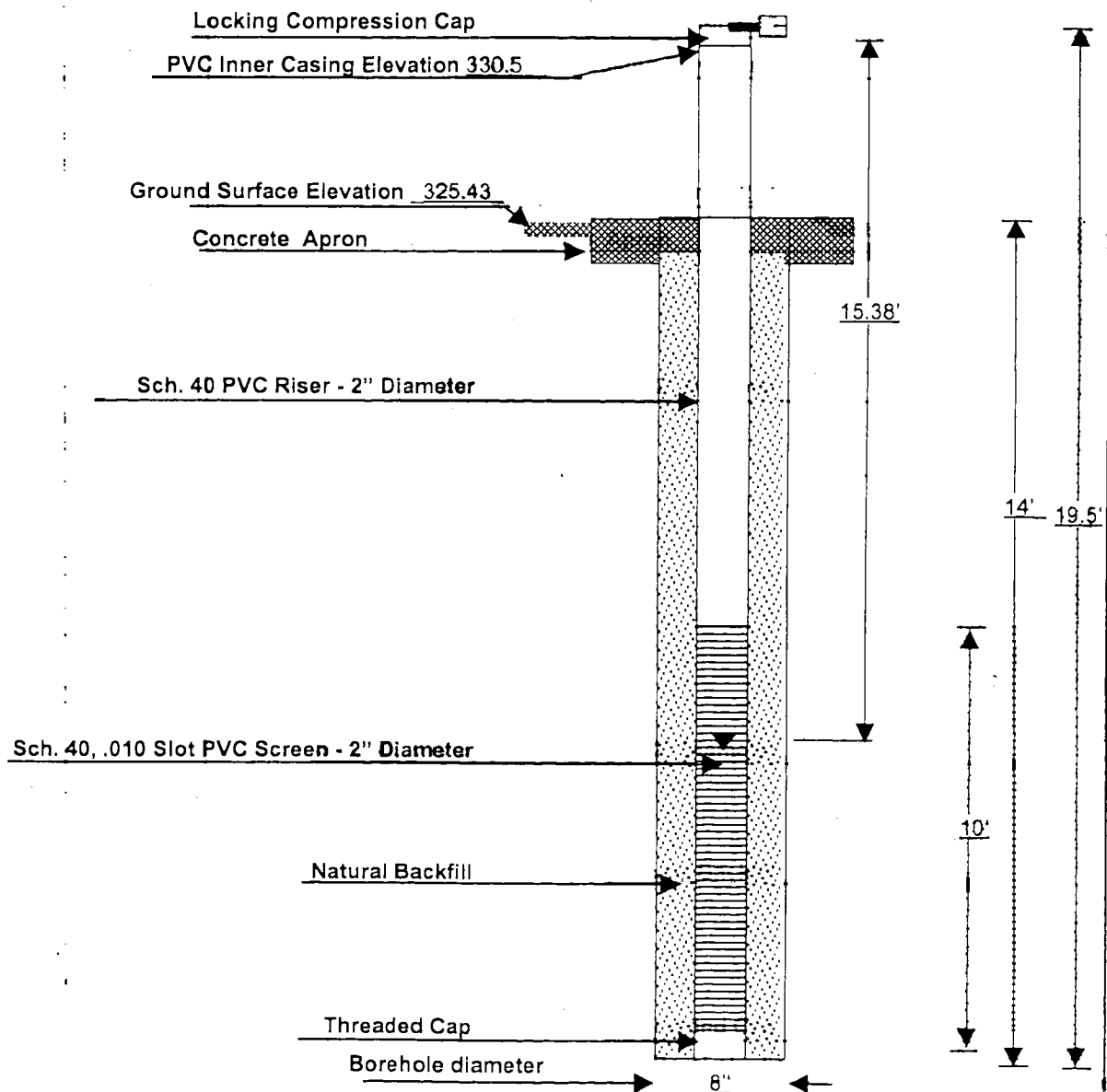
39'

15'

TRC**Overburden Piezometer
Construction Log**

Well No.

PZ-02

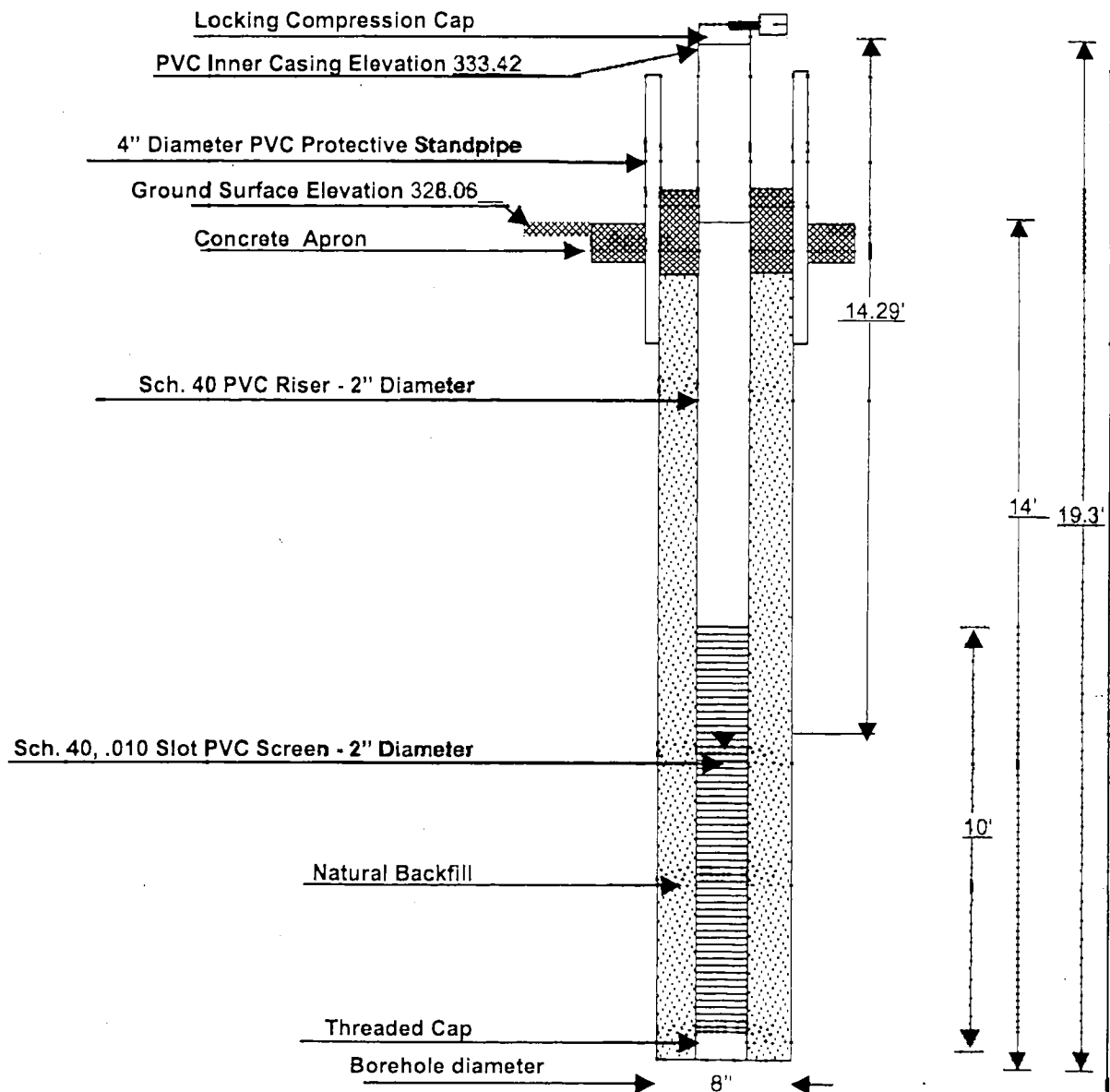
Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 330.5Client: Pam Cook Date Completed: 07/28/99Reference Description: Top of PVC riserLocation: South east corner of site, 240 ft south of southern roadDepth to Water: 15.38 ftDrilling Contractor: SJB Services Method: HSADevelopment Date: N/ATRC Geologist: Charles FosterDevelopment Method: N/A

TRC

**Overburden Piezometer
Construction Log with Protective Casing**

Well No.

PZ-03

Project: Akzo-Nobel Phase II RFI No.: 19045-006-00000Reference Elevation: 333.42Client: Pam Cook Date Completed: 07/29/99Reference Description: Top of PVC riserLocation: Southwest corner of site, 150 ft. west of building 2/2ADepth to Water: 14.29 ftDrilling Contractor: SJB Services Method: HSADevelopment Date: N/ATRC Geologist: Charles FosterDevelopment Method: N/A

APPENDIX D

SUMMARY OF GROUND WATER ELEVATIONS

Akzo Nobel

Ground and PVC Riser Elevation Spreadsheet

Sep-99

Site benchmark Reference of MH-10 from RFI at 324.03 ft. msl no longer available;
used NW H rim East of site at 322.30 per Akzo drawings

Monitoring Well	Measurement	Ground	PVC		Ground
	Reference	Elevation	Reference	Depth to Water	Water
	Location	At Well	Elevation	From PVC	Elevation
MW-1	PVC North	325.68	327.90	13.25	314.65
MW-1B	PVC North	326.16	327.79	12.61	315.18
MW-2	PVC North	322.00	321.39	5.16	316.23
MW-3	PVC North	319.61	322.10	11.03	311.07
MW-3B	PVC North	319.73	321.39	12.85	308.54
MW-4	PVC North	320.24	322.59	14.82	307.77
MW-5	PVC North	322.26	324.19	8.23	315.96
MW-6	PVC North	322.28	324.80	8.91	315.89
MW-7	PVC North	321.27	323.61	7.70	315.91
MW-8	PVC North	323.39	325.76	9.83	315.93
PZ-3	PVC North	328.06	333.42	15.38	318.04
PZ-2	PVC North	325.43	330.50	14.29	316.21
OS-1	PVC North	325.90	327.15	10.92	316.23

Akzo Nobel

Ground and PVC Riser Elevation Spreadsheet

Site benchmark Reference is MH-10 from RFI at 324.03 ft. msl

Dec-99

Monitoring Well	Measurement	Ground	PVC		Ground
	Reference	Elevation	Reference	Depth to Water	Water
	Location	At Well	Elevation	From PVC	Elevation
MW-1	PVC North	325.68	327.90	10.40	317.50
MW-1B	PVC North	326.16	327.79	10.01	317.78
MW-2	PVC North	322.00	321.39	3.73	317.66
MW-3	PVC North	319.61	322.10	4.42	317.68
MW-3B	PVC North	319.73	321.39	10.54	310.85
MW-4	PVC North	320.24	322.59	9.18	313.41
MW-5	PVC North	322.26	324.19	6.52	317.67
MW-6	PVC North	322.28	324.80	7.08	317.72
MW-7	PVC North	321.27	323.61	5.91	317.70
MW-8	PVC North	323.39	325.76	8.11	317.65
PZ-3	PVC North	328.06	333.42	12.76	320.66
PZ-2	PVC North	325.43	330.50	14.83	315.67
OS-1	PVC North	325.90	327.15	9.49	317.66

Akzo Nobel

Ground and PVC Riser Elevation Spreadsheet

Site benchmark Reference is MH-10 from RFI at 324.03 ft. msl

Mar-00

Monitoring Well	Measurement	Ground	PVC		Ground
	Reference	Elevation	Reference	Depth to Water	Water
	Location	At Well	Elevation	From PVC	Elevation
MW-1	PVC North	325.68	327.90	8.12	319.78
MW-1B	PVC North	326.16	327.79	7.52	320.27
MW-2	PVC North	322.00	321.39	1.81	319.58
MW-3	PVC North	319.61	322.10	2.75	319.35
MW-3B	PVC North	319.73	321.39	10.59	310.80
MW-4	PVC North	320.24	322.59	7.64	314.95
MW-5	PVC North	322.26	324.19	4.47	319.72
MW-6	PVC North	322.28	324.80	5.52	319.28
MW-7	PVC North	321.27	323.61	4.30	319.31
MW-8	PVC North	323.39	325.76	6.80	318.96
PZ-3	PVC North	328.06	333.42	11.64	321.78
PZ-2	PVC North	325.43	330.50	10.73	319.77
OS-1	PVC North	325.90	327.15	7.32	319.83

Akzo Nobel

Ground and PVC Riser Elevation Spreadsheet

Site benchmark Reference is MH-10 from RFI at 324.03 ft. msl

Jul-00

Monitoring Well	Measurement	Ground	PVC		Ground
	Reference	Elevation	Reference	Depth to Water	Water
	Location	At Well	Elevation	From PVC	Elevation
MW-1	PVC North	325.68	327.90	9.29	318.61
MW-1B	PVC North	326.16	327.79	8.34	319.45
MW-2	PVC North	322.00	321.39	2.24	319.15
MW-3	PVC North	319.61	322.10	4.99	317.11
MW-3B	PVC North	319.73	321.39	11.15	310.24
MW-4	PVC North	320.24	322.59	8.99	313.60
MW-5	PVC North	322.26	324.19	5.22	318.97
MW-6	PVC North	322.28	324.80	6.13	318.67
MW-7	PVC North	321.27	323.61	4.83	318.78
MW-8	PVC North	323.39	325.76	7.14	318.62
PZ-3	PVC North	328.06	333.42	12.52	320.90
PZ-2	PVC North	325.43	330.50	11.34	319.16
OS-1	PVC North	325.90	327.15	7.91	319.24

APPENDIX E

**SLUG TEST FORMS AND AQTESOLV HYDRAULIC
CONDUCTIVITY CURVES**

TRC Slug Test Data Sheet	Project: Akzo Nobel Project No.: 19045-007 Phase II RFI	Date/Time: 7/29/99	Sheet <u>1</u> of <u>1</u>
	Contractor Personnel:		TRC Personnel: C. Foster

Well No.: MW-1	Weather: Hot/Humid 85° F
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WELL DATA: (attach well construction form and well log if available) Well Diameter: <u>2"</u> Filter Pack Diameter: <u>8"</u> (same as auger/drive casing diameter) Depth to Water: <u>12.05</u> From Top of: <u>X</u> Riser _____ Ground. Depth to Top of Screen: <u>6'</u> Depth to Bottom of Screen: <u>16'</u> Screen Slot Size: <u>10 slot</u>	AQUIFER INFORMATION: Aquifer Material: <u>Fine Sand and Silt</u> Confined: _____ Unconfined: <u>X</u> Perched _____ Aquifer Thickness (est.) _____ Overburden is 25' thick with ground water at 9-10' bgs.
--	--

SLUG TEST METHOD Withdrawal: <u>X</u> Volume: <u>~2.0 gallons</u> Addition: _____ Volume: _____ Slug Bar: _____ Dimensions: L _____ W _____ Bailer: _____ Dimensions: L _____ W _____ Calculate Volume of Slug Bar/Bailer: <u>Used a whale pump to remove ground water,</u> <u>slow recharge above XD.</u>	TEST DATA Time Started: <u>~11:25</u> Time Completed: <u>11:55</u> Elapsed Time: <u>30 minutes</u> Water Level at Test Completion: <u>12.05</u>
---	--

TEST MEASUREMENT INFORMATION Recording Method: <u>Data Logger</u> Transducer Size (ex. 10 psi): <u>10 psi</u> Transducer Depth: <u>15'</u> Data Logger Model: <u>Hermit 3000</u> Data Logger Test Number: <u>New MW-1 Test #2</u> Recording Type: Linear _____ Log <u>X</u> Maximum Time Step: <u>Millisec Log</u> Obtain Field Print of Data? Y _____ N <u>X</u> (Note: allow time for water level to equilibrate once transducer has been introduced)	Comments: 1). Whale pump was used to remove ground water above XD. Due to development data and location of screened interval (across gw table), needed to measure rising head test data. This was more efficient than using a bailer. 2). Started with 5.18' of ground water above XD.
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TRC**Slug Test Data Sheet**Project: Akzo Nobel Project No.:
Phase II RFI 19045-007Date/Time:
7/30/99, 1445Sheet 1 of 1

Contractor Personnel:

TRC Personnel:
C. Foster

Well No.: MW-1B Weather: Hot/Humid 93° F

WELL DATA:
(attach well construction form and well log if available)Well Diameter: 2", 3 7/8 boreholeFilter Pack Diameter: NA
(same as auger/drive casing diameter)Depth to Water: 37.08From Top of: X Riser Ground.Depth to Top of Screen: 31'Depth to Bottom of Screen: 46'Screen Slot Size: 10 slot

AQUIFER INFORMATION:

Aquifer Material: BedrockConfined: Unconfined: X Perched Aquifer Thickness (est.) Unknown**SLUG TEST METHOD**Withdrawal: X Volume: Addition: Volume: Slug Bar: Dimensions: L W Bailer: Dimensions: L W

Calculate Volume of Slug Bar/Bailer:

 TEST DATATime Started: 14:45Time Completed: 15:53Elapsed Time: 1 hr 8 minutesWater Level at Test Completion: 41.88'**Comments:**1). Ground water was removed using a
bailer. Slow recharging bedrock well.**TEST MEASUREMENT INFORMATION**Recording Method: Data LoggerTransducer Size (ex. 10 psi): 10 psiTransducer Depth: 45'Data Logger Model: Hermit 3000Data Logger Test Number: Test #9Recording Type: Linear Log XMaximum Time Step: 30 minute testObtain Field Print of Data? Y N X(Note: allow time for water level to equilibrate
once transducer has been introduced)

		Project: Akzo Nobel	Project No.: 19045-007	Date/Time: 7/30/99	Sheet <u>1</u> of <u>1</u>
		Phase II RFI			
Slug Test Data Sheet		Contractor Personnel:		TRC Personnel: C. Foster	
Well No.: MW-3	Weather: Hot/Humid 86° F				
WELL DATA: (attach well construction form and well log if available)			AQUIFER INFORMATION:		
Well Diameter: <u>2"</u>			Aquifer Material: <u>Sand & Gravel</u>		
Filter Pack Diameter: <u>8"</u> (same as auger/drill casing diameter)					
Depth to Water: <u>8.45</u>			Confined: <u> </u> Unconfined: <u>X</u> Perched <u> </u>		
From Top of: <u>X</u> Riser <u> </u> Ground.			Aquifer Thickness (est.) <u>21' to Bedrock</u>		
Depth to Top of Screen: <u>7.2'</u>					
Depth to Bottom of Screen: <u>17.2'</u>					
Screen Slot Size: <u>10 slot</u>					
SLUG TEST METHOD			TEST DATA		
Withdrawal: <u>X</u> Volume: <u>5 liters</u>			Time Started: <u>~08:50</u>		
Addition: <u> </u> Volume: <u> </u>			Time Completed: <u>09:20</u>		
Slug Bar: <u> </u> Dimensions: L <u> </u> W <u> </u>			Elapsed Time: <u>30 minutes</u>		
Bailer: <u>X</u> Dimensions: L <u>3'</u> W <u>.15'</u>			Water Level at Test Completion: <u>8.45</u>		
Calculate Volume of Slug Bar/Bailer: <u> </u> <u> </u>			Comments: 1). Due to fast recharge, slug was installed, allowed to equilibrate than withdrawn at the start of the test. Slug displacement = .5ft. Bailed out slug. 2). Depressed water table from 8.45' to 8.95. Log data anticipated to be adequate to calculate recharge rate.		
TEST MEASUREMENT INFORMATION					
Recording Method: <u>Data Logger</u>					
Transducer Size (ex. 10 psi): <u>10 psi</u>					
Transducer Depth: <u>16.5'</u>					
Data Logger Model: <u>Hermit 3000</u>					
Data Logger Test Number: <u>Test #4</u>					
Recording Type: Linear <u> </u> Log <u>X</u>					
Maximum Time Step: <u>2 minutes</u>					
Obtain Field Print of Data? Y <u> </u> N <u>X</u>					
(Note: allow time for water level to equilibrate once transducer has been introduced)					

TRC Slug Test Data Sheet	Project: Akzo Nobel Project No.: <u>Phase II RFI 19045-007</u>	Date/Time: <u>7/30/99</u>	Sheet <u>1</u> of <u>1</u>
	Contractor Personnel:		TRC Personnel: <u>C. Foster</u>
	Well No.: <u>MW-3B</u> Weather: <u>Clear Hot/Humid 86° F</u>		

WELL DATA: (attach well construction form and well log if available) Well Diameter: <u>2" screen in 3 7/8 borehole</u> Filter Pack Diameter: <u>NA</u> (same as auger/drive casing diameter) Depth to Water: <u>32.50</u> From Top of: <u>X</u> Riser <u> </u> Ground. Depth to Top of Screen: <u>21'</u> Depth to Bottom of Screen: <u>36'</u> Screen Slot Size: <u>10 slot</u>	AQUIFER INFORMATION: Aquifer Material: <u>Bedrock</u> Confined: <u>X</u> Unconfined: <u> </u> Perched <u> </u> Aquifer Thickness (est.) <u> </u>
SLUG TEST METHOD Withdrawal: <u>X</u> Volume: <u>30 gallons</u> Addition: <u> </u> Volume: <u> </u> Slug Bar: <u> </u> Dimensions: L <u> </u> W <u> </u> Bailer: <u> </u> Dimensions: L <u> </u> W <u> </u> Calculate Volume of Slug Bar/Bailer: <u>NA</u>	TEST DATA Time Started: <u>09:30</u> Time Completed: <u>10:52</u> Elapsed Time: <u>1 hr 22 minutes</u> Water Level at Test Completion: <u>17.9</u>
TEST MEASUREMENT INFORMATION Recording Method: <u>Data Logger</u> Transducer Size (ex. 10 psi): <u>10 psi</u> Transducer Depth: <u>28'</u> Data Logger Model: <u>Hermit 3000</u> Data Logger Test Number: <u>Test #5</u> Recording Type: Linear <u> </u> Log <u>X</u> Maximum Time Step: <u>2 minutes/30 minutes total</u> Obtain Field Print of Data? Y <u> </u> N <u>X</u> (Note: allow time for water level to equilibrate once transducer has been introduced)	Comments: 1). Pumped out bedrock well and installed transducer to record increasing water levels.

TRC Slug Test Data Sheet	Project: Akzo Nobel Project No.: 19045-007 Phase II RFI	Date/Time: 7/29/99	Sheet <u>1</u> of <u>1</u>
	Contractor Personnel:		TRC Personnel: C. Foster

Well No.: MW-4	Weather: Hot/Humid 85° F
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WELL DATA: (attach well construction form and well log if available) Well Diameter: <u>2"</u> Filter Pack Diameter: <u>8"</u> (same as auger/drive casing diameter) Depth to Water: <u>11.01</u> From Top of: <u>X</u> Riser <u> </u> Ground. Depth to Top of Screen: <u>6.5'</u> Depth to Bottom of Screen: <u>16.5'</u> Screen Slot Size: <u>10 slot</u>	AQUIFER INFORMATION: Aquifer Material: <u>Till - Fine Silt, gravel and clay</u> Confined: <u> </u> Unconfined: <u>X</u> Perched <u> </u> Aquifer Thickness (est.): <u>6'</u>
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SLUG TEST METHOD Withdrawal: <u>X</u> Volume: <u>5 liters</u> Addition: <u> </u> Volume: <u> </u> Slug Bar: <u> </u> Dimensions: L <u> </u> W <u> </u> Bailer: <u> </u> Dimensions: L <u> </u> W <u> </u> Calculate Volume of Slug Bar/Bailer: <u>NA</u>	TEST DATA Time Started: <u>~14:18 (see log output)</u> Time Completed: <u>~15:03</u> Elapsed Time: <u>45 minutes</u> Water Level at Test Completion: <u> </u>
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TEST MEASUREMENT INFORMATION Recording Method: <u>Data Logger</u> Transducer Size (ex. 10 psi): <u>10 psi</u> Transducer Depth: <u>15.5'</u> Data Logger Model: <u>Hermit 3000</u> Data Logger Test Number: <u>Test #3</u> Recording Type: Linear <u> </u> Log <u>X</u> Maximum Time Step: <u>Field Log 2 minutes</u> Obtain Field Print of Data? Y <u> </u> N <u>X</u> (Note: allow time for water level to equilibrate once transducer has been introduced)	Comments: 1). Removed five liters (5 bailers) of ground water based on slow recharge during development. Monitored increasing gw levels due to screen set across water table.
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Slug Test Data Sheet

Project: Akzo Nobel Project No.:
Phase II RFI 19045-007

Date/Time:
7/30/99, 1300

Sheet ___ of 1

Contractor Personnel:

TRC Personnel:
C. Foster

Well No.: MW-5

Weather: Hot/Humid 85° F

WELL DATA:
(attach well construction form and well log if available)

Well Diameter: 2"

Filter Pack Diameter: 8"
(same as auger/drive casing diameter)

Depth to Water: 7.51

From Top of: X Riser Ground.

Depth to Top of Screen: 5.5'

Depth to Bottom of Screen: 15.5'

Screen Slot Size: 10 slot

AQUIFER INFORMATION:

Aquifer Material: Sand and Gravel

Confined: Unconfined: X Perched

Aquifer Thickness (est.) 20'

SLUG TEST METHOD

Withdrawal: X Volume:

Addition: Volume:

Slug Bar: Dimensions: L W

Bailer: Dimensions: L W

Calculate Volume of Slug Bar/Bailer:

TEST MEASUREMENT INFORMATION

Recording Method: Data Logger

Transducer Size (ex. 10 psi): 10 psi

Transducer Depth: 14.5'

Data Logger Model: Hermit 3000

Data Logger Test Number: Test #7 and Test #8

Recording Type: Linear Log X

Maximum Time Step: 2 minutes

Obtain Field Print of Data? Y N X

(Note: allow time for water level to equilibrate
once transducer has been introduced)

TEST DATA

Time Started: 13:00 Test#7 13:20 Test#8

Time Completed: 13:10 Test#7 13:35 Test#8

Elapsed Time: 10 minutes 15 minutes

Water Level at Test Completion: 7.51' Test #8

Comments:

Test #7

1). Removed ground water with a whale pump. Recharge during development was adequate, this will allow for better displacement.

Test #8

1). Test 7 achieved little displacement, added bailer/slug, allowed water level to equilibrate, withdrew slug and monitored for recovery back to static water level.



Slug Test Data Sheet

Project: Akzo Nobel Project No.:
Phase II RFI 19045-007

Date/Time:
7/30/99, 1200

Sheet 1 of 1

Contractor Personnel:

TRC Personnel:
C. Foster

Well No.: MW-8

Weather: Clear Hot/Humid 86° F

WELL DATA:
(attach well construction form and well log if available)

Well Diameter: 2"

Filter Pack Diameter: 8"
(same as auger/drill casing diameter)

Depth to Water: 9.16

From Top of: X Riser Ground.

Depth to Top of Screen: 8.5'

Depth to Bottom of Screen: 18.5'

Screen Slot Size: 10 slot

AQUIFER INFORMATION:

Aquifer Material: Sand and Gravel

Confined: Unconfined: X Perched

Aquifer Thickness (est.) ~15'

SLUG TEST METHOD

Withdrawal: X Volume: 3 liters

Addition: Volume:

Slug Bar: Dimensions: L W

Bailer: Dimensions: L W

Calculate Volume of Slug Bar/Bailer:
NA

TEST DATA

Time Started: 12:00

Time Completed: 12:40

Elapsed Time: 40 minutes

Water Level at Test Completion: 9.2"

Comments:

1). Based on development data, removed 3 liters with a bailer, then recorded the recovery.

TEST MEASUREMENT INFORMATION

Recording Method: Data Logger

Transducer Size (ex. 10 psi): 10 psi

Transducer Depth: 17.5'

Data Logger Model: Hermit 3000

Data Logger Test Number: Test #6

Recording Type: Linear Log X

Maximum Time Step: Total 40 minutes

Obtain Field Print of Data? Y N X

(Note: allow time for water level to equilibrate
once transducer has been introduced)

TRC Slug Test Data Sheet		Project: Akzo Nobel Project No.: _____		Date/Time: _____	Sheet <u>1</u> of <u>1</u>
		Phase II RFI 19045-007		09/11/00, 1020	
		Contractor Personnel: _____		TRC Personnel: C. Foster	

Well No.: MW-4	Weather: Clear 75° F
----------------	----------------------

WELL DATA: (attach well construction form and well log if available) Well Diameter: <u>2"</u> Filter Pack Diameter: <u>8"</u> (same as auger/drive casing diameter) Depth to Water: <u>9.41</u> From Top of: <u>X</u> Riser _____ Ground. Depth to Top of Screen: <u>6.37</u> Depth to Bottom of Screen: <u>16.37'</u> Screen Slot Size: <u>10 slot</u>	AQUIFER INFORMATION: Aquifer Material: <u>Till - Fine Silt, gravel and clay</u> <u>Top of bedrock</u> Confined: _____ Unconfined: <u>X</u> Perched _____ Aquifer Thickness (est.) <u>6.96'</u>
--	--

SLUG TEST METHOD Withdrawal: <u>X</u> Volume: <u>0.78 gals</u> Addition: _____ Volume: _____ Slug Bar: _____ Dimensions: L _____ W _____ Bailer: <u>X</u> Dimensions: L <u>3.1</u> W <u>0.104</u> Calculate Volume of Slug Bar/Bailer: <u>0.105 cubic feet / 0.78 gallons</u>	TEST DATA Time Started: <u>~10:20 (see log output)</u> Time Completed: <u>10:35</u> Elapsed Time: <u>15-20 minutes</u> Water Level at Test Completion: <u>8.8 ft. (90% rec)</u>
--	--

TEST MEASUREMENT INFORMATION Recording Method: <u>Data Logger</u> Transducer Size (ex. 10 psi): <u>10 psi</u> Transducer Depth: <u>15.3'</u> Data Logger Model: <u>Hermit 3000</u> Data Logger Test Number: <u>Test 5</u> Recording Type: Linear _____ Log <u>X</u> Maximum Time Step: <u>Field Log 1 minutes</u> Obtain Field Print of Data? Y _____ N <u>X</u> (Note: allow time for water level to equilibrate once transducer has been introduced)	Comments: 1). Reference set to zero, inserted bailer and allowed well to equilibrate. Removed bailer and initiated log cycle. Displacement = 1.4 feet. 2) Terminated test at 90 % recovery
--	--



Slug Test Data Sheet

Project: Akzo Nobel Project No.:
Phase II RFI 19045-007

Date/Time:
09/11/00, 0830

Sheet 1 of 1

Contractor Personnel:

TRC Personnel:
C. Foster

Well No.: MW-5

Weather: Clear 75 ° F

WELL DATA:
(attach well construction form and well log if available)

Well Diameter: 2"

Filter Pack Diameter: 8"
(same as auger/drive casing diameter)

Depth to Water: 5.15

From Top of: X Riser _____ Ground.

Depth to Top of Screen: 4.98

Depth to Bottom of Screen: 14.98'

Screen Slot Size: 10 slot

AQUIFER INFORMATION:

Aquifer Material: Sand and Gravel

Confined: _____ Unconfined: X Perched _____

Aquifer Thickness (est.) Minimum 9.83'

SLUG TEST METHOD

Withdrawal: X Volume: 0.78 gal

Addition: X Volume: 4.0 gals

Slug Bar: _____ Dimensions: L _____ W _____

Bailer: X Dimensions: L 3.1 W 0.104

Calculate Volume of Slug Bar/Bailer:

0.104 cubic feet / 0.78 gallons

TEST DATA

Time Started: 0900

Time Completed: 1005

Elapsed Time: 4 tests, 7 mins each

Water Level at Test Completion: Static (5.15')

TEST MEASUREMENT INFORMATION

Recording Method: Data Logger

Transducer Size (ex. 10 psi): 10 psi

Transducer Depth: 14.1'

Data Logger Model: Hermit 3000

Data Logger Test Number: Tests 1-4

Recording Type: Linear _____ Log X

Maximum Time Step: 1 minutes

Obtain Field Print of Data? Y _____ N X

(Note: allow time for water level to equilibrate
once transducer has been introduced)

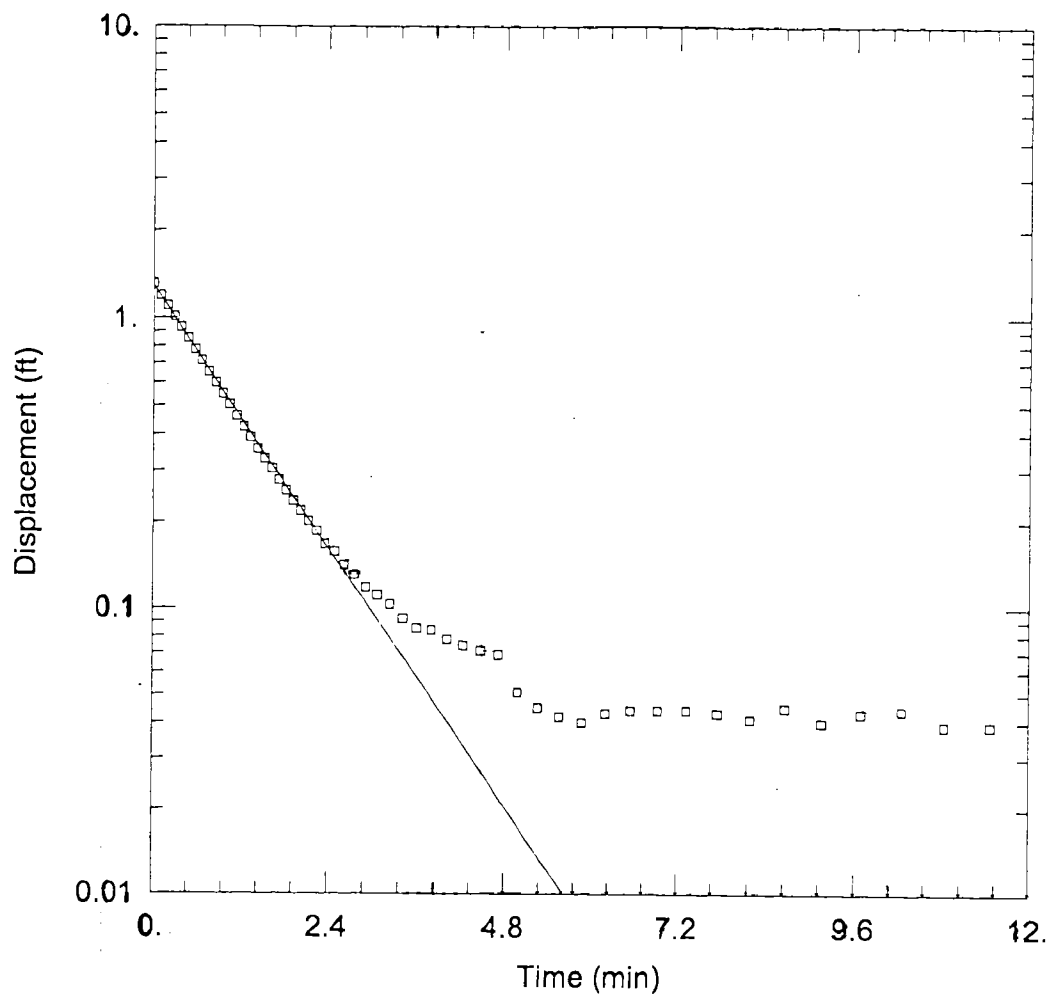
Comments:

1) First test Ref to TOC , withdrew single bailer and had poor displacement, test deleted.

2) Second test, removed two bailers simultaneously, rapid recovery.

3) Test 3 -Pulled two bailers simultaneously and again experienced rapid recovery

4) Tried a falling head test using liquid slug of "Vermont Pure Natural Spring Water". Since a 9.8 ft. of water in a 10 ft. screen, gained best displacement of all tests and data that appeared useable.



MW-01

Data Set: O:\MISCPROJ\Akzo PH 2 RFI\Slugtest\data\mw-1.aqt

Date: 04/18/00

Time: 09:56:40

PROJECT INFORMATION

Company: TRC Environmental

Client: AKZO-Nobel

Project: 19045-006

Test Location: Burt, N.Y.

Test Well: MW-01

Test Date: 07/29/99

AQUIFER DATA

Saturated Thickness: 13. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-01)

Initial Displacement: 1.312 ft

Water Column Height: 3.95 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.33 ft

Screen Length: 10. ft

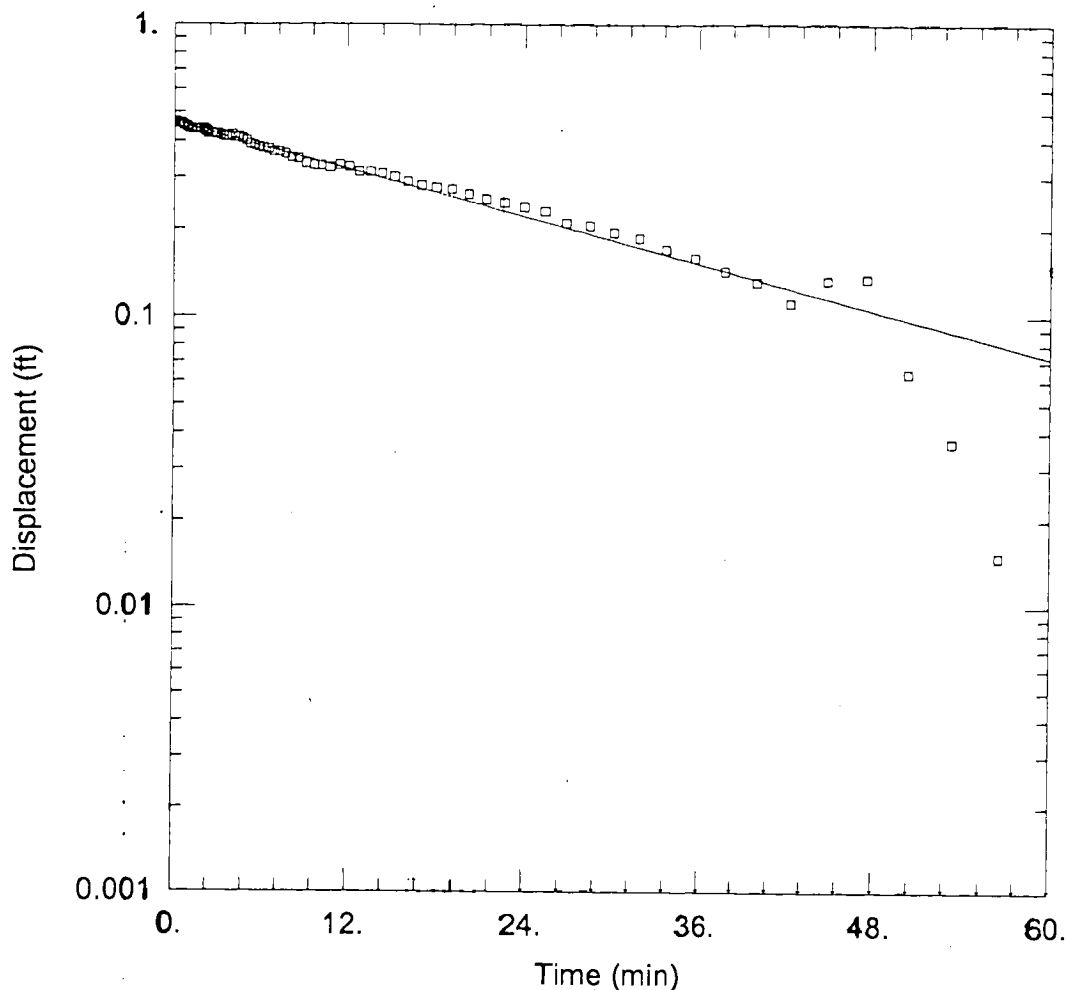
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.0005238$ ft/min

$y_0 = 1.289$ ft



MW-01-BEDROCK

Data Set: O:\MISC\PROJ\Akzo PH 2 RFI\Slugtest\data\mw-1bed.aqt

Date: 04/18/00

Time: 09:57:32

PROJECT INFORMATION

Company: TRC Environmental

Client: AKZO-Nobel

Project: 19045-006

Test Location: Burt, N.Y

Test Well: MW-1 Bedrock

Test Date: 7/30/99

AQUIFER DATA

Saturated Thickness: 30. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-1-BED)

Initial Displacement: 0.465 ft

Water Column Height: 8.92 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.166 ft

Screen Length: 15. ft

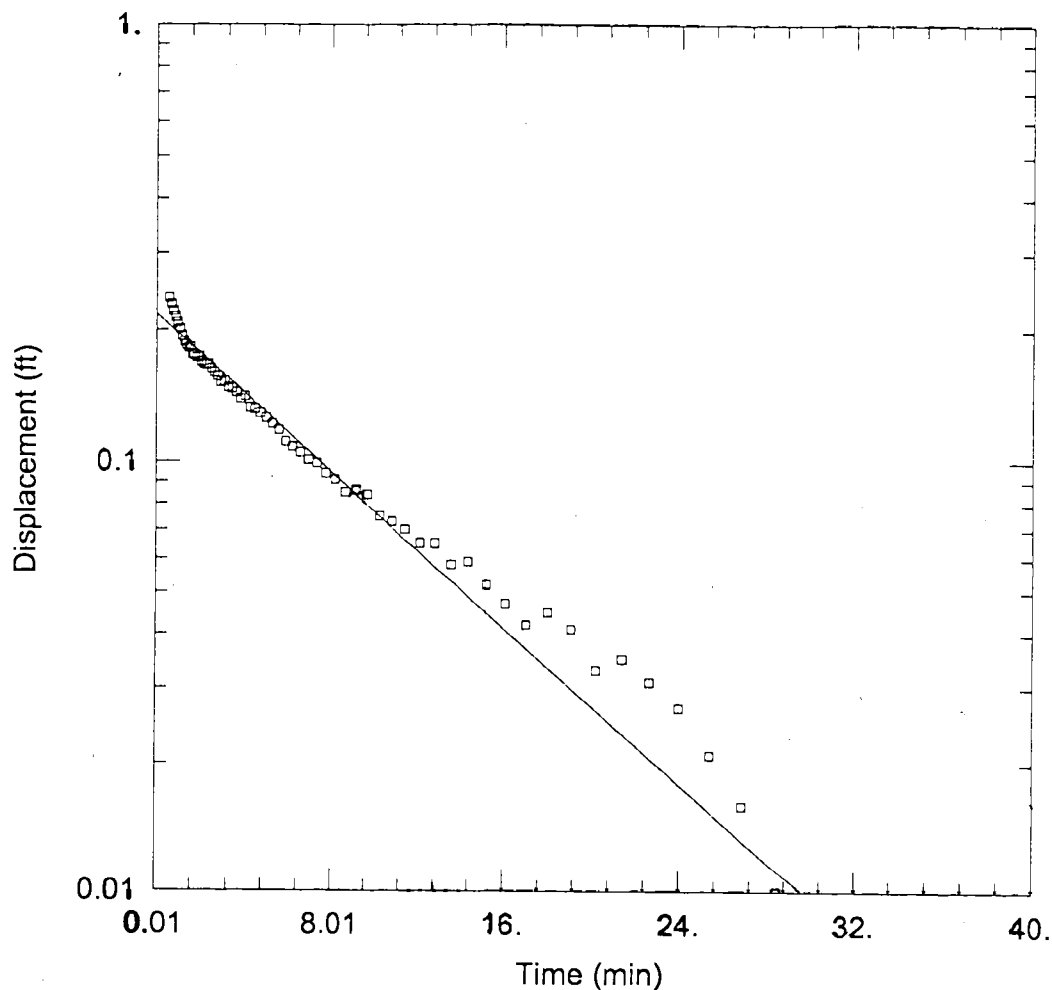
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 1.985E-05$ ft/min

$y_0 = 0.4638$ ft



MW-03

Data Set: O:\MISCPROJ\Akzo PH 2 RFI\Slugtestdata\mw-03.aqt
 Date: 04/18/00 Time: 11:44:45

PROJECT INFORMATION

Company: TRC Environmental
 Client: AKZO-Nobel
 Project: 19045-006
 Test Location: Burt, N.Y.
 Test Well: MW-03
 Test Date: 07/30/99

AQUIFER DATA

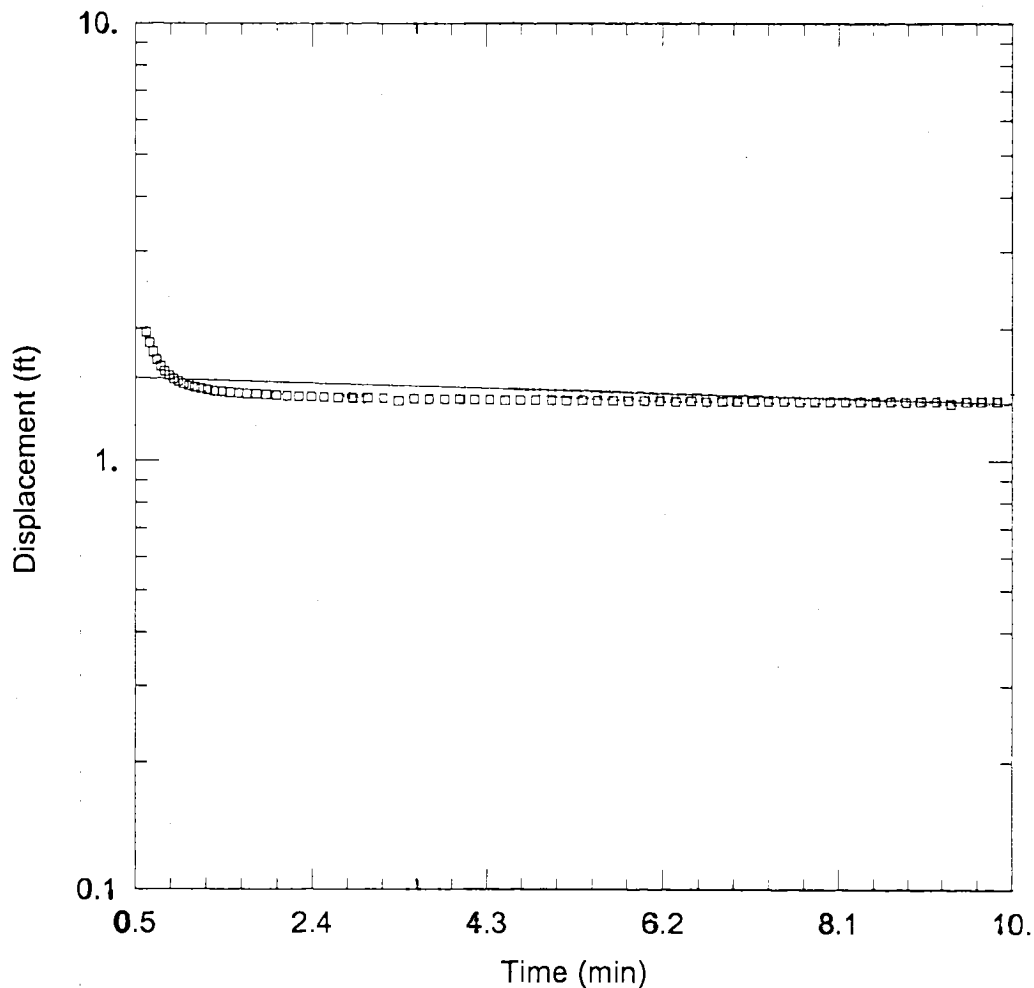
Saturated Thickness: 8.75 ft Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-03)

Initial Displacement: 0.759 ft Water Column Height: 8.75 ft
 Casing Radius: 0.083 ft Wellbore Radius: 0.33 ft
 Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
 $K = 8.943E-05$ ft/min $y_0 = 0.2176$ ft



WELL TEST ANALYSIS

Data Set: O:\MISCPROJ\Akzo PH 2 RFI\Slugtestdata\mw-04.aqt
 Date: 11/10/00 Time: 15:20:04

PROJECT INFORMATION

Company: TRC Environmental
 Client: AKZO-Nobel
 Project: 19045-006
 Test Location: Burt, N.Y.
 Test Well: MW-04
 Test Date: 09/11/2000

AQUIFER DATA

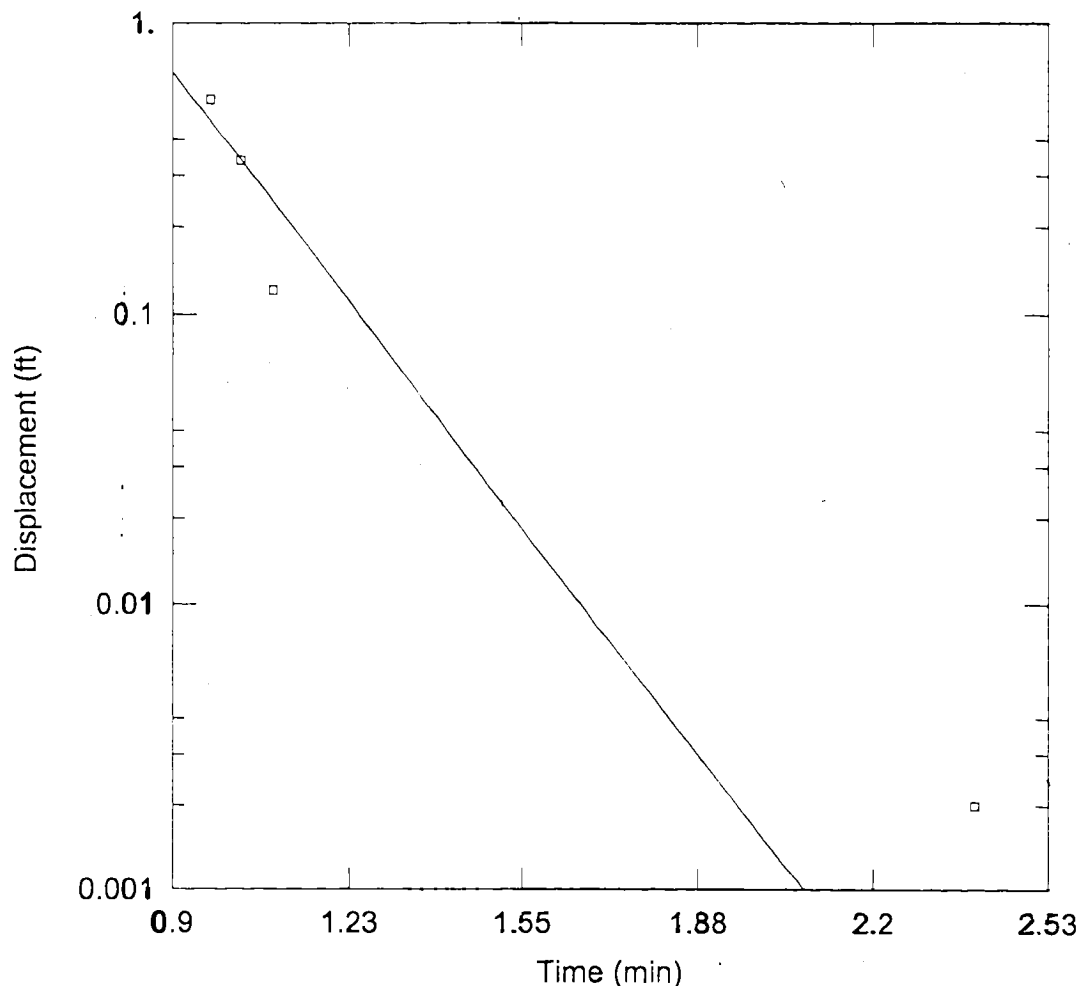
Saturated Thickness: 6.96 ft Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-04)

Initial Displacement: 1.4 ft Water Column Height: 6.96 ft
 Casing Radius: 0.083 ft Wellbore Radius: 0.33 ft
 Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
 $K = 1.124E-05$ ft/min $y_0 = 1.556$ ft



WELL TEST ANALYSIS

Data Set: A:\akzoslug2\MW-05.aqt

Date: 11/10/00

Time: 15:53:33

PROJECT INFORMATION

Company: TRC Environmental

Client: AKZO-Nobel

Project: 19045-006

Test Location: Burt, N.Y.

Test Well: MW-05

Test Date: 09/11/2000

AQUIFER DATA

Saturated Thickness: 9.83 ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-01)

Initial Displacement: 0.547 ft

Water Column Height: 9.83 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.33 ft

Screen Length: 10. ft

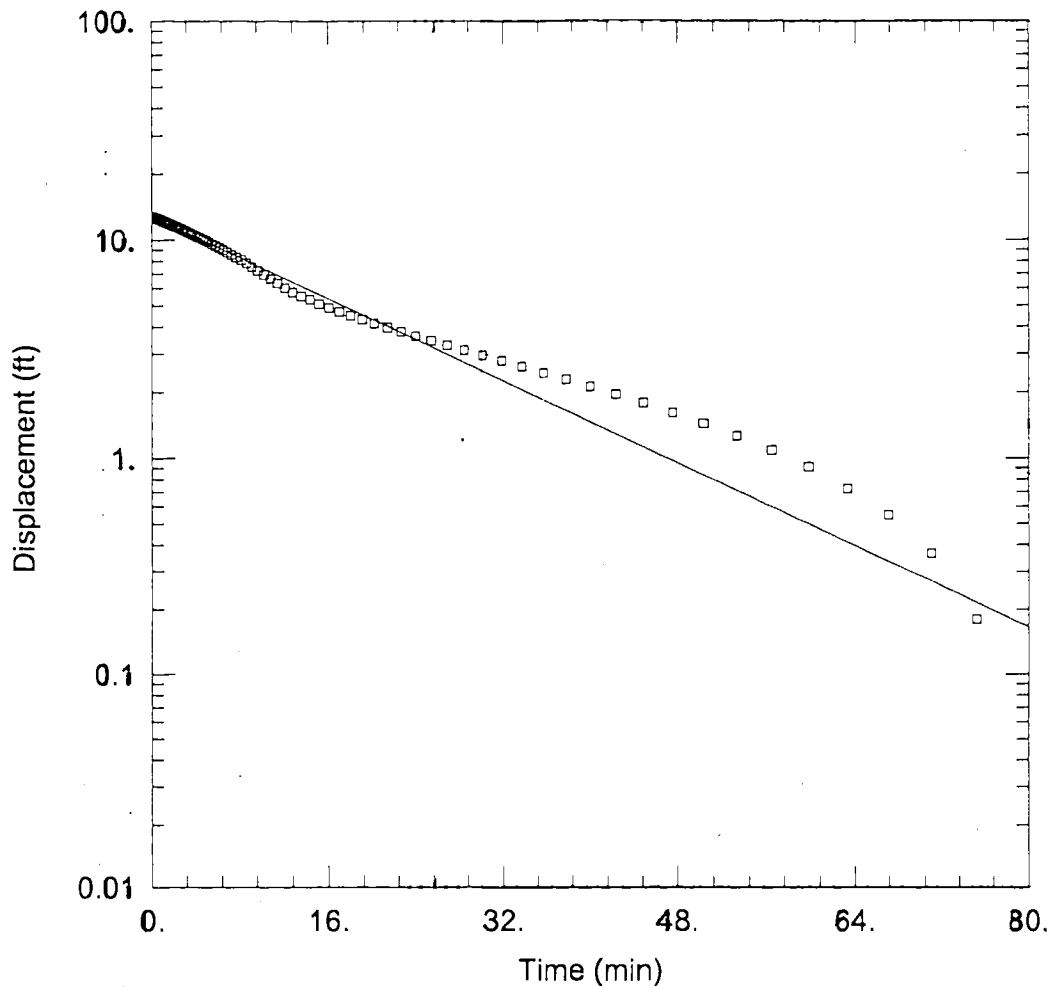
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.004905$ ft/min

$y_0 = 100.$ ft



MW-03-BEDROCK

Data Set: O:\MISCPROJ\Akzo PH 2 RFI\Slugtestdata\MW-03-BED.aqt
 Date: 04/18/00 Time: 10:07:00

PROJECT INFORMATION

Company: TRC Environmental
 Client: AKZO-Nobel
 Project: 19045-006
 Test Location: Burt, N.Y.
 Test Well: MW-03-Bedrock
 Test Date: 07/30/99

AQUIFER DATA

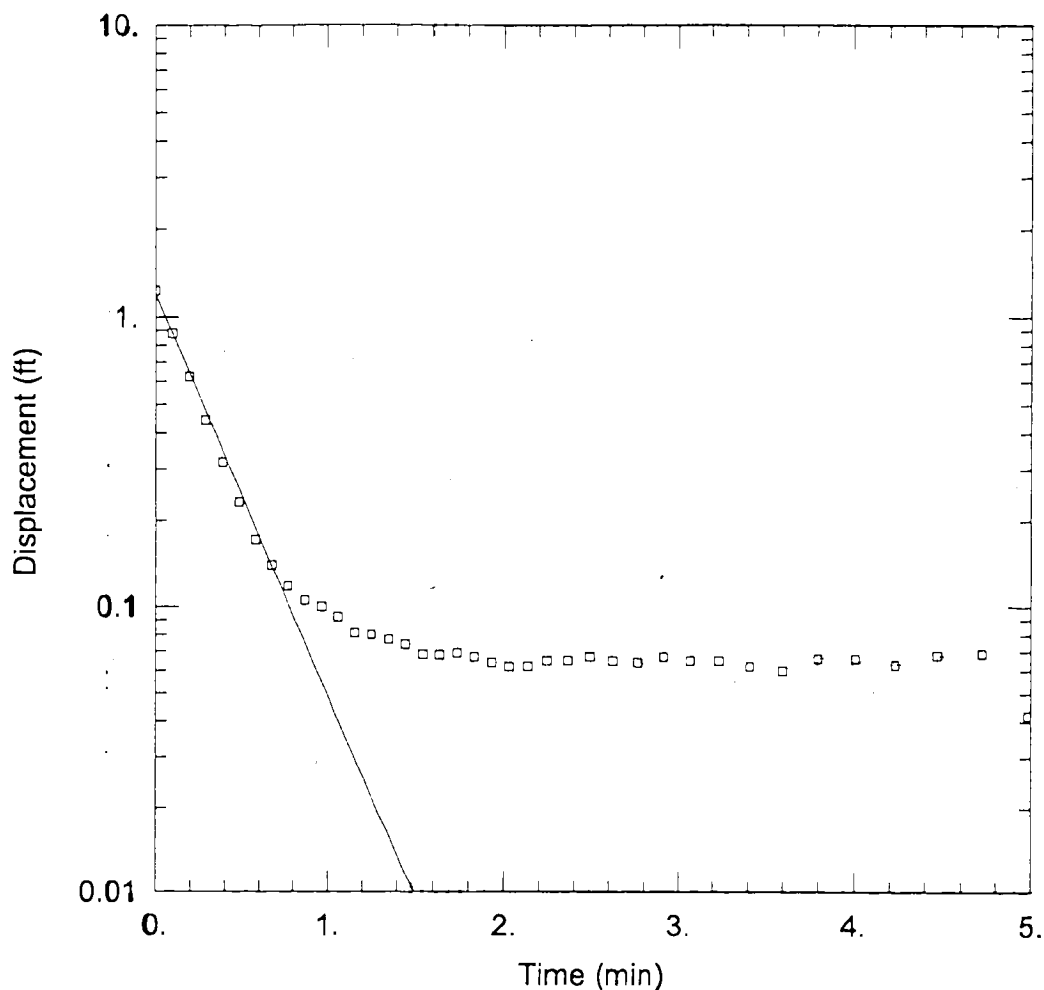
Saturated Thickness: 30. ft Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-03-BED)

Initial Displacement: 12.79 ft Water Column Height: 22. ft
 Casing Radius: 0.083 ft Wellbore Radius: 0.166 ft
 Screen Length: 15. ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
 $K = 4.155E-05$ ft/min $y_0 = 12.86$ ft



MW-07

Data Set: O:\MISCPROJ\Akzo PH 2 RFI\Slugtestdata\mw-07.aqt

Date: 04/18/00

Time: 10:12:19

PROJECT INFORMATION

Company: TRC Environmental

Client: AKZO-Nobel

Project: 19045-006

Test Location: Burt, N.Y.

Test Well: MW-07

Test Date: 07/30/99

AQUIFER DATA

Saturated Thickness: 13. ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-07)

Initial Displacement: 1.233 ft

Water Column Height: 7.45 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.33 ft

Screen Length: 10. ft

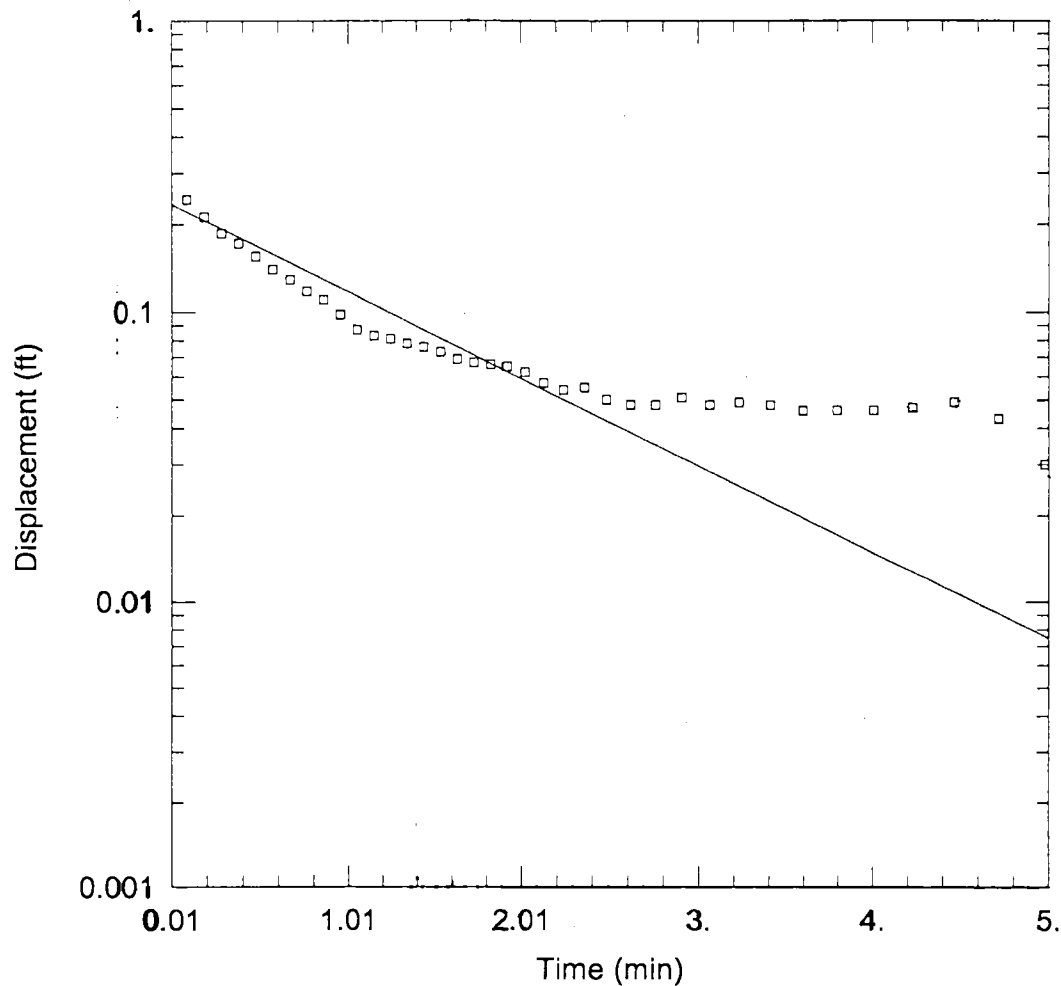
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.002337$ ft/min

$y_0 = 1.2$ ft



MW-08

Data Set: O:\MISCPROJ\Akzo PH 2 RFI\Slugtestdata\mw-08.aqt

Date: 04/18/00

Time: 12:58:28

PROJECT INFORMATION

Company: TRC Environmental

Client: AKZO-Nobel

Project: 19045-006

Test Location: Burt, N.Y.

Test Well: MW-08

Test Date: 07/30/99

AQUIFER DATA

Saturated Thickness: 9.34 ft

Anisotropy Ratio (K_z/K_r): 1.

WELL DATA (MW-08)

Initial Displacement: 0.305 ft

Water Column Height: 9.34 ft

Casing Radius: 0.083 ft

Wellbore Radius: 0.33 ft

Screen Length: 10. ft

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

$K = 0.0006027$ ft/min

$y_0 = 0.2357$ ft

APPENDIX F
DATA VALIDATION REPORTS

Data Validation Narrative

Site: Akzo Nobel
Laboratory: Severn Trent Laboratories, Inc. – CT (STL)
Case No.: 7099-1813A
Reviewer: Kerri Cattabriga, TRC

Samples Reviewed and Evaluation Summary

VOC: 3/Soil/E-19-2; E-19-8; E-19-8E
(Field Duplicates E-19-8/E-19-8E)
1/Soil Sodium Bisulfate Field Blank/TB-NA Bisulfate
1/Aqueous Field Blank/FB-01

TOC: 9/Soil/MW-1-10; MW-2-8; MW-3-10; MW-4-10; MW-5-10; MW-6-10;
MW-7-8; MW-8-12; MW-18-12
(Field Duplicates MW-8-12/MW-18-12)

DRO: 5/Soil/OS-1-10; RB-2-10; RB-3-10; RB-1-10; RB-5-10
(No Field Duplicates)

The data validation was performed in accordance with the EPA Region II data validation functional guidelines for evaluating environmental analyses. The data were evaluated based on the following parameters:

- Data Completeness*
- Technical Holding Times
- Initial and Continuing Calibration
- Blanks
- Surrogate Compounds
- Internal Standards*
- Matrix Spike (MS)/Matrix Spike Duplicates (MSD)*
- Field Duplicates*
- Sample Quantitation and Reported Quantitation Limits*

* = No qualifications were applied based on this parameter.

Overall Evaluation of Data and Potential Usability Issues

VOC:

Measurement error associated with sample analysis includes low surrogate recovery, calibration variability, and bank contamination. Several results were estimated. There were no major impacts to data usability.

No qualifications were applied based on measurement associated with sample collection.

TOC:

Measurement error associated with sample analysis includes expired holding times. Two results were estimated. There were no major impacts to data usability.

No qualifications were applied based on measurement error associated with sample collection.

DRO:

No qualifications were applied based on measurement error associated with sample analyses or with sample collection.

Data Completeness

The data package was complete. No qualifications were applied.

Technical Holding Times

Technical holding time criteria were met for all VOC and DRO analyses. No qualifications were applied VOC and DRO analyses based on this parameter.

The holding time for the TOC soil analysis is 28 days. Two TOC samples (MW-8-12 and MW-18-12) were analyzed three days past the holding time. The TOC results for the two TOC soil samples were estimated (J). The analytical results are usable for project objectives as estimated values.

Initial and Continuing Calibration

Calibration criteria were met for the TOC and DRO analyses. Compounds that did not meet criteria in the VOC initial and continuing calibrations (IC and CC) are summarized in the following table:

Compound	IC 7/23/99	CC 7/29/99	CC 7/29/99
1,1,2,2-Tetrachloroethane		X	
Acetone	X	X	
4-Methyl-2-pentanone		X	
Bromoform		X	
2-Hexanone		X	
Bromomethane			X
Chloroethane			X
Chloromethane		X	
Samples Affected:	E-19-2 E-19-8 E-19-8E TB-NA Bisulfate	E-19-2 E-19-8 E-19-8E TB-NA Bisulfate	FB-01

X = % RSD > 30; % D > 25; Estimate (J, UJ) all positive and non-detected results.

Blanks

One compound, methylene chloride, was detected in all sample analyses and all method blank sample analyses. Methylene chloride results were qualified as non-detected (U) at the Sample Quantitation Limit (SQL) in all samples. This compound is a common laboratory contaminant.

In addition, 2-butanone was detected in the aqueous method blank. The positive result for 2-butanone was qualified as non-detected (U) at the SQL in the aqueous sample FB-01.

All blank criteria were met for the TOC and DRO sample analyses.

Surrogate Compounds

Surrogate compound recovery criteria were met for all DRO analyses. Surrogate compound recovery criteria are not applicable to TOC analyses. No qualifications were applied to DRO and TOC sample analyses based on this parameter.

Two VOC surrogate compound results were recovered below the acceptable quality control (QC) limits in sample E-19-2. The sample was reanalyzed as matrix spike (MS) and matrix spike duplicate (MSD) analyses. The MS analysis surrogate recoveries were within QC limits and the MSD analysis surrogate recoveries were below the acceptable QC limits. All positive and non-detected results in VOC sample E-19-2 were estimated (J, UJ). Results for this sample may be biased low. The results for sample E-19-2 are usable for project objectives as estimated values.

Internal Standards

Internal standard recovery criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Matrix Spike/Matrix Spike Duplicate

All criteria were met for TOC and DRO MS/MSD analyses. The relative percent difference (RPD) criteria were above the QC limits for four compounds, 1,1-dichloroethene, benzene, toluene, and chlorobenzene. No qualifications were applied. There were no major impacts to data usability.

Field Duplicates

All field duplicate criteria were met for the sample analyses. No qualifications were applied.

Sample Quantitation and Reported Quantitation Limits

Sample quantitation and reported quantitation criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Data Summary Table
Diesal Range Organics Analyses
ug/Kg

Site: Akzo Nobel	LAB SAMPLE NUMBER	991813A-10	991813A-11	991813A-12	991813A-13	991813A-14
STL ID CASE: 7099-1813A	SAMPLE LOCATION	OS-1-10	RB-2-10	RB-3-10	RB-1-10	RB-5-10
SDG: A1813	DATE SAMPLED	7/27/99	7/28/99	7/28/99	7/28/99	7/28/99
	DATE EXTRACTED	8/3/99	8/3/99	8/3/99	8/3/99	8/3/99
	DATE ANALYZED	8/5/99	8/4/99	8/4/99	8/4/99	8/4/99

ANALYTE						
Diesal Range Organics	3600000	38000	19000 U	19000 U	20000 U	

U - Concentration not detected at or above the quantitation limit.

MATRIX

ANALYSIS

Project Name: **AK20 NOBEL RFI Phase II**
 Project No.: **19045-0060 - 00000**
 Sampling Date(s):
 Laboratory: **SEVEN TRENT LABS**
 Laboratory P.O. #: **7/22/99/26/27/28/99**
 Shipping Airbill No.: **811909826150**
 Shipping Date(s): **7/28/99**
 Shipper's Name: **TOPD D MAJER**

Page 1 of 2!

Sample Code	Sampled Date	Container		Aqueous	Organic	Acid	Base	Other	Source Description	Trace Metals	Hexavalent Chromium	C12	Particulate	PCDD/F	Semi-Volatile	Volatile	Physical	TOC	Mo	Comments
		Size	G/P																	
MW-1-10	7/26/99	3-8oz	G		X				MW-1-10; 1600											MS/MSD
MW-2-8	7/27/99	1-8oz	G		X				MW-2-8; 0840											
MW-3-10	7/27/99	1-8oz	G		X				MW-3-10; 1430											
MW-4-10	7/23/99	1-8oz	G		X				MW-4-10; 1515											
MW-5-10	7/24/99	1-8oz	G		X				MW-5-10; 0930											
MW-6-10	7/23/99	1-8oz	G		X				MW-6-10; 0905											
MW-7-8	7/24/99	1-8oz	G		X				MW-7-8; 1120											
MW-8-12	7/23/99	1-8oz	G		X				MW-8-12; 1135											Dup of MW-18-12
MW-18-12	7/23/99	1-8oz	G		X				MW-18-12; 1235											Dup of MW-8-12
OS-1-10	7/24/99	1-8oz	G		X				OS-1-10; 1430											
RB-2-10	7/28/99	1-8oz	G		X				RB-2-10; 0805											
RB-3-10	7/28/99	1-8oz	G		X				RB-3-10; 0900											
RB-1-10	7/28/99	1-8oz	G		X				RB-1-10; 1130											
RB-5-10	7/28/99	1-8oz	G		X				RB-5-10; 1300											
E-19-2	7/26/99	10-4oz	G		X				E-19-2; 1530	X	X									MS/MSD
E-19-8 *** (see page 2)	7/26/99	4-4oz	G		X				E-19-8; 1540	X	X									Dup of E-19-8
E-19-10 ***	7/26/99	4-4oz	G		X				E-19-10; 1550	X	X									
E-19-8E	7/26/99	4-4oz	G		X				E-19-8E; 1600	X	X									Dup of E-19-8

Relinquished by: **Topo M. J.**

Date/Time: **7/28/99, 1800**

Relinquished by:

Date/Time:

Received by: **Federal Engineers**

Date/Time: **7/28/99, 1800**

Received by:

Date/Time:

REMARKS (*):

8260 Low Conc. - **PREPARED WITH NAHSO4**
 8260 High Conc. - **PREPARED WITH METHANOL**

} All other samples on i.c.

SEE NOTES PAGE 2

No 02504

WHITE - LABORATORY

YELLOW - LABORATORY COPY

PINK - OFFICE COPY

GOLD - FIELD COPY

TRC

TRC Environmental Corporation

Data Validation Narrative

Site: Akzo Nobel
Laboratory: Severn Trent Laboratories, Inc. – CT (STL)
Case No.: 7099-2342A
Reviewer: Kerri Cattabriga, TRC

Samples Reviewed and Evaluation Summary

VOC: 11/Groundwater/MW-01; MW-1B; MW-02; MW-03; MW-3B; MW-04; MW-05;
MW-06; MW-07; MW-7D; MW-08
(Field Duplicates MW07; MW-7D)
3/Field Blank/FB-01; FB-02; FB-03
2/Trip Blank/TB-01; TB-02

The data validation was performed in accordance with the EPA Region II data validation functional guidelines for evaluating environmental analyses. The data were evaluated based on the following parameters:

- Data Completeness*
- Technical Holding Times*
- Initial and Continuing Calibration
- Blanks
- Surrogate Compounds*
- Internal Standards*
- Matrix Spike (MS)/Matrix Spike Duplicates (MSD)
- Field Duplicates
- Sample Quantitation and Reported Quantitation Limits*

* = No qualifications were applied based on this parameter.

Overall Evaluation of Data and Potential Usability Issues

VOC:

Measurement error associated with sample analysis includes calibration variability, blank contamination, and non-compliant MS/MSD recoveries. Several results were estimated. There were no major impacts to data usability.

Measurement error associated with sample collection includes field duplicate variability. Several results were estimated. There were no major impacts to data usability.

Data Completeness

The data package was complete. No qualifications were applied.

Technical Holding Times

Technical holding time criteria were met for all VOC analyses. No qualifications were applied.

Initial and Continuing Calibration

Compounds that did not meet criteria in the VOC initial and continuing calibrations (IC and CC) are summarized in the following table:

Compound	IC 8/11/99	CC 9/18/99	CC 9/19/99	CC 9/20/99
Acetone	X	X	X	
4-Methyl-2-pentanone	X			
1,1,2,2-Tetrachloroethane		X		X
2-Hexanone	X	X	X	X
Vinyl acetate	X	X	X	X
2-Chloroethylvinylether	X	X	X	X
Dibromomethane				X
Samples Affected:	All	FB-01 FB-02 MW-01 MW-03 MW-3B MW-05 MW-06	FB-03 TB-01 TB-02 MW-1B MW-04 MW-07 MW-08	MW-02 MW-7D

X = % RSD > 30; % D > 25; Estimate (J, UJ) all positive and non-detected results.

Blanks

The contaminants detected in the VOC laboratory and field blanks are summarized in the following table:

Compound	Blank Type	Max Conc.	Action Level	Sample SQL	Affected Samples
Acetone	Laboratory	4.1 ug/L	41 ug/L		All
2-Butanone	Laboratory	2.9 ug/L	29 ug/L		All
Chloromethane	Field	0.7 ug/L	3.5 ug/L	0.6 ug/L	All
Bromoform	Field	0.7 ug/L	3.5 ug/L	0.1 ug/L	MW-1B,MW-01,MW-05,MW-06, MW-07,MW-07D,MW-08
1,2-Dichloroethane	Field	0.8 ug/L	4.0 ug/L	0.2 ug/L	MW-1B,MW-01,MW-02,MW-04, MW-05,MW-06, MW-07, MW-07D,MW-08
1,1,2-Trichloroethane	Field	0.5 ug/L	2.5 ug/L	0.2 ug/L	MW-1B,MW-01,MW-05,MW-06, MW-07,MW-07D,MW-08
Bromodichloromethane	Field	1.7 ug/L	8.5 ug/L	0.2 ug/L	MW-02,MW-04
Chloroform	Field	26 ug/L	130 ug/L	0.2 ug/L	MW-02,MW-04
1,1,2,2-Tetrachloroethane	Field	1.4 ug/L	7 ug/L	0.2 ug/L	MW-1B,MW-01,MW-05,MW-06, MW-07,MW-07D,MW-08
Dibromochloromethane	Field	0.4 ug/L	2.0 ug/L	0.1 ug/L	MW-02,MW-04

SQL = Sample Quantitation Limit
 ug/L = micrograms per liter
 Max Conc. = maximum concentration

*The action level for each compound is the maximum concentration found in the blank multiplied by the compound specific multipliers (either 5 or 10) that are listed in the blank contamination section of the Region II data validation functional guidelines.

Actions:

- Sample concentration < SQL; report SQL followed by a U.
- Sample concentration > SQL and < action level; report concentration followed by a U.
- Sample concentration > SQL and > action level; report concentration unqualified.

Surrogate Compounds

Surrogate compound recovery criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Internal Standards

Internal standard recovery criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Matrix Spike/Matrix Spike Duplicate

The following spike compounds did not meet recovery criteria for matrix spike (MS) and matrix spike duplicate (MSD) samples MW-03MS and MS-03MSD:

MS/MSD	Compound	%Rec (RPD)	Limits %	Action Pos/ND
MS/MSD	Vinyl acetate	200/220	0-190	J/A
MS/MSD	Styrene	56/72 (25)	77-126 (20)	J/UJ
MS/MSD	Carbon disulfide	(21)	(20)	J/UJ

MS/MSD = Matrix Spike/Matrix Spike Duplicate
 %Rec = Percent recovery
 RPD = Relative percent difference
 Pos/ND = Positive results/Non-detected results
 J/A = Estimate positive results/Accept non-detected results
 J/UJ = Estimate positive results/Estimate non-detected results

Sample results in the unspiked sample MW-03 will be qualified as indicated above.

Field Duplicates

The following compounds were detected in the groundwater field duplicate samples MW-07 and MW-07D:

Compound	MW-07 Conc. (ug/L)	MW-07D Conc. (ug/L)	RPD	Action Pos/ND
Acetone	2100	1600	27	NA
Benzene	100	74	30	NA
2-Butanone	2900	2300	23	NA
Carbon disulfide	9.3	4.8	64	J/A
Chlorobenzene	44	34	26	NA
Chloroethane	17	7.6 U	NC	J/UJ
Chloromethane	12	11 U	NC	NA
1,2-Dichlorobenzene	25	7.2	110	J/A
1,3-Dichlorobenzene	17	5 U	NC	J/UJ
1,4-Dichlorobenzene	19	5.4 U	NC	J/UJ
cis-1,2-Dichloroethene	8.6	3.8 U	NC	J/UJ
Ethylbenzene	11	5.6 U	NC	NA
4-Methyl-2-pentanone	44	23	63	J/A
Styrene	8.9	5.6 U	NC	NA
Toluene	18	10	57	J/A
Trichloroethene	8.8	5.4 U	NC	NA
Xylene (total)	34	4.8 U	NC	J/UJ

Conc. = Concentration.
 ug/L = micrograms per liter.
 RPD = Relative Percent Difference.
 Pos/ND = Positive results/Non-detected results.
 NA = No Action.
 J/A = Estimate positive results/accept non-detected results.
 J/UJ = Estimate positive results/estimate non-detected results.
 NC = Not calculated since one result was undetected.

Field duplicate compound results with RPD values greater than 50% were be estimated (J). If a compound was not detected in one field duplicate sample and detected at greater than two times the sample quantitation limit in the other field duplicate sample, then both the positive and non-detected results were estimated (J, UJ).

Sample Quantitation and Reported Quantitation Limits

Sample quantitation and reported quantitation criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Data Validation Narrative

Site: Akzo Nobel
Laboratory: Severn Trent Laboratories, INC. - CT (STL)
Case No.: 7099-3238A
Reviewer: Lorie MacKinnon, TRC

Samples Reviewed and Evaluation Summary

VOC: 11/Groundwater/MW-4, MW-3B, MW-3, MW-8, MW-6, MW-7, MW-7D, MW-5,
MW-1B, MW-1, MW-2
(Field duplicates MW-7/MW-7D)
1/Field Blank/RB-01
1/Trip Blank/TB-01

The data validation was performed in accordance with the EPA Region II data validation guidelines for evaluating environmental analyses. The data were evaluated based on the following parameters:

- * • Data Completeness
- * • Technical Holding Times
- * • Gas Chromatograph/Mass Spectrometry (GC/MS) Instrument Performance Check
- Initial and Continuing Calibration
- Blanks
- * • Surrogate Recoveries
- * • Internal Standards
- * • Matrix Spike/Matrix Spike Duplicate (MS/MSD)
- * • Field Duplicates
- * • Sample Quantitation and Reported Quantitation Limits
- * - No qualifications were applied based on this parameter.

Overall Evaluation of Data and Potential Usability Issues

Measurement error associated with sample analysis includes calibration variability and blank contamination. Several results were estimated. There were no major impacts to data usability. Some results were qualified as nondetected due to method blank contamination. There were no major impacts to data usability. The nondetected results are usable as elevated detection limits.

Measurement error associated with sample collection includes field and trip blank contamination. Some results were qualified as nondetected due to trip blank contamination. There were no major impacts to data usability. The nondetected results are usable as elevated detection limits.

Data Completeness

The data package was complete. No qualifications were applied.

Technical Holding Times

Technical holding time criteria were met for all VOC analyses. No qualifications were applied.

Initial and Continuing Calibration

Compounds that did not meet criteria in the VOC initial and continuing calibrations (IC and CC) are summarized in the following table.

Instrument ID	HP59710	HP59710	HP59710
Compound	IC 11/26/99	CC 12/07/99	CC 12/08/99
Acetone	X		
Samples Affected	All	TB-01, MW-3B, MW-3, MW-8, MW-6, MW-5, MW-4	MW-1B, MW-1, MW-2, MW-7, MW-7D, RB-01

X = %RSD > 30%; %D > 25; Estimate (J/UJ) all positive and non-detected results.

Blanks

The contaminants detected in the laboratory and field blanks are summarized in the following table:

Compound	Blank Type	Max Conc.	Action Level	Sample SQL	Affected Samples
Acetone	Method	12 µg/L	120 µg/L	6 µg/L	All
2-butanone	Method	2 µg/L	20 µg/L	2 µg/L	All
Dichloromethane	Trip	0.7 µg/L	7 µg/L	0.3 µg/L	All
Acetone	Field	9300 µg/L	93000 µg/L	6 µg/L	Not used to evaluate samples *
2-butanone	Field	310 µg/L	3100 µg/L	2 µg/L	Not used to evaluate samples *
Dichloromethane	Field	210 µg/L	2100 µg/L	0.3 µg/L	Not used to evaluate samples *
Carbon Disulfide	Field	44 µg/L	220 µg/L	0.4 µg/L	Not used to evaluate samples *
Styrene	Field	27 µg/L	135 µg/L	0.3 µg/L	Not used to evaluate samples *
Toluene	Field	19 µg/L	190 µg/L	0.2 µg/L	Not used to evaluate samples *

SQL = Sample Quantitation Limit

ug/L = micrograms per liter

Max Conc. = maximum concentration

* The ultra DI water used for the collection of the field rinse blank was stored in a building on site for several months, in a glass container without a teflon septum cap, adjacent to chemical products. This DI water was not used for decontamination of sampling equipment and is not indicative of possible field sampling equipment contamination. It was therefore not used for the evaluation of possible field contamination.

The action level for each compound is the maximum concentration found in the blank multiplied by the compound specific multipliers (either 5 or 10) that are listed in the blank contamination section of the Region II data validation functional guidelines.

Blank Actions:

Sample concentration < SQL; report SQL followed by a U.

Sample concentration > SQL and < action level; report concentration followed by a U.

Sample concentration > SQL and > action level; report concentration unqualified.

Sample results were compared to the action levels before the application of dilution factors. Based on the action levels determined, the 2-butanone results for samples MW-4, MW-8, MW-1B, and MW-2 were qualified as nondetected (U) due to laboratory blank contamination. The acetone results for samples MW-3B, MW-3, MW-8, MW-5, MW-7, MW-7D, MW-2, MW-1B, and MW-1 were qualified as nondetected (U) due to method blank contamination. The

dichloromethane results for samples MW-3, MW-7, MW-7D and MW-2 were qualified as nondetected (U) due to trip blank contamination.

Surrogate Compounds

Surrogate compound recovery criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Internal Standards

Internal standard recovery criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Matrix Spike/Matrix Spike Duplicate

Matrix spike/matrix spike recovery criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Field Duplicates

Field duplicate precision criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Sample Quantitation and Reported Quantitation Limits

Sample quantitation and reported quantitation criteria were met for all sample analyses. No qualifications were applied based on this parameter.

Table 1
Volatile Analyses
ug/L

Site: Akzo Nobel RFI Phase II
SDG: A3238

SAMPLE NUMBER:
LABORATORY NUMBER:

SAMPLE NUMBER:		TB-01	MW-4	MW-3B	MW-3	MW-8	MW-6	MW-7	MW-7D	MW-5
LABORATORY NUMBER:		993238A-01	993238A-02	993238A-03	993238A-04	993238A-05	9932381-06	993238A-07	993238A-08	993238A-09
COMPOUND	RL									
Acetone	6	3 J	6 UJ	6 UJ	6 UJ	32 UJ	6 UJ	990 UJ	1200 UJ	86 UJ
Benzene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5	23	26	0.2 U
Bromodichloromethane	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Bromoform	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.8 U	0.8 U	0.1 U
Bromomethane	1	1 U	1 U	1 U	1 U	1 U	1 U	10 U	10 U	1 U
2-Butanone	2	2	2 U	2 U	2 U	2 U	2 U	460	460	2 U
Carbon Disulfide	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	4 U	4 U	0.4 U
Carbon tetrachloride	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Chlorobenzene	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	5	8	9	0.3 U
Chloroethane	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	4	4 U	4 U	0.4 U
2-Chloroethylvinylether	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	3 U	0.3 U
Chloroform	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U	2 U	2 U	0.2 U
Chloromethane	0.6	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	6 U	6 U	0.6 U
Dibromochloromethane	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	1 U	1 U	0.1 U
1,2-Dichlorobenzene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1	2 U	2 U	0.2 U
1,3-Dichlorobenzene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	2 U	2 U	0.2 U
1,4-Dichlorobenzene	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.7	3 U	3 U	0.3 U
1,1-Dichloroethane	0.1	0.1 U	0.1 U	0.1 U	0.1 U	11	1	1 U	1 U	0.1 U
1,2-Dichloroethane	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
1,1-Dichloroethene	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.6	0.3 U	3 U	3 U	0.3 U
cis-1,2-Dichloroethene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
trans-1,2-Dichloroethene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Dichloromethane	0.3	0.7	0.3 U	0.3 U	0.6 U	0.3 U	0.3 U	13 U	14 U	0.3 U
1,2-Dichloropropane	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
cis-1,3-Dichloropropene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
trans-1,3-Dichloropropene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Ethylbenzene	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	3 U	0.3 U
2-Hexanone	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	4 U	4 U	0.4 U
4-Methyl-2-Pentanone	0.4	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	9	4 U	0.4 U
Styrene	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	3 U	0.3 U
1,1,2,2-Tetrachloroethane	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Tetrachloroethene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Toluene	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	5	4	0.2 U
1,1,1-Trichloroethane	0.2	0.2 U	0.2 U	0.2 U	0.2 U	11	0.2 U	2 U	2 U	0.2 U
1,1,2-Trichloroethane	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
Trichloroethene	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	3 U	0.3 U
Vinyl Acetate	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	12 U	12 U	1.0 U
Vinyl Chloride	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3 U	3 U	0.3 U
Xylene (total)	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	2 U	0.2 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	10	10	1.0
DATE SAMPLED:		12/5/99	12/5/99	12/5/99	12/5/99	12/5/99	12/5/99	12/5/99	12/5/99	12/5/99
DATE ANALYZED:		12/7/99	12/7/99	12/7/99	12/7/99	12/7/99	12/7/99	12/8/99	12/8/99	12/7/99

Table 1
Volatile Analyses
ug/L

Site: Akzo Nobel RFI Phase II

SDG: A3238

SAMPLE NUMBER:	MW-1B	MW-1	MW-2	RB-01
LABORATORY NUMBER:	993238A-10	993238A-11	993238A-12	993238A-13

COMPOUND	RL				
Acetone	6	22 UJ	6 UJ	8 UJ	9300 J
Benzene	0.2	0.9	0.2 U	4	19 U
Bromodichloromethane	0.2	0.2 U	0.2 U	0.2 U	21 U
Bromoform	0.1	0.1 U	0.1 U	0.1 U	8 U
Bromomethane	1	1 U	1 U	1 U	97 U
2-Butanone	2	8 U	2 U	2 U	310
Carbon Disulfide	0.4	0.4 U	0.4 U	0.4 U	44
Carbon tetrachloride	0.2	0.2 U	0.2 U	0.2 U	19 U
Chlorobenzene	0.3	0.3 U	0.3 U	3	26 U
Chloroethane	0.4	0.4 U	0.4 U	6	38 U
2-Chloroethylvinylether	0.3	0.3 U	0.3 U	0.3 U	34 U
Chloroform	0.2	0.2 U	0.2 U	0.2 U	23 U
Chloromethane	0.6	0.6 U	0.6 U	0.6 U	57 U
Dibromochloromethane	0.1	0.1 U	0.1 U	0.1 U	14 U
1,2-Dichlorobenzene	0.2	0.2 U	0.2 U	1	19 U
1,3-Dichlorobenzene	0.2	0.2 U	0.2 U	0.9	25 U
1,4-Dichlorobenzene	0.3	0.3 U	0.3 U	0.5	27 U
1,1-Dichloroethane	0.1	0.1 U	0.1 U	0.5	12 U
1,2-Dichloroethane	0.2	0.2 U	0.2 U	0.2 U	21 U
1,1-Dichloroethene	0.3	0.3 U	0.3 U	0.3 U	27 U
cis-1,2-Dichloroethene	0.2	0.2 U	0.2 U	0.2 U	19 U
trans-1,2-Dichloroethene	0.2	0.2 U	0.2 U	0.2 U	21 U
Dichloromethane	0.3	0.3 U	0.3 U	1 U	210
1,2-Dichloropropane	0.2	0.2 U	0.2 U	0.2 U	17 U
cis-1,3-Dichloropropene	0.2	0.2 U	0.2 U	0.2 U	21 U
trans-1,3-Dichloropropene	0.2	0.2 U	0.2 U	0.2 U	17 U
Ethylbenzene	0.3	0.3 U	0.3 U	0.3 U	28 U
2-Hexanone	0.4	3	0.4 U	0.4 U	38 U
4-Methyl-2-Pentanone	0.4	0.4 U	0.4 U	0.4 U	36 U
Styrene	0.3	0.3 U	0.3 U	0.3 U	27
1,1,2,2-Tetrachloroethane	0.2	0.2 U	0.2 U	0.2 U	22 U
Tetrachloroethane	0.2	0.2 U	0.2 U	0.2 U	21 U
Toluene	0.2	0.2 U	0.2 U	0.3	19
1,1,1-Trichloroethane	0.2	0.2 U	0.2 U	0.2 U	20 U
1,1,2-Trichloroethane	0.2	0.2 U	0.2 U	0.2 U	21 U
Trichloroethene	0.3	0.3 U	0.3 U	0.3 U	27 U
Vinyl Acetate	1.0	1.0 U	1.0 U	1.0 U	120 U
Vinyl Chloride	0.3	0.3 U	0.3 U	0.3 U	34 U
Xylene (total)	0.2	0.2 U	0.2 U	0.4	24 U

DILUTION FACTOR:	1.0	1.0	1.0	100
DATE SAMPLED:	12/5/99	12/5/99	12/5/99	12/5/99
DATE ANALYZED:	12/8/99	12/8/99	12/8/99	12/8/99

Akzo Nobel R2001417

Data Validation Narrative

Site: Akzo Nobel
Laboratory: Columbia Analytical Services, INC., Rochester, NY
Case No.: R2001417
Reviewer: Lorie MacKinnon, TRC
Date: July 19, 2000

Samples Reviewed and Evaluation Summary

VOC:	11/Groundwater/	MW-4, MW-3B, MW-3, MW-8, MW-6, MW-7, MW-7B, MW-5, MW-1B, MW-1, MW-2 (Field duplicates MW-7/MW-7B)
	1/Rinsate Blank/	RB-01
	1/Trip Blank/	TB-01

The above listed samples were analyzed for site-specific volatile organic compounds (VOCs) by SW-846 method 8260B. The data validation was performed in accordance with the *CLP Organics Data Review and Preliminary Review, No. HW-6, Revision #8* (January 1992), modified as necessary to accommodate the SW-846 methodology. The data were evaluated based on the following parameters:

- * • Data Completeness
- * • Holding Times and Sample Preservation
- * • Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- Initial and Continuing Calibrations
- Blanks
- * • Surrogate Recoveries
- * • Internal Standards
- * • Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- * • Laboratory Control Sample (LCS) Results
- * • Field Duplicate Results
- Sample Quantitation and Reported Quantitation Limits
- * - All criteria were met.

Overall Evaluation of Data and Potential Usability Issues

No qualifications were applied to the data as a result of sampling error.

Qualifications applied to the data as a result of analytical error are discussed below.

- Potential uncertainty exists in the acetone and 2-butanone results in all samples due to calibration nonconformances. Positive and nondetect results for acetone in all groundwater samples, with the exception of sample MW-1, were qualified as estimated (J/UJ). These results can be used for project objectives as estimated values which may have a minor impact on the data usability. Nondetect results for 2-butanone in all samples and the nondetect result for acetone in sample MW-1 were rejected. These results cannot be used for project objectives. This has a major impact on the data usability.
- The aromatic compound results in samples MW-7 and MW-7B may be biased low due to sample preservation nonconformances. The positive and nondetect results for the aromatic compounds in these samples were qualified as estimated (J/UJ). These results can be used for project objectives as estimated values which may have a minor impact on the data usability.
- Potential uncertainty exists for benzene for nondetects and positive results between 0.7 and 1.0 $\mu\text{g/L}$ due to the lack of analysis of a calibration standard at the reported detection limit (0.7 $\mu\text{g/L}$). These results were qualified as estimated (J/UJ) in all associated samples. These results can be used for project objectives as estimated values which may have a minor impact on the data usability.

Data Completeness

During validation, the following items were noted as missing:

- The laboratory did not report results for vinyl acetate, 2-chloroethyl vinyl ether, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and 1,2-dichlorobenzene. These compounds are required as per the project Workplan. Although not reported, these compounds were calibrated for by the laboratory. Upon request, the laboratory resubmitted all Form Is with these compounds reported.
- Upon review of the revised data discussed above, it was noted that the laboratory did not submit the spectra for 1,4-dichlorobenzene and 1,2-dichlorobenzene in sample MW-7. Upon request, the laboratory submitted these spectra.

Holding Times and Sample Preservation

Samples MW-7 and MW-7B were preserved in the field with HCl. However, the pH of these samples, when measured at the laboratory, exceeded 2. These samples were analyzed two and three days, respectively, outside the seven-day holding time for unpreserved samples. Since these samples were analyzed within 14 days of sample collection, only the aromatic compounds are affected by this nonconformance. The positive results and nondetects for the aromatic compounds in samples MW-7 and MW-7B were qualified as estimated (J/UJ).

Initial and Continuing Calibrations

Compounds that did not meet criteria in the initial and continuing calibrations (IC and CC) are summarized in the following table. It should be noted that a low level curve of 1, 4, 10, 20, 30, and 40 ug/l was performed in order to achieve lower reporting limits.

Instrument ID	GCMS#1	GCMS#1	GCMS#1
Compound	IC 03/13/00	CC 04/06/00	CC 04/07/00
2-Butanone	+	X, +	+
Acetone	+(*)	X, +(*)	+(*)
Samples Affected	All	MW-4, MW-3, MW-3B, MW-8, MW-6, MW-7, MW-1B	MW-7B, MW-5, MW-2, RB-01, MW-2DL, RB-01DL, MW-7DL, MW-7BDL

Instrument ID	GCMS#1	GCMS#1
Compound	IC 04/10/00	CC 04/11/00
2-Butanone	+	+
Acetone	+	+
Samples Affected	All	TB-01, MW-1

X = percent relative standard deviation (%RSD) > 30%; percent difference (%D) > 25; Estimate (J/UJ) all positive and nondetect results.

+ = response factor (RF) < 0.050; Estimate (J) all positive results and reject (R) nondetect results.

Akzo Nobel R2001417

* = Since the laboratory used linear regression to quantitate this compound (and not the average response factor), which is allowed under SW-846, rejection of data for this compound was not required. However, the positive and nondetect results were qualified as estimated (J/UJ).

Blanks

Target analytes were not detected in the laboratory blanks or trip blank. The contaminant detected in the rinsate blank is summarized in the following table:

Compound	Blank Type	Maximum Concentration	Action Level	Sample SQL	Affected Samples
Acetone	Rinsate	5300 µg/L	53,000 µg/L	10 µg/L	Not used to evaluate samples *

SQL = Sample Quantitation Limit

* The ultra DI water used for the collection of the field rinse blank was stored in a building on site for several months in a glass container without a teflon septum cap, adjacent to chemical products. This DI water was not used for decontamination of sampling equipment and is not indicative of possible field sampling equipment contamination. It was therefore not used for the evaluation of possible field contamination in samples.

It should also be noted that the rinsate blank was analyzed at a 100-fold dilution, which is at a significantly higher dilution factor than most samples were analyzed.

Surrogate Recoveries

Surrogate recoveries were within the control limits in all sample analyses.

Internal Standards

Internal standard performance was within the quality control (QC) acceptance limits in all sample analyses.

MS/MSD Results

MS/MSD analyses were performed on sample MW-1B. The recoveries and relative percent differences (RPDs) of the spiked target analytes were within the QC acceptance limits.

LCS Results

The recoveries of the spiked target analytes were within the QC acceptance limits in the LCS analyses.

Field Duplicate Results

Samples MW-7 and MW-7B were submitted as a field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes, all of which were either within the QC acceptance criteria or not calculable (NC) due to a nondetected value in the duplicate sample. Qualification of the data on the basis of the field duplicate results was not required.

Compound	MW-7 ($\mu\text{g/L}$)	MW-7B ($\mu\text{g/L}$)	RPD (%)
Acetone	1300	1400	7.4
Benzene	29	30	3.4
2-Butanone	660	660	0
Chlorobenzene	11	11 J	0
Chloroethane	0.65 J	20 U	NC
1,2-Dichlorobenzene	1.8 J	20 U	NC
1,4-Dichlorobenzene	0.50 J	20 U	NC
cis-1,2-Dichloroethene	0.68 J	20 U	NC
Ethylbenzene	0.66 J	20 U	NC
Methylene chloride	1.8	20 U	NC
4-Methyl-2-pentanone	10	100 U	NC
Toluene	4.9	20 U	NC
o-Xylene	0.54 J	20 U	NC
m&p-Xylenes	0.57 J	20 U	NC

Sample Quantitation and Reported Quantitation Limits

Sample calculations were spot-checked; there were no errors noted.

Akzo Nobel R2001417

The laboratory reported a quantitation limit of 0.7 $\mu\text{g/L}$ for benzene, which was required under the project Workplan. However, the lowest calibration standard analyzed by the laboratory was 1.0 $\mu\text{g/L}$. Therefore, all positive results for benzene between 0.7 and 1.0 $\mu\text{g/L}$ and all nondetect results for benzene were qualified as estimated (J/UJ) due to a lack of analysis of a calibration standard at the reported quantitation limit, as required under SW-846.

Several samples were analyzed on dilution due to the concentrations of target analytes which would have exceeded the calibration range if not diluted. These samples included MW-7B (20x), MW-2 (100x), and RB-01 (100x). SQLs for these samples were elevated accordingly by the laboratory.

Several samples were reanalyzed on dilution due to the concentrations of target analytes which exceeded the calibration range in the initial analysis. These samples included MW-7 (1x and 50x), MW-7B (20x and 50x), MW-2 (100x and 500x), and RB-01 (100x and 200x). The results of both analyses were combined during validation in order to report the lowest possible SQLs and all results within the calibration range.

Data Summary Table
Volatile Organic Compound Analyses in Groundwater
(Units: ug/L)

Site: Akzo Nobel SDG: R2001417						
SAMPLE NUMBER: LABORATORY NUMBER: COMMENTS:		MW-1 367935	MW-1B 367936	MW-2 367934	MW-3 367927	MW-3B 367928
COMPOUND	QL					
Acetone	10	R	28 J	1000 UJ	10 UJ	10 UJ
Benzene	0.7	0.70 UJ	1.7	66 J	0.70 UJ	0.70 UJ
Bromodichloromethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Bromoform	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Bromomethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
2-Butanone	5.0	R	6.2 J	R	R	R
Carbon Disulfide	5.0	5.0 U	5.0 U	500 U	5.0 U	5.0 U
Carbon tetrachloride	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Chlorobenzene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Chloroethane	1.0	1.0 U	1.0 U	59 J	1.0 U	1.0 U
2-Chloroethylvinyl Ether	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Chloroform	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Chloromethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Dibromochloromethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0	1.0 U	1.0 U	630	1.0 U	1.0 U
1,2-Dichloroethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0	1.0 U	1.0 U	70 J	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Ethylbenzene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
2-Hexanone	5.0	5.0 U	5.0 U	500 U	5.0 U	5.0 U
Methylene Chloride	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
4-Methyl-2-Pentanone	5.0	5.0 U	5.0 U	500 U	5.0 U	5.0 U
Styrene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Tetrachloroethene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Toluene	1.0	1.0 U	1.0 U	9800	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Trichloroethene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Vinyl Acetate	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
Vinyl Chloride	1.0	1.0 U	1.0 U	62 J	1.0 U	1.0 U
O-xylene	1.0	1.0 U	1.0 U	100 U	1.0 U	1.0 U
M + P Xylene	1.0	1.0 U	1.0 U	72 J	1.0 U	1.0 U
DILUTION FACTOR:		1.0	1.0	100	1.0	1.0
DATE SAMPLED:		3/28/00	3/28/00	3/28/00	3/28/00	3/28/00
DATE ANALYZED:		4/11/00	4/6/00	4/7/00	4/6/00	4/6/00

QL = Quantitation limit
U = Undetected at specified detection limit
UJ = Estimated nondetect
J = Estimated value
R = Rejected during data validation

Data Summary Table
Volatile Organic Compound Analyses in Groundwater
(Units: ug/L)

Site: AKZO Nobel SDG: R2001417						
SAMPLE NUMBER: LABORATORY NUMBER: COMMENTS:		MW-4 367926	MW-5 367931	MW-6 367930	MW-7 367931	MW-7B 367912 Field Duplicate of MW-7
COMPOUND	QL					
Acetone	10	10 UJ	10 J	10 UJ	1300 J	1400 J
Benzene	0.7	0.70 UJ	0.70 UJ	0.70 UJ	29 J	30 J
Bromodichloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Bromoform	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Bromomethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
2-Butanone	5.0	R	R	R	660 J	660 J
Carbon Disulfide	5.0	5.0 U	5.0 U	5.0 U	5.0 U	100 U
Carbon tetrachloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Chlorobenzene	1.0	1.0 U	1.0 U	1.0 U	11 J	11 J
Chloroethane	1.0	1.0 U	1.0 U	1.0 U	0.65 J	20 U
2-Chloroethylvinyl Ether	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Chloroform	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Chloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Dibromochloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
1,3-Dichlorobenzene	1.0	1.0 U	1.0 U	1.0 U	1.0 UJ	20 UJ
1,2-Dichlorobenzene	1.0	1.0 U	1.0 U	1.0 U	1.8 J	20 UJ
1,4-Dichlorobenzene	1.0	1.0 U	1.0 U	1.0 U	0.5 J	20 UJ
1,1-Dichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
1,2-Dichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
1,1-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
cis-1,2-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	0.68 J	20 U
trans-1,2-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
1,2-Dichloropropane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
cis-1,3-Dichloropropene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
trans-1,3-Dichloropropene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Ethylbenzene	1.0	1.0 U	1.0 U	1.0 U	0.66 J	20 UJ
2-Hexanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	100 U
Methylene Chloride	1.0	1.0 U	1.0 U	1.0 U	1.8	20 U
4-Methyl-2-Pentanone	5.0	5.0 U	5.0 U	5.0 U	10	100 U
Styrene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
1,1,2,2-Tetrachloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Tetrachloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Toluene	1.0	1.0 U	1.0 U	1.0 U	4.9 J	20 UJ
1,1,1-Trichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
1,1,2-Trichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Trichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Vinyl Acetate	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
Vinyl Chloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	20 U
O-xylene	1.0	1.0 U	1.0 U	1.0 U	0.54 J	20 UJ
M + P Xylene	1.0	1.0 U	1.0 U	1.0 U	0.57 J	20 UJ
DILUTION FACTOR:		1.0	1.0	1.0	1.0	20
DATE SAMPLED:		3/28/00	3/28/00	3/28/00	3/28/00	3/28/00
DATE ANALYZED:		4/6/00	4/7/00	4/6/00	4/6/00	4/7/00

QL = Quantitation limit
U = Undetected at specified detection limit
UJ = Estimated nondetect
J = Estimated value
R = Rejected during data validation

Data Summary Table
Volatile Organic Compound Analyses in Groundwater
(Units: ug/L)

Site: Akzo Nobel SDG: R2001417		MW-8 367929			TB-01 367925	RH-01 367937
SAMPLE NUMBER: LABORATORY NUMBER: COMMENTS:		Trip Blank			Rinsate Blank	
COMPOUND	CONC.	MW-8			TB-01	RH-01
Acetone	10	10 UJ			R	5300 J
Benzene	0.7	0.70 UJ			0.70 UJ	70 UJ
Bromodichloromethane	1.0	1.0 U			1.0 U	100 U
Bromoform	1.0	1.0 U			1.0 U	100 U
Bromomethane	1.0	1.0 U			1.0 U	100 U
2-Butanone	5.0	R			R	R
Carbon Disulfide	5.0	5.0 U			5.0 U	500 U
Carbon tetrachloride	1.0	1.0 U			1.0 U	100 U
Chlorobenzene	1.0	1.0 U			1.0 U	100 U
Chloroethane	1.0	1.0 U			1.0 U	100 U
2-Chloroethylvinyl Ether	1.0	1.0 U			1.0 U	100 U
Chloroform	1.0	0.55 J			1.0 U	100 U
Chloromethane	1.0	1.0 U			1.0 U	100 U
Dibromochloromethane	1.0	1.0 U			1.0 U	100 U
1,3-Dichlorobenzene	1.0	1.0 U			1.0 U	100 U
1,2-Dichlorobenzene	1.0	1.0 U			1.0 U	100 U
1,4-Dichlorobenzene	1.0	1.0 U			1.0 U	100 U
1,1-Dichloroethane	1.0	19			1.0 U	100 U
1,2-Dichloroethane	1.0	1.0 U			1.0 U	100 U
1,1-Dichloroethene	1.0	1.3			1.0 U	100 U
cis-1,2-Dichloroethene	1.0	1.0 U			1.0 U	100 U
trans-1,2-Dichloroethene	1.0	1.0 U			1.0 U	100 U
1,2-Dichloropropane	1.0	1.0 U			1.0 U	100 U
cis-1,3-Dichloropropene	1.0	1.0 U			1.0 U	100 U
trans-1,3-Dichloropropene	1.0	1.0 U			1.0 U	100 U
Ethylbenzene	1.0	1.0 U			1.0 U	100 U
2-Hexanone	5.0	5.0 U			5.0 U	500 U
Methylene Chloride	1.0	1.0 U			1.0 U	100 U
4-Methyl-2-Pentanone	5.0	5.0 U			5.0 U	500 U
Styrene	1.0	1.0 U			1.0 U	100 U
1,1,2,2-Tetrachloroethane	1.0	1.0 U			1.0 U	100 U
Tetrachloroethene	1.0	1.0 U			1.0 U	100 U
Toluene	1.0	1.0 U			1.0 U	100 U
1,1,1-Trichloroethane	1.0	16			1.0 U	100 U
1,1,2-Trichloroethane	1.0	1.0 U			1.0 U	100 U
Trichloroethene	1.0	1.0 U			1.0 U	100 U
Vinyl Acetate	1.0	1.0 U			1.0 U	100 U
Vinyl Chloride	1.0	1.0 U			1.0 U	100 U
O-xylene	1.0	1.0 U			1.0 U	100 U
M + P Xylene	1.0	1.0 U			1.0 U	100 U
DILUTION FACTOR:		1.0			1.0	100
DATE SAMPLED:		3/28/00			3/28/00	3/28/00
DATE ANALYZED:		4/6/00			4/11/00	4/7/00

QL = Quantitation limit
U = Undetected at specified detection limit
UJ = Estimated nondetect
J = Estimated value
R = Rejected during data validation

Akzo Nobel E73162

Data Validation Narrative

Site: Akzo Nobel
Laboratory: Accutest, Dayton, NJ
Case No.: E73162
Reviewer: Lorie MacKinnon, TRC
Date: August 29, 2000

Samples Reviewed and Evaluation Summary

VOC:	10/Groundwater/	MW-02, MW-08, MW-04, MW-03, MW-3B, MW-7, MW-7B, MW-5, MW-1, MW-1B (Field duplicates MW-7/MW-7B)
	1/Rinsate Blank/	RB-01
	1/Trip Blank/	TB-01

The above listed samples were analyzed for site-specific volatile organic compounds (VOCs) by SW-846 method 8260B. The data validation was performed in accordance with the *CLP Organics Data Review and Preliminary Review, No. HW-6, Revision #8* (January 1992), modified as necessary to accommodate the SW-846 methodology. The data were evaluated based on the following parameters:

- * • Data Completeness
- * • Holding Times and Sample Preservation
- * • Gas Chromatography/Mass Spectrometry (GC/MS) Tunes
- * • Initial and Continuing Calibrations
- * • Blanks
- * • Surrogate Recoveries
- * • Internal Standards
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Control Sample (LCS) Results
- * • Field Duplicate Results
- * • Sample Quantitation and Reported Quantitation Limits
- * - All criteria were met.

Akzo Nobel E73162

Overall Evaluation of Data and Potential Usability Issues

No qualifications were applied to the data as a result of sampling error.

Qualifications applied to the data as a result of analytical error are discussed below.

- The nondetect result for 2-chloroethyl vinyl ether was rejected in sample MW-3B due to lack of recovery of this analyte in the MS/MSD analyses. This result cannot be used for project objectives. This has a major impact on the data usability.

Data Completeness

There were no data completeness issues noted.

Holding Times and Sample Preservation

All samples were analyzed within the required holding times.

Initial and Continuing Calibrations

All initial and continuing calibration criteria were met.

Blanks

Target analytes were not detected in the laboratory, rinsate or trip blanks.

Surrogate Recoveries

Surrogate recoveries were within the control limits in all sample analyses.

Internal Standards

Internal standard performance was within the quality control (QC) acceptance limits in all sample analyses.

MS/MSD Results

MS/MSD analyses were performed on sample MW-3B. The following table lists the recoveries of the spiked target analytes found outside of the QC acceptance limits and the resulting validation actions.

Compound	MS%R/ MSD%R	Control Limits	Actions
2-Chloroethyl vinyl Ether	0/0	50-150	Reject (R) nondetect result for 2-chloroethyl vinyl ether in sample MW-3B

It should be noted that the recovery of 2-chloroethyl vinyl ether was within the control limits in the associated blank spike. However, due to the lack of recovery of this compound in sample MW-3B, the nondetect sample result was rejected.

LCS Results

The recovery of cis-1,3-dichloropropene (89%) fell slightly below the control limits in the LCS analysis. Based on professional judgment, qualification of the data was not required on the basis of this minor nonconformance.

Field Duplicate Results

Samples MW-7 and MW-7B were submitted as a field duplicate pair with this sample set. The following table summarizes the relative percent differences (RPDs) of the detected analytes, all of which were either within the QC acceptance criteria or not calculable (NC) due to a nondetected value in the duplicate sample. Qualification of the data on the basis of the field duplicate results was not required.

Compound	MW-7 (µg/L)	MW-7B (µg/L)	RPD (%)
Acetone	10.3	10.4	1.0
Benzene	18.8	18.8	0
Chlorobenzene	9.7	9.3	4.2
1,2-Dichlorobenzene	1.7	1.5	12.5
1,3-Dichlorobenzene	0.35 J	0.32J	9.0

Akzo Nobel E73162

Compound	MW-7 ($\mu\text{g/L}$)	MW-7B ($\mu\text{g/L}$)	RPD (%)
1,4-Dichlorobenzene	0.42 J	0.40J	4.9
cis-1,2-Dichloroethene	0.34 J	1.0U	NC
Ethylbenzene	0.52 J	0.51J	1.9
Toluene ^b	1.3	1.3	0
Total Xylene	0.81 J	0.68J	17.4

Sample Quantitation and Reported Quantitation Limits

Sample calculations were spot-checked; there were no errors noted.

There were no dilutions performed on samples in this data set. Sample quantitation limits were therefore not adversely affected.

It should be noted that the laboratory reported a quantitation limit of $0.7 \mu\text{g/L}$ for benzene. However, the lowest calibration standard analyzed for benzene was $0.5 \mu\text{g/L}$. The quantitation limit for benzene was therefore changed during validation to reflect the lowest calibration standard.

Data Summary Table
Volatile Organic Compound Analyses in Groundwater
(Units: ug/L)

Site: Akzo Nobel SDG: E73162						
SAMPLE NUMBER: LABORATORY NUMBER: COMMENTS:		MW-02 E73162-3	MW-03 E73162-4	MW-04 E73162-5	MW-05 E73162-6	MW-2B E73162-7
COMPOUND	QL					
Acetone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	0.5	23.9	0.62	0.50 U	0.50 U	0.50 U
Bromodichloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0	2.7	1.8	1.0 U	1.0 U	1.0 U
Chloroethane	1.0	9.3	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethylvinyl Ether	1.0	1.0 U	1.0 U	1.0 U	1.0 U	R
Chloroform	1.0	1.0 U	0.57 J	1.0 U	1.0 U	1.0 U
Chloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0	3.0	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0	2.4	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0	1.4	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0	1.3	22.7	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0	1.0 U	2.0	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	1.0	3.8	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	1.0 U	0.35 J	1.0 U	1.0 U	1.0 U
Toluene	1.0	8.0	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0	1.0 U	21.5	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylene	1.0	2.4	1.0 U	1.0 U	1.0 U	1.0 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		7/16/00	7/16/00	7/16/00	7/16/00	7/16/00
DATE ANALYZED:		7/23/00	7/23/00	7/24/00	7/24/00	7/24/00

QL = Quantitation limit
 U = Undetected at specified detection limit
 UJ = Estimated nondetect
 J = Estimated value
 R = Rejected during data validation

Data Summary Table
Volatile Organic Compound Analyses in Groundwater
(Units: ug/L)

Site: Akzo Nobel SDG: EE73162		Well: EE73162				
SAMPLE NUMBER: LABORATORY NUMBER: COMMENTS:		MW-7 EE73162-3	MW-7B EE73162-9	MW-5 EE73162-10	MW-1 EE73162-11	MW-1B EE73162-12
COMPOUND:		Field Duplicate of MW-7				
Acetone	5.0	10.3	10.4	65.4	5.0 U	6.7
Benzene	0.5	18.8	18.8	0.50 U	0.50 U	0.57
Bromodichloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0	9.7	9.3	1.0 U	1.0 U	1.0 U
Chloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethylvinyl Ether	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0	1.7	1.5	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0	0.35 J	0.32 J	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0	0.42 J	0.40 J	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0	0.34 J	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	1.0	0.52 J	0.51 J	1.0 U	1.0 U	1.0 U
2-Hexanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	5.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1.0	1.3	1.3	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Acetate	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Total Xylene	1.0	0.81 J	0.68 J	1.0 U	1.0 U	1.0 U
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0
DATE SAMPLED:		7/16/00	7/16/00	7/16/00	7/16/00	7/16/00
DATE ANALYZED:		7/24/00	7/24/00	7/24/00	7/24/00	7/24/00

QL = Quantitation limit
U = Undetected at specified detection limit
UJ = Estimated nondetect
J = Estimated value
R = Rejected during data validation

Data Summary Table
Volatile Organic Compound Analyses in Groundwater
(Units: ug/L)

Site: Akzo Nobel SDG: E73162			
SAMPLE NUMBER:		MTB-01	MRB-01
LABORATORY NUMBER:		E73162-1	E73162-2
COMMENTS:		Tripl Blank	Rinsate Blank
COMPOUND	QL		
Acetone	5.0	5.0 U	5.0 U
Benzene	0.5	0.50 U	0.50 U
Bromodichloromethane	1.0	1.0 U	1.0 U
Bromoform	1.0	1.0 U	1.0 U
Bromomethane	1.0	1.0 U	1.0 U
2-Butanone	5.0	5.0 U	5.0 U
Carbon Disulfide	5.0	5.0 U	5.0 U
Carbon tetrachloride	1.0	1.0 U	1.0 U
Chlorobenzene	1.0	1.0 U	1.0 U
Chloroethane	1.0	1.0 U	1.0 U
2-Chloroethylvinyl Ether	1.0	1.0 U	1.0 U
Chloroform	1.0	1.0 U	1.0 U
Chloromethane	1.0	1.0 U	1.0 U
Dibromochloromethane	1.0	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0	1.0 U	1.0 U
1,1-Dichloroethane	1.0	1.0 U	1.0 U
1,2-Dichloroethane	1.0	1.0 U	1.0 U
1,1-Dichloroethene	1.0	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0	1.0 U	1.0 U
1,2-Dichloropropane	1.0	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0	1.0 U	1.0 U
Ethylbenzene	1.0	1.0 U	1.0 U
2-Hexanone	5.0	5.0 U	5.0 U
4-Methyl-2-Pentanone	5.0	5.0 U	5.0 U
Methylene Chloride	1.0	1.0 U	1.0 U
Styrene	1.0	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0	1.0 U	1.0 U
Tetrachloroethene	1.0	1.0 U	1.0 U
Toluene	1.0	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0	1.0 U	1.0 U
Trichloroethene	1.0	1.0 U	1.0 U
Vinyl Acetate	1.0	1.0 U	1.0 U
Vinyl Chloride	1.0	1.0 U	1.0 U
Total Xylene	1.0	1.0 U	1.0 U
DILUTION FACTOR:		1.0	1.0
DATE SAMPLED:		7/16/00	7/16/00
DATE ANALYZED:		7/24/00	7/24/00

QL = Quantitation limit
 U = Undetected at specified detection limit
 UJ = Estimated nondetect
 J = Estimated value
 R = Rejected during data validation

APPENDIX G
GROUNDWATER SAMPLING FIELD DATA SHEETS



Field Data Record Ground Water

Project: AKZO NOBEL
GW Sampling - Round 1

Project No: 19045-007

Date/Time: 9/14/99 0845

Sheet 1 of 1

Contractor Personnel:

TRC Personnel:
T. Majer

Sample No.: MW-01

Well Location: MW-01

WELL INTEGRITY

Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock Present

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

Protective
Casing Stick-up 2.35 ft.
(from ground)

Riser Stick-up
(from ground) 2.25 ft.

WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inch

Well
Depth 18.10 ft.

☒ top of riser
☐ top of casing
☒ measured
☐ historical

Water
Depth 13.25 ft.

Height of
Water Column 4.85 ft. x
☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)

OVA/PID SCREENING MEAS.

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL

☒ PVC ☐ SS ☐

Volume of Water in Well = 0.8 gallon(s)

1.6 Total gallons
to purge

[Vol. = $r^2 h(0.163)$]

FIELD WATER QUALITY MEASUREMENTS

Purge Volume (gal)	0.8	1.6								
pH (Std. Units)	7.47	7.47								
Eh (millivolts)	-47.6	-49.4								
Conduct. (µmhos/cm)	271	274								
Temp. (C)	14.71	14.51								
Turb. (NTU)										
DO (mg/l)	9.99	9.96								
Carbon Dioxide (mg/L)		40								
										Sample Description
										Clear ☐ Turbid ☒
										Color <u>Brown</u>
										Odor <u>None</u>
										Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump
Submersible Pump
Bailer
Watterra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

☐	☐
☒	☐
☐	☒
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

EQUIPMENT ID

Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer
Well dry after purging 1.6 gallons

DESCRIPTION OF DECON. PROC.

Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

DECON. FLUID USED

Tap Water ☒
Alconox ☒
Tap Water ☐
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
DI Water ☐
Air Dry ☐
None ☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	0845	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No:**
19045-007**Date/Time:**
9/14/99 0815Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-1B**Well Location:** MW-1B**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock Present

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

ProtectiveCasing Stick-up 1.90 ft.
(from ground)Riser Stick-up 1.65 ft.
(from ground)
WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inch
Well Depth 47.30 ft.
☒ top of riser
☐ top of casing
☒ measured
☐ historical
Water Depth 12.61 ft.**Height of Water Column** 34.69 ft. x
☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)
OVA/PID SCREENING MEAS.

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL
☒ PVC
☐ SS
☐
Volume of Water in Well = 5.5 gallon(s)27.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	5.5	11	16.5	22	27.5			
pH (Std. Units)	7.51	7.49	7.52	7.53	7.53			
Eh (millivolts)	-46.1	-53.6	-54.7	-56.4	-58.1			
Conduct. (µmhos/cm)	241	244	244	243	244			
Temp. (C)	14.51	14.26	14.10	13.97	13.91			
Turb. (NTU)								
DO (mg/l)	10.08	10.06	10.06	10.06	10.04			
Carbon Dioxide (mg/L)					50			

Sample Description
Clear ☒ Turbid ☐
Color Cloudy
Odor None
Other _____
SAMPLE EQUIP./DECON.**PURGE SAMPLE**
Peristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

☒	☒
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

EQUIPMENT ID
Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer
DESCRIPTION OF DECON. PROC.
Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.
DECON. FLUID USED
Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None

☒
☒
☐
☐
☒
☐
☐
☐
☒
☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	0815		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

Signed: T. Majer

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No:**
19045-007**Date/Time:**
9/15/99 0830Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer

Sample No.: MW-02

Well Location: MW-02

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective** Flush Mount
Casing Stick-up _____ ft.
(from ground)Riser Stick-up Flush Mount
(from ground) _____ ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 11.15 ft.top of riser
top of casingmeasured
historical**Water**
Depth 5.16 ft.**Height of**
Water Column 5.99 ft. x.16 gal/ft (2 in.)
.65 gal/ft (4 in.)
1.5 gal/ft (6 in.)
___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	50.0 ppm	

WELL MATERIAL

PVC

SS

Volume of Water in Well = 1.0 gallon(s)5.0Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.0	2.0	3.0	4.0	5.0			
pH (Std. Units)	6.99	7.06	7.08	7.09	7.09			
Eh (millivolts)	-81.6	-83.4	-81.4	-83.4	-84.6			
Conduct. (μ hos/cm)	1406	1412	1424	1428	1429			
Temp. (C)	15.45	15.43	15.29	15.19	15.10			
Turb. (NTU)								
DO (mg/l)	10.08	10.09	10.09	10.10	10.10			
Carbon Dioxide (mg/L)					10			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy-brown
Odor Petroleum Odor
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Waterira
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape**EQUIPMENT ID**
Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	0830	---	---
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: T. Majer

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No.:**
19045-007**Date/Time:**
9/13/99 1615Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer

Sample No.: MW-03

MS/MSD

Well Location: MW-03

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐Protective
Casing Stick-up 2.61 ft.
(from ground)Riser Stick-up
(from ground) 2.50 ft.WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inchWell
Depth 16.88 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historicalWater
Depth 11.03 ft.Height of
Water Column 5.85 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 0.9 gallon(s)4.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	0.9	1.8	2.7	3.6	4.5			
pH (Std. Units)	7.46	7.47	7.44	7.40	7.44			
Eh (millivolts)	-12.9	-47.4	-64.9	-70.9	-55.6			
Conduct. (µmhos/cm)	927	912	941	930	942			
Temp. (C)	14.98	14.73	14.22	13.96	13.84			
Turb. (NTU)								
DO (mg/l)	10.76	10.83	10.04	7.41	7.44			
Carbon Dioxide (mg/L)					30			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor None
Other _____

SAMPLE EQUIP./DECON.

PURGE SAMPLE

Peristaltic Pump
Submersible Pump
Bailer
Waterra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☒
☒
☐
☐
☐
☐
☐
☐
☐
☐
☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☒
☒
☐
☐
☒
☒
☐
☐
☐
☒
☐
☐**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	1615		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Todd D. Majer

Rev. 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No:**
19045-007**Date/Time:**
9/13/99 1700Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer

Sample No.: MW-3B

Well Location: MW-3B

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.5 ft.
(from ground)Riser Stick-up
(from ground) 2.4 ft.WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inchWell
Depth 37.6 ft.☒ top of riser
☐ top of casing☒ measured
☐ historicalWater
Depth 12.84 ft.Height of
Water Column 24.76 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 4.0 gallon(s)20.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	4.0	8.0	12.0	16.0	20.0			Sample Description Clear ☒ Turbid ☐ Color <u>Little Cloudy</u> Odor <u>None</u> Other _____
pH (Std. Units)	7.48	7.49	7.51	7.52	7.53			
Eh (millivolts)	-30.6	-36.6	-38.4	-41.1	-43.4			
Conduct. (µmhos/cm)	232	236	235	238	239			
Temp. (C)	14.57	14.48	14.36	14.24	14.19			
Turb. (NTU)								
DO (mg/l)	11.35	11.21	11.09	11.11	11.08			
Carbon Dioxide (mg/L)					30			

SAMPLE EQUIP./DECON.**PURGE****SAMPLE**

Peristaltic Pump	☐
Submersible Pump	☒
Bailer	☐
Waterira	☐
PVC/Silicon Tubing	☐
Teflon/Silicon Tubing	☐
Air Lift	☐
In-line Filter	☐
Pressure Vacuum Filter	☐
Measuring Tape	☐

☐
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☐

EQUIPMENT ID

Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer

DECON. FLUID USED

Tap Water	☒
Alconox	☐
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
DI Water	☒
Air Dry	☐
None	☐

DESCRIPTION OF DECON. PROC.

Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	1700		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Ted D. Mlyn

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No:**
19045-007**Date/Time:**
9/13/99 1430Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer

Sample No.: MW-04**Well Location:** MW-04**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**
Casing Stick-up ~3.0 ft.
(from ground)Riser Stick-up
(from ground) -2.8 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 16.39 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historical**Water**
Depth 14.82 ft.**Height of**
Water Column 1.57 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐**Volume of Water in Well =** 0.25 gallon(s)0.50 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	0.25	0.50					
pH (Std. Units)	7.32	7.34					
Eh (millivolts)	-42.6	-41.7					
Conduct. (umhos/cm)	885	880					
Temp. (C)	15.00	14.56					
Turb. (NTU)							
DO (mg/l)	10.14	10.60					
Carbon Dioxide (mg/L)		25					

Sample DescriptionClear ☒ Turbid ☐

Color Slightly Cloudy/Brown

Odor None

Other

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watrerra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☒
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☐
☐**EQUIPMENT ID**Collected field parameters with YSI flow-through cell.
Collected GW sample with dedicated teflon bailer.
Due to inefficient volume, well was purged with a
bailer. Collected GW sample upon recovery of MW.

Well dry after purging .50 gallons

DESCRIPTION OF DECON. PROC.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☐
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	9/14/99, 0745		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

Signed: *T. Majer*

AF-205/C

Signed: John D. Wilson

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No:**
19045-007**Date/Time:**
9/14/99 1130Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer

Sample No.: MW-06

Well Location: MW-06

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.65 ft.
(from ground)Riser Stick-up
(from ground) 2.55 ft.WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inchWell
Depth 17.40 ft. ☒ top of riser ☒ measured
☐ top of casing ☐ historicalWater
Depth 8.91 ft.Height of
Water Column 8.49 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.4 gallon(s)7.0 Total gallons
to purge
[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.4	2.8	4.2	5.6	7.0				
pH (Std. Units)	7.24	7.26	7.26	7.28	7.28				
Eh (millivolts)	-59.6	-59.8	-61.3	-64.4	-64.2				
Conduct. (µmhos/cm)	434	436	436	437	438				
Temp. (C)	14.51	14.40	14.31	14.14	14.12				
Turb. (NTU)									
DO (mg/l)	9.71	9.72	9.72	9.72	9.37				
Carbon Dioxide (mg/L)					50				

Sample Description

Clear ☐ Turbid ☒
 Color Brown
 Odor None
 Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump	☐	☐
Submersible Pump	☒	☐
Ballor	☐	☒
Waterra	☐	☐
PVC/Silicon Tubing	☐	☐
Teflon/Silicon Tubing	☐	☐
Air Lift	☐	☐
In-line Filter	☐	☐
Pressure Vacuum Filter	☐	☐
Measuring Tape	☐	☐

EQUIPMENT ID

Whale pump with dedicated tubing. Collected field
 parameters with YSI flow-through cell. Collected GW
 sample with dedicated teflon bailer

DECON. FLUID USED

Tap Water	☒
Alconox	☒
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
DI Water	☒
Air Dry	☐
None	☐

DESCRIPTION OF DECON. PROC.

Decontaminated whale pump by pumping 5-
 gallons of alconox/tap mixture, DI rinse, methanol
 rinse, and DI rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	1130		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Todd D. Majer

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 1**Project No:**
19045-007**Date/Time:**
9/14/99 1445Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-07/ MW-07D**Well Location:** MW-07**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**
Casing Stick-up 2.55 ft.
(from ground)Riser Stick-up
(from ground) 2.40 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 15.60 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historicalWater
Depth 7.70 ft.Height of
Water Column 7.9 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	120.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.3 gallon(s)6.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.3	2.6	3.9	5.2	6.5			
pH (Std. Units)	8.96	8.99	9.06	9.09	9.12			
Eh (millivolts)	-199.6	-206.4	-212.4	-218.6	-221.4			
Conduct. (µmhos/cm)	2891	2896	2894	2899	2903			
Temp. (C)	14.91	14.81	14.82	14.79	14.76			
Turb. (NTU)								
DO (mg/l)	8.01	8.06	8.04	8.09	8.12			
Carbon Dioxide (mg/L)					400			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy Gray
Odor Strong
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Waterwa
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
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☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water ☒
Alconox ☒
Tap Water ☐
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
DI Water ☐
Air Dry ☒
None ☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	1445	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					



Field Data Record Ground Water

Project: AKZO NOBEL
GW Sampling - Round 1

Project No:
19045-007

Date/Time:
9/14/99 1330

Sheet 1 **of** 1

Contractor Personnel:

TRC Personnel:
T. Majer

Sample No.: MW-08

Well Location: MW-08

WELL INTEGRITY

Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock Present

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

Protective

Casing Stick-up 2.10 ft.
(from ground)

Riser Stick-up 1.95 ft.
(from ground)

WELL DIAMETER

☒	2 inch
☐	4 inch
☐	6 inch

Well Depth 18.35 ft.

☒	top of riser
☐	top of casing

☒ measured
☐ historical

Water Depth 9.83 ft.

Height of Water Column 8.52 ft. x

☒	.16 gal/ft (2 in.)
☐	.65 gal/ft (4 in.)
☐	1.5 gal/ft (6 in.)
☐	___ gal/ft (___ in.)

OVA/PID SCREENING MEAS.

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	10.0 ppm	

WELL MATERIAL

☒	☐	☐
PVC	SS	

Volume of Water in Well = 1.4 gallon(s)

7.0 Total gallons
to purge

[Vol. = $r^2 h(0.163)$]

FIELD WATER QUALITY MEASUREMENTS

Purge Volume (gal)	1.4	2.8	4.2	5.6	7.0		
pH (Std. Units)	7.56	7.49	7.53	7.54	7.58		
Eh (millivolts)	-112.6	-116.8	-121.6	-124.8	-127.9		
Conduct. (µmhos/cm)	1220	1228	1234	1237	1239		
Temp. (C)	14.68	14.61	14.58	14.51	14.46		
Turb. (NTU)							
DO (mg/l)	7.89	7.91	7.92	7.94	7.99		
Carbon Dioxide (mg/L)					200		

Sample Description
Clear ☐ Turbid ☒
Color Cloudy brown
Odor Sewer Odor
Other _____

SAMPLE EQUIP./DECON.

Peristaltic Pump
Submersible Pump
Bailer
Waterra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

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SAMPLE

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EQUIPMENT ID

Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer

DESCRIPTION OF DECON. PROC.

Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

DECON. FLUID USED

Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None

☒
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☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	1330		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-01**Well Location:** MW-01**WELL INTEGRITY**

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.35 ft.
(from ground)Riser Stick-up
(from ground) 2.25 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 18.05 ft.☒ top of riser
☐ top of casing☒ measured
☐ historical**Water**
Depth 10.40 ft.Height of
Water Column 7.65 ft. x
☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.2 gallon(s)3.6 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.2	2.4	3.6							
pH (Std. Units)	8.30	8.21	8.17							
Eh (millivolts)	67.7	81.4	100.8							
Conduct. (µmhos/cm)	446	447	452							
Temp. (C)	11.85	11.73	11.89							
Turb. (NTU)										
DO (mg/l)	7.78	7.24	5.6							
Carbon Dioxide (mg/L)			50							

Sample Description
Clear ☐ Turbid ☒
Color Brown
Odor None
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump	☐	☐
Submersible Pump	☒	☐
Bailer	☐	☒
Waterara	☐	☐
PVC/Silicon Tubing	☐	☐
Teflon/Silicon Tubing	☐	☐
Air Lift	☐	☐
In-line Filter	☐	☐
Pressure Vacuum Filter	☐	☐
Measuring Tape	☐	☐

EQUIPMENT ID

Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer.
Well dry after purging 3.6 gallons.

DESCRIPTION OF DECON. PROC.

Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

DECON. FLUID USED

Tap Water	☒
Alconox	☒
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
DI Water	☒
Air Dry	☐
None	☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 1030		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-1B**MS/MSD****Well Location:** MW-1B**WELL INTEGRITY**

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 1.90 ft.
(from ground)Riser Stick-up
(from ground) 1.65 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 47.45 ft.☒ top of riser
☐ top of casing
☐☒ measured
☐ historical**Water**
Depth 10.01 ft.**Height of**
Water Column 37.44 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC
☐ SS
☐**Volume of Water in Well =** 6.0 gallon(s)24.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	6.0	12	18	24						
pH (Std. Units)	12.91	12.90	12.91	12.90						
Eh (millivolts)	-102.4	-132.4	-136.4	-137.1						
Conduct. (µmhos/cm)	3206	3221	3228	3229						
Temp. (C)	10.95	11.47	11.77	11.79						
Turb. (NTU)										
DO (mg/l)	0.75	0.82	0.83	0.84						
Carbon Dioxide (mg/L)				50						

Sample Description
Clear ☒ Turbid ☐
Color Cloudy
Odor Cement/Grout
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watterra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

☐	☐
☒	☒
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

EQUIPMENT ID
Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None

☒
☒
☐
☐
☐
☒
☐
☐
☐
☒
☒
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 1000		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

Signed: T. Majer

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-02**Well Location:** MW-02**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective** Flush Mount
Casing Stick-up _____ ft.
(from ground)Riser Stick-up Flush Mount
(from ground) _____ ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 11.10 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historical**Water**
Depth 3.73 ft.Height of
Water Column 7.37 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ _____ gal/ft (____ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	50.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.2 gallon(s)4.8 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.2	2.4	3.6	4.8					
pH (Std. Units)	7.95	7.72	7.60	7.63					
Eh (millivolts)	-47.8	-53.5	-59.6	-59.9					
Conduct. (µmhos/cm)	4804	4928	4960	4961					
Temp. (C)	13.79	13.75	13.77	13.77					
Turb. (NTU)									
DO (mg/l)	6.98	5.47	4.64	4.69					
Carbon Dioxide (mg/L)				15					

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor Petroleum Odor
Other _____

SAMPLE EQUIP./DECON.**PURGE SAMPLE**Peristaltic Pump
Submersible Pump
Bailer
Waterra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐ ☒
☒ ☐
☐ ☒
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer.**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons ofalconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water ☒
Alconox ☒
Tap Water ☐
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
DI Water ☒
Air Dry ☐
None ☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 1045	_____	_____
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: *T. Majer*

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-03**Well Location:** MW-03**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**Casing Stick-up 2.61 ft.
(from ground)Riser Stick-up
(from ground) 2.50 ft.**WELL DIAMETER**☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 16.74 ft.☒ top of riser
☐ top of casing
☒ measured
☐ historical**Water**
Depth 4.42 ft.**Height of**
Water Column 12.32 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC
☐ SS
☐**Volume of Water in Well =** 2.0 gallon(s)10.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	2.0	4.0	6.0	8.0	10.0			
pH (Std. Units)	8.15	8.06	8.06	8.07	8.08			
Eh (millivolts)	98.4	94.1	100.7	101.4	101.9			
Conduct. (umhos/cm)	657	700	703	705	706			
Temp. (C)	11.03	11.98	12.44	12.44	12.46			
Turb. (NTU)								
DO (mg/l)	5.16	3.18	2.95	2.94	2.91			
Carbon Dioxide (mg/L)					55			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor None
Other _____

SAMPLE EQUIP./DECON.**PURGE** **SAMPLE**Peristaltic Pump
Submersible Pump
Baller
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☐
☐
☐
☐
☐
☐
☐
☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☒
☒
☐
☐
☐
☒
☐
☐
☐
☒
☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0815	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-3B**Well Location:** MW-3B**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**
Casing Stick-up 2.5 ft.
(from ground)Riser Stick-up
(from ground) 2.4 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well** ☒ top of riser ☒ measured
Depth 38 ft. ☐ top of casing ☐ historical**Water**
Depth 10.54 ft.**Height of**
Water Column 27.46 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐**Volume of Water in Well =** 4.4 gallon(s)22.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	4.4	8.8	13.2	17.6	22.0			
pH (Std. Units)	8.77	8.85	9.08	9.09	9.11			
Eh (millivolts)	-49.7	-138.5	-157.4	-159.6	-159.9			
Conduct. (μ mhos/cm)	339	323	331	342	344			
Temp. (C)	11.81	11.88	12.11	12.13	12.14			
Turb. (NTU)								
DO (mg/l)	6.56	5.08	5.02	5.06	5.05			
Carbon Dioxide (mg/L)					50			

Sample Description
Clear ☒ Turbid ☐
Color Little Cloudy
Odor None
Other _____

SAMPLE EQUIP./DECON.Peristaltic Pump
Submersible Pump
Bailer
Waterira
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring TapePURGE SAMPLE
☒ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DECON. FLUID USED**Tap Water ☒
Alconox ☒
Tap Water ☒
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
DI Water ☒
Air Dry ☐
None ☐**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0800		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Todd D. Majer

Rev. 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-04**Well Location:** MW-04**WELL INTEGRITY**

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up ~3.0 ft.
(from ground)Riser Stick-up
(from ground) ~2.8 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 16.30 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historicalWater
Depth 9.18 ft.Height of
Water Column 7.12 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.1 gallon(s)3.3 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.1	2.2	3.3							
pH (Std. Units)	8.28	8.00	8.00							
Eh (millivolts)	233.5	236.3	227.7							
Conduct. (μ mhos/cm)	589	628	639							
Temp. (C)	11.96	11.95	12.07							
Turb. (NTU)										
DO (mg/l)	5.67	4.74	4.98							
Carbon Dioxide (mg/L)			125							

Sample Description
Clear ☒ Turbid ☐
Color Cloudy/Brown
Odor None
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump	☐	☐
Submersible Pump	☐	☐
Bailer	☒	☒
Watertra	☐	☐
PVC/Silicon Tubing	☐	☐
Teflon/Silicon Tubing	☐	☐
Air Lift	☐	☐
In-line Filter	☐	☐
Pressure Vacuum Filter	☐	☐
Measuring Tape	☐	☐

EQUIPMENT IDCollected field parameters with YSI flow-through cell.
Collected GW sample with dedicated teflon bailer.
Well dry after purging 3.3 gallons. Collected GW
sample upon recovery of MW.**DECON. FLUID USED**

Tap Water	☐
Alconox	☐
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☐
Hexane	☐
Acetone	☐
Air Dry	☐
DI Water	☐
Air Dry	☐
None	☐

DESCRIPTION OF DECON. PROC.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0745	---	---
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Todd D. Majer

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-05**Well Location:** MW-05**WELL INTEGRITY**

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.12 ft.
(from ground)Riser Stick-up
(from ground) 1.95 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well Depth** 15.4 ft. ☒ top of riser ☒ measured
☐ top of casing ☐ historical**Water Depth** 6.52 ft.**Height of Water Column** 8.88 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐**Volume of Water in Well =** 1.4 gallon(s)7.0 Total gallons
[Vol. = $r^2 h(0.163)$] to purge**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.4	2.8	4.2	5.6	7.0			
pH (Std. Units)	9.15	8.80	8.71	8.72	8.73			
Eh (millivolts)	55.8	60.9	61.8	61.9	62.4			
Conduct. (µmhos/cm)	678	690	695	696	698			
Temp. (C)	12.30	12.35	12.37	12.37	12.39			
Turb. (NTU)								
DO (mg/l)	4.67	1.45	0.94	0.95	0.95			
Carbon Dioxide (mg/L)					50			

Sample Description
Clear ☒ Turbid ☐
Color Little cloudy
Odor None
Other _____

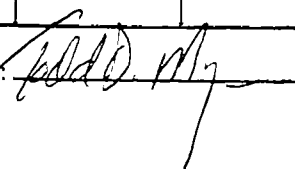
SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump	☐
Submersible Pump	☒
Bailer	☒
Waterra	☐
PVC/Silicon Tubing	☐
Teflon/Silicon Tubing	☐
Air Lift	☐
In-line Filter	☐
Pressure Vacuum Filter	☐
Measuring Tape	☐

EQUIPMENT ID
Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons ofalconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**

Tap Water	☒
Alconox	☒
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
DI Water	☒
Air Dry	☐
None	☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0930	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: 

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer

Sample No.: MW-06

Well Location: MW-06

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.65 ft.
(from ground)Riser Stick-up
(from ground) 2.55 ft.**WELL DIAMETER**
☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 17.28 ft.
☒ top of riser
☐ top of casing☒ measured
☐ historicalWater
Depth 7.08 ft.Height of
Water Column 10.2 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC
☐ SS
☐Volume of Water in Well = 1.6 gallon(s)8.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.6	3.2	4.8	6.4	8.0			
pH (Std. Units)	7.83	7.81	7.78	7.78	7.79			
Eh (millivolts)	-24.9	-26.5	-28.9	-29.1	-29.2			
Conduct. (µmhos/cm)	4019	3989	3988	3989	3990			
Temp. (C)	12.28	12.28	12.29	12.29	12.31			
Turb. (NTU)								
DO (mg/l)	3.39	2.57	1.97	1.95	1.94			
Carbon Dioxide (mg/L)					75			

Sample Description
Clear ☐ Turbid ☒
Color Brown
Odor None
Other _____

SAMPLE EQUIP./DECON.**PURGE SAMPLE**

Peristaltic Pump	☐	☐
Submersible Pump	☒	☐
Bailer	☐	☒
Watertra	☐	☐
PVC/Silicon Tubing	☐	☐
Teflon/Silicon Tubing	☐	☐
Air Lift	☐	☐
In-line Filter	☐	☐
Pressure Vacuum Filter	☐	☐
Measuring Tape	☐	☐

EQUIPMENT IDWhale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DECON. FLUID USED**

Tap Water	☒
Alconox	☒
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
DI Water	☒
Air Dry	☐
None	☐

DESCRIPTION OF DECON. PROC.Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0845		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-07/ MW-07D**Well Location:** MW-07**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**
Casing Stick-up 2.55 ft.
(from ground)Riser Stick-up
(from ground) 2.40 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 15.50 ft.☒ top of riser
☐ top of casing☒ measured
☐ historical**Water**
Depth 5.91 ft.**Height of**
Water Column 9.59 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.6 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐**Volume of Water in Well =** 1.5 gallon(s)7.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.5	3.0	4.5	6.0	7.5			
pH (Std. Units)	7.57	7.46	7.44	7.45	7.45			
Eh (millivolts)	-56.2	-56.7	-59.1	-46.6	-49.1			
Conduct. (umhos/cm)	10486	12143	13378	14703	14986			
Temp. (C)	12.14	12.39	12.59	12.78	12.81			
Turb. (NTU)								
DO (mg/l)	2.46	2.21	1.88	1.82	1.89			
Carbon Dioxide (mg/L)					450			

Sample Description
Clear ☐ Turbid ☒
Cloudy Gray/white Milky layer
Color _____
Odor Strong
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer.**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☒
☒
☐
☐
☐
☒
☐
☐
☐
☒
☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0900	---	---
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 2**Project No:**
19045-007**Date/Time:**
12/4/99Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**
T. Majer**Sample No.:** MW-08**Well Location:** MW-08**WELL INTEGRITY**Protect. Casing Secure ☒ YES ☐ NO
Concrete Collar Intact ☒ YES ☐ NO
PVC Stick-up Intact ☒ YES ☐ NO
Well Cap Present ☒ YES ☐ NO
Security Lock Present ☒ YES ☐ NO**Protective**
Casing Stick-up 2.10 ft.
(from ground)Riser Stick-up
(from ground) 1.95 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 17.92 ft. ☒ top of riser ☒ measured
☐ top of casing ☐ historicalWater
Depth 8.11 ft.Height of
Water Column 9.81 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.6 gallon(s)8.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.6	3.2	4.8	6.4	8.0			
pH (Std. Units)	7.68	7.63	7.59	7.61	7.61			
Eh (millivolts)	-19.3	-23.2	-29.2	-31.6	-33.3			
Conduct. (µmhos/cm)	6784	7453	7734	7945	8096			
Temp. (C)	13.55	13.57	13.58	13.58	13.59			
Turb. (NTU)								
DO (mg/l)	9.69	9.04	8.77	8.71	8.70			
Carbon Dioxide (mg/L)					175			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy brown
Odor Sewer Odor
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump ☐
Submersible Pump ☒
Bailer ☒
Waterra ☐
PVC/Silicon Tubing ☐
Teflon/Silicon Tubing ☐
Air Lift ☐
In-line Filter ☐
Pressure Vacuum Filter ☐
Measuring Tape ☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water ☒
Alconox ☒
Tap Water ☐
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
DI Water ☒
Air Dry ☐
None ☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	2x40 mL	12/5/99, 0830	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: *T. Majer*

Rev: 8 July 1991

AF-206/C

Signed: Paul D. Miller

Rev. 8 July 1991

AF-206/C

Signed:

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 3**Project No:**
19045-007**Date/Time:**
3/27/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S. Nabozny

Sample No.: MW-02

Well Location: MW-02

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective** Flush Mount
Casing Stick-up _____ ft.
(from ground)Riser Stick-up Flush Mount
(from ground) _____ ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 11.10 ft.☒ top of riser
☐ top of casing☒ measured
☐ historical**Water**
Depth 1.81 ft.**Height of**
Water Column 9.29 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ _____ gal/ft (____ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	2.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.5 gallon(s)7.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.5	3.0	4.5	6.0	7.5
pH (Std. Units)	7.16	7.11	7.09	7.06	7.05
Eh (millivolts)	-121.3	-144.7	-149.7	-129.8	-142.6
Conduct. (µmhos/cm)	1222	1171	1139	1136	1128
Temp. (C)	10.55	10.46	10.47	10.56	10.48
Turb. (NTU)					
DO (mg/l)	3.65	3.50	3.61	3.21	2.01
Carbon Dioxide (mg/L)					25

Sample DescriptionClear ☐ Turbid ☒
Color Cloudy/Brown
Odor Petroleum Odor
Other _____**SAMPLE EQUIP./DECON. PURGE SAMPLE**Peristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐ ☒
☐ ☒
☐ ☒
☐ ☒
☐ ☒
☐ ☒
☐ ☒
☐ ☒
☐ ☒
☐ ☒**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer.**DECON. FLUID USED**Tap Water ☒
Alconox ☒
Tap Water ☐
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
DI Water ☒
Air Dry ☐
None ☐**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00, 1030	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

TRC Field Data Record Ground Water	Project: AKZO NOBEL GW Sampling - Round 3	Project No: 19045-007	Date/Time: 3/27/00	Sheet <u>1</u> of <u>1</u>
	Contractor Personnel:		TRC Personnel: T. Majer/S.Nabozny	

Sample No.: MW-03

Well Location: MW-03

WELL INTEGRITY

Protect. Casing Secure	YES	NO	
Concrete Collar Intact	☒	☐	
PVC Stick-up Intact	☒	☐	
Well Cap Present	☒	☐	
Security Lock Present	☒	☐	

Protective
 Casing Stick-up 2.61 ft.
 (from ground)

 Riser Stick-up
 (from ground) 2.50 ft.

WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inch

Well Depth 16.90 ft. ☒ top of riser ☒ measured
☐ top of casing ☐ historical

Water Depth 2.75 ft.

Height of Water Column 14.15 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)

OVA/PID SCREENING MEAS.

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL
☒ PVC ☐ SS ☐
Volume of Water in Well = 2.3 gallon(s)

9.0 Total gallons to purge
 [Vol. = $r^2 h(0.163)$]

FIELD WATER QUALITY MEASUREMENTS

Purge Volume (gal)	2.3	4.6	6.9	9.0					
pH (Std. Units)	7.32	7.47	7.25	7.28					
Eh (millivolts)	185.4	180.8	159.1	156.2					
Conduct. (umhos/cm)	571	573	580	584					
Temp. (C)	7.55	7.68	7.96	7.99					
Turb. (NTU)									
DO (mg/l)	3.83	3.21	5.62	5.74					
Carbon Dioxide (mg/L)				50					

Sample Description

 Clear ☐ Turbid ☒
 Color Cloudy
 Odor None
 Other _____

SAMPLE EQUIP./DECON.
PURGE SAMPLE

 Peristaltic Pump ☐
 Submersible Pump ☒
 Bailor ☒
 Waterra ☐
 PVC/Silicon Tubing ☐
 Teflon/Silicon Tubing ☐
 Air Lift ☐
 In-line Filter ☐
 Pressure Vacuum Filter ☐
 Measuring Tape ☐
EQUIPMENT ID

 Whale pump with dedicated tubing. Collected field
 parameters with YSI flow-through cell. Collected GW
 sample with dedicated teflon bailer.
 Well dry after purging 9.0 gallons

DESCRIPTION OF DECON. PROC.

 Decontaminated whale pump by pumping 5-
 gallons of alconox/tap mixture, DI rinse, methanol
 rinse, and DI rinse.

DECON. FLUID USED

 Tap Water ☒
 Alconox ☒
 Tap Water ☐
 HNO₃ (1 or 10%) ☐
 Tap Water ☐
 Methanol ☒
 Hexane ☐
 Acetone ☐
 Air Dry ☐
 DI Water ☒
 Air Dry ☐
 None ☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00, 0830		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 3**Project No:**
19045-007**Date/Time:**
3/27/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-3B

Well Location: MW-3B

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**Casing Stick-up 2.5 ft.
(from ground)Riser Stick-up 2.4 ft.
(from ground)**WELL DIAMETER**☒ 2 inch
☐ 4 inch
☐ 6 inchWell Depth 38 ft.☒ top of riser
☐ top of casing
☐ measured
☐ historicalWater Depth 10.59 ft.Height of Water Column 27.41 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 4.5 gallon(s)22.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	4.5	9.0	13.5	18.0	22.5			Sample Description Clear ☒ Turbid ☐ Color <u>Cloudy</u> Odor <u>None</u> Other _____
pH (Std. Units)	8.01	8.02	7.99	7.97	7.96			
Eh (millivolts)	-127.5	-173.4	-178.1	-172.5	-172.9			
Conduct. (umhos/cm)	334	334	336	338	339			
Temp. (C)	10.39	10.31	10.36	10.45	10.53			
Turb. (NTU)								
DO (mg/l)	2.80	0.35	0.20	0.20	0.16			
Carbon Dioxide (mg/L)					45			

SAMPLE EQUIP./DECON.**PURGE SAMPLE**Peristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☒
☐
☐
☐
☐
☐
☐
☐
☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☒
☒
☐
☐
☐
☒
☐
☐
☐
☒
☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00, 0900	---	---
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					



Field Data Record Ground Water

Project: AKZO NOBEL
GW Sampling - Round 3

Project No:
19045-007

Date/Time:
3/27/00

Sheet 1 of 1

Contractor Personnel:

TRC Personnel:

T. Majer/S. Nabozny

Sample No.: MW-04

Well Location: MW-04

WELL INTEGRITY

Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock Present

YES	NO
☒	☐
☒	☐
☒	☐
☒	☐
☒	☐

Protective
Casing Stick-up ~3.0 ft.
(from ground)

Riser Stick-up ~2.8 ft.
(from ground)

WELL DIAMETER
☒ 2 inch
☐ 4 inch
☐ 6 inch

Well Depth 16.42 ft.
☒ top of riser
☐ top of casing
☒ measured
☐ historical

Water Depth 7.64 ft.

Height of Water Column 8.78 ft. x

☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)

OVA/PID SCREENING MEAS.

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL

☒ PVC ☐ SS ☐

Volume of Water in Well = 1.4 gallon(s)

5.6 Total gallons
to purge

[Vol. = $r^2 h(0.163)$]

FIELD WATER QUALITY MEASUREMENTS

Purge Volume (gal)	1.4	2.8	4.2	5.6			
pH (Std. Units)	7.26	7.27	7.24	7.27			
Eh (millivolts)	165.2	177.1	181.8	181.7			
Conduct. (μ mhos/cm)	408	416	413	423			
Temp. (C)	7.25	7.21	7.32	7.55			
Turb. (NTU)							
DO (mg/l)	7.69	7.82	4.29	5.68			
Carbon Dioxide (mg/L)				75			

Sample Description

Clear ☒ Turbid ☐
Color Cloudy/Brown
Odor None
Other _____

SAMPLE EQUIP./DECON.

PURGE **SAMPLE**

Peristaltic Pump
Submersible Pump
Bailer
Wattera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

☐	☐
☐	☐
☒	☒
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

EQUIPMENT ID

Collected field parameters with YSI flow-through cell.
Collected GW sample with dedicated teflon bailer.
Well dry after purging 5.6 gallons. Collected GW sample upon recovery of MW.

DESCRIPTION OF DECON. PROC.

DECON. FLUID USED

Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None

☐
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐

ANALYTICAL PARAMETERS

Filtered
(circle)

Preservation
Method

Volume
Required

Time of
Collection

CLP
Sample #

CLP
Case #

☒ TCL Volatiles

YES NO

4° C/HCl

3x40 mL

3/28/00, 0810

☐ BNA Extractables

YES NO

4° C

4x1 L Amb GL

☐ PCBs/Pesticides

YES NO

4° C

☐ TAL Metals

YES NO

HNO₃/4° C

1 L PL

☐ Cyanide

YES NO

NaOH/4° C

1 L PL

☐ _____

YES NO

Signed: T. Majer

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 3**Project No:**
19045-007**Date/Time:**
3/27/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-05**Well Location:** MW-05**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**Casing Stick-up 2.12 ft.
(from ground)Riser Stick-up 1.95 ft.
(from ground)**WELL DIAMETER**☒ 2 inch
☐ 4 inch
☐ 6 inch**Well Depth** 15.30 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historical**Water Depth** 4.47 ft.**Height of Water Column** 10.83 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	2.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐**Volume of Water in Well =** 1.7 gallon(s)8.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.7	3.4	5.1	6.8	8.5			
pH (Std. Units)	7.93	7.72	7.44	7.35	7.28			
Eh (millivolts)	40.9	50.4	58.4	62.0	64.5			
Conduct. (umhos/cm)	616	618	622	625	626			
Temp. (C)	8.13	8.18	8.21	8.22	8.23			
Turb. (NTU)								
DO (mg/l)	0.72	0.46	0.25	0.18	0.17			
Carbon Dioxide (mg/L)					15			

Sample Description
Clear ☒ Turbid ☐
Color Little cloudy
Odor None
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☒
☒
☐
☐
☐
☒
☐
☐
☐
☒
☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00,1015		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 3**Project No:**
19045-007**Date/Time:**
3/27/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S. Nabozny

Sample No.: MW-06**Well Location:** MW-06**WELL INTEGRITY**Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☒
☒ ☒
☒ ☒
☒ ☒
☒ ☒**Protective**Casing Stick-up 2.65 ft.
(from ground)Riser Stick-up 2.55 ft.
(from ground)**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well Depth** 17.40 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historical**Water Depth** 5.52 ft.**Height of Water Column** 11.88 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	2.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐**Volume of Water in Well =** 2.0 gallon(s)10.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	2.0	4.0	6.0	8.0	10.0			
pH (Std. Units)	7.04	6.97	6.96	6.98	6.98			
Eh (millivolts)	23.4	9.5	5.4	1.4	-1.6			
Conduct. (µmhos/cm)	1626	1851	1888	1899	2108			
Temp. (C)	7.83	7.39	7.33	7.31	7.39			
Turb. (NTU)								
DO (mg/l)	1.06	0.89	0.78	0.81	0.59			
Carbon Dioxide (mg/L)					50			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor None
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☒
☒
☒
☒
☒
☒
☒
☒
☒
☒
☒**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**Tap Water ☒
Alconox ☒
Tap Water ☒
HNO₃ (1 or 10%) ☒
Tap Water ☒
Methanol ☒
Hexane ☒
Acetone ☒
Air Dry ☒
DI Water ☒
Air Dry ☒
None ☒

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00, 0930		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					



Field Data Record Ground Water

Project: AKZO NOBEL
GW Sampling - Round 3

Project No:
19045-007

Date/Time:
3/27/00

Sheet 1 of 1

Contractor Personnel:

TRC Personnel:

T. Majer/S. Nabozny

Sample No.: MW-07/ MW-07B

Well Location: MW-07

WELL INTEGRITY

Protect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock Present

YES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐

Protective

Casing Stick-up 2.55 ft.
(from ground)

Riser Stick-up 2.40 ft.
(from ground)

WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inch

Well Depth 15.60 ft.

☒ top of riser
☐ top of casing

☒ measured
☐ historical

Water Depth 4.30 ft.

Height of Water Column 11.30 ft. x

☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)

OVA/PID SCREENING MEAS.

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	3.0 ppm	

WELL MATERIAL

☒ PVC ☐ SS ☐

Volume of Water in Well = 1.8 gallon(s)

9.0 Total gallons
to purge

[Vol. = $r^2 h(0.163)$]

FIELD WATER QUALITY MEASUREMENTS

Purge Volume (gal)	1.8	3.6	5.4	7.2	9.0			
pH (Std. Units)	6.72	6.68	6.63	6.63	6.63			
Eh (millivolts)	-128.6	-128.9	-133.9	-133.2	-131.6			
Conduct. (µmhos/cm)	5646	6892	9191	10196	12694			
Temp. (C)	7.65	7.69	7.83	7.97	8.07			
Turb. (NTU)								
DO (mg/l)	0.99	0.98	0.97	0.96	0.99			
Carbon Dioxide (mg/L)					250			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor Strong Chemical
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump
Submersible Pump
Bailer
Waterra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

☒
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☐

EQUIPMENT ID
Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer

DESCRIPTION OF DECON. PROC.

Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.

DECON. FLUID USED

Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None

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ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00, 0955		
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 3**Project No:**
19045-007**Date/Time:**
3/27/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-08

Well Location: MW-08

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**
Casing Stick-up 2.10 ft.
(from ground)Riser Stick-up
(from ground) 1.95 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 18.30 ft.☒ top of riser
☐ top of casing☒ measured
☐ historicalWater
Depth 6.81 ft.Height of
Water Column 11.5 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	2.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.8 gallon(s)9.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.8	3.6	5.4	7.2	9.0			
pH (Std. Units)	6.92	6.87	6.83	6.81	6.81			
Eh (millivolts)	-77.8	-81.6	-90.5	-95.5	-97.8			
Conduct. (umhos/cm)	3109	3181	3328	3363	3373			
Temp. (C)	9.14	9.10	9.12	9.13	9.12			
Turb. (NTU)								
DO (mg/l)	1.07	1.03	1.02	1.01	1.01			
Carbon Dioxide (mg/L)					75			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor Sewer Odor
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Waterara
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☐
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☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer.**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/tap mixture, DI rinse, methanol
rinse, and DI rinse.**DECON. FLUID USED**

Tap Water

Alconox

Tap Water

HNO₃ (1 or 10%)

Tap Water

Methanol

Hexane

Acetone

Air Dry

DI Water

Air Dry

None

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☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	3/28/00, 0915	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Ted D. Majer

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 3**Project No:**
19045-007**Date/Time:**
3/27/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.:

Well Location: OS-01

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☒
☒ ☒
☒ ☒
☒ ☒
☒ ☒**Protective**
Casing Stick-up _____ ft.
(from ground)Riser Stick-up
(from ground) ~1.5 ft.**WELL DIAMETER**
☒ 2 inch
☒ 4 inch
☐ 6 inch**Well**
Depth 13.85 ft.☒ top of riser
☐ top of casing
☒ measured
☐ historical**Water**
Depth 7.32 ft.**Height of**
Water Column 6.53 ft. x☒ .16 gal/ft (2 in.)
☒ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ _____ gal/ft (____ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	2.0 ppm	

WELL MATERIAL☒ PVC
☐ SS
☐Volume of Water in Well = 4.2 gallon(s)21.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	4.2	8.4	12.6	16.8	21.0			
pH (Std. Units)	7.0	6.83	6.85	6.88	6.86			
Eh (millivolts)	-44.3	-39.9	-55.2	-53.3	-66.2			
Conduct. (µmhos/cm)	645	621	595	580	570			
Temp. (C)	8.48	8.43	8.45	8.49	8.42			
Turb. (NTU)								
DO (mg/l)	2.92	2.65	2.52	2.80	2.68			
Carbon Dioxide (mg/L)					20			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor Petroleum Odor
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
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☐**EQUIPMENT ID**OS-01 was purged with a teflon bailer. TRC did not
collect a GW sample here, only field GW quality
parameters**DESCRIPTION OF DECON. PROC.****DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☐
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☐
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☐ TCL Volatiles	YES NO	4° C/HCl	3x40 mL			
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: T. Majer

Rev: 8 July 1991

AF-206/C

Signed

Rev: 8 July 1991

AF-208/C

Signed:

Rev: 8 July 1991

AF-208/C

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 4**Project No:**
19045-007**Date/Time:**
7/15/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-3B

MS/MSD

Well Location: MW-3B

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.5 ft.
(from ground)Riser Stick-up
(from ground) 2.4 ft.WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inchWell Depth 38 ft. ☒ top of riser ☒ measured
☐ top of casing ☐ historicalWater
Depth 11.15 ft.Height of
Water Column 26.85 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 4.3 gallon(s)21.5 Total gallons
to purge
[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	4.3	8.6	12.9	17.2	21.5			
pH (Std. Units)	8.18	8.26	8.45	8.32	8.14			
Eh (millivolts)	-152.4	-179.4	-194.6	-166.6	-72.7			
Conduct. (µmhos/cm)	315	318	321	328	341			
Temp. (C)	10.60	10.70	10.79	10.70	10.58			
Turb. (NTU)								
DO (mg/l)	1.60	1.45	1.41	1.41	4.06			
Carbon Dioxide (mg/L)					50			

Sample Description
Clear ☒ Turbid ☐
Color Cloudy
Odor None
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLEPeristaltic Pump
Submersible Pump
Bailer
Watertra
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape

☐	☐
☒	☒
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

EQUIPMENT IDWhale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons ofalconox/Poland Spring mixture, Poland
Spring rinse, methanol rinse, and Poland Spring
rinse.**DECON. FLUID USED**Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
Water
Air Dry
None

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☒
☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	7/16/00, 1005	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

AF-206/C

Signed: *[Signature]*

Rev: 8 July 1991

AF-208/C

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 4**Project No:**
19045-007**Date/Time:**
7/15/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-05

Well Location: MW-05

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☐
☒ ☐
☒ ☐
☒ ☐
☒ ☐**Protective**
Casing Stick-up 2.12 ft.
(from ground)Riser Stick-up
(from ground) 1.95 ft.**WELL DIAMETER** ☒ 2 inch
☐ 4 inch
☐ 6 inch**Well**
Depth 15.30 ft.☒ top of riser ☒ measured
☐ top of casing ☐ historical**Water**
Depth 5.22 ft.**Height of**
Water Column 10.08 ft. x☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.6 gallon(s)8.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.6	3.2	4.8	6.4	8.0		
pH (Std. Units)	7.52	7.30	7.23	7.21	7.20		
Eh (millivolts)	23.7	31.8	38.7	43.5	45.5		
Conduct. (μ mhos/cm)	620	616	615	614	614		
Temp. (C)	13.09	13.00	12.97	12.95	12.94		
Turb. (NTU)							
DO (mg/l)	8.74	5.95	4.80	5.11	5.37		
Carbon Dioxide (mg/L)					15		

Sample DescriptionClear ☒ Turbid ☐
Color Little cloudy
Odor None
Other _____**SAMPLE EQUIP./DECON.**Peristaltic Pump
Submersible Pump
Bailer
Wattera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring TapePURGE SAMPLE
☒ ☒
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐**EQUIPMENT ID**Whale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/Poland Spring mixture, Poland
Spring rinse, methanol rinse, and Poland Spring
rinse.**DECON. FLUID USED**Water ☒
Alconox ☒
Tap Water ☐
HNO₃ (1 or 10%) ☐
Tap Water ☐
Methanol ☒
Hexane ☐
Acetone ☐
Air Dry ☐
Water ☒
Air Dry ☐
None ☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	7/16/00,1045	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

Signed: Ted D. Majer

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 4**Project No:**
19045-007**Date/Time:**
7/15/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-07/ MW-07B

Well Location: MW-07

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.55 ft.
(from ground)Riser Stick-up
(from ground) 2.40 ft.WELL DIAMETER ☒ 2 inch
☐ 4 inch
☐ 6 inchWell
Depth 15.60 ft.
☒ top of riser
☐ top of casing
☐ measured
☐ historicalWater
Depth 4.83 ft.Height of
Water Column 10.77 ft. x ☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	5.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 1.7 gallon(s)8.5 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.7	3.4	5.1	6.8	8.5			
pH (Std. Units)	7.30	7.27	7.27	7.27	7.27			
Eh (millivolts)	-72.5	-81.9	-87.9	-93.3	-95.3			
Conduct. (µmhos/cm)	4688	5183	5396	5096	5113			
Temp. (C)	14.45	13.66	13.51	13.37	13.35			
Turb. (NTU)								
DO (mg/l)	1.19	1.04	1.05	1.0	1.1			
Carbon Dioxide (mg/L)					200			

Sample Description
Clear ☐ Turbid ☒
Cloudy
Color
Odor Strong Chemical
Other

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump	☐	☐
Submersible Pump	☒	☐
Bailer	☐	☒
Watera	☐	☐
PVC/Silicon Tubing	☐	☐
Teflon/Silicon Tubing	☐	☐
Air Lift	☐	☐
In-line Filter	☐	☐
Pressure Vacuum Filter	☐	☐
Measuring Tape	☐	☐

EQUIPMENT IDWhale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DECON. FLUID USED**

Water	☒
Alconox	☒
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
Water	☒
Air Dry	☐
None	☐

DESCRIPTION OF DECON. PROC.Decontaminated whale pump by pumping 5-
gallons of alconox/Poland Spring mixture, Poland
Spring rinse, methanol rinse, and Poland Spring
rinse.

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	7/16/00, 1020	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐	YES NO					

AF-209/C

Signed: *[Signature]*

Rev: 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 4**Project No:**
19045-007**Date/Time:**
7/15/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.: MW-08

Well Location: MW-08

WELL INTEGRITY

	YES	NO
Protect. Casing Secure	☒	☐
Concrete Collar Intact	☒	☐
PVC Stick-up Intact	☒	☐
Well Cap Present	☒	☐
Security Lock Present	☒	☐

Protective
Casing Stick-up 2.10 ft.
(from ground)Riser Stick-up
(from ground) 1.95 ft.**WELL DIAMETER**
☒ 2 inch
☐ 4 inch
☐ 6 inch**Well Depth** 18.30 ft.
☒ top of riser
☐ top of casing
☒ measured
☐ historical**Water Depth** 7.14 ft.**Height of Water Column** 11.16 ft. x
☒ .16 gal/ft (2 in.)
☐ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ ___ gal/ft (___ in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC
☐ SS
☐Volume of Water in Well = 1.8 gallon(s)9.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	1.8	3.6	5.4	7.2	9.0					
pH (Std. Units)	7.43	7.38	7.36	7.35	7.35					
Eh (millivolts)	-63.7	-66.3	-68.6	-70.7	-72.4					
Conduct. (µmhos/cm)	19329	1893	1892	1901	1912					
Temp. (C)	13.08	13.09	13.12	13.12	13.10					
Turb. (NTU)										
DO (mg/l)	7.72	7.27	7.03	7.22	7.29					
Carbon Dioxide (mg/L)					50					

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor Sewer Odor
Other _____

SAMPLE EQUIP./DECON. PURGE SAMPLE

Peristaltic Pump	☐	☐
Submersible Pump	☒	☐
Bailer	☐	☒
Waterra	☐	☐
PVC/Silicon Tubing	☐	☐
Teflon/Silicon Tubing	☐	☐
Air Lift	☐	☐
In-line Filter	☐	☐
Pressure Vacuum Filter	☐	☐
Measuring Tape	☐	☐

EQUIPMENT IDWhale pump with dedicated tubing. Collected field
parameters with YSI flow-through cell. Collected GW
sample with dedicated teflon bailer**DESCRIPTION OF DECON. PROC.**Decontaminated whale pump by pumping 5-
gallons of alconox/Poland Spring mixture, Poland
Spring rinse, methanol rinse, and Poland Spring
rinse.**DECON. FLUID USED**

Water	☒
Alconox	☒
Tap Water	☐
HNO ₃ (1 or 10%)	☐
Tap Water	☐
Methanol	☒
Hexane	☐
Acetone	☐
Air Dry	☐
Water	☒
Air Dry	☐
None	☐

ANALYTICAL PARAMETERS	Filtered (circle)	Preservation Method	Volume Required	Time of Collection	CLP Sample #	CLP Case #
☒ TCL Volatiles	YES NO	4° C/HCl	3x40 mL	7/16/00, 0930	-----	-----
☐ BNA Extractables	YES NO	4° C	4x1 L Amb GL			
☐ PCBs/Pesticides	YES NO	4° C				
☐ TAL Metals	YES NO	HNO ₃ /4° C	1 L PL			
☐ Cyanide	YES NO	NaOH/4° C	1 L PL			
☐ _____	YES NO					

AF-206/C

Signed: [Signature]

Rev. 8 July 1991

TRC**Field Data Record
Ground Water****Project:** AKZO NOBEL
GW Sampling - Round 4**Project No:**
19045-007**Date/Time:**
7/15/00Sheet 1 of 1**Contractor Personnel:****TRC Personnel:**

T. Majer/S.Nabozny

Sample No.:

Well Location: OS-01

WELL INTEGRITYProtect. Casing Secure
Concrete Collar Intact
PVC Stick-up Intact
Well Cap Present
Security Lock PresentYES NO
☒ ☒
☒ ☒
☒ ☒
☒ ☒
☒ ☒**Protective**
Casing Stick-up _____ ft.
(from ground)Riser Stick-up
(from ground) -1.5 ft.**WELL DIAMETER**
☒ 2 inch
☒ 4 inch
☐ 6 inch**Well**
Depth 13.85 ft.
☒ top of riser
☐ top of casing☒ measured
☐ historical**Water**
Depth 7.91 ft.Height of
Water Column 5.94 ft. x☒ .16 gal/ft (2 in.)
☒ .65 gal/ft (4 in.)
☐ 1.5 gal/ft (6 in.)
☐ gal/ft (in.)**OVA/PID SCREENING MEAS.**

	Total VOC's	Methane
Background	0.0 ppm	
Well Mouth	0.0 ppm	

WELL MATERIAL☒ PVC ☐ SS ☐Volume of Water in Well = 4.0 gallon(s)20.0 Total gallons
to purge[Vol. = $r^2 h(0.163)$]**FIELD WATER QUALITY MEASUREMENTS**

Purge Volume (gal)	4.0	8.0	12.0	16.0	20.0			
pH (Std. Units)	6.99	7.00	7.00	7.01	7.00			
Eh (millivolts)	-43.3	-56.7	-55.3	-46.7	-45.6			
Conduct. (μ mhos/cm)	770	761	744	733	739			
Temp. (C)	14.98	15.01	14.93	14.93	14.90			
Turb. (NTU)								
DO (mg/l)	3.49	3.07	4.58	4.59	5.61			
Carbon Dioxide (mg/L)					25			

Sample Description
Clear ☐ Turbid ☒
Color Cloudy
Odor Petroleum Odor
Other _____

SAMPLE EQUIP./DECON.**PURGE SAMPLE**Peristaltic Pump
Submersible Pump
Bailer
Watera
PVC/Silicon Tubing
Teflon/Silicon Tubing
Air Lift
In-line Filter
Pressure Vacuum Filter
Measuring Tape☐
☒
☐
☐
☐
☐
☐
☐
☐
☐
☐**EQUIPMENT ID**OS-01 was purged with a whale pump. TRC did not
collect a GW sample here, only field GW quality
Parameters _____**DECON. FLUID USED**Tap Water
Alconox
Tap Water
HNO₃ (1 or 10%)
Tap Water
Methanol
Hexane
Acetone
Air Dry
DI Water
Air Dry
None☐
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐
☐**DESCRIPTION OF DECON. PROC.****ANALYTICAL PARAMETERS**Filtered
(circle)Preservation
MethodVolume
RequiredTime of
CollectionCLP
Sample #CLP
Case #☐ TCL Volatiles

YES NO

4° C/HCl

3x40 mL

☐ BNA Extractables

YES NO

4° C

4x1 L Amb GL

☐ PCBs/Pesticides

YES NO

4° C

☐ TAL Metals

YES NO

HNO₃/4° C

1 L PL

☐ Cyanide

YES NO

NaOH/4° C

1 L PL

☐ _____

YES NO

Signed:

APPENDIX H
FUGACITY MODEL PARAMETERS AND OUTPUT

Level I V 2.11 MODEL

CHEMICAL NAME: Benzene

Simulation ID: ANC Benzene

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	78.11
Data Temperature (°C)	25
Log Kow	2.13
Water Solubility (g/m ³)	1780
Water Solubility (mol/m ³)	22.8
Henry's Law Constant (Pa.m ³ /mol)	557
Vapour Pressure (Pa)	12700
Melting Point (°C)	5.53

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	1.28
Fugacity Pa	0.768
Total of VZ Products	1.67

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	2.13
Octanol-Water Partition Coefficient	135
Organic Carbon-Water Partition Coefficient (L/kg)	55.3
Air-Water Partition Coefficient	0.225
Soil-Water Partition Coefficient	1.08
Soil-Water Partition Coefficient (L/kg)	0.448
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	472

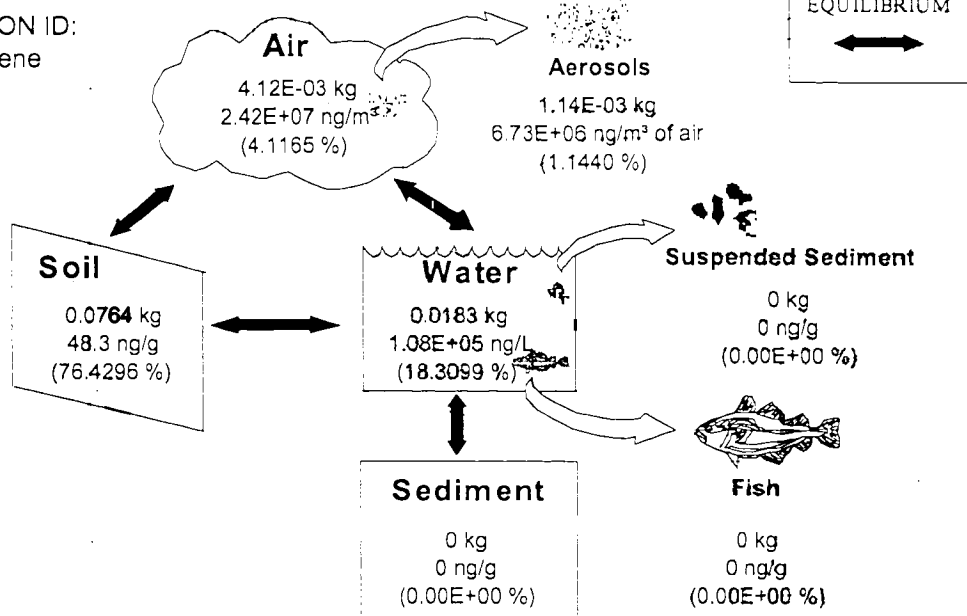
PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.03E-04	1.79E-03	1.93E-03	0.00E+00	0.00E+00	0.00E+00	1.91E-01
VZ (mol/Pa)	6.86E-02	3.05E-01	1.27E+00	0.00E+00	0.00E+00	0.00E+00	1.91E-02
Concentration (mol/m ³)	3.10E-04	1.38E-03	1.48E-03	0.00E+00	0.00E+00	0.00E+00	1.46E-01
Concentration (g/m ³)	2.42E-02	1.08E-01	1.16E-01	0.00E+00	0.00E+00	0.00E+00	1.14E+01
Concentration (µg/g)	2.04E+01	1.08E-01	4.83E-02	0.00E+00	0.00E+00	0.00E+00	5.72E+00
Amount (kg)	4.12E-03	1.83E-02	7.64E-02	0.00E+00	0.00E+00	0.00E+00	1.14E-03
Amount (mol)	5.27E-02	2.34E-01	9.78E-01	0.00E+00	0.00E+00	0.00E+00	1.46E-02
Amount (%)	4.1165	18.3099	76.4296	0.00E+00	0.00E+00	0.00E+00	1.1440

LEVEL I Chemical: Benzene

Version 2.1

SIMULATION ID:
ANC Benzene



Fugacity = 7.68E+05 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: Chlorobenzene

Simulation ID: ANC Chlorobenzene

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	112.56
Data Temperature (°C)	25
Log Kow	2.80
Water Solubility (g/m ³)	484
Water Solubility (mol/m ³)	4.30
Henry's Law Constant (Pa.m ³ /mol)	367
Vapour Pressure (Pa)	1580
Melting Point (°C)	-45.6

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	0.888
Fugacity Pa	0.0914
Total of VZ Products	9.72

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	2.80
Octanol-Water Partition Coefficient	631
Organic Carbon-Water Partition Coefficient (L/kg)	259
Air-Water Partition Coefficient	0.148
Soil-Water Partition Coefficient	5.03
Soil-Water Partition Coefficient (L/kg)	2.10
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	3797

PHASE PROPERTIES AND COMPOSITION

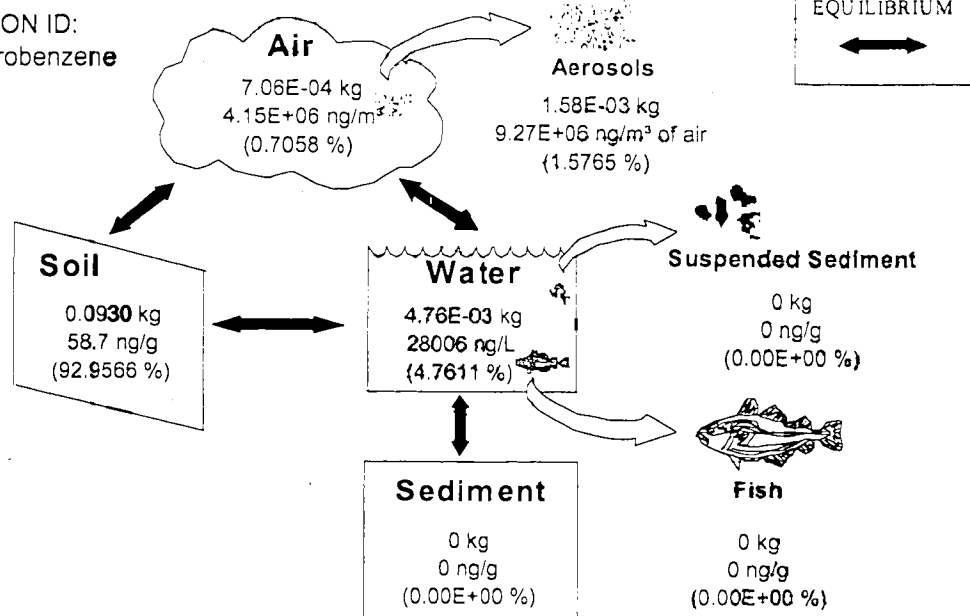
PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.03E-04	2.72E-03	1.37E-02	0.00E+00	0.00E+00	0.00E+00	1.53E+00
VZ (mol/Pa)	6.86E-02	4.63E-01	9.03E+00	0.00E+00	0.00E+00	0.00E+00	1.53E-01
Concentration (mol/m ³)	3.69E-05	2.49E-04	1.25E-03	0.00E+00	0.00E+00	0.00E+00	1.40E-01
Concentration (g/m ³)	4.15E-03	2.80E-02	1.41E-01	0.00E+00	0.00E+00	0.00E+00	1.58E+01
Concentration (µg/g)	3.50E+00	2.80E-02	5.87E-02	0.00E+00	0.00E+00	0.00E+00	7.88E+00
Amount (kg)	7.06E-04	4.76E-03	9.30E-02	0.00E+00	0.00E+00	0.00E+00	1.58E-03
Amount (mol)	6.27E-03	4.23E-02	8.26E-01	0.00E+00	0.00E+00	0.00E+00	1.40E-02
Amount (%)	0.7058	4.7611	92.9566	0.00E+00	0.00E+00	0.00E+00	1.5765

LEVEL I Chemical: Chlorobenzene

Version 2.1

SIMULATION ID:

ANC Chlorobenzene



Fugacity = 91426 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: Acetone

Simulation ID: ANC Acetone

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	58.08
Data Temperature (°C)	20
Log Kow	-0.24
Water Solubility (g/m ³)	553
Water Solubility (mol/m ³)	9.52
Henry's Law Constant (Pa.m ³ /mol)	3725
Vapour Pressure (Pa)	35464
Melting Point (°C)	-95.35

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	1.72
Fugacity Pa	14.0
Total of VZ Products	0.123

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	-0.24
Octanol-Water Partition Coefficient	0.575
Organic Carbon-Water Partition Coefficient (L/kg)	0.236
Air-Water Partition Coefficient	1.53
Soil-Water Partition Coefficient	4.59E-03
Soil-Water Partition Coefficient (L/kg)	1.91E-03
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	169

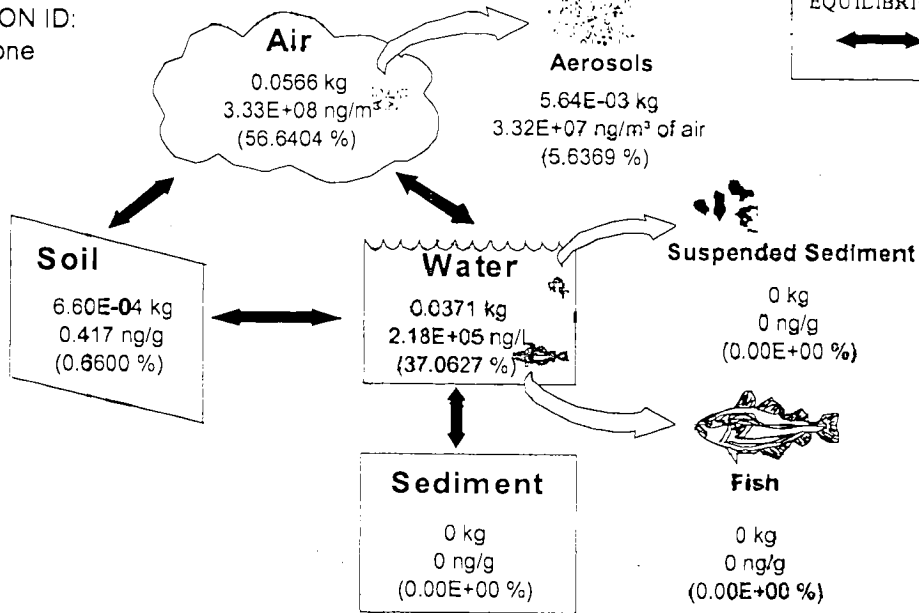
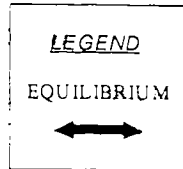
PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.206	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.10E-04	2.68E-04	1.23E-06	0.00E+00	0.00E+00	0.00E+00	6.94E-02
VZ (mol/Pa)	6.98E-02	4.56E-02	8.13E-04	0.00E+00	0.00E+00	0.00E+00	6.94E-03
Concentration (mol/m ³)	5.74E-03	3.75E-03	1.72E-05	0.00E+00	0.00E+00	0.00E+00	9.71E-01
Concentration (g/m ³)	3.33E-01	2.18E-01	1.00E-03	0.00E+00	0.00E+00	0.00E+00	5.64E+01
Concentration (µg/g)	2.76E+02	2.18E-01	4.17E-04	0.00E+00	0.00E+00	0.00E+00	2.82E+01
Amount (kg)	5.66E-02	3.71E-02	6.60E-04	0.00E+00	0.00E+00	0.00E+00	5.64E-03
Amount (mol)	9.75E-01	6.38E-01	1.14E-02	0.00E+00	0.00E+00	0.00E+00	9.71E-02
Amount (%)	56.6404	37.0627	0.6600	0.00E+00	0.00E+00	0.00E+00	5.6369

LEVEL I Chemical: Acetone

Version 2.1

SIMULATION ID:
ANC Acetone



Fugacity = 1.40E+07 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: 2-Butanone

Simulation ID: ANC 2-Butanone

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	72.11
Data Temperature (°C)	25
Log Kow	0.26
Water Solubility (g/m³)	2.75E+05
Water Solubility (mol/m³)	3814
Henry's Law Constant (Pa.m³/mol)	3.50
Vapour Pressure (Pa)	13332
Melting Point (°C)	-86.3

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	1.39
Fugacity Pa	0.0270
Total of VZ Products	51.5

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	0.26
Octanol-Water Partition Coefficient	1.82
Organic Carbon-Water Partition Coefficient (L/kg)	0.746
Air-Water Partition Coefficient	1.41E-03
Soil-Water Partition Coefficient	0.0145
Soil-Water Partition Coefficient (L/kg)	6.04E-03
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	450

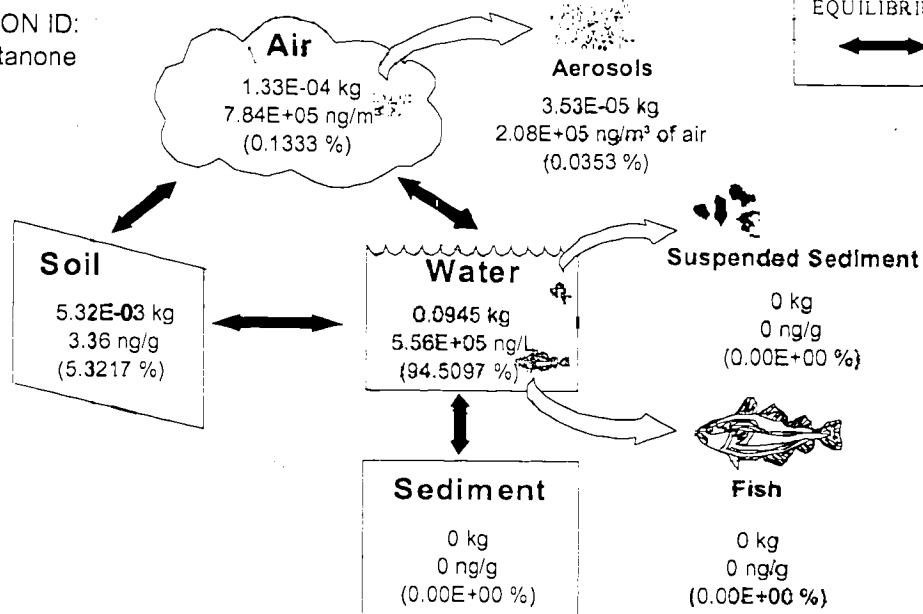
PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m³.Pa)	4.03E-04	2.86E-01	4.15E-03	0.00E+00	0.00E+00	0.00E+00	1.82E-01
VZ (mol/Pa)	6.86E-02	4.86E+01	2.74E+00	0.00E+00	0.00E+00	0.00E+00	1.82E-02
Concentration (mol/m³)	1.09E-05	7.71E-03	1.12E-04	0.00E+00	0.00E+00	0.00E+00	4.89E-03
Concentration (g/m³)	7.84E-04	5.56E-01	8.06E-03	0.00E+00	0.00E+00	0.00E+00	3.53E-01
Concentration (µg/g)	6.61E-01	5.56E-01	3.36E-03	0.00E+00	0.00E+00	0.00E+00	1.76E-01
Amount (kg)	1.33E-04	9.45E-02	5.32E-03	0.00E+00	0.00E+00	0.00E+00	3.53E-05
Amount (mol)	1.85E-03	1.31E+00	7.38E-02	0.00E+00	0.00E+00	0.00E+00	4.89E-04
Amount (%)	0.1333	94.5097	5.3217	0.00E+00	0.00E+00	0.00E+00	0.0353

LEVEL I Chemical: 2-Butanone

Version 2.1

SIMULATION ID:
ANC 2-Butanone



Fugacity = 26952 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: 1,2-dichlorobenzene

Simulation ID: ANC 1,2-dichlorobenzene

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	147
Data Temperature (°C)	25
Log Kow	3.38
Water Solubility (g/m ³)	145
Water Solubility (mol/m ³)	0.986
Henry's Law Constant (Pa.m ³ /mol)	203
Vapour Pressure (Pa)	200
Melting Point (°C)	-17

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	0.680
Fugacity Pa	0.0106
Total of VZ Products	64.4

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	3.38
Octanol-Water Partition Coefficient	2399
Organic Carbon-Water Partition Coefficient (L/kg)	984
Air-Water Partition Coefficient	0.0818
Soil-Water Partition Coefficient	19.1
Soil-Water Partition Coefficient (L/kg)	7.97
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	30000

PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.03E-04	4.93E-03	9.43E-02	0.00E+00	0.00E+00	0.00E+00	1.21E+01
VZ (mol/Pa)	6.86E-02	8.38E-01	6.22E+01	0.00E+00	0.00E+00	0.00E+00	1.21E+00
Concentration (mol/m ³)	4.26E-06	5.21E-05	9.97E-04	0.00E+00	0.00E+00	0.00E+00	1.28E-01
Concentration (g/m ³)	6.27E-04	7.66E-03	1.47E-01	0.00E+00	0.00E+00	0.00E+00	1.88E+01
Concentration (µg/g)	5.29E-01	7.66E-03	6.11E-02	0.00E+00	0.00E+00	0.00E+00	9.40E+00
Amount (kg)	1.07E-04	1.30E-03	9.67E-02	0.00E+00	0.00E+00	0.00E+00	1.88E-03
Amount (mol)	7.25E-04	8.86E-03	6.58E-01	0.00E+00	0.00E+00	0.00E+00	1.28E-02
Amount (%)	0.1066	1.3029	96.7100	0.00E+00	0.00E+00	0.00E+00	1.8806

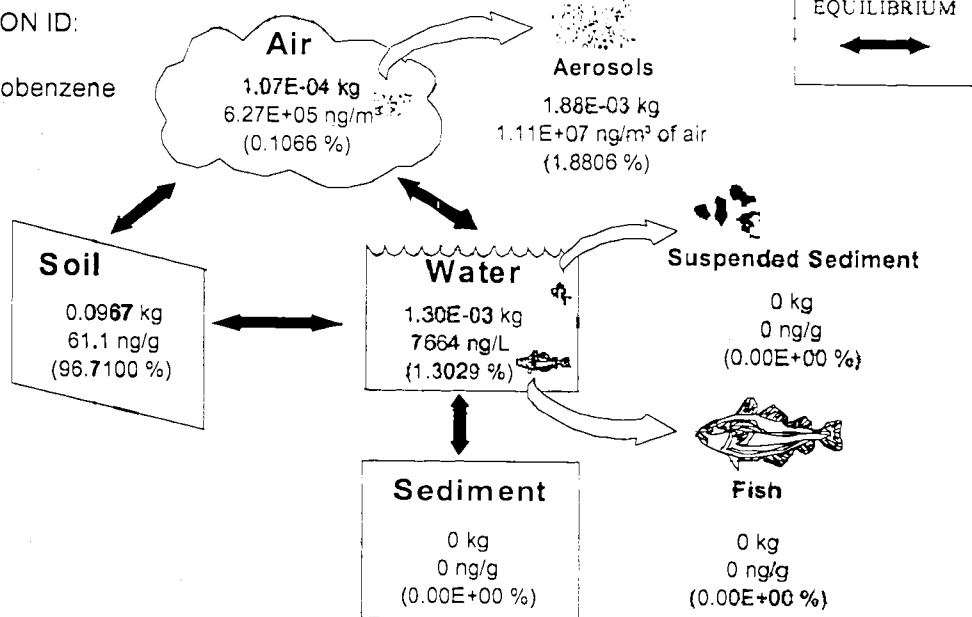
LEVEL I Chemical: 1,2-dichlorobenzene

Version 2.1

SIMULATION ID:

ANC

1,2-dichlorobenzene



Fugacity = 10571 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: 1,3-dichlorobenzene

Simulation ID: ANC 1,3-dichlorobenzene

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	147
Data Temperature (°C)	25
Log Kow	3.38
Water Solubility (g/m³)	123
Water Solubility (mol/m³)	0.837
Henry's Law Constant (Pa.m³/mol)	1.20
Vapour Pressure (Pa)	1.00
Melting Point (°C)	-24.7

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	0.680
Fugacity Pa	6.22E-05
Total of VZ Products	10943

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	3.38
Octanol-Water Partition Coefficient	2399
Organic Carbon-Water Partition Coefficient (L/kg)	984
Air-Water Partition Coefficient	4.82E-04
Soil-Water Partition Coefficient	19.1
Soil-Water Partition Coefficient (L/kg)	7.97
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	6.00E+06

PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m³.Pa)	4.03E-04	8.37E-01	1.60E+01	0.00E+00	0.00E+00	0.00E+00	2.42E+03
VZ (mol/Pa)	6.86E-02	1.42E+02	1.06E+04	0.00E+00	0.00E+00	0.00E+00	2.42E+02
Concentration (mol/m³)	2.51E-08	5.20E-05	9.95E-04	0.00E+00	0.00E+00	0.00E+00	1.50E-01
Concentration (g/m³)	3.69E-06	7.65E-03	1.46E-01	0.00E+00	0.00E+00	0.00E+00	2.21E+01
Concentration (µg/g)	3.11E-03	7.65E-03	6.09E-02	0.00E+00	0.00E+00	0.00E+00	1.11E+01
Amount (kg)	6.27E-07	1.30E-03	9.65E-02	0.00E+00	0.00E+00	0.00E+00	2.21E-03
Amount (mol)	4.26E-06	8.84E-03	6.56E-01	0.00E+00	0.00E+00	0.00E+00	1.50E-02
Amount (%)	6.27E-04	1.2999	96.4876	0.00E+00	0.00E+00	0.00E+00	2.2119

LEVEL I Chemical: 1,3-dichlorobenzene

Version 2.1

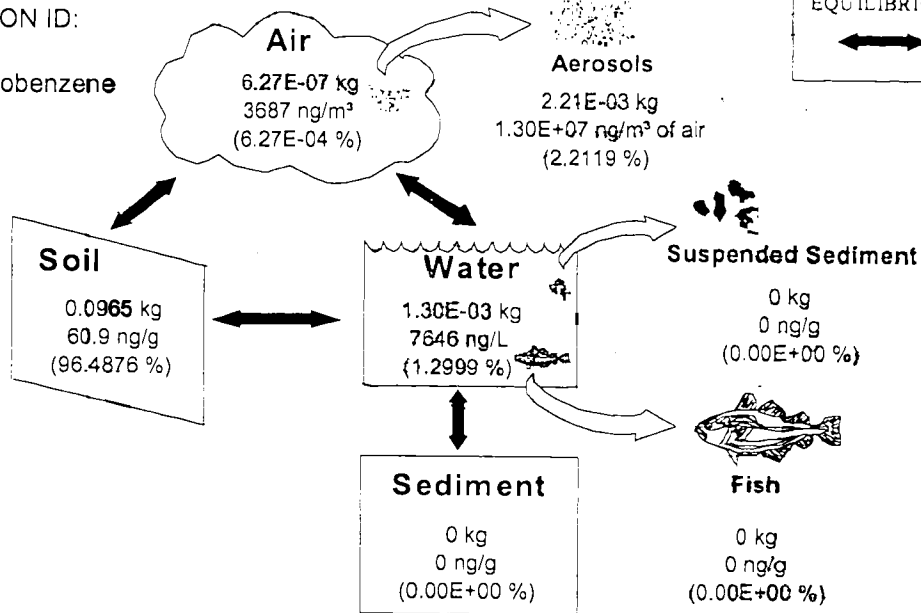
SIMULATION ID:

ANC

1,3-dichlorobenzene

LEGEND

EQUILIBRIUM



Fugacity = 62.2 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: 1,4-dichlorobenzene

Simulation ID: ANC 1,4-dichlorobenzene

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	147
Data Temperature (°C)	25
Log Kow	3.39
Water Solubility (g/m ³)	79.0
Water Solubility (mol/m ³)	0.537
Henry's Law Constant (Pa.m ³ /mol)	3.35
Vapour Pressure (Pa)	1.80
Melting Point (°C)	53.1
Fugacity Ratio	0.527
Sub-cooled Liquid Vapour Pressure	3.41

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	0.680
Fugacity Pa	1.71E-04
Total of VZ Products	3977

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	3.39
Octanol-Water Partition Coefficient	2455
Organic Carbon-Water Partition Coefficient (L/kg)	1006
Air-Water Partition Coefficient	1.35E-03
Soil-Water Partition Coefficient	19.6
Soil-Water Partition Coefficient (L/kg)	8.15
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	1.76E+06

PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.03E-04	2.99E-01	5.84E+00	0.00E+00	0.00E+00	0.00E+00	7.09E+02
VZ (mol/Pa)	6.86E-02	5.08E+01	3.86E+03	0.00E+00	0.00E+00	0.00E+00	7.09E+01
Concentration (mol/m ³)	6.90E-08	5.11E-05	9.99E-04	0.00E+00	0.00E+00	0.00E+00	1.21E-01
Concentration (g/m ³)	1.01E-05	7.51E-03	1.47E-01	0.00E+00	0.00E+00	0.00E+00	1.78E+01
Concentration (µg/g)	8.56E-03	7.51E-03	6.12E-02	0.00E+00	0.00E+00	0.00E+00	8.91E+00
Amount (kg)	1.72E-06	1.28E-03	9.69E-02	0.00E+00	0.00E+00	0.00E+00	1.78E-03
Amount (mol)	1.17E-05	8.68E-03	6.59E-01	0.00E+00	0.00E+00	0.00E+00	1.21E-02
Amount (%)	0.0017	1.2762	96.9391	0.00E+00	0.00E+00	0.00E+00	1.7830

LEVEL I Chemical: 1,4-dichlorobenzene

Version 2.1

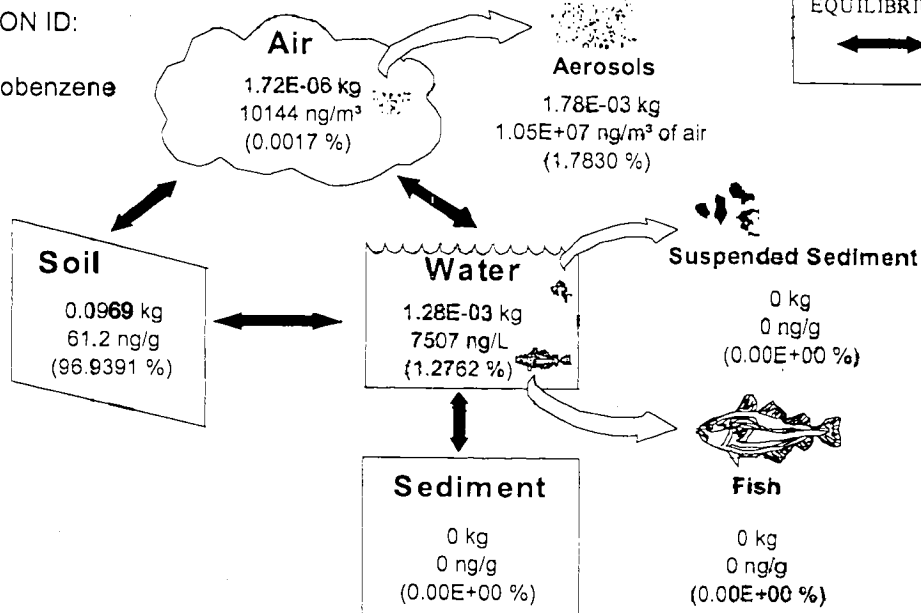
SIMULATION ID:

ANC

1,4-dichlorobenzene

LEGEND

EQUILIBRIUM



Fugacity = 171 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: 1,1-dichloroethane

Simulation ID: ANC 1,1-dichloroethane

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	98.96
Data Temperature (°C)	25
Log Kow	1.79
Water Solubility (g/m ³)	5500
Water Solubility (mol/m ³)	55.6
Henry's Law Constant (Pa.m ³ /mol)	561
Vapour Pressure (Pa)	31197
Melting Point (°C)	-97

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	1.01
Fugacity Pa	1.06
Total of VZ Products	0.957

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	1.79
Octanol-Water Partition Coefficient	61.7
Organic Carbon-Water Partition Coefficient (L/kg)	25.3
Air-Water Partition Coefficient	0.226
Soil-Water Partition Coefficient	0.491
Soil-Water Partition Coefficient (L/kg)	0.205
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	192

PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.185	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.03E-04	1.78E-03	8.76E-04	0.00E+00	0.00E+00	0.00E+00	7.76E-02
VZ (mol/Pa)	6.86E-02	3.03E-01	5.78E-01	0.00E+00	0.00E+00	0.00E+00	7.76E-03
Concentration (mol/m ³)	4.26E-04	1.88E-03	9.24E-04	0.00E+00	0.00E+00	0.00E+00	8.19E-02
Concentration (g/m ³)	4.22E-02	1.86E-01	9.15E-02	0.00E+00	0.00E+00	0.00E+00	8.11E+00
Concentration (µg/g)	3.56E+01	1.86E-01	3.81E-02	0.00E+00	0.00E+00	0.00E+00	4.05E+00
Amount (kg)	7.17E-03	3.16E-02	6.04E-02	0.00E+00	0.00E+00	0.00E+00	8.11E-04
Amount (mol)	7.24E-02	3.20E-01	6.10E-01	0.00E+00	0.00E+00	0.00E+00	8.19E-03
Amount (%)	7.1659	31.6451	60.3783	0.00E+00	0.00E+00	0.00E+00	0.8107

LEVEL I Chemical: 1,1-dichloroethane

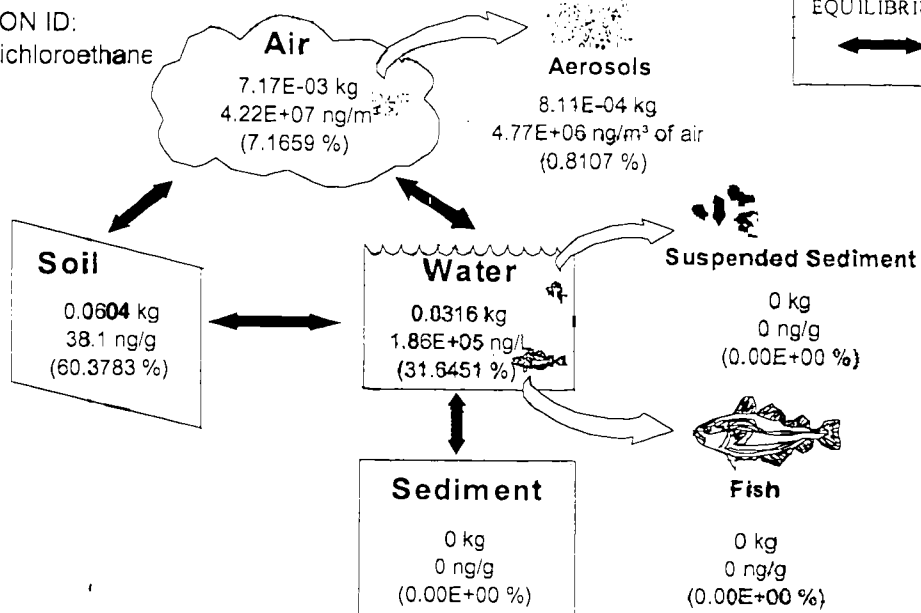
Version 2.1

SIMULATION ID:

ANC 1,1-dichloroethane

LEGEND

EQUILIBRIUM



Fugacity = 1.06E+06 μ Pa
Total Mass = 0.1 kg

Level I V 2.11 MODEL

CHEMICAL NAME: 1,1,1-trichloroethane

Simulation ID: ANC 1,1,1-trichloroethane

Addition Description/Comments: October 19, 2000

CHEMICAL PROPERTIES Chemical Type 1

Molecular Mass (g/mol)	133.4
Data Temperature (°C)	20
Log Kow	2.47
Water Solubility (g/m ³)	4400
Water Solubility (mol/m ³)	33.0
Henry's Law Constant (Pa.m ³ /mol)	404
Vapour Pressure (Pa)	13332
Melting Point (°C)	-30.4

The Vapour Pressure is that
of the chemical in the state
at the data temperature

Amount of Chemical (kg)	0.1
Amount of Chemical (mol)	0.750
Fugacity Pa	0.172
Total of VZ Products	4.35

PARTITION COEFFICIENTS

(All amounts are dimensionless, except where noted)

Log Octanol-Water Partition Coefficient	2.47
Octanol-Water Partition Coefficient	295
Organic Carbon-Water Partition Coefficient (L/kg)	121
Air-Water Partition Coefficient	0.166
Soil-Water Partition Coefficient	2.35
Soil-Water Partition Coefficient (L/kg)	0.980
Sediment-Water Partition Coefficient	0
Sediment-Water Partition Coefficient (L/kg)	0
Suspended Sediment-Water Partition Coefficient	0
Suspended Sediment-Water Partition Coefficient (L/kg)	0
Fish-Water Partition Coefficient	0
Fish-Water Partition Coefficient (L/kg)	0
Aerosol-Air Partition Coefficient	450

PHASE PROPERTIES AND COMPOSITION

PHASE	AIR	WATER	SOIL	SEDMT.	SUSP. SEDMT.	FISH	AEROSOL
Volume, V (m ³)	170	170	660	0.100	0.100	0.100	0.100
Density (kg/m ³)	1.206	1000	2400	2400	1500	1000	2000
Organic Carbon (g/g)	-	-	0.0081	0.00E+00	0.00E+00	-	-
Fish Lipid (g/g)	-	-	-	-	-	0.00E+00	-
Z Value (mol/m ³ .Pa)	4.10E-04	2.47E-03	5.82E-03	0.00E+00	0.00E+00	0.00E+00	1.85E-01
VZ (mol/Pa)	6.98E-02	4.21E-01	3.84E+00	0.00E+00	0.00E+00	0.00E+00	1.85E-02
Concentration (mol/m ³)	7.07E-05	4.26E-04	1.00E-03	0.00E+00	0.00E+00	0.00E+00	3.18E-02
Concentration (g/m ³)	9.43E-03	5.69E-02	1.34E-01	0.00E+00	0.00E+00	0.00E+00	4.25E+00
Concentration (µg/g)	7.82E+00	5.69E-02	5.57E-02	0.00E+00	0.00E+00	0.00E+00	2.12E+00
Amount (kg)	1.60E-03	9.67E-03	8.83E-02	0.00E+00	0.00E+00	0.00E+00	4.25E-04
Amount (mol)	1.20E-02	7.25E-02	6.62E-01	0.00E+00	0.00E+00	0.00E+00	3.18E-03
Amount (%)	1.6036	9.6694	88.3025	0.00E+00	0.00E+00	0.00E+00	0.4245

LEVEL I Chemical: 1,1,1-trichloroethane

Version 2.1

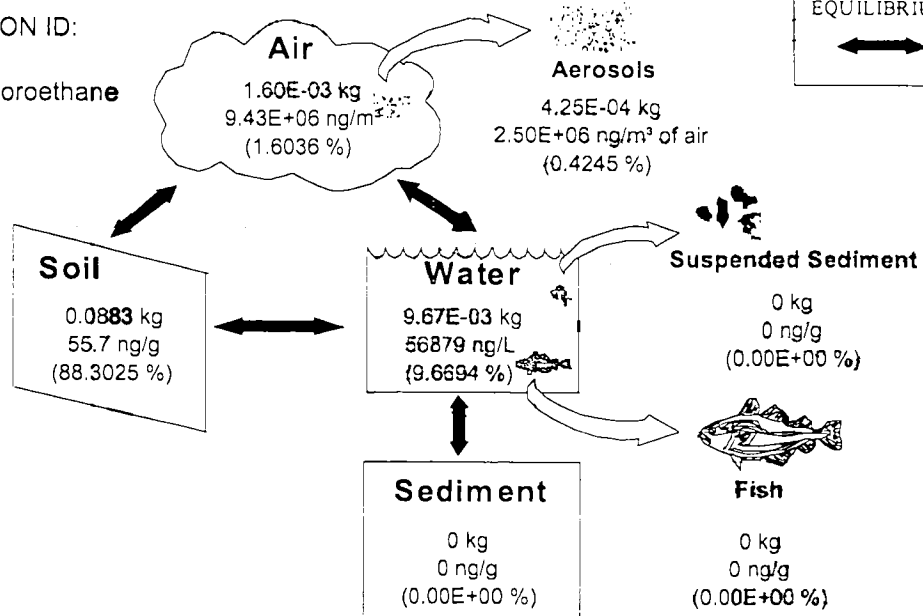
SIMULATION ID:

ANC

1,1,1-trichloroethane

LEGEND

EQUILIBRIUM



Fugacity = 1.72E+05 μ Pa
Total Mass = 0.1 kg

APPENDIX I
SWMU 17 CORRESPONDENCE

New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7220 • **FAX:** (716) 851-7226
Website: www.state.ny.us



July 6, 2000

Ms. Pamela Cook
Senior Environmental Engineer
Akzo Nobel Polymer Chemicals, LLC
2153 Lockport-Olcott Road
Burt, New York 14028

Dear Ms. Cook:

SWMU 17 Storage Shed Construction

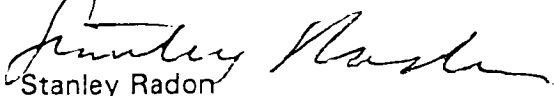
The New York State Department of Environmental Conservation (Department) has received your June 16, 2000 letter regarding a proposed construction project in the vicinity of SWMU 17. The Department has met with you (June 22, 2000) to discuss the project and inspect the area of SWMU 17. The Department hereby grants approval of the construction project, provided that Akzo Nobel performs the following:

1. Notify the Department at least one week in advance of any construction related activities; and
2. Notify the Department immediately if free product is found in any of the wells or stand pipes in the vicinity of SWMU 17 during the July 2000 sampling event.

If free product is found during or subsequent to the construction, Akzo Nobel may need to implement an Interim Corrective Measures plan.

If you have any questions, please contact me at 716/851-7220.

Sincerely,


Stanley Radon
Engineering Geologist II

SR:lj

cc: Mr. James Strickland, Regional Hazardous Materials Engineer
Mr. Nelson Schnabel, Environmental Engineer I
Mr. Roger Murphy, NYSDEC/Albany
Mr. Jim Reidy, EPA Region II

copy: GM
MS
J. Miller
P. Hughes





Customer-Focused Solutions

June 13, 2000

Ms. Pamela Cook
Plant Environmental Engineer
Akzo Nobel Chemicals Inc.
2153 Lockport-Olcott Road
Burt, NY 14028

Subject: RCRA RFI Project (TRC 19045)

Dear Ms. Cook:

Attached please find TRC's analysis of SWMU 17 data and TRC's conclusions regarding remedial requirements for SWMU 17, completed at your request. Please feel free to call me at (978) 656-3625 with any questions you may have regarding this submittal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul A. Hughes'.

Paul A. Hughes, P.E.
Senior Project Manager

06/13/00

TRC Recommended Approach

SWMU 17; Former UST No. 2 Area

It is TRC's understanding the Akzo Nobel plans to construct new facilities at SWMU 17 and wishes to consider remediation of SWMU 17 at this time. TRC understands that construction is limited to shallow (less than 4 ft. deep) excavations and surface completion of light structures/paving.

This document summarizes information gathered to date regarding SWMU 17 contamination and recommends an approach to addressing SWMU 17 corrective action obligations. Specifically, it addresses whether data collected to date indicates the need for an interim corrective measure (ICM) to remove fuel contaminated soil at SWMU 17 prior to constructing improvements at this location.

Setting

The former UST No. 2 Area is located in the west-central portion of the site, just southeast of Building 2 and south of Building 2B. This 8,000-gallon steel UST was installed in 1955. The UST was used to store No. 2 fuel oil. On February 22, 1985, the tank was overfilled. On June 18, 1987, the tank was cleaned, and closed in place by filling with sand. Niagara County Department of Health (NCDOH) inspected the cleaned tank and excavated soil and noted no deficiencies, thus excavated soils were returned to the excavation area. The area currently is grassed.

Geologic Setting

Geologic conditions at SWMU 17 are documented in the RFA borings SB-17-1, SB-17-2, SB-17-3 and SB-17-4; in Phase I RFI borings B-4 and B-5; and in Phase II RFI borings RB-01, RB-02, RB-03, RB-05, and AS-01. The upper 6-8 feet of overburden is silty and clayey sand and sandy silt with clay, below which lies fine gravel with coarse to fine sand, some silt, with bedrock refusal from 14-20 ft. BGS. The water table lies 4-8 ft. BGS.

Soil Investigations

Prior soil investigations provided sufficient soil contamination characterization data to support the conclusion that any soil contamination encountered was limited to fuel oil-related contamination at SWMU 17.

During the RFA-SV, TPH was detected in samples at concentrations ranging from 500 mg/kg (SB-17-4, 6 to 8 feet) to 15,921 mg/kg (SB-17-2, 8 to 10 feet). EPA Method 8270 analyses indicated that compounds that are typically associated with a fuel oil-type impact were detected in soil samples. Most notably, naphthalene was present at a concentration of 32,000 µg/kg in the SB-17-2 (8 to 10 feet) sample. This concentration is above the NYSDEC TAGM Soil Cleanup Objective of 13,000 µg/kg.

RFA-SV results indicated there has been some impact to soils from fuel oil contamination. However, only naphthalene contamination in SB-17-2 exceeded the NYSDEC cleanup objective. Samples from borings to the north (SB-17-1), south (SB-17-3) and southwest (SB-17-4) did not exceed the objectives for the parameters analyzed. Based on the RFA-SV data and the low migration potential of naphthalene, the extent of naphthalene contamination was anticipated to be limited, prior to conduct of the RFI.

During the RFI, two soil borings (B-4, B-5) were advanced to the saturated zone and a subsurface sample was collected for naphthalene analysis from the most contaminated interval based on visual, olfactory and field screening results. Field screening was conducted via headspace FID, which is useful as a qualitative screen of fuel-oil type components. The two soil borings advanced during the RFI, were located to define contamination to the east and to the west of SB-17-2. Samples from these borings were analyzed for naphthalene (EPA Method 8270), EPA Method 8240 BTEX, TOC, pH, and grain size.

Results of analysis indicate the only VOC detected was ethylbenzene at a concentration below the detection limit and below NYSDEC Soil Cleanup Objectives in the soil sample from Boring B-4 at a depth of 4 to 6 feet BGS. The elevation sampled is immediately above the water table which also evidenced the highest FID reading (1200 ppm). A sample was collected from the 4 to 6 foot interval at Boring B-5. This interval showed the highest reading of 3 ppm on the FID. No target analytes were detected in the sample from B-5. Soil contamination above NYSDEC Soil Cleanup Objectives was not observed in the RFI borings.

The RFA-SV boring, SB-17-2, which evidenced naphthalene contamination at 32,000 ug/kg, was sampled at 8 to 10 feet BGS. This sampled interval is deeper than the water table elevation (4 feet BGS) shown on the RFA-SV boring log. Based on the above data, it can be concluded that RFA-SV soils contamination is likely attributable to absorption of contaminants in soil within the smear zone created by water table fluctuations. Consequently, this contamination should be evaluated for impacts to ground water.

Ground Water Investigations

During the Phase I RFI, a ground water headspace hotspot was evident at SWMU 17. The ground water headspace hotspot, approximately centered at SWMU 17, the former UST No. 2 area, indicates historic releases from the tank and likely residual contamination remaining.

A ground water sample (GWL-3) was collected in close proximity to SB-17-1, which is near downgradient from the highest soil concentrations at SB-17-2. A product layer was encountered at this location. The screening headspace reading for ground water at this location was greater than 10,000 ppm. The ground water sample, collected from this SWMU, was analyzed for naphthalene using EPA Method 8270 and for BTEX by EPA Method 8240 BTEX. Results of analysis of GWL-3 VOC results show detection of benzene (32 J ug/L), ethylbenzene (27 J ug/L), toluene (1300 J ug/L), and total xylenes

(88 J ug/L). SVOC data indicate naphthalene was present at 3700 ug/L. The detected concentrations of these analytes, which are typical of fuel contamination, exceed the action levels for ground water and are indicative of historic releases from the former tank and the likelihood of residual contamination. In addition, the concentrations found support the conclusion that what appeared to be soil contamination below the water table, in the RFA-SV, was attributable to ground water contamination at the smear zone.

Two ground water samples collected less than 300 feet downgradient of SWMU 17, GWS-3 and GWS-3E, evidenced lower ground water headspace concentrations of 400 and 18 ppm, respectively. It was concluded that ground water contamination detected warranted further investigation during the Phase II RFI.

LNAPL Investigation and Phase II soil and Ground water investigation

Akzo Nobel completed additional investigations to determine the extent of the free product plume of No. 2 fuel oil encountered at SWMU 17 during the borings advanced during the RFA and RFI, and as observed on ground water at GWL-3 during the RFI. Five borings were advanced on July 27 and 28, 1999 at locations encompassing SWMU 17, as illustrated in Figure 1. Borings were advanced to refusal, and split spoon samples were collected continuously and evaluated for field screening, visual, and olfactory evidence of contamination. One soil sample was selected from each boring based on field evidence of contamination, and analyzed for the presence of petroleum hydrocarbons via Modified EPA Method 8100. One of the planned contingent borings (RB-5) was advanced in a location offset from primary boring RB-2 to define an endpoint to observed fuel oil contamination to the west, based upon sample FID/PID screening, and visual/olfactory observations.

One of the borings (AS-1) was converted to observation standpipe 1 (OS-1). Observation standpipe OS-1, and MW-2 were installed at locations illustrated in Figure 1. The standpipe OS-1 was constructed of 4 inch diameter pvc and slotted screen installed directly in the overburden. The screen was installed across the water table and across the gravel layer which exhibited the greatest evidence of contamination in prior investigations. The observation standpipe was allowed to equilibrate for a period of greater than 48 hours and were surveyed for the presence of LNAPL via examination with an oil/water interface probe (along with other MWs) during the course of quarterly ground water monitoring.

Ground water contours generated during the three rounds of elevation determinations during the Phase II RFI indicate the ground water gradient at SWMU 17 is from South to North; thus MW-2 is down gradient of OS-1 and SWMU 17.

OS-1 and MW-2 have been surveyed for the presence of LNAPL during the three ground water sampling rounds completed to date. No evidence of LNAPL has been observed in OS-1 and MW-2. Chemical analysis of MW-2 has revealed trace concentrations of benzene, toluene and xylenes, and no ethylbenzene in the 1st and 2nd sampling rounds. The 3rd sampling round data recorded concentrations of benzene, toluene and xylene

considerably elevated over that encountered in earlier sampling rounds. However, other volatile organics not related to fuel oil were also encountered at significant concentrations. Given the presence of SWMU 15, the Building 2 sump, in the location down gradient of SWMU 17 and up gradient of MW-2, the presence of BETX constituents in ground water at MW-2 may not be strictly related to the historic fuel oil release at SWMU 17.

Ground water obtained from MW-3B and MW-4, located down gradient of SWMU 17 and the western developed portion of the Akzo Nobel facility did not contain contaminants at concentrations exceeding groundwater standards.

Data Interpretation

The information gathered to date indicate a No. 2 fuel oil release had occurred at SWMU 17. The fuel oil release has had a localized impact on ground water quality. No recoverable free product layer remains. Petroleum product remains adsorbed on the soil matrix at and below the water. The eastern, southern, and western lateral extent of saturated soil petroleum contamination has been defined by visual inspection of split spoon samples and analytical testing for presence of TPH and fuel oil constituents. The vertical extent has been defined by observations recorded in boring logs of soil conditions encountered. Data collected to date indicate the saturated soil petroleum contamination extends to AS-1, the boring advanced during the Phase II RFI as close to building 2B as possible. No evidence of fuel oil-related soil contamination was encountered at MW-2. Thus the northern lateral extent of saturated soil petroleum contamination is anticipated to extend to, and likely beneath, building 2B.

Regulatory Considerations

From a regulatory perspective, remediation of fuel oil releases from USTs (in the absence of a superimposed chemical release) is typically addressed in accordance with STARS Memo #1, Petroleum-Contaminated Soil Guidance Policy, NYSDEC Bureau of Spill Prevention and Response, August 1992. However, the RFI soil threshold action levels approved by NYSDEC for corrective action at the Akzo Nobel Burt facility are those of NYSDEC guidance TAGM 4046.

As summarized above, a localized volume of soil likely exceeds the soil cleanup objectives specified in TAGM 4046.

Risk Based Perspective

The data can also be interpreted from a risk-based perspective. In cases where TAGM 4046 threshold action levels have been exceeded, an evaluation of risk forms the basis for establishment of site-specific soil remediation standards.

Since the contamination resides in and at the water table, which exists 4-8 ft. BGS, there are no direct contact soil exposure scenarios other than those associated with excavation and/or translocation of soils. Translocation and excavation exposure scenarios can be

06/13/00

managed by institutional controls, which Akzo Nobel has indicated are anticipated for the production areas of the parcel.

Thus the need for remediation of these soils can be limited to considerations of intermedia transfer to ground water of contaminants in the soil.

The presence of variable concentrations of hazardous constituents in ground water at MW-2 may or may not require active source remediation. The presence of chlorobenzene, chloroethane, dichloroethane, dichloroethene, and dichlorobenzenes indicates ground water contamination is not solely from fuel oil.

Ground water is not used for potable consumption at the Akzo Nobel facility. Concentrations of contaminants in ground water from fuel oil releases are generally well below those required to generate an indoor air risk from intermedia transfer (and building 2/2B is not a residence and has only short duration potential exposures to an adult population). Data gathered to date from bedrock well MW-3B and overburden well MW-4 indicate these wells are down gradient of the potential source areas on the western side of the Akzo Nobel facility. The absence of contaminants present above ground water standards at this location (based on data collected to date) suggests any ground water contamination from SWMU 17 has attenuated within the facility boundaries. Thus there is no realistic ground water exposure scenario.

Source Material Remediation

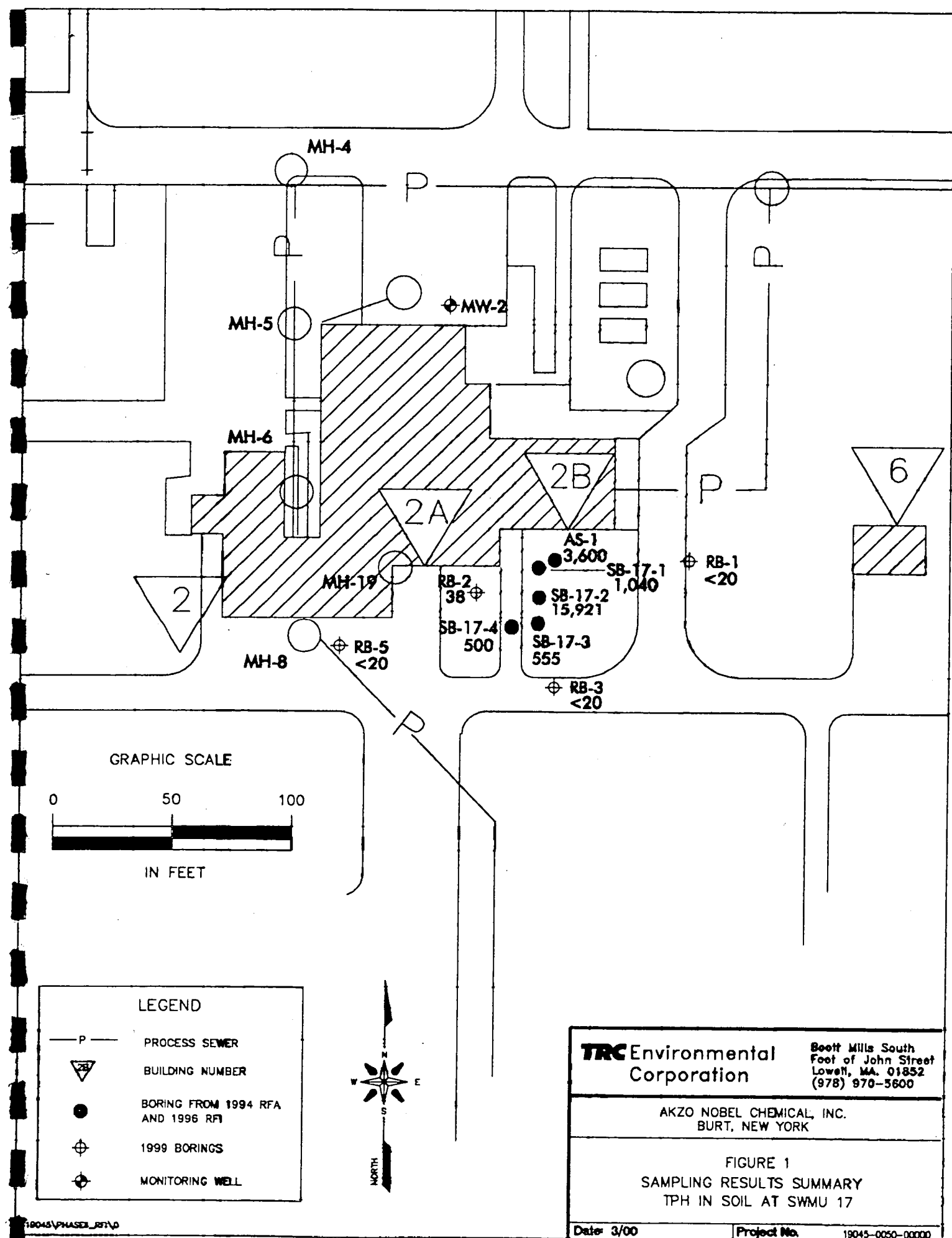
In the past, NYSDEC has indicated verbally a willingness to allow source materials (i.e. SWMU 24) to remain in place so long as a reasonable point of compliance for ground water contamination is established within the facility and the facility implements institutional controls to prevent current and future exposures.

While NYSDEC will determine if source material remediation is required, the data gathered to date indicates there are no current risks to control and no future risks that cannot be controlled via institutional activity and use restrictions.

Additionally, SWMU 17 is located immediately up gradient of SWMU 15, the Building 2 sump. SWMU 15 investigation has been deferred until facility operation scheduling permits investigation. It is TRC's understanding that investigation and remediation (if necessary) of SWMU 15 will be conducted when Building 2 is decommissioned.

Recommended Approach

Based on the information available to date and an absence of risk to human health and the environment, as presented above, TRC concludes that a fuel oil-contaminated soil removal ICM is unwarranted at this time for SWMU 17. It is TRC's opinion that further remedial action, if any is required by NYSDEC, be deferred until such time that the opportunity to address both SWMU 15 and 17 is available.



MH-4

MH-5

⊕ MW-2

MH-6

MH-19

MH-8

⊕ RB-5
<20

⊕ RB-2
38

SB-17-4
500

AS-1
3,600

● SB-17-2
15,921

● SB-17-3
555

⊕ RB-3
<20

SB-17-1
1,040

⊕ RB-1
<20

P

P

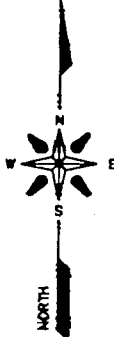
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2

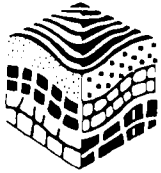
2A

2B

6



APPENDIX J
GEOTECHNICAL DATA REPORTS



GeoTesting Express, Inc.

1145 MASSACHUSETTS AVE.
BOXBOROUGH, MA 01719
978-635-0424 (FAX) 978-635-0266

August 23, 1999

Mr. Charles Foster
TRC Environmental
Boott Mill South
Foot of John Street
Lowell, MA 01852

RE: AKZO Nobel Phase II (GTX-2459)

Dear Mr. Foster:

Enclosed are the test results you requested for the above referenced project. Eight samples were delivered to our laboratory on August 10, 1999. A copy of the chain of custody for these samples is located at the end of this report. GeoTesting Express performed the following test on each of these samples:

Grain size analysis (ASTM D 422)

Per the instructions of Mr. Jim Leonard, the hydrometer portion of the grain size analysis was performed on only the three samples with the most fines content.

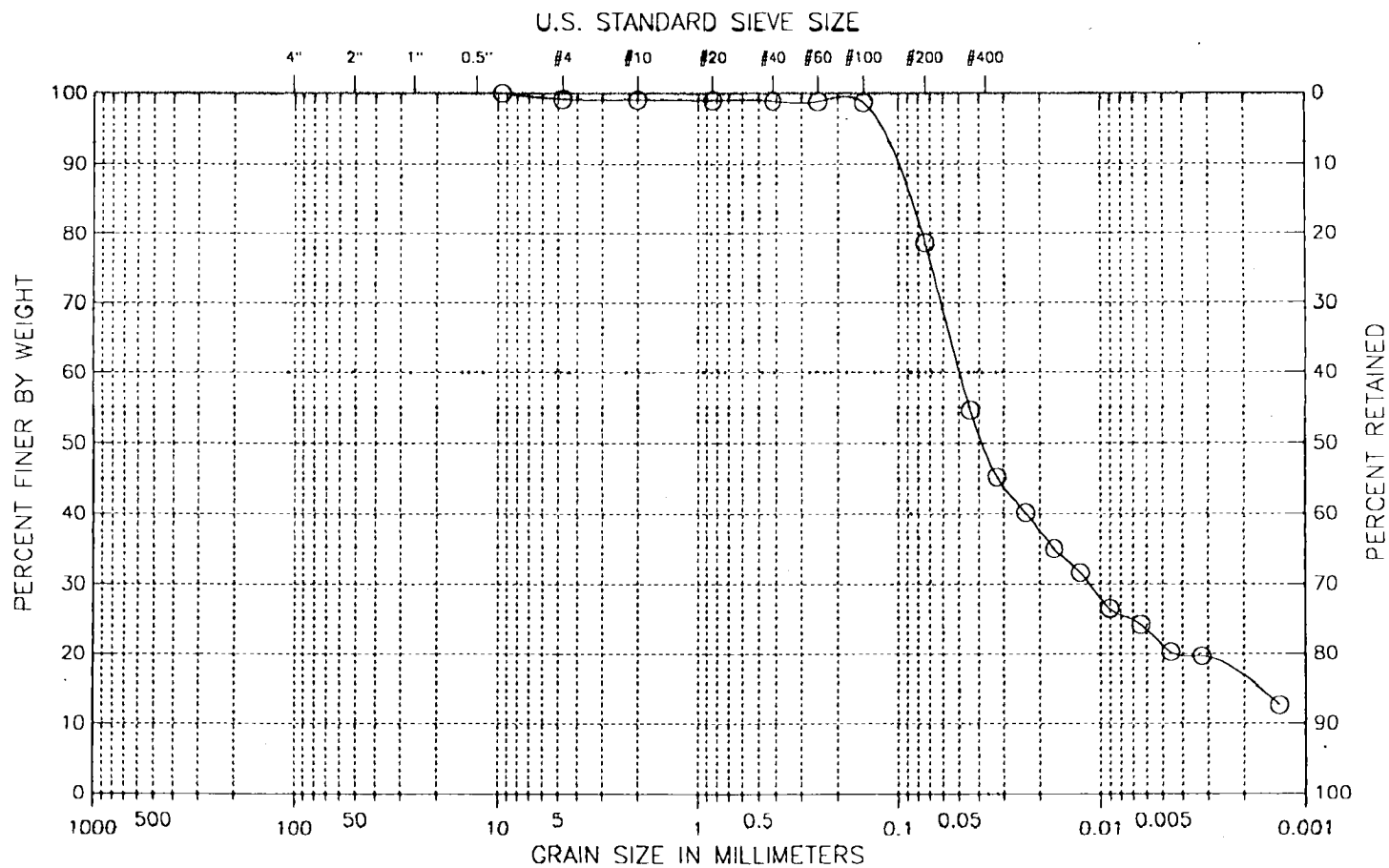
The results presented in this report apply only to the items tested. This report shall not be reproduced except in full, without written approval from GeoTesting Express. The remainder of these samples will be retained for a period of sixty days and will then be discarded unless otherwise notified by you. Please call me directly if you have any questions or require additional information. Thank you for once again allowing GeoTesting Express the opportunity to provide your firm with physical properties testing of soils. We look forward to working with you again on future projects.

Respectfully yours;


Gary T. Torosian
Laboratory Manager

Boring No. : ---
 Sample No.: MW-1-10
 Test Method ASTM D 422
 Filename : MW-1-10

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :

Moist, brown sandy silt

Figure 1

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006
 Project No. : GTX-2459
 Boring No. : ---
 Sample No. : MW-1-10
 Location : New York
 Soil Description : Moist, brown sandy silt
 Remarks : ---

Depth : ---
 Test Date : 08/10/99
 Test Method : ASTM D 422

Filename : MW-1-10
 Elevation : ---
 Tested by : mch
 Checked by : gtt

HYDROMETER

Hydrometer ID : 257525
 Weight of air-dried soil = 58.13 gm
 Specific Gravity = 2.65

Hydroscopic Moisture Content :

Weight of Wet Soil = 0 gm
 Weight of Dry Soil = 0 gm
 Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
1.00	36.50	19.50	32.02	0.044	55	0.044
2.00	31.00	19.50	26.52	0.033	45	0.033
4.00	28.00	19.50	23.52	0.023	40	0.023
8.00	25.00	19.50	20.52	0.017	35	0.017
15.00	23.00	19.50	18.52	0.013	32	0.013
30.00	20.00	19.50	15.52	0.009	26	0.009
60.00	18.50	20.00	14.18	0.006	24	0.006
120.00	16.00	20.50	11.84	0.005	20	0.005
240.00	15.50	21.00	11.50	0.003	20	0.003
1497.00	12.00	19.00	7.36	0.001	13	0.001

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
0.375"	0.374	9.51	0.00	0.00	100
#4	0.187	4.75	1.23	1.23	99
#10	0.079	2.00	0.13	1.36	99
#20	0.033	0.84	0.14	1.50	99
#40	0.017	0.42	0.11	1.61	99
#60	0.010	0.25	0.11	1.72	99
#100	0.006	0.15	0.24	1.96	99
#200	0.003	0.07	29.02	30.98	79
Pan			114.14	145.12	0

Total Dry Weight of Sample = 154.46

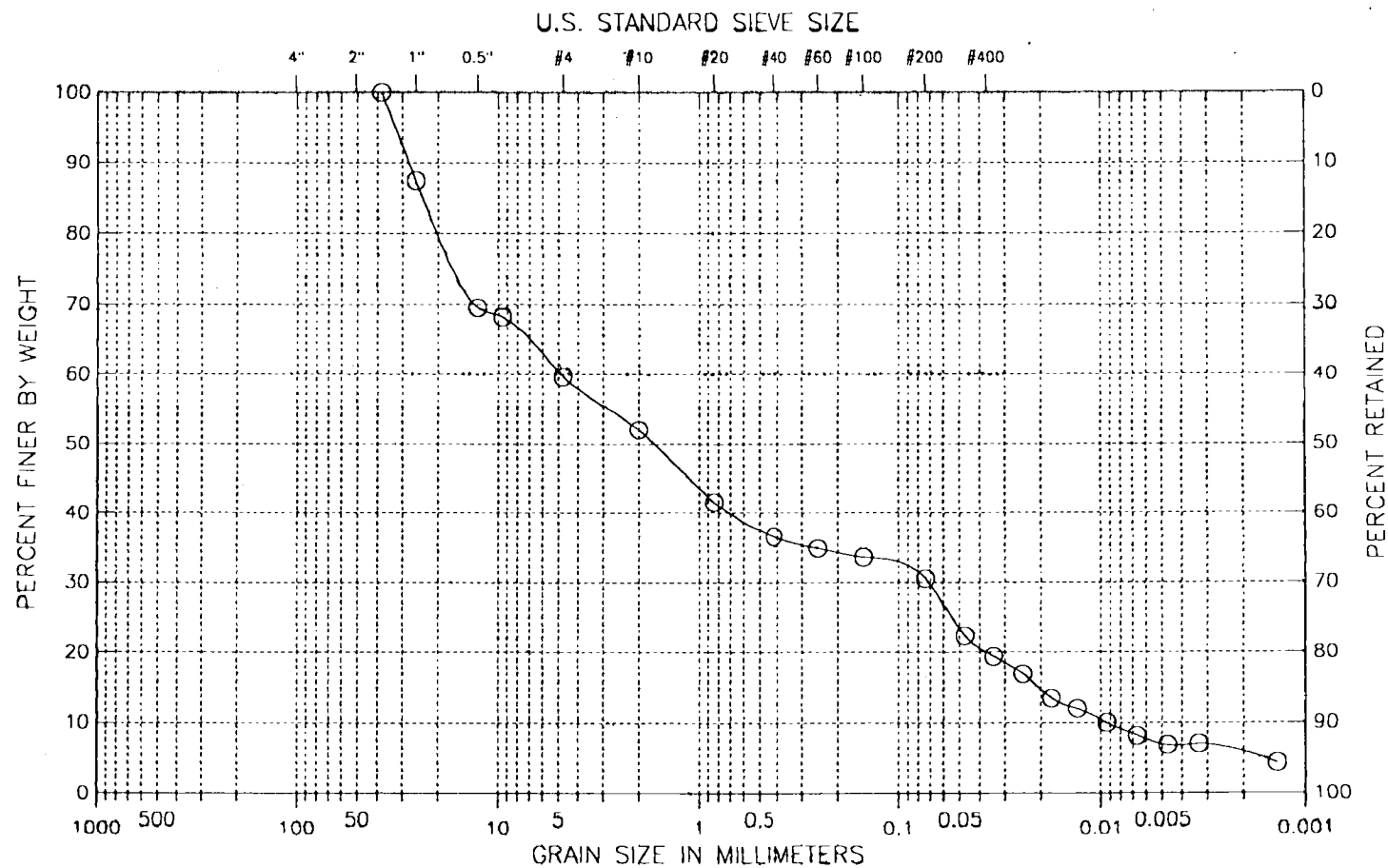
D85 : 0.0924 mm
 D60 : 0.0495 mm
 D50 : 0.0380 mm
 D30 : 0.0113 mm
 D15 : 0.0018 mm
 D10 : 0.0010 mm

Soil Classification

ASTM Group Symbol : N/A
 ASTM Group Name : N/A
 AASHTO Group Symbol : A-4(0)
 AASHTO Group Name : Silty Soils

Boring No. : ---
 Sample No: MW-2-8
 Test Method ASTM D 422
 Filename : MW-2-8

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006
 Project No. : GTX-2459 Depth : ---
 Boring No. : --- Test Date : 08/10/99
 Sample No. : MW-2-8 Test Method : ASTM D 422
 Location : New York
 Soil Description : Moist, dark brown silty sand with gravel
 Remarks : ---

Filename : MW-2-8
 Elevation : ---
 Tested by : mch
 Checked by : gtt

HYDROMETER

Hydrometer ID : 257525
 Weight of air-dried soil = 52.44 gm
 Specific Gravity = 2.65

Hydroscopic Moisture Content :

Weight of Wet Soil = 0 gm
 Weight of Dry Soil = 0 gm
 Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
1.00	27.00	19.50	22.52	0.047	22	0.047
2.00	24.00	19.50	19.52	0.034	19	0.034
4.00	21.50	19.50	17.02	0.025	17	0.025
8.00	18.00	19.50	13.52	0.018	13	0.018
15.00	16.50	19.50	12.02	0.013	12	0.013
30.00	14.50	19.50	10.02	0.009	10	0.009
60.00	12.50	20.00	8.18	0.007	8	0.007
120.00	11.00	20.50	6.84	0.005	7	0.005
240.00	11.00	21.00	7.00	0.003	7	0.003
1491.00	9.00	19.00	4.36	0.001	4	0.001

FINE SIEVE SET					
Sieve Mesh	Sieve Openings		Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
	Inches	Millimeters			
1.5"	1.500	38.10	0.00	0.00	100
1"	1.012	25.70	47.41	47.41	87
0.5"	0.500	12.70	67.29	114.70	70
0.375"	0.374	9.51	4.98	119.68	68
#4	0.187	4.75	32.09	151.77	60
#10	0.079	2.00	28.74	180.51	52
#20	0.033	0.84	39.65	220.16	42
#40	0.017	0.42	18.49	238.65	37
#60	0.010	0.25	6.49	245.14	35
#100	0.006	0.15	4.82	249.96	34
#200	0.003	0.07	11.69	261.65	31
Pan			114.96	376.61	0

Total Dry Weight of Sample = 385.64

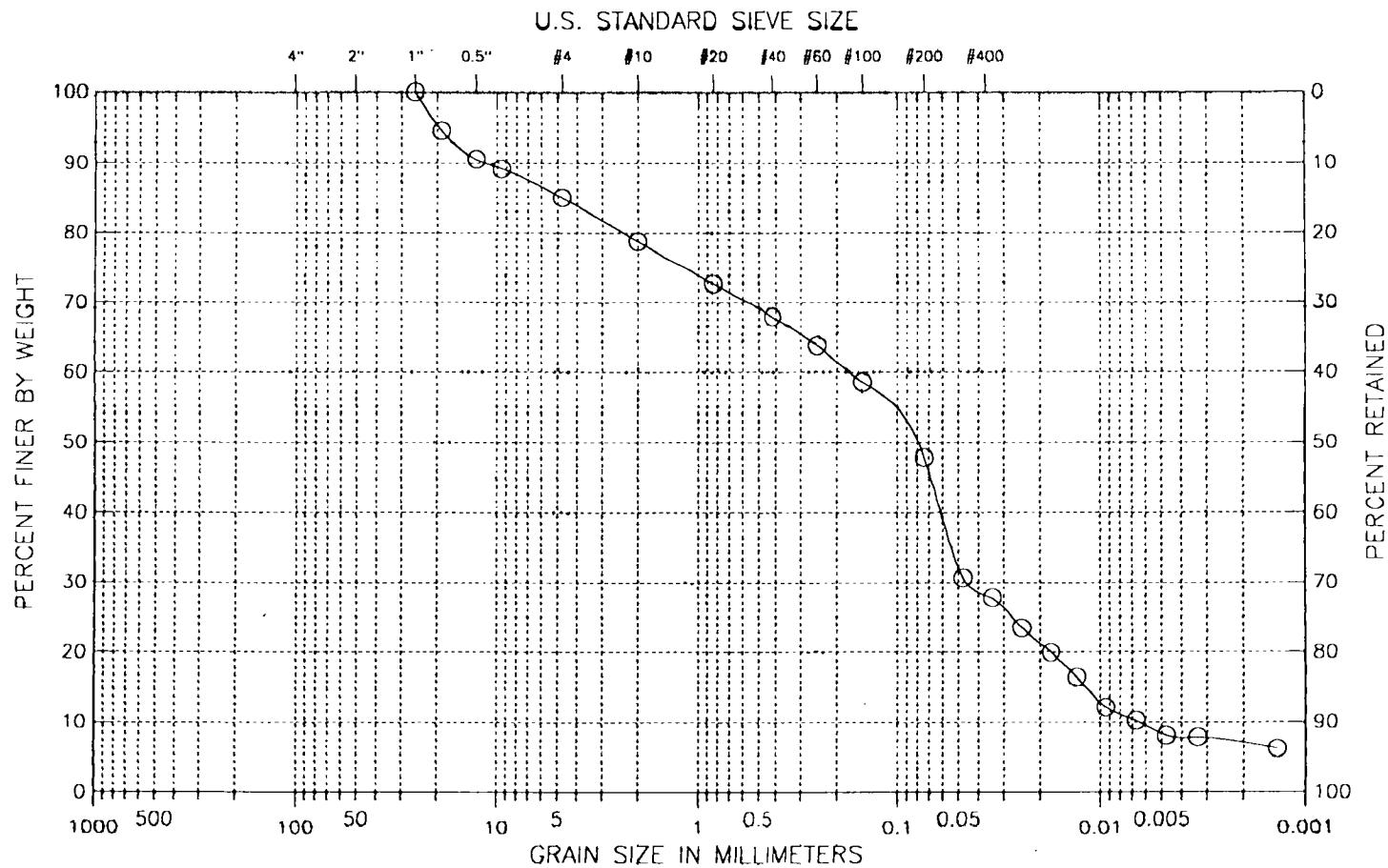
D85 : 23.3678 mm
 D60 : 4.8671 mm
 D50 : 1.6868 mm
 D30 : 0.0719 mm
 D15 : 0.0205 mm
 D10 : 0.0094 mm

Soil Classification

ASTM Group Symbol : N/A
 ASTM Group Name : N/A
 AASHTO Group Symbol : A-2-4(0)
 AASHTO Group Name : Silty Gravel and Sand

Boring No. : ---
 Sample No: MW-3-10
 Test Method ASTM D 422
 Filename : MW-3-10

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :

Moist, brown sandy silt with gravel

Figure 3.

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Page : 1

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006
Project No. : GTX-2459
Boring No. : ---
Sample No. : MW-3-10
Location : New York
Soil Description : Moist, brown sandy silt with gravel
Remarks : ---

Filename : MW-3-10
Depth : ---
Elevation : ---
Test Date : 08/10/99
Test Method : ASTM D 422
Tested by : mch
Checked by : gtt

HYDROMETER

Hydrometer ID : 257525
Weight of air-dried soil = 55.33 gm
Specific Gravity = 2.65

Hydroscopic Moisture Content :

Weight of Wet Soil = 0 gm
Weight of Dry Soil = 0 gm
Moisture Content = 0

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
1.00	26.00	19.50	21.52	0.048	31	0.048
2.00	24.00	19.50	19.52	0.034	28	0.034
4.00	21.00	19.50	16.52	0.025	24	0.025
8.00	18.50	19.50	14.02	0.018	20	0.018
15.00	16.00	19.50	11.52	0.013	16	0.013
30.00	13.00	19.50	8.52	0.009	12	0.009
60.00	11.50	20.00	7.18	0.007	10	0.007
120.00	10.00	20.00	5.68	0.005	8	0.005
240.00	9.50	21.00	5.50	0.003	8	0.003
1499.00	9.00	19.00	4.36	0.001	6	0.001

FINE SIEVE SET					
Sieve Mesh	Sieve Openings		Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
	Inches	Millimeters			
1"	1.012	25.70	0.00	0.00	100
0.75"	0.748	19.00	13.75	13.75	95
0.5"	0.500	12.70	10.21	23.96	91
0.375"	0.374	9.51	3.45	27.41	89
#4	0.187	4.75	10.43	37.84	85
#10	0.079	2.00	16.00	53.84	79
#20	0.033	0.84	15.48	69.32	73
#40	0.017	0.42	12.02	81.34	68
#60	0.010	0.25	10.50	91.84	64
#100	0.006	0.15	13.30	105.14	59
#200	0.003	0.07	27.22	132.36	48
Pan			121.54	253.90	0

Total Dry Weight of Sample = 263.04

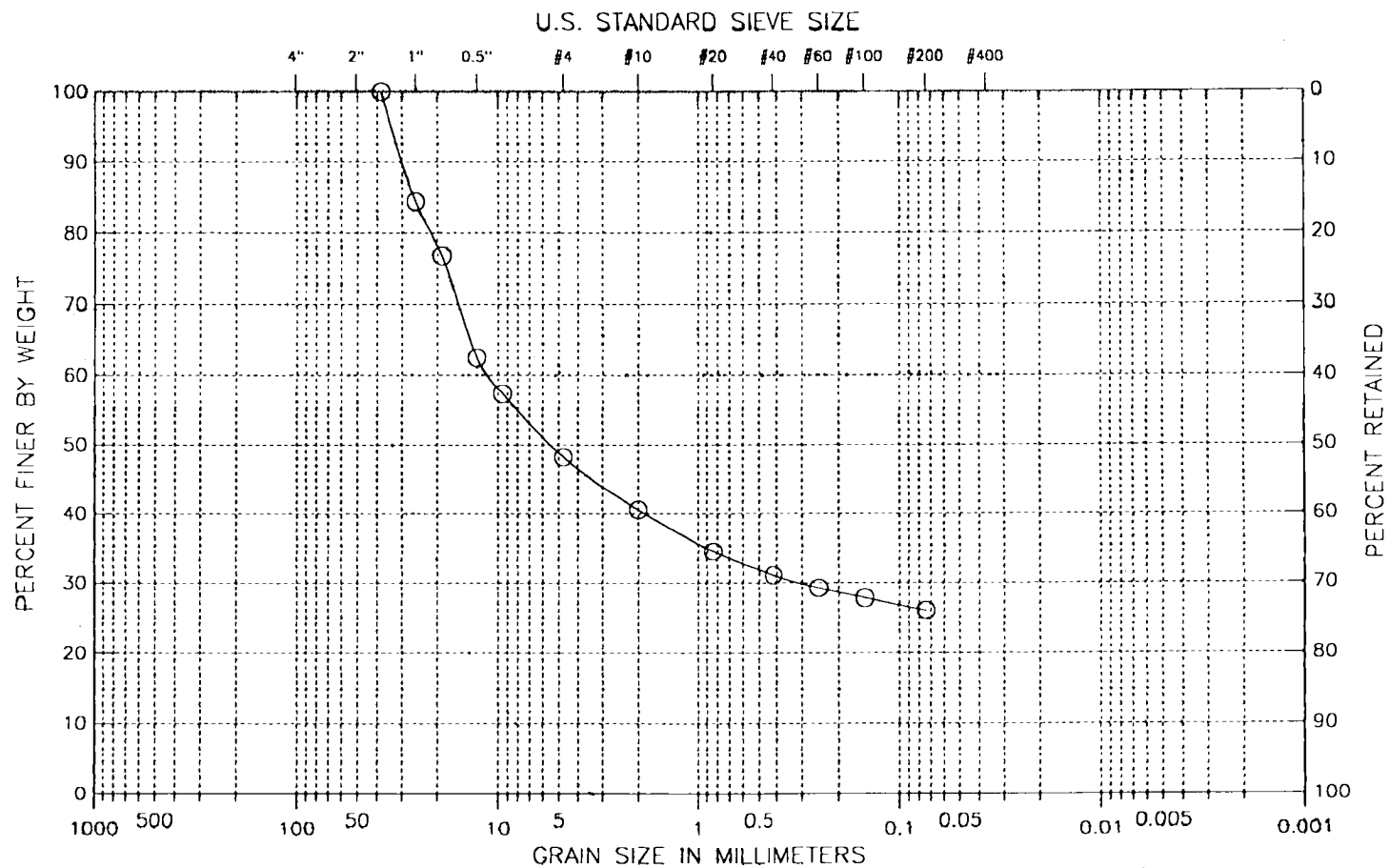
D85 : 4.6875 mm
D60 : 0.1713 mm
D50 : 0.0850 mm
D30 : 0.0440 mm
D15 : 0.0117 mm
D10 : 0.0064 mm

Soil Classification

ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-4(0)
AASHTO Group Name : Silty Soils

Boring No.: ---
 Sample No: MW-4-14
 Test Method ASTM D 422
 Filename : MW-4-14

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :

Moist, dark brown silty sand with gravel

Figure 4

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006

Filename : MW-4-14

Project No. : GTX-2459

Depth : ---

Elevation : ---

Boring No. : ---

Test Date : 08/10/99

Tested by : mch

Sample No. : MW-4-14

Test Method : ASTM D 422

Checked by : gtt

Location : New York

Soil Description : Moist, dark brown silty sand with gravel

Remarks : ---

Sieve Mesh	Sieve Openings		FINE SIEVE SET		Percent Finer (%)
	Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	
1.5"	1.500	38.10	0.00	0.00	100
1"	1.012	25.70	72.30	72.30	84
0.75"	0.748	19.00	35.48	107.78	77
0.5"	0.500	12.70	66.48	174.26	62
0.375"	0.374	9.51	23.81	198.07	57
#4	0.187	4.75	42.56	240.63	48
#10	0.079	2.00	35.59	276.22	41
#20	0.033	0.84	27.98	304.20	35
#40	0.017	0.42	15.97	320.17	31
#60	0.010	0.25	8.61	328.78	29
#100	0.006	0.15	6.57	335.35	28
#200	0.003	0.07	8.21	343.56	26
Pan			121.01	464.57	0

Total Dry Weight of Sample = 473.67

D85 : 26.0685 mm

D60 : 11.0349 mm

D50 : 5.4426 mm

D30 : 0.3102 mm

D15 : N/A

D10 : N/A

Soil Classification

ASTM Group Symbol : N/A

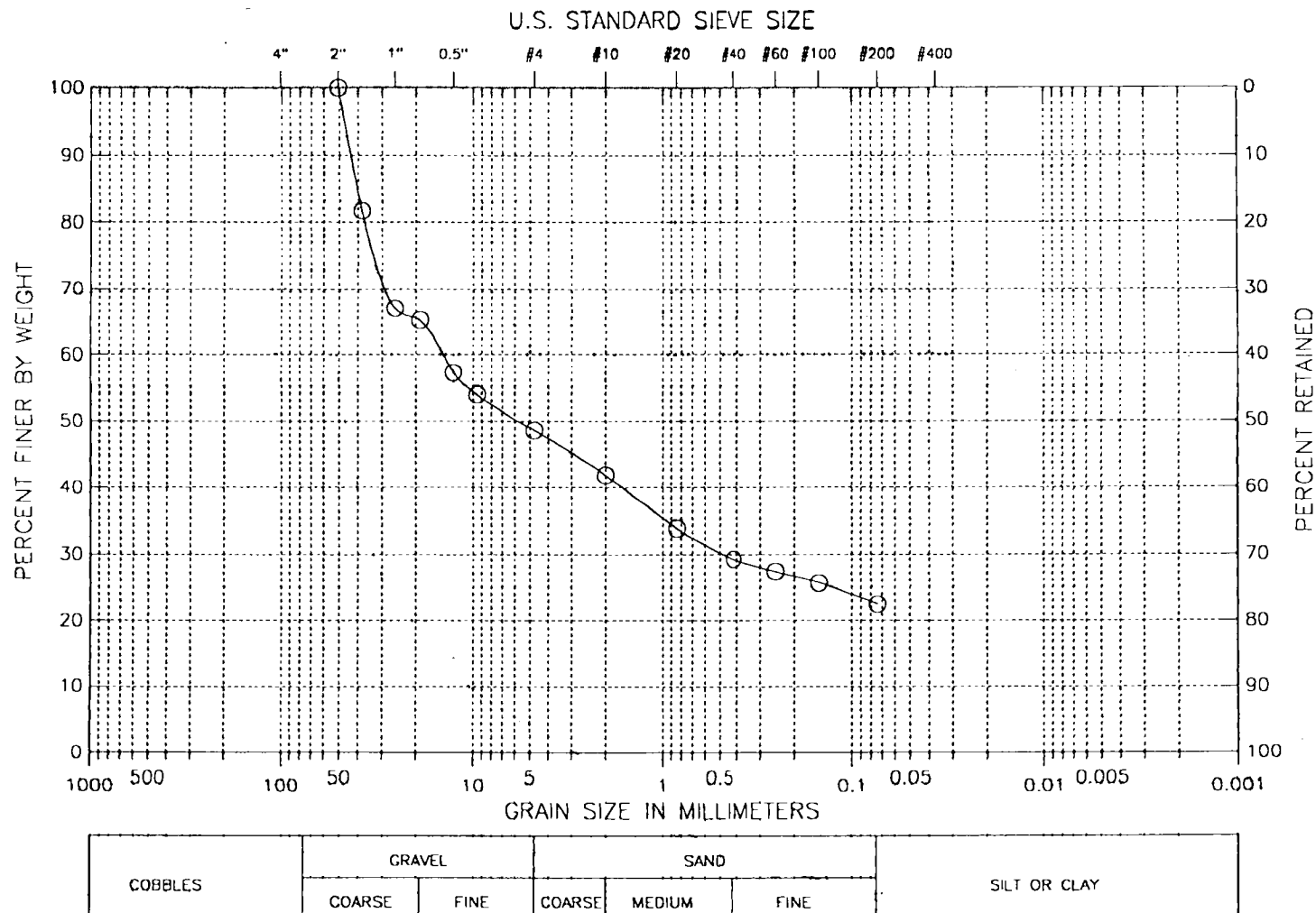
ASTM Group Name : N/A

AASHTO Group Symbol : A-2-4(0)

AASHTO Group Name : Silty Gravel and Sand

Boring No. : ---
 Sample No: MW-5-10
 Test Method ASTM D 422
 Filename : MW-5-10

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



Classification :

Remarks :

Visual Description :

Moist, dark brown silty sand with gravel

Figure 5

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Page : 1

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006
Project No. : GTX-2459 Depth : ---
Boring No. : --- Test Date : 08/10/99
Sample No. : MW-5-10 Test Method : ASTM D 422
Location : New York
Soil Description : Moist, dark brown silty sand with gravel
Remarks : ---

Filename : MW-5-10
Elevation : ---
Tested by : mch
Checked by : gtt

Sieve Mesh	Sieve Openings		FINE SIEVE SET		Percent Finer (%)
	Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	
2"	2.000	50.80	0.00	0.00	100
1.5"	1.500	38.10	113.51	113.51	82
1"	1.012	25.70	91.38	204.89	67
0.75"	0.748	19.00	11.14	216.03	65
0.5"	0.500	12.70	49.29	265.32	57
0.375"	0.374	9.51	20.80	286.12	54
#4	0.187	4.75	33.39	319.51	49
#10	0.079	2.00	42.02	361.53	42
#20	0.033	0.84	49.50	411.03	34
#40	0.017	0.42	28.71	439.74	29
#60	0.010	0.25	11.51	451.25	27
#100	0.006	0.15	10.45	461.70	26
#200	0.003	0.07	20.15	481.85	23
Pan			139.90	621.75	0

Total Dry Weight of Sample = 631.21

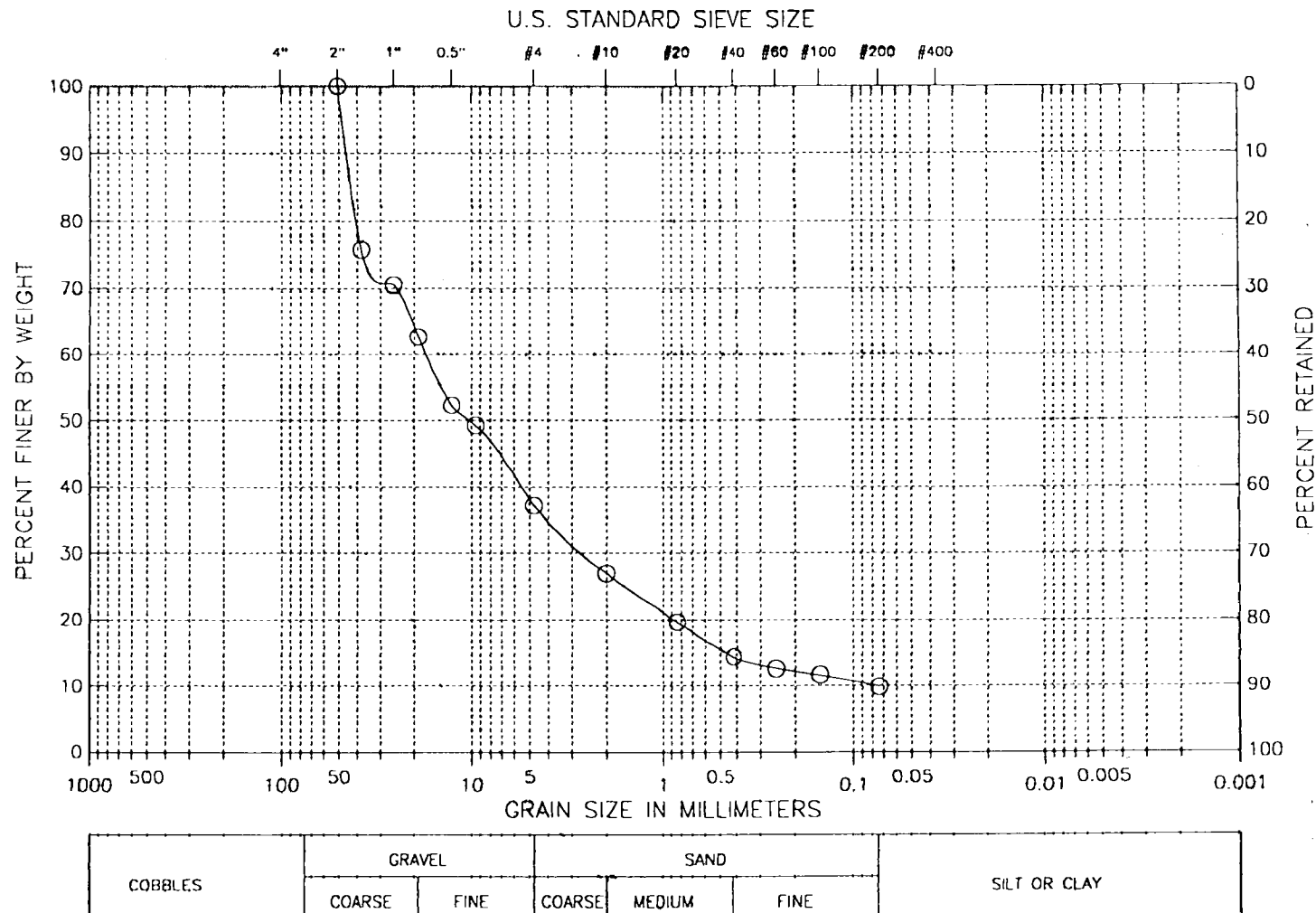
D85 : 40.1062 mm
D60 : 14.5477 mm
D50 : 5.6841 mm
D30 : 0.4685 mm
D15 : N/A
D10 : N/A

Soil Classification

ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-1-b(0)
AASHTO Group Name : Stone Fragments, Gravel and Sand

Boring No. : ----
 Sample No: MW-6-10
 Test Method ASTM D 422
 Filename : MW-6-10

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



Classification :

Remarks :

Visual Description :

Moist, brown sand with gravel, silt

Figure 6

Mon Aug 23 11:07:12 1999

Page : 1

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006
Project No. : GTX-2459
Boring No. : ---
Sample No. : MW-6-10
Location : New York
Soil Description : Moist, brown sand with gravel, silt
Remarks : ---

Filename : MW-6-10
Elevation : ---
Tested by : mch
Checked by : gtt

Sieve Mesh	Sieve Openings		FINE SIEVE SET		Percent Finer (%)
	Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	
2"	2.000	50.80	0.00	0.00	100
1.5"	1.500	38.10	132.63	132.63	76
1"	1.012	25.70	28.67	161.30	71
0.75"	0.748	19.00	43.07	204.37	63
0.5"	0.500	12.70	56.95	261.32	52
0.375"	0.374	9.51	16.71	278.03	49
#4	0.187	4.75	65.93	343.96	37
#10	0.079	2.00	56.01	399.97	27
#20	0.033	0.84	40.32	440.29	20
#40	0.017	0.42	28.84	469.13	14
#60	0.010	0.25	9.52	478.65	13
#100	0.006	0.15	5.43	484.08	12
#200	0.003	0.07	9.41	493.49	10
Pan			54.19	547.68	0

Total Dry Weight of Sample = 556.77

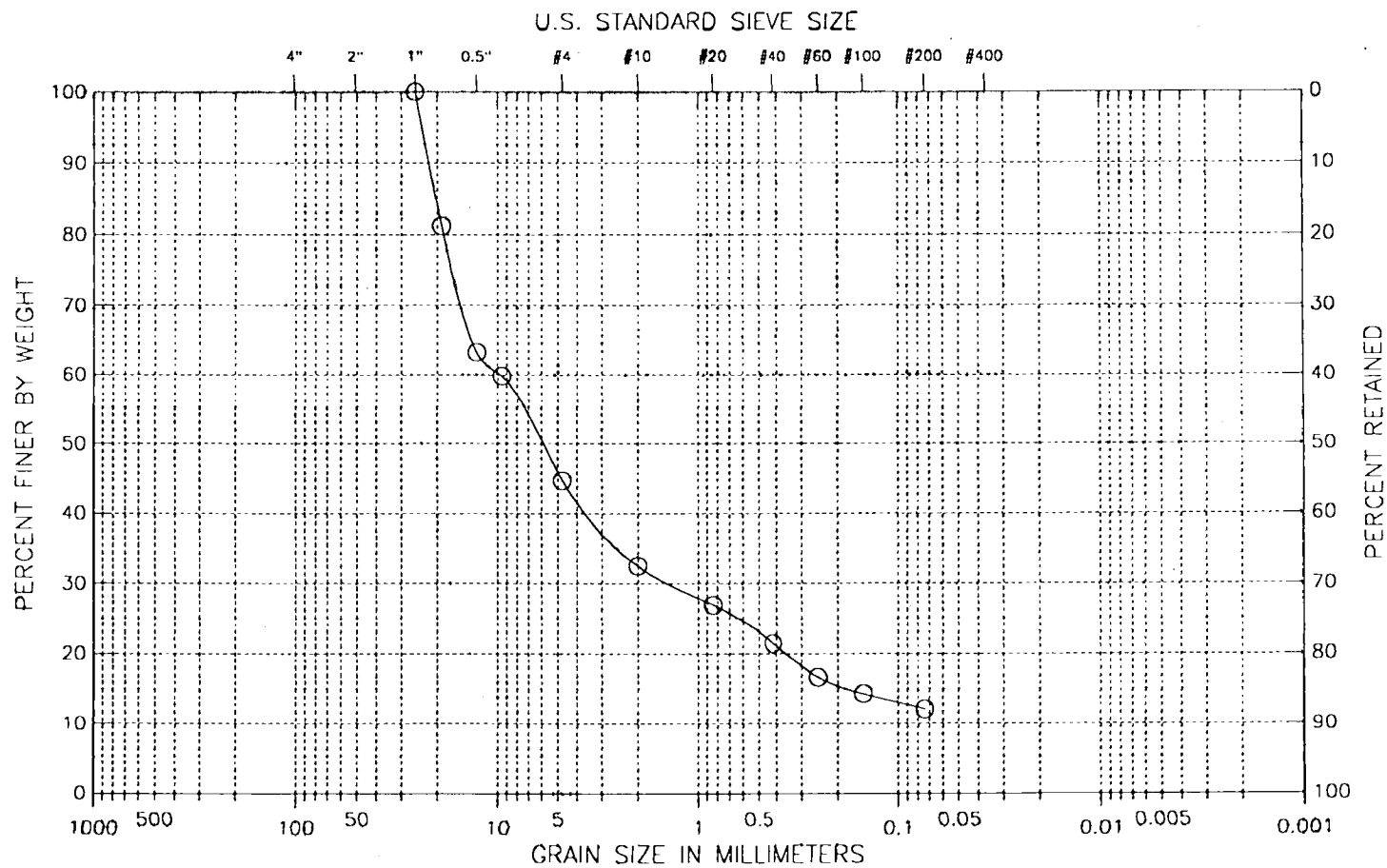
D85 : 42.5085 mm
D60 : 17.1234 mm
D50 : 10.2254 mm
D30 : 2.5842 mm
D15 : 0.4580 mm
D10 : 0.0773 mm

Soil Classification

ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-1-a(0)
AASHTO Group Name : Stone Fragments, Gravel and Sand

Boring No. : ---
 Sample No: MW-7-10
 Test Method ASTM D 422
 Filename : MW-7-10

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :

Moist, very dark brown silty sand with gravel

Figure 7

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006
Project No. : GTX-2459 Depth : ---
Boring No. : --- Test Date : 08/10/99
Sample No. : MW-7-10 Test Method : ASTM D 422
Location : New York
Soil Description : Moist, very dark brown silty sand with gravel
Remarks : ---

Filename : MW-7-10
Elevation : ---
Tested by : mch
Checked by : gtt

FINE SIEVE SET					
Sieve Mesh	Sieve Openings		Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
	Inches	Millimeters			
1"	1.012	25.70	0.00	0.00	100
0.75"	0.748	19.00	77.74	77.74	81
0.5"	0.500	12.70	74.48	152.22	63
0.375"	0.374	9.51	14.43	166.65	60
#4	0.187	4.75	62.52	229.17	45
#10	0.079	2.00	50.55	279.72	33
#20	0.033	0.84	23.24	302.96	27
#40	0.017	0.42	22.67	325.63	21
#60	0.010	0.25	20.22	345.85	17
#100	0.006	0.15	9.70	355.55	14
#200	0.003	0.07	9.09	364.64	12
Pan			49.88	414.52	0

Total Dry Weight of Sample = 423.75

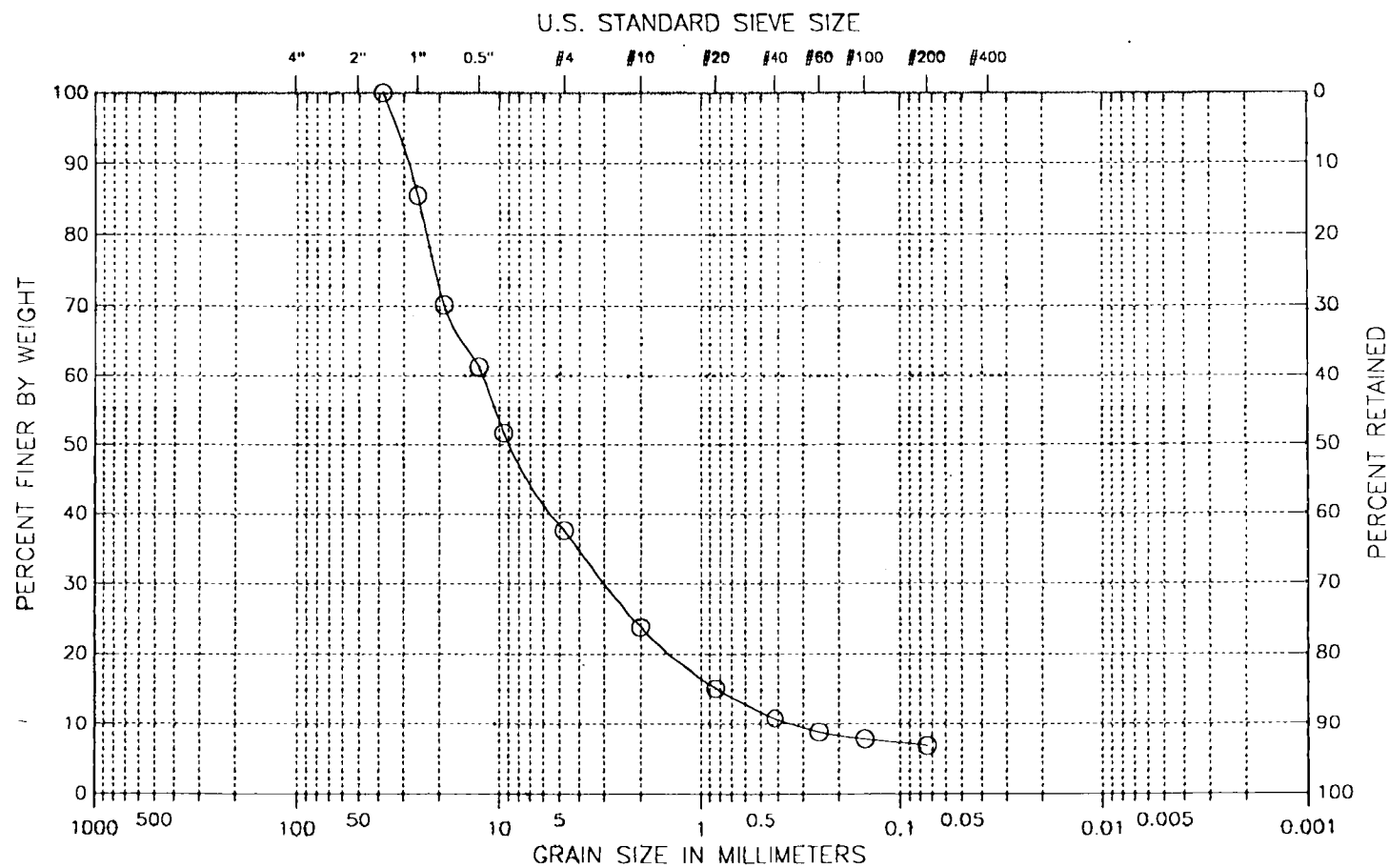
D85 : 20.1843 mm
D60 : 9.6719 mm
D50 : 6.0583 mm
D30 : 1.3550 mm
D15 : 0.1768 mm
D10 : 0.0387 mm

Soil Classification

ASTM Group Symbol : N/A
ASTM Group Name : N/A
AASHTO Group Symbol : A-1-a(0)
AASHTO Group Name : Stone Fragments, Gravel and Sand

Boring No. : ---
 Sample No: MW-8-10
 Test Method ASTM D 422
 Filename : MW-8-10

Project : AKZO Nobel Phase II; 19045-006
 Project No.: GTX-2459
 Location: New York
 Date : Mon Aug 23 1999



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Classification :

Remarks :

Visual Description :

Moist, dark brown sand with gravel

GEOTECHNICAL LABORATORY TEST DATA

Project : AKZO Nobel Phase II; 19045-006

Filename : MW-8-10

Project No. : GTX-2459

Depth : ---

Elevation : ---

Boring No. : ---

Test Date : 08/10/99

Tested by : mch

Sample No. : MW-8-10

Test Method : ASTM D 422

Checked by : gtt

Location : New York

Soil Description : Moist, dark brown sand with gravel

Remarks : ---

Sieve Mesh	Sieve Openings		FINE SIEVE SET		Percent Finer (%)
	Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	
1.5"	1.500	38.10	0.00	0.00	100
1"	1.012	25.70	80.78	80.78	86
0.75"	0.748	19.00	85.57	166.35	70
0.5"	0.500	12.70	49.45	215.80	61
0.375"	0.374	9.51	53.94	269.74	52
#4	0.187	4.75	78.55	348.29	38
#10	0.079	2.00	76.79	425.08	24
#20	0.033	0.84	48.61	473.69	15
#40	0.017	0.42	23.86	497.55	11
#60	0.010	0.25	10.91	508.46	9
#100	0.006	0.15	5.47	513.93	8
#200	0.003	0.07	5.21	519.14	7
Pan			38.66	557.80	0

Total Dry Weight of Sample = 566.98

D85 : 25.4392 mm

D60 : 12.2111 mm

D50 : 8.7705 mm

D30 : 2.9539 mm

D15 : 0.8303 mm

D10 : 0.3396 mm

Soil Classification

ASTM Group Symbol : N/A

ASTM Group Name : N/A

AASHTO Group Symbol : A-1-a(0)

AASHTO Group Name : Stone Fragments, Gravel and Sand

CHAIN OF CUSTODY RECORD

Project Name: AKZO NOBEL PHASE II
 Project No.: 19045-006 - NY
 Sampling Date(s): 7/22-23-24-27/99
 Laboratory: GRÖSTING EXPRESS
 Laboratory P.O. #: _____
 Shipping Airbill No.: Delivery (Charles Foster)
 Shipping Date(s): 8/10/99
 Shipper's Name: TERRA MARSH & JIM LEONARD

MATRIX

ANALYSIS

Sample Code	Sampled Date	Container		Aque	Organic	Acidic	Basic	Other	Source Description	Trace	Merc	Hexa	HCl	Cl2	Partic	PCDD	Semi	Volat	Phys	Grav	h	i	Comments
		Size	G/P																				
MW-3-10	7/22/99	1-BAL	P		X														X				
MW-4-14	7/23/99				X														X				
MW-6-10	7/23/99				X														X				
MW-8-12	7/23/99				X														X				
MW-7-10	7/26/99				X														X				
MW-5-10	7/26/99				X														X				
MW-1-10	7/26/99				X														X				
MW-2-8	7/27/99	↓	↓		X														X				

Relinquished by: Jim P. Lusk

Date/Time: 8/10/99 4:26 am

Relinquished by: _____

Date/Time: _____

Received by: Cathy Lusk

Date/Time: 8/10/99 9:26 am

Received by: _____

Date/Time: _____

REMARKS (*):

No 02324

WHITE — LABORATORY

YELLOW — LABORATORY COPY

PINK — OFFICE COPY

GOLD — FIELD COPY

TRC

TRC Environmental Corporation

APPENDIX K

**LABORATORY DATA DELEIVERABLES
(SUPPLIED UPON REQUEST)**

TRC