VOLUME II - APPENDICES

RCRA FACILITY INVESTIGATION REPORT FOR THE OLIN BUFFALO AVENUE PLANT RCRA-89-3013-0208

Prepared for:
Olin Chemicals
1186 Lower River Road
Charleston, Tennessee 37310
August 1994

Woodward-Clyde

Woodward-Clyde Consultants, Inc.
15 Hazelwood Drive, Suite 110
Amherst, New York 14228-2229
Project Number 4E02704

VOLUME II - APPENDICES

[redacted]

REVIEW DRAFT
RCRA FACILITY INVESTIGATION REPORT FOR THE OLIN BUFFALO AVENUE PLANT
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TABLE OF CONTENTS - VOLUME II

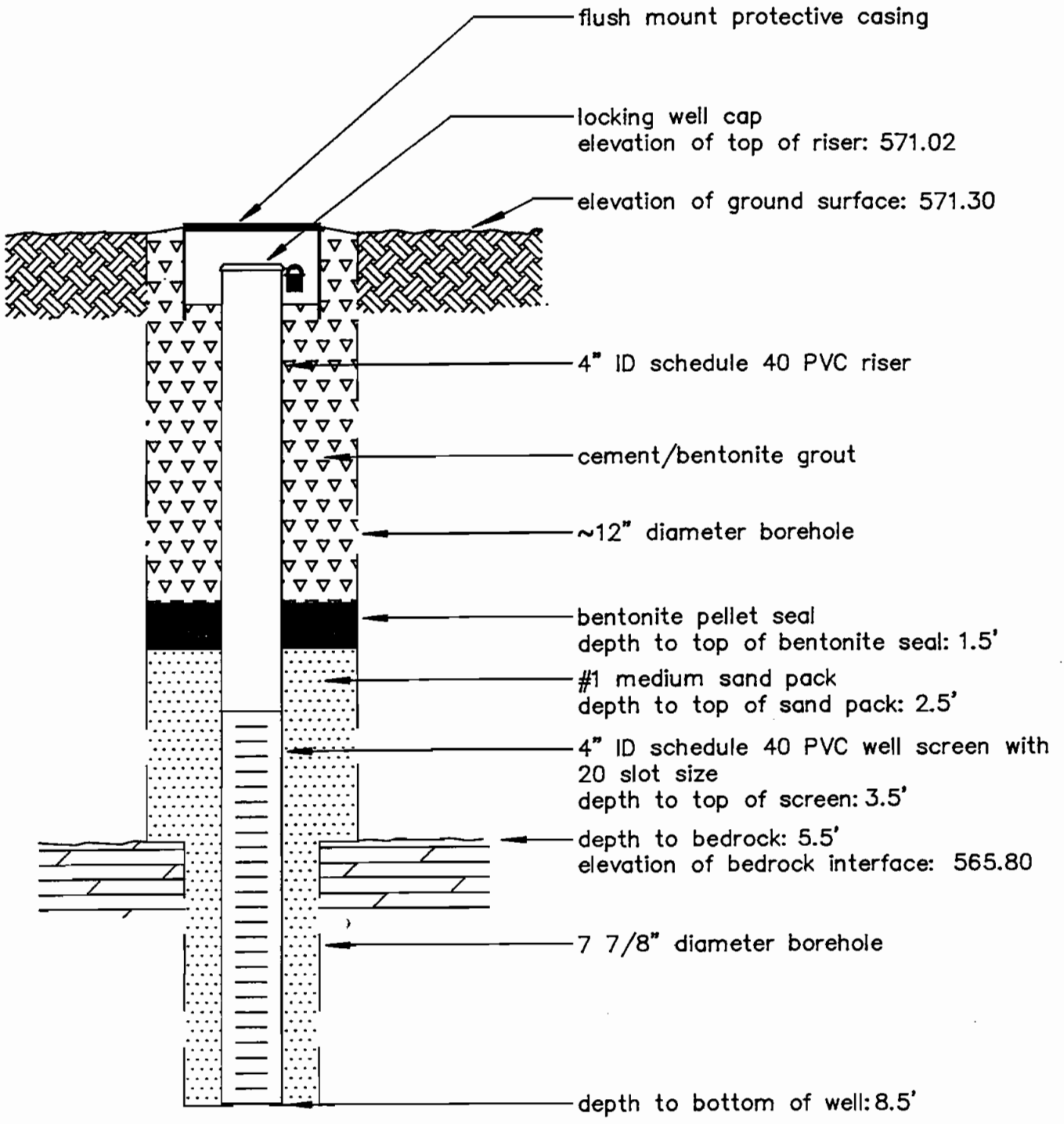
LIST OF APPENDICES

Appendix A

Monitoring Well Completion Diagrams

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

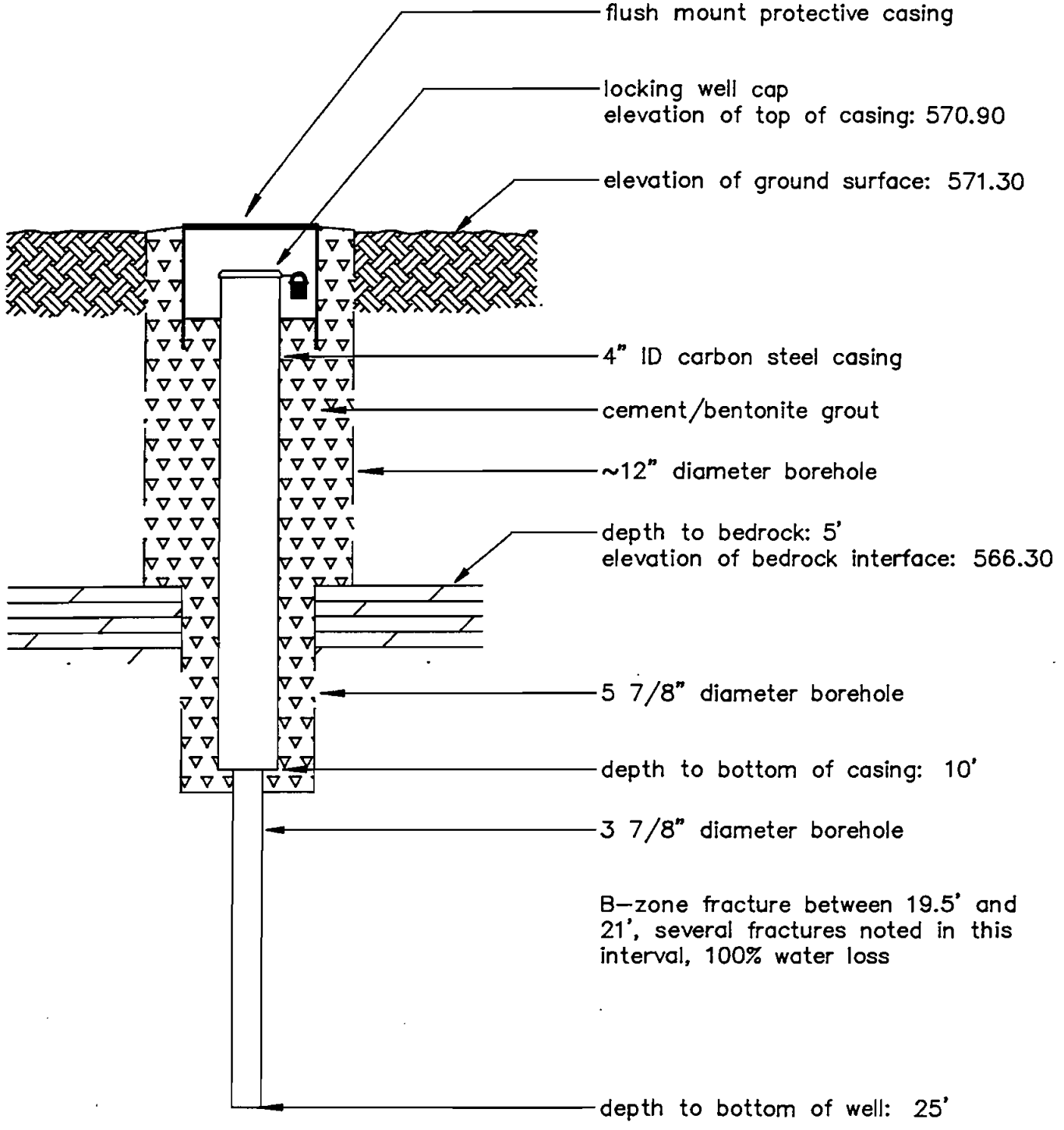


REPORT OF MONITORING WELL OBA-1A

COMPLETION DATE: 6/22/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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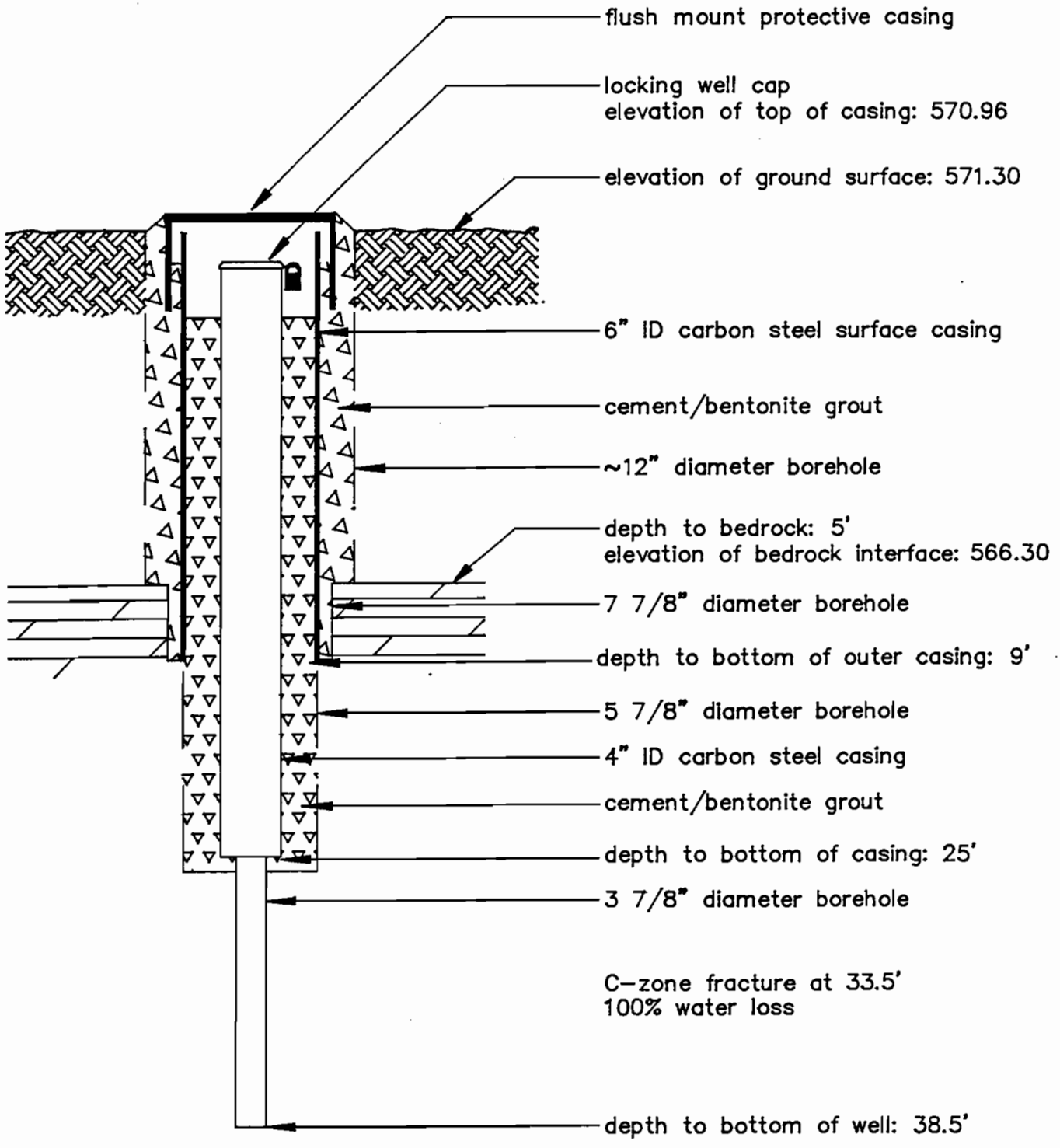
COMPLETION DATE: 6/23/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-1C/CD

COMPLETION DATE: 6/27/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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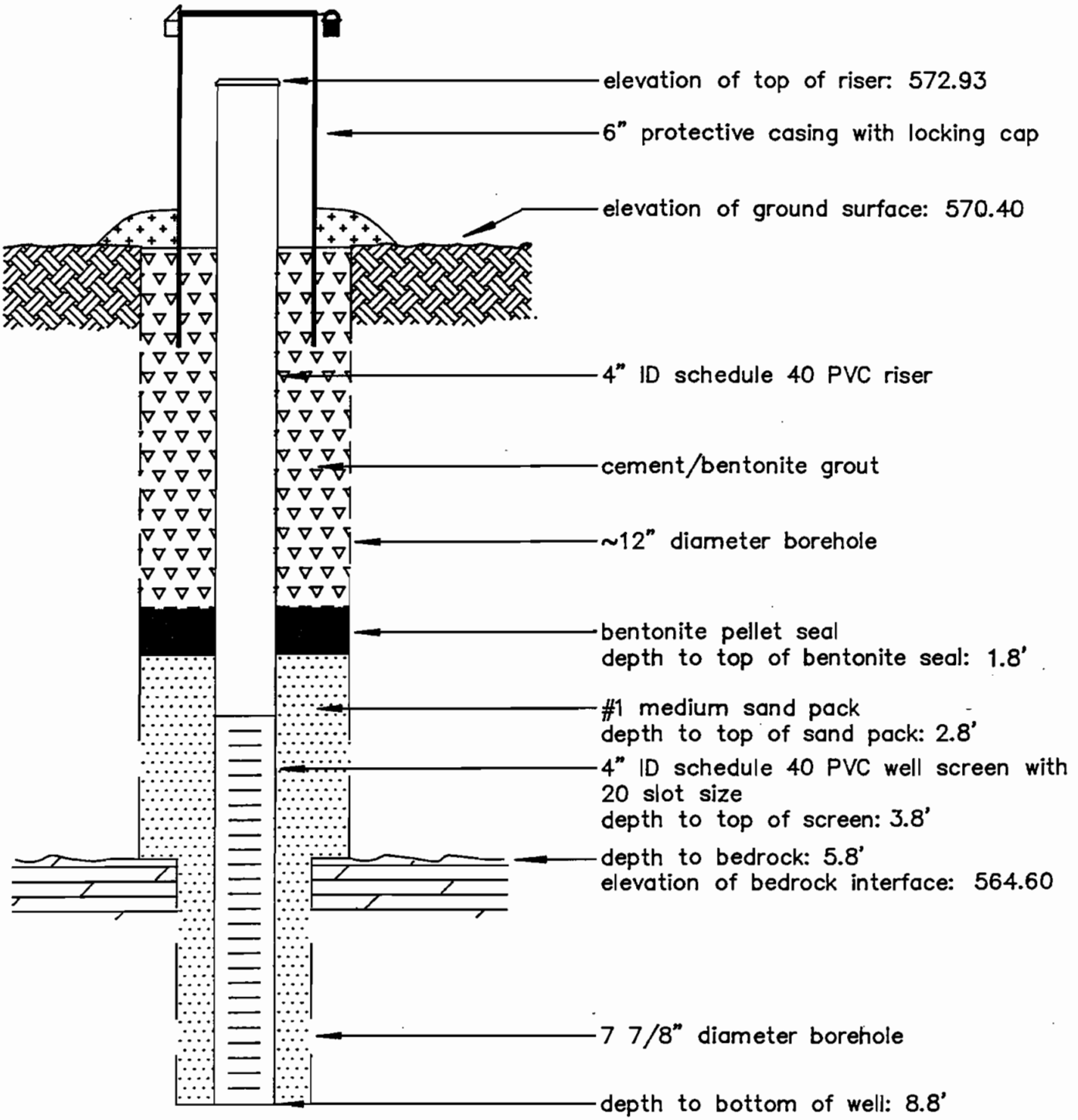

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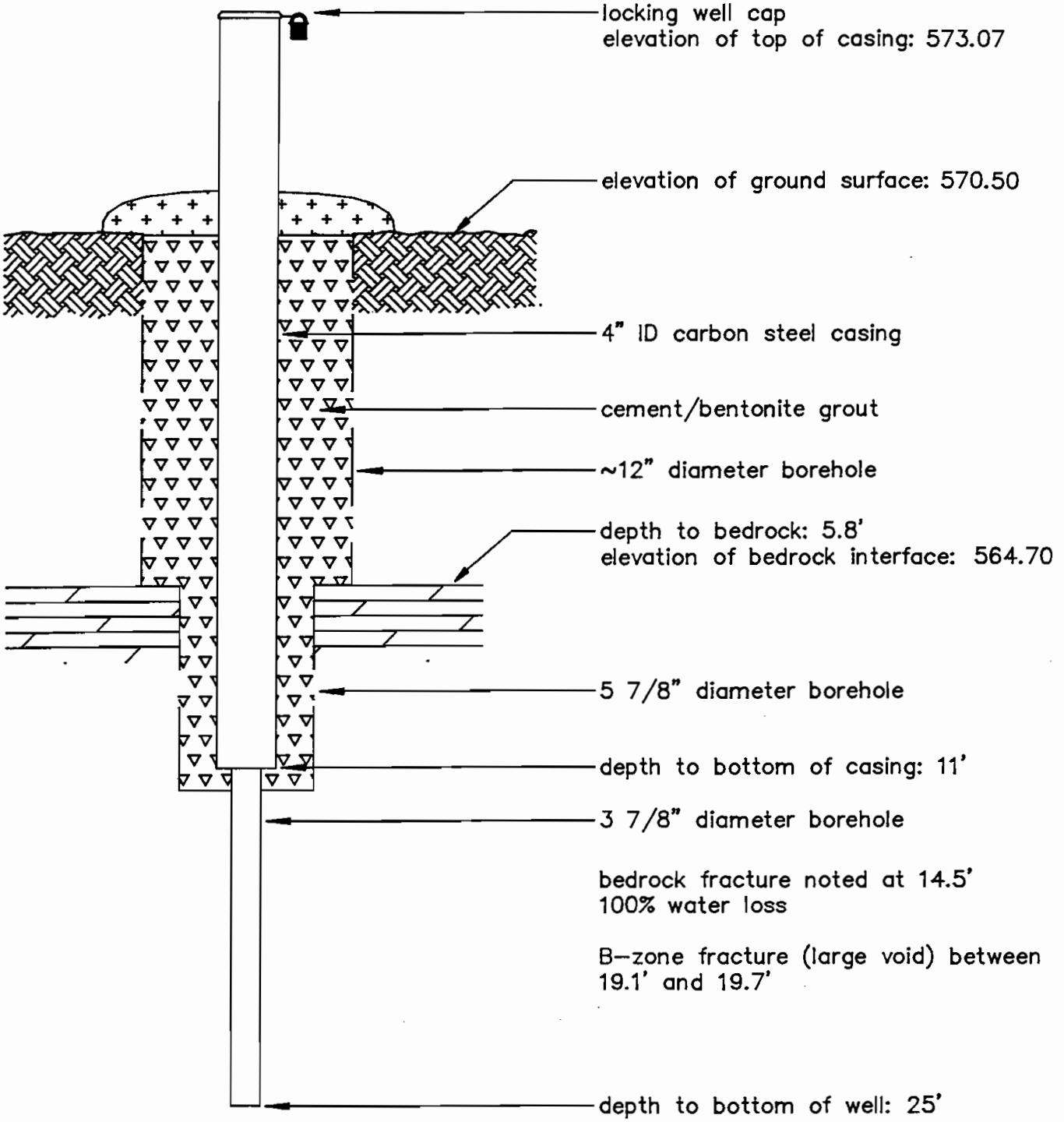
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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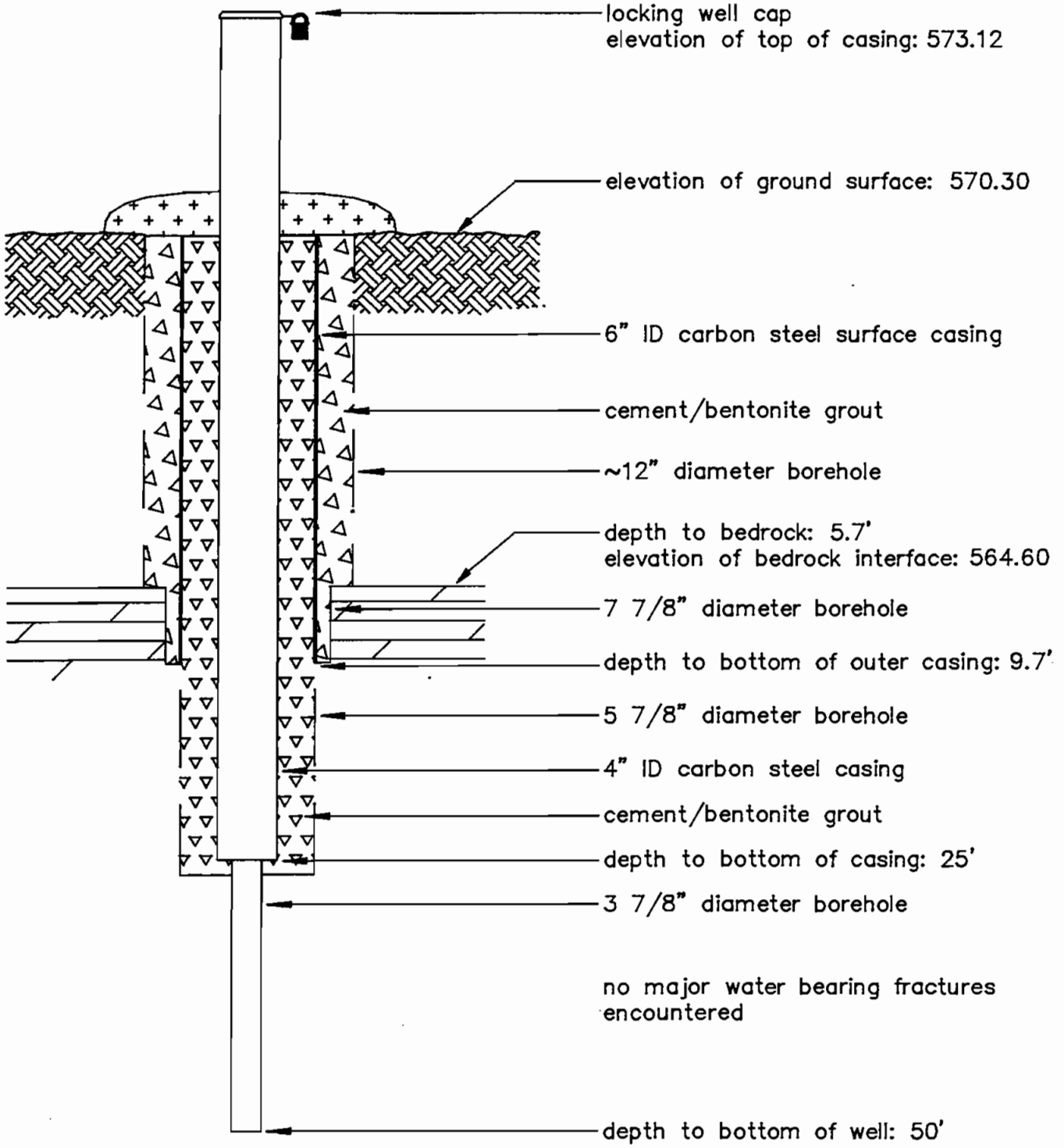
Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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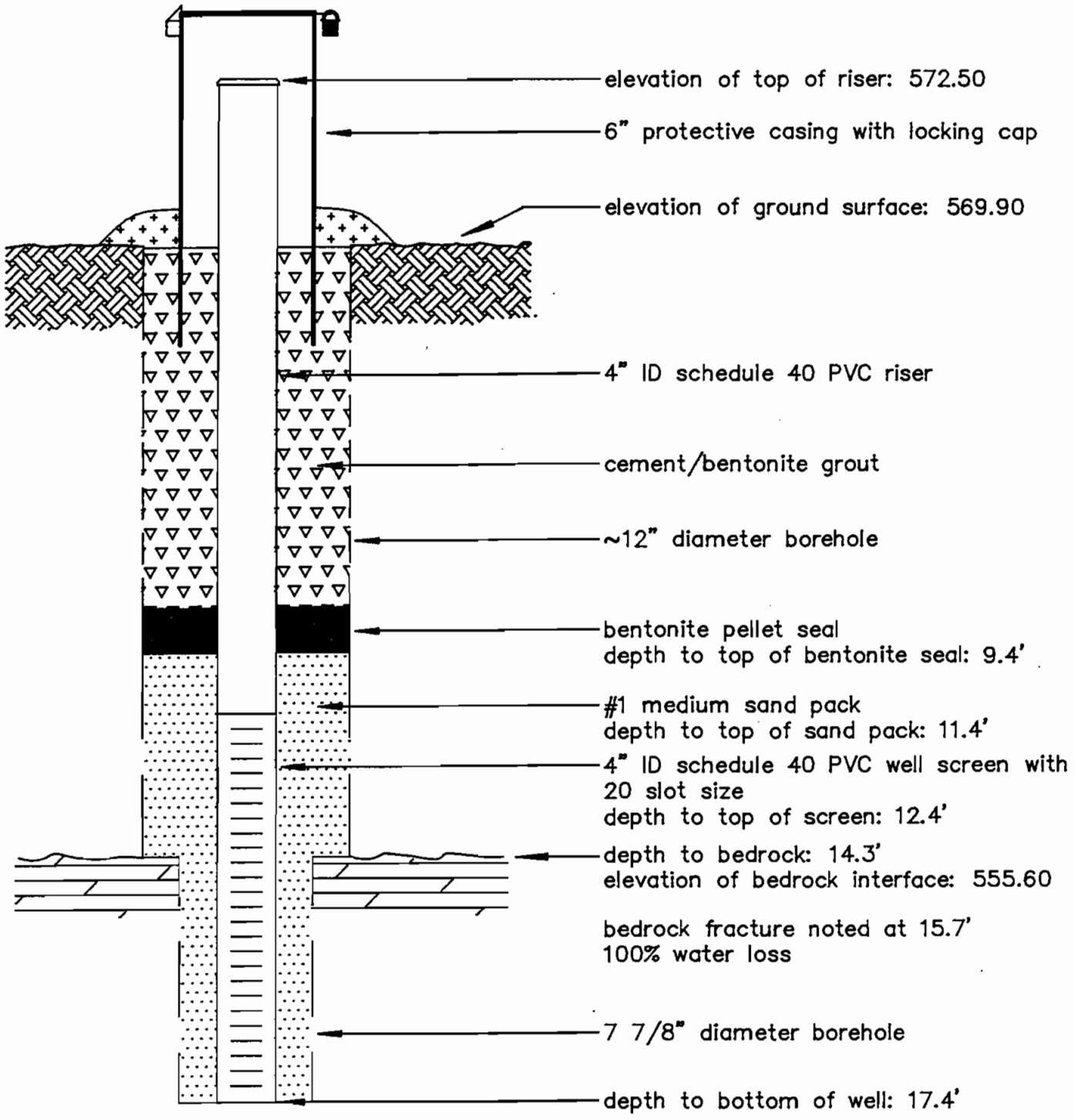
Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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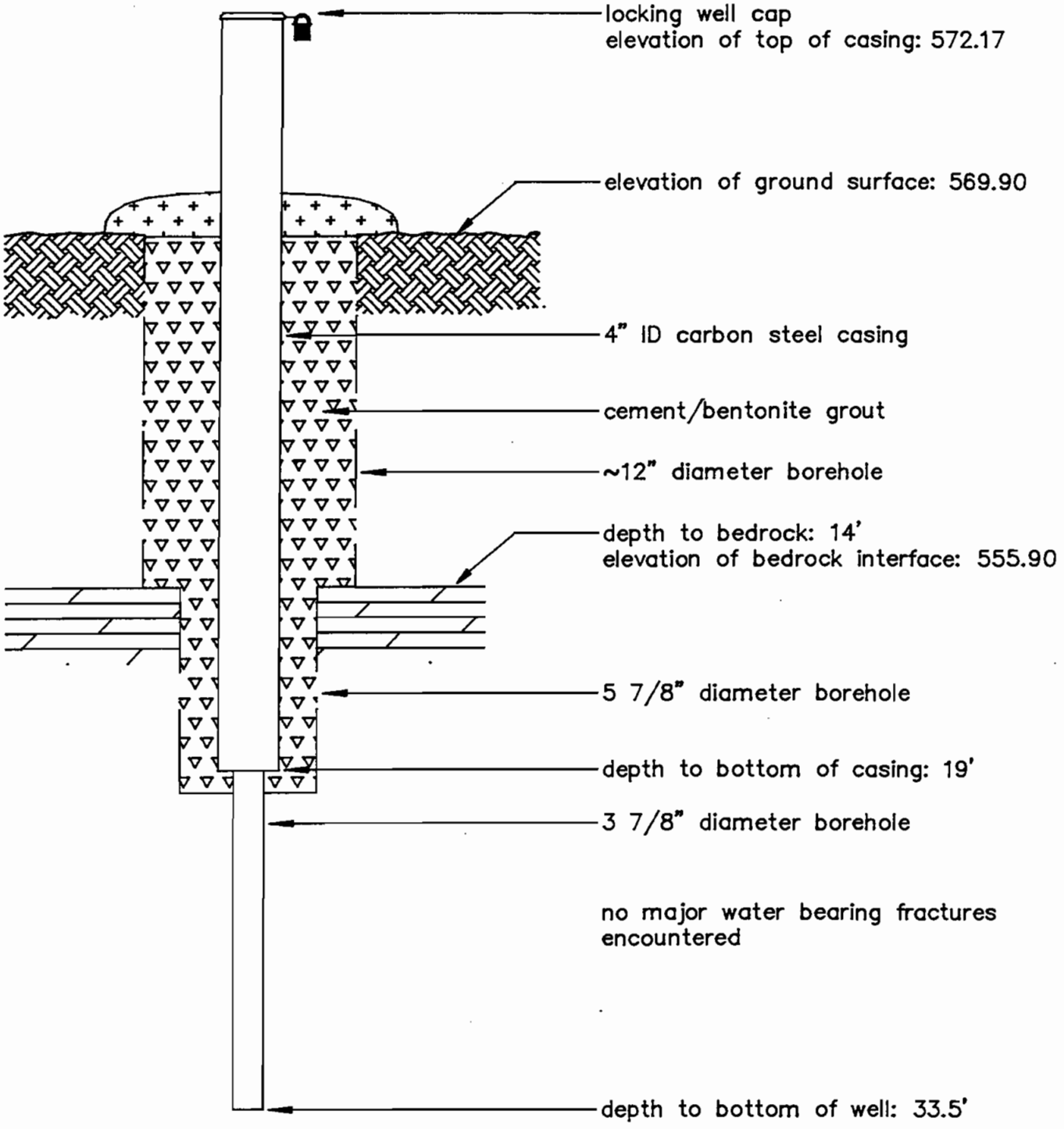
Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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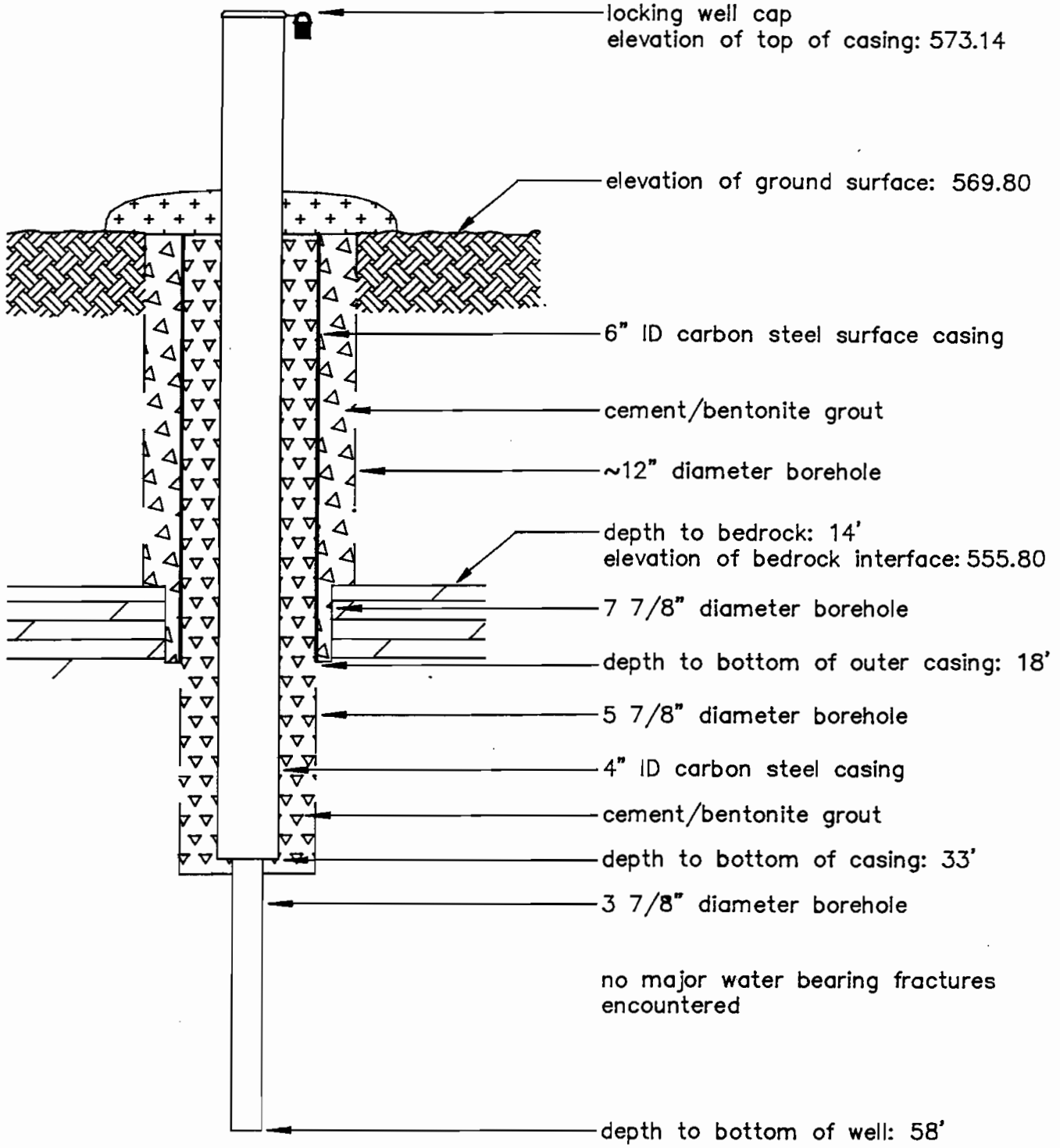
Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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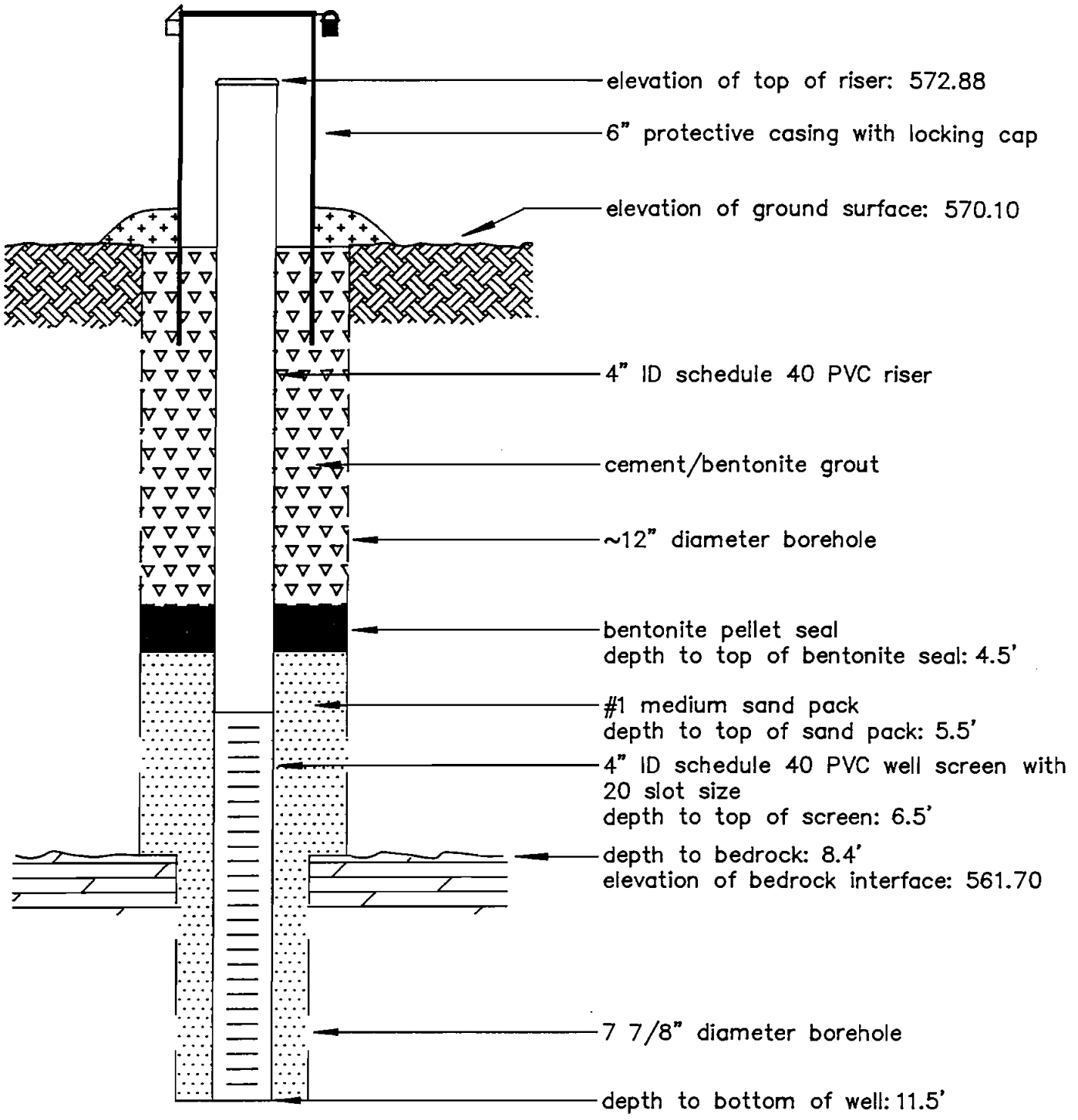

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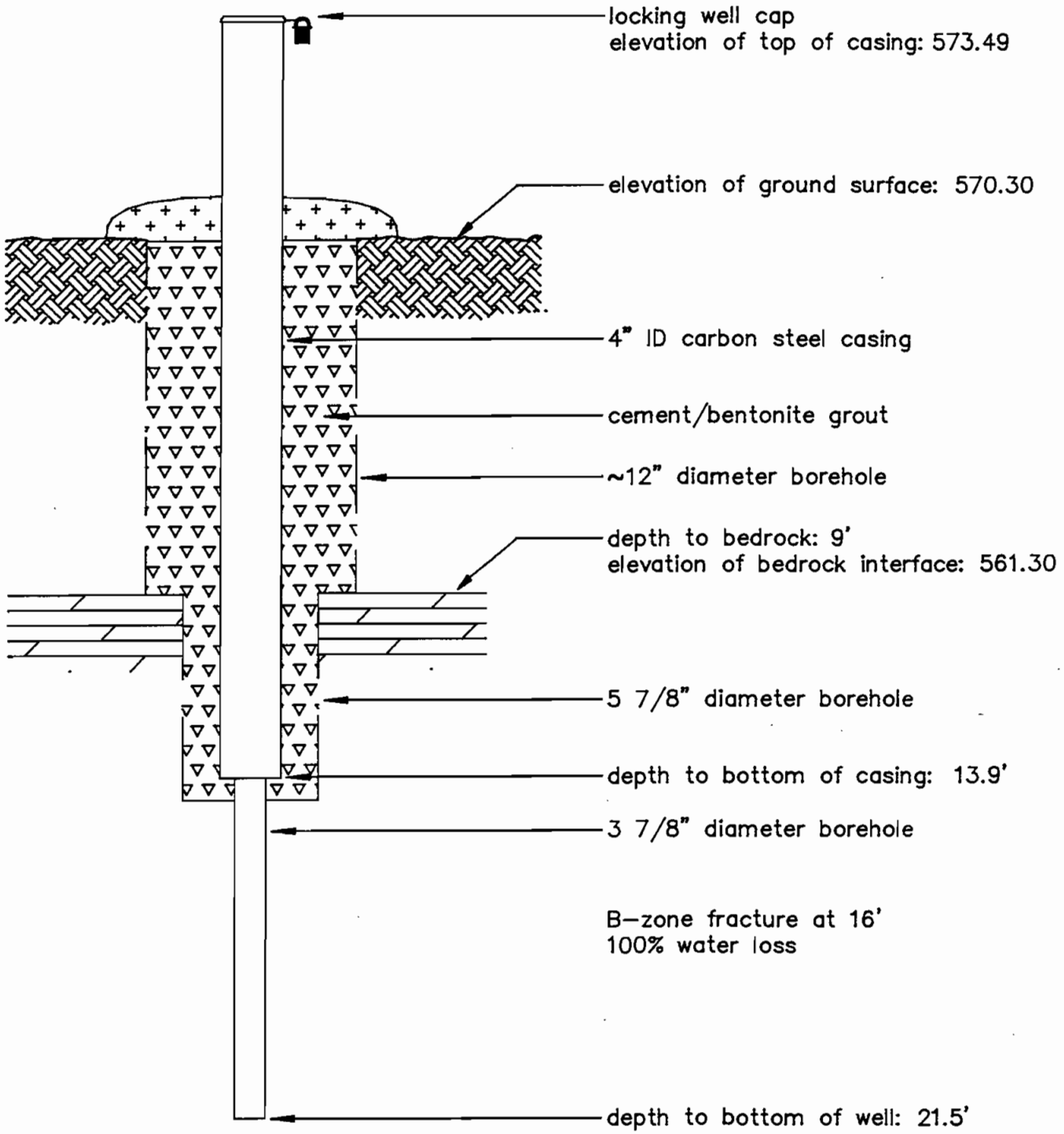
Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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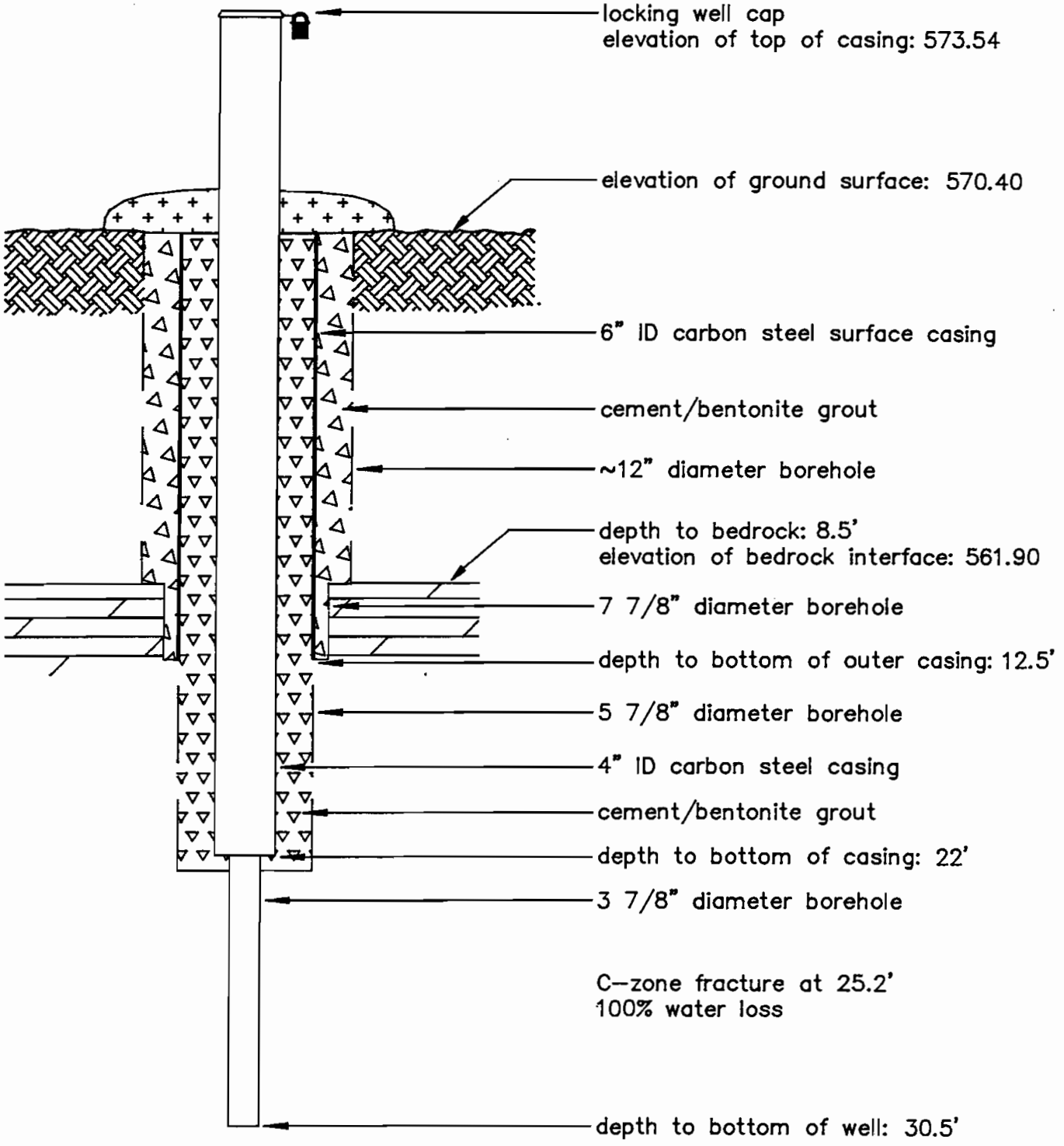
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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Olin Chemicals
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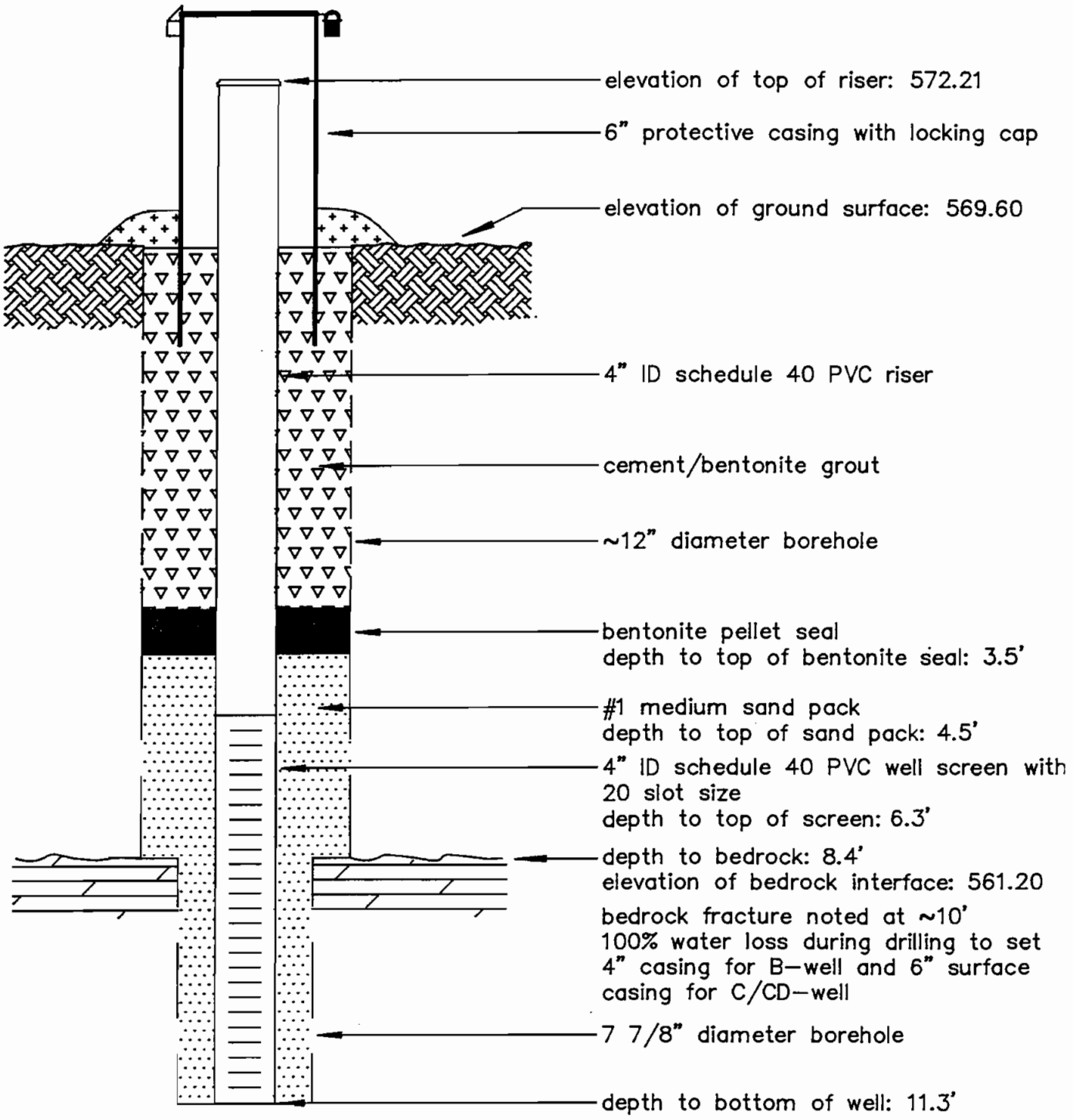
WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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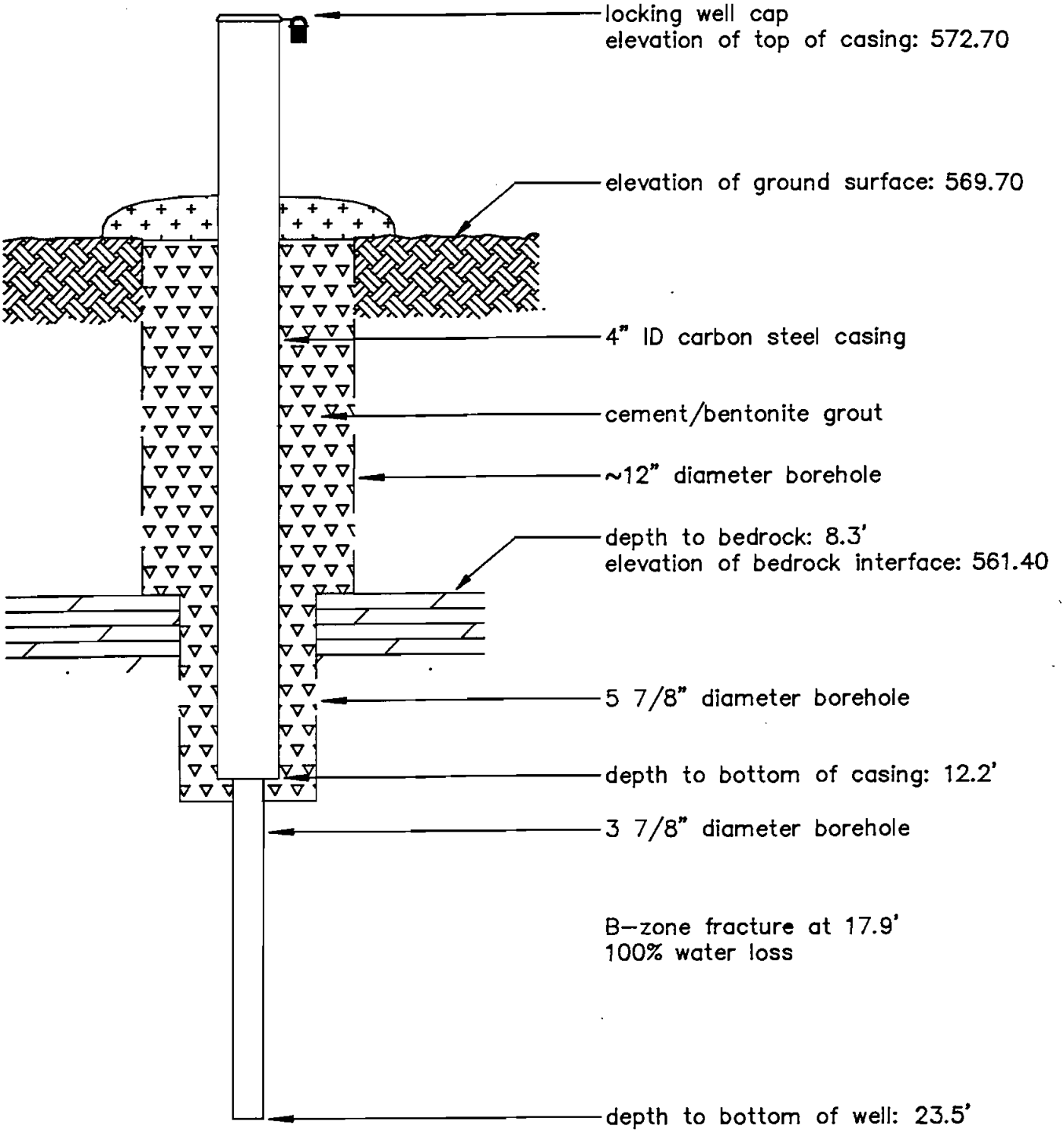
COMPLETION DATE: 8/7/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-5B

COMPLETION DATE: 8/8/89	INSPECTED BY: Paul F. Mazierski

DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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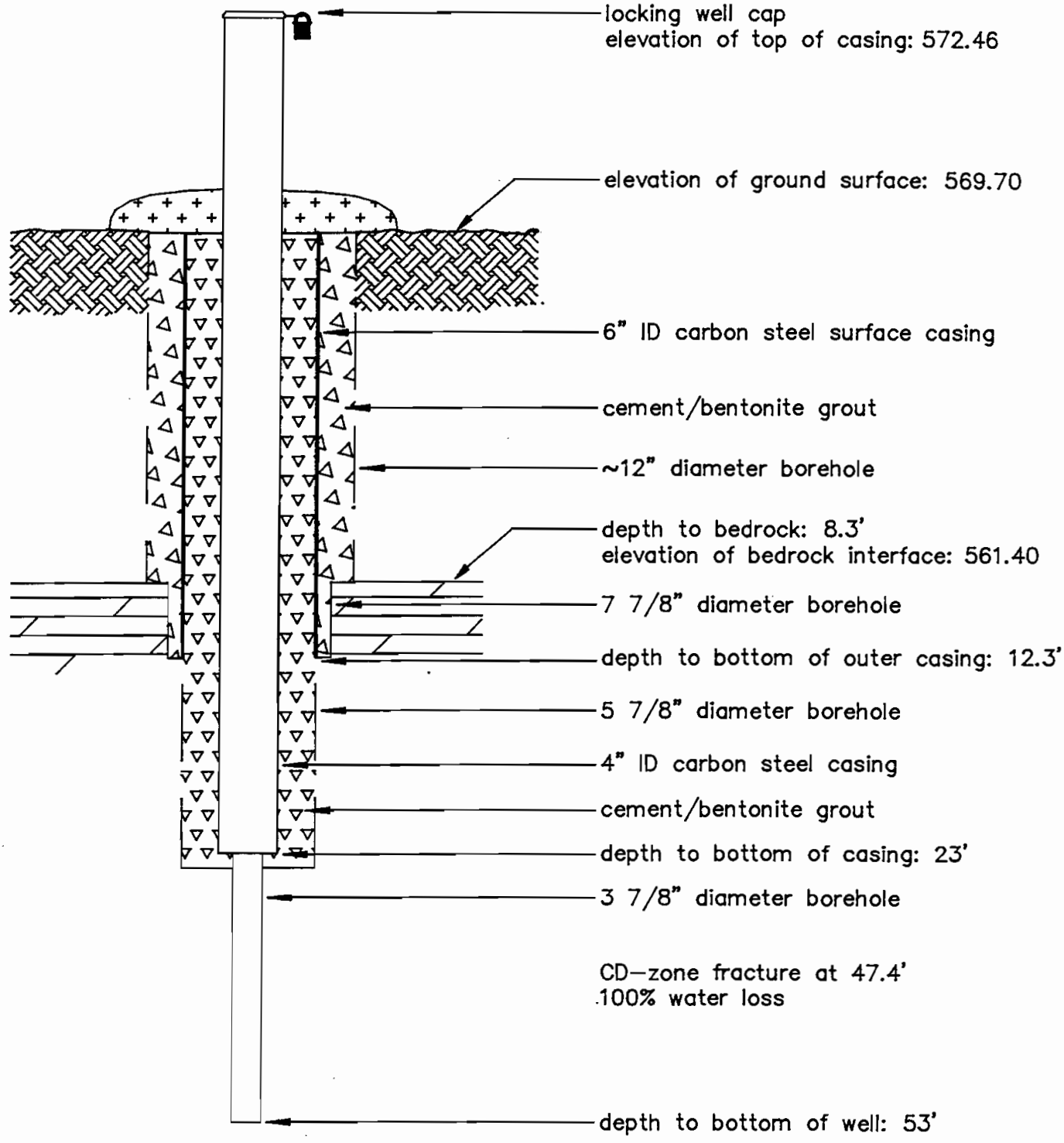

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Olin Chemicals
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WOODWARD-CLYDE CONSULTANTS
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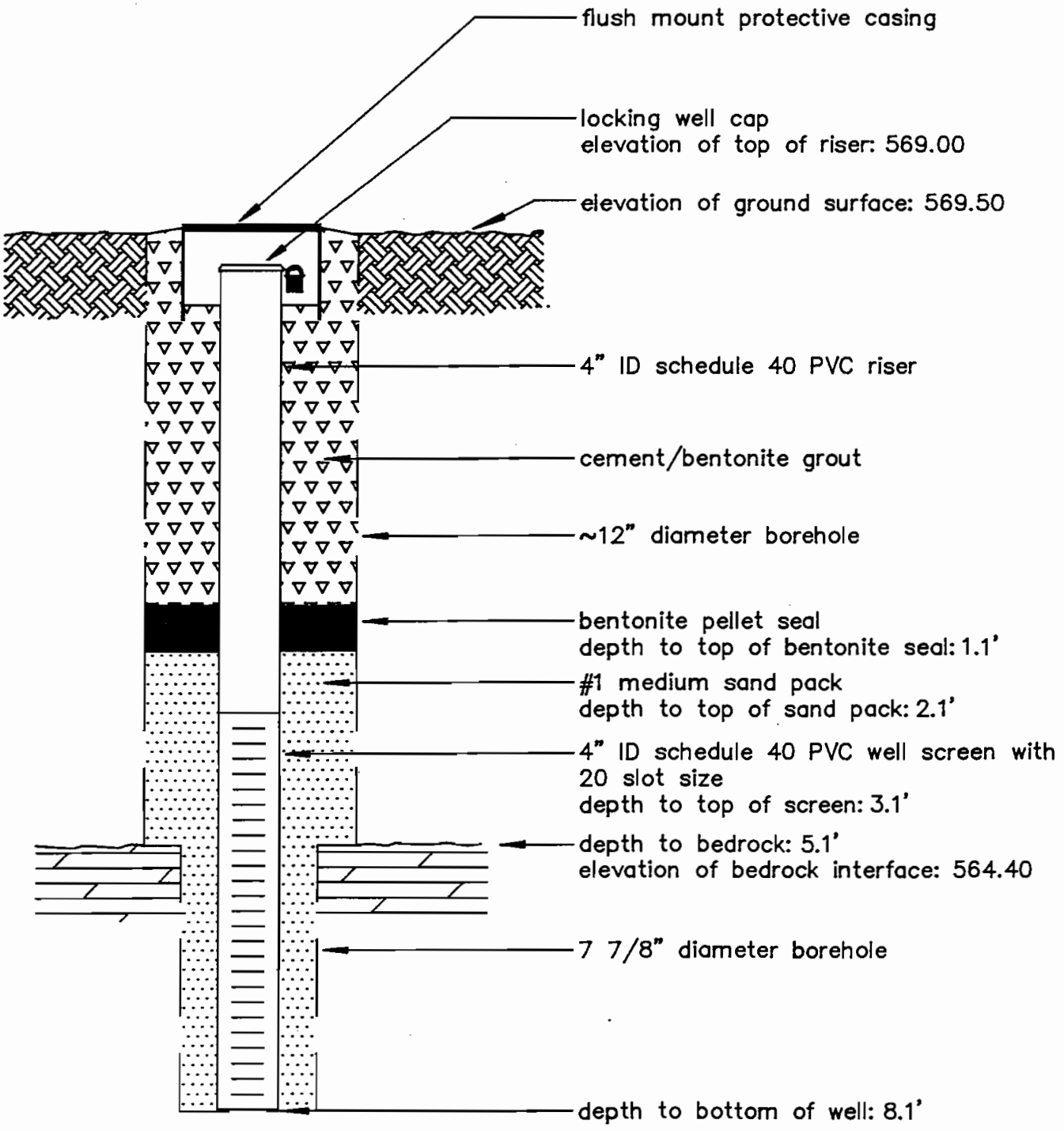

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COMPLETION DATE: 8/15/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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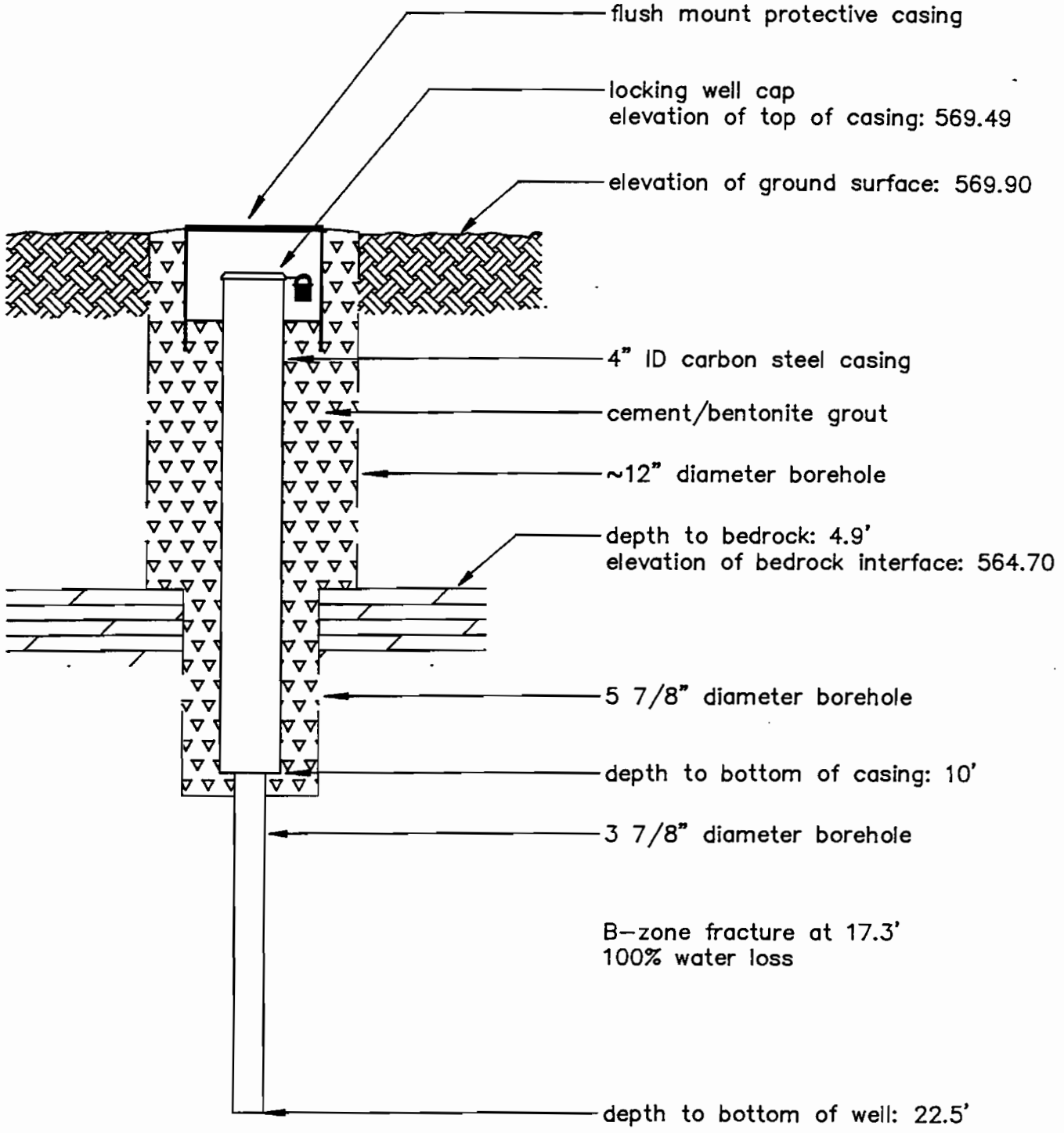

REPORT OF MONITORING WELL OBA-6B

COMPLETION DATE: 8/15/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

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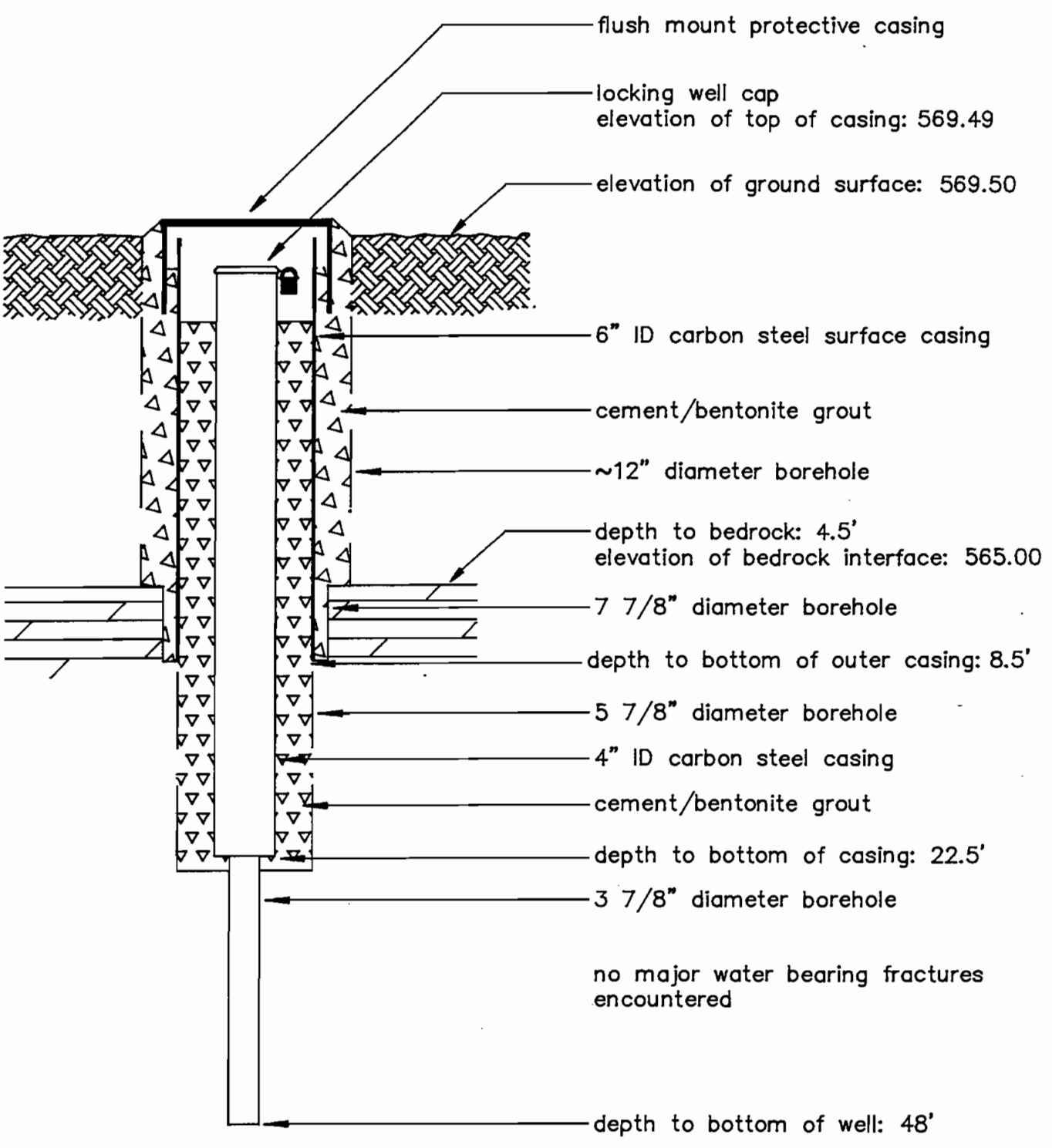
Consulting Engineers, Geologists and Environmental Scientists



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COMPLETION DATE: 8/18/89	INSPECTED BY: Paul F. Mazierski

DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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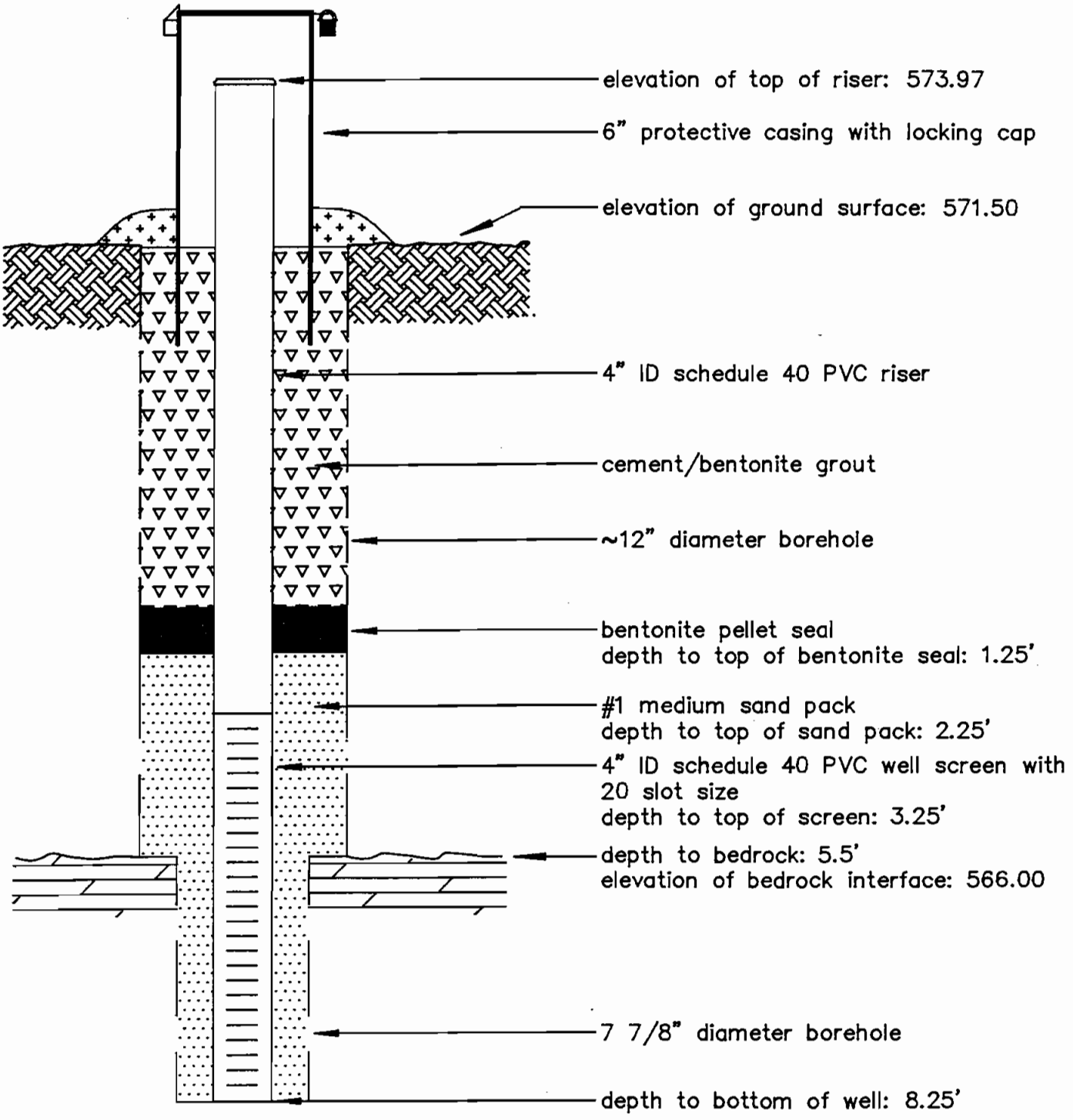

REPORT OF MONITORING WELL OBA-7A

COMPLETION DATE: 6/7/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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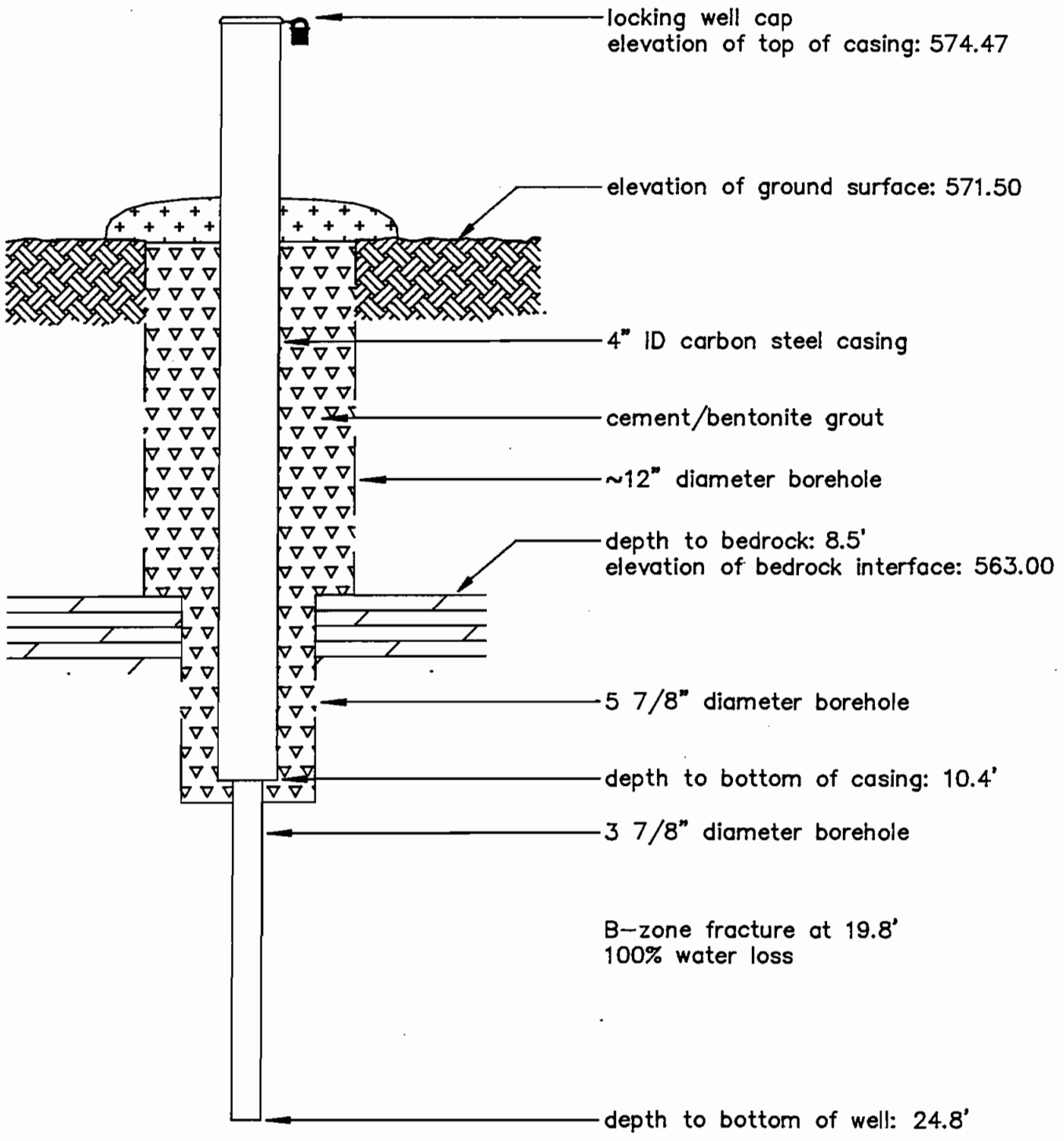

REPORT OF MONITORING WELL OBA-7B

COMPLETION DATE: 6/13/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

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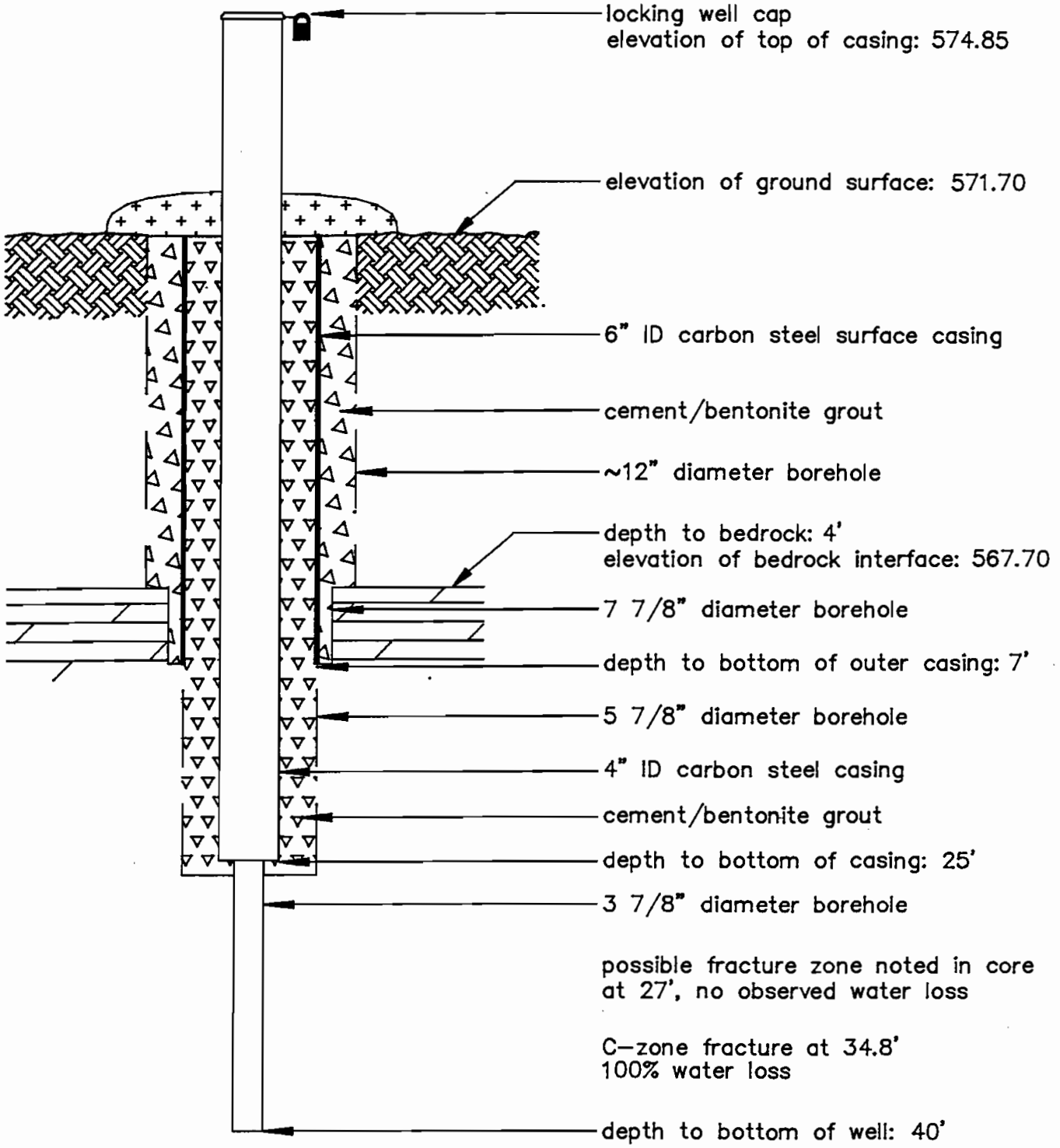
Consulting Engineers, Geologists and Environmental Scientists



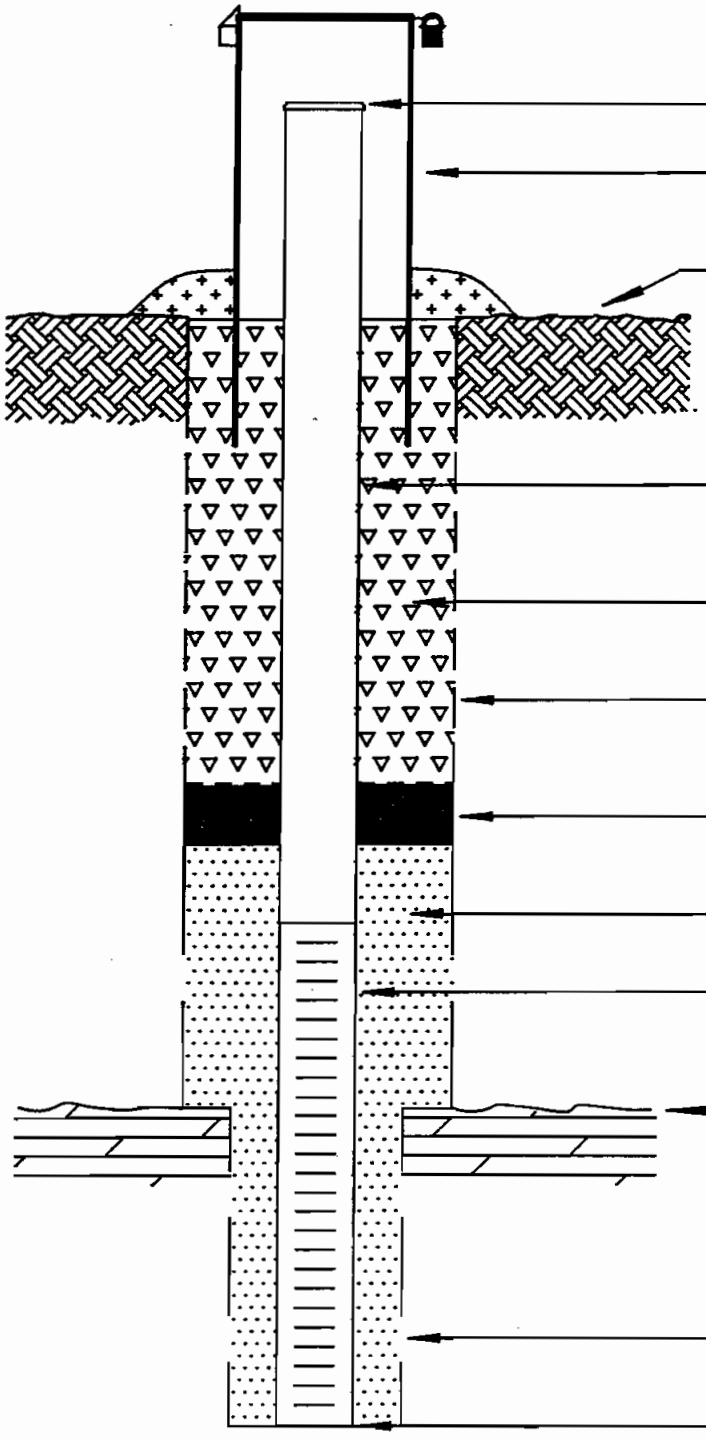
REPORT OF MONITORING WELL OBA-7C/CD

COMPLETION DATE: 6/20/89	INSPECTED BY: Paul F. Mazierski

DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE : 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



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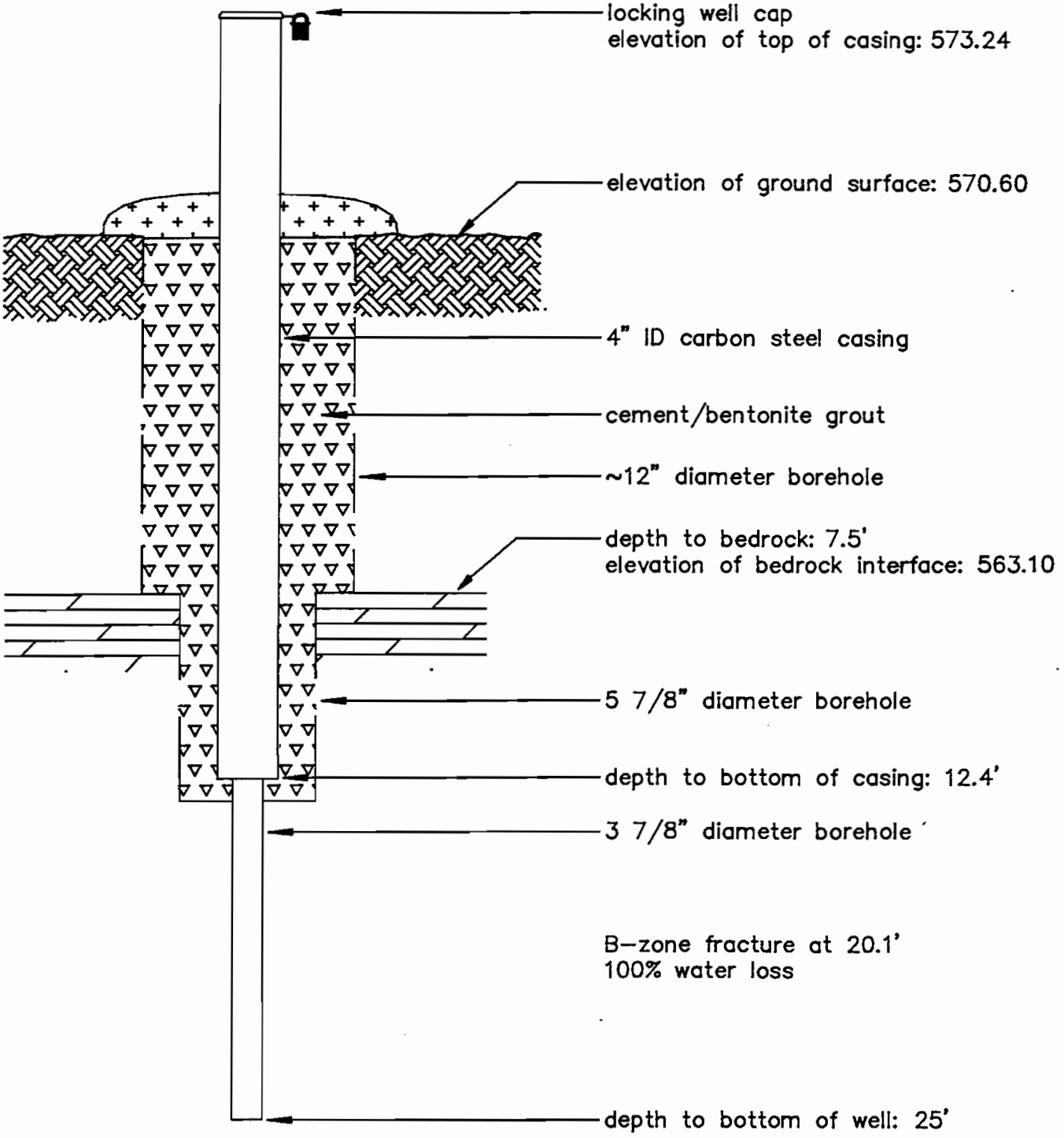
COMPLETION DATE: 7/26/89	INSPECTED BY: Paul F. Mazierski

DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-8B

COMPLETION DATE: 7/28/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2348-2	DATE: 4/23/90	FIGURE NO:

Olin Chemicals
Niagara Plant RFI

WOODWARD-CLYDE CONSULTANTS
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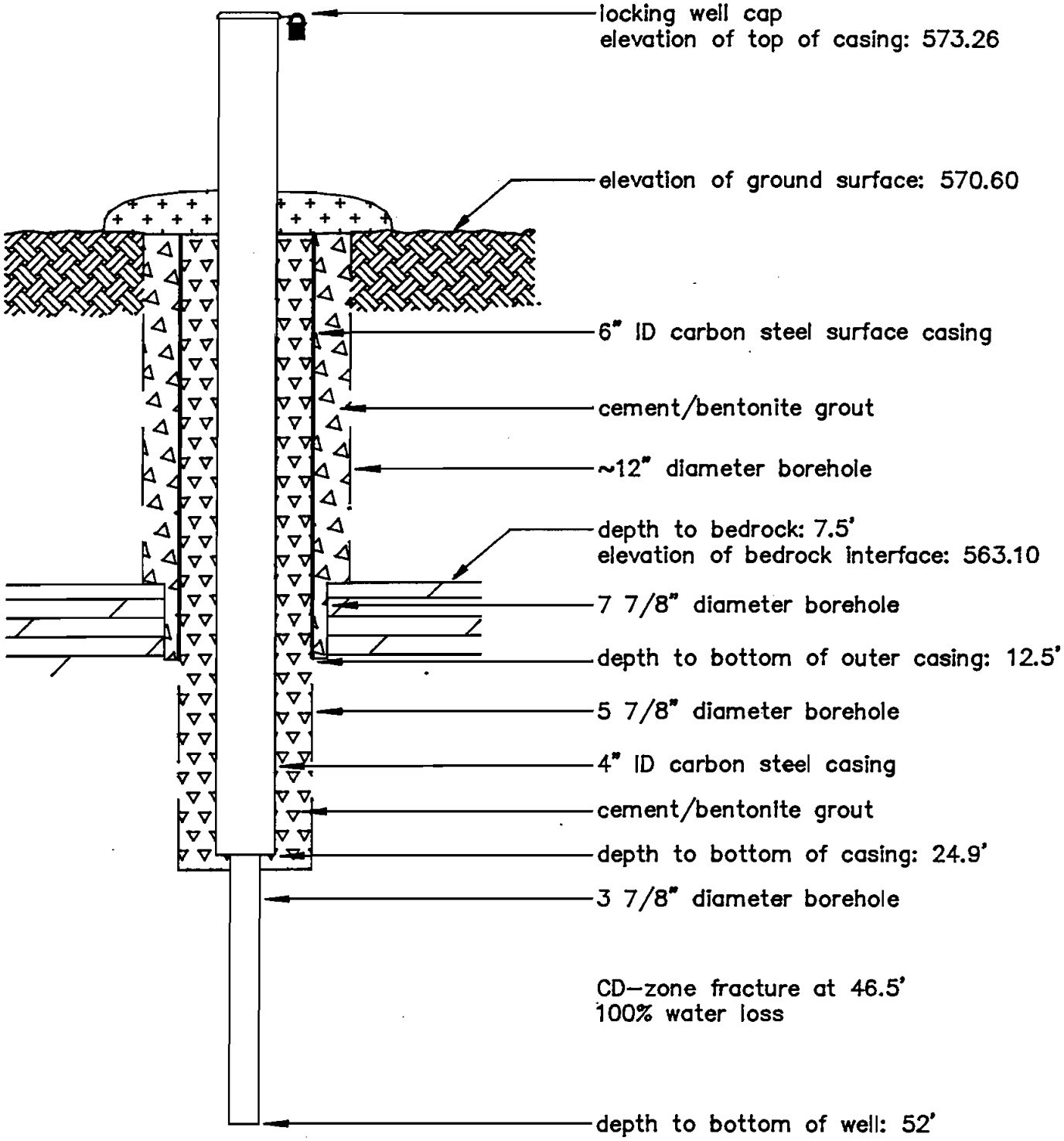

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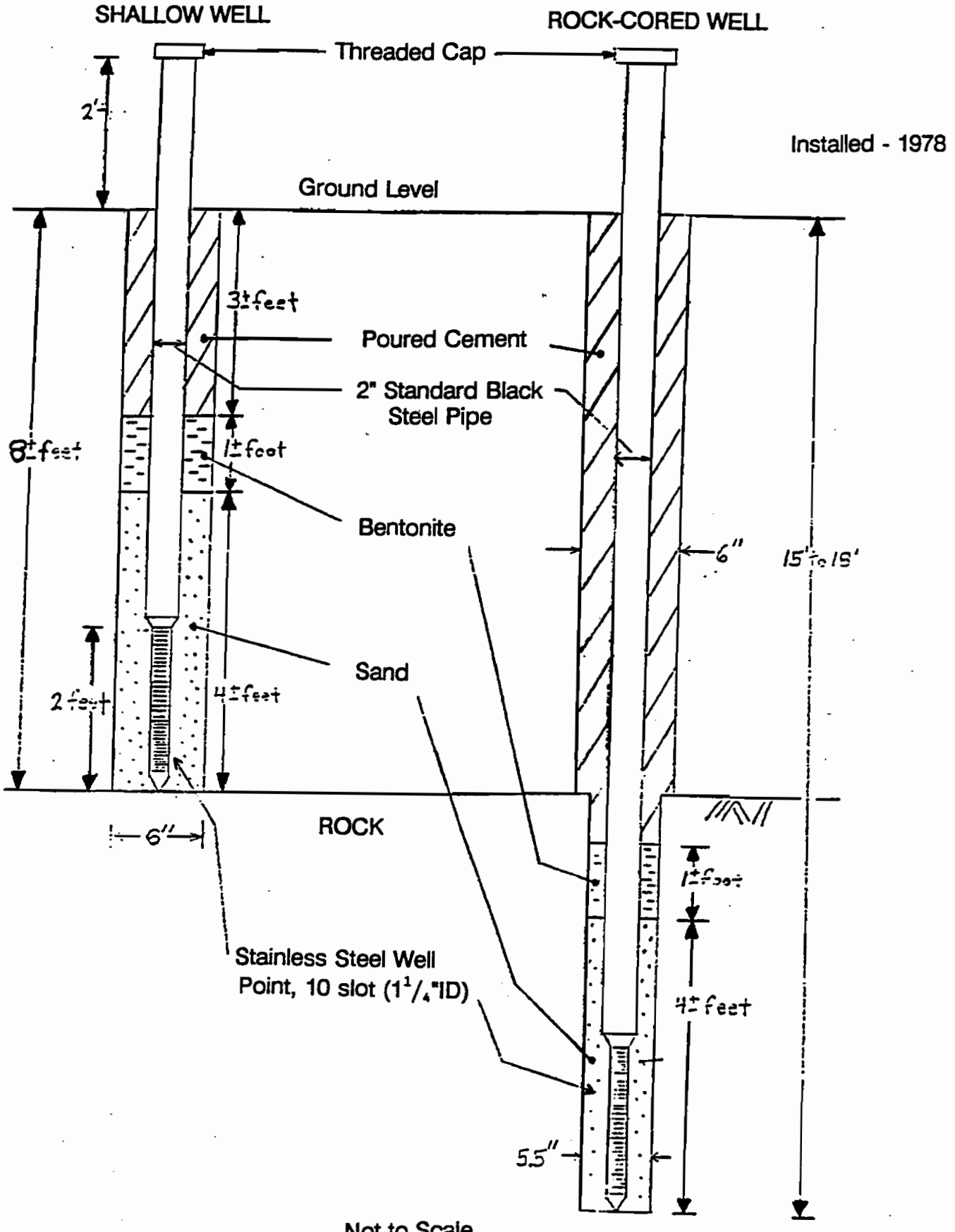
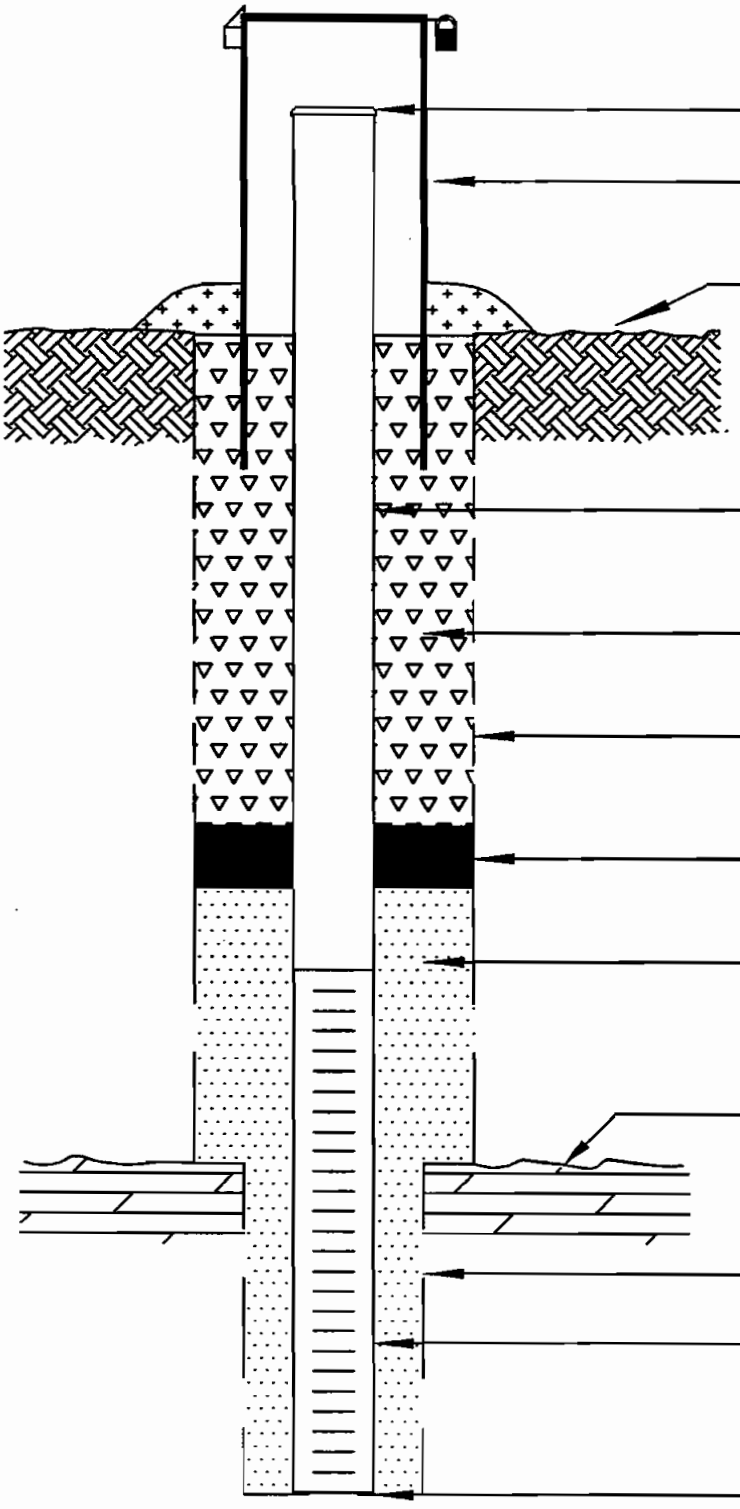
COMPLETION DATE: 8/4/89			INSPECTED BY: Paul F. Mazierski	
DRAWN BY: PFM	CHECKED BY: KRM	PROJECT NUMBER: 88C2346-2	DATE : 4/23/90	FIGURE NO:

TYPICAL WELL CONSTRUCTION SPECIFICATIONS - HARZA ENGINEERING CO.



WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-9A

COMPLETION DATE: 11-02-92	INSPECTED BY: F. GARBE

DRAWN BY: ERG	CHECKED BY: DRE	PROJECT NO: 92C2030-6	DATE: 6/20/94	FIGURE NO:

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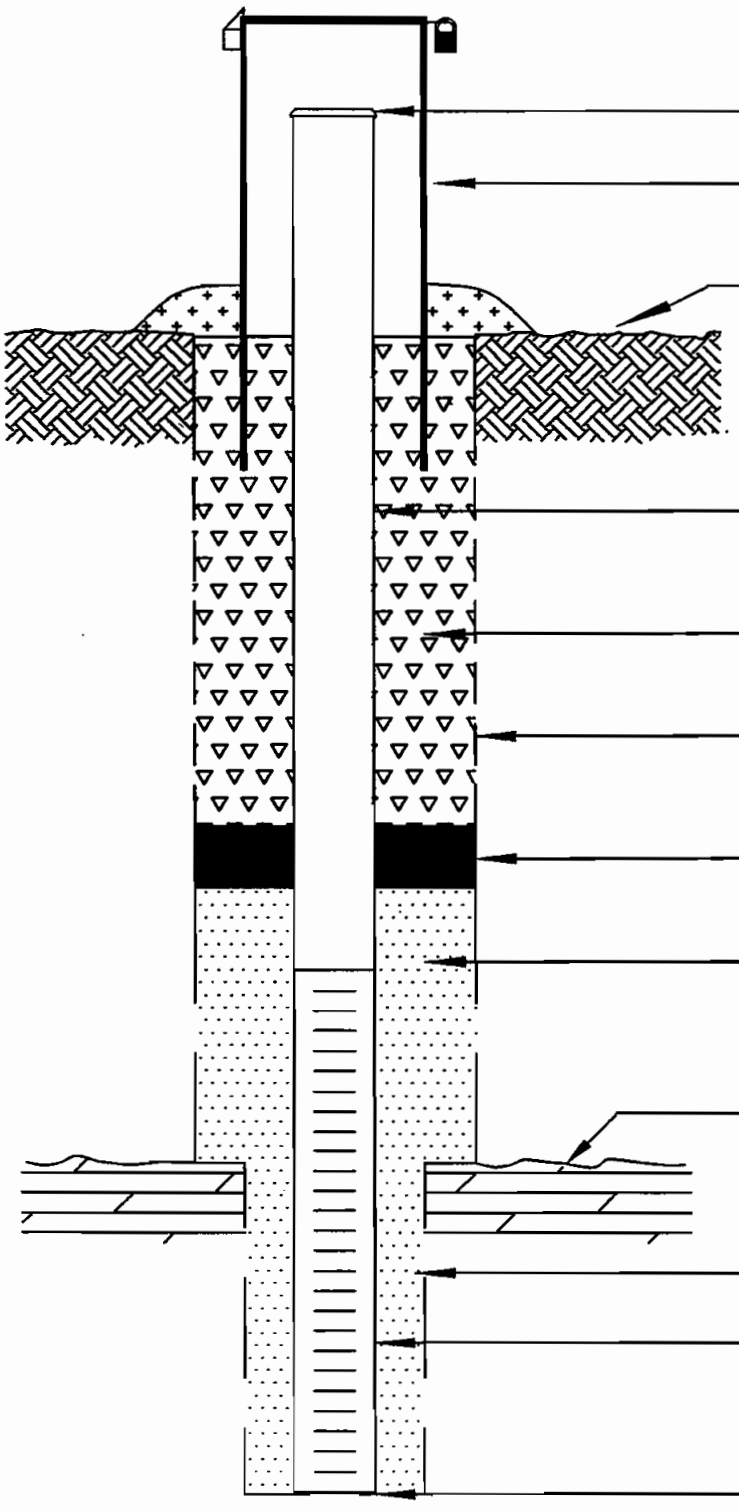
Consulting Engineers, Geologists and Environmental Scientists



Elevation of top of riser: 569.88'

8" Protective casing
with locking cap

Elevation of ground surface: 568.23'

6" I.D Schedule 40 PVC riser

Cement/bentonite grout

Diameter of borehole: 12"

Bentonite pellet seal
Depth to top of bentonite seal: 2.3'

sand pack: 'pea gravel'
Depth to top of sand pack: 4.5'

Depth to bedrock: 7.5'
Elevation of bedrock interface: 560.7'

7 7/8" diameter borehole

6" I.D. stainless steel well
screen with 20 slot size
Depth to top of well screen: 5.4'

Depth to bottom of well: 10.8'
(well screen has .4' Schedule 40 PVC
slip cap)

REPORT OF NAPL RECOVERY WELL OBA–9AR

COMPLETION DATE: 11–30–92		INSPECTED BY: F. GARBE	
DRAWN BY: ERG	CHECKED BY: DPF	PROJECT NO: 92C2030–6	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
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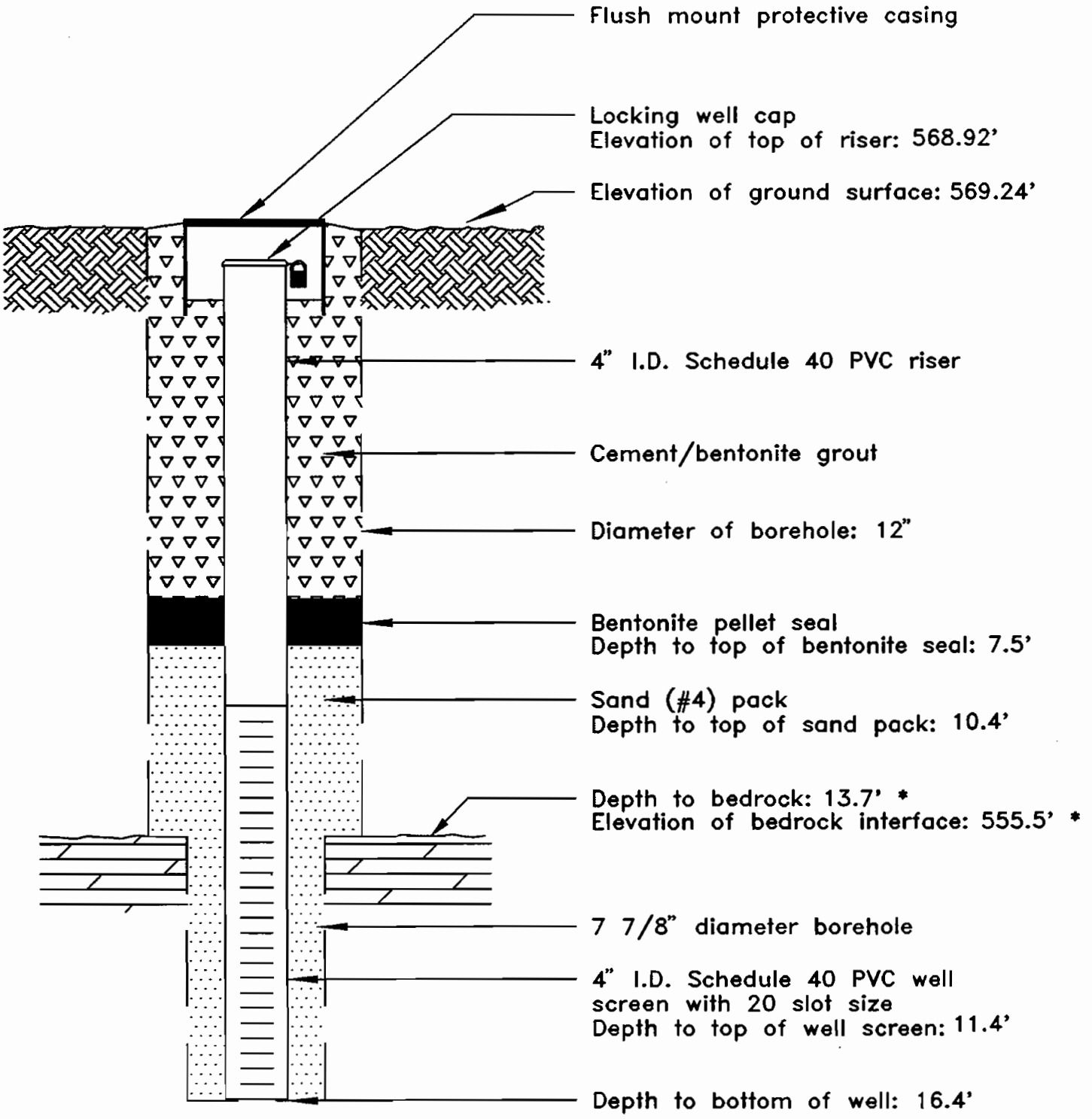


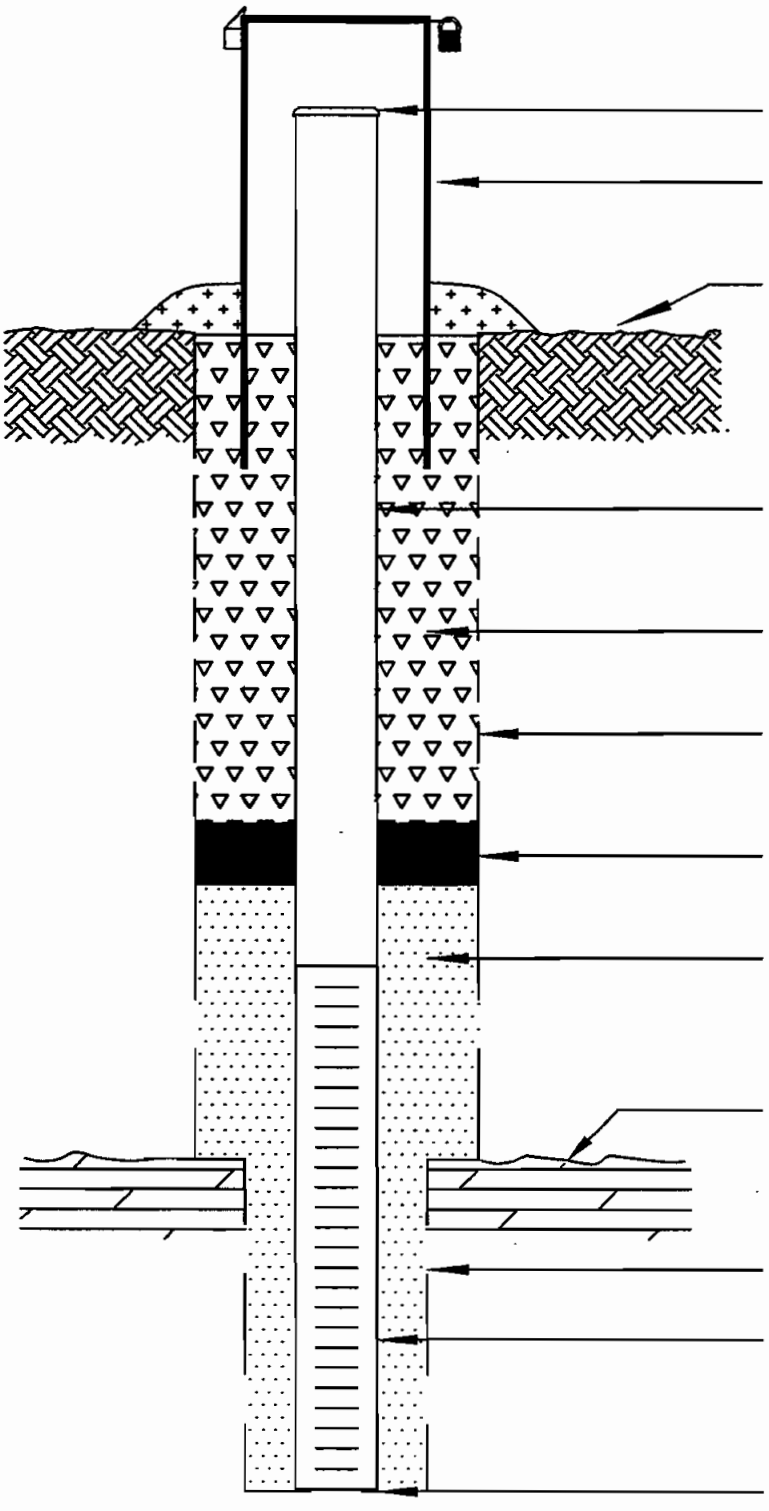
* OBA-10A WAS MOST LIKELY INSTALLED IN A SEWER LINE TRENCH EXCAVATED INTO ROCK, THUS THE TOP OF ROCK ELEVATION DOES NOT ACCURATELY REFLECT BEDROCK ELEVATION IN THE SURROUNDING AREA.

REPORT OF MONITORING WELL OBA-10A

COMPLETION DATE: 11-04-92	INSPECTED BY: F. GARBE

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 92C2030-6	DATE: 6/20/94	FIGURE NO:

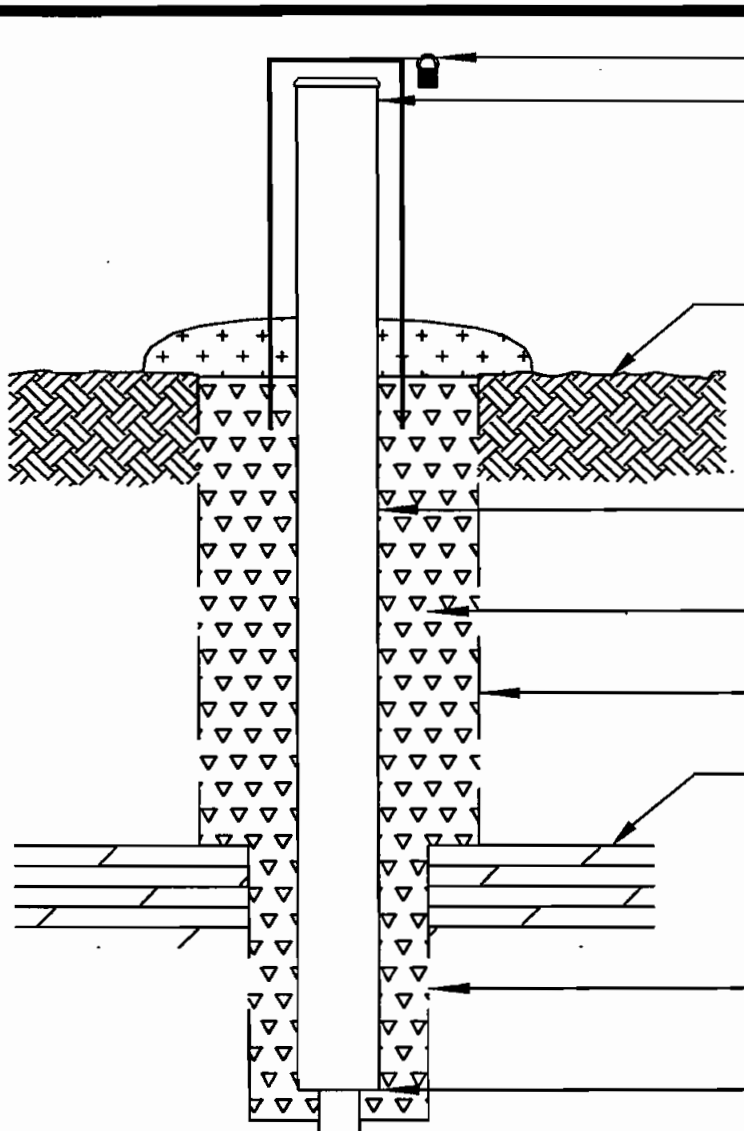
WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-11A

COMPLETION DATE: 11-30-93			INSPECTED BY: F. GARBE	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

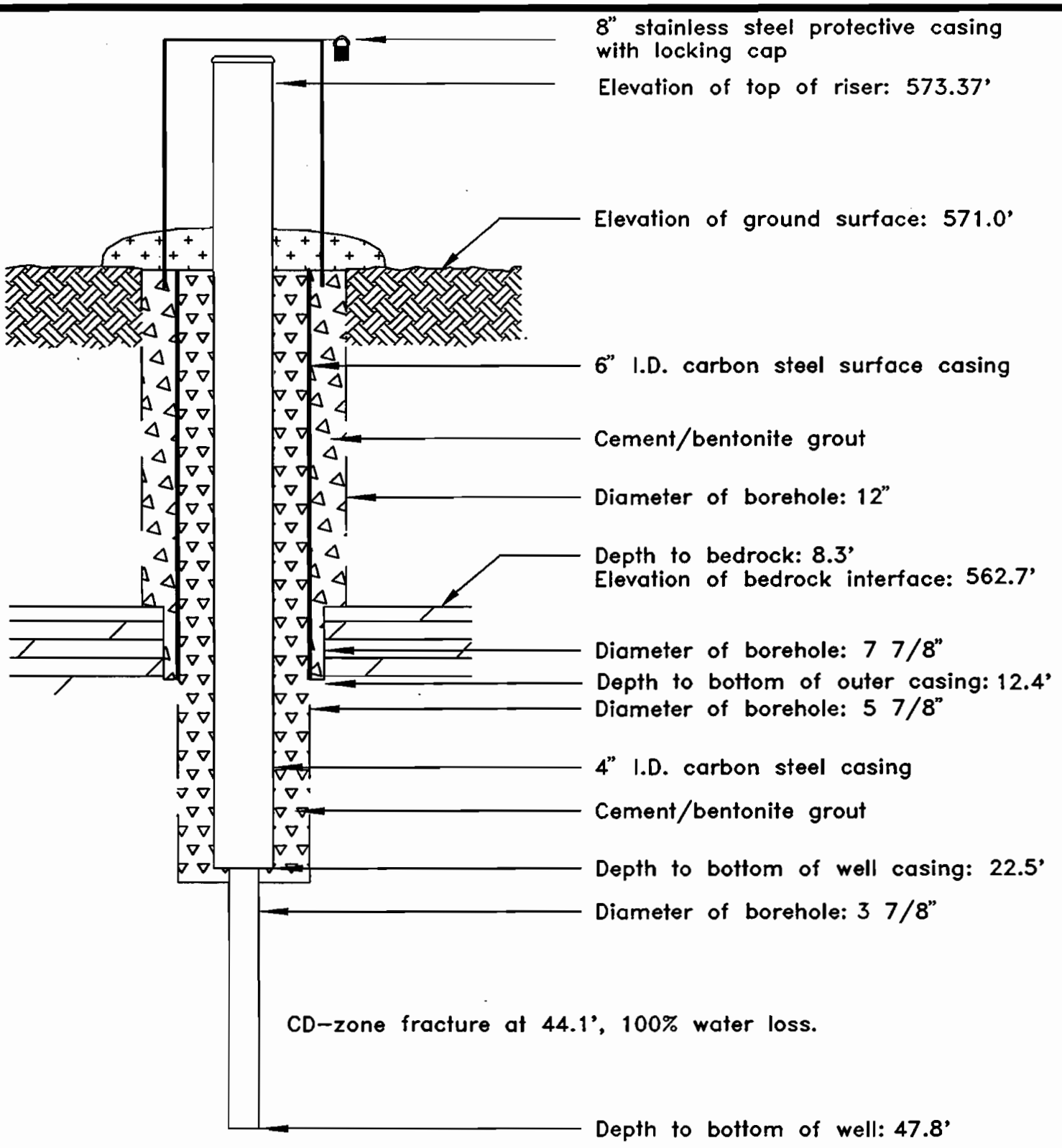


6" stainless steel protective casing with locking cap
Elevation of top of riser: 573.29'
Elevation of ground surface: 571.0'
4" I.D. carbon steel casing
Cement/bentonite grout
Diameter of borehole: 12"
Depth to bedrock: 8.5'
Elevation of bedrock interface: 562.5'
Diameter of borehole: 5 7/8"
Depth to bottom of well casing: 13.5'
Diameter of borehole 3 7/8"
B-zone fracture between 18.0' to 19.5', 100% water loss
Depth to bottom of well: 24.5'

REPORT OF MONITORING WELL OBA-11B

COMPLETION DATE: 12-02-93			INSPECTED BY: F. GARBE	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

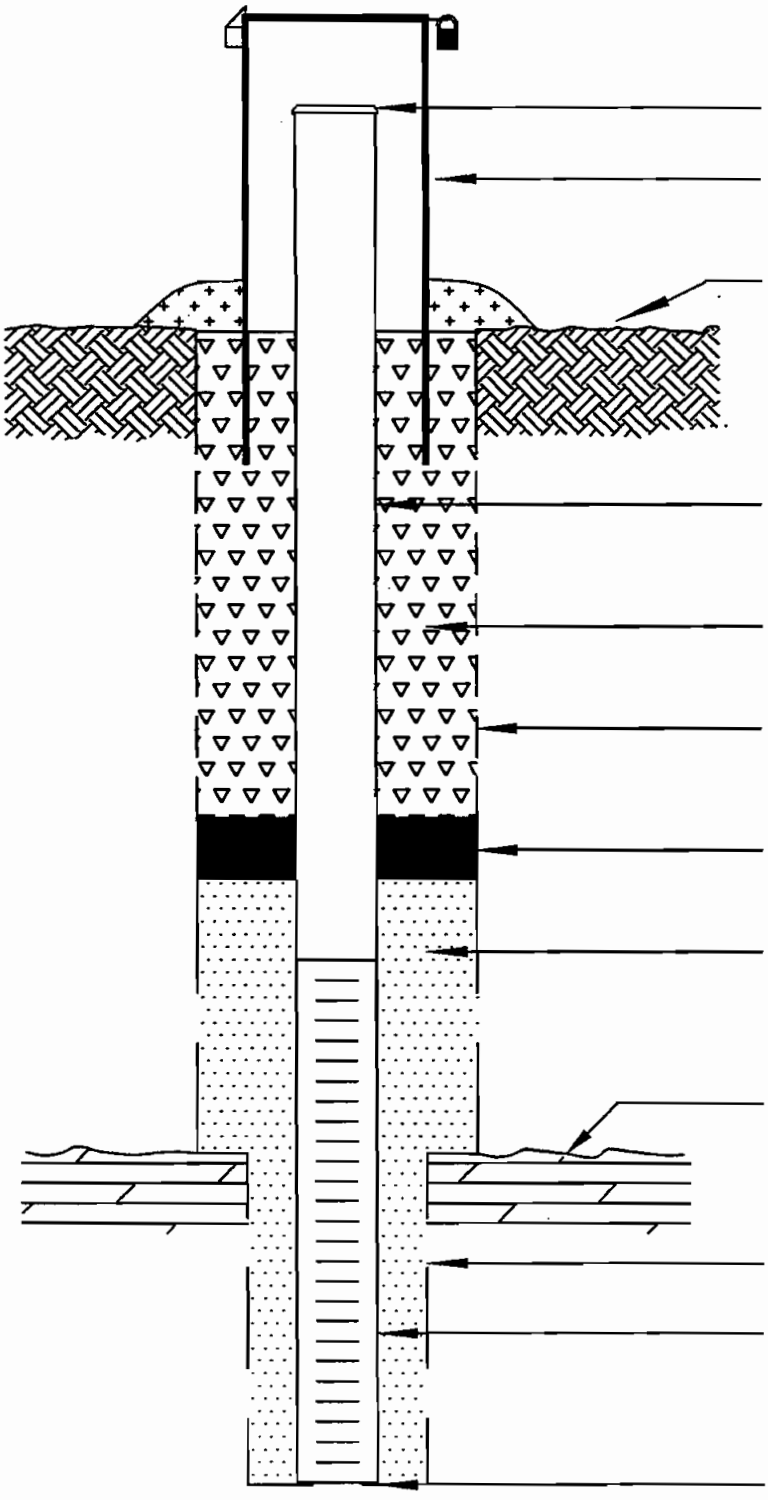
WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-11C/CD

COMPLETION DATE: 12-06-93			INSPECTED BY: F. GARBE	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

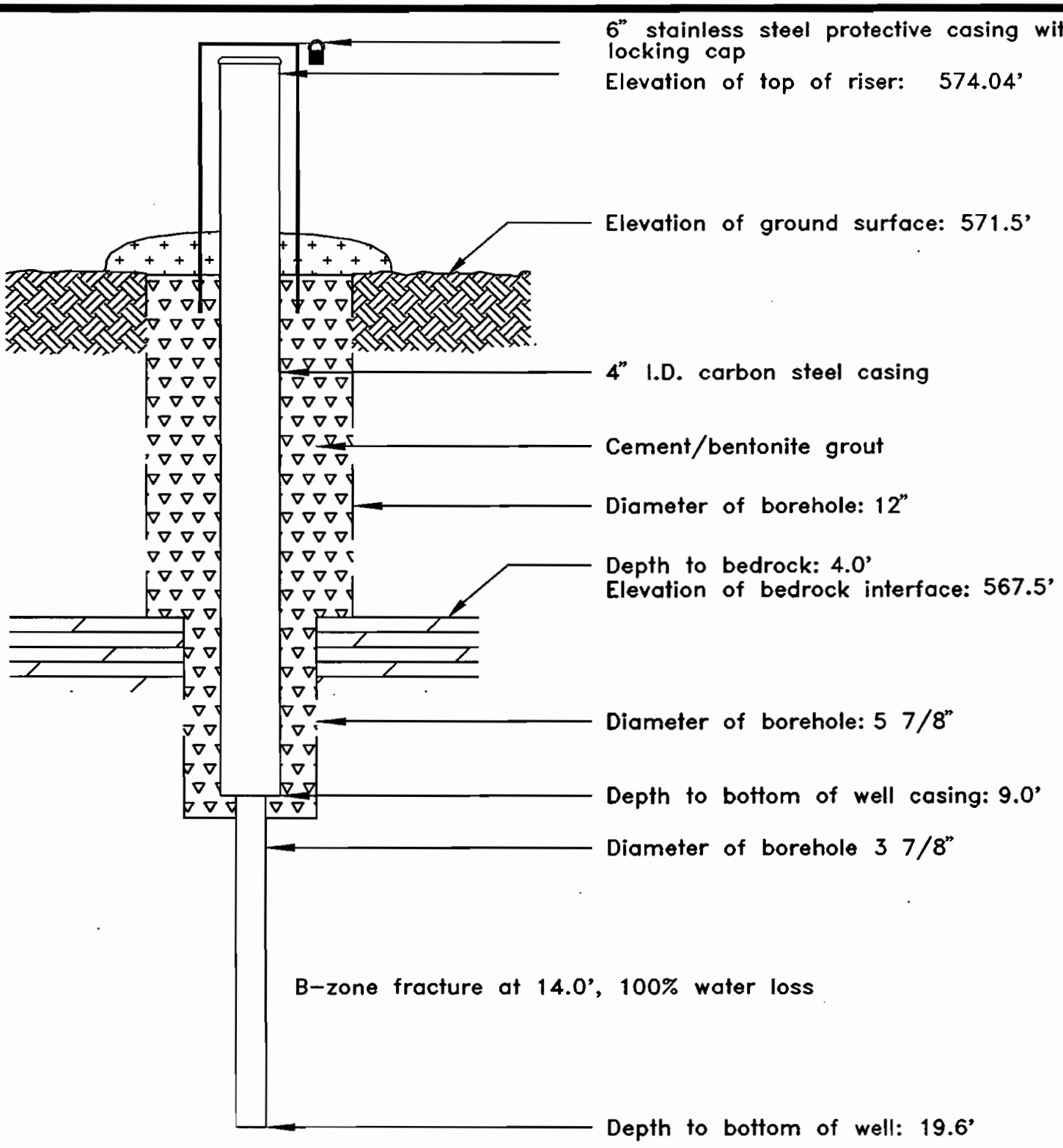
WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA–12A

COMPLETION DATE: 12–07–93		INSPECTED BY: F. GARBE		
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6–20–94	FIGURE NO:

WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

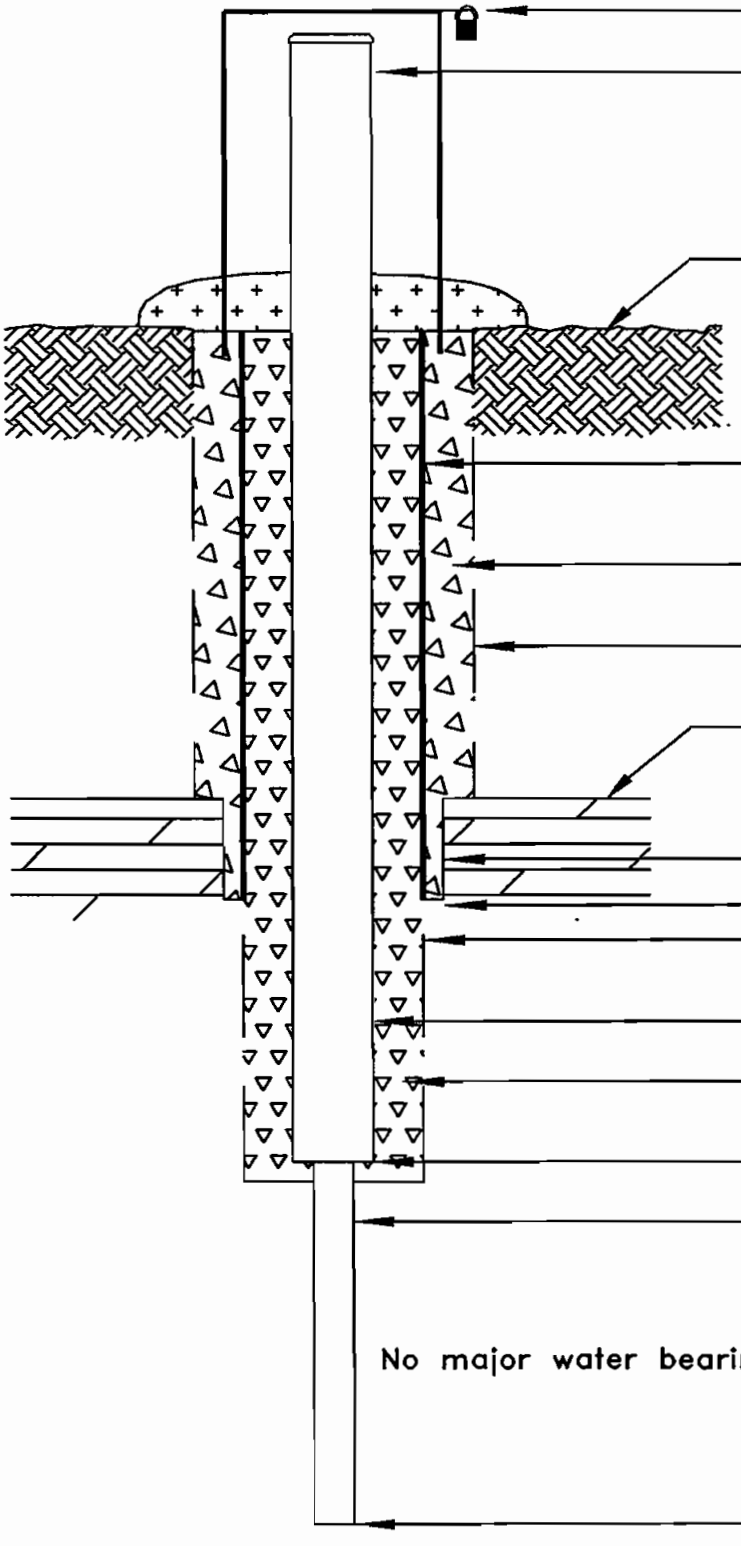


REPORT OF MONITORING WELL OBA–12B

COMPLETION DATE: 12–20–93	INSPECTED BY: F. GARBE

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

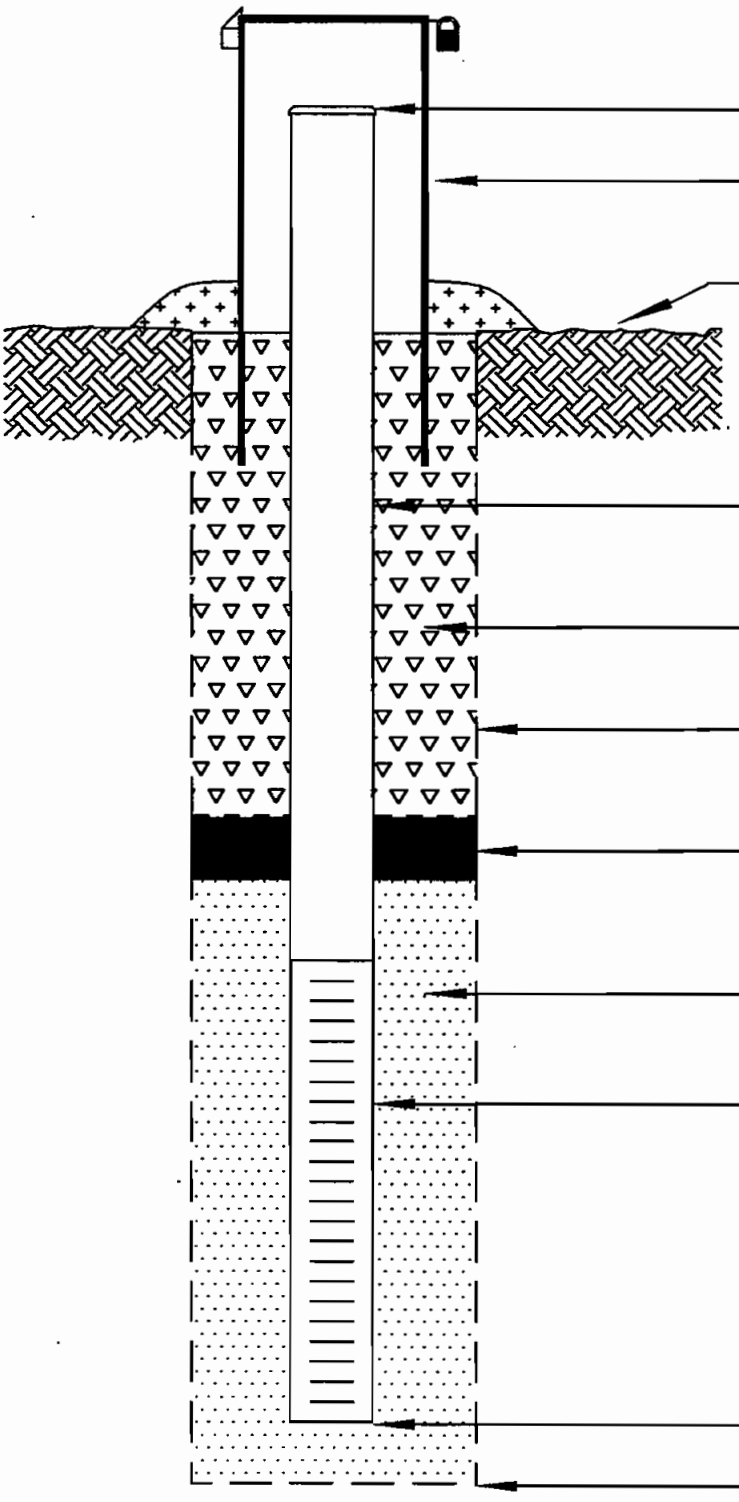


REPORT OF MONITORING WELL OBA-12C/CD

COMPLETION DATE: 12-20-93	INSPECTED BY: F. GARBE

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

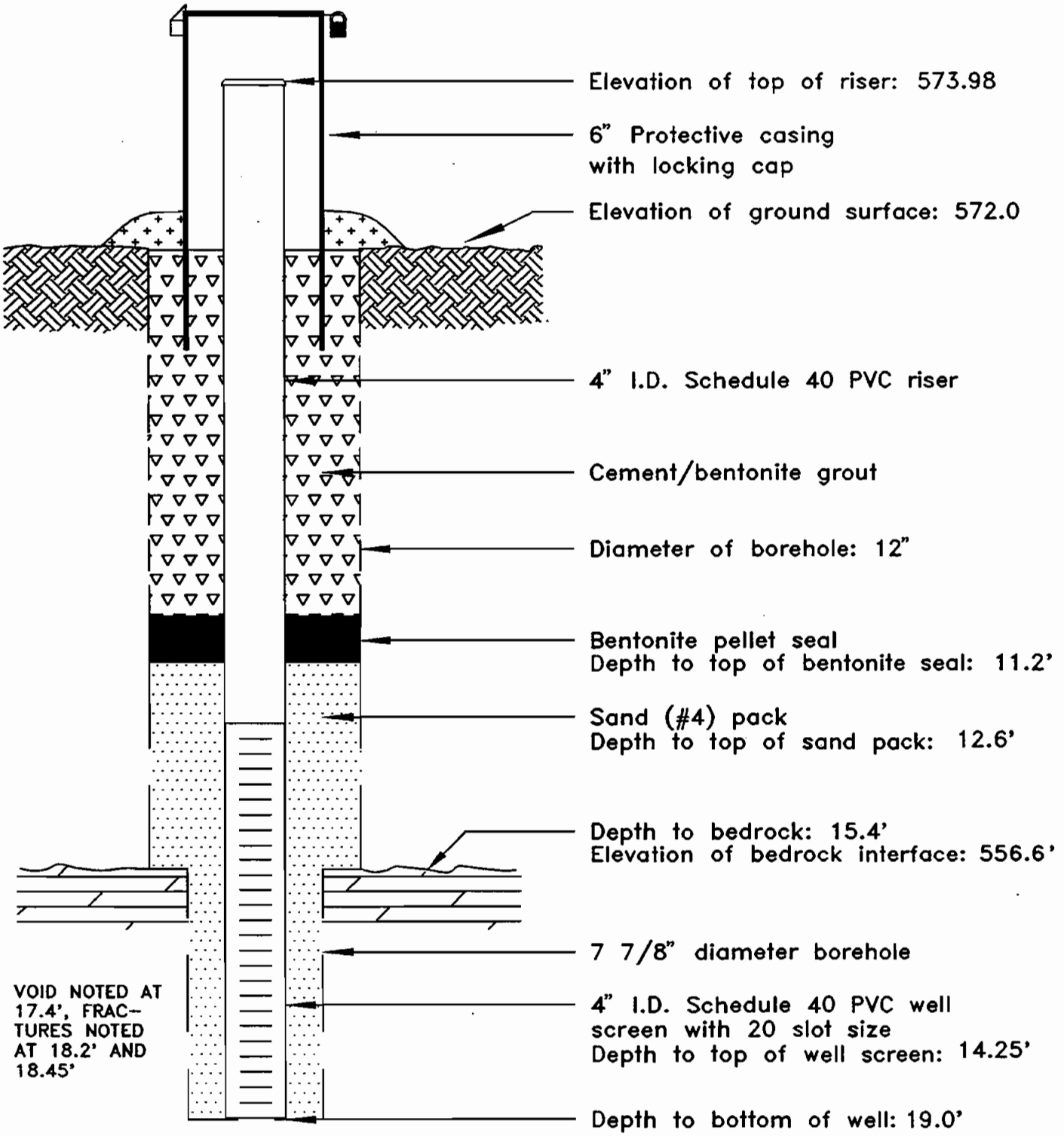


REPORT OF MONITORING WELL OBA–13AOB

COMPLETION DATE: 4–18–94	INSPECTED BY: D. FRIEDMAN

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

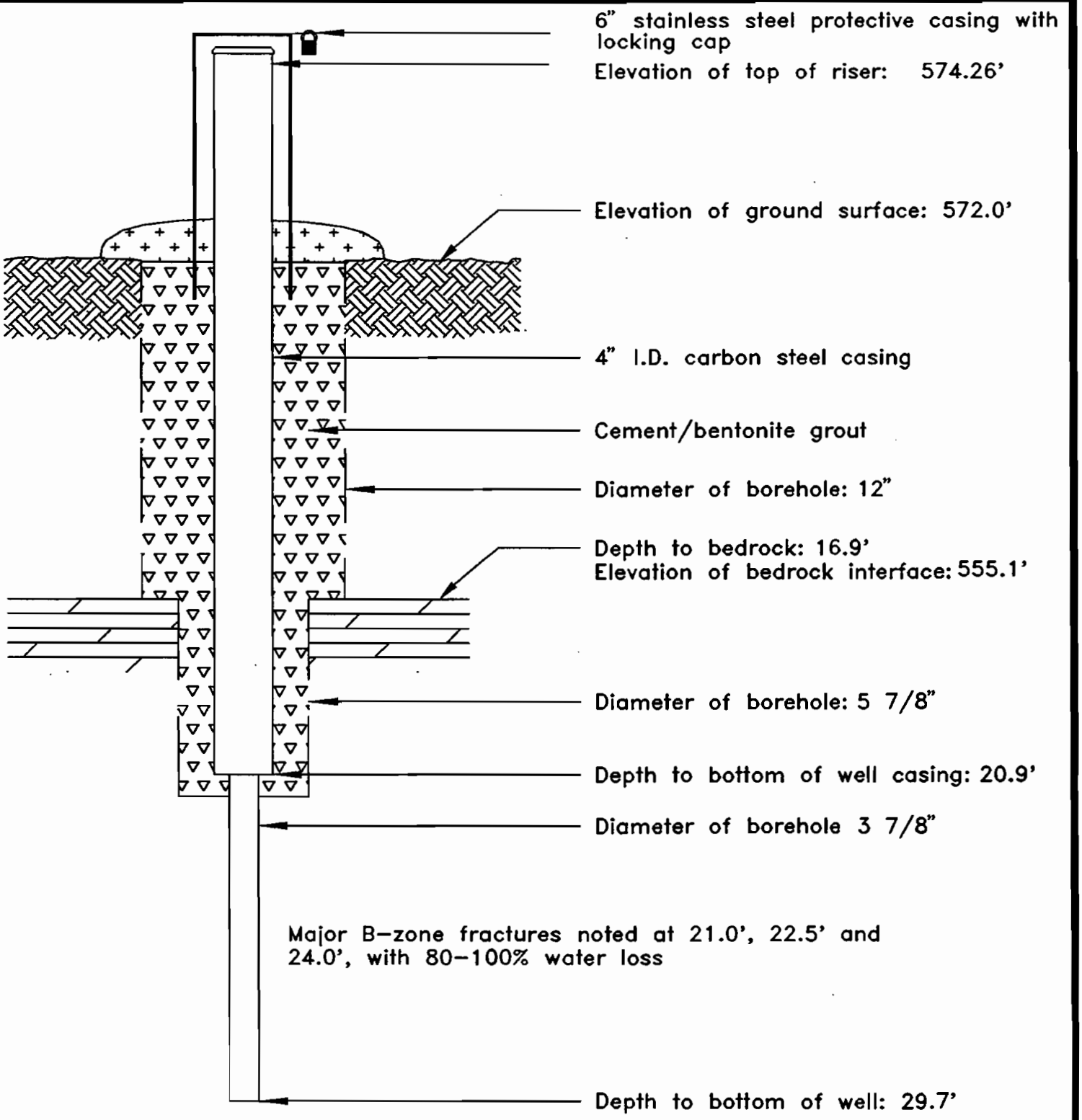
WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA–13A

COMPLETION DATE: 4–18–94			INSPECTED BY: D. FRIEDMAN	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

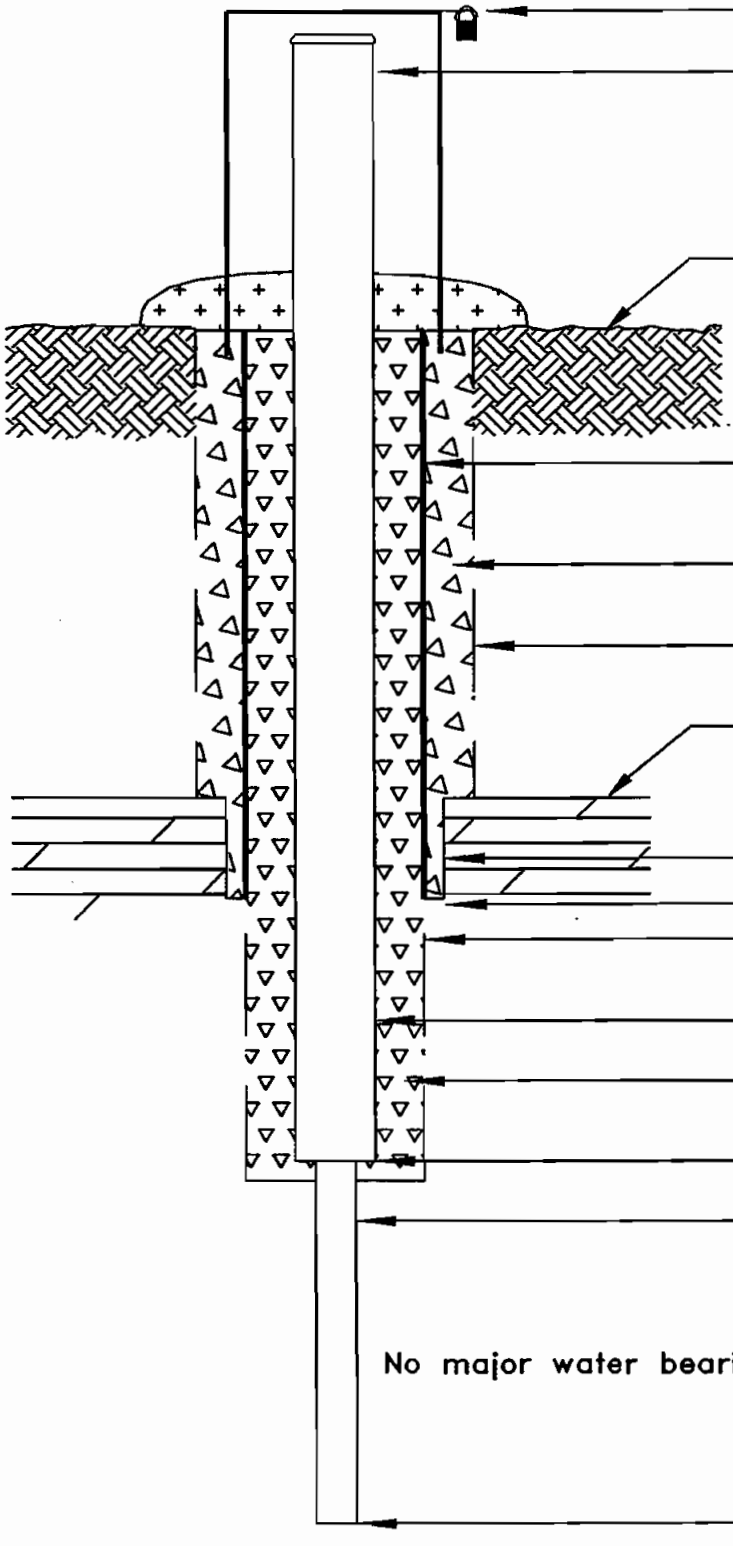


REPORT OF MONITORING WELL OBA-13B

COMPLETION DATE: 4-19-94	INSPECTED BY: D. FRIEDMAN

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

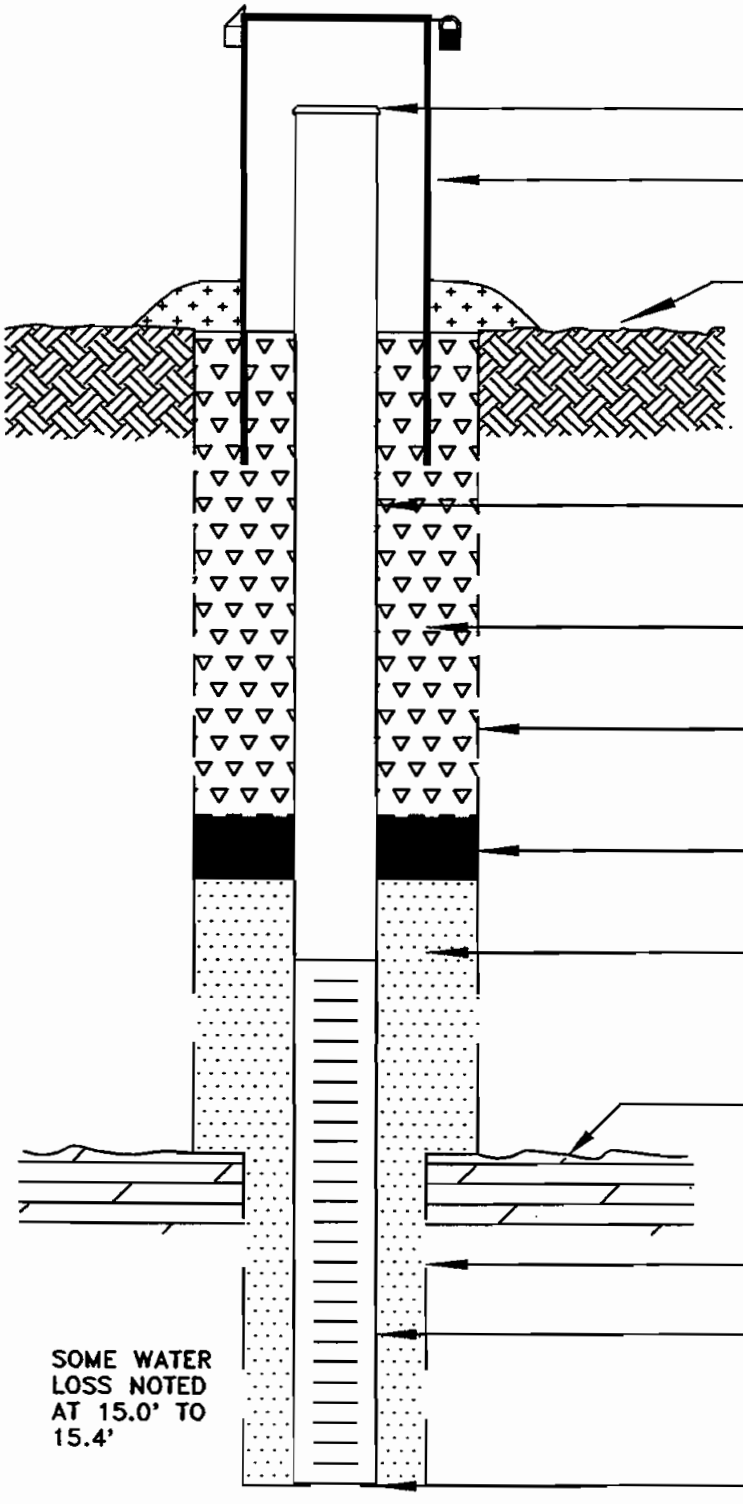


REPORT OF MONITORING WELL OBA-13C/CD

COMPLETION DATE: 4-26-94	INSPECTED BY: D. FRIEDMAN

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

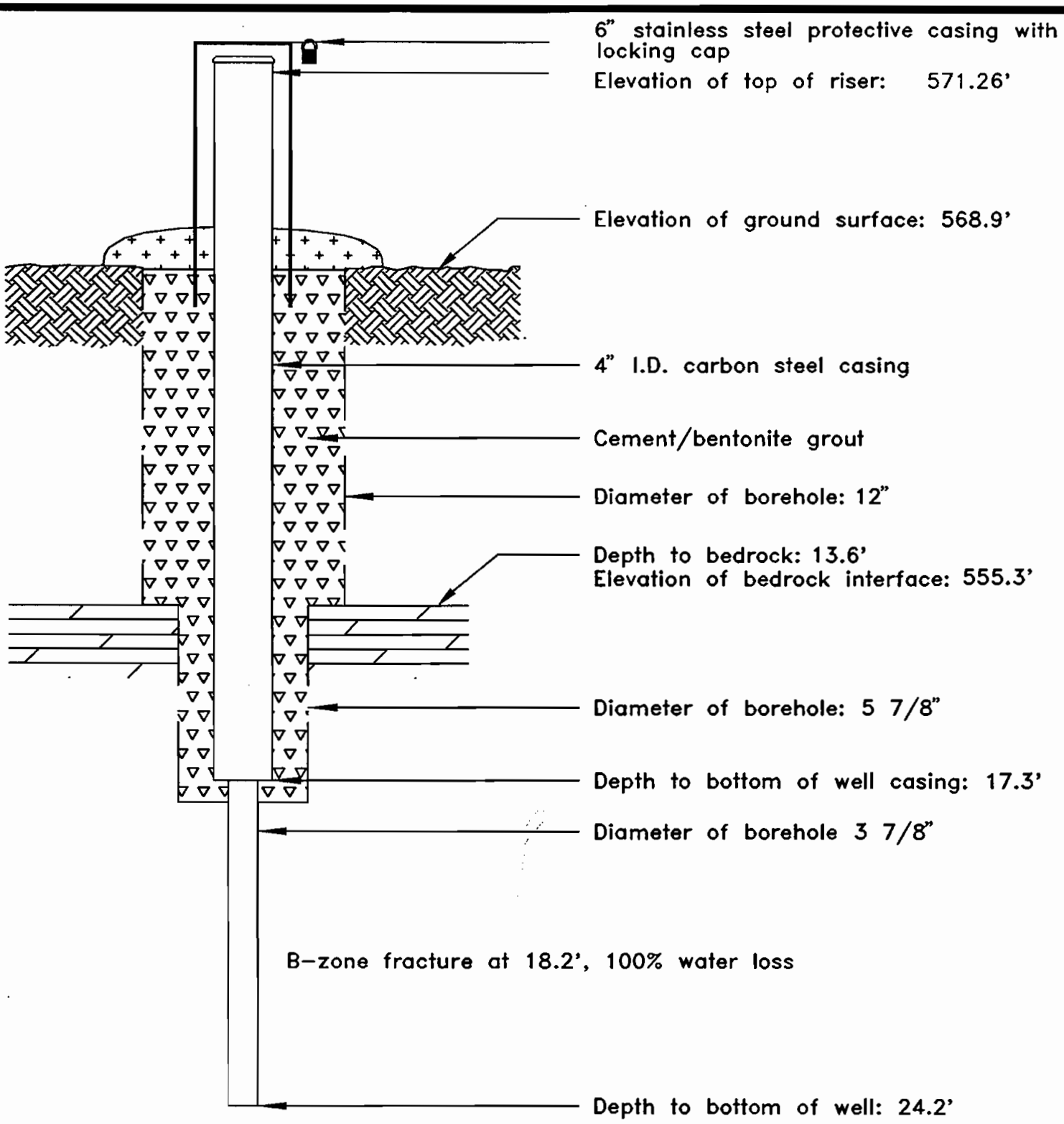


REPORT OF MONITORING WELL OBA-14A

COMPLETION DATE: 4-25-94	INSPECTED BY: D. FRIEDMAN

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists

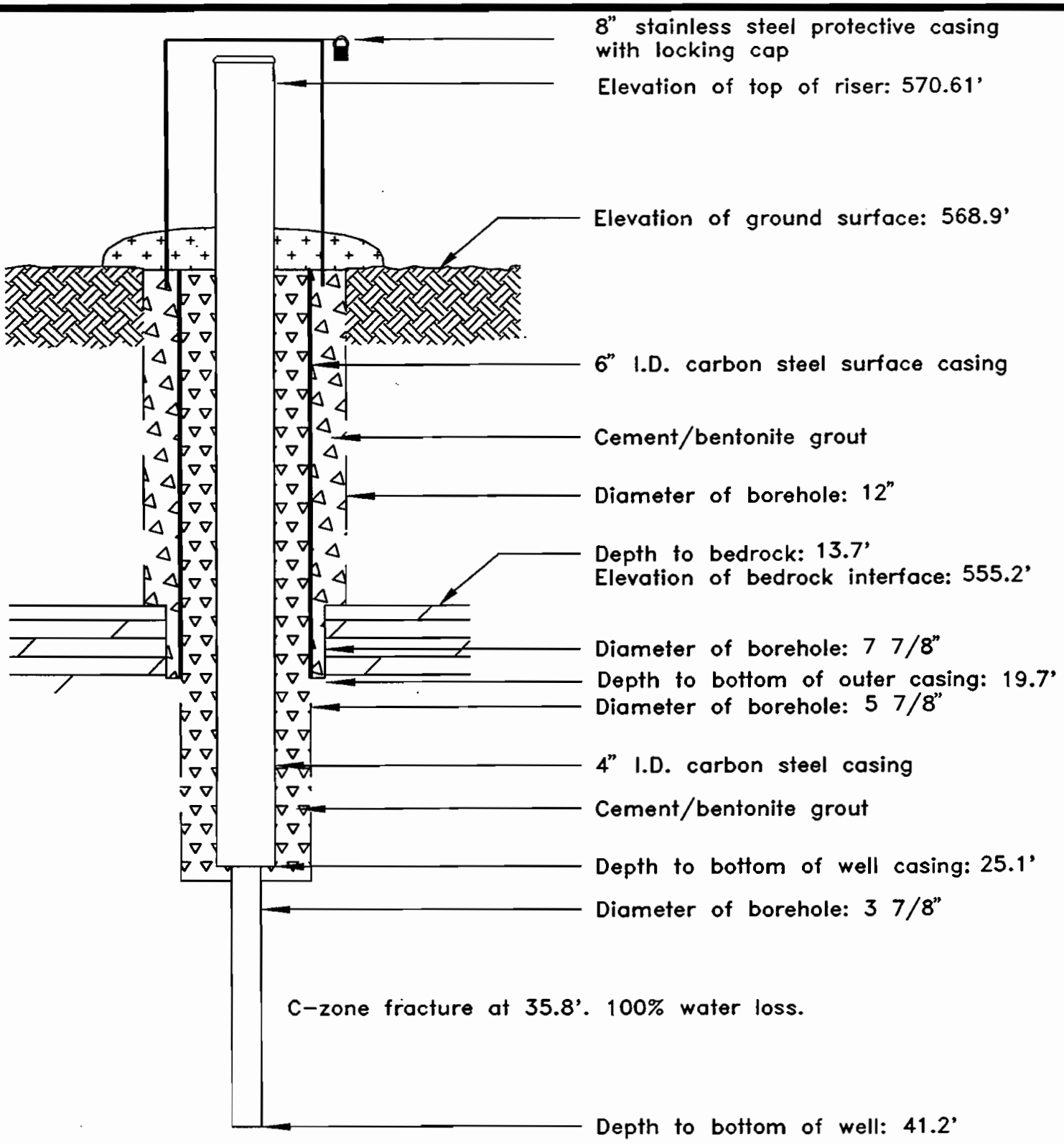


REPORT OF MONITORING WELL OBA–14B

COMPLETION DATE: 4–25–94	INSPECTED BY: D. FRIEDMAN

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

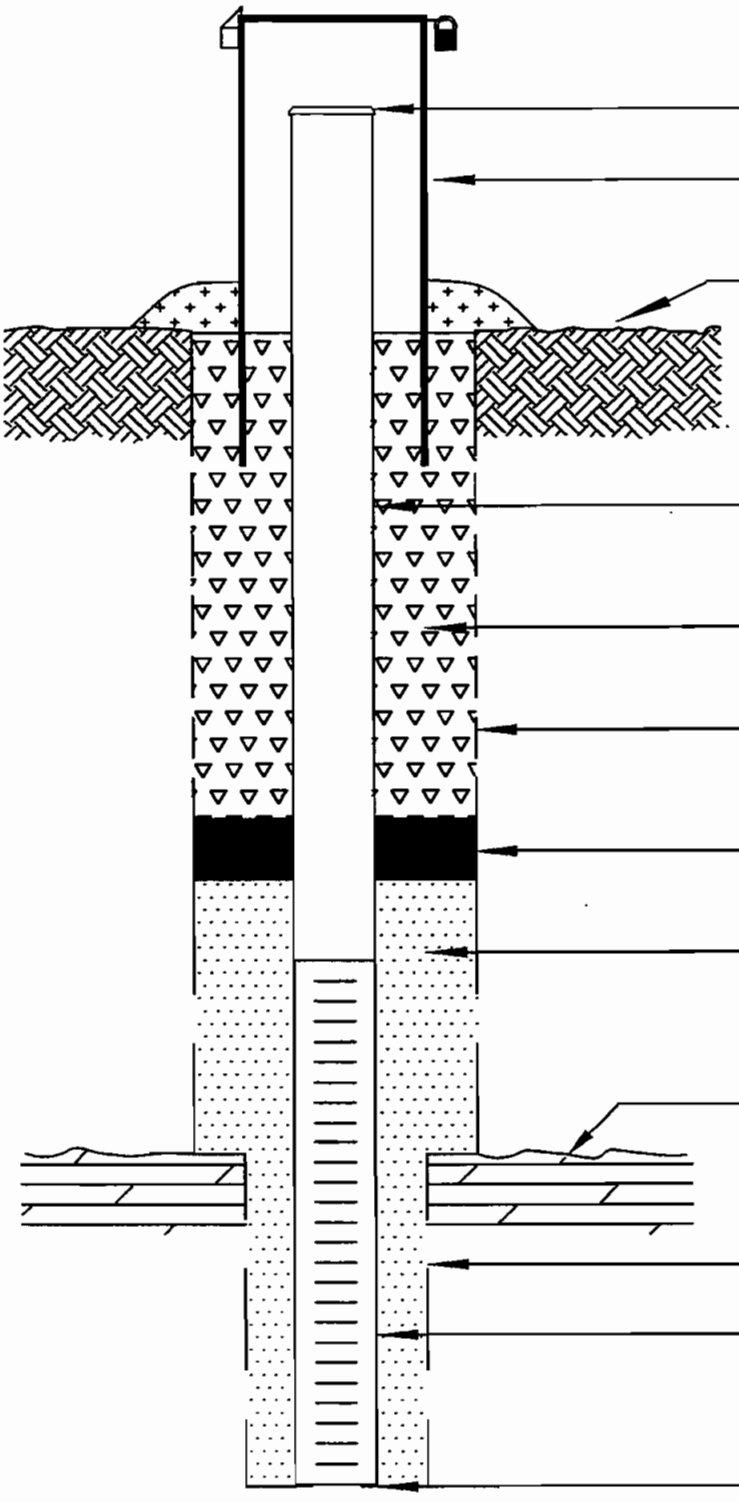
WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA–14C/CD

COMPLETION DATE: 4–27–94		INSPECTED BY: D. FRIEDMAN	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94 FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-15A

COMPLETION DATE: 4-13-94			INSPECTED BY: D. FRIEDMAN	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD-CLYDE CONSULTANTS
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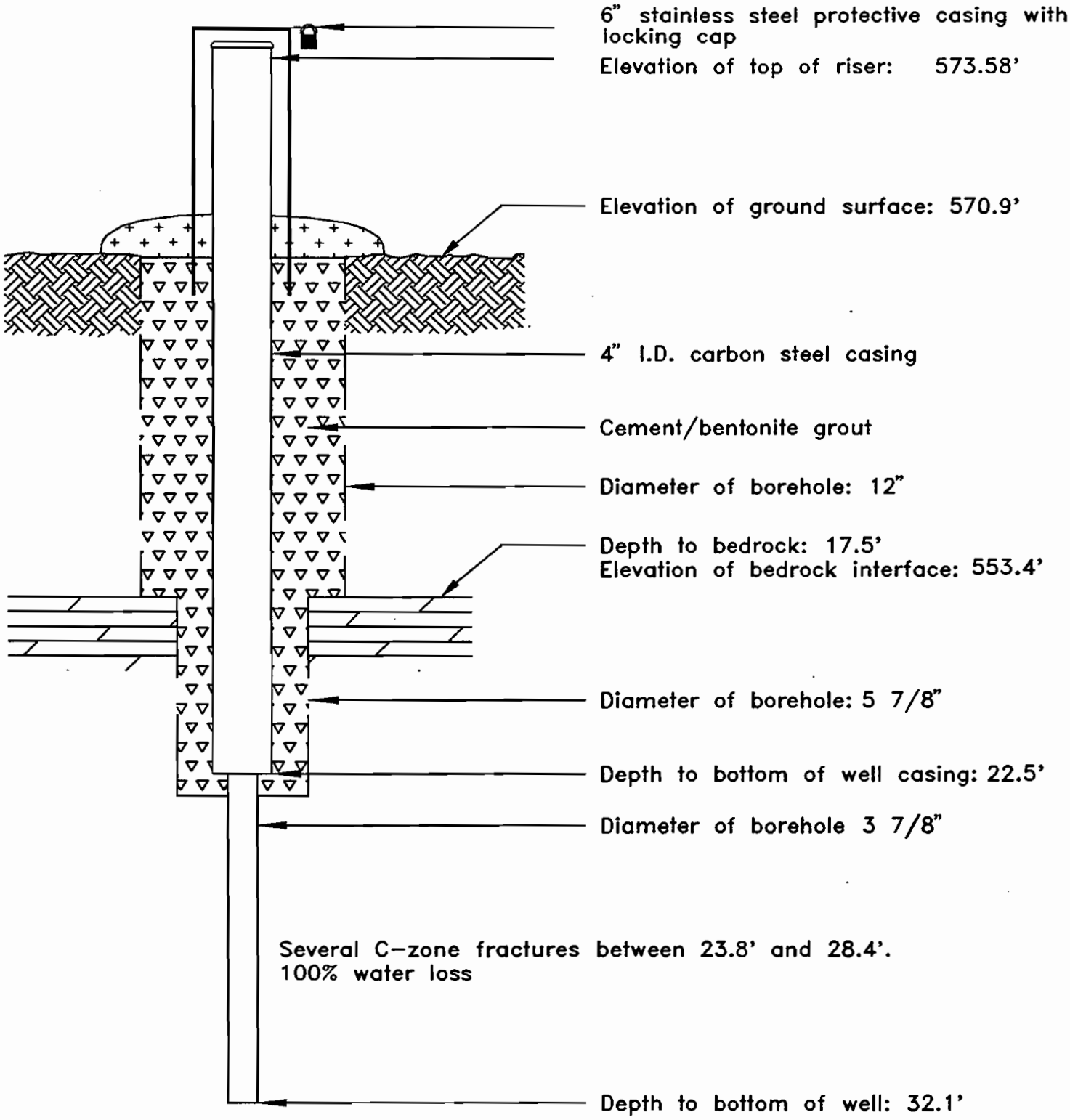
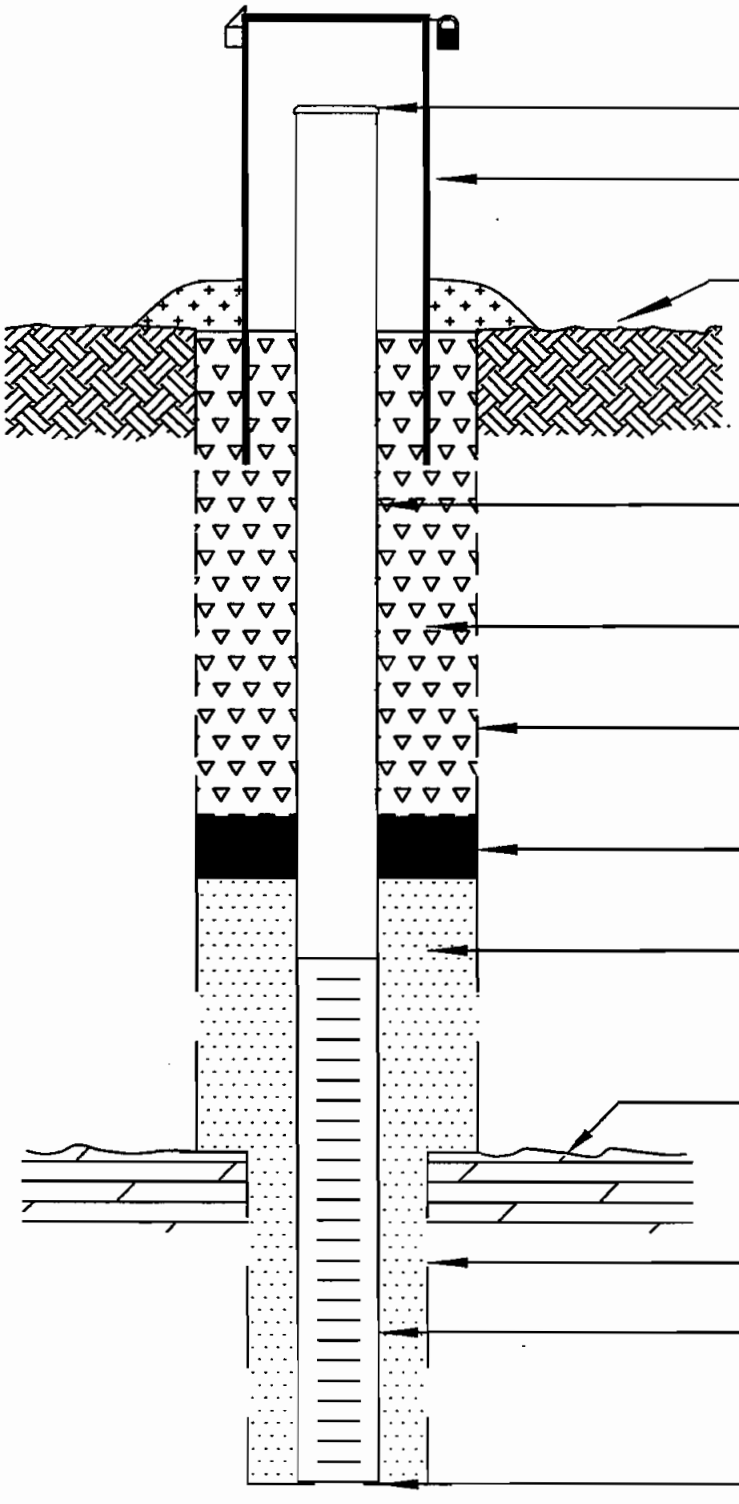


REPORT OF MONITORING WELL OBA-15B

COMPLETION DATE: 4-20-94	INSPECTED BY: D. FRIEDMAN

DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

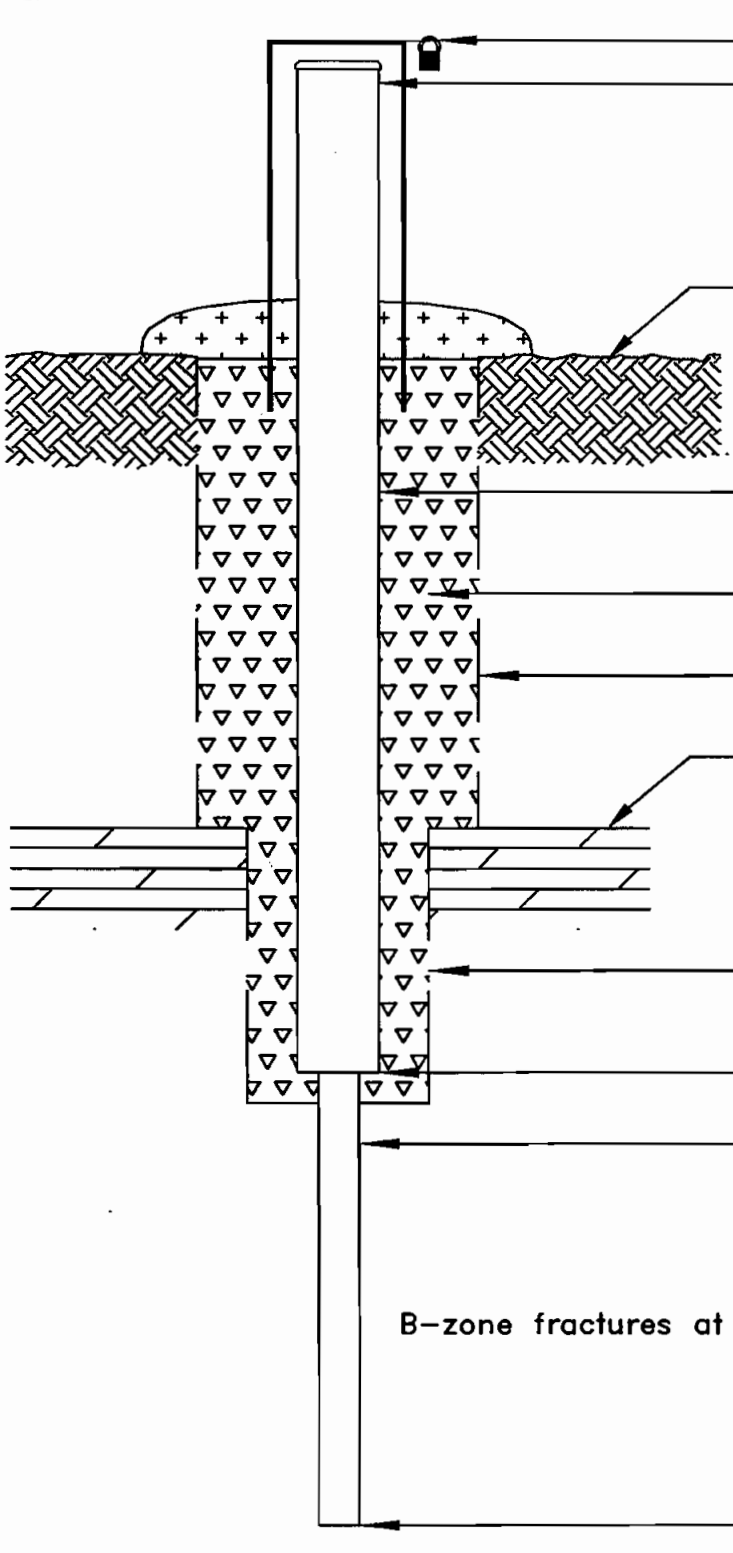
WOODWARD-CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA-16A

COMPLETION DATE: 4-5-94			INSPECTED BY: D. FRIEDMAN	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

WOODWARD–CLYDE CONSULTANTS
Consulting Engineers, Geologists and Environmental Scientists



REPORT OF MONITORING WELL OBA–16B

COMPLETION DATE: 4–20–94			INSPECTED BY: D. FRIEDMAN	
DRAWN BY: FRG	CHECKED BY: DPF	PROJECT NO: 4E02704	DATE: 6/20/94	FIGURE NO:

Appendix B

Phase I Soil Borings

LOG of BORING No. OSB-1

DATE 10/14/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0		8	SS	Bituminous asphalt with gray shot rock subbase material						0.40/ ND
				Dark brown silt/clay fill with small rock clasts						
		2	SS	Light brown-tan lime sludge, very soft, very wet to saturated						458/ 1.6
		WOR	SS							167/ 0.6
5		5	SS	(FILL)						624/ 8.6
		100/4"	SS	Black-brown coarse sand and gravel, wet, elemental mercury beads noted in sample at about 8 feet, little brick fragments (FILL)						1210/ 3
10										
				NOTES: (1) Top of bedrock @ 9.1'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
15										

Completion Depth: 9.1 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-2

DATE 10/15/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0				Bituminous asphalt with gray shot rock subbase material						
		37	SS	Black-brown clay, little silt, trace sand, damp, some interbedded black sand/gravel layers						6.5/ ND
		26	SS.	(FILL)						0.41/ .2
		100/ 0.3"	SS	Brown-tan clay with gray dolomite rock clasts, wet						
5										
10										
15										

NOTES:
(1) Top of bedrock @ 4.6'.
(2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.

Completion Depth: 4.6 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

LOG of BORING No. OSB-3

Sheet 1 of 1

DATE 10/15/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0			Bituminous asphalt with gray shot rock subbase material						
	19	SS	Miscellaneous black-brown fill materials, dry						2.3/ 0.2
	9	SS	- same, damp, softer (FILL)						0.77/ ND
	4	SS							0.44/ ND
5			Tan-light brown clay, little silt and sand, becoming more brown near bottom of spoon						
	100/5"	SS	- same, brown-tan clay, little sand with rock clasts, wet, very firm (CL)						ND/ ND
10			NOTES: (1) Top of bedrock @ 6.9'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
15									

Completion Depth: 6.9 Ft.

Project No.: 88C2346-8

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of BORING No. OSB-4

DATE 10/15/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0		126/0.9"	SS	Bituminous asphalt for first 3", miscellaneous gray-brown fill, shot rock, brick fragments, etc. to refusal (FILL)						57/ 0.4
		100/2"	SS							2.9/ 2.4
5				NOTES: (1) Auger refusal on old cell room foundation at 2.5'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10										
15										

Completion Depth: 2.5 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

LOG of BORING No. OSB-5

DATE 10/15/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	18	SS	Bituminous asphalt with gray shot rock subbase material Coarse shot rock fill (FILL)						11.4/ .2
	10	SS	Brown-tan mottled clay, little(-) silt, thin sand lense at 3', damp (FILL)						35.4/ .9
	13	SS	Brown clay, little(-) sand - brown-orange-tan clay, trace sand, little sand in some sections, dry, hard (CL)						1.3/ ND
5	100/ 0.9"	SS							
10			NOTES: (1) Top of bedrock @ 6.5'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
15									

Completion Depth: 6.5 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-6

Sheet 1 of 1

DATE 10/15/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	119/2"	SS	Bituminous asphalt with black shot rock subbase						79/ 3.7
			Black-orange-red miscellaneous fill, cinder, brick, shot rock, difficult drilling from 1.5'-2' (FILL)						
			DIFFICULT DRILLING AT 2', AUGER TO 3' AND BEGIN CONTINUOUS SAMPLING						
	18	SS	Miscellaneous black-brown fill brown,clay and brick cinder						55/ 6.6
5	2	SS	- same, black sand/fine gravel, some silt, saturated, very soft (FILL)						6.5/ ND
	100/6"	SS	Brown-tan clay, very firm, moist, slight organic odor noted at bottom of spoon						1.7/ .8
10			NOTES: (1) Top of bedrock @ 8.2'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
15									

Completion Depth: 8.2 Ft.

Project No.: 88C2346-8

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-7

Sheet 1 of 1

DATE 10/16/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0		29	SS	Bituminous asphalt with gray shot rock subbase material						21/ 1.3
				Gray shot rock fill (FILL)						
		200/ 6.06"	SS	Brown-red-tan clay with abundant rock clasts (FILL)						7.8/ ND
5				Gray shot rock fill - very difficult augering through hard rock fill from 3' to bedrock refusal at 5.3'						
				NOTES: (1) Top of bedrock @ 5.3'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10										
15										

Completion Depth: 5.3 Ft.

Project No.: 88C2346-8

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of BORING No. OSB-8

DATE 10/16/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	20	SS	Bituminous asphalt for first 3", coarse gray shot rock fill						30/ 1.3
	100/4"	SS	- same, thin black-brown clay layer observed (FILL)						18.5/ .3
5			NOTES: (1) Auger refusal on old cell room foundation at 3.2'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 3.2 Ft.

Project No.: 88C2346-8

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-9

DATE 10/16/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	19	SS	Bituminous asphalt for first 3" Gray shot rock fill						23.7/ ND
	100/ 0.5"	SS	- miscellaneous fill, some brown-black clay (FILL)						112/ 4.6
5			NOTES: (1) Auger refusal on old cell room foundation at 3.2'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 3.2 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of BORING No. OSB-10

DATE 10/16/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	22	SS	Bituminous asphalt for first 3" Miscellaneous fill,compact clay and shot rock, slag, dry						250/ 13
	20	SS	- same, wet above auger refusal at 4' (FILL)						626/ 14
5			NOTES: (1) Auger refusal on old cell room foundation at 4'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 4.0 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of BORING No. OSB-11

Sheet 1 of 1

DATE 10/16/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	39	SS	Bituminous asphalt for first 3" Miscellaneous shot rock/brick fill (FILL)						588/ 32
	100/ 0.1"	SS							165/ 2.5
5			NOTES: (1) Auger refusal on old cell room foundation at 2.5'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 2.5 Ft.

Project No.: 88C2346-8

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of BORING No. OSB-12

DATE 10/16/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	56	SS	Gray shot rock fill						50/ 3.2
	100/ 0.6"	SS	(FILL)						63/ 16.3
5			NOTES: (1) Auger refusal on old cell room foundation at 3'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 3.0 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of BORING No. OSB-13

DATE 10/17/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0		27	SS	Bituminous asphalt for first 3" Miscellaneous shot rock fill						418/ 8.6
		106/11"	SS							95/ 1.5
				- same, clay above refusal (FILL)						
5				NOTES: (1) Auger refusal on old cell room foundation at 3.4'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10										
15										

Completion Depth: 3.4 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of BORING No. OSB-14

Sheet 1 of 1

DATE 10/17/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	30	SS	Bituminous asphalt for first 3" Miscellaneous shot rock fill, some compacted clay, very firm						113/ 1.1
	100/4"	SS	- same, wet (FILL)						95/ 1.4
5			NOTES: (1) Auger refusal on old cell room foundation at 2.8'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 2.8 Ft.

Project No.: 88C2346-8

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-15

DATE 10/17/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	99	SS	Gray shot rock fill						28/ 1.2
	100/2"	SS	(FILL)						104/ 0.3
5			NOTES: (1) Auger refusal on old cell room foundation at 2.6'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
10									
15									

Completion Depth: 2.6 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-16

Sheet 1 of 1

DATE 10/18/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0			Concrete pad						
	25	SS	Shot rock fill						8.3/ ND
			Black fine sand/cinder fill						
	9	SS	- same, some tan mottling, damp at 2', wet at 4'						5.2/ 0.2
	7	SS	- same, black fine sand fill, saturated, sheen on water, slight organic odor						15.7/ ND
5			(FILL)						
	100/3"	SS							NR/ ND
			NOTES: (1) Top of bedrock @ 6.7'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L. (3) NR: no analytic result.						
10									
15									

Completion Depth: 6.7 Ft.

Water Depth: _____ ft., After _____ hrs.

Project No.: 88C2346-8

_____ ft., After _____ hrs.

Project Name: OLIN RFI

_____ ft., After _____ hrs.

Drilling Method: Hollow-Stem Auger

_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-17

Sheet 1 of 1

DATE 10/18/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0				Concrete pad						
		21	SS	Shot rock fill						
				Tan-red-brown fine brick and sand fill, large clasts of tan-red porous brick throughout						
		15	SS							
		10	SS							
5				- same, spoon wet upon retrieval						
		100/3"	SS							
				- fill becoming black above refusal and sheen noted on water						
				(FILL)						
				NOTE: (1) Top of bedrock @ 7'.						
10										
15										

Completion Depth: 7.0 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

Woodward-Clyde Consultants

LOG of BORING No. OSB-18

Sheet 1 of 1

DATE 10/18/91 SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0				Bituminous asphalt for first 2", concrete for next 6", augered to 1' to begin sampling again						
		13/6"	SS	Mottled black-brown fill, damp, organic odor noted						404/ 4.0
		13	SS	- same, mottled brown-black-tan fill						161/ 5.1
		8	SS	- same, more massive and clay/silt dominated (FILL)						1.7/ 0.5
5				Mottled brown-gray clay, firm, damp, slight organic odor noted						
		100/0.6"	SS	- same, with rock clasts above bedrock						12/ 1.3
10				NOTES: (1) Top of bedrock @ 6.7'. (2) Values under "OTHER TESTS" are total Hg concentration in mg/kg over TCLP Hg concentration in ug/L.						
15										

Completion Depth: 6.7 Ft.
Project No.: 88C2346-8
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

Woodward-Clyde Consultants

Phase II Soil Borings

LOG of Boring No. NSB-1

DATE 12/7/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0	9	SS	Topsoil (0.4')	-0.4	0.0	.004
	3	SS	Loose, predominantly brown, coarse gravel and red brick in a silty medium to fine sand matrix, moist	-4.0	0.0	.013
5	24	SS	Stiff, brown, silty clay with trace rootlets, moist	-4.8	0.0	.004
	9	SS	Firm, brown, coarse to fine gravelly silty clay, moist becoming wet	-8.2	0.0	.001
	50/4"	SS	Stiff, brown, gravelly silty clay	-8.4	0.0	0
10			Dolostone Bedrock	-8.6		
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 8.5 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

LOG of Boring No. NSB-2

Sheet 1 of 1

DATE 12/7/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0		9	SS	Topsoil (0.4')	-0.4	0.0	0
		9	SS	Medium dense, black, medium to fine sandy silt, some coal and slag fragments, moist	-1.0	0.0	0
5		28	SS	Firm, red-brown, silty clay to clay with some yellow and gray mottling	-4.8	0.0	0
				Dense, brown to red-brown, fine gravelly coarse to fine sandy silt, moist	-5.9		
				Dolostone Bedrock	-6.1		
10							
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 6.1 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25 H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-3

DATE 12/8/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0	11	SS	Medium dense, silty coarse to fine sand and fine gravel, dry	-0.2	0.0	0
	7	SS	Medium dense, black to brown with little yellow mottling, silty coasre to fine sand and fine gravel, trace wood fragments	-2.5	0.0	0
5	7	SS	Firm to stiff, red-brown to brown, coarse to fine gravelly clay, little silt and coarse to fine sand, some brick fragments, moist	-6.0	0.0	0
	67/ 7"	SS	Stiff, red-brown, sandy gravelly clay	-7.2	0.0	.001
			Dolostone Bedrock	-7.4		
10						
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 7.4 Ft. Water Depth: ____ ft., After ____ hrs.

Project No.: 92C2030-6 ____ ft., After ____ hrs.

Project Name: Olin Plant RFI ____ ft., After ____ hrs.

Drilling Method: 4.25" H.S.A. ____ ft., After ____ hrs.

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LOG of Boring No. NSB-4

Sheet 1 of 1

DATE 12/8/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt pavement overlying concrete (2')	-2.0		
	5	SS	Medium dense, light brown to tan, silty coarse to fine sand and gravel (primarily concrete fragments), trace wood, dry	-2.3	0.0	.011
	WOH	SS	Firm, brown, medium to fine sandy clay, trace coarse to fine gravel, moist	-2.6	0.0	.004
5	57/ 7"	SS	Medium dense, orange and black, silty coarse to fine sandy silt, trace coarse to fine gravel, moist	-3.5	0.0	.003
			Soft, gray, clay, moist	-4.5		
			Firm, brown-red, coarse to fine sandy clay, trace coarse to fine gravel, moist	-6.0		
10			Soft to firm, black, clay, moist	-6.4		
			Firm to stiff, red-brown, coarse to fine gravelly clay	-7.2		
			Dolostone Bedrock	-7.4		
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 7.4 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-5

DATE 12/8/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt pavement overlying concrete (2')	-2.0		
	44	SS	Very dense, white, coarse to fine sand and fine gravel (concrete fragments), dry	-2.4	0.0	0
5	34	SS	Very dense, red, silty coarse to fine sand and fine gravel (brick fragments), occasional seam of white sand, dry becoming wet at 6'		0.0	.003
	88	SS		-7.5	0.0	.002
			Dolostone Bedrock	-7.7		
10						
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 7.6 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

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LOG of Boring No. NSB-6

Sheet 1 of 1

DATE 12/8/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Concrete Pad (1')	-1.0		
		29	SS	Poor Recovery- Concrete fragment blocked shoe of spoon			
		WOR	SS	*Void 2.5' to 3.5'	-4.0		
5		2	SS	Loose, brown, silty sand and gravel overlying soft to firm, red-brown, coarse to fine gravelly coarse to fine sandy silty clay;		0.0	.008
		46	SS	Poor Recovery of Sample, wet	-7.0	0.0	.003
				Dense, brown, coarse to fine sandy coarse to fine gravel and silt, wet	-7.9		
10				Dolostone Bedrock	-8.1		
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 8.1 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-7

DATE 12/9/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Concrete Pad (1')	-1.0		
				Void (1')	-2.0		
		2	SS	Concrete Fragments	2.5	0.0	0
				Soft, red-brown, silty clay to clay, moist	-4.0		
5		4	SS	Moderately decomposed wood		0.0	0
		3/ 18"	SS		-6.9	0.0	0
				Soft, brown, gravelly clay, wet	-7.8		
			SS	Coarse to fine angular gravel	-9.0	0.0	0
10				Dolostone Bedrock	-9.2		
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 9.1 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-8

Sheet 1 of 1

DATE 12/9/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt Pavement (0.8')	-0.8		
	7	SS	Medium dense, green-gray to black, silty coarse to fine sand and		0.0	.002
	3	SS	coarse to fine gravel	-4.1		
5	10	SS	Stiff, brown-red, silty coarse to fine gravelly clay			.001
	11	SS			0.0	.001
	20	SS		-8.4	0.0	.001
			Medium dense to dense, yellow-brown, silty coarse to fine sand	-8.7		
10	50/1"	SS	and coarse to fine gravel, some red brick fragments	-9.0	0.0	.001
			Soft, clay, trace sand and gravel, wet	-10.6		
			Dense, gray, angular coarse to fine sand and coarse to fine gravel	-10.8		
			Dolostone Bedrock			
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 10.7 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-9

DATE 12/9/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt Pavement (0.5')	-0.5		
	8	SS	Dense, gray, crushed stone, dry	-0.9	0.0	.002
	6	SS	Medium stiff to stiff, predominantly red-brown, gravelly silty clay, gravel includes brick fragments, some sand and gravel layers, moist	-3.8	0.0	.002
5	14	SS			0.0	0
	30	SS	Stiff, red-brown, gravelly clay to silty gravelly clay, moist becoming wet at 5.7'		0.0	.001
	65/10"	SS		-9.3	0.0	0
10			Dolostone Bedrock	-9.5		
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 9.4 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-10

Sheet 1 of 1

DATE 12/9/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Concrete Pad (0.5')	0.5		
		4	SS	No Recovery	-2.0		
		2	SS	Loose, light gray-brown, silty coarse to fine sand and coarse to fine gravel	-4.0	0.0	.002
5		12	SS	Stiff, red-brown, clay, little to trace gravel, dry becoming moist at 8'		0.0	.002
		30	SS			0.0	0
		50/ 3"	SS		-8.7	0.0	0
10				Dolostone Bedrock	-8.9		
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.-
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 8.8 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-11

Sheet 1 of 1

DATE 12/13/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt Pavement (0.5')	0.5		
	4	SS	Loose, light gray, sand and gravel	-0.8	0.0	0
	10	SS	Firm to stiff, red-brown silty clay to clay, some gravelly layers, moist to dry	-4.0	0.0	0
5	30	SS	Very stiff, red-brown, silty clay to clay, some gravelly layers, moist to dry		0.0	0
	11	SS	- becoming coarse to medium sandy fine gravelly clay, coarse fraction includes dolostone fragments	-8.5	0.0	0
	50/ 6"	SS	-increasing dolostone fragments in a red-brown clay matrix	-8.7		
10			Dolostone Bedrock			
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 8.6 Ft. **Water Depth:** ____ ft., After ____ hrs.

Project No.: 92C2030-6 ____ ft., After ____ hrs.

Project Name: Olin Plant RFI ____ ft., After ____ hrs.

Drilling Method: 4.25" H.S.A. ____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-12

DATE 12/13/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Asphalt Pavement (0.5')	-0.5		
		3	SS	Loose to medium dense, brown coarse to fine sand and coarse to fine gravel interstratified with soft to stiff, dark brown clayey silt to silty clay, moist to wet		0.0	0
		8	SS		-4.0		
5		20	SS	Stiff to very stiff, red-brown silty clay to clay with little fine gravel, but occassional layers are coarse sandy to fine gravelly			
		27	SS			0.0	0
					-8.9		
10				Dolostone Bedrock	-9.1		
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 9.0 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

LOG of Boring No. NSB-13

DATE 12/14/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt Pavement (0.8')	-0.8		
	8	SS	Medium dense to dense, silty coarse to fine sand and coarse to fine gravel, gravel includes brick fragments		0.0	
	20	SS		-4.5	0.0	
5	26	SS	Very stiff becoming soft, red-brown silty clay to clayey silt, dry		0.0	0
	50/ 2"	SS	-becoming wet	-7.7	0.0	
			Dolostone Bedrock	-7.9		
10						
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 7.8 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: _____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

LOG of Boring No. NSB-14

Sheet 1 of 1

DATE 12/14/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt Pavement (0.7')	-0.7		
	11	SS	Medium dense, brown gravelly silt, some brick fragments, moist	-3.2		0
	28	SS	Very stiff becoming soft, red-brown silty clay to clay, some gravelly layers, dry			0
5	34	SS				0
	50/ 2"	SS	-becoming moist	-7.7		0
			Dolostone Bedrock	-7.9		
10						
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 7.8 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.

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LOG of Boring No. NSB-15

Sheet 1 of 1

DATE 12/14/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Asphalt Pavement (0.8')	-0.8		
		7	SS	Firm, brown to red-brown, silty coarse to fine gravelly clay, occassional yellow sand lens, some gravel as brick fragments			0
		8	SS		-3.9		0
5		19	SS	Medium dense, white, coarse to fine sand and fine gravel -becoming intermixed with soft to firm, red-brown clay -becoming stiff then soft, red-brown coarse to fine gravelly silty clay			0
		50/ 4"	SS		-7.4		0
				Very dense, dolostone fragments	-7.8		
10				Dolostone Bedrock	-8.0		
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 7.9 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

LOG of Boring No. NSB-16

DATE 12/14/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0			Asphalt Pavement (0.8')	-0.8		
	11	SS	Medium dense to dense, black coarse to fine sand and coarse to fine gravel, traces of brick, concrete, and wood fragments		0.0	
	12	SS			0.0	
5				-5.2		
	11	SS	Stiff, red-brown, clay	-5.8	0.0	
	19	SS	Medium dense, red-brown, clayey coarse to fine sand and coarse to fine gravel	-8.8	0.0	
10			Dolostone Bedrock	-9.0		
15						
20						
25						
30						
35						
40						

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 8.9 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

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LOG of Boring No. NSB-17

DATE 12/14/93 SURFACE ELEVATION 0.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Asphalt Pavement (0.8')	-0.8		
		10	SS	Medium dense, white coarse to fine sand and fine to coarse gravel	-1.1	0.0	
		15	SS	Medium dense, brown to black-brown, coarse to fine sand and coarse to fine gravel interstratified with occassional clay layers, trace coal pieces	-3.0	0.0	
5		18	SS	Medium dense to stiff, yellow-brown, brown, and black-brown, clayey coarse to fine sand and coarse to fine gravel to coarse interstratified with fine sandy and coarse to fine gravelly clay	-5.4	0.0	
		12	SS	Medium dense to dense, coarse gravel, trace clay, gravels include brick fragments, occassional yellow sand lens	-7.0	0.0	
				Stiff to firm, black silty clay, occassional brick fragment	-8.1		
				Medium dense, yellow to white, well-rounded coarse sand and fine gravel	-8.7		
10				Dolostone Bedrock	-8.9		
15							
20							
25							
30							
35							
40							

Notes:

1) Surface elevation assigned arbitrary datum 0.0.
2) Readings under "Other Readings" are Mercury Vapor Analyzer readings over the split-spoon sampler.
3) Readings under "OVA Readings" are Organic Vapor Analyzer readings over the split-spoon sampler.

Completion Depth: 8.8 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

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Monitoring Well Soil Borings

HARZA ENGINEERING COMPANY

Page: 1

Form: SE5

Sheet 1 of 1

DESCRIPTIVE LOG

Site: Olin Corporation, Niagara Falls, N.Y.

Logged by: WRC

Drill Hole No.: BH-1

Date: 11/30/78

Depth From	Depth To	Symbol No.	Classification, Description and Remarks	SPT Blows per 6" penetratio
0	10.1	GW	Sandy gravel fill, gravel less than 1/2 inch diameter, sub - angular, high permeability, poorly graded	
			5.-6.5 ft. Split Spoon Sample #1	2/.5'
			Same as above but some red brick colored	2/.5'
			fill.	4/.5'
			Split Spoon #2 9.5-10.1 ft.	16/.5'
			Hit rock at 10.1 ft.	100/.1'
			Same as above but with 1 inch diameter pieces of angular red brick.	
10.1	11.0		Rock coring Dolomite: Rubble, broken up by corer, grey, crystalline. Largest piece 2" diameter.	
11.0	16.1		Dolomite: Dark grey, crystalline, thickly bedded, irregular stylolitic partings parallel to bedding; bedding horizontal, breaks along partings with medium hammer blow. Fine vuggy porosity throughout, diameter .5 mm to 2.0 mm. Vugs partially filled with calcite, also gypsum. 13.0 ft. - Lost drilling water, cored .5 ft. in 30 seconds. 14.2' Calcite filled vug 1.0" diameter 15.3' Calcite filled vug, .5" diameter 16.1 Finished coring, Recovery 100%. Bottom of well point set at 16.1 ft.	

HARZA ENGINEERING COMPANY

Page: 1

Form: SE5

Sheet 1 o

DESCRIPTIVE LOG

Site: Olin Corporation, Niagara Falls, N.Y.

Logged by: WRC

Drill Hole No.: RH-3

Date: 12/3/78

Depth From	Depth To	Symbol No.	Classification, Description and Remarks	SPT Blows p .5' penetra
0	1	GP	Gravel fill, subangular, .5" to 1.0" diameter no fines, poorly graded, very high permeability.	
1	5	ML	Split Spoon Sample #1 3.5 to 5 ft.	6/.5'
			Clayey silt, grey-brown with some sand and	6/.5'
			gravel. Very low permeability, very low	7/.5'
			plasticity. Water hit at 5.0 ft.	
5	8.5	GM	Split Spoon Sample #2 8.0 to 8.5 ft.	6/.5'
			Sandy gravel, with silt and clay,	100/0.0'
			grey gravel sub-angular to rounded gravel poorly graded, low-moderate permeability.	
8.5	18.0		Dolomite: Grey, thickly bedded, irregular stylolitic partings parallel to horizontal bedding. Breaks along partings with medium hammer blow. Fine vuggy porosity, some vugs partially filled with gypsum or calcite.	
			Fracturing: 8-9.5' Fractures averaging every 3"	
			9.5-11.0 Fractures averaging every 8"	
			11.0-13.0 Largest piece 3" long	
			15.0-18.1 Pieces averaging 1.0 ft.	
			12.0-12.6 Very porous, caused by fine vugs	
			Bottom of well point set at 18.0 ft.	

HARZA ENGINEERING COMPANY

Form: SE5

DESCRIPTIVE LOG

Site: Olin Corporation, Niagara Falls, N.Y.

Logged by: WRC

Drill Hole No.: BH-9

Date: 12/13/78

Depth From	Depth To	Symbol No.	Classification, Description and Remarks	SPT Blows per .5' penetrati
0	1	ML	Sandy silt, some fine gravel, dark brown, low permeability, very low plasticity.	
1	5	GW	Split Spoon Sample #1 3-5ft. Sandy Gravel, fine to medium black, angular-subangular, coated with substance, organic smell, high permeability.	10/.5' 22/.5' 10/.5' 11/.5'
5	7		Split Spoon Sample #2 5-7 ft. Same as above but with some plastic fines. Moderate permeability	11/.5' 13/.5' 7/.5' 6/.5'
7	8.4	CL	Soil Sample #3 7-8.4 ft. Clay, some silt, organic smell brown-black, very low permeability	5/.5' 11/.5' 100/.4'
			Bottom of well point set at 8.4 ft.	

LOG of BORING No. OBA-1

Sheet 1 of 1

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0				Black asphalt overlying concrete foundation						
		34	SS	Gray shot rock fill, some brown silt, trace clay, saturated just above clay. organic smell noted in fill above clay (FILL)						
		113	SS							
				Brown-tan clay, some (+) silt, cohesive low plasticity, some angular to subangular bedrock fragments close to bedrock contact (CL)						
		100/4"	SS							
5				Bedrock encountered @ 5.5', gray dolomite						
				NOTES: (1) Top of bedrock @ 5.5'. (2) Perched water table at about 2.5'. (3) Solvent smell noted in fill material directly above clay.						
10										
15										

Completion Depth: 5.5 Ft.

Project No.: 88C2346-2

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: See ft., After _____ hrs.

Notes ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of BORING No. OBA-2

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	51	SS	Gray shot rock fill, some brown-tan silt and clay as matrix, thin black coarse sand layer at bottom of fill materials (FILL)						
	21	SS	Brown-tan to brown-gray mottled glaciolacustrine clay, little (-) silt						
	12	SS	- same, several gray-brown dolomite pieces lodged in spoon tip, increase in abundance of rock fragments in clay toward bedrock interface						
5		SS	(CL)						
			Bedrock encountered @ 5.8', gray dolomite						
			NOTES: (1) Top of bedrock @ 5.8' (2) No water table at overburden/bedrock interface noted.						
10									
15									

Completion Depth: 5.8 Ft.
Project No.: 88C2346-2
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: See ft., After _____ hrs.
Notes ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of BORING No. OBA-3

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	16	SS	Gray shot rock fill, some (-) clay and silt, poorly graded for first 2 feet, miscellaneous layered fill to lower clay contact						
	8	SS	(FILL)						
	7	SS	Tan-brown glaciolacustrine clay, moderate to high plasticity, coherent						
5	16	SS	- same, trace silt, high plasticity, damp, becoming more orange-brown toward bottom of sample						
	20	SS	- orange-brown clay with tan mottling, dry at top, very wet 1.2' into spoon, some subrounded black crystalline rock fragments within clay						
10	128/7"	SS	- same, increase in abundance of rock fragments down through sample, rock shard lodged in spoon tip. rock fragments do not resemble gray dolomite country rock.						
	104	SS	- same, abundant rock fragments throughout recovered sample (CH)						
15			Bedrock encountered @14.3', gray dolomite						

NOTES:
(1) Top of bedrock @14.3'.
(2) No significant water table observed at overburden/rock contact.

Completion Depth: 14.3 Ft.
Project No.: 88C2346-2
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: See ft., After _____ hrs.
Notes ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

LOG of BORING No. OBA-4

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0		10	SS	Black asphalt with black granular subbase material						
				Miscellaneous layered fill deposits to bedrock interface, shot rock and black sandy slag						
		5	SS	- black-brown-tan fill with shot rock, slag, glass shards, etc., little sand and silt						
		31	SS	- same, menthol-like odor noted						
5		14	SS	- same, black-gray fill for first 0.3', then red-brown fill material, little (+) clay and silt (FILL)						
		100/0"	SS	Bedrock encountered @8.4', gray dolomite						
10				NOTES: (1) Top of bedrock @8.4'. (2) No significant water table at overburden/rock interface.						
15										

Completion Depth: 8.4 Ft.
Project No.: 88C2346-2
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: See ft., After _____ hrs.
Notes ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of BORING No. OBA-5

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	21	SS	Gray shot rock fill, some brown sandy silt						
			Coarse miscellaneous fill, coarse gravel sized shot rock with mottled brown-tan-red matrix, brick fragments						
	22	SS	(FILL)						
	35	SS	Miscellaneous brown-tan fill, some (+) clay, very wet, white powdery material noted in spoon tip, strong napthalene-like odor noted						
5	10	SS	(FILL)						
			Black peat with roots, saturated, strong organic odor noted						
	100/1"	SS	Bedrock encountered @8.4', gray dolomite						
10			NOTES: (1) Top of bedrock @8.4'. (2) Water table at about 4'.						
15									

Completion Depth: 8.4 Ft.

Project No.: 88C2346-2

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: See ft., After _____ hrs.

Notes ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of BORING No. OBA-6

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0			Black asphalt with granular subbase material						
	15	SS	Brown-black miscellaneous fill, rock fragments, dry - black fill with some oil staining (FILL)						
	5	SS							
			Brown-red-tan glaciolacustrine clay (CL)						
	100/1"	SS	- same, very wet (CH)						
5			Bedrock encountered @5.1', gray dolomite NOTES: (1) Top of bedrock @5.1'. (2) Water table at about 4.5'.						
10									
15									

Completion Depth: 5.1 Ft.

Project No.: 88C2346-2

Project Name: OLIN RFI

Drilling Method: Hollow-Stem Auger

Water Depth: See Notes ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of BORING No. OBA-7

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0	31	SS	Gray shot rock fill, some brown sandy silt, trace clay - orange-red brick from 1.1' to 1.6' - gray shot rock fill to bedrock						
	23	SS							
	105/8"	SS	(FILL)						
5			Bedrock encountered @5.5', gray dolomite NOTES: (1) Top of bedrock @5.5'. (2) Water table at about 5'.						
10									
15									

Completion Depth: 5.5 Ft. Water Depth: See ft., After _____ hrs.

Project No.: 88C2346-2 Notes ft., After _____ hrs.

Project Name: OLIN RFI _____ ft., After _____ hrs.

Drilling Method: Hollow-Stem Auger _____ ft., After _____ hrs.

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LOG of BORING No. OBA-8

DATE _____ SURFACE ELEVATION _____ LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	POCKET PENETROMETER	WATER CONTENT, %	LIQUID LIMIT, %	PLASTIC LIMIT, %	OTHER TESTS
0				Black asphalt with granular subbase material						
		20	SS	Dark gray to black shot rock fill, little (+) silt and clay, dark near bottom of spoon (FILL)						
		20	SS	Tan-brown sand, trace silt, homogenous,damp from 2.3' to 2.8' (SW)						
		22	SS	Red-brown glaciolacustrine clay, some mottling, dry, cohesive, occasional gray veinlets						
5		136/9"	SS.	(CL)						
				Bedrock encountered @7.5', gray dolomite						
				NOTES: (1) Top of bedrock @7.5. (2) No significant water table noted at overburden/rock interface.						
10										
15										

Completion Depth: 7.5 Ft.
Project No.: 88C2346-2
Project Name: OLIN RFI
Drilling Method: Hollow-Stem Auger

Water Depth: See ft., After _____ hrs.
Notes ft., After _____ hrs.
_____ ft., After _____ hrs.
_____ ft., After _____ hrs.

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LOG of Boring No. OBA-9AR

DATE 10/29/92 SURFACE ELEVATION 568.2 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0	6	SS	Medium dense to dense, black-brown, silty coarse to fine sand and coarse gravel, gravel includes crushed stone fill and brick fragments, dry becoming moist at 2 feet			
	7	SS				
	2	SS	-becoming wet	563.7		
5			Soft, black, silty clay, trace organics, moist	561.7		
	124/ 9"	SS	Dense to very dense, black silty clay and gravel, gravel is angular rock fragments	560.6		
10						
15						
20						
25						
30						
35						
40						

Notes:

1) Auger refusal at 7.6 feet on bedrock. Complete boring with 7.875-inch roller bit to 10.8 feet.

Completion Depth: 7.6 Ft.

Project No.: 92C2030-6

Project Name: Olin Plant RFI

Drilling Method: 4.25" H.S.A.

Water Depth: _____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

_____ ft., After _____ hrs.

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LOG of Boring No. OBA-10A

DATE 11/3/92 SURFACE ELEVATION 569.2 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0		16	SS	Dense, black-brown, silty coarse to fine sand and coarse to fine gravel becoming clayey in the last .3', moist.	567.2		
		8	SS	Firm to stiff, red-brown becoming yellow, clay, trace silt, dry	565.2		
5		53	SS	Dense to very dense, silty medium to sand and coarse to fine gravel, dry			
		42	SS	- with angular rock fragments.	561.2		
		5	SS	Soft, black, clay with organic debris (roots, plant material, etc), soft			
10		18	SS	- with trace fine, rounded gravel.	556.9		
		116/ 8"	SS	- increasing gravel content	556.0		
				Firm to dense, black silty clay and coarse gravel, very wet			
15							
20							
25							
30							
35							
40							

Note:
1) Auger refusal at 13.7 feet in bedrock. Complete hole with 7.875-inch roller bit to depth 16.7 feet.

Completion Depth: 13.7 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4 1/4" H.S.A.

Water Depth: ____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.

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LOG of Boring No. OBA-11A

DATE 11/30/93 SURFACE ELEVATION 571.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0		16	SS	Topsoil (0.4')	570.6		
				Medium dense, white with little black, coarse to fine sand	570.1		
		6	SS	Loose to medium dense, black to dark green, silty medium to fine sand with fine gravel to coarse sand slag fragments	569.0 568.3		
5		14	SS	Firm, dark brown coarse to fine gravelly clayey silt, rootlets and organic debris, moist			
		34	SS				
				Firm to stiff, tan, red-brown, and dark brown with occassional yellow mottling, silty clay to clay, moist	563.0		
		50/ 5"	SS		562.6		
10				Stiff, red-brown to dark brown, coarse to fine sandy clay, becoming coarse to fine gravelly	562.4		
				Dolostone Bedrock			
15							
20							
25							
30							
35							
40							

Completion Depth: 8.4 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 8.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

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LOG of Boring No. OBA-12C

DATE 12/15/93 SURFACE ELEVATION 571.5 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0		7	SS	Medium dense to dense, black to brown with white sand grains, coarse to fine gravelly coarse to fine sand, dry to moist	570.3		
		34	SS	Firm, brown to red-brown, medium to fine sandy silty clay, moist to very moist	568.9		
5		50/ 2"	SS	Dense to very dense, yellow-brown to brown, silty coarse to fine gravelly coarse to fine sand, gravel includes shaly dolostone fragments	567.3		
				Dolostone Bedrock	567.1		
10							
15							
20							
25							
30							
35							
40							

Completion Depth: 4.2 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 8.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

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LOG of Boring No. OBA-13A

Sheet 1 of 1

DATE 4/6/94 SURFACE ELEVATION 572.0 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0		9	SS	Dense to medium dense, brown to dark gray, coarse to fine sandy coarse to fine angular gravel, some clayey and silty layers, moist			
		6	SS				
		5	SS		567.1		
5		9	SS	Firm to stiff, light brown to light gray with occassional orange mottling, silty clay becoming fine sandy clay, some well-rounded coarse sand and fine gravel and trace organics			
		3	SS		561.8		
10		8	SS	Medium dense becoming very dense, red-brown coarse sandy and coarse to fine gravelly clay, trace amounts of silt and medium to fine sand			
		38	SS				
		110/ 3"	SS		556.7		
15				Dolostone Bedrock	556.5		
20							
25							
30							
35							
40							

Completion Depth: 15.3 Ft.

Project No.: 92C2030-6

Project Name: Olin Plant RFI

Drilling Method: 8.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.

____ ft., After ____ hrs.

____ ft., After ____ hrs.

____ ft., After ____ hrs.

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LOG of Boring No. OBA-14B

DATE 4/21/94 SURFACE ELEVATION 568.9 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0		10	SS	Medium dense, light brown, dark brown, and gray coarse to medium sand and fine gravel, trace fine sand and silt, moist			
		10	SS				
5		4	SS	-becoming loose			
		6	SS		562.3		
		24	SS	Loose, dark gray, fine sandy silty coarse to medium sand and coarse to fine gravel consisting primarily of coal ash and crushed stone, wet	561.6		
10		56	SS	Stiff, brown-red silty clay, moist	559.4		
		82	SS	Dense to very dense, clayey coarse to fine sand and coarse to fine gravel, little silt	555.3		
15				Dolostone Bedrock	555.1		
20							
25							
30							
35							
40							

Completion Depth: 13.6 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 4.25" H.S.A.

Water Depth: ____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.
____ft.,After ____hrs.

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LOG of Boring No. OBA-15A

DATE 4/13/94 SURFACE ELEVATION 570.9 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0	45	SS	Crushed stone fill (0.5')	570.4		
	12	SS	Medium dense, black, silty coarse to medium sand and fine gravel, predominantly coal, moist	568.9		
5	6	SS	Firm to stiff, brown with orange mottling, clayey silt to silty clay becoming coarse sandy to fine gravelly clayey silt, coarse fraction sub-angular to sub-round			
	12	SS	- increasing clay content to silty clay and decreasing coarse fraction			
	9	SS		561.1		
10	13	SS	Stiff, red-brown, fine gravelly coarse to medium sandy clay	558.9		
	100/ 5"	SS	Very dense, gray silty angular gravel consisting of dolostone fragments	556.8		
15	50/ 2"	SS	Dolostone Bedrock	554.0		
20						
25						
30						
35						
40						

Completion Depth: 16.9 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 8.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

LOG of Boring No. OBA-16A

DATE 4/5/94 SURFACE ELEVATION 571.1 LOCATION Olin Buffalo Avenue Plant

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	SAMPLE TYPE	DESCRIPTION	STRATUM ELEVATION	OVA Readings (ppm)	Other Readings (ppm)
0				Asphalt Pavement (0.5')	570.6		
		16	SS	Medium dense, brown to black, silty corse to fine sand and fine gravel, frequent coal pieces, moist			
		7	SS		567.1		
5		5	SS	Stiff, brown, gray, and orange-brown with orange mottling, coarse sandy and fine gravelly clay, sub-rounded coarse fraction, trace organic matter	564.1		
		75/ 3"	SS	Dense, brown-gray, silty angular coarse to medium sand and coarse to fine gravel	561.8		
10		50/ 4"	SS	Dolostone Bedrock	561.6		
15							
20							
25							
30							
35							
40							

Completion Depth: 9.3 Ft.
Project No.: 92C2030-6
Project Name: Olin Plant RFI
Drilling Method: 8.25" H.S.A.

Water Depth: ____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.
____ ft., After ____ hrs.

Woodward-Clyde Consultants

Monitoring Well Rock Corings

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-1A**
Boring Offset
Surface Elevation 571.3
Date Start 6/21/89 Finish 6/21/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5								565.8				
6	6/21/89 RUN 1 5.5'-8.5'		0'/3'	(0%)	3'/3'	(100%)	NX	5.5	Medium to fine grained, medium to light gray, medium to thinly bedded dolomite, abundant thin stylolites, occasional thin brown beds, highly fractured	3		
7										11		
8										8		
								562.8		1		
								8.5				

General Notes:
- 100% water loss from onset of coring and reaming operations

Total Depth 8.5'
Rock Drilling 3'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-1A

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Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-1B**
Boring Offset
Surface Elevation 571.3
Date Start 6/22/89 Finish 6/23/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4								566.6				
5	6/22/89 RUN 1 4.7'-9.7'		0'/5'	(0%)	5'/5'	(100%)	NX	4.7	Medium to fine grained, medium to light gray, medium to thin bedded dolomite, abundant stylolites, occasional brownish layers where majority of fractures are observed, no vugs	8		
6										11		
7										6		
8										6		
9									- same, predominantly dark gray, increase in amount of vugs, large vugs with sphalerite crystal lining at 9.6'	3		
10	6/23/89 RUN 1 9.7'-13.3'		0.8'/3.6'	(22%)	3.6'/3.6'	(100%)	NX		- same, dark gray, dark brown, some vugs, occasional stylolites	3+		
11								560.3 11.0	Medium to fine grained, medium to dark brown massive dolomite, fine vugs throughout	11		
12										5		
13							NX	558.0		6		
14	RUN 2 13.3'-18.2'		2.8'/4.9'	(57%)	4.85'/4.9'	(99%)		13.3	Medium to fine grained, medium brown to medium/dark gray, massive dolomite, occasional vuggy intervals, occasional stylolites, highly vuggy from 13.6' to 14.2'	2		
15									- predominantly massive beyond 15', thick stylolite at 17.9', becoming medium to finely bedded beyond 17.9'	3		
16										3		
17										6		
18							NX			2		
19	RUN 3 18.2'-23.3'		2.45'/5'	(49%)	5'/5'	(100%)			-same, slump structure at 18.2'-18.5', vuggy at 19', gypsum seams/veins at 20.1', 20.5', 21.2', becoming more massive from 21.4' to 23.2'	8		

CONTINUED ON THE NEXT SHEET

General Notes:
- B-zone fracture between 19.5' and 21', 100% water loss

Total Depth 25.2'
Rock Drilling 20.5'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-1B

Woodward-Clyde Consultants

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-1B**
Boring Offset
Surface Elevation 571.3
Date Start 6/22/89 Finish 6/23/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21									SAME AS ABOVE	5		
22										2		
23										4		
24	RUN 4 23.3'-25.2'		1.15'/2' (58%)		2'/2' (100%)				-same, gypsum seam at 23.6', rugose corals after 24.8', large gypsum filled void at 24.8	3		
25								546.1 25.2		3		

General Notes:
- B-zone fracture between 19.5' and 21', 100% water loss

Total Depth 25.2'
Rock Drilling 20.5'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-1B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-1C/CD**
Boring Offset _____
Surface Elevation 571.3
Date Start 6/27/89 Finish 6/27/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19									CONTINUED ON THE NEXT SHEET			

General Notes:
- C-zone fracture at 33.5', 100% water loss

Total Depth 38.5'
Rock Drilling 13.5'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-1C/CD

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-1C/C D**
Boring Offset _____
Surface Elevation 571.3
Date Start 6/27/89 Finish 6/27/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21												
22												
23												
24								547.1				
	6/27/89 RUN 1		2.45'/4.5'	(54%)	4.4'/4.5'	(98%)	NX	24.2	GROUT PLUG			
25	24.2'-28.7'							546.3 25.0	Medium grained, medium/dark brown to medium gray, massive dolomite, frequent gypsum seams, gypsum filled voids and corals from 25' to 26.5'	2		
26									- gypsum seams becoming occasional and corals dissapper beyond 26.5'	3		
27								543.8		4		
28								27.5	Medium grained, light to medium brown, massive dolomite light brown zones are massive (no gypsum or corals)	2		
	RUN 2		3.5'/4.7'	(74%)	4.5'/4.7'	(96%)	NX		-same, moderaterly fractured			
29	28.7'-33.4'									4		
30									- same, now with occasional gypsum seams and stylolites prominent stylolite at 30.5'	1		
31										1		
32									- cluster of gypsum filled circular voids at 32'	5		
33										1		
	RUN 3		3.85'/5.1'	(75%)	4.9'/5.1'	(96%)	NX		- same, gypsum seam/stylolite at 35.6'			
34	33.4'-38.5'									0		
35										2		
36									- same, massive	1		
37										3		
38								532.8		3+		
								38.5				

General Notes:
- C-zone fracture at 33.5', 100% water loss

Total Depth 38.5'
Rock Drilling 13.5'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-1C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation	Job OLIN - RFI No. 88C2346-2	Boring Number OBA-2A
At ____ Ft. at Completion	Drilling Rig ACKER AD II	Boring Offset ____
At ____ Ft. after ____ hrs.	Operator Larry Schroder (Emp)	Surface Elevation 570.4
At ____ Ft. after ____ hrs.	Inspector Paul Mazierski (WCC)	Date Start 8/21/89 Finish 8/21/89
At ____ Ft. after ____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5								564.6				
6	8/21/89 RUN 1 5.8'-8.8'		0'/3'	(0%)	0'/3'	(0%)	NX	5.8	Predominantly fine grained, dark to light gray dolomite, occasional stylolites in massive fine grained portions, very soft in finely vuggy interval at about 7.3', rapid drilling advancement in this interval, highly fractured	8		
7										?		
8										?		
								561.6				
								8.8				

General Notes:

- Void noted at 7.3', 75% water loss

Total Depth 8.8'

Rock Drilling 3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-2A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-2B**
Boring Offset
Surface Elevation 570.5
Date Start 8/22/89 Finish 8/23/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
								564.6				
6	8/22/89 RUN 1 5.9'-10.9'		1.11'/5' (22%)		4.05'/5' (100%)		NX	5.9	Medium to fine grained, dark to light gray to brown dolomite, highly fractured for first 0.5', mottled appearance at 6.9' before a highly vuggy, brown, soft interval. Dark to medium gray dolomite with occasional vugs to the end of the run	Soft Interval		
7										4		
8												
9										5		
10												
								559.6		3		
11	8/23/89 RUN 1 10.8'-14.8'		0.75'/4' (19%)		3.75'/4' (94%)		NX	10.9	Fine grained, brown massive bedded dolomite, few stylolites, vuggy just before major fracture at 14.4', massive throughout run	6		
12												
13										4		
14										3		
								555.7		1		
15	RUN 2 14.8'-19.8'		1.3'/5' (26%)		4.5'/5' (90%)		NX	14.8	Medium to fine grained, light gray to light gray-brown mottled, medium bedded dolomite, occasional stylolites, vuggy for 0.5' before fracture at 18'	4		
16												
17										5		
18										5		
19									CONTINUED ON THE NEXT SHEET	2		
								550.7		3		

General Notes:
- Void noted at 7.7', 75% water loss (setting 4" casing) - Fracture noted at 14.5', 100% water loss - B-zone fracture (large void) noted between 19.1' and 19.7'

Total Depth 25.0'
Rock Drilling 19.1'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-2B

Woodward-Clyde Consultants

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-2B**
Boring Offset
Surface Elevation 570.5
Date Start 8/22/89 Finish 8/23/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21	RUN 3 19.8'-25'		2.2'/5.2'	(42%)	5.15'/5.2'	(99%)	NX	19.8	Medium to fine grained, light gray to brown dolomite, occasional stylolites, large calcite filled cavities and coral pieces, medium to massive bedding, more massive for first 1.6' and for last 0.3'	4		
22										3		
23										1		
24										4		
25								545.5 25.0		5		

General Notes:
- Void noted at 7.7', 75% water loss (setting 4" casing) - Fracture noted at 14.5', 100% water loss - B-zone fracture (large void) noted between 19.1' and 19.7'

Total Depth 25.0'
Rock Drilling 19.1'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-2B

Woodward-Clyde Consultants

Ground Water Observation	Job OLIN - RFI No. 88C2346-2	Boring Number OBA-2C/CD
At _____ Ft. at Completion	Drilling Rig ACKER AD II	Boring Offset _____
At _____ Ft. after _____ hrs.	Operator Larry Schroder (Emp)	Surface Elevation 570.3
At _____ Ft. after _____ hrs.	Inspector Paul Mazierski (WCC)	Date Start 8/29/89 Finish 8/29/89
At _____ Ft. after _____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19									CONTINUED ON THE NEXT SHEET			

General Notes:

- No major water bearing fractures encountered

Total Depth 50.3'

Rock Drilling 25.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-2C/CD

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-2C/CD**
Boring Offset _____
Surface Elevation 570.3
Date Start 8/29/89 Finish 8/29/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21												
22												
23												
24								545.7				
25	8/29/89 RUN 1 24.6'-29.7'		2.4'/5.1'	(47%)	5'/5.1'	(98%)	NX	24.6	GROUT PLUG	-		
								545.3	Fine grained, light brown, massive dolomite, moderately fractured, rare stylolites	3		
26								25.0		4		
27										3		
28								542.5				
								27.8	Medium to fine grained, light gray to brown dolomite, more mottled appearance, occasional stylolites and isolated coral pods	4		
29										3		
30	RUN 2 29.7'-34.2'		1.45'/4.5'	(32%)	4'/4.5'	(89%)	NX		- same, interbedded mottled fossiliferous dolomite and massive gray dolomite, mottled dolomite dominates highly fractured zone from 30.4' to 31.4'	Highly		
31										Fractured		
								538.5				
32								31.8	Medium to fine grained, light brown to gray, massive dolomite, slightly fractured	2		
33										2		
34	RUN 3 34.2'-39.2'		2'/5'	(40%)	5'/5'	(100%)	NX		- same, increase in occurence of coral fragments to 35.6'	1		
35										5		
								534.7				
36								35.6	Medium to fine grained, light to medium gray mottled dolomite, abundant isolated coral fragments, highly fractured, sphalerite microcrystals in tabulae of coral fragments	6		
37										7		
38										3		
39									CONTINUED ON THE NEXT SHEET	4		
							NX					

General Notes:
- No major water bearing fractures encountered

Total Depth 50.3'
Rock Drilling 25.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-2C/CD

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-2C/CD**
Boring Offset _____
Surface Elevation 570.3
Date Start 8/29/89 Finish 8/29/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
41	RUN 4 39.2'-44.2'		1.8'/5'	(36%)	5'/5'	(100%)			SAME AS ABOVE	4		
								528.5		2+		
42								41.8	Medium to fine grained, light brown to light gray massive dolomite, occasional stylolites, rare small coral fragments	4		
43										3		
44										2+		
45	RUN 5 44.2'-49.2'		4.2'/5'	(84%)	4.9'/5'	(98%)	NX			2		
46										2		
47										2		
48										3		
49										2		
50	RUN 6 49.2'-50.3'		0.48'/1.1'	(44%)	1.1'/1.1'	(100%)	NX			0		
								520.0				
								50.3				

General Notes:
- No major water bearing fractures encountered

Total Depth 50.3'
Rock Drilling 25.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-2C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation	Job OLIN - RFI No. 88C2346-2	Boring Number OBA-3A
At _____ Ft. at Completion	Drilling Rig ACKER AD II	Boring Offset _____
At _____ Ft. after _____ hrs.	Operator Larry Schroder (Emp)	Surface Elevation 569.9
At _____ Ft. after _____ hrs.	Inspector Paul Mazierski (WCC)	Date Start 6/30/89 Finish 6/30/89
At _____ Ft. after _____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14								555.6				
15	6/30/89 RUN 1 14.3'-17.4'		0.45'/3.1' (15%)		2.6'/3.1' (84%)		NX	14.3	Medium grained, medium gray-brown massive bedded dolomite, heavily fractured from 14.3' to 15.8', completely fractured from 15.5' to 15.8', irregular vugs with sphalerite and calcite infilling from 16.2' to 16.7'	Highly Fractured		
16										3		
17								552.5		1		
								17.4				

General Notes:

- 100% water loss from onset of coring operations - Large void noted at 15.7'

Total Depth 17.4'

Rock Drilling 3.1'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-3A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-3B
Boring Offset _____
Surface Elevation 569.9
Date Start 7/5/89 Finish 7/5/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14	7/5/89 RUN 1 14.05'-19.3'		1.15'/5.25' (22%)		4.65'/5.25' (89%)		NX	555.8 14.1	Medium to fine grained, medium gray to brown dolomite, pitting observed from 14' to 14.9', highly fractured from 15.2' to 16.5', especially between 15.8' and 16.5', coral fragments abundant in heavily fractured interval, more massive at end of run	2+ 9+ Highly Fractured 3+ 4+		
15												
16												
17												
18												
19							NX	550.6 19.3	CONTINUED ON THE NEXT SHEET	2		

General Notes:
- 100% water loss from onset of coring, void noted at 16' (setting 4" casing) - No major water bearing fractures encountered through completion of well

Total Depth 33.3'
Rock Drilling 19.25'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-3B

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-3B
Boring Offset .
Surface Elevation 569.9
Date Start 7/5/89 Finish 7/5/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21	7/7/89 RUN 1 19.3'-23.1'		3.45'/4.1'	(84%)	3.9'/4.1'	(95%)			Medium grained, medium gray to brown-gray, medium to massive bedded dolomite, slightly fractured, occasional stylolites, increase in vug and coral content between 21' and 21.8', more massive at end of run	1		
22										2		
23										3		
24	RUN 2 23.1'-28.3'		4.4'/5.2'	(85%)	4.9'/5.2'	(94%)			- same, massive bedding, fractured interval from 23.7' to 24.2', transition to an abundant coral zone after a prominent stylolite at 25.85'	2+		
25										2+		
26									- same, isolated coral fragments to end of run	3		
27										1		
28								541.6		1		
29	RUN 3 28.3'-33.3'		4.75'/5'	(95%)	4.9'/5'	(98%)	NX	28.3	Medium grained, medium to light gray dolomite, occasional concentration of vugs/coral, becoming more massive after 29.7'	0		
30										2		
31										3		
32										0		
33								536.6		0		
								33.3		0		

General Notes:
- 100% water loss from onset of coring, void noted at 16' (setting 4" casing) - No major water bearing fractures encountered through completion of well

Total Depth 33.3'
Rock Drilling 19.25'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-3B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-3C/CD**
Boring Offset _____
Surface Elevation 569.8
Date Start 7/11/89 Finish 7/11/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19									CONTINUED ON THE NEXT SHEET			

General Notes:
- No major water bearing fractures encountered

Total Depth 58.0'
Rock Drilling 25'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-3C/CD

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-3C/CD
Boring Offset _____
Surface Elevation 569.8
Date Start 7/11/89 Finish 7/11/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												
33	7/11/89 RUN 1 33'-38'		4.35'/5'	(87%)	4.6'/5'	(92%)	NX	536.8 33.0	Medium grained, medium brown, massive dolomite, little stylolites, rare small vugs, no coral fragments, some limited medium gray areas, very few calcite filled larger vugs, slightly fractured	0		
34										2		
35										0		
36										1		
37										2		
38	RUN 2 38'-43'		3.15'/5'	(63%)	4.9'/5'	(98%)	NX		- same, prominent stylolites at 39.5' and 39.8', becoming finely bedded before character change at 40', slightly fractured	1		
39								529.8	CONTINUED ON THE NEXT SHEET	1		

General Notes:
- No major water bearing fractures encountered

Total Depth 58.0'
Rock Drilling 25'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-3C/CD

Woodward-Clyde Consultants

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-3C/CD
Boring Offset ____
Surface Elevation 569.8
Date Start 7/11/89 Finish 7/11/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
41								40.0	Medium grained, medium to dark brown dolomite with occasional light gray limy seams and light brown-tan small irregular splotches, sandy adjacent to limy seams	3		
								528.7				
								41.1	Medium to coarse grained, medium to dark brown dolomite, abundant limy seams, very sandy from 41.6' to 41.9', ostracods	5		
42								527.7				
								42.1	Medium grained, medium brown to medium gray, massive dolomite, occasional stylolites and isolated gypsum filled vugs prominent stylolites at 43.75', 45.1', 46.35' and 47.5'	4		
43	RUN 3 43'-48'		5'/5'	(100%)	5'/5'	(100%)	NX			0		
44										1		
45										1		
46										1		
47										1		
								521.8				
48	RUN 4 48'-53'		4.7'/5'	(94%)	5'/5'	(100%)		48.0	Medium grained, medium to dark brown, massive dolomite, more mottled appearance starting at 47.4', small isolated pitted splotches, limited vuggy intervals, occasional stylolites, prominent stylolites at 48.55', 49.4', and 51.1'	1		
49										1		
50										0		
51										1		
52										1		
53	RUN 5 53'-58'		4.9'/5'	(98%)	5'/5'	(100%)			- same, prominent stylolites at 53.2', 55.95', and 57.2' marked change to more mottled dolomite after 57.2'	0		
54										1		
55										1		
56										1		
57										2		
								511.8				
58								58.0				

General Notes:
- No major water bearing fractures encountered

Total Depth 58.0'
Rock Drilling 25'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-3C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation	Job OLIN - RFI No. 88C2346-2	Boring Number OBA-4A
At _____ Ft. at Completion	Drilling Rig ACKER AD II	Boring Offset _____
At _____ Ft. after _____ hrs.	Operator Larry Schroder (Emp)	Surface Elevation 570.1
At _____ Ft. after _____ hrs.	Inspector Paul Mazierski (WCC)	Date Start 7/13/89 Finish 7/13/89
At _____ Ft. after _____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8								561.7				
9	7/13/89 RUN 1 8.4'-9.2'		- *		- *		NX	8.4	Fine to medium grained, medium gray to brown, fine to medium bedded dolomite	-		
10	RUN 2 9.2'-11.4'		- *		- *		NX			-		
11								558.7				
								11.4	SEE FIELD ROCK LOG FOR OBA-4B FOR FULLY RECOVERED CORE DESCRIPTION			

General Notes:

* Problems during coring operations - 100% water loss from onset of coring operations

Total Depth 11.4'

Rock Drilling 3'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-4A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-4B
Boring Offset
Surface Elevation 570.3
Date Start 7/17/89 Finish 7/17/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9								561.3				
10	7/17/89 RUN 1 9'-14'		3.15'/5' (63%)		4.85'/5' (95%)		NX	9.0	Fine grained, medium brown to gray dolomite, pinhole vugs throughout	6		
11								559.9 10.4	Fine to medium grained, medium brown to gray, medium to massive bedded dolomite, predominantly medium grained and massive, some isolated vuggy zones from 11.5' to 12.5', occasional irregular stylolites, rare coral fragments	4		
12										2		
13										1		
14	7/19/89 RUN 1 13.1'-18.1'		3.4'/5' (68%)		4.25'/5' (85%)		NX		- same, moderaterly fractured, occasional stylolites, rare vugs, no coral	1		
15										0		
16										5		
17										3		
18	RUN 2 18.1'-21'		1.9'/2.9' (66%)		2.85'/2.9' (98%)		NX		- same, some coral fragments and vugs between 18.7' and 20'	3		
19									CONTINUED ON THE NEXT SHEET	2		
										0		

General Notes:
- 100% water loss from onset of coring operations, fracture noted at 12.7'(setting 4" casing) - B-zone fracture noted at 16', 100% water loss

Total Depth 21.0'
Rock Drilling 12'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-4B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-4B**
Boring Offset _____
Surface Elevation 570.3
Date Start 7/17/89 Finish 7/17/89

DEPTH	CORE RUN FROM	CORE RUN TO	ROD INCH	ROD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21								549.3 / 21.0	SAME AS ABOVE	6		

General Notes:
- 100% water loss from onset of coring operations, fracture noted at 12.7'(setting 4" casing) - B-zone fracture noted at 16', 100% water loss

Total Depth 21.0'
Rock Drilling 12'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-4B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-4C/CD
Boring Offset
Surface Elevation 570.4
Date Start 7/24/89 Finish 7/24/89

DEPTH	CORE RUN FROM	CORE RUN TO	ROD INCH	ROD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19									CONTINUED ON THE NEXT SHEET			

General Notes:
- C-zone fracture noted at 25.2', 100% water loss

Total Depth 30.2'
Rock Drilling 8.7'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-4C/CD

Woodward-Clyde Consultants

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-4C/CD**
Boring Offset ____
Surface Elevation 570.4
Date Start 7/24/89 Finish 7/24/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
								549.5				
21	7/24/89 RUN 1 20.9'-25.2'		2.55'/4.3'	(59%)	4.15'/4.3'	(97%)	NX	20.9	GROUT PLUG	1		
								548.9				
22								21.5	Fine to medium grained, medium brown to dark gray, medium to massive bedded dolomite, some small coral colonies,vugs and stylolites throughout, large gypsum dike from 23.8' to 24'	3		
23										4		
24										2		
25												
	RUN 2 25.2'-30.2'		4.8'/5'	(96%)	4.95'/5'	(99%)	NX		- same, dominantly massive from 25.2' to 26.4' (no coral, few small vugs), becoming more irregular at 26.4', vugs more common, occasional coral fragments	1		
26										2		
27										1		
28										1		
29										1		
30								540.2				
								30.2				

General Notes:
- C-zone fracture noted at 25.2', 100% water loss

Total Depth 30.2'
Rock Drilling 8.7'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-4C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation	Job OLIN - RFI No. 88C2346-2	Boring Number OBA-5A
At ____ Ft. at Completion	Drilling Rig ACKER AD II	Boring Offset ____
At ____ Ft. after ____ hrs.	Operator Larry Schroder (Emp)	Surface Elevation 569.6
At ____ Ft. after ____ hrs.	Inspector Paul Mazierski (WCC)	Date Start 8/7/89 Finish 8/7/89
At ____ Ft. after ____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8								561.4				
9	8/7/89 RUN 1 8.2'-10.3'		0.45'/2.1'	(21%)	1.95'/2.1'	(93%)	NX	8.2	Fine to medium grained, medium gray to light brown dolomite, highly fractured, occasional stylolites, massive throughout	Highly Fractured		
10												
11	RUN 2 10.3'-11.4'		0'/1.1'	(0%)	1.0'/1.1'	(90%)	NX	558.2				
								11.4				

General Notes:

- 40% water loss from onset of coring operations, upwards of 80% loss by completion of coring, 100% water loss during reaming operations

Total Depth 11.4'

Rock Drilling 3.2'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-5A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-5B**
Boring Offset _____
Surface Elevation 569.7
Date Start 8/7/89 Finish 8/7/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8								561.4				
9	8/7/89 RUN 1 8.3'-13.3'		0'/5'	(0%)	5'/5'	(100%)	NX	8.3	Fine to medium grained, medium gray to brown dolomite, occasional isolated vuggy sections, medium to massive bedding, highly fractured, few stylolites	5+		
10										9		
11								558.9 10.8		5		
12								558.3 11.4	Fine to medium grained, dark gray, finely bedded dolomite with tan-brown irregular vuggy pods Fine to medium grained, light to medium brown dolomite, occasional thin stylolites	8		
13								556.4		6		
14	8/8/89 RUN 1 12.5'-15.9'		0.8'/3.4'	(24%)	2.8'/3.4'	(82%)	NX	13.3	Meidum grained, medium brown to medium gray dolomite, few stylolites, predominantly brown at beginning of run, becoming dominantly gray at end of run	1		
15										4		
16	RUN 2 15.9'-20.9'		3.8'/5'	(76%)	4.6'/5'	(92%)	NX		- same, large vug and fine contorted bedding prior to B-zone, possible slump structures	3		
17										1		
18								551.8 17.9	B-zone SECTION MISSING	3		
19								551.4 18.3	Fine to medium grained, medium brown to gray, fine to medium bedded dolomite, bedding absent after 19.3', dominantly massive after this CONTINUED ON THE NEXT SHEET	4		
										3		

General Notes:
- Fracture noted at 10.2', 100% water loss (setting 4" casing) - B-zone fracture noted at 17.9', 100% water loss

Total Depth 23.5'
Rock Drilling 15.2'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-5B

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-5B**
Boring Offset
Surface Elevation 569.7
Date Start 8/7/89 Finish 8/7/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
									SAME AS ABOVE	2		
								548.8				
21	RUN 3 20.9'-23.5'		1.8'/2.6'	(70%)	2.6'/2.6'	(100%)	NX	20.9	Medium grained, medium gray to brown dolomite, more mottled appearance than before, some isolated coral colonies, isolated vuggy zones and irregular stylolites	3		
22										4		
23										1		
								546.2				
								23.5				

General Notes:
- Fracture noted at 10.2', 100% water loss (setting 4" casing) - B-zone fracture noted at 17.9', 100% water loss

Total Depth 23.5'
Rock Drilling 15.2'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-5B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-5C/CD
Boring Offset
Surface Elevation 569.7
Date Start 8/10/89 Finish 8/10/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19									CONTINED ON THE NEXT SHEET			

General Notes:
- CD-zone fracture noted at 47.4', 100% water loss

Total Depth 52.2'
Rock Drilling 29.2'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-5C/CD

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-5C/CD
Boring Offset
Surface Elevation 569.7
Date Start 8/10/89 Finish 8/10/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21												
22												
23								546.7				
24	8/10/89 RUN 1 23'-27.8'		3.15'/4.8'	(66%)	4.8'/4.8'	(100%)	NX	23.0	Fine to medium grained, medium to dark gray dolomite, occasional stylolites and isolated vuggy areas, few tabulate coral fragments, large undulating stylolite at 25.4'	7+		
25										4		
26										3		
27										2		
28	RUN 2 27.8'-32.8'		3.6'/5'	(72%)	5'/5'	(100%)	NX		- same, more massive, vugs and coral fragments rare, few stylolites, gypsum dike at 30.2'	4		
29										0		
30								539.5		3		
31								30.2	Medium grained, medium gray to brown dolomite, some small coral colonies, stylolites and vuggy intervals, becoming predominantly light brown after 31.7' with increase in abundance of coral, vugs	3		
32										3		
33	RUN 3 32.8'-38'		3.05'/5.2'	(58%)	5.1'/5.2'	(98%)	NX		- same, becoming predominantly gray at 33.3', large coral colonies from 35.2' to 35.8', where coral fragments are found, dolomite is more dominantly brown colored	3		
34										2		
35										4		
36										3		
37									- same, becoming a more mottled gray-brown dolomite at 37.4'	2		
38	RUN 4 38'-43'		4.25'/5'	(85%)	5'/5'	(100%)	NX		- same, mottled appearance with abundant light brown fine to medium grained dolomite associated with semicircular coral colonies, gypsum and sphalerite crystals common in vugs and tabulae of coral	2		
39									CONTINUED ON THE NEXT SHEET	2		

General Notes:
- CD-zone fracture noted at 47.4', 100% water loss

Total Depth 52.2'
Rock Drilling 29.2'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-5C/CD

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-5C/CD
Boring Offset
Surface Elevation 569.7
Date Start 8/10/89 Finish 8/10/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
41									SAME AS ABOVE	3		
42										3		
43	RUN 5 43'-48'		4.3'/5' (86%)		5'/5' (100%)		NX	526.3		3+		
44								43.4	Medium grained, mottled brown-gray dolomite with abundant small coral poda and other fossil fragments, possible bioherm, predominantly stylolites at 46.5'	4		
45										2		
46										2		
47								523.2 46.5	Fine to medium grained, gray, massive dolomite, no vugs or fossil fragments, becoming more brown-gray toward end of run	2		
48	RUN 6 48'-52.2'		3.6'/4.2' (86%)		3.85'/4.2' (92%)		NX	521.7 48.0	Medium grained, predominantly brown, massive dolomite, gray areas have dendritic crystal pattern, no vugs or corals, rare stylolites, large calcite crystals at 51.8'	4		
49										1		
50										1		
51										2		
52								517.8 51.9	BROKEN UP IN CORE BARREL	2		
								517.5 52.2				

General Notes:
- CD-zone fracture noted at 47.4', 100% water loss

Total Depth 52.2'
Rock Drilling 29.2'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-5C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation	Job OLIN - RFI No. 88C2346-2	Boring Number OBA-6A
At _____ Ft. at Completion	Drilling Rig _____	Boring Offset _____
At _____ Ft. after _____ hrs.	Operator Larry Schroder (Emp)	Surface Elevation 569.5
At _____ Ft. after _____ hrs.	Inspector Paul Mazierski (WCC)	Date Start 8/14/89 Finish 8/14/89
At _____ Ft. after _____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5								564.4				
6	8/14/89 RUN 1 5.1'-8.1'		0'/3' (0%)		2.35'/3' (78%)		NX	5.1	Fine grained, light gray to light brown dolomite, highly fractured			
7										Highly Fractured		
8								561.4 8.1				

General Notes:

Total Depth 8.1'

Rock Drilling 3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-6A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-6B**
Boring Offset _____
Surface Elevation 569.9
Date Start 8/15/89 Finish 8/16/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5	8/15/89 RUN 1 4.9'-7.4'		0'/2.5'	(0%)	2.05'/2.5'	(82%)	NX	565.0 4.9	Fine grained, light brown to light gray dolomite, highly fractured, some stylolites and bedding observed in small segments			
6												
7								562.5 7.4		Highly Fractured		
8									UNABLE TO CORE, BROKEN CORE BARREL LIFTER, SEE OBA-6C/CD LOG			
9	-		-		-							
10	8/16/89 RUN 1 9.7'-13.2'		0.4'/3.5'	(11%)	3.5'/3.5'	(100%)	NX	559.5 10.4	Fine grained, light brown dolomite, pinhole vugs throughout, vugs very uniform in site (< 1 mm)	10		
11								558.2 11.7		6+		
12									Fine grained, light brown to light gray dolomite, some vugs of variable size, vug content decreasing to zero at end of run	8		
13	RUN 2 13.2'-18.2'		2.25'/5'	(45%)	4.9'/5'	(98%)	NX		- same, gradual transition from light gray, fine grained dolomite to light brown, medium grained dolomite across run, occasional stylolites, moderaterly fractured	3		
14										5		
15										4		
16										5		
17								553.0 16.9	Fine to medium grained, light brown to light gray finely bedded dolomite, differential weathering in bedding planes, some stylolites	5		
18								551.7		3		
19	RUN 3 18.2'-22.5'		0.95'/4.3'	(22%)	4.25'/4.3'	(99%)	NX	18.2	Fine to medium grained, light gray to light brown, fairly massive dolomite, occasional isolated vugs, rare stylolites and coral colonies	4		

CONTINUED ON THE NEXT SHEET

General Notes:
- B-zone fracture at 17.3', 100% water loss

Total Depth 22.5'
Rock Drilling 15.3'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-6B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-6B
Boring Offset _____
Surface Elevation 569.9
Date Start 8/15/89 Finish 8/16/89

DEPTH	CORE RUN FROM	CORE RUN TO	ROD INCH	ROD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21									SAME AS ABOVE	3		
22										6		
								547.4		2		
								22.5				

General Notes:
- B-zone fracture at 17.3', 100% water loss

Total Depth 22.5'
Rock Drilling 15.3'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-6B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-6C/CD**
Boring Offset
Surface Elevation 569.5
Date Start 8/16/89 Finish 8/18/89

DEPTH	CORE RUN FROM	CORE RUN TO	ROD INCH	ROD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4								565.0				
5	8/16/89 RUN 1 4.5'-6.1'		0'/1.6'	(0%)	1.4'/1.6'	(88%)	NX	4.5	Fine grained, light gray dolomite, highly fractured, bedding noted in small fragments	Highly Fractured		
6	RUN 2 6.1'-9.5'		0'/3.4'	(0%)	3.4'/3.4'	(100%)	NX		- same, medium grained, finely bedded in short intervals, occasional stylolites	6		
7										5		
8										7		
9										3		
10								560.0				
11								9.5				
12												
13												
14												
15												
16												
17												
18												
19									CONTINUED ON THE NEXT SHEET			

General Notes:
- No major water bearing fractures encountered

Total Depth 48.1'
Rock Drilling 31.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-6C/CD

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-6C/CD**
Boring Offset _____
Surface Elevation 569.5
Date Start 8/16/89 Finish 8/18/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21								547.7				
22	8/18/89 RUN 1 21.8'-27'		2.65'/5.2'	(51%)	4.9'/5.2'	(94%)	NX	21.8 547.0 22.5	GROUT PLUG Fine to medium grained, medium gray to light brown, massive bedded dolomite, occasional irregular stylolites, some gypsum filled vugs, large stylolite with organic staining at 24.4'	1 5		
23												
24										3		
25										2		
26										1		
27	RUN 2 27'-32'		3.65'/5'	(73%)	5'/5'	(100%)	NX		- same, becoming a mottled brown-gray dolomite after a prominent stylolite at 29.2'	1		
28										2		
29								540.3 29.2	Fine to medium grained, mottled medium gray-brown dolomite with isolated patches of gypsum/sphalerite filled vugs and irregular stylolites	3		
30										1		
31									- breccia/slump structures with large calcite crystals from 31.1' to 31.6'	3		
32	RUN 3 32'-37'		2.65'/5'	(53%)	5'/5'	(100%)	NX		- same, more massive from 32' to 33', after 33' more sucrosic in appearance with increase in vug content, occasional isolated coral pods after 34', abundant coral between 35' and 36'	1		
33										3		
34										4		
35										6		
36										4		
37	RUN 4 37'-42'		2.6'/5'	(52%)	5'/5'	(100%)	NX		- same, very variable in structure/composition, abundant isolated tabulate coral masses, large gypsum veins at 39.2', irregular stylolites, very mottled appearance from 39.7' to 41.4'	3		
38										6		
39									CONTINUED ON THE NEXT SHEET	5		

General Notes:
- No major water bearing fractures encountered

Total Depth 48.1'
Rock Drilling 31.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-6C/CD

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-6C/CD**
Boring Offset _____
Surface Elevation 569.5
Date Start 8/16/89 Finish 8/18/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
41									SAME AS ABOVE	4		
										1		
42	RUN 5 42'-47'		2'/5'	(40%)	5'/5'	(100%)	NX	527.5 42.0	Fine to medium grained, light brown to light gray mottled, fossiliferous dolomite, abundant coral colonies and other fossil fragments from 42.3' to 43', large calcite crystals at 44.5'	4		
43										3		
44										5		
45										4		
46										3		
47	RUN 6 47'-48.1'		1.1'/1.1'	(100%)	1.1'/1.1'	(100%)	NX			1		
48								521.4 48.1				

General Notes:
- No major water bearing fractures encountered

Total Depth 48.1'
Rock Drilling 31.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-6C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-7A**
Boring Offset _____
Surface Elevation 571.5
Date Start 6/6/89 Finish 6/6/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5								566.0				
6	6/6/89 RUN 1 5.5'-7.2'		0'/1.7'	(0%)	0.95'/1.7'	(56%)	NX	5.5	Fine to medium grained, light to medium brown, fine to medium bedded dolomite, abundant thin stylolites, heavily fractured	Highly Fractured		
7										11		
8	RUN 2 7.2'-8.5'		0'/1.3'	(0%)	1.3'/1.3'	(100%)	NX	563.0		5		
								8.5				

General Notes:
- 100% water loss at 6.5' while reaming

Total Depth 8.5'
Rock Drilling 3'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-7A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-7B**
Boring Offset _____
Surface Elevation 571.5
Date Start 6/12/89 Finish 6/13/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5								566.0		2		
6	6/12/89 RUN 1 5.5'-10.7'		3.45'/5.2'	(66%)	5.1'/5.2'	(98%)	NX	5.5	CONCRETE FOUNDATION (OLD DRUM STORAGE AREA: CSA-3)	2		
7										1		
8										2		
9								562.4		2		
10								9.1	Fine to medium grained, medium to dark brown to gray, fine to massive bedded dolomite, finely bedded from 9.1' to 10', vuggy interval from 10.4' to 10.7', occasional stylolites	2		
11	6/13/89 RUN 1 10.5'-13.3'		0.95'/2.8'	(34%)	2.45'/2.8'	(88%)	NX		- same, becoming predominantly light brown with fine pinhole vugs from 12.2' to 13.3'	4+		
12										8		
13								558.2		3		
14	RUN 2 13.3'-18.2'		2.55'/4.9'	(52%)	4.8'/4.9'	(98%)	NX	13.3	Fine to medium grained, medium to dark brown to gray, massive dolomite, occasional stylolites and limited vuggy intervals, becoming finely bedded after a prominent stylolite at 18.7', moderately fractured	7		
15										3		
16										3		
17										5		
18							NX			3		
19	RUN 3 18.2'-23.2'		3'/5'	(60%)	5'/5'	(100%)			- same, highly fractured from 20.8' to 21', occasional calcite filled vugs with sphalerite crystals after 21', dark gray vuggy interval from 22.5' to 23'	2		

CONTINUED ON THE NEXT SHEET

General Notes:
- B-zone fracture noted at 19.8', 100% water loss

Total Depth 24.8'
Rock Drilling 19.3'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-7B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-7B
Boring Offset _____
Surface Elevation 571.5
Date Start 6/12/89 Finish 6/13/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21									SAME AS ABOVE	2+		
22										5		
23										6		
	RUN 4		0.5'/1.6'		1.5'/1.6'		NX			5+		
24	23.2'	24.8'	(31%)		(94%)			546.7		3		
								24.8				

General Notes:
- B-zone fracture noted at 19.8', 100% water loss

Total Depth 24.8'
Rock Drilling 19.3'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-7B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-7C/CD**
Boring Offset _____
Surface Elevation 571.7
Date Start 6/20/89 Finish 6/20/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19									CONTINUED ON THE NEXT SHEET			

General Notes:
- Potential fracture noted in core at 27', no observed water loss - C-zone fracture noted at 34.8', 100% water loss

Total Depth 40.0'
Rock Drilling 15.5'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-7C/CD

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-7C/CD**
Boring Offset _____
Surface Elevation 571.7
Date Start 6/20/89 Finish 6/20/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21												
22												
23												
24								547.2				
25	6/20/89 RUN 1 24.5'-28'		2.5'/3.5'	(71%)	3.4'/3.5'	(97%)	NX	24.5 546.7 25.0	GROUT PLUG Medium grained, medium to dark brown to gray, massive dolomite, occasional stylolites and calcite seams, some coral fragments ranging from large colonies with well developed tabulae to irregular mineralized coral lenses,fractured in areas where corals are abundant	1		
26										6		
27										0		
28	RUN 2 28'-33'		4.7'/5'	(94%)	5'/5'	(100%)	NX		- same, occasional small calcite filled voids, occasional stylolites, massive throughout run	3		
29										1		
30										0		
31										1		
32										2		
33	RUN 3 33'-38'		3.8'/5'	(76%)	4.8'/5'	(96%)	NX		- same, large calcite seams at 33.8' and 36.8', finely bedded from 34' to 34.5', highly fractured around 34' and 34.8'	2		
34										7+		
35										1		
36										3		
37										1		
38	RUN 4 38'-40'		2'/2'	(100%)	2'/2'	(100%)	NX		- same, some small coral pods	0		
39								531.7	CONTINUED ON THE NEXT SHEET	0		

General Notes:
- Potential fracture noted in core at 27', no observed water loss - C-zone fracture noted at 34.8', 100% water loss

Total Depth 40.0'
Rock Drilling 15.5'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-7C/CD

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-7C/CD**
Boring Offset
Surface Elevation 571.7
Date Start 6/20/89 Finish 6/20/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
								40.0				

General Notes:
- Potential fracture noted in core at 27', no observed water loss - C-zone fracture noted at 34.8', 100% water loss

Total Depth 40.0'
Rock Drilling 15.5'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-7C/CD

Woodward-Clyde Consultants

Sheet 1 of 1

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-8A**
Boring Offset _____
Surface Elevation 570.7
Date Start 7/25/89 Finish 7/25/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7								563.3				
8	7/25/89 RUN 1 7.4'-9.7'		0.4'/2.3'	(17%)	1.9'/23'	(83%)	NX	7.4	Fine to medium grained, light to medium gray, thin to medium bedded dolomite, abundant gently undulating to finely serated stylolites, heavily fractured			
9										Highly Fractured		
10	RUN 2 9.7'-10.5'		0'/0.8'	(0%)	0.65'/0.8'	(81%)	NX	560.2				
								10.5				

General Notes:
- 100% water loss from onset of coring operations

Total Depth 10.5'
Rock Drilling 3.1'

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-8A

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-8B**
Boring Offset _____
Surface Elevation 570.6
Date Start 7/26/89 Finish 7/26/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1												
2												
3												
4												
5												
6												
7								563.1				
8	7/26/89 RUN 1 7.5'-12.5'		?*		?*		NX	7.5	Fine to medium grained, medium gray to brown, thin to medium bedded dolomite, abundant stylolites, finely bedded throughout majority of recovered core, highly fractured			
9												
10										Highly Fractured		
11												
12	7/28/89 RUN 1 11.7'-13.8'		0.71'/2.1'	(33%)	1.6'/2.1'	(76%)	NX		- same, occasional vugs from 12.5' to 13.4'			
13								556.8		6		
14	RUN 2 13.8'-18.6'		2.95'/4.8'	(61%)	4.8'/4.8'	(100%)	NX	13.8	Fine to medium grained, medium gray to brown, medium bedded to massive dolomite, pinhole vugs from 13.8' to 15.3', predominantly brown in vuggy sections, more gray and massive after 15.3', moderately fractured	2		
15										5		
16										2		
17										4		
18								552.0		0		
19	RUN 3 18.6'-21.7'		2.1'/3.1	(68%)	2.9'/3.1'	(93%)	NX	18.6	Medium grained, medium to dark gray to brown, fine to massive bedded dolomite, massive to 20.1', then finely bedded to fractured interval at 20.9', gently undulating beds with	0		

General Notes:

* Core barrel lifter broke during coring operations, lost some of core down hole - 100% water loss from onset of coring and reaming operations (setting 4" casing) - B-zone fracture noted at 20.1', 100% water loss

Total Depth 25.0'
Rock Drilling 17.5'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-8B

Woodward-Clyde Consultants

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-8B**
Boring Offset
Surface Elevation 570.6
Date Start 7/26/89 Finish 7/26/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED OIP
21									stylolites, gradual change to massive bedding from fractured interval to end of run	3+		
								548.9		2+		
22	RUN 4 21.7'-25'		3.25'/3.3'	(98%)	3.25'/3.3'	(98%)	NX	21.7	Fine to medium grained, dark to medium gray to brown, massive dolomite, becoming more irregular in structure beyond 24', several coral pods at 24', occasional stylolites, isolated vuggy zones	1		
23										2		
24										0		
25								545.6				
								25.0				

General Notes:

* Core barrel lifter broke during coring operations, lost some of core down hole - 100% water loss from onset of coring and reaming operations (setting 4" casing) - B-zone fracture noted at 20.1', 100% water loss

Total Depth 25.0'
Rock Drilling 17.5'

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-8B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-8C/CD**
Boring Offset
Surface Elevation 570.6
Date Start 7/27/89 Finish 8/2/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1–7								563.1				
8–10	7/27/89 RUN 1 7.5'-10.8'		0'/3.3'	(0%)	2.5'/3.3'	(76%)	NX	7.5	Fine to medium grained, medium to dark gray, thin to medium bedded dolomite, highly fractured abundant stylolites, thinly bedded throughout	Highly Fractured		
11–12	RUN 2 10.8'-12.6'		0.35'/1.8'	(19%)	1.8'/1.8'	(100%)	NX	559.8 10.8	Medium grained, medium to dark gray, medium to massive bedded dolomite, some isolated vugs after 11.5', more massive than run 1	4 2		
13–19								558.0 12.6	CONTINUED ON THE NEXT SHEET			

General Notes:
- 100% water loss at 10' during coring and reaming operations (setting 6" casing) - CD-zone fracture noted at 46.5', 100% water loss

Total Depth 50.0'
Rock Drilling 31.1

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-8C/CD

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number **OBA-8C/CD**
Boring Offset
Surface Elevation 570.6
Date Start 7/27/89 Finish 8/2/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
21												
22												
23												
24	8/2/89 RUN 1 24'-28.2'		1.8'/4.2'	(43%)	3.9'/4.2'	(93%)	NX	546.6 24.0	GROUT PLUG			
25								545.6 25.0	Fine to medium grained, medium to dark gray to brown, fine to massive bedded dolomite, finely bedded with calcite filled voids in highly fractured area centered around 26', large vug at 27'	7		
26										5		
27								543.6 27.0	Fine to medium grained, mottled medium to dark gray and brown dolomite, brown coral pods abundant, some stylolites, isolated vugs and calcite filled voids	4		
28	RUN 2 28.2'-33.2'		1.5'/5'	(30%)	5'/5'	(100%)	NX		- same, decrease in coral abundance from 28.5' to 29.7'	6		
29										6+		
30								540.9 29.7	Fine to medium grained, medium gray to brown, massive dolomite, occasional limited thinly bedded zones where fracturing is observed, occasional calcite filled voids and stylolites, small isolated coral colonies, moderately fractured	6		
31										2		
32										3		
33	RUN 3 33.2'-38.2'		4.6'/5'	(92%)	5'/5'	(100%)	NX		- same, large calcite filled void at 33.3', slightly fractured	1		
34										2		
35										2		
36										5+		
37										1		
38	RUN 4 38.2'-43.2'		3.95'/5'	(79%)	4.9'/5'	(100%)	NX		- same, thinly bedded fractured zones not as evident, occasional mottled zones with small brown coral pods, slightly fractured	1		
39									CONTINUED ON THE NEXT SHEET	2		

General Notes:

- 100% water loss at 10' during coring and reaming operations (setting 6" casing) - CD-zone fracture noted at 46.5', 100% water loss

Total Depth 50.0'

Rock Drilling 31.1

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-8C/CD

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job OLIN - RFI No. 88C2346-2
Drilling Rig ACKER AD II
Operator Larry Schroder (Emp)
Inspector Paul Mazierski (WCC)

Boring Number OBA-8C/CD
Boring Offset
Surface Elevation 570.6
Date Start 7/27/89 Finish 8/2/89

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY INCH	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
41									SAME AS ABOVE	3		
42										2		
43										2		
	RUN 5 43.2'-45'		1'/1.8'	(56%)	1.8'/1.8'	(100%)	NX		- same, several large calcite filled voids between 43.2' and 43.5', moderately fractured	1		
44										3		
45								525.6				
	8/3/89 RUN 1 45'-50'		0.7'/5'	(14%)	4.45'/5'	(89%)	NX	45.0	Fine to medium grained, medium to dark gray, medium to massive bedded dolomite, some brown mottling, occasional stylolites and calcite filled voids	8		
46										7		
47										6		
48										7+		
49										2		
50								520.6				
								50.0				

General Notes:

- 100% water loss at 10' during coring and reaming operations (setting 6" casing) - CD-zone fracture noted at 46.5', 100% water loss

Total Depth 50.0'

Rock Drilling 31.1

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-8C/CD

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator K. Swinnitch (SJB)
Inspector Frank Garbe

Boring Number **OBA-11B**
Boring Offset _____
Surface Elevation 571.0
Date Start 12/2/93 Finish 12/2/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1									See log of soil boring OBA-11A for description of overlying soil			
2												
3												
4												
5												
6												
7												
8								562.5				
9	12/02/93 Run #1 8.5'-13.5'		36.5"/60" = 61%		4.5'/5.0' = 90%		HQ	8.5	Brown-gray to gray, slightly weathered to highly weathered on fracture faces and in voids, thick bedded, fine to medium grained, fossiliferous calcitic Dolostone. Occassional stylolites and carbonaceous partings, significant secondary porosity due to dissolution of calcite. Predominant fossil is Favosites.	2		
10										3		
11										3		
12								559.5 11.5	Becoming highly porous, dolomitic limestone bioherm (Favosites)	5		
13								558.6 12.4	Becoming less fossiliferous and less porous	2		
	Run #2						HQ		Continued on Sheet 2	2		

General Notes:

Total Depth 25.0'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-11B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator K. Swinnitch (SJB)
Inspector Frank Garbe

Boring Number **OBA-11B**
Boring Offset _____
Surface Elevation 571.0
Date Start 12/2/93 Finish 12/2/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
	Run #2 13.5'-15.0'		16.5"/18"	= 92%	1.5'/1.5'	= 100%			Same as Above	1		
15	Run #3 15.0'-20.0'		28"/60"	= 47%	4.5'/5.0'	= 90%	HQ			3		
16										1		
17										0		
18								552.9 18.1	Becoming thin bedded, stromatolitic calcitic Dolostone. Void noted approximately 18.0' to 18.2'. - Highly fractured 18.5' to 18.8'	Highly Fractured		
19									- Highly fractured 19.5 to 20.0'	5		
20	Run #4 20.0'-25.0'		30.5"/60"	= 51%	4.6'/5.0'	= 92%	HQ	550.7 20.3	Becoming massive, with large solutional pores (1" to 3") from weathering of calcitic fossils - Highly fractured 20.8' to 21.1'	Highly Fractured		
21									- Highly fractured 21.4' to 21.7' with void 21.5' to 21.65'	Highly Fractured		
22										Highly Fractured		
23									- Highly fractured 22.8' to 23.0' - Highly fractured 23.4' to 23.7'	Highly Fractured		
24								547.2 23.8	Becoming thickly bedded, sacchroidal calcitic dolostone	2		
25								546.0 25.0	LOCKPORT FORMATION			

General Notes:

Total Depth 25.0'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-11B

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Ken Swinnitch
Inspector Frank Garbe

Boring Number **OBA-11C**
Boring Offset ____
Surface Elevation 571.0
Date Start 12/6/93 Finish 12/6/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
15									See logs of soil boring OBA-11A and rock coring OBA-11B for descriptions of overlying soils and rock			
16												
17												
18												
19												
20												
21												
22								548.5				
23	Run #1 22.5'-25.0'		11"/30" = 37%		2.2'/2.5' = 88%		HQ	22.5	Dark gray, weathered, medium bedded, fossiliferous Limestone. Predominant fossil is Favosites.	2		
								547.6		4		
24								23.4	Medium to dark gray, medium to massive bedded, weathered to fresh, medium grained, calcitic Dolostone, little vuggy and pin-hole solution pits, trace fossiliferous, occassional stylolites and carbonaceous partings	2		
25	Run #2 25.0'-30.0'		57"/60" = 95%		4.95'/5.0' = 99%		HQ			0		
26										1		
27										1		

Continued on Next Page

General Notes:

Total Depth 48.0'
Rock Drilling ____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-11C

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Ken Swinnitch
Inspector Frank Garbe

Boring Number **OBA-11C**
Boring Offset _____
Surface Elevation 571.0
Date Start 12/6/93 Finish 12/6/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
29								541.9 29.1	As Above Becoming oolitic calcitic Dolostone	1 2		
30	Run #3 30.0'-35.0'		60"/60" = 100%		5.0'/5.0' = 100%		HQ			0		
31										0		
32										1		
33										0		
34								536.5 34.5		1		
35	Run #4 35.0'-40.0'		59"/60" = 98%		4.9'/5.0' = 98%		HQ		Becoming brownish-gray, medium to fine grained, medium to thick bedded, calcitic Dolostone. Medium grained beds show increased porosity.	0		
36										0		
37								533.4 37.6	Becoming gray, fine grained, argillaceous Dolostone	1		
38								533.0 38.0	Becoming brownish-gray, medium grained, medium to thick bedded, vuggy, fossiliferous calcitic Dolostone, occassional stylolitic and oolitic beds	1		
39										0		
40	Run #5 40.0'-45.0'		50.0"/60" = 84%		4.65'/5.0' = 93%		HQ			0		
41										0		

Continued on Next Page

General Notes:

Total Depth 48.0'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-11C

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Ken Swinnitch
Inspector Frank Garbe

Boring Number **OBA-11C**
Boring Offset _____
Surface Elevation 571.0
Date Start 12/6/93 Finish 12/6/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
43								528.8 42.2	Becoming medium to thin bedded, oolitic and stylolitic calcitic Dolostone, trace to little fossiliferous	1		
44										3		
45	Run #6 45.0'-48.0'		35"/36" = 97%		3.0'/3.0' = 100%		HQ			2		
46										1		
47									LOCKPORT FORMATION	0		
48								523.0 48.0		1		

General Notes:

Total Depth 48.0'
Rock Drilling _____

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-11C

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Dan Grigsby (SJB)
Inspector Frank Garbe

Boring Number **OBA-12B**
Boring Offset _____
Surface Elevation 571.5
Date Start 12/20/93 Finish 12/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1									See soil boring log and rock coring log of OBA-12C for description of overlying soil and rock.			
2												
3												
4												
5								566.2				
	Run #1 5.3'-9.6'		See Notes		See Notes		HQ	5.3	Grout			
6												
7												
8												
9								562.4				
								9.1	Medium gray, fine grained, slightly weathered, medium to thin bedded, calcitic Dolostone, little fossiliferous, occasional stylolites	4		
	Run #2 9.6'-14.6'		32"/60" = 53%		4.9'/5.0' = 98%		HQ	561.8 9.7	Medium gray, weathered, fossiliferous calcitic Dolostone, frequent solution pitting.	6		
10								560.9				
								10.6	Becoming medium to fine grained, less fossiliferous	2		
11												
12										4		
								558.8				
								12.7	Becoming fossiliferous			
13								558.1		Highly Fractured		
								13.4	Description on Next Page			

General Notes:

Total Depth 19.6'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-12B

Woodward-Clyde Consultants

Ground Water Observation	Job Olin Plant RFI No. 4E02704	Boring Number OBA-12B
At ____ Ft. at Completion	Drilling Rig CME-550	Boring Offset ____
At ____ Ft. after ____ hrs.	Operator Dan Grigsby (SJB)	Surface Elevation 571.5
At ____ Ft. after ____ hrs.	Inspector Frank Garbe	Date Start 12/20/93 Finish 12/20/93
At ____ Ft. after ____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
									Becoming brown-gray, thin bedded, fine grained, stromatolitic calcitic Dolostone, slightly oolitic. Highly fractured 13.4' to 15.3'.	Highly Fractured		
15	Run #3 14.6'-19.6'		Appx. 36"/60" = 60%		Appx. 5.0'/5.0' = 100%		HQ	556.2 15.3	Becoming medium to fine grained, medium to thick bedded, fossiliferous dolomitic Limestone, occassional vugs and stylolites	Highly Fractured		
16										5		
17										1		
18										3		
									LOCKPORT FORMATION			
19										1		
								551.9 19.6				

Notes:
1) Recovery and RQD for Run #1 not calculated. Rock was cored in the bottom 0.5 feet of the run.
2) Recovery and RQD for Run #3 are approximations. Rock was too highly fractured to accurately measure these parameters.

General Notes:

Total Depth 19.6'

Rock Drilling ____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-12B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Dan Grigsby (SJB)
Inspector Frank Garbe

Boring Number **OBA-12C**
Boring Offset _____
Surface Elevation 571.5
Date Start 12/15/93 Finish 12/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1									See Log of Soil Boring OBA-12C for description of overlying soil.			
2												
3												
4								567.3				
5	Run #1 4.2'-9.2'		21.5"/60" = 36%		4.6'/5.0' = 92%		HQ	4.2	Gray, fine grained, medium bedded, calcitic Dolostone, slightly fossiliferous, occassional stylolites	Highly Fractured 2		
6								566.1 5.4	Becoming medium to fine grained, more fossiliferous and solution pits, moderately vuggy	2		
7								564.7 6.8	Becoming highly fossiliferous and frequent pin-hole solution pits	4		
8								563.9 7.6	Becoming fine grained, less fossiliferous and solution pitting.	6		
9									- large solution void			
10								562.3 9.2	See Log of Rock Coring OBA-12B for description of rock 9.2' to 18.4			
11												
12												
13									Continued on Next Page			

General Notes:

Total Depth 45.0'
Rock Drilling _____

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-12C

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Dan Grigsby (SJB)
Inspector Frank Garbe

Boring Number **OBA-12C**
Boring Offset ____
Surface Elevation 571.5
Date Start 12/15/93 Finish 12/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
15									See Log of Rock Coring OBA-12B for description of rock 9.2' to 18.4'			
16												
17												
18								553.1				
19	Run #2 18.4'-20.0'		15.5"/19" = 82%		1.6'/1.6' = 100%		HQ	18.4	Dark gray to brown-gray, medium to fine grained, medium to thick bedded, dolomitic Limestone, little fossiliferous, some solutional voids, trace oolites	0		
20	Run #3 20.0'-25.0'		49"/60" = 82%		4.7'/5.0' = 94%			551.5 20.0	Becoming fossiliferous, occassional vug	4		
21								550.7 20.8	Medium to dark gray, thick bedded, slightly weathered, Dolostone, some pin-hole solution pits, stylolites, little calcite, occassional oolitic and vuggy	2		
22										1		
23										3		
24								547.7 23.8	Becoming medium grained, calcitic Dolostone	0		
25	Run #4 25.0'-30.0'		59"/60" = 98%		5.0'/5.0' = 100%		HQ	546.3 25.2	Becoming predominantly oolitic	3		
26										1		
27										1		
										2		
									Continued on Next Page			

General Notes:

Total Depth 45.0'
Rock Drilling ____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-12C

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Dan Grigsby (SJB)
Inspector Frank Garbe

Boring Number **OBA-12C**
Boring Offset _____
Surface Elevation 571.5
Date Start 12/15/93 Finish 12/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
									As Above	1		
								542.5				
29								29.0	Becoming fossiliferous and sacchroidal, increasing gypsum vugs, occassional oolitic	1		
30	Run #5 30.0'-35.0'		57"/60" = 95%		4.75'/5.0' = 95%		HQ			0		
									- with carbonaceous partings and stylolites			
31										0		
32										0		
33										1		
34										1		
35	Run #6 35.0'-40.0'		60"/60" = 100%		5.0'/5.0' = 100%		HQ			0		
36										0		
37										0		
38										0		
39										1		
40	Run #7 40.0'-45.0'		54"/60" = 90%		5.0'/5.0' = 100%		HQ			0		
41								530.1	-Large gypsum vug	1		
								41.4	Becoming coarse to medium grained and very fossiliferous			

General Notes:

Total Depth 45.0'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-12C

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-550
Operator Dan Grigsby (SJB)
Inspector Frank Garbe

Boring Number **OBA-12C**
Boring Offset _____
Surface Elevation 571.5
Date Start 12/15/93 Finish 12/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
43									As Above	0		
										1		
44									LOCKPORT FORMATION	3		
45								526.5 / 45.0	-Becoming fine grained			

General Notes:

Total Depth 45.0'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-12C

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-13B**
Boring Offset ____
Surface Elevation 572.0
Date Start 4/8/94 Finish 4/19/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
15									See log of soil boring OBA-13A for description of overlying soils			
16												
								555.1				
17	04/08/94 Run #1 16.9'-20.9'		37"/48" = 77%		3.6'/4.0' = 90%		HQ	16.9	Gray, thick to medium bedded, fresh to moderately weathered, interstratified argillaceous and fine sandy calcareous Dolostone, numerous pinhole pores, occassional gypsum vugs, stylolites, and carbonaceous partings, native bituminous staining	2		
18										5		
								553.0				
19								19.0	Gray, thick bedded, slightly weathered, fossiliferous calcareous Dolostone, predominant fossil is Favosites, gyptiferous, occassional stylolites and carbonaceous partings. Moderate secondary porosity associated with fossils. Bituminous stain 19.15 to 19.25 feet, 19.6 to 19.9 feet, and 20.9 feet.	1		
20										0		
21	04/19/94 Run #2 20.9'-29.7'		86"/105" = 82%		8.8'/8.8' = 100%		HQ	550.9				
								21.1	Medium to dark gray, medium bedded, carbonaceous Dolostone	Highly Fractured		
								550.1				
22								21.9	Medium to light gray, thick to massively bedded, fresh to slightly weathered, medium to fine sandy calcareous Dolostone, moderately fossiliferous, numerous pinhole pores, occassionally bituminous.	Highly Fractured		
23										2		
24										1		
								547.3				
25								24.7	Medium to light gray, massive, slightly weathered, fossiliferous calcareous Dolostone, predominant fossil Favosites, occassional gypsum vug, high secondary porosity associated with fossils.	0		
26										0		
27										0		
									Continued on Next Page			

General Notes:

Total Depth 29.7'
Rock Drilling ____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-13B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-13B**
Boring Offset _____
Surface Elevation 572.0
Date Start 4/8/94 Finish 4/19/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
29			86"/105" = 82%		8.8'/8.8' = 100%			542.3 29.7	As Above LOCKPORT FORMATION	0 0		

General Notes:

Total Depth 29.7'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-13B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-13C**
Boring Offset _____
Surface Elevation 572.0
Date Start 4/26/94 Finish 4/26/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
								543.6	See log of rock core for OBA-13B for description of overlying rock			
	04/26/94 Run #1		104"/120" = 87%		10.0'/10.0' = 100%		HQ	28.4	Medium to light gray, thickly to massively bedded, fossiliferous calcareous Dolostone, predominant fossil Favosites, high secondary porosity associated with fossils, occassional gypsum vug	0		
29	28.4'-38.4'									0		
30										0		
31										2		
32										1		
33										1		
								538.1				
34								33.9	Medium gray, fresh to slightly weathered, fine to medium grained sacchroidal Dolostone, occassional stylolite and fossiliferous beds, trace bituminous	1		
35										Highly Fractured		
36								535.7		1		
								36.3	Medium to light gray, medium to massively bedded, fossiliferous calcareous Dolostone, predominant fossil Favosites, high secondary porosity associated with fossils, occassional carbonaceous partings.			
37										1		
38										0		
	Run #2		120"/120"		10.0'/10.0'		HQ					
39	38.4'-48.4'		= 100%		= 100%					1		
40										0		
41										0		

Continued on Next Page

General Notes:

Total Depth 48.4'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-13C

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-13C**
Boring Offset _____
Surface Elevation 572.0
Date Start 4/26/94 Finish 4/26/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
	Run #2 38.4'-48.4'		120"/120" = 100%		10.0'/10.0' = 100%			529.9 42.1	Gray-brown, massive, fresh, medium grained Dolostone, occassional stylolite and gypsum vug.	1		
43										0		
44										0		
45										1		
46										1		
47									LOCKPORT FORMATION	1		
48										0		
								523.6 48.4				

General Notes:

Total Depth 48.4'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-13C

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-14B**
Boring Offset _____
Surface Elevation 568.9
Date Start 4/25/94 Finish 4/25/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
15									See logs of soil boring OBA-14A and rock coring OBA-14C for description of overlying soil and rock.			
16												
17												
18	04/25/94 Run #1 17.2'-24.2'		51"/84" = 61%		7.0'/7.0' = 100%		HQ	551.5 17.4	Medium gray, slightly weathered, fine sandy calcareous Dolostone, occassional fossil	0		
19								549.8 19.1	Dark to medium gray, slightly weathered, fine to medium sandy calcareous Dolostone, sacchroidal, moderately fossiliferous with moderate secondary porosity associated with fossils, occassional stylolites.	Highly Fractured 3		
20										1		
21										1		
22										2		
23									LOCKPORT FORMATION	1		
24								544.7 24.2				

General Notes:

Total Depth 24.2'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-14B

Woodward-Clyde Consultants

Ground Water Observation	Job Olin Plant RFI No. 4E02704	Boring Number OBA-14C
At ____ Ft. at Completion	Drilling Rig CME-75	Boring Offset ____
At ____ Ft. after ____ hrs.	Operator Jim Lamm (SJB)	Surface Elevation 568.9
At ____ Ft. after ____ hrs.	Inspector Dave Friedman	Date Start 4/22/94 Finish 4/27/94
At ____ Ft. after ____ hrs.		

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1									See log of soil boring OBA-14A for description of overlying soils.			
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13								555.2				
	Run #1						HQ	13.7	See Page 2 for rock description	0		

General Notes:

Total Depth 41.7'

Rock Drilling ____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-14C

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-14C**
Boring Offset _____
Surface Elevation 568.9
Date Start 4/22/94 Finish 4/27/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
15	04/22/94 Run #1 13.7'-19.7'		40"/72" = 56%		5.5'/6.0' = 92%				Medium gray, moderately to slightly weathered, medium to thick bedded, fine sandy calcareous dolostone, numerous pinhole pores, moderately fossiliferous with occassional fossiliferous bed and argillaceous bed, predominant fossil Favosites.	3		
16										1		
17										2		
18										1		
19									- Void 18.7 to 19.05 feet - Vertical fracture 19.05 to 19.25 feet	1		
20								549.2 19.7	See log of rock coring OBA-14B for description of rock from 17.2 to 24.2 feet	4		
21												
22												
23												
24								544.2				
25	04/27/94 Run #2 24.7'-34.7'		111"/120" = 93%		9.9'/10.0' = 99%		HQ	24.7	Medium to light gray, thickly to massively bedded, slightly weathered to fresh, fossiliferous calcareous Dolostone, gyptiferous with gypsum vugs, occassional stylolites and carbonaceous partings, moderate to high secondary porosity associated with fossils and vugs.	0		
26										0		
27										0		
										1		

General Notes:

Total Depth 41.7'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-14C

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-14C**
Boring Offset _____
Surface Elevation 568.9
Date Start 4/22/94 Finish 4/27/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
	Run #2 24.7'-34.7'		111"/120" = 93%		9.9'/10.0' = 99%				As above	0		
29										0		
30										0		
31										0		
32										1		
33										2		
34										1		
35	Run #3 34.7'-41.7'		56"/84" = 67%		6.6'/7.0' = 94%		HQ			1		
36									- Void 35.8 to 35.95 feet	2		
37										0		
38										2		
39										1		
40										2		
41								528.2 40.7 527.2 41.7	Gray, thin to medium bedded, slightly weathered to fresh, sacchroidal Dolostone, some carbonaceous partings LOCKPORT FORMATION	3		

General Notes:

Total Depth 41.7'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-14C

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-15B**
Boring Offset _____
Surface Elevation 570.9
Date Start 4/12/94 Finish 4/20/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
									See log of soil boring OBA-15A for description of overlying soils.			
15												
16												
17								553.4				
18	04/12/94 Run #1 17.5'-22.5'		29"/60" = 48%		4.75'/5.0' = 95%		HQ	17.5	Dark gray, thickly bedded, moderately weathered, fossiliferous calcareous Dolostone, vuggy, very porous structure due to weathered fossils and vugs, numerous voids ranging from 0.5 to 3 inches, predominant fossil Favosites.	Highly Fractured		
								552.5		Highly Fractured		
19								18.4	Light gray, thinly to medium bedded, slightly weathered, fine sandy calcareous Dolostone, frequent stylolites and carbonaceous partings, occassional gypsum vug.	5		
20										3		
21								549.9				
								21.0	Medium to light gray, medium to massively bedded, weathered to fresh, fossiliferous calcareous Dolostone, predominant fossil Favosites, frequent vugs, stylolites, and carbonaceous partings, high secondary porosity associated with fossils and vugs.	2		
22										0		
23	04/20/94 Run #2 22.5'-32.1'		98"/115" = 85%		9.5'/9.6' = 99%		HQ		- Void 22.5 to 22.7 feet			
								547.6		Highly Fractured		
								23.3	As above, but becoming sacchroidal with occassional vugs, stylolites, and carbonaceous partings, smaller weathering pores and lesser degree of secondary porosity			
24										1		
25										0		
26										0		
27										0		
									Continued on Next Page			

General Notes:

Total Depth 32.1'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-15B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-15B**
Boring Offset _____
Surface Elevation 570.9
Date Start 4/12/94 Finish 4/20/94

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
	Run #2 22.5'-32.1'		98"/115" = 85%		9.5'/9.6' = 99%				As above	0		
29										0		
30										0		
31									LOCKPORT FORMATION	0		
32								538.8 32.1				

General Notes:

Total Depth 32.1'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-15B

Woodward-Clyde Consultants

Ground Water Observation
At ____ Ft. at Completion
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.
At ____ Ft. after ____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-16B**
Boring Offset
Surface Elevation 571.1
Date Start 4/5/93 Finish 4/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
	Run #2		59"/120"		9.6'/10.0'				As Above	Highly Fractured		
15	11.8'	21.8'	= 49%		= 96%				- becoming less fossiliferous and more stylolitic	3		
16										3		
17										3		
								553.6				
								17.5	As above, fossiliferous and vuggy bed			
18										2		
								552.4				
								18.7	As above, occassional fossils, vugs, and stylolites			
19										1		
20										0		
								550.1				
21								21.0	Gray, slightly weathered, fossiliferous calcareous Dolostone, vuggy and frequent carbonaceous partings, predominant fossil Favosites.	2		
								549.3				
								21.8	LOCKPORT FORMATION			

General Notes:

Total Depth 21.8'
Rock Drilling ____

*Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-16B

Woodward-Clyde Consultants

Ground Water Observation
At _____ Ft. at Completion
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.
At _____ Ft. after _____ hrs.

Job Olin Plant RFI No. 4E02704
Drilling Rig CME-75
Operator Jim Lamm (SJB)
Inspector Dave Friedman

Boring Number **OBA-16B**
Boring Offset _____
Surface Elevation 571.1
Date Start 4/5/93 Finish 4/20/93

DEPTH	CORE RUN FROM	CORE RUN TO	RQD INCH	RQD %	RECOVERY FEET	RECOVERY %	CORE TYPE & RESIST.	STRATA CHANGE DEPTH	FIELD IDENTIFICATION, TYPE AND COLOR WEATHERING, SEAMS IN ROCK, etc.	FRACTURES No./Ft.	FRACTURES DIP*	BED DIP
1									See log of soil boring OBA-16A for description of overlying soils			
2												
3												
4												
5												
6												
7								563.5				
8	04/05/94 Run #1 7.6'-11.6'		4"/48" = 8%		4.0'/4.0' = 100%		HQ	7.6	Light gray, thinly to medium bedded, weathered to slightly weathered, fossiliferous calcareous Dolostone, predominant fossil Favosites, numerous pinhole pores, occassional vugs and stylolites	Highly Fractured		
9										Highly Fractured		
10										5		
11										7		
12	04/20/94 Run #2 11.8'-21.8'		59"/120" = 49%		9.6'/10.0' = 96%		HQ			4		
13									Continued on Next Page	4		

General Notes:

Total Depth 21.8'
Rock Drilling _____

%Proportions used: trace 0-10%, little 10-20%, some 20-35%, and 35-50%

Hole No. OBA-16B

Appendix C

Phase I Soil Borings

Summary of Mercury Analyses

October 1991

OLIN NIAGARA PLANT RFI
SUBSURFACE SOIL INVESTIGATION
MERCURY RESULTS

BORING ID		TOTAL Hg(mg/kg)	TCLP Hg (ug/L)
OSB-1	0'-2'	0.40	ND0.2
	2'-4'	458	1.6
	4'-6'	167	0.6
	6'-8'	624	8.6
	8'-10'	1210	2.9
OSB-2	0'-2'	6.5	ND0.2
	4'-6'	0.41	0.2
OSB-3	0'-2'	2.3	0.2
	2'-4'	0.77	ND0.2
	4'-6'	0.44	ND0.2
Dup	4'-6'	0.98	ND0.2
	6'-8'	ND0.10	ND0.2
OSB-4	0'-2'	56.9	0.4
	2'-4'	2.9	2.4
OSB-5	0'-2'	11.4	0.2
	2'-4'	35.4	0.9
	4'-6'	1.3	ND0.2
OSB-6	0'-2'	78.6	3.7
Dup	0'-2'	65.6	3.2
	3'-5'	55.0	6.6
	5'-7'	6.5	ND0.2
	7'-9'	1.7	0.8
OSB-7	0'-2'	21.1J	1.3J
	2'-4'	7.8J	ND0.2
OSB-8	0'-2'	29.8J	1.3J
	2'-4'	18.5J	0.3J
OSB-9	0'-2'	23.7J	ND0.2
	2'-4'	112J	4.6J
OSB-10	0'-2'	250J	13.2J
	2'-4'	626J	14.2J
Dup	2'-4'	1920J	10.7J
OSB-11	0'-2'	588J	31.7J
	2'-4'	165J	2.5J
OSB-12	0'-2'	50	3.2
	2'-4'	63	16.3
OSB-13	0'-2'	418	8.6
	2'-4'	95.4	1.5
OSB-14	0'-2'	113	1.1
	2'-4'	95.2	1.4

OLIN NIAGARA PLANT RFI (continued)
SUBSURFACE SOIL INVESTIGATION
MERCURY RESULTS

BORING ID		TOTAL Hg(mg/kg)	TCLP Hg (ug/L)
OSB-15	0'-2'	27.5	1.2
	2'-4'	104	0.3
OSB-16	0'-2'	8.3	ND0.2
	2'-4'	5.2	0.2
Dup	2'-4'	4.0	ND0.2
	4'-6'	15.7	ND0.2
	6'-8'	No Result[1]	ND0.2
OSB-17	0'-2'	Not Analyzed[2]	Not Analyzed[2]
	2'-4'	Not Analyzed	Not Analyzed
	4'-6'	Not Analyzed	Not Analyzed
	6'-8'	Not Analyzed	Not Analyzed
OSB-18	0'-2'	404	4.0
Dup	0'-2'	464	6.5
	2'-4'	161	5.1
	4'-6'	1.7	0.5
	6'-8'	11.9	1.3

Rinsate Blanks	Total Hg(ug/L)
RB-1	0.2
RB-2	57.7
RB-3	ND0.2
RB-4	0.7
RB-5	ND0.2

NS - Not sampled
ND - Not detected, applicable detection limit listed
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument but was diluted below the instrument detection limit on subsequent dilution runs.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

Notes:

(1) - Total mercury analysis not performed due to laboratory error
(2) - Total and TCLP mercury analysis not performed as per RFI Work Plan

Phase I Soil Borings
Summary of Detected Compounds
October 1991

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-17 0'-2'	OSB-17 2'-4'	OSB-17 4'-6'	OSB-17 6'-8'	OSB-18 0'-2'	Dup OSB-18 0'-2'	OSB-18 2'-4'	OSB-18 4'-6'
Sample Date	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compounds								
TCL - VOAS								
Methylene chloride	0.002J	0.0005J	0.001J	0.001J	ND0.006	ND0.006	ND0.006	ND0.006
Acetone	ND0.011	ND0.010	0.008J	0.012J	0.016J	0.034J	0.034J	0.045J
Chloroform	0.006	0.007	0.004J	0.009	0.016	0.017	0.008	0.001
1,2-dichloropropane	ND0.006	ND0.005	ND0.006	ND0.006	ND0.006	ND0.006	ND0.006	ND0.006
Trichloroethene	0.002J	0.002J	0.0007J	0.002J	0.0009J	0.001J	0.0009J	ND0.006
Benzene	0.003J	0.002J	ND0.006	0.003J	0.003	0.003J	0.003J	0.002J
Tetrachloroethene	0.002J	0.002J	0.002J	0.003J	0.008	0.007	0.015	0.009
Toluene	0.0005J	ND0.005	ND0.006	0.0006J	0.001J	ND0.006	ND0.006	ND0.006
Chlorobenzene	0.003J	0.002J	0.002J	0.003J	0.002J	ND0.006	0.020	22
Total xylenes	ND0.006	ND0.005	ND0.006	ND0.006	ND0.006	ND0.006	ND0.006	ND0.006

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-18 6'-8'	RB-5 Rinsate
Sample Date	10/18/91	10/18/91
Units	mg/kg	ug/L
Compounds		
TCL - VOAS		
Methylene chloride	ND0.006	ND5
Acetone	ND0.012	ND10
Chloroform	0.003J	ND5
1,2-dichloropropane	ND0.006	3J
Trichloroethene	ND0.006	ND5
Benzene	0.002J	ND5
Tetrachloroethene	0.009	ND5
Toluene	0.001J	ND5
Chlorobenzene	0.015J	4J
Total xylenes	0.003J	ND5

NS - Not sampled
ND - Not detected, applicable detection limit listed
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument but was diluted below the instrument detection limit on subsequent dilution runs.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-17 0'-2'	OSB-17 2'-4'	OSB-17 4'-6'	OSB-17 6'-8'	OSB-18 0'-2'	Dup OSB-18 0'-2'	OSB-18 2'-4'	OSB-18 4'-6'
Sample Date	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compounds								
Semi-Volatiles								
1,3-dichlorobenzene	0.36J	0.52J	0.077J	ND24	1.7	2.3	1.1	17E
1,4-dichlorobenzene	1.0	1.7	ND0.75	ND24	ND0.80	ND0.79	0.69J	2.0
1,2-dichlorobenzene	0.57J	0.85	0.15J	ND24	0.89	1.3	3.4	24
2-methylphenol	ND0.71	ND0.73	ND0.75	7.5J	ND0.80	ND0.79	ND0.80	ND0.82
4-methylphenol	ND0.71	0.13J	ND0.75	25	ND0.80	ND0.79	ND0.80	ND0.82
2,4-dimethylphenol	ND0.71	ND0.73	ND0.75	5.9J	ND0.80	ND0.79	ND0.80	ND0.82
2,4-dichlorophenol	ND0.71	ND0.73	ND0.75	ND24	ND0.80	ND0.79	0.15J	ND0.82
1,2,4-trichlorobenzene	4.4	6.4	1.1	ND24	330	270	210	1,900
Naphthalene	2.0	2.4	1.4	1,400	ND0.80	ND0.79	ND0.80	ND0.82
2-methylnaphthalene	0.38J	0.57J	0.46J	140J	0.46J	0.44J	0.19J	ND0.82UJ
2,4,6-trichlorophenol	0.085J	0.15J	ND0.75	ND24	ND0.80	ND0.79	ND0.80	ND0.82
2,4,5-trichlorophenol	0.42J	0.43J	ND3.6	ND110	1.7J	2.2J	ND3.9	6.5
Acenaphthylene	0.93	0.82	ND0.75	ND24	ND0.80	ND0.79	0.17J	ND0.82
Acenaphthene	ND0.71	2.4	2.7	1,000	ND0.80	ND0.79	0.14J	ND0.82
Dibenzofuran	2.0	1.7	2.1	650	0.31J	0.36J	0.14J	ND0.82
Fluorene	2.4	3.1	3.8	920	ND0.80	ND0.79	0.13J	ND0.82
Hexachlorobenzene	0.14J	0.15J	ND0.75	ND24	25	29J	5.8	ND0.82
Phenanthrene	26	47	59	4,600	1.6	1.8	1.8	0.28J
Anthracene	3.8	6.5	5.7	1,300	ND0.80	ND0.79	0.29J	ND0.82
Fluoranthene	43	50	51	3,500	2.5	2.9	3.9	0.39J
Pyrene	25	33	31	2,800	1.7	1.9	4.7	0.30
Benzo(a)anthracene	18	24	20	1,600	0.83	0.97	1.4	0.17J
Chrysene	18	25	23	1,400	1.6	1.8	1.8	0.20J
Bis(2-ethylhexyl)phthalate	0.91	0.91	0.85	ND24	1.4	1.7	1.5	0.35J
Benzo(b)fluoranthene	18	29	25	1.4	2.1	2.6	3.1	0.21J
Benzo(k)fluoranthene	6.1	7.6	6.0	260	0.76J	0.98	1.4	0.11J
Benzo(a)pyrene	12E	23	10	1,200	0.18J	0.21J	1.8	0.13J
Indeno(1,2,3-cd)pyrene	0.063J	5.8	ND0.75	310	0.83	0.87	1.3	0.12J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-17 0'-2'	OSB-17 2'-4'	OSB-17 4'-6'	OSB-17 6'-8'	OSB-18 0'-2'	Dup OSB-18 0'-2'	OSB-18 2'-4'	OSB-18 4'-6'
Sample Date	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compounds								
Semi-Volatiles								
Dibenzo(a,h)anthracene	1.3	1.2	0.33J	65	ND0.80	ND0.79	ND0.80	ND0.82
Benzo(g,h,i)perylene	0.062J	1.1	2.3	82	0.59J	0.59J	0.87	0.10J
3,4-dichlorophenol	ND0.71	ND0.73	ND0.75	ND24	ND0.80	ND0.79	0.13J	ND0.82
2,3,6-trichlorophenol	ND0.71	ND0.73	ND0.75	ND24	ND0.80	ND0.79	2.6	ND0.82
3,4,5-trichlorophenol	ND0.71	ND0.73	ND0.75	ND24	0.31J	0.57J	ND0.80	ND0.82
2,3,4,5-tetrachlorophenol	ND0.71UJ	ND0.73UJ	ND0.75UJ	ND24UJ	0.16J	0.45J	0.46J	ND0.82
2,3,4,6-tetrachlorophenol	ND0.71R	ND0.73R	ND0.75R	ND24R	0.096J	ND0.79R	ND0.80R	0.31J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-18 6'-8'	RB-5 Rinsate
Sample Date	10/18/91	10/18/91
Units	mg/kg	ug/L
Compounds		
Semi-Volatiles		
1,3-dichlorobenzene	2.3	ND10
1,4-dichlorobenzene	0.42J	ND10
1,2-dichlorobenzene	4.3	ND10
2-methylphenol	ND0.73	ND10
4-methylphenol	ND0.73	ND10
2,4-dimethylphenol	ND0.73	ND10
2,4-dichlorophenol	ND0.73	ND10
1,2,4-trichlorobenzene	340	ND10
Naphthalene	ND0.73	ND10
2-methylnaphthalene	ND0.73UJ	ND10
2,4,6-trichlorophenol	ND0.73	ND10
2,4,5-trichlorophenol	2.9J	ND50
Acenaphthylene	ND0.73	ND10
Acenaphthene	ND0.73	ND10
Dibenzofuran	ND0.73	ND10
Fluorene	ND0.73	ND10
Hexachlorobenzene	ND0.73	ND10
Phenanthrene	0.18J	ND10
Anthracene	ND0.73	ND10
Fluoranthene	0.28J	ND10
Pyrene	0.22J	ND10
Benzo(a)anthracene	0.12J	ND10
Chrysene	0.17J	ND10
Bis(2-ethylhexyl)phthalate	3.7	ND10
Benzo(b)fluoranthene	0.21J	ND10
Benzo(k)fluoranthene	0.079J	ND10
Benzo(a)pyrene	0.072J	ND10
Indeno(1,2,3-cd)pyrene	0.11J	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-18 6'-8'	RB-5 Rinsate
Sample Date	10/18/91	10/18/91
Units	mg/kg	ug/L
Compounds		
Semi-Volatiles		
Dibenzo(a,h)anthracene	0.036J	ND10
Benzo(g,h,i)perylene	0.11J	ND10
3,4-dichlorophenol	ND0.73	ND10
2,3,6-trichlorophenol	ND0.73	ND10
3,4,5-trichlorophenol	ND0.73	ND10
2;3,4,5-tetrachlorophenol	ND0.73	ND10
2,3,4,6-tetrachlorophenol	ND0.73R	ND10R

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UJ - Estimated quantitation limit

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-17 0'-2'	OSB-17 2'-4'	OSB-17 4'-6'	OSB-17 6'-8'	OSB-18 0'-2'	Dup OSB-18 0'-2'	OSB-18 2'-4'	OSB-18 4'-6'
Sample Date	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91	10/18/91
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compounds								
Pesticides								
alpha-BHC	10	18	2.6	1.6	1.0J	1.6	18	23
beta-BHC	27	44	3.5	0.56	19	30	9.5	0.94
delta-BHC	5.5	9.8	0.94	0.58	ND0.19	ND0.19	0.16J	0.19J
gamma-BHC	8.3	13	1.0	0.46	ND0.19	ND0.19	0.35J	0.39J
Heptachlor	ND0.34	ND0.70	0.051	0.0057	ND0.19	ND0.19	ND0.39	ND0.40
Aldrin	ND0.34	ND0.70	ND0.036	0.096	ND0.19	ND0.19	ND0.39	ND0.40
Heptachlor epoxide	ND0.34	ND0.70	ND0.036	ND0.037	ND0.19	0.03J	ND0.39	ND0.40
Dieldrin	ND0.69	ND1.4	0.083	1.1	ND0.39	ND0.38	ND0.78	ND0.81
Endrin	ND0.69	ND1.4	ND0.072	1.3	ND0.39	ND0.38	ND0.78	ND0.81
Endosulfan II	ND0.69	ND1.4	0.015J	0.01J	ND0.39	0.05J	ND0.78	ND0.81
4,4'-DDD	ND0.69	ND1.4	ND0.072	0.029J	ND0.39	ND0.38	ND0.78	ND0.81
4,4'-DDT	ND0.69	ND1.4	0.085	0.0087J	ND0.39	ND0.38	ND0.78	ND0.81
Methoxychlor	ND3.4	ND7.0	ND0.36	0.17J	ND1.9	ND1.9	ND3.9	ND4.0
Alpha-chlordane	ND3.4	ND7.0	0.36U	0.37U	ND1.9	ND1.9	ND3.9	ND4.0
Gamma-chlordane	ND3.4	ND7.0	ND0.36	ND0.37	ND1.9	0.065J	ND3.9	ND4.0

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI SOIL SAMPLES
NIAGARA FALLS, NEW YORK

Sample ID	OSB-18 6'-8'	RB-5 Rinsate
Sample Date	10/18/91	10/18/91
Units	mg/kg	ug/L
Compounds		
Pesticides		
alpha-BHC	5.0	0.14
beta-BHC	1.6	0.063
delta-BHC	ND0.088	0.12
gamma-BHC	0.091	0.041
Heptachlor	ND0.088	ND0.062
Aldrin	ND0.088	ND0.062
Heptachlor epoxide	ND0.088	ND0.062
Dieldrin	ND0.18	ND0.12
Endrin	ND0.18	ND0.12
Endosulfan II	ND0.18	ND0.12
4,4'-DDD	ND0.18	ND0.12
4,4'-DDT	ND0.18	ND0.12
Methoxychlor	ND0.88	ND0.62
Alpha-chlordane	ND0.88	ND0.62
Gamma-chlordane	ND0.88	ND0.62

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R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

Phase I Groundwater Samples

Summary of Detected Compounds

September/October 1991

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	9/23/91	9/17/91	9/17/91	9/17/91	9/23/91	10/4/91	9/23/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	150	ND10	51	840EJ	69	2800	1300
methylene chloride	97J	ND5	330J	39,000J	ND5R	300J	ND500R
acetone	ND10UJ	ND10	21	ND10UJ	ND10UJ	ND1000	ND1000UJ
carbon disulfide	ND5	ND5	ND5	6J	ND5	490J	ND500
1,1-dichloroethene	2J	ND5	9	360J	ND5	120J	ND500
1,1-dichloroethane	ND5	ND5	1J	24J	ND5	ND500	ND500
1,2-dichloroethene (total)	340	ND5	340	16,000	170	16,000	2200
chloroform	390	3J	19	98,000	33	6400	ND500
1,2-dichloroethane	ND5	ND5	ND5	68J	ND5	ND500	ND500
1,1,1-trichloroethane	2J	ND5	ND5	320EJ	ND5	ND500	ND500
carbon tetrachloride	10	ND5	ND5	37J	ND5	1600	ND500
bromodichloromethane	ND5	ND5	ND5	ND5UJ	ND5	ND500	ND500
1,2-dichloropropane	ND5	ND5	ND5	ND5UJ	ND5	ND500	ND500
cis-1,3-dichloropropene	ND5	ND5	ND5	2J	ND5	ND500	ND500
trichloroethene	460	9	2700	150,000	140	380,000	ND500
1,1,2-trichloroethane	ND5	ND5	ND5	1700J	ND5	580	ND500
benzene	2J	6	18	920J	7	140J	4900
tetrachloroethene	210	7	3000	20,000	85	82,000	ND500
1,1,2,2-tetrachloroethane	84J	4J	ND5	ND5UJ	ND5	74,000	ND500
toluene	ND5	ND5	2J	5J	ND5	66J	ND500
chlorobenzene	0.9J	5U	27	190J	9	57J	16,000
ethyl benzene	ND5	ND5	ND5	ND5UJ	ND5	ND500	ND500
total xylenes	ND5	ND5	ND5	4J	ND5	ND500	ND500

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	9/23/91	9/23/91	10/4/91	9/20/91	9/18/91	9/18/91	9/20/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	1500	1700	2900	ND10	35	110J	11J
methylene chloride	ND500	ND500R	ND1000	ND5	ND5	160J	6J
acetone	ND1000	ND1000	ND2000	ND10	ND10	ND250	99
carbon disulfide	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
1,1-dichloroethene	ND500	ND500	ND1000	ND5	0.8J	ND120	ND25
1,1-dichloroethane	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
1,2-dichloroethene (total)	2400	2400	8400	3J	150	1300	270
chloroform	ND500	ND500	ND1000	5	ND5	850	530J
1,2-dichloroethane	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
1,1,1-trichloroethane	ND500	ND500	ND1000	ND5	ND5	ND120	11J
carbon tetrachloride	ND500	ND500	ND1000	ND5	ND5	ND120	5J
bromodichloromethane	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
1,2-dichloropropane	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
cis-1,3-dichloropropene	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
trichloroethene	ND500	ND500	500J	48	32	6900	870J
1,1,2-trichloroethane	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
benzene	5400	7100	9700	ND5	25	25J	76
tetrachloroethene	ND500	ND500	190J	22	14	4900	830
1,1,2,2-tetrachloroethane	ND500	ND500	840J	ND5	ND5	1400J	ND25
toluene	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
chlorobenzene	17,000	13,000	22,000	ND5	22	47J	160
ethyl benzene	ND500	ND500	ND1000	ND5	ND5	ND120	ND25
total xylenes	ND500	ND500	ND1000	ND5	ND5	ND120	ND25

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-5A	OBA-5B	OBA-5C	OBA-6A	OBA-6B	OBA-6C	OBA-7A
Sample Date	9/20/91	9/20/91	10/7/91	9/20/91	9/19/91	9/19/91	9/19/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	10J	1300	100J	12	83J	250J	ND10
methylene chloride	9J	30,000	ND100	ND5	1100	ND500	ND5
acetone	130	ND1000	ND200	33	ND400	ND1000	ND10
carbon disulfide	ND50	290J	ND100	ND5	ND200	ND500	ND5
1,1-dichloroethene	ND50	1200	18J	ND5	21J	ND500	ND5
1,1-dichloroethane	ND50	ND500	ND100	ND5	ND200	ND500	ND5
1,2-dichloroethene (total)	270	17,000	2100	88	1400	5800	24
chloroform	540J	74,000J	34J	ND5	83J	190J	14
1,2-dichloroethane	ND50	ND500	ND100	ND5	ND200	ND500	ND5
1,1,1-trichloroethane	10J	750	ND100	ND5	ND200	ND500	ND5
carbon tetrachloride	ND50	240J	ND100	ND5	ND200	110J	ND5
bromodichloromethane	ND50	ND500	ND100	ND5	ND200	ND500	ND5
1,2-dichloropropane	ND50	ND500	ND100	ND5	ND200	ND500	ND5
cis-1,3-dichloropropene	ND50	ND500	ND100	ND5	ND200	ND500	ND5
trichloroethene	1100J	310,000J	1800	28J	5100J	39,000J	11U
1,1,2-trichloroethane	ND50	ND500	120	ND5	ND200	ND500	ND5
benzene	75	6300	420	3J	1100	230J	ND5
tetrachloroethene	830	30,000	110	35	3100	56,000	9U
1,1,2,2-tetrachloroethane	ND50	ND500	47J	ND5	ND200	ND500	ND5
toluene	ND50	ND500	ND100	4J	ND200	ND500	ND5
chlorobenzene	160	2100	ND100	2J	220	81J	3J
ethyl benzene	ND50	ND500	ND100	0.6J	ND200	ND500	ND5
total xylenes	ND50	ND500	ND100	4J	ND200	ND500	2J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	OBA-7B	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C
Sample Date	9/19/91	10/7/91	10/7/91	9/19/91	9/18/91	9/18/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	ND100	290	380	ND10	1600J	1300	ND50
methylene chloride	1000	130	160	6	30,000J	24,000J	ND25
acetone	ND100	ND200	ND200	ND10	ND100UJ	ND1000	ND50
carbon disulfide	ND50	ND100	ND100	ND5	250J	ND500	ND25
1,1-dichloroethene	ND50	18J	24J	ND5	190J	120J	ND25
1,1-dichloroethane	ND50	ND100	ND100	3J	20J	ND500	ND25
1,2-dichloroethene (total)	ND50	1600	2100	1J	15,000	14,000	58
chloroform	ND50	340	340	780J	93,000	76,000	6J
1,2-dichloroethane	ND50	ND100	ND100	ND5	71J	ND500	ND25
1,1,1-trichloroethane	ND50	ND100	ND100	ND5	460J	240J	ND25
carbon tetrachloride	ND50	ND100	ND100	ND5	8J	ND500	ND25
bromodichloromethane	ND50	ND100	ND100	0.7J	ND50UJ	ND500	ND25
1,2-dichloropropane	ND50	ND100	ND100	ND5	ND50UJ	ND500	ND25
cis-1,3-dichloropropene	ND50	ND100	ND100	ND5	ND50UJ	ND500	ND25
trichloroethene	50U	2700	2800	9	62,000	48,000	620
1,1,2-trichloroethane	ND50	ND100	ND100	ND5	260J	190J	ND25
benzene	7J	58J	77J	ND5	200J	180J	ND25
tetrachloroethene	50U	1200	1300	7	13,000	12,000	850
1,1,2,2-tetrachloroethane	ND50	ND100	ND100	4J	9500J	11,000J	57J
toluene	ND50	ND100	ND100	ND5	ND50UJ	ND500	ND25
chlorobenzene	ND50	ND100	100U	ND5	56U	ND500	3J
ethyl benzene	ND50	ND100	ND100	ND5	ND50UJ	ND500	ND25
total xylenes	ND50	ND100	ND100	ND5	ND50UJ	ND500	ND25

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	BH-1	BH-3	NAPL OBA-2C	Rinsate 1	Rinsate 2	Rinsate 3	Trip Blank 1
Sample Date	9/18/91	9/18/91	9/20/91	9/18/91	9/20/91	10/7/91	9/18/91
Units	ug/L	ug/L	mg/kg	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	3J	ND1000	ND6200	ND10	ND10	ND10	ND10
methylene chloride	ND5	76J	ND3100	ND5	0.6J	ND5	ND5
acetone	ND10	610J	ND6200	ND10	ND10	ND10	ND10
carbon disulfide	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
1,1-dichloroethene	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
1,1-dichloroethane	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
1,2-dichloroethene (total)	23	280J	380J	ND5	ND5	ND5	ND5
chloroform	0.7J	2800	600J	ND5	2J	ND5	ND5
1,2-dichloroethane	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
1,1,1-trichloroethane	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
carbon tetrachloride	ND5	ND500	2300J	ND5	ND5	ND5	ND5
bromodichloromethane	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
1,2-dichloropropane	ND5	ND500	ND3100	1J	0.9J	ND5	ND5
cis-1,3-dichloropropene	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
trichloroethene	18	1600	130,000	ND5	62	3J	ND5
1,1,2-trichloroethane	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
benzene	2J	49,000	ND3100	ND5	ND5	ND5	ND5
tetrachloroethene	4J	250J	130,000	ND5	15	ND5	ND5
1,1,2,2-tetrachloroethane	3J	390J	35,000	ND5	ND5	ND5	ND5
toluene	0.5J	ND500	ND3100	ND5	ND5	ND5	ND5
chlorobenzene	5U	9800	ND3100	2J	2J	ND5	ND5
ethyl benzene	ND5	ND500	ND3100	ND5	ND5	ND5	ND5
total xylenes	ND5	ND500	ND3100	ND5	ND5	ND5	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Trip Blank 2	Field Blank 1	Field Blank 2
Sample Date	9/20/91	9/18/91	10/7/91
Units	ug/L	ug/L	ug/L
Compounds			
TCL - VOCS			
vinyl chloride	ND10	ND10	ND10
methylene chloride	ND5	ND5	ND5
acetone	ND10	ND10	ND10
carbon disulfide	ND5	ND5	ND5
1,1-dichloroethene	ND5	ND5	ND5
1,1-dichloroethane	ND5	ND5	ND5
1,2-dichloroethene (total)	ND5	ND5	ND5
chloroform	ND5	ND5	ND5
1,2-dichloroethane	ND5	ND5	ND5
1,1,1-trichloroethane	ND5	ND5	ND5
carbon tetrachloride	ND5	ND5	ND5
bromodichloromethane	ND5	ND5	ND5
1,2-dichloropropane	ND5	1J	ND5
cis-1,3-dichloropropene	ND5	ND5	ND5
trichloroethene	ND5	ND5	28
1,1,2-trichloroethane	ND5	ND5	ND5
benzene	ND5	ND5	ND5
tetrachloroethene	ND5	ND5	4J
1,1,2,2-tetrachloroethane	ND5	ND5	ND5
toluene	ND5	ND5	2J
chlorobenzene	ND5	2J	1J
ethyl benzene	ND5	ND5	ND5
total xylenes	ND5	ND5	ND5

NS - Not sampled
ND - Not detected, applicable detection limit listed
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument but was diluted below the instrument detection limit on subsequent dilution runs.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	9/23/91	9/19/91	9/17/91	9/17/91	9/23/91	10/4/91	9/23/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
phenol	ND10	ND12	10J	ND12	ND10	11J	ND10
2-chlorophenol	ND10	ND12	ND12	ND12	ND10	ND12	16
1,3-dichlorobenzene	ND10	ND12	ND12	18	48	26	730
1,4-dichlorobenzene	ND10	ND12	ND12	19	9J	84	2700
benzyl alcohol	ND10	ND12	ND12	ND12	ND10	13	ND10
1,2-dichlorobenzene	ND10	ND12	5J	44	16	450	3600
2-methylphenol	ND10	ND12	ND12	ND12	ND10	ND12	ND10
4-methylphenol	ND10	ND12	5J	ND12	ND10	ND12	ND10
hexachloroethane	ND10	ND12	ND12	5J	ND10	440	ND10
2,4-dimethylphenol	ND10	ND12	ND12	ND12	ND10	ND12	ND10
benzoic acid	ND50	ND59	23J	ND62	ND50	2200J	ND52
2,4-dichlorophenol	ND10	ND12	ND12	ND12	ND10	ND12	ND10
1,2,4-trichlorobenzene	2J	ND12	37	8J	1300	56	520
napthalene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
4-chloroanaline	ND10	ND12	ND12	ND12	ND10	ND12	4J
hexachlorobutadiene	ND10	ND12	ND12	ND12	ND10	23	ND10
2,4,6-trichlorophenol	ND10	ND12	ND12	ND12	110	ND12	ND10
2,4,5-trichlorophenol	ND50	ND59	10J	34J	ND50	ND62	ND52
hexachlorobenzene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
pentachlorophenol	ND50	ND59	ND62	ND62	ND50	ND62	ND52
phenanthrene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
anthracene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
fluoranthene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
pyrene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
bis(2-ethylhexyl)phthalate	ND10	ND12	ND12	ND12	ND10	ND12	ND10
benzo(b)fluoranthene	ND10	ND12	ND12	ND12	ND10	ND12	ND10
2,3-dichlorophenol	ND10	ND12	ND12	ND12	ND10	ND12	3J
2,5-dichlorophenol	ND10	ND12	ND12	ND12	ND10	ND12	5J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	9/23/91	9/19/91	9/17/91	9/17/91	9/23/91	10/4/91	9/23/91
Units	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
3,4-dichlorophenol	ND10	ND12	ND12	11J	26	ND12	4J
2,3,6-trichlorophenol	ND10	ND12	ND12	ND12	ND10	ND12	ND10
2,3,4,5-tetrachlorophenol	ND10UJ	ND12	ND12	ND12	ND10UJ	ND12	ND10UJ
3-chlorophenol	ND10	ND12	ND12	ND12	7J	ND12	20
4-chlorophenol	ND10	ND12	ND12	ND12	7J	ND12	20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	9/23/91	9/23/91	10/4/91	9/23/91	9/18/91	9/18/91	9/20/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
phenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
2-chlorophenol	20	8J	15	ND12	ND12	ND12	ND12R
1,3-dichlorobenzene	370J	540	1000	ND12	ND12	12	280J
1,4-dichlorobenzene	1400J	1700	4400	ND12	ND12	43	110
benzyl alcohol	ND12	40	ND12	ND12	ND12	ND12	ND12R
1,2-dichlorobenzene	1700J	2300	5900	ND12	ND12	58	370J
2-methylphenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
4-methylphenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
hexachloroethane	ND12	ND11	ND12	ND12	ND12	24	ND12R
2,4-dimethylphenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
benzoic acid	ND59	ND56	ND62	ND62	ND58	ND58	64J
2,4-dichlorophenol	7J	ND11	ND12	ND12	ND12	ND12	ND12R
1,2,4-trichlorobenzene	320J	190	440J	ND12	ND12	170	4600
napthalene	ND12	ND11	ND12	ND12	ND12	ND12	6J
4-chloroanaline	9J	ND11	ND12	ND12	ND12	ND12	ND12
hexachlorobutadiene	ND12	ND11	ND12	ND12	ND12	32	ND12
2,4,6-trichlorophenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
2,4,5-trichlorophenol	ND59	ND56	ND62	ND62	ND58	ND58	ND58R
hexachlorobenzene	ND12	ND11	ND12	ND12	ND12	ND12	ND12
pentachlorophenol	ND59	ND56	ND62	ND62	ND58	ND58	ND58R
phenanthrene	ND12	ND11	ND12	ND12	ND12	ND12	8J
anthracene	ND12	ND11	ND12	ND12	ND12	ND12	ND12
fluoranthene	ND12	ND11	ND12	ND12	ND12	ND12	10J
pyrene	ND12	ND11	ND12	ND12	ND12	ND12	7J
bis(2-ethylhexyl)phthalate	ND12	ND11	ND12	ND12	ND12	15	ND12
benzo(b)fluoranthene	ND12	ND11	ND12	ND12	ND12	ND12	7J
2,3-dichlorophenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
2,5-dichlorophenol	ND12	ND11	6J	ND12	ND12	ND12	ND12R

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	9/23/91	9/23/91	10/4/91	9/23/91	9/18/91	9/18/91	9/20/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
3,4-dichlorophenol	5J	5J	5J	ND12	ND12	ND12	ND12R
2,3,6-trichlorophenol	ND12	ND11	ND12	ND12	ND12	ND12	ND12R
2,3,4,5-tetrachlorophenol	ND12UJ	ND11UJ	ND12	ND12	ND12UJ	ND12	ND12R
3-chlorophenol	25	9J	24	ND12	ND12	ND12	ND12R
4-chlorophenol	ND12	9J	ND12	ND12	ND12	ND12	ND12R

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-5A	OBA-5B	OBA-5C	OBA-6A	OBA-6B	OBA-6C	OBA-7A
Sample Date	9/20/91	9/20/91	10/7/91	9/20/91	9/19/91	9/19/91	9/19/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
phenol	30J	11J	ND12	85	15	ND12	ND12
2-chlorophenol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12
1,3-dichlorobenzene	220	260	ND12	ND11	200	13	4J
1,4-dichlorobenzene	62	190	ND12	ND11	57	9J	3J
benzyl alcohol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12
1,2-dichlorobenzene	250	450	ND12	ND11	150	32	ND12
2-methylphenol	ND12R	ND11	ND12	4J	3J	ND12	ND12
4-methylphenol	ND12R	ND11	ND12	24	11J	ND12	ND12
hexachloroethane	ND12	27	ND12	ND11	ND11	220	ND12
2,4-dimethylphenol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12
benzoic acid	ND60R	42J	ND62	19J	47J	ND62UJ	ND62
2,4-dichlorophenol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12
1,2,4-trichlorobenzene	2800	4100	ND12	ND11	5700	360	3J
napthalene	ND12	2J	ND12	ND11	4J	ND12	ND12
4-chloroanaline	ND12	ND11	ND12	ND11	ND11	ND12	ND12
hexachlorobutadiene	ND12	ND11	ND12	ND11	ND11	35	ND12
2,4,6-trichlorophenol	ND12R	5J	ND12	ND11	620	130	ND12
2,4,5-trichlorophenol	ND60R	ND56	ND62	ND56	ND56	ND62	ND62
hexachlorobenzene	ND12	ND11	ND12	ND11	ND11	ND12	ND12
pentachlorophenol	ND60R	ND56	ND62	ND56	ND56	ND62	7J
phenanthrene	5J	ND11	ND12	ND11	ND11	ND12	ND12
anthracene	ND12	ND11	ND12	ND11	ND11	ND12	ND12
fluoranthene	7J	ND11	ND12	ND11	ND11	ND12	ND12
pyrene	5J	ND11	ND12	ND11	ND11	ND12	ND12
bis(2-ethylhexyl)phthalate	ND12	ND11	ND12	ND11	ND11	ND12	ND12
benzo(b)fluoranthene	98J	ND11	ND12	ND11	ND11	ND12	ND12
2,3-dichlorophenol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12
2,5-dichlorophenol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-5A	OBA-5B	OBA-5C	OBA-6A	OBA-6B	OBA-6C	OBA-7A
Sample Date	9/20/91	9/20/91	10/7/91	9/20/91	9/19/91	9/19/91	9/19/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
3,4-dichlorophenol	ND12R	8J	ND12	ND11	13	ND12	ND12
2,3,6-trichlorophenol	ND12R	260	ND12	ND11	13	ND12	ND12
2,3,4,5-tetrachlorophenol	ND12R	3J	ND12	ND11UJ	ND11UJ	ND12UJ	ND12UJ
3-chlorophenol	ND12R	3J	ND12	ND11	ND11	ND12	ND12
4-chlorophenol	ND12R	ND11	ND12	ND11	ND11	ND12	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	OBA-7B	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C
Sample Date	9/19/91	10/7/91	10/7/91	9/19/91	9/18/91	9/18/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
phenol	12	7J	4J	ND12	ND12	ND11	ND12
2-chlorophenol	ND12	ND12	ND11	ND12	ND12	ND11	ND12
1,3-dichlorobenzene	11J	3J	2J	ND12	95	91	ND12
1,4-dichlorobenzene	ND12	2J	2J	ND12	10J	9J	ND12
benzyl alcohol	9J	ND12	ND11	ND12	ND12	ND11	ND12
1,2-dichlorobenzene	11J	12U	11U	ND12	ND12	ND11	ND12
2-methylphenol	2J	ND12	ND11	ND12	ND12	ND11	ND12
4-methylphenol	5J	3J	2J	ND12	ND12	ND11	ND12
hexachloroethane	ND12	ND12	ND11	ND12	ND12	ND11	ND12
2,4-dimethylphenol	ND12	ND12	ND11	ND12	ND12	ND11	ND12
benzoic acid	ND58	ND62	ND56	ND60	ND59	ND57	ND62
2,4-dichlorophenol	ND12	14	13	ND12	ND12	ND11	ND12
1,2,4-trichlorobenzene	130	8J	9J	ND12	ND12	ND11	33
napthalene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
4-chloroanaline	ND12	ND12	ND11	ND12	ND12	ND11	ND12
hexachlorobutadiene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
2,4,6-trichlorophenol	ND12	6J	7J	ND12	ND12	ND11	ND12
2,4,5-trichlorophenol	ND58	200	200	ND60	4J	2J	12J
hexachlorobenzene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
pentachlorophenol	ND58	ND62	ND56	ND60	ND59	ND57	ND62
phenanthrene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
anthracene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
fluoranthene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
pyrene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
bis(2-ethylhexyl)phthalate	ND12	ND12	10J	ND12	ND12	ND11	4J
benzo(b)fluoranthene	ND12	ND12	ND11	ND12	ND12	ND11	ND12
2,3-dichlorophenol	ND12	ND12	ND11	ND12	ND12	ND11	ND12
2,5-dichlorophenol	ND12	ND12	ND11	ND12	ND12	ND11	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	OBA-7B	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C
Sample Date	9/19/91	10/7/91	10/7/91	9/19/91	9/18/91	9/18/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
3,4-dichlorophenol	ND12	330	390	ND12	ND12	ND11	ND12
2,3,6-trichlorophenol	ND12	ND12	ND11	ND12	ND12	ND11	ND12
2,3,4,5-tetrachlorophenol	ND12UJ	22J	20J	ND12UJ	ND12	ND11	ND12
3-chlorophenol	ND12	5J	4J	ND12	ND12	ND11	ND12
4-chlorophenol	ND12	ND12	ND11	ND12	ND12	ND11	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	BH-1	BH-3	NAPL OBA-2C	Rinsate Blank 1	Rinsate Blank 2	Rinsate Blank 3	Trip Blank 1
Sample Date	9/19/91	9/18/91	9/20/91	9/18/91	9/20/91	10/7/91	-----
Units	ug/L	ug/L	mg/kg	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
phenol	ND12	44	ND90	ND12	ND11	ND12	NS
2-chlorophenol	ND12	20	ND90	ND12	ND11	ND12	
1,3-dichlorobenzene	ND12	700	410	ND12	ND11	ND12	
1,4-dichlorobenzene	ND12	390J	1200	ND12	ND11	ND12	
benzyl alcohol	ND12	ND12	ND90	ND12	ND11	ND12	
1,2-dichlorobenzene	ND12	1600	6,000	ND12	ND11	ND12	
2-methylphenol	ND12	ND12	ND90	ND12	ND11	ND12	
4-methylphenol	ND12	ND12	ND90	ND12	ND11	ND12	
hexachloroethane	ND12	ND12	25,000	ND12	ND11	ND12	
2,4-dimethylphenol	ND12	ND12	ND90	ND12	ND11	ND12	
benzoic acid	ND61	630J	ND440UJ	ND58	ND56	ND60	
2,4-dichlorophenol	ND12	ND12	ND90	ND12	ND11	ND12	
1,2,4-trichlorobenzene	ND12	4900	2800	ND12	ND11	ND12	
napthalene	ND12	ND12	ND90	ND12	ND11	ND12	
4-chloroanaline	ND12	ND12	ND90	ND12	ND11	ND12	
hexachlorobutadiene	ND12	ND12	9600	ND12	ND11	ND12	
2,4,6-trichlorophenol	ND12	9J	ND90	ND12	ND11	ND12	
2,4,5-trichlorophenol	ND61	ND62	ND440	ND58	ND56	ND60	
hexachlorobenzene	ND12	ND12	360	ND12	ND11	ND12	
pentachlorophenol	ND61	ND62	ND440	ND58	ND56	ND60	
phenanthrene	ND12	2J	ND90	ND12	ND11	ND12	
anthracene	ND12	2J	ND90	ND12	ND11	ND12	
fluoranthene	ND12	ND12	ND90	ND12	ND11	ND12	
pyrene	ND12	ND12	ND90	ND12	ND11	ND12	
bis(2-ethylhexyl)phthalate	ND12	ND12	2100	ND12	ND11	ND12	
benzo(b)fluoranthene	ND12	ND12	ND90	ND12	ND11	ND12	
2,3-dichlorophenol	ND12	ND12	ND90	ND12	ND11	ND12	
2,5-dichlorophenol	ND12	4J	ND90	ND12	ND11	ND12	

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	BH-1	BH-3	NAPL OBA-2C	Rinsate Blank 1	Rinsate Blank 2	Rinsate Blank 3	Trip Blank 1
Sample Date	9/19/91	9/18/91	9/20/91	9/18/91	9/20/91	10/7/91	-----
Units	ug/L	ug/L	mg/kg	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL-BNAs							
3,4-dichlorophenol	ND12	ND12	ND90	ND12	ND11	ND12	NS
2,3,6-trichlorophenol	ND12	ND12	ND90	ND12	ND11	ND12	
2,3,4,5-tetrachlorophenol	ND12	4J	ND90UJ	ND12	ND11	ND12	
3-chlorophenol	ND12	10J	ND90	ND12	ND11	ND12	
4-chlorophenol	ND12	ND12	ND90	ND12	ND11	ND12	

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Trip Blank 2	Field Blank 1	Field Blank 2
Sample Date	-----	-----	-----
Units	ug/L	ug/L	ug/L
Compounds			
TCL-BNAs			
phenol	NS	NS	NS
2-chlorophenol			
1,3-dichlorobenzene			
1,4-dichlorobenzene			
benzyl alcohol			
1,2-dichlorobenzene			
2-methylphenol			
4-methylphenol			
hexachloroethane			
2,4-dimethylphenol			
benzoic acid			
2,4-dichlorophenol			
1,2,4-trichlorobenzene			
napthalene			
4-chloroanaline			
hexachlorobutadiene			
2,4,6-trichlorophenol			
2,4,5-trichlorophenol			
hexachlorobenzene			
pentachlorophenol			
phenanthrene			
anthracene			
fluoranthene			
pyrene			
bis(2-ethylhexyl)phthalate			
benzo(b)fluoranthene			
2,3-dichlorophenol			
2,5-dichlorophenol			

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Trip Blank 2	Field Blank 1	Field Blank 2
Sample Date	-----	-----	-----
Units	ug/L	ug/L	ug/L
Compounds			
TCL-BNAs			
3,4-dichlorophenol	NS	NS	NS
2,3,6-trichlorophenol			
2,3,4,5-tetrachlorophenol			
3-chlorophenol			
4-chlorophenol			

NS - Not sampled
ND - Not detected, applicable detection limit listed
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument but was diluted below the instrument detection limit on subsequent dilution runs.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	9/23/91	9/20/91	9/17/91	9/17/91	9/23/91	10/4/91	9/23/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - Pesticide/PCBs							
alpha-BHC	0.65	8.5	ND0.062	ND0.062	20	2.8	5.4
beta-BHC	ND0.056	21	0.32	ND0.062	0.66	1.1	0.95
delta-BHC	ND0.056	ND0.28	ND0.062	ND0.062	ND0.25	0.89	1.6
gamma-BHC	0.27	ND0.28	ND0.062	0.14	3.7	2.0	0.92
Heptachlor	ND0.056	ND0.28	ND0.062	ND0.062	ND0.25	0.47	ND0.23
Aldrin	ND0.056	ND0.28	ND0.062	ND0.062	ND0.25	0.094J	ND0.23
Heptachlor epoxide	ND0.056	ND0.28	ND0.062	ND0.062	ND0.25	ND0.12	ND0.23
4,4'-DDE	ND0.11	ND0.57	ND0.12	ND0.12	ND0.50	ND0.25	ND0.46
Endrin	ND0.11	ND0.57	ND0.12UJ	ND0.12	ND0.50	ND0.25	ND0.46
Endosulfan sulfate	0.51	ND0.57	ND0.12	ND0.12	ND0.50	0.062J	ND0.46
4,4'-DDT	ND0.11	ND0.57	ND0.12	ND0.12	ND0.50	ND0.25	ND0.46
alpha-Chlordane	ND0.56	ND2.8	ND0.62	ND0.62	ND2.5	ND1.2	ND2.3
gamma-Chlordane	ND0.56	ND2.8	ND0.62	ND0.62	ND2.5	ND1.2	ND2.3

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	9/23/91	9/23/91	10/4/91	9/20/91	9/18/91	9/18/91	9/20/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - Pesticide/PCBs							
alpha-BHC	5.2	2.6	1.5	ND0.062	0.56	21	190
beta-BHC	0.93	0.70	1.2	0.22	0.84	1.8	130
delta-BHC	1.6	0.41	0.28	ND0.062	0.036J	4.5	4.9
gamma-BHC	0.64	ND0.056	0.18	ND0.062	ND0.055	12	98
Heptachlor	ND0.22	ND0.056	ND0.062	ND0.062	ND0.055	ND0.29	ND0.62
Aldrin	ND0.22	ND0.056	ND0.062	ND0.062	ND0.055	ND0.29	ND0.62
Heptachlor epoxide	ND0.22	ND0.056	ND0.062	ND0.062	ND0.055	ND0.29	ND0.62
4,4'-DDE	ND0.44	ND0.11	ND0.12	ND0.12	ND0.11	ND0.58	ND1.2
Endrin	ND0.44	ND0.11	ND0.12	ND0.12	ND0.11	ND0.58	ND1.2
Endosulfan sulfate	ND0.44	ND0.11	ND0.12	ND0.12	ND0.11	1.3	ND1.2
4,4'-DDT	ND0.44	ND0.11	ND0.12	ND0.12	ND0.11	ND0.58	ND1.2
alpha-Chlordane	ND2.2	ND0.56	ND0.62	ND0.62	ND0.55	ND2.9	ND6.2
gamma-Chlordane	ND2.2	ND0.56	ND0.62	ND0.62	ND0.55	ND2.9	ND6.2

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-5A	OBA-5B	OBA-5C	OBA-6A	OBA-6B	OBA-6C	OBA-7A
Sample Date	9/20/91	9/20/91	10/7/91	9/20/91	9/19/91	9/19/91	9/19/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - Pesticide/PCBs							
alpha-BHC	180	120	ND0.062	ND0.062	3.7	39	0.066
beta-BHC	98	42	ND0.062	0.10	7.7	2.1	5.8
delta-BHC	4.3	3.0	ND0.062	ND0.062	ND0.12	0.22J	ND0.062
gamma-BHC	93	110	ND0.062	ND0.062	ND0.12	1.0	ND0.062
Heptachlor	ND0.62	ND0.62	ND0.062	ND0.062	ND0.12	ND0.62	ND0.062
Aldrin	ND0.62	ND0.62	ND0.062	ND0.062	ND0.12	ND0.62	0.028J
Heptachlor epoxide	ND0.62	ND0.62	ND0.062	ND0.062	ND0.12	ND0.62	0.071
4,4'-DDE	ND1.2	ND1.2	ND0.12	ND0.12	ND0.25	ND1.2	ND0.12
Endrin	ND1.2	ND1.2	ND0.12	ND0.12	ND0.25	ND1.2	ND0.12
Endosulfan sulfate	ND1.2	ND1.2	0.15	ND0.12	ND0.25	ND1.2	ND0.12
4,4'-DDT	ND1.2	ND1.2	ND0.12	ND0.12	1.0	ND1.2	ND0.12
alpha-Chlordane	ND6.2	ND6.2	ND0.62	ND0.62	ND1.2	ND6.2	ND0.62
gamma-Chlordane	ND6.2	ND6.2	ND0.62	ND0.62	ND1.2	ND6.2	ND0.62

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	OBA-7B	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C
Sample Date	9/19/91	10/7/91	10/7/91	9/19/91	9/18/91	9/18/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - Pesticide/PCBs							
alpha-BHC	ND0.062	ND0.062	ND0.056	0.10	8.4	6.9	1.2
beta-BHC	0.43	0.31	0.26	0.93	0.80	0.70	0.021J
delta-BHC	ND0.062	ND0.062	ND0.056	ND0.062	ND0.28	ND0.28	ND0.058
gamma-BHC	ND0.062	ND0.062	ND0.056	ND0.062	0.56	0.53	ND0.058
Heptachlor	ND0.062	0.90	1.0	ND0.062	ND0.28	ND0.28	ND0.058
Aldrin	ND0.062	ND0.062	ND0.056	0.065	ND0.28	ND0.28	ND0.058
Heptachlor epoxide	ND0.062	ND0.062	ND0.056	ND0.062	ND0.28	ND0.28	ND0.058
4,4'-DDE	ND0.12	ND0.12	ND0.11	ND0.12	ND0.56	ND0.55	ND0.12
Endrin	ND0.12	ND0.12	ND0.11	ND0.12	ND0.56	ND0.55	ND0.12
Endosulfan sulfate	ND0.12	ND0.12	ND0.11	ND0.12	ND0.56	ND0.55	ND0.12
4,4'-DDT	ND0.12	0.21	ND0.11	ND0.12	ND0.56	ND0.55	ND0.12
alpha-Chlordane	ND0.62	ND0.62	ND0.56	ND0.62	ND2.8	ND2.8	ND0.58
gamma-Chlordane	ND0.62	ND0.62	ND0.56	ND0.62	ND2.8	ND2.8	ND0.58

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	BH-1	BH-3	NAPL OBA-2C	Rinsate 1	Rinsate 2	Rinsate 3	Trip Blank 1
Sample Date	9/18/91	9/18/91	9/20/91	9/18/91	9/20/91	10/7/91	-----
Units	ug/L	ug/L	mg/kg	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - Pesticide/PCBs							
alpha-BHC	ND0.062	610	70	ND0.058	ND0.062	ND0.058	NS
beta-BHC	0.38	64	71	ND0.058	ND0.062	ND0.058	
delta-BHC	0.027J	170	170	ND0.058	ND0.062	ND0.058	
gamma-BHC	ND0.062	430	50	ND0.058	ND0.062	ND0.058	
Heptachlor	ND0.062	ND2.5	7.6	ND0.058	ND0.062	ND0.058	
Aldrin	ND0.062	ND2.5	ND4.9	ND0.058	ND0.062	ND0.058	
Heptachlor epoxide	ND0.062	ND2.5	5.2	ND0.058	ND0.062	ND0.058	
4,4'-DDE	ND0.12	ND5.0	9.0J	ND0.12	ND0.12	ND0.12	
Endrin	ND0.12	ND5.0	130	ND0.12	ND0.12	ND0.12	
Endosulfan sulfate	ND0.12	ND5.0	200	ND0.12	ND0.12	ND0.12	
4,4'-DDT	ND0.12	ND5.0	ND9.8	ND0.12	ND0.12	ND0.12	
alpha-Chlordane	ND0.62	ND25	1.8J	ND0.58	ND0.62	ND0.58	
gamma-Chlordane	ND0.62	ND25	3.9J	ND0.58	ND0.62	ND0.58	

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Trip Blank 2	Field Blank 1	Field Blank 2
Sample Date	-----	-----	-----
Units	ug/L	ug/L	ug/L
Compounds			
TCL - Pesticide/PCBs			
alpha-BHC	NS	NS	NS
beta-BHC			
delta-BHC			
gamma-BHC			
Heptachlor			
Aldrin			
Heptachlor epoxide			
4,4'-DDE			
Endrin			
Endosulfan sulfate			
4,4'-DDT			
alpha-Chlordane			
gamma-Chlordane			

NS - Not sampled
ND - Not detected, applicable detection limit listed
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument but was diluted below the instrument detection limit on subsequent dilution runs.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	9/23/91	9/17/91	9/17/91	9/17/91	9/23/91	10/4/91	9/23/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Methanol	ND1000	ND1000	2100	1800	ND1000	ND1000	ND1000
Sample Date	9/23/91	9/20/91	9/17/91	9/17/91	9/23/91	10/4/91	9/23/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Mercury	0.3	1.8	166	0.2	30.6	0.9	6.3J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	9/23/91	9/23/91	10/4/91	9/20/92	9/18/91	9/18/91	9/20/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Methanol	ND1000	ND1000	ND1000	ND1000	ND1000	ND1000	1400
Sample Date	9/23/91	9/23/91	10/4/91	9/23/91	9/18/91	9/18/91	9/20/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Mercury	0.3J	0.2	0.5	ND0.2	ND0.2	ND0.2	202

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	Dup OBA-5A	OBA-5B	OBA-5C	OBA-6A	OBA-6B	OBA-6C	OBA-7A
Sample Date	9/20/91	9/20/91	10/7/91	9/20/91	9/19/91	9/19/91	9/19/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Methanol	1500	68,000	ND1000	1,570,000	161,000	1500	ND1000
Sample Date	9/20/91	9/20/91	10/7/91	9/20/91	9/19/91	9/19/91	9/19/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Mercury	194	7.0	ND0.2	10.6	47.7	0.7	2.8

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	OBA-7B	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C
Sample Date	9/19/91	10/7/91	10/7/91	9/19/91	9/18/91	9/18/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Methanol	2300	ND1000	ND1000	ND1000	75,000J	6300J	ND1000
Sample Date	9/19/91	10/7/91	10/7/91	9/19/91	9/18/91	9/18/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Mercury	108	7.9	6.2	13.1	1.3	2.0	0.3

Olinrfi.tab

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

Well ID	BH-1	BH-3	OBA-2C NAPL	Rinsate 1	Rinsate 2	Rinsate 3	Trip Blank 1
Sample Date	9/18/91	9/18/91	9/20/91	9/18/91	9/20/91	10/7/91	9/18/91
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound							
Methanol	ND1000	3000	ND100,000 UJ	ND1000	ND1000	ND1000	ND1000
Sample Date	9/20/91	9/18/91	9/20/91	9/18/91	9/20/91	10/7/91	-----
Units	ug/L	ug/L	mg/kg	ug/L	ug/L	ug/L	ug/L
Mercury	ND0.2	223	ND0.14	ND0.2	ND0.2	ND0.2	NS

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK

	Trip	Field	Field
Well ID	Blank 2	Blank 1	Blank 2
Sample Date	9/20/91	9/18/91	10/7/91
Units	ug/L	ug/L	ug/L
Compound			
Methanol	ND1000	ND1000	ND1000
Sample Date	-----	-----	-----
Units	ug/L	ug/L	ug/L
Mercury	NS	NS	NS

NS - Not sampled
ND - Not detected, applicable detection limit listed
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument but was diluted below the instrument detection limit on subsequent dilution runs.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit

Phase I Groundwater Samples
Summary of Detected Compounds
March 1992

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	3/06/92	3/10/92	3/09/92	3/09/92	3/11/92	3/13/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	61	ND10	33	ND10,000	30	2,200J	330J
methylene chloride	150	ND5	ND5	22,000	ND5	ND10,000	ND500
acetone	ND50	ND10	ND10	ND10,000	ND10	ND20,000	ND1,000
1,1-dichloroethene	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500
1,2-dichloroethene (total)	420	ND5	52	9,300	120	14,000	790
chloroform	560	.4J	8	60,000	22	5,200J	ND500
2-butanone	ND50	ND10	ND10	ND10,000	ND10	ND20,000	ND1,000
1,1,1-trichloroethane	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500
carbon tetrachloride	4J	ND5	ND5	ND5,000	ND5	1,400J	ND500
1,2-dichloropropane	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500
trichloroethene	680	5U	56	98,000	68	390,000	110J
1,1,2-trichloroethane	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500
benzene	ND25	ND5	ND5	ND5,000	2J	ND10,000	2,900
tetrachloroethene	230	.6J	38	10,000	68	85,000	500U
1,1,2,2-tetrachloroethane	83	ND5	ND5	2,000J	6	100,000	85J
toluene	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500
chlorobenzene	ND25	ND5	ND5	ND5,000	5U	ND10,000	7,000
ethylbenzene	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500
total xylenes	ND25	ND5	ND5	ND5,000	ND5	ND10,000	ND500

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	3/12/92	3/13/92	3/13/92	3/11/92	3/10/92	3/10/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	340J	660J	3,200	ND10	10	79J	51J
methylene chloride	ND500	ND500	ND500	ND5	ND5	46J	ND100
acetone	ND1,000	ND1,000	ND1,000	ND10	ND10	ND500	ND200
1,1-dichloroethene	ND500	ND500	ND500	ND5	ND5	ND250	ND100
1,2-dichloroethene (total)	950	1,900	13,000	2J	74	1,200	720
chloroform	ND500	ND500	63J	2J	.8J	550	490
2-butanone	ND1,000	ND1,000	ND1,000	ND10	ND10	ND500	ND200
1,1,1-trichloroethane	ND500	ND500	ND500	ND5	ND5	ND250	16J
carbon tetrachloride	ND500	ND500	ND500	ND5	ND5	ND250	ND100
1,2-dichloropropane	ND500	ND500	ND500	ND5	ND5	ND250	ND100
trichloroethene	500U	ND500	500U	27	34	7,200	1,800
1,1,2-trichloroethane	ND500	ND500	ND500	ND5	ND5	ND250	ND100
benzene	3,700	5,800	7,900	ND5	14	ND250	620
tetrachloroethene	ND500	ND500	500U	11	12	5,100	1,600
1,1,2,2-tetrachloroethane	ND500	ND500	1,300	ND5	ND5	1,200	ND100
toluene	ND500	ND500	ND500	ND5	ND5	ND250	ND100
chlorobenzene	9,100	11,000	19,000	ND5	10U	ND250	600
ethylbenzene	ND500	ND500	ND500	ND5	ND5	ND250	ND100
total xylenes	ND500	ND500	ND500	ND5	ND5	ND250	ND100

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-5B	OBA-5C	OBA-5CDL	OBA-6A	OBA-6B	Dup OBA-6B	OBA-6C
Sample Date	3/12/92	3/12/92	3/12/92	3/11/92	3/11/92	3/11/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	ND20,000	180J	190J	9J	27J	25J	300J
methylene chloride	15,000	140	130J	.7J	12J	12J	ND500
acetone	ND20,000	ND200	ND1,000	34	200	180	ND1,000
1,1-dichloroethene	ND10,000	330	300J	ND5	ND25	ND25	ND500
1,2-dichloroethene (total)	4,100J	2,000	1,900	50	400	380	7,400
chloroform	19,000	280	260J	ND5	ND25	ND25	200J
2-butanone	ND20,000	ND200	ND1,000	6J	61	54	ND1,000
1,1,1-trichloroethane	ND10,000	ND100	ND500	ND5	ND25	ND25	ND500
carbon tetrachloride	ND10,000	ND100	ND500	ND5	ND25	ND25	380J
1,2-dichloropropane	ND10,000	ND100	ND500	ND5	ND25	ND25	ND500
trichloroethene	210,000	10,000E	11,000	23	500	460	85,000E
1,1,2-trichloroethane	2400J	680	700	ND5	ND25	ND25	ND500
benzene	32,000	1,100	1,100	3J	8J	8J	250J
tetrachloroethene	29,000	1,500	1,500	61	610	530	100,000E
1,1,2,2-tetrachloroethane	8,800J	430	360J	ND5	ND25	ND25	8,000
toluene	ND10,000	ND100	ND500	4J	5J	5J	ND500
chlorobenzene	2,000J	36J	ND500	1J	ND25	ND25	70J
ethylbenzene	ND10,000	ND100	ND500	.7J	8J	7J	ND500
total xylenes	ND10,000	ND100	ND500	6	ND25	ND25	ND500

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-6CDL	OBA-7A	OBA-7B	OBA-7C	OBA-7CDL	OBA-8A	OBA-8B
Sample Date	3/12/92	3/10/92	3/10/92	3/10/92	3/10/92	3/06/92	3/06/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	ND10,000	ND10	ND50	170J	160J	ND100	2J
methylene chloride	ND5,000	ND5	780	220	210	23J	15
acetone	ND10,000	ND10	ND50	ND200	ND400	ND100	ND20
1,1-dichloroethene	ND5,000	ND5	ND25	41J	38J	ND50	ND10
1,2-dichloroethene (total)	6,200	.6J	3J	1,400	1,400	ND50	11
chloroform	ND5,000	4J	ND25	820	800	1,500	300
2-butanone	ND10,000	ND10	ND50	ND200	ND400	ND100	ND20
1,1,1-trichloroethane	ND5,000	ND5	ND25	ND100	ND200	ND50	ND10
carbon tetrachloride	ND5,000	ND5	ND25	ND100	ND200	ND50	ND10
1,2-dichloropropane	ND5,000	ND5	ND25	ND100	ND200	ND50	ND10
trichloroethene	72,000	5U	25U	6300E	6,200	50U	51
1,1,2-trichloroethane	ND5,000	ND5	ND25	31J	ND200	ND50	ND10
benzene	ND5,000	ND5	5J	64J	60J	ND50	1J
tetrachloroethene	88,000	2J	ND25	3,100	3,300	10J	15
1,1,2,2-tetrachloroethane	7,400	ND5	ND25	ND100	ND200	ND50	4J
toluene	ND5,000	ND5	ND25	ND100	ND200	ND50	ND10
chlorobenzene	ND5,000	ND5	ND25	22J	200U	ND50	6J
ethylbenzene	ND5,000	ND5	ND25	ND100	ND200	ND50	ND10
total xylenes	ND5,000	ND5	ND25	ND100	ND200	ND50	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Dup OBA-8B	OBA-8C	BH-1	BH-3	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	3/06/92	3/06/92	3/06/92	3/06/92	3/09/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - VOCS							
vinyl chloride	2J	.9J	11	ND4,000	ND10	ND10	ND10
methylene chloride	20	ND5	ND5	ND2,000	ND5	ND5	ND5
acetone	ND20	ND10	ND10	ND4,000	ND10	ND10	ND10
1,1-dichloroethene	ND10	ND5	ND5	ND2,000	ND5	ND5	ND5
1,2-dichloroethene (total)	14	14	22	ND2,000	ND5	ND5	ND5
chloroform	280	1J	.3J	2,500	ND5	.7J	ND5
2-butanone	ND20	ND10	ND10	ND4,000	ND10	ND10	ND10
1,1,1-trichloroethane	ND10	ND5	ND5	ND2,000	ND5	ND5	ND5
carbon tetrachloride	ND10	ND5	ND5	ND2,000	ND5	ND5	ND5
1,2-dichloropropane	ND10	ND5	ND5	ND2,000	.9J	ND5	.9J
trichloroethene	70	85	17	1,200J	.4J	ND5	18
1,1,2-trichloroethane	ND10	ND5	ND5	ND2,000	ND5	ND5	ND5
benzene	1J	.7J	2J	57,000	ND5	ND5	ND5
tetrachloroethene	18	130	3J	ND2,000	ND5	ND5	12
1,1,2,2-tetrachloroethane	7J	ND5	1J	ND2,000	ND5	ND5	ND5
toluene	ND10	ND5	.5J	ND2,000	ND5	ND5	ND5
chlorobenzene	10U	.8J	2J	10,000	4J	2J	3J
ethylbenzene	ND10	ND5	ND5	ND2,000	ND5	ND5	ND5
total xylenes	ND10	ND5	ND5	ND2,000	ND5	ND5	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	**FB-1**	**FB-2**	**TB-1**	**TB-2**
Sample Date	3/10/92	3/13/92	3/10/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L
Compounds				
TCL - VOCS				
vinyl chloride	ND10	ND10	ND10	ND10
methylene chloride	ND5	ND5	ND5	1J
acetone	ND10	ND10	ND10	ND10
1,1-dichloroethene	ND5	ND5	ND5	ND5
1,2-dichloroethene (total)	ND5	ND5	ND5	ND5
chloroform	ND5	ND5	ND5	ND5
2-butanone	ND10	ND10	ND10	ND10
1,1,1-trichloroethane	ND5	ND5	ND5	ND5
carbon tetrachloride	ND5	ND5	ND5	ND5
1,2-dichloropropane	ND5	.8J	ND5	ND5
trichloroethene	ND5	ND5	ND5	ND5
1,1,2-trichloroethane	ND5	ND5	ND5	ND5
benzene	ND5	ND5	ND5	ND5
tetrachloroethene	ND5	ND5	ND5	ND5
1,1,2,2-tetrachloroethane	ND5	ND5	ND5	ND5
toluene	ND5	ND5	ND5	ND5
chlorobenzene	ND5	3J	ND5	ND5
ethylbenzene	ND5	ND5	ND5	ND5
total xylenes	ND5	ND5	ND5	ND5

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument and required dilution.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2BDL	OBA-2C
Sample Date	3/06/92	3/10/92	3/09/92	3/09/92	3/11/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS							
phenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	16
2-chlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
1,3-dichlorobenzene	ND12	ND12	ND12	9J	44J	42J	34
1,4-dichlorobenzene	ND12	ND12	ND12	9J	2J	ND120UJ	88
benzyl alcohol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	21
1,2-dichlorobenzene	ND12	ND12	ND12	19	45J	46J	460E
2-methylphenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
4-methylphenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
hexachloroethane	.9J	ND12	ND12	ND12	ND12UJ	ND120UJ	540E
benzoic acid	ND62	ND62	ND62	ND62	ND62UJ	ND620UJ	2,100E
2,4-dichlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
1,2,4-trichlorobenzene	ND12	ND12	14	6J	670E	660J	70
naphthalene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
hexachlorobutadiene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	50
2-methylnaphthalene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
2,4,6-trichlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
2,4,5-trichlorophenol	ND62	ND62	ND62	35J	14J	ND620UJ	ND62
acenaphthene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
dibenzofuran	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
fluorene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
hexachlorobenzene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
phenanthrene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
anthracene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
fluoranthene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
pyrene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
benzo(a)anthracene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
chrysene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
bis(2-ethylhexyl)phthalate	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	5J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2BDL	OBA-2C
Sample Date	3/06/92	3/10/92	3/09/92	3/09/92	3/11/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS (continued)							
benzo(b)fluoranthene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
benzo(k)fluoranthene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
benzo(a)pyrene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
indeno(1,2,3-cd)pyrene	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
benzo(g,h,i)perylene	ND12UJ	ND12UJ	ND12UJ	ND12UJ	ND12UJ	ND120UJ	ND12UJ
2,3-dichlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
2,5-dichlorophenol	ND12	ND12	ND12	ND12	1J	ND120UJ	ND12
3,4-dichlorophenol	ND12	ND12	ND12	14	3J	ND120UJ	ND12
3,5-dichlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
2,3,5-trichlorophenol	ND12	ND12	ND12	ND12	2J	ND120UJ	ND12
2,3,6-trichlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
3,4,5-trichlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
3-chlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12
2,3,4,6-tetrachlorophenol	ND12	ND12	ND12	ND12	ND12UJ	ND120UJ	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-2CDL	OBA-3A	OBA-3ADL	Dup OBA-3A	Dup OBA-3ADL	OBA-3B	OBA-3BDL
Sample Date	3/13/92	3/12/92	3/12/92	3/12/92	3/12/92	3/13/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS							
phenol	ND120	9J	ND1,200	ND12	ND1,200	ND12	ND1,200
2-chlorophenol	ND120	13	ND1,200	13	ND1,200	7J	ND1,200
1,3-dichlorobenzene	34J	390J	480J	620E	750J	460E	580J
1,4-dichlorobenzene	96J	1,300E	1,800J	1,800E	2,800J	1,200E	1,500
benzyl alcohol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
1,2-dichlorobenzene	520	1,600E	2,500J	2,700E	3,800J	1,500E	2,200
2-methylphenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
4-methylphenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
hexachloroethane	650	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
benzoic acid	2,800	ND62	ND6,200	ND62	ND6,200	ND62	ND6,200
2,4-dichlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
1,2,4-trichlorobenzene	78J	360	530J	500E	660J	140	ND1,200
naphthalene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
hexachlorobutadiene	53J	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
2-methylnaphthalene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
2,4,6-trichlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
2,4,5-trichlorophenol	ND620	ND62	ND6,200	ND62	ND6,200	ND62	ND6,200
acenaphthene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
dibenzofuran	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
fluorene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
hexachlorobenzene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
phenanthrene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
anthracene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
fluoranthene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
pyrene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
benzo(a)anthracene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
chrysene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
bis(2-ethylhexyl)phthalate	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-2CDL	OBA-3A	OBA-3ADL	Dup OBA-3A	Dup OBA-3ADL	OBA-3B	OBA-3BDL
Sample Date	3/13/92	3/12/92	3/12/92	3/12/92	3/12/92	3/13/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS (continued)							
benzo(b)fluoranthene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
benzo(k)fluoranthene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
benzo(a)pyrene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
indeno(1,2,3-cd)pyrene	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
benzo(g,h,i)perylene	ND120UJ	ND12UJ	ND1,200UJ	ND12UJ	ND1,200UJ	ND12UJ	ND1,200UJ
2,3-dichlorophenol	ND120	6J	ND1,200	4J	ND1,200	2J	ND1,200
2,5-dichlorophenol	ND120	2J	ND1,200	5J	ND1,200	.7J	ND1,200
3,4-dichlorophenol	ND120	4J	ND1,200	5J	ND1,200	5J	ND1,200
3,5-dichlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	2J	ND1,200
2,3,5-trichlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
2,3,6-trichlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
3,4,5-trichlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200
3-chlorophenol	ND120	22	ND1,200	23	ND1,200	12J	ND1,200
2,3,4,6-tetrachlorophenol	ND120	ND12	ND1,200	ND12	ND1,200	ND12	ND1,200

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-3C	OBA-3CDL	OBA-4A	OBA-4B	OBA-4C	OBA-5A	OBA-5ADL
Sample Date	3/13/92	3/13/92	3/11/92	3/10/92	3/10/92	3/12/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS							
phenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
2-chlorophenol	10J	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
1,3-dichlorobenzene	1,000E	1,100J	ND12	ND12	15	950E	960J
1,4-dichlorobenzene	3,200E	4,300	ND12	ND12	44	500E	450J
benzyl alcohol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
1,2-dichlorobenzene	4,200E	6,300	ND12	ND12	54	1,400E	1,200J
2-methylphenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
4-methylphenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
hexachloroethane	ND12	ND2,500	ND12	ND12	44	ND12	ND1,200
benzoic acid	ND62	ND12,000	ND62	ND62	ND62	ND62R	ND6,200
2,4-dichlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
1,2,4-trichlorobenzene	620E	700J	ND12	ND12	180	5,200E	13,000
naphthalene	2J	ND2,500	ND12	ND12	ND12	11J	ND1,200
hexachlorobutadiene	ND12	ND2,500	ND12	ND12	41	ND12	ND1,200
2-methylnaphthalene	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
2,4,6-trichlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
2,4,5-trichlorophenol	ND62	ND12,000	ND62	ND62	4J	6J	ND6,200
acenaphthene	ND12	ND2,500	ND12	ND12	ND12	3J	ND1,200
dibenzofuran	ND12	ND2,500	ND12	ND12	ND12	3J	ND1,200
fluorene	ND12	ND2,500	ND12	ND12	ND12	3J	ND1,200
hexachlorobenzene	ND12	ND2,500	ND12	ND12	ND12	6J	ND1,200
phenanthrene	ND12	ND2,500	ND12	ND12	ND12	17	ND1,200
anthracene	ND12	ND2,500	ND12	ND12	ND12	1J	ND1,200
fluoranthene	ND12	ND2,500	ND12	ND12	ND12	18	ND1,200
pyrene	ND12	ND2,500	ND12	ND12	ND12	12J	ND1,200
benzo(a)anthracene	ND12	ND2,500	ND12	ND12	ND12	4J	ND1,200
chrysene	ND12	ND2,500	ND12	ND12	ND12	8J	ND1,200
bis(2-ethylhexyl)phthalate	ND12	ND2,500	ND12	ND12	ND12	1J	ND1,200

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-3C	OBA-3CDL	OBA-4A	OBA-4B	OBA-4C	OBA-5A	OBA-5ADL
Sample Date	3/13/92	3/13/92	3/11/92	3/10/92	3/10/92	3/12/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS (continued)							
benzo(b)fluoranthene	ND12	ND2,500	ND12	ND12	ND12	8J	ND1,200
benzo(k)fluoranthene	ND12	ND2,500	ND12	ND12	ND12	4J	ND1,200
benzo(a)pyrene	ND12	ND2,500	ND12	ND12	ND12	1J	ND1,200
indeno(1,2,3-cd)pyrene	ND12	ND2,500	ND12	ND12	ND12	3J	ND1,200
benzo(g,h,i)perylene	ND12UJ	ND2,500UJ	ND12UJ	ND12UJ	ND12UJ	2J	ND1,200
2,3-dichlorophenol	8J	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
2,5-dichlorophenol	2J	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
3,4-dichlorophenol	4J	ND2,500	ND12	ND12	ND12	4J	ND1,200
3,5-dichlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
2,3,5-trichlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
2,3,6-trichlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
3,4,5-trichlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200
3-chlorophenol	18	ND2,500	ND12	ND12	ND12	2J	ND1,200
2,3,4,6-tetrachlorophenol	ND12	ND2,500	ND12	ND12	ND12	ND12R	ND1,200

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-5ARe	OBA-5ARe-DL	OBA-5B	OBA-5BDL	OBA-5C	OBA-6A	OBA-6B
Sample Date	3/12/92	3/12/92	3/12/92	3/12/92	3/12/92	3/11/92	3/11/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS							
phenol	ND12UJ	ND1,200UJ	50	ND1,200	30	39J	54
2-chlorophenol	ND12UJ	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
1,3-dichlorobenzene	690E	980J	170	250J	ND12	ND12UJ	21J
1,4-dichlorobenzene	360J	500J	100	170J	ND12	ND12UJ	6J
benzyl alcohol	ND12UJ	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	12J
1,2-dichlorobenzene	1,000E	1,400J	260	350J	13	ND12UJ	13J
2-methylphenol	ND12UJ	ND1,200UJ	ND12	ND1,200	ND12	3J	6J
4-methylphenol	ND12UJ	ND1,200UJ	ND12	ND1,200	ND12	17J	28
hexachloroethane	ND12R	ND1,200UJ	61	ND1,200	ND12	ND12UJ	ND12
benzoic acid	ND62UJ	ND6,200UJ	94J	ND6,200	ND62	22J	97J
2,4-dichlorophenol	ND12UJ	ND1,200UJ	6J	ND1,200	ND12	ND12UJ	ND12
1,2,4-trichlorobenzene	6,300E	13,000J	1,600E	2,400	10J	ND12UJ	360J
naphthalene	9J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	4J
hexachlorobutadiene	ND12R	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
2-methylnaphthalene	3J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
2,4,6-trichlorophenol	3J	ND1,200UJ	7J	ND1,200	ND12	ND12UJ	16
2,4,5-trichlorophenol	17J	ND6,200UJ	130	ND6,200	7J	ND62UJ	15J
acenaphthene	2J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
dibenzofuran	3J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
fluorene	2J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
hexachlorobenzene	5J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
phenanthrene	13J	ND1,200UJ	ND12	ND1,200	ND12	1J	ND12
anthracene	2J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
fluoranthene	16J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
pyrene	11J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
benzo(a)anthracene	4J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
chrysene	8J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
bis(2-ethylhexyl)phthalate	ND12R	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	4J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-5ARe	OBA-5AReDL	OBA-5B	OBA-5BDL	OBA-5C	OBA-6A	OBA-6B
Sample Date	3/12/92	3/12/92	3/12/92	3/12/92	3/12/92	3/11/92	3/11/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS (continued)							
benzo(b)fluoranthene	8J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
benzo(k)fluoranthene	4J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
benzo(a)pyrene	2J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
indeno(1,2,3-cd)pyrene	ND12R	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
benzo(g,h,i)perylene	2J	ND1,200UJ	ND12UJ	ND1,200UJ	ND12UJ	ND12UJ	ND12UJ
2,3-dichlorophenol	ND12UJ	ND1,200UJ	2J	ND1,200	ND12	ND12UJ	ND12
2,5-dichlorophenol	ND12UJ	ND1,200UJ	4J	ND1,200	ND12	ND12UJ	3J
3,4-dichlorophenol	5J	ND1,200UJ	10J	ND1,200	ND12	ND12UJ	2J
3,5-dichlorophenol	ND12UJ	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
2,3,5-trichlorophenol	2J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
2,3,6-trichlorophenol	ND12UJ	ND1,200UJ	8J	ND1,200	ND12	ND12UJ	ND12
3,4,5-trichlorophenol	1J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12
3-chlorophenol	ND12UJ	ND1,200UJ	8J	ND1,200	ND12	ND12UJ	ND12
2,3,4,6-tetrachlorophenol	4J	ND1,200UJ	ND12	ND1,200	ND12	ND12UJ	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Dup OBA-6B	Dup OBA-6BDL	OBA-6C	OBA-6CDL	OBA-7A	OBA-7B	OBA-7C
Sample Date	3/11/92	3/11/92	3/12/92	3/12/92	3/10/92	3/10/92	3/10/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS							
phenol	45	ND120	ND12	ND120	ND12	16	6J
2-chlorophenol	ND12	ND120	ND12	ND120	ND12	ND12	ND12
1,3-dichlorobenzene	110J	96J	44	38J	ND12	9J	6J
1,4-dichlorobenzene	30J	28J	25	24J	ND12	2J	4J
benzyl alcohol	17	ND120	ND12	ND120	ND12	8J	ND12
1,2-dichlorobenzene	72J	62J	90	72J	ND12	10J	9J
2-methylphenol	6J	ND120	ND12	ND120	ND12	4J	ND12
4-methylphenol	22	ND120	ND12	ND120	ND12	10J	ND12
hexachloroethane	ND12	ND120	910E	940	ND12	ND12	ND12
benzoic acid	54J	ND620	ND62	ND620	ND62	ND62	6J
2,4-dichlorophenol	ND12	ND120	8J	ND120	ND12	ND12	11J
1,2,4-trichlorobenzene	1,700E	1,800J	620E	580	ND12	91	14
naphthalene	5J	ND120	ND12	ND120	ND12	2J	ND12
hexachlorobutadiene	ND12	ND120	140	130	ND12	ND12	ND12
2-methylnaphthalene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
2,4,6-trichlorophenol	8J	ND120	ND12	ND120	ND12	ND12	5J
2,4,5-trichlorophenol	66J	54J	580E	520J	ND62	ND62	140
acenaphthene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
dibenzofuran	ND12	ND120	ND12	ND120	ND12	ND12	ND12
fluorene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
hexachlorobenzene	ND12	ND120	8J	ND120	ND12	ND12	ND12
phenanthrene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
anthracene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
fluoranthene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
pyrene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
benzo(a)anthracene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
chrysene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
bis(2-ethylhexyl)phthalate	2J	ND120	8J	ND120	ND12	ND12	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Dup OBA-6B	OBA-6BDL	OBA-6C	OBA-6CDL	OBA-7A	OBA-7B	OBA-7C
Sample Date	3/11/92	3/11/92	3/12/92	3/12/92	3/10/92	3/10/92	3/10/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS (continued)							
benzo(b)fluoranthene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
benzo(k)fluoranthene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
benzo(a)pyrene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
indeno(1,2,3-cd)pyrene	ND12	ND120	ND12	ND120	ND12	ND12	ND12
benzo(g,h,i)perylene	ND12UJ	ND120UJ	ND12UJ	ND120UJ	ND12UJ	ND12UJ	ND12
2,3-dichlorophenol	2J	ND120	ND12	ND120	ND12	ND12	ND12
2,5-dichlorophenol	2J	ND120	ND12	ND120	ND12	ND12	ND12
3,4-dichlorophenol	7J	ND120	4J	ND120	ND12	ND12	280
3,5-dichlorophenol	ND12	ND120	ND12	ND120	ND12	ND12	ND12
2,3,5-trichlorophenol	ND12	ND120	ND12	ND120	ND12	ND12	ND12
2,3,6-trichlorophenol	ND12	ND120	ND12	ND120	ND12	ND12	ND12
3,4,5-trichlorophenol	ND12	ND120	ND12	ND120	ND12	ND12	ND12
3-chlorophenol	2J	ND120	2J	ND120	ND12	ND12	4J
2,3,4,6-tetrachlorophenol	ND12	ND120	45	ND120	ND12	ND12	7J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C	BH-1	BH-3	BH-3DL
Sample Date	3/06/92	3/06/92	3/06/92	3/06/92	3/06/92	3/06/92	3/06/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS							
phenol	ND12	ND12	ND11	ND12	ND12UJ	62	84J
2-chlorophenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
1,3-dichlorobenzene	ND12	66	53	ND12	ND12UJ	550E	860
1,4-dichlorobenzene	ND12	7J	7J	ND12	ND12UJ	330	480
benzyl alcohol	ND12	ND12	ND11	ND12	ND12UJ	23	ND240
1,2-dichlorobenzene	ND12	ND12	ND11	ND12	ND12UJ	1000E	1600
2-methylphenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
4-methylphenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
hexachloroethane	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
benzoic acid	ND62	ND59	ND56	ND59	ND62UJ	340	280J
2,4-dichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
1,2,4-trichlorobenzene	38	ND12	ND11	7J	ND12UJ	2500E	4700
naphthalene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
hexachlorobutadiene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
2-methylnaphthalene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
2,4,6-trichlorophenol	ND12	3J	2J	ND12	ND12UJ	30	ND240
2,4,5-trichlorophenol	ND62	11J	5J	5J	ND62UJ	5J	ND1200
acenaphthene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
dibenzofuran	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
fluorene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
hexachlorobenzene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
phenanthrene	ND12	ND12	ND11	ND12	ND12UJ	2J	ND240
anthracene	ND12	ND12	ND11	ND12	ND12UJ	2J	ND240
fluoranthene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
pyrene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
benzo(a)anthracene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
chrysene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
bis(2-ethylhexyl)phthalate	ND12	ND12	3J	ND12	ND12UJ	ND12	26J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C	BH-1	BH-3	BH-3DL
Sample Date	3/06/92	3/06/92	3/06/92	3/06/92	3/06/92	3/06/92	3/06/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
TCL - BNAS (continued)							
benzo(b)fluoranthene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
benzo(k)fluoranthene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
benzo(a)pyrene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
indeno(1,2,3-cd)pyrene	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
benzo(g,h,i)perylene	ND12	ND12	ND11UJ	ND12	ND12UJ	ND12	ND240
2,3-dichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	12	ND240
2,5-dichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	.8J	ND240
3,4-dichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	3J	ND240
3,5-dichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
2,3,5-trichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
2,3,6-trichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	3J	ND240
3,4,5-trichlorophenol	ND12	ND12	ND11	ND12	ND12UJ	ND12	ND240
3-chlorophenol	ND12	ND12	ND11	ND12	ND12UJ	19	ND240
2,3,4,6-tetrachlorophenol	ND12	ND12	ND11	ND12	ND12UJ	20	ND240

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	3/09/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L
Compounds			
TCL - BNAS			
phenol	ND12	ND12	ND12
2-chlorophenol	ND12	ND12	ND12
1,3-dichlorobenzene	ND12	ND12	ND12
1,4-dichlorobenzene	ND12	ND12	ND12
benzyl alcohol	ND12	ND12	ND12
1,2-dichlorobenzene	ND12	ND12	ND12
2-methylphenol	ND12	ND12	ND12
4-methylphenol	ND12	ND12	ND12
hexachloroethane	ND12	ND12	ND12
benzoic acid	ND62	ND62	ND62
2,4-dichlorophenol	ND12	ND12	ND12
1,2,4-trichlorobenzene	ND12	ND12	ND12
naphthalene	ND12	ND12	ND12
hexachlorobutadiene	ND12	ND12	ND12
2-methylnaphthalene	ND12	ND12	ND12
2,4,6-trichlorophenol	ND12	ND12	ND12
2,4,5-trichlorophenol	ND62	ND62	ND62
acenaphthene	ND12	ND12	ND12
dibenzofuran	ND12	ND12	ND12
fluorene	ND12	ND12	ND12
hexachlorobenzene	ND12	ND12	ND12
phenanthrene	ND12	ND12	ND12
anthracene	ND12	ND12	ND12
fluoranthene	ND12	ND12	ND12
pyrene	ND12	ND12	ND12
benzo(a)anthracene	ND12	ND12	ND12
chrysene	ND12	ND12	ND12
bis(2-ethylhexyl)phthalate	ND12	ND12	ND12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	3/09/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L
Compounds			
TCL - BNAS (continued)			
benzo(b)fluoranthene	ND12	ND12	ND12
benzo(k)fluoranthene	ND12	ND12	ND12
benzo(a)pyrene	ND12	ND12	ND12
indeno(1,2,3-cd)pyrene	ND12	ND12	ND12
benzo(g,h,i)perylene	ND12UJ	ND12UJ	ND12UJ
2,3-dichlorophenol	ND12	ND12	ND12
2,5-dichlorophenol	ND12	ND12	ND12
3,4-dichlorophenol	ND12	ND12	ND12
3,5-dichlorophenol	ND12	ND12	ND12
2,3,5-trichlorophenol	ND12	ND12	ND12
2,3,6-trichlorophenol	ND12	ND12	ND12
3,4,5-trichlorophenol	ND12	ND12	ND12
3-chlorophenol	ND12	ND12	ND12
2,3,4,6-tetrachlorophenol	ND12	ND12	ND12

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument and required dilution.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2BDL	OBA-2C
Sample Date	3/06/92	3/11/92	3/09/92	3/09/92	3/11/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
Pesticide/PCBs							
alpha-BHC	.48	.18J	.022J	.24	22	33	2.3
beta-BHC	.055J	8.0	.061J	.040J	1.8	1.9J	1.3
delta-BHC	.025J	ND .62	ND .062	.011J	.18J	ND 6.2	.96
gamma-BHC (lindane)	.21	ND .62	.035J	.039J	3.3	3J	1.6
heptachlor	ND .056	ND .62	ND .062	ND .062	ND .62	ND 6.2	1.2
aldrin	ND .056	ND .62	ND .062	.0089J	ND .62	ND 6.2	ND .62
heptachlor epoxide	ND .056	ND .62	ND .062	.024J	.8	ND 6.2	ND .62
dieldrin	ND .11	ND 1.2	ND .12	ND .12	ND 1.2	ND 12	.14J
4,4'-DDE	ND .11	ND 1.2	ND .12	ND .12	ND 1.2	ND 12	ND 1.2
endrin	ND .11	ND 1.2	ND .12	ND .12	ND 1.2	ND 12	ND 1.2
4,4'-DDD	ND .11	ND 1.2	ND .12	ND .12	ND 1.2	ND 12	ND 1.2
4,4'-DDT	ND .11	ND 1.2	ND .12	ND .12	ND 1.2	ND 12	ND 1.2
endrin ketone	ND .11	ND 1.2	ND .12	.068J	ND 1.2	ND 12	ND 1.2

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-3A	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C
Sample Date	3/12/92	3/12/92	3/13/92	3/13/92	3/11/92	3/10/92	3/10/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
Pesticide/PCBs							
alpha-BHC	3.1	2.8	1.4	1.2	ND .062	.079	11J
beta-BHC	.93	.85	.66	1.0	.23	1.0	2.3J
delta-BHC	.90	.81	.33	.22J	ND .062	.019J	3.6J
gamma-BHC (lindane)	5.0J	.61J	ND .31	.34	ND .062	.0090J	11J
heptachlor	ND .62	ND .62	ND .31	ND .31	ND .062	ND .062	ND .31UJ
aldrin	ND .62	ND .62	ND .31	ND .31	ND .062	ND .062	ND .31UJ
heptachlor epoxide	ND .62	ND .62	ND .31	ND .31	ND .062	ND .062	ND .31UJ
dieldrin	ND 1.2	ND 1.2	ND .62	ND .62	ND .12	ND .12	ND .62UJ
4,4'-DDE	ND 1.2	ND 1.2	ND .62	ND .62	ND .12	ND .12	ND .62UJ
endrin	ND 1.2	ND 1.2	ND .62	ND .62	ND .12	ND .12	ND .62UJ
4,4'-DDD	ND 1.2	ND 1.2	ND .62	ND .62	ND .12	ND .12	ND .62UJ
4,4'-DDT	ND 1.2	ND 1.2	ND .62	ND .62	ND .12	ND .12	ND .62UJ
endrin ketone	ND 1.2	ND 1.2	ND .62	ND .62	ND .12	ND .12	ND .62UJ

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-4CDL	OBA-5A	OBA-5ADL	OBA-5B	OBA-5BDL	OBA-5C	OBA-6A
Sample Date	3/10/92	3/12/92	3/12/92	3/12/92	3/12/92	3/12/92	3/11/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
Pesticide/PCBs							
alpha-BHC	26J	31	150	29	120	.57	ND.062
beta-BHC	2.6J	49	120	34	47	.091	.072
delta-BHC	3.1J	2.5	2.3J	6.6	5.6J	.025J	ND .062
gamma-BHC (1indane)	16J	34	130	34	140	.023J	.036J
heptachlor	ND 3.1UJ	.29J	ND 6.2	ND .62	ND 6.2	ND .062	ND .062
aldrin	ND 3.1UJ	ND .62	ND 6.2	ND .62	ND 6.2	.051J	ND .062
heptachlor epoxide	ND 3.1UJ	ND .62	ND 6.2	ND .62	ND 6.2	ND .062	ND .062
dieldrin	ND 6.2UJ	2.3	ND 12	ND 1.2	ND 12	ND .12	ND .12
4,4'-DDE	ND 6.2UJ	.13J	ND 12	ND 1.2	ND 12	ND .12	ND .12
endrin	ND 6.2UJ	.44J	ND 12	ND 1.2	ND 12	ND .12	.062J
4,4'-DDD	ND 6.2UJ	.25J	ND 12	ND 1.2	ND 12	ND .12	ND .12
4,4'-DDT	ND 6.2UJ	ND 1.2	ND 12	ND 1.2	ND 12	ND .12	ND .12
endrin ketone	ND 6.2UJ	ND 1.2	ND 12	ND 1.2	ND 12	.065J	ND .12

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-6B	Dup OBA-6B	OBA-6C	OBA-6CDL	OBA-7A	OBA-7B	OBA-7C
Sample Date	3/11/92	3/11/92	3/12/92	3/12/92	3/10/92	3/10/92	3/10/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
Pesticide/PCBs							
alpha-BHC	ND .062	ND .31	12	35	.011J	ND .062	.017J
beta-BHC	.14J	2.4J	3.3	3.2	1.3	.19	.32
delta-BHC	ND .062	ND .31	.67	.56J	ND .062	ND .062	ND .12
gamma-BHC (lindane)	.059J	ND .31	2.7	2.5J	ND .062	ND .062	.049J
heptachlor	ND .062	ND .31	.57	ND 3.1	ND .062	ND .062	.060J
aldrin	ND .062	ND .31	.43	ND 3.1	ND .062	ND .062	ND .12
heptachlor epoxide	ND .062	ND .31	ND .31	ND 3.1	ND .062	ND .062	ND .12
dieldrin	ND .12	ND .62	ND .62	ND 6.2	ND .12	ND .12	ND .025
4,4'-DDE	ND .12	ND .62	ND .62	ND 6.2	ND .12	ND .12	ND .025
endrin	.039J	ND .62	ND .62	ND 6.2	ND .12	ND .12	ND .025
4,4'-DDD	ND .12	ND .62	ND .62	ND 6.2	ND .12	ND .12	ND .025
4,4'-DDT	ND .12	ND .62	ND .62	ND 6.2	ND .12	ND .12	ND .025
endrin ketone	ND .12	ND .62	.11J	ND 6.2	ND .12	ND .12	.038J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-8A	OBA-8B	Dup OBA-8B	OBA-8C	BH-1	BH-3	BH-3DL
Sample Date	3/06/92	3/06/92	3/06/92	3/06/92	3/09/92	3/09/92	3/09/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compounds							
Pesticide/PCBs							
alpha-BHC	.12	6.3	6.8	.16	.18	260	980
beta-BHC	.51	.95	.84	.032J	.46	130	180
delta-BHC	ND .062	ND .59	ND .62	ND .062	ND .062	240	380
gamma-BHC (lindane)	ND .062	ND .59	ND .62	ND .062	ND .062	280	890
heptachlor	ND .062	ND .59	ND .62	ND .062	.056J	ND 6.2	ND 62
aldrin	.022J	ND .59	ND .62	ND .062	ND .062	ND 6.2	ND 62
heptachlor epoxide	.053J	ND .59	ND .62	ND .062	ND .062	ND 6.2	ND 62
dieldrin	ND .12	ND 1.2	ND 1.2	ND .12	ND .12	ND 12	ND 120
4,4'-DDE	.023J	ND 1.2	ND 1.2	ND .12	ND .12	ND 12	ND 120
endrin	ND .12	ND 1.2	ND 1.2	ND .12	ND .12	ND 12	ND 120
4,4'-DDD	ND .12	ND 1.2	ND 1.2	ND .12	ND .12	ND 12	ND 120
4,4'-DDT	.025J	ND 1.2	ND 1.2	ND .12	ND .12	ND 12	ND 120
endrin ketone	ND .12	.26J	.22J	ND .12	ND .12	ND 12	ND 120

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	3/09/92	3/11/92	3/13/92
Units	ug/L	ug/L	ug/L
Compounds			
Pesticide/PCBs			
alpha-BHC	ND .062	ND .056	ND .062
beta-BHC	ND .062	ND .056	ND .062
delta-BHC	ND .062	ND .056	ND .062
gamma-BHC (lindane)	ND .062	ND .056	ND .062
heptachlor	ND .062	ND .056	ND .062
aldrin	ND .062	ND .056	ND .062
heptachlor epoxide	ND .062	ND .056	ND .062
dieldrin	ND .12	ND .11	ND .12
4,4'-DDE	ND .12	ND .11	ND .12
endrin	ND .12	ND .11	ND .12
4,4'-DDD	ND .12	ND .11	ND .12
4,4'-DDT	ND .12	ND .11	ND .12
endrin ketone	ND .12	ND .11	ND .12

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	3/06/92	3/10/92	3/09/92	3/09/92	3/11/92	3/13/92	3/12/92
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compounds							
methanol	ND .55	ND .55	ND .55	ND .55	ND .55	ND .55	ND .55
Sample Date	3/06/92	3/11/92	3/09/92	3/09/92	3/11/92	3/13/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
mercury	ND .20	.20	134	.20	36	ND .20	ND .20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	3/12/92	3/13/92	3/13/92	3/11/92	3/10/92	3/10/92	3/12/92
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compounds							
methanol	ND .55	ND .55	ND .55	ND .55	ND .55	ND .55	ND .55
Sample Date	3/12/92	3/13/92	3/13/92	3/13/92	3/10/92	3/10/92	3/12/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
mercury	.30	ND .20	ND .20	ND .20	ND .20	ND .20	120

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	OBA-5B	OBA-5C	OBA-6A	OBA-6B	Dup OBA-6B	OBA-6C	OBA-7A
Sample Date	3/12/92	3/12/92	3/11/92	3/11/92	3/11/92	3/12/92	3/10/92
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compounds							
methanol	64J	1.4J	560J	2500J	1700J	.50J	ND .55
Sample Date	3/12/92	3/12/92	3/11/92	3/11/92	3/11/92	3/12/92	3/10/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
mercury	2.5	ND .20	22.0	193J	107J	ND .20	.56

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	**OBA-7B**	**OBA-7C**	**OBA-8A**	**OBA-8B**	**Dup OBA-8B**	**OBA-8C**	**BH-1**
Sample Date	3/10/92	3/10/92	3/06/92	3/06/92	3/06/92	3/06/92	3/09/92
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compounds							
methanol	1.2	ND .55	ND .55	ND .55	.60	.59	ND .55
Sample Date	3/10/92	3/10/92	3/06/92	3/06/92	3/06/92	3/06/92	3/10/92
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
mercury	81.2	2.3	.55	ND .20	.31	ND .20	.29

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	BH-3	Rinsate-1	Rinsate-2	Rinsate-3	FB-1	FB-2	TB-1
Sample Date	3/09/92	3/09/92	3/11/92	3/13/92	3/10/92	3/13/92	3/10/92
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compounds							
methanol	1.2	ND .55	ND .55	ND .55	ND .55	ND .55	ND .55

Well ID							
Sample Date	3/09/92	3/09/92	3/11/92	3/13/92	---	---	---
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
mercury	146	ND .20	.90	ND .20	NS	NS	NS

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MARCH 1992 SAMPLING ROUND

Well ID	TB-2
Sample Date	3/13/92
Units	mg/L
Compounds	
methanol	ND .55
Sample Date	---
Units	ug/L
mercury	NS

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

Phase I Groundwater Samples
Summary of Detected Compounds
June 1992

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Olin Production Well	Olin Production Well DL	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2BDL
Sample Date	6/23/92	6/23/92	6/24/92	6/23/92	6/23/92	6/26/92	6/26/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - VOCS							
vinyl chloride	110	160J	ND10	31	ND5,000	64	66
methylene chloride	75	170U	5U	8	22,000	ND5	ND25
acetone	ND10	ND200	ND10	ND10	ND5,000	ND10	ND50
carbon disulfide	ND5	ND100	ND5	ND5	ND2,500	ND5	ND25
1,1-dichloroethene	2J	ND100	ND5	0.9J	380J	2J	ND25
1,1-dichloroethane	ND5	ND100	ND5	ND5	ND2,500	ND5	ND25
1,2-dichloroethene (total)	410E	610	ND5	49	8,200	390E	380
chloroform	310E	510	2J	13	51,000	29	28
2-butanone	ND10	ND200	ND10	ND10	ND5,000	ND10	ND50R
1,1,1-trichloroethane	2J	ND100	ND5	ND5	ND2,500	ND5	ND25
carbon tetrachloride	8J	ND100	ND5	ND5UJ	ND2,500	0.8J	ND25
1,2-dichloropropane	ND5	ND100	ND5	ND5	ND2,500	ND5	ND25
trichloroethene	1,200E	1,100J	2J	190	84,000	410E	510
1,1,2-trichloroethane	ND5	ND100	ND5	ND5	730J	ND5	ND25
benzene	2J	ND100	ND5	ND5	420J	3J	ND25
tetrachloroethene	480E	600	3J	150J	12,000	360E	480
1,1,2,2-tetrachloroethane	80	100	ND5	ND5	ND2,500	ND5	ND25
toluene	ND5	ND100	0.2J	ND5	ND2,500	0.5J	ND25
chlorobenzene	0.9J	ND100	ND5	ND5	ND2,500	11	12J
ethylbenzene	ND5	ND100	ND5	ND5	ND2,500	ND5	ND25
total xylenes	ND5	ND100	ND5	ND5	ND2,500	ND5	ND25

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-2C	Dup. OBA-2C	Dup. DL OBA-2C	OBA-3A	Dup. OBA-3A	OBA-3B	OBA-3C
Sample Date	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - VOCS							
vinyl chloride	2,600J	2,600	1,900J	120J	120J	400J	2,000
methylene chloride	ND10,000	430J	ND10,000	ND250	ND250	ND500	ND500
acetone	ND20,000	ND1,000	ND20,000	ND500	ND500	ND1,000	ND1,000
carbon disulfide	ND10,000	570	ND10,000	ND250	ND250	ND500	ND500
1,1-dichloroethene	ND10,000	140J	ND10,000	ND250	ND250	ND500	ND500
1,1-dichloroethane	ND10,000	ND500	ND10,000	ND250	ND250	ND500	ND500
1,2-dichloroethene (total)	15,000	16,000	13,000	420	420	1,500	15,000
chloroform	5,500J	5,700	5,000J	ND250	ND250	ND500	90J
2-butanone	ND20,000	ND1,000	ND20,000R	ND500R	ND500R	ND1,000R	ND1,000R
1,1,1-trichloroethane	ND10,000	ND500	ND10,000	ND250	ND250	ND500	ND500
carbon tetrachloride	1,400J	1,400	1,200J	ND250	ND250	ND500	ND500
1,2-dichloropropane	ND10,000	ND500	ND10,000	ND250	ND250	ND500	ND500
trichloroethene	350,000	140,000E	330,000	98J	100J	87J	150J
1,1,2-trichloroethane	ND10,000	ND500	ND10,000	ND250	ND250	ND500	ND500
benzene	ND10,000	160J	ND10,000	2,600	2,600	6,700	6,700
tetrachloroethene	91,000	50,000E	77,000	ND250	45J	ND500	150J
1,1,2,2-tetrachloroethane	220,000J	70,000E	82,000J	ND250	250	ND500	410J
toluene	ND10,000	79J	ND10,000	ND250	ND250	ND500	ND500
chlorobenzene	560J	120J	1,900J	6,200	7,400	13,000	16,000
ethylbenzene	ND10,000	ND500	ND10,000	ND250	ND250	ND500	ND500
total xylenes	ND10,000	ND500	ND10,000	ND250	ND250	ND500	ND500

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-4A	OBA-4B	OBA-4C	OBA-5A	OBA-5B	OBA-5BDL	OBA-5C
Sample Date	6/25/92	6/24/92	6/24/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - VOCS							
vinyl chloride	ND10	13	88J	ND100	ND4,000	ND20,000	160J
methylene chloride	ND5	ND5	200U	50U	4,200U	10,000U	500U
acetone	ND10R	ND10	ND400	ND100	ND4,000	ND20,000	ND1,000
carbon disulfide	ND5	ND5	ND200	ND50	ND2,000	ND10,000	ND500
1,1-dichloroethene	ND5	ND5	ND200	ND50	260J	ND10,000	300J
1,1-dichloroethane	ND5	ND5	ND200	ND50	ND1,000	ND10,000	ND500
1,2-dichloroethene (total)	3J	90	1,000	290	1,900J	1,400J	3,100
chloroform	2J	0.9J	460	560	4,600	4,700J	300J
2-butanone	ND10R	ND10	ND400	ND100	ND4,000	ND20,000	ND1,000
1,1,1-trichloroethane	ND5	ND5	ND200	6J	ND2,000	ND10,000	ND500
carbon tetrachloride	ND5	ND5	ND200	5J	ND2,000	ND10,000	ND500
1,2-dichloropropane	ND5	ND5	ND200	ND50	ND2,000	ND10,000	ND500
trichloroethene	36	35	6,300	1,500	100,000E	96,000	12,000
1,1,2-trichloroethane	ND5	ND5	ND200	ND50	1,500J	1,300J	670
benzene	ND5	16	ND200	100	19,000	18,000	820
tetrachloroethene	16	12	6,000	1,100	9,500	9,100J	880
1,1,2,2-tetrachloroethane	ND5	ND5	360	ND50	5,600	4,800J	130J
toluene	ND5	ND5	ND200	ND50	ND2,000	ND10,000	ND500
chlorobenzene	ND5	11	18J	140	1,200J	1,200J	ND500
ethylbenzene	ND5	ND5	ND200	ND50	ND2,000	ND10,000	ND500
total xylenes	ND5	ND5	ND200	ND50	ND2,000	ND10,000	ND500

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-6A	OBA-6B	OBA-6C	OBA-7A	OBA-7B	OBA-7C	OBA-7CDL
Sample Date	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - VOCS							
vinyl chloride	9J	22J	330J	ND10	ND50	230	240J
methylene chloride	ND5	12J	200U	ND5	910	190U	240
acetone	9J	150J	ND400	ND10R	ND50	ND100	ND400
carbon disulfide	ND5	ND25	ND200	ND5	ND25	ND50	ND200
1,1-dichloroethene	ND5	ND25	ND200	ND5	ND25	17J	ND200
1,1-dichloroethane	ND5	ND25	ND200	ND5	ND25	ND50	ND200
1,2-dichloroethene (total)	41	300	5,900	4J	4J	1,800	1,700
chloroform	ND5	ND25	100J	2J	ND25	220	220
2-butanone	13J	64	ND400	ND10R	ND50	ND100	ND400
1,1,1-trichloroethane	ND5	ND25	ND200	ND5	ND25	ND50	ND200
carbon tetrachloride	ND5	ND25	ND200	ND5	ND25	ND50	ND200
1,2-dichloropropane	ND5	ND25	ND200	ND5	ND25	ND50	ND200
trichloroethene	18	480	7,500	3J	5J	2,400E	2,200
1,1,2-trichloroethane	ND5	ND25	ND200	ND5	ND25	7J	ND200
benzene	2J	7J	180J	ND5	6J	51	49J
tetrachloroethene	28	530	2,400	1J	ND25	960	880
1,1,2,2-tetrachloroethane	ND5	ND25	71J	ND5	ND25	ND50	ND200
toluene	3J	5J	ND200	ND5	3J	ND50	ND200
chlorobenzene	5U	25U	62J	ND5	25U	50U	200U
ethylbenzene	0.6J	8J	ND200	ND5	ND25	ND50	ND200
total xylenes	3J	ND25	ND200	ND5	2J	ND50	ND200

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Dup OBA-7C	Dup DL OBA-7C	OBA-8A	OBA-8A DL	OBA-8B	OBA-8C	Dup OBA-8C
Sample Date	6/25/92	6/25/92	6/24/92	6/24/92	6/24/92	6/24/92	6/24/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - VOCS							
vinyl chloride	190	220	ND100	ND200	ND20	ND10	ND10
methylene chloride	150	180U	50U	100U	15U	5U	5U
acetone	ND50	ND200	ND100	ND200	ND20	ND10	ND10
carbon disulfide	ND25	ND100	ND50	ND100	ND10	ND5	ND5
1,1-dichloroethene	17J	12J	ND50	ND100	0.4J	ND5	ND5
1,1-dichloroethane	ND25	ND100	ND50	ND100	2J	ND5	ND5
1,2-dichloroethene (total)	1,800E	1,700	ND50	ND100	8J	4J	4J
chloroform	190	180	2,100E	2,700	240	ND5	ND5
2-butanone	ND50	ND200	ND50	ND200	ND20	ND10	ND10
1,1,1-trichloroethane	ND25	ND100	ND50	ND100	ND10	ND5	ND5
carbon tetrachloride	ND25	ND100	ND50	ND100	ND10	ND5	ND5
1,2-dichloropropane	ND25	ND100	ND50	ND100	ND10	ND5	ND5
trichloroethene	2,200E	2,200	ND50	ND100	64	9	9
1,1,2-trichloroethane	5J	ND100	ND50	ND100	ND10	ND5	ND5
benzene	45	52J	ND50	ND100	2J	ND5	ND5
tetrachloroethene	890	840	4J	ND100	16	14	13
1,1,2,2-tetrachloroethane	ND25	ND100	ND50	ND100	ND10	ND5	ND5
toluene	ND25	ND100	ND50	ND100	ND10	ND5	ND5
chlorobenzene	25U	21J	ND50	ND100	10U	ND5	ND5
ethylbenzene	ND25	ND100	ND50	ND100	ND10	ND5	ND5
total xylenes	ND25	ND100	ND50	ND100	ND10	ND5	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	BH-1	BH-3	BH-3 DL	Rinsate-1	Rinsate-2	Rinsate-3	FB-1
Sample Date	6/24/92	6/24/92	6/24/92	6/24/92	6/25/92	6/26/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - VOCS							
vinyl chloride	8J	ND2,000	ND10,000	ND10	ND10	ND10	ND10
methylene chloride	5U	1,000U	5,000U	5U	5U	ND5	5U
acetone	ND10	ND2,000	ND10,000	ND10	ND10	ND10	ND10
carbon disulfide	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
1,1-dichloroethene	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
1,1-dichloroethane	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
1,2-dichloroethene (total)	30	220J	ND5,000	ND5	ND5	ND5	ND5
chloroform	ND5	3,600	3,500J	ND5	ND5	ND5	ND5
2-butanone	ND10	ND2,000	ND10,000	ND10	ND10	ND10R	ND10
1,1,1-trichloroethane	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
carbon tetrachloride	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
1,2-dichloropropane	ND5	ND1,000	ND5,000	0.9J	0.7J	ND5	0.7J
trichloroethene	17	1,200	1,200J	ND5	ND5	5	ND5
1,1,2-trichloroethane	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
benzene	1J	42,000E	43,000	ND5	ND5	ND5	ND5
tetrachloroethene	3J	200J	ND5,000	ND5	ND5	4J	ND5
1,1,2,2-tetrachloroethane	ND5	270J	ND5,000	ND5	ND5	ND5	ND5
toluene	0.4J	ND1,000	ND5,000	ND5	ND5	ND5	ND5
chlorobenzene	1J	11,000	11,000	2J	1J	1J	1J
ethylbenzene	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5
total xylenes	ND5	ND1,000	ND5,000	ND5	ND5	ND5	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	FB-2	TB-1	TB-2
Sample Date	6/26/92	6/25/92	6/26/92
Units	µg/L	µg/L	µg/L
Compounds			
TCL - VOCS			
vinyl chloride	ND10	ND10	ND10
methylene chloride	ND5	5U	ND5
acetone	ND10	ND10	ND10
carbon disulfide	ND5	ND5	ND5
1,1-dichloroethene	ND5	ND5	ND5
1,1-dichloroethane	ND5	ND5	ND5
1,2-dichloroethene (total)	ND5	ND5	ND5
chloroform	ND5	ND5	ND5
2-butanone	ND10	ND10	ND10
1,1,1-trichloroethane	ND5	ND5	ND5
carbon tetrachloride	ND5	ND5	ND5
1,2-dichloropropane	0.9J	ND5	ND5
trichloroethene	ND5	ND5	ND5
1,1,2-trichloroethane	ND5	ND5	ND5
benzene	ND5	ND5	ND5
tetrachloroethene	ND5	ND5	ND5
1,1,2,2-tetrachloroethane	ND5	ND5	ND5
toluene	ND5	ND5	ND5
chlorobenzene	2J	ND5	ND5
ethylbenzene	ND5	ND5	ND5
total xylenes	ND5	ND5	ND5

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument and required dilution.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2B DL	OBA-2C
Sample Date	6/23/92	6/24/92	6/23/92	6/23/92	6/26/92	6/26/92	6/26/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - BNAS							
phenol	ND12	ND10	ND10	ND10	ND10	ND200	10
2-chlorophenol	ND12	ND10	ND10	ND10	ND10	ND200	ND10
1,3-dichlorobenzene	ND12	ND10	ND10	ND10	94	ND200	25
1,4-dichlorobenzene	ND12	ND10	ND10	ND10	46	ND200	72
benzyl alcohol	ND12	ND10	ND10	ND10	ND10	ND200	8J
1,2-dichlorobenzene	ND12	ND10	ND10	14	240	190J	470E
4-methylphenol	ND12	ND10	ND10	ND10	ND10	ND200	ND10
hexachloroethane	ND12	ND10	ND10	ND10	4J	ND200	650E
benzoic acid	ND62	ND50	5J	ND52	ND50	ND1,000	3,900E
1,2,4-trichlorobenzene	ND12	ND10	24	ND10	2,900E	2,600	58
naphthalene	ND12	ND10	ND10	ND10	ND10	ND200	ND10
hexachlorobutadiene	ND12	ND10	ND10	ND10	8J	ND200	42
2,4,6-trichlorophenol	ND12	ND10	ND10	ND10	ND10	ND200	ND10
2,4,5-trichlorophenol	ND62	ND50	ND50	41J	16J	ND1,000	ND50
phenanthrene	ND12	ND10	ND10	ND10	ND10	ND200	ND10
bis(2-ethylhexyl)phthalate	ND12	ND10	ND10	ND10	ND10	ND200	ND10
benzo(b)fluoranthene	ND12	ND10	ND10	ND10	ND10	ND200	ND10
3,4-dichlorophenol	ND12	ND10	ND10	ND10	ND10	ND200	ND10
3-chlorophenol	ND12	ND10	ND10	ND10	ND10	ND200	ND10
2,3,4,6-tetrachlorophenol	ND12	ND10	ND10	ND10	ND10	ND200	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-2C DL	Dup OBA-2C	Dup OBA-2C DL	OBA-3A	OBA-3A DL	Dup OBA-3A	Dup OBA-3A DL
Sample Date	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - BNAS							
phenol	ND200	ND10	ND500	ND10	ND200	ND10	ND200
2-chlorophenol	ND200	ND10	ND500	ND10	ND200	ND10	ND200
1,3-dichlorobenzene	ND200	58	ND500	640E	530	810E	740
1,4-dichlorobenzene	ND200	190	ND500	2,300E	2,000	2,800E	2,800
benzyl alcohol	ND200	7J	ND500	ND10	ND200	ND10	ND200
1,2-dichlorobenzene	400	680E	570	3,100E	2,700	4,000E	3,800
4-methylphenol	ND200	ND10	ND500	ND10	ND200	ND10	ND200
hexachloroethane	470	730E	410J	ND10	ND200	ND10	ND200
benzoic acid	3,000	2,500E	3,600	ND50	ND1,000	ND50	ND1,000
1,2,4-trichlorobenzene	ND200	89	ND500	530E	420	660E	610
naphthalene	ND200	ND10	ND500	ND10	ND200	ND10	ND200
hexachlorobutadiene	ND200	43	ND500	ND10	ND200	ND10	ND200
2,4,6-trichlorophenol	ND200	ND10	ND500	ND10	ND200	ND10	ND200
2,4,5-trichlorophenol	ND1,000	ND50	ND2,500	ND50	ND1,000	ND50	ND1,000
phenanthrene	ND200	ND10	ND500	ND10	ND200	ND10	ND200
bis(2-ethylhexyl)phthalate	ND200	ND10	ND500	ND10	ND200	ND10	ND200
benzo(b)fluoranthene	ND200	ND10	ND500	ND10	ND200	ND10	ND200
3,4-dichlorophenol	ND200	ND10	ND500	ND10	ND200	ND10	ND200
3-chlorophenol	ND200	ND10	ND500	16	ND200	ND10	ND200
2,3,4,6-tetrachlorophenol	ND200	ND10	ND500	ND10	ND200	ND10	ND200

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-3B	OBA-3BDL	OBA-3C	OBA-3C DL	OBA-4A	OBA-4B	OBA-4C
Sample Date	6/26/92	6/26/92	6/26/92	6/26/92	6/25/92	6/24/92	6/24/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - BNAS							
phenol	ND10	ND200	ND10	ND500	ND10	ND10	ND10
2-chlorophenol	ND10	ND200	ND10	ND500	ND10	ND10	ND10
1,3-dichlorobenzene	710E	590	920E	850	ND10	ND10	9J
1,4-dichlorobenzene	1,800E	1,600	3,600E	3,800	ND10	ND10	36
benzyl alcohol	ND10	ND200	ND10	ND500	ND10UJ	ND10	ND10
1,2-dichlorobenzene	2,400E	2,100	5,500E	5,400	ND10	ND10	47
4-methylphenol	ND10	ND200	ND10	ND500	ND10	ND10	ND10
hexachloroethane	ND10	ND200	ND10	ND500	ND10	ND10	28
benzoic acid	ND50	ND1,000	ND50	ND2,500	ND50	ND50	ND50
1,2,4-trichlorobenzene	150	ND200	660E	550	ND10	ND10	160
naphthalene	ND10	ND200	ND10	ND500	ND10	ND10	ND10
hexachlorobutadiene	ND10	ND200	ND10	ND500	ND10	ND10	35
2,4,6-trichlorophenol	ND10	ND200	ND10	ND500	ND10	ND10	ND10
2,4,5-trichlorophenol	ND50	ND1,000	ND50	ND2,500	ND50	ND50	ND50
phenanthrene	ND10	ND200	ND10	ND500	ND10	ND10	ND10
bis(2-ethylhexyl)phthalate	ND10	ND200	ND10	ND500	5J	ND10	ND10
benzo(b)fluoranthene	ND10	ND200	ND10	ND500	ND10	ND10	ND10
3,4-dichlorophenol	ND10	ND200	ND10	ND500	ND10	ND10	ND10
3-chlorophenol	9J	ND200	ND10	ND500	ND10	ND10	ND10
2,3,4,6-tetrachlorophenol	ND10	ND200	ND10	ND500	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-5A	OBA-5A DL	OBA-5A RE	OBA-5A RE DL	OBA-5B	OBA-5BDL	OBA-5C
Sample Date	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - BNAS							
phenol	ND10R	ND200	ND10R	ND200UJ	73	56J	28
2-chlorophenol	ND10R	ND200	ND10R	ND200UJ	ND10	ND100	ND10
1,3-dichlorobenzene	250	190J	270J	230J	150	140	ND10
1,4-dichlorobenzene	74	ND200	79J	ND200UJ	95	85J	ND10
benzyl alcohol	ND10R	ND200	ND10R	ND200UJ	ND10UJ	ND100	ND10UJ
1,2-dichlorobenzene	280	220	310J	260J	240	240	ND10
4-methylphenol	ND10R	ND200	ND10R	ND200UJ	ND10	ND100	ND10
hexachloroethane	ND10	ND200	ND10UJ	ND200UJ	ND10	ND100	ND10
benzoic acid	ND50R	ND1,000	ND50R	ND1,000UJ	ND50	ND500	ND51
1,2,4-trichlorobenzene	3,700E	3,300	5,200E	3,800J	1,500E	1,600	ND10
naphthalene	4J	ND200	5J	ND200UJ	ND10	ND100	ND10
hexachlorobutadiene	6J	ND200	14J	ND200UJ	ND10	ND100	ND10
2,4,6-trichlorophenol	ND10R	ND200	ND10R	ND200UJ	ND10	ND100	ND10
2,4,5-trichlorophenol	ND50R	ND1,000	ND50R	ND1,000UJ	89	60J	ND51
phenanthrene	ND10	ND200	4J	ND200UJ	ND10	ND100	ND10
bis(2-ethylhexyl)phthalate	ND10	ND200	ND10UJ	ND200UJ	ND10	ND100	ND10
benzo(b)fluoranthene	2J	ND200	2J	ND200UJ	ND10	ND100	ND10
3,4-dichlorophenol	ND10R	ND200	ND10R	ND200UJ	ND10	ND100	ND10
3-chlorophenol	ND10R	ND200	ND10R	ND200UJ	ND10	ND100	ND10
2,3,4,6-tetrachlorophenol	ND10R	ND200	ND10R	ND200UJ	ND10	ND100	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-6A	OBA-6B	OBA-6B DL	OBA-6C	OBA-6C DL	OBA-7A	OBA-7B
Sample Date	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - BNAS							
phenol	ND10	43	ND100	ND10	ND100	ND10	ND10
2-chlorophenol	ND10	ND10	ND100	ND10	ND100	ND10	ND10
1,3-dichlorobenzene	ND10	30	ND100	35	ND100	ND10	ND10
1,4-dichlorobenzene	ND10	7J	ND100	20	ND100	ND10	ND10
benzyl alcohol	ND10UJ	ND10UJ	ND100	ND10UJ	ND100	ND10UJ	ND10UJ
1,2-dichlorobenzene	ND10	18	ND100	72	73J	ND10	ND10
4-methylphenol	ND10	19	ND100	ND10	ND100	ND10	ND10
hexachloroethane	ND10	ND10	ND100	ND10	ND100	ND10	ND10
benzoic acid	4J	74J	40J	22J	ND500	ND50	ND50
1,2,4-trichlorobenzene	ND10	650E	800	820E	990	ND10	93
naphthalene	ND10	ND10	ND100	ND10	ND100	ND10	ND10
hexachlorobutadiene	ND10	ND10	ND100	ND10	ND100	ND10	ND10
2,4,6-trichlorophenol	ND10	5J	ND100	ND10	ND100	ND10	ND10
2,4,5-trichlorophenol	ND50	17J	ND500	710E	680	ND50	ND50
phenanthrene	ND10	ND10	ND100	ND10	ND100	ND10	ND10
bis(2-ethylhexyl)phthalate	ND10	ND10	ND100	ND10	ND100	ND10	ND10
benzo(b)fluoranthene	ND10	ND10	ND100	ND10	ND100	ND10	ND10
3,4-dichlorophenol	ND10	ND10	ND100	ND10	ND100	ND10	ND10
3-chlorophenol	ND10	ND10	ND100	ND10	ND100	ND10	ND10
2,3,4,6-tetrachlorophenol	ND10	ND10	ND100	56	ND100	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	OBA-8B DL	OBA-8C	Dup OBA-8C
Sample Date	6/25/92	6/25/92	6/24/92	6/24/92	6/24/92	6/24/92	6/24/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
TCL - BNAS							
phenol	ND10	ND10	ND10	ND11	ND21	ND10	ND10
2-chlorophenol	ND10	ND10	ND10	ND11	ND21	ND10	ND10
1,3-dichlorobenzene	ND10	ND10	ND10	70	71	ND10	ND10
1,4-dichlorobenzene	ND10	ND10	ND10	6J	ND21	ND10	ND10
benzyl alcohol	ND10UJ	ND10UJ	ND10	ND11	ND21	ND10	ND10
1,2-dichlorobenzene	8J	7J	ND10	ND11	ND21	ND10	ND10
4-methylphenol	ND10	ND10	ND10	ND11	ND21	ND10	ND10
hexachloroethane	ND10	ND10	ND10	ND11	ND21	ND10	ND10
benzoic acid	11J	ND50	ND50	ND53	ND110	ND50	ND50
1,2,4-trichlorobenzene	12	11	28	510E	570	ND10	ND10
naphthalene	ND10	ND10	ND10	ND11	ND21	ND10	ND10
hexachlorobutadiene	ND10	ND10	ND10	ND11	ND21	ND10	ND10
2,4,6-trichlorophenol	ND10	ND10	ND10	ND11	ND21	ND10	ND10
2,4,5-trichlorophenol	150	120	ND50	ND53	ND110	ND50	ND50
phenanthrene	ND10	ND10	ND10	ND11	ND21	ND10	ND10
bis(2-ethylhexyl)phthalate	ND10	ND10	ND10	ND11	ND21	ND10	ND10
benzo(b)fluoranthene	ND10	ND10	ND10	ND11	ND21	ND10	ND10
3,4-dichlorophenol	200	180	ND10	ND11	ND21	ND10	ND10
3-chlorophenol	ND10	ND10	ND10	ND11	ND21	ND10	ND10
2,3,4,6-tetrachlorophenol	ND10	ND10	ND10	ND11	ND21	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	BH-1	BH-3	BH-3DL	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	6/24/92	6/24/92	6/24/92	6/24/92	6/25/92	6/26/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds						
TCL - BNAS						
Phenol	ND10	ND10	ND500	ND10	ND10	ND10
2-chlorophenol	ND10	120	ND500	ND10	ND10	ND10
1,3-dichlorobenzene	ND10	820E	760	ND10	ND10	ND10
1,4-dichlorobenzene	ND10	450E	410J	ND10	ND10	ND10
benzyl alcohol	ND10	ND10	ND500UJ	ND10	ND10UJ	ND10
1,2-dichlorobenzene	ND10	1,600E	1,600	ND10	ND10	ND10
4-methylphenol	ND10	ND10	ND500	ND10	ND10	ND10
hexachloroethane	ND10	ND10	ND500	ND10	ND10	ND10
benzoic acid	ND50	ND50	ND2,500	ND50	ND50	ND50
1,2,4-trichlorobenzene	ND10	5,000E	5,700	ND10	ND10	ND10
naphthalene	ND10	ND10	ND500	ND10	ND10	ND10
hexachlorobutadiene	ND10	ND10	ND500	ND10	ND10	ND10
2,4,6-trichlorophenol	ND10	10	ND500	ND10	ND10	ND10
2,4,5-trichlorophenol	ND50	ND50	ND500	ND50	ND50	ND50
phenanthrene	ND10	ND10	ND500	ND10	ND10	ND10
bis(2-ethylhexyl)phthalate	ND10	ND10	ND500	ND10	ND10	ND10
benzo(b)fluoranthene	ND10	ND10	ND500	ND10	ND10	ND10
3,4-dichlorophenol	ND10	ND10	ND500	ND10	ND10	ND10
3-chlorophenol	ND10	ND10	ND500	ND10	ND10	ND10
2,3,4,6-tetrachlorophenol	ND10	ND10	ND500	ND10	ND10	ND10

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument and required dilution.
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2BDL	OBA-2C
Sample Date	6/23/92	6/25/92	6/23/92	6/23/92	6/26/92	6/26/92	6/26/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
Pesticide/PCBs							
alpha-BHC	0.41	0.95	ND0.050	ND0.052	18J	14J	1.9J
beta-BHC	ND0.062	15	0.24	0.080	0.91J	ND2.0UJ	0.98J
delta-BHC	ND0.062	ND0.50	ND0.050	0.035J	0.15J	ND2.0UJ	1.1J
gamma-BHC (lindane)	0.25J	ND0.50	ND0.050	ND0.052	2.2J	2.0J	1.6J
heptachlor	ND0.062	ND0.50	ND0.050	ND0.052	ND0.20UJ	ND2.0UJ	ND0.20UJ
aldrin	ND0.062	ND0.50	ND0.50	ND0.052	ND0.20UJ	ND2.0UJ	1.2J
heptachlor epoxide	ND0.062	ND0.50	ND0.050	ND0.052	0.13J	ND2.0UJ	0.21J
endosulfan I	ND0.062	ND0.50	0.060	ND0.052	ND0.20UJ	ND2.0UJ	ND0.20UJ
dieldrin	ND0.12	ND1.0	ND0.10	0.060J	ND0.40UJ	ND4.0UJ	ND0.40UJ
4,4'-DDE	ND0.12	ND1.0	ND0.10	0.10J	ND0.40UJ	ND4.0UJ	ND0.40UJ
endrin	ND0.12	ND1.0	ND0.10	ND0.10	ND0.40UJ	ND4.0UJ	1.7J
4,4'-DDD	ND0.12	ND1.0	ND0.10	ND0.10	ND0.40UJ	ND4.0UJ	ND0.40UJ
gamma-chlordane	ND0.62	ND5.0	ND0.50	ND0.52	ND2.0UJ	ND20UJ	0.13J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Dup OBA-2C	OBA-3A	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B
Sample Date	6/26/92	6/26/92	6/26/92	6/26/92	6/26/92	6/25/92	6/24/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
Pesticide/PCBs							
alpha-BHC	2.0J	1.5J	3.2J	1.1J	1.2J	ND0.050	0.12
beta-BHC	0.93J	0.45J	0.81J	0.61J	0.82J	0.13	1.3
delta-BHC	0.83J	0.44J	0.81J	0.34J	0.19J	ND0.050	ND0.050
gamma-BHC (lindane)	1.6J	0.22J	1.6J	ND0.10UJ	0.31J	ND0.050	ND0.050
heptachlor	0.90J	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.050	ND0.050
aldrin	0.10J	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.050	ND0.050
heptachlor epoxide	0.20J	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.050	ND0.050
endosulfan I	0.13J	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.10UJ	ND0.050	ND0.050
dieldrin	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.21UJ	ND0.10	ND0.10
4,4'-DDE	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.21UJ	ND0.10	ND0.10
endrin	1.7J	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.21UJ	ND0.10	ND0.10
4,4'-DDD	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.20UJ	ND0.21UJ	ND0.10	ND0.10
gamma-chlordane	0.084J	ND1.0UJ	ND1.0UJ	ND1.0UJ	ND1.0UJ	ND0.50	ND0.50

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-4C	OBA-5A	OBA-5A DL	OBA-5B	OBA-5B DL	OBA-5C	OBA-6A
Sample Date	6/24/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
Pesticide/PCBs							
alpha-BHC	25	77	70	94	110	0.075	ND0.050
beta-BHC	1.1	91	100	40	39	ND0.050	0.11
delta-BHC	2.4	0.45J	ND5.0	7.1	4.6J	ND0.050	ND0.050
gamma-BHC (lindane)	12	77	71	120	160	ND0.050	0.038J
heptachlor	ND0.50	ND0.50	ND5.0	ND0.50	ND5.0	ND0.050	ND0.050
aldrin	ND0.50	ND0.50	ND5.0	ND0.50	ND5.0	ND0.050	ND0.050
heptachlor epoxide	ND0.50	ND0.50	ND5.0	ND0.50	ND5.0	ND0.050	ND0.050
endosulfan I	ND0.50	ND0.50	ND5.0	ND0.50	ND5.0	ND0.050	ND0.050
dieldrin	ND1.0	1.2	ND10	ND1.0	ND10	ND0.10	ND0.10
4,4'-DDE	ND1.0	ND1.0	ND10	ND1.0	ND10	ND0.10	ND0.10
endrin	ND1.0	ND1.0	ND10	ND1.0	ND10	ND0.10	ND0.10
4,4'-DDD	ND1.0	ND1.0	ND10	ND1.0	ND10	ND0.10	ND0.10
gamma-chlordane	ND5.0	ND5.0	ND50	ND5.0	ND50	ND0.50	ND0.50

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-6B	OBA-6C	OBA-6C DL	OBA-7A	OBA-7B	OBA-7C	Dup OBA-7C
Sample Date	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
Pesticide/PCBs							
alpha-BHC	ND0.050	47	35	ND0.050	ND0.050	0.038J	ND0.050
beta-BHC	1.2	2.5	ND5.0	2.5	0.18	0.20	0.16
delta-BHC	ND0.050	0.63	ND5.0	ND0.050	ND0.050	ND0.050	ND0.050
gamma-BHC (lindane)	ND0.050	ND0.50	ND5.0	ND0.050	0.074	ND0.050	ND0.050
heptachlor	ND0.050	ND0.50	ND5.0	ND0.050	ND0.050	ND0.050	ND0.050
aldrin	ND0.050	ND0.50	ND5.0	ND0.050	ND0.050	ND0.050	ND0.050
heptachlor epoxide	ND0.050	ND0.50	ND5.0	ND0.050	ND0.050	ND0.050	ND0.050
endosulfan I	ND0.050	ND0.50	ND5.0	ND0.050	ND0.050	ND0.050	ND0.050
dieldrin	0.71	ND1.0	ND10	ND0.10	ND0.10	ND0.10	ND0.10
4,4'-DDE	0.070J	ND1.0	ND10	ND0.10	ND0.10	ND0.10	ND0.10
endrin	0.051J	ND1.0	ND10	ND0.10	ND0.10	ND0.10	ND0.10
4,4'-DDD	0.64	ND1.0	ND10	ND0.10	ND0.10	ND0.10	ND0.10
gamma-chlordane	ND0.50	ND5.0	ND50	ND0.50	ND0.50	ND0.50	0.033J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-8A	OBA-8B	OBA-8C	Dup OBA-8C	BH-1	BH-3	BH-3 DL
Sample Date	6/24/92	6/24/92	6/24/92	6/24/92	6/25/92	6/24/92	6/24/92
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Compounds							
Pesticide/PCBs							
alpha-BHC	ND0.052	11	ND0.050	ND0.050	0.071	530	930
beta-BHC	ND0.052	0.74	ND0.050	ND0.050	0.60	110	110
delta-BHC	ND0.052	ND0.20	ND0.050	ND0.050	ND0.050	340	290
gamma-BHC (lindane)	ND0.052	ND0.20	ND0.050	ND0.050	0.13	610	920
heptachlor	ND0.052	ND0.20	ND0.050	ND0.050	ND0.050	ND2.5	ND25
aldrin	ND0.052	ND0.20	ND0.050	ND0.050	ND0.050	ND2.5	ND25
heptachlor epoxide	ND0.052	ND0.20	ND0.050	ND0.050	ND0.050	ND2.5	ND25
endosulfan I	ND0.052	ND0.20	ND0.050	ND0.050	ND0.050	ND2.5	ND25
dieldrin	ND0.10	ND0.40	ND0.10	ND0.10	ND0.10	ND5.0	ND50
4,4'-DDE	ND0.10	ND0.40	ND0.10	ND0.10	ND0.10	ND5.0	ND50
endrin	ND0.10	ND0.40	ND0.10	ND0.10	ND0.10	ND5.0	ND50
4,4'-DDD	ND0.10	ND0.40	ND0.10	ND0.10	ND0.10	ND5.0	ND50
gamma-chlordane	ND0.52	ND2.0	ND0.50	ND0.50	ND0.50	ND25	ND250

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	6/24/92	6/25/92	6/26/92
Units	µg/L	µg/L	µg/L
Compounds			
Pesticide/PCBs			
alpha-BHC	ND0.050	ND0.051	ND0.050UJ
beta-BHC	ND0.050	ND0.051	ND0.050UJ
delta-BHC	ND0.050	ND0.051	ND0.050UJ
gamma-BHC (lindane)	ND0.050	ND0.051	ND0.050UJ
heptachlor	ND0.050	ND0.051	ND0.050UJ
aldrin	ND0.050	ND0.051	ND0.050UJ
heptachlor epoxide	ND0.050	ND0.051	ND0.050UJ
endosulfan I	ND0.050	ND0.051	ND0.050UJ
dieldrin	ND0.10	ND0.10	ND0.10UJ
4,4'-DDE	ND0.10	ND0.10	ND0.10UJ
endrin	ND0.10	ND0.10	ND0.10UJ
4,4'-DDD	ND0.10	ND0.10	ND0.10UJ
gamma-chlordane	ND0.50	ND0.51	ND0.50UJ

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	Dup OBA-2C
Sample Date	6/23/92	6/24/92	6/23/92	6/23/92	6/26/92	6/26/92	6/26/92
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds							
methanol	ND0.55	ND0.55	ND0.55	0.61	ND0.55	ND0.55	ND0.55
Sample Date	6/23/92	6/25/92	6/23/92	6/23/92	6/26/92	6/26/92	6/26/92
Units	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
mercury	0.30	0.21	72.0	ND0.20	4.3	ND0.20	0.26

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-3A	Dup OBA-3A	OBA-3B	OBA-3C	OBA-4A	OBA-4B	OBA-4C
Sample Date	6/26/92	6/26/92	6/26/92	6/26/92	6/25/92	6/24/92	6/24/92
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds							
methanol	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55
Sample Date	6/26/92	6/26/92	6/26/92	6/26/92	6/25/92	6/24/92	6/24/92
Units	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
mercury	ND0.20	ND0.20	0.47	ND0.20	ND0.20	ND0.20	0.35

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	**OBA-5A**	**OBA-5B**	**OBA-5C**	**OBA-6A**	**OBA-6B**	**OBA-6C**	**OBA-7A**
Sample Date	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
<u>Compounds</u>							
methanol	ND0.55	52	1.40	240	1,500	0.93	ND0.55
Sample Date	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92	6/25/92
Units	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
mercury	133	9.7	0.26U	28.2	128	0.56U	0.47

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	OBA-7B	OBA-7C	Dup OBA-7C	OBA-8A	OBA-8B	OBA-8C	Dup OBA-8C
Sample Date	6/25/92	6/25/92	6/25/92	6/24/92	6/24/92	6/24/92	6/24/92
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds							
methanol	1.5	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55
Sample Date	6/25/92	6/25/92	6/25/92	6/24/92	6/24/92	6/24/92	6/24/92
Units	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
mercury	78.3	16.7	20.2	0.79	0.24	0.26	ND0.20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	BH-1	BH-3	Rinsate-1	Rinsate-2	Rinsate-3	FB-1	FB-2
Sample Date	6/24/92	6/24/92	6/24/92	6/25/92	6/26/92	6/25/92	6/26/92
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
<u>Compounds</u>							
methanol	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55	ND0.55

Well ID					
Sample Date	6/25/92	6/24/92	6/24/92	6/25/92	6/26
Units	µg/l	µg/l	µg/l	µg/l	µg/l
mercury	ND0.20	48.3	ND0.20	0.21	ND0.20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JUNE 1992 SAMPLING ROUND

Well ID	TB-1	TB-2
Sample Date	6/25/92	6/26/92
Units	mg/l	mg/l
Compounds		
methanol	ND0.55	ND0.55

Notes:

NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL) but less than the practical quantitation limit (PQL).
R - Data found to be unusable as a result of outlying QC criteria.
U - The material was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

By: TMV
Checked By: WSM
Date: 9/17/92

Phase I Groundwater Samples
Summary of Detected Compounds
September/November 1992

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Olin Production Well	OBA-1A	OBA-1B	OBA-1B DL	OBA-1C	OBA-1C DL	OBA-2B
Sample Date	9/15/92	9/15/92	9/15/92	9/15/92	9/15/92	9/15/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-VOCs							
vinyl chloride	60	ND10	11	ND20	ND500	ND10,000	48
methylene chloride	77U	9U	20U	33U	24,000E	36,000	39U
acetone	30J	ND10	10U	ND20UJ	ND500	19,000	36J
1,1-dichloroethene	ND20	ND5	ND5	ND10	370	ND5,000	ND10
1,1-dichloroethane	ND20	ND5	ND5	ND10	ND250	ND5,000	ND10
1,2-dichloroethene (total)	340	ND5	62	58	10,000E	9,400	240
chloroform	170	3J	7U	10U	72,000E	70,000	22
1,2-dichloroethane	ND20	ND5	ND5	ND10	110J	ND5,000	ND10
2-butanone	ND40	ND10	ND10	ND20	500U	10,000U	ND20
1,1,1-trichloroethane	ND20	ND5	ND5	ND10	100J	ND5,000	ND10
carbon tetrachloride	ND20	ND5	ND5	ND10	ND250	ND5,000	ND10
trichloroethene	560J	4J	250E	200	120,000E	110,000	240
1,1,2-trichloroethane	ND20	ND5	ND5	ND10	1,400	1,200J	ND10
benzene	ND20	ND5	ND5	ND10	620	ND5,000	ND10
tetrachloroethene	300	5	230E	210	17,000E	16,000	180
1,1,2,2-tetrachloroethane	54	ND5	ND5	ND10	900	ND5,000	14
toluene	ND20	ND5	ND5	ND10	ND250	ND5,000	ND10
chlorobenzene	ND20	ND5	ND5	ND10	150J	ND5,000	3J
ethylbenzene	ND20	ND5	ND5	ND10	ND250	ND5,000	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-2C	OBA-3A	OBA-3B	OBA-3C	Dup. OBA-3C	OBA-4A	OBA-4B
Sample Date	9/18/92	9/18/92	9/18/92	9/18/92	9/18/92	9/17/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-VOCs							
vinyl chloride	ND20,000	190J	1,300	2,000	2,100	ND10	8J
methylene chloride	23,000U	ND100	890U	2,600U	800U	6U	5U
acetone	ND20,000	ND200R	ND1,000	1,100J	ND1,000	ND10	ND10
1,1-dichloroethene	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5
1,1-dichloroethane	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5
1,2-dichloroethene (total)	11,000	640	4200	12,000	12,000	4J	75
chloroform	5,100J	ND100	140J	ND500	ND500	3J	5U
1,2-dichloroethane	ND10,000	ND100UJ	ND500	ND500	ND500	ND5	ND5
2-butanone	ND20,000	ND200	ND1,000	180J	230J	ND10	ND10
1,1,1-trichloroethane	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5
carbon tetrachloride	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5
trichloroethene	400,000	91J	480J	ND500	ND500	41	48
1,1,2-trichloroethane	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5
benzene	ND10,000	1,300	5,200	7,400	7,100	ND5	2J
tetrachloroethene	110,000	16J	190J	ND500	ND500	18	16
1,1,2,2-tetrachloroethane	38,000	200J	1,300	ND500	ND500	ND5	1J
toluene	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5
chlorobenzene	2,600J	2,600	13,000	17,000	16,000	ND5	10
ethylbenzene	ND10,000	ND100	ND500	ND500	ND500	ND5	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-4C	OBA-4C DL	OBA-5A	OBA-5B	OBA-5C	OBA-6A	OBA-6B
Sample Date	9/16/92	9/16/92	9/17/92	9/17/92	9/17/92	9/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-VOCs							
vinyl chloride	130J	ND2,000	ND100	ND20,000	ND800	7J	20J
methylene chloride	200U	2,800U	450	65,000U	1,200U	5U	54U
acetone	ND400	ND2,000	360	ND20,000	ND800	ND10	ND50
1,1-dichloroethene	ND200	ND1,000	ND50	ND10,000	300J	ND5	ND25
1,1-dichloroethane	ND200	ND1,000	ND50	ND10,000	ND400	ND5	ND25
1,2-dichloroethene (total)	2,600	2,500	230	13,000	3,600	58	320
chloroform	1,200	1,200	520	87,000	320J	ND5	ND25
1,2-dichloroethane	ND200	ND1,000	ND50	ND10,000	ND400	ND5	ND25
2-butanone	ND400	ND2,000	160U	ND20,000	ND800	ND10	ND50
1,1,1-trichloroethane	55J	ND1,000	ND50	ND10,000	ND400	ND5	ND25
carbon tetrachloride	430	ND1,000	ND50	ND10,000	ND400	ND5	ND25
trichloroethene	21,000E	26,000	1,400	280,000	12,000	15	730J
1,1,2-trichloroethane	ND200	ND1,000	ND50	ND10,000	650	ND5	ND25
benzene	ND200	ND1,000	79	23,000	870	2J	38
tetrachloroethene	17,000E	16,000	980	23,000	1,000	10	690
1,1,2,2-tetrachloroethane	2,500	870J	ND50	ND10,000	100J	ND5	ND25
toluene	ND200	ND1,000	ND50	ND10,000	ND400	2J	ND25
chlorobenzene	48J	ND1,000	220	3,100J	ND400	2J	18
ethylbenzene	ND200	ND1,000	ND50	ND10,000	ND400	ND5	ND25

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Dup. OBA-6B	OBA-6C	OBA-7A	OBA-7B	OBA-7C	OBA-8A	OBA-8B
Sample Date	9/16/92	9/16/92	9/17/92	9/17/92	9/17/92	9/16/92	9/15/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-VOCs							
vinyl chloride	10J	200J	ND10	ND80	260	ND200	ND10
methylene chloride	62U	570U	34U	1,100	640U	200U	7U
acetone	64U	ND400	ND10	ND80	70J	ND200	ND10UJ
1,1-dichloroethene	7J	ND200	ND5	ND40	ND100	ND100	ND5
1,1-dichloroethane	ND20	ND200	ND5	ND40	ND100	ND100	ND5
1,2-dichloroethene (total)	260	6,100	5	8J	2,800	ND100	3J
chloroform	ND20	110J	8	ND40	230	2,000	5UJ
1,2-dichloroethane	ND20	ND200	ND5	ND40	ND100	ND100	ND5
2-butanone	35J	ND400	ND10	15J	50J	ND200	ND10
1,1,1-trichloroethane	ND20	ND200	ND5	ND40	ND100	ND100	ND5
carbon tetrachloride	ND20	ND200	ND5	ND40	ND100	ND100	ND5
trichloroethene	320J	6,000	22	40U	2,500	21J	10J
1,1,2-trichloroethane	ND20	ND200	ND5	ND40	ND100	ND100	ND5
benzene	22	210	ND5	9J	110	ND100	ND5
tetrachloroethene	440	2,500	4J	ND40	750	ND100	4J
1,1,2,2-tetrachloroethane	7J	130J	ND5	ND40	ND100	ND100	ND5
toluene	10J	ND200	ND5	ND40	ND100	ND100	ND5
chlorobenzene	10J	75J	ND5	ND40	62J	ND100	ND5
ethylbenzene	5J	ND200	ND5	ND40	ND100	ND100	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Dup. OBA-8B	Dup. OBA-8B DL	OBA-8C	OBA-9A	OBA-10A	Dup. OBA-10A	BH-1
Sample Date	9/15/92	9/15/92	9/15/92	11/16/92	11/16/92	11/16/92	9/15/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-VOCs							
vinyl chloride	ND10	ND20	ND10	3J	ND500	ND500	7J
methylene chloride	47U	51U	5U	6J	ND250	ND250	8U
acetone	ND10	ND20	ND10	110	ND500	ND500	ND10
1,1-dichloroethene	ND5	ND10	ND5	ND10	ND250	ND250	ND5
1,1-dichloroethane	3J	3J	ND5	ND10	ND250	ND250	ND5
1,2-dichloroethene (total)	33	20	ND5	45	79J	82J	29
chloroform	240E	200J	5U	150	83J	83J	ND5
1,2-dichloroethane	ND5	ND10	ND5	ND10	ND250	ND250	ND5
2-butanone	ND10	ND20	ND10	7J	ND500	ND500	ND10
1,1,1-trichloroethane	10	ND10	ND5	ND10	ND250	ND250	ND5
carbon tetrachloride	ND5	ND10	ND5	ND10	ND250	ND250	ND5
trichloroethene	290E	170J	10	260	580	560	16
1,1,2-trichloroethane	ND5	ND10	ND5	ND10	ND250	ND250	ND5
benzene	2J	ND10	ND5	320	250	240J	2J
tetrachloroethene	59	35	3J	100	63J	61J	1J
1,1,2,2-tetrachloroethane	8	3J	ND5	ND10	ND250	ND250	ND5
toluene	ND5	ND10	ND5	ND10	ND250	ND250	ND5
chlorobenzene	7	ND10	ND5	270	1,500	1,400	2J
ethylbenzene	ND5	ND10	ND5	ND10	ND250	ND250	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	BH-3	Rinsate-1	Rinsate-2	Rinsate-3	Rinsate-4	FB-1	FB-2
Sample Date	9/15/92	9/15/92	9/17/92	9/18/92	11/16/92	9/16/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-VOCs							
vinyl chloride	ND2,500	ND10	ND10	ND10	ND10	ND10	ND10
methylene chloride	2,000U	7U	12U	5U	ND5	14U	5U
acetone	ND2,500UJ	ND10UJ	ND10	ND10	ND10	7J	ND10
1,1-dichloroethene	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
1,1-dichloroethane	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
1,2-dichloroethene (total)	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
chloroform	3,200	2J	3J	2J	ND5	2J	2J
1,2-dichloroethane	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
2-butanone	ND2,500	ND10	ND10	ND10	ND10	ND10	ND10
1,1,1-trichloroethane	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
carbon tetrachloride	ND1,200	62	41	47	0.6J	42	54
trichloroethene	980J	ND5	6	4J	ND5	ND5	3J
1,1,2-trichloroethane	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
benzene	31,000	ND5	ND5	ND5	ND5	ND5	ND5
tetrachloroethene	ND1,200	ND5	ND5	2J	ND5	ND5	ND5
1,1,2,2-tetrachloroethane	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
toluene	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5
chlorobenzene	10,000	ND5	ND5	ND5	ND5	ND5	ND5
ethylbenzene	ND1,200	ND5	ND5	ND5	ND5	ND5	ND5

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	TB-1	TB-2	TB-3	TB-4
Sample Date	9/15/92	9/17/92	9/18/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l
Compounds				
TCL-VOCs				
vinyl chloride	ND10	ND10	ND10	ND10
methylene chloride	14U	5U	7U	ND5
acetone	ND10UJ	ND10	ND10	ND10
1,1-dichloroethene	ND5	ND5	ND5	ND5
1,1-dichloroethane	ND5	ND5	ND5	ND5
1,2-dichloroethene (total)	ND5	ND5	ND5	ND5
chloroform	ND5	ND5	ND5	ND5
1,2-dichloroethane	ND5	ND5	ND5	ND5
2-butanone	ND10	ND10	ND10	ND10
1,1,1-trichloroethane	ND5	ND5	ND5	ND5
carbon tetrachloride	ND5	ND5	ND5	ND5
trichloroethene	ND5	ND5	ND5	ND5
1,1,2-trichloroethane	ND5	ND5	ND5	ND5
benzene	ND5	ND5	ND5	ND5
tetrachloroethene	ND5	ND5	ND5	ND5
1,1,2,2-tetrachloroethane	ND5	ND5	ND5	ND5
toluene	ND5	ND5	ND5	ND5
chlorobenzene	ND5	ND5	ND5	ND5
ethylbenzene	ND5	ND5	ND5	ND5

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument and required dilution.
R - Data found to be unusable as a result of outlying QC criteria.
U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C
Sample Date	9/15/92	9/15/92	9/15/92	9/15/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	120J	130	ND10	7J	ND10	29
2-chlorophenol	130J	140	ND10	ND10	ND10	ND10
1,3-dichlorobenzene	ND10	ND10	3J	11	ND10	26
1,4-dichlorobenzene	ND10	ND10	ND10	9J	ND10	67
benzyl alcohol	ND10	ND10	ND10	ND10	ND10	17
1,2-dichlorobenzene	ND10	ND10	5J	22	ND10	310
2-methylphenol	ND10	ND10	ND10	ND10	ND10	11
4-methylphenol	ND10	ND10	ND10	ND10	ND10	ND10
hexachloroethane	ND10	ND10	ND10	ND10	ND10	380E
2,4-dimethylphenol	ND10	ND10	ND10	ND10	ND10	ND10
benzoic acid	ND50	ND50	ND50	9J	ND50	13,000EJ
bis(2-chloroethoxy)methane	ND10	ND10	ND10	ND10	ND10	ND10
2,4-dichlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
1,2,4-trichlorobenzene	3J	ND10	24	11	13	51
naphthalene	ND10	ND10	ND10	ND10	ND10	ND10
hexachlorobutadiene	ND10	ND10	ND10	ND10	ND10	23
4-chloro-3-methylphenol	54	53	ND10	ND10	ND10	ND10
2,4,6-trichlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
2,4,5-trichlorophenol	ND50	ND50	ND50	ND50	15J	ND50
2-chloronaphthalene	ND10	ND10	ND10	ND10	ND10	ND10
acenaphthene	ND10	ND10	ND10	ND10	ND10	ND10
4-nitrophenol	130J	110	ND50	ND50	ND50	ND50
dibenzofuran	ND10	ND10	ND10	ND10	ND10	ND10
fluorene	ND10	ND10	ND10	ND10	ND10	ND10
pentachlorophenol	110J	100	ND50	ND50	ND50	ND50
phenanthrene	ND10	ND10	ND10	ND10	ND10	ND10
anthracene	ND10	ND10	ND10	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C
Sample Date	9/15/92	9/15/92	9/15/92	9/15/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND10	ND10	ND10	ND10	ND10	ND10
pyrene	ND10	ND10	ND10	ND10	ND10	ND10
2,3-dichlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
2,5-dichlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
3,4-dichlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
2,3,4-trichlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
2,3,4,5-tetrachlorophenol	ND10	ND10	ND10	ND10	ND10	ND10
2,3,5,6-tetrachlorophenol	ND10	ND10	ND10	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-2C DL	OBA-3A	OBA-3A DL	OBA-3B	OBA-3B DL	OBA-3C
Sample Date	9/18/92	9/18/92	9/18/92	9/18/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND750	12	ND100	ND10	ND100	9J
2-chlorophenol	ND750	ND10	ND100	ND10	ND100	ND10
1,3-dichlorobenzene	ND750	590E	750	480E	670	710E
1,4-dichlorobenzene	ND750	1,100E	2,300	810E	1,700	1,400E
benzyl alcohol	ND750	ND10	ND100	ND10	ND100	ND10
1,2-dichlorobenzene	580J	1,300E	3,100	1,000E	2,300	1,300E
2-methylphenol	ND750	ND10	ND100	ND10	ND100	ND10
4-methylphenol	ND750	ND10	ND100	ND10	ND100	ND10
hexachloroethane	670J	ND10	ND100	ND10	ND100	ND10
2,4-dimethylphenol	ND750	ND10	ND100	ND10	ND100	ND10
benzoic acid	11,000J	ND50	ND500	ND50	ND500	ND50
bis(2-chloroethoxy)methane	ND750	ND10	ND100	ND10	ND100	ND10
2,4-dichlorophenol	ND750	7J	ND100	ND10	ND100	ND10
1,2,4-trichlorobenzene	ND750	410E	630	160	210	400E
naphthalene	ND750	8J	ND100	ND10	ND100	ND10
hexachlorobutadiene	ND750	ND10	ND100	ND10	ND100	ND10
4-chloro-3-methylphenol	ND750	ND10	ND100	ND10	ND100	ND10
2,4,6-trichlorophenol	ND750	ND10	ND100	ND10	ND100	ND10
2,4,5-trichlorophenol	ND3,800	ND50	ND500	ND50	ND500	ND50
2-chloronaphthalene	ND750	ND10	ND100	ND10	ND100	ND10
acenaphthene	ND750	ND10	ND100	ND10	ND100	ND10
4-nitrophenol	ND3,800	ND50	ND500	ND50	ND500	ND50
dibenzofuran	ND750	ND10	ND100	ND10	ND100	ND10
fluorene	ND750	ND10	ND100	ND10	ND100	ND10
pentachlorophenol	ND3,800	ND50	ND500	ND50	ND500	ND50
phenanthrene	ND750	ND10	ND100	ND10	ND100	ND10
anthracene	ND750	ND10	ND100	ND10	ND100	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-2C DL	OBA-3A	OBA-3A DL	OBA-3B	OBA-3B DL	OBA-3C
Sample Date	9/18/92	9/18/92	9/18/92	9/18/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND750	ND10	ND100	ND10	ND100	ND10
pyrene	ND750	ND10	ND100	ND10	ND100	ND10
2,3-dichlorophenol	ND750	7J	ND100	ND10	ND100	ND10
2,5-dichlorophenol	ND750	ND10	ND100	ND10	ND100	ND10
3,4-dichlorophenol	ND750	ND10	ND100	ND10	ND100	ND10
2,3,4-trichlorophenol	ND750	ND10	ND100	ND10	ND100	ND10
2,3,4,5-tetrachlorophenol	ND750	ND10	ND100	ND10	ND100	ND10
2,3,5,6-tetrachlorophenol	ND750	ND10	ND100	ND10	ND100	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-3C DL	Dup. OBA-3C	Dup. OBA-3C DL	OBA-4A	OBA-4B	OBA-4C
Sample Date	9/18/92	9/18/92	9/18/92	9/17/92	9/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND200	9J	ND200	ND10	ND10	ND10
2-chlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
1,3-dichlorobenzene	880	880E	830	ND10	ND10	35
1,4-dichlorobenzene	3,200	1,500E	3,000	ND10	ND10	96
benzyl alcohol	ND200	ND10	ND200	ND10	ND10	ND10
1,2-dichlorobenzene	4,300	1,900E	4,200	ND10	ND10	97
2-methylphenol	ND200	ND10	ND200	ND10	ND10	ND10
4-methylphenol	ND200	ND10	ND200	ND10	ND10	ND10
hexachloroethane	ND200	ND10	ND200	ND10	ND10	180
2,4-dimethylphenol	ND200	ND10	ND200	ND10	ND10	ND10
benzoic acid	ND1,000	12J	ND1,000	ND50	ND50	ND50
bis(2-chloroethoxy)methane	ND200	ND10	ND200	ND10	ND10	ND10
2,4-dichlorophenol	ND200	5J	ND200	ND10	ND10	ND10
1,2,4-trichlorobenzene	650	390E	660	ND10	ND10	380E
naphthalene	ND200	6J	ND200	ND10	ND10	ND10
hexachlorobutadiene	ND200	ND10	ND200	ND10	ND10	120
4-chloro-3-methylphenol	ND200	ND10	ND200	ND10	ND10	ND10
2,4,6-trichlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
2,4,5-trichlorophenol	ND1,000	ND50	ND1,000	ND50	ND50	ND50
2-chloronaphthalene	ND200	ND10	ND200	ND10	ND10	ND10
acenaphthene	ND200	ND10	ND200	ND10	ND10	ND10
4-nitrophenol	ND1,000	ND50	ND1,000	ND50	ND50	ND50
dibenzofuran	ND200	ND10	ND200	ND10	ND10	ND10
fluorene	ND200	ND10	ND200	ND10	ND10	ND10
pentachlorophenol	ND1,000	ND50	ND1,000	ND50	ND50	ND50
phenanthrene	ND200	ND10	ND200	ND10	ND10	ND10
anthracene	ND200	ND10	ND200	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-3C DL	Dup. OBA-3C	Dup. OBA-3C DL	OBA-4A	OBA-4B	OBA-4C
Sample Date	9/18/92	9/18/92	9/18/92	9/17/92	9/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND200	ND10	ND200	ND10	ND10	ND10
pyrene	ND200	ND10	ND200	ND10	ND10	ND10
2,3-dichlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
2,5-dichlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
3,4-dichlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
2,3,4-trichlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
2,3,4,5-tetrachlorophenol	ND200	ND10	ND200	ND10	ND10	ND10
2,3,5,6-tetrachlorophenol	ND200	ND10	ND200	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-4C DL	OBA-5A	OBA-5A DL	OBA-5B	OBA-5B DL	OBA-5C
Sample Date	9/16/92	9/17/92	9/17/92	9/17/92	9/17/92	9/17/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND50	ND100	ND300	35	39J	31
2-chlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
1,3-dichlorobenzene	37J	350	380	150	180	3J
1,4-dichlorobenzene	100	200	200J	98	120	3J
benzyl alcohol	ND50	ND100	ND300	ND10	ND100	ND10
1,2-dichlorobenzene	110	450	470	230	320	5J
2-methylphenol	ND50	ND100	ND300	ND10	ND100	ND10
4-methylphenol	ND50	ND100	ND300	ND10	ND100	ND10
hexachloroethane	190	ND100	ND300	34	ND100	ND10
2,4-dimethylphenol	ND50	ND100	ND300	ND10	ND100	ND10
benzoic acid	ND250	ND500	ND1,500	ND50	ND500	ND50
bis(2-chloroethoxy)methane	ND50	ND100	ND300	ND10	ND100	ND10
2,4-dichlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
1,2,4-trichlorobenzene	530	4,100E	5,200	610E	1,900	4J
naphthalene	ND50	ND100	ND300	ND10	ND100	ND10
hexachlorobutadiene	160	ND100	ND300	10	ND100	ND10
4-chloro-3-methylphenol	ND50	ND100	ND300	ND10	ND100	ND10
2,4,6-trichlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
2,4,5-trichlorophenol	ND250	ND500	ND1,500	74	ND500	ND50
2-chloronaphthalene	ND50	ND100	ND300	ND10	ND100	ND10
acenaphthene	ND50	ND100	ND300	ND10	ND100	ND10
4-nitrophenol	ND250	ND500	ND1,500	ND50	ND500	ND50
dibenzofuran	ND50	ND100	ND300	ND10	ND100	ND10
fluorene	ND50	ND100	ND300	ND10	ND100	ND10
pentachlorophenol	ND250	ND500	ND1,500	ND50	ND500	ND50
phenanthrene	ND50	ND100	ND300	ND10	ND100	ND10
anthracene	ND50	ND100	ND300	ND10	ND100	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-4C DL	OBA-5A	OBA-5A DL	OBA-5B	OBA-5B DL	OBA-5C
Sample Date	9/16/92	9/17/92	9/17/92	9/17/92	9/17/92	9/17/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND50	ND100	ND300	ND10	ND100	ND10
pyrene	ND50	ND100	ND300	ND10	ND100	ND10
2,3-dichlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
2,5-dichlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
3,4-dichlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
2,3,4-trichlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
2,3,4,5-tetrachlorophenol	ND50	ND100	ND300	ND10	ND100	ND10
2,3,5,6-tetrachlorophenol	ND50	ND100	ND300	ND10	ND100	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-6A	OBA-6B	OBA-6B DL	Dup. OBA-6B	Dup. OBA-6B DL	OBA-6C
Sample Date	9/16/92	9/16/92	9/16/92	9/16/92	9/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	24	40	47J	36	32J	7J
2-chlorophenol	ND10	ND10	ND50	ND10	ND50	ND10
1,3-dichlorobenzene	ND10	56	67	52	48J	52
1,4-dichlorobenzene	ND10	15	18J	14	47J	30
benzyl alcohol	ND10	ND10	ND50	ND10	ND50	ND10
1,2-dichlorobenzene	ND10	35	41J	33	29J	96
2-methylphenol	ND10	3J	ND50	3J	ND50	ND10
4-methylphenol	6J	10	ND50	10	ND50	ND10
hexachloroethane	ND10	ND10	ND50	ND10	ND50	15
2,4-dimethylphenol	ND10	ND10	ND50	ND10	ND50	ND10
benzoic acid	6J	100J	84J	83J	50J	16J
bis(2-chloroethoxy)methane	ND10	ND10	ND50	ND10	ND50	ND10
2,4-dichlorophenol	ND10	ND10	ND50	ND10	ND50	11
1,2,4-trichlorobenzene	ND10	580E	1,200	550E	900	640E
naphthalene	ND10	3J	ND50	3J	ND50	ND10
hexachlorobutadiene	ND10	ND10	ND50	ND10	ND50	ND10
4-chloro-3-methylphenol	ND10	ND10	ND50	ND10	ND50	ND10
2,4,6-trichlorophenol	ND10	4J	ND50	3J	ND50	ND10
2,4,5-trichlorophenol	ND50	38J	44J	31J	26J	620E
2-chloronaphthalene	ND10	ND10	ND50	ND10	ND50	ND10
acenaphthene	ND10	ND10	ND50	ND10	ND50	ND10
4-nitrophenol	ND50	ND50	ND250	ND50	ND250	ND50
dibenzofuran	ND10	ND10	ND50	ND10	ND50	ND10
fluorene	ND10	ND10	ND250	ND10	ND50	ND10
pentachlorophenol	ND50	ND50	ND250	ND50	ND250	ND50
phenanthrene	ND10	ND10	ND50	ND10	ND50	ND10
anthracene	ND10	ND10	ND50	ND10	ND50	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-6A	OBA-6B	OBA-6B DL	Dup. OBA-6B	Dup. OBA-6B DL	OBA-6C
Sample Date	9/16/92	9/16/92	9/16/92	9/16/92	9/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND10	ND10	ND50	ND10	ND50	ND10
pyrene	ND10	ND10	ND50	ND10	ND50	ND10
2,3-dichlorophenol	ND10	ND10	ND50	ND10	ND50	ND10
2,5-dichlorophenol	ND10	ND10	ND50	ND10	ND50	10
3,4-dichlorophenol	ND10	ND10	ND50	ND10	ND50	ND10
2,3,4-trichlorophenol	ND10	ND10	ND50	ND10	ND50	17
2,3,4,5-tetrachlorophenol	ND10	ND10	ND50	ND10	ND50	100
2,3,5,6-tetrachlorophenol	ND10	ND10	ND50	ND10	ND50	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-6C DL	OBA-7A	OBA-7B	OBA-7C	OBA-8A	OBA-8B
Sample Date	9/16/92	9/17/92	9/17/92	9/17/92	9/16/92	9/15/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND50	ND10	15	18	ND10	ND10
2-chlorophenol	ND50	ND10	ND10	ND10	ND10	ND10
1,3-dichlorobenzene	51	ND10	10	8J	ND10	7J
1,4-dichlorobenzene	29J	ND10	2J	4J	ND10	ND10
benzyl alcohol	ND50	ND10	ND10	ND10	ND10	ND10
1,2-dichlorobenzene	100	ND10	11	13	ND10	ND10
2-methylphenol	ND50	ND10	3J	3J	ND10	ND10
4-methylphenol	ND50	ND10	8J	7J	ND10	ND10
hexachloroethane	13J	ND10	ND10	ND10	ND10	ND10
2,4-dimethylphenol	ND50	ND10	5J	ND10	ND10	ND10
benzoic acid	ND250	ND50	ND50	ND50	ND50	ND50
bis(2-chloroethoxy)methane	ND50	ND10	ND10	ND10	ND10	ND10
2,4-dichlorophenol	ND50	ND10	ND10	ND10	ND10	ND10
1,2,4-trichlorobenzene	1,100	ND10	100	15	60	ND10
naphthalene	ND50	ND10	2J	ND10	ND10	ND10
hexachlorobutadiene	ND50	ND10	ND10	ND10	ND10	ND10
4-chloro-3-methylphenol	ND50	ND10	ND10	ND10	ND10	ND10
2,4,6-trichlorophenol	ND50	ND10	ND10	ND10	ND10	ND10
2,4,5-trichlorophenol	740	ND50	ND50	73	ND50	8J
2-chloronaphthalene	ND50	ND10	ND10	58	ND10	ND10
acenaphthene	ND50	ND10	ND10	ND10	ND10	ND10
4-nitrophenol	ND250	ND50	ND50R	ND50	ND50	ND50
dibenzofuran	ND50	ND10	ND10	ND10	ND10	ND10
fluorene	ND50	ND10	ND10	ND10	ND10	ND10
pentachlorophenol	ND250	ND50	ND50R	ND50	ND50	ND50
phenanthrene	ND50	ND10	ND10	ND10	ND10	ND10
anthracene	ND50	ND10	ND10	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	OBA-6C DL	OBA-7A	OBA-7B	OBA-7C	OBA-8A	OBA-8B
Sample Date	9/16/92	9/17/92	9/17/92	9/17/92	9/16/92	9/15/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND50	ND10	ND10	ND10	ND10	ND10
pyrene	ND50	ND10	ND10	ND10	ND10	ND10
2,3-dichlorophenol	ND50	ND10	ND10	ND10	ND10	ND10
2,5-dichlorophenol	ND50	ND10	ND10	ND10	ND10	ND10
3,4-dichlorophenol	ND50	ND10	ND10	95	ND10	ND10
2,3,4-trichlorophenol	920	ND10	ND10	ND10	ND10	ND10
2,3,4,5-tetrachlorophenol	83	ND10	ND10	ND10	ND10	ND10
2,3,5,6-tetrachlorophenol	ND50	ND10	ND10	ND10	ND10	ND10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Dup. OBA-8B	OBA-8C	OBA-9A	OBA-9A DL	OBA-10A	OBA-10A DL
Sample Date	9/15/92	9/15/92	11/16/92	11/16/92	11/16/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND10	ND10	ND10	ND20	ND10	ND1,000
2-chlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
1,3-dichlorobenzene	77J	ND10	91	96	1,200E	1,200
1,4-dichlorobenzene	11	ND10	29J	29J	5,000E	7,500
benzyl alcohol	ND10	ND10	ND10	ND20	ND10	ND1,000
1,2-dichlorobenzene	ND10	ND10	55	60	7,800E	9,400
2-methylphenol	ND10	ND10	ND10UJ	ND20UJ	ND10UJ	ND1,000UJ
4-methylphenol	ND10	ND10	ND10	ND20	ND10	ND1,000
hexachloroethane	ND10	ND10	ND10	ND20	ND10	ND1,000
2,4-dimethylphenol	ND10	ND10	ND10	ND20	ND10	ND1,000
benzoic acid	ND50	ND50	ND50	ND100R	ND50	ND5,000R
bis(2-chloroethoxy)methane	ND10	ND10	ND10	ND20	ND10	ND1,000
2,4-dichlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
1,2,4-trichlorobenzene	ND10	ND10	350E	410J	1,900E	4,200
naphthalene	ND10	ND10	1J	ND20	36	ND1,000
hexachlorobutadiene	ND10	ND10	ND10	ND20	ND10	ND1,000
4-chloro-3-methylphenol	ND10	ND10	ND10	ND20	ND10	ND1,000
2,4,6-trichlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
2,4,5-trichlorophenol	7J	ND50	ND50	ND100	2J	ND5,000
2-chloronaphthalene	ND10	ND10	ND10	ND20	ND10	ND1,000
acenaphthene	ND10	ND10	9J	8J	11	ND1,000
4-nitrophenol	ND50	ND50	ND50	ND100	ND50	ND5,000
dibenzofuran	ND10	ND10	ND10	ND20	5J	ND1,000
fluorene	ND10	ND10	4J	ND20	5J	ND1,000
pentachlorophenol	ND50	ND50	ND50	ND100	ND50	ND5,000
phenanthrene	ND10	ND10	4J	3J	7J	ND1,000
anthracene	ND10	ND10	2J	ND20	ND10	ND1,000
fluoranthene	ND10	ND10	4J	ND20	ND10	ND1,000
pyrene	ND10	ND10	3J	ND20	ND10	ND1,000

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Dup. OBA-8B	OBA-8C	OBA-9A	OBA-9A DL	OBA-10A	OBA-10A DL
Sample Date	9/15/92	9/15/92	11/16/92	11/16/92	11/16/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND10	ND10	4J	ND20	ND10	ND1,000
pyrene	ND10	ND10	3J	ND20	ND10	ND1,000
2,3-dichlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
2,5-dichlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
3,4-dichlorophenol	ND10	ND10	ND10	ND20	6J	ND1,000
2,3,4-trichlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
2,3,4,5-tetrachlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000
2,3,5,6-tetrachlorophenol	ND10	ND10	ND10	ND20	ND10	ND1,000

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Dup. OBA-10A	Dup. OBA-10A DL	BH-1	BH-1 Re	BH-1 DL	BH-3
Sample Date	11/16/92	11/16/92	9/15/92	9/15/92	9/15/92	9/15/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND10	ND1,000	ND10	ND10	ND200	25J
2-chlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
1,3-dichlorobenzene	1,300E	1,200	21	21	ND200	560
1,4-dichlorobenzene	5,000E	7,000	10	11	ND200	340
benzyl alcohol	ND10	ND1,000	ND10	ND10	ND200	ND50
1,2-dichlorobenzene	7,700E	8,700	38	39	ND200	1,100
2-methylphenol	ND10UJ	ND1,000UJ	ND10	ND10	ND200	ND50
4-methylphenol	ND10	ND1,000	ND10	ND10	ND200	ND50
hexachloroethane	ND10	ND1,000	ND10	ND10	ND200	ND50
2,4-dimethylphenol	ND10	ND1,000	ND10	ND10	ND200	ND50
benzoic acid	ND50	ND5,000R	1,600EJ	1,600EJ	2,700J	ND250
bis(2-chloroethoxy)methane	ND10	ND1,000	ND10	ND10	ND200	ND50
2,4-dichlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
1,2,4-trichlorobenzene	1,800E	3,800	170	170	310	2,500E
naphthalene	34	ND1,000	ND10	ND10	ND200	ND50
hexachlorobutadiene	ND10	ND1,000	ND10	ND10	ND200	ND50
4-chloro-3-methylphenol	ND10	ND1,000	ND10	ND10	ND200	ND50
2,4,6-trichlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
2,4,5-trichlorophenol	2J	ND5,000	ND50	ND50	ND1,000	ND250
2-chloronaphthalene	ND10	ND1,000	ND10	ND10	ND200	ND50
acenaphthene	9J	ND1,000	ND10	ND10	ND200	ND50
4-nitrophenol	ND50	ND5,000	ND50	ND50	ND1,000	ND250
dibenzofuran	4J	ND1,000	ND10	ND10	ND200	ND50
fluorene	ND10	ND1,000	ND10	ND10	ND200	ND50
pentachlorophenol	ND50	ND1,000	ND50	ND50	ND1,000	ND250
phenanthrene	5J	ND1,000	ND10	ND10	ND200	ND50
anthracene	ND10	ND1,000	ND10	ND10	ND200	ND50

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	Dup. OBA-10A	Dup. OBA-10A DL	BH-1	BH-1 Re	BH-1 DL	BH-3
Sample Date	11/16/92	11/16/92	9/15/92	9/15/92	9/15/92	9/15/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND10	ND1,000	ND10	ND10	ND200	ND50
pyrene	ND10	ND1,000	ND10	ND10	ND200	ND50
2,3-dichlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
2,5-dichlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
3,4-dichlorophenol	5J	ND1,000	ND10	ND10	ND200	ND50
2,3,4-trichlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
2,3,4,5-tetrachlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50
2,3,5,6-tetrachlorophenol	ND10	ND1,000	ND10	ND10	ND200	ND50

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	BH-3 DL	Rinsate-1	Rinsate-2	Rinsate-3	Rinsate-4	FB-1
Sample Date	9/15/92	9/15/92	9/17/92	9/18/92	11/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
phenol	ND250	ND10	ND10	ND10	ND10	NS
2-chlorophenol	ND250	ND10	ND10	ND10	ND10	NS
1,3-dichlorobenzene	700	ND10	ND10	ND10	ND10	NS
1,4-dichlorobenzene	390	ND10	ND10	ND10	ND10	NS
benzyl alcohol	ND250	ND10	ND10	ND10	ND10	NS
1,2-dichlorobenzene	1,500	ND10	ND10	ND10	ND10	NS
2-methylphenol	ND250	ND10	ND10	ND10	ND10UJ	NS
4-methylphenol	ND250	ND10	ND10	ND10	ND10	NS
hexachloroethane	ND250	ND10	ND10	ND10	ND10	NS
2,4-dimethylphenol	ND250	ND10	ND10	ND10	ND10	NS
benzoic acid	ND1,200	ND50	ND50	ND50	ND50	NS
bis(2-chloroethoxy)methane	ND250	ND10	ND10	ND10	ND10	NS
2,4-dichlorophenol	ND250	ND10	ND10	ND10	ND10	NS
1,2,4-trichlorobenzene	4,700	ND10	ND10	ND10	ND10	NS
naphthalene	ND250	ND10	ND10	ND10	ND10	NS
hexachlorobutadiene	ND250	ND10	ND10	ND10	ND10	NS
4-chloro-3-methylphenol	ND250	ND10	ND10	ND10	ND10	NS
2,4,6-trichlorophenol	ND250	ND10	ND10	ND10	ND10	NS
2,4,5-trichlorophenol	ND1,200	ND10	ND10	ND10	ND50	NS
2-chloronaphthalene	ND250	ND10	ND10	ND10	ND10	NS
acenaphthene	ND250	ND10	ND10	ND10	ND10	NS
4-nitrophenol	ND1,200	ND50	ND50	ND50	ND50	NS
dibenzofuran	ND250	ND10	ND10	ND10	ND10	NS
fluorene	ND250	ND10	ND10	ND10	ND10	NS
pentachlorophenol	ND1,200	ND50	ND50	ND50	ND50	NS
phenanthrene	ND250	ND10	ND10	ND10	ND10	NS
anthracene	ND250	ND10	ND10	ND10	ND10	NS

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	BH-3 DL	Rinsate-1	Rinsate-2	Rinsate-3	Rinsate-4	FB-1
Sample Date	9/15/92	9/15/92	9/17/92	9/18/92	11/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-BNAs						
fluoranthene	ND250	ND10	ND10	ND10	ND10	NS
pyrene	ND250	ND10	ND10	ND10	ND10	NS
2,3-dichlorophenol	ND250	ND10	ND10	ND10	ND10	NS
2,5-dichlorophenol	ND250	ND10	ND10	ND10	ND10	NS
3,4-dichlorophenol	ND250	ND10	ND10	ND10	ND10	NS
2,3,4-trichlorophenol	ND250	ND10	ND10	ND10	ND10	NS
2,3,4,5-tetrachlorophenol	ND250	ND10	ND10	ND10	ND10	NS
2,3,5,6-tetrachlorophenol	ND250	ND10	ND10	ND10	ND10	NS

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	FB-2	TB-1	TB-2	TB-3	TB-4
Sample Date	9/18/92	9/15/92	9/17/92	9/18/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-BNAs					
phenol	NS	NS	NS	NS	NS
2-chlorophenol	NS	NS	NS	NS	NS
1,3-dichlorobenzene	NS	NS	NS	NS	NS
1,4-dichlorobenzene	NS	NS	NS	NS	NS
benzyl alcohol	NS	NS	NS	NS	NS
1,2-dichlorobenzene	NS	NS	NS	NS	NS
2-methylphenol	NS	NS	NS	NS	NS
4-methylphenol	NS	NS	NS	NS	NS
hexachloroethane	NS	NS	NS	NS	NS
2,4-dimethylphenol	NS	NS	NS	NS	NS
benzoic acid	NS	NS	NS	NS	NS
bis(2-chloroethoxy)methane	NS	NS	NS	NS	NS
2,4-dichlorophenol	NS	NS	NS	NS	NS
1,2,4-trichlorobenzene	NS	NS	NS	NS	NS
naphthalene	NS	NS	NS	NS	NS
hexachlorobutadiene	NS	NS	NS	NS	NS
4-chloro-3-methylphenol	NS	NS	NS	NS	NS
2,4,6-trichlorophenol	NS	NS	NS	NS	NS
2,4,5-trichlorophenol	NS	NS	NS	NS	NS
2-chloronaphthalene	NS	NS	NS	NS	NS
acenaphthene	NS	NS	NS	NS	NS
4-nitrophenol	NS	NS	NS	NS	NS
dibenzofuran	NS	NS	NS	NS	NS
fluorene	NS	NS	NS	NS	NS
pentachlorophenol	NS	NS	NS	NS	NS
phenanthrene	NS	NS	NS	NS	NS
anthracene	NS	NS	NS	NS	NS

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well I.D	FB-2	TB-1	TB-2	TB-3	TB-4
Sample Date	9/18/92	9/15/92	9/17/92	9/18/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-BNAs					
fluoranthene	NS	NS	NS	NS	NS
pyrene	NS	NS	NS	NS	NS
2,3-dichlorophenol	NS	NS	NS	NS	NS
2,5-dichlorophenol	NS	NS	NS	NS	NS
3,4-dichlorophenol	NS	NS	NS	NS	NS
2,3,4-trichlorophenol	NS	NS	NS	NS	NS
2,3,4,5-tetrachlorophenol	NS	NS	NS	NS	NS
2,3,5,6-tetrachlorophenol	NS	NS	NS	NS	NS

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
E - Compound whose concentration exceeds the calibration range of the GC/MS instrument and required dilution.
R - Data found to be unusable as a result of outlying QC criteria.
U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	Olin Production Well	OBA-1A	OBA-1A DL	OBA-1B	OBA-1C	OBA-2B	OBA-2B DL
Sample Date	9/15/92	9/15/92	9/15/92	9/15/92	9/15/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	0.47	0.33	ND 2.5	ND .050	ND .050	30	35
beta-BHC	ND .050	11	16	0.12	0.057	1.7	ND 5.0
delta-BHC	0.057	ND .050	ND 2.5	ND .050	ND .050	ND .50	ND 5.0
gamma-BHC (lindane)	0.27J	ND .050	ND 2.5	ND .050	ND .050	3.1	ND 5.0
heptachlor	ND .050	ND .050	ND 2.5	ND .050	ND .050	ND .50	ND 5.0
hepatachlor epoxide	ND .050	ND .050	ND 2.5	ND .050	ND .050	ND .50	ND 5.0
endosulfan I	ND .050	ND .050	ND 2.5	ND .050	ND .050	ND .50	ND 5.0
Aroclor-1260	ND 1.0	ND 1.0	ND 50	ND 1.0	ND 1.0	ND 10	ND 100

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-2C	OBA-3A	OBA-3B	OBA-3C	Dup. OBA-3C	OBA-4A	OBA-4B
Sample Date	9/18/92	9/18/92	9/18/92	9/18/92	9/18/92	9/17/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	1.7	6.8	2.8	2.9	2.9	ND .050	0.11U
beta-BHC	ND .50	13	0.98	0.93	1	0.27	0.94J
delta-BHC	ND .50	1.8	1.2	ND .50	ND .50	ND .050	0.067J
gamma-BHC (lindane)	0.71	4.4	ND .50	1.5	1.3	ND .050	ND .050UJ
heptachlor	ND .50	ND .50	ND .50	ND .50	ND .50	ND .050	ND .050UJ
hepatachlor epoxide	ND .50	ND .50	ND .50	ND .50	ND .50	ND .050	ND .050UJ
endosulfan I	ND .50	ND .50	ND .50	ND .50	ND .50	ND .050	ND .050UJ
Aroclor-1260	ND 10	ND 10	ND 10	ND 10	ND 10	ND 1.0	ND 1.0UJ

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-4C	OBA-4C DL-1	OBA-4C DL-2	OBA-5A	OBA-5A DL-1	OBA-5A DL-2	OBA-5B
Sample Date	9/16/92	9/16/92	9/16/92	9/17/92	9/17/92	9/17/92	9/17/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	37J	98J	96J	32	44	57	130
beta-BHC	3.2J	5.9J	ND 50UJ	24	32	45	42
delta-BHC	20J	27J	ND 50UJ	1.4	1.4	ND 5.0	11
gamma-BHC (lindane)	34J	62J	60J	28	38	49	140
heptachlor	0.13J	ND 5.0UJ	ND 50UJ	ND .050	ND .50	ND 5.0	ND 5.0
hepatachlor epoxide	0.17J	ND 5.0UJ	ND 50UJ	ND .050	ND .50	ND 5.0	ND 5.0
endosulfan I	0.42J	ND 5.0UJ	ND 50UJ	ND .050	ND .50	ND 5.0	ND 5.0
Aroclor-1260	ND 1.0UJ	ND 100UJ	ND 1,000UJ	1.4	ND 10	ND 100	ND 100

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-5B DL	OBA-5C	OBA -6A	OBA-6B	Dup. OBA-6B	OBA-6C	OBA-6C DL
Sample Date	9/17/92	9/17/92	9/16/92	9/16/92	9/16/92	9/16/92	9/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	140	ND .050	ND .050UJ	ND .050UJ	ND .050UJ	42J	63J
beta-BHC	ND 50	ND .050	ND .050UJ	ND .050UJ	2.6J	ND .50UJ	ND 5.0UJ
delta-BHC	ND 50	ND .050	ND .050UJ	ND .050UJ	ND .050UJ	2.2J	ND 5.0UJ
gamma-BHC (lindane)	160	ND .050	ND .050UJ	ND .050UJ	ND .050UJ	0.49J	ND 5.0UJ
heptachlor	ND 50	ND .050	ND .050UJ	ND .050UJ	ND .050UJ	ND .50UJ	ND 5.0UJ
hepatachlor epoxide	ND 50	ND .050	ND .050UJ	ND .050UJ	ND .050UJ	ND .50UJ	ND 5.0UJ
endosulfan I	ND 50	ND .050	ND .050UJ	ND .050UJ	ND .050UJ	ND .50UJ	ND 5.0UJ
Aroclor-1260	ND 1,000	ND 1.0	ND 1.0UJ	ND 1.0UJ	ND 1.0UJ	ND 10UJ	ND 100UJ

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	Dup. OBA-8B DL	OBA-8C	OBA-9A	OBA-9A DL	OBA-10A	OBA-10A DL	Dup. OBA-10A
Sample Date	9/15/92	9/15/92	11/16/92	11/16/92	11/16/92	11/16/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	8.3	ND .050	1.4	1.4	65	290	65
beta-BHC	ND 1.0	ND .050	21	31	36	48	34
delta-BHC	ND 1.0	ND .050	ND .10	ND 1.0	14	13	13
gamma-BHC (lindane)	ND 1.0	ND .050	5.3	6.3	63	120	61
heptachlor	ND 1.0	ND .050	ND .10	ND 1.0	ND .50	ND 5.0	ND .50
hepatachlor epoxide	ND 1.0	ND .050	ND .10	ND 1.0	ND .50	ND 5.0	ND .50
endosulfan I	ND 1.0	ND .050	0.025J	ND 1.0	ND .50	ND 5.0	ND .50
Aroclor-1260	ND 20	ND 1.0	ND 2.0	ND 20	ND 10	ND 100	ND 10

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	Dup. OBA-10A DL	BH-1	BH-3	BH-3 DL	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	11/16/92	9/17/92	9/15/92	9/15/92	9/15/92	9/17/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	280	0.1	37	610	ND .050	0.054	ND .050
beta-BHC	46	0.48	42	100	ND .050	ND .050	ND .050
delta-BHC	12	ND .050	81	550	ND .050	ND .050	ND .050
gamma-BHC (lindane)	120	0.096	37	560	ND .050	0.06	ND .050
heptachlor	ND 5.0	ND .050	ND .050	ND 50	ND .050	ND .050	ND .050
hepatachlor epoxide	ND 5.0	ND .050	0.092	ND 50	ND .050	ND .050	ND .050
endosulfan I	ND 5.0	ND .050	0.53	ND 50	ND .050	ND .050	ND .050
Aroclor-1260	ND 100	ND 1.0	ND 1.0	ND 1,000	ND 1.0	ND 1.0	ND 1.0

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	Rinsate-4	FB-1	FB-2	TB-1	TB-2	TB-3	TB-4
Sample Date	11/16/92	9/16/92	9/18/92	9/15/92	9/17/92	9/18/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
TCL-Pest/PCBs							
alpha-BHC	0.013J	NS	NS	NS	NS	NS	NS
beta-BHC	ND .050	NS	NS	NS	NS	NS	NS
delta-BHC	ND .050	NS	NS	NS	NS	NS	NS
gamma-BHC (lindane)	ND .050	NS	NS	NS	NS	NS	NS
heptachlor	ND .050	NS	NS	NS	NS	NS	NS
hepatachlor epoxide	ND .050	NS	NS	NS	NS	NS	NS
endosulfan I	ND .050	NS	NS	NS	NS	NS	NS
Aroclor-1260	ND 1.0	NS	NS	NS	NS	NS	NS

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
R - Data found to be unusable as a result of outlying QC criteria.
U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	Olin Production Well	OBA-1A	OBA-1B	OBA-1C	OBA-2B	OBA-2C	OBA-3A
Sample Date	9/15/92	9/15/92	9/15/92	9/15/92	9/18/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
methanol	ND 550	ND 550	ND 550	ND 550	ND 550	ND 550	ND 550
Sample Date	9/15/92	9/16/92	9/15/92	9/15/92	9/18/92	9/18/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals							
mercury	ND .20	ND .20	95.6	ND .20	5.2	ND .20	ND .20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-3B	OBA-3C	Dup. OBA-3C	OBA-4A	OBA-4B	OBA-4C	OBA-5A
Sample Date	9/18/92	9/18/92	9/18/92	9/17/92	9/16/92	9/16/92	9/17/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
methanol	ND 550	ND 550	ND 550	ND 550	ND 550	ND 550	ND 550

Sample Date	9/18/92	9/18/92	9/18/92	9/17/92	9/16/92	9/16/92	9/17/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals							
mercury	0.80	ND .20	ND .20	ND .20	ND .20	0.78	77.9

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-5B	OBA-5C	OBA -6A	OBA-6B	Dup. OBA-6B	OBA-6C	OBA-7A
Sample Date	9/17/92	9/17/92	9/16/92	9/16/92	9/16/92	9/16/92	9/17/82
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
methanol	62,000	1,100	52,000	410,000	510,000	650	ND 550

Sample Date	9/17/92	9/17/92	9/16/92	9/16/92	9/16/92	9/16/92	9/17/82
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals							
mercury	7.8	ND .20	14.2	36.9	49.5	0.87	ND .20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-7B	OBA-7C	OBA-8A	OBA-8B	Dup. OBA-8B	OBA-8C	OBA-9A
Sample Date	9/17/82	9/17/82	9/16/92	9/15/92	9/15/92	9/15/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
methanol	900	1,200	ND 550	ND 550	ND 550	1,200	ND 550
Sample Date	9/17/82	9/17/82	9/16/92	9/15/92	9/15/92	9/15/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals							
mercury	52.4J	9.4	0.61	0.61	1	ND .20	0.38

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	OBA-10A	Dup. OBA-10A	BH-1	BH-3	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	11/16/92	11/16/92	9/15/92	9/15/92	9/15/92	9/17/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
methanol	ND 550	ND 550	ND 550	2,200	ND 550	ND 550	ND 550
Sample Date	11/16/92	11/16/92	9/16/92	9/15/92	9/15/92	9/17/92	9/18/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals							
mercury	ND .20	ND .20	0.53	133	ND .20	ND .20	ND .20

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
SEPTEMBER, NOVEMBER 1992

Well ID	Rinsate-4	FB-1	FB-2	TB-1	TB-2	TB-3	TB-4
Sample Date	11/16/92	9/16/92	9/18/92	9/15/92	9/17/92	9/18/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds							
methanol	ND 550	ND 550	ND 550	ND 550	ND 550	ND 550	ND 550

Sample Date	11/16/92	9/16/92	9/18/92	9/15/92	9/17/92	9/18/92	11/16/92
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Metals							
mercury	ND .20	NS	NS	NS	NS	NS	NS

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Estimated quantitation limit.

By:AJM
Checked by:TMV
3/1/93

Olin/Dupont Split Groundwater Samples

Summary of Detected Compounds

October 1993

SUMMARY OF DETECTED COMPOUNDS
DUPONT/OLIN SPLIT SAMPLES
OCTOBER 1993

Sample I.D.	MW-15A	MW-15CD	MW-19A	MW-19B	MW-19B Dup.	MW-19CD-1
Sample Date	10/7/93	10/15/93	10/15/93	10/15/93	10/15/93	10/15/93
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Semi-Volatiles						
1,3-dichlorobenzene	ND 10	13	ND 10	ND 10	ND 10	1 J
1,4-dichlorobenzene	ND 10	11	ND 10	ND 10	ND 10	1 J
1,2-dichlorobenzene	ND 10	16	ND 10	ND 10	ND 10	2 J
4-methylphenol	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
hexachloroethane	ND 10	4 J	ND 10	ND 10	ND 10	1 J
1,2,4-trichlorobenzene	ND 10	98 E	ND 10	ND 10	ND 10	6 J
naphthalene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
hexachlorobutadiene	ND 10	5 J	ND 10	1 J	ND 10	ND 10
2-methylnaphthalene	ND 10UJ	ND 10	ND 10	ND 10	ND 10	ND 10
2,4,6-trichlorophenol	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
acenaphthylene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
acenaphthene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
fluorene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
n-nitrosodiphenylamine	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
phenanthrene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
anthracene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
carbazole	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
di-n-butylphthalate	0.6 J	ND 10	ND 10	0.4 J	0.5 J	0.4 J
fluoranthene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
pyrene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
butylbenzylphthalate	ND 10	0.1 J	ND 10	ND 10	ND 10	ND 10
benzo(a)anthracene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
chrysene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
bis(2-ethylhexyl)phthalate	4 J	15	10 U	10 U	10 U	10 U
benzo(b)fluoranthene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
benzo(k)fluoranthene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
benzo(a)pyrene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
indeno(1,2,3-cd)pyrene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
benzo(g,h,i)perylene	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
3,4-dichlorophenol	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10

By: AJM Chk: MSJ 8/2/94

SUMMARY OF DETECTED COMPOUNDS
DUPONT/OLIN SPLIT SAMPLES
OCTOBER 1993

Sample I.D.	MW-20B	MW-22B	MW-22C	MW-22D	MW-22F	MW-26CD
Sample Date	10/15/93	10/29/93	10/29/93	10/29/93	10/29/93	10/29/93
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Semi-Volatiles						
1,3-dichlorobenzene	ND 10	ND 10	7 J	ND 10	3 J	0.8 J
1,4-dichlorobenzene	ND 10	ND 10	2 J	ND 10	5 J	1 J
1,2-dichlorobenzene	ND 10	ND 10	ND 10	ND 10	12	ND 10
4-methylphenol	1 J	ND 10	ND 10	ND 10	ND 10	ND 10
hexachloroethane	ND 10	ND 10	ND 10	ND 10	ND 10	5 J
1,2,4-trichlorobenzene	ND 10	ND 10	2 J	5 J	4 J	4 J
naphthalene	5 J	ND 10	ND 10	ND 10	ND 10	ND 10
hexachlorobutadiene	ND 10	ND 10	ND 10	1 J	ND 10	7 J
2-methylnaphthalene	3 J	ND 10	ND 10	ND 10	ND 10	4 J
2,4,6-trichlorophenol	2 J	ND 10	ND 10	ND 10	ND 10	ND 10
acenaphthylene	2 J	ND 10	ND 10	ND 10	ND 10	ND 10
acenaphthene	0.7 J	ND 10	ND 10	ND 10	ND 10	ND 10
fluorene	1 J	ND 10	ND 10	ND 10	ND 10	ND 10
n-nitrosodiphenylamine	ND 10	ND 10	ND 10	ND 10	ND 10	0.5 J
phenanthrene	2 J	ND 10	0.4 J	0.9 J	0.4 J	0.4 J
anthracene	0.7 J	ND 10	ND 10	ND 10	ND 10	ND 10
carbazole	ND 10	ND 10	0.8 J	0.9 J	0.6 J	ND 10
di-n-butylphthalate	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
fluoranthene	1 J	0.8 J	1 J	1 J	1 J	ND 10
pyrene	1 J	ND 10	ND 10	ND 10	ND 10	ND 10
butylbenzylphthalate	ND 10	ND 10	ND 10	ND 10	ND 10	ND 10
benzo(a)anthracene	0.5 J	0.6 J	ND 10	ND 10	ND 10	ND 10
chrysene	0.4 J	3 J	0.6 J	ND 10	0.6 J	ND 10
bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	11	10 U	10 U
benzo(b)fluoranthene	0.4 J	2 J	0.5 J	ND 10	0.4 J	ND 10
benzo(k)fluoranthene	ND 10	0.7 J	0.2 J	ND 10	0.2 J	ND 10
benzo(a)pyrene	ND 10	0.4 J	ND 10	ND 10	ND 10	ND 10
indeno(1,2,3-cd)pyrene	ND 10	0.5 J	ND 10	ND 10	ND 10	ND 10
benzo(g,h,i)perylene	ND 10	0.4 J	ND 10	ND 10	ND 10	ND 10
3,4-dichlorophenol	ND 10	ND 10	1 J	ND 10	0.7 J	ND 10

SUMMARY OF DETECTED COMPOUNDS
DUPONT/OLIN SPLIT SAMPLES
OCTOBER 1993

Sample I.D.	Rinsate-1
Sample Date	10/29/93
Units	ug/l
Semi-Volatiles	
1,3-dichlorobenzene	ND 10
1,4-dichlorobenzene	ND 10
1,2-dichlorobenzene	ND 10
4-methylphenol	ND 10
hexachloroethane	ND 10
1,2,4-trichlorobenzene	ND 10
naphthalene	ND 10
hexachlorobutadiene	ND 10
2-methylnaphthalene	ND 10
2,4,6-trichlorophenol	ND 10
acenaphthylene	ND 10
acenaphthene	ND 10
fluorene	ND 10
n-nitrosodiphenylamine	ND 10
phenanthrene	ND 10
anthracene	ND 10
carbazole	ND 10
di-n-butylphthalate	ND 10
fluoranthene	ND 10
pyrene	ND 10
butylbenzylphthalate	ND 10
benzo(a)anthracene	ND 10
chrysene	ND 10
bis(2-ethylhexyl)phthalate	0.8 J
benzo(b)fluoranthene	ND 10
benzo(k)fluoranthene	ND 10
benzo(a)pyrene	ND 10
indeno(1,2,3-cd)pyrene	ND 10
benzo(g,h,i)perylene	ND 10
3,4-dichlorophenol	ND 10

Notes:

ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC results and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
U - The compound was anlyzed for but not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.
UJ - Indicates an estimated PQL due to outlying QC results.
E - Sample result reported from a secondary dilution.

By: AJM Chk: MSJ 8/2/94

SUMMARY OF DETECTED COMPOUNDS
DUPONT/OLIN SPLIT SAMPLES
OCTOBER 1993

Sample I.D.	MW-15A	MW-15CD	MW-19A	MW-19B	MW-19B Dup.	MW-19CD-1
Sample Date	10/7/93	10/15/93	10/15/93	10/15/93	10/15/93	10/15/93
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
TCL-Pesticides						
alpha-BHC	0.021 J	5.1	0.024 J	0.025 J	0.036 J	2.2 J
beta-BHC	0.18	1.4	0.14 J	0.23 J	0.24 J	0.31 J
delta-BHC	ND 0.050	0.19 J	ND 0.050UJ	ND 0.050UJ	ND 0.050UJ	0.098 J
gamma-BHC (lindane)	ND 0.050	2.0	ND 0.050UJ	ND 0.050UJ	0.013 J	0.80
Metals						
mercury	ND 0.20	ND 0.20	1.0 J	2.6 J	2.7 J	ND 0.20

By: AJM Chk: MSJ 8/2/94

SUMMARY OF DETECTED COMPOUNDS
DUPONT/OLIN SPLIT SAMPLES
OCTOBER 1993

Sample I.D.	MW-20B	MW-22B	MW-22C	MW-22D	MW-22F	MW-26CD
Sample Date	10/15/93	10/29/93	10/29/93	10/29/93	10/29/93	10/29/93
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
TCL-Pesticides						
alpha-BHC	ND 0.050UJ	ND 0.062	0.020 J	0.089	0.23 J	0.23 J
beta-BHC	ND 0.050UJ	ND 0.062	ND 0.050	0.017 J	0.027 J	0.11 J
delta-BHC	ND 0.050UJ	ND 0.062	ND 0.050	ND 0.050	ND 0.052UJ	ND 0.050UJ
gamma-BHC (lindane)	ND 0.050UJ	ND 0.062	0.018 J	0.056 J	0.012 J	0.25 J
Metals						
mercury	ND 0.20	0.54 J	ND 0.20	ND 0.20	ND 0.20	ND 0.20

By: AJM Chk: MSJ 8/2/94

SUMMARY OF DETECTED COMPOUNDS
DUPONT/OLIN SPLIT SAMPLES
OCTOBER 1993

Sample I.D.	Rinsate-1
Sample Date	10/29/93
Units	ug/l
TCL-Pesticides	
alpha-BHC	ND 0.050
beta-BHC	ND 0.050
delta-BHC	ND 0.050
gamma-BHC (lindane)	ND 0.050
Metals	
mercury	ND 0.20

Notes:

ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC results and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
UJ - Indicates an estimated PQL due to outlying QC results.

Phase II Soil Samples

Summary of Detected Compounds

December 1993

SUMMARY OF DETECTED COMPOUNDS
OLIN SOIL BORINGS
OLIN RFI
NIAGARA FALLS, NEW YORK
DECEMBER 1993

Sample I.D.	NSB-16	NSB-16	NSB-16	NSB-16	NSB-17	NSB-17	NSB-17
Depth (feet)	1-3	3-5	5-7	7-9	1-3	3-5	5-7
Sample Date	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93	12/14/93
TCL-Pesticides (ug/kg)							
alpha-BHC	110,000 CE	1,800 CE	54,000 CE	4,800 CE	290 J	190	2,100 E
beta-BHC	57,000 CE	5,400 CE	50,000 CE	9,400 CE	1,300 E	450 E	3,100 E
delta-BHC	2,600 C	110 J	1,500 CJ	150	25	12 J	220
gamma-BHC (lindane)	4,000 C	71 J	1,500 CJ	1,500	140	52	1,000

Sample I.D.	NSB-1	NSB-1	NSB-1	NSB-1	NSB-1	NSB-4	NSB-4
Depth (feet)	0-2	2-4	4-6	6-8	8-10	2-4	4-6
Sample Date	12/7/93	12/7/93	12/7/93	12/7/93	12/7/93	12/8/93	12/8/93
Metals (mg/kg)							
mercury	13,000 J	15,600 J	186 J	6.9 J	8.2 J	217	158
TCLP Metals (ug/l)							
mercury	21.4	254	577	2.0	2.3	1.3	3.0

SUMMARY OF DETECTED COMPOUNDS
OLIN SOIL BORINGS
OLIN RFI
NIAGARA FALLS, NEW YORK
DECEMBER 1993

Sample I.D.	NSB-17
Depth (feet)	7-9
Sample Date	12/14/93
TCL-Pesticides (ug/kg)	
alpha-BHC	60
beta-BHC	66
delta-BHC	4.5 J
gamma-BHC (lindane)	15 J

Sample I.D.	NSB-4	NSB-14	NSB-14	NSB-14	NSB-14
Depth (feet)	6-8	1-3	3-5	5-7	7-9
Sample Date	12/8/93	12/14/93	12/14/93	12/14/93	12/14/93
Metals (mg/kg)					
mercury	0.38	20.1	0.13	0.53	ND 0.10
TCLP Metals (ug/l)					
mercury	ND 0.20	1.7	0.56	ND 0.20	ND 0.20

ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC results and/or indicates detection above the m detection limit (MDL), but less than the practical quantitation limit (PQL)
C - Compound confirmed by GC/MS.
E - Sample result reported from a secondary dilution.

Phase II Groundwater Samples
Summary of Detected Compounds
January 1994

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well I.D	OBA-11B	OBA-11C	OBA-12B	Dup. OBA-12B	OBA-12C
Sample Date	1/24/94	1/24/94	1/21/94	1/21/94	1/21/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
vinyl chloride	55	1500	ND 10	ND 10	4300
methylene chloride	ND 10	500 J	ND 10	ND 10	ND 1000
1,1-dichloroethene	2 J	ND 1000	ND 10	ND 10	ND 1000
1,2-dichloroethene (total)	170 E	7100	ND 10	ND 10	14000
chloroform	93	3400	ND 10	ND 10	ND 1000
1,1,1-trichloroethane	1 J	ND 1000	ND 10	ND 10	ND1000
trichloroethene	460 E	21000 E	ND 10	ND 10	3400
carbon tetrachloride	ND 10	ND 1000	ND 10	ND 10	ND 1000
benzene	0.8 J	ND 1000	ND 10	ND 10	89 J
tetrachloroethene	160	4700	ND 10	ND 10	200 J
1,1,2,2-tetrachloroethane	11	380 J	ND 10	ND 10	ND 1000
chlorobenzene	10 U	1000 U	ND 10	ND 10	40 J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well I.D	Rinsate-1	TB-1	TB-2
Sample Date	1/24/94	1/21/94	1/24/94
Units	ug/l	ug/l	ug/l
Compounds			
TCL-VOCs			
vinyl chloride	ND 10	ND 10	ND 10
methylene chloride	ND 10	ND 10	ND 10
1,1-dichloroethene	ND 10	ND 10	ND 10
1,2-dichloroethene (total)	ND 10	ND 10	ND 10
chloroform	2 J	ND 10	ND 10
1,1,1-trichloroethane	ND 10	ND 10	ND 10
trichloroethene	ND 10	ND 10	ND 10
carbon tetrachloride	7 J	ND 10	ND 10
benzene	ND 10	ND 10	ND 10
tetrachloroethene	ND 10	ND 10	ND 10
1,1,2,2-tetrachloroethane	ND 10	ND 10	ND 10
chlorobenzene	ND 10	ND 10	ND 10

Notes:

ND - Not detected, applicable detection limit listed.

J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).

E - Sample result reported from secondary dilution.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well I.D	OBA-11B	OBA-11C	OBA-12B	Dup. OBA-12B	OBA-12C
Sample Date	1/24/94	1/24/94	1/21/94	1/21/94	1/21/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
Semi-Volatiles					
1,3-dichlorobenzene	6 J	21	ND 10	ND 10	10
1,4-dichlorobenzene	6 J	16	ND 10	ND 10	5 J
1,2-dichlorobenzene	31	100 E	ND 10	ND 10	14
4-methylphenol	ND 10	8 J	ND 10	ND 10	ND 10
1,2,4-trichlorobenzene	10	34	ND 10	ND 10	2 J
hexachlorobutadiene	ND 10	1 J	ND 10	ND 10	ND 10
2,4,6-trichlorophenol	ND 10	ND 10	ND 10	ND 10	2 J
2,4,5-trichlorophenol	ND 25	ND 25	ND 25	ND 25	40
di-n-butyl phthalate	ND 10	0.4 J	0.5 J	0.4 J	0.4 J
bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U
3-chlorophenol	ND 10	ND 10	ND 10	ND 10	4 J
3,4-dichlorophenol	ND 10	ND 10	ND 10	ND 10	74
2,3,6-trichlorophenol	ND 10	ND 10	ND 10	ND 10	1 J

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well I.D	Rinsate-1	TB-1	TB-2
Sample Date	1/24/94	1/21/94	1/24/94
Units	ug/l	ug/l	ug/l
Compounds			
Semi-Volatiles			
1,3-dichlorobenzene	ND 10	NS	NS
1,4-dichlorobenzene	ND 10	NS	NS
1,2-dichlorobenzene	ND 10	NS	NS
4-methylphenol	ND 10	NS	NS
1,2,4-trichlorobenzene	ND 10	NS	NS
hexachlorobutadiene	ND 10	NS	NS
2,4,6-trichlorophenol	ND 10	NS	NS
2,4,5-trichlorophenol	ND 25	NS	NS
di-n-butyl phthalate	ND 10	NS	NS
bis(2-ethylhexyl)phthalate	0.4 J	NS	NS
3-chlorophenol	ND 10	NS	NS
3,4-dichlorophenol	ND 10	NS	NS
2,3,6-trichlorophenol	ND 10	NS	NS

Notes:

NS - Not sampled.

ND - Not detected, applicable detection limit listed.

J - Indicates an estimated value due to outlying QC results and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).

E -Sample result reported from secondary dilution.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well ID	OBA-11B	OBA-11C	OBA-12B	Dup. OBA-12B	OBA-12C	Rinsate-1
Sample Date	1/24/94	1/24/94	1/21/94	1/21/94	1/21/94	1/24/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	0.64 J	0.73	0.077	0.061	0.021 J	ND .050UJ
beta-BHC	0.078 J	0.092 J	0.027 J	0.029 J	ND .050	ND .050UJ
delta-BHC	0.012 J	0.016 J	ND .050	ND .050	ND .050	ND .050UJ
gamma-BHC (lindane)	0.12 J	0.14	0.023 J	0.015 J	ND .050	ND .050UJ

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well ID	TB-1	TB-2
Sample Date	1/21/94	1/24/94
Units	ug/l	ug/l
Compounds		
TCL-Pest/PCBs		
alpha-BHC	NS	NS
beta-BHC	NS	NS
delta-BHC	NS	NS
gamma-BHC (lindane)	NS	NS

Notes:

NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
UJ - Indicates an estimated PQL due to outlying QC results.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well ID	OBA-11B	OBA-11C	OBA-12B	Dup. OBA-12B	OBA-12C
Sample Date	1/24/94	1/24/94	1/21/94	1/21/94	1/21/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	ND 0.55	ND 0.55	ND 0.55	ND 0.55
Sample Date	1/24/94	1/24/94	1/21/94	1/21/94	1/21/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	0.29	0.39	1.3	1.6	ND 0.2

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JANUARY 1994

Well ID	Rinsate Blank 1	Trip Blank 1	Trip Blank 2
Sample Date	1/24/94	1/21/94	1/24/94
Units	mg/l	mg/l	mg/l
Compounds			
methanol	ND 0.55	ND 0.55	ND 0.55

Sample Date	1/24/94	1/21/94	1/24/94
Units	ug/l	ug/l	ug/l
Metals			
mercury	ND 0.2	NS	NS

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.

Appendix D

Phase II Groundwater Samples
Summary of Detected Compounds
May 1994

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well I.D	OBA-4A	OBA-4B	OBA-4C	Dup. OBA-4C	OBA-9A
Sample Date	5/13/94	5/13/94	5/12/94	5/12/94	5/18/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
1,1,1-trichloroethane	ND 10	ND 10	ND 400	ND 400	ND 10
1,1,2,2-tetrachloroethane	ND 10	5 J	1900	2000	ND 10
1,1-dichloroethene	ND 10	ND 10	ND 400	ND 400	0.8 J
1,2-dichloroethene (total)	ND 10	ND 10	810	860	42
acetone	ND 10	ND 10	ND 400	ND 400	96
benzene	ND 10	11	ND 400	ND 400	19
bromodichloromethane	ND 10	ND 10	ND 400	ND 400	ND 10
carbon tetrachloride	ND 10	ND 10	ND 400	16 J	0.4 J
chlorobenzene	ND 10	8 BJ	ND 400	ND 400	6 J
chloroform	1 J	0.5 J	1200	1200	280 E
dibromochloromethane	ND 10	ND 10	ND 400	ND 400	ND 10
methylene chloride	ND 10	ND 10	ND 400	ND 400	6 J
tetrachloroethene	11	12	3300 E	10000 E	250 E
trichloroethene	24	36	23000 E	16000 E	600 E
vinyl chloride	ND 10	15	34 J	42 J	1 J

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well I.D	OBA-10A	OBA-10A NAPL	OBA-11B	OBA-11C	OBA-12B
Sample Date	5/18/94	5/19/94	5/11/94	5/11/94	5/11/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
1,1,1-trichloroethane	ND 500	ND 2400000	ND 40	ND 1000	ND 10
1,1,2,2-tetrachloroethane	58 J	ND 2400000	20 J	94 J	ND 10
1,1-dichloroethene	ND 500	ND 2400000	ND 40	84 J	ND 10
1,2-dichloroethene (total)	43 J	ND 2400000	140	4500	ND 10
acetone	ND 500	ND 2400000	ND 40	ND 1000	ND 10
benzene	5400	21000000	ND 40	ND 1000	ND 10
bromodichloromethane	ND 500	ND 2400000	ND 40	ND 1000	ND 10
carbon tetrachloride	ND 500	ND 2400000	ND 40	ND 1000	0.5 J
chlorobenzene	3800	18000000	ND 40	ND 1000	ND 10
chloroform	96 J	ND 2400000	220	2600	ND 10
dibromochloromethane	ND 500	ND 2400000	ND 40	ND 1000	ND 10
methylene chloride	ND 500	ND 2400000	3 J	1800	ND 10
tetrachloroethene	140 J	590000 J	500	3200	ND 10
trichloroethene	840	1000000 J	810 E	17000 E	ND 10
vinyl chloride	ND 500	ND 2400000	17 J	600 J	ND 10

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well I.D	OBA12C	OBA-13A	OBA-13B	Dup. OBA-13B	OBA-13C
Sample Date	5/11/94	5/16/94	5/16/94	5/16/94	5/16/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
1,1,1-trichloroethane	ND 1000	ND 20	ND 2000	ND 1000	ND 100
1,1,2,2-tetrachloroethane	ND 1000	ND 20	ND 2000	90 J	ND 100
1,1-dichloroethene	ND 1000	ND 20	ND 2000	ND 1000	ND 100
1,2-dichloroethene (total)	11000	340	24000	23000 E	500
acetone	ND 1000	ND 20	ND 2000	ND 1000	ND 100
benzene	ND 1000	33	7200	8200	1700
bromodichloromethane	ND 1000	ND 20	ND 2000	ND 1000	ND 100
carbon tetrachloride	ND 1000	ND 20	ND 2000	ND 1000	ND 100
chlorobenzene	ND 1000	18 J	18000	20000	570
chloroform	ND 1000	ND 20	230 J	250 J	ND 100
dibromochloromethane	ND 1000	ND 20	ND 2000	ND 1000	ND 100
methylene chloride	ND 1000	ND 20	ND 2000	ND 1000	ND 100
tetrachloroethene	150 J	ND 20	950 J	960 J	ND 100
trichloroethene	2000	3 J	2300	2500	ND 100
vinyl chloride	2600	190	1600 J	1700	1000

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well I.D	OBA-14A	OBA-14B	OBA-14C	OBA-15A	OBA-15B
Sample Date	5/17/94	5/17/94	5/17/94	5/17/94	5/17/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
1,1,1-trichloroethane	ND 50	ND 100	ND 800	ND 1000	ND 500
1,1,2,2-tetrachloroethane	ND 50	ND 100	200 J	950 J	ND 500
1,1-dichloroethene	ND 50	ND 100	ND 800	ND 1000	ND 500
1,2-dichloroethene (total)	ND 50	120	5000	7600	7000
acetone	ND 50	ND 100	ND 800	ND 1000	ND 500
benzene	48 J	370	3100	2900	2400
bromodichloromethane	ND 50	ND 100	ND 800	ND 1000	ND 500
carbon tetrachloride	ND 50	ND 100	ND 800	ND 1000	ND 500
chlorobenzene	160	1600	9000	14000	6000
chloroform	ND 50	7 J	76 J	120 J	470 J
dibromochloromethane	ND 50	ND 100	ND 800	ND 1000	ND 500
methylene chloride	ND 50	ND 100	ND 800	ND 1000	ND 500
tetrachloroethene	ND 50	ND 100	290 J	350 J	1400
trichloroethene	ND 50	ND 100	2400	2200	8900
vinyl chloride	ND 50	71 J	550 J	1200	490 J

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well LD	OBA-16A	OBA-16B	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	5/13/94	5/13/94	5/12/94	5/16/94	5/18/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
1,1,1-trichloroethane	ND 10	0.7 J	ND 10	ND 10	ND 10
1,1,2,2-tetrachloroethane	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-dichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-dichloroethene (total)	ND 10	ND 10	ND 10	ND 10	ND 10
acetone	ND 10	ND 10	ND 10	ND 10	15
benzene	ND 10	0.8 J	ND 10	ND 10	ND 10
bromodichloromethane	1 J	3 J	ND 10	ND 10	ND 10
carbon tetrachloride	1 J	12	2 J	ND 10	1 J
chlorobenzene	ND 10	ND 10	ND 10	ND 10	ND 10
chloroform	60	260 E	1 J	ND 10	1 J
dibromochloromethane	ND 10	0.5 J	ND 10	ND 10	ND 10
methylene chloride	ND 10	1 J	ND 10	ND 10	2 J
tetrachloroethene	3 J	26	ND 10	ND 10	ND 10
trichloroethene	5 J	25	ND 10	ND 10	ND 10
vinyl chloride	ND 10	ND 10	ND 10	ND 10	ND 10

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well I.D	FB-1	FB-2	FB-3	FB-4	TB-1
Sample Date	5/11/94	5/13/94	5/16/94	5/18/94	5/11/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
1,1,1-trichloroethane	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-tetrachloroethane	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-dichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
1,2-dichloroethene (total)	ND 10	ND 10	ND 10	ND 10	ND 10
acetone	ND 10	ND 10	ND 10	ND 10	ND 10
benzene	ND 10	ND 10	ND 10	ND 10	ND 10
bromodichloromethane	ND 10	ND 10	ND 10	ND 10	ND 10
carbon tetrachloride	ND 10	ND 10	ND 10	ND 10	ND 10
chlorobenzene	ND 10	ND 10	ND 10	ND 10	ND 10
chloroform	ND 10	ND 10	ND 10	ND 10	ND 10
dibromochloromethane	ND 10	ND 10	ND 10	ND 10	ND 10
methylene chloride	ND 10	ND 10	ND 10	ND 10	ND 10
tetrachloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
trichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
vinyl chloride	ND 10	ND 10	ND 10	ND 10	ND 10

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well I.D	TB-2	TB-3	TB-4
Sample Date	5/13/94	5/17/94	5/18/94
Units	ug/l	ug/l	ug/l
Compounds			
TCL-VOCs			
1,1,1-trichloroethane	ND 10	ND 10	ND 10
1,1,2,2-tetrachloroethane	ND 10	ND 10	ND 10
1,1-dichloroethene	ND 10	ND 10	ND 10
1,2-dichloroethene (total)	ND 10	ND 10	ND 10
acetone	ND 10	ND 10	ND 10
benzene	ND 10	ND 10	ND 10
bromodichloromethane	ND 10	ND 10	ND 10
carbon tetrachloride	ND 10	ND 10	ND 10
chlorobenzene	ND 10	ND 10	ND 10
chloroform	ND 10	ND 10	ND 10
dibromochloromethane	ND 10	ND 10	ND 10
methylene chloride	ND 10	ND 10	ND 10
tetrachloroethene	ND 10	ND 10	ND 10
trichloroethene	ND 10	ND 10	ND 10
vinyl chloride	ND 10	ND 10	ND 10

Preliminary Report
Not Validated
As of 08/02/94

Notes:

ND - Not detected, applicable detection limit listed.

J - Indicates an estimated value due to outlying QC results and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).

E - Sample result reported from a secondary dilution.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA-4A	OBA-4B	OBA-4C	Dup. OBA-4C	OBA-9A	OBA-10A
Sample Date	5/13/94	5/13/94	5/12/94	5/12/94	5/18/94	5/18/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	ND 0.050	0.074 J	48 E	30 E	ND 0.31	920 E
beta-BHC	0.061	2.4	3.5	2.4	16 E	73 E
delta-BHC	ND 0.050	ND 0.25	4.6 E	3.1 E	ND 0.31	74 E
gamma-BHC (Lindane)	ND 0.050	ND 0.25	28 E	18 E	ND 0.31	580 E
Heptachlor	ND 0.050	ND 0.25	0.96	0.69	ND 0.31	ND 3.1
Aldrin	ND 0.050	ND 0.25	0.64	0.58	ND 0.31	ND 3.1
4,4'-DDT	ND 0.10	ND 0.50	ND 0.50	ND 0.50	ND 0.62	ND 6.2

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA-11B	OBA-11C	OBA-12B	OBA12C	OBA-13A	OBA-13B
Sample Date	5/11/94	5/11/94	5/11/94	5/11/94	5/16/94	5/16/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	0.65	0.69	0.035 J	0.022 J	0.025 J	22 E
beta-BHC	0.086	0.095	ND 0.050	ND 0.050	0.23	2.7
delta-BHC	0.0097 J	0.014 J	ND 0.050	ND 0.050	ND 0.050	2.8
gamma-BHC (Lindane)	0.12	0.13	0.0088 J	ND 0.050	ND 0.050	3.2
Heptachlor	ND 0.050	ND 0.050	ND 0.050	ND 0.050	ND 0.050	ND 0.25
Aldrin	ND 0.050	ND 0.050	ND 0.050	ND 0.050	ND 0.050	ND 0.25
4,4'-DDT	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.10	ND 0.50

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	Dup. OBA-13B	OBA-13C	OBA-14A	OBA-14B	OBA-14C	OBA-15A
Sample Date	5/16/94	5/16/94	5/17/94	5/17/94	5/17/94	5/17/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	13 E	ND 0.056	ND 0.062	0.16	2.8	7.4 E
beta-BHC	1.8	ND 0.056	ND 0.062	0.14	0.55	1.2
delta-BHC	1.7	ND 0.056	ND 0.062	0.057	0.44 J	1.5
gamma-BHC (Lindane)	2	ND 0.056	ND 0.062	ND 0.050	1.4	3.5 E
Heptachlor	ND 0.31	ND 0.056	ND 0.062	ND 0.050	ND 0.50	ND 0.25
Aldrin	ND 0.31	ND 0.056	ND 0.062	ND 0.050	ND 0.50	ND 0.25
4,4'-DDT	ND 0.62	ND 0.11	ND 0.12	ND 0.10	ND 1.0	ND 0.50

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA-15B	OBA-16A	OBA-16B	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	5/17/94	5/13/94	5/13/94	5/12/94	5/16/94	5/18/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	6.6 E	0.3 J	34 E	ND 0.050	ND 0.062	ND 0.062
beta-BHC	1.8	14 E	12 E	ND 0.050	ND 0.062	ND 0.062
delta-BHC	0.5	ND 0.51	2.8	ND 0.050	ND 0.062	ND 0.062
gamma-BHC (Lindane)	3.8	ND 0.51	40 E	ND 0.050	ND 0.062	ND 0.062
Heptachlor	ND 0.25	ND 0.51	ND 0.62	ND 0.050	ND 0.062	ND 0.062
Aldrin	ND 0.25	ND 0.51	ND 0.62	ND 0.050	ND 0.062	ND 0.062
4,4'-DDT	ND 0.50	ND 1.0	ND 1.2	ND 0.10	ND 0.12	0.023 J

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	FB-1	FB-2	FB-3	FB-4	TB-1	TB-2
Sample Date	5/11/94	5/13/94	5/16/94	5/18/94	5/11/94	5/13/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	NS	NS	NS	NS	NS	NS
beta-BHC	NS	NS	NS	NS	NS	NS
delta-BHC	NS	NS	NS	NS	NS	NS
gamma-BHC (Lindane)	NS	NS	NS	NS	NS	NS
Heptachlor	NS	NS	NS	NS	NS	NS
Aldrin	NS	NS	NS	NS	NS	NS
4,4'-DDT	NS	NS	NS	NS	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	TB-3	TB-4
Sample Date	5/17/94	5/18/94
Units	ug/l	ug/l
Compounds		
TCL-Pest/PCBs		
alpha-BHC	NS	NS
beta-BHC	NS	NS
delta-BHC	NS	NS
gamma-BHC (Lindane)	NS	NS
Heptachlor	NS	NS
Aldrin	NS	NS
4,4'-DDT	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

Notes:

NS - Not sampled.

ND - Not detected, applicable detection limit listed.

J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).

R - Data found to be unusable as a result of outlying QC criteria.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

UJ - Estimated quantitation limit.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

				Dup.	
Well ID	OBA-4A	OBA-4B	OBA-4C	OBA-4C	OBA-9A
Sample Date	5/13/94	5/13/94	5/12/94	5/12/94	5/18/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	ND 0.55	ND 0.55	ND 0.55	ND 0.55
Sample Date	5/13/94	5/13/94	5/12/94	5/12/94	5/18/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	0.37	ND 0.20	1.9	1.8	0.44

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA-10A	OBA-10A NAPL	OBA-11B	OBA-11C	OBA-12B
Sample Date	5/18/94	5/19/94	5/11/94	5/11/94	5/11/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	No Data	ND 0.55	ND 0.55	ND 0.55

Sample Date	5/18/94	5/19/94	5/11/94	5/11/94	5/11/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	0.52	ND 0.10	1.4	1.8	1.2

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA12C	OBA-13A	OBA-13B	Dup. OBA-13B	OBA-13C
Sample Date	5/11/94	5/16/94	5/16/94	5/16/94	5/16/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	ND 0.55	ND 0.55	ND 0.55	ND 0.55
Sample Date	5/11/94	5/16/94	5/16/94	5/16/94	5/16/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	ND 0.20	ND 0.20	ND 0.20	ND 0.20	ND 0.20

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA-14A	OBA-14B	OBA-14C	OBA-15A	OBA-15B
Sample Date	5/17/94	5/17/94	5/17/94	5/17/94	5/17/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	ND 0.55	ND 0.55	ND 0.55	ND 0.55

Sample Date	5/17/94	5/17/94	5/17/94	5/17/94	5/17/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	ND 0.20	ND 0.20	ND 0.20	0.4	ND 0.20

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	OBA-16A	OBA-16B	Rinsate-1	Rinsate-2	Rinsate-3
Sample Date	5/13/94	5/13/94	5/12/94	5/16/94	5/18/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	ND 0.55	ND 0.55	ND 0.55	ND 0.55

Sample Date	5/13/94	5/13/94	5/12/94	5/16/94	5/18/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	156	225	ND 0.20	ND 0.20	ND 0.20

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	FB-1	FB-2	FB-3	FB-4	TB-1
Sample Date	5/11/94	5/13/94	5/16/94	5/18/94	5/11/94
Units	mg/l	mg/l	mg/l	mg/l	mg/l
Compounds					
methanol	ND 0.55	ND 0.55	ND 0.55	ND 0.55	ND 0.55

Sample Date	5/11/94	5/13/94	5/16/94	5/18/94	5/11/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	NS	NS	NS	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
MAY 1994

Well ID	TB-2	TB-3	TB-4
Sample Date	5/13/94	5/17/94	5/18/94
Units	mg/l	mg/l	mg/l
Compounds			
methanol	ND 0.55	ND 0.55	ND 0.55

Sample Date	5/13/94	5/17/94	5/18/94
Units	ug/l	ug/l	ug/l
Metals			
mercury	NS	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

Notes:

NS - Not sampled.

ND - Not detected, applicable detection limit listed.

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R - Data found to be unusable as a result of outlying QC criteria.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

UJ - Estimated quantitation limit.

Phase II Groundwater Samples
Summary of Detected Compounds
July 1994

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	OBA-3A	OBA-3B	OBA-3C	OBA-13A	OBA-13B
Sample Date	7/15/94	7/15/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
acetone	ND 1000	ND 1000	500 J	ND 50	810 J
vinyl chloride	760 J	1200	960 J	270	850 J
methylene chloride	ND 1000	ND 1000	ND 1000	ND 50	ND 1000
1,1-dichloroethene	ND 1000	ND 1000	ND 1000	ND 50	ND 1000
cis-1,2-dichloroethene	1000	2800	12000	610	16000
trans-1,2-dichloroethene	300 J	410 J	880 J	43 J	950 J
chloroform	ND 1000	160 J	500 J	ND 50	300 J
1,1,1-trichloroethane	ND 1000	ND 1000	ND 1000	ND 50	ND 1000
trichloroethene	1000	1500	3800	ND 50	2300
carbon tetrachloride	ND 1000	ND 1000	ND 1000	ND 50	ND 1000
benzene	2600	4300	4500	ND 50	5700
tetrachloroethene	510 J	380 J	910 J	ND 50	550 J
1,1,2,2-tetrachloroethane	580 J	580 J	660 J	ND 50	ND 1000
chlorobenzene	17000	14000	12000	58	13000

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	OBA-13C	OBA-14A	OBA-14B	OBA-14C	Dup. OBA-14C
Sample Date	7/14/94	7/15/94	7/15/94	7/15/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
acetone	ND 50	ND 10	ND 250	510	410 J
vinyl chloride	640	ND 10	110 J	360 J	300 J
methylene chloride	ND 50	ND 10	ND 250	ND 550	ND 500
1,1-dichloroethene	ND 50	ND 10	ND 250	ND 500	ND 500
cis-1,2-dichloroethene	410	ND 10	180 J	4100	3300
trans-1,2-dichloroethene	81	ND 10	51 J	270 J	230 J
chloroform	ND 50	ND 10	ND 250	110 J	85 J
1,1,1-trichloroethane	ND 50	ND 10	ND 250	ND 500	ND 500
trichloroethene	ND 50	ND 10	ND 250	1600	1500
carbon tetrachloride	ND 50	ND 10	ND 250	ND 500	ND 500
benzene	1400 E	1.7 J	800	2500	2400
tetrachloroethene	ND 50	ND 10	ND 250	360 J	340 J
1,1,2,2-tetrachloroethane	ND 50	ND 10	ND 250	53 J	ND 500
chlorobenzene	520	1.1 J	3400	6400	6100

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	OBA-15A	Dup. OBA-15A	OBA-15B	OBA-16A	OBA-16B
Sample Date	7/14/94	7/14/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
acetone	ND 1000	ND 1000	ND 250	ND 10	ND 20
vinyl chloride	610 J	620 J	160 J	ND 10	4.2 J
methylene chloride	ND 1000	ND 1000	ND 250	ND 10	ND 20
1,1-dichloroethene	ND 1000	ND 1000	ND 250	ND 10	ND 20
cis-1,2-dichloroethene	4500	4600	3400	ND 10	32
trans-1,2-dichloroethene	310 J	370 J	120 J	ND 10	ND 20
chloroform	190 J	200 J	310	60	250
1,1,1-trichloroethane	ND 1000	ND 1000	ND 250	ND 10	ND 20
trichloroethene	3500	3700	4100	7.3 J	86
carbon tetrachloride	ND 1000	ND 1000	ND 250	ND 10	14 J
benzene	3500	3700	1100	ND 10	2.8 J
tetrachloroethene	1500	1500	660	3.7 J	93
1,1,2,2-tetrachloroethane	1200	1200	ND 250	ND 10	ND 20
chlorobenzene	11000	11000	3500	ND 10	5.3 J

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	Rinsate-1	TB-1	TB-2	FB-1	FB-2
Sample Date	7/15/94	7/14/94	7/15/94	7/14/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-VOCs					
acetone	ND 10	ND 10	7.7 J	ND 10	ND 10
vinyl chloride	ND 10	ND 10	ND 10	ND 10	ND 10
methylene chloride	ND 10	ND 10	ND 10	ND 10	ND 10
1,1-dichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
cis-1,2-dichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
trans-1,2-dichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
chloroform	ND 10	ND 10	ND 10	ND 10	1.1 J
1,1,1-trichloroethane	ND 10	ND 10	ND 10	ND 10	ND 10
trichloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
carbon tetrachloride	ND 10	ND 10	ND 10	ND 10	ND 10
benzene	ND 10	ND 10	ND 10	ND 10	ND 10
tetrachloroethene	ND 10	ND 10	ND 10	ND 10	ND 10
1,1,2,2-tetrachloroethane	ND 10	ND 10	ND 10	ND 10	ND 10
chlorobenzene	ND 10	ND 10	ND 10	ND 10	ND 10

Preliminary Report
Not Validated
As of 08/02/94

Notes:

ND - Not detected, applicable detection limit listed.

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E - Sample result reported from secondary dilution.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	OBA-3A	OBA-3B	OBA-3C	OBA-13A	OBA-13B
Sample Date	7/15/94	7/15/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
Semi-Volatiles					
phenol	ND 200	ND 200	13 J	3 J	ND 200
2-chlorophenol	ND 200	ND 200	19 J	ND 10	ND 200
1,3-dichlorobenzene	1200 E	640	500	2 J	690
1,4-dichlorobenzene	3100 E	1500	1900 E	4 J	2000 E
1,2-dichlorobenzene	4000 E	2600 E	2800 E	4 J	2800 E
hexachloroethane	ND 200	ND 200	ND 100	ND 10	ND 200
2,4-dichlorophenol	ND 200	ND 200	ND 100	ND 10	ND 200
1,2,4-trichlorobenzene	1400 E	440	480	ND 10	550
naphthalene	ND 200	ND 200	ND 100	ND 10	ND 200
hexachlorobutadiene	ND 200	ND 200	ND 100	ND 10	ND 200
2,4,6-trichlorophenol	ND 200	ND 200	ND 100	ND 10	ND 200
2,4,5-trichlorophenol	ND 500	ND 500	ND 100	ND 25	ND 500
pentachlorophenol	ND 500	ND 500	ND 250	ND 25	ND 500
di-n-butyl phthalate	ND 200	ND 200	ND 100	3 JB	ND 200
butylbenzylphthalate	ND 200	ND 200	ND 100	ND 10	ND 200
bis(2-ethylhexyl)phthalate	ND 200	ND 200	ND 100	2 JB	ND 200

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	OBA-13C	OBA-14A	OBA-14B	OBA-14C	Dup. OBA-14C
Sample Date	7/14/94	7/15/94	7/15/94	7/15/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
Semi-Volatiles					
phenol	23	6 J	ND 100	ND 200	12 J
2-chlorophenol	ND 10	9 J	11 J	ND 200	14 J
1,3-dichlorobenzene	3 J	84 E	330	260	270
1,4-dichlorobenzene	10	120 E	670	810	720
1,2-dichlorobenzene	20	150 E	790	1200	1200 E
hexachloroethane	ND 10	ND 10	ND 100	ND 200	ND 100
2,4-dichlorophenol	ND 10	8 J	ND 100	ND 200	ND 100
1,2,4-trichlorobenzene	ND 10	50	150	340	290
naphthalene	2 J	ND 10	ND 100	ND 200	ND 100
hexachlorobutadiene	ND 10	ND 10	ND 100	ND 200	ND 100
2,4,6-trichlorophenol	ND 10	ND 10	ND 100	ND 200	ND 100
2,4,5-trichlorophenol	ND 25	ND 20	ND 100	ND 500	ND 100
pentachlorophenol	ND 25	ND 25	ND 250	ND 500	ND 250
di-n-butyl phthalate	ND 10	ND 10	ND 100	ND 200	ND 100
butylbenzylphthalate	ND 10	ND 10	ND 100	ND 200	ND 100
bis(2-ethylhexyl)phthalate	2 JB	2 JB	110	ND 200	ND 100

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	OBA-15A	Dup. OBA-15A	OBA-15B	OBA-16A	OBA-16B
Sample Date	7/14/94	7/14/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
Semi-Volatiles					
phenol	ND 200	ND 200	9 J	ND 10	ND 10
2-chlorophenol	ND 200	ND 200	17	ND 10	ND 10
1,3-dichlorobenzene	700	680	370 E	ND 10	54
1,4-dichlorobenzene	1600	1500	960 E	1 J	17
1,2-dichlorobenzene	2500 E	2600 E	1300 E	ND 10	14
hexachloroethane	ND 200	ND 200	2 J	ND 10	ND 10
2,4-dichlorophenol	ND 200	ND 200	4 J	ND 10	5 J
1,2,4-trichlorobenzene	580	550	400 E	1 J	350 E
naphthalene	ND 200	ND 200	1 J	ND 10	1 J
hexachlorobutadiene	ND 200	ND 200	16	ND 10	ND 10
2,4,6-trichlorophenol	ND 200	ND 200	ND 10	ND 10	ND 10
2,4,5-trichlorophenol	ND 500	ND 500	2 J	ND 25	390 E
pentachlorophenol	ND 500	ND 500	ND 25	ND 25	3 J
di-n-butyl phthalate	ND 200	ND 200	1 JB	ND 10	2 JB
butylbenzylphthalate	ND 200	ND 200	ND 10	ND 10	ND 10
bis(2-ethylhexyl)phthalate	ND 200	ND 200	4 JB	4 JB	3 JB

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well I.D	Rinsate-1	FB-1	FB-2	TB-1	TB-2
Sample Date	7/15/94	7/14/94	7/15/94	1/21/94	1/24/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
Semi-Volatiles					
phenol	NS	NS	NS	NS	NS
2-chlorophenol	NS	NS	NS	NS	NS
1,3-dichlorobenzene	NS	NS	NS	NS	NS
1,4-dichlorobenzene	NS	NS	NS	NS	NS
1,2-dichlorobenzene	NS	NS	NS	NS	NS
hexachloroethane	NS	NS	NS	NS	NS
2,4-dichlorophenol	NS	NS	NS	NS	NS
1,2,4-trichlorobenzene	NS	NS	NS	NS	NS
naphthalene	NS	NS	NS	NS	NS
hexachlorobutadiene	NS	NS	NS	NS	NS
2,4,6-trichlorophenol	NS	NS	NS	NS	NS
2,4,5-trichlorophenol	NS	NS	NS	NS	NS
pentachlorophenol	NS	NS	NS	NS	NS
di-n-butyl phthalate	NS	NS	NS	NS	NS
butylbenzylphthalate	NS	NS	NS	NS	NS
bis(2-ethylhexyl)phthalate	NS	NS	NS	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

Notes:

NS - Not sampled.

ND - Not detected, applicable detection limit listed.

J - Indicates an estimated value due to outlying QC results and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).

E -Sample result reported from secondary dilution.

U - The compound was analyzed for but was not detected. The numerical value is the sample quantitation limit and has been adjusted to reflect contamination from laboratory or field activities.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	OBA-3A	OBA-3B	OBA-3C	OBA-13A	OBA-13B	OBA-13C
Sample Date	7/15/94	7/15/94	7/15/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds						
TCL-Pest/PCBs						
alpha-BHC	4.5 E	3.8 E	3.9 E	.061 P	.94 E	ND .05
beta-BHC	0.63	2.6 E	0.71	0.22	2.5 E	ND .05
delta-BHC	.33 P	0.76 E	0.21	.017 J	ND .05	ND .05
gamma-BHC (lindane)	0.77	0.094	2.5 E	.022 JP	0.2	ND .05
endrin aldehyde	ND 0.1	ND 0.1	ND 0.1	ND 0.1	ND 0.1	ND 0.1

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	OBA-14A	OBA-14B	OBA-14C	Dup. OBA-14C	OBA-15A
Sample Date	7/15/94	7/15/94	7/15/94	7/15/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-Pest/PCBs					
alpha-BHC	.014 JP	0.28	3.1 E	2.9 E	16 E
beta-BHC	ND .05	0.31	.81 E	0.68	1.8 E
delta-BHC	ND .05	0.099	0.41	0.34	3.0 E
gamma-BHC (lindane)	ND .05	.011 JP	0.46	.35 P	6.1 E
endrin aldehyde	ND 0.1	ND 0.1	ND 0.1	ND 0.1	.14 P

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	Dup. OBA-15A	OBA-15B	OBA-16A	OBA-16B	Rinsate-1
Sample Date	7/14/94	7/14/94	7/14/94	7/14/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
TCL-Pest/PCBs					
alpha-BHC	17 E	1.5 E	1.4 EJ	19 E	NS
beta-BHC	1.8 EJ	1.2 E	31 E	11 E	NS
delta-BHC	3.2 E	0.18	.064 P	.82 EJP	NS
gamma-BHC (lindane)	6.5 E	0.77	.3 P	25 E	NS
endrin aldehyde	ND .10	ND .10	ND .10	ND .10	NS

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	FB-1	FB-2	TB-1	TB-2
Sample Date	7/14/94	7/15/94	7/14/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l
Compounds				
TCL-Pest/PCBs				
alpha-BHC	NS	NS	NS	NS
beta-BHC	NS	NS	NS	NS
delta-BHC	NS	NS	NS	NS
gamma-BHC (lindane)	NS	NS	NS	NS
endrin aldehyde	NS	NS	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.
J - Indicates an estimated value due to outlying QC criteria and/or indicates detection above the method detection limit (MDL), but less than the practical quantitation limit (PQL).
UJ - Indicates an estimated PQL due to outlying QC results.

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	OBA-3A	OBA-3B	OBA-3C	OBA-13A	OBA-13B
Sample Date	7/15/94	7/15/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
methanol	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000

Sample Date	7/15/94	7/15/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	ND 0.00020	0.00021	ND 0.00020	ND 0.00020	ND 0.00020

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	OBA-13C	OBA-14A	OBA-14B	OBA-14C	Dup. OBA-14C
Sample Date	7/14/94	7/15/94	7/15/94	7/15/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
methanol	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
Sample Date	7/14/94	7/15/94	7/15/94	7/15/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	ND 0.00020	ND 0.00020	ND 0.00020	ND 0.00020	ND 0.00020

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	OBA-15A	Dup. OBA-15A	OBA-15B	OBA-16A	OBA-16B
Sample Date	7/14/94	7/14/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
methanol	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000
Sample Date	7/14/94	7/14/94	7/14/94	7/14/94	7/14/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	0.00056	0.00103	ND 0.00020	0.195	0.116

Preliminary Report
Not Validated
As of 08/02/94

SUMMARY OF DETECTED COMPOUNDS
OLIN RFI GROUNDWATER SAMPLES
NIAGARA FALLS, NEW YORK
JULY 1994

Well ID	Rinsate Blank 1	FB-1	FB-2	Trip Blank 1	Trip Blank 2
Sample Date	7/15/94	7/14/94	7/15/94	7/14/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Compounds					
methanol	ND 1000	ND 1000	ND 1000	ND 1000	ND 1000

Sample Date	7/15/94	7/14/94	7/15/94	7/14/94	7/15/94
Units	ug/l	ug/l	ug/l	ug/l	ug/l
Metals					
mercury	NS	NS	NS	NS	NS

Preliminary Report
Not Validated
As of 08/02/94

Notes:
NS - Not sampled.
ND - Not detected, applicable detection limit listed.