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CONTAMINANT SOURCE INVES
JOHNSON CITY WELLFIELD

FINAL REPORT
APPENDICES A-D
VOLUME 2 OF 2

JOHNSON CITY WELLFIELD
JOHNSON CITY (C) **BROOME (C)**

Prepared for:

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
50 Wolf Road, Albany, New York

Thomas C. Jorling, Commissioner

DIVISION OF HAZARDOUS WASTE REMEDIATION

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

Consultants, Inc.
elaware Avenue
, New York 14202

MAY 22, 1992

"F" Overflow (SSI) Vol 2 of 2
AFP 59 MAY 92 AFP
NYSDEC Source Investigation Report

CONTAMINANT SOURCE INVESTIGATION

JOHNSON CITY WELLFIELD

JOHNSON CITY, BROOME COUNTY, NEW YORK

W.A. NO. D002340-12

FINAL REPORT

APPENDICES A-D

(VOLUME 2 OF 2)

PREPARED BY

URS CONSULTANTS, INC.

282 DELAWARE AVENUE

BUFFALO, NEW YORK 14202

PREPARED FOR

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

DIVISION OF HAZARDOUS WASTE REMEDIATION

MAY 22, 1992

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(VOLUME 2 OF 2)

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APPENDIX A

DRILLING AND WELL INSTALLATION

A 000001

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-1 S+D

PROJECT: JOHNSON CITY WELLFIELD
CLIENT: NYSDEC
BORING CONTRACTOR: AMER. CI. I AUGER
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2"		
WT.		140#		
FALL		30"		

* POCKET PENETROMETER READING

SHEET NO. 1 OF 3
JOB NO.: 35238.00
BORING LOCATION:
GROUND ELEVATION: S:825.12, D:824.91'
DATE STARTED: S:9/23/91 D:9/14/91
DATE FINISHED: S:9/24/91, D:9/23/91
DRILLER: John Pietruch
GEOLOGIST: Andre LaPres
REVIEWED BY: D.A. Sikora

DEPTH FT	STRATA	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
		1	SS	5 10 / 14 17	90	MEDIUM BROWN / DARK BROWN	STIFF	ORGANIC, GRAVELLY CLAYEY SILT	ML	DRY OXIDIZED ZONES
5		2	SS	2 2 / 3 4	80	REDDISH BROWN	SOFT TO MEDIUM STIFF	SILT with a trace of clay, some organics		MOIST HOMOGENEOUS WITH SOME OXIDIZED ZONES
10		3	SS	1 1 / 2 2	90			becomes FINE SANDY		VERY MOIST
15		4	SS	2 2 / 2 4	70	MOTTLED DARK BROWN TO REDDISH BROWN / MOTTLED DARK GRAY, GRAY AND REDDISH BROWN		CLAYEY SILT		MOIST SOME ORGANICS
		5	SS	21 8 / 4 5	80	MOTTLED DARK BROWN, REDDISH BROWN / MEDIUM BROWN	LOOSE	SILTY, CLAYEY FINE SAND with a trace of medium sand and gravel		WET SATURATED HOMOGENEOUS
20		6	SS	2 2 / 3 3	90			SILTY FINE SAND		
		7	SS	2 3 / 4 6	80					
		8	SS	3 2 / 3 6	90					
25		9	SS	3 3 / 3 6	90					
		10	SS	3 4 / 5 10	90		MEDIUM DENSE	OCCURRENCE OF GRAY MEDIUM FINE SAND SEAMS		
		11	SS	10 11 / 12 14	70					
30		12	SS	9 8 / 9 17	80					
		13	SS	10 7 / 6 12	80					
35		14	SS	10 7 / 9 11	80	MEDIUM BROWN		SILT with trace clay		SATURATED

A-3205

COMMENTS BOTH BORINGS WERE ADVANCED WITH A MOBILE DRILL B-57 AUGER RIG USING 4¼" HOLLOW STEM AUGERS.

PROJECT NO. 35238.00
BORING NO. MW-1 S+D

A000002

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-1 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 2 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
37	SS	15	SS	10 14 17 25	70	MEDIUM BROWN	STIFF TO VERY STIFF	SILT with a trace of clay	ML	
		16	SS	7 9 14 21	90					
40		17	SS	4 7 12 18	90					
		18	SS	10 11 18 28	90					
45		19	SS	7 9 19 26	80			OCCURRENCE OF RED CLAY PARTINGS		OCCASIONAL GRAVEL MOIST TO WET
		20	SS	8 14 19 22	80					
		21	SS	6 10 14 18	60			DARK BROWN FINE AND MEDIUM SAND LAYERS		
50		22	SS	6 9 10 14	70					
	SS	23	SS	7 13 16 25	80			RED CLAY SEAMS		
55		24	SS	11 15 22 35	70					
		25	SS	9 17 30 25	60	BROWN	MEDIUM DENSE TO VERY DENSE	ALTERNATING LAYERS OF:		SANDY LAYERS ARE WET,
		26	SS	16 12 15 19	80			SILTY FINE SAND	SM	SILTY LAYERS ARE MOIST
60		27	SS	20 15 25 26	80					
		28	SS	10 15 16 20	70			GRAVELLY MEDIUM AND FINE SAND	SW	
65		29	SS	8 9 18 26	70					
		30	SS	25 43 57 68	50			GRAVELLY SANDY SILT with a trace of clay	ML	
		31	SS	100/0.5	50					DRIVING ON A STONE
70		32	SS	85 50/0.1	80					
		33	SS	30 55 21 21	40					
75		34	SS	30 16 20 22	60					
		35	SS	29 56 30 27	40					

A-3205A

COMMENTS SHALLOW BORING WAS COMPLETE AT 45' DEPTH (no split spoon samples taken from shallow boring).

PROJECT NO. 35238.00
BORING NO. MW-1 S+D

A000003

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-1 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 3 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY / RQD %	DESCRIPTION: COLOR	DESCRIPTION: CONSISTENCY / HARDNESS	DESCRIPTION: MATERIAL DESCRIPTION	DESCRIPTION: CLASS USCS	REMARKS
80		36	SS	11 7 / 10 14	60	BROWN	MEDIUM DENSE TO VERY DENSE	ALTERNATING LAYERS OF:		
		37	SS	16 18 / 17 26	50			SILTY FINE SAND	SM	
		38	SS	17 22 / 20 29	50			GRAVELLY MEDIUM AND FINE SAND	SW	
85		39	SS	13 10 / 10 17	60			GRAVELLY SANDY SILT with a trace of clay	ML	DRIVING ON A STONE
		40	SS	15 18 / 26 19	5					
90		41	SS	15 15 / 18 24	60					
		42	SS	25 23 / 22 32	60					
		43	SS	8 18 / 28 21	0					
95		44	SS	29 52 / 23 26	50					
		45	SS	20 38 / 49 57	10					
		46	SS	9 24 / 3 47	30					
100		47	SS	8 28 / 33 41	50					
105								DEEP BORING COMPLETED AT 102'		

A-3205A

COMMENTS MONITORING WELLS MW-1S and MW-1D INSTALLED IN SHALLOW AND DEEP BORES - SEE CONSTRUCTION DETAILS

PROJECT NO. 35238.00
BORING NO. MW-1 S+D

A-000004

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-2 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 1 OF 3
CLIENT: NYSDEC
JOB NO.: 35238.00
BORING CONTRACTOR: AMERICA, AUGER
BORING LOCATION:
GROUND WATER:

DATE	TIME	LEV	TYPE
9/12/91	17:32	+0.39'	surface ground
9/13/91	08:05	40.33'	(shallow
9/16/91	11:13	27.71'	boring
			casing)

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2"		
WT.		140#		
FALL		30"		

• POCKET PENETROMETER READING

GROUND ELEVATION: S:843.21' D:243.16'
DATE STARTED: S: 9/24/91, D: 9/[illegible]/91
DATE FINISHED: S: 9/25/91, D: 9/16/91
DRILLER: S: Rocky Bair D: Bucky Day
GEOLOGIST: Stelzer, Moeller
REVIEWED BY: D. A. Sikora

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
	S/S					BROWN TO BLACK		SILTY LOAM	ML	TOPSOIL
5						BROWN TO OLIVE BROWN		WELL ROUNDED COARSE SAND AND GRAVEL with some fine and medium sand, some cobbles, trace of silt.	GW	STEEL PIPE [illegible] GROUND SURFACE TO BE INSTALLED IN MW-2D (2½' depth. No split spoon samples from shallow boring until 60' depth as hammer on split spoon sampler was not operable.
10										
15										
20										
25										
30										DRILLER THINKS MATERIAL IS SATURATED
35										

A-3205

COMMENTS SHALLOW BOHING (0'-64') ADVANCED WITH A MOBILE DRILL B-57 AUGER RIG USING 4¼" HOLLOW STEM AUGERS. DEEP BORING (0'-101') ADVANCED WITH A BUCYRUS-ERIE 20W CABLE TOOL RIG DRILLING 6⅛" I.D. STEEL CASING.

PROJECT NO. 35238.00
BORING NO. MW-2 S+D

A 000005

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-2 S+D
SHEET NO. 2 OF 3
JOB NO.: 35238.00

PROJECT: JOHNSON CITY WELLFIELD
CLIENT: NYSDEC

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY RQD %	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
37						BROWN TO OLIVE BROWN		WELL ROUNDED COARSE SAND AND GRAVEL with some fine and medium sand, some cobbles, trace of silt.	GW	
45								SUBANGULAR TO ROUNDED FINE AND MEDIUM SAND with a trace of clay, silt, coarse sand, and fine gravel.	SW	A few small gray silty clay pieces.
60		1	SS	26 18	30	GRAY	HARD / VERY STIFF / SOFT	SILT with a trace of well graded sand, fine gravel, and clay.	ML	SATURATED, COMPACT, SLIGHTLY STICKY
		2	SS	25 9	30					
			SS	5 3	80					
			SS	3 5						
65								FINE SAND with a trace of silt.	SP	
70								SUBANGULAR TO ROUNDED MEDIUM AND COARSE SAND with a trace to some silt, trace of clay and fine gravel.	SW	
75	S S S									

A-3205A

COMMENTS SHALLOW BORING COMPLETED AT 64' - AUGERS ADVANCED TO 60', SPLIT SPOON SAMPLES TO 64'.

PROJECT NO. 35238.00
BORING NO. MW-2 S+D

A 000006

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-2 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 3 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
80						GRAY			SW	VARIABLE THICKNESS
						DARK GRAY		FINE SAND with some medium to coarse sand, trace silt and rounded cobbles.		98% of material is dark gray shale rock - ANGULAR TO ROUNDED MED. & CRS. SAND
85										SOUPY
90										
95	SS SS SS SS SS					MEDIUM GRAY		CLAYEY SILT with a trace of greenish-gray, angular shale fragments (1/8" - 3/4" TYP.).	ML	MORE PLASTIC
100								DEEP BORING COMPLETED AT 101'		
105										

A-32054

COMMENTS MONITORING WELLS MW-2S and MW-2D INSTALLED IN SHALLOW AND DEEP BORES - SEE CONSTRUCTION DETAILS

PROJECT NO. 35238.00
BORING NO. MW-2 S+D

A000007

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-3D

PROJECT: JOHNSON CITY WELLFIELD
CLIENT: NYSDEC
BORING CONTRACTOR: AMERICAN AUGER

GROUND WATER:					CAS.	SAMP	CORE	TUBE
DATE	TIME	LEV	TYPE	TYPE				
				DIA.				
				WT.				
				FALL				
				• POCKET PENETROMETER READING				

SHEET NO. 1 OF 3
JOB NO.: 35238.00
BORING LOCATION:
GROUND ELEVATION: 841.70'
DATE STARTED: 9/4/91
DATE FINISHED: 9/9/91
DRILLER: Bucky Day
GEOLOGIST: Steven Mueller
REVIEWED BY: D.S. Sikora

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
						BROWN		SILTY LOAM	ML	Topsoil
5		1				OLIVE BROWN		SUBANGULAR TO SUBROUNDED SILTY FINE AND MEDIUM SAND with a trace of subrounded to rounded coarse sand and fine gravel.	SM	* SLURRY SAMPLES OF BORING MATERIALS WERE TAKEN WITH A 16' LONG, 4½" O.D. STEEL BAILER.
10		2								
13		3								
15		4				OLIVE TO DARK GRAY		SILTY CLAY with some well graded, angular to subrounded coarse sand and fine gravel.	CL	
20		5								
25		6								
		7								
30		8				OLIVE		SILTY CLAY AND SUBROUNDED TO ROUNDED FINE TO COARSE SAND, trace rounded fine gravel.	SC	
35										

A-3205

COMMENTS BOREHOLE WAS ADVANCED WITH A BUCYRUS-ERIE 20W CABLE TOOL RIG DRIVING 6⅝" I.D. STEEL CASING. SLURRY SAMPLES OF BORING MATERIALS WERE TAKEN USING A 16' LONG, 4½" O.D. STEEL BAILER.

PROJECT NO. 35238.00
BORING NO. MW-3D

A 000008

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-3D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 2 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
37		9				BROWN TO GRAY		SUBANGULAR TO SUBROUNDED MEDIUM AND COARSE SAND with a trace to some silt and trace of fine gravel.	SW	MATERIAL APPEARED TO BE SATURATED
		10								
40										
45		11								
50		12								
55										
60		13				BROWN TO GRAY		FINE AND MEDIUM SAND with a trace of silt and coarse sand.		VERY CLEAN SAND, GOOD WATER BEARING UNIT
65										
70										
		14				OLIVE		SILTY CLAY with some well graded, angular to subrounded, fine to coarse sand; trace fine gravel.	CL	
75	S									
	S									
	S	15								

A-3205A

COMMENTS

PROJECT NO. 35238.00
BORING NO. MW-3D

A 000009

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-3D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 3 OF 3
CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
80						BROWN TO GRAY		ANGULAR TO SUB-ROUNDED MEDIUM TO COARSE SAND with a trace of fine sand, silt, clay, and fine gravel.	SW	CLEAN SANDS
		16								
85										
90										
		17								
95								SUBANGULAR TO SUBROUNDED MEDIUM AND COARSE SAND with some silt and clay, trace of fine gravel.	SM-SC	
		18								
100										
105								BORING COMPLETED AT 102'		

A-3208A

COMMENTS HIT A VERY HARD MATERIAL AT 102' DEPTH (may have been till or bedrock). MONITORING WELL MW-3D INSTALLED IN BORE-SEE CONSTRUCTION DETAILS.

PROJECT NO. 35238.00
BORING NO. MW-3D

A 000010

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-4 S+D

PROJECT: JOHNSON CITY WELLFIELD
CLIENT: NYSDEC
BORING CONTRACTOR: AMERICAN AUGER

SHEET NO. 1 OF
JOB NO. : 35238.00
BORING LOCATION:
GROUND ELEVATION: S:822.00', D:822.43'
DATE STARTED: S:10/3/91, D:10/1/91
DATE FINISHED: S:10/3/91, D:10/3/91
DRILLER: S: Rocky Baye, D: Bucky Day
GEOLOGIST: S: Steven Moeller D: Andre LaPore
REVIEWED BY: H.S. Sikora

GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2"		
WT.		140#		
FALL		30"		

* POCKET PENETROMETER READING

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
0						LIGHT BROWN	MEDIUM STIFF	SILTY LOAM	ML	TOPSOIL
5		1	SS	4/3 3/7	20	LIGHT BROWN TO REDDISH BROWN		SILTY FINE SAND with some clay.		MOIST
10		2	SS	4/4 3/4	40	GRAY				some peaty, reddish brown organic matter
15		3	SS	11/9 8/10	60	OLIVE BROWN	MEDIUM DENSE	SUBROUNDED TO WELL ROUNDED SAND AND GRAVEL with a trace of silt and clay.	SW	saturated
20		4	SS	10/10 10/10	45					
25		5	SS	4/1 2/2	10	BROWN	LOOSE	FINE SAND with a trace of clay, silt, and subrounded to well rounded coarse sand and fine gravel.	SP	
30		6	SS	4/4 3/3	100					
35		7	SS	2	1 100					

A-3205

COMMENTS SHALLOW BORING (0'-61') ADVANCED WITH A MOBILE DRILL B-57 AUGER RIG USING 4 1/4" HOLLOW STEM AUGERS. DEEP BORING (0'-85') ADVANCED WITH A BUCYRUS-ERIE 20W CABLE TOOL RIG DRIVING 6 1/8" I.D. STEEL CASING.

PROJECT NO. 35238.00
BORING NO. MW-4 S+D

A000011

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-4 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 2 OF
CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
		7	SS	7 7	100	BROWN	MEDIUM DENSE TO LOOSE	FINE SAND with a trace of clay, silt, and subrounded to well rounded coarse sand and fine gravel. Occasional gray silt seams up to 4" thick.	SP	
40		8	SS	5 7 5 3	100					
45		9	SS	3 7 10 14	100					
50		10	SS	4 3 2 3	2					
55	SS	11	SS	6 9 15 14	50	GRAY	STIFF TO VERY STIFF	SILT AND FINE SAND with some clay	ML	MOIST BUT NOT SATURATED
	SS	12	SS	9 13 11 13	40					
60	SS	13	SS	14 17 13 13	50					
	SS							CLAYEY, SANDY SILT		
65	SS									
	SS									
	SS									
70	SS									
	SS									
	SS									
75	SS									
	SS									
	SS									

A-3205A

COMMENTS SHALLOW BORING WAS COMPLETE AT 61' DEPTH.

PROJECT NO. 35238.00
BORING NO. MW-4 S+D

A 000012

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-4 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 3 OF 3
CLIENT: NYSDEC
JOB NO. : 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
80	SS					GRAY		CLAYEY SANDY SILT	ML	
85	SS									
								DEEP BORING COMPLETED AT 85'		BORING TERMINATED AT 85' ON SHALE
90										

A-3205A

COMMENTS MONITORING WELLS MW-4S and MW-4D INSTALLED IN SHALLOW AND DEEP BORES - SEE CONSTRUCTION DETAILS

PROJECT NO. 35238.00
BORING NO. MW-4 S+D

A 000013

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-5 S+D

PROJECT: JOHNSON CITY WELLFIELD
CLIENT: NYSDEC
BORING CONTRACTOR: AMERICAN AUGER
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE		SS		
DIA.		2"		
WT.		140#		
FALL		30"		

• POCKET PENETROMETER READING

SHEET NO. 1 OF 3
JOB NO.: 35238.00
BORING LOCATION:
GROUND ELEVATION: S: 835.57' D: 835.53'
DATE STARTED: S: 9/30/91, D: 9/25/91
DATE FINISHED: S: 10/1/91, D: 9/27/91
DRILLER: S: Rocky Bay, D: Bucky Day
GEOLOGIST: Steven Moeller
REVIEWED BY: H. S. Sikora

DEPTH FT	STRATA	SAMPLE NO.	TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
						BROWN	SOFT TO MEDIUM STIFF	ASPHALT DRIVEWAY SILTY FINE SAND	ML	
5		1	SS	2/4 2/3	65					COMPACT
10		2	SS	5/4 4/4	65		LOOSE TO MEDIUM DENSE	FINE SAND with a trace of silt	SP	SLIGHTLY MOIST
15		3	SS	7/2 4/2	30					DRIVING ON A STONE
20		4	SS	4/4 3/5	55					
25		5	SS	4/3 3/3	65					
30		6	SS	7/3 4/4	40			SUBROUNDED TO WELL ROUNDED FINE GRAVEL, COARSE SAND, AND FINE SAND with a trace to some silt	SW	SATURATED
35		7	SS	12 6	40					

A-3205

COMMENTS SHALLOW BORING (0'-65') ADVANCED WITH A MOBILE DRILL B-57 AUGER RIG USIN 4¼" HOLLOW STEM AUGERS. DEEP BORING (0'-100') ADVANCED WITH A BUCYRUS-ERIE 20W CABLE TOOL RIG DRIVING 6⅛" I.D. STEEL CASING.

PROJECT NO. 35238.00
BORING NO. MW-5 S+D

A 000014

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-5 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 2 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
		7	SS	1 / 3	40	BROWN	LOOSE TO MEDIUM DENSE	SUBROUNDED TO WELL ROUNDED FINE GRAVEL, COARSE SAND, AND FINE SAND with a trace to some silt, trace coarse gravel, medium sand, and clay.	SW	Brown color is present from silt and clay sand of various shades but is mostly dark gray in color.
		8	SS	7 / 2	25					
40		9	SS	9 / 4	45					
		10	SS	9 / 5	25					
		11	SS	16 / 8	10					
45		12	SS	— / —	10					DRILLER MISSED BLOW COUNTS
50		13	SS	23 / 10	15		MEDIUM DENSE TO DENSE			
55		14	SS	26 / 10	100					
		15	SS	14 / 7	25					
60		16	SS	14 / 8	15					
		17	SS	16 / 11	15					
		18	SS	19 / 14	1					DRIVING ON A STONE
65										
70										
75										

A-3205A

COMMENTS: SHALLOW BORING WAS COMPLETE AT 65' DEPTH.

PROJECT NO. 35238.00
BORING NO. MW-5 S+D

A000015

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-5 S+D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 3 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	DESCRIPTION COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION	CLASS USCS	REMARKS
80						BROWN		SUBROUNDED TO WELL ROUNDED FINE GRAVEL, COARSE SAND, AND FINE SAND with a trace of silt, coarse gravel, medium sand, and clay	SW	
85						OLIVE		SUBROUNDED TO WELL ROUNDED FINE GRAVEL with some well graded fine to coarse sand; trace silt, clay, and coarse gravel	GW	
90										
95										
100								DEEP BORING COMPLETED AT 100'		
105										

A-3208A

COMMENTS MONITORING WELLS MW-5S and MW-5D INSTALLED IN SHALLOW AND DEEP BORES - SEE CONSTRUCTION DETAILS

PROJECT NO. 35238.00
BORING NO. MW-5 S+D

A000016

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-6D

PROJECT: JOHNSON CITY WELLFIELD
CLIENT: NYSDEC
BORING CONTRACTOR: AMERICAN AUGER
GROUND WATER:

DATE	TIME	LEV	TYPE

	CAS.	SAMP	CORE	TUBE
TYPE				
DIA.				
WT.				
FALL				

* POCKET PENETROMETER READING

SHEET NO. 1 OF 3
JOB NO.: 35238.00
BORING LOCATION:
GROUND ELEVATION: 824.70'
DATE STARTED: 9/18/91
DATE FINISHED: 9/26/91
DRILLER: Bucky Day
GEOLOGIST: Steven J Moeller
REVIEWED BY: D A Sikora

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	BLOWS PER 6"	RECOVERY ROD %	COLOR	CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	CLASS USCS	REMARKS
						BROWN		ORGANIC SILTY LOAM TOPSOIL	ML	MOIST
5								SILT with some fine sand and clay; trace of subrounded to angular fine gravel and coarse sand.		
10										
15								CLAYEY SILT with some well graded sand and fine gravel.		At 17', driller thinks we hit water
20										
25						BROWN TO OLIVE BROWN		SILTY FINE SAND with a trace of subangular to angular medium and coarse sand.		saturated sticky and slightly plastic
30										
35										

A-3205

COMMENTS BORING WAS ADVANCED WITH A BUCYRUS-ERIE 20W CABLE TOOL RIG DRIVING 6 1/8" I.D. STEEL CASING. SLURRY SAMPLES OF BORING MATERIAL WERE TAKEN USING A 16' LONG, 4 1/2" O.D. STEEL BAILER.

PROJECT NO. 35238.00
BORING NO. MW-6D

A000017

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-6D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 2 OF 3
CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
37	S					BROWN TO OLIVE BROWN		SILTY FINE SAND with a trace of subangular to angular medium and coarse sand	ML	
40	S									
45	S					OLIVE		SILT AND FINE SAND with a trace of clay and angular to subrounded medium and coarse sand	ML SM	sticky and slightly plastic
50	S									
55	S							HEAVY SILT with some fine sand and a trace of clay	ML	very sticky but not plastic
60	S									very cohesive
65	S							SILTY FINE SAND with a trace of medium sand and clay		slightly cohesive
70	S							SILTY WELL GRADED FINE TO COARSE SAND, trace clay	SM	
75	S									

A-3208A

COMMENTS

PROJECT NO. 35238.00
BORING NO. MW-6D

A 000018

URS CONSULTANTS, Inc.

TEST BORING LOG
BORING NO. MW-6D

PROJECT: JOHNSON CITY WELLFIELD
SHEET NO. 3 OF 3

CLIENT: NYSDEC
JOB NO.: 35238.00

DEPTH FT	STRATA	SAMPLE NO.	SAMPLE TYPE	SAMPLE BLOWS PER 6"	SAMPLE RECOVERY ROD %	DESCRIPTION COLOR	DESCRIPTION CONSISTENCY HARDNESS	DESCRIPTION MATERIAL DESCRIPTION	DESCRIPTION CLASS USCS	REMARKS
	S					OLIVE		SUBANGULAR TO ROUNDED MEDIUM AND COARSE SAND with some fine sand and silt, trace clay and fine gravel	SM	
80	S									
	S							SILTY FINE SAND with a trace of medium and coarse sand, clay, and gravel		slightly cohesive
	S									
85								SILTY FINE AND MEDIUM SAND with some coarse sand, trace clay		
	S									
90								MEDIUM AND COARSE SAND with some fine sand, trace silt	SW	
95										
100										
								BORING COMPLETED AT 101.5'		
105										

A-3205A

COMMENTS MONITORING WELL MW-6D INSTALLED IN BORE - SEE CONSTRUCTION DETAILS

PROJECT NO. 35238.00
BORING NO. MW-6D

A 000019

DRILLING SUMMARY

Geologist: Andre LaPres

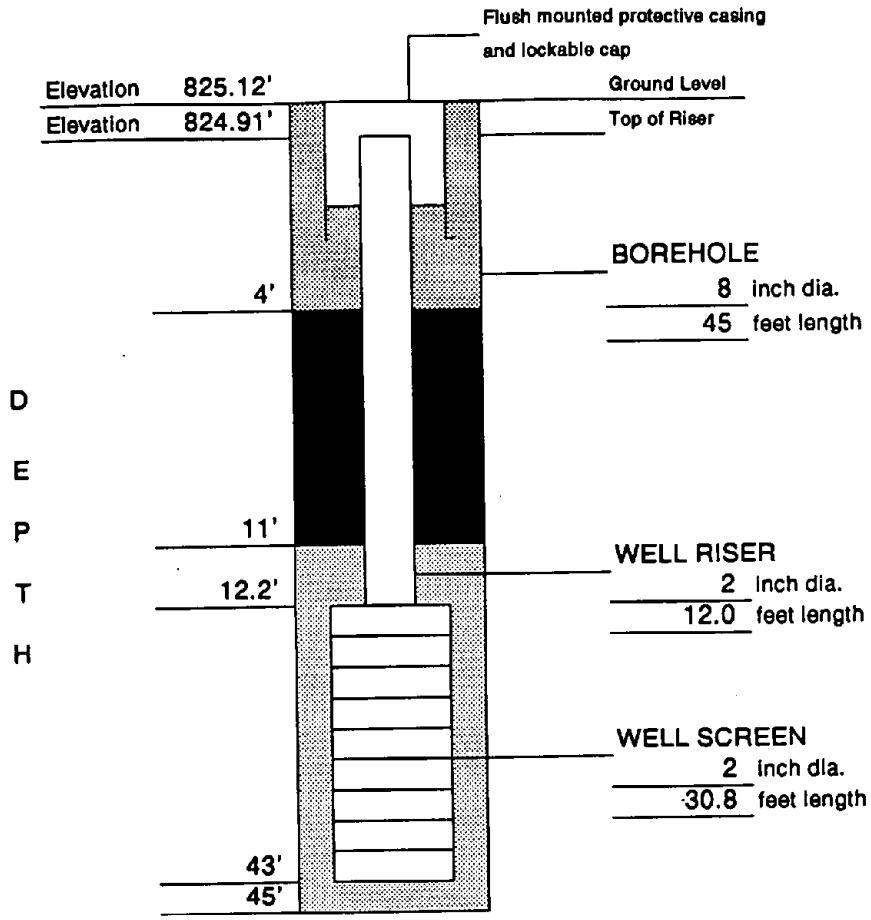
Drilling Company: American Auger

Driller: John Pietruch

Date: 9/23/91-9/24/91

GEOLOGIC LOG

depth(ft.)	lithology
0-17	Recent alluvium
17-35	Outwash silty sand and gravel
35-45	Lake silt and clay



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 4'-11'

Seal #2 Type: Cement Grout
Setting: 0'-4'

BACKFILL MATERIAL

Type: none

Setting: none

FILTER MATERIAL

Type: #2 Q-ROK

Setting: 11'-45'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-1 S

A 000020

DRILLING SUMMARY

Geologist:
Andre LaPres

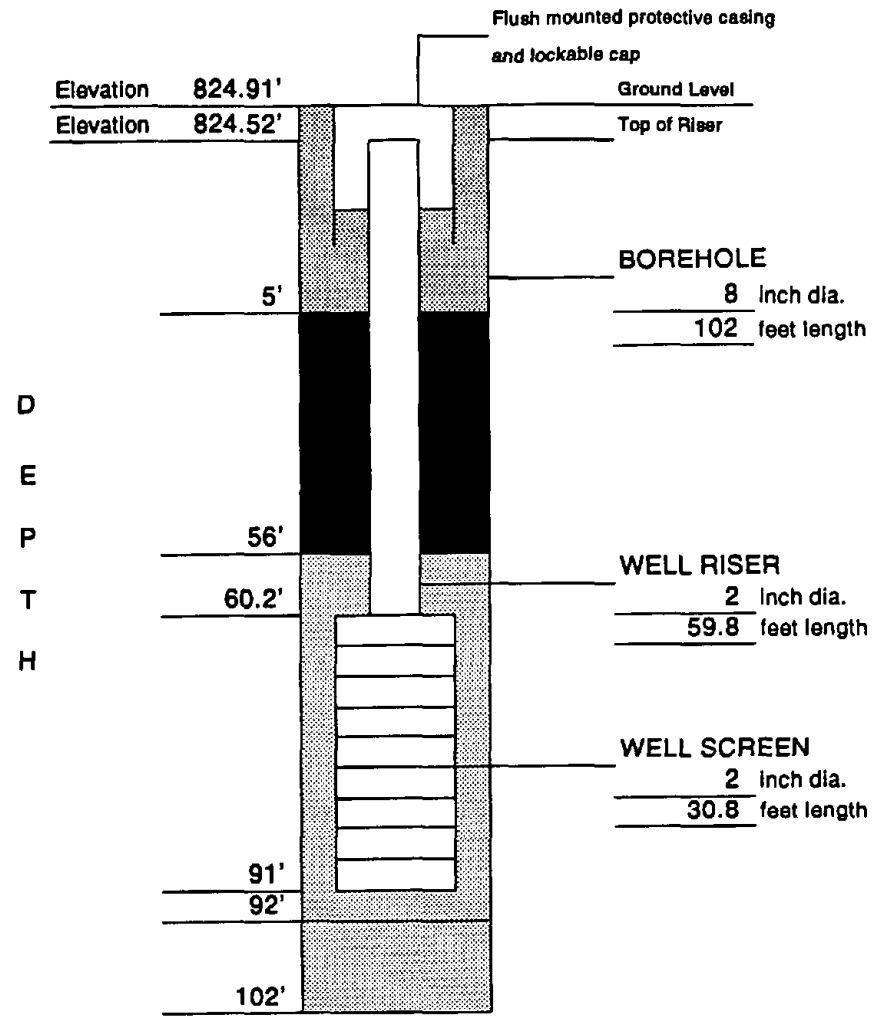
Drilling Company:
American Auger

Driller:
John Pietruch

Date:
9/14/91–9/23/91

GEOLOGIC LOG

depth(ft.)	lithology
0–17	Recent alluvium
17–35	Outwash silty sand and gravel
35–56	Lake silt and clay
56–102	Kame sand and gravel



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 5'–56'

Seal #2 Type: Cement Grout
Setting: 0'–5'

BACKFILL MATERIAL

Type: formational collapse

Setting: 92'–102'

FILTER MATERIAL

Type: #2 Q-ROK

Setting: 56'–92'

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number:	35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number:	MW-1 D

DRILLING SUMMARY

Geologist: Steven Moeller

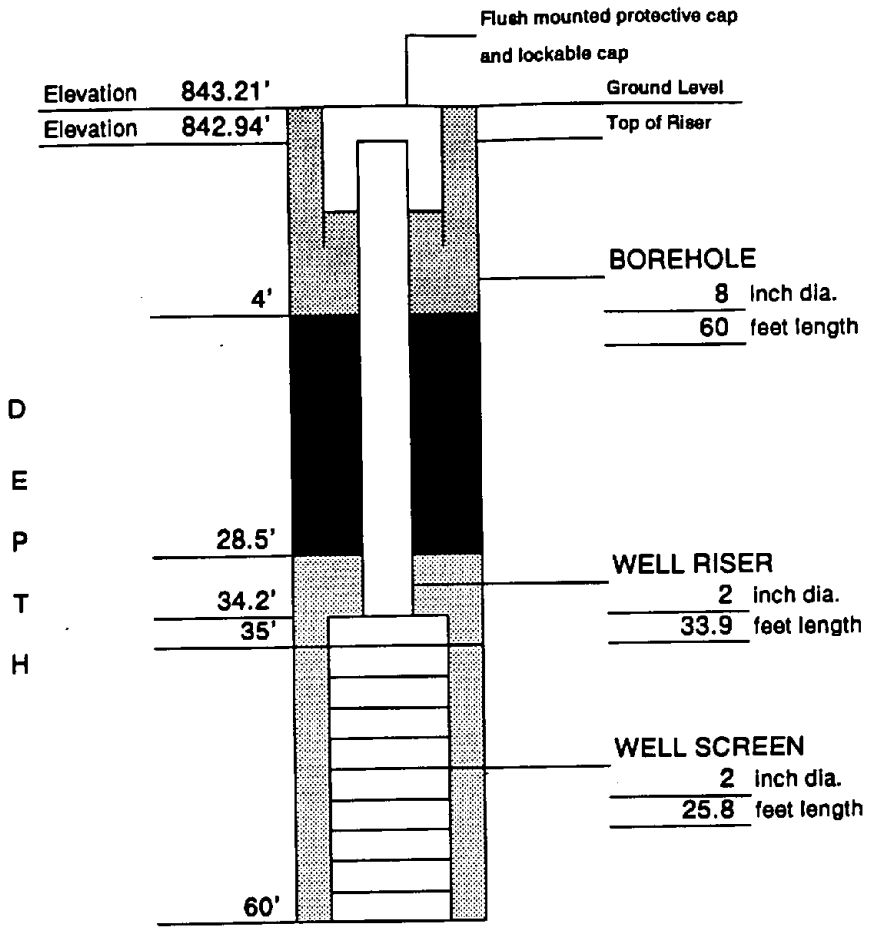
Drilling Company: American Auger

Driller: Rocky Baye

Date: 9/24/91-9/25/91

GEOLOGIC LOG

depth(ft.)	lithology
0-5(?)	Cut and fill
5-60	Outwash sand and gravel
60-64	Lake silt



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 4'-28.5'

Seal #2 Type: Cement Grout
Setting: 0'-4'

BACKFILL MATERIAL

Type: formational collapse

Setting: 35'-60'

FILTER MATERIAL

Type: #3 Q-ROK

Setting: 28.5'-35'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number:	35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number:	MW-2 S

A 000022

DRILLING SUMMARY

Geologist:
Steven Moeller

Drilling Company:
American Auger

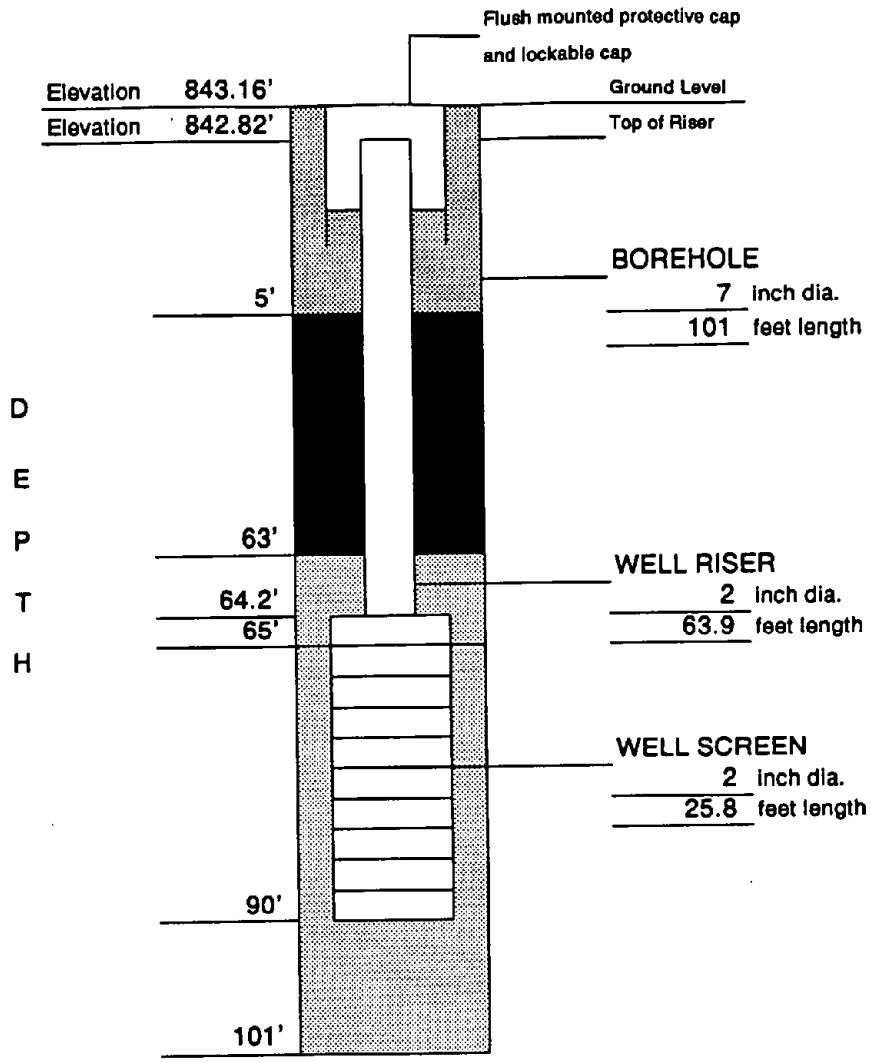
Driller:
Bucky Day

Date:
9/12/91-9/16/91

GEOLOGIC LOG

depth(ft.)	lithology
0-5(?)	Cut and fill
5-60	Outwash sand and gravel
60-65	Lake silt
65-93	Kame sand and gravel
93-100	Glacial till

WELL DESIGN



CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 5'-63'

Seal #2 Type: Cement Grout
Setting: 0'-5'

BACKFILL MATERIAL

Type: formational collapse

Setting: 65'-101'

FILTER MATERIAL

Type: #3 Q-ROK

Setting: 63'-65'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-2 D

A 000023

DRILLING SUMMARY

Geologist: Steven Moeller

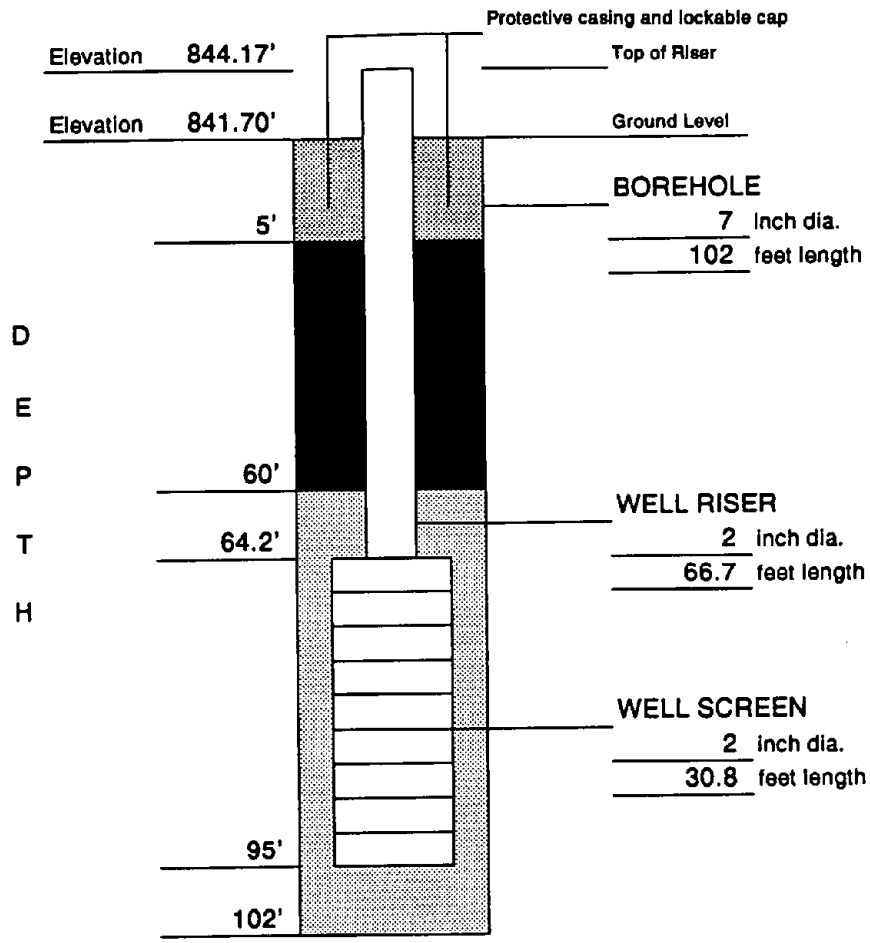
Drilling Company: American Auger

Driller: Bucky Day

Date: 9/4/91-9/9/91

GEOLOGIC LOG

depth(ft.)	lithology
0-5(?)	Cut and fill
5-73	Outwash sand and gravel
73-78	Lake silt and clay
78-102	Kame sand and gravel
102-?	Glacial till



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 5'-60'

Seal #2 Type: Cement Grout
Setting: 0'-5'

BACKFILL MATERIAL

Type: none

Setting: none

FILTER MATERIAL

Type: formational collapse

Setting: 60'-102'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-3 D

A000024

DRILLING SUMMARY

Geologist: Steven Moeller

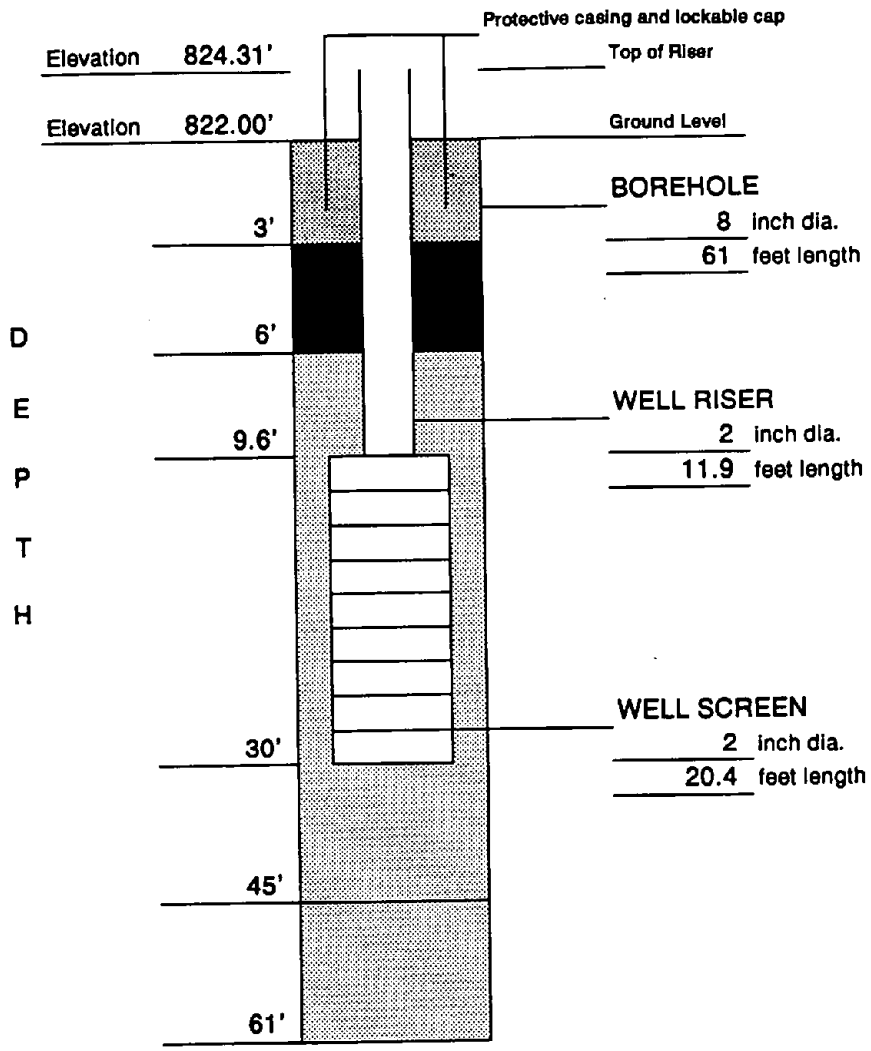
Drilling Company: American Auger

Driller: Rocky Baye

Date: 10/3/91

GEOLOGIC LOG

depth(ft.)	lithology
0-15	Recent alluvium
15-54	Outwash sand and gravel
54-61	Lake silt and clay



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Bentonite Pellets
Setting: 3'-6'

Seal #2 Type: Cement Grout
Setting: 0'-3'

BACKFILL MATERIAL

Type: formational collapse

Setting: 45'-61'

FILTER MATERIAL

Type: #3 Q-ROK

Setting: 6'-45'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-4 S

A000025

DRILLING SUMMARY

Geologist: Andre LaPres

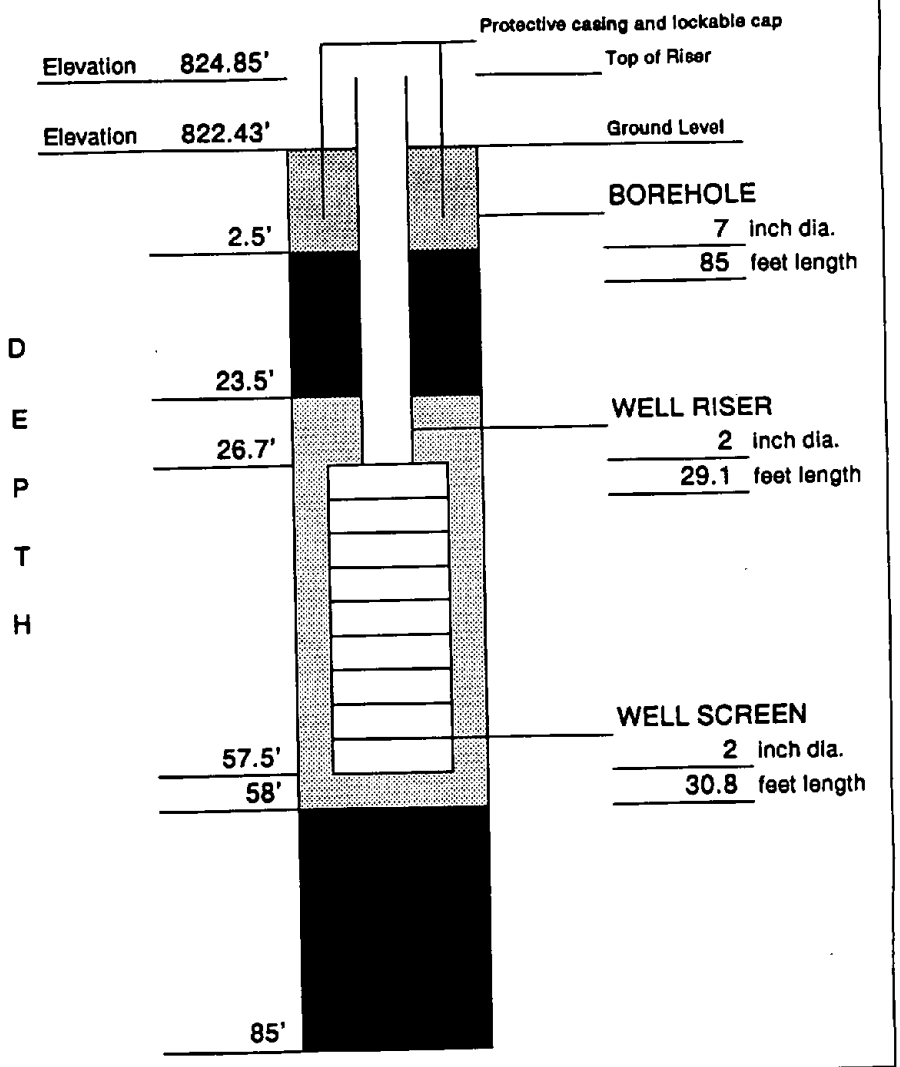
Drilling Company: American Auger

Driller: Bucky Day

Date: 10/1/91–10/3/91

GEOLOGIC LOG

depth(ft.)	lithology
0–15	Recent alluvium
15–54	Outwash sand and gravel
54–62	Lake silt and clay
62–85	Glacial till
85	Shale bedrock



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 2.5'–23.5'

Seal #2 Type: Cement Grout
Setting: 0'–2.5'

BACKFILL MATERIAL

Type: Hole Plug Bentonite and Bentonite Pellets

Setting: 58'–85'

FILTER MATERIAL

Type: #3 Q-ROK

Setting: 23.5'–58'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW–4 D

A 000026

DRILLING SUMMARY

Geologist:
Steven Moeller

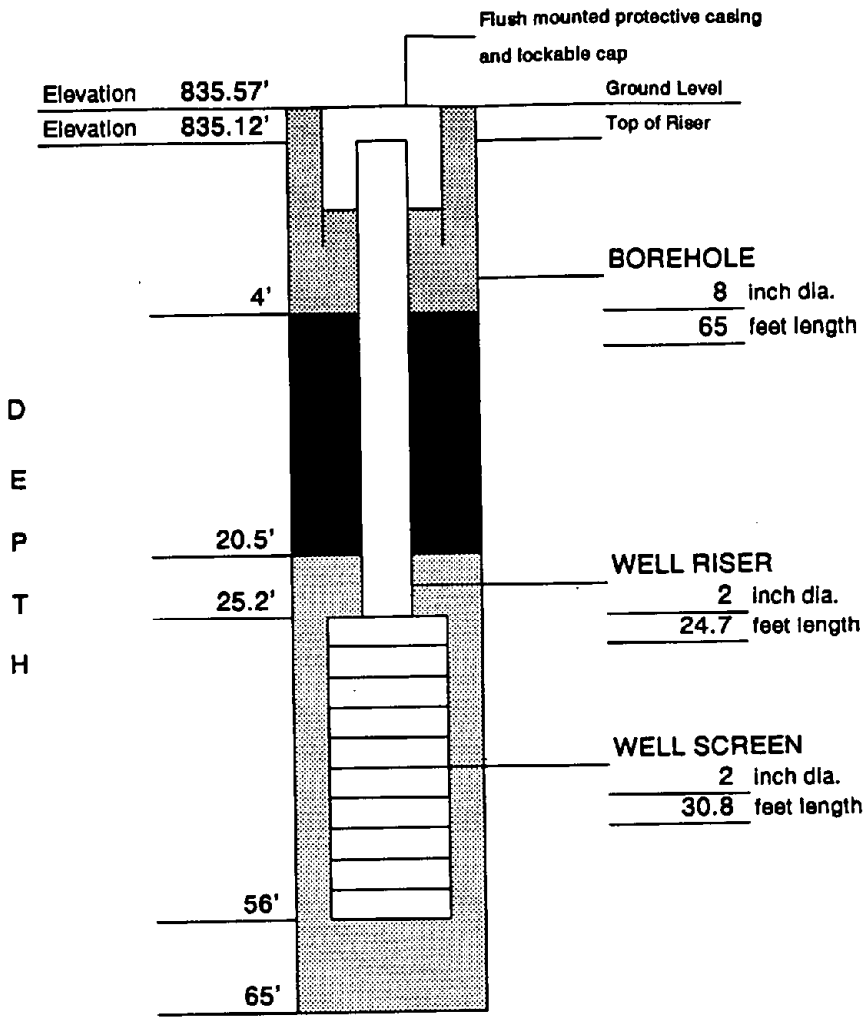
Drilling Company:
American Auger

Driller:
Rocky Baye

Date:
9/30/91-10/1/91

GEOLOGIC LOG

depth(ft.)	lithology
0-65	Outwash sand and gravel Kame sand and gravel



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 4'-20.5'

Seal #2 Type: Cement Grout
Setting: 0'-4'

BACKFILL MATERIAL

Type: none

Setting: none

FILTER MATERIAL

Type: formational collapse

Setting: 20.5'-65'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-5 S

A000027

DRILLING SUMMARY

Geologist: Steven Moeller

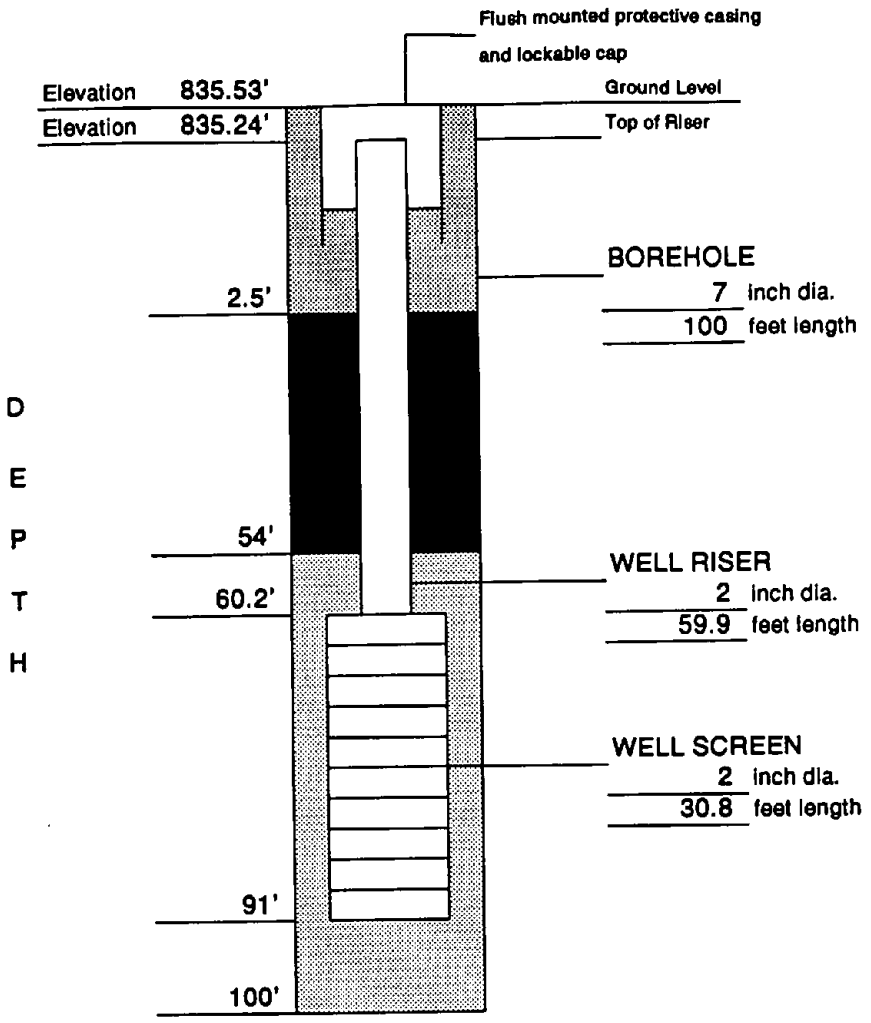
Drilling Company: American Auger

Driller: Bucky Day

Date: 9/25/91-9/27/91

GEOLOGIC LOG

depth(ft.)	lithology
0-100	Outwash sand and gravel
	Kame sand and gravel



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 2.5'-54'

Seal #2 Type: Cement Grout
Setting: 0'-2.5'

BACKFILL MATERIAL

Type: none

Setting: none

FILTER MATERIAL

Type: formational collapse

Setting: 54'-100'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-5 D

DRILLING SUMMARY

Geologist:
Steven Moeller

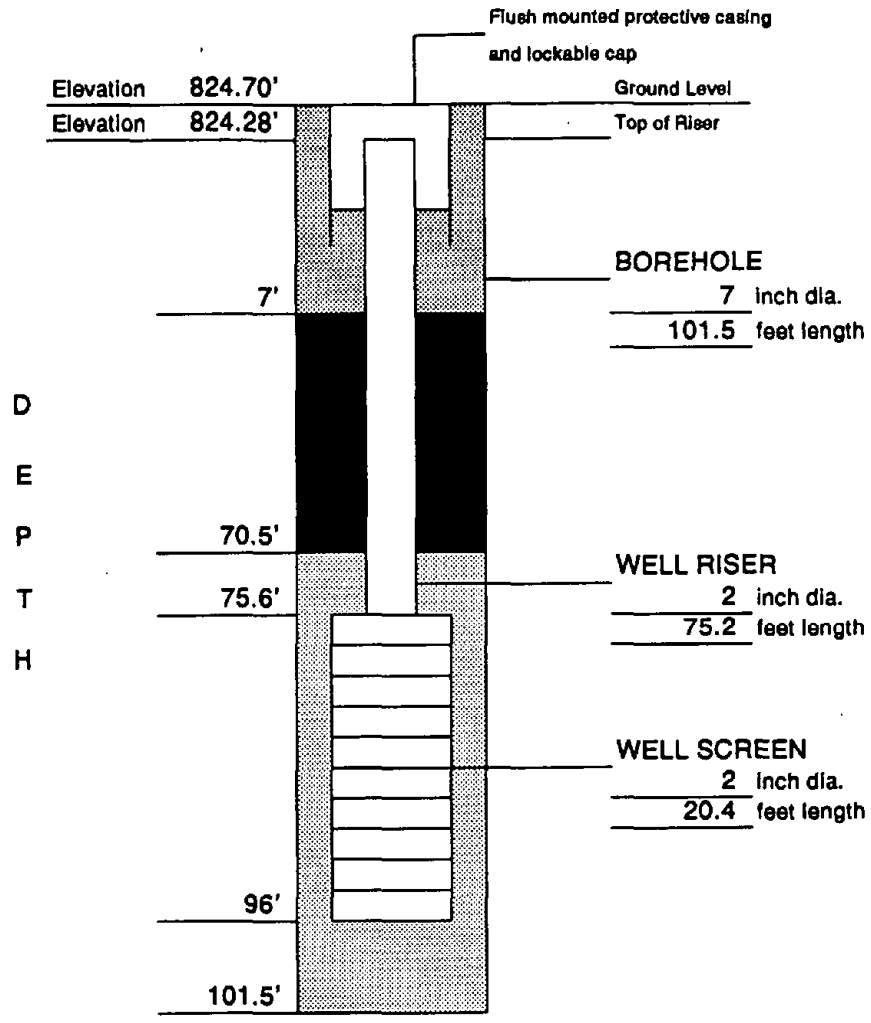
Drilling Company:
American Auger

Driller:
Bucky Day

Date:
9/18/91-9/26/91

GEOLOGIC LOG

depth(ft.)	lithology
0-14	Recent alluvium
14-55	Outwash silty sand and gravel
55-65	Lake silt
65-101.5	Kame sand and gravel



WELL DESIGN

CASING MATERIAL

Surface: Steel

Monitor: Stainless Steel

SCREEN MATERIAL

Type: Stainless Steel

Slot Size: 0.010 inch prepacked with #2 Q-ROK

SEAL MATERIAL

Seal #1 Type: Benseal Slurry
Setting: 7'-70.5'

Seal #2 Type: Cement Grout
Setting: 0'-7'

BACKFILL MATERIAL

Type: none

Setting: none

FILTER MATERIAL

Type: #3 Q-ROK

Setting: 70.5'-101.5'

LEGEND

Cement/Bentonite Grout

Bentonite Seal

Sandpack

Client: NYSDEC	Project: Johnson City Wellfield	Project Number: 35238.00
URS Consultants Inc.	Monitoring Well Constuction Details	Well Number: MW-6 D

A000029

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: ~~MW-15~~ [redacted]

STAFF: J. Richards / [redacted]

DATE: 9/25/91 9/30/91

WELL NO.: MW-15

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) 18.33

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	initial 0 gallons	10	20	30	40	50	60	[illegible]	75	80	90
pH	7.80	7.76	7.81	7.78	7.79	7.76	7.72	—	—	—	—
Spec. Cond. (µmho)	690	600	510 ~~5.10~~	475	500	500	550	540	580	710	700
Turbidity (NTU)	>200	>200	>200	140	108	104	>200	7200	32	43	10
Temperature (°C)	12.1	13.8	13.6	11.5	11.5	11.5	11.8	13.7	12.0	12.1	12

COMMENTS:

A-2347

A 000030

URS CONSULTANTS, INC.	WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: _____

STAFF: K Nussbaum

DATE: 9/30/91

WELL NO.: MW-15

	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): _____	1"	0.04
	2"	0.17
② CASING INTERNAL DIAMETER (in.): _____	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	95 ●	Initial	120	145	170						
pH	—	8.25	7.75	7.64	7.49						
Spec. Cond. (µmho)	670	710	650	650	650						
Turbidity (NTU)	26	>200	3	4	2						
Temperature (°C)	12	14.3	13.1	12.9	6						

COMMENTS:

A-2347

A000031

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: ~~MW-1D~~ [redacted]

STAFF: J. Richards / [redacted]

DATE: 9/25/91, 9/30/91, 10/1/91

WELL NO.: MW-1D

① TOTAL CASING AND SCREEN LENGTH (FT.):	
② CASING INTERNAL DIAMETER (in.):	
③ WATER LEVEL BELOW TOP OF CASING (FT.)	18.59'
④ VOLUME OF WATER IN CASING (GAL.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	gallons 9 .971	25	35	50	75	100	125	150	175	205*	
pH	7.88	7.71	7.63	7.51	7.46	7.52	7.50	7.58	—	8.21	
Spec. Cond. (μmho)	775	450	445	610	550	425	400	400	470	350	
Turbidity (NTU)	184	>200	>200	>200	100	>200	>200	>200	>200	17	
Temperature (°C)	12.4	12.7	13.4	13.6	13.4	13.7	12.5	12.2	12.0	12.8	

COMMENTS: + 4 hr. purge w/ compressor

A-2347

A000032

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 3123S

STAFF: [redacted]

DATE: 10/1/91

WELL NO.: MW-1D

	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.): _____	1"	0.04
	2"	0.17
② CASING INTERNAL DIAMETER (in.): _____	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.) _____	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	Initial 0	230	255	280	305						
pH	8.21	8.37	8.35	8.31	8.25						
Spec. Cond. (µmho)	350	350	350	350	350						
Turbidity (NTU)	10	180	70	27	27						
Temperature (°C)	13.7	13.8	14.1	13.9	14.3						

COMMENTS:

A-2347

A000033

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 37238

STAFF: K. Nussbaum

DATE: 10/2/91

WELL NO.: MW-25

		WELL I.D.	VOL. GAL./FT.
①	TOTAL CASING AND SCREEN LENGTH (FT.): _____	1"	0.04
		2"	0.17
②	CASING INTERNAL DIAMETER (in.): _____	3"	0.38
		4"	0.66
③	WATER LEVEL BELOW TOP OF CASING (FT.) _____	5"	1.04
		6"	1.50
④	VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	25	50	75	100	125	150				
pH	8.18	7.67	7.56	7.61	7.66	7.70	7.79				
Spec. Cond. (µmho)	1350	1300	1310	1300	1300	1290	1270				
Turbidity (NTU)	>200	7	38	3.4	5	5.5	0.8				
Temperature (°C)	15.3	14.8	15.3	15.3	15.0	14.8	14.9				

COMMENTS:

A-2347

A000034

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson Ctr.

PROJECT NO.:

STAFF: L. Nussbaum

DATE: 10/2/91

WELL NO.: MW-2D

	WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	1"	0.04
	2"	0.17
② CASING INTERNAL DIAMETER (in.):	3"	0.38
	4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.)	5"	1.04
	6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	50	100	150	200	250	300	350	400		
pH	7.59	7.72	7.87	7.86	7.89	7.67	7.70	7.76	7.69		
Spec. Cond. (µmho)	1120	1110	1110	1140	1100	1120	1120	1100	1100		
Turbidity (NTU)	>200	18	75	58	51	11	4	18	6		
Temperature (°C)	13.4	13.5	14.1	13.8	13.8	13.8	13.9	14.0	14.2		

COMMENTS:

A-2347

A 000035

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: ~~MW-3D~~ [redacted] (page 1)

STAFF: J. Richards

DATE: 9/24/91

WELL NO.: MW-3D

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) 43.40'

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	initial 0	25 gal	50 gal	75 gal	gallons 100	125	150	175	200	225	250
pH	7.53	7.36	7.41	7.55	7.40	7.37	7.31	7.40	7.20	7.03	6.94
Spec. Cond. (µmho)	1125	1125	1125	1150	1150	1150	1125	1135	1150	1135	1150
Turbidity (NTU)	>200 ~~>200~~	>200 ~~>200~~ 9/24	>200 ~~>200~~	66	>200 ~~>200~~	>200 ~~>200~~	>200 ~~>200~~ 9/24	116	90	⊛₁ 3.0	⊛₂ 6.0
Temperature (°C)	12.8	13.1	13.0	12.8	13.3	13.2	12.9	13.3	13.0	13.5	13.0

COMMENTS: ⊛₁ → Turbidity value of 3.0 represents the top portion of screen within well casing.

⊛₂ Turbidity value of 6.0 NTU represents the middle portion of screen within well casing

A-2347

A 000036

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: MW-3D (page 2)

STAFF: J. Richards

DATE: 9/24/91

WELL NO.: MW-3D

① TOTAL CASING AND SCREEN LENGTH (FT.):	
② CASING INTERNAL DIAMETER (in.):	
③ WATER LEVEL BELOW TOP OF CASING (FT.)	43.40'
④ VOLUME OF WATER IN CASING (GAL.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	275 @ gallons	300	350	375	400	425	450	475	500	525	550
pH	6.87	6.84	6.83	6.83	6.79	6.80	6.82	6.87	6.88	6.83	6.84
Spec. Cond. (μmho)	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
Turbidity (NTU)	③ >200	60	>200	>200	148	120	34	26	>200	>200	108
Temperature (°C)	12.9	13.0	13.2	12.9	12.8	12.8	13.0	12.9	12.9	12.7	12.6

COMMENTS: ③ Turbidity of >200 NTU represents bottom portion of screen within well casing

A-2347

A 000037

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: MW-3D (page 3)

STAFF: J. Richards

DATE: 9/24/91

WELL NO.: MW-3D

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) 43.40'

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	575 gallons	600	625	650	675	700	725	750	775	800	850	925 ~~900~~
pH	6.78	6.74	6.75	6.74	6.78	6.77	6.78	6.78	6.74	6.74	6.72	6.8
Spec. Cond. (µmho)	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
Turbidity (NTU)	68	>200	>200	104	>200	>200	44	>200	20	44	7.2	28
Temperature (°C)	12.8	12.8	12.6	12.6	12.8	12.9	13.8	12.8	12.8	12.7	12.7	13.0

COMMENTS:

A-2347

A 000038

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: MW-3D (page 4)

STAFF: J. Richards

DATE: 9/24/91

WELL NO.: MW-3D

		WELL I.D.	VOL. GAL./FT.
①	TOTAL CASING AND SCREEN LENGTH (FT.): _____	1"	0.04
		2"	0.17
②	CASING INTERNAL DIAMETER (in.): _____	3"	0.38
		4"	0.66
③	WATER LEVEL BELOW TOP OF CASING (FT.) 43.40'	5"	1.04
		6"	1.50
④	VOLUME OF WATER IN CASING (GAL.) _____	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	975 gallons	1025									
pH	6.75	6.74									
Spec. Cond. (μmho)	1150	1150									
Turbidity (NTU)	18	8.2									
Temperature (°C)	12.7	12.7									

COMMENTS:

A-2347

A 000039

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 55254

STAFF: 10/4/91

DATE: K Nesmith

WELL NO.: MW-4S

		WELL I.D.	VOL. GAL./FT.
①	TOTAL CASING AND SCREEN LENGTH (FT.):	1"	0.04
		2"	0.17
②	CASING INTERNAL DIAMETER (in.):	3"	0.38
		4"	0.66
③	WATER LEVEL BELOW TOP OF CASING (FT.)	5"	1.04
		6"	1.50
④	VOLUME OF WATER IN CASING (GAL.)	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	25	50	75	100	125	200	225	250	275	
pH	7.91	7.84	7.79	7.54	7.70	7.54	7.07	6.99	7.03	7.04	
Spec. Cond. (µmho)	750	610	600	550	500	425	380	390	350	350	
Turbidity (NTU)	>200	>200	190	>200	>200	>200	26	50	5.2	2.0	
Temperature (°C)	16.3	17.0	16.5	17.3	17.0	17.3	16.8	16.5	16.9	16.8	

COMMENTS:

A-2347

A000040

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: [redacted]

STAFF: 10/4/91

DATE: [illegible]

WELL NO.: MW-4D

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③)$ = _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	50	100	150	200						
pH	7.61	7.79	7.72	7.80	7.81						
Spec. Cond. (μmho)	300	300	300	300	300						
Turbidity (NTU)	1.4	1.0	0.8	1.0	0.6						
Temperature (°C)	14.5	14.6	14.3	14.5	14.5						

COMMENTS:

A-2347

4 000041

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson Co.

PROJECT NO.: 3523X

STAFF: L. Nassaney

DATE: 10/3/91

WELL NO.: MW-5S

① TOTAL CASING AND SCREEN LENGTH (FT.):	
② CASING INTERNAL DIAMETER (in.):	
③ WATER LEVEL BELOW TOP OF CASING (FT.)	
④ VOLUME OF WATER IN CASING (GAL.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	25	50	100	150	200	250	300	350	400	450
pH	7.60	7.83	7.40	7.65	7.74	7.48	7.63	7.65	7.71	7.51	7.56
Spec. Cond. (µmho)	1100	1100	1150	1150	1150	1160	1150	1160	1160	1150	1150
Turbidity (NTU)	>200	>200	>200	86	26	>200	7.4	22	15	>200	>200
Temperature (°C)	14.4	11.8	11.6	12.0	11.7	11.3	12.2	12.5	12.3	13.1	12

COMMENTS:

A-2347

A000042

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson [illegible]

PROJECT NO.: 35238

STAFF: [illegible]

DATE: 10/3/91

WELL NO.: MW-5S

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	500	550	600	650	700						
pH	7.16	7.63	7.52	7.69	7.76						
Spec. Cond. (µmho)	1160	1160	1150	1150	1150						
Turbidity (NTU)	120	>200	24	26	25						
Temperature (°C)	12.0	12.5	12.0	12.1	11.9						

COMMENTS:

A-2347

A000043

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35235

STAFF: K. Nissavage

DATE: 10/4/91

WELL NO.: MW-5D

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	50	100	150	200	250	300	350	400		
pH	7.87	7.76	7.66	7.67	7.72	7.73	7.62	7.58	7.63		
Spec. Cond. (μmho)	975	1010	1040	1100	1090	1100	1110	1120	1100		
Turbidity (NTU)	>200	98	168	160	56	6	43	7	1.8		
Temperature (°C)	11.9	10.9	10.9	10.9	10.7	10.8	10.9	10.8	10.8		

COMMENTS:

A-2347

A00004

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: [redacted]

PROJECT NO.: ~~M006A~~ [redacted]

STAFF: K. [redacted]

DATE: 9/30/91

WELL NO.: MW-6D

① TOTAL CASING AND SCREEN LENGTH (FT.): _____

② CASING INTERNAL DIAMETER (in.): _____

③ WATER LEVEL BELOW TOP OF CASING (FT.) _____

④ VOLUME OF WATER IN CASING (GAL.) _____

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	25	50	75	100	125	150	175	200	225	250
pH	—	—	—	—	—	—	—	—	—	—	—
Spec. Cond. (μmho)	350	300	300	300	210	300	300	300	290	300	290
Turbidity (NTU)	>200	25	21	12	10	14	11	11	28	20	12
Temperature (°C)	11.2	11.5	10.8	11.1	11.3	11.3	11.6	11.5	11.3	.5	.2

COMMENTS: pH meter not working well

A-2347

A 000045

URS CONSULTANTS, INC.

WELL DEVELOPMENT/[redacted] LOG

PROJECT TITLE: Johnson city

PROJECT NO.:

STAFF: K NASSAUGH

DATE: 9/30/91

WELL NO.: MW6D

① TOTAL CASING AND SCREEN LENGTH (FT.):	
② CASING INTERNAL DIAMETER (in.):	
③ WATER LEVEL BELOW TOP OF CASING (FT.)	
④ VOLUME OF WATER IN CASING (GAL.)	

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③)$ = _____ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	300										
pH	—										
Spec. Cond. (μmho)	290										
Turbidity (NTU)	12										
Temperature (°C)	11.6										

COMMENTS:

A-2347

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

A 46

INSTALLATION REPORT
SHALLOW MONITORING WELL

PROJECT AND LOCATION	WELL NO.	ELEVATION DATUM	PROJECT NO.
NYSEG GOUDEY STATION BINGHAMTON, NY	8802 SH	—	85C4527
DRILLING AGENCY	**FOREMAN**	**DATE INSTALLATION STARTED**	**DATE INSTALLATION FINISHED**
NORTHSTAR DRILLING CO.	HARRY LYON	3 JUNE 1988	3 JUNE 1988
DEVELOPMENT EQUIPMENT	**GALLONS REMOVED**	**TIME DEVELOPMENT STARTED**	**TIME DEVELOPMENT COMPLETED**
—	—	—	—

LOG OF MONITORING WELL

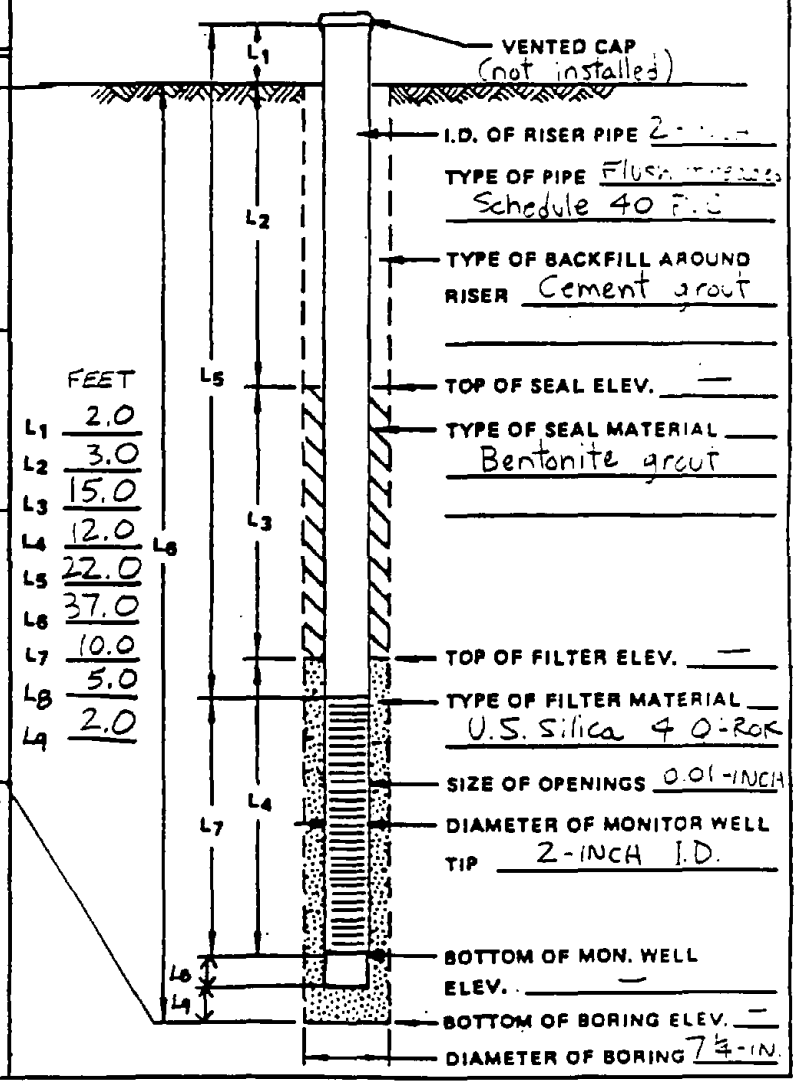
BORING

DEPTH IN FT	DESCRIPTION
0	SM, gray black ash (FILL)
10	
20	SM, brown silty f. SAND (FILL ?)
30	GW-GP, brown c-f sandy GRAVEL
40	Bottom of borhole at 37.0 FT

MONITORING WELL

TYPE OF MONITORING WELL SHALLOW OVERBURDEN (drawing not to scale)

GROUND ELEV. — TOP OF RISER ELEV. —



	FEET
L1	2.0
L2	3.0
L3	15.0
L4	12.0
L5	22.0
L6	37.0
L7	10.0
L8	5.0
L9	2.0

- VENTED CAP (not installed)
- I.D. OF RISER PIPE 2-inch
- TYPE OF PIPE Flush threaded Schedule 40 PVC
- TYPE OF BACKFILL AROUND RISER Cement grout
- TOP OF SEAL ELEV. —
- TYPE OF SEAL MATERIAL Bentonite grout
- TOP OF FILTER ELEV. —
- TYPE OF FILTER MATERIAL U.S. Silica 40-ROK
- SIZE OF OPENINGS 0.01-INCH
- DIAMETER OF MONITOR WELL TIP 2-INCH I.D.
- BOTTOM OF MON. WELL ELEV. —
- BOTTOM OF BORING ELEV. —
- DIAMETER OF BORING 7¼-IN.

REMARKS Installed 6-inch I.D. Schedule 40 PVC guard pipe and Royer locking cap in accordance with NYSEG Monitoring Well Specs. Revision 3. Placed four 4-inch steel guard posts around 8802 deep and shallow well cluster.

INSPECTED BY CARL VARTERESIAN

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

INSTALLATION REPORT
SHALLOW MONITORING WELL

A 47

PROJECT AND LOCATION	WELL NO.	ELEVATION DATUM	PROJECT NO.
NYSEG GOUDEY STATION BINGHAMTON, NY	8802 D	—	85C4527
DRILLING AGENCY	FOREMAN	DATE INSTALLATION STARTED	DATE INSTALLATION FINISHED
NORTHSTAR DRILLING CO.	HARRY LYON	2 JUNE 1988	3 JUNE 1988
DEVELOPMENT EQUIPMENT	GALLONS REMOVED	TIME DEVELOPMENT STARTED	TIME DEVELOPMENT COMPLETED
—	—	—	—

LOG OF MONITORING WELL

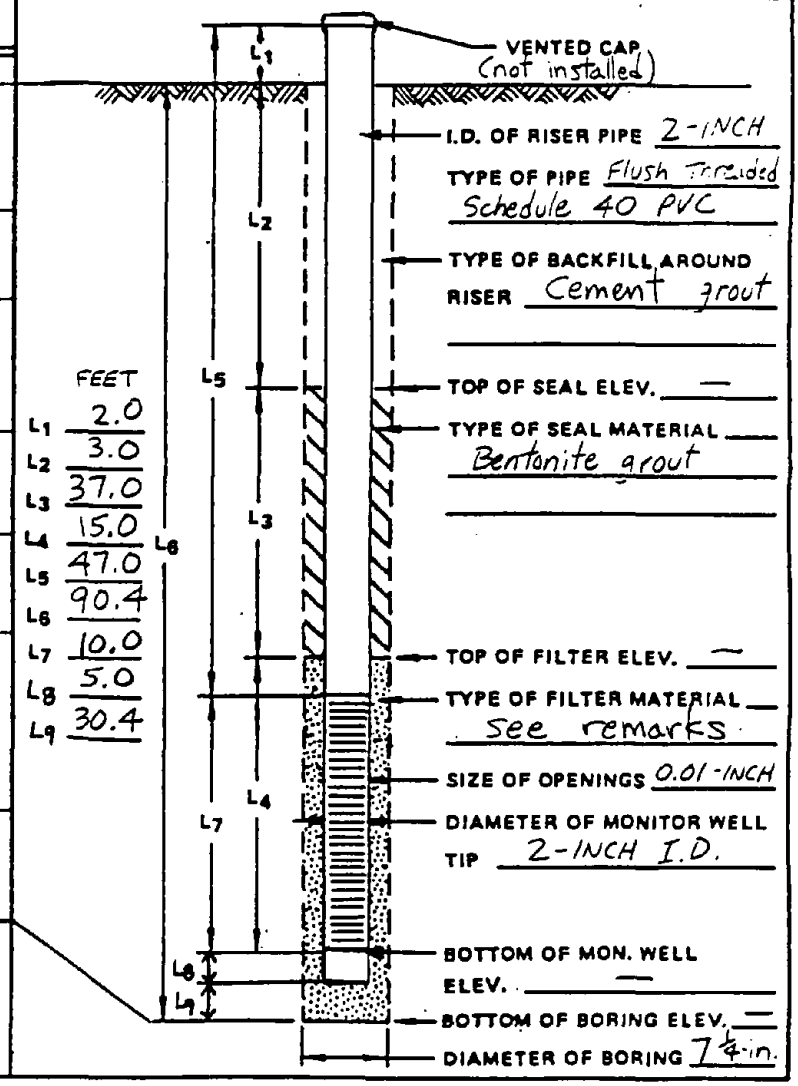
BORING

DEPTH IN FT	DESCRIPTION
0	
	SM, gray black ash (FILL)
20	SM, brown silty f. SAND (FILL?)
	GW-GP, brown sandy GRAVEL
40	SW, olive gray c-f SAND
	GW-GM, lt. olive gray silty, sandy GRAVEL
60	GM, blue-gray silty, clayey, SAND + GRAVEL, ang. shale frags. (TILL)
80	SM, blue gray silty, clayey, SAND ang. shale frags. (TILL)
	Bottom of Boring at 90.4 FT
100	

MONITORING WELL

TYPE OF MONITORING WELL: DEEP OVERBURDEN (drawing not to scale)

GROUND ELEV. — TOP OF RISER ELEV. —



	FEET
L1	2.0
L2	3.0
L3	37.0
L4	15.0
L5	47.0
L6	90.4
L7	10.0
L8	5.0
L9	30.4

VENTED CAP (not installed)

I.D. OF RISER PIPE 2-INCH

TYPE OF PIPE Flush Threaded Schedule 40 PVC

TYPE OF BACKFILL AROUND RISER Cement grout

TOP OF SEAL ELEV. —

TYPE OF SEAL MATERIAL Bentonite grout

TOP OF FILTER ELEV. —

TYPE OF FILTER MATERIAL See remarks

SIZE OF OPENINGS 0.01-INCH

DIAMETER OF MONITOR WELL TIP 2-INCH I.D.

BOTTOM OF MON. WELL ELEV. —

BOTTOM OF BORING ELEV. —

DIAMETER OF BORING 7¼ in.

REMARKS Installed 6-inch I.D. Schedule 40 PVC guard pipe and Royer locking cap in accordance with NYSEG Monitoring Well Specs., Revision 3. Placed four inch steel guard pipes around 8802 deep and shallow well cluster. Backfilled bottom of borehole with formation material from 90.4 to 60 Ft. below grade. Filter material is part U.S. silica 4 Q-Rok and part natural formation material which caved in during installation.

INSPECTED BY CARL VARTERESIAN

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING 8802 D

SHEET 1 OF 4

PROJECT AND LOCATION: NYSEG GOUDEY STATION, BINGHAMTON, NY		ELEVATION AND DATUM	PROJECT NO: 85C4527
DRILLING AGENCY: NORTHSTAR DRILLING CO.	FOREMAN: HARRY LYON	DATE STARTED: 2 JUNE 1988	DATE FINISHED: 2 JUNE 1988
DRILLING EQUIPMENT: CME-55		COMPLETION DEPTH: 90.4 FT.	ROCK DEPTH: 90.4 FT
SIZE AND TYPE OF BIT: 7¼-IN. AUGER	SIZE AND TYPE CORE BARREL: —	NO. SAMPLES: DIST. 19	UNDIST. 0 / CORE 0
CASING: —		WATER LEVEL (FT): FIRST 24	COMPL. 25.5 / 24 HR.
CASING HAMMER: WEIGHT —	DROP —	BORING ANGLE AND DIRECTION: VERTICAL	
SAMPLER: 2-IN. O.D. SPLIT-SPOON		INSPECTOR: CARL VARTERESIAN	
SAMPLER HAMMER: WEIGHT 140 LBS.	DROP 30 IN.		

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES: TYPE NUMBER	SAMPLES: RECOV. FT	SAMPLES: PENETR RESIST BL/6 IN.	R. CORE: RECOVERY %	R. CORE: ROD	INDEX TESTS: W_n, %	INDEX TESTS: LL, %	INDEX TESTS: PL, %	INDEX TESTS: -200, %	REMARKS
	TOPSOIL 0.3 FT												
	SM, Stiff, gray black f. sandy SILT with welded ash Particles, dry (FILL)		1	S-2	1.0	2 4 6							
			2										
			3										
			4										
	SM, same as above		5										
			6	S-2	1.0	3 3 6							
			7										
			8										
			9										
	SM, same as above, except firm, red-black.		10										
			11	S-3	0.5	1 2 2							
	13.3 FT		12										
			13										Hit cobble zone at 13.5 FT.
			14										
			15										
	SM, Loose, brown silty f. SAND, tr. clay, dry (FILL?)		16	S-4	1.0	2 1 3							
			17										
			18										
			19										

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV. FT	SAMPLES PENETR. RESIST. BL/6IN.	R. CORE RECOVERY %	R. CORE RQD	INDEX TESTS W_n, %	INDEX TESTS LL, %	INDEX TESTS PL, %	INDEX TESTS -200, %	REMARKS
	SM, same as above, except moist.		21	S-5	1.0	WH 1 2							
	23.5 FT		23										Material is stiffer and cobbly at 23.5'
	GW-GP, Med. dense, brown c-f sandy GRAVEL, some silt, gravels are well rounded, wet.		25	S-6	1.1	11 9 8							First encountered ground water at 24.5'
	GW-GP, same as above		29	S-7	1.2	8 9 9							Smooth augering at 29. FT.
	GW-GP, same as above		35	S-8	1.5	11 12 12							
	38.3 FT		38										
	SW, Med. dense olive gray c-f SAND, some silt, wet		40	S-9	0.8	5 5 6							
	SW, same as above, except m-f SAND, some c. sand.		45	S-10	0.5	16 20							

CASING PENETR. RESIST. BL/FT	DESCRIPTION	PIEZ.	DEPTH, FT	SAMPLES TYPE NUMBER	SAMPLES RECOV. FT	SAMPLES PENETR. RESIST BL/6IN.	R. CORE RECOVERY, %	R. CORE RQD	INDEX TESTS W_n, %	INDEX TESTS LL, %	INDEX TESTS PL, %	INDEX TESTS -200, %	REMARKS
	SW, same as above.		47	S-10	0.5	20							
	48.3 FT		48										
	GW-GM, Med. dense, lt. olive gray silty c-f sandy GRAVEL, gravel well rounded, wet		49 50 51	S-11	0.5	9 9 12							
	GW, dense, olive gray c-f sandy GRAVEL, some silt, wet		52 53 54 55 56	S-12	0.5	12 16 16							
	58.5 FT		57 58										
	GM, Med. dense blue-gray silty clayey c-f SAND and GRAVEL, angular shale fragments, wet (TILL)		59 60 61 62 63 64	S-13	0.4	8 16 11							
	GM, Same as above		65 66 67 68 69	S-14	0.4	13 14 15							
	GM, same as above		70 71	S-15	0.5	9 6 10							

WOODWARD-CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING 8802D

DESCRIPTION	DEPTH, FT	SAMPLES: TYPE & NO.	SAMPLES: BLOWS/FT	SAMPLES: POCKET PEN. TSF/KPA	W_n, %	LL, %	PL, %	-200, %	REMARKS
GM, same as above	75	S-16	0.6	11 23 32					
78.3 FT	78								
SM, Very dense, blue-gray silty, clayey c-f SAND, some rounded f. gravel, moist (TILL)	80	S-17	0.5	11 18 45					
SM, same as above, except med. dense, with tr. f. gravel.	85	S-18	0.5	8 12 15					
SM, same as above, except shale frag.	90	S-19	0.4	18/4					Material stiffer at 89.5 FT. Refusal at 90.4 FT
Bottom of boring at 90.4 FT	91								

MONITOR WELL INSTALLATION REPORT

A-52

Project NYSEG - Goudey Station
Project No. 85C4527B Installed By NORTHSTAR DRILLING

Monitor Well No. 8507 SH
Location Binghamton, NY
Date 12/2/85 Time 11:00 am

Method of Installation BORING ADVANCED WITH 4¼" HOLLOW STEM AUGERS TO DESIRED DEPTH. TWO-INCH SCHEDULE 40 PVC WELL WITH 10-FOOT SLOTTED 0.010" SCREEN INSTALLED IN BOREHOLE. #4 SILICA SAND FILTER PACK EMPLACED AROUND SCREENED INTERVAL. 1-2' THICK PELTONITE SEAL EMPLACED ABOVE SAND PACK. BENTONITE/CEMENT GROUT PLACED BY TREMIE PIPE TO GROUND SURFACE. STEEL GUARD PIPE WITH LOCKING CAP INSTALLED AROUND PVC STICK-UP.

LOG OF MONITOR WELL

BORING

Depth in ft.	Description	Symbol
0	Black f SAND and SILT to SILT, tr. clay containing welded ash fragments and assorted debris (FILL)	
20	Clean, coarse GRAVEL, wet	GW
30	Brown m-c SAND, wet	SW
	Clean, coarse GRAVEL, wet	GW
40		

MONITOR WELL

Type of Monitor Well

Ground Elev. Top of Riser Elev.

Vented Cap

L_1 = 3'
L_2 = 21'
L_3 = 1'
L_4 = 13'
L_5 = 28'
L_6 = 10'
L_7 = 36'

I.D. of Riser Pipe 2"
Type of Pipe SCHEDULE 40 PVC
Type of Backfill Around Riser BENTONITE/CEMENT GROUT
Top of Seal Elev.
Type of Seal Material WYOMING BENTONITE PELLETS
Top of Filter Elev.
Type of Filter Material #4 SILICA SAND
Size of Openings 0.010"
Diameter of Monitor Well Tip 2"
Bottom of Mon. Well Elev.
Bottom of Boring Elev.
Diameter of Boring 6"

Remarks

Inspected By D. Terry

MONITOR WELL INSTALLATION REPORT

A-53

Monitor Well No. 8507 D

Project NYSEG - Goudey Station — Location Binghamton, NY

Project No. 85C4527B — Installed By Northstar Drilling — Date 1/21/86 — Time 4 CC p.m.

Method of Installation BORING ADVANCED USING 4¼" HOLLOW STEM AUGERS TO DESIRED DEPTH. TWO-INCH SCHEDULE 40 PVC WELL WITH 5-FOOT SLOTTED 0.010" WELL SCREEN INSTALLED IN BOREHOLE. #4 SILICA SAND FILTER PACK EMPLACED AROUND SCREENED INTERVAL. 1-2' THICK PELLETITE SEAL INSTALLED ABOVE FILTER PACK. BENTONITE/CEMENT GROUT PLACED BY TREMIE PIPE TO GROUND SURFACE. STEEL GUARD PIPE WITH LOCKING CAP INSTALLED AROUND PVC STICK-UP.

LOG OF MONITOR WELL

BORING

Depth in ft.	Description	Symbol
0	Black to gray SILT, tr clay - ash particles (FILL), dry	
15	Clean Open-work GRAVEL, wet	GW
30	Brown m-c SAND, saturated	SW
	Clean coarse GRAVEL	GW
	Lt. brown sandy, silty GRAVEL, tr. clay, wet, with shale frags.	GM
45	Lt. brown sandy, silty GRAVEL, tr. clay, becoming stonier w/ depth (TILL), wet	GM
60		
75		

MONITOR WELL

Type of Monitor Well

Ground Elev. — Top of Riser Elev.

Vented Cap

L_1 = 3'
L_2 = 38'
L_3 = 1'
L_4 = 9'
L_5 = 46'
L_6 = 5'
L_7 = 57.2'

I.D. of Riser Pipe 2"

Type of Pipe SCHEDULE 40 PVC

Type of Backfill Around Riser BENTONITE/CEMENT GROUT

Top of Seal Elev.

Type of Seal Material WYOMING BENTONITE PELLETS

Top of Filter Elev.

Type of Filter Material #4 SILICA SAND

Size of Openings 0.010"

Diameter of Monitor Well Tip 2"

Bottom of Mon. Well Elev.

Bottom of Boring Elev.

Diameter of Boring 6"

Remarks

Inspected By David Terry

WOODWARD-CLYDE CONSULTANTS

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING 8507 D **SHEET** 1 **OF** 3

PROJECT AND LOCATION: NYSEG - Gouley Station, Binghamton, NY		ELEVATION AND DATUM:	PROJECT NO.: 85C4527B
DRILLING AGENCY: Northstar Drilling Company	FOREMAN: Jeff Thew	DATE STARTED: 1/21/86	DATE FINISHED: 1/21/86
DRILLING EQUIPMENT: C.M.E. 55		TOTAL DEPTH OF HOLE: 57.2'	ROCK DEPTH: 57' ?
SIZE AND TYPE OF BIT: 4¼" H.S.A.	SIZE AND TYPE OF CORE BARREL:	NO. SAMPLES: DIST. 4	CORE: LENGTH – DIA. –
		WATER LEVEL: FIRST	CASING: DIA.
CASING			BORING ANGLE AND DIRECTION: Vertical
CASING HAMMER: WEIGHT	DROP		LOGGED BY: D. Terry
SAMPLER: 2" O.D. SPLIT SPOON	24"		
SAMPLER HAMMER: WEIGHT 140 lbs.	DROP 30"		

DESCRIPTION	PENETRATION	DEPTH, FT	SAMPLES: TYPE NO.	SAMPLES: RECOV. FT	SAMPLES: BLOWS/6" PENETRATION TEST	ROCK CORES: RECOV. %	ROCK CORES: CRACKS: NO. PER FT	ROCK CORES: CRACKS: DIP	ROCK CORES: RQD	ROCK CORES: CORE LOSS FT	REMARKS
Black to gray SILT, tr clay, dry (ASH)		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19									SEE LOG OF BORING P-2
same; with welded ash fragments											
same											
same											

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LOG OF BORING 8507 D SHEET 2 OF 3

DESCRIPTION	DEPTH, FT	REMARKS
Gray fine SAND and SILT, tr. clay (FILL?)	21	
	22	
	23	
Clean open-work GRAVEL, wet	24	
	25	
	26	
	27	
	28	
Brown m-c SAND, saturated	29	
	30	
	31	
	32	
	33	
	34	
Brown m-c SAND over	35	
coarse, clean GRAVEL	36	
	37	
	38	
	39	
	40	
Lt. brown sandy, silty GRAVEL, tr. clay, wet, numerous large shale frags.	41	S-1 10" 15|13|9|7
	42	
	43	
	44	

SEE LOG OF BORING P-2

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

LOG OF BORING 8507 D

SHEET 3 OF 3

DESCRIPTION	DEPTH, FT	SAMPLES	REMARKS
Lt. brown sandy silty GRAVEL, tr. clay, becoming stonier with depth, wet (TILL)	46–49	S-2: 18"; 23/20/22/32	
Silty coarse GRAVEL, tr. f-c sand, wet (TILL)	50–52	S-3: 6"; 1/20/21/23	
same	53–56	S-4: 2"; 19/23/14/15	
Shale bedrock or large boulder.	57–60		End of Boring = 57' Hit bedrock or large boulder at 57.2'

PROJECT NAME: USAF-JOHNSON CITY
DATE DRILLED: 9/9/86
WELL INSTALLED: SW-1
ON SITE GEOLOGIST : V. DEVILLEZ
DRILLING METHOD: H.S.A.(4.25 IN.)

PROJECT NUMBER: 01071-00
BORING NUMBER: SW1
BOREHOLE GRND ELEV.: 831.90
DRILLING COMPANY: EMPIRE

Sample Number	Sample Depth Begin Ft.	Sample Depth End Ft.	Method of Sample Collect	Blows per 6" of Drive	Recov. Ft.	O.V.A. ppm	Feet	Visual Classification
SS-1	0.5	2.0	SS	NR	0.2	NM	1	(SM) 0 to 0.5 blacktop. Shale fragments.
							2	
							3	
							4	
SS-2	5.0	7.0	SS	4	0	NM	5	No recovery.
				4			6	
				4				
				5			7	
							8	
							9	
SS-3	10.0	12.0	SS	2	0.4	NM	10	Brown, fine, sandy silt; slightly moist; sand
				4			11	lens 0.5 in. .
				4				
SS-4	12.0	14.0	SS	4	0.5	NM	12	Same as above; wet.
				3			13	
				5				
SS-5	14.0	16.0	SS	4	0.3	NM	14	Large rounded gravel and sandy silt; wet.
				3			15	
				5				
SS-6	16.0	18.0	SS	7	0	NM	16	No recovery.
				10			17	
				5				
SS-7	18.0	20.0	SS	5	1.1	NM	18	Brown silty sand; wet.
				4			19	
				6				
SS-8	20.0	22.0	SS	3	1.1	NM	20	Brown silty sand with trace of clay; wet.
				6				
				7			21	
				10				
SS-9	22.0	24.0	SS	6	1.2	NM	22	Same as above.
				7				

Log Continued on Next Page

PROJECT NAME: USAF-JOHNSON CITY
DATE DRILLED: 9/9/86
WELL INSTALLED: SW-1
ON SITE GEOLOGIST : V. DEVILLEZ
DRILLING METHOD: H.S.A.(4.25 IN.)

PROJECT NUMBER: 01071-00
BORING NUMBER: SW1
BOREHOLE GRND ELEV.: 831.90
DRILLING COMPANY: EMPIRE

Sample Number	Sample Depth Begin Ft.	Sample Depth End Ft.	Method of Sample Collect	Blows per 6" of Drive	Recov. Ft.	O.V.A. ppm	Feet	Visual Classification
				7			23	
				13				
SS-10	24.0	26.0	SS	8	0.3	NM	24	Coarse, rounded gravel.
				12				
				20			25	
				18				
SS-11	26.0	28.0	SS	16	0.4	NM	26	Medium sand with medium rounded gravel; wet.
				14				
				9			27	
				8				
SS-12	28.0	30.0	SS	4	2.0	NM	28	Medium to coarse sand.
				5				
				7			29	
				7				
SS-13	30.0	32.0	SS	4	0.8	NM	30	Same as above with minor gravel.
				5				
				7			31	
				9				
SS-14	32.0	34.0	SS	WR	1.0	NM	32	Same as above.
							33	
SS-15	34.0	36.0	SS	WR	1.1	NM	34	same as above.
							35	
							36	

PROJECT NAME: USAF-JOHNSON CITY
DATE DRILLED: 9/11/86
WELL INSTALLED: SW-2
ON SITE GEOLOGIST : V. DEVILLEZ
DRILLING METHOD: C.M.E.

PROJECT NUMBER: 01071-00
BORING NUMBER: SW2
BOREHOLE GRND ELEV.: 828.90
DRILLING COMPANY: EMPIRE

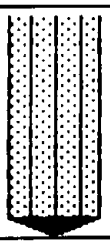
Sample Number	Sample Depth Begin Ft.	Sample Depth End Ft.	Method of Sample Collect	Blows per 6" of Drive	Recov. Ft.	O.V.A. ppm	Feet	Visual Classification
SS-1	0.5	2.0	SS	4 8 11	0.6	NM	1	[SM] Brown sandy silt, slightly moist.
							2	
							3	
							4	
SS-2	5.0	7.0	SS	8 14 9	0.7	NM	5	Brown silt and medium sand; moist.
				5			6	
							7	
							8	
							9	Easy drilling at 9 Ft..
SS-3	10.0	12.0	SS	3 4 7	0.7	NM	10	Medium to fine, brown sand with trace of silt.
				7			11	
SS-4	12	14	SS	6 6 7	1.3	NM	12	Same as above with more silt.
				6			13	
SS-5	14.0	16.0	SS	9 8 7	0.6	NM	14	Same as above.
							15	
SS-6	16.0	18.0	SS	4 3 5	0.6	NM	16	Medium rounded gravel with silty sand.
				12			17	
SS-7	18	20	SS	12 25 22	0.3	NM	18	Fine to medium silty sand; wet.
				21			19	
SS-8	20.0	22.0	SS	25 29 22	0.5	NM	20	Angular gravel/rock fragments; wet.
				17			21	
SS-9	22.0	24.0	SS	15 12 12	1.0	NM	22	Same as above; saturated.

Log Continued on Next Page

PROJECT NAME: USAF-JOHNSON CITY
DATE DRILLED: 9/11/86
WELL INSTALLED: SW-2
ON SITE GEOLOGIST : V. DEVILLEZ
DRILLING METHOD: C.M.E.

PROJECT NUMBER: 01071-00
BORING NUMBER: SW2
BOREHOLE GRND ELEV.: 828.90
DRILLING COMPANY: EMPIRE

Sample Number	Sample Depth Begin Ft.	Sample Depth End Ft.	Method of Sample Collect	Blows per 6" of Drive	Recov. Ft.	O.V.A. ppm	Feet	Visual Classification
				15			23	
				10				
SS-10	24.0	26.0	SS	18	1.0	NM	24	Same as above.
				21				
				15			25	
				14				
							26	



PROJECT NAME: USAF-JOHNSON CITY
DATE DRILLED: 9/10/86
WELL INSTALLED: SW-3
ON SITE GEOLOGIST : R. GOLDMAN
DRILLING METHOD: H.S.A.(4.25 IN.)

PROJECT NUMBER: 01071-00
BORING NUMBER: SW3
BOREHOLE GRND ELEV.: 829.40
DRILLING COMPANY: EMPIRE

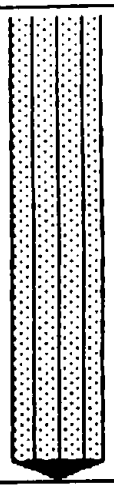
Sample Number	Sample Depth Begin Ft.	Sample Depth End Ft.	Method of Sample Collect	Blows per 6" of Drive	Recov. Ft.	O.V.A. ppm	Feet	Visual Classification
SS-1	0	2.0	SS	4, 5	0.3	0	1	[SM] 0 to 4" topsoil: dark brown with trace of gravel.
				5				
				5			2	
							3	
							4	
SS-2	5.0	7.0	SS	12	0.6	0	5	Silty, medium brown sand and pebbles.
				18				
				25			6	
				17			7	
							8	
							9	
SS-3	10.0	12.0	SS	10	1.0	4	10	Silty, fine to coarse sand and pebbles.
				22				
				34			11	
				38				
SS-4	12.0	14.0	SS	25	0.3	0	12	Same as above.
				12				
				11			13	
				11				
SS-5	14.0	16.0	SS	8	1.0	2.8	14	Same as above.
				10				
				13			15	
				15				
SS-6	16.0	18.0	SS	20	1.0	0.4	16	Same as above.
				18				
				23			17	
				25				
SS-7	18.0	20.0	SS	16	1.0	2.4	18	Same as above; moist.
				14				
				14			19	
				20				
SS-8	20.0	22.0	SS	24	1.0	0.4	20	Same as above; moist.
				25				
				24			21	
				26				
SS-9	22.0	24.0	SS	8	0.9	9.0	22	Medium to coarse sand; wet.
				14				

Log Continued on Next Page

PROJECT NAME: USAF-JOHNSON CITY
DATE DRILLED: 9/10/86
WELL INSTALLED: SW-3
ON SITE GEOLOGIST : R. GOLDMAN
DRILLING METHOD: H.S.A.(4.25 IN.)

PROJECT NUMBER: 01071-00
BORING NUMBER: SW3
BOREHOLE GRND ELEV.: 829.40
DRILLING COMPANY: EMPIRE

Sample Number	Sample Depth Begin Ft.	Sample Depth End Ft.	Method of Sample Collect	Blows per 6" of Drive	Recov. Ft.	O.V.A. ppm	Feet	Visual Classification
				13			23	
				11				
SS-10	24.0	26.0	SS	10	0.9	1.2	24	Medium to coarse sand and gravel.
				10				
				18			25	
				16				
SS-11	26.0	28.0	SS	25	0.7	1.2	26	Medium to coarse sand with trace of gravel.
				24				
				20			27	
				17				
SS-12	28.0	30.0	SS	20	0.7	1.6	28	Same as above.
				19				
				12			29	
				17				
							30	



CATOH Environmental Companies, Inc.
16 Drumlin Drive, P.O. Box 560
Weedsport, New York 13166
Phone: 315/834-6603

Project: Test Borings and Observation Well Installation
General Electric Facility, Johnson City, NY

Project No.: C364
Boring No.: B-6
Surface Elev.:

Client: R.J. Martin Consulting Engineers
Date Started: 3/31/86
Date Completed: 4/3/86
Driller: A. Utter
Inspector:

Groundwater Depth-Casing In: 25.0'
Below Ground Surf.-Casing Out: 22.0'

Sheet 1 of 3

DEPTH	SAMPLE DEPTH	SAMPLE NO.	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	N	MATERIAL DESCRIPTION
0								Black top 0.3'
5								
10								
15								
20								
25								
30	30.0-32.0'	1	20	19			39	Brown saturated sandy medium to fine gravel.
					21	18	39	
35								
40								

N = No. of blows to drive 2" spoon 12" w/ 140 lb weight 30" each blow

A - 64

CATOH Environmental Companies, Inc.
16 Drumlin Drive, P.O. Box 560
Weedsport, New York 13166
Phone: 315/834-6603

Project: Test Borings and Observation Well Installation
General Electric Facility, Johnson City, NY

Project No.: C364
Boring No.: B-6
Surface Elev.:

Client: R.J. Martin Consulting Engineers
Date Started: 3/31/86
Date Completed: 4/3/86
Driller: A. Utter
Inspector:

Groundwater Depth-Casing In: 25.0'
Below Ground Surf.-Casing Out: 22.0'

DEPTH	SAMPLE DEPTH	SAMPLE NO.	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	N	MATERIAL DESCRIPTION
40	40.0-42.0'	2	26	20			46	Brown saturated sandy medium to fine gravel.
					19	15	34	
								45.0'
45								
50	50.0-52.0'	3	24	22			46	Brown saturated medium to fine sand.
					20	21	41	
55								57.0'
60	59.0-61.0'	4	29	28			57	Brown wet silty gravel, little sand, few cobbles.
					28	27	55	
								63.0'
65								
	68.0-70.0'	5	19	18			37	Grey saturated silty fine sand.
70					18	21	39	
75								77.0'
	78.0-80.0'	6	41	62			103	Grey wet sandy gravel, little silt and clay
80					68	74	142	

N = No. of blows to drive 2" spoon 12" w/ 140 lb. weight 30" each blow.
Casing Type: hollow stem auger

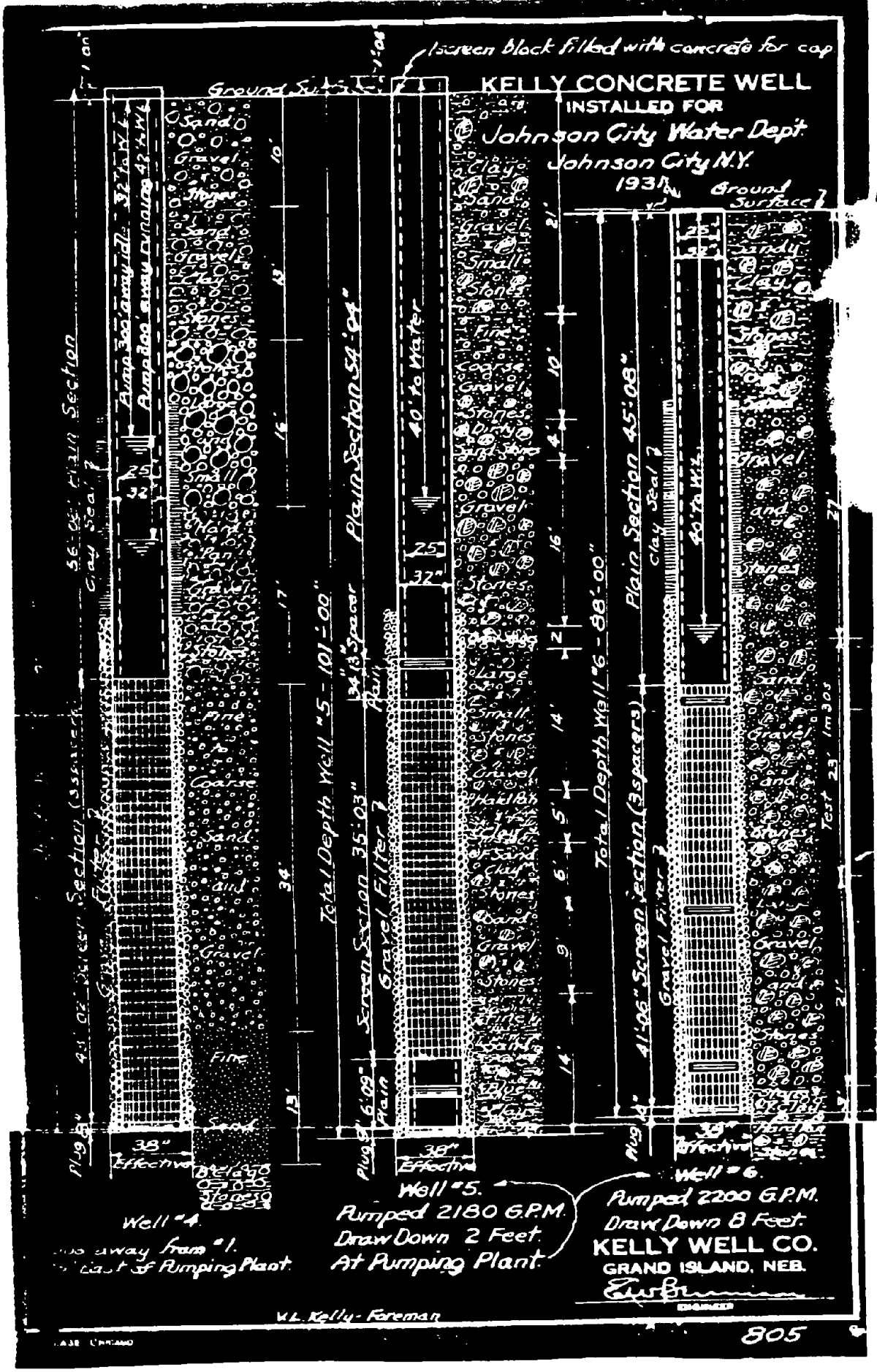
A-65

CATOH Environmental Companies, Inc.
16 Drumlin Drive, P.O. Box 560
Weedsport, New York 13166
Phone: 315/834-6603

Project: Test Borings and Observation Well Installation
General Elctric Facility, Johnson City, NY
Project No.: C364
Boring No.: B-6
Client: R.J. Martin Consulting Engineers
Surface Elev.:
Date Started: 3/31/86
Groundwater Depth-Casing In: 25.0'
Date Completed: 4/3/86
Below Ground Surf.-Casing Out: 22.0'
Driller: A. Utter
Inspector:
Sheet 3 of 3

DEPTH	SAMPLE DEPTH	SAMPLE NO.	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	18"/24"	N	MATERIAL DESCRIPTION
80								
85								
	88.0-89.0'	7	62	100			162	Grey damp sandy gravel, some silt.
90								
	"							
95								
								98.0'
	98.0-98.2'	8	140/.2				140/.2	Grey shale.
100								Boring terminated at 98.2'
105								
110								
115								
120								

N = No. of blows to drive 2" spoon 12" w/ 140 lb. weight 30" each blow.
Casing Type: hollow stem auger



WELL IDENTIFICATIONS: JC-1 JC-2 JC-3

APPENDIX B

SAMPLING AND ANALYSIS

B000001

URS CONSULTANTS, INC.

WELL [redacted]/PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE: 12/21/91

WELL NO.: MW-15

① TOTAL CASING AND SCREEN LENGTH (FT.):	13.5
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	17.79
④ VOLUME OF WATER IN CASING (GAL.)	4.37 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 13.11 GAL. (3 casings)

(4.37 gal) x 3 = 13.11

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1WV 0	2WV	3WV		Sample						
pH	6.89	6.83	6.92		6.79						
Spec. Cond. (μmho)	400	450	500		470						
Turbidity (NTU)	22	24	40		1.3						
Temperature (°C)	11.2	11.5	11.5		12.1						

COMMENTS: purged 15.0 gals

→ initial bailer (VOAs) was clear, later bailer samples were turbid & silty

(metals sample O.K. <50 NTU)

A-2347

B000002

URS CONSULTANTS, INC.

WELL [redacted] /PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE: 10/21/91

WELL NO.: MW-1D

① TOTAL CASING AND SCREEN LENGTH (FT.):	92
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	18.78'
④ VOLUME OF WATER IN CASING (GAL.)	12.45 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 37.35 GAL. (3 casings)

(12.45 gal) x 3 = 37.35

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	1WV 0	2WV	3WV		Sample						
pH	6.88	7.61	7.40		7.03						
Spec. Cond. (µmho)	470	400	310		300						
Turbidity (NTU)	20	19	5		7.4						
Temperature (°C)	10.5	10.6	10.7		11.1						

COMMENTS: purged 40 gals

A-2347

B 000003

URS CONSULTANTS, INC.

WELL [redacted] / PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE: 10/23/91 purged

WELL NO.: MW - 25

① TOTAL CASING AND SCREEN LENGTH (FT.):	60
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	37.30
④ VOLUME OF WATER IN CASING (GAL.)	3.9 gals

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③)$ = 11.6 gal GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	~~1 WV~~ 0	1 WV ~~3 WV~~	2 WV ~~3 WV~~	3 WV	Sample						
pH	7.00	7.22	7.25	7.29	7.37						
Spec. Cond. (µmho)	1350	1390	1400	1400	1400						
Turbidity (NTU)	54	25	15	51	32						
Temperature (°C)	11.4	12.2	12.3	12.3	13.8						

COMMENTS:

A-2347

B000004

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE: 10/23/91 purged

WELL NO.: MW-2D

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	90.5'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	37.58	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	9.0	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 27.0 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	~~1wv~~ 0	1wv ~~2wv~~	2wv ~~3wv~~	3wv	Smple						
pH	7.46	7.59	7.67	7.67	7.76						
Spec. Cond. (µmho)	1100	1150	1160	1150	1100						
Turbidity (NTU)	61	51	40	31	10						
Temperature (°C)	12.2	12.2	13.3	12.3	13.6						

COMMENTS:

A-2347

B000005

URS CONSULTANTS, INC.

WELL [redacted] / PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE: 10/22/91

WELL NO.: MW-3D

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	95'	1"	0.04
		2"	0.17
② CASING INTERNAL DIAMETER (in.):	2"	3"	0.38
		4"	0.66
③ WATER LEVEL BELOW TOP OF ~~CASING~~ riser (FT.)	43.55'	5"	1.04
		6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)	8.8	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 26.3 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	[redacted] 0	1WV	2WV	3WV	Smpl.						
pH	7.25	7.26	7.25	7.23	7.35						
Spec. Cond. (µmho)	1090	1075 ~~1150~~	1100	1100	1045						
Turbidity (NTU)	10	1.0	0.5	0.5	12						
Temperature (°C)	11.6	11.6	11.5	11.5	11.6						

COMMENTS: 43.50' water level prior to sampling

A-2347

B000006

URS CONSULTANTS, INC.

WELL [redacted] /PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE:

WELL NO.: MW-45

① TOTAL CASING AND SCREEN LENGTH (FT.):	30
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	12.46'
④ VOLUME OF WATER IN CASING (GAL.)	3.0

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 9.0 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	~~[redacted]~~ 0	1WV ~~2WV~~	2WV ~~3WV~~	3WV	Smple						
pH	7.14	6.96	7.09	7.02	6.70						
Spec. Cond. (µmho)	160	200	200	205	300						
Turbidity (NTU)	62	22	20	71	68						
Temperature (°C)	16.2	16.9	16.7	16.7	16.6						

COMMENTS:

1430

A-2347

B000007

URS CONSULTANTS, INC.

WELL [redacted] / PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE:

WELL NO.: MW-4D

		WELL I.D.	VOL. GAL./FT.
①	TOTAL CASING AND SCREEN LENGTH (FT.): 60	1"	0.04
		2"	0.17
②	CASING INTERNAL DIAMETER (in.): 2"	3"	0.38
		4"	0.66
③	WATER LEVEL BELOW TOP OF CASING (FT.) 14.46'	5"	1.04
		6"	1.50
④	VOLUME OF WATER IN CASING (GAL.) 7.74 gal	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 23.23 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	~~1~~ 0	1 WV ~~2~~	2 WV ~~3~~	3 WV	Sample						
pH	7.28	7.36	7.63	7.86	7.23						
Spec. Cond. (µmho)	150	300	310	330	300						
Turbidity (NTU)	1.0	2.3	0.7	0.15	1.3						
Temperature (°C)	16.0	15.9	16.0	16.0	16.2						

COMMENTS:

A-2347

B000008

URS CONSULTANTS, INC.

WELL [redacted] / PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/sm

DATE: 10/22/91

WELL NO.: MW-5S

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	56	1"	0.04
		2"	0.17
② CASING INTERNAL DIAMETER (in.):	2"	3"	0.38
		4"	0.66
③ WATER LEVEL BELOW TOP OF CASING (FT.)	28.36	5"	1.04
		6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)	4.7	8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 14.1 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	~~1 wv~~ 0	1 wv ~~3 wv~~	2 wv ~~3 wv~~	3 wv	Simple							
pH	7.36	7.29	7.40	7.38	7.41							
Spec. Cond. (µmho)	1000	950	1050	1050	650							
Turbidity (NTU)	67	68	55	30	38							
Temperature (°C)	11.3	11.1	10.8	10.6	10.6							

COMMENTS:

A-2347

B000009

URS CONSULTANTS, INC.

WELL [redacted] / PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/SM

DATE: 10/22/91 purged

WELL NO.: MW-5D

① TOTAL CASING AND SCREEN LENGTH (FT.):	91
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	28.30
④ VOLUME OF WATER IN CASING (GAL.)	10.7 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 32 gals GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	~~1wv~~ 0	1WV ~~2WV~~	2WV ~~3WV~~	3WV	5 gals						
pH	7.39	7.33	7.38	7.45	7.47						
Spec. Cond. (µmho)	600	1050	1050	1100	750						
Turbidity (NTU)	3.5	0.5	0.5	0.2	8.0						
Temperature (°C)	11.0	10.8	11.1	11.1	10.7						

COMMENTS:

A-2347

B000010

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: Johnson City

PROJECT NO.: 35238.00

STAFF: JR/sm

DATE: 10/22/91

WELL NO.: MW-6D

① TOTAL CASING AND SCREEN LENGTH (FT.): 96

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 20.50'

④ VOLUME OF WATER IN CASING (GAL.) 12.8 gal

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = 0.0408 (②)^2 \times (① - ③) =$ 38.51 gals GAL. (3 casings)

(12.8 gals) x 3 =

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)											
	[redacted] 0	1WV	2WV	3WV	Sample							
pH	6.99	7.77	7.73	7.70	7.67							
Spec. Cond. (μmho)	300	280	250	260	235							
Turbidity (NTU)	1.0	3.2	1.3	0.5	7.1							
Temperature (°C)	9.4	10.0	10.1	10.3	11.4							
		15	30	45								

COMMENTS:

Water level in well before sampling 20.50'.

A-2347

B000011

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/11/91

WELL NO.: MW-1S

① TOTAL CASING AND SCREEN LENGTH (FT.): 43.5'

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 11.28'

④ VOLUME OF WATER IN CASING (GAL.) 5.48

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} = 16.43$ GAL. (3 casings)

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	20		SAMPLE							
pH	7.29	6.81		6.72							
Spec. Cond. (μmho)	740	530		550							
Turbidity (NTU)	>200	7.5		9.6							
Temperature (°C)	10.2	9.6		10.1							
	cloudy orange	slighty gray cloudy		slightly gray							

COMMENTS:

SAMPLE TAKEN AT 9:00 AM.
(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-1S-GW

B 000012

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/11/91

WELL NO.: MW-1D

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	92'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
		3"	0.38
③ WATER LEVEL BELOW TOP OF CASING (FT.)	10.75'	4"	0.66
		5"	1.04
		6"	1.50
④ VOLUME OF WATER IN CASING (GAL.)	13.81	8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} =$ 41.44 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	45		SAMPLE							
pH	7.82	7.72		7.74							
Spec. Cond. (μmho)	275	320		285							
Turbidity (NTU)	17	2.5		3.0							
Temperature (°C)	9.6	9.6		9.8							
	clear	clear		clear							

COMMENTS: SAMPLE TAKEN AT 10:00 AM.

(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-1D-GW

B000013

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/10/91

WELL NO.: MW-2S

① TOTAL CASING AND SCREEN LENGTH (FT.):	60'
② CASING INTERNAL DIAMETER (in.):	2"
③ WATER LEVEL BELOW TOP OF CASING (FT.)	29.08'
④ VOLUME OF WATER IN CASING (GAL.)	5.26

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} = 15.77$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	20		SAMPLE							
pH	6.71	6.72		6.80							
Spec. Cond. (µmho)	950	880		780							
Turbidity (NTU)	90	>200		20							
Temperature (°C)	11.8	12.3		12.5							
	slightly cloudy										

COMMENTS:

SAMPLE TAKEN AT 2:30 PM.
Clear, no odor.
(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-2S-GW

B000014

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/10/91

WELL NO.: MW-2D

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	90.5'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	29.14'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	10.43	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} =$ 31.29 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	35		SAMPLE							
pH	7.03	6.96		7.31							
Spec. Cond. (µmho)	850	1120		960							
Turbidity (NTU)	7.5	62		15							
Temperature (°C)	9.8	10.4		11.6							
	clear	slightly cloudy gray		clear							

COMMENTS:

SAMPLE TAKEN AT 3:00 PM.
Clear, no odor.
(Teflon disporable bailer)

A-2347

SAMPLE LABEL: JC-MW-2D-GW
(also MS + DUP)

B000015

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/10/91

WELL NO.: MW-3D

① TOTAL CASING AND SCREEN LENGTH (FT.): 95'

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 30.13'

④ VOLUME OF WATER IN CASING (GAL.) 11.03

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} =$ 33.09 GAL. (3 casings)

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	35		SAMPLE							
pH	6.77	6.91		6.90							
Spec. Cond. (μmho)	1025	1160		1150							
Turbidity (NTU)	7.0	7.7		5.6							
Temperature (°C)	10.1	9.1		11.4							

COMMENTS: SAMPLE TAKEN AT 5:00 PM.
Clear, no odor.
(Tetlon disposable bailer)

A-2347

Sample label: JC-MW-3D-GW

B000016

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/11/91

WELL NO.: MW-45

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	30'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	9.85'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	3.43	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} =$ 10.28 GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	14		SAMPLE							
pH	7.21	7.01		6.96							
Spec. Cond. (µmho)	7200	7100		100							
Turbidity (NTU)	330	250		215							
Temperature (°C)	13.7	14.3		13.9							
	slightly gray cloudy	slightly gray cloudy		slightly Turbid							

sulfur odor

COMMENTS:

SAMPLE TAKEN AT 3:15 PM.

(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-45-GW

B000017

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/11/91

WELL NO.: MW-4D

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	60'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	10.43'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	8.43	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} = 25.28$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	27		SAMPLE							
pH	7.30	7.58		7.36							
Spec. Cond. (μmho)	245	275		245							
Turbidity (NTU)	8.6	8.2		12.5							
Temperature (°C)	14.0	13.0		13.5							
	clear	clear		clear							

COMMENTS: SAMPLE TAKEN AT 2:50 PM.

(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-4D-GW

B 000018

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/10/91

WELL NO.: MW-5S

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	56'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	21.71'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	5.83	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} = 17.49$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	18		SAMPLE							
pH	6.16	6.52		6.26							
Spec. Cond. (µmho)	910	950		925							
Turbidity (NTU)	2.5	3.0		8.5							
Temperature (°C)	8.9	9.8		10.4							
	clear	clear, musty odor									

COMMENTS:

SAMPLE TAKEN AT 12:30 PM.
Clear, slight musty odor.
(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-5S-GW

B 000019

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/10/91

WELL NO.: MW-5D

		WELL I.D.	VOL. GAL./FT.
① TOTAL CASING AND SCREEN LENGTH (FT.):	91'	1"	0.04
② CASING INTERNAL DIAMETER (in.):	2"	2"	0.17
③ WATER LEVEL BELOW TOP OF CASING (FT.)	21.70'	3"	0.38
④ VOLUME OF WATER IN CASING (GAL.)	11.78	4"	0.66
		5"	1.04
		6"	1.50
		8"	2.60

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} = 35.34$ GAL. (3 casings)

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	○	40		SAMPLE							
pH	6.54	6.42		6.40							
Spec. Cond. (μmho)	820	810		810							
Turbidity (NTU)	10	20		20							
Temperature (°C)	8.7	9.7		9.8							

COMMENTS: SAMPLE TAKEN AT 12:00 PM.
Clear, no odor.
(Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-5D-GW

B 000020

URS CONSULTANTS, INC.

WELL [redacted] PURGING LOG

PROJECT TITLE: JOHNSON CITY

PROJECT NO.: 35238.00

STAFF: Steven Moeller / Scott Kreuzer

DATE: 12/11/91

WELL NO.: MW-6D

① TOTAL CASING AND SCREEN LENGTH (FT.): 96'

② CASING INTERNAL DIAMETER (in.): 2"

③ WATER LEVEL BELOW TOP OF CASING (FT.) 10.36'

④ VOLUME OF WATER IN CASING (GAL.) 14.56

$V = (① - ③) \times \frac{0.17 \text{ gal.}}{\text{ft.}} = 43.68$ GAL. (3 casings)

WELL I.D.	VOL. GAL./FT.
1"	0.04
2"	0.17
3"	0.38
4"	0.66
5"	1.04
6"	1.50
8"	2.60

PARAMETERS	ACCUMULATED VOLUME PURGED (GALLONS)										
	0	45		SAMPLE							
pH	7.80	7.72		7.74							
Spec. Cond. (µmho)	245	250		255							
Turbidity (NTU)	3.0	2.5		6							
Temperature (°C)	10.0	10.1		10.1							
	clear	clear		clear							

COMMENTS: SAMPLE TAKEN AT 11:15 AM. (Teflon disposable bailer)

A-2347

SAMPLE LABEL: JC-MW-6D-GW

ANALYTICAL DATA ASSESSMENT

FOR

FIRST AND SECOND-ROUND CHEMICAL ANALYSES AT JOHNSON CITY

Performed by:

IEA, INC., MONROE, CT

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

By:

URS CONSULTANTS, INC.

FEBRUARY 1992

INTRODUCTION: This assessment represents the best judgement of URS Consultants, Inc. (URS) concerning the usability and defensibility of chemical data produced by IEA, Inc., a subcontractor to URS, as part of a Wellfield Groundwater Investigation at Johnson City in Broome County, New York. This project is being funded by the New York State Department of Environmental Conservation (NYSDEC), State Superfund Standby Work Assignment No. D002340-12. The data being evaluated is from first and second round of groundwater sampling and the aquifer testing. All analyses performed by IEA, Inc. were subject to NYSDEC Analytical Services Protocol - September 1989.

Data documentation and chain-of-custody procedures were performed in accordance with NYSDEC Analytical Services Protocol - September 1989. Data validation, reduction, and determination of usability, were performed in accordance with USEPA SOP No. HW-3 CLP Organic Data Review. The inorganic data validation processes were performed in accordance with USEPA SOP No. HW-2 Evaluation of Metals Data for the Contract Laboratory Program, Revision VII, February 1988. Other ASP parameters will be validated against the methods.

CATEGORIES: The following table summarizes our assessment of data usability on a sample-by-sample and fraction-by-fraction basis. In evaluating this data, we have established four (4) categories which are, for the most part, gradational in nature. The categories are defined as follows:

Category 1a - Usable and Defensible - Fully usable, despite possible minor deviations from ASP criteria.

Category 1b - Usable Though Not Fully Defensible - Usable with caution; cumulative deviations from ASP criteria are greater than Category 1a, though not considered so significant as to jeopardize the chemical representativeness of the sample results.

Category 2a - Rejected Fractions/Compounds Due to Holding Time Violations - Did not comply with ASP holding times.

Category 2b - Rejected Fraction(s)/Compound(s) Due to Various ASP Deviations - In a sample fraction, some compounds may be usable and defensible, other compounds may be rejected, or the sample fraction may be rejected due to various deviations from ASP. See table notes for rationale of rejected fractions and Tables 2 and 4 for lists of rejected compounds.

In Tables 1, 3, and 5 some fractions are assigned single categories, indicating that they are either considered usable in their entirety or rejected in their entirety. The notes accompanying this table indicate the reason for rejections (Categories 2a, 2b) and for only conditional acceptances (Category 1b). Also on Tables 1 and 3 some fractions are assigned dual categories. This indicates that, while some compounds within the fraction are usable, others are rejected due to contamination in one or more of the QC blanks. Tables 2 and 4 identify the specific compounds within each sample which are rejected due to blank contamination.

SUMMARY ASSESSMENT: In summary, we feel that the analytical data is usable for Category 1a, usable with caution for Category 1b and rejected for Categories 2a and 2b. It should be noted that the use of Category 1b involves some risk in the event of a legalistic challenge based upon noncompliance with strict ASP criteria. Of the total analyses performed (by sample and fraction), the overall data packages are categorized as follows:

Laboratory Report No. 30910-1932 and 2038A

Category	VOA (524.2)	PCB	Metals	Cyanide
1a	0	18	17	16
1b	8	0	0	0
1a,2b	1	0	0	0
1b,2b	6	0	0	0
Total	15	18	17	16

Laboratory Report No. 30910-2265

Category	VOA	VOA (524.2)	Metals	Cyanide
1a	0	0	13	12
1b	1	6	0	0
1b,2b	0	4	0	0
2a	0	1	0	0
Total	1	11	13	12

Laboratory Report No. 30910-2320

Category	VOA (524.2)
1b	4
2a	1
Total	5

(b)-4

The Laboratory Reports identified above are in compliance with the terms and conditions of the laboratory contract, other than the conditions detailed in the following tables. Release of the data for this phase of the investigation has been authorized by the Project Manager and QA/QC Officer by the following signatures.

Gerald S. Sikora
Project Manager

Thomas Knickerbocker
QA/QC Officer

2-7-92.ADA/35238

(b)-5

TABLE 1

ANALYTICAL DATA ASSESSMENT
MATRIX: Groundwater, Round 1
Laboratory Report Number: 30910-1932 and -2038A
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA (524.2)	PCB	Metals	CN	Notes
CT-RB-1	1a,2b	1a	1a	1a	1
DW-1	1b,2b	1a	1a	1a	1,3
DW-1-L	--	--	1a	--	
MW-1S-GW	1b	1a	1a	1a	4
MW-1D-GW	1b	1a	1a	1a	2,4
MW-2S-GW	1b,2b	1a	1a	1a	1,2,4
MW-2D-GW	1b,2b	1a	1a	1a	1,3,4
MW-3D-GW	1b,2b	1a	1a	1a	1,4
MW-3D-GW-MS	--	1a	1a	1a	
MW-3D-GW-MSB	--	1a	--	--	
MW-3D-GW-MSD	--	1a	--	--	
MW-4S-GW	1b,2b	1a	1a	1a	1,4
MW-4D-GW	1b	1a	1a	1a	4
MW-5S-GW	1b	1a	1a	1a	2,4
MW-5D-GW	1b,2b	1a	1a	1a	1,2,4
MW-6D-GW	1b	1a	1a	1a	2,4
MW-6D-GW-DUP	1b	1a	1a	1a	4
PW-2-GW	1b	1a	1a	1a	4
DW-2	1b	1a	1a	1a	4

Abbreviation/Legend:

VOA (542.2) - Purgeable Organic Compounds (Method 524.2, Revision 3.0)
PCB - Target Compound List (TCL) Polychlorinated Biphenyls
Metals - Target Analyte List (TAL) Metals
CN - Cyanide
MW - Monitoring Well
CT - Cable Tool
GW - Groundwater
PW - Production Well

RB - Rinse Blank
L - Serial Dilution
MSB - Matrix Spike Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
DUP - Duplicate
D - Deep
S - Shallow
DW - Drill Water

(b)-6

NOTES FOR TABLE 1

1. See Table 2 for list of rejected compounds.

2. The volatile (524.2) analysis exceed NYSDEC ASP 1989 holding time criteria by less than three (3) hours. NYSDEC was consulted and it was agreed this exceedance does not impact the data, however, the data is usable with caution.

3. The volatile (524.2) analysis had one surrogate outside advisory QC limits. The sample was not reanalyzed. Therefore, the data is usable with caution.

4. There is no laboratory fortified blank associated with the volatile (524.2) sample, due to holding time exceedance. Therefore, the data is usable with caution.

TABLE 2*

ORGANIC COMPOUNDS REJECTED FROM THE FIRST ROUND SAMPLING FOR JOHNSON CITY

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Rinse Blank	Conc. (ppb) of Compound in the Drill Water-1	Conc. (ppb) of Compound in the Drill Water-2	Conc. (ppb) of Compound in the Method Blank
CT-RB-1	Chloroform (524.2)	--	0.7	--	--	1.0
CT-RB-1	Ethylbenzene (524.2)	--	0.1	--	--	0.2
CT-RB-1	1,3,5-Trimethylbenzene (524.2)	--	0.1	--	--	0.1
DW-1	Ethylbenzene (524.2)	--	--	0.2	--	0.2
DW-1	1,3,5-Trimethylbenzene (524.2)	--	--	0.5	--	0.1
MW-3D-GW	1,1,1-Trichloroethane (524.2)	5.7	0	0	1.7	0
MW-2S-GW	1,1,1-Trichloroethane (524.2)	1.9	0	--	1.7	0
MW-2D-GW	Toluene (524.2)	0.2	0.2	--	0	1.8
MW-5D-GW	Chloroform (524.2)	0.1	0.7	--	--	0.2
MW-5D-GW	Toluene (524.2)	11	0.2	--	--	1.8
MW-4S-GW	Ethylbenzene (524.2)	0.03	0.1	--	--	0.04
MW-4S-GW	Isopropylbenzene (524.2)	0.03	0	--	--	0.05
MW-4S-GW	1,2,4-Trimethylbenzene (524.2)	0.1	0	--	--	0.1
MW-4S-GW	scc-Butylbenzene (524.2)	0.2	0	--	--	0.2

* For volatile samples, no positive results are reported unless the concentrations of the compound in the sample exceeds ten times the concentration of <u>any</u> quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, and toluene), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the quality control blanks. Drill water and rinse blanks should be treated the same as samples, except that any rejected drill water and rinse blank can still be utilized to reject sample data.

(b)-8

TABLE 3

ANALYTICAL DATA ASSESSMENT
MATRIX: Groundwater, Round 2

Laboratory Report Number: 30910-2265
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA	VOA (524.2)	PCB	Metals	CN	Notes
JC-TL-DW	1b	--	--	--	--	3
JC-MW-1S-GW	--	1b,2b	--	1a	1a	1,2
JC-MW-1D-GW	--	1b	--	1a	1a	2
JC-MW-2S-GW	--	1b	--	1a	1a	2
JC-MW-2S-GW-L	--	--	--	1a	--	
JC-MW-2D-GW	--	1b	--	1a	1a	2
JC-MW-2D-GW-MS	--	--	--	1a	1a	
JC-MW-2D-GW-DUP	--	--	--	1a	1a	
JC-MW-3D-GW	--	1b	--	1a	1a	2
JC-MW-4S-GW	--	1b,2b	--	1a	1a	1,2
JC-MW-4D-GW	--	1b,2b	--	1a	1a	1,2
JC-MW-5S-GW	--	1b	--	1a	1a	2
JC-MW-5D-GW	--	1b	--	1a	1a	2
JC-MW-6D-GW	--	1b,2b	--	1a	1a	1,2
LFB	--	2a	--	--	--	

Abbreviation/Legend

VOA - Target Compound List (TCL) Volatiles
VOA (524.2) - Purgeable Organic Compounds (Method 524.2, Revision 3.0)
PCB - TCL PCBs
Metals - Target Analyte List (TAL) Metals
CN - Cyanide
MW - Monitoring Well
JC - Johnson City
GW - Groundwater

L - Serial Dilution
MS- Matrix Spike
DUP - Duplicate
DW - Dry Well
TL - Trim Line
S - Shallow
D - Deep
LFB - Laboratory Fortified Blank

NOTES FOR TABLE 3

1) See Table 4 for list of rejected compounds.

2) The laboratory fortified blank (LFB), associated with the volatile (524.2) analysis, was analyzed outside the 12-hour tuning criteria, as established by the subcontract agreement. Other quality control data (i.e., surrogates, quarterly control samples) associated to this sample were reviewed and based upon this data it was determined that the data would be usable with caution.

3) There were no NYSDEC ASP quarterly instrument detection limits analyzed for the TCL volatile sample.

(b) -10

TABLE 4*

ORGANIC COMPOUNDS REJECTED FROM THE SECOND ROUND SAMPLING OF JOHNSON CITY

Sample ID	Compound Rejected	Conc. (ppb) of Compound in the Sample	Conc. (ppb) of Compound in the Method Blank
JC-MW-1S-GW	Chloroform (524.2)	0.4	0.3
JC-MW-6D-GW	Ethylbenzene (524.2)	0.1	0.1
JC-MW-6D-GW	m- and/or p-Xylene (524.2)	0.2	0.2
JC-MW-4D-GW	Toluene (524.2)	0.5	0.2
JC-MW-4D-GW	Ethylbenzene (524.2)	0.2	0.1
JC-MW-4D-GW	m- and/or p-Xylene (524.2)	0.4	0.2
JC-MW-4S-GW	Toluene (524.2)	0.2	0.2
JC-MW-4S-GW	Ethylbenzene (524.2)	0.1	0.1

* For volatile samples, no positive results are reported unless the concentration of the compound in the sample exceeds ten times the concentration of any quality control blank for common laboratory contaminants (methylene chloride, acetone, 2-butanone, and toluene), or five times the concentration for other compounds. Diluted samples and dry weights must be accounted for in the method blank. Quality control blanks should be treated the same as samples, except that any rejected quality control blank can still be utilized to reject sample data.

TABLE 5

ANALYTICAL DATA ASSESSMENT
MATRIX: Groundwater, Aquifer Test

Laboratory Report Number: 30910-2320
Assessment Categories: 1a, 1b, 2a, 2b

Sample ID	VOA (524.2)	Notes
JC-#3-24HR	1b	2
JC-#3-48HR	1b	2
JC-#3-72HR	1b	2
JC-#2-72HR	1b	1,2
LFB	2a	

Abbreviation/Legend

VOA (524.2) - Purgeable Organic Compounds (Method 524.2, Revision 3.0)
JC - Johnson City
HR - Hour
LFB - Laboratory Fortified Blank

(b)-12

NOTES FOR TABLE 5

1) The volatile (524.2) analysis exhibited surrogates outside advisory QC limits. The sample was not reanalyzed. Therefore, the data is usable with caution.

2) The laboratory fortified blank (LFB), associated with the volatile (524.2) analysis, was analyzed outside the 12-hour tuning criteria, as established by the subcontract agreement. Other quality control data (i.e., surrogates, quarterly control samples) associated to this sample were reviewed and based upon this data it was determined that the data would be usable with caution.

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 10/91
PURGEABLE ORGANIC COMPOUNDS
(METHOD 524.2, REVISION 3.0)

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	PW2	DRILL-1	DRILL-2
COLLECTION DATE	GA	10/22/91	10/22/91	10/23/91	10/23/91	10/22/91	10/24/91	10/24/91	10/22/91	10/22/91	10/22/91	10/22/91	10/3/91	10/22/91
PARAMETER	STANDARDS #													
Dichlorodifluoromethane	5 (POC)													
Chloromethane	5 (POC)													
Vinyl Chloride	2													
Bromomethane	5 (POC)													
Chloroethane	5 (POC)													
Trichlorofluoromethane	5													
Methylene Chloride	5			0.4 J										
1,1-Dichloroethene	5													
trans-1,2-Dichloroethene	5													
1,1-Dichloroethane	5				0.3 J				0.4 J	0.5 J				
2,2-Dichloropropane	5													
cis-1,2-Dichloroethene	5 (POC)			2.6	0.5 J	1.1								
Bromochloromethane	5 (POC)													
Chloroform	100								R					
1,1,1-Trichloroethane	5				R	R			8.1	11		2.9		1.7
1,1-Dichloropropene	5 (POC)													
Carbon Tetrachloride	5													
Benzene	0.7			0.3 J		0.3 J			0.2 J					
1,2-Dichloroethane	5													
Trichloroethene	5			0.3 J	1.5	1.5			0.5 J	0.8 J				
1,2-Dichloropropane	5													
Dibromomethane	5 (POC)													
Bromodichloromethane	50													
cis-1,3-Dichloropropene	5 (POC)													
Toluene	5			R					R				0.5 J	
trans-1,3-Dichloropropene	5 (POC)													
1,1,2-Trichloroethane	5													
Tetrachloroethene	5													
1,3-Dichloropropane	5 (POC)													
Acetone	5													
2-Butanone	5 (POC)													

Only Detected Results are Reported.

All results are reported in ug/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values. September 25,1990. 6 NYCRR 703.5, revised 9/1/91

J -The sample results are less than the quantitation limit, but greater than zero.

R - Compound rejected due to method blank contamination.

POC - Principal Organic Contaminant #

ND - Non detectable

- Concentrations exceeding current GA Standards.

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 10/91 (cont.)
PURGEABLE ORGANIC COMPOUNDS
(METHOD 524.2, REVISION 3.0)

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	PW2	DRILL-1	DRILL-2
COLLECTION DATE	GA	10/22/91	10/22/91	10/23/91	10/23/91	10/22/91	10/24/91	10/24/91	10/22/91	10/22/91	10/22/91	10/22/91	10/3/91	10/22/91
PARAMETER	STANDARDS #													
Dibromochloromethane	50													
1,2-Dibromoethane	5 (POC)													
Chlorobenzene	5													
1,1,1,2-Tetrachloroethane	5 (POC)													
Ethylbenzene	5							R					R	
meta and/or para-Xylene	5							0.075						
ortho-Xylene	5													
Styrene	5													
Bromoform	50													
Isopropylbenzene	5 (POC)							R						
Bromobenzene	5 (POC)													
1,1,2,2-Tetrachloroethane	5													
1,2,3-Trichloropropane	5 (POC)													
Propylbenzene	5 (POC)													
2-Chlorotoluene	5 (POC)													
4-Chlorotoluene	5 (POC)													
1,3,5-Trimethylbenzene	5												R	
tert-Butylbenzene	5 (POC)													
1,2,4-Trimethylbenzene	5							R						
sec-Butylbenzene	5 (POC)							R					11	
1,3-Dichlorobenzene	5													
p-Isopropyltoluene	5 (POC)													
1,4-Dichlorobenzene	4.7							0.1 J						
1,2-Dichlorobenzene	4.7													
Butylbenzene	5 (POC)													
1,2-Dibromo-3-chloropropane	5 (POC)													
1,2,4-Trichlorobenzene	5													
Hexachlorobutadiene	5													
Naphthalene	5													
1,2,3-Trichlorobenzene	5													

~~Only Detected Results are Reported.~~

All results are reported in ug/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values. September 25,1990. 6 NYCRR 703.5, revised 9/1/91.

J - The sample results are less than the quantitation limit, but greater than zero.

R - Compound rejected due to method blank contamination.

POC - Principal Organic Contaminant #

ND - Non detectable

[redacted] - Concentrations exceeding current GA Standards.

B 000022

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 10/91 (cont.)
PCB (NYSDEC ASP 89-3) *

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	PW2	DRILL-1	DRILL-2
COLLECTION DATE	GA	10/22/91	10/22/91	10/23/91	10/23/91	10/22/91	10/24/91	10/24/91	10/22/91	10/22/91	10/22/91	10/22/91	10/3/91	10/22/91
PARAMETER	STANDARDS #													
Aroclor-1016	x													
Aroclor-1221	x													
Aroclor-1232	x													
Aroclor-1242	x													
Aroclor-1248	x													
Aroclor-1254	x													
Aroclor-1260	x													

Only Detected Results are Reported.
All results repoited in µg/L (ppb).
- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values. September 25,1990.
x - Current GA Standard 0.1 ppb Total PCB's.

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 10/91 (cont.)
TARGET ANALYTE LIST METALS AND CYANIDE (NYSDEC ASP 9010)

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D	PW2	DRILL-1	DRILL-2
COLLECTION DATE	GA	10/22/91	10/22/91	10/23/91	10/23/91	10/22/91	10/24/91	10/24/91	10/22/91	10/22/91	10/22/91	10/22/91	10/3/91	10/22/91
PARAMETER	STANDARDS #													
Aluminum	x	106 B	611	206	372	170 B	50.1 B	950	139 B	2520	90.1 B		183 B	
Antimony	3							6.4 B		1.9 B			19.4	
Arsenic	25			2.3 B										
Barium	1000	18.6 B	50 B	141 B	107 B	109 B	47.1 B	75.5 B	47.1 B	110 B	52.9 B	51.8 B	253	52.9 B
Beryllium	3#													
Cadmium	10	2.1 B												
Calcium	x	46500	52900	121000	182000	1139000	33000	44400	80200	129000	40400	88200	42200	90100
Chromium	50	37.6 N*	5.5 B*	184 N*	18.2 N*	781 N*	9.6 B*	21.3 N*	100 N*	50.1 N*	98.4 N*			
Cobalt	x					7 B				4 B				
Copper	200					30.9				9.4 B				30.7
Iron	300	374 N	935 N	1540 N	793 N	3620 N	191 N	5070 N	797 N	6140 N	639 N		1140	1120 N
Lead	25			1.9 BW		1.2 B		1.5 B	1.3 B	3.3 B			1.3 B	2.7 B
Magnesium	35,000 #	7910	9870	28800	28900	25600	4360 B	5400	18100	25200	7480	14600	10800	14800
Manganese	300	121	22.3	731	40	86.6	4490	5350	359	221	167		243	19.5
Mercury	2													
Nickel	x	23.2 BE		136 E	10.9 BE	378 E	11.3 BE	28.6 BE	76.6 E	35.6 BE	47.7 E			
Potassium	x	1950 B	721 B	2420 B	3910 B	2830 B	2350 B	2150 B	3970 B	4110 B	887 B	2100 B	1880 B	1970 B
Selenium	10													
Silver	50													
Sodium	20,000	12700	31300	33600	47100	44000	16700	13300	34000	46200	10600	27000	8230	27500
Thallium	x													
Vanadium	x			9.8 B										
Zinc	300	19.2 B	16.4 B	28	21	51.4	21.6	19.9 B	26.2	37.1	40.7	15.2 B	15.9 B	618
Cyanide	100								42.3					

Only Detected Results are Reported.
All results are reported in µg/L (ppb).
- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values. September 25,1990.
B - The reported value is less than the quantitation limit. but greater than the instrument detection limit.
x - No standard or guidance value established for class GA water.
- Concentrations exceeding current GA Standards.

* - Duplicate analysis not within control limits.
N - Spiked sample recovery not within control limits.
E - The reported value is estimated due to the presence of interference.
W - Post-digestion spike for Furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 12/91
PURGEABLE ORGANIC COMPOUNDS
(METHOD 524.2, REVISION 3.0)

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D
COLLECTION DATE	GA	12/11/91	12/11/91	12/10/91	12/10/91	12/10/91	12/11/91	12/11/91	12/10/91	12/10/91	12/11/91
PARAMETER	STANDARDS #										
Dichlorodifluoromethane	5 (POC)										
Chloromethane	5 (POC)										
Vinyl Chloride	2										
Bromomethane	5 (POC)										
Chloroethane	5 (POC)										
Trichlorofluoromethane	5										
Methylene Chloride	5			0.4 J							
1,1-Dichloroethene	5										
trans-1,2-Dichloroethene	5										
1,1-Dichloroethane	5								1.0		
2,2-Dichloropropane	5										
cis-1,2-Dichloroethene	5 (POC)			1.9	0.2 J	0.9 J			0.2 J		
Bromochloromethane	5 (POC)										
Chloroform	100		R								
1,1,1-Trichloroethane	5				1.2	2.4			12	13	
1,1-Dichloropropene	5 (POC)										
Carbon Tetrachloride	5										
Benzene	0.7	0.1 J		0.7 J	0.6 J	1.3			3.3		
1,2-Dichloroethane	5										
Trichloroethene	5				2.0	1.6			1.2	0.9 J	
1,2-Dichloropropane	5										
Dibromomethane	5 (POC)										
Bromodichloromethane	50										
cis-1,3-Dichloropropene	5 (POC)										
Toluene	5			0.3 J		0.2 J	R	R	1.4		R
trans-1,3-Dichloropropene	5 (POC)										
1,1,2-Trichloroethane	5										
Tetrachloroethene	5										
1,3-Dichloropropane	5 (POC)										
Acetone	5										
2-Butanone	5 (POC)										

Only Detected results are reported.

All results are reported in ug/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values, 9/25/90. 6 NCYRR 703.5, revised 9/1/91.

J -The sample results are less than the quantitation limit, but greater than zero.

R - Compound rejected due to method blank contamination.

POC - Principal Organic Contaminant #

ND - Non detectable

- Concentrations exceeding current GA Standards.

B 000025

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 12/91 (cont.)
PURGEABLE ORGANIC COMPOUNDS
(METHOD 524.2, REVISION 3.0)

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D
COLLECTION DATE	GA	12/11/91	12/11/91	12/10/91	12/10/91	12/10/91	12/11/91	12/11/91	12/10/91	12/10/91	12/11/91
PARAMETER	STANDARDS #										
Dibromochloromethane	50										
1,2-Dibromoethane	5 (POC)										
Chlorobenzene	5										
1,1,1,2-Tetrachloroethane	5 (POC)										
Ethylbenzene	5						R	R	0.2 J		R
meta and/or para-Xylene	5			0.9 J		0.8 J	R		1.0	0.9 J	R
ortho-Xylene	5						0.3 J		0.3 J		0.2 J
Styrene	5										
Bromoform	50										
Isopropylbenzene	5 (POC)								0.1 J		
Bromobenzene	5 (POC)										
1,1,2,2-Tetrachloroethane	5										
1,2,3-Trichloropropane	5 (POC)										
Propylbenzene	5 (POC)								0.2 J		
2-Chlorotoluene	5 (POC)										
4-Chlorotoluene	5 (POC)										
1,3,5-Trimethylbenzene	5										
tert-Butylbenzene	5 (POC)										
1,2,4-Trimethylbenzene	5			0.8 J			0.2 J		0.9 J	0.8 J	0.3 J
sec-Butylbenzene	5 (POC)								0.2 J		
1,3-Dichlorobenzene	5										
p-Isopropyltoluene	5 (POC)								0.8 J		
1,4-Dichlorobenzene	4.7										
1,2-Dichlorobenzene	4.7										
Butylbenzene	5 (POC)										
1,2-Dibromo-3-chloropropane	5 (POC)										
1,2,4-Trichlorobenzene	5								0.2 J		
Hexachlorobutadiene	5										
Naphthalene	5								0.8 J		
1,2,3-Trichlorobenzene	5										

~~Only detected results are reported.~~

All results are reported in ug/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values, 9/25/90. 6 NCYRR 703.5, revised 9/1/91.

J - The sample results are less than the quantitation limit, but greater than zero.

R - Compound rejected due to method blank contamination.

POC - Principal Organic Contaminant #

ND - Non detectable

[redacted] - Concentrations exceeding current GA Standards.

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 12/91 (cont.)
TARGET ANALYTE LIST METALS AND CYANIDE (NYSDEC ASP 9010)

WELL-SAMPLE ID NUMBER	CURRENT	MW-1D	MW-1S	MW-2D	MW-2S	MW-3D	MW-4D	MW-4S	MW-5D	MW-5S	MW-6D
COLLECTION DATE	GA	12/11/91	12/11/91	12/10/91	12/10/91	12/10/91	12/11/91	12/11/91	12/10/91	12/10/91	12/11/91
PARAMETER	STANDARDS #										
Aluminum	x	52.1 B	5310	281	5110	51.7 B		1850	75.4 B	234	57.6 B
Antimony	3		21.3 B	91.9 B				21.2 B	21.3 B		
Arsenic	25		2.0 B	1.9 B	3.9 B		1.0 B	8.8 B			
Barium	1000	17.3 B	62.2 B	147 B	145 B	111 B	55.0 B	68.6 B	92.2 B	91.9 B	63.5 B
Beryllium	3#										
Cadmium	10									2.9 B	
Calcium	x	43800	34800	120000	117000	134000	33400	34200	110000	110000	38200
Chromium	50	6.9 B	360	250	682	99.6	9.5 B	46.9	77.6	81.5	31.3
Cobalt	x		5.7 B	5.1 B	10.4 B	4.8 B					
Copper	200		34.2	9.5 B	46.8	10.3 B	6.2 B	11.0 B	7.9 B	25.8	4.3 B
Iron	300	156	10600	1800	13100	674	154	6300	1140	879	314
Lead	25		5.3	2.4 B	8.3			5.1	2.4 B	5.0	1.5 B
Magnesium	35,000 #	7290	9200	28800	20200	25100	4470 B	4410 B	21100	20400	7110
Manganese	300	174	186	771	558	65.4	4490	4610	90.5	77.0	172
Mercury	2										
Nickel	x		164	182	402	182	10.6 BN	35.6 B	62.0	49.2	19.8 B
Potassium	x	1220 B	1580 B	2970 B	4110 B	2420 B	2720 B	1970 B	3440 B	2570 B	799 B
Selenium	10										
Silver	50										
Sodium	20,000	10200 E	49400 E	34200 E	23600 E	41200 E	15600 E	15300 E	38500 E	37400 E	8920 E
Thallium	x										
Vanadium	x		11.1 B		11.6 B						
Zinc	300	2.8 B	39.1	10.5 B	51.5	15.2 B	8.0 B	14.6 B	9.2 B	15.7 B	10.1 B
Cyanide	100										

Only detected results are reported.

All results are reported in µg/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values. September 25,1990.

B - The reported value is less than the quantitation limit.
but greater than the instrument detection limit.

x - No standard or guidance value established for class GA water.

- Concentrations exceeding current GA Standards.

E - The reported value is estimated due to presence of interference.

N - Sample spike recovery not within control limits.

JOHNSON CITY WELLFIELD INVESTIGATION
GROUNDWATER SAMPLE ANALYSIS 12/91
TCL VOLATILES (NYSDEC ASP 89-1)

WELL-SAMPLE ID NUMBER	CURRENT	TRIM LINE
COLLECTION DATE	GA	12/10/91
PARAMETER	STANDARDS #	
Chloromethane	5 (POC)	
Bromomethane	5 (POC)	
Vinyl Chloride	2	
Chloroethane	5 (POC)	
Methylene Chloride	5	
Acetone	5	36000 B
Carbon Disulfide		
1,1-Dichloroethene	5	
1,1-Dichloroethane	5	
1,2-Dichloroethene (total)	5 (POC)	
Chloroform	100	
1,2-Dichloroethane	5	
2-Butanone (or MEK)	5 (POC)	2100
1,1,1-Trichloroethane	5	
Carbon Tetrachloride	5	
Vinyl Acetate		
Bromodichloromethane	50	
1,2-Dichloropropane	5	
cis-1,3-Dichloropropene	5 (POC)	
Trichloroethene	5	
Dibromochloromethane	50	
1,1,2-Trichloroethane	5	
Benzene	ND	
trans-1,3-Dichloropropene	5 (POC)	
Bromoform	50	
4-Methyl-2-pentanone		
2-Hexanone	50	
Tetrachloroethene	5	
1,1,2,2-Tetrachloroethane	5	
Toluene	5	3800
Chlorobenzene	5	
Ethylbenzene	5	
Styrene	5	
Total Xylenes	5	450 J

~~Only detected results are reported.~~

All results are reported in µg/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values. September 25, 1990.

J - The sample results are less than the quantitation limit, but greater than zero.

POC - Principal Organic Contaminant #

ND - Not Detectable

B - Compound detected in associated method blank.

- Concentrations exceeding current GA Standards.

JOHNSON CITY WELLFIELD INVESTIGATION
COMMUNITY WELL SAMPLE ANALYSIS 12/91
PURGEABLE ORGANIC COMPOUNDS
(METHOD 524.2, REVISION 3.0)

WELL-SAMPLE ID NUMBER / COLLECTION DATE / PARAMETER	CURRENT GA STANDARDS#	JC-3-24HR 12/18/91	JC-3-48HR 12/19/91	JC-3-72HR 12/20/91	JC-2-72HR 12/20/91
Dichlorodifluoromethane	5 (POC)				
Chloromethane	5 (POC)				
Vinyl Chloride	2				
Bromomethane	5 (POC)				
Chloroethane	5 (POC)				
Trichlorofluoromethane	5				
Methylene Chloride	5				
1,1-Dichloroethene	5				
trans-1,2-Dichloroethene	5				
1,1-Dichloroethane	5		0.3 J		
2,2-Dichloropropane	5				
cis-1,2-Dichloroethene	5 (POC)	0.2 J	0.2 J	0.2 J	
Bromochloromethane	5 (POC)				
Chloroform	100				
1,1,1-Trichloroethane	5	11	12	14	2.6
1,1-Dichloropropene	5 (POC)				
Carbon Tetrachloride	5				
Benzene	0.7				
1,2-Dichloroethane	5				
Trichloroethene	5	0.8 J	0.7 J	0.7 J	0.4 J
1,2-Dichloropropane	5				
Dibromomethane	5 (POC)				
Bromodichloromethane	50				
cis-1,3-Dichloropropene	5 (POC)				
Toluene	5				
trans-1,3-Dichloropropene	5 (POC)				
1,1,2-Trichloroethane	5				
Tetrachloroethene	5				
1,3-Dichloropropane	5 (POC)				
Acetone	5				
2-Butanone	5 (POC)				

Only detected results are reported.

All results are reported in ug/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values, 9/25/90. 6 NYCRR Part 703.5, revised 9/1/91.

J - The sample results are less than the quantitation limit, but greater than zero.

R - Compound rejected due to method blank contamination.

POC - Principal Organic Contaminant #

ND - Non detectable

- Concentrations exceeding current GA Standards.

JOHNSON CITY WELLFIELD INVESTIGATION

COMMUNITY WELL SAMPLE ANALYSIS 12/91 (cont.)

PURGEABLE ORGANIC COMPOUNDS

(METHOD 524.2, REVISION 3.0)

WELL-SAMPLE ID NUMBER	CURRENT	JC-3-24HR	JC-3-48HR	JC-3-72HR	JC-2-72HR
COLLECTION DATE	GA	12/18/91	12/19/91	12/20/91	12/20/91
PARAMETER	STANDARDS #				
Dibromochloromethane	50				
1,2-Dibromoethane	5 (POC)				
Chlorobenzene	5				
1,1,1,2-Tetrachloroethane	5 (POC)				
Ethylbenzene	5				
meta and/or para-Xylene	5				
ortho-Xylene	5				
Styrene	5				
Bromoform	50				
Isopropylbenzene	5 (POC)				
Bromobenzene	5 (POC)				
1,1,2,2-Tetrachloroethane	5				
1,2,3-Trichloropropane	5 (POC)				
Propylbenzene	5 (POC)				
2-Chlorotoluene	5 (POC)				
4-Chlorotoluene	5 (POC)				
1,3,5-Trimethylbenzene	5				
tert-Butylbenzene	5 (POC)				
1,2,4-Trimethylbenzene	5				
sec-Butylbenzene	5 (POC)				
1,3-Dichlorobenzene	5				
p-Isopropyltoluene	5 (POC)				
1,4-Dichlorobenzene	4.7				
1,2-Dichlorobenzene	4.7				
Butylbenzene	5 (POC)				
1,2-Dibromo-3-chloropropane	5 (POC)				
1,2,4-Trichlorobenzene	5				
Hexachlorobutadiene	5				
Naphthalene	5				
1,2,3-Trichlorobenzene	5				

~~Only detected results are reported.~~

All results are reported in ug/L (ppb).

- NYSDEC Division of Technical and Operational Guidance Series (1.1.1.) Ambient Water Quality Standards and Guidance Values, 9/25/90. 6 NYCRR Part 703.5, revised 9/1/91.

J - The sample results are less than the quantitation limit, but greater than zero.

R - Compound rejected due to method blank contamination.

POC - Principal Organic Contaminant *

ND - Non detectable

[redacted] - Concentrations exceeding current GA Standards.

3091-203B

B 000031 040

WATER

524.2 VOLATILE COMPOUNDS +MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000	1.0000	1.0000	1.0000	
Method Blank I. D.	>G7185	>G7185	>G7185	>G7185	Lower Limits of Detection with no Dilution
Compound	VBLKGG	JC-PW2 -GW	JC-MW-1S-GW	JC-MW-6D-GW-DUP	
Dichlorodifluoromethane	U	U	U	U	1.0
Chloromethane	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	1.0
Bromomethane	U	U	U	U	1.0
Chloroethane	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	1.0
Methylene Chloride	U ~~1.7~~	U	U	U	1.0
1,1-Dichloroethene	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	1.0
1,1-Dichloroethane	U	U	U	U	1.0
2,2-Dichloropropane	U	U	U	U	1.0
cis-1,2-Dichloroethene	U	U	U	U	1.0
Bromochloromethane	U	U	U	U	1.0
Chloroform	~~U 0.70J~~	U	U	U	1.0
1,1,1-Trichloroethane	U	2.9 ~~3.0~~	U	U	1.0
1,1-Dichloropropene	U	U	U	U	1.0
Carbon Tetrachloride	U	U	U	U	1.0
Benzene	U	U	U	U	1.0
1,2-Dichloroethane	U	U	U	U	1.0
Trichloroethene	U	U	U	U	1.0
1,2-Dichloropropane	U	U	U	U	1.0
Dibromomethane	U	U	U	U	1.0
Bromodichloromethane	U	U	U	U	1.0
cis-1,3-Dichloropropene	U	U	U	U	1.0
Toluene	U	U	U	U	1.0
trans-1,3-Dichloropropene	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	1.0
ACETONE	U	U	U	U	10
2-BUTANONE	U	U	U	U	10

U, J, B - See **Appendix** for definition

RAS 01/15/92

B 000032 041

3091-2038

WATER

524.2 VOLATILE COMPOUNDS +MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000	1.0000	1.0000	1.0000	
Method Blank I. D.	>G7185	>G7185	>G7185	>G7185	Lower Limits of Detection with no Dilution
Compound	VBLKGG	JC-PW2 -GW	JC-MW-1S-GW	JC-MW-6D-GW-DUP	
Dibromochloromethane	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	1.0
Ethylbenzene	U	U	U	U	1.0
meta and/or para-Xylene	U	U	U	U	1.0
ortho-Xylene	U	U	U	U	1.0
Styrene	U	U	U	U	1.0
Bromoform	U	U	U	U	1.0
Isopropylbenzene	U	U	U	U	1.0
Bromobenzene	U	U	U	U	1.0
1,1,2,2-Tetrachloroethane	U	U	U	U	1.0
1,2,3-Trichloropropane	U	U	U	U	1.0
Propylbenzene	U	U	U	U	1.0
2-Chlorotoluene	U	U	U	U	1.0
-Chlorotoluene	U	U	U	U	1.0
,3,5-Trimethylbenzene	U	U	U	U	1.0
tert-Butylbenzene	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	U	U	U	1.0
sec-Butylbenzene	0.02 J ~~U~~	U	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	1.0
p-Isopropyltoluene	0.02 J ~~U~~	U	U	U	1.0
1,4-Dichlorobenzene	U	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	1.0
Butylbenzene	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	U	U	1.0
Hexachlorobutadiene	U	U	U	U	1.0
Naphthalene	U	U	U	U	1.0
1,2,3-Trichlorobenzene	U	U	U	U	1.0

Pas 01/15/92

U, J, B - See Appendix for definition

3091-2038

B000033 0360

WATER

524.2 VOLATILE COMPOUNDS +MISC.

All results reported as UG/L

Sample Identification

Compound	JC-MW-1D-GW	JC-MW-6D-GW	JC-MW-2S-GW	JC-MW-5D-GW	Lower Limits of Detection with no Dilution
Dilution Factor	1.0000	1.0000	1.0000	1.0000	
Method Blank I. D.	>B6064	>B6064	>B6064	>B6064	
Dichlorodifluoromethane	U	U	U	U	1.0
Chloromethane	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	1.0
Bromomethane	U	U	U	U	1.0
Chloroethane	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	1.0
Methylene Chloride	U	U	U	U	1.0
1,1-Dichloroethene	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	1.0
1,1-Dichloroethane	U	U	0.30 ~~0.20~~J	0.40J	1.0
2,2-Dichloropropane	U	U	U	U	1.0
cis-1,2-Dichloroethene	U	U	0.50J	U	1.0
Bromochloromethane	U	U	U	U	1.0
Chloroform	U	U	U	~~0.50~~ ~~0.50J~~	R 1.0
1,1,1-Trichloroethane	U	U	R ~~1.9~~	8.1 ~~8.2~~	1.0
1,1-Dichloropropene	U	U	1/17/92 PP U	U	1.0
Carbon Tetrachloride	U	U	U	U	1.0
Benzene	U	U	U	0.20J	1.0
1,2-Dichloroethane	U	U	U	U	1.0
Trichloroethene	U	U	1.5	0.50 ~~0.60J~~	1.0
1,2-Dichloropropane	U	U	U	U	1.0
Dibromomethane	U	U	U	U	1.0
Bromodichloromethane	U	U	U	1/17/92 PP U	1.0
cis-1,3-Dichloropropene	U	U	U	U	1.0
Toluene	U	U	U	R ~~11J~~	1.0
trans-1,3-Dichloropropene	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	1.0
ACETONE	✓	✓	✓	U ~~2.4~~	10
2-BUTANONE	✓	✓	✓	U	10

U, J, B - See Appendix for definition

PAS 01/15/92

B000034

037

3091-2038

WATER

524.2 VOLATILE COMPOUNDS + MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000	1.0000	1.0000	1.0000	
Method Blank I. D.	>B6064	>B6064	>B6064	>B6064	Lower Limits of Detection with no Dilution
Compound	JC-MW-1D-GW	JC-MW-6D-GW	JC-MW-2S-GW	JC-MW-5D-GW	
Dibromochloromethane	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	1.0
Ethylbenzene	U	U	U	U	1.0
meta and/or para-Xylene	U	U	U	U	1.0
ortho-Xylene	U	U	U	U	1.0
Styrene	U	U	U	U	1.0
Bromoform	U	U	U	U	1.0
Isopropylbenzene	U	U	U	U	1.0
Bromobenzene	U	U	U	U	1.0
1,1,2,2-Tetrachloroethane	U	U	U	U	1.0
1,2,3-Trichloropropane	U	U	U	U	1.0
Propylbenzene	U	U	U	U	1.0
2-Chlorotoluene	U	U	U	U	1.0
4-Chlorotoluene	U	U	U	U	1.0
1,3,5-Trimethylbenzene	U	U	U	U	1.0
tert-Butylbenzene	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	U	U	U	1.0
sec-Butylbenzene	U	U	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	1.0
p-Isopropyltoluene	U	U	U	U	1.0
1,4-Dichlorobenzene	U	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	1.0
Butylbenzene	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	U	U	1.0
Hexachlorobutadiene	U	U	U	U	1.0
Naphthalene	U	U	U	U	1.0
1,2,3-Trichlorobenzene	U	U	U	U	1.0

U, J, B - See Appendix for definition

B000035 034

3091-2038

WATER

524.2 VOLATILE COMPOUNDS + MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000	1.0000	1.0000	1.0000	
Method Blank I. D.	>B6064	>B6064	>B6064	>B6064	Lower Limits of Detection with no Dilution
Compound	VBLKBI	JC-DW-2	JC-MW-2D-GW	JC-MW-3D-GW	
Dichlorodifluoromethane	U	U	U	U	1.0
Chloromethane	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	1.0
Bromomethane	U	U	U	U	1.0
Chloroethane	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	1.0
Methylene Chloride	U	U	0.40J	U	1.0
1,1-Dichloroethene	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	1.0
1,1-Dichloroethane	U	U	U	U	1.0
2,2-Dichloropropane	U	U	U	U	1.0
cis-1,2-Dichloroethene	U	U	2.6	1.1	1.0
Bromochloromethane	U	U	U	U	1.0
Chloroform	~~0.60J~~ 0.35J	U	U	U	1.0
1,1,1-Trichloroethane	U	1.7 ~~1.8~~	U	~~5.9~~ 5.9 R	1.0
1,1-Dichloropropene	U	U	U	U	1.0
Carbon Tetrachloride	U	U	U	U	1.0
Benzene	U	U	0.30J	~~0.20~~ 0.20J	1.0
1,2-Dichloroethane	U	U	U	U	1.0
Trichloroethene	U	U	0.30J	1.5	1.0
1,2-Dichloropropane	U	U	U	U	1.0
Dibromomethane	U	U	U	U	1.0
Bromodichloromethane	U	U	U	U	1.0
cis-1,3-Dichloropropene	U	U	U	U	1.0
Toluene	~~2.1~~ ~~U~~ 1.8	U	R ~~0.20J~~	U	1.0
trans-1,3-Dichloropropene	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	1.0
ACETONE	U	U	U	U	10
2-BUTANONE	U	U	U	U	10

U, J, B - See Appendix for definition

PAS 01/09/92
PAS 01/15/92

3291-2038

B000036

035

WATER

5242 VOLATILE COMPOUNDS + MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000	1.0000	1.0000	1.0000	
Method Blank I. D.	>B6064 VBLKBI	>B6064 JC-DW-2	>B6064 JC-MW-2D-GW	>B6064 JC-MW-3D-GW	Lower Limits of Detection with no Dilution
Compound					
Dibromochloromethane	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	1.0
Ethylbenzene	U	U	U	U	1.0
meta and/or para-Xylene	U	U	U	U	1.0
ortho-Xylene	U	U	U	U	1.0
Styrene	U	U	U	U	1.0
Bromoform	U	U	U	U	1.0
Isopropylbenzene	U	U	U	U	1.0
Bromobenzene	U	U	U	U	1.0
1,1,2,2-Tetrachloroethane	U	U	U	U	1.0
1,2,3-Trichloropropane	U	U	U	U	1.0
Propylbenzene	U	U	U	U	1.0
2-Chlorotoluene	U	U	U	U	1.0
4-Chlorotoluene	U	U	U	U	1.0
1,3,5-Trimethylbenzene	U	U	U	U	1.0
tert-Butylbenzene	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	U	U	U	1.0
sec-Butylbenzene	U	U	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	1.0
p-Isopropyltoluene	U	U	U	U	1.0
1,4-Dichlorobenzene	U	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	1.0
Butylbenzene	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	U	U	1.0
Hexachlorobutadiene	U	U	U	U	1.0
Naphthalene	U	U	U	U	1.0
1,2,3-Trichlorobenzene	U	U	U	U	1.0

U, J, B - See Appendix for definition

3021-2038

B 000037

042

WATER

524.2 VOLATILE COMPOUNDS +MISC

All results reported as UG/L

Compound	Sample Identification				Lower Limits of Detection with no Dilution
Dilution Factor	1.0000	1.0000	1.0000		
Method Blank I. D.	>G7199	>G7199	>G7199		
	VBLKGH	JC-MW-4S-GW	JC-MW-4D-GW		
Dichlorodifluoromethane	U	U	U		1.0
Chloromethane	U	U	U		1.0
Vinyl Chloride	U	U	U		1.0
Bromomethane	U	U	U		1.0
Chloroethane	U	U	U		1.0
Trichlorofluoromethane	U	U	U		1.0
Methylene Chloride	U	U	U		1.0
1,1-Dichloroethene	U	U	U		1.0
trans-1,2-Dichloroethene	U	U	U		1.0
1,1-Dichloroethane	U	U	U		1.0
2,2-Dichloropropane	U	U	U		1.0
cis-1,2-Dichloroethene	U	U	U		1.0
Bromochloromethane	U	U	U		1.0
Chloroform	U ~~0.80J~~	U	U		1.0
1,1,1-Trichloroethane	U ~~0.30J~~	U	U		1.0
1,1-Dichloropropene	U	U	U		1.0
Carbon Tetrachloride	U	U	U		1.0
Benzene	U	U	U		1.0
1,2-Dichloroethane	U	U	U		1.0
Trichloroethene	U	U	U		1.0
1,2-Dichloropropane	U	U	U		1.0
Dibromomethane	U	U	U		1.0
Bromodichloromethane	U	U	U		1.0
cis-1,3-Dichloropropene	U	U	U		1.0
Toluene	U	U	U		1.0
trans-1,3-Dichloropropene	U	U	U		1.0
1,1,2-Trichloroethane	U	U	U		1.0
Tetrachloroethene	U	U	U		1.0
1,3-Dichloropropane	U	U	U		1.0
ACETONE	U	U	U		10
2-BUTANONE	U	U	U		10

U, J, B - See **Appendix** for definition

AAS 01/15/92

3091-2038

B000038
043

WATER

524.2 VOLATILE COMPOUNDS +MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000	1.0000	1.0000		
Method Blank I. D.	>G7199	>G7199	>G7199		Lower Limits of Detection with no Dilution
Compound	VBLKGH	JC-MW-4S-GW	JC-MW-4D-GW		
Dibromochloromethane	U	U	U		1.0
1,2-Dibromoethane	U	U	U		1.0
Chlorobenzene	U	U	U		1.0
1,1,1,2-Tetrachloroethane	U	U	U		1.0
Ethylbenzene	0.07J ~~U~~	R ~~0.06JB~~	U		1.0
meta and/or para-Xylene	U	0.07J	1/17/92 PF U		1.0
ortho-Xylene	U	U	U		1.0
Styrene	0.10J ~~U~~	U	U		1.0
Bromoform	U	U	U		1.0
Isopropylbenzene	0.05J ~~U~~	R ~~0.03JB~~	U		1.0
Bromobenzene	U	U	U		1.0
1,1,2,2-Tetrachloroethane	U	U	U		1.0
1,2,3-Trichloropropane	U	U	U		1.0
Propylbenzene	U	U	U		1.0
2-Chlorotoluene	U	U	U		1.0
4-Chlorotoluene	U	U	U		1.0
1,3,5-Trimethylbenzene	U	U	U		1.0
tert-Butylbenzene	0.04J ~~U~~	U	U		1.0
1,2,4-Trimethylbenzene	0.03J ~~U~~	R ~~0.03JB~~	1/17/92 PF U		1.0
sec-Butylbenzene	0.04J	R ~~0.03JB~~	U		1.0
1,3-Dichlorobenzene	U	U	U		1.0
p-Isopropyltoluene	0.04J	U	U		1.0
1,4-Dichlorobenzene	U	0.10J	U		1.0
1,2-Dichlorobenzene	U	U	U		1.0
Butylbenzene	U	U	U		1.0
1,2-Dibromo-3-chloropropane	U	U	U		1.0
1,2,4-Trichlorobenzene	U	U	U		1.0
Hexachlorobutadiene	U	U	U		1.0
Naphthalene	U	U	U		1.0
1,2,3-Trichlorobenzene	U	U	U		1.0

PAS 01/16/92

U, J, B - See Appendix for definition

3091-2038

B000039

038

WATER

524.2 VOLATILE COMPOUNDS + MISC

All results reported as UG/L

Sample Identification

Compound					Lower Limits of Detection with no Dilution
Dilution Factor	1.0000				
Method Blank I. D.	>B6064				
	JC-MW-5S-GW				
Dichlorodifluoromethane	U				1.0
Chloromethane	U				1.0
Vinyl Chloride	U				1.0
Bromomethane	U				1.0
Chloroethane	U				1.0
Trichlorofluoromethane	U				1.0
Methylene Chloride	U				1.0
1,1-Dichloroethene	U				1.0
trans-1,2-Dichloroethene	U				1.0
1,1-Dichloroethane	0.50J				1.0
2,2-Dichloropropane	U				1.0
cis-1,2-Dichloroethene	U				1.0
Bromochloromethane	U				1.0
Chloroform	U				1.0
,1-Trichloroethane	11				1.0
1,1-Dichloropropene	U				1.0
Carbon Tetrachloride	U				1.0
Benzene	U				1.0
1,2-Dichloroethane	U				1.0
Trichloroethene	~~0.90~~ 0.90J				1.0
1,2-Dichloropropane	U				1.0
Dibromomethane	U				1.0
Bromodichloromethane	U				1.0
cis-1,3-Dichloropropene	U				1.0
Toluene	U				1.0
trans-1,3-Dichloropropene	U				1.0
1,1,2-Trichloroethane	U				1.0
Tetrachloroethene	U				1.0
1,3-Dichloropropane	U				1.0
ACETONE	U				10
2-BUTANONE	U				10

U, J, B - See Appendix for definition

PRS 01/09/92

3091-203B

B 000040 039

WATER

524.2 VOLATILE COMPOUNDS +MISC

All results reported as UG/L

	Sample Identification				
Dilution Factor	1.0000				
Method Blank I. D.	>B6064				Lower Limits of Detection with no Dilution
Compound	JC-MW-5S-GW				
Dibromochloromethane	U				1.0
1,2-Dibromoethane	U				1.0
Chlorobenzene	U				1.0
1,1,1,2-Tetrachloroethane	U				1.0
Ethylbenzene	U				1.0
meta and/or para-Xylene	U				1.0
ortho-Xylene	U				1.0
Styrene	U				1.0
Bromoform	U				1.0
Isopropylbenzene	U				1.0
Bromobenzene	U				1.0
1,1,2,2-Tetrachloroethane	U				1.0
1,2,3-Trichloropropane	U				1.0
Propylbenzene	U				1.0
2-Chlorotoluene	U				1.0
4-Chlorotoluene	U				1.0
1,3,5-Trimethylbenzene	U				1.0
tert-Butylbenzene	U				1.0
1,2,4-Trimethylbenzene	U				1.0
sec-Butylbenzene	U				1.0
1,3-Dichlorobenzene	U				1.0
p-Isopropyltoluene	U				1.0
1,4-Dichlorobenzene	U				1.0
1,2-Dichlorobenzene	U				1.0
Butylbenzene	U				1.0
1,2-Dibromo-3-chloropropane	U				1.0
1,2,4-Trichlorobenzene	U				1.0
Hexachlorobutadiene	U				1.0
Naphthalene	U				1.0
1,2,3-Trichlorobenzene	U				1.0

U, J, B - See Appendix for definition

B 000041

30910-1932
URS CONSULTANTS
524.2 PLUS MISCELLANEOUS VOLATILE ORGANICS

Aqueous

All values are ug/L.

	Sample Identification				
Dilution Factor	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G6912	>G6912	>G6912	>G6912	
Compound	Method Blank	CT-RB-1	DRILL-1	FMS	Quantitation Limits with no Dilution
Dichlorodifluoromethane	U	U	U	~~6.9~~ 7.2	1.0
Chloromethane	U	U	U	~~76.0~~ 7.0	1.0
Vinyl Chloride	U	U	U	7.54	1.0
Bromomethane	U	U	U	7.53	1.0
Chloroethane	U	U	U	4.83	1.0
Trichlorofluoromethane	U	U	U	~~6.9~~ 7.8	1.0
Methylene Chloride	U	2.44	U	6.86	1.0
1,1-Dichloroethene	U	U	U	6.1	1.0
trans-1,2-Dichloroethene	U	U	U	~~6.1~~ 7.0	1.0
1,1-Dichloroethane	U	U	U	6.5	1.0
2,2-Dichloropropane	U	U	U	~~5.9~~ ~~7.2~~ 5.9	1.0
cis-1,2-Dichloroethene	U	U	U	~~6.4~~ ~~5.4~~ 7.2	1.0
Bromochloromethane	U	U	U	~~4.9~~ ~~5.8~~ 5.4	1.0
Chloroform	1.0	~~0.70J~~ R	U	~~4.3~~ 4.8	1.0
1,1,1-Trichloroethane	U	U 1/6/92 pf	U	~~5.6~~ 6.4	1.0
1,1-Dichloropropene	U	U	U	~~5.8~~ 6.7	1.0
Carbon Tetrachloride	U	U	U	~~5.5~~ 6.4	1.0
Benzene	U	U	U	~~5.9~~ 6.7	1.0
1,2-Dichloroethane	U	U	U	~~24~~ 25	1.0
Trichloroethene	U	U	U	~~5.7~~ 6.3	1.0
1,2-Dichloropropane	U	U	U	~~5.8~~ 6.6	1.0
Dibromomethane	U	U	U	~~5.6~~ 6.2	1.0
Bromodichloromethane	U	U	U	~~5.8~~ 6.3	1.0
cis-1,3-Dichloropropene	U	U	U	1.0	1.0
Toluene	U	0.20~~0.50J~~	0.50 ~~0.70J~~	~~5.4~~ 6.2	1.0
trans-1,3-Dichloropropene	U	U	U	~~5.5~~ ~~4.6~~ 6.1	1.0
1,1,2-Trichloroethane	U	U	U	~~4.1~~ 4.6	1.0
Tetrachloroethene	U	U	U	~~5.4~~ 6.3	1.0
1,3-Dichloropropane	U	U	U	~~6.1~~ 6.6	1.0
Acetone	2.0	U	U	70B	10 10.0
2-Butanone	U	U	U	49.3	10 10.0

U, J, B - See Appendix for definition. PAS 12/20/91 PAS 12/20/91
Note: Sample detection limit = quantitation limit x dilution factor.

30910-1932
URS CONSULTANTS
524.2 PLUS MISCELLANEOUS VOLATILE ORGANICS

Aqueous
Page 2 of 2

All values are ug/L.

	Sample Identification				
Dilution Factor	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G6912	>G6912	>G6912	>G6912	
Compound	Method Blank	CT-RB-1	DRILL-1	FMS	Quantitation Limits with no Dilution
Dibromochloromethane	U	U	U	~~5.7~~ 10	1.0
1,2-Dibromoethane	U	U	U	5.5	1.0
Chlorobenzene	U	U	U	~~5.1~~ 6.0	1.0
1,1,1,2-Tetrachloroethane	U	U	U	~~5.4~~ 6.2	1.0
Ethylbenzene	0.20J	~~0.10JB~~R	~~0.20JB~~R	9.9B	1.0
meta and/or para-Xylene	U	U	U	10	1.0
ortho-Xylene	U	U	U	21	1.0
Styrene	7.1	U	U	~~4.7B~~ 4.9B	1.0
Bromoform	U	U	U	~~5.8~~ 6.5	1.0
Isopropylbenzene	U	U	U	~~5.5~~ 6.6	1.0
Bromobenzene	U	U	U	~~5.4~~ 6.2	1.0
1,1,2,2-Tetrachloroethane	U	U	U	6.2	1.0
1,2,3-Trichloropropane	U	U	U	2.4	1.0
Propylbenzene	0.10 ~~0.50J~~	U	U	~~5.8B~~ 6.9B	1.0
2-Chlorotoluene	U	U	U	~~23~~ 21	1.0
4-Chlorotoluene	U	U	U	~~4.2~~ 5.1	1.0
1,3,5-Trimethylbenzene	0.10 ~~0.50J~~	~~0.50JB~~	~~0.50JB~~	~~5.7B~~ 6.8B	1.0
tert-Butylbenzene	U	U	U	~~5.9~~ 6.9	1.0
1,2,4-Trimethylbenzene	0.10 ~~0.50J~~	U	U	~~3.3B~~ 4.0B	1.0
sec-Butylbenzene	U	U	11	~~8.8~~ 8.7	1.0
1,3-Dichlorobenzene	U	U	U	~~5.2~~ 6.2	1.0
p-Isopropyltoluene	0.10 ~~0.40J~~	U	U	~~6.1B~~ 6.8B	1.0
1,4-Dichlorobenzene	U	U	U	~~5.6~~ 6.2	1.0
1,2-Dichlorobenzene	U	U	U	~~5.6~~ 6.3	1.0
Butylbenzene	U	U	U	~~5.9~~ 7.0	1.0
1,2-Dibromo-3-chloropropane	U	U	U	~~5.6~~ 5.9	1.0
1,2,4-Trichlorobenzene	U	U	U	~~5.4~~ 6.2	1.0
Hexachlorobutadiene	U	U	U	~~5.6~~ 6.5	1.0
Naphthalene	U	U	U	~~5.5~~ 6.2	1.0
1,2,3-Trichlorobenzene	U	U	U	~~5.5~~ 4.3	1.0

U, J, B - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-1S-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038001

Sample wt/vol: 950. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/30/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

B 000044

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-1D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038002

Sample wt/vol: 950. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/30/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JC-MW-2S-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038009

Sample wt/vol: 975. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.51	U
11104-28-2	Aroclor-1221	0.51	U
11141-16-5	Aroclor-1232	0.51	U
53469-21-9	Aroclor-1242	0.51	U
12672-29-6	Aroclor-1248	0.51	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-2D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038008

Sample wt/vol: 975. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.51	U
11104-28-2	Aroclor-1221	0.51	U
11141-16-5	Aroclor-1232	0.51	U
53469-21-9	Aroclor-1242	0.51	U
12672-29-6	Aroclor-1248	0.51	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-3D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038006

Sample wt/vol: 1000. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JC-MW-4S-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038012

Sample wt/vol: 900. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/25/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/29/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.56	U
11104-28-2	Aroclor-1221	0.56	U
11141-16-5	Aroclor-1232	0.56	U
53469-21-9	Aroclor-1242	0.56	U
12672-29-6	Aroclor-1248	0.56	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JC-MW-4D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038013

Sample wt/vol: 900. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/25/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/29/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.56	U
11104-28-2	Aroclor-1221	0.56	U
11141-16-5	Aroclor-1232	0.56	U
53469-21-9	Aroclor-1242	0.56	U
12672-29-6	Aroclor-1248	0.56	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-5S-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038011

Sample wt/vol: 1000. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D
PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JC-MW-5D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038010

Sample wt/vol: 950. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.53	U
11104-28-2	Aroclor-1221	0.53	U
11141-16-5	Aroclor-1232	0.53	U
53469-21-9	Aroclor-1242	0.53	U
12672-29-6	Aroclor-1248	0.53	U
11097-69-1	Aroclor-1254	1.1	U
11096-82-5	Aroclor-1260	1.1	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-6D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038003

Sample wt/vol: 975. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/30/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.51	U
11104-28-2	Aroclor-1221	0.51	U
11141-16-5	Aroclor-1232	0.51	U
53469-21-9	Aroclor-1242	0.51	U
12672-29-6	Aroclor-1248	0.51	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-PW2-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038005

Sample wt/vol: 1000. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

0090 B000054

EPA SAMPLE NO.

DRILL-1

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 1932 SAS No.: _____ SDG No.: Z1932

Matrix: (soil/water) WATER Lab Sample ID: 1932002

Sample wt/vol: 1000. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/04/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/08/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 10/12/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PCB ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-DW-2

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: _____ SDG No.: Z2038

Matrix: (soil/water) WATER Lab Sample ID: 2038007

Sample wt/vol: 1000. (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 10/24/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 10/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 11/02/91

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO

JC —MW-1S-(

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No. Z2038

Matrix (soil/water): WATER Lab Sample ID: 2[illegible]3801

Level (low/med): LOW Date Received: 1[illegible] '24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	611			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	50.0	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	52900			P
7440-47-3	Chromium	5.5	B	N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	935		N	P
7439-92-1	Lead	1.0	U	W	F
7439-95-4	Magnesium	9870			P
7439-96-5	Manganese	22.3			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.0	U	E	P
7440-09-7	Potassium	721	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	3130[illegible]			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	16.4	B		P
	Cyanide	11.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-1D-5

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z203E

Matrix (soil/water): WATER Lab Sample ID: 203802

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	106	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	18.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.1	B		P
7440-70-2	Calcium	46500			P
7440-47-3	Chromium	37.6		N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	374		N	P
7439-92-1	Lead	1.0	U		F
7439-95-4	Magnesium	7910			P
7439-96-5	Manganese	121			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	23.2	B	E	P
7440-09-7	Potassium	1950	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	12700			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	19.2	B		P
	Cyanide	11.8	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-2[illegible]

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z203[illegible]

Matrix (soil/water): WATER Lab Sample ID: 203808

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	206			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	2.3	B		F
7440-39-3	Barium	141	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	184		N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	1540		N	P
7439-92-1	Lead	1.9	B	W	F
7439-95-4	Magnesium	28800			P
7439-96-5	Manganese	731			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	136		E	P
7440-09-7	Potassium	2420	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	33600			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	9.8	B		P
7440-66-6	Zinc	28.0			P
	Cyanide	11.8	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-2S

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 22038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203809

Level (low/med): LOW Date Received: 10/24/9

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	372			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	107	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	182000			P
7440-47-3	Chromium	18.2		N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	795		N	P
7439-92-1	Lead	1.0	U		F
7439-95-4	Magnesium	28900			P
7439-96-5	Manganese	40.0			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	10.9	B	E	P
7440-09-7	Potassium	3910	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	47100			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	21.0			P
	Cyanide	11.8	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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U.S. EPA - CLP

038
EPA SAMPLE NO.

1
INORGANIC ANALYSIS DATA SHEET

JC-DW-2

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203807

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.0	U		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	52.9	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	90100			P
7440-47-3	Chromium	3.0	U	N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	30.7			P
7439-89-6	Iron	1120		N	P
7439-92-1	Lead	2.7	B	W	F
7439-95-4	Magnesium	14800			P
7439-96-5	Manganese	19.5			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.0	U	E	P
7440-09-7	Potassium	1970	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	27500			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	618			P
	Cyanide	11.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-3D-6

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203806

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	170	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	109	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	139000			P
7440-47-3	Chromium	781		N*	P
7440-48-4	Cobalt	7.0	B		P
7440-50-8	Copper	30.9			P
7439-89-6	Iron	3620		N	P
7439-92-1	Lead	1.2	B		F
7439-95-4	Magnesium	25600			P
7439-96-5	Manganese	86.6			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	378		E	P
7440-09-7	Potassium	2830	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	44000			P
7440-28-0	Thallium	2.0	U	NW	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	51.4			P
	Cyanide	12.5	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B-76

039

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-TXL-DW

Lab Name: IEA Contract:

Lab Code: Case No.: 2265 SAS No.: SDG No.: 22265 PAS 01/21/92

Matrix: (soil/water) WATER Lab Sample ID: 2265006

Sample wt/vol: .025 (g/mL) ML Lab File ID: >A9042

Level: (low/med) LOW Date Received: 12/11/91

% Moisture: not dec. Date Analyzed: 12/17/91

Column: (pack/cap) CAP Dilution Factor: 200

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC	Q
01.		UNKNOWN SILOXANE	9.20	38000 190	J
02.	107-46-0	DISILOXANE, HEXAMETHYL-	11.71	3400 17	J
03.					
04.					
05.					
06.					
07.					
08.					
09.					
10.					
11.					
12.					
13.					
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28.					
29.					
30.					

PAS 01/21/92

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-4S-GW

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203812

Level (low/med): LOW Date Received: 10/25/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	950			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	6.4	B		F
7440-39-3	Barium	75.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	44400			P
7440-47-3	Chromium	21.3		N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	5070		N	P
7439-92-1	Lead	1.5	B	W	F
7439-95-4	Magnesium	5400			P
7439-96-5	Manganese	5350			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	28.6	B	E	P
7440-09-7	Potassium	2150	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	13300			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	19.9	B		P
	Cyanide	11.8	U		AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B000063

U.S. EPA - CLP

044

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-4D-GW

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203813

Level (low/med): LOW Date Received: 10/25/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	50.1	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	47.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	33000			P
7440-47-3	Chromium	9.6	B	N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	191		N	P
7439-92-1	Lead	1.0	U	W	F
7439-95-4	Magnesium	4360	B		P
7439-96-5	Manganese	4490			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	11.3	B	E	P
7440-09-7	Potassium	2350	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	16700			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	21.6			P
	Cyanide	11.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

B000064

SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-SS-6

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203811

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2520			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.9	B		F
7440-39-3	Barium	110	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	129000			P
7440-47-3	Chromium	50.1		N*	P
7440-48-4	Cobalt	4.0	B		P
7440-50-8	Copper	9.4	B		P
7439-89-6	Iron	6140		N	P
7439-92-1	Lead	3.3	B		F
7439-95-4	Magnesium	25200			P
7439-96-5	Manganese	221			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	35.6	B	E	P
7440-09-7	Potassium	4110	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	46200			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	37.1			P
	Cyanide	11.8	U		AS

Color Before: GRAY Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

B 000065

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-5D-GW

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203810

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	139	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	47.1	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	80200			P
7440-47-3	Chromium	100		N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	797		N	P
7439-92-1	Lead	1.3	B	W	F
7439-95-4	Magnesium	18100			P
7439-96-5	Manganese	359			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	76.6		E	P
7440-09-7	Potassium	3970	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	34000			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	26.2			P
	Cyanide	42.3			AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B000066 034

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-6D-GW

Lab Name: IEA Contract: _____

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203803

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	90.1	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	52.9	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	40400			P
7440-47-3	Chromium	98.4		N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	639		N	P
7439-92-1	Lead	1.0	U	W	F
7439-95-4	Magnesium	7480			P
7439-96-5	Manganese	167			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	47.7		E	P
7440-09-7	Potassium	887	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	40.7			P
	Cyanide	10.5	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B000067

U.S. EPA - CLP

035
EPA SAMPLE NO

1
INORGANIC ANALYSIS DATA SHEET

III-MW-6D-DU1

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: Z2038

Matrix (soil/water): WATER Lab Sample ID: 203804

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	101	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	53.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	42000			P
7440-47-3	Chromium	116		N+	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	755		N	P
7439-92-1	Lead	1.0	U	W	F
7439-95-4	Magnesium	7780			P
7439-96-5	Manganese	171			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	58.3		E	P
7440-09-7	Potassium	838	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	10900			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	46.2			P
	Cyanide	11.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-PWI-3W

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2038 SAS No.: SDG No.: [illegible]

Matrix (soil/water): WATER Lab Sample ID: 203[illegible]

Level (low/med): LOW Date Received: 10/24/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.0	U		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	51.8	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	88200			P
7440-47-3	Chromium	3.0	U	N*	P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	90.0	U	N	P
7439-92-1	Lead	1.0	U	W	F
7439-95-4	Magnesium	14600			P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.0	U	E	P
7440-09-7	Potassium	2100	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	27000			P
7440-28-0	Thallium	2.0	U	N	F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	15.2	B		P
	Cyanide	11.1	U		AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

30910-2265
URS CONSULTANTS
524.2 VOLATILE ORGANICS

All values are ug/L.

	Sample Identification				
Dilution Factor	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7733	>G7733	>G7733	>G7733	
Compound	Method Blank	JC-MW-1S-GW	JC-MW-4S-GW	JC-MW-2S-GW	Quantitation Limits with no Dilution
Dichlorodifluoromethane	U	U	U	U	1.0
Chloromethane	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	1.0
Bromomethane	U	U	U	U	1.0
Chloroethane	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	1.0
Methylene Chloride	2.6	U	U	U	1.0
1,1-Dichloroethene	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	1.0
1,1-Dichloroethane	U	U	U	U	1.0
2,2-Dichloropropane	U	U	U	U	1.0
cis-1,2-Dichloroethene	U	U	U	U ~~0.20J~~	1.0
Bromochloromethane	U	U	U	U	1.0
Chloroform	0.40J ~~0.30J~~	~~0.60JB~~ R	U	U	1.0
1,1,1-Trichloroethane	U	U	U	1.2	1.0
1,1-Dichloropropene	U	U	U	U	1.0
Carbon Tetrachloride	U	U	U	U	1.0
Benzene	U	U	U	0.60J	1.0
1,2-Dichloroethane	U	U	U	U	1.0
Trichloroethene	U	U	U	2.0	1.0
1,2-Dichloropropane	U	U	U	U	1.0
Dibromomethane	U	U	U	U	1.0
Bromodichloromethane	U	U	U	U	1.0
cis-1,3-Dichloropropene	U	U	U	U	1.0
Toluene	0.20J	U	~~0.20JB~~ R	U	1.0
trans-1,3-Dichloropropene	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	1.0
2-BUTANONE	U	U	U	U	10

1/24/92 PC

PAS 01/21/92

U, J, B - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

PAS 01/21/92

30910-2265
URS CONSULTANTS
524.2 VOLATILE ORGANICS

All values are ug/L.

	Sample Identification				
Dilution Factor	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7733	>G7733	>G7733	>G7733	
Compound	Method Blank	JC-MW-1S-GW	JC-MW-4S-GW	JC-MW-2S-GW	Quantitation Limits with no Dilution
Dibromochloromethane	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	1.0
Ethylbenzene	0.10J	U	~~0.10JB~~ R	U	1.0
meta and/or para-Xylene	0.20J	U	1/24/90 U	U	1.0
ortho-Xylene	U	U	AC U	U	1.0
Styrene	U	U	U	U	1.0
Bromoform	U	U	U	U	1.0
Isopropylbenzene	U	U	U	U	1.0
Bromobenzene	U	U	U	U	1.0
1,1,2,2-Tetrachloroethane	U	U	U	U	1.0
.,2,3-Trichloropropane	U	U	U	U	1.0
Propylbenzene	U	U	U	U	1.0
2-Chlorotoluene	U	U	U	U	1.0
4-Chlorotoluene	U	U	U	U	1.0
1,3,5-Trimethylbenzene	U	U	U	U	1.0
tert-Butylbenzene	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	U	U	U	1.0
sec-Butylbenzene	U	U	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	1.0
p-Isopropyltoluene	U	U	U	U	1.0
1,4-Dichlorobenzene	0.10J	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	1.0
Butylbenzene	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	U	U	1.0
Hexachlorobutadiene	U	U	U	U	1.0
Naphthalene	0.60J	U	U	U	1.0
1,2,3-Trichlorobenzene	0.30J	U	U	U	1.0
ACETONE	U	U	U	U	10

U, J, B - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

30910-2265
URS CONSULTANTS
524.2 VOLATILE ORGANICS

All values are ug/L.

	Sample Identification				
Dilution Factor	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7733	>G7733	>G7733	>G7733	
Compound	Method Blank	JC-MW-1D-GW	JC-MW-6D-GW	JC-MW-4D-GW	Quantitation Limits with no Dilution
Dichlorodifluoromethane	U	U	U	U	1.0
Chloromethane	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	1.0
Bromomethane	U	U	U	U	1.0
Chloroethane	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	1.0
Methylene Chloride	2.6	U	U	U	1.0
1,1-Dichloroethene	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	1.0
1,1-Dichloroethane	U	U	U	U	1.0
2,2-Dichloropropane	U	U	U	U	1.0
cis-1,2-Dichloroethene	U	U	U	U	1.0
Bromochloromethane	U	U	U	U	1.0
Chloroform	0.40J ~~0.30J~~	U	U	U	1.0
1,1,1-Trichloroethane	U	U	U	U	1.0
1,1-Dichloropropene	U	U	U	U	1.0
Carbon Tetrachloride	U	U	U	U	1.0
Benzene	U	0.10J	U	U	1.0
1,2-Dichloroethane	U	U	U	U	1.0
Trichloroethene	U	U	U	U	1.0
1,2-Dichloropropane	U	U	U	U	1.0
Dibromomethane	U	U	U	U	1.0
Bromodichloromethane	U	U	U	U	1.0
cis-1,3-Dichloropropene	U	U	U	U	1.0
Toluene	0.20J	U	U	~~0.50JB~~ R 1/24/92	1.0
trans-1,3-Dichloropropene	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	1.0
2-BUTANONE	✓	✓	✓	✓	10 Ø

U, J, B - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

PAS 01/21/92

30910-2265
URS CONSULTANTS
524.2 VOLATILE ORGANICS

All values are ug/L.

	Sample Identification				
Dilution Factor	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7733	>G7733	>G7733	>G7733	
Compound	Method Blank	JC-MW-1D-GW	JC-MW-6D-GW	JC-MW-4D-GW	Quantitation Limits with no Dilution
Dibromochloromethane	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	1.0
Ethylbenzene	0.10J	U	~~R 0.10JB~~	~~0.20JB~~ R	1.0
meta and/or para-Xylene	0.20J	U	~~R 0.20JB~~	~~0.30JB~~ ~~0.40JB~~ R	1.0
ortho-Xylene	U	U	0.20J	0.30J	1.0
Styrene	U	U	U	U	1.0
Bromoform	U	U	U	U	1.0
Isopropylbenzene	U	U	U	U	1.0
Bromobenzene	U	U	U	U	1.0
1,1,2,2-Tetrachloroethane	U	U	U	U	1.0
1,2,3-Trichloropropane	U	U	U	U	1.0
Propylbenzene	U	U	U	U	1.0
2-Chlorotoluene	U	U	U	U	1.0
4-Chlorotoluene	U	U	U	U	1.0
1,3,5-Trimethylbenzene	U	U	U	U	1.0
tert-Butylbenzene	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	U	0.30J	0.20J	1.0
sec-Butylbenzene	U	U	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	1.0
p-Isopropyltoluene	U	U	U	U	1.0
1,4-Dichlorobenzene	0.10J	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	1.0
Butylbenzene	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	U	U	1.0
Hexachlorobutadiene	U	U	U	U	1.0
Naphthalene	0.60J	U	U	U	1.0
1,2,3-Trichlorobenzene	0.30J	U	U	U	1.0
ACETONE	U	U	U	U	10.0

1/24/92 PC

U, J, B - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

PAS 01/21/92

B-73 099D

30910-2265
URS CONSULTANTS
524.2 VOLATILE ORGANICS

All values are ug/L.

	Sample Identification					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7695	>G7695	>G7695	>G7695	>G7695	
Compound	Method Blank	JC-MW-5S-GW	JC-MW-5D-GW	JC-MW-2D-GW	JC-MW-3D-GW	Quantitation Limits with no Dilution
Dichlorodifluoromethane	U	U	U	U	U	1.0
Chloromethane	U	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	U	1.0
Bromomethane	U	U	U	U	U	1.0
Chloroethane	U	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	U	1.0
Methylene Chloride	U	U	U	0.40J	U	1.0
1,1-Dichloroethene	U	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	U	1.0
1,1-Dichloroethane	U	U	1.0	U	U	1.0
2,2-Dichloropropane	U	U	U	U	U	1.0
cis-1,2-Dichloroethene	U	U	0.20J	1.9	0.90J	1.0
Bromochloromethane	U	U	U	U	U	1.0
Chloroform	U	U	U	U	U	1.0
1,1,1-Trichloroethane	U	13	12	U	7.1	1.0
1,1-Dichloropropene	U	U	U	U	U	1.0
Carbon Tetrachloride	U	U	U	U	U	1.0
Benzene	U	U	3.3	0.70J	1.3	1.0
1,2-Dichloroethane	U	U	U	U	U	1.0
Trichloroethene	U	0.90J	1.2	U	1.6	1.0
1,2-Dichloropropane	U	U	U	U	U	1.0
Dibromomethane	U	U	U	U	U	1.0
Bromodichloromethane	U	U	U	U	U	1.0
cis-1,3-Dichloropropene	U	U	U	U	U	1.0
Toluene	U	U	1.4	0.30J	0.20J	1.0
trans-1,3-Dichloropropene	U	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	U	1.0
2-BUTANONE	U	U	U	U	U	10

U, J - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

30910-2265
URS CONSULTANTS
524.2 VOLATILE ORGANICS

All values are ug/L.

	Sample Identification					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7695	>G7695	>G7695	>G7695	>G7695	
Compound	Method Blank	JC-MW-5S-GW	JC-MW-5D-GW	JC-MW-2D-GW	JC-MW-3D-GW	Quantitation Limits with no Dilution
Dibromochloromethane	U	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	U	1.0
Ethylbenzene	U	U	0.20J	U	U	1.0
meta and/or para-Xylene	U	0.90J	1.0	0.90J	0.80J	1.0
ortho-Xylene	U	U	0.30J	U	U	1.0
Styrene	U	U	U	U	U	1.0
Bromoform	U	U	U	U	U	1.0
Isopropylbenzene	U	U	0.10J	U	U	1.0
Bromobenzene	U	U	U	U	U	1.0
1,1,2,2-Tetrachloroethane	U	U	U	U	U	1.0
1,2,3-Trichloropropane	U	U	U	U	U	1.0
Propylbenzene	U	U	0.20J	U	U	1.0
2-Chlorotoluene	U	U	U	U	U	1.0
4-Chlorotoluene	U	U	U	U	U	1.0
1,3,5-Trimethylbenzene	U	~~0.60J~~	~~0.70J~~	~~0.60J~~	U	1.0
tert-Butylbenzene	U	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	~~0.80J~~	0.90J	0.80J	U	1.0
sec-Butylbenzene	U	U	0.20J	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	U	1.0
p-Isopropyltoluene	U	U	0.80J	U	U	1.0
1,4-Dichlorobenzene	U	U	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	U	1.0
Butylbenzene	U	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	0.20J	U	U	1.0
Hexachlorobutadiene	U	U	U	U	U	1.0
Naphthalene	U	U	0.80J	U	U	1.0
1,2,3-Trichlorobenzene	U	U	U	U	U	1.0
ACETONE	U	U	U	U	U	10

U, J - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

RBS 01/21/92

B-75

038

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-TXL-DW

DAS 01/21/92

.b Name: IEA Contract:

Lab Code: Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix: (soil/water) WATER Lab Sample ID: 2265006

Sample wt/vol: .025 (g/mL) ML Lab File ID: >A9042

Level: (low/med) LOW Date Received: 12/11/91

% Moisture: not dec. Date Analyzed: 12/17/91

Column: (pack/cap) CAP Dilution Factor: 200

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	2000.000	U
74-83-9	Bromomethane	2000.000	U
75-01-4	Vinyl Chloride	2000.000	U
75-00-3	Chloroethane	2000.000	U
75-09-2	Methylene Chloride	1000.000	U
67-64-1	Acetone	36000.000	B
75-15-0	Carbon Disulfide	1000.000	U
75-35-4	1,1-Dichloroethene	1000.000	U
75-34-3	1,1-Dichloroethane	1000.000	U
540-59-0	1,2-Dichloroethene (total)	1000.000	U
67-66-3	Chloroform	1000.000	U
107-06-2	1,2-Dichloroethane	1000.000	U
78-93-3	2-Butanone	2100.000	
71-55-6	1,1,1-Trichloroethane	1000.000	U
56-23-5	Carbon Tetrachloride	1000.000	U
108-05-4	Vinyl Acetate	2000.000	U
75-27-4	Bromodichloromethane	1000.000	U
78-87-5	1,2-Dichloropropane	1000.000	U
10061-01-5	cis-1,3-Dichloropropene	1000.000	U
79-01-6	Trichloroethene	1000.000	U
124-48-1	Dibromochloromethane	1000.000	U
79-00-5	1,1,2-Trichloroethane	1000.000	U
71-43-2	Benzene	1000.000	U
10061-02-6	trans-1,3-Dichloropropene	1000.000	U
75-25-2	Bromoform	1000.000	U
108-10-1	4-Methyl-2-Pentanone	2000.000	U
591-78-6	2-Hexanone	2000.000	U
127-18-4	Tetrachloroethene	1000.000	U
79-34-5	1,1,2,2-Tetrachloroethane	1000.000	U
108-88-3	Toluene	3800.000	
108-90-7	Chlorobenzene	1000.000	U
100-41-4	Ethylbenzene	1000.000	U
100-42-5	Styrene	1000.000	U
1330-20-7	Xylene (total)	450.000	J

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-1S-GW

Lab Name: IEA Contract:

D.F.Galt 12/30/91

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226507

Level (low/med): LOW Date Received: 12/12/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5310			P	
7440-36-0	Antimony	28.8	B		P	
7440-38-2	Arsenic	2.0	B		F	
7440-39-3	Barium	62.2	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	2.0	U		P	
7440-70-2	Calcium	34800			P	
7440-47-3	Chromium	360			P	
7440-48-4	Cobalt	5.7	B		P	
7440-50-8	Copper	34.2			P	
7439-89-6	Iron	10600			P	
7439-92-1	Lead	5.3			F	
7439-95-4	Magnesium	9200			P	
7439-96-5	Manganese	186			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	164			P	
7440-09-7	Potassium	1580	B		P	
7782-49-2	Selenium	2.0	U		F	
7440-22-4	Silver	3.0	U		P	
7440-23-5	Sodium	49400		E	P	
7440-28-0	Thallium	1.0	U		F	
7440-62-2	Vanadium	11.1	B		P	
7440-66-6	Zinc	39.1			P	
	Cyanide	10.0	U		~~NR~~	AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B000078

262

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-1D-GW

D.F calc 12/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226508

Level (low/med): LOW Date Received: 12/12/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	52.1	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	17.3	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	43800			P
7440-47-3	Chromium	6.9	B		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	156			P
7439-92-1	Lead	1.0	U		F
7439-95-4	Magnesium	7290			P
7439-96-5	Manganese	174			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.0	U		P
7440-09-7	Potassium	1220	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	10200		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	2.8	B		P
	Cyanide	10.0	U		NR AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-2S-GW

D.F. 08 9/3/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226503

Level (low/med): LOW Date Received: 12/11/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration (p 360)	C	Q	M
7429-90-5	Aluminum	5110			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	3.9	B		F
7440-39-3	Barium	145	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	117000			P
7440-47-3	Chromium	682			P
7440-48-4	Cobalt	10.4	B		P
7440-50-8	Copper	46.8			P
7439-89-6	Iron	13100			P
7439-92-1	Lead	8.3			F
7439-95-4	Magnesium	20200			P
7439-96-5	Manganese	558			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	402			P
7440-09-7	Potassium	4110	B		P
7782-49-2	Selenium	2.0	U	W	F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	23600		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	11.6	B		P
7440-66-6	Zinc	51.5			P
	Cyanide	10.0	U		~~NR~~ AS

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-2D-GW

D.F. 12/31/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226504

Level (low/med): LOW Date Received: 12/11/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	281			P
7440-36-0	Antimony	31.9	B		P
7440-38-2	Arsenic	1.9	B		F
7440-39-3	Barium	147	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	120000			P
7440-47-3	Chromium	250			P
7440-48-4	Cobalt	5.1	B		P
7440-50-8	Copper	9.5	B		P
7439-89-6	Iron	1800			P
7439-92-1	Lead	2.4	B		F
7439-95-4	Magnesium	28800			P
7439-96-5	Manganese	771			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	182			P
7440-09-7	Potassium	2970	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	34200		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	10.5	B		P
	Cyanide	10.0	U		NR AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-3D-SW

D.F. 10 4/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226505

Level (low/med): LOW Date Received: 12/11/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	51.7	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	111	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	134000			P
7440-47-3	Chromium	99.6			P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	10.3	B		P
7439-89-6	Iron	674			P
7439-92-1	Lead	1.0	U		F
7439-95-4	Magnesium	25100			P
7439-96-5	Manganese	65.4			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	182			P
7440-09-7	Potassium	2420	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	41200		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	15.2	B		P
	Cyanide	10.0	U		~~NR~~ AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B 000082

265

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-4S-GW

D. Fath 1/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226511

Level (low/med): LOW Date Received: 12/12/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1850			P
7440-36-0	Antimony	21.2	B		P
7440-38-2	Arsenic	8.8	B		F
7440-39-3	Barium	68.6	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	34200			P
7440-47-3	Chromium	46.9			P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	11.0	B		P
7439-89-6	Iron	6300			P
7439-92-1	Lead	5.1			F
7439-95-4	Magnesium	4410	B		P
7439-96-5	Manganese	4610			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	35.6	B		P
7440-09-7	Potassium	1970	B		P
7782-49-2	Selenium	2.0	U	W	F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	15300		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	14.6	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B000083

261

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-4D-6W

J.F. 3/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226510

Level (low/med): LOW Date Received: 12/12/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.0	U		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	B		F
7440-39-3	Barium	55.0	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	33400			P
7440-47-3	Chromium	9.5	B		P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	6.2	B		P
7439-89-6	Iron	154			P
7439-92-1	Lead	1.0	U		F
7439-95-4	Magnesium	4470	B		P
7439-96-5	Manganese	4490			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	10.6	B		P
7440-09-7	Potassium	2720	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	15600		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	8.0	B		P
	Cyanide	10.0	W		NR AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

JC-MW-5S-GW

D. Fadl 12/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226501

Level (low/med): LOW Date Received: 12/11/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	234			P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	91.9	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.9	B		P
7440-70-2	Calcium	110000			P
7440-47-3	Chromium	81.5			P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	25.8			P
7439-89-6	Iron	879			P
7439-92-1	Lead	5.0			F
7439-95-4	Magnesium	20400			P
7439-96-5	Manganese	77.0			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	49.2			P
7440-09-7	Potassium	2570	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	37400		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	15.7	B		P
	Cyanide	10.0	U		~~NR~~AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-5D-GW

D. Fotis 12/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226502

Level (low/med): LOW Date Received: 12/11/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	75.4	B		P	
7440-36-0	Antimony	21.3	B		P	
7440-38-2	Arsenic	1.0	U		F	
7440-39-3	Barium	92.2	B		P	
7440-41-7	Beryllium	1.0	U		P	
7440-43-9	Cadmium	2.0	U		P	
7440-70-2	Calcium	110000			P	
7440-47-3	Chromium	77.6			P	
7440-48-4	Cobalt	4.0	U		P	
7440-50-8	Copper	7.9	B		P	
7439-89-6	Iron	1140			P	
7439-92-1	Lead	2.4	B		F	
7439-95-4	Magnesium	21100			P	
7439-96-5	Manganese	90.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	62.0			P	
7440-09-7	Potassium	3440	B		P	
7782-49-2	Selenium	2.0	U		F	
7440-22-4	Silver	3.0	U		P	
7440-23-5	Sodium	38500		E	P	
7440-28-0	Thallium	1.0	U		F	
7440-62-2	Vanadium	7.0	U		P	
7440-66-6	Zinc	9.2	B		P	
	Cyanide	10.0	U		~~NR~~	AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

JC-MW-6D-GW

DF.dat 12/30/91

Lab Name: IEA Contract:

Lab Code: IEA Case No.: 2265 SAS No.: SDG No.: Z2265

Matrix (soil/water): WATER Lab Sample ID: 226509

Level (low/med): LOW Date Received: 12/12/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.6	B		P
7440-36-0	Antimony	21.0	U		P
7440-38-2	Arsenic	1.0	U		F
7440-39-3	Barium	63.5	B		P
7440-41-7	Beryllium	1.0	U		P
7440-43-9	Cadmium	2.0	U		P
7440-70-2	Calcium	38200			P
7440-47-3	Chromium	31.3			P
7440-48-4	Cobalt	4.0	U		P
7440-50-8	Copper	4.3	B		P
7439-89-6	Iron	314			P
7439-92-1	Lead	1.5	B		F
7439-95-4	Magnesium	7110			P
7439-96-5	Manganese	172			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	19.8	B		P
7440-09-7	Potassium	799	B		P
7782-49-2	Selenium	2.0	U		F
7440-22-4	Silver	3.0	U		P
7440-23-5	Sodium	8920		E	P
7440-28-0	Thallium	1.0	U		F
7440-62-2	Vanadium	7.0	U		P
7440-66-6	Zinc	10.1	B		P
	Cyanide	10.0	U		NR AS

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

B-87

0031

30910-2320
URS CONSULTANTS
524.2 PLUS MISCELLANEOUS VOLATILE ORGANICS

Aqueous

All values are ug/L.

	Sample Identification					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7871	>G7871	>G7871	>G7871	>G7871	
Compound	Method Blank	JC#3 -24HR	JC#3 -48HR	JC#2 -72HR	JC#3 -72HR	Quantitation Limits with no Dilution
Dichlorodifluoromethane	U	U	U	U	U	1.0
Chloromethane	U	U	U	U	U	1.0
Vinyl Chloride	U	U	U	U	U	1.0
Bromomethane	U	U	U	U	U	1.0
Chloroethane	U	U	U	U	U	1.0
Trichlorofluoromethane	U	U	U	U	U	1.0
Methylene Chloride	1.3	U	U	U	U	1.0
1,1-Dichloroethene	U	U	U	U	U	1.0
trans-1,2-Dichloroethene	U	U	U	U	U	1.0
1,1-Dichloroethane	U	U	0.30J	U	U	1.0
2,2-Dichloropropane	U	U	U	U	U	1.0
's-1,2-Dichloroethene	U	0.20J	0.20J	U	0.20J	1.0
omochloromethane	U	U	U	U	U	1.0
Chloroform	U	U	U	U	U	1.0
1,1,1-Trichloroethane	U	11	13	2.6	15	1.0
1,1-Dichloropropene	U	U	U	U	U	1.0
Carbon Tetrachloride	U	U	U	U	U	1.0
Benzene	U	U	U	U	U	1.0
1,2-Dichloroethane	U	U	U	U	U	1.0
Trichloroethene	U	0.80J	0.70J	0.40J	0.70J	1.0
1,2-Dichloropropane	U	U	U	U	U	1.0
Dibromomethane	U	U	U	U	U	1.0
Bromodichloromethane	U	U	U	U	U	1.0
cis-1,3-Dichloropropene	U	U	U	U	U	1.0
Toluene	U	U	U	U	U	1.0
trans-1,3-Dichloropropene	U	U	U	U	U	1.0
1,1,2-Trichloroethane	U	U	U	U	U	1.0
Tetrachloroethene	U	U	U	U	U	1.0
1,3-Dichloropropane	U	U	U	U	U	1.0

U, J - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

30910-2320
URS CONSULTANTS
524.2 PLUS MISCELLANEOUS VOLATILE ORGANICS

All values are ug/L.

	Sample Identification					
Dilution Factor	1.0	1.0	1.0	1.0	1.0	
Method Blank I.D.	>G7871	>G7871	>G7871	>G7871	>G7871	
Compound	Method Blank	JC#3 -24HR	JC#3 -48HR	JC#2 -72HR	JC#3 -72HR	Quantitation Limits with no Dilution
Dibromochloromethane	U	U	U	U	U	1.0
1,2-Dibromoethane	U	U	U	U	U	1.0
Chlorobenzene	U	U	U	U	U	1.0
1,1,1,2-Tetrachloroethane	U	U	U	U	U	1.0
Ethylbenzene	U	U	U	U	U	1.0
meta and/or para-Xylene	0.90J	U	U	U	U	1.0
ortho-Xylene	U	U	U	U	U	1.0
Styrene	U	U	U	U	U	1.0
Bromoform	U	U	U	U	U	1.0
Isopropylbenzene	U	U	U	U	U	1.0
Bromobenzene	U	U	U	U	U	1.0
1,2,2-Tetrachloroethane	U	U	U	U	U	1.0
,2,3-Trichloropropane	U	U	U	U	U	1.0
Propylbenzene	U	U	U	U	U	1.0
2-Chlorotoluene	U	U	U	U	U	1.0
4-Chlorotoluene	U	U	U	U	U	1.0
1,3,5-Trimethylbenzene	U	U	U	U	U	1.0
tert-Butylbenzene	U	U	U	U	U	1.0
1,2,4-Trimethylbenzene	U	U	U	U	U	1.0
sec-Butylbenzene	U	U	U	U	U	1.0
1,3-Dichlorobenzene	U	U	U	U	U	1.0
p-Isopropyltoluene	U	U	U	U	U	1.0
1,4-Dichlorobenzene	U	U	U	U	U	1.0
1,2-Dichlorobenzene	U	U	U	U	U	1.0
Butylbenzene	U	U	U	U	U	1.0
1,2-Dibromo-3-chloropropane	U	U	U	U	U	1.0
1,2,4-Trichlorobenzene	U	U	U	U	U	1.0
Hexachlorobutadiene	U	U	U	U	U	1.0
Naphthalene	U	U	U	U	U	1.0
1,2,3-Trichlorobenzene	U	U	U	U	U	1.0
Acetone	U	U	U	U	U	1.0
2-Butanone	U	U	U	U	U	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	U	U	U	U	U	1.0

U, J - See Appendix for definition.
Note: Sample detection limit = quantitation limit x dilution factor.

APPENDIX C

INACTIVE HAZARDOUS WASTE DISPOSAL REPORTS

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT C000001

CLASSIFICATION CODE: 2 REGION: 7 SITE CODE: 704020
EPA ID: NY5570024641

NAME OF SITE : U.S. Air Force Plant No. 59
STREET ADDRESS: Main Street
TOWN/CITY: COUNTY: ZIP:
Johnson City Broome 13790

SITE TYPE: Open Dump- Structure-X Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: 40 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: General Electric Co., Inc.
CURRENT OWNER ADDRESS.: PO Box 5000, Binghamton, NY
OWNER(S) DURING USE...: U.S. Air Force
OPERATOR DURING USE...: US Air Force
OPERATOR ADDRESS.....: ,
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1942 To present

SITE DESCRIPTION:
An active industrial facility that manufactures systems for military and commercial aircraft. The current occupant is the General Electric Co. (under contract to USAF) The area of potential hazardous waste disposal is a plating building. The site is the subject of a U.S. Air Force Installation Restoration Program (IRP) investigation. Monitoring wells indicate levels of metals and volatile organics in groundwater in excess of NYS groundwater standards. Petroleum hydrocarbons have also been found above standards. Soil samples taken from beneath the plating building have revealed contamination by metals.

HAZARDOUS WASTE DISPOSED: Confirmed-X TYPE	Suspected- QUANTITY (units)
Metals (Cadmium, Arsenic, Lead, Chromium)	unknown
Chlorinated organics (1,1-Dichloroethane,	unknown
Trans 1,2-Dichloroethene, Trichloroethene,	unknown
1,1,1-Trichloroethane)	unknown

36

SITE CODE: 704020

ANALYTICAL DATA AVAILABLE:
Air- Surface Water- Groundwater-X Soil-X Sediment-

C 000002

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: Negotiation in Progress- Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-
NATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE: Sand and gravel, Clinton Street Ball Park Aquifer
GROUNDWATER DEPTH: Less than 20 feet

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Hazardous waste disposal has been confirmed at this site. The groundwater and soil has been contaminated at the site. The site is located over a sole source aquifer (Clinton St. Ball Park).

ASSESSMENT OF HEALTH PROBLEMS:

The likelihood of migration of known contaminants in groundwater is high. The plant is located over the sole source aquifer from which Johnson City draws its supply. However, no contamination in the wells has been detected by DOH monitoring. No private wells are known to be in the area. Because the site is securely fenced and most of the area is paved, the potential for exposure by air or soil is considered unlikely.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT C000003

CLASSIFICATION CODE: 2 REGION: 7 SITE CODE: 704002
EPA ID: NYD002232957

NAME OF SITE : Robintech Site
STREET ADDRESS: Commerce Road
TOWN/CITY: COUNTY: ZIP:
Vestal Broome 13850

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: 1 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: National Pipe Co.
CURRENT OWNER ADDRESS.: 3421 Vestal Rd., Vestal, NY
OWNER(S) DURING USE...: Robintech, Inc.
OPERATOR DURING USE...: Robintech, Inc.
OPERATOR ADDRESS.....: Commerce Road, Vestal, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1968 To 1974

SITE DESCRIPTION:
The Robintech facility is an open dump, approximately 1 acre in size, that is located on the property of the National Pipe Company. The site has been under ownership by different companies over the past few years. From September 1966 to 1970 it was Robinson Technical Products; from 1970 to late 1982 it was Robintech, Inc.; and from late 1982 to the present, the National Pipe Co. owned it. The facility manufactures PVC pipe from inert PVC resin, and assembles plastic coated cable. The open dump was used from '68 to '74 for disposing chromic acid plating solution, reverse plating etch, lathe and screw machine cutting oils and toluol. The old disposal area was a swamp which has nearly been filled with clean fill. Most of this filled area is blacktopped or gravel covered and is used as a storage yard for the PVC pipe.
A Phase I Investigation was completed in September of 1983. The site is listed on the National Priorities List (NPL). The EPA's consultant has found groundwater contamination of 1,1,1-trichloroethane, and arsenic. Subsurface soils have also been found to be contaminated with heavy metals, PAH's, cyanide, and arsenic. The USEPA is currently negotiating with the RP for remediation of the site. This is a Federal lead Responsible Party site. An RI/FS is currently underway. The draft Remedial Investigation report was received by the NYSDOH and the NYSDEC for review. Comments on the draft report were sent to the USEPA on February 26, 1991.

HAZARDOUS WASTE DISPOSED: TYPE	Confirmed-X QUANTITY (units)	Suspected-
Chromic acid plating waste	approx. 450 gallons	
Caustic etch	approx. 450 gallons	
Cutting oils	approx. 630 gallons	
Toluene	unknown	
Heavy metals	unknown	
PAHs	unknown	
Cyanide	unknown	
Arsenic	unknown	

SITE CODE: 704002 C000004

ANALYTICAL DATA AVAILABLE:
Air- Surface Water-X Groundwater-X Soil-X Sediment-X

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: Consent Order State- Federal- X
STATUS: Negotiation in Progress- Order Signed- X

REMEDIAL ACTION:

Proposed-X Under design- In Progress- Completed-
NATURE OF ACTION: RI-FS

GEOTECHNICAL INFORMATION:
SOIL TYPE: Glacial deposits; sand, silt and gravel.
GROUNDWATER DEPTH:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Soil, sediment and groundwater contamination is evidenced here. The town of Vestal wellfield is approximately .6 miles downstream.

ASSESSMENT OF HEALTH PROBLEMS:

The residences surrounding the site are supplied with public water. There are no known private water supplies. Three water supply wells for the municipality of Vestal are located approximately 1800 feet northwest of the site. Because of its proximity to public water supplywells, the potential groundwater impacts from this site must be fully investigated. Inhalation of contaminated soil particulates is a potential exposure route during site remedial activities. The dispersion of PVC dust from the fabrication of PVC products and storage of PVC in silos on-site is considered to be a nuisance dust rather than exposure to vinyl chloride monomer. A preliminary ATSDR health assessment was completed for this site in June 1989 and a final ATSDR health assessment is expected in November 1991.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT C000005

CLASSIFICATION CODE: 4 REGION: 7 SITE CODE: 704009B
EPA ID: NYD980652267

NAME OF SITE : Vestal Water Supply (Site 4-2)
STREET ADDRESS:
TOWN/CITY: COUNTY: ZIP:
Vestal Broome 13850

SITE TYPE: Open Dump- Structure-X Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Town of Vestal
CURRENT OWNER ADDRESS.: Vestal, NY
OWNER(S) DURING USE...: Town of Vestal
OPERATOR DURING USE...:
OPERATOR ADDRESS.....:
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From To

SITE DESCRIPTION:
A public water supply well that was contaminated by Monarch Chemicals. Well 4-2 was taken out of service because of contamination. A new well, 4-4 has since been installed. Enforcement action has been handled by the Attorney General's staff. In May of 1985, Monarch Chemical, Inc. agreed to pay $633,000 to the Town of Vestal to pay for the installation of a water treatment system at well 4-2. The treatment system consists of an air stripper. The air stripper was completed in September of 1988 and has brought contaminant levels down. Groundwater will be monitored by Jones Chemicals for four years after the levels of contaminants in the water are brought within limits outlined in the agreement. If the levels exceed standards during this period, treatment must again begin and the four year monitoring period will resume. The agreement also permits the Town of Vestal to reinstitute legal action if new sources of contamination are found or if new information about the known contamination is developed. This site has been accepted to the National Priorities List (NPL). It is also a Federal Superfund site.

The Town of Vestal has designed and installed an air stripper system followed by a carbon filtration system which was first put on line in September of 1988 and was formally dedicated in the spring of 1989. A comprehensive monitoring program for well 4-2 has been instituted and is ongoing.

	HAZARDOUS WASTE DISPOSED: TYPE	Confirmed-X	Suspected- QUANTITY (units)
16	1,1,1-trichloroethane (TCA)		unknown

SITE CODE: 704009B

ANALYTICAL DATA AVAILABLE:
Air- Surface Water- Groundwater-X Soil- Sediment-

C000006

CONTRAVENTION OF STANDARDS:
Groundwater- Drinking Water-X Surface Water- Air-

LEGAL ACTION:

TYPE..: A.G.-Consent Order State- X Federal-
STATUS: Negotiation in Progress- Order Signed- X

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-X
NATURE OF ACTION: Air-stripper

GEOTECHNICAL INFORMATION:
SOIL TYPE:
GROUNDWATER DEPTH:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Contamination of the groundwater has been confirmed. An air stripper is in place to help reduce the level of contaminants found in the water. A monitoring program is underway to insure the remediation is working properly.

ASSESSMENT OF HEALTH PROBLEMS:

Groundwater is the predominant contaminant pathway. The presence of chlorinated solvents in this supply leads to a concern for ingestion, inhalation and dermal contact with these substances. Other contaminant pathways have not been of issue at this location, since contamination stems from subsurface disposal of chlorinated solvents. Well 4-2 was taken out of service in 1980, however, a treatment system was installed in 1988 which effectively removes contamination and therefore any exposure.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT C000007

CLASSIFICATION CODE: 3 REGION: 7 SITE CODE: 704003
EPA ID: NYD010780146

NAME OF SITE : Monarch Chemical
STREET ADDRESS: Prentiss Road
TOWN/CITY: COUNTY: ZIP:
Vestal Broome 13850

SITE TYPE: Open Dump-X Structure- Lagoon- Landfill- Treatment Pond-
ESTIMATED SIZE: Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Monarch Chemical
CURRENT OWNER ADDRESS.: Glenmary Drive, Owego, NY
OWNER(S) DURING USE...: Monarch Chemical
OPERATOR DURING USE...: Monarch Chemical
OPERATOR ADDRESS.....: Prentiss Road, Vestal, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From 1971 To 1981

SITE DESCRIPTION:
From 1971 to 1981, Monarch Chemicals leased the site from Lee Knowles, Inc. as a center for the distribution of various chemicals. Due to poor housekeeping and handling proceedures, chemicals were spilled and discharged to the ground. This resulted in soil and groundwater contamination. The groundwater contamination subsequently impacted the Town of Vestal's water supply well 4-2 (Registry Site ID No. 704009B).

In 1985, Monarch Chemical paid a monetary sum to the Town whereby the Town agreed to implement necessary remedial actions at the site. The Town has since constructed an air stripper at well 4-2. The air stripper has minimized the impact of groundwater contamination from Monarch. In June of 1990, the Town took soil borings at the site. Analysis of the soil from the borings showed concentrations of tetrachloroethylene up to 13.9 ppm, and trichloroethene and 1,1,1-trichloroethene at significantly lower concentrations. The Town has agreed to perform further soil investigations at the site to define the extent of remaining contamination & determine the need for further remediation.

HAZARDOUS WASTE DISPOSED: TYPE	Confirmed-X QUANTITY (units)	Suspected-
Trichloroethylene (TCE)	unknown	
Tetrachloroethylene	unknown	

SITE CODE: 704003

ANALYTICAL DATA AVAILABLE:
Air- Surface Water- Groundwater-X Soil-X Sediment-

C000008

CONTRAVENTION OF STANDARDS:
Groundwater-X Drinking Water- Surface Water- Air-

LEGAL ACTION:

TYPE..: State- Federal-
STATUS: Negotiation in Progress- Order Signed-

REMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-X
NATURE OF ACTION: Air stripper constructed for the Town well.

GEOTECHNICAL INFORMATION:
SOIL TYPE:
GROUNDWATER DEPTH:

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

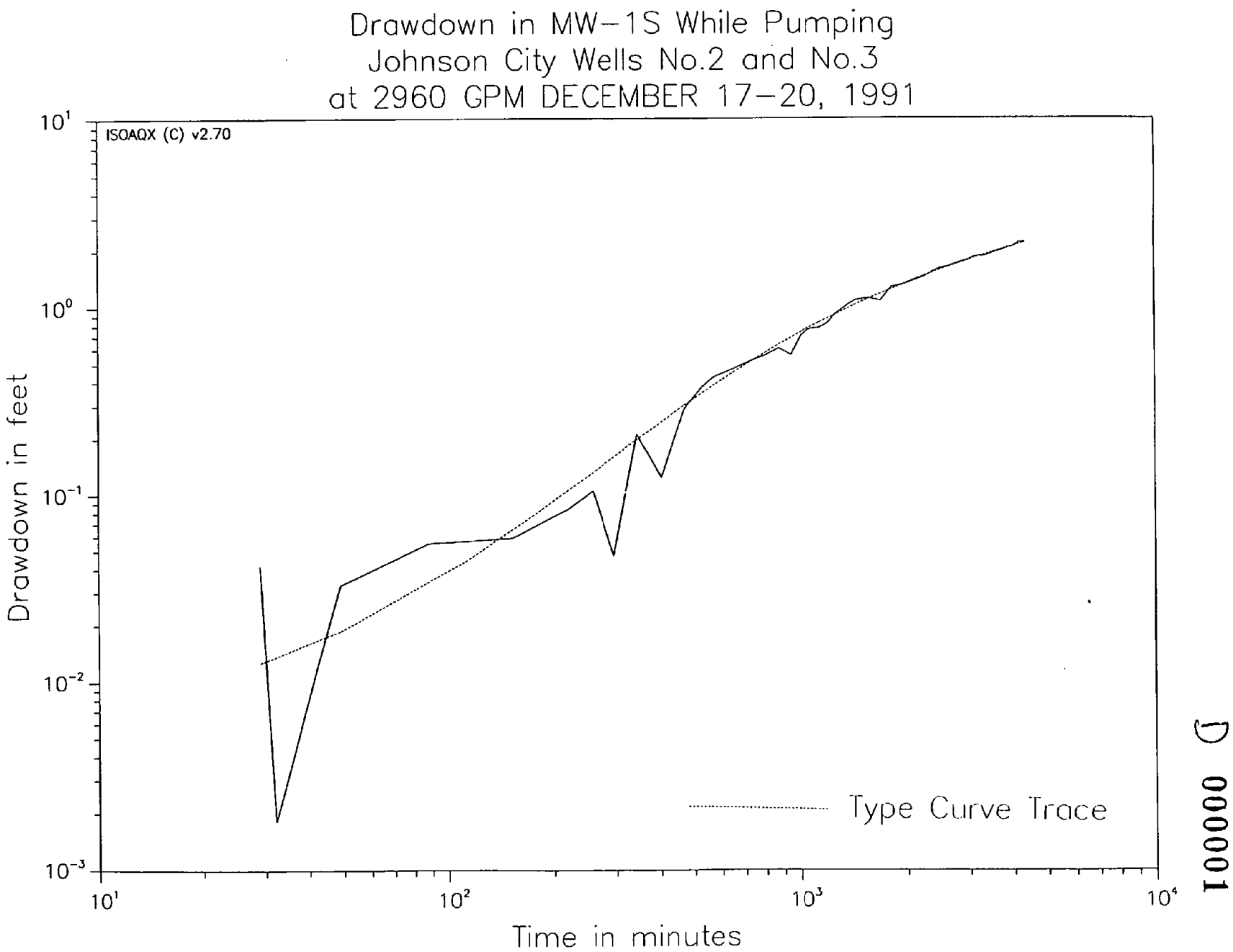
Groundwater & soil contamination has been confirmed at this site.

ASSESSMENT OF HEALTH PROBLEMS:

Contamination appears limited to subsurface soils and groundwater. Direct contact exposures would seem unlikely. Vestal well 4-2 is currently provided with a treatment system to remove contamination. Based on NYSDOH site inspection report, soil vapors (i.e. impacts to subsurface structural features) are not considered likely.

APPENDIX D

AQUIFER TEST


Drawdown in MW-1S While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW1S.DTT

Test No 1: r = 782.12 ft Q = 2960.00 gpm M = 81.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-1S

Time(min.)--Drawdown(ft) input data for test No 1

15.0,	0.001/	17.0,	-0.009/	29.0,	0.042/	32.0,	0.002/
49.0,	0.033/	88.0,	0.055/	112.0,	0.056/	153.0,	0.059/
184.0,	0.070/	218.0,	0.082/	258.0,	0.105/	296.0,	0.047/
345.0,	0.210/	404.0,	0.123/	472.0,	0.287/	527.0,	0.370/
571.0,	0.423/	650.0,	0.467/	725.0,	0.511/	785.0,	0.545/
875.0,	0.600/	945.0,	0.554/	1013.0,	0.708/	1070.0,	0.761/
1141.0,	0.775/	1199.0,	0.818/	1258.0,	0.912/	1322.0,	0.975/
1376.0,	1.028/	1439.0,	1.082/	1562.0,	1.109/	1690.0,	1.076/
1815.0,	1.273/	1947.0,	1.301/	2086.0,	1.369/	2250.0,	1.448/
2372.0,	1.525/	2485.0,	1.592/	2595.0,	1.618/	2712.0,	1.665/
2834.0,	1.722/	2984.0,	1.770/	3132.0,	1.849/	3281.0,	1.837/
3444.0,	1.886/	3556.0,	1.943/	3749.0,	1.994/	3865.0,	2.050/
3983.0,	2.077/	4153.0,	2.187/	4310.0,	2.196/		

ISOAQX (C) v2.70 --- FILE MW1S.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting = 1.00E-03

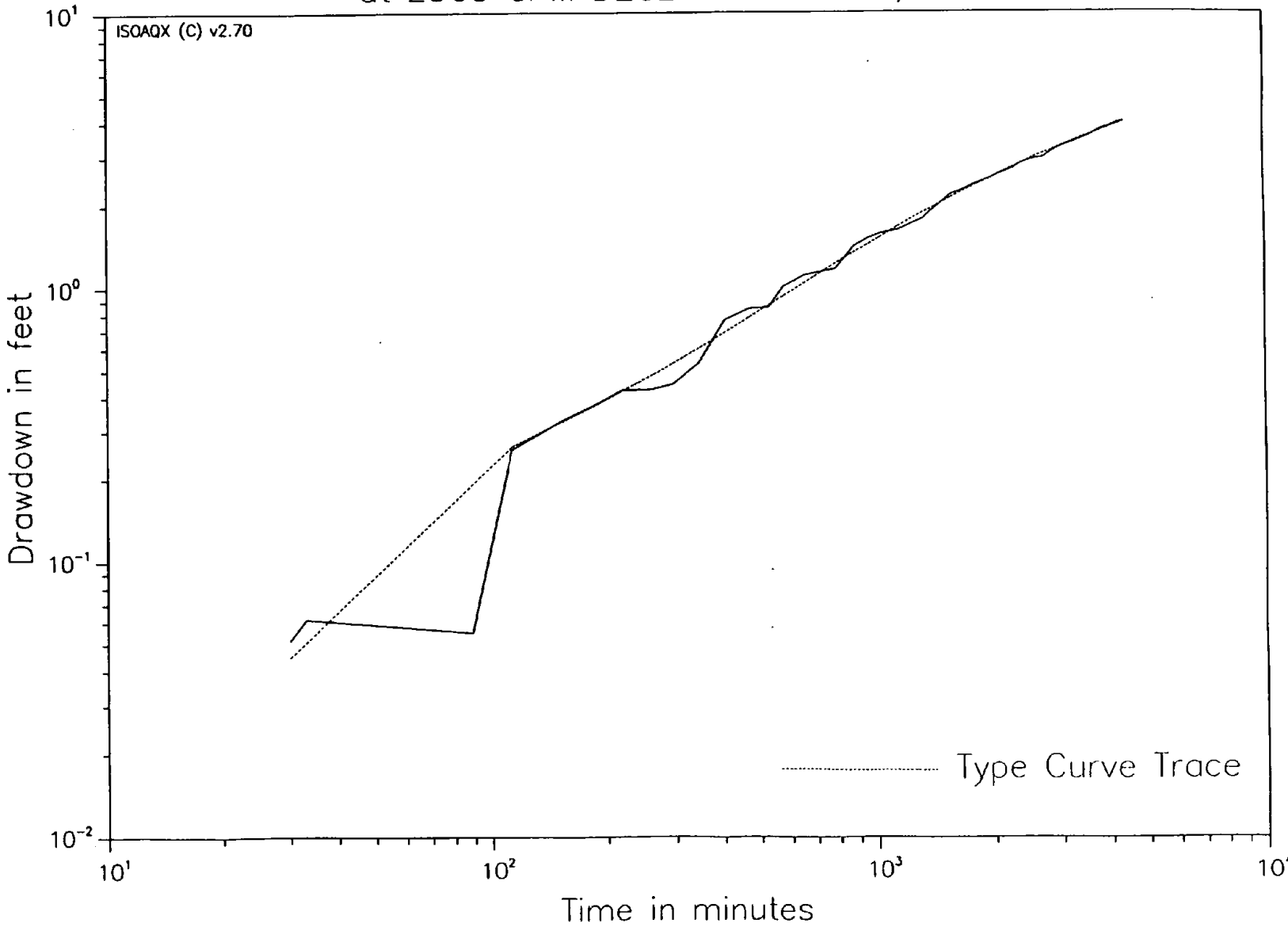
root mean squared error (ft) = 3.87E-02

hydraulic conductivity (ft/day) = 424.54

vertical hyd cond (ft/day) = 75.78

specific yield (dimensionless) = 8.29E-02

Drawdown in MW-1D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991



INPUT DATA

ISOAQX (C) v2.70 --- FILE MW1D.DTT

Test No 1: r = 789.36 ft Q = 2960.00 gpm M = 81.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-1D

Time(min.)--Drawdown(ft) input data for test No 1

14.0,	-0.009/	16.0,	-0.009/	30.0,	0.052/	33.0,	0.062/
50.0,	-0.137/	89.0,	0.055/	113.0,	0.256/	155.0,	0.329/
185.0,	0.371/	220.0,	0.423/	260.0,	0.425/	298.0,	0.447/
347.0,	0.530/	405.0,	0.763/	469.0,	0.837/	529.0,	0.850/
575.0,	1.003/	655.0,	1.107/	728.0,	1.141/	787.0,	1.165/
877.0,	1.410/	946.0,	1.504/	1014.0,	1.558/	1072.0,	1.591/
1140.0,	1.615/	1200.0,	1.668/	1260.0,	1.722/	1323.0,	1.775/
1378.0,	1.879/	1440.0,	1.982/	1565.0,	2.179/	1692.0,	2.266/
1812.0,	2.383/	1950.0,	2.471/	2088.0,	2.589/	2251.0,	2.698/
2373.0,	2.815/	2487.0,	2.892/	2597.0,	2.928/	2714.0,	2.965/
2836.0,	3.102/	2986.0,	3.230/	3134.0,	3.309/	3283.0,	3.387/
3446.0,	3.496/	3557.0,	3.553/	3750.0,	3.714/	3864.0,	3.770/
3984.0,	3.827/	4154.0,	3.937/	4313.0,	4.006/		

ISOAQX (C) v2.70 --- FILE MW1D.DTT

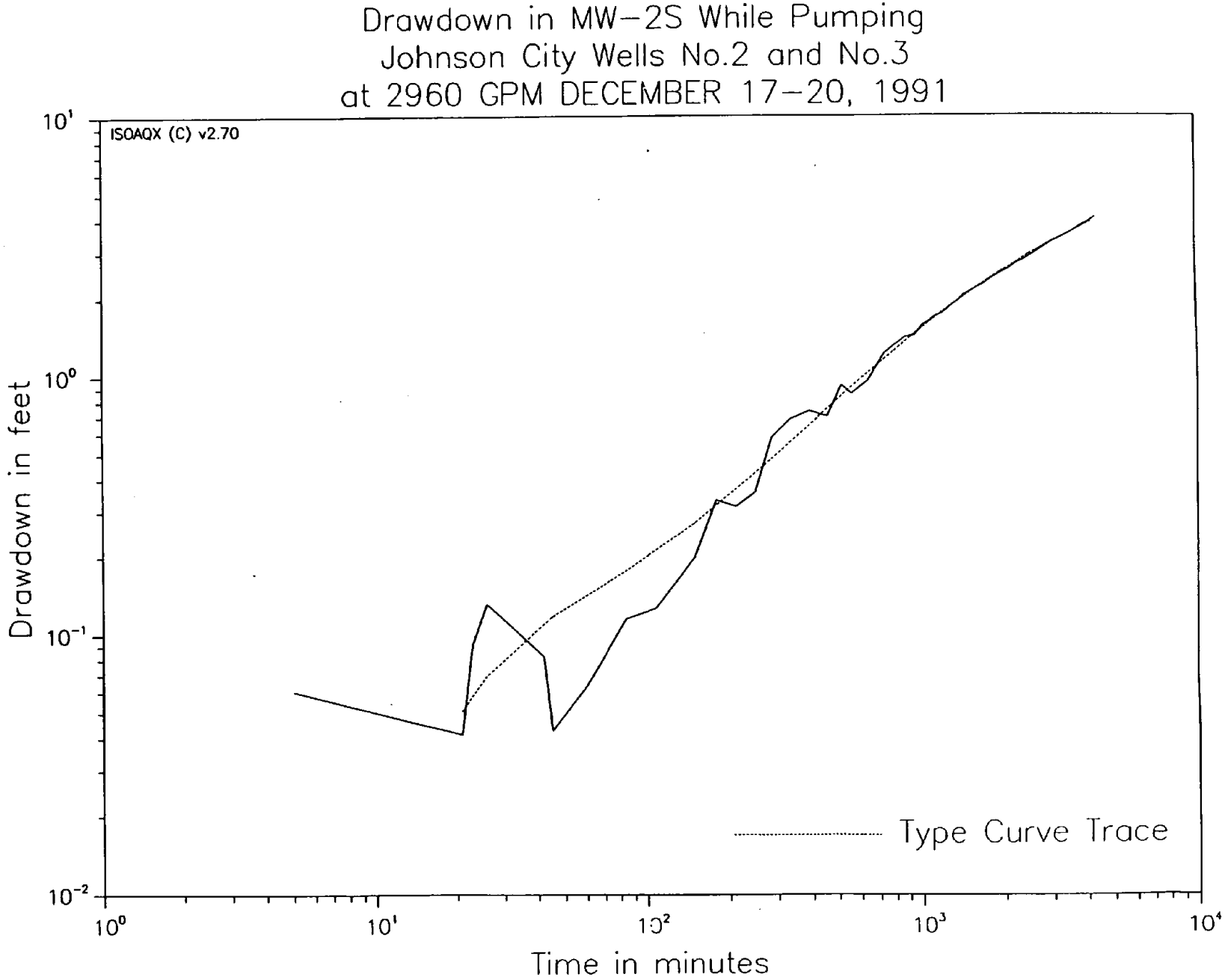
test # comb: 1

---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	4.79E-02
hydraulic conductivity (ft/day)	=	250.58
vertical hyd cond (ft/day)	=	4.22
specific yield (dimensionless)	=	3.15E-02
storativity (dimensionless)	=	1.18E-02


Drawdown in MW-2S While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{0}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW2S.DTT

Test No 1: r = 515.32 ft Q = 2960.00 gpm M = 68.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-2S

Time(min.)--Drawdown(ft) input data for test No 1

3.0,	-0.020/	5.0,	0.060/	8.0,	-0.010/	10.0,	-0.009/
21.0,	0.041/	23.0,	0.091/	26.0,	0.131/	42.0,	0.082/
45.0,	0.043/	60.0,	0.063/	84.0,	0.115/	108.0,	0.126/
150.0,	0.199/	181.0,	0.330/	214.0,	0.312/	250.0,	0.354/
287.0,	0.576/	337.0,	0.679/	394.0,	0.732/	459.0,	0.696/
520.0,	0.920/	564.0,	0.852/	644.0,	0.957/	735.0,	1.212/
793.0,	1.295/	880.0,	1.410/	952.0,	1.424/	1022.0,	1.568/
1078.0,	1.621/	1132.0,	1.695/	1195.0,	1.728/	1253.0,	1.801/
1314.0,	1.885/	1372.0,	1.938/	1435.0,	2.042/	1576.0,	2.150/
1698.0,	2.237/	1825.0,	2.374/	1955.0,	2.471/	2094.0,	2.569/
2240.0,	2.708/	2360.0,	2.765/	2478.0,	2.861/	2589.0,	2.938/
2705.0,	3.024/	2830.0,	3.121/	2990.0,	3.240/	3140.0,	3.339/
3301.0,	3.428/	3458.0,	3.507/	3563.0,	3.573/	3757.0,	3.724/
3869.0,	3.791/	3994.0,	3.838/	4160.0,	3.947/	4316.0,	4.046/

ISOAQX (C) v2.70 --- FILE MW2S.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

partial analysis: based on one point in 2

using closure tolerance setting = 1.00E-03

root mean squared error (ft) = 4.50E-02

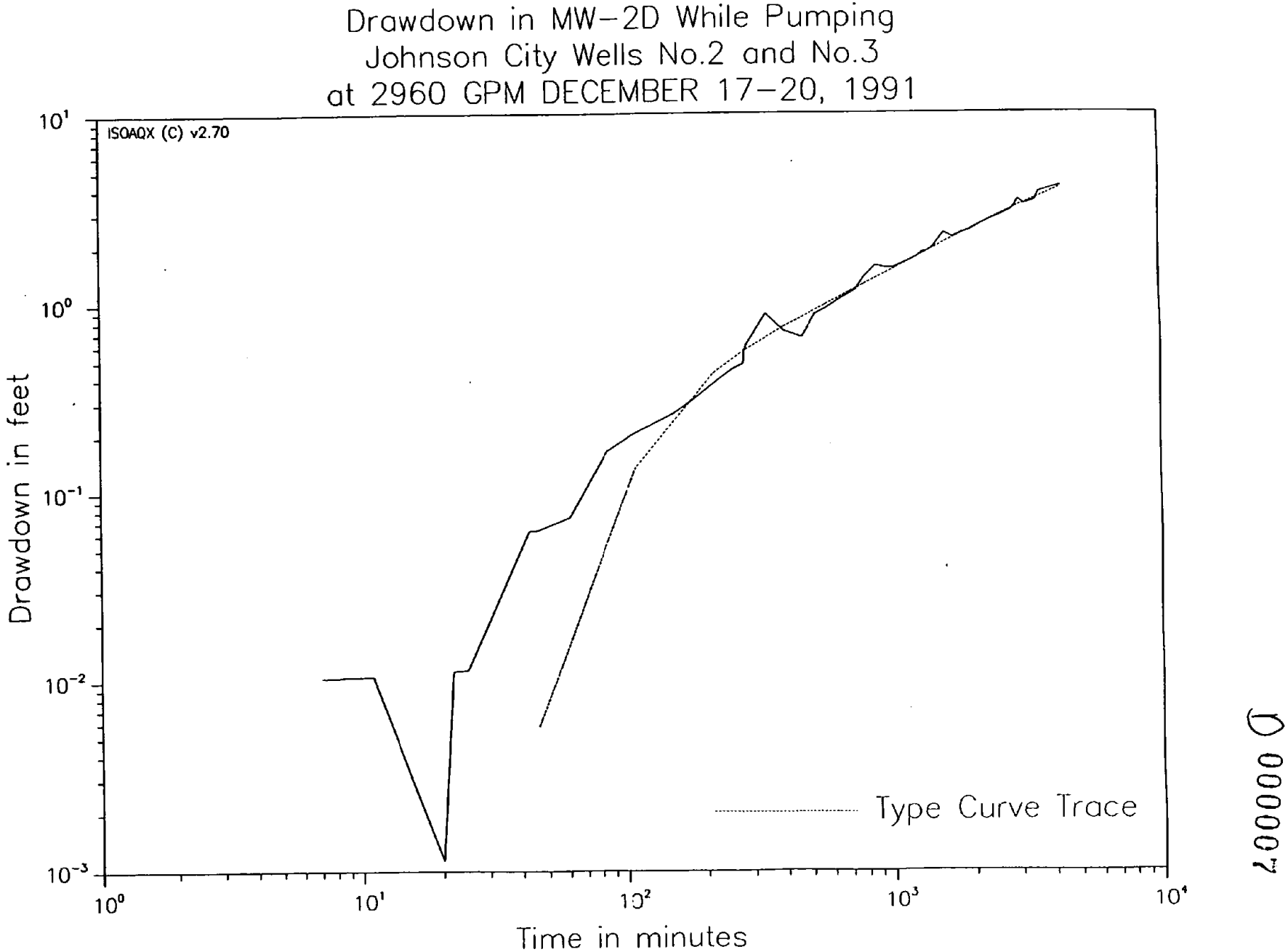
hydraulic conductivity (ft/day) = 288.53

vertical hyd cond (ft/day) = 5.31

specific yield (dimensionless) = 6.82E-02

storativity (dimensionless) = 3.25E-02

aqth: 68.00/TP: 35.00/BP: 68.00/TO: 5.00/BO: 31.00


Drawdown in MW-2D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{0}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

D 0000077

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW2D.DTT

Test No 1: r = 517.11 ft Q = 2960.00 gpm M = 67.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-2D

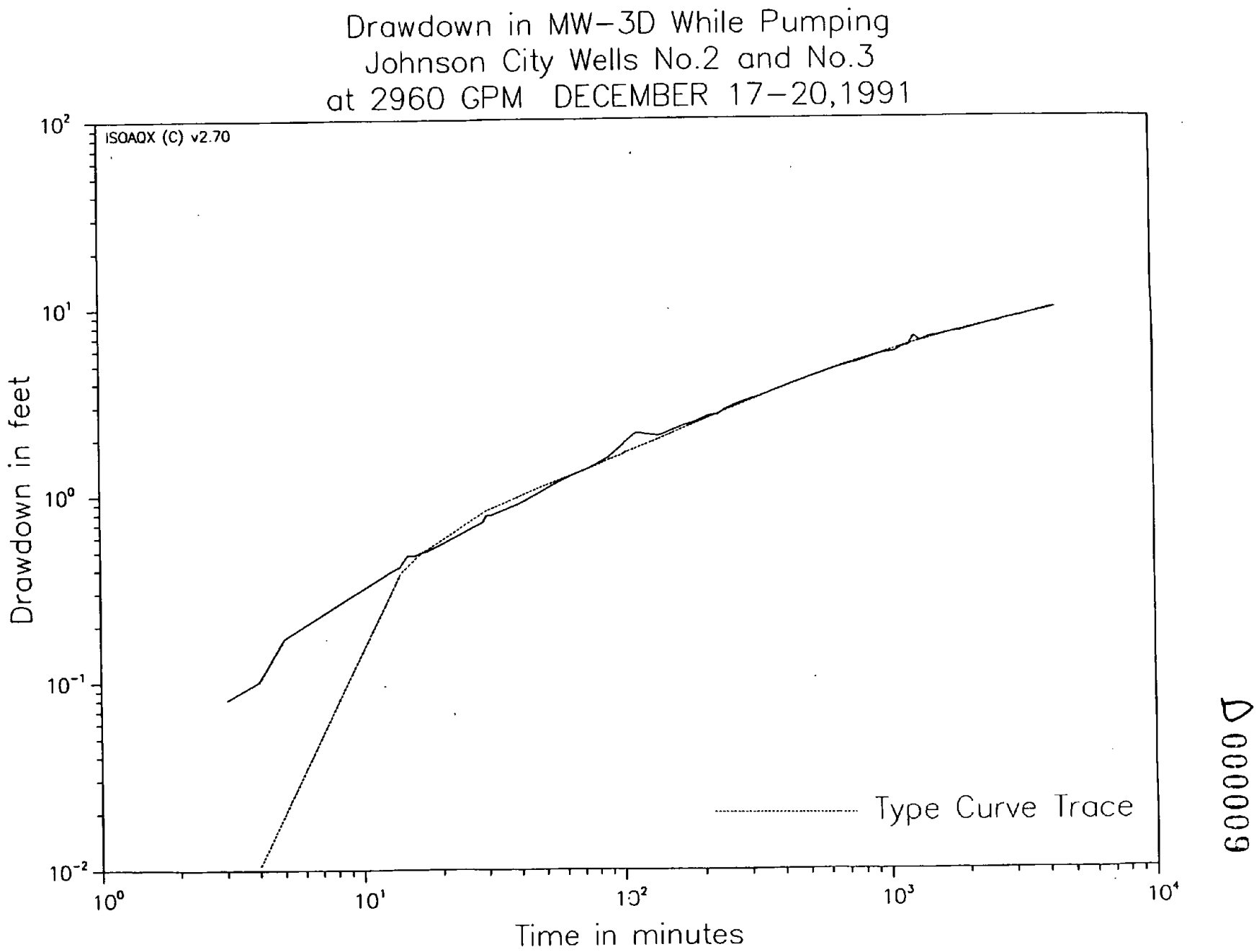
Time(min.)--Drawdown(ft) input data for test No 1

2.0,	0.000/	4.0,	-0.080/	7.0,	0.010/	9.0,	-0.109/
11.0,	0.011/	20.0,	0.001/	22.0,	0.011/	25.0,	0.011/
43.0,	0.062/	46.0,	0.063/	61.0,	0.073/	85.0,	0.165/
109.0,	0.206/	151.0,	0.259/	182.0,	0.310/	215.0,	0.372/
253.0,	0.444/	278.0,	0.476/	281.0,	0.556/	285.0,	0.596/
339.0,	0.879/	396.0,	0.713/	462.0,	0.656/	522.0,	0.870/
566.0,	0.922/	646.0,	1.037/	740.0,	1.152/	795.0,	1.345/
883.0,	1.560/	952.0,	1.514/	1023.0,	1.518/	1080.0,	1.572/
1135.0,	1.625/	1197.0,	1.678/	1255.0,	1.732/	1315.0,	1.835/
1373.0,	1.858/	1436.0,	1.942/	1578.0,	2.330/	1700.0,	2.207/
1827.0,	2.314/	1958.0,	2.382/	2097.0,	2.520/	2241.0,	2.638/
2358.0,	2.724/	2479.0,	2.801/	2590.0,	2.878/	2707.0,	2.964/
2831.0,	3.061/	2995.0,	3.481/	3141.0,	3.279/	3305.0,	3.348/
3454.0,	3.427/	3568.0,	3.793/	4317.0,	4.096/	4320.0,	4.096/

ISOAQX (C) v2.70 --- FILE MW2D.DTT

test # comb: 1

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:
partial analysis: based on one point in 2
using closure tolerance setting = 1.00E-03
root mean squared error (ft) = 8.93E-02
hydraulic conductivity (ft/day) = 277.33
vertical hyd cond (ft/day) = 11.20
specific yield (dimensionless) = 8.19E-02
storativity (dimensionless) = 3.41E-02
aqth: 67.00/TP: 35.00/BP: 67.00/TO: 34.90/BO: 60.70


Drawdown in MW-3D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991
ISOAQX (C) v2.70
Drawdown in feet
Time in minutes
Type Curve Trace
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{0}
10^{1}
10^{2}
10^{3}
10^{4}

INPUT DATA

ISOAQX (C) v2.70 --- FILE b:\test\mw3d.dt (modified)

Test No 1: r = 173.94 ft Q = 2960.00 gpm M = 74.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-3D

Time(min.)--Drawdown(ft) input data for test No 1

1.0,	0.000/	2.0,	0.000/	3.0,	0.080/	4.0,	0.100/
5.0,	0.170/	13.0,	0.391/	14.0,	0.411/	15.0,	0.471/
16.0,	0.471/	17.0,	0.491/	18.0,	0.501/	29.0,	0.712/
30.0,	0.772/	31.0,	0.772/	40.0,	0.892/	47.0,	1.003/
57.0,	1.173/	64.0,	1.264/	74.0,	1.374/	89.0,	1.575/
113.0,	2.116/	138.0,	2.038/	161.0,	2.229/	172.0,	2.310/
189.0,	2.401/	199.0,	2.491/	212.0,	2.602/	223.0,	2.623/
233.0,	2.633/	244.0,	2.794/	270.0,	2.995/	300.0,	3.167/
330.0,	3.289/	360.0,	3.451/	441.0,	3.865/	493.0,	4.088/
557.0,	4.332/	630.0,	4.586/	695.0,	4.790/	720.0,	4.871/
780.0,	5.024/	870.0,	5.300/	940.0,	5.504/	1010.0,	5.608/
1067.0,	5.671/	1150.0,	6.006/	1207.0,	6.059/	1267.0,	6.842/
1328.0,	6.446/	1383.0,	6.559/	1445.0,	6.792/	1556.0,	6.859/
1677.0,	7.036/	1805.0,	7.203/	1915.0,	7.259/	2075.0,	7.498/
2260.0,	7.719/	2375.0,	7.875/	2493.0,	8.032/	2610.0,	8.089/
2723.0,	8.265/	2841.0,	8.392/	2977.0,	8.490/	3126.0,	8.648/
3268.0,	8.736/	3437.0,	8.906/	3550.0,	9.002/	3744.0,	9.223/
3861.0,	9.340/	3980.0,	9.437/	4151.0,	9.567/	4310.0,	9.616/
4315.0,	9.626/	4320.0,	9.616/				

ISOAQX (C) v2.70 --- FILE b:\test\mw3d.dt (modified)

test # comb: 1

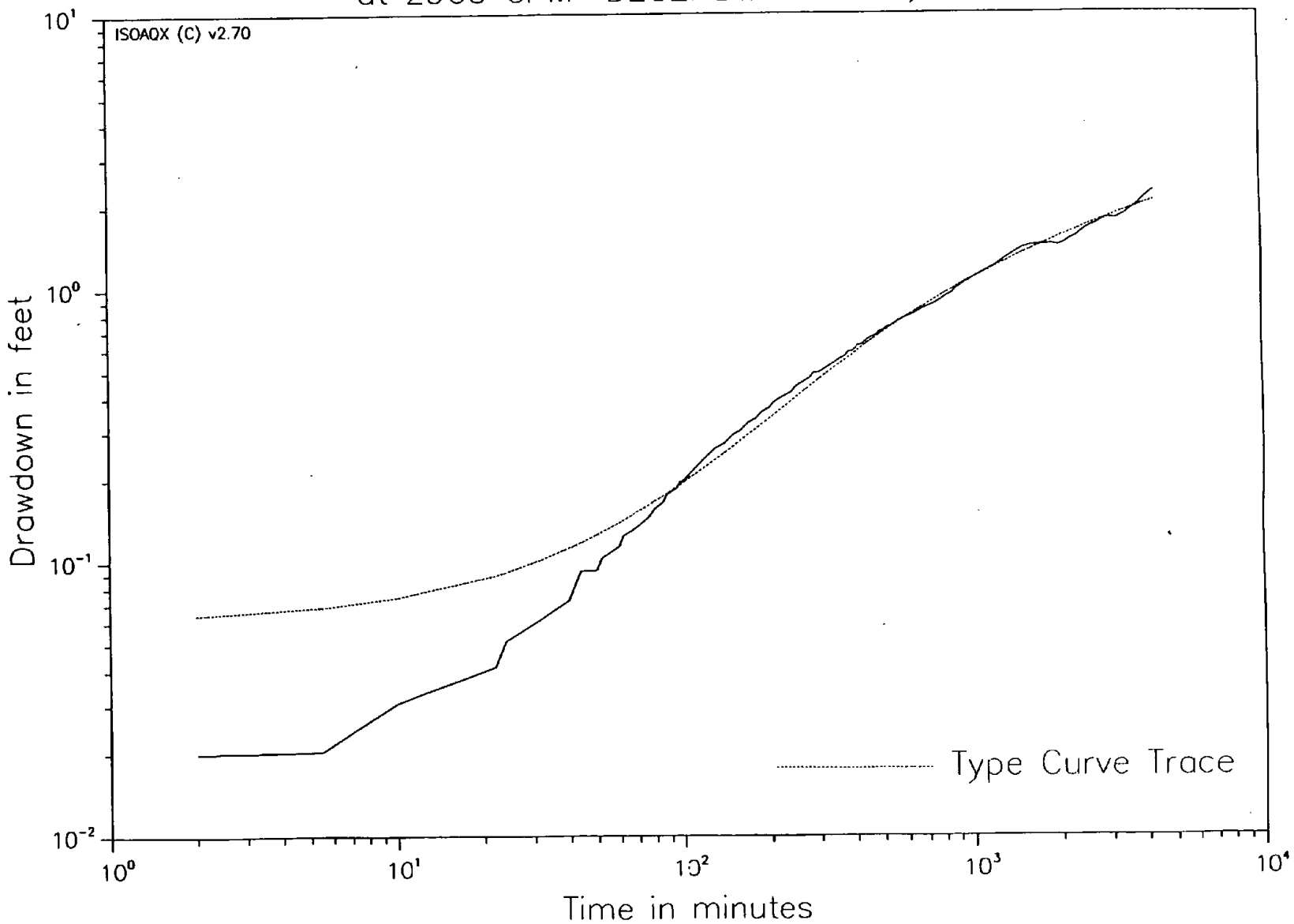
---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

partial analysis:	based on one point in	3
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	4.85E-02
hydraulic conductivity (ft/day)	=	244.29
vertical hyd cond (ft/day)	=	69.87
specific yield (dimensionless)	=	9.10E-02
storativity (dimensionless)	=	2.71E-02

aqth: 74.00/TP: 35.00/BP: 74.00/TO: 36.50/BO: 67.30

Drawdown in MW-4S While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991



D000011

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW4S.DTT

Test No 1: r = 1013.56 ft Q = 2960.00 gpm M = 63.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-4S

Time(min.)--Drawdown(ft) input data for test No 1

0.5,	0.000/	2.0,	0.020/	5.5,	0.020/	10.0,	0.031/
22.0,	0.041/	24.0,	0.051/	32.0,	0.062/	40.0,	0.072/
42.0,	0.082/	44.0,	0.093/	50.0,	0.093/	52.0,	0.103/
60.0,	0.113/	62.0,	0.124/	70.0,	0.134/	76.0,	0.144/
80.0,	0.155/	86.0,	0.165/	88.0,	0.175/	96.0,	0.185/
98.0,	0.196/	100.0,	0.196/	110.0,	0.216/	120.0,	0.237/
130.0,	0.257/	140.0,	0.268/	150.0,	0.289/	160.0,	0.299/
170.0,	0.320/	180.0,	0.330/	190.0,	0.351/	200.0,	0.361/
210.0,	0.382/	220.0,	0.393/	230.0,	0.403/	240.0,	0.414/
250.0,	0.434/	260.0,	0.445/	270.0,	0.455/	280.0,	0.466/
290.0,	0.487/	300.0,	0.487/	310.0,	0.498/	320.0,	0.508/
330.0,	0.519/	340.0,	0.529/	350.0,	0.540/	360.0,	0.551/
370.0,	0.561/	380.0,	0.582/	390.0,	0.582/	400.0,	0.593/
410.0,	0.613/	420.0,	0.614/	430.0,	0.625/	440.0,	0.635/
450.0,	0.646/	460.0,	0.656/	480.0,	0.667/	490.0,	0.688/
500.0,	0.689/	500.0,	0.689/	510.0,	0.699/	520.0,	0.710/
540.0,	0.721/	550.0,	0.731/	560.0,	0.742/	570.0,	0.752/
590.0,	0.764/	600.0,	0.774/	620.0,	0.785/	640.0,	0.796/
650.0,	0.807/	670.0,	0.818/	680.0,	0.829/	700.0,	0.840/
720.0,	0.851/	740.0,	0.862/	760.0,	0.873/	770.0,	0.884/
790.0,	0.895/	800.0,	0.906/	810.0,	0.916/	830.0,	0.927/
840.0,	0.938/	860.0,	0.949/	870.0,	0.960/	880.0,	0.970/
890.0,	0.981/	900.0,	0.991/	910.0,	1.002/	920.0,	1.002/
930.0,	1.013/	940.0,	1.024/	950.0,	1.034/	970.0,	1.045/
990.0,	1.056/	1000.0,	1.067/	1100.0,	1.133/	1200.0,	1.188/
1300.0,	1.264/	1400.0,	1.330/	1500.0,	1.385/	1600.0,	1.411/
1700.0,	1.427/	1800.0,	1.423/	1900.0,	1.428/	2000.0,	1.414/
2100.0,	1.450/	2200.0,	1.495/	2300.0,	1.531/	2400.0,	1.587/
2500.0,	1.633/	2600.0,	1.668/	2700.0,	1.694/	2800.0,	1.730/
2900.0,	1.765/	3000.0,	1.781/	3100.0,	1.767/	3200.0,	1.772/
3300.0,	1.808/	3400.0,	1.834/	3500.0,	1.880/	3600.0,	1.915/
3700.0,	1.961/	3800.0,	2.007/	3900.0,	2.052/	4000.0,	2.108/
4100.0,	2.154/	4200.0,	2.199/	4300.0,	2.235/		

ISOAQX (C) v2.70 --- FILE MW4S.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis: all active data points used

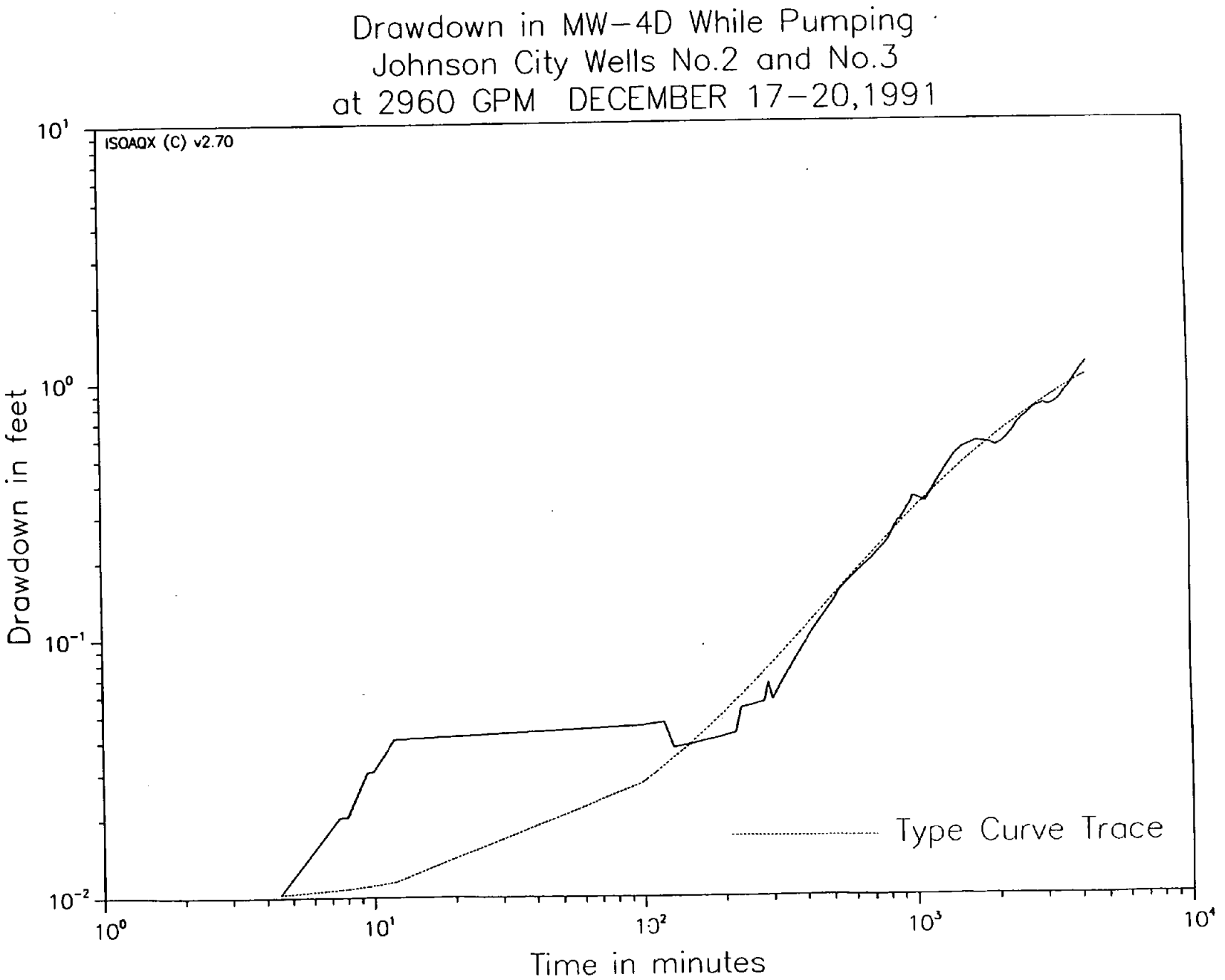
using closure tolerance setting = 1.00E-03

root mean squared error (ft) = 4.03E-02

hydraulic conductivity (ft/day) = 1002.98

vertical hyd cond (ft/day) = 10.90

specific yield (dimensionless) = 2.56E-02


Drawdown in MW-4D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991
ISOAQX (C) v2.70
Drawdown in feet
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{0}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

000013

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW4D.DTT

Test No 1: r = 1006.76 ft Q = 2960.00 gpm M = 63.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-4D

Time(min.)--Drawdown(ft) input data for test No 1

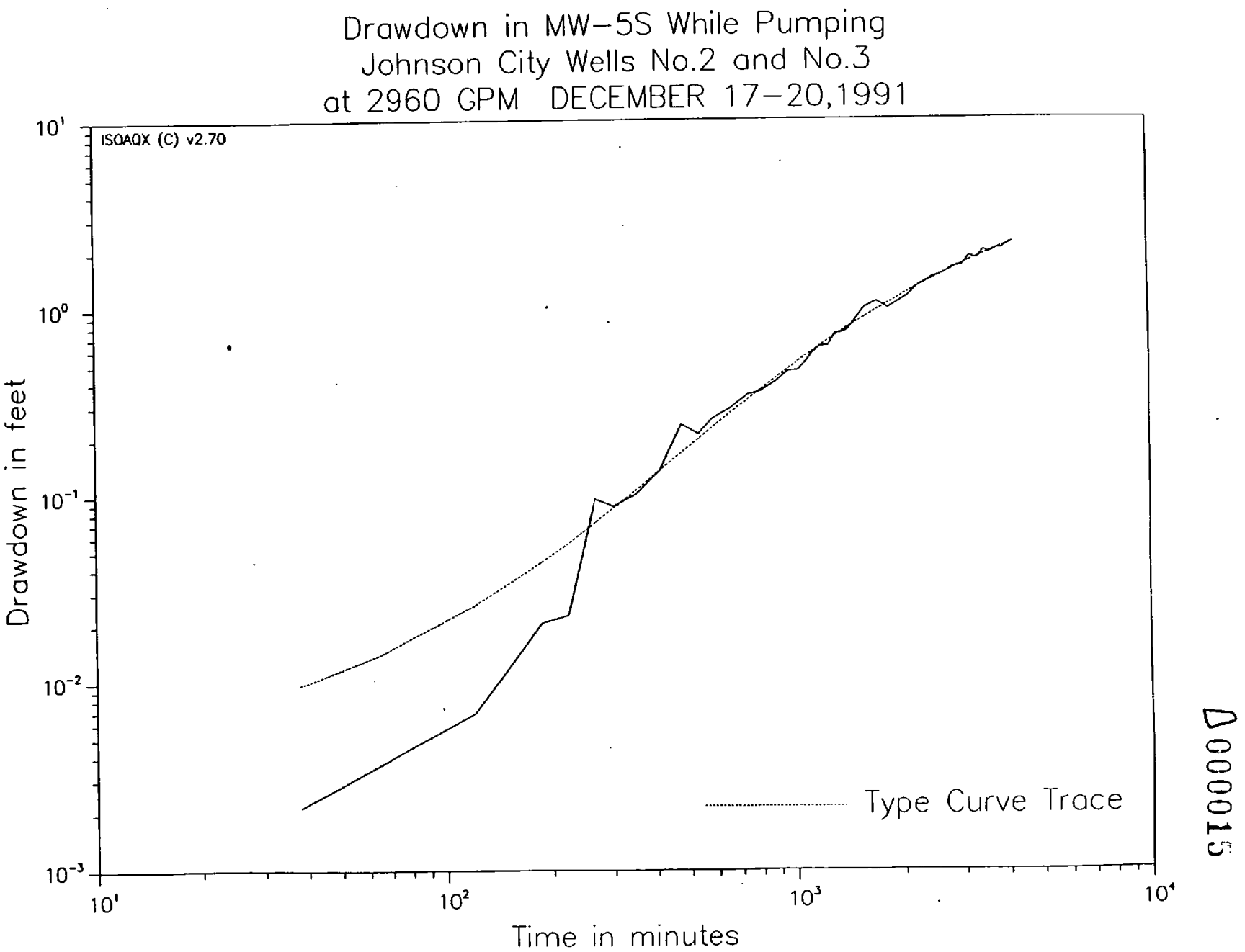
0.2,	0.000/	0.8,	0.000/	4.5,	0.010/	7.5,	0.020/
8.0,	0.020/	9.5,	0.031/	10.0,	0.031/	12.0,	0.041/
98.0,	0.046/	100.0,	0.046/	110.0,	0.046/	120.0,	0.047/
130.0,	0.037/	140.0,	0.038/	150.0,	0.039/	160.0,	0.039/
170.0,	0.040/	180.0,	0.040/	190.0,	0.041/	200.0,	0.041/
210.0,	0.042/	220.0,	0.043/	230.0,	0.053/	240.0,	0.054/
250.0,	0.054/	260.0,	0.055/	270.0,	0.055/	280.0,	0.056/
290.0,	0.067/	300.0,	0.057/	330.0,	0.069/	360.0,	0.081/
390.0,	0.092/	420.0,	0.104/	450.0,	0.116/	480.0,	0.127/
510.0,	0.139/	530.0,	0.150/	570.0,	0.162/	610.0,	0.175/
650.0,	0.187/	700.0,	0.200/	730.0,	0.212/	770.0,	0.224/
800.0,	0.236/	820.0,	0.247/	840.0,	0.258/	850.0,	0.268/
860.0,	0.269/	870.0,	0.280/	880.0,	0.280/	890.0,	0.281/
910.0,	0.292/	930.0,	0.303/	940.0,	0.314/	970.0,	0.325/
980.0,	0.336/	990.0,	0.346/	1000.0,	0.347/	1100.0,	0.333/
1200.0,	0.388/	1300.0,	0.444/	1400.0,	0.500/	1500.0,	0.535/
1600.0,	0.551/	1700.0,	0.567/	1800.0,	0.563/	1900.0,	0.558/
2000.0,	0.544/	2100.0,	0.560/	2200.0,	0.585/	2300.0,	0.621/
2400.0,	0.667/	2500.0,	0.692/	2600.0,	0.718/	2700.0,	0.744/
2800.0,	0.770/	2900.0,	0.775/	3000.0,	0.791/	3100.0,	0.777/
3200.0,	0.782/	3300.0,	0.798/	3400.0,	0.814/	3500.0,	0.850/
3600.0,	0.885/	3700.0,	0.911/	3800.0,	0.957/	3900.0,	0.992/
4000.0,	1.028/	4100.0,	1.074/	4200.0,	1.109/	4300.0,	1.145/

ISOAQX (C) v2.70 --- FILE MW4D.DTT

test # comb: 1

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	3.28E-02
hydraulic conductivity (ft/day)	=	1017.24
vertical hyd cond (ft/day)	=	29.22
specific yield (dimensionless)	=	1.18E-01


Drawdown in MW-5S While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991
ISOAQX (C) v2.70
Drawdown in feet
Time in minutes
Type Curve Trace

D000015

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW5S.DTT

Test No 1: r = 968.00 ft Q = 2960.00 gpm M = 75.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-5S

Time(min.)--Drawdown(ft) input data for test No 1

37.0,	-0.098/	38.0,	0.002/	40.0,	0.002/	65.0,	0.004/
80.0,	-0.005/	121.0,	0.007/	159.0,	-0.101/	188.0,	0.021/
223.0,	0.023/	268.0,	0.095/	304.0,	0.087/	351.0,	0.100/
413.0,	0.134/	479.0,	0.237/	534.0,	0.210/	585.0,	0.253/
660.0,	0.288/	740.0,	0.342/	802.0,	0.356/	887.0,	0.401/
960.0,	0.455/	1029.0,	0.459/	1084.0,	0.512/	1126.0,	0.564/
1187.0,	0.618/	1250.0,	0.621/	1311.0,	0.725/	1369.0,	0.728/
1422.0,	0.751/	1585.0,	0.990/	1710.0,	1.067/	1835.0,	0.985/
1968.0,	1.062/	2099.0,	1.140/	2235.0,	1.287/	2350.0,	1.354/
2473.0,	1.441/	2583.0,	1.467/	2699.0,	1.524/	2828.0,	1.631/
2999.0,	1.651/	3147.0,	1.849/	3315.0,	1.789/	3457.0,	1.997/
3576.0,	1.924/	3768.0,	2.015/	3884.0,	2.021/	4001.0,	2.098/
4170.0,	2.188/						

ISOAQX (C) v2.70 --- FILE MW5S.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting = 1.00E-03

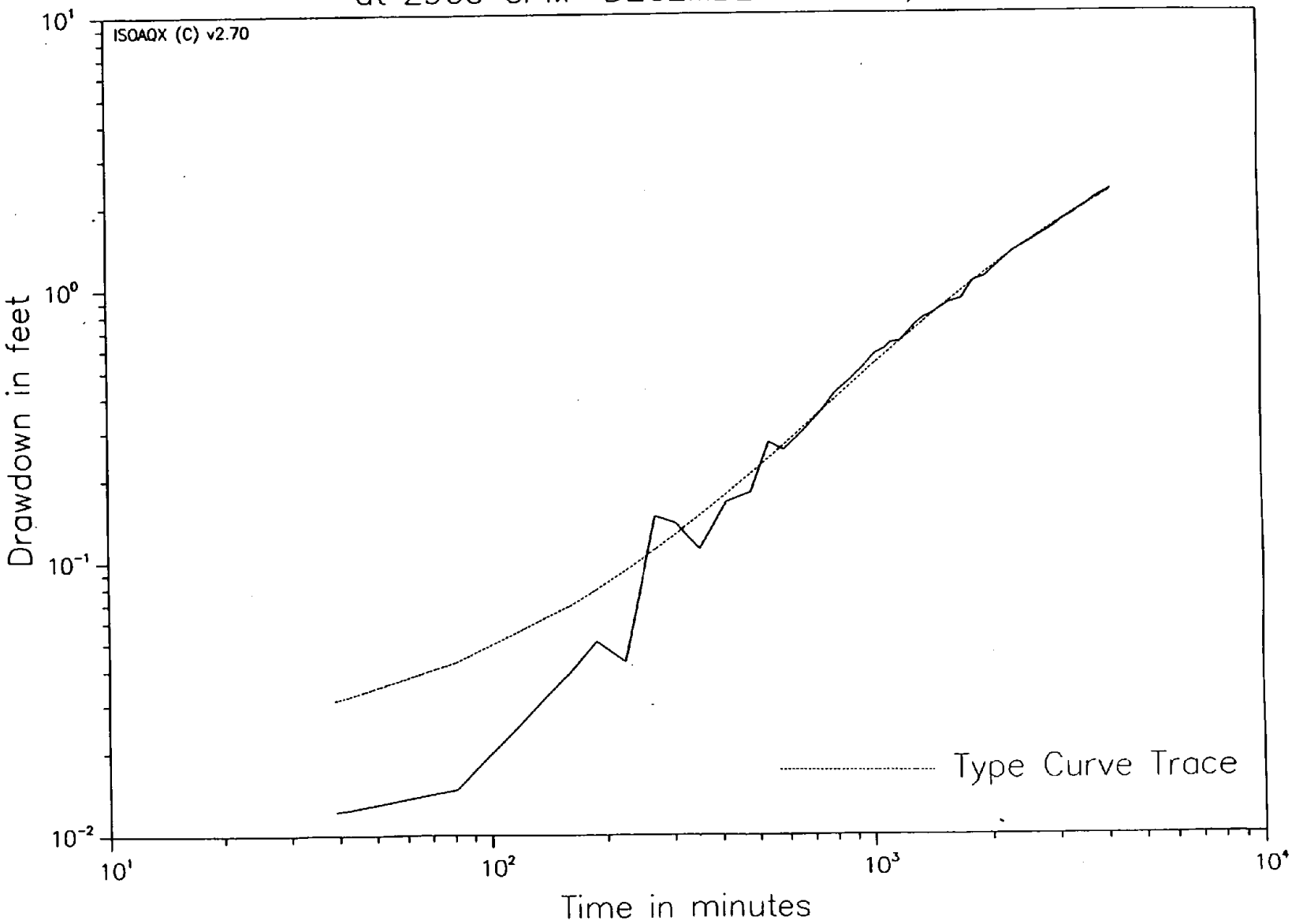
root mean squared error (ft) = 4.09E-02

hydraulic conductivity (ft/day) = 293.87

vertical hyd cond (ft/day) = 24.86

specific yield (dimensionless) = 6.80E-02

Drawdown in MW-5D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991



D000017

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW5D.DTT

Test No 1: r = 963.51 ft Q = 2960.00 gpm M = 75.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-5D

Time(min.)--Drawdown(ft) input data for test No 1

35.0,	-0.038/	39.0,	0.012/	41.0,	0.012/	64.0,	-0.086/
81.0,	0.015/	123.0,	-0.083/	161.0,	0.039/	189.0,	0.051/
224.0,	0.043/	270.0,	0.145/	306.0,	0.137/	353.0,	0.110/
415.0,	0.164/	480.0,	0.177/	536.0,	0.271/	587.0,	0.253/
662.0,	0.298/	742.0,	0.352/	800.0,	0.406/	885.0,	0.460/
958.0,	0.515/	1026.0,	0.568/	1083.0,	0.592/	1125.0,	0.624/
1185.0,	0.628/	1248.0,	0.681/	1310.0,	0.735/	1367.0,	0.768/
1431.0,	0.792/	1586.0,	0.870/	1713.0,	0.898/	1838.0,	1.045/
1970.0,	1.082/	2105.0,	1.180/	2236.0,	1.267/	2349.0,	1.344/
2472.0,	1.401/	2585.0,	1.457/	2700.0,	1.514/	2827.0,	1.571/
3004.0,	1.661/	3148.0,	1.749/	3318.0,	1.819/	3460.0,	1.897/
3580.0,	1.944/	3765.0,	2.075/	3883.0,	2.131/	4000.0,	2.178/
4165.0,	2.247/						

ISOAQX (C) v2.70 --- FILE MW5D.DTT

test # comb: 1

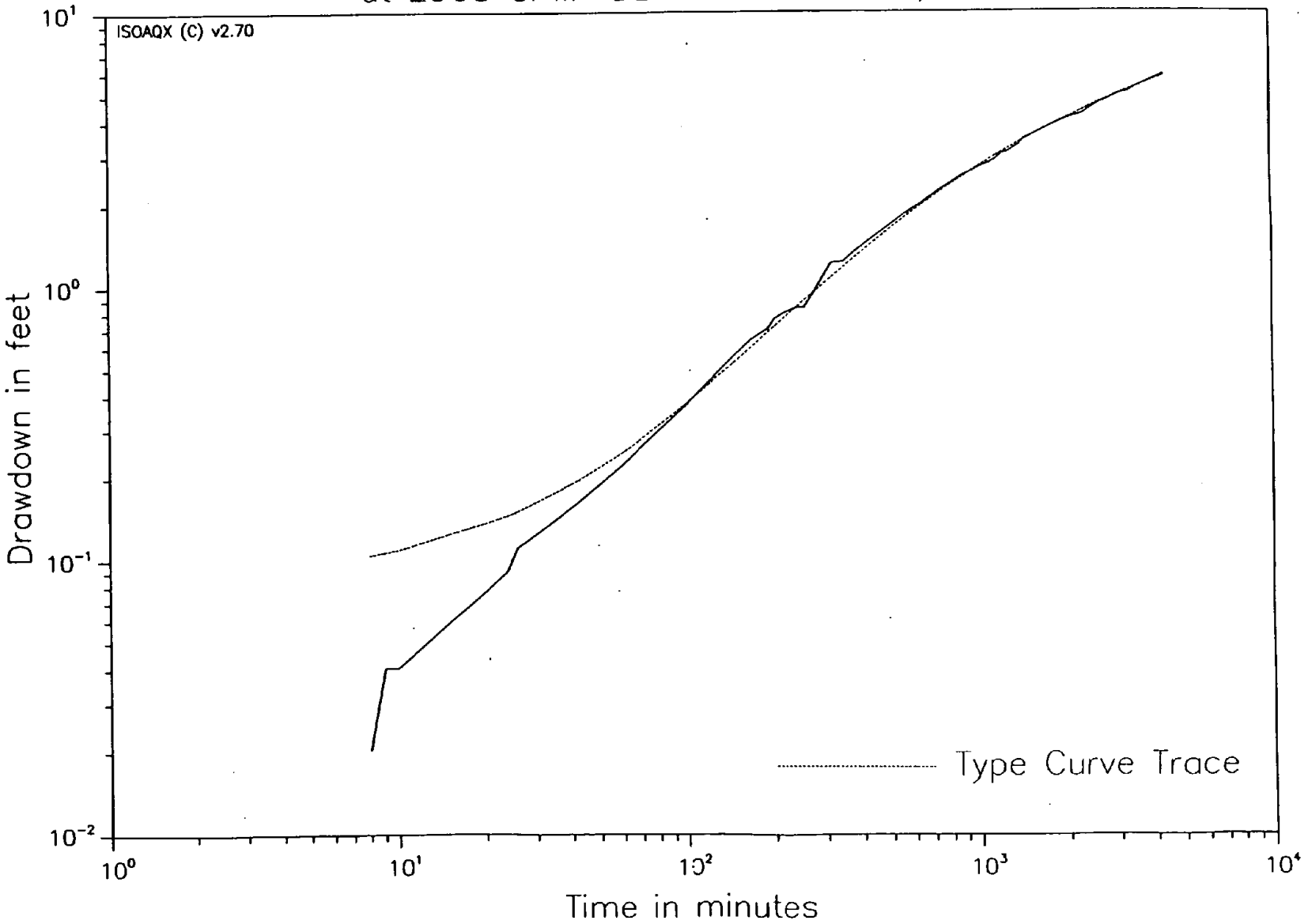
---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	2.51E-02
hydraulic conductivity (ft/day)	=	263.72
vertical hyd cond (ft/day)	=	13.66
specific yield (dimensionless)	=	7.03E-02

Drawdown in MW-6D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991



D000019

D 000020

INPUT DATA

ISOAQX (C) v2.70 --- FILE MW6D.DTT

Test No 1: r = 465.78 ft Q = 2960.00 gpm M = 93.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL MW-6D

Time(min.)--Drawdown(ft) input data for test No 1

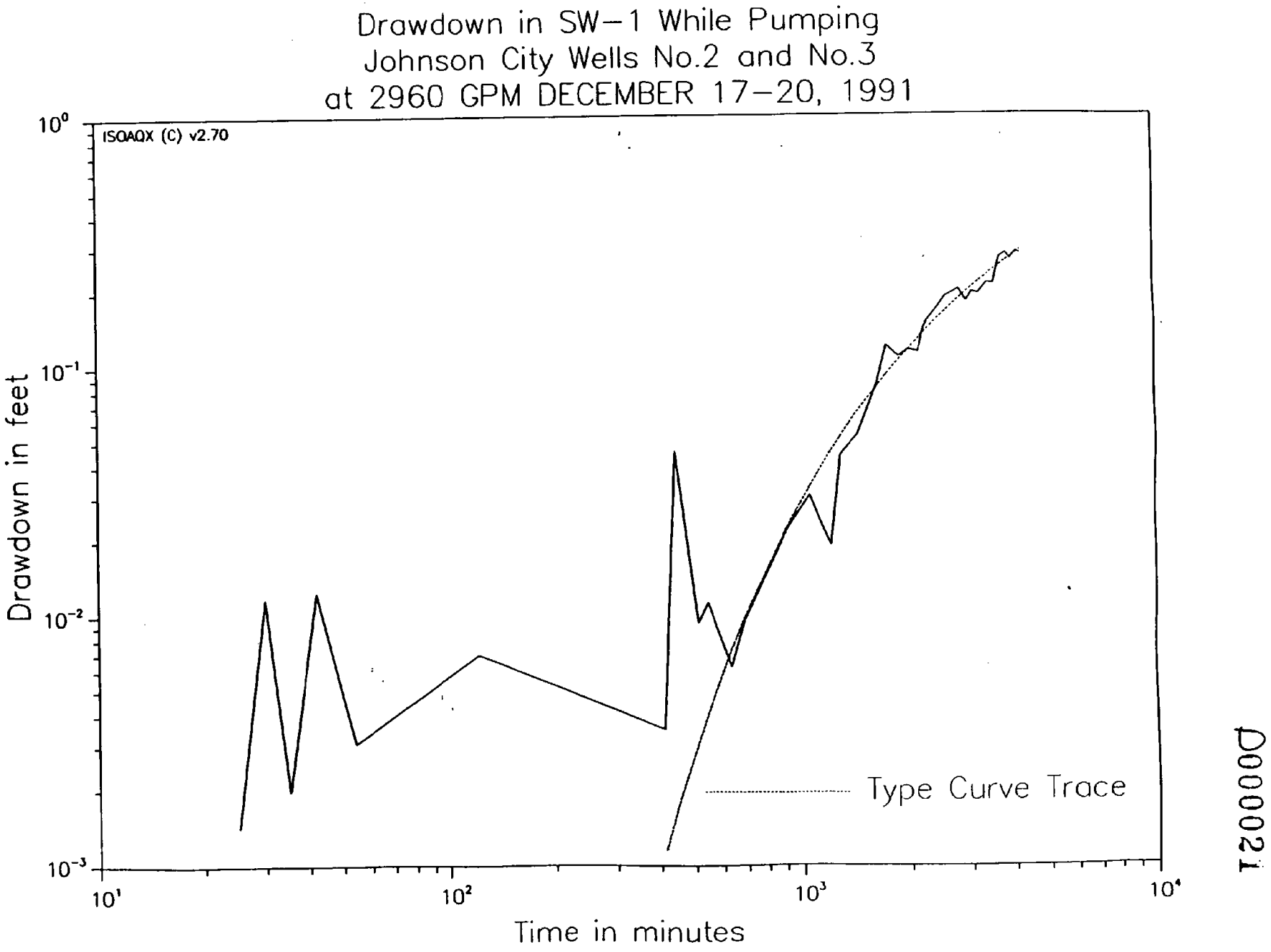
8.0,	0.020/	9.0,	0.041/	10.0,	0.041/	24.0,	0.091/
25.0,	0.101/	26.0,	0.111/	42.0,	0.162/	60.0,	0.223/
68.0,	0.254/	96.0,	0.355/	147.0,	0.558/	168.0,	0.640/
193.0,	0.701/	203.0,	0.762/	219.0,	0.802/	229.0,	0.813/
239.0,	0.834/	255.0,	0.835/	285.0,	1.016/	315.0,	1.218/
345.0,	1.230/	377.0,	1.341/	452.0,	1.546/	510.0,	1.699/
561.0,	1.842/	636.0,	1.996/	730.0,	2.222/	790.0,	2.335/
878.0,	2.520/	949.0,	2.624/	1018.0,	2.728/	1075.0,	2.781/
1145.0,	2.885/	1205.0,	3.039/	1263.0,	3.092/	1380.0,	3.269/
1443.0,	3.452/	1560.0,	3.579/	1686.0,	3.736/	1808.0,	3.873/
1940.0,	4.001/	2080.0,	4.129/	2255.0,	4.219/	2375.0,	4.355/
2490.0,	4.492/	2605.0,	4.638/	2717.0,	4.725/	2838.0,	4.822/
2981.0,	4.930/	3129.0,	5.038/	3271.0,	5.086/	3440.0,	5.266/
3554.0,	5.343/	3755.0,	5.484/	3867.0,	5.560/	3990.0,	5.647/
4157.0,	5.777/	4314.0,	5.866/	4317.0,	5.866/	4320.0,	5.866/

ISOAQX (C) v2.70 --- FILE MW6D.DTT

test # comb: 1

---

unbiased GR-DRN PART-PENETRATION "B" CURVE MODEL:
full analysis: all active data points used
using closure tolerance setting = 1.00E-03
root mean squared error (ft) = 5.10E-02
hydraulic conductivity (ft/day) = 213.75
vertical hyd cond (ft/day) = 52.11
specific yield (dimensionless) = 5.61E-02
aqth: 93.00/TP: 35.00/BP: 71.00/TO: 64.90/BO: 85.90


Drawdown in SW-1 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

D0000021

INPUT DATA

ISOAQX (C) v2.70 --- FILE SW1S.DTT

Test No 1: r = 2183.50 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL SW-1S

Time(min.)--Drawdown(ft) input data for test No 1

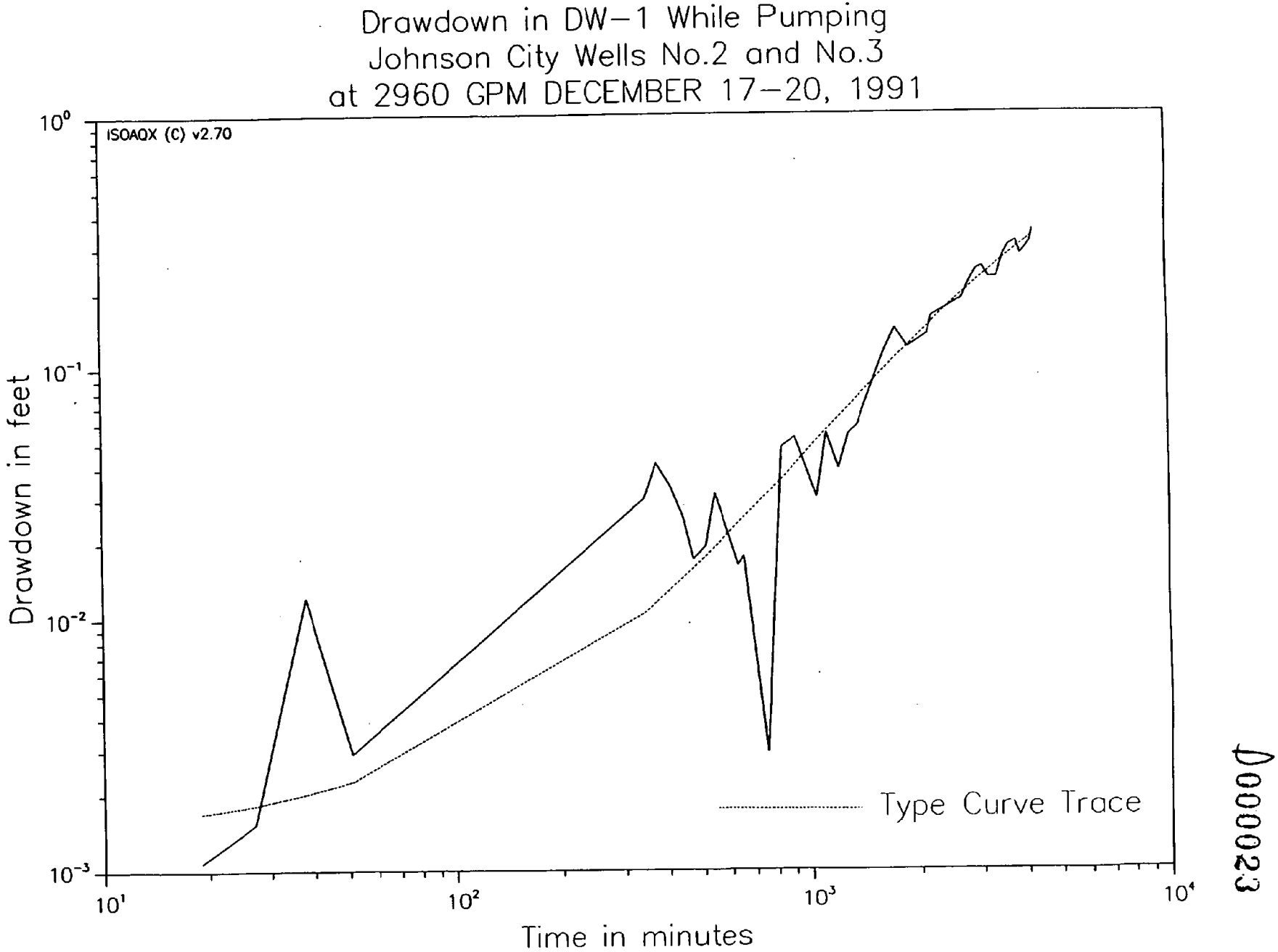
25.0,	0.001/	30.0,	0.012/	35.0,	0.002/	42.0,	0.012/
54.0,	0.003/	62.0,	0.004/	77.0,	0.004/	91.0,	0.005/
107.0,	0.006/	122.0,	0.007/	151.0,	-0.001/	180.0,	0.000/
182.0,	-0.030/	245.0,	-0.076/	291.0,	-0.013/	348.0,	-0.040/
377.0,	-0.019/	412.0,	0.003/	447.0,	0.045/	478.0,	-0.003/
514.0,	0.009/	548.0,	0.011/	635.0,	0.006/	660.0,	0.008/
693.0,	0.010/	759.0,	-0.017/	838.0,	-0.002/	915.0,	0.022/
991.0,	0.026/	1056.0,	0.030/	1125.0,	0.024/	1212.0,	0.019/
1292.0,	0.044/	1371.0,	0.048/	1447.0,	0.052/	1636.0,	0.083/
1751.0,	0.120/	1897.0,	0.108/	2020.0,	0.115/	2154.0,	0.113/
2221.0,	0.137/	2285.0,	0.150/	2466.0,	0.171/	2572.0,	0.187/
2694.0,	0.194/	2818.0,	0.201/	2966.0,	0.179/	3075.0,	0.195/
3195.0,	0.192/	3375.0,	0.212/	3524.0,	0.211/	3660.0,	0.269/
3826.0,	0.278/	3935.0,	0.264/	4076.0,	0.282/	4195.0,	0.279/

ISOAQX (C) v2.70 --- FILE SW1S.DTT

test # comb: 1

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	1.39E-02
hydraulic conductivity (ft/day)	=	1375.12
vertical hyd cond (ft/day)	=	1939.74
specific yield (dimensionless)	=	1.09E-01


Drawdown in DW-1 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

D000023

INPUT DATA

ISOAQX (C) v2.70 --- FILE SW1D.DTT

Test No 1: r = 2183.50 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL SW-1D

Time(min.)--Drawdown(ft) input data for test No 1

19.0,	0.001/	27.0,	0.002/	38.0,	0.012/	51.0,	0.003/
60.0,	-0.007/	75.0,	-0.006/	90.0,	-0.005/	105.0,	-0.004/
120.0,	-0.013/	150.0,	-0.011/	180.0,	-0.010/	210.0,	-0.018/
242.0,	-0.016/	345.0,	0.030/	374.0,	0.041/	410.0,	0.033/
444.0,	0.025/	474.0,	0.017/	511.0,	0.019/	545.0,	0.031/
633.0,	0.016/	658.0,	0.018/	691.0,	0.009/	753.0,	0.003/
834.0,	0.048/	913.0,	0.052/	1052.0,	0.030/	1122.0,	0.054/
1210.0,	0.039/	1288.0,	0.053/	1368.0,	0.058/	1445.0,	0.072/
1631.0,	0.113/	1754.0,	0.140/	1893.0,	0.118/	2016.0,	0.125/
2152.0,	0.133/	2218.0,	0.156/	2281.0,	0.160/	2463.0,	0.170/
2575.0,	0.177/	2692.0,	0.183/	2816.0,	0.211/	2962.0,	0.239/
3073.0,	0.245/	3198.0,	0.222/	3380.0,	0.223/	3520.0,	0.271/
3650.0,	0.298/	3828.0,	0.308/	3933.0,	0.274/	4074.0,	0.292/
4190.0,	0.309/	4247.0,	0.342/				

ISOAQX (C) v2.70 --- FILE SW1D.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis: all active data points used

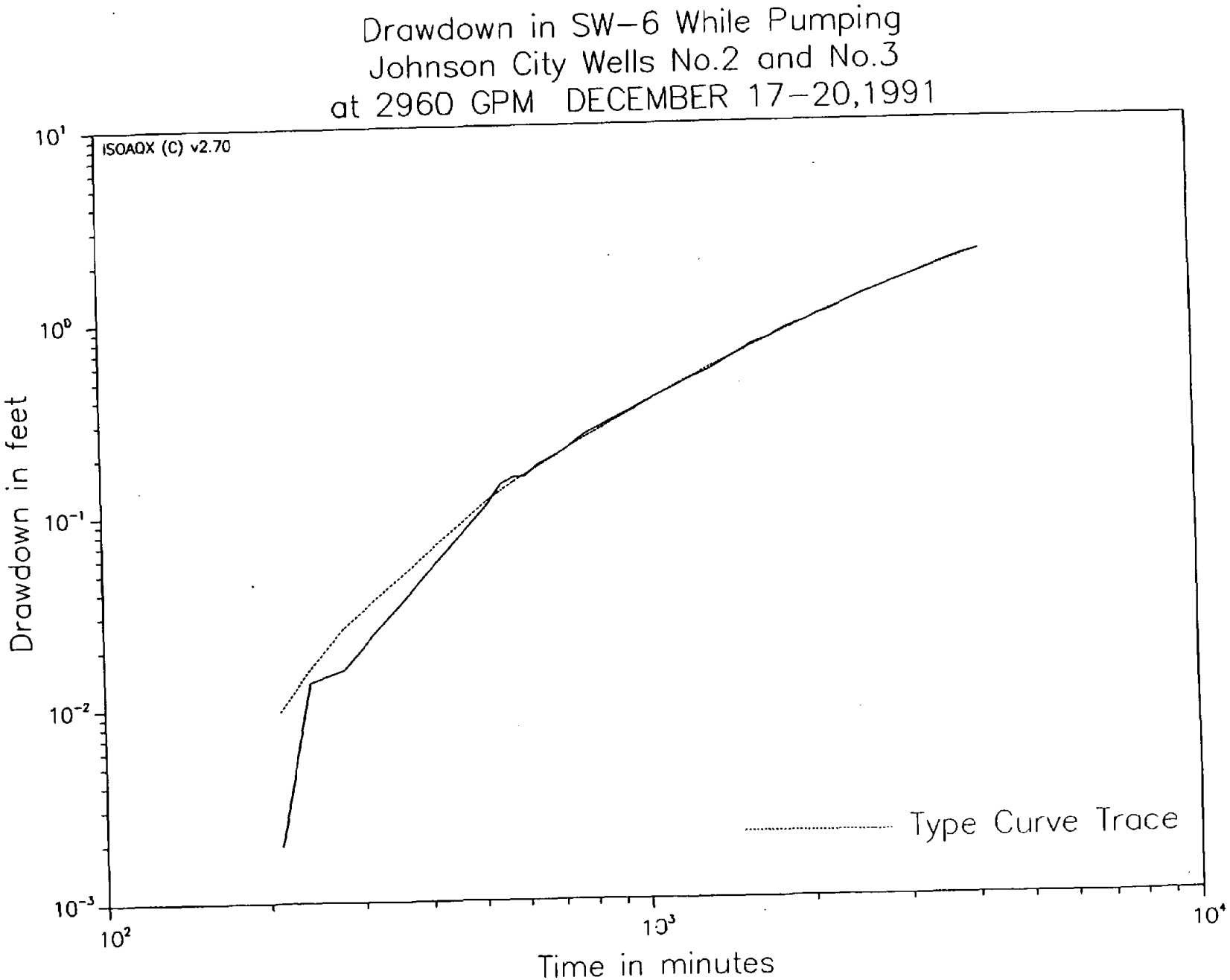
using closure tolerance setting = 1.00E-03

root mean squared error (ft) = 1.56E-02

hydraulic conductivity (ft/day) = 991.73

vertical hyd cond (ft/day) = 16.83

specific yield (dimensionless) = 9.93E-02


Drawdown in SW-6 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20,1991
ISOAQX (C) v2.70
Drawdown in feet
Time in minutes
Type Curve Trace

D000025

INPUT DATA

ISOAQX (C) v2.70 --- FILE SW6.DTT

Test No 1: r = 970.00 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL SW-6

Time(min.)--Drawdown(ft) input data for test No 1

5.0,	0.000/	15.0,	-0.009/	25.0,	-0.009/	30.0,	0.002/
40.0,	-0.008/	50.0,	-0.007/	60.0,	-0.007/	75.0,	-0.006/
90.0,	-0.005/	105.0,	-0.004/	120.0,	-0.003/	150.0,	-0.001/
180.0,	0.000/	210.0,	0.002/	240.0,	0.014/	277.0,	0.016/
512.0,	0.109/	546.0,	0.141/	576.0,	0.153/	606.0,	0.155/
639.0,	0.176/	666.0,	0.188/	720.0,	0.211/	787.0,	0.255/
1171.0,	0.447/	1249.0,	0.491/	1331.0,	0.526/	1409.0,	0.580/
1597.0,	0.711/	1717.0,	0.768/	1848.0,	0.865/	1995.0,	0.934/
2118.0,	1.011/	2190.0,	1.035/	2310.0,	1.112/	2430.0,	1.189/
2551.0,	1.265/	2669.0,	1.322/	2786.0,	1.389/	3913.0,	1.993/
4055.0,	2.041/	4175.0,	2.088/				

ISOAQX (C) v2.70 --- FILE SW6.DTT

test # comb: 1

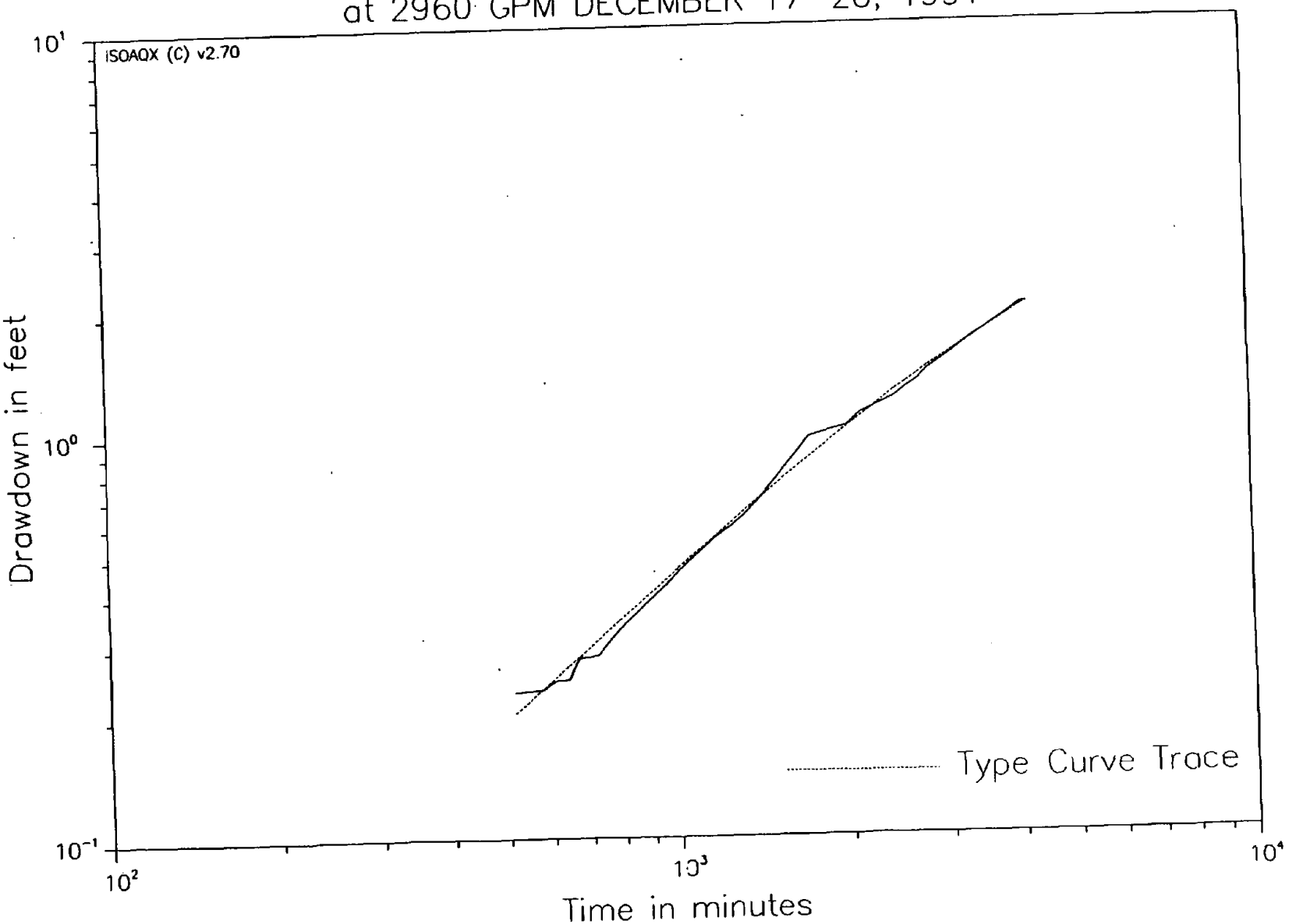
---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	8.48E-03
hydraulic conductivity (ft/day)	=	199.72
vertical hyd cond (ft/day)	=	5.04
specific yield (dimensionless)	=	4.42E-02
storativity (dimensionless)	=	3.31E-02

Drawdown in DW-6 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991



D000027

INPUT DATA

ISOAQX (C) v2.70 --- FILE DW6.DTT

Test No 1: r = 970.00 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL DW-6

Time(min.)--Drawdown(ft) input data for test No 1

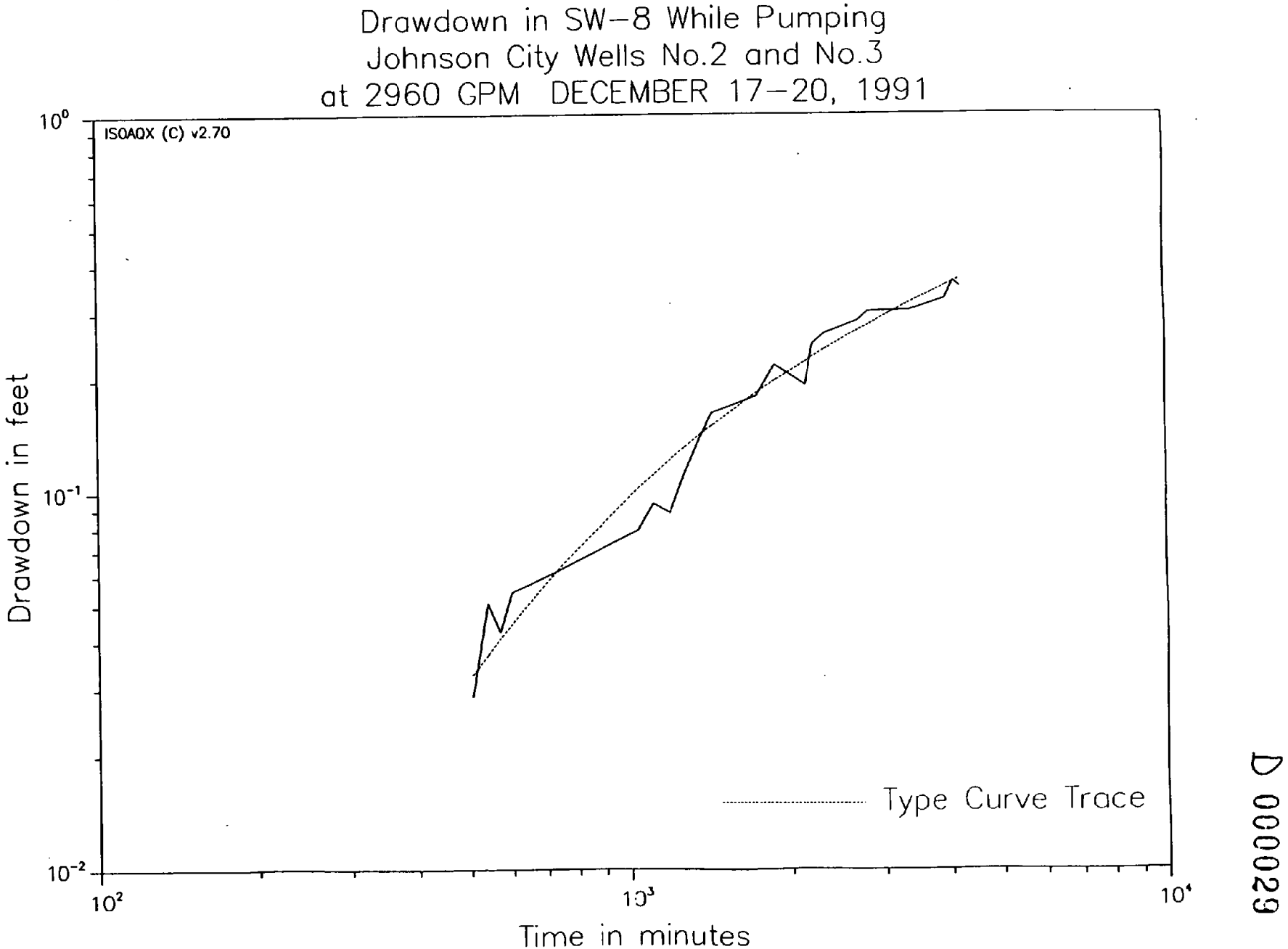
15.0,	-0.009/	25.0,	-0.029/	30.0,	-0.018/	40.0,	-0.048/
50.0,	-0.077/	60.0,	-0.097/	75.0,	-0.106/	90.0,	-0.115/
105.0,	-0.114/	120.0,	-0.093/	150.0,	-0.081/	180.0,	-0.080/
210.0,	-0.058/	242.0,	-0.036/	280.0,	-0.004/	515.0,	0.229/
548.0,	0.231/	578.0,	0.233/	608.0,	0.245/	641.0,	0.247/
668.0,	0.278/	722.0,	0.281/	789.0,	0.325/	1173.0,	0.547/
1251.0,	0.581/	1334.0,	0.626/	1411.0,	0.680/	1719.0,	0.958/
1851.0,	0.986/	1998.0,	1.014/	2120.0,	1.091/	2193.0,	1.115/
2312.0,	1.152/	2432.0,	1.189/	2553.0,	1.256/	2671.0,	1.312/
2788.0,	1.389/	3912.0,	1.933/	4057.0,	2.001/	4172.0,	2.008/

ISOAQX (C) v2.70 --- FILE DW6.DTT

test # comb: 1

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	3.10E-02
hydraulic conductivity (ft/day)	=	261.13
vertical hyd cond (ft/day)	=	7.05
specific yield (dimensionless)	=	5.93E-02
storativity (dimensionless)	=	1.91E-02


Drawdown in SW-8 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{0}
10^{-1}
10^{-2}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

D 000029

INPUT DATA

ISOAQX (C) v2.70 --- FILE SW8.DTT

Test No 1: r = 1900.00 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL SW-8

Time(min.)--Drawdown(ft) input data for test No 1

505.0,	0.029/	540.0,	0.051/	570.0,	0.042/	600.0,	0.054/
630.0,	0.056/	660.0,	0.058/	739.0,	0.062/	1040.0,	0.079/
1112.0,	0.093/	1196.0,	0.088/	1278.0,	0.113/	1360.0,	0.138/
1436.0,	0.162/	1742.0,	0.179/	1884.0,	0.217/	2140.0,	0.192/
2214.0,	0.246/	2330.0,	0.263/	2445.0,	0.269/	2567.0,	0.276/
2686.0,	0.283/	2808.0,	0.300/	3364.0,	0.302/	3930.0,	0.324/
4072.0,	0.362/	4188.0,	0.349/				

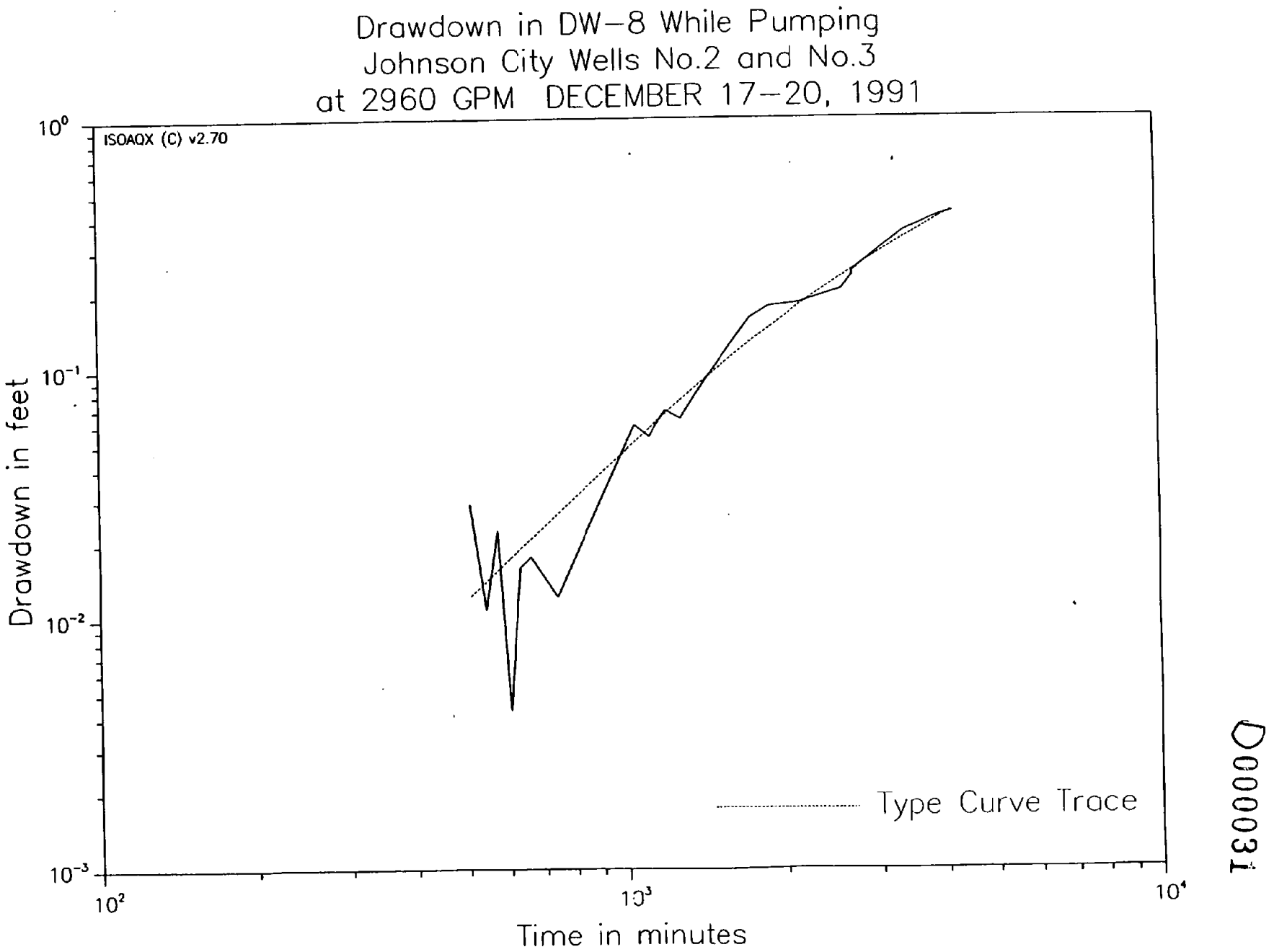
ISOAQX (C) v2.70 --- FILE SW8.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	1.74E-02
hydraulic conductivity (ft/day)	=	2160.27
vertical hyd cond (ft/day)	=	148.73
specific yield (dimensionless)	=	9.41E-02


Drawdown in DW-8 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

D000031

INPUT DATA

ISOAQX (C) v2.70 --- FILE DW8.DTT

Test No 1: r = 1900.00 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL DW-8

Time(min.)--Drawdown(ft) input data for test No 1

507.0,	0.029/	542.0,	0.011/	572.0,	0.023/	602.0,	0.004/
632.0,	0.016/	662.0,	0.018/	741.0,	0.012/	1043.0,	0.059/
1114.0,	0.053/	1199.0,	0.068/	1281.0,	0.063/	1364.0,	0.078/
1440.0,	0.092/	1744.0,	0.159/	1886.0,	0.178/	2144.0,	0.182/
2211.0,	0.186/	2332.0,	0.193/	2447.0,	0.199/	2565.0,	0.206/
2688.0,	0.233/	2690.0,	0.243/	3369.0,	0.352/	3928.0,	0.404/
4068.0,	0.412/	4185.0,	0.419/				

ISOAQX (C) v2.70 --- FILE DW8.DTT

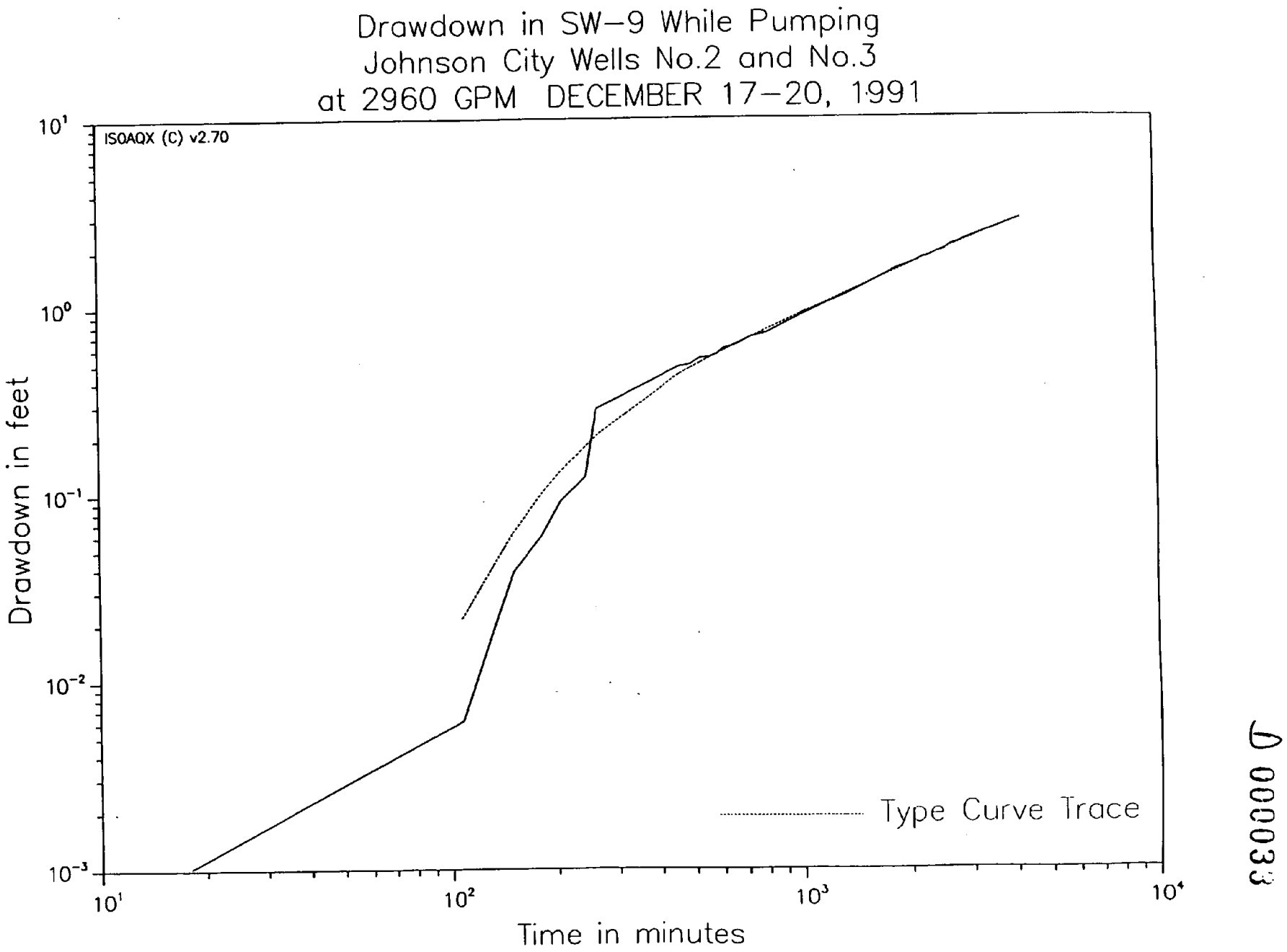
test # comb: 1

---

unbiased GRAVITY-DRAINAGE "B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	1.35E-02
hydraulic conductivity (ft/day)	=	734.63
vertical hyd cond (ft/day)	=	31.60
specific yield (dimensionless)	=	9.72E-02


Drawdown in SW–9 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17–20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

INPUT DATA

ISOAQX (C) v2.70 --- FILE SW9.DTT

Test No 1: r = 743.94 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL SW-9

Time(min.)--Drawdown(ft) input data for test No 1

4.0,	0.000/	10.0,	-0.029/	13.0,	-0.019/	18.0,	0.001/
24.0,	-0.019/	28.0,	-0.018/	40.0,	-0.018/	52.0,	-0.017/
53.0,	-0.017/	75.0,	-0.016/	91.0,	-0.005/	108.0,	0.006/
118.0,	-0.003/	151.0,	0.039/	183.0,	0.060/	207.0,	0.092/
243.0,	0.124/	263.0,	0.285/	460.0,	0.476/	493.0,	0.488/
526.0,	0.530/	557.0,	0.532/	587.0,	0.553/	612.0,	0.595/
646.0,	0.607/	676.0,	0.629/	731.0,	0.682/	806.0,	0.716/
1025.0,	0.898/	1097.0,	0.953/	1185.0,	1.028/	1265.0,	1.082/
1349.0,	1.137/	1425.0,	1.201/	1732.0,	1.439/	1870.0,	1.557/
2009.0,	1.635/	2131.0,	1.701/	2203.0,	1.766/	2324.0,	1.822/
2442.0,	1.899/	2559.0,	1.946/	2678.0,	2.083/	2798.0,	2.129/
2938.0,	2.227/	3358.0,	2.461/	3503.0,	2.520/	3922.0,	2.734/
4063.0,	2.802/	4180.0,	2.858/				

ISOAQX (C) v2.70 --- FILE SW9.DTT

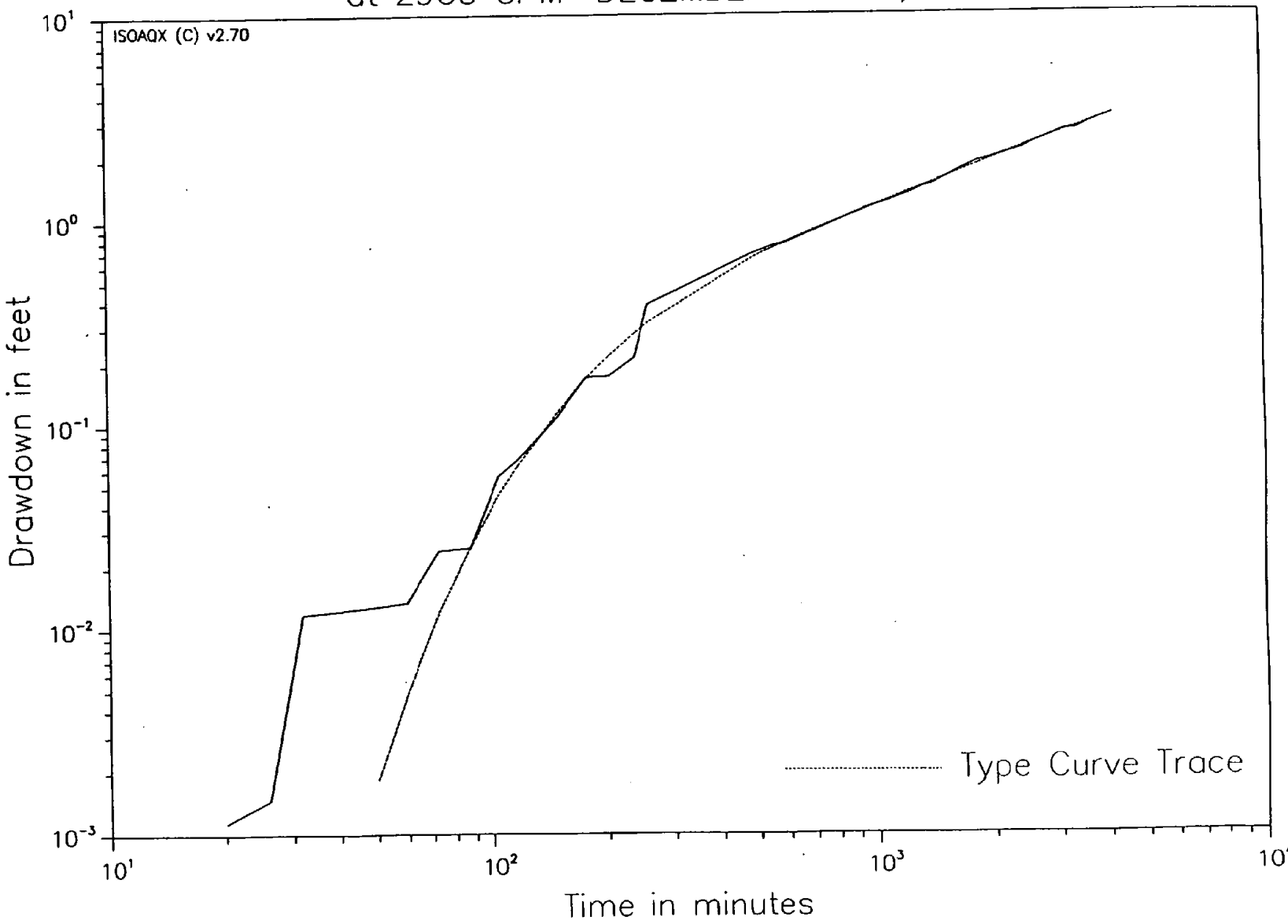
test # comb: 1

---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	2.44E-02
hydraulic conductivity (ft/day)	=	221.04
vertical hyd cond (ft/day)	=	3.64
specific yield (dimensionless)	=	6.40E-02
storativity (dimensionless)	=	2.75E-02

Drawdown in DW–9 While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17–20, 1991



D 000035

INPUT DATA

ISOAQX (C) v2.70 --- FILE DW9.DTT

Test No 1: r = 740.00 ft Q = 2960.00 gpm M = 76.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL DW-9

Time(min.)--Drawdown(ft) input data for test No 1

2.0,	0.000/	9.0,	0.001/	12.0,	-0.009/	17.0,	0.001/
20.0,	0.001/	26.0,	0.001/	32.0,	0.012/	38.0,	0.012/
50.0,	0.013/	60.0,	0.013/	73.0,	0.024/	88.0,	0.025/
105.0,	0.056/	117.0,	0.067/	149.0,	0.108/	179.0,	0.170/
205.0,	0.172/	240.0,	0.214/	261.0,	0.385/	490.0,	0.678/
524.0,	0.710/	555.0,	0.742/	585.0,	0.753/	611.0,	0.775/
644.0,	0.807/	674.0,	0.838/	728.0,	0.891/	958.0,	1.125/
1022.0,	1.168/	1093.0,	1.212/	1182.0,	1.277/	1261.0,	1.342/
1346.0,	1.427/	1422.0,	1.461/	1728.0,	1.758/	1867.0,	1.876/
2005.0,	1.944/	2128.0,	2.021/	2201.0,	2.065/	2322.0,	2.112/
2440.0,	2.169/	2557.0,	2.266/	2676.0,	2.373/	2795.0,	2.439/
3172.0,	2.691/	3355.0,	2.681/	3804.0,	2.997/	3920.0,	3.043/
4065.0,	3.112/	4177.0,	3.178/				

ISOAQX (C) v2.70 --- FILE DW9.DTT

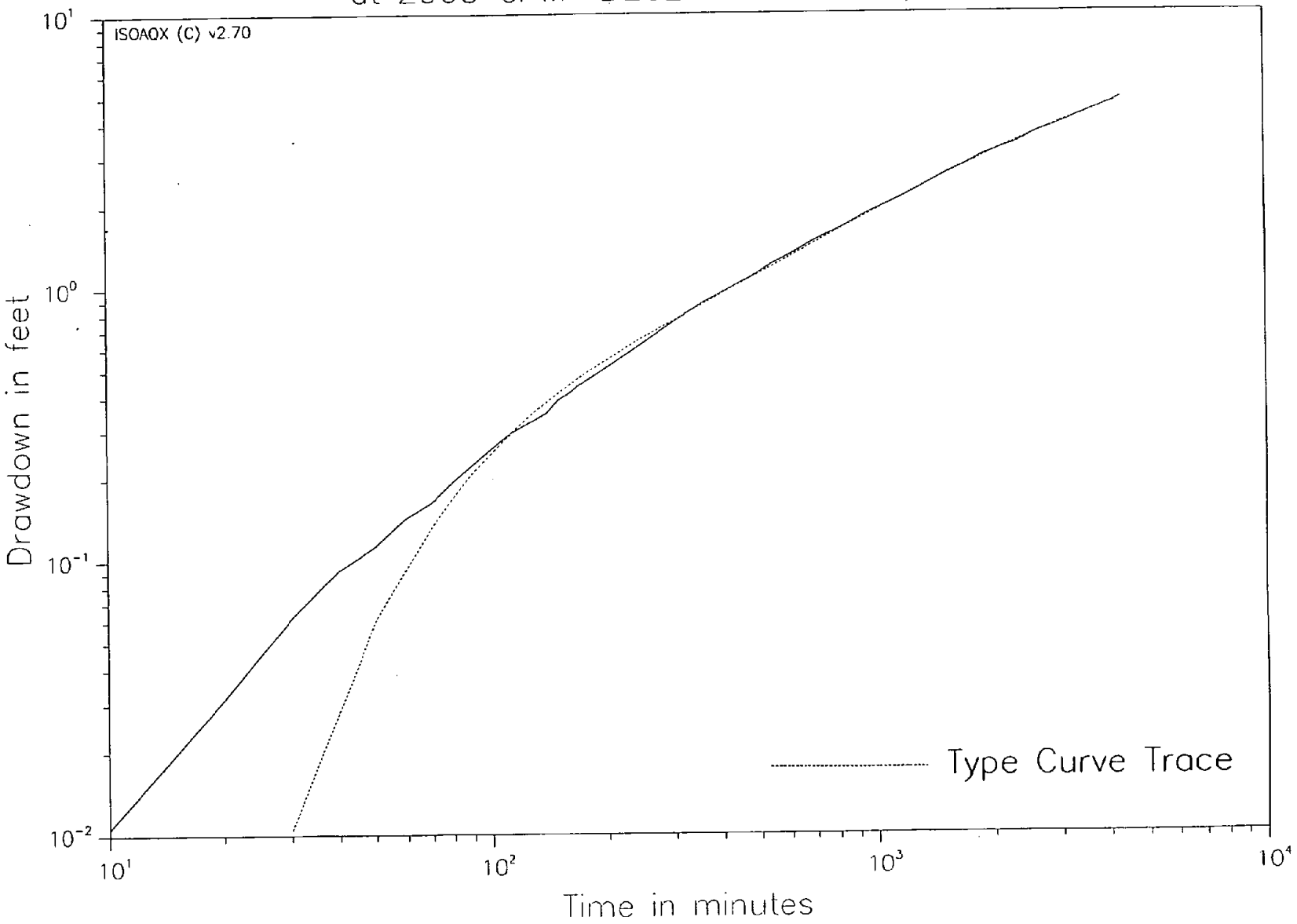
test # comb: 1

---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	2.56E-02
hydraulic conductivity (ft/day)	=	243.27
vertical hyd cond (ft/day)	=	2.71
specific yield (dimensionless)	=	5.30E-02
storativity (dimensionless)	=	2.39E-02

Drawdown in 8507-S While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991



D 000037

INPUT DATA

ISOAQX (C) v2.70 --- FILE 8507S.DTT (modified)

Test No 1: r = 385.64 ft Q = 2960.00 gpm M = 55.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL 8507-S

Time(min.)--Drawdown(ft) input data for test No 1

10.0,	0.011/	20.0,	0.031/	30.0,	0.062/	40.0,	0.092/
50.0,	0.113/	60.0,	0.143/	70.0,	0.164/	80.0,	0.195/
90.0,	0.225/	100.0,	0.256/	110.0,	0.286/	120.0,	0.307/
130.0,	0.327/	140.0,	0.348/	150.0,	0.389/	160.0,	0.409/
170.0,	0.440/	180.0,	0.460/	240.0,	0.604/	300.0,	0.747/
360.0,	0.881/	420.0,	0.984/	480.0,	1.087/	540.0,	1.211/
600.0,	1.304/	660.0,	1.408/	720.0,	1.501/	780.0,	1.584/
840.0,	1.668/	960.0,	1.865/	1080.0,	2.002/	1200.0,	2.148/
1320.0,	2.305/	1440.0,	2.472/	1560.0,	2.629/	1680.0,	2.746/
1800.0,	2.893/	1920.0,	3.019/	2040.0,	3.116/	2160.0,	3.223/
2280.0,	3.300/	2400.0,	3.427/	2520.0,	3.534/	2640.0,	3.650/
2760.0,	3.727/	2880.0,	3.814/	3000.0,	3.901/	3120.0,	3.988/
3240.0,	4.085/	3360.0,	4.182/	3480.0,	4.258/	3600.0,	4.355/
3720.0,	4.422/	3840.0,	4.509/	3960.0,	4.586/	4080.0,	4.643/
4200.0,	4.749/	4320.0,	4.826/				

ISOAQX (C) v2.70 --- FILE 8507S.DTT (modified)

test # comb: 1

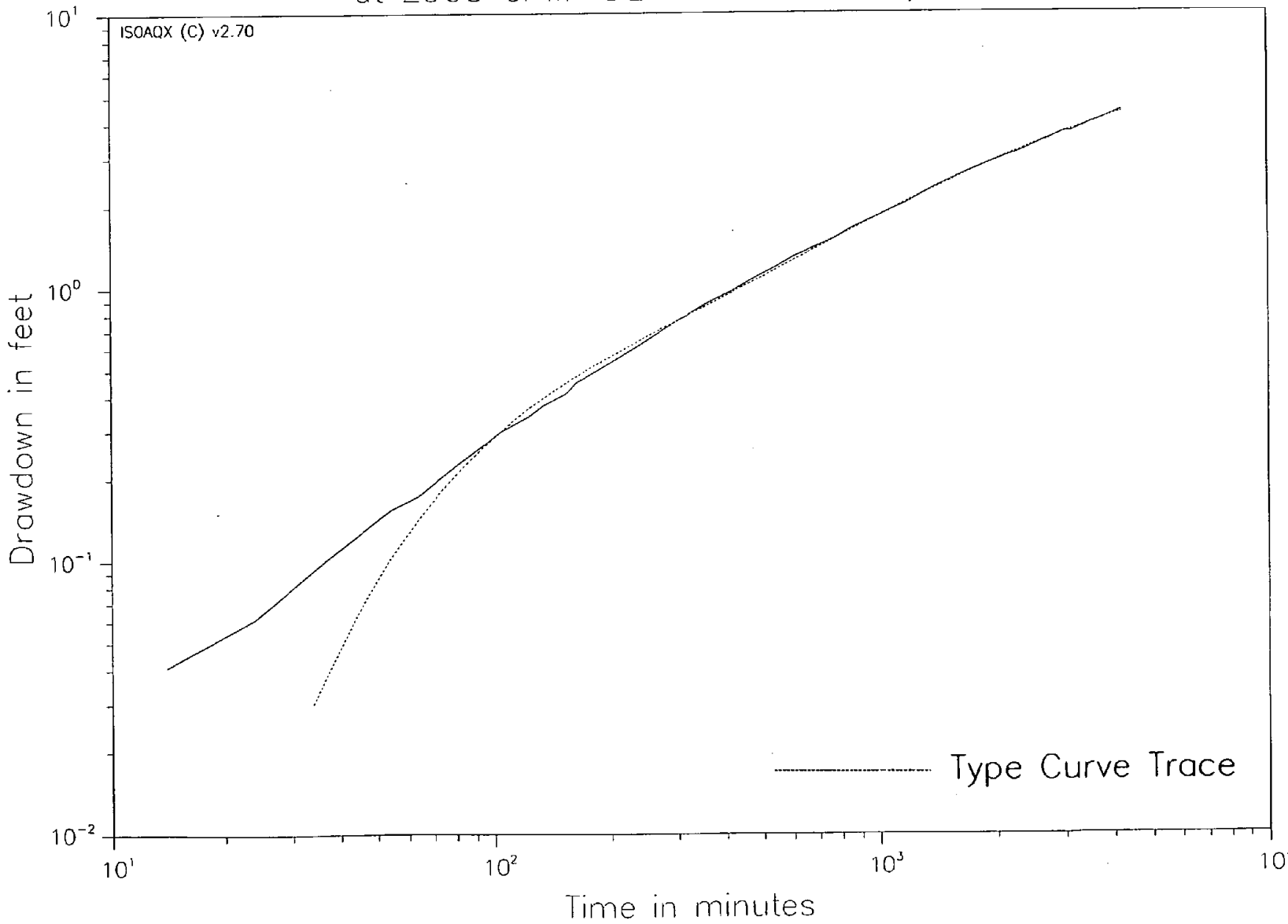
---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	2.51E-02
hydraulic conductivity (ft/day)	=	340.33
vertical hyd cond (ft/day)	=	9.01
specific yield (dimensionless)	=	1.04E-01
storativity (dimensionless)	=	3.78E-02

Drawdown in 8507-D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991



D000039

INPUT DATA

ISOAQX (C) v2.70 --- FILE 8507D.DTT

Test No 1: r = 385.00 ft Q = 2960.00 gpm M = 55.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL 8507-D

Time(min.)--Drawdown(ft) input data for test No 1

14.0,	0.041/	24.0,	0.061/	34.0,	0.092/	44.0,	0.123/
54.0,	0.153/	64.0,	0.174/	74.0,	0.204/	84.0,	0.235/
94.0,	0.265/	104.0,	0.296/	114.0,	0.316/	124.0,	0.337/
134.0,	0.368/	144.0,	0.388/	154.0,	0.409/	164.0,	0.449/
174.0,	0.470/	184.0,	0.490/	244.0,	0.624/	304.0,	0.757/
364.0,	0.881/	424.0,	0.974/	484.0,	1.088/	544.0,	1.181/
604.0,	1.284/	664.0,	1.368/	724.0,	1.441/	784.0,	1.515/
844.0,	1.618/	964.0,	1.775/	1084.0,	1.912/	1204.0,	2.039/
1324.0,	2.205/	1444.0,	2.352/	1564.0,	2.479/	1684.0,	2.596/
1804.0,	2.703/	1924.0,	2.810/	2044.0,	2.907/	2164.0,	3.003/
2284.0,	3.080/	2404.0,	3.177/	2524.0,	3.264/	2644.0,	3.381/
2764.0,	3.448/	2884.0,	3.564/	3004.0,	3.651/	3124.0,	3.648/
3244.0,	3.765/	3364.0,	3.832/	3484.0,	3.929/	3604.0,	4.005/
3724.0,	4.082/	3844.0,	4.139/	3964.0,	4.216/	4084.0,	4.303/
4204.0,	4.380/						

ISOAQX (C) v2.70 --- FILE 8507D.DTT

test # comb: 1

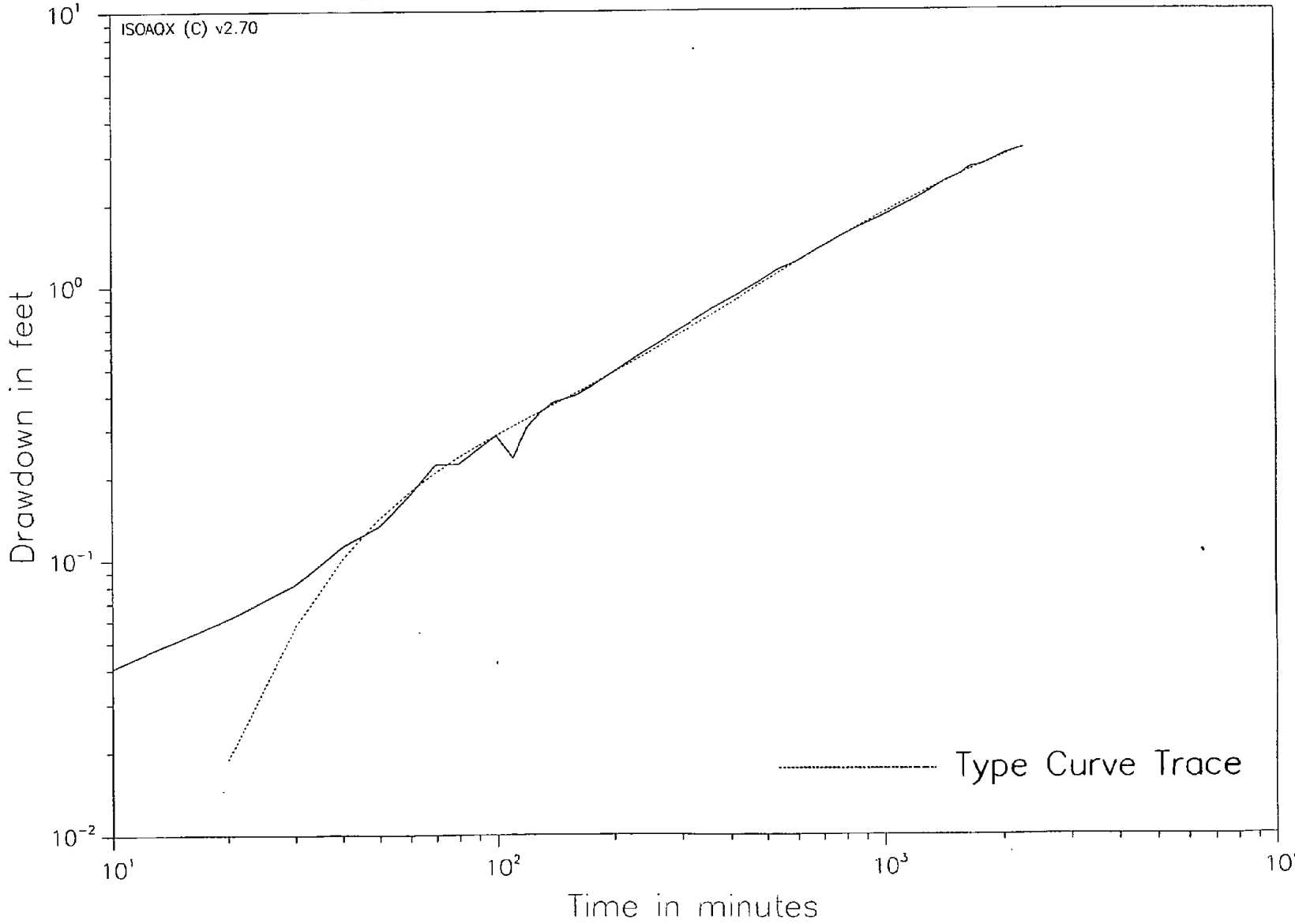
---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	2.81E-02
hydraulic conductivity (ft/day)	=	392.77
vertical hyd cond (ft/day)	=	10.11
specific yield (dimensionless)	=	1.09E-01
storativity (dimensionless)	=	3.57E-02

Drawdown in 8802-S While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991



INPUT DATA

ISOAQX (C) v2.70 --- FILE 8802S.DTT

Test No 1: r = 617.00 ft Q = 2960.00 gpm M = 75.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL 8802-S

Time(min.)--Drawdown(ft) input data for test No 1

10.0,	0.041/	20.0,	0.061/	30.0,	0.082/	40.0,	0.112/
50.0,	0.133/	60.0,	0.173/	70.0,	0.224/	80.0,	0.225/
90.0,	0.255/	100.0,	0.286/	110.0,	0.236/	120.0,	0.307/
130.0,	0.347/	140.0,	0.378/	150.0,	0.389/	160.0,	0.399/
170.0,	0.420/	180.0,	0.440/	240.0,	0.574/	300.0,	0.697/
360.0,	0.821/	420.0,	0.924/	480.0,	1.027/	540.0,	1.141/
600.0,	1.214/	660.0,	1.318/	720.0,	1.401/	780.0,	1.504/
840.0,	1.588/	960.0,	1.735/	1080.0,	1.882/	1200.0,	2.038/
1320.0,	2.205/	1440.0,	2.392/	1560.0,	2.499/	1680.0,	2.686/
1800.0,	2.743/	1920.0,	2.869/	2040.0,	2.996/	2160.0,	3.073/
2280.0,	3.140/						

ISOAQX (C) v2.70 --- FILE 8802S.DTT

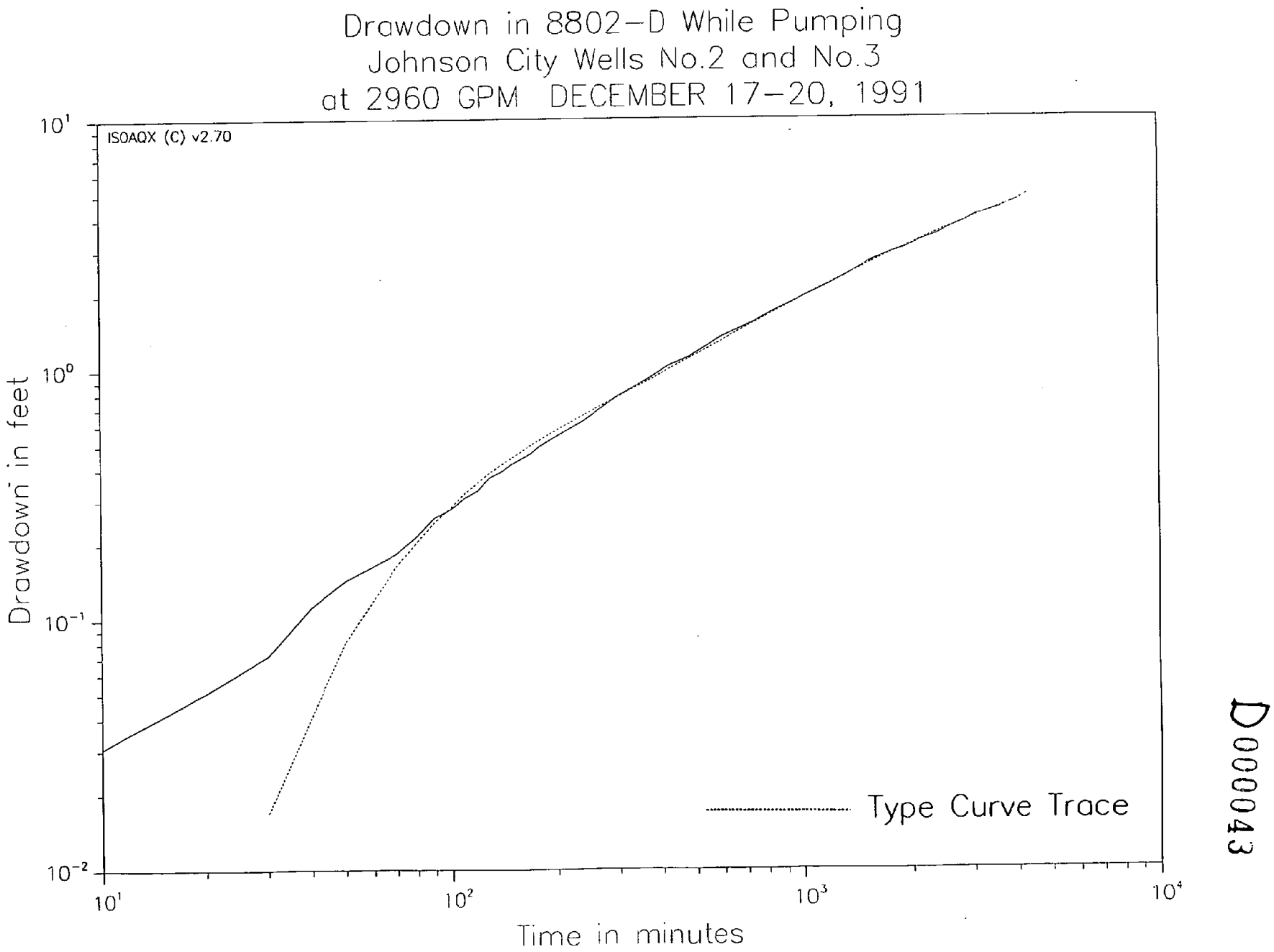
test # comb: 1

---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis: all active data points used

using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	2.63E-02
hydraulic conductivity (ft/day)	=	295.52
vertical hyd cond (ft/day)	=	9.75
specific yield (dimensionless)	=	4.37E-02
storativity (dimensionless)	=	9.08E-03


Drawdown in 8802-D While Pumping
Johnson City Wells No.2 and No.3
at 2960 GPM DECEMBER 17-20, 1991
ISOAQX (C) v2.70
Drawdown in feet
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{1}
10^{2}
10^{3}
10^{4}
Time in minutes
Type Curve Trace

D0000043

INPUT DATA

ISOAQX (C) v2.70 --- FILE 8802D.DTT

Test No 1: r = 617.43 ft Q = 2960.00 gpm M = 75.0 ft

JOHNSON CITY PUMP TEST - OBSERVATION WELL 8802-D

Time(min.)--Drawdown(ft) input data for test No 1

10.0,	0.031/	20.0,	0.051/	30.0,	0.072/	40.0,	0.112/
50.0,	0.143/	60.0,	0.163/	70.0,	0.184/	80.0,	0.215/
90.0,	0.255/	100.0,	0.276/	110.0,	0.306/	120.0,	0.327/
130.0,	0.367/	140.0,	0.388/	150.0,	0.419/	160.0,	0.439/
170.0,	0.460/	180.0,	0.490/	240.0,	0.624/	300.0,	0.777/
360.0,	0.901/	420.0,	1.024/	480.0,	1.107/	540.0,	1.231/
600.0,	1.344/	660.0,	1.428/	720.0,	1.511/	780.0,	1.604/
840.0,	1.698/	960.0,	1.865/	1080.0,	2.022/	1200.0,	2.168/
1320.0,	2.335/	1440.0,	2.512/	1560.0,	2.679/	1680.0,	2.796/
1800.0,	2.913/	1920.0,	2.989/	2040.0,	3.096/	2160.0,	3.233/
2280.0,	3.330/	2400.0,	3.407/	2520.0,	3.534/	2640.0,	3.650/
2760.0,	3.747/	2880.0,	3.844/	3000.0,	3.971/	3120.0,	4.078/
3240.0,	4.115/	3360.0,	4.182/	3480.0,	4.258/	3600.0,	4.325/
3720.0,	4.422/	3840.0,	4.519/	3960.0,	4.586/	4080.0,	4.693/
4200.0,	4.779/	4320.0,	4.886/				

ISOAQX (C) v2.70 --- FILE 8802D.DTT

test # comb: 1

---

unbiased GRAVITY-DRAINAGE (N) "A/B" CURVE MODEL:

full analysis:	all active data points used	
using closure tolerance setting	=	1.00E-03
root mean squared error (ft)	=	3.31E-02
hydraulic conductivity (ft/day)	=	242.99
vertical hyd cond (ft/day)	=	4.76
specific yield (dimensionless)	=	4.18E-02
storativity (dimensionless)	=	1.33E-02

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-1S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

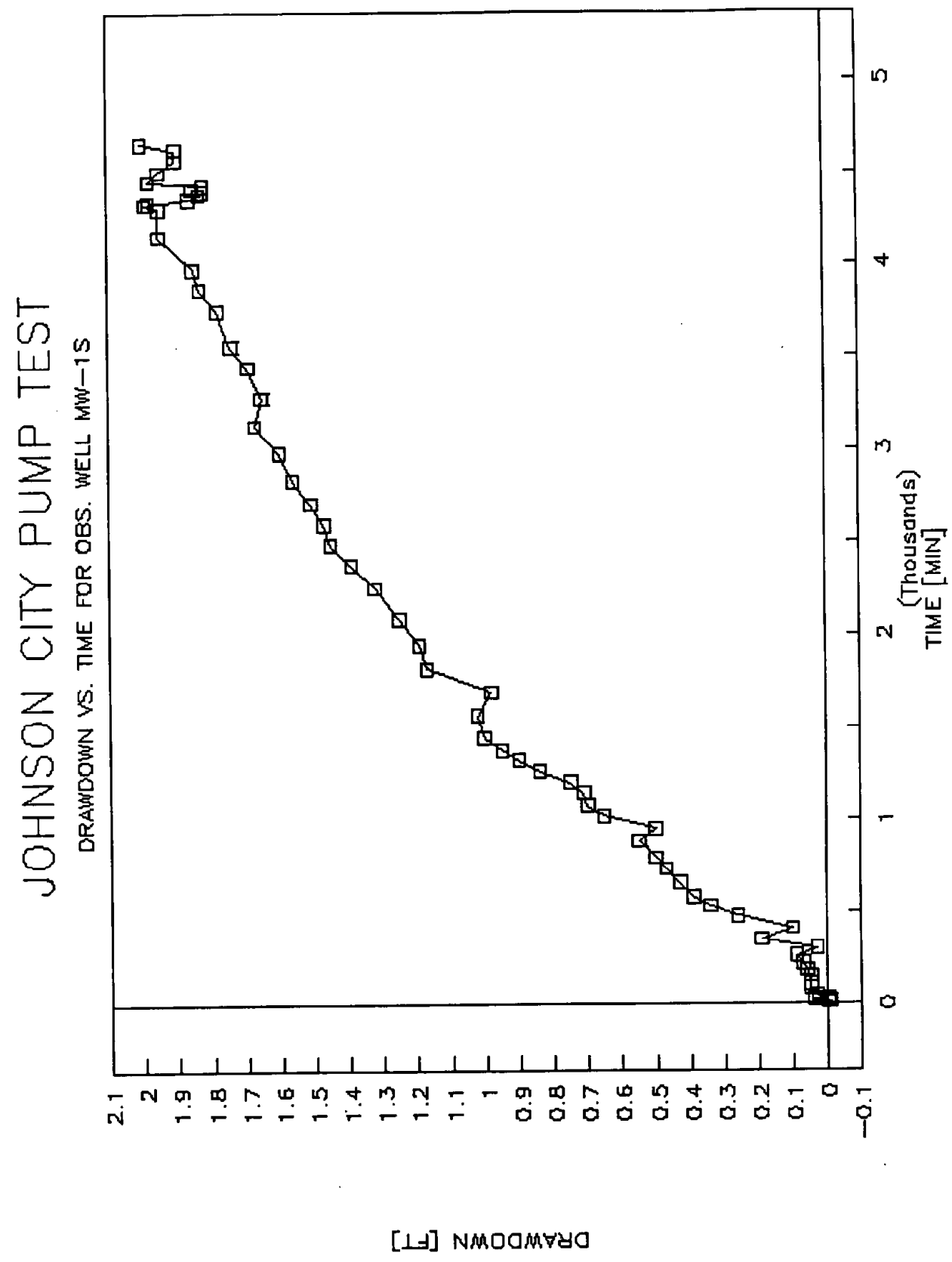
DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	10.90	0.00
12 - 17 - 91	10 : 15	15	10.90	0.00
12 - 17 - 91	10 : 17	17	10.89	-0.01
12 - 17 - 91	10 : 29	29	10.94	0.04
12 - 17 - 91	10 : 32	32	10.90	0.00
12 - 17 - 91	10 : 49	49	10.93	0.03
12 - 17 - 91	11 : 28	88	10.95	0.05
12 - 17 - 91	11 : 52	112	10.95	0.05
12 - 17 - 91	12 : 33	153	10.95	0.05
12 - 17 - 91	13 : 4	184	10.96	0.06
12 - 17 - 91	13 : 38	218	10.97	0.07
12 - 17 - 91	14 : 18	258	10.99	0.09
12 - 17 - 91	14 : 56	296	10.93	0.03
12 - 17 - 91	15 : 45	345	11.09	0.19
12 - 17 - 91	16 : 44	404	11.00	0.10
12 - 17 - 91	17 : 52	472	11.16	0.26
12 - 17 - 91	18 : 47	527	11.24	0.34
12 - 17 - 91	19 : 31	571	11.29	0.39
12 - 17 - 91	20 : 50	650	11.33	0.43
12 - 17 - 91	22 : 5	725	11.37	0.47
12 - 17 - 91	23 : 5	785	11.40	0.50
12 - 18 - 91	0 : 35	875	11.45	0.55
12 - 18 - 91	1 : 45	945	11.40	0.50
12 - 18 - 91	2 : 53	1013	11.55	0.65
12 - 18 - 91	3 : 50	1070	11.60	0.70
12 - 18 - 91	5 : 1	1141	11.61	0.71
12 - 18 - 91	5 : 59	1199	11.65	0.75
12 - 18 - 91	6 : 58	1258	11.74	0.84
12 - 18 - 91	8 : 2	1322	11.80	0.90
12 - 18 - 91	8 : 56	1376	11.85	0.95
12 - 18 - 91	9 : 59	1439	11.90	1.00
12 - 18 - 91	12 : 2	1562	11.92	1.02
12 - 18 - 91	14 : 10	1690	11.88	0.98
12 - 18 - 91	16 : 15	1815	12.07	1.17
12 - 18 - 91	18 : 27	1947	12.09	1.19
12 - 18 - 91	20 : 46	2086	12.15	1.25
12 - 18 - 91	23 : 30	2250	12.22	1.32

D000046

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-1S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 19 - 91	1 : 32	2372	12.29	1.39
12 - 19 - 91	3 : 25	2485	12.35	1.45
12 - 19 - 91	5 : 15	2595	12.37	1.47
12 - 19 - 91	7 : 12	2712	12.41	1.51
12 - 19 - 91	9 : 14	2834	12.46	1.56
12 - 19 - 91	11 : 44	2984	12.50	1.60
12 - 19 - 91	14 : 12	3132	12.57	1.67
12 - 19 - 91	16 : 41	3281	12.55	1.65
12 - 19 - 91	19 : 24	3444	12.59	1.69
12 - 19 - 91	21 : 16	3556	12.64	1.74
12 - 20 - 91	0 : 29	3749	12.68	1.78
12 - 20 - 91	2 : 25	3865	12.73	1.83
12 - 20 - 91	4 : 23	3983	12.75	1.85
12 - 20 - 91	7 : 13	4153	12.85	1.95
12 - 20 - 91	9 : 50	4310	12.85	1.95
12 - 20 - 91	10 : 15	4335	12.89	1.99
12 - 20 - 91	10 : 17	4337	12.88	1.98
12 - 20 - 91	10 : 19	4339	12.88	1.98
12 - 20 - 91	10 : 41	4361	12.76	1.86
12 - 20 - 91	11 : 7	4387	12.73	1.83
12 - 20 - 91	11 : 19	4399	12.72	1.82
12 - 20 - 91	11 : 35	4415	12.75	1.85
12 - 20 - 91	11 : 50	4430	12.72	1.82
12 - 20 - 91	12 : 15	4455	12.88	1.98
12 - 20 - 91	13 : 5	4505	12.85	1.95
12 - 20 - 91	14 : 9	4569	12.80	1.90
12 - 20 - 91	15 : 7	4627	12.80	1.90
12 - 20 - 91	15 : 43	4663	12.90	2.00

D000047


JOHNSON CITY PUMP TEST
DRAWDOWN VS. TIME FOR OBS. WELL MW-1S
DRAWDOWN [FT]
2.1
2
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
1
2
3
4
5
(Thousands)
TIME [MIN]

D 000048

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-1D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	10.50	0.00
12 - 17 - 91	10 : 14	14	10.49	-0.01
12 - 17 - 91	10 : 16	16	10.49	-0.01
12 - 17 - 91	10 : 30	30	10.55	0.05
12 - 17 - 91	10 : 33	33	10.56	0.06
12 - 17 - 91	10 : 50	50	10.36	-0.14
12 - 17 - 91	11 : 29	89	10.55	0.05
12 - 17 - 91	11 : 53	113	10.75	0.25
12 - 17 - 91	12 : 35	155	10.82	0.32
12 - 17 - 91	13 : 5	185	10.86	0.36
12 - 17 - 91	13 : 40	220	10.91	0.41
12 - 17 - 91	14 : 20	260	10.91	0.41
12 - 17 - 91	14 : 58	298	10.93	0.43
12 - 17 - 91	15 : 47	347	11.01	0.51
12 - 17 - 91	16 : 45	405	11.24	0.74
12 - 17 - 91	17 : 49	469	11.31	0.81
12 - 17 - 91	18 : 49	529	11.32	0.82
12 - 17 - 91	19 : 35	575	11.47	0.97
12 - 17 - 91	20 : 55	655	11.57	1.07
12 - 17 - 91	22 : 8	728	11.60	1.10
12 - 17 - 91	23 : 7	787	11.62	1.12
12 - 18 - 91	0 : 37	877	11.86	1.36
12 - 18 - 91	1 : 46	946	11.95	1.45
12 - 18 - 91	2 : 54	1014	12.00	1.50
12 - 18 - 91	3 : 52	1072	12.03	1.53
12 - 18 - 91	5 : 0	1140	12.05	1.55
12 - 18 - 91	6 : 0	1200	12.10	1.60
12 - 18 - 91	7 : 0	1260	12.15	1.65
12 - 18 - 91	8 : 3	1323	12.20	1.70
12 - 18 - 91	8 : 58	1378	12.30	1.80
12 - 18 - 91	10 : 0	1440	12.40	1.90
12 - 18 - 91	12 : 5	1565	12.59	2.09
12 - 18 - 91	14 : 12	1692	12.67	2.17
12 - 18 - 91	16 : 12	1812	12.78	2.28
12 - 18 - 91	18 : 30	1950	12.86	2.36
12 - 18 - 91	20 : 48	2088	12.97	2.47
12 - 18 - 91	23 : 31	2251	13.07	2.57
12 - 19 - 91	1 : 33	2373	13.18	2.68

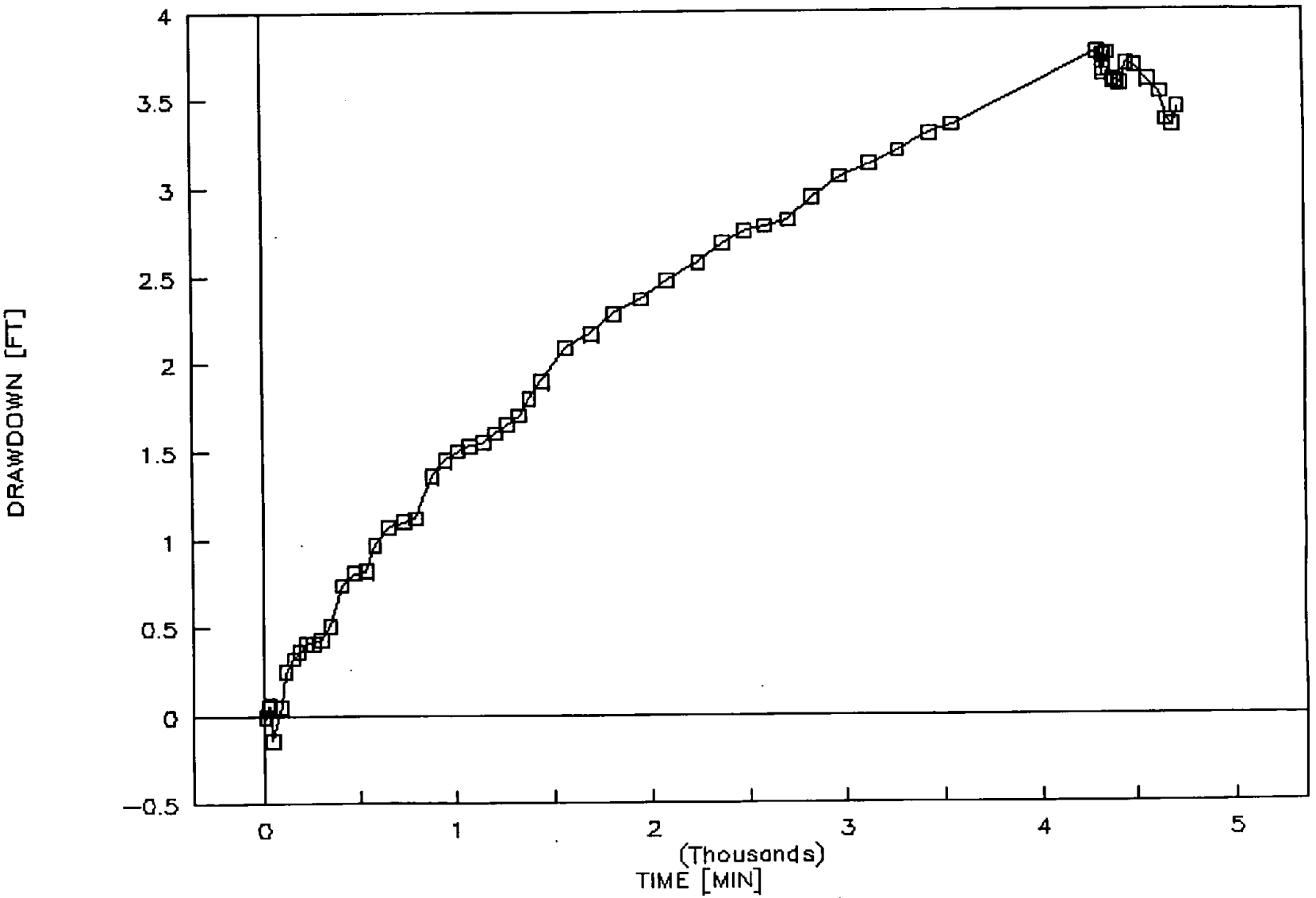
D 000049

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-1D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 19 - 91	3 : 27	2487	13.25	2.75
12 - 19 - 91	5 : 17	2597	13.28	2.78
12 - 19 - 91	7 : 14	2714	13.31	2.81
12 - 19 - 91	9 : 16	2836	13.44	2.94
12 - 19 - 91	11 : 46	2986	13.56	3.06
12 - 19 - 91	14 : 14	3134	13.63	3.13
12 - 19 - 91	16 : 43	3283	13.70	3.20
12 - 19 - 91	19 : 26	3446	13.80	3.30
12 - 19 - 91	21 : 17	3557	13.85	3.35
12 - 20 - 91	0 : 30	3750	14.00	3.50
12 - 20 - 91	2 : 24	3864	14.05	3.55
12 - 20 - 91	4 : 24	3984	14.10	3.60
12 - 20 - 91	7 : 14	4154	14.20	3.70
12 - 20 - 91	9 : 53	4313	14.26	3.76
12 - 20 - 91	10 : 15	4335	14.13	3.63
12 - 20 - 91	10 : 18	4338	14.24	3.74
12 - 20 - 91	10 : 21	4341	14.16	3.66
12 - 20 - 91	10 : 42	4362	14.25	3.75
12 - 20 - 91	11 : 7	4387	14.10	3.60
12 - 20 - 91	11 : 21	4401	14.09	3.59
12 - 20 - 91	11 : 36	4416	14.08	3.58
12 - 20 - 91	11 : 51	4431	14.08	3.58
12 - 20 - 91	12 : 17	4457	14.19	3.69
12 - 20 - 91	13 : 6	4506	14.18	3.68
12 - 20 - 91	14 : 10	4570	14.10	3.60
12 - 20 - 91	15 : 9	4629	14.03	3.53
12 - 20 - 91	15 : 44	4664	13.87	3.37
12 - 20 - 91	16 : 13	4693	13.84	3.34

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-1D



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-2S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	28.64	0.00
12 - 17 - 91	10 : 3	3	28.62	-0.02
12 - 17 - 91	10 : 5	5	28.70	0.06
12 - 17 - 91	10 : 8	8	28.63	-0.01
12 - 17 - 91	10 : 10	10	28.63	-0.01
12 - 17 - 91	10 : 21	21	28.68	0.04
12 - 17 - 91	10 : 23	23	28.73	0.09
12 - 17 - 91	10 : 26	26	28.77	0.13
12 - 17 - 91	10 : 42	42	28.72	0.08
12 - 17 - 91	10 : 45	45	28.68	0.04
12 - 17 - 91	11 : 0	60	28.70	0.06
12 - 17 - 91	11 : 24	84	28.75	0.11
12 - 17 - 91	11 : 48	108	28.76	0.12
12 - 17 - 91	12 : 30	150	28.83	0.19
12 - 17 - 91	13 : 1	181	28.96	0.32
12 - 17 - 91	13 : 34	214	28.94	0.30
12 - 17 - 91	14 : 10	250	28.98	0.34
12 - 17 - 91	14 : 47	287	29.20	0.56
12 - 17 - 91	15 : 37	337	29.30	0.66
12 - 17 - 91	16 : 34	394	29.35	0.71
12 - 17 - 91	17 : 39	459	29.31	0.67
12 - 17 - 91	18 : 40	520	29.53	0.89
12 - 17 - 91	19 : 24	564	29.46	0.82
12 - 17 - 91	20 : 44	644	29.56	0.92
12 - 17 - 91	22 : 15	735	29.81	1.17
12 - 17 - 91	23 : 13	793	29.89	1.25
12 - 18 - 91	0 : 40	880	30.00	1.36
12 - 18 - 91	1 : 52	952	30.01	1.37
12 - 18 - 91	3 : 2	1022	30.15	1.51
12 - 18 - 91	3 : 58	1078	30.20	1.56
12 - 18 - 91	4 : 52	1132	30.27	1.63
12 - 18 - 91	5 : 55	1195	30.30	1.66
12 - 18 - 91	6 : 53	1253	30.37	1.73
12 - 18 - 91	7 : 54	1314	30.45	1.81
12 - 18 - 91	8 : 52	1372	30.50	1.86
12 - 18 - 91	9 : 55	1435	30.60	1.96
12 - 18 - 91	12 : 16	1576	30.70	2.06

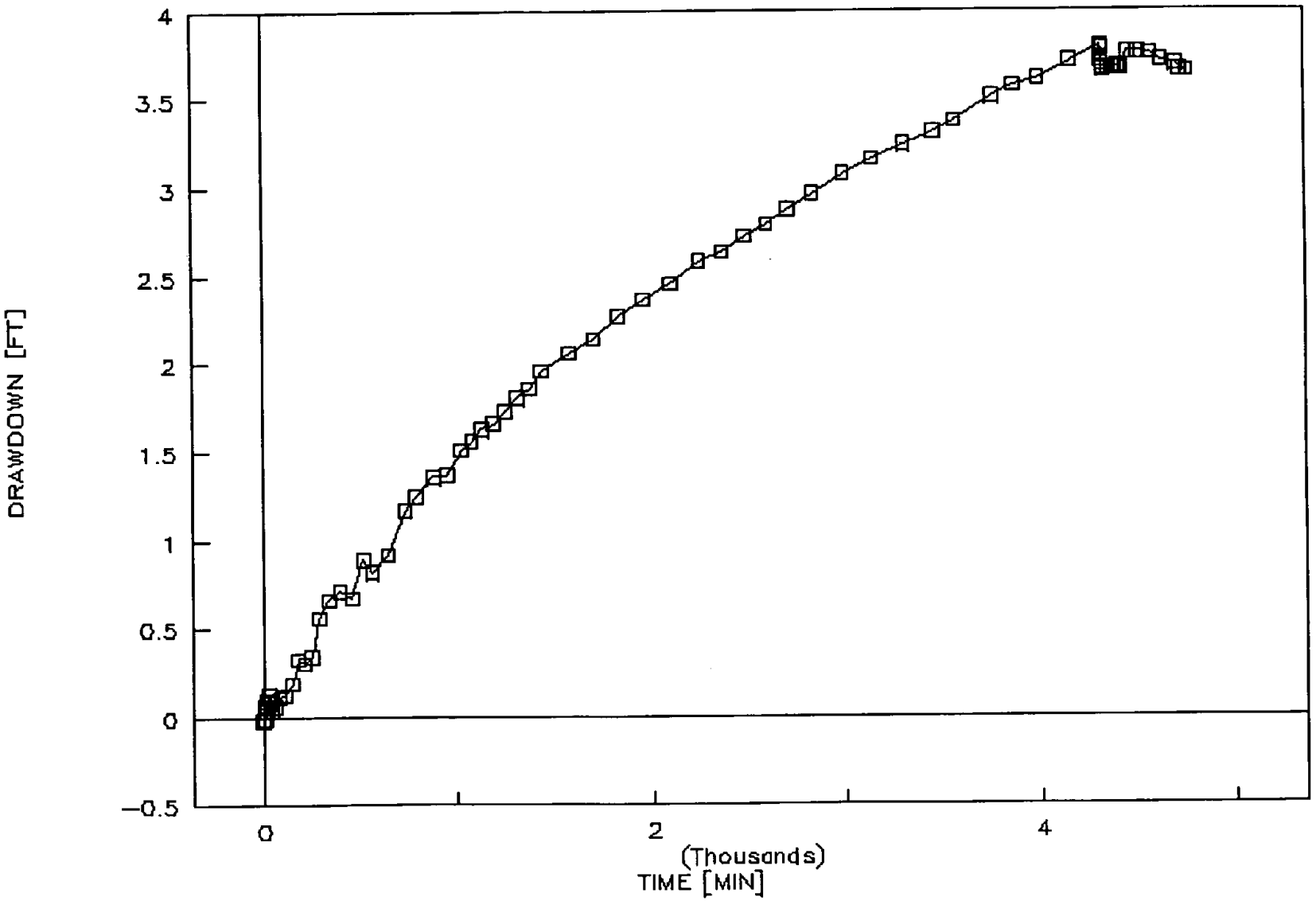
D 000052

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-2S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	14 : 18	1698	30.78	2.14
12 - 18 - 91	16 : 25	1825	30.91	2.27
12 - 18 - 91	18 : 35	1955	31.00	2.36
12 - 18 - 91	20 : 54	2094	31.09	2.45
12 - 18 - 91	23 : 20	2240	31.22	2.58
12 - 19 - 91	1 : 20	2360	31.27	2.63
12 - 19 - 91	3 : 18	2478	31.36	2.72
12 - 19 - 91	5 : 9	2589	31.43	2.79
12 - 19 - 91	7 : 5	2705	31.51	2.87
12 - 19 - 91	9 : 10	2830	31.60	2.96
12 - 19 - 91	11 : 50	2990	31.71	3.07
12 - 19 - 91	14 : 20	3140	31.80	3.16
12 - 19 - 91	17 : 1	3301	31.88	3.24
12 - 19 - 91	19 : 38	3458	31.95	3.31
12 - 19 - 91	21 : 23	3563	32.01	3.37
12 - 20 - 91	0 : 37	3757	32.15	3.51
12 - 20 - 91	2 : 29	3869	32.21	3.57
12 - 20 - 91	4 : 34	3994	32.25	3.61
12 - 20 - 91	7 : 20	4160	32.35	3.71
12 - 20 - 91	9 : 56	4316	32.44	3.80
12 - 20 - 91	10 : 1	4321	32.35	3.71
12 - 20 - 91	10 : 3	4323	32.42	3.78
12 - 20 - 91	10 : 5	4325	32.33	3.69
12 - 20 - 91	10 : 8	4328	32.30	3.66
12 - 20 - 91	10 : 10	4330	32.31	3.67
12 - 20 - 91	10 : 35	4355	32.31	3.67
12 - 20 - 91	10 : 59	4379	32.31	3.67
12 - 20 - 91	11 : 16	4396	32.31	3.67
12 - 20 - 91	11 : 31	4411	32.32	3.68
12 - 20 - 91	11 : 45	4425	32.31	3.67
12 - 20 - 91	12 : 18	4458	32.40	3.76
12 - 20 - 91	13 : 9	4509	32.40	3.76
12 - 20 - 91	14 : 13	4573	32.39	3.75
12 - 20 - 91	15 : 5	4625	32.35	3.71
12 - 20 - 91	16 : 18	4698	32.33	3.69
12 - 20 - 91	16 : 42	4722	32.30	3.66
12 - 20 - 91	17 : 16	4756	32.29	3.65

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-2S



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-2D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	28.59	0.00
12 - 17 - 91	10 : 2	2	28.59	0.00
12 - 17 - 91	10 : 4	4	28.51	-0.08
12 - 17 - 91	10 : 7	7	28.60	0.01
12 - 17 - 91	10 : 9	9	28.48	-0.11
12 - 17 - 91	10 : 11	11	28.60	0.01
12 - 17 - 91	10 : 20	20	28.59	0.00
12 - 17 - 91	10 : 22	22	28.60	0.01
12 - 17 - 91	10 : 25	25	28.60	0.01
12 - 17 - 91	10 : 43	43	28.65	0.06
12 - 17 - 91	10 : 46	46	28.65	0.06
12 - 17 - 91	11 : 1	61	28.66	0.07
12 - 17 - 91	11 : 25	85	28.75	0.16
12 - 17 - 91	11 : 49	109	28.79	0.20
12 - 17 - 91	12 : 31	151	28.84	0.25
12 - 17 - 91	13 : 2	182	28.89	0.30
12 - 17 - 91	13 : 35	215	28.95	0.36
12 - 17 - 91	14 : 13	253	29.02	0.43
12 - 17 - 91	14 : 38	278	29.05	0.46
12 - 17 - 91	14 : 41	281	29.13	0.54
12 - 17 - 91	14 : 45	285	29.17	0.58
12 - 17 - 91	15 : 39	339	29.45	0.86
12 - 17 - 91	16 : 36	396	29.28	0.69
12 - 17 - 91	17 : 42	462	29.22	0.63
12 - 17 - 91	18 : 42	522	29.43	0.84
12 - 17 - 91	19 : 26	566	29.48	0.89
12 - 17 - 91	20 : 46	646	29.59	1.00
12 - 17 - 91	22 : 20	740	29.70	1.11
12 - 17 - 91	23 : 15	795	29.89	1.30
12 - 18 - 91	0 : 43	883	30.10	1.51
12 - 18 - 91	1 : 52	952	30.05	1.46
12 - 18 - 91	3 : 3	1023	30.05	1.46
12 - 18 - 91	4 : 0	1080	30.10	1.51
12 - 18 - 91	4 : 55	1135	30.15	1.56
12 - 18 - 91	5 : 57	1197	30.20	1.61
12 - 18 - 91	6 : 55	1255	30.25	1.66
12 - 18 - 91	7 : 55	1315	30.35	1.76

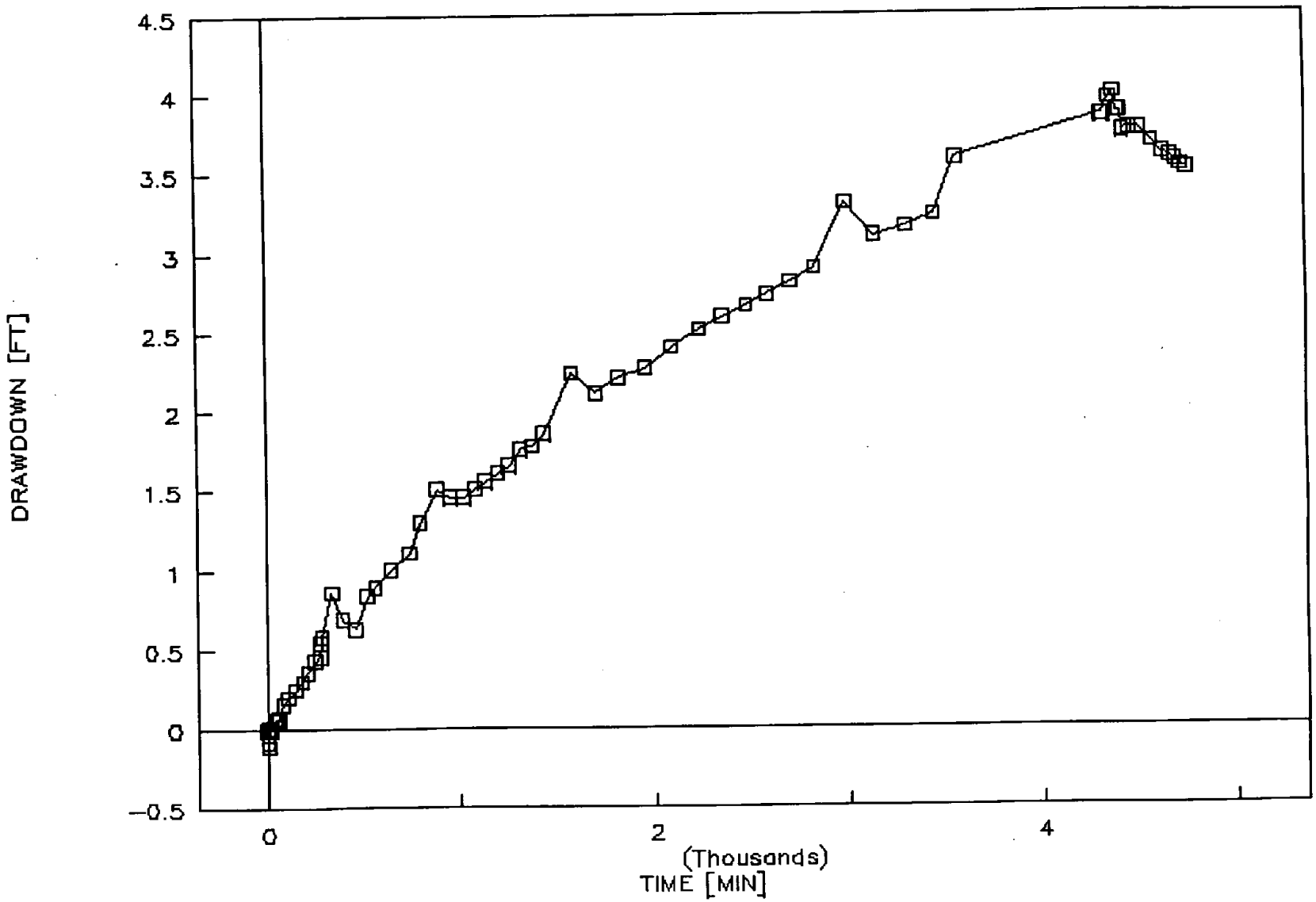
D000055

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-2D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	8 : 53	1373	30.37	1.78
12 - 18 - 91	9 : 56	1436	30.45	1.86
12 - 18 - 91	12 : 18	1578	30.83	2.24
12 - 18 - 91	14 : 20	1700	30.70	2.11
12 - 18 - 91	16 : 27	1827	30.80	2.21
12 - 18 - 91	18 : 38	1958	30.86	2.27
12 - 18 - 91	20 : 57	2097	30.99	2.40
12 - 18 - 91	23 : 21	2241	31.10	2.51
12 - 19 - 91	1 : 18	2358	31.18	2.59
12 - 19 - 91	3 : 19	2479	31.25	2.66
12 - 19 - 91	5 : 10	2590	31.32	2.73
12 - 19 - 91	7 : 7	2707	31.40	2.81
12 - 19 - 91	9 : 11	2831	31.49	2.90
12 - 19 - 91	11 : 55	2995	31.90	3.31
12 - 19 - 91	14 : 21	3141	31.69	3.10
12 - 19 - 91	17 : 5	3305	31.75	3.16
12 - 19 - 91	19 : 34	3454	31.82	3.23
12 - 19 - 91	21 : 28	3568	32.18	3.59
12 - 20 - 91	9 : 57	4317	32.44	3.85
12 - 20 - 91	10 : 0	4320	32.44	3.85
12 - 20 - 91	10 : 2	4322	32.44	3.85
12 - 20 - 91	10 : 4	4324	32.44	3.85
12 - 20 - 91	10 : 6	4326	32.44	3.85
12 - 20 - 91	10 : 9	4329	32.44	3.85
12 - 20 - 91	10 : 37	4357	32.54	3.95
12 - 20 - 91	11 : 0	4380	32.58	3.99
12 - 20 - 91	11 : 17	4397	32.46	3.87
12 - 20 - 91	11 : 32	4412	32.46	3.87
12 - 20 - 91	11 : 46	4426	32.34	3.75
12 - 20 - 91	12 : 20	4460	32.35	3.76
12 - 20 - 91	13 : 10	4510	32.35	3.76
12 - 20 - 91	14 : 15	4575	32.27	3.68
12 - 20 - 91	15 : 9	4629	32.20	3.61
12 - 20 - 91	15 : 47	4667	32.18	3.59
12 - 20 - 91	16 : 17	4697	32.15	3.56
12 - 20 - 91	16 : 43	4723	32.12	3.53
12 - 20 - 91	17 : 13	4753	32.10	3.51

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-2D



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-3
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	29.83	0.00
12 - 17 - 91	10 : 1	1	29.83	0.00
12 - 17 - 91	10 : 2	2	29.83	0.00
12 - 17 - 91	10 : 3	3	29.91	0.08
12 - 17 - 91	10 : 4	4	29.93	0.10
12 - 17 - 91	10 : 5	5	30.00	0.17
12 - 17 - 91	10 : 13	13	30.22	0.39
12 - 17 - 91	10 : 14	14	30.24	0.41
12 - 17 - 91	10 : 15	15	30.30	0.47
12 - 17 - 91	10 : 16	16	30.30	0.47
12 - 17 - 91	10 : 17	17	30.32	0.49
12 - 17 - 91	10 : 18	18	30.33	0.50
12 - 17 - 91	10 : 29	29	30.54	0.71
12 - 17 - 91	10 : 30	30	30.60	0.77
12 - 17 - 91	10 : 31	31	30.60	0.77
12 - 17 - 91	10 : 40	40	30.72	0.89
12 - 17 - 91	10 : 47	47	30.83	1.00
12 - 17 - 91	10 : 57	57	31.00	1.17
12 - 17 - 91	11 : 4	64	31.09	1.26
12 - 17 - 91	11 : 14	74	31.20	1.37
12 - 17 - 91	11 : 29	89	31.40	1.57
12 - 17 - 91	11 : 53	113	31.94	2.11
12 - 17 - 91	12 : 18	138	31.86	2.03
12 - 17 - 91	12 : 41	161	32.05	2.22
12 - 17 - 91	12 : 52	172	32.13	2.30
12 - 17 - 91	13 : 9	189	32.22	2.39
12 - 17 - 91	13 : 19	199	32.31	2.48
12 - 17 - 91	13 : 32	212	32.42	2.59
12 - 17 - 91	13 : 43	223	32.44	2.61
12 - 17 - 91	13 : 53	233	32.45	2.62
12 - 17 - 91	14 : 4	244	32.61	2.78
12 - 17 - 91	14 : 30	270	32.81	2.98
12 - 17 - 91	15 : 0	300	32.98	3.15
12 - 17 - 91	15 : 30	330	33.10	3.27
12 - 17 - 91	16 : 0	360	33.26	3.43
12 - 17 - 91	17 : 21	441	33.67	3.84
12 - 17 - 91	18 : 13	493	33.89	4.06
12 - 17 - 91	19 : 17	557	34.13	4.30

D000058

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-3
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	20 : 30	630	34.38	4.55
12 - 17 - 91	21 : 35	695	34.58	4.75
12 - 17 - 91	22 : 0	720	34.66	4.83
12 - 17 - 91	23 : 0	780	34.81	4.98
12 - 18 - 91	0 : 30	870	35.08	5.25
12 - 18 - 91	1 : 40	940	35.28	5.45
12 - 18 - 91	2 : 50	1010	35.38	5.55
12 - 18 - 91	3 : 47	1067	35.44	5.61
12 - 18 - 91	5 : 10	1150	35.77	5.94
12 - 18 - 91	6 : 7	1207	35.82	5.99
12 - 18 - 91	7 : 7	1267	36.60	6.77
12 - 18 - 91	8 : 8	1328	36.20	6.37
12 - 18 - 91	9 : 3	1383	36.31	6.48
12 - 18 - 91	10 : 5	1445	36.54	6.71
12 - 18 - 91	11 : 56	1556	36.60	6.77
12 - 18 - 91	13 : 57	1677	36.77	6.94
12 - 18 - 91	16 : 5	1805	36.93	7.10
12 - 18 - 91	17 : 55	1915	36.98	7.15
12 - 18 - 91	20 : 35	2075	37.21	7.38
12 - 18 - 91	23 : 40	2260	37.42	7.59
12 - 19 - 91	1 : 35	2375	37.57	7.74
12 - 19 - 91	3 : 33	2493	37.72	7.89
12 - 19 - 91	5 : 30	2610	37.77	7.94
12 - 19 - 91	7 : 23	2723	37.94	8.11
12 - 19 - 91	9 : 21	2841	38.06	8.23
12 - 19 - 91	11 : 37	2977	38.15	8.32
12 - 19 - 91	14 : 6	3126	38.30	8.47
12 - 19 - 91	16 : 28	3268	38.38	8.55
12 - 19 - 91	19 : 17	3437	38.54	8.71
12 - 19 - 91	21 : 10	3550	38.63	8.80
12 - 20 - 91	0 : 24	3744	38.84	9.01
12 - 20 - 91	2 : 21	3861	38.95	9.12
12 - 20 - 91	4 : 20	3980	39.04	9.21
12 - 20 - 91	7 : 11	4151	39.16	9.33
12 - 20 - 91	9 : 50	4310	39.20	9.37
12 - 20 - 91	9 : 55	4315	39.21	9.38
12 - 20 - 91	10 : 0	4320	39.20	9.37
12 - 20 - 91	10 : 1	4321	39.12	9.29

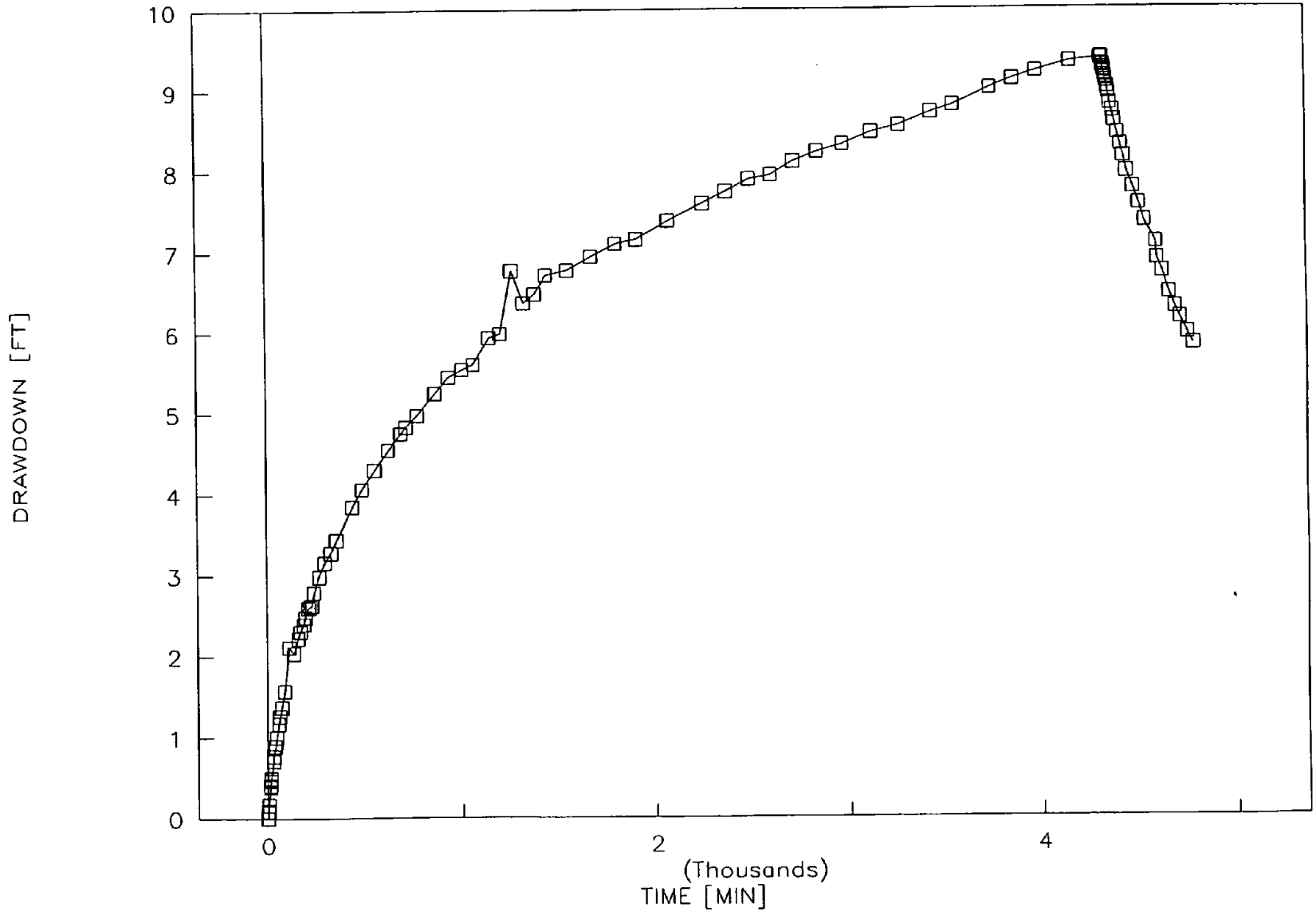
D 000059

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-3
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 20 - 91	10 : 2	4322	39.12	9.29
12 - 20 - 91	10 : 3	4323	39.11	9.28
12 - 20 - 91	10 : 4	4324	39.10	9.27
12 - 20 - 91	10 : 5	4325	39.10	9.27
12 - 20 - 91	10 : 6	4326	39.08	9.25
12 - 20 - 91	10 : 7	4327	39.08	9.25
12 - 20 - 91	10 : 8	4328	39.06	9.23
12 - 20 - 91	10 : 9	4329	39.05	9.22
12 - 20 - 91	10 : 10	4330	39.03	9.20
12 - 20 - 91	10 : 12	4332	39.01	9.18
12 - 20 - 91	10 : 14	4334	38.98	9.15
12 - 20 - 91	10 : 16	4336	38.96	9.13
12 - 20 - 91	10 : 18	4338	38.94	9.11
12 - 20 - 91	10 : 20	4340	38.91	9.08
12 - 20 - 91	10 : 25	4345	38.84	9.01
12 - 20 - 91	10 : 30	4350	38.78	8.95
12 - 20 - 91	10 : 40	4360	38.64	8.81
12 - 20 - 91	10 : 50	4370	38.54	8.71
12 - 20 - 91	11 : 0	4380	38.43	8.60
12 - 20 - 91	11 : 15	4395	38.27	8.44
12 - 20 - 91	11 : 30	4410	38.13	8.30
12 - 20 - 91	11 : 45	4425	37.98	8.15
12 - 20 - 91	12 : 0	4440	37.80	7.97
12 - 20 - 91	12 : 30	4470	37.60	7.77
12 - 20 - 91	13 : 0	4500	37.40	7.57
12 - 20 - 91	13 : 30	4530	37.19	7.36
12 - 20 - 91	14 : 30	4590	36.92	7.09
12 - 20 - 91	14 : 33	4593	36.72	6.89
12 - 20 - 91	15 : 0	4620	36.56	6.73
12 - 20 - 91	15 : 37	4657	36.30	6.47
12 - 20 - 91	16 : 8	4688	36.12	6.29
12 - 20 - 91	16 : 32	4712	35.99	6.16
12 - 20 - 91	17 : 10	4750	35.80	5.97
12 - 20 - 91	17 : 39	4779	35.66	5.83

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-3



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 17 - 91	0	12.29	0.00
12 - 17 - 91	0.5	12.29	0.00
12 - 17 - 91	2	12.27	0.02
12 - 17 - 91	5.5	12.27	0.02
12 - 17 - 91	10	12.26	0.03
12 - 17 - 91	22	12.25	0.04
12 - 17 - 91	24	12.24	0.05
12 - 17 - 91	32	12.23	0.06
12 - 17 - 91	40	12.22	0.07
12 - 17 - 91	42	12.21	0.08
12 - 17 - 91	44	12.20	0.09
12 - 17 - 91	50	12.20	0.09
12 - 17 - 91	52	12.19	0.10
12 - 17 - 91	60	12.18	0.11
12 - 17 - 91	62	12.17	0.12
12 - 17 - 91	70	12.16	0.13
12 - 17 - 91	76	12.15	0.14
12 - 17 - 91	80	12.14	0.15
12 - 17 - 91	86	12.13	0.16
12 - 17 - 91	88	12.12	0.17
12 - 17 - 91	96	12.11	0.18
12 - 17 - 91	98	12.10	0.19
12 - 17 - 91	100	12.10	0.19
12 - 17 - 91	110	12.08	0.21
12 - 17 - 91	120	12.06	0.23
12 - 17 - 91	130	12.04	0.25
12 - 17 - 91	140	12.03	0.26
12 - 17 - 91	150	12.01	0.28
12 - 17 - 91	160	12.00	0.29
12 - 17 - 91	170	11.98	0.31
12 - 17 - 91	180	11.97	0.32
12 - 17 - 91	190	11.95	0.34
12 - 17 - 91	200	11.94	0.35
12 - 17 - 91	210	11.92	0.37
12 - 17 - 91	220	11.91	0.38
12 - 17 - 91	230	11.90	0.39

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 17 - 91	240	11.89	0.40
12 - 17 - 91	250	11.87	0.42
12 - 17 - 91	260	11.86	0.43
12 - 17 - 91	270	11.85	0.44
12 - 17 - 91	280	11.84	0.45
12 - 17 - 91	290	11.82	0.47
12 - 17 - 91	300	11.82	0.47
12 - 17 - 91	310	11.81	0.48
12 - 17 - 91	320	11.80	0.49
12 - 17 - 91	330	11.79	0.50
12 - 17 - 91	340	11.78	0.51
12 - 17 - 91	350	11.77	0.52
12 - 17 - 91	360	11.76	0.53
12 - 17 - 91	370	11.75	0.54
12 - 17 - 91	380	11.73	0.56
12 - 17 - 91	390	11.73	0.56
12 - 17 - 91	400	11.72	0.57
12 - 17 - 91	410	11.70	0.59
12 - 17 - 91	420	11.70	0.59
12 - 17 - 91	430	11.69	0.60
12 - 17 - 91	440	11.68	0.61
12 - 17 - 91	450	11.67	0.62
12 - 17 - 91	460	11.66	0.63
12 - 17 - 91	480	11.65	0.64
12 - 17 - 91	490	11.63	0.66
12 - 17 - 91	500	11.63	0.66
12 - 17 - 91	500	11.63	0.66
12 - 17 - 91	510	11.62	0.67
12 - 17 - 91	520	11.61	0.68
12 - 17 - 91	540	11.60	0.69
12 - 17 - 91	550	11.59	0.70
12 - 17 - 91	560	11.58	0.71
12 - 17 - 91	570	11.57	0.72
12 - 17 - 91	590	11.56	0.73
12 - 17 - 91	600	11.55	0.74
12 - 17 - 91	620	11.54	0.75

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

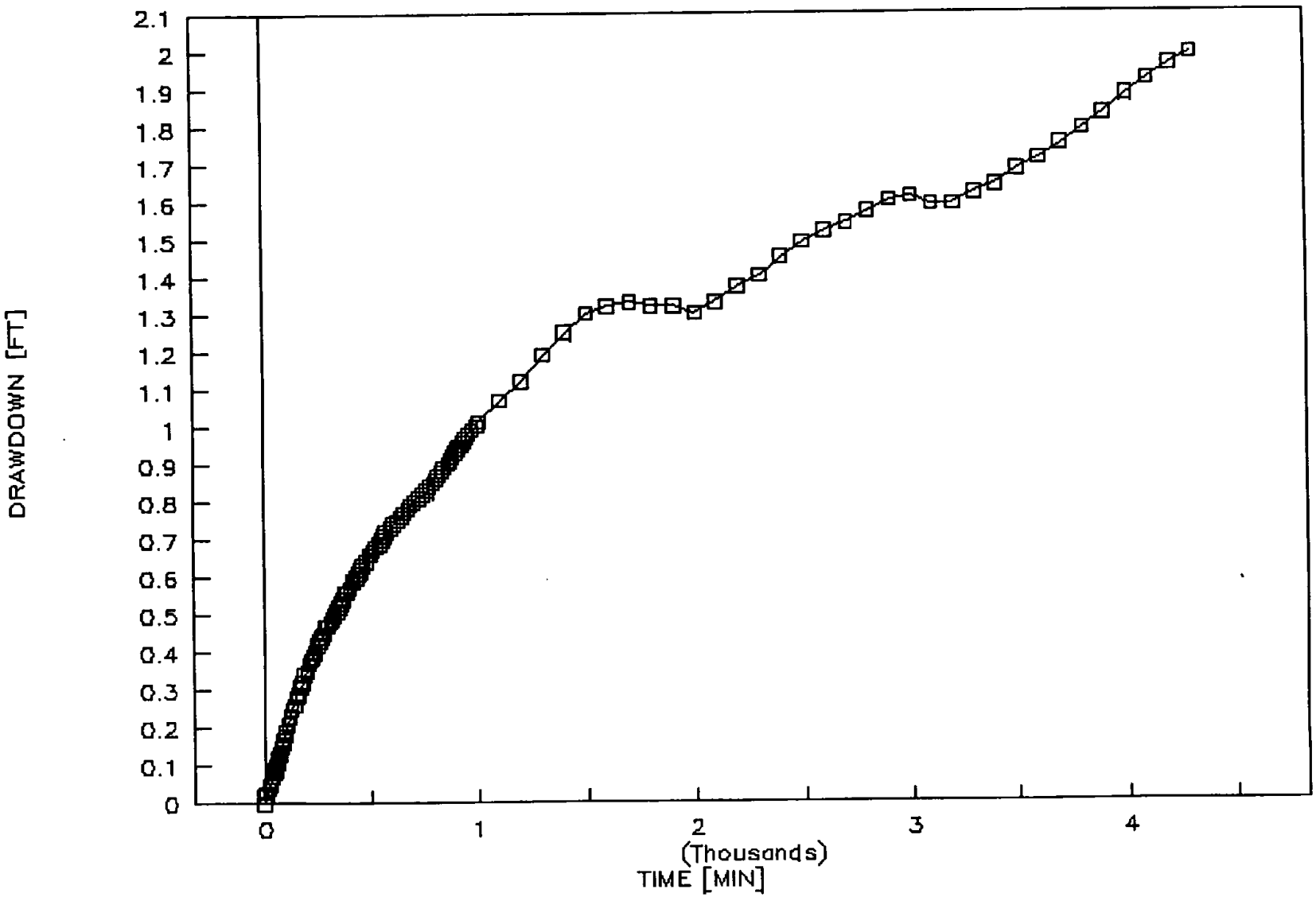
DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 17 - 91	640	11.53	0.76
12 - 17 - 91	650	11.52	0.77
12 - 17 - 91	670	11.51	0.78
12 - 17 - 91	680	11.50	0.79
12 - 17 - 91	700	11.49	0.80
12 - 17 - 91	720	11.48	0.81
12 - 17 - 91	740	11.47	0.82
12 - 17 - 91	760	11.46	0.83
12 - 17 - 91	770	11.45	0.84
12 - 17 - 91	790	11.44	0.85
12 - 17 - 91	800	11.43	0.86
12 - 17 - 91	810	11.42	0.87
12 - 17 91	830	11.41	0.88
12 - 18 91	840	11.40	0.89
12 - 18 91	860	11.39	0.90
12 - 18 91	870	11.38	0.91
12 - 18 91	880	11.37	0.92
12 - 18 91	890	11.36	0.93
12 - 18 91	900	11.35	0.94
12 - 18 91	910	11.34	0.95
12 - 18 91	920	11.34	0.95
12 - 18 91	930	11.33	0.96
12 - 18 91	940	11.32	0.97
12 - 18 91	950	11.31	0.98
12 - 18 91	970	11.30	0.99
12 - 18 91	990	11.29	1.00
12 - 18 91	1000	11.28	1.01
12 - 18 91	1100	11.22	1.07
12 - 18 91	1200	11.17	1.12
12 - 18 91	1300	11.10	1.19
12 - 18 91	1400	11.04	1.25
12 - 18 91	1500	10.99	1.30
12 - 18 91	1600	10.97	1.32
12 - 18 91	1700	10.96	1.33
12 - 18 91	1800	10.97	1.32
12 - 18 91	1900	10.97	1.32

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 18 - 91	2000	10.99	1.30
12 - 18 - 91	2100	10.96	1.33
12 - 18 - 91	2200	10.92	1.37
12 - 19 - 91	2300	10.89	1.40
12 - 19 - 91	2400	10.84	1.45
12 - 19 - 91	2500	10.80	1.49
12 - 19 - 91	2600	10.77	1.52
12 - 19 - 91	2700	10.75	1.54
12 - 19 - 91	2800	10.72	1.57
12 - 19 - 91	2900	10.69	1.60
12 - 19 - 91	3000	10.68	1.61
12 - 19 - 91	3100	10.70	1.59
12 - 19 - 91	3200	10.70	1.59
12 - 19 - 91	3300	10.67	1.62
12 - 19 - 91	3400	10.65	1.64
12 - 19 - 91	3500	10.61	1.68
12 - 19 - 91	3600	10.58	1.71
12 - 19 - 91	3700	10.54	1.75
12 - 20 - 91	3800	10.50	1.79
12 - 20 - 91	3900	10.46	1.83
12 - 20 - 91	4000	10.41	1.88
12 - 20 - 91	4100	10.37	1.92
12 - 20 - 91	4200	10.33	1.96
12 - 20 - 91	4300	10.30	1.99

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-4S



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 17 - 91	0	7.85	0.00
12 - 17 - 91	0.18	7.85	0.00
12 - 17 - 91	0.83	7.85	0.00
12 - 17 - 91	4.5	7.84	0.01
12 - 17 - 91	7.5	7.83	0.02
12 - 17 - 91	8	7.83	0.02
12 - 17 - 91	9.5	7.82	0.03
12 - 17 - 91	10	7.82	0.03
12 - 17 - 91	12	7.81	0.04
12 - 17 - 91	98	7.81	0.04
12 - 17 - 91	100	7.81	0.04
12 - 17 - 91	110	7.81	0.04
12 - 17 - 91	120	7.81	0.04
12 - 17 - 91	130	7.82	0.03
12 - 17 - 91	140	7.82	0.03
12 - 17 - 91	150	7.82	0.03
12 - 17 - 91	160	7.82	0.03
12 - 17 - 91	170	7.82	0.03
12 - 17 - 91	180	7.82	0.03
12 - 17 - 91	190	7.82	0.03
12 - 17 - 91	200	7.82	0.03
12 - 17 - 91	210	7.82	0.03
12 - 17 - 91	220	7.82	0.03
12 - 17 - 91	230	7.81	0.04
12 - 17 - 91	240	7.81	0.04
12 - 17 - 91	250	7.81	0.04
12 - 17 - 91	260	7.81	0.04
12 - 17 - 91	270	7.81	0.04
12 - 17 - 91	280	7.81	0.04
12 - 17 - 91	290	7.80	0.05
12 - 17 - 91	300	7.81	0.04
12 - 17 - 91	330	7.80	0.05
12 - 17 - 91	360	7.79	0.06
12 - 17 - 91	390	7.78	0.07
12 - 17 - 91	420	7.77	0.08
12 - 17 - 91	450	7.76	0.09

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 17 - 91	480	7.75	0.10
12 - 17 - 91	510	7.74	0.11
12 - 17 - 91	530	7.73	0.12
12 - 17 - 91	570	7.72	0.13
12 - 17 - 91	610	7.71	0.14
12 - 17 - 91	650	7.70	0.15
12 - 17 - 91	700	7.69	0.16
12 - 17 - 91	730	7.68	0.17
12 - 17 - 91	770	7.67	0.18
12 - 17 - 91	800	7.66	0.19
12 - 17 - 91	820	7.65	0.20
12 - 18 - 91	840	7.64	0.21
12 - 18 - 91	850	7.63	0.22
12 - 18 - 91	860	7.63	0.22
12 - 18 - 91	870	7.62	0.23
12 - 18 - 91	880	7.62	0.23
12 - 18 - 91	890	7.62	0.23
12 - 18 - 91	910	7.61	0.24
12 - 18 - 91	930	7.60	0.25
12 - 18 - 91	940	7.59	0.26
12 - 18 - 91	970	7.58	0.27
12 - 18 - 91	980	7.57	0.28
12 - 18 - 91	990	7.56	0.29
12 - 18 - 91	1000	7.56	0.29
12 - 18 - 91	1100	7.58	0.27
12 - 18 - 91	1200	7.53	0.32
12 - 18 - 91	1300	7.48	0.37
12 - 18 - 91	1400	7.43	0.42
12 - 18 - 91	1500	7.40	0.45
12 - 18 - 91	1600	7.39	0.46
12 - 18 - 91	1700	7.38	0.47
12 - 18 - 91	1800	7.39	0.46
12 - 18 - 91	1900	7.40	0.45
12 - 18 - 91	2000	7.42	0.43
12 - 18 - 91	2100	7.41	0.44
12 - 18 - 91	2200	7.39	0.46

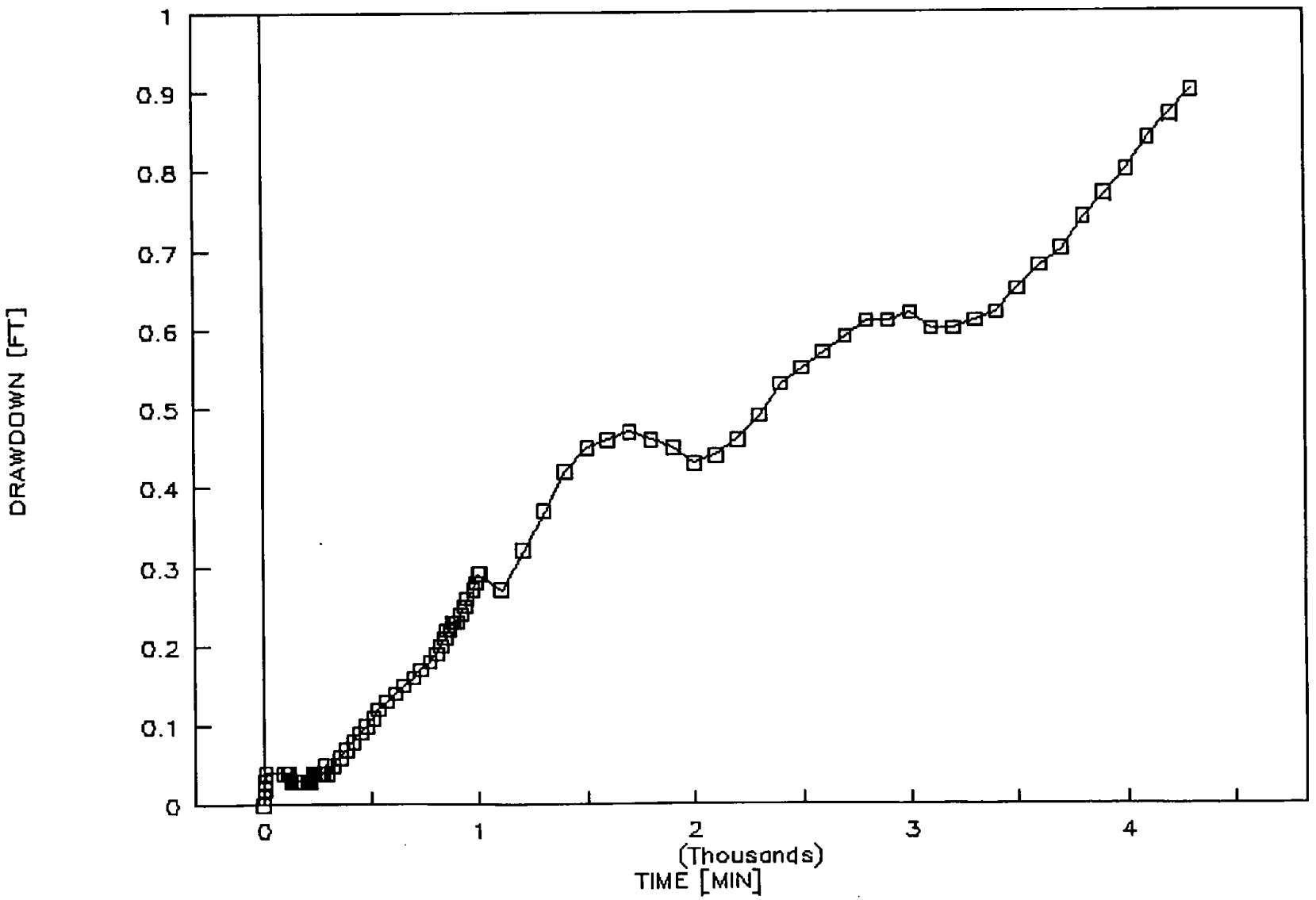
0000068

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-4D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	TEST TIME	HEIGHT OF WATER	DRAWDOWN
[DAY - MO - YR]	[MIN]	[FT]	[FT]
12 - 19 - 91	2300	7.36	0.49
12 - 19 - 91	2400	7.32	0.53
12 - 19 - 91	2500	7.30	0.55
12 - 19 - 91	2600	7.28	0.57
12 - 19 - 91	2700	7.26	0.59
12 - 19 - 91	2800	7.24	0.61
12 - 19 - 91	2900	7.24	0.61
12 - 19 - 91	3000	7.23	0.62
12 - 19 - 91	3100	7.25	0.60
12 - 19 - 91	3200	7.25	0.60
12 - 19 - 91	3300	7.24	0.61
12 - 19 - 91	3400	7.23	0.62
12 - 19 91	3500	7.20	0.65
12 - 19 91	3600	7.17	0.68
12 - 19 91	3700	7.15	0.70
12 - 20 91	3800	7.11	0.74
12 - 20 91	3900	7.08	0.77
12 - 20 91	4000	7.05	0.80
12 - 20 91	4100	7.01	0.84
12 - 20 91	4200	6.98	0.87
12 - 20 91	4300	6.95	0.90

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-4D



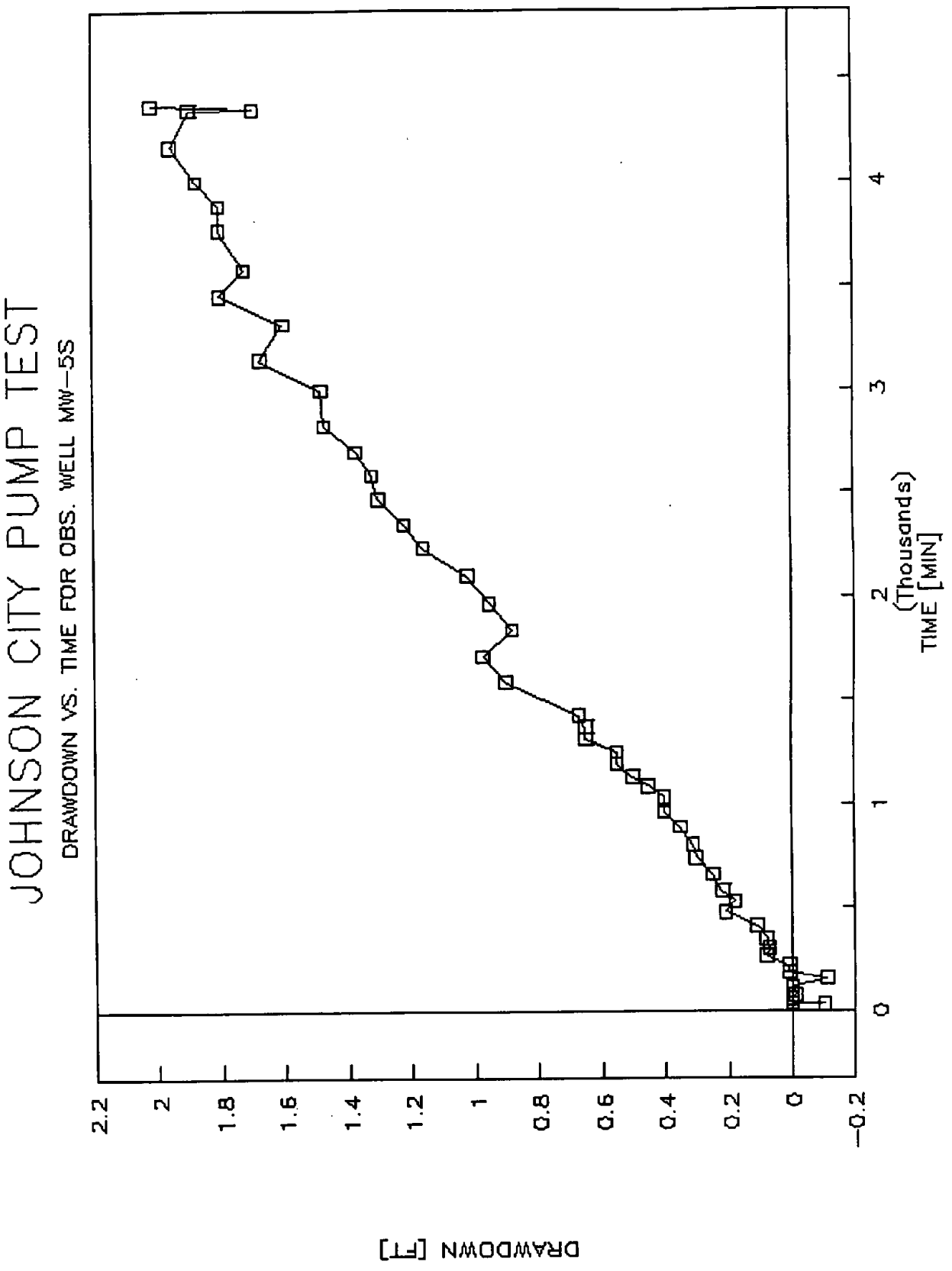
PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-5S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	21.25	0.00
12 - 17 - 91	10 : 37	37	21.15	-0.10
12 - 17 - 91	10 : 38	38	21.25	0.00
12 - 17 - 91	10 : 40	40	21.25	0.00
12 - 17 - 91	11 : 5	65	21.25	0.00
12 - 17 - 91	11 : 20	80	21.24	-0.01
12 - 17 - 91	12 : 1	121	21.25	0.00
12 - 17 - 91	12 : 39	159	21.14	-0.11
12 - 17 - 91	13 : 8	188	21.26	0.01
12 - 17 - 91	13 : 43	223	21.26	0.01
12 - 17 - 91	14 : 28	268	21.33	0.08
12 - 17 - 91	15 : 4	304	21.32	0.07
12 - 17 - 91	15 : 51	351	21.33	0.08
12 - 17 - 91	16 : 53	413	21.36	0.11
12 - 17 - 91	17 : 59	479	21.46	0.21
12 - 17 - 91	18 : 54	534	21.43	0.18
12 - 17 - 91	19 : 45	585	21.47	0.22
12 - 17 - 91	21 : 0	660	21.50	0.25
12 - 17 - 91	22 : 20	740	21.55	0.30
12 - 17 - 91	23 : 22	802	21.56	0.31
12 - 18 - 91	0 : 47	887	21.60	0.35
12 - 18 - 91	2 : 0	960	21.65	0.40
12 - 18 - 91	3 : 9	1029	21.65	0.40
12 - 18 - 91	4 : 4	1084	21.70	0.45
12 - 18 - 91	4 : 46	1126	21.75	0.50
12 - 18 - 91	5 : 47	1187	21.80	0.55
12 - 18 - 91	6 : 50	1250	21.80	0.55
12 - 18 - 91	7 : 51	1311	21.90	0.65
12 - 18 - 91	8 : 49	1369	21.90	0.65
12 - 18 - 91	9 : 42	1422	21.92	0.67
12 - 18 - 91	12 : 25	1585	22.15	0.90
12 - 18 - 91	14 : 30	1710	22.22	0.97
12 - 18 - 91	16 : 35	1835	22.13	0.88
12 - 18 - 91	18 : 48	1968	22.20	0.95
12 - 18 - 91	20 : 59	2099	22.27	1.02
12 - 18 - 91	23 : 15	2235	22.41	1.16

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-5S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 19 - 91	1 : 10	2350	22.47	1.22
12 - 19 - 91	3 : 13	2473	22.55	1.30
12 - 19 - 91	5 : 3	2583	22.57	1.32
12 - 19 - 91	6 : 59	2699	22.62	1.37
12 - 19 - 91	9 : 8	2828	22.72	1.47
12 - 19 - 91	11 : 59	2999	22.73	1.48
12 - 19 - 91	14 : 27	3147	22.92	1.67
12 - 19 - 91	17 : 15	3315	22.85	1.60
12 - 19 - 91	19 : 37	3457	23.05	1.80
12 - 19 - 91	21 : 36	3576	22.97	1.72
12 - 20 - 91	0 : 48	3768	23.05	1.80
12 - 20 - 91	2 : 44	3884	23.05	1.80
12 - 20 - 91	4 : 41	4001	23.12	1.87
12 - 20 - 91	7 : 30	4170	23.20	1.95
12 - 20 - 91	10 : 25	4345	23.14	1.89
12 - 20 - 91	10 : 29	4349	22.94	1.69
12 - 20 - 91	10 : 48	4368	23.26	2.01

D 000072


JOHNSON CITY PUMP TEST
DRAWDOWN VS. TIME FOR OBS. WELL MW-5S
DRAWDOWN [FT]
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
-0.2
0
1
2
3
4
(Thousands)
TIME [MIN]

D 000073

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-5D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	21.34	0.00
12 - 17 - 91	10 : 35	35	21.30	-0.04
12 - 17 - 91	10 : 39	39	21.35	0.01
12 - 17 - 91	10 : 41	41	21.35	0.01
12 - 17 - 91	11 : 4	64	21.25	-0.09
12 - 17 - 91	11 : 21	81	21.35	0.01
12 - 17 - 91	12 : 3	123	21.25	-0.09
12 - 17 - 91	12 : 41	161	21.37	0.03
12 - 17 - 91	13 : 9	189	21.38	0.04
12 - 17 - 91	13 : 44	224	21.37	0.03
12 - 17 - 91	14 : 30	270	21.47	0.13
12 - 17 - 91	15 : 6	306	21.46	0.12
12 - 17 - 91	15 : 53	353	21.43	0.09
12 - 17 - 91	16 : 55	415	21.48	0.14
12 - 17 - 91	18 : 0	480	21.49	0.15
12 - 17 - 91	18 : 56	536	21.58	0.24
12 - 17 - 91	19 : 47	587	21.56	0.22
12 - 17 - 91	21 : 2	662	21.60	0.26
12 - 17 - 91	22 : 22	742	21.65	0.31
12 - 17 - 91	23 : 20	800	21.70	0.36
12 - 18 - 91	0 : 45	885	21.75	0.41
12 - 18 - 91	1 : 58	958	21.80	0.46
12 - 18 - 91	3 : 6	1026	21.85	0.51
12 - 18 - 91	4 : 3	1083	21.87	0.53
12 - 18 - 91	4 : 45	1125	21.90	0.56
12 - 18 - 91	5 : 45	1185	21.90	0.56
12 - 18 - 91	6 : 48	1248	21.95	0.61
12 - 18 - 91	7 : 50	1310	22.00	0.66
12 - 18 - 91	8 : 47	1367	22.03	0.69
12 - 18 - 91	9 : 51	1431	22.05	0.71
12 - 18 - 91	12 : 26	1586	22.12	0.78
12 - 18 - 91	14 : 33	1713	22.14	0.80
12 - 18 - 91	16 : 38	1838	22.28	0.94
12 - 18 - 91	18 : 50	1970	22.31	0.97
12 - 18 - 91	21 : 5	2105	22.40	1.06
12 - 18 - 91	23 : 16	2236	22.48	1.14

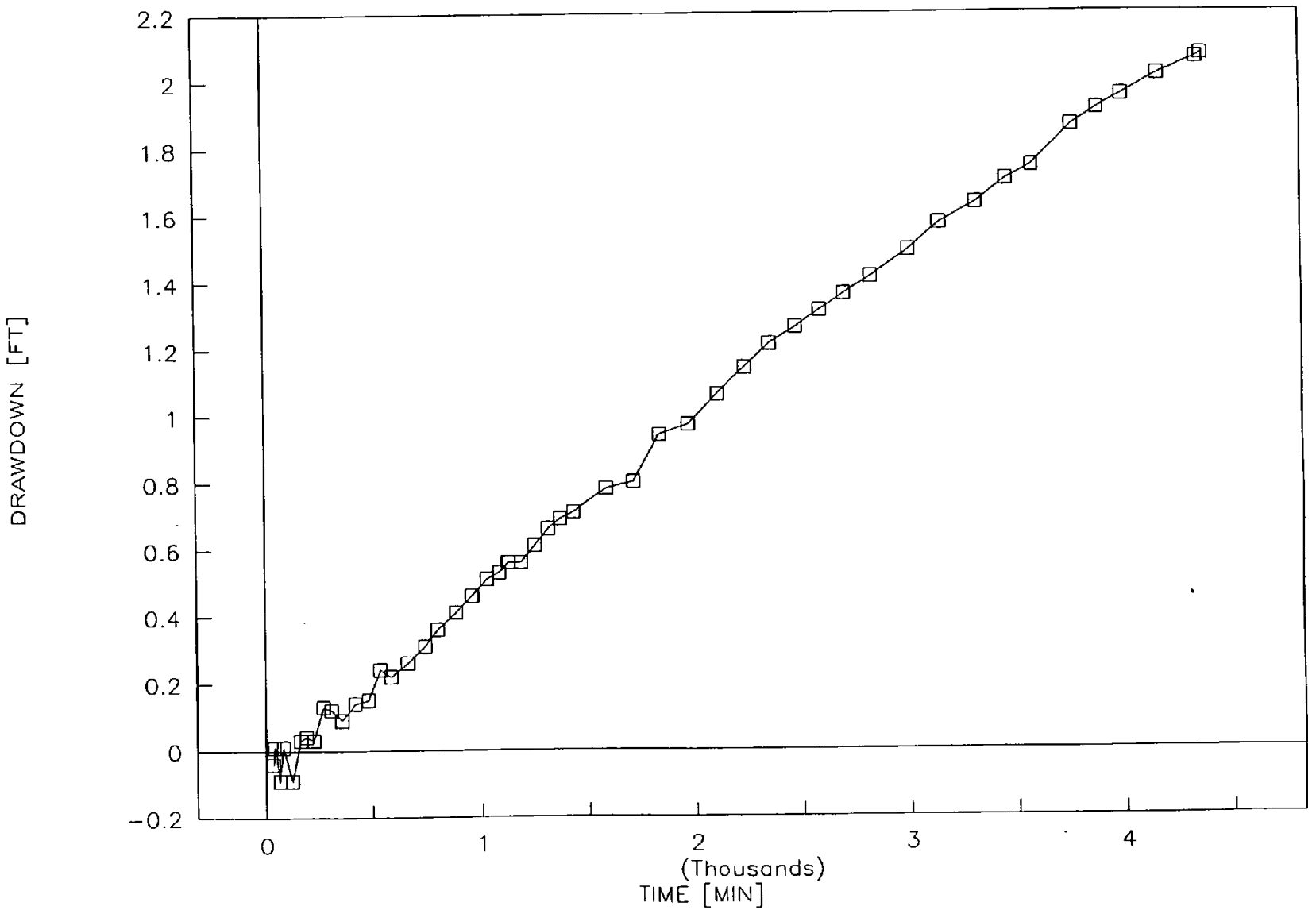
D000074

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-5D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 19 - 91	1 : 9	2349	22.55	1.21
12 - 19 - 91	3 : 12	2472	22.60	1.26
12 - 19 - 91	5 : 5	2585	22.65	1.31
12 - 19 - 91	7 : 0	2700	22.70	1.36
12 - 19 - 91	9 : 7	2827	22.75	1.41
12 - 19 - 91	12 : 4	3004	22.83	1.49
12 - 19 - 91	14 : 28	3148	22.91	1.57
12 - 19 - 91	17 : 18	3318	22.97	1.63
12 - 19 - 91	19 : 40	3460	23.04	1.70
12 - 19 - 91	21 : 40	3580	23.08	1.74
12 - 20 - 91	0 : 45	3765	23.20	1.86
12 - 20 - 91	2 : 43	3883	23.25	1.91
12 - 20 - 91	4 : 40	4000	23.29	1.95
12 - 20 - 91	7 : 25	4165	23.35	2.01
12 - 20 - 91	10 : 27	4347	23.40	2.06
12 - 20 - 91	10 : 30	4350	23.40	2.06
12 - 20 - 91	10 : 51	4371	23.41	2.07

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-5D



D 000076

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	10.13	0.00
12 - 17 - 91	10 : 8	8	10.15	0.02
12 - 17 - 91	10 : 9	9	10.17	0.04
12 - 17 - 91	10 : 10	10	10.17	0.04
12 - 17 - 91	10 : 24	24	10.22	0.09
12 - 17 - 91	10 : 25	25	10.23	0.10
12 - 17 - 91	10 : 26	26	10.24	0.11
12 - 17 - 91	10 : 42	42	10.29	0.16
12 - 17 - 91	11 : 0	60	10.35	0.22
12 - 17 - 91	11 : 8	68	10.38	0.25
12 - 17 - 91	11 : 36	96	10.48	0.35
12 - 17 - 91	12 : 27	147	10.68	0.55
12 - 17 - 91	12 : 48	168	10.76	0.63
12 - 17 - 91	13 : 13	193	10.82	0.69
12 - 17 - 91	13 : 23	203	10.88	0.75
12 - 17 - 91	13 : 39	219	10.92	0.79
12 - 17 - 91	13 : 49	229	10.93	0.80
12 - 17 - 91	13 : 59	239	10.95	0.82
12 - 17 - 91	14 : 15	255	10.95	0.82
12 - 17 - 91	14 : 45	285	11.13	1.00
12 - 17 - 91	15 : 15	315	11.33	1.20
12 - 17 - 91	15 : 45	345	11.34	1.21
12 - 17 - 91	16 : 17	377	11.45	1.32
12 - 17 - 91	17 : 32	452	11.65	1.52
12 - 17 - 91	18 : 30	510	11.80	1.67
12 - 17 - 91	19 : 21	561	11.94	1.81
12 - 17 - 91	20 : 36	636	12.09	1.96
12 - 17 - 91	22 : 10	730	12.31	2.18
12 - 17 - 91	23 : 10	790	12.42	2.29
12 - 18 - 91	0 : 38	878	12.60	2.47
12 - 18 - 91	1 : 49	949	12.70	2.57
12 - 18 - 91	2 : 58	1018	12.80	2.67
12 - 18 - 91	3 : 55	1075	12.85	2.72
12 - 18 - 91	5 : 5	1145	12.95	2.82
12 - 18 - 91	6 : 5	1205	13.10	2.97
12 - 18 - 91	7 : 3	1263	13.15	3.02

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

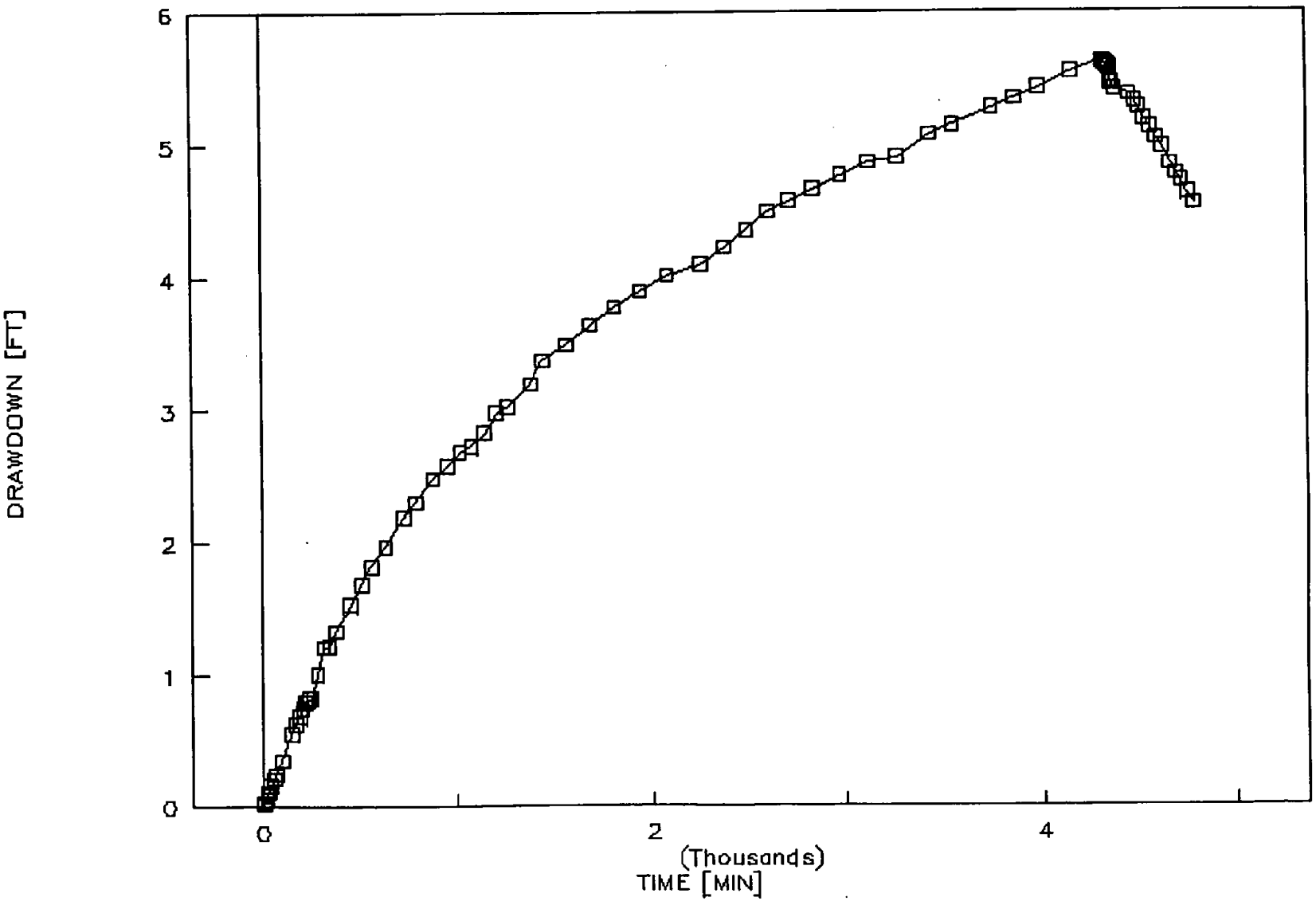
DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	9 : 0	1380	13.32	3.19
12 - 18 - 91	10 : 3	1443	13.50	3.37
12 - 18 - 91	12 : 0	1560	13.62	3.49
12 - 18 - 91	14 : 6	1686	13.77	3.64
12 - 18 - 91	16 : 8	1808	13.90	3.77
12 - 18 - 91	18 : 20	1940	14.02	3.89
12 - 18 - 91	20 : 40	2080	14.14	4.01
12 - 18 - 91	23 : 35	2255	14.22	4.09
12 - 19 - 91	1 : 35	2375	14.35	4.22
12 - 19 - 91	3 : 30	2490	14.48	4.35
12 - 19 - 91	5 : 25	2605	14.62	4.49
12 - 19 - 91	7 : 17	2717	14.70	4.57
12 - 19 - 91	9 : 18	2838	14.79	4.66
12 - 19 - 91	11 : 41	2981	14.89	4.76
12 - 19 - 91	14 : 9	3129	14.99	4.86
12 - 19 - 91	16 : 31	3271	15.03	4.90
12 - 19 - 91	19 : 20	3440	15.20	5.07
12 - 19 - 91	21 : 14	3554	15.27	5.14
12 - 20 - 91	0 : 35	3755	15.40	5.27
12 - 20 - 91	2 : 27	3867	15.47	5.34
12 - 20 - 91	4 : 30	3990	15.55	5.42
12 - 20 - 91	7 : 17	4157	15.67	5.54
12 - 20 - 91	9 : 54	4314	15.75	5.62
12 - 20 - 91	9 : 57	4317	15.75	5.62
12 - 20 - 91	10 : 0	4320	15.75	5.62
12 - 20 - 91	10 : 1	4321	15.74	5.61
12 - 20 - 91	10 : 2	4322	15.74	5.61
12 - 20 - 91	10 : 3	4323	15.73	5.60
12 - 20 - 91	10 : 4	4324	15.73	5.60
12 - 20 - 91	10 : 5	4325	15.73	5.60
12 - 20 - 91	10 : 6	4326	15.73	5.60
12 - 20 - 91	10 : 7	4327	15.73	5.60
12 - 20 - 91	10 : 8	4328	15.73	5.60
12 - 20 - 91	10 : 9	4329	15.73	5.60
12 - 20 - 91	10 : 10	4330	15.72	5.59
12 - 20 - 91	10 : 12	4332	15.72	5.59

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: MW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 20 - 91	10 : 14	4334	15.72	5.59
12 - 20 - 91	10 : 16	4336	15.72	5.59
12 - 20 - 91	10 : 18	4338	15.71	5.58
12 - 20 - 91	10 : 20	4340	15.71	5.58
12 - 20 - 91	10 : 25	4345	15.70	5.57
12 - 20 - 91	10 : 30	4350	15.70	5.57
12 - 20 - 91	10 : 35	4355	15.60	5.47
12 - 20 - 91	10 : 45	4365	15.58	5.45
12 - 20 - 91	10 : 55	4375	15.54	5.41
12 - 20 - 91	12 : 11	4451	15.50	5.37
12 - 20 - 91	12 : 40	4480	15.45	5.32
12 - 20 - 91	13 : 3	4503	15.40	5.27
12 - 20 - 91	13 : 33	4533	15.31	5.18
12 - 20 - 91	14 : 3	4563	15.25	5.12
12 - 20 - 91	14 : 30	4590	15.17	5.04
12 - 20 - 91	15 : 3	4623	15.10	4.97
12 - 20 - 91	15 : 41	4661	14.98	4.85
12 - 20 - 91	16 : 11	4691	14.90	4.77
12 - 20 - 91	16 : 34	4714	14.85	4.72
12 - 20 - 91	17 : 11	4751	14.76	4.63
12 - 20 - 91	17 : 42	4782	14.68	4.55

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL MW-6

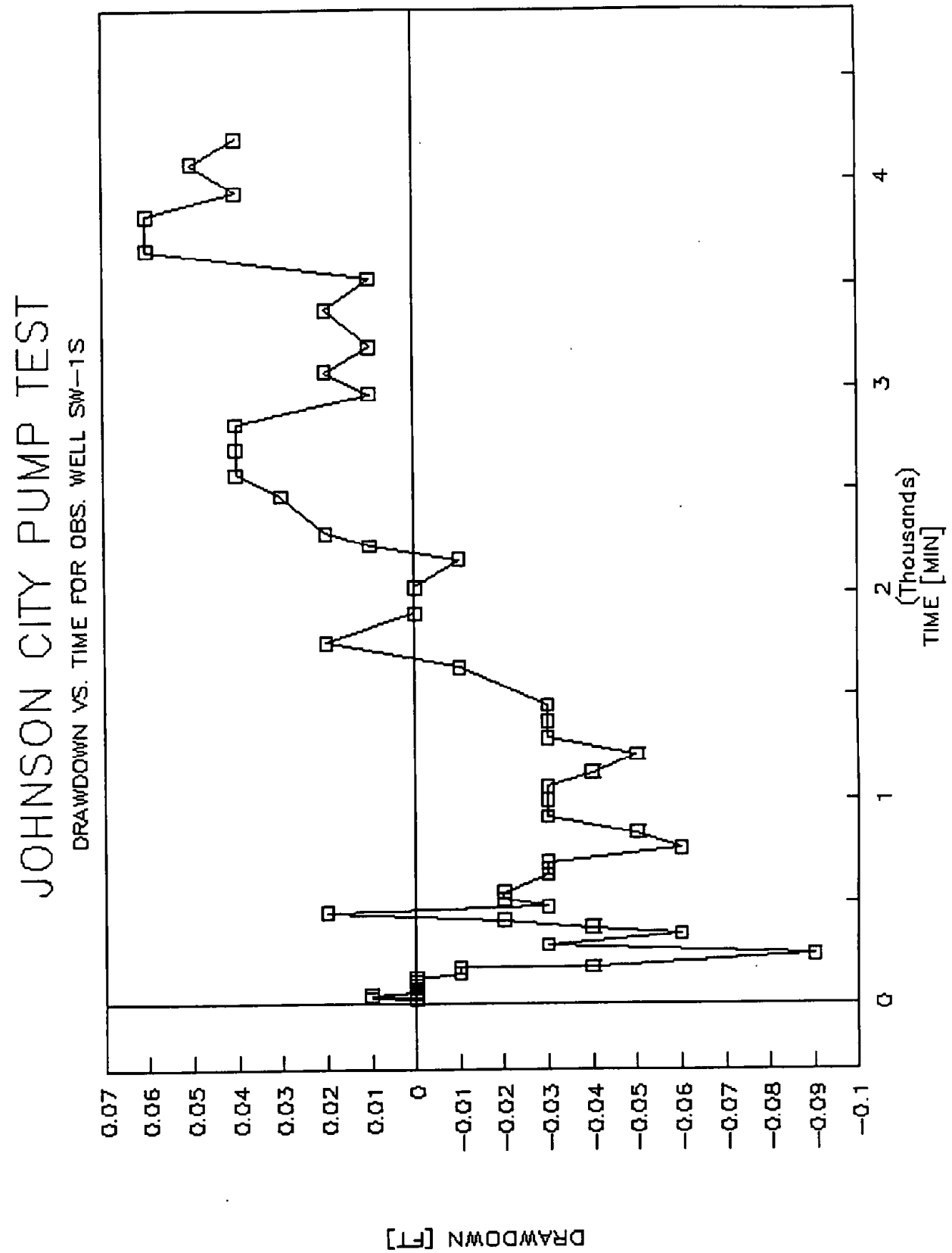


PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-1S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	20.26	0.00
12 - 17 - 91	10 : 25	25	20.26	0.00
12 - 17 - 91	10 : 30	30	20.27	0.01
12 - 17 - 91	10 : 35	35	20.26	0.00
12 - 17 - 91	10 : 42	42	20.27	0.01
12 - 17 - 91	10 : 54	54	20.26	0.00
12 - 17 - 91	11 : 2	62	20.26	0.00
12 - 17 - 91	11 : 17	77	20.26	0.00
12 - 17 - 91	11 : 31	91	20.26	0.00
12 - 17 - 91	11 : 47	107	20.26	0.00
12 - 17 - 91	12 : 2	122	20.26	0.00
12 - 17 - 91	12 : 31	151	20.25	-0.01
12 - 17 - 91	13 : 0	180	20.25	-0.01
12 - 17 - 91	13 : 2	182	20.22	-0.04
12 - 17 - 91	14 : 5	245	20.17	-0.09
12 - 17 - 91	14 : 51	291	20.23	-0.03
12 - 17 - 91	15 : 48	348	20.20	-0.06
12 - 17 - 91	16 : 17	377	20.22	-0.04
12 - 17 - 91	16 : 52	412	20.24	-0.02
12 - 17 - 91	17 : 27	447	20.28	0.02
12 - 17 - 91	17 : 58	478	20.23	-0.03
12 - 17 - 91	18 : 34	514	20.24	-0.02
12 - 17 - 91	19 : 8	548	20.24	-0.02
12 - 17 - 91	20 : 35	635	20.23	-0.03
12 - 17 - 91	21 : 0	660	20.23	-0.03
12 - 17 - 91	21 : 33	693	20.23	-0.03
12 - 17 - 91	22 : 39	759	20.20	-0.06
12 - 17 - 91	23 : 58	838	20.21	-0.05
12 - 18 - 91	1 : 15	915	20.23	-0.03
12 - 18 - 91	2 : 31	991	20.23	-0.03
12 - 18 - 91	3 : 36	1056	20.23	-0.03
12 - 18 - 91	4 : 45	1125	20.22	-0.04
12 - 18 - 91	6 : 12	1212	20.21	-0.05
12 - 18 - 91	7 : 32	1292	20.23	-0.03
12 - 18 - 91	8 : 51	1371	20.23	-0.03
12 - 18 - 91	10 : 7	1447	20.23	-0.03

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-1S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	13 : 16	1636	20.25	-0.01
12 - 18 - 91	15 : 11	1751	20.28	0.02
12 - 18 - 91	17 : 37	1897	20.26	0.00
12 - 18 - 91	19 : 40	2020	20.26	0.00
12 - 18 - 91	21 : 54	2154	20.25	-0.01
12 - 18 - 91	23 : 1	2221	20.27	0.01
12 - 19 - 91	0 : 5	2285	20.28	0.02
12 - 19 - 91	3 : 6	2466	20.29	0.03
12 - 19 - 91	4 : 52	2572	20.30	0.04
12 - 19 - 91	6 : 54	2694	20.30	0.04
12 - 19 - 91	8 : 58	2818	20.30	0.04
12 - 19 - 91	11 : 26	2966	20.27	0.01
12 - 19 - 91	13 : 15	3075	20.28	0.02
12 - 19 - 91	15 : 15	3195	20.27	0.01
12 - 19 - 91	18 : 15	3375	20.28	0.02
12 - 19 - 91	20 : 44	3524	20.27	0.01
12 - 19 - 91	23 : 0	3660	20.32	0.06
12 - 20 - 91	1 : 46	3826	20.32	0.06
12 - 20 - 91	3 : 35	3935	20.30	0.04
12 - 20 - 91	5 : 56	4076	20.31	0.05
12 - 20 - 91	7 : 55	4195	20.30	0.04


JOHNSON CITY PUMP TEST
DRAWDOWN VS. TIME FOR OBS. WELL SW-1S
DRAWDOWN [FT]
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
-0.06
-0.07
-0.08
-0.09
-0.1
0
1
2
3
4
(Thousands)
TIME [MIN]

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-1D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

D 000083

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	20.28	0.00
12 - 17 - 91	10 : 19	19	20.28	0.00
12 - 17 - 91	10 : 27	27	20.28	0.00
12 - 17 - 91	10 : 38	38	20.29	0.01
12 - 17 - 91	10 : 51	51	20.28	0.00
12 - 17 - 91	11 : 0	60	20.27	-0.01
12 - 17 - 91	11 : 15	75	20.27	-0.01
12 - 17 - 91	11 : 30	90	20.27	-0.01
12 - 17 - 91	11 : 45	105	20.27	-0.01
12 - 17 - 91	12 : 0	120	20.26	-0.02
12 - 17 - 91	12 : 30	150	20.26	-0.02
12 - 17 - 91	13 : 0	180	20.26	-0.02
12 - 17 - 91	13 : 30	210	20.25	-0.03
12 - 17 - 91	14 : 2	242	20.25	-0.03
12 - 17 - 91	15 : 45	345	20.29	0.01
12 - 17 - 91	16 : 14	374	20.30	0.02
12 - 17 - 91	16 : 50	410	20.29	0.01
12 - 17 - 91	17 : 24	444	20.28	0.00
12 - 17 - 91	17 : 54	474	20.27	-0.01
12 - 17 - 91	18 : 31	511	20.27	-0.01
12 - 17 - 91	19 : 5	545	20.28	0.00
12 - 17 - 91	20 : 33	633	20.26	-0.02
12 - 17 - 91	20 : 58	658	20.26	-0.02
12 - 17 - 91	21 : 31	691	20.25	-0.03
12 - 17 - 91	22 : 33	753	20.24	-0.04
12 - 17 - 91	23 : 54	834	20.28	0.00
12 - 18 - 91	1 : 13	913	20.28	0.00
12 - 18 - 91	3 : 32	1052	20.25	-0.03
12 - 18 - 91	4 : 42	1122	20.27	-0.01
12 - 18 - 91	6 : 10	1210	20.25	-0.03
12 - 18 - 91	7 : 28	1288	20.26	-0.02
12 - 18 - 91	8 : 48	1368	20.26	-0.02
12 - 18 - 91	10 : 5	1445	20.27	-0.01
12 - 18 - 91	13 : 11	1631	20.30	0.02
12 - 18 - 91	15 : 14	1754	20.32	0.04
12 - 18 - 91	17 : 33	1893	20.29	0.01

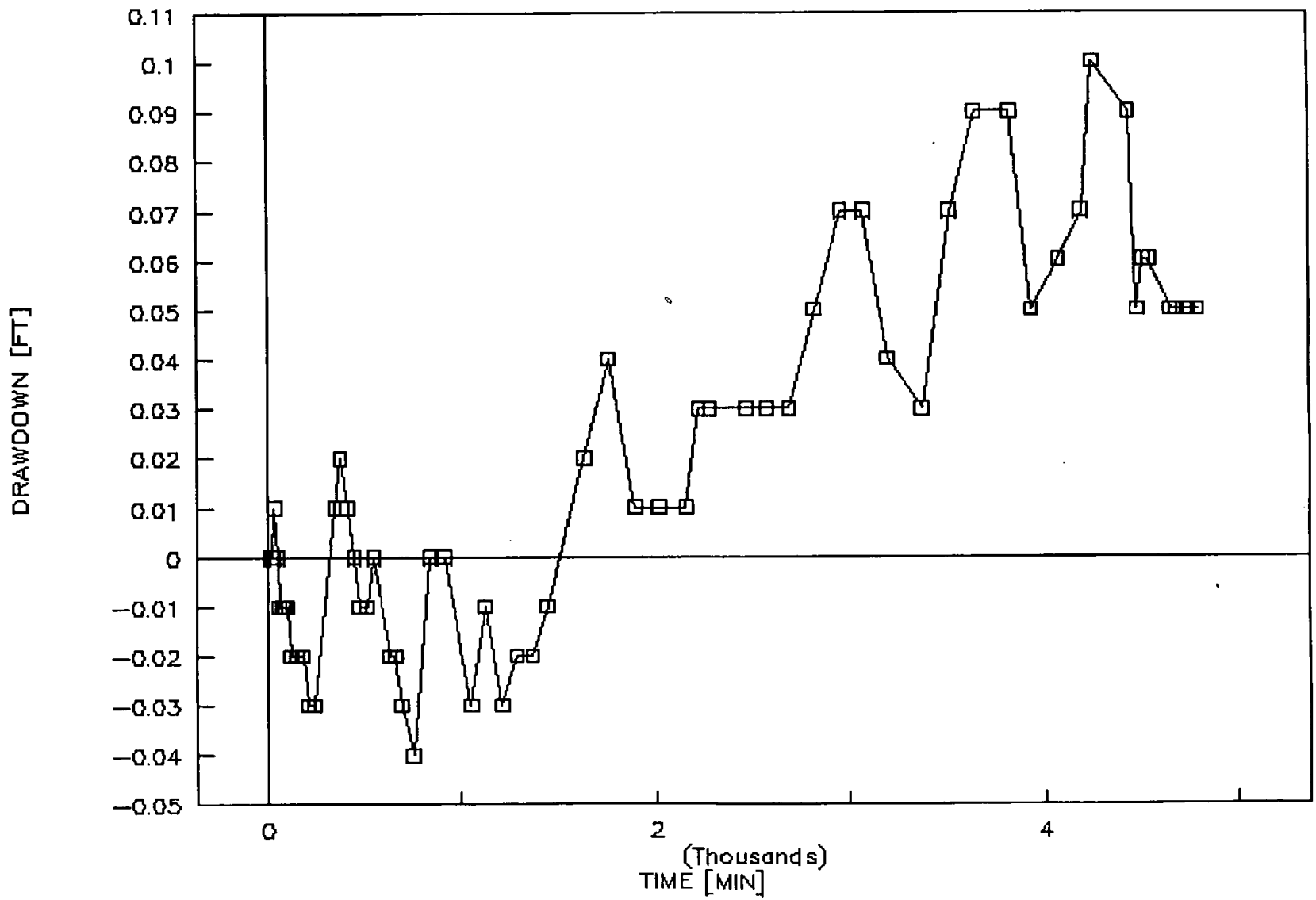
000084

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-1D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	19 : 36	2016	20.29	0.01
12 - 18 - 91	21 : 52	2152	20.29	0.01
12 - 18 - 91	22 : 58	2218	20.31	0.03
12 - 19 - 91	0 : 1	2281	20.31	0.03
12 - 19 - 91	3 : 3	2463	20.31	0.03
12 - 19 - 91	4 : 55	2575	20.31	0.03
12 - 19 - 91	6 : 52	2692	20.31	0.03
12 - 19 - 91	8 : 56	2816	20.33	0.05
12 - 19 - 91	11 : 22	2962	20.35	0.07
12 - 19 - 91	13 : 13	3073	20.35	0.07
12 - 19 - 91	15 : 18	3198	20.32	0.04
12 - 19 - 91	18 : 20	3380	20.31	0.03
12 - 19 - 91	20 : 40	3520	20.35	0.07
12 - 19 - 91	22 : 50	3650	20.37	0.09
12 - 20 - 91	1 : 48	3828	20.37	0.09
12 - 20 - 91	3 : 33	3933	20.33	0.05
12 - 20 - 91	5 : 54	4074	20.34	0.06
12 - 20 - 91	7 : 50	4190	20.35	0.07
12 - 20 - 91	8 : 47	4247	20.38	0.10
12 - 20 - 91	11 : 55	4435	20.37	0.09
12 - 20 - 91	12 : 39	4479	20.33	0.05
12 - 20 - 91	13 : 8	4508	20.34	0.06
12 - 20 - 91	13 : 38	4538	20.34	0.06
12 - 20 - 91	15 : 31	4651	20.33	0.05
12 - 20 - 91	15 : 58	4678	20.33	0.05
12 - 20 - 91	17 : 0	4740	20.33	0.05
12 - 20 - 91	17 : 56	4796	20.33	0.05

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL SW-1D



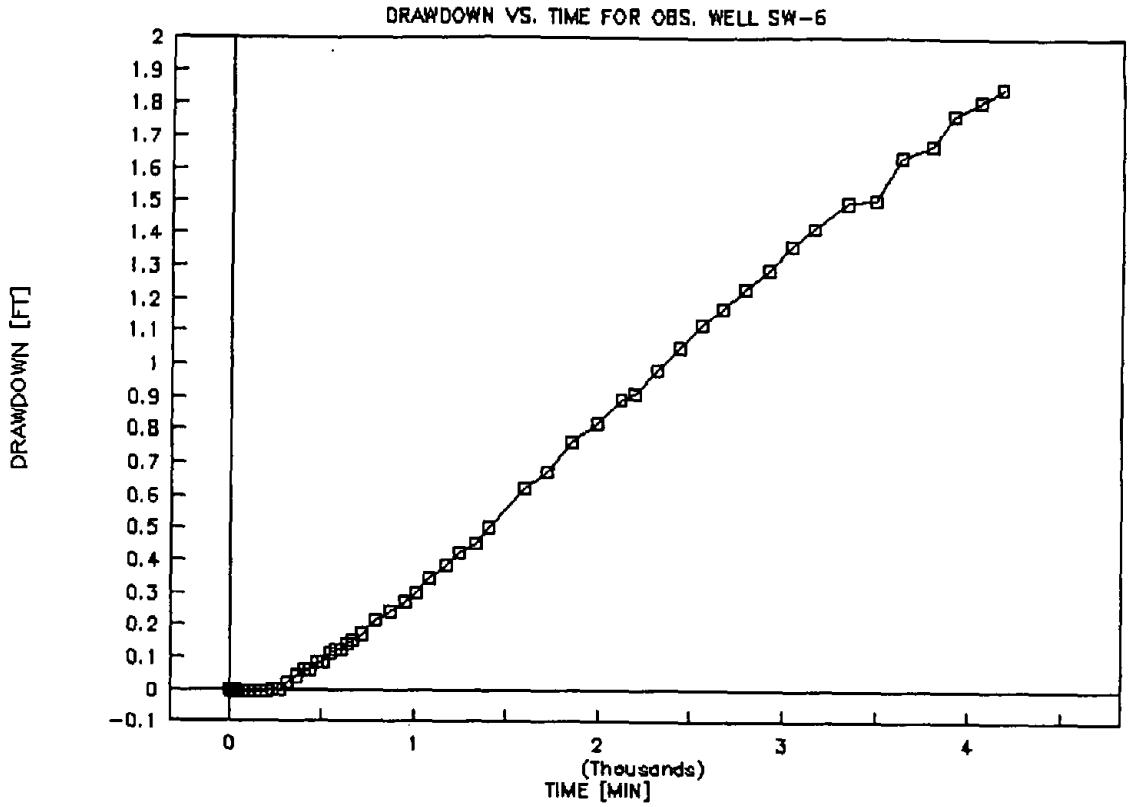
PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	14.53	0.00
12 - 17 - 91	10 : 5	5	14.53	0.00
12 - 17 - 91	10 : 15	15	14.52	-0.01
12 - 17 - 91	10 : 25	25	14.52	-0.01
12 - 17 - 91	10 : 30	30	14.53	0.00
12 - 17 - 91	10 : 40	40	14.52	-0.01
12 - 17 - 91	10 : 50	50	14.52	-0.01
12 - 17 - 91	11 : 0	60	14.52	-0.01
12 - 17 - 91	11 : 15	75	14.52	-0.01
12 - 17 - 91	11 : 30	90	14.52	-0.01
12 - 17 - 91	11 : 45	105	14.52	-0.01
12 - 17 - 91	12 : 0	120	14.52	-0.01
12 - 17 - 91	12 : 30	150	14.52	-0.01
12 - 17 - 91	13 : 0	180	14.52	-0.01
12 - 17 - 91	13 : 30	210	14.52	-0.01
12 - 17 - 91	14 : 0	240	14.53	0.00
12 - 17 - 91	14 : 37	277	14.53	0.00
12 - 17 - 91	15 : 20	320	14.55	0.02
12 - 17 - 91	16 : 10	370	14.57	0.04
12 - 17 - 91	16 : 43	403	14.59	0.06
12 - 17 - 91	17 : 15	435	14.59	0.06
12 - 17 - 91	17 : 55	475	14.61	0.08
12 - 17 - 91	18 : 32	512	14.61	0.08
12 - 17 - 91	19 : 6	546	14.64	0.11
12 - 17 - 91	19 : 36	576	14.65	0.12
12 - 17 - 91	20 : 6	606	14.65	0.12
12 - 17 - 91	20 : 39	639	14.67	0.14
12 - 17 - 91	21 : 6	666	14.68	0.15
12 - 17 - 91	22 : 0	720	14.70	0.17
12 - 17 - 91	23 : 7	787	14.74	0.21
12 - 18 - 91	0 : 35	875	14.77	0.24
12 - 18 - 91	1 : 48	948	14.80	0.27
12 - 18 - 91	2 : 49	1009	14.83	0.30
12 - 18 - 91	4 : 2	1082	14.87	0.34
12 - 18 - 91	5 : 31	1171	14.91	0.38
12 - 18 - 91	6 : 49	1249	14.95	0.42
12 - 18 - 91	8 : 11	1331	14.98	0.45
12 - 18 - 91	9 : 29	1409	15.03	0.50

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	12 : 37	1597	15.15	0.62
12 - 18 - 91	14 : 37	1717	15.20	0.67
12 - 18 - 91	16 : 48	1848	15.29	0.76
12 - 18 - 91	19 : 15	1995	15.35	0.82
12 - 18 - 91	21 : 18	2118	15.42	0.89
12 - 18 - 91	22 : 30	2190	15.44	0.91
12 - 19 - 91	0 : 30	2310	15.51	0.98
12 - 19 - 91	2 : 30	2430	15.58	1.05
12 - 19 - 91	4 : 31	2551	15.65	1.12
12 - 19 - 91	6 : 29	2669	15.70	1.17
12 - 19 - 91	8 : 26	2786	15.76	1.23
12 - 19 - 91	10 : 40	2920	15.82	1.29
12 - 19 - 91	12 : 37	3037	15.89	1.36
12 - 19 - 91	14 : 42	3162	15.95	1.42
12 - 19 - 91	17 : 47	3347	16.03	1.50
12 - 19 - 91	20 : 12	3492	16.04	1.51
12 - 19 - 91	22 : 31	3631	16.17	1.64
12 - 20 - 91	1 : 19	3799	16.20	1.67
12 - 20 - 91	3 : 13	3913	16.30	1.77
12 - 20 - 91	5 : 35	4055	16.34	1.81
12 - 20 - 91	7 : 35	4175	16.38	1.85

JOHNSON CITY PUMP TEST



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: DW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	14.65	0.00
12 - 17 - 91	10 : 15	15	14.64	-0.01
12 - 17 - 91	10 : 25	25	14.62	-0.03
12 - 17 - 91	10 : 30	30	14.63	-0.02
12 - 17 - 91	10 : 40	40	14.60	-0.05
12 - 17 - 91	10 : 50	50	14.57	-0.08
12 - 17 - 91	11 : 0	60	14.55	-0.10
12 - 17 - 91	11 : 15	75	14.54	-0.11
12 - 17 - 91	11 : 30	90	14.53	-0.12
12 - 17 - 91	11 : 45	105	14.53	-0.12
12 - 17 - 91	12 : 0	120	14.55	-0.10
12 - 17 - 91	12 : 30	150	14.56	-0.09
12 - 17 - 91	13 : 0	180	14.56	-0.09
12 - 17 - 91	13 : 30	210	14.58	-0.07
12 - 17 - 91	14 : 2	242	14.60	-0.05
12 - 17 - 91	14 : 40	280	14.63	-0.02
12 - 17 - 91	15 : 17	317	14.86	0.21
12 - 17 - 91	16 : 8	368	15.10	0.45
12 - 17 - 91	16 : 40	400	15.26	0.61
12 - 17 - 91	17 : 18	438	15.10	0.45
12 - 17 - 91	18 : 0	480	14.96	0.31
12 - 17 - 91	18 : 35	515	14.85	0.20
12 - 17 - 91	19 : 8	548	14.85	0.20
12 - 17 - 91	19 : 38	578	14.85	0.20
12 - 17 - 91	20 : 8	608	14.86	0.21
12 - 17 - 91	20 : 41	641	14.86	0.21
12 - 17 - 91	21 : 8	668	14.89	0.24
12 - 17 - 91	22 : 2	722	14.89	0.24
12 - 17 - 91	23 : 9	789	14.93	0.28
12 - 18 - 91	0 : 32	872	15.45	0.80
12 - 18 - 91	1 : 50	950	15.37	0.72
12 - 18 - 91	2 : 51	1011	15.22	0.57
12 - 18 - 91	4 : 4	1084	15.16	0.51
12 - 18 - 91	5 : 33	1173	15.13	0.48
12 - 18 - 91	6 : 51	1251	15.16	0.51
12 - 18 - 91	8 : 14	1334	15.20	0.55

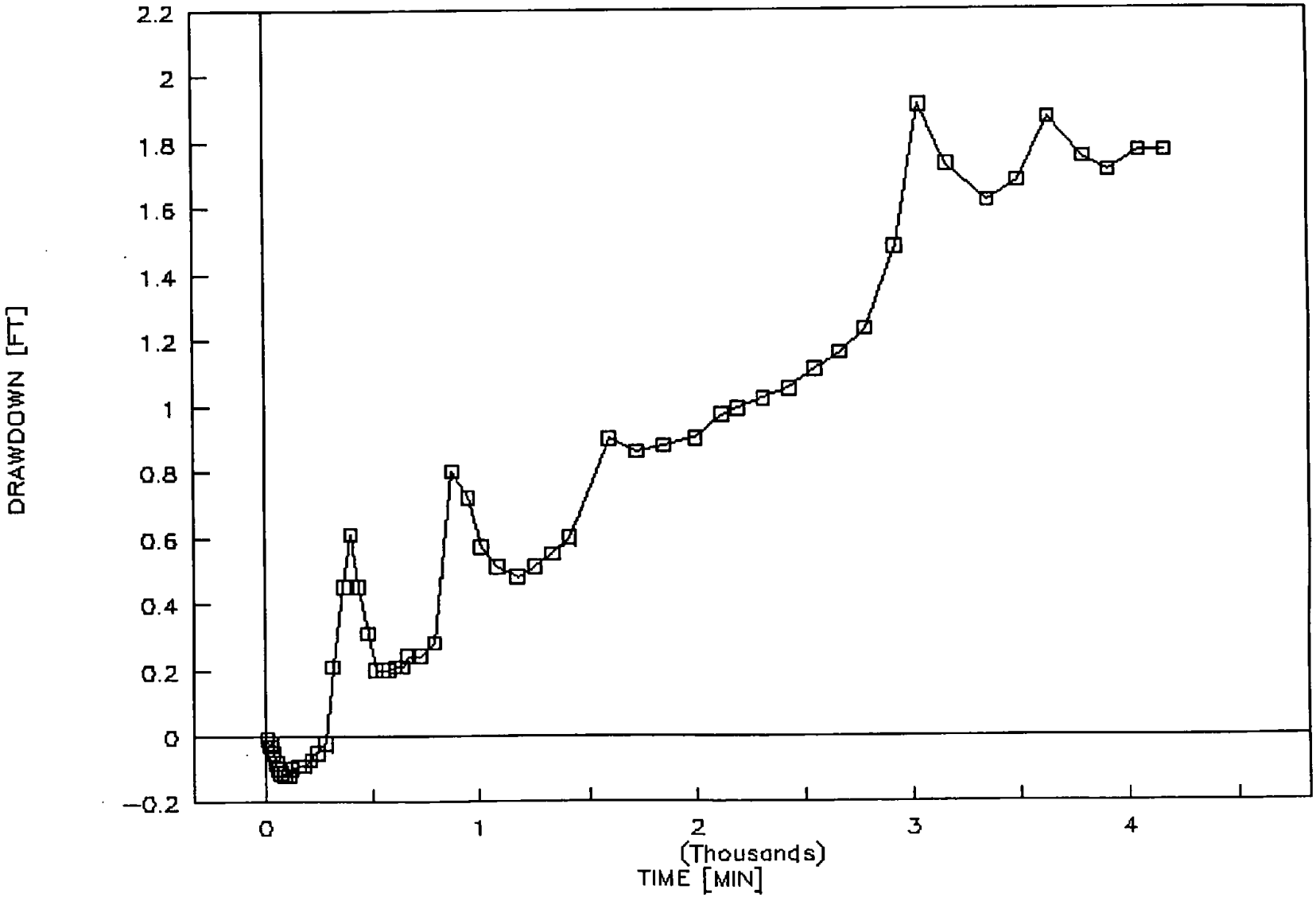
D000090

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: DW-6
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	9 : 31	1411	15.25	0.60
12 - 18 - 91	12 : 39	1599	15.55	0.90
12 - 18 - 91	14 : 39	1719	15.51	0.86
12 - 18 - 91	16 : 51	1851	15.53	0.88
12 - 18 - 91	19 : 18	1998	15.55	0.90
12 - 18 - 91	21 : 20	2120	15.62	0.97
12 - 18 - 91	22 : 33	2193	15.64	0.99
12 - 19 - 91	0 : 32	2312	15.67	1.02
12 - 19 - 91	2 : 32	2432	15.70	1.05
12 - 19 - 91	4 : 33	2553	15.76	1.11
12 - 19 - 91	6 : 31	2671	15.81	1.16
12 - 19 - 91	8 : 28	2788	15.88	1.23
12 - 19 - 91	10 : 44	2924	16.13	1.48
12 - 19 - 91	12 : 39	3039	16.56	1.91
12 - 19 - 91	14 : 44	3164	16.38	1.73
12 - 19 - 91	17 : 50	3350	16.27	1.62
12 - 19 - 91	20 : 14	3494	16.33	1.68
12 - 19 - 91	22 : 32	3632	16.52	1.87
12 - 20 - 91	1 : 17	3797	16.40	1.75
12 - 20 - 91	3 : 12	3912	16.36	1.71
12 - 20 - 91	5 : 37	4057	16.42	1.77
12 - 20 - 91	7 : 32	4172	16.42	1.77

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL DW-6

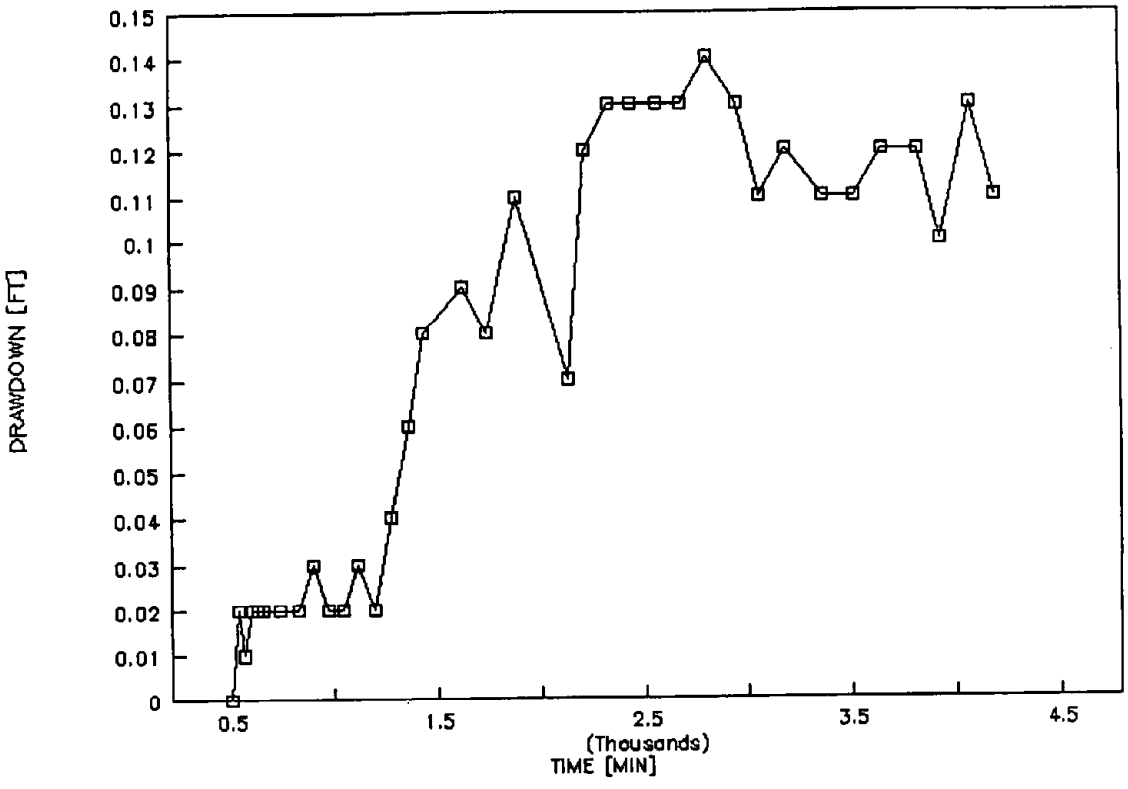


PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-8
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	13.05	0.00
12 - 17 - 91	18 : 25	505	13.05	0.00
12 - 17 - 91	19 : 0	540	13.07	0.02
12 - 17 - 91	19 : 30	570	13.06	0.01
12 - 17 - 91	20 : 0	600	13.07	0.02
12 - 17 - 91	20 : 30	630	13.07	0.02
12 - 17 - 91	21 : 0	660	13.07	0.02
12 - 17 - 91	22 : 19	739	13.07	0.02
12 - 17 - 91	23 : 46	826	13.07	0.02
12 - 18 - 91	0 : 58	898	13.08	0.03
12 - 18 - 91	2 : 12	972	13.07	0.02
12 - 18 - 91	3 : 20	1040	13.07	0.02
12 - 18 - 91	4 : 32	1112	13.08	0.03
12 - 18 - 91	5 : 56	1196	13.07	0.02
12 - 18 - 91	7 : 18	1278	13.09	0.04
12 - 18 - 91	8 : 40	1360	13.11	0.06
12 - 18 - 91	9 : 56	1436	13.13	0.08
12 - 18 - 91	13 : 3	1623	13.14	0.09
12 - 18 - 91	15 : 2	1742	13.13	0.08
12 - 18 - 91	17 : 24	1884	13.16	0.11
12 - 18 - 91	21 : 40	2140	13.12	0.07
12 - 18 - 91	22 : 54	2214	13.17	0.12
12 - 19 - 91	0 : 50	2330	13.18	0.13
12 - 19 - 91	2 : 45	2445	13.18	0.13
12 - 19 - 91	4 : 47	2567	13.18	0.13
12 - 19 - 91	6 : 46	2686	13.18	0.13
12 - 19 - 91	8 : 48	2808	13.19	0.14
12 - 19 - 91	11 : 12	2952	13.18	0.13
12 - 19 - 91	13 : 3	3063	13.16	0.11
12 - 19 - 91	15 : 5	3185	13.17	0.12
12 - 19 - 91	18 : 4	3364	13.16	0.11
12 - 19 - 91	20 : 32	3512	13.16	0.11
12 - 19 - 91	22 : 53	3653	13.17	0.12
12 - 20 - 91	1 : 40	3820	13.17	0.12
12 - 20 - 91	3 : 30	3930	13.15	0.10
12 - 20 - 91	5 : 52	4072	13.18	0.13
12 - 20 - 91	7 : 48	4188	13.16	0.11

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL SW-B

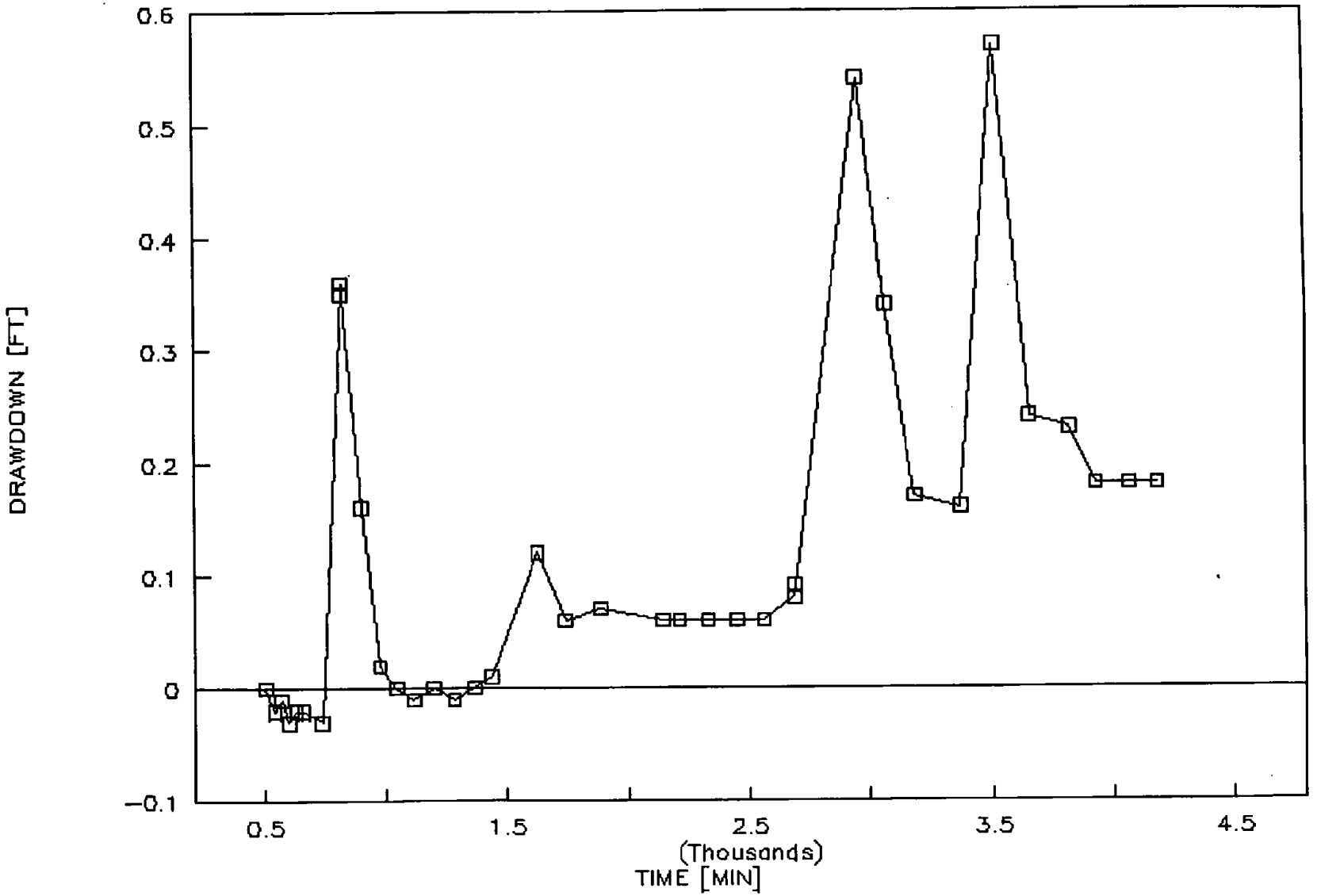


PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: DW-8
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	15.42	0.00
12 - 17 - 91	18 : 27	507	15.42	0.00
12 - 17 - 91	19 : 2	542	15.40	-0.02
12 - 17 - 91	19 : 32	572	15.41	-0.01
12 - 17 - 91	20 : 2	602	15.39	-0.03
12 - 17 - 91	20 : 32	632	15.40	-0.02
12 - 17 - 91	21 : 2	662	15.40	-0.02
12 - 17 - 91	22 : 21	741	15.39	-0.03
12 - 17 - 91	23 : 41	821	15.78	0.36
12 - 17 - 91	23 : 42	822	15.77	0.35
12 - 18 - 91	1 : 2	902	15.58	0.16
12 - 18 - 91	2 : 16	976	15.44	0.02
12 - 18 - 91	3 : 23	1043	15.42	0.00
12 - 18 - 91	4 : 34	1114	15.41	-0.01
12 - 18 - 91	5 : 59	1199	15.42	0.00
12 - 18 - 91	7 : 21	1281	15.41	-0.01
12 - 18 - 91	8 : 44	1364	15.42	0.00
12 - 18 - 91	10 : 0	1440	15.43	0.01
12 - 18 - 91	13 : 5	1625	15.54	0.12
12 - 18 - 91	15 : 4	1744	15.48	0.06
12 - 18 - 91	17 : 26	1886	15.49	0.07
12 - 18 - 91	21 : 44	2144	15.48	0.06
12 - 18 - 91	22 : 51	2211	15.48	0.06
12 - 19 - 91	0 : 52	2332	15.48	0.06
12 - 19 - 91	2 : 47	2447	15.48	0.06
12 - 19 - 91	4 : 45	2565	15.48	0.06
12 - 19 - 91	6 : 48	2688	15.50	0.08
12 - 19 - 91	6 : 50	2690	15.51	0.09
12 - 19 - 91	11 : 15	2955	15.96	0.54
12 - 19 - 91	13 : 4	3064	15.76	0.34
12 - 19 - 91	15 : 6	3186	15.59	0.17
12 - 19 - 91	18 : 9	3369	15.58	0.16
12 - 19 - 91	20 : 34	3514	15.99	0.57
12 - 19 - 91	22 : 54	3654	15.66	0.24
12 - 20 - 91	1 : 38	3818	15.65	0.23
12 - 20 - 91	3 : 28	3928	15.60	0.18
12 - 20 - 91	5 : 48	4068	15.60	0.18
12 - 20 - 91	7 : 45	4185	15.60	0.18

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL DW-8



D0000093

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	17.15	0.00
12 - 17 - 91	10 : 4	4	17.15	0.00
12 - 17 - 91	10 : 10	10	17.12	-0.03
12 - 17 - 91	10 : 13	13	17.13	-0.02
12 - 17 - 91	10 : 18	18	17.15	0.00
12 - 17 - 91	10 : 24	24	17.13	-0.02
12 - 17 - 91	10 : 28	28	17.13	-0.02
12 - 17 - 91	10 : 40	40	17.13	-0.02
12 - 17 - 91	10 : 52	52	17.13	-0.02
12 - 17 - 91	10 : 53	53	17.13	-0.02
12 - 17 - 91	11 : 15	75	17.13	-0.02
12 - 17 - 91	11 : 31	91	17.14	-0.01
12 - 17 - 91	11 : 48	108	17.15	0.00
12 - 17 - 91	11 : 58	118	17.14	-0.01
12 - 17 - 91	12 : 31	151	17.18	0.03
12 - 17 - 91	13 : 3	183	17.20	0.05
12 - 17 - 91	13 : 27	207	17.23	0.08
12 - 17 - 91	14 : 3	243	17.26	0.11
12 - 17 - 91	14 : 23	263	17.42	0.27
12 - 17 - 91	15 : 5	305	17.45	0.30
12 - 17 - 91	15 : 50	350	17.49	0.34
12 - 17 - 91	16 : 1	361	17.51	0.36
12 - 17 - 91	16 : 31	391	17.55	0.40
12 - 17 - 91	17 : 5	425	17.56	0.41
12 - 17 - 91	17 : 40	460	17.60	0.45
12 - 17 - 91	18 : 13	493	17.61	0.46
12 - 17 - 91	18 : 46	526	17.65	0.50
12 - 17 - 91	19 : 17	557	17.65	0.50
12 - 17 - 91	19 : 47	587	17.67	0.52
12 - 17 - 91	20 : 12	612	17.71	0.56
12 - 17 - 91	20 : 46	646	17.72	0.57
12 - 17 - 91	21 : 16	676	17.74	0.59
12 - 17 - 91	22 : 11	731	17.79	0.64
12 - 17 - 91	23 : 26	806	17.82	0.67
12 - 18 - 91	0 : 45	885	17.88	0.73
12 - 18 - 91	2 : 1	961	17.95	0.80
12 - 18 - 91	3 : 5	1025	17.99	0.84
12 - 18 - 91	4 : 17	1097	18.04	0.89

D000097

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

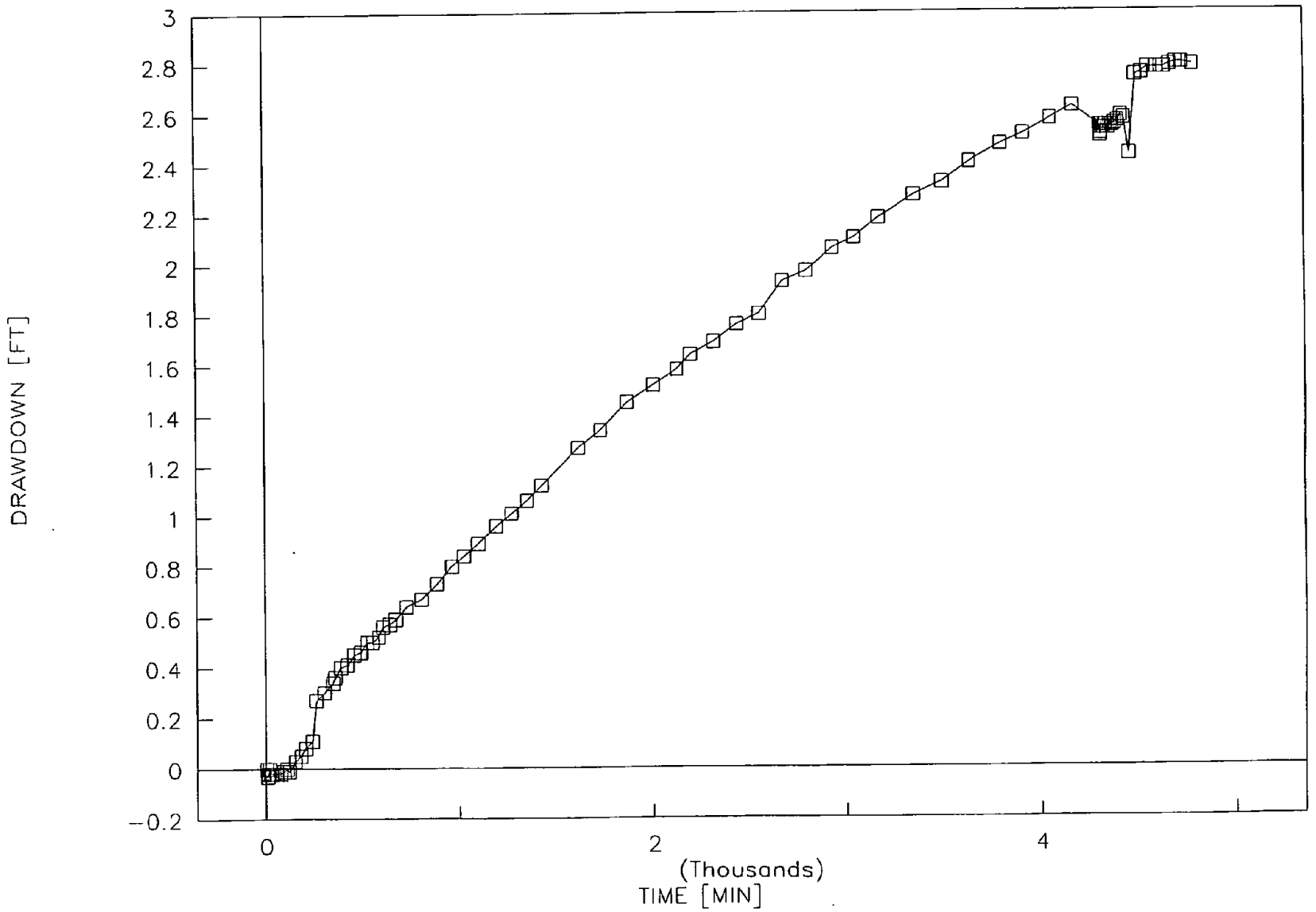
DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	5 : 45	1185	18.11	0.96
12 - 18 - 91	7 : 5	1265	18.16	1.01
12 - 18 - 91	8 : 29	1349	18.21	1.06
12 - 18 - 91	9 : 45	1425	18.27	1.12
12 - 18 - 91	12 : 51	1611	18.42	1.27
12 - 18 - 91	14 : 52	1732	18.49	1.34
12 - 18 - 91	17 : 10	1870	18.60	1.45
12 - 18 - 91	19 : 29	2009	18.67	1.52
12 - 18 - 91	21 : 31	2131	18.73	1.58
12 - 18 - 91	22 : 43	2203	18.79	1.64
12 - 19 - 91	0 : 44	2324	18.84	1.69
12 - 19 - 91	2 : 42	2442	18.91	1.76
12 - 19 - 91	4 : 39	2559	18.95	1.80
12 - 19 - 91	6 : 38	2678	19.08	1.93
12 - 19 - 91	8 : 38	2798	19.12	1.97
12 - 19 - 91	10 : 58	2938	19.21	2.06
12 - 19 - 91	12 : 51	3051	19.25	2.10
12 - 19 - 91	14 : 54	3174	19.33	2.18
12 - 19 - 91	17 : 58	3358	19.42	2.27
12 - 19 - 91	20 : 23	3503	19.47	2.32
12 - 19 - 91	22 : 43	3643	19.55	2.40
12 - 20 - 91	1 : 26	3806	19.62	2.47
12 - 20 - 91	3 : 22	3922	19.66	2.51
12 - 20 - 91	5 : 43	4063	19.72	2.57
12 - 20 - 91	7 : 40	4180	19.77	2.62
12 - 20 - 91	9 : 56	4316	19.69	2.54
12 - 20 - 91	10 : 0	4320	19.68	2.53
12 - 20 - 91	10 : 1	4321	19.65	2.50
12 - 20 - 91	10 : 3	4323	19.66	2.51
12 - 20 - 91	10 : 5	4325	19.68	2.53
12 - 20 - 91	10 : 7	4327	19.69	2.54
12 - 20 - 91	10 : 9	4329	19.69	2.54
12 - 20 - 91	10 : 11	4331	19.69	2.54
12 - 20 - 91	10 : 13	4333	19.69	2.54
12 - 20 - 91	10 : 15	4335	19.68	2.53
12 - 20 - 91	10 : 17	4337	19.68	2.53
12 - 20 - 91	10 : 19	4339	19.68	2.53
12 - 20 - 91	10 : 26	4346	19.69	2.54

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: SW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 20 - 91	10 : 31	4351	19.69	2.54
12 - 20 - 91	10 : 41	4361	19.68	2.53
12 - 20 - 91	10 : 51	4371	19.69	2.54
12 - 20 - 91	11 : 2	4382	19.69	2.54
12 - 20 - 91	11 : 16	4396	19.70	2.55
12 - 20 - 91	11 : 31	4411	19.71	2.56
12 - 20 - 91	11 : 46	4426	19.73	2.58
12 - 20 - 91	12 : 1	4441	19.72	2.57
12 - 20 - 91	12 : 32	4472	19.58	2.43
12 - 20 - 91	13 : 3	4503	19.89	2.74
12 - 20 - 91	13 : 33	4533	19.90	2.75
12 - 20 - 91	14 : 5	4565	19.92	2.77
12 - 20 - 91	14 : 50	4610	19.92	2.77
12 - 20 - 91	15 : 26	4646	19.92	2.77
12 - 20 - 91	15 : 54	4674	19.93	2.78
12 - 20 - 91	16 : 25	4705	19.94	2.79
12 - 20 - 91	16 : 55	4735	19.94	2.79
12 - 20 - 91	17 : 50	4790	19.93	2.78

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL SW-9



660000 σ

D000100

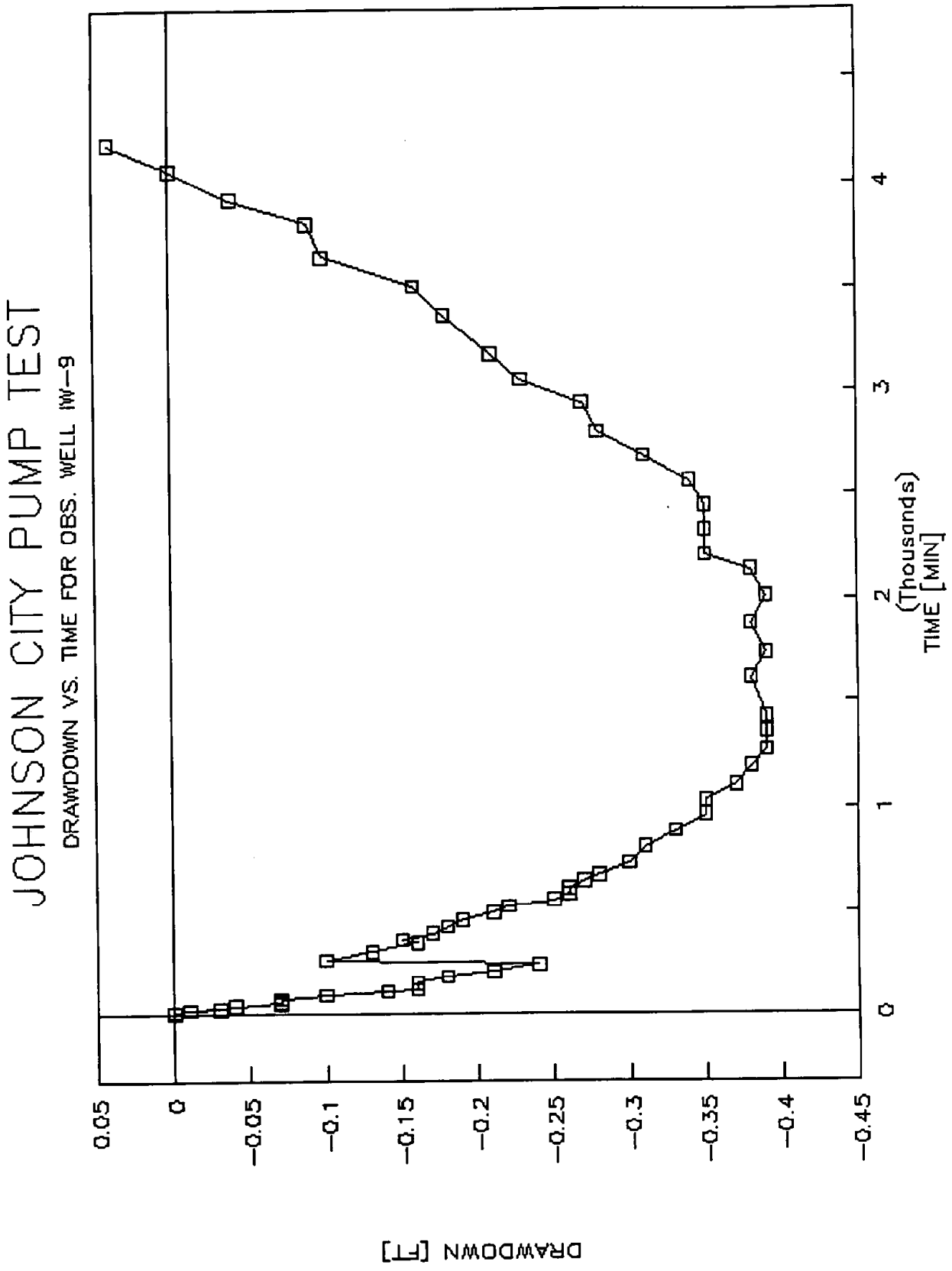
PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: IW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	18.74	0.00
12 - 17 - 91	10 : 7	7	18.74	0.00
12 - 17 - 91	10 : 15	15	18.74	0.00
12 - 17 - 91	10 : 22	22	18.73	-0.01
12 - 17 - 91	10 : 29	29	18.71	-0.03
12 - 17 - 91	10 : 42	42	18.70	-0.04
12 - 17 - 91	10 : 54	54	18.67	-0.07
12 - 17 - 91	11 : 5	65	18.67	-0.07
12 - 17 - 91	11 : 17	77	18.67	-0.07
12 - 17 - 91	11 : 34	94	18.64	-0.10
12 - 17 - 91	11 : 51	111	18.60	-0.14
12 - 17 - 91	12 : 0	120	18.58	-0.16
12 - 17 - 91	12 : 34	154	18.58	-0.16
12 - 17 - 91	13 : 4	184	18.56	-0.18
12 - 17 - 91	13 : 29	209	18.53	-0.21
12 - 17 - 91	14 : 5	245	18.50	-0.24
12 - 17 - 91	14 : 25	265	18.64	-0.10
12 - 17 - 91	15 : 8	308	18.61	-0.13
12 - 17 - 91	15 : 52	352	18.58	-0.16
12 - 17 - 91	16 : 3	363	18.59	-0.15
12 - 17 - 91	16 : 33	393	18.57	-0.17
12 - 17 - 91	17 : 8	428	18.56	-0.18
12 - 17 - 91	17 : 42	462	18.55	-0.19
12 - 17 - 91	18 : 16	496	18.53	-0.21
12 - 17 - 91	18 : 49	529	18.52	-0.22
12 - 17 - 91	19 : 19	559	18.49	-0.25
12 - 17 - 91	19 : 49	589	18.48	-0.26
12 - 17 - 91	20 : 14	614	18.48	-0.26
12 - 17 - 91	20 : 48	648	18.47	-0.27
12 - 17 - 91	21 : 18	678	18.46	-0.28
12 - 17 - 91	22 : 13	733	18.44	-0.30
12 - 17 - 91	23 : 29	809	18.43	-0.31
12 - 18 - 91	0 : 48	888	18.41	-0.33
12 - 18 - 91	2 : 3	963	18.39	-0.35
12 - 18 - 91	3 : 10	1030	18.39	-0.35
12 - 18 - 91	4 : 21	1101	18.37	-0.37
12 - 18 - 91	5 : 49	1189	18.36	-0.38
12 - 18 - 91	7 : 8	1268	18.35	-0.39

D 000101

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: IW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	8 : 31	1351	18.35	-0.39
12 - 18 - 91	9 : 47	1427	18.35	-0.39
12 - 18 - 91	12 : 54	1614	18.36	-0.38
12 - 18 - 91	14 : 54	1734	18.35	-0.39
12 - 18 - 91	17 : 15	1875	18.36	-0.38
12 - 18 - 91	19 : 30	2010	18.35	-0.39
12 - 18 - 91	21 : 35	2135	18.36	-0.38
12 - 18 - 91	22 : 45	2205	18.39	-0.35
12 - 19 - 91	0 : 46	2326	18.39	-0.35
12 - 19 - 91	2 : 44	2444	18.39	-0.35
12 - 19 - 91	4 : 41	2561	18.40	-0.34
12 - 19 - 91	6 : 41	2681	18.43	-0.31
12 - 19 - 91	8 : 41	2801	18.46	-0.28
12 - 19 - 91	11 : 0	2940	18.47	-0.27
12 - 19 - 91	12 : 53	3053	18.51	-0.23
12 - 19 - 91	14 : 56	3176	18.53	-0.21
12 - 19 - 91	18 : 2	3362	18.56	-0.18
12 - 19 - 91	20 : 26	3506	18.58	-0.16
12 - 19 - 91	22 : 46	3646	18.64	-0.10
12 - 20 - 91	1 : 29	3809	18.65	-0.09
12 - 20 - 91	3 : 24	3924	18.70	-0.04
12 - 20 - 91	5 : 41	4061	18.74	0.00
12 - 20 - 91	7 : 43	4183	18.78	0.04


JOHNSON CITY PUMP TEST
DRAWDOWN VS. TIME FOR OBS. WELL IW-9
DRAWDOWN [FT]
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
-0.35
-0.4
-0.45
0
1
2
3
4
(Thousands)
TIME [MIN]

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: DW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	16.98	0.00
12 - 17 - 91	10 : 2	2	16.98	0.00
12 - 17 - 91	10 : 9	9	16.98	0.00
12 - 17 - 91	10 : 12	12	16.97	-0.01
12 - 17 - 91	10 : 17	17	16.98	0.00
12 - 17 - 91	10 : 20	20	16.98	0.00
12 - 17 - 91	10 : 26	26	16.98	0.00
12 - 17 - 91	10 : 32	32	16.99	0.01
12 - 17 - 91	10 : 38	38	16.99	0.01
12 - 17 - 91	10 : 50	50	16.99	0.01
12 - 17 - 91	11 : 0	60	16.99	0.01
12 - 17 - 91	11 : 13	73	17.00	0.02
12 - 17 - 91	11 : 28	88	17.00	0.02
12 - 17 - 91	11 : 45	105	17.03	0.05
12 - 17 - 91	11 : 57	117	17.04	0.06
12 - 17 - 91	12 : 29	149	17.08	0.10
12 - 17 - 91	12 : 59	179	17.14	0.16
12 - 17 - 91	13 : 25	205	17.14	0.16
12 - 17 - 91	14 : 0	240	17.18	0.20
12 - 17 - 91	14 : 21	261	17.35	0.37
12 - 17 - 91	15 : 2	302	18.29	1.31
12 - 17 - 91	15 : 10	310	18.35	1.37
12 - 17 - 91	15 : 47	347	18.46	1.48
12 - 17 - 91	15 : 58	358	18.47	1.49
12 - 17 - 91	16 : 30	390	18.12	1.14
12 - 17 - 91	17 : 2	422	17.65	0.67
12 - 17 - 91	17 : 37	457	17.62	0.64
12 - 17 - 91	18 : 10	490	17.63	0.65
12 - 17 - 91	18 : 44	524	17.66	0.68
12 - 17 - 91	19 : 15	555	17.69	0.71
12 - 17 - 91	19 : 45	585	17.70	0.72
12 - 17 - 91	20 : 11	611	17.72	0.74
12 - 17 - 91	20 : 44	644	17.75	0.77
12 - 17 - 91	21 : 14	674	17.78	0.80
12 - 17 - 91	22 : 8	728	17.83	0.85
12 - 17 - 91	23 : 24	804	18.65	1.67
12 - 18 - 91	0 : 42	882	18.81	1.83
12 - 18 - 91	1 : 58	958	18.05	1.07

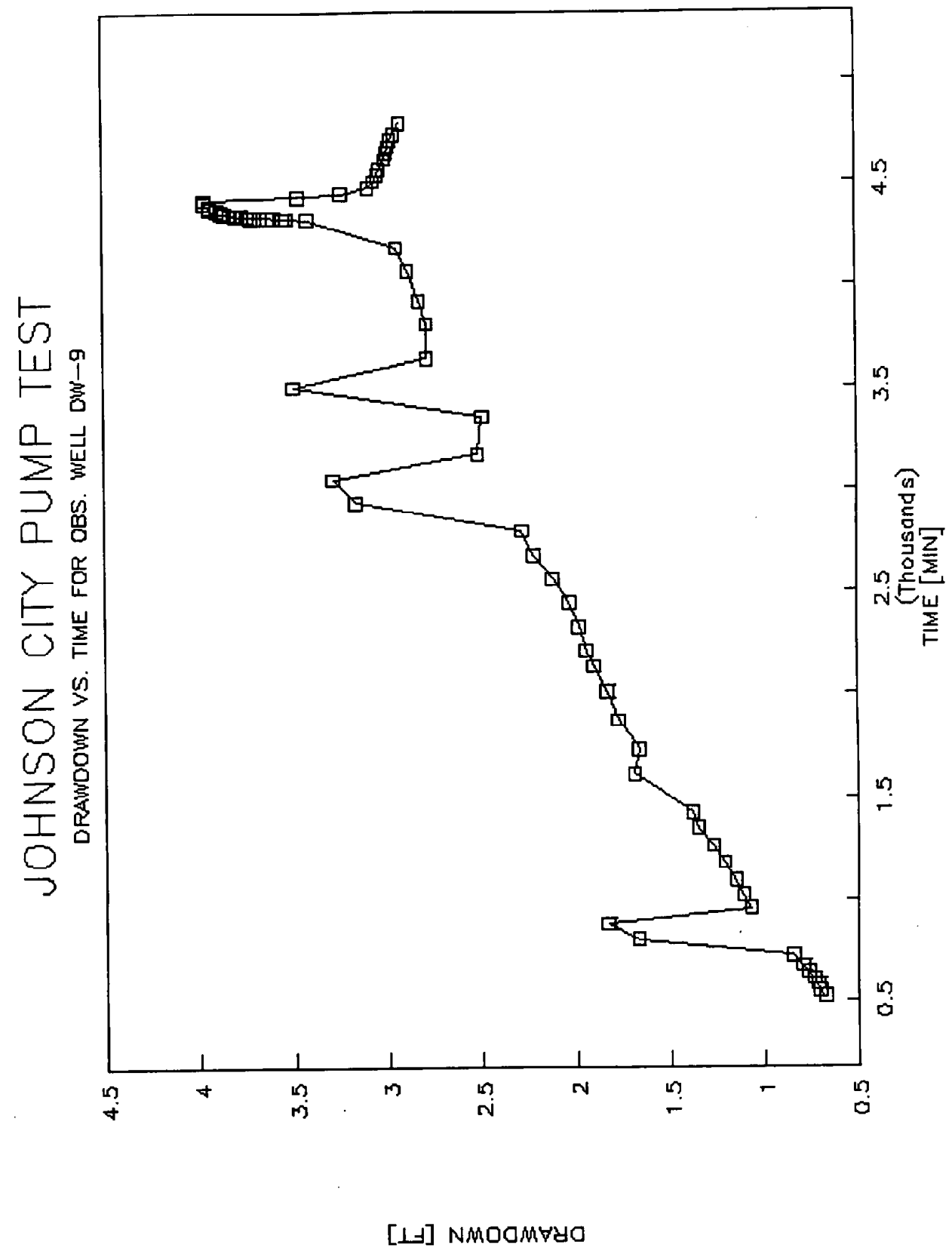
PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: DW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	3 : 2	1022	18.09	1.11
12 - 18 - 91	4 : 13	1093	18.13	1.15
12 - 18 - 91	5 : 42	1182	18.19	1.21
12 - 18 - 91	7 : 1	1261	18.25	1.27
12 - 18 - 91	8 : 26	1346	18.33	1.35
12 - 18 - 91	9 : 42	1422	18.36	1.38
12 - 18 - 91	12 : 48	1608	18.67	1.69
12 - 18 - 91	14 : 48	1728	18.64	1.66
12 - 18 - 91	17 : 7	1867	18.75	1.77
12 - 18 - 91	19 : 25	2005	18.81	1.83
12 - 18 - 91	21 : 28	2128	18.88	1.90
12 - 18 - 91	22 : 41	2201	18.92	1.94
12 - 19 - 91	0 : 42	2322	18.96	1.98
12 - 19 - 91	2 : 40	2440	19.01	2.03
12 - 19 - 91	4 : 37	2557	19.10	2.12
12 - 19 - 91	6 : 36	2676	19.20	2.22
12 - 19 - 91	8 : 35	2795	19.26	2.28
12 - 19 - 91	10 : 56	2936	20.14	3.16
12 - 19 - 91	12 : 48	3048	20.26	3.28
12 - 19 - 91	14 : 52	3172	19.49	2.51
12 - 19 - 91	17 : 55	3355	19.47	2.49
12 - 19 - 91	20 : 20	3500	20.47	3.49
12 - 19 - 91	22 : 40	3640	19.76	2.78
12 - 20 - 91	1 : 24	3804	19.76	2.78
12 - 20 - 91	3 : 20	3920	19.80	2.82
12 - 20 - 91	5 : 45	4065	19.86	2.88
12 - 20 - 91	7 : 37	4177	19.92	2.94
12 - 20 - 91	9 : 55	4315	20.39	3.41
12 - 20 - 91	10 : 0	4320	20.50	3.52
12 - 20 - 91	10 : 1	4321	20.52	3.54
12 - 20 - 91	10 : 2	4322	20.57	3.59
12 - 20 - 91	10 : 4	4324	20.60	3.62
12 - 20 - 91	10 : 6	4326	20.64	3.66
12 - 20 - 91	10 : 8	4328	20.69	3.71
12 - 20 - 91	10 : 10	4330	20.71	3.73
12 - 20 - 91	10 : 12	4332	20.74	3.76
12 - 20 - 91	10 : 14	4334	20.74	3.76
12 - 20 - 91	10 : 16	4336	20.77	3.79

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: DW-9
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 20 - 91	10 : 18	4338	20.77	3.79
12 - 20 - 91	10 : 20	4340	20.80	3.82
12 - 20 - 91	10 : 25	4345	20.83	3.85
12 - 20 - 91	10 : 30	4350	20.85	3.87
12 - 20 - 91	10 : 40	4360	20.87	3.89
12 - 20 - 91	10 : 50	4370	20.91	3.93
12 - 20 - 91	11 : 1	4381	20.91	3.93
12 - 20 - 91	11 : 15	4395	20.94	3.96
12 - 20 - 91	11 : 30	4410	20.94	3.96
12 - 20 - 91	11 : 45	4425	20.44	3.46
12 - 20 - 91	12 : 0	4440	20.21	3.23
12 - 20 - 91	12 : 31	4471	20.07	3.09
12 - 20 - 91	13 : 1	4501	20.04	3.06
12 - 20 - 91	13 : 31	4531	20.02	3.04
12 - 20 - 91	14 : 2	4562	20.01	3.03
12 - 20 - 91	14 : 49	4609	19.98	3.00
12 - 20 - 91	15 : 23	4643	19.97	2.99
12 - 20 - 91	15 : 53	4673	19.96	2.98
12 - 20 - 91	16 : 24	4704	19.95	2.97
12 - 20 - 91	16 : 52	4732	19.93	2.95
12 - 20 - 91	17 : 48	4788	19.90	2.92

D 000106


JOHNSON CITY PUMP TEST
DRAWDOWN VS. TIME FOR OBS. WELL DW-9
DRAWDOWN [FT]
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0.5
1.5
2.5
3.5
4.5
(Thousands)
TIME [MIN]

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8507-S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	7.00	0.00
12 - 17 - 91	10 : 10	10	6.99	0.01
12 - 17 - 91	10 : 20	20	6.97	0.03
12 - 17 - 91	10 : 30	30	6.94	0.06
12 - 17 - 91	10 : 40	40	6.91	0.09
12 - 17 - 91	10 : 50	50	6.89	0.11
12 - 17 - 91	11 : 0	60	6.86	0.14
12 - 17 - 91	11 : 10	70	6.84	0.16
12 - 17 - 91	11 : 20	80	6.81	0.19
12 - 17 - 91	11 : 30	90	6.78	0.22
12 - 17 - 91	11 : 40	100	6.75	0.25
12 - 17 - 91	11 : 50	110	6.72	0.28
12 - 17 - 91	12 : 0	120	6.70	0.30
12 - 17 - 91	12 : 10	130	6.68	0.32
12 - 17 - 91	12 : 20	140	6.66	0.34
12 - 17 - 91	12 : 30	150	6.62	0.38
12 - 17 - 91	12 : 40	160	6.60	0.40
12 - 17 - 91	12 : 50	170	6.57	0.43
12 - 17 - 91	13 : 0	180	6.55	0.45
12 - 17 - 91	14 : 0	240	6.41	0.59
12 - 17 - 91	15 : 0	300	6.27	0.73
12 - 17 - 91	16 : 0	360	6.14	0.86
12 - 17 - 91	17 : 0	420	6.04	0.96
12 - 17 - 91	18 : 0	480	5.94	1.06
12 - 17 - 91	19 : 0	540	5.82	1.18
12 - 17 - 91	20 : 0	600	5.73	1.27
12 - 17 - 91	21 : 0	660	5.63	1.37
12 - 17 - 91	22 : 0	720	5.54	1.46
12 - 17 - 91	23 : 0	780	5.46	1.54
12 - 18 - 91	0 : 0	840	5.38	1.62
12 - 18 - 91	2 : 0	960	5.19	1.81
12 - 18 - 91	4 : 0	1080	5.06	1.94
12 - 18 - 91	6 : 0	1200	4.92	2.08
12 - 18 - 91	8 : 0	1320	4.77	2.23
12 - 18 - 91	10 : 0	1440	4.61	2.39
12 - 18 - 91	12 : 0	1560	4.46	2.54

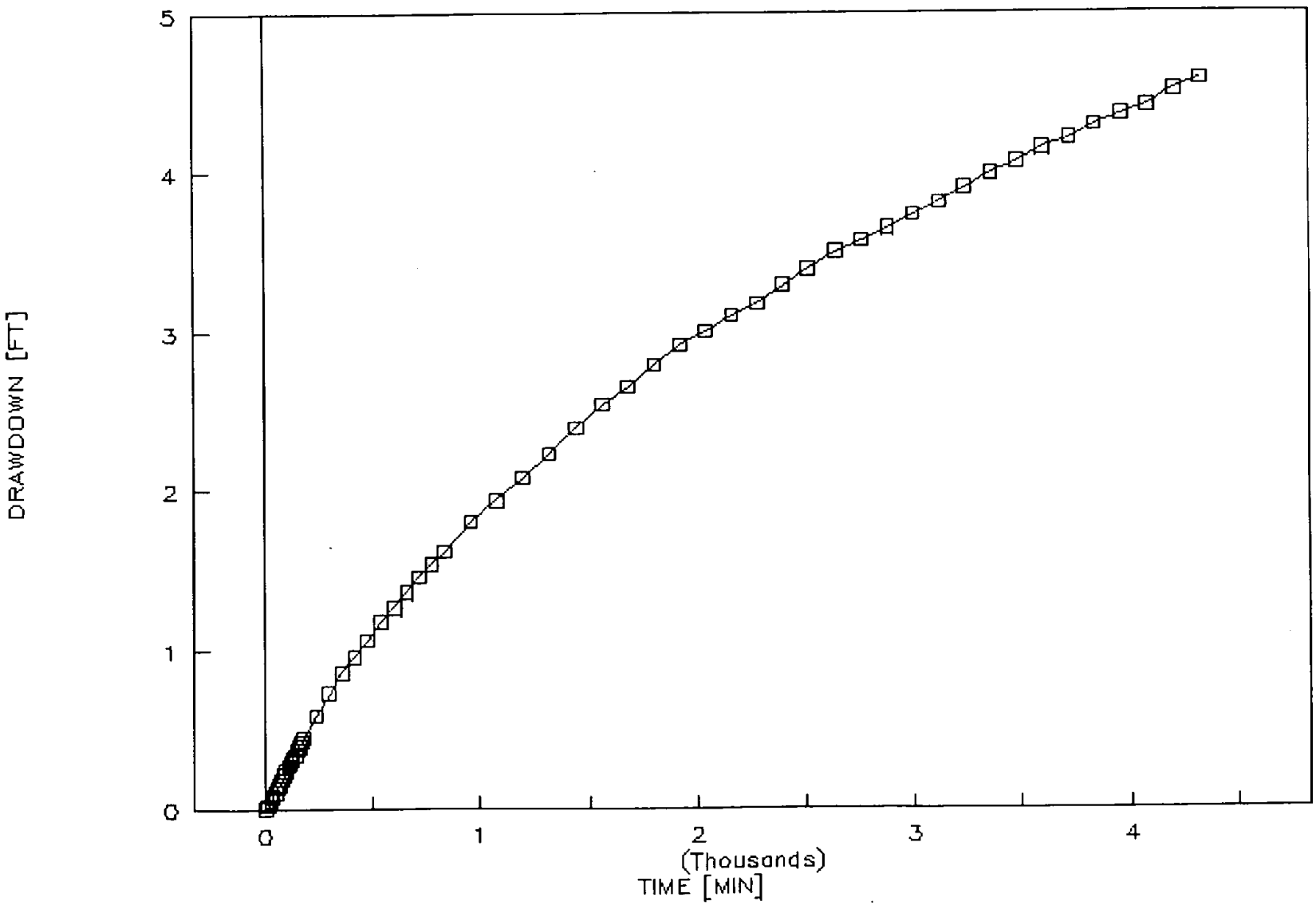
D000108

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8507-S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	14 : 0	1680	4.35	2.65
12 - 18 - 91	16 : 0	1800	4.21	2.79
12 - 18 - 91	18 : 0	1920	4.09	2.91
12 - 18 - 91	20 : 0	2040	4.00	3.00
12 - 18 - 91	22 : 0	2160	3.90	3.10
12 - 19 - 91	0 : 0	2280	3.83	3.17
12 - 19 - 91	2 : 0	2400	3.71	3.29
12 - 19 - 91	4 : 0	2520	3.61	3.39
12 - 19 - 91	6 : 0	2640	3.50	3.50
12 - 19 - 91	8 : 0	2760	3.43	3.57
12 - 19 - 91	10 : 0	2880	3.35	3.65
12 - 19 - 91	12 : 0	3000	3.27	3.73
12 - 19 - 91	14 : 0	3120	3.19	3.81
12 - 19 - 91	16 : 0	3240	3.10	3.90
12 - 19 - 91	18 : 0	3360	3.01	3.99
12 - 19 - 91	20 : 0	3480	2.94	4.06
12 - 19 - 91	22 : 0	3600	2.85	4.15
12 - 20 - 91	0 : 0	3720	2.79	4.21
12 - 20 - 91	2 : 0	3840	2.71	4.29
12 - 20 - 91	4 : 0	3960	2.64	4.36
12 - 20 - 91	6 : 0	4080	2.59	4.41
12 - 20 - 91	8 : 0	4200	2.49	4.51
12 - 20 - 91	10 : 0	4320	2.42	4.58

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL 8507-S



D 000110

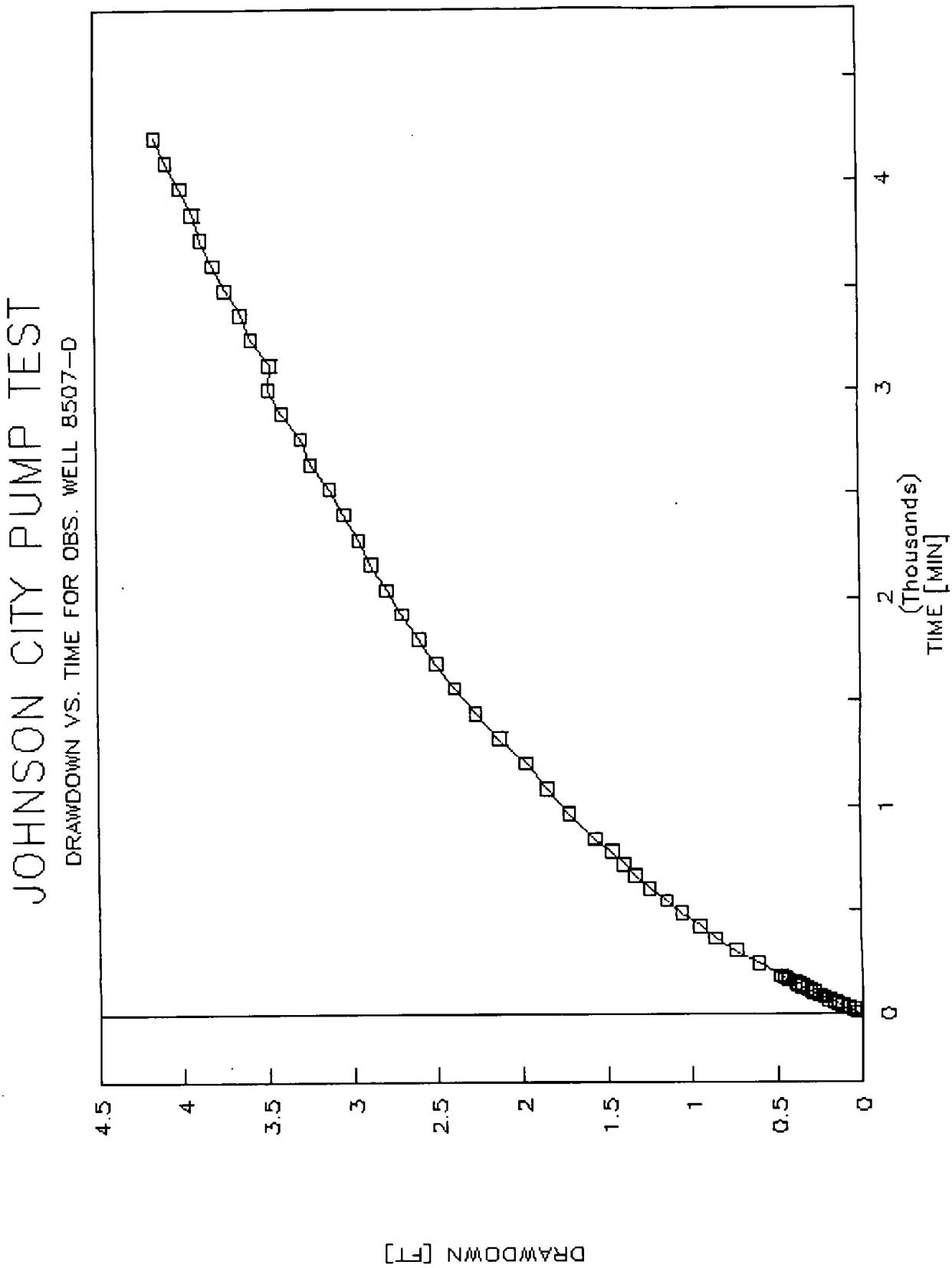
PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8507-D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	7.02	0.00
12 - 17 - 91	10 : 14	14	6.98	0.04
12 - 17 - 91	10 : 24	24	6.96	0.06
12 - 17 - 91	10 : 34	34	6.93	0.09
12 - 17 - 91	10 : 44	44	6.90	0.12
12 - 17 - 91	10 : 54	54	6.87	0.15
12 - 17 - 91	11 : 4	64	6.85	0.17
12 - 17 - 91	11 : 14	74	6.82	0.20
12 - 17 - 91	11 : 24	84	6.79	0.23
12 - 17 - 91	11 : 34	94	6.76	0.26
12 - 17 - 91	11 : 44	104	6.73	0.29
12 - 17 - 91	11 : 54	114	6.71	0.31
12 - 17 - 91	12 : 4	124	6.69	0.33
12 - 17 - 91	12 : 14	134	6.66	0.36
12 - 17 - 91	12 : 24	144	6.64	0.38
12 - 17 - 91	12 : 34	154	6.62	0.40
12 - 17 - 91	12 : 44	164	6.58	0.44
12 - 17 - 91	12 : 54	174	6.56	0.46
12 - 17 - 91	13 : 4	184	6.54	0.48
12 - 17 - 91	14 : 4	244	6.41	0.61
12 - 17 - 91	15 : 4	304	6.28	0.74
12 - 17 - 91	16 : 4	364	6.16	0.86
12 - 17 - 91	17 : 4	424	6.07	0.95
12 - 17 - 91	18 : 4	484	5.96	1.06
12 - 17 - 91	19 : 4	544	5.87	1.15
12 - 17 - 91	20 : 4	604	5.77	1.25
12 - 17 - 91	21 : 4	664	5.69	1.33
12 - 17 - 91	22 : 4	724	5.62	1.40
12 - 17 - 91	23 : 4	784	5.55	1.47
12 - 18 - 91	0 : 4	844	5.45	1.57
12 - 18 - 91	2 : 4	964	5.30	1.72
12 - 18 - 91	4 : 4	1084	5.17	1.85
12 - 18 - 91	6 : 4	1204	5.05	1.97
12 - 18 - 91	8 : 4	1324	4.89	2.13
12 - 18 - 91	10 : 4	1444	4.75	2.27
12 - 18 - 91	12 : 4	1564	4.63	2.39

D 000111

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8507-D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	14 : 4	1684	4.52	2.50
12 - 18 - 91	16 : 4	1804	4.42	2.60
12 - 18 - 91	18 : 4	1924	4.32	2.70
12 - 18 - 91	20 : 4	2044	4.23	2.79
12 - 18 - 91	22 : 4	2164	4.14	2.88
12 - 19 - 91	0 : 4	2284	4.07	2.95
12 - 19 - 91	2 : 4	2404	3.98	3.04
12 - 19 - 91	4 : 4	2524	3.90	3.12
12 - 19 - 91	6 : 4	2644	3.79	3.23
12 - 19 - 91	8 : 4	2764	3.73	3.29
12 - 19 - 91	10 : 4	2884	3.62	3.40
12 - 19 - 91	12 : 4	3004	3.54	3.48
12 - 19 - 91	14 : 4	3124	3.55	3.47
12 - 19 - 91	16 : 4	3244	3.44	3.58
12 - 19 - 91	18 : 4	3364	3.38	3.64
12 - 19 - 91	20 : 4	3484	3.29	3.73
12 - 19 - 91	22 : 4	3604	3.22	3.80
12 - 20 - 91	0 : 4	3724	3.15	3.87
12 - 20 - 91	2 : 4	3844	3.10	3.92
12 - 20 - 91	4 : 4	3964	3.03	3.99
12 - 20 - 91	6 : 4	4084	2.95	4.07
12 - 20 - 91	8 : 4	4204	2.88	4.14


JOHNSON CITY PUMP TEST
DRAWDOWN VS. TIME FOR OBS. WELL 8507-D
DRAWDOWN [FT]
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
1
2
3
4
(Thousands)
TIME [MIN]

D000113

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8802-S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

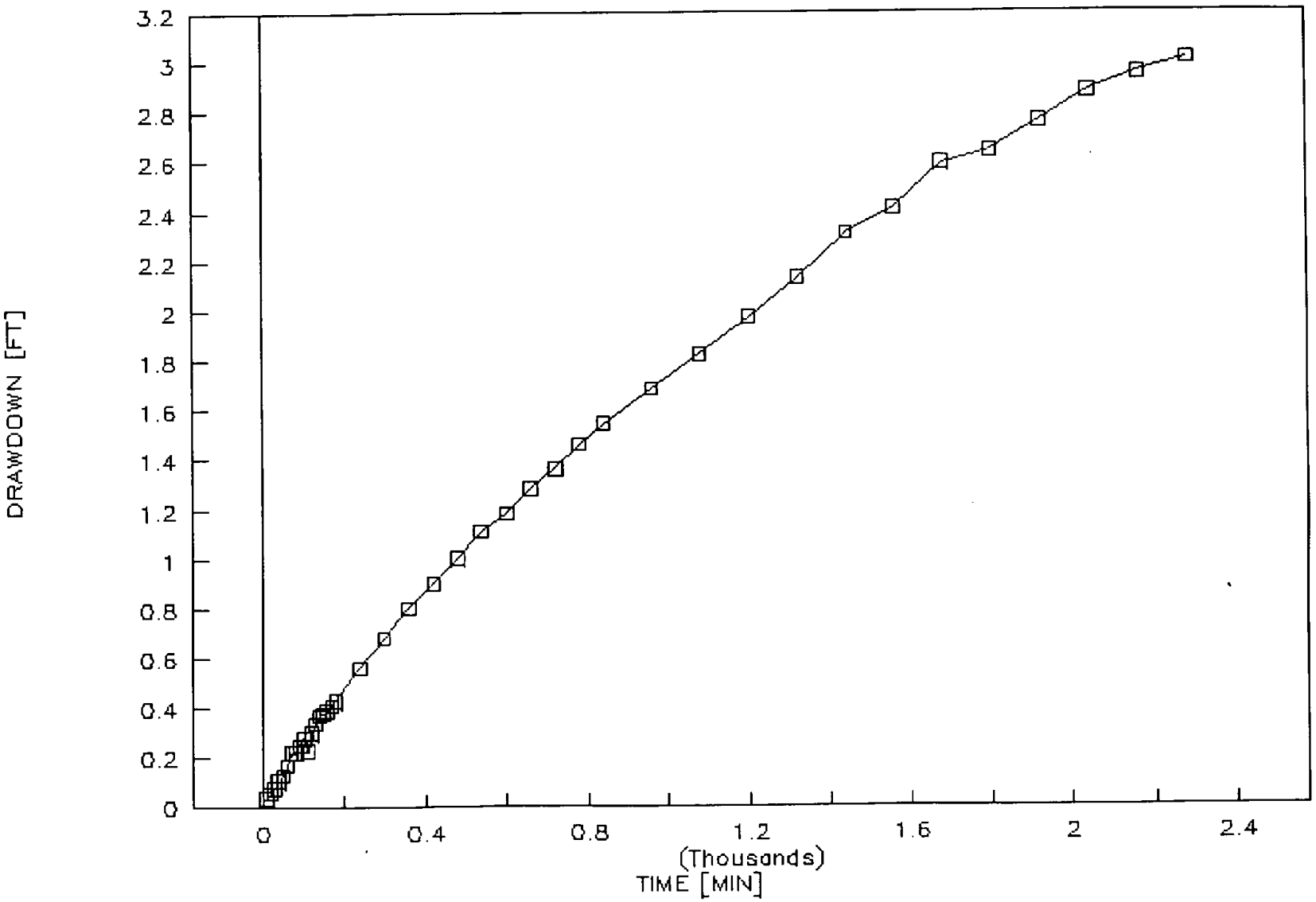
DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	3.06	0.00
12 - 17 - 91	10 : 10	10	3.02	0.04
12 - 17 - 91	10 : 20	20	3.00	0.06
12 - 17 - 91	10 : 30	30	2.98	0.08
12 - 17 - 91	10 : 40	40	2.95	0.11
12 - 17 - 91	10 : 50	50	2.93	0.13
12 - 17 - 91	11 : 0	60	2.89	0.17
12 - 17 - 91	11 : 10	70	2.84	0.22
12 - 17 - 91	11 : 20	80	2.84	0.22
12 - 17 - 91	11 : 30	90	2.81	0.25
12 - 17 - 91	11 : 40	100	2.78	0.28
12 - 17 - 91	11 : 50	110	2.83	0.23
12 - 17 - 91	12 : 0	120	2.76	0.30
12 - 17 - 91	12 : 10	130	2.72	0.34
12 - 17 - 91	12 : 20	140	2.69	0.37
12 - 17 - 91	12 : 30	150	2.68	0.38
12 - 17 - 91	12 : 40	160	2.67	0.39
12 - 17 - 91	12 : 50	170	2.65	0.41
12 - 17 - 91	13 : 0	180	2.63	0.43
12 - 17 - 91	14 : 0	240	2.50	0.56
12 - 17 - 91	15 : 0	300	2.38	0.68
12 - 17 - 91	16 : 0	360	2.26	0.80
12 - 17 - 91	17 : 0	420	2.16	0.90
12 - 17 - 91	18 : 0	480	2.06	1.00
12 - 17 - 91	19 : 0	540	1.95	1.11
12 - 17 - 91	20 : 0	600	1.88	1.18
12 - 17 - 91	21 : 0	660	1.78	1.28
12 - 17 - 91	22 : 0	720	1.70	1.36
12 - 17 - 91	23 : 0	780	1.60	1.46
12 - 18 - 91	0 : 0	840	1.52	1.54
12 - 18 - 91	2 : 0	960	1.38	1.68
12 - 18 - 91	4 : 0	1080	1.24	1.82
12 - 18 - 91	6 : 0	1200	1.09	1.97
12 - 18 - 91	8 : 0	1320	0.93	2.13
12 - 18 - 91	10 : 0	1440	0.75	2.31
12 - 18 - 91	12 : 0	1560	0.65	2.41

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8802-S
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	14 : 0	1680	0.47	2.59
12 - 18 - 91	16 : 0	1800	0.42	2.64
12 - 18 - 91	18 : 0	1920	0.30	2.76
12 - 18 - 91	20 : 0	2040	0.18	2.88
12 - 18 - 91	22 : 0	2160	0.11	2.95
12 - 19 - 91	0 : 0	2280	0.05	3.01

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL 8802-S



PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8802-D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

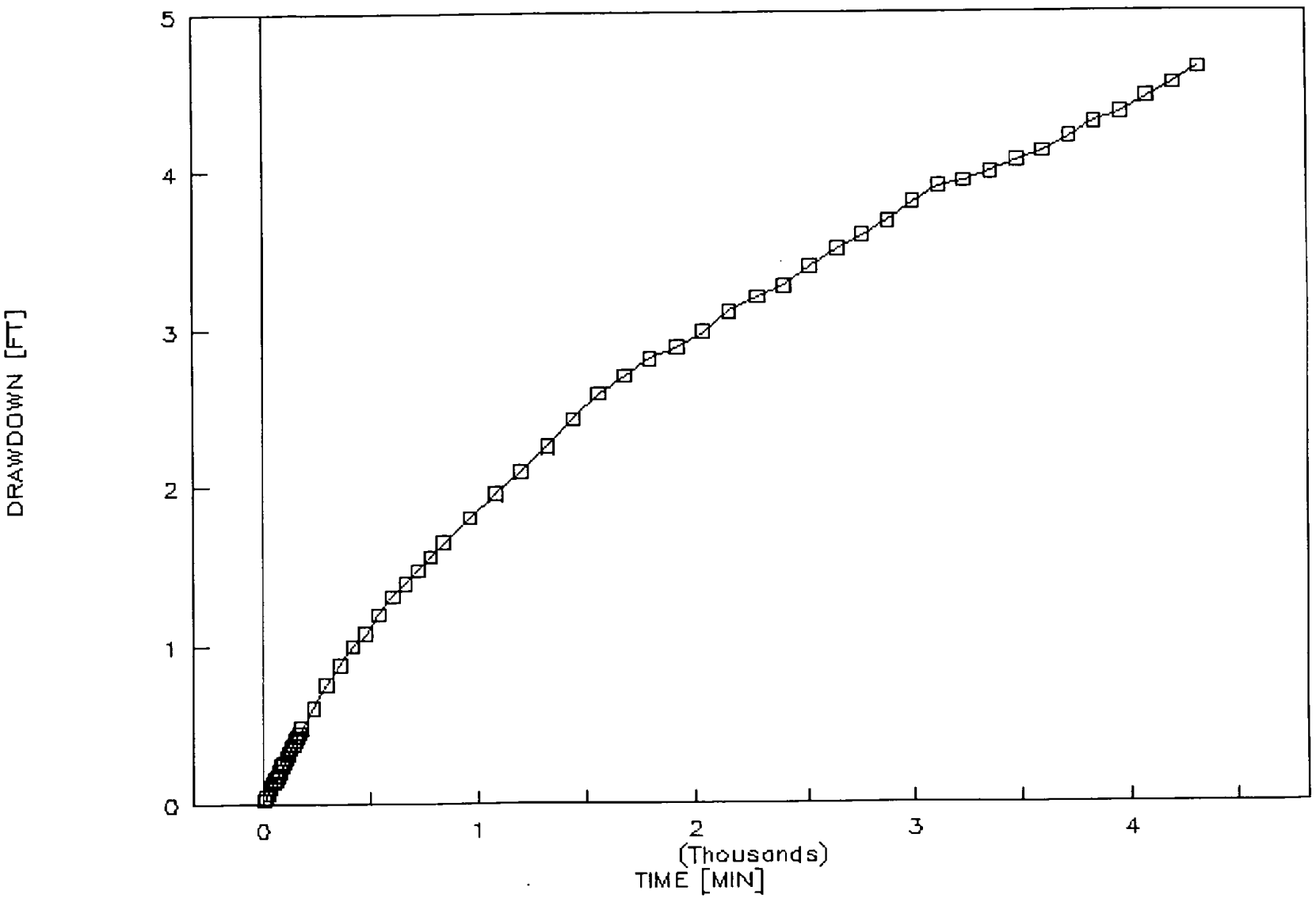
DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 17 - 91	10 : 0	0	6.12	0.00
12 - 17 - 91	10 : 10	10	6.09	0.03
12 - 17 - 91	10 : 20	20	6.07	0.05
12 - 17 - 91	10 : 30	30	6.05	0.07
12 - 17 - 91	10 : 40	40	6.01	0.11
12 - 17 - 91	10 : 50	50	5.98	0.14
12 - 17 - 91	11 : 0	60	5.96	0.16
12 - 17 - 91	11 : 10	70	5.94	0.18
12 - 17 - 91	11 : 20	80	5.91	0.21
12 - 17 - 91	11 : 30	90	5.87	0.25
12 - 17 - 91	11 : 40	100	5.85	0.27
12 - 17 - 91	11 : 50	110	5.82	0.30
12 - 17 - 91	12 : 0	120	5.80	0.32
12 - 17 - 91	12 : 10	130	5.76	0.36
12 - 17 - 91	12 : 20	140	5.74	0.38
12 - 17 - 91	12 : 30	150	5.71	0.41
12 - 17 - 91	12 : 40	160	5.69	0.43
12 - 17 - 91	12 : 50	170	5.67	0.45
12 - 17 - 91	13 : 0	180	5.64	0.48
12 - 17 - 91	14 : 0	240	5.51	0.61
12 - 17 - 91	15 : 0	300	5.36	0.76
12 - 17 - 91	16 : 0	360	5.24	0.88
12 - 17 - 91	17 : 0	420	5.12	1.00
12 - 17 - 91	18 : 0	480	5.04	1.08
12 - 17 - 91	19 : 0	540	4.92	1.20
12 - 17 - 91	20 : 0	600	4.81	1.31
12 - 17 - 91	21 : 0	660	4.73	1.39
12 - 17 - 91	22 : 0	720	4.65	1.47
12 - 17 - 91	23 : 0	780	4.56	1.56
12 - 18 - 91	0 : 0	840	4.47	1.65
12 - 18 - 91	2 : 0	960	4.31	1.81
12 - 18 - 91	4 : 0	1080	4.16	1.96
12 - 18 - 91	6 : 0	1200	4.02	2.10
12 - 18 - 91	8 : 0	1320	3.86	2.26
12 - 18 - 91	10 : 0	1440	3.69	2.43
12 - 18 - 91	12 : 0	1560	3.53	2.59

PROJECT: JOHNSON CITY
TASK: PUMP TEST
WELL: 8802-D
START TIME: DEC-17-91, 10:00 AM
END TIME: DEC-20-91, 10:00 AM

DATE	CLOCK TIME	TEST TIME	DEPTH TO WATER	DRAWDOWN
[DAY - MO - YR]	[HR : MIN]	[MIN]	[FT]	[FT]
12 - 18 - 91	14 : 0	1680	3.42	2.70
12 - 18 - 91	16 : 0	1800	3.31	2.81
12 - 18 - 91	18 : 0	1920	3.24	2.88
12 - 18 - 91	20 : 0	2040	3.14	2.98
12 - 18 - 91	22 : 0	2160	3.01	3.11
12 - 19 - 91	0 : 0	2280	2.92	3.20
12 - 19 - 91	2 : 0	2400	2.85	3.27
12 - 19 - 91	4 : 0	2520	2.73	3.39
12 - 19 - 91	6 : 0	2640	2.62	3.50
12 - 19 - 91	8 : 0	2760	2.53	3.59
12 - 19 - 91	10 : 0	2880	2.44	3.68
12 - 19 - 91	12 : 0	3000	2.32	3.80
12 - 19 - 91	14 : 0	3120	2.22	3.90
12 - 19 - 91	16 : 0	3240	2.19	3.93
12 - 19 - 91	18 : 0	3360	2.13	3.99
12 - 19 - 91	20 : 0	3480	2.06	4.06
12 - 19 - 91	22 : 0	3600	2.00	4.12
12 - 20 - 91	0 : 0	3720	1.91	4.21
12 - 20 - 91	2 : 0	3840	1.82	4.30
12 - 20 - 91	4 : 0	3960	1.76	4.36
12 - 20 - 91	6 : 0	4080	1.66	4.46
12 - 20 - 91	8 : 0	4200	1.58	4.54
12 - 20 - 91	10 : 0	4320	1.48	4.64

JOHNSON CITY PUMP TEST

DRAWDOWN VS. TIME FOR OBS. WELL 8802-D



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