007684

GEOCHEMICAL/GEOHYDROLOGIC REPORT

GROUND WATER REMEDIAL DESIGN

Crystal Chemical Company Site
3502 Rogerdale Road
Houston, Texas

VOLUME 2 - APPENDICIES 1 TO 9

This volume contains

APPENDIX 1 -	CPT SOUNDINGS AND DISSIPATION TESTS
APPENDIX 2 -	BORING LOGS
APPENDIX 3 -	MONITORING WELL CONSTRUCTION DIAGRAMS
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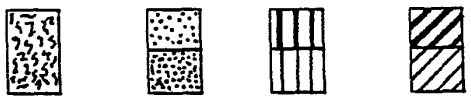
APPENDIX 5 -	GEOPHYSICAL LOGS FOR MW-26 (300 FOOT WELL)
APPENDIX 6 -	POND BORING INFORMATION
APPENDIX 7 -	PUMP TEST WELL/PIEZOMETER BORING LOGS AND CONSTRUCTION DETAILS
APPENDIX 8 -	PUMP TEST DATA
APPENDIX 9 -	GEOTECHNICAL BORINGS DATA

July 22, 1994

138702

Key To Soil Classification and Symbols

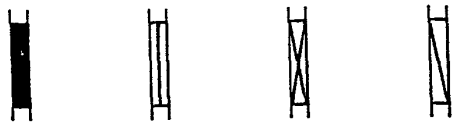
SOIL TYPE
(Shown in Symbol Column)



Fill | Sandy | Silty | Clayey

Predominant Type Shown Heavy

SAMPLE TYPE
(Shown in Samples Column)



Undisturbed | Rock Core | Split Spoon | No Recovery

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TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE GRAINED SOILS (Major portion Retained on No. 200 Sieve)
Includes (1) clean gravels and sand described as fine, medium or course, depending on distribution of grain sizes (2) silty or clayey gravels and sands and (3) fine grained low plasticity soils (PI < 10) such as sandy silts. Condition is rated according to relative density, as determined by lab tests or estimated from resistance to sampler penetration.

Descriptive Term	Penetration Resistance*	Relative Density
Loose	0 - 10	0 to 40%
Medium Dense	10 - 30	40 to 70%
Dense	30 - 50	70 to 90%
Very Dense	Over 50	90 to 100%

* Blows/Foot, 140# Hammer, 30" Drop

FINE GRAINED SOILS (Major Portion Passing No. 200 Sieve)
Includes (1) inorganic and organic silts and clays, (2) sandy, gravelly or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings or by unconfined compression tests for soils with PI $\geq$ 10.

Descriptive Term	Cohesive Shear Strength Tons/Square Foot
Very Soft	Less Than 0.125
Soft	0.125 to 0.25
Firm	0.25 to 0.50
Stiff	0.50 to 1.00
Very Stiff	1.00 to 2.00
Hard	2.00 and Higher

Note: Slickensided and fissured clay may have lower unconfined compressive strengths than shown above because of planes of weakness or shrinkage cracks; consistency ratings of such soils are based on hand penetrometer readings.

TERMS CHARACTERIZING SOIL STRUCTURE

Parting:	paper thin in size
Seam:	1/8" to 3" thick
Layer:	greater than 3"
Fissured:	containing shrinkage cracks, frequently filled with fine sand or silt, usually more or less vertical
Sensitive:	pertaining to cohesive soils that are subject to appreciable loss of strength when remolded
Interbedded:	composed of alternate layers of different soil types
Laminated:	composed of thin layers of varying color and texture
Calcareous:	containing appreciable quantities of calcium carbonate
Well Graded:	having wide range in grain sizes and substantial amounts of all intermediate particle sizes
Poorly Graded:	predominantly of one grain size, or having a range of sizes with some intermediate size missing
Flocculated:	pertaining to cohesive soils that exhibit a loose knit or flakey structure
Slickensided:	having inclined planes of weakness that are slick and glossy in appearance.

Degree of Slickensided Development

Slightly Slickensided:	slickensides present at intervals of 1' to 2', soil does not easily break along these plates
Moderately Slickensided:	slickensides spaced at intervals of 1' to 2', soil breaks easily along these planes
Extremely Slickensided:	continuous and interconnected slickensides spaced at intervals of 4" to 12', soil breaks along the slickensides into pieces 3" to 6" in size
Intensely Slickensided:	slickensides spaced at intervals of less than 4", continuous in all directions; soil breaks down along planes into nodules 1/4" to 2" in size.

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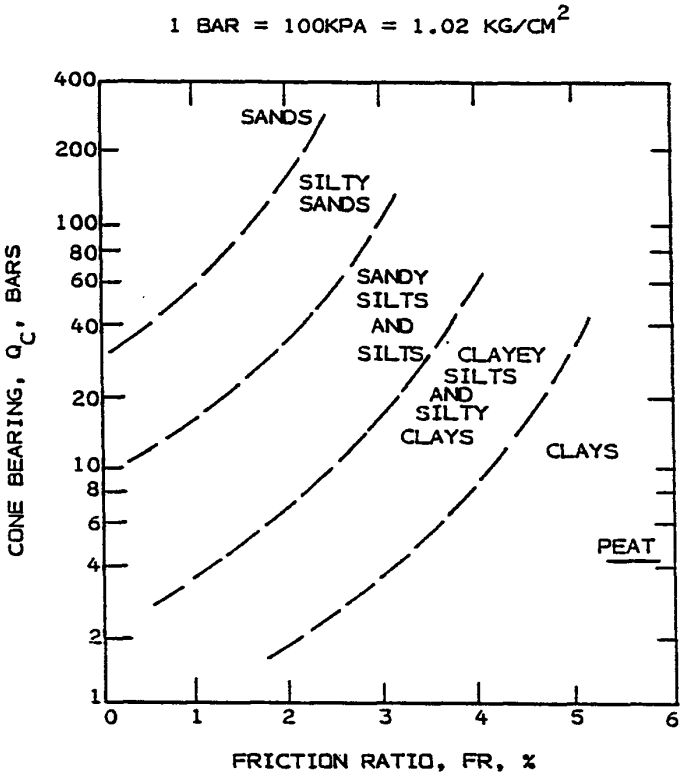

CAMPANELLA AND ROBERTSON CLASSIFICATION CHART

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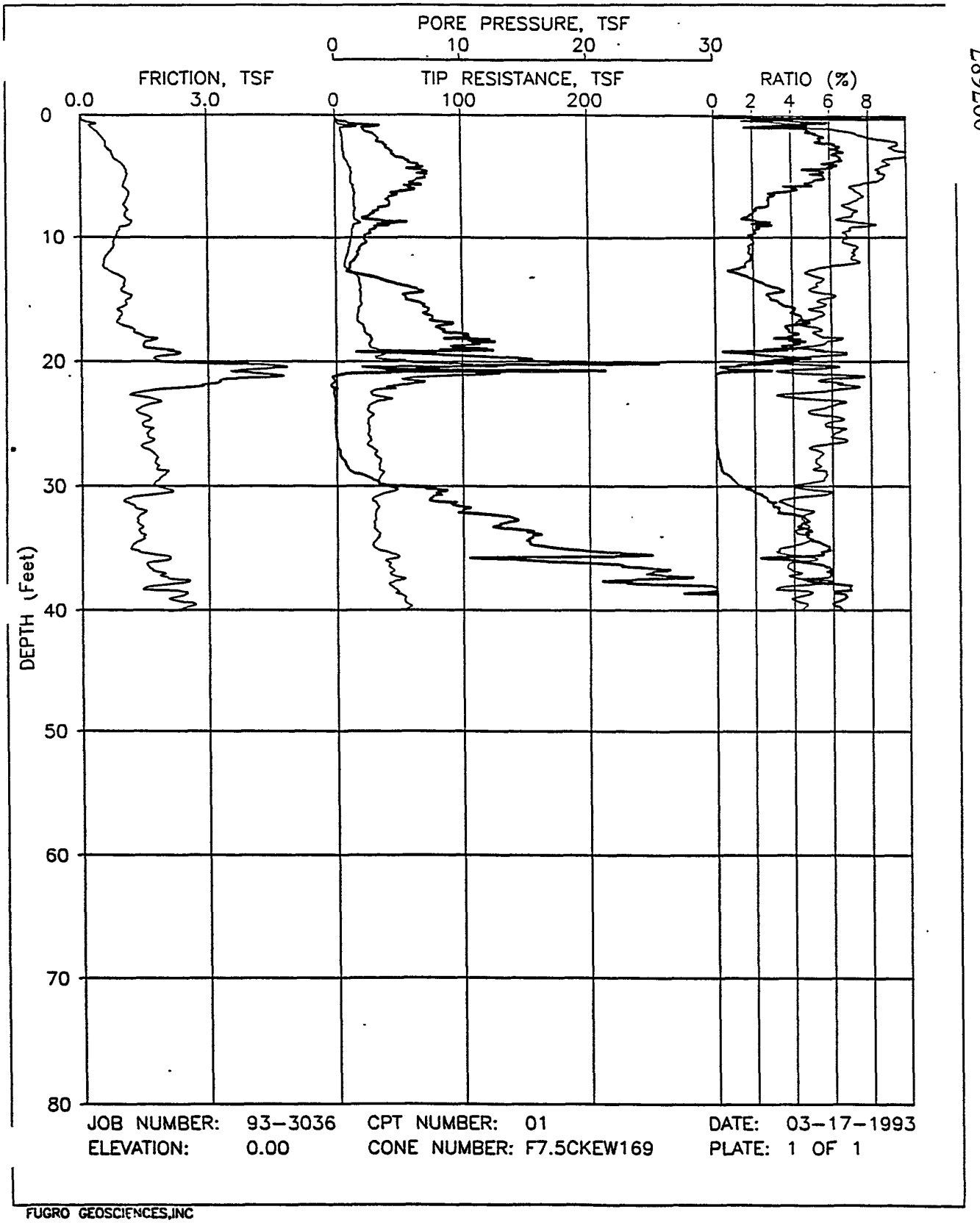

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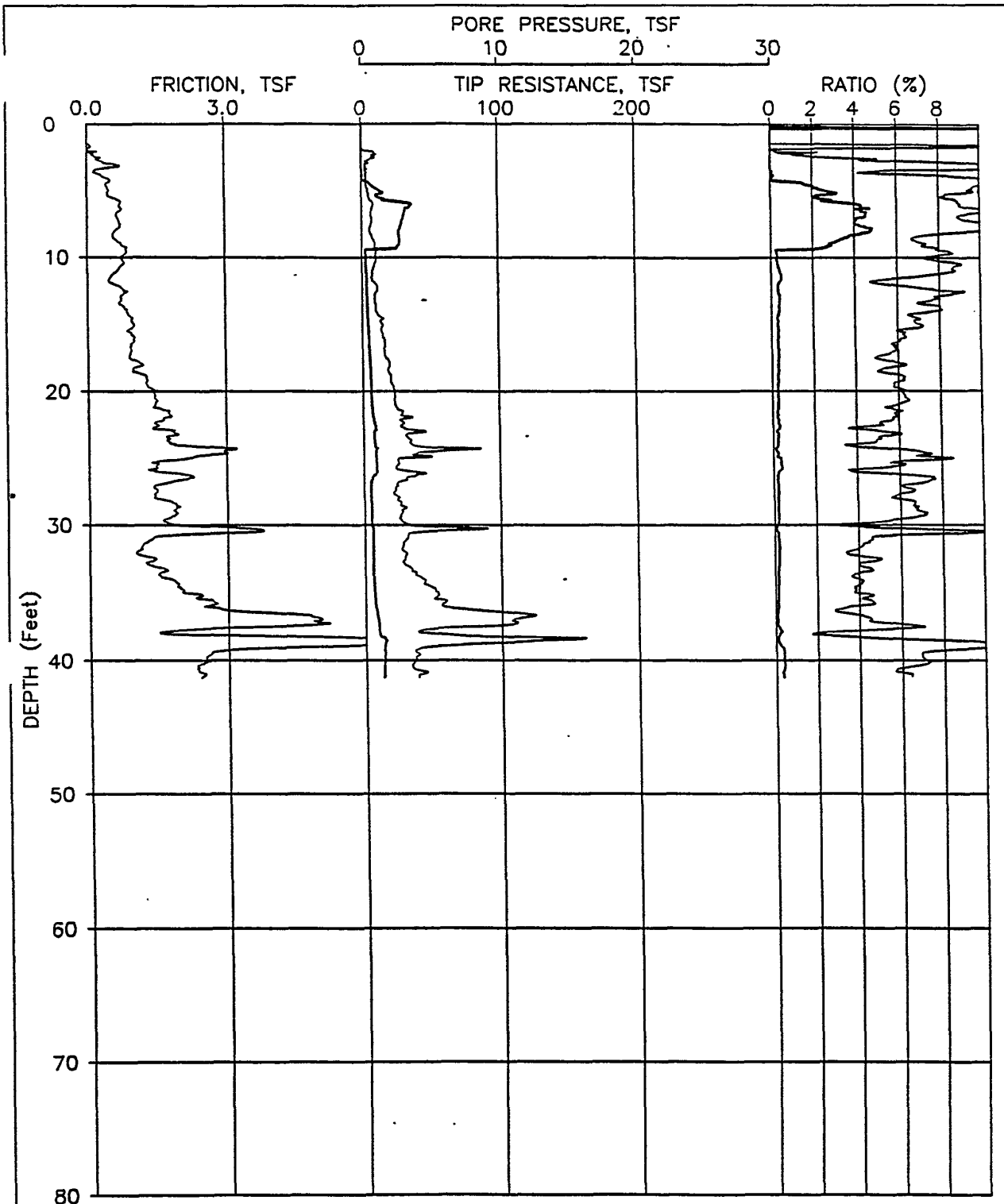

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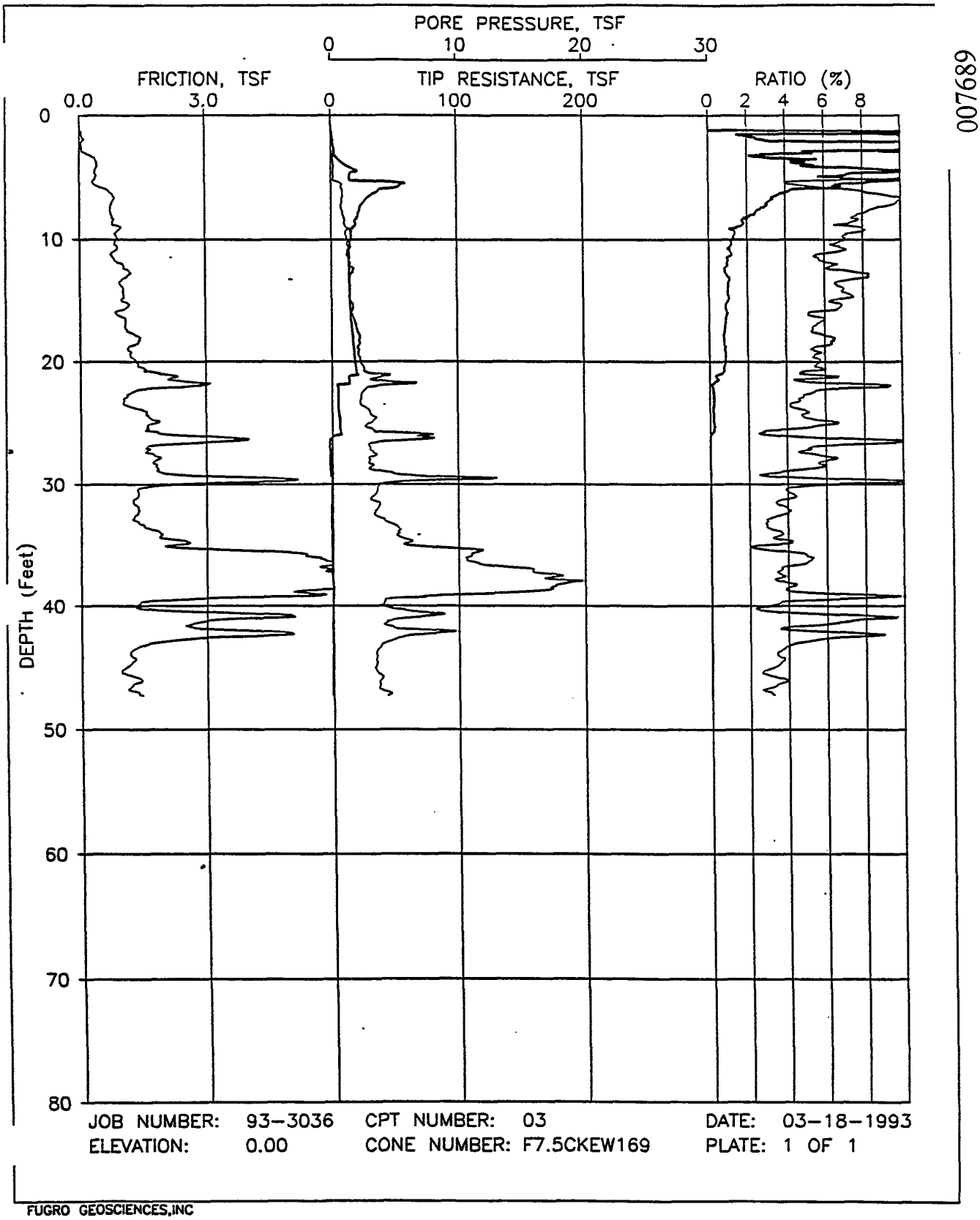

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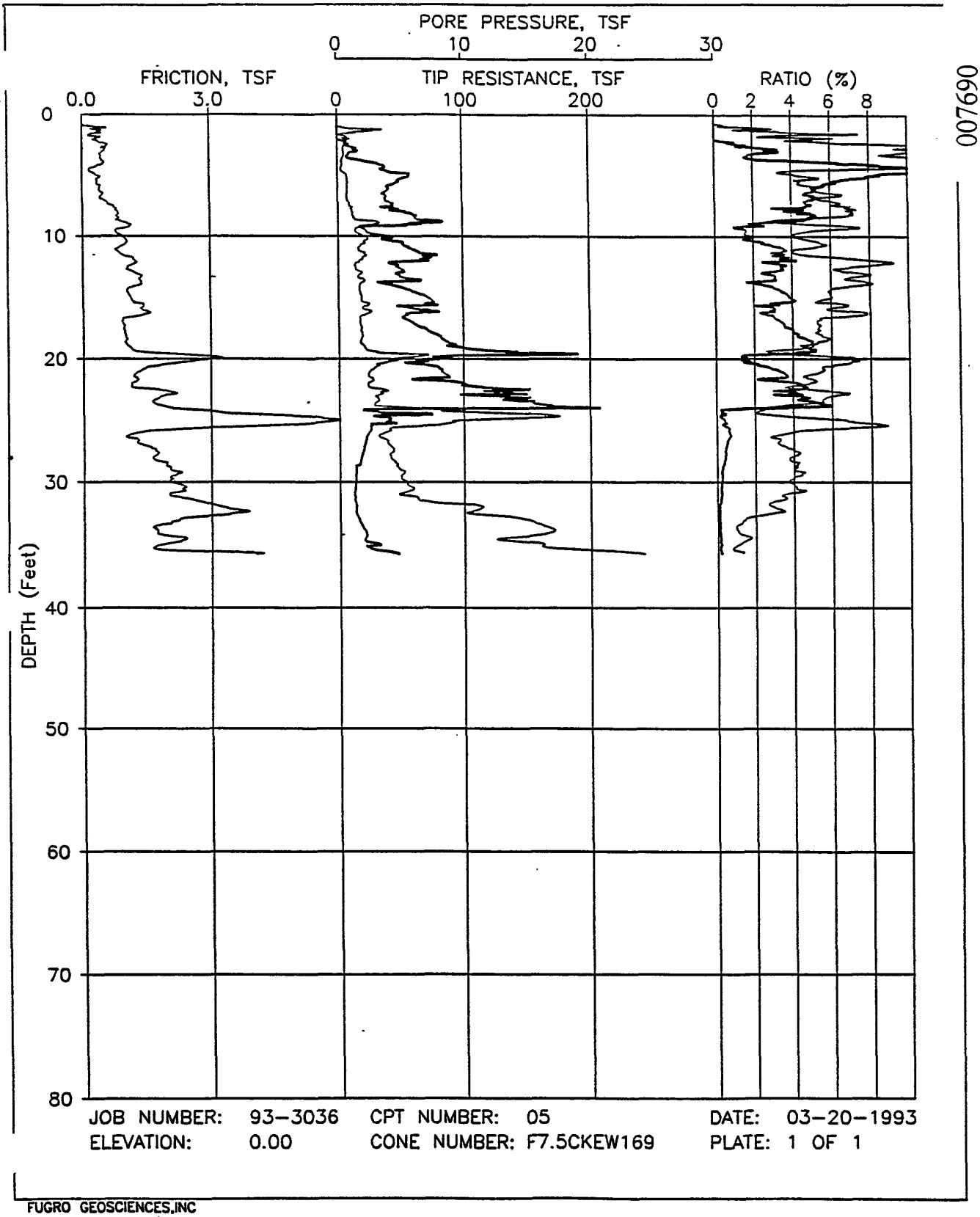

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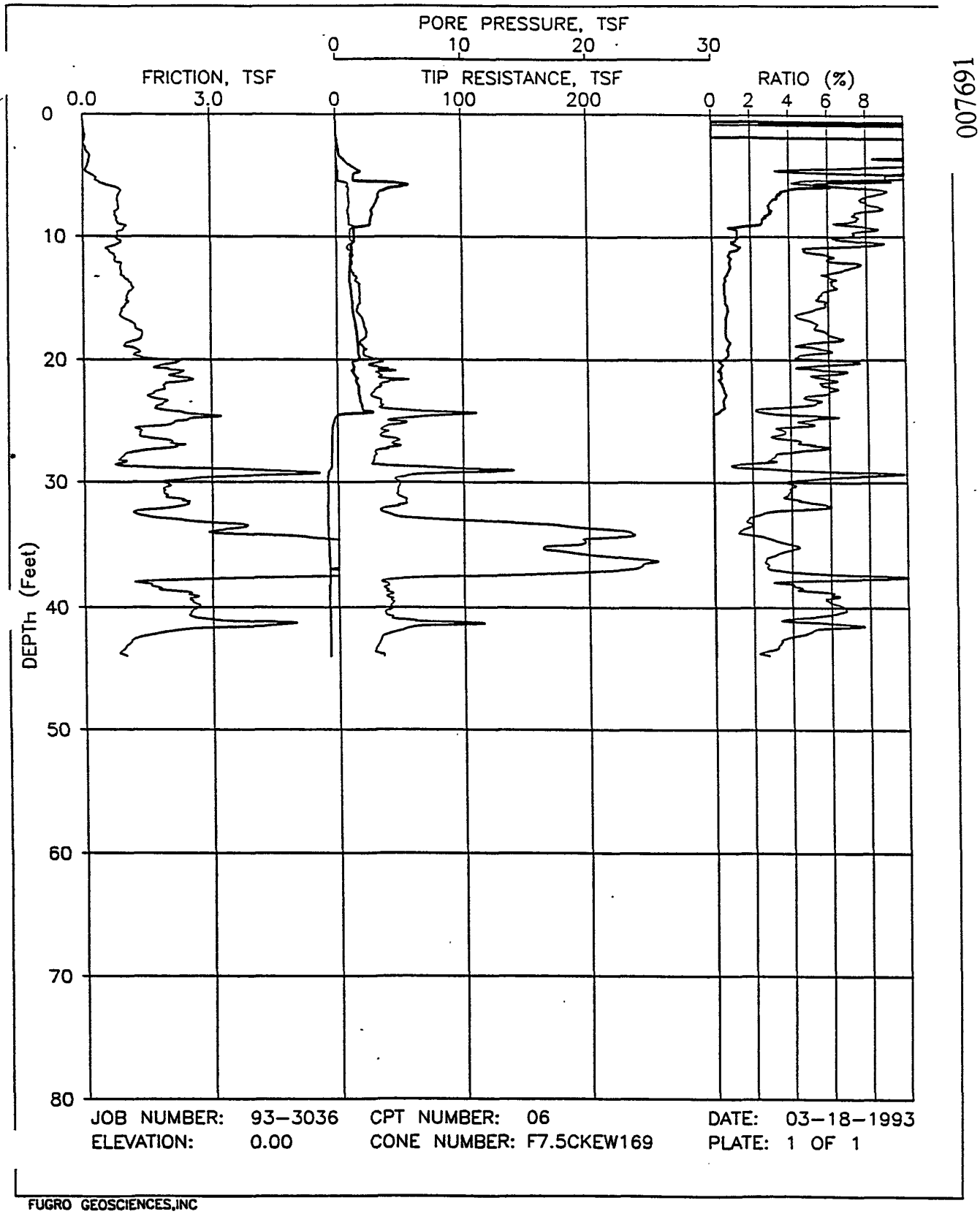

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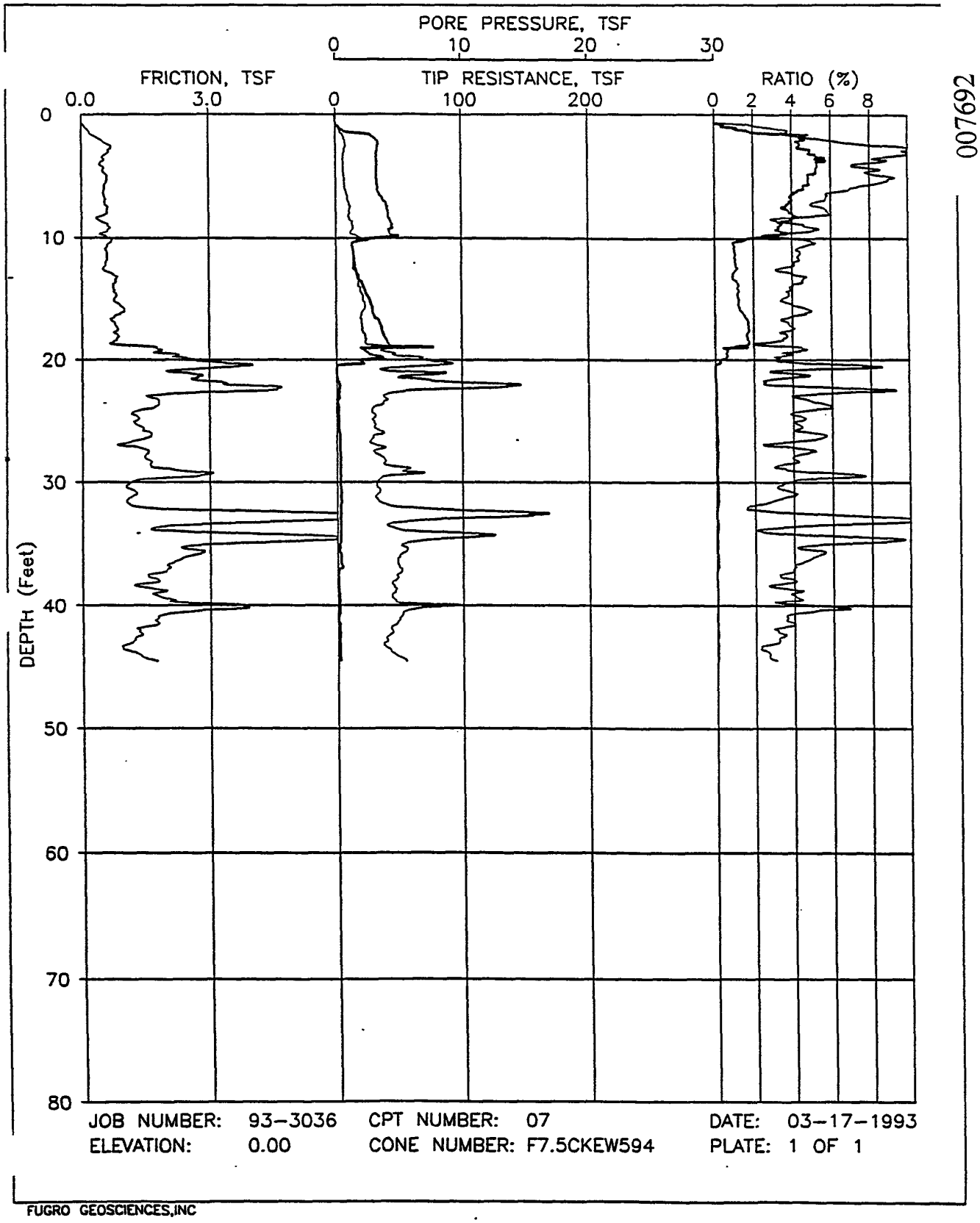

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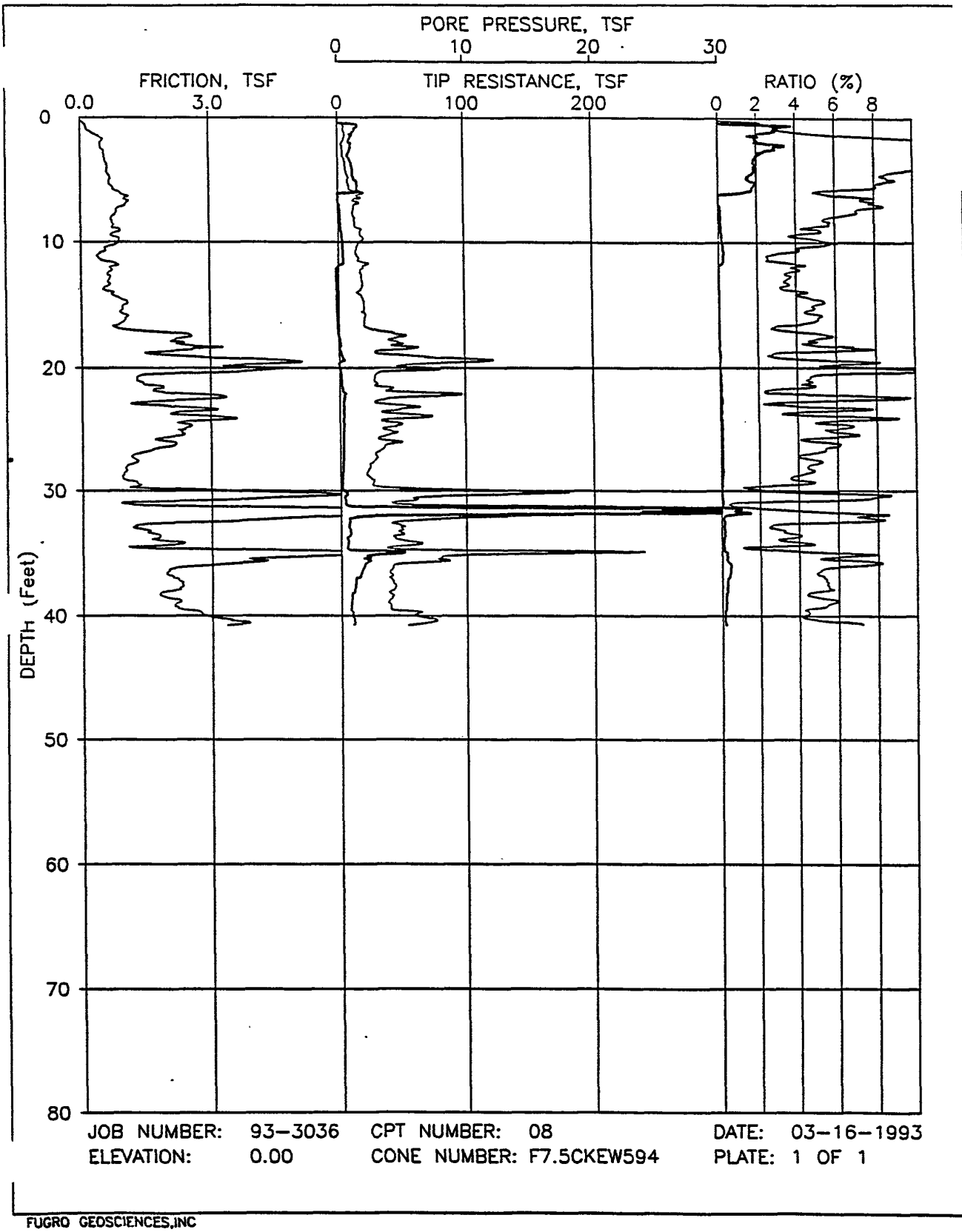

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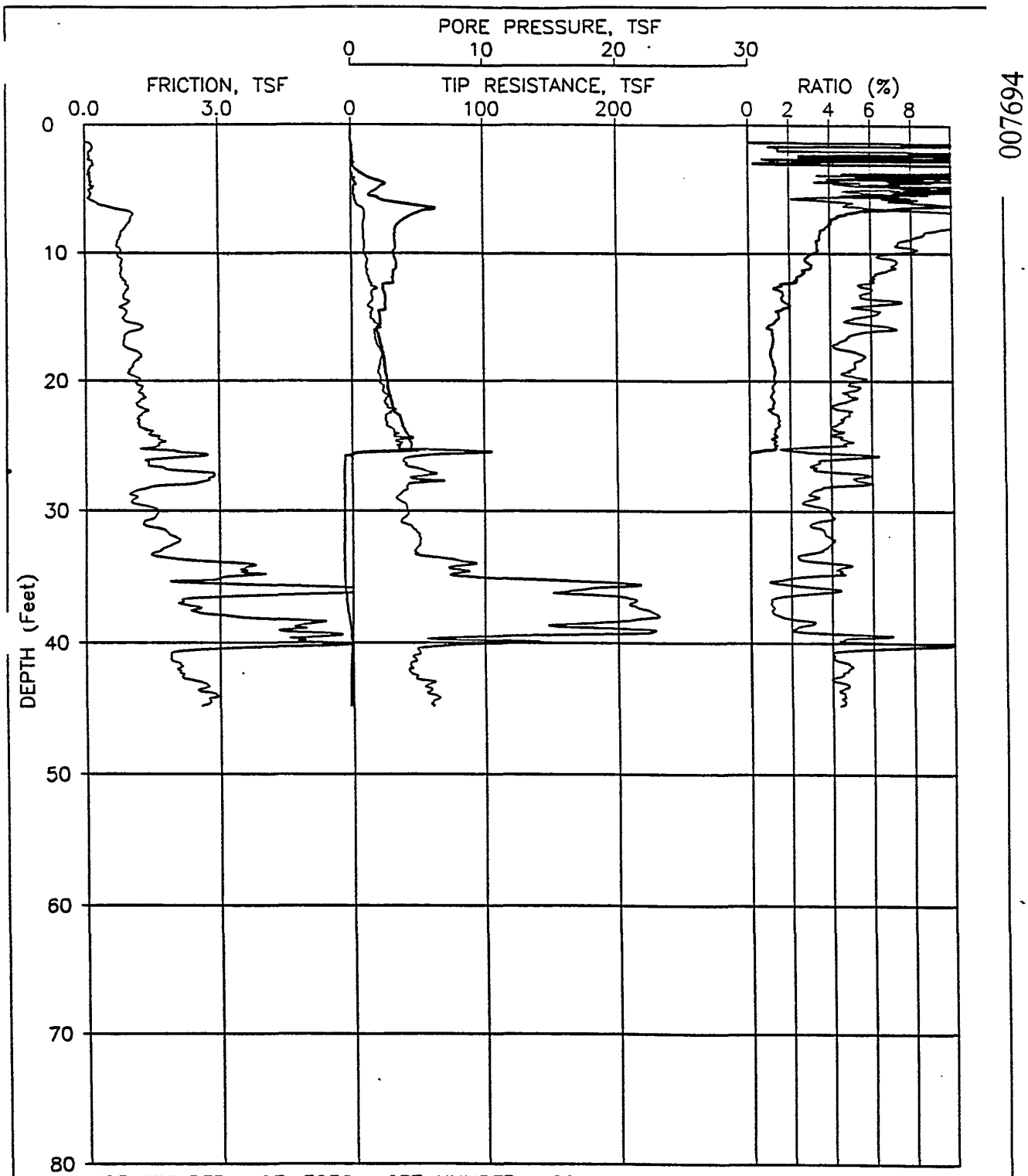

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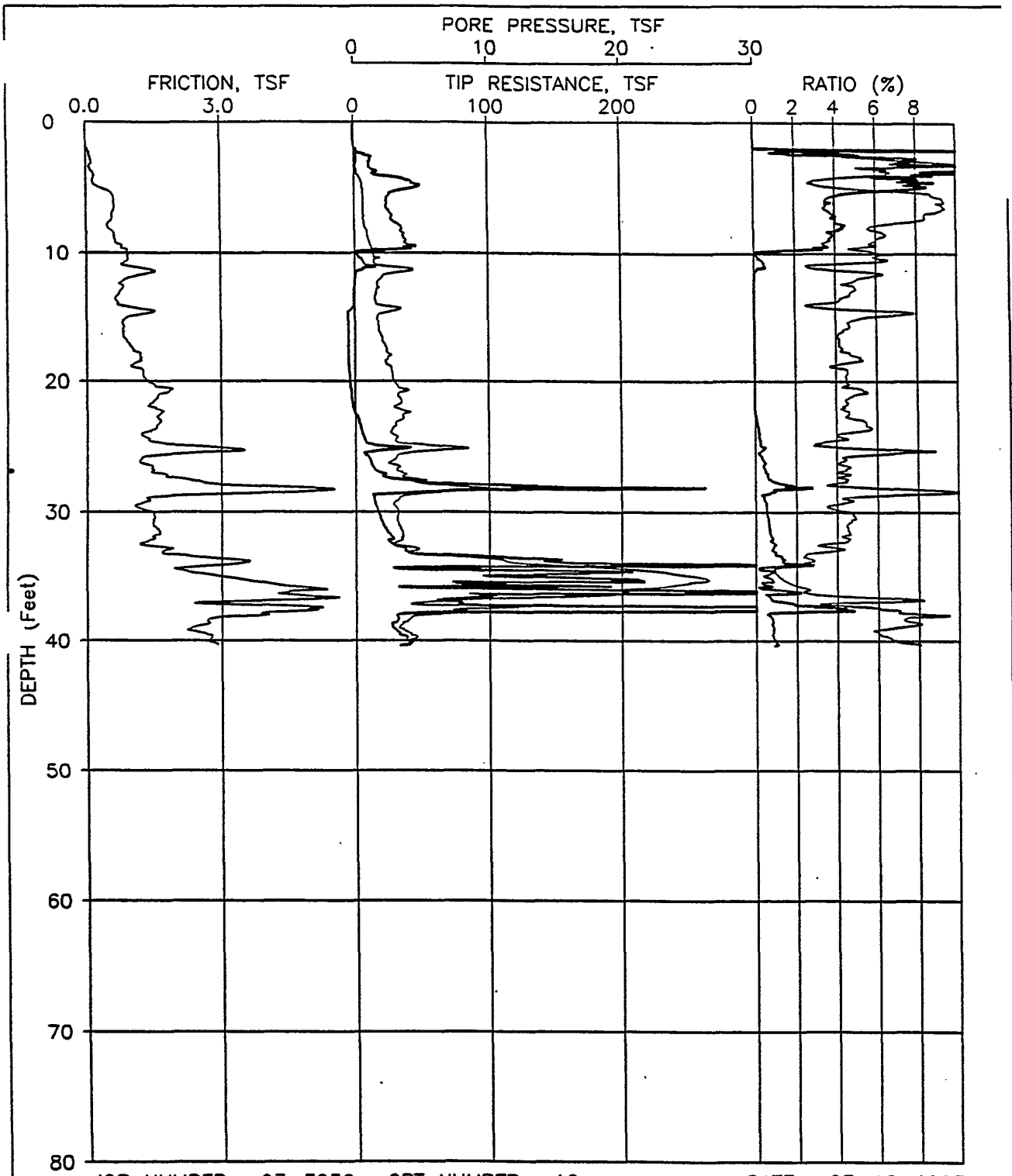

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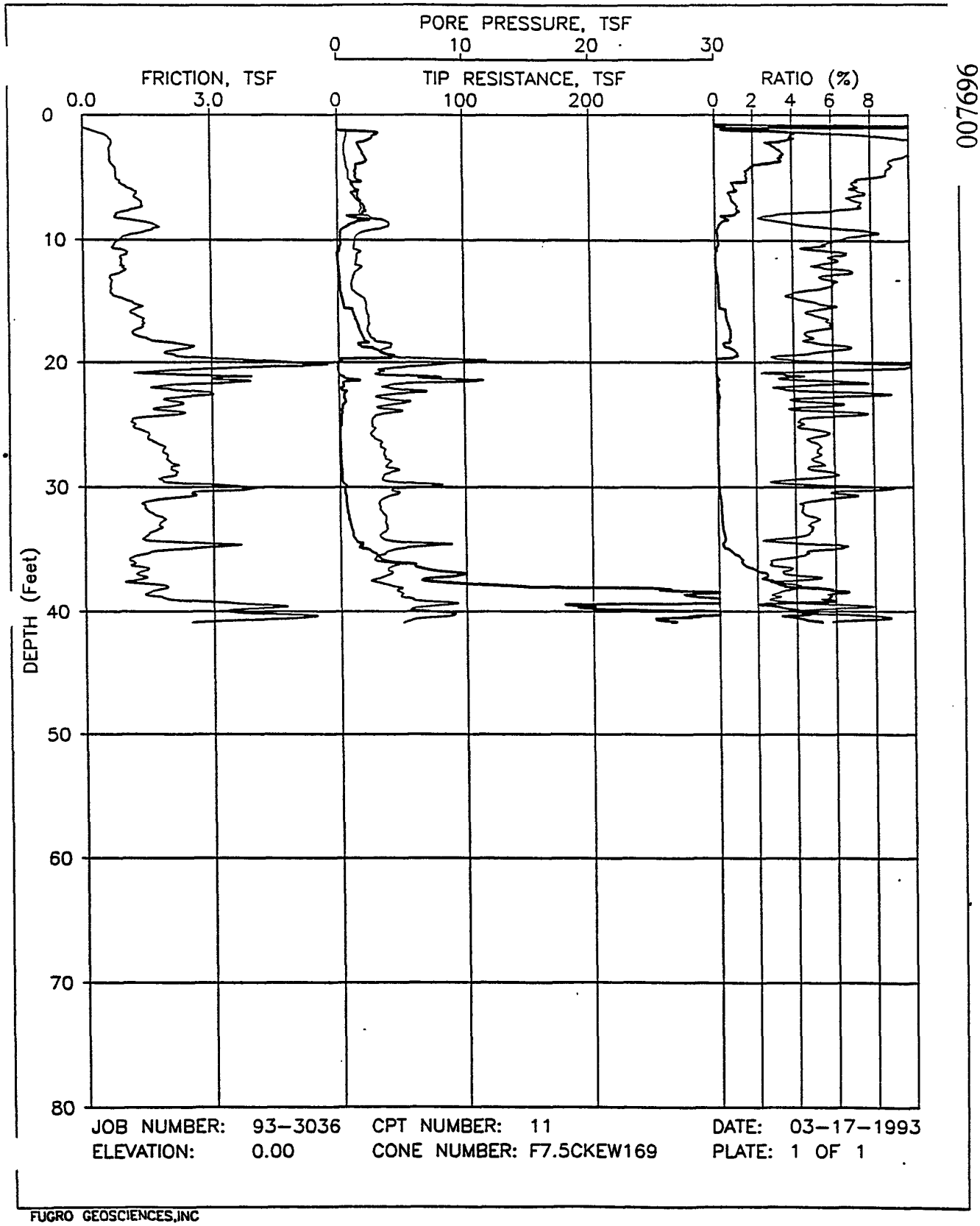

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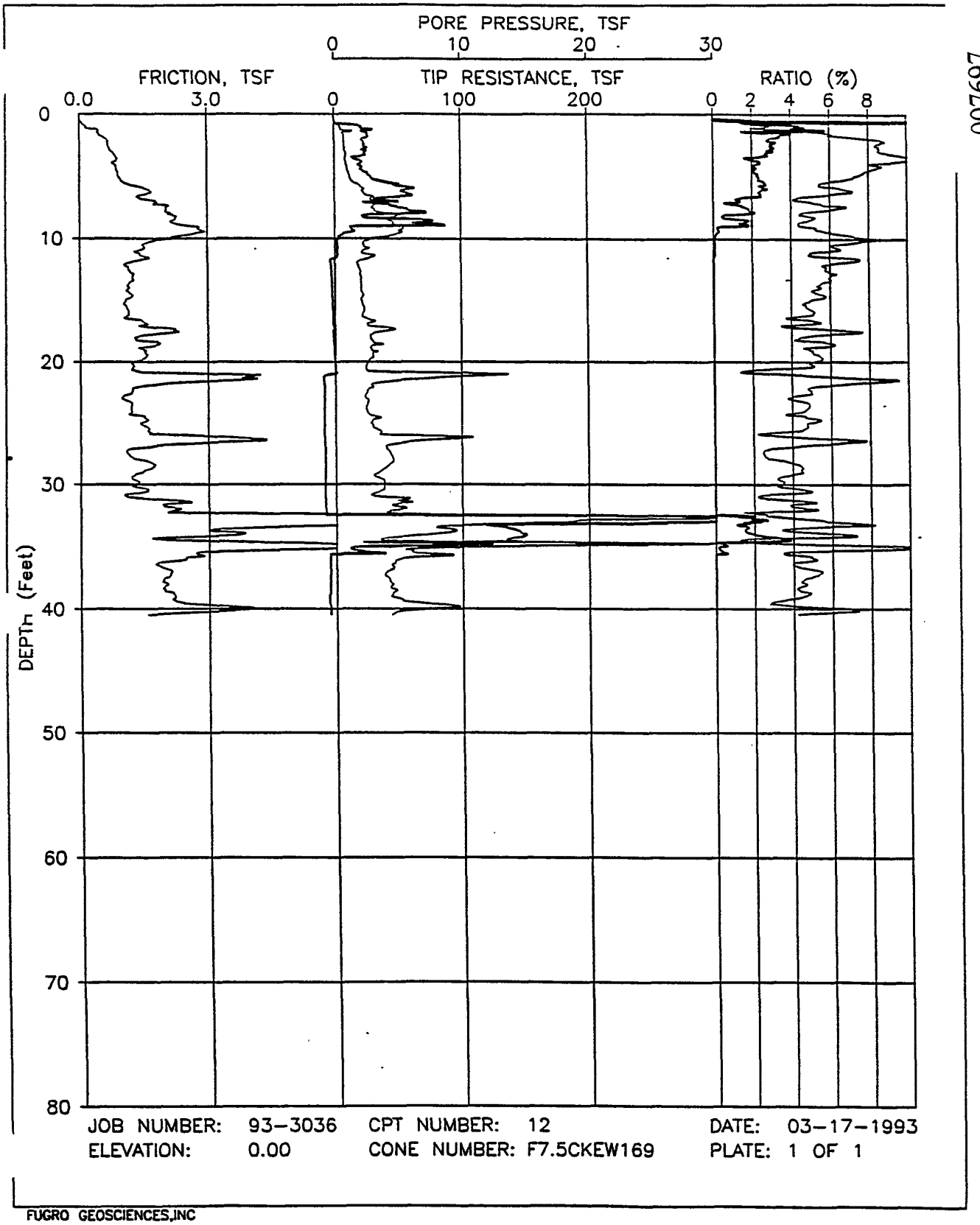

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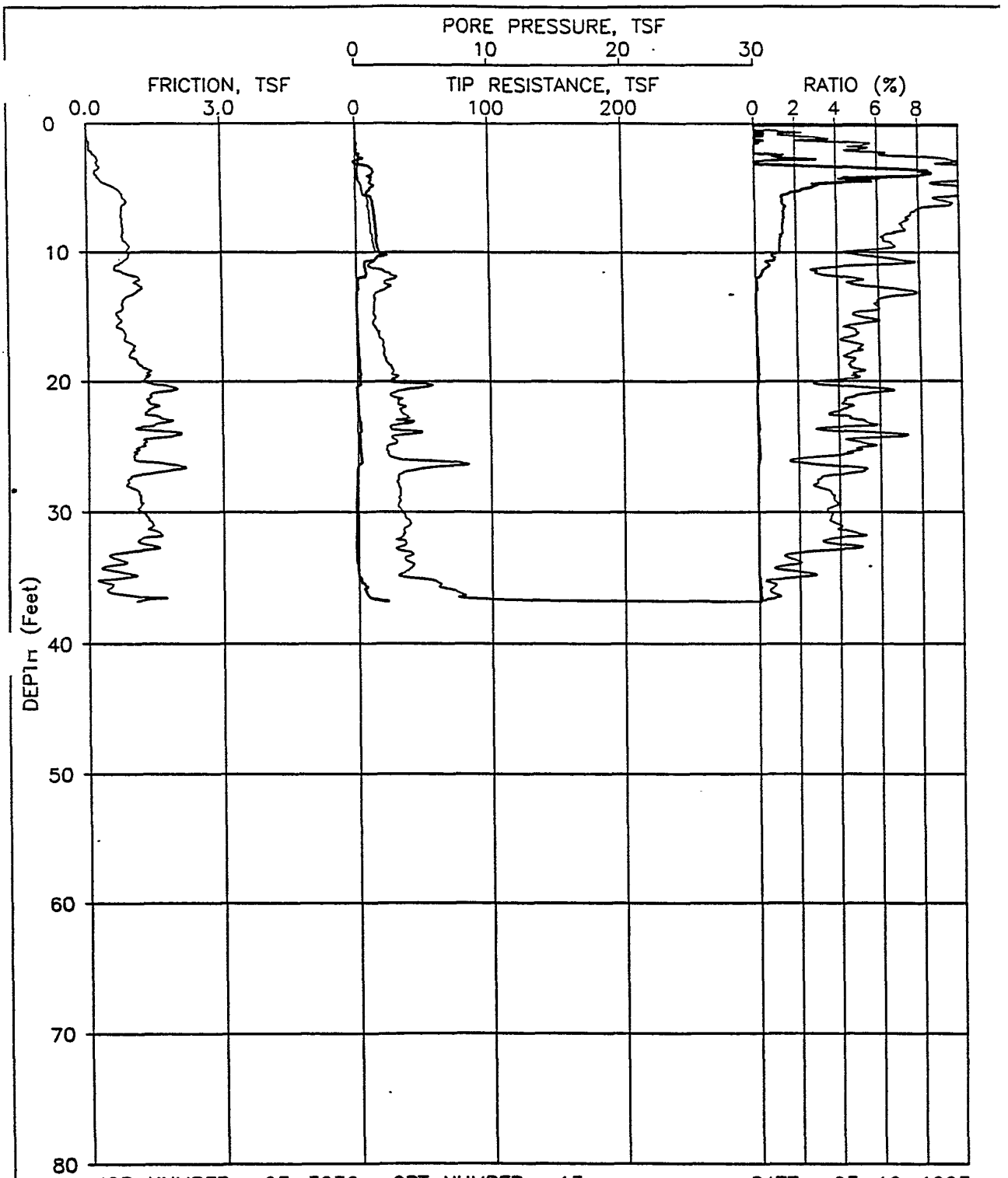

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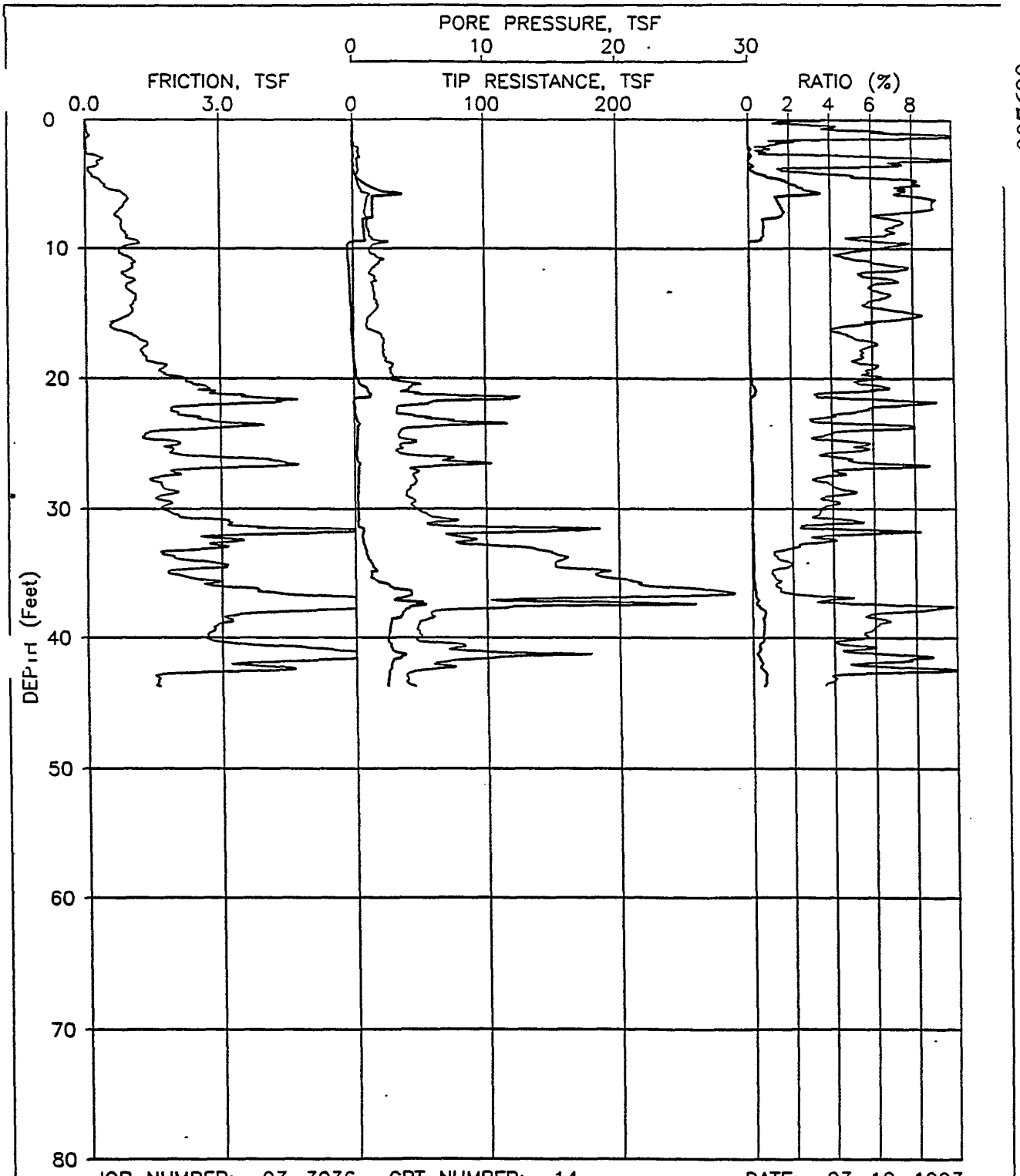

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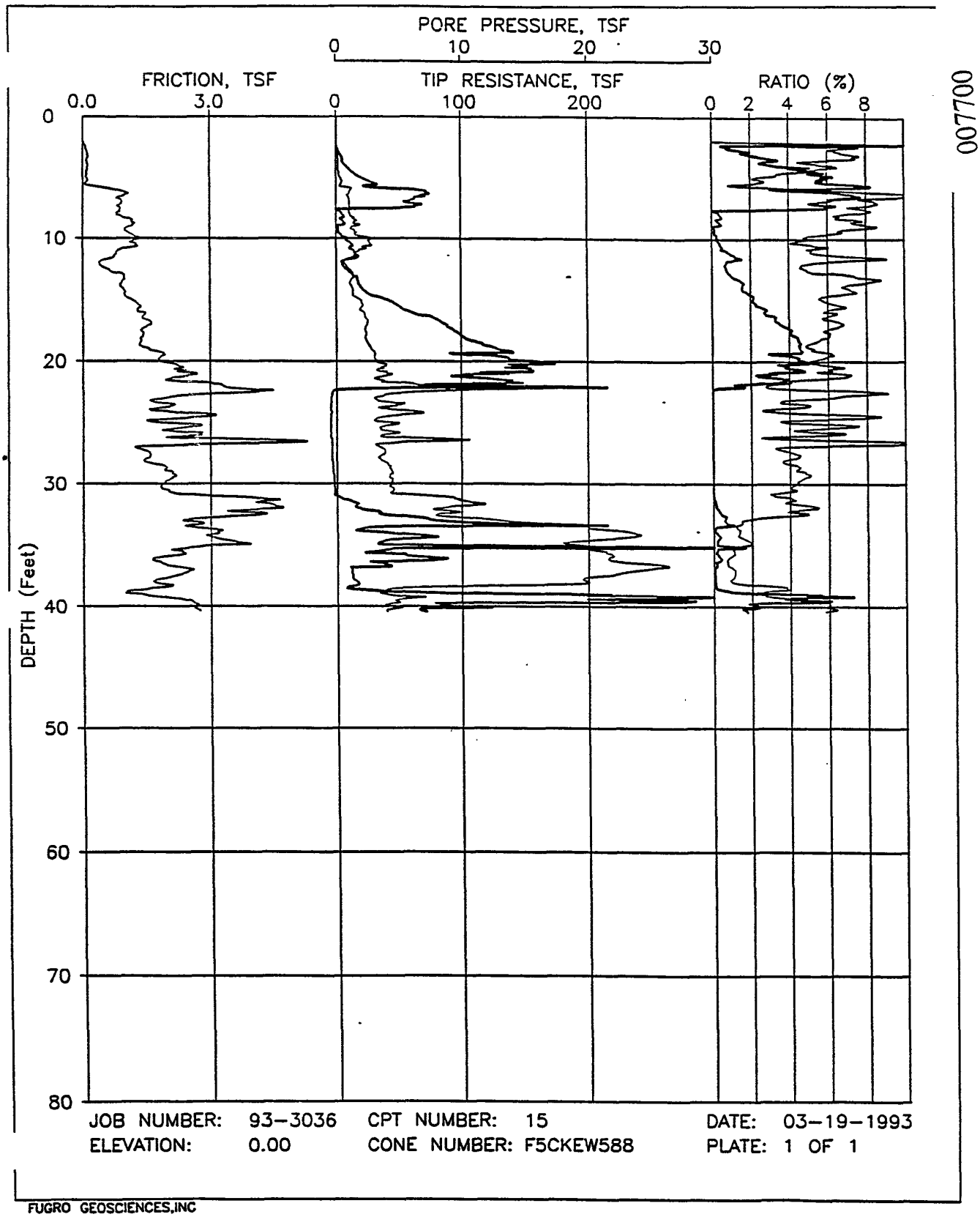

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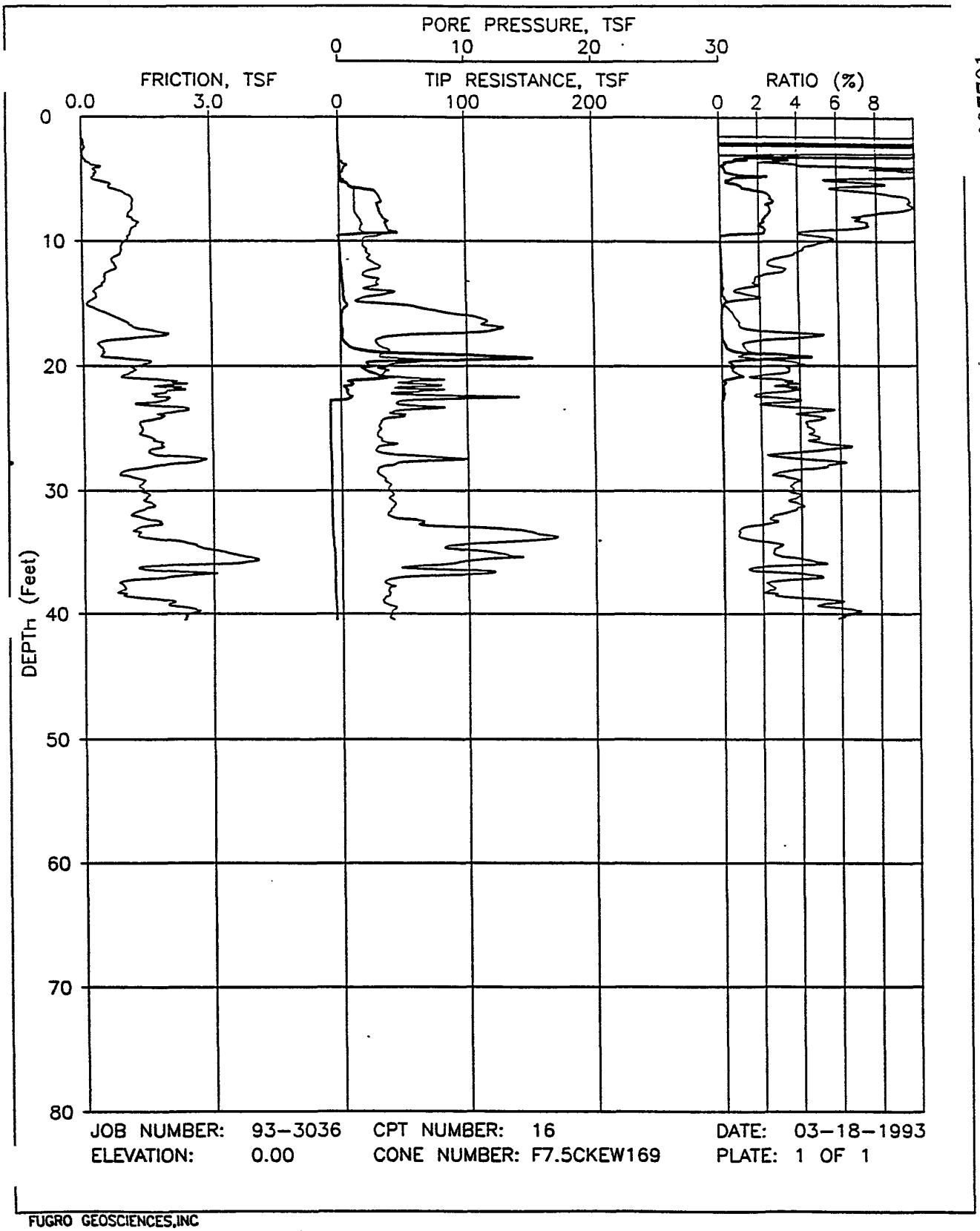

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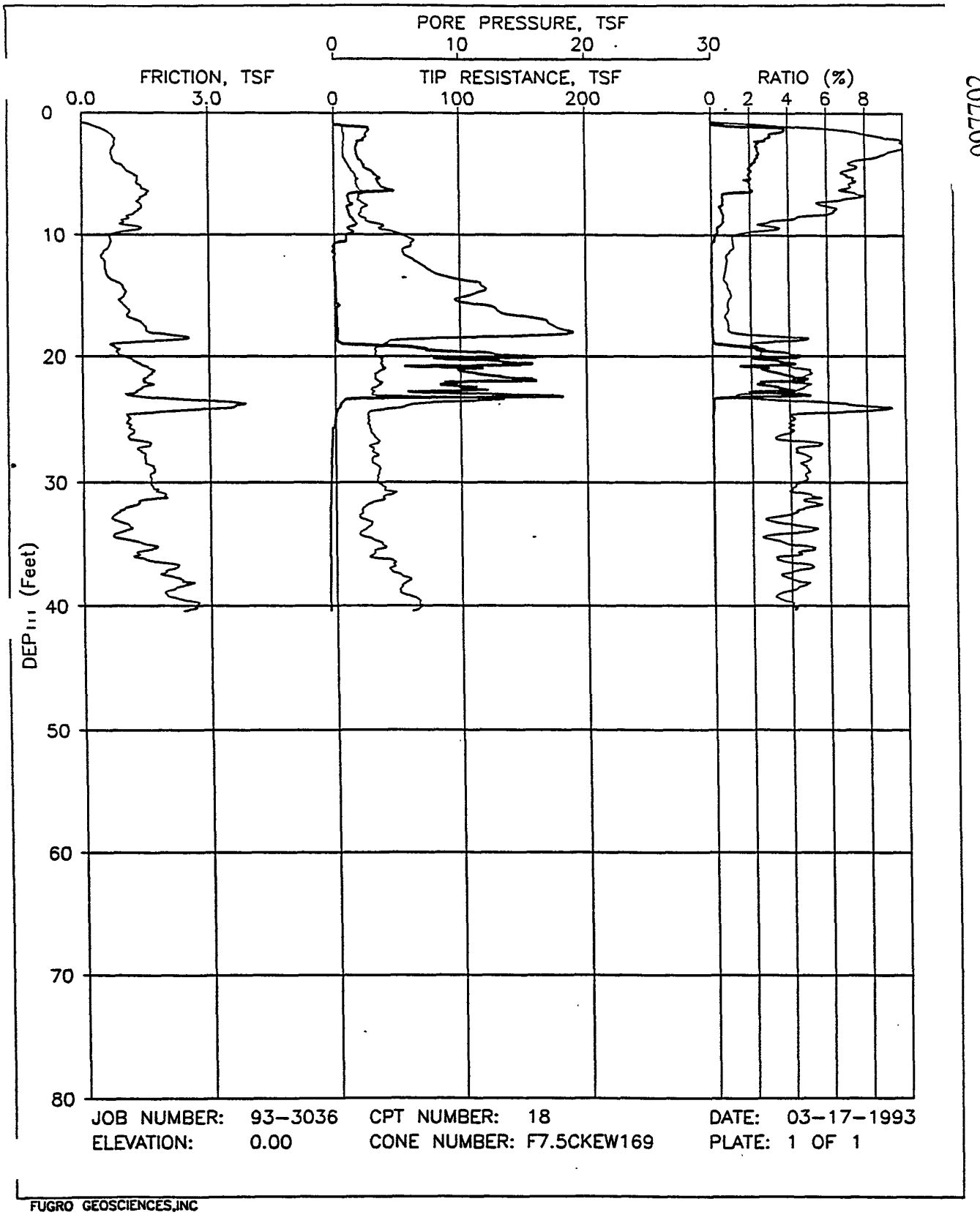

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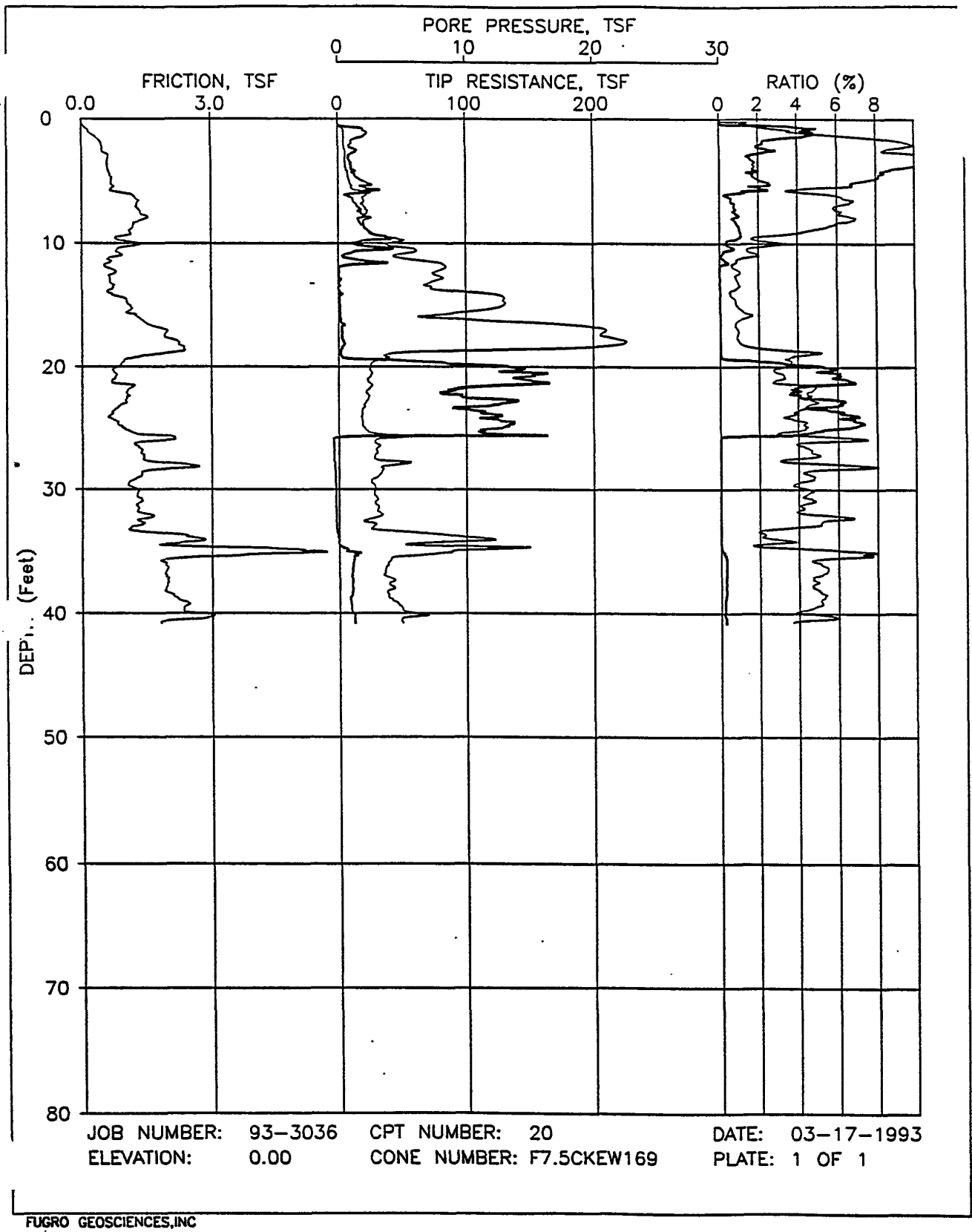

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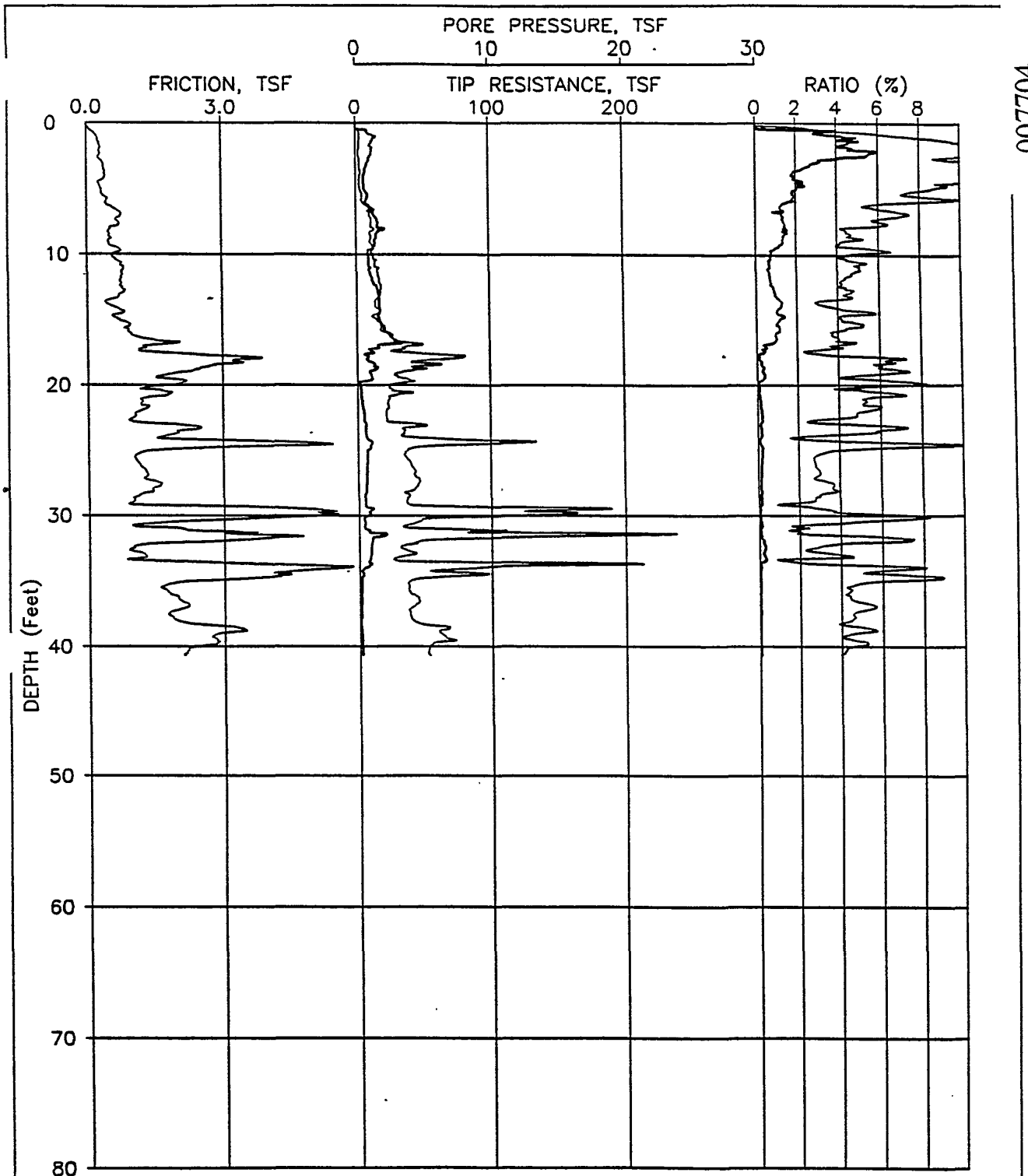

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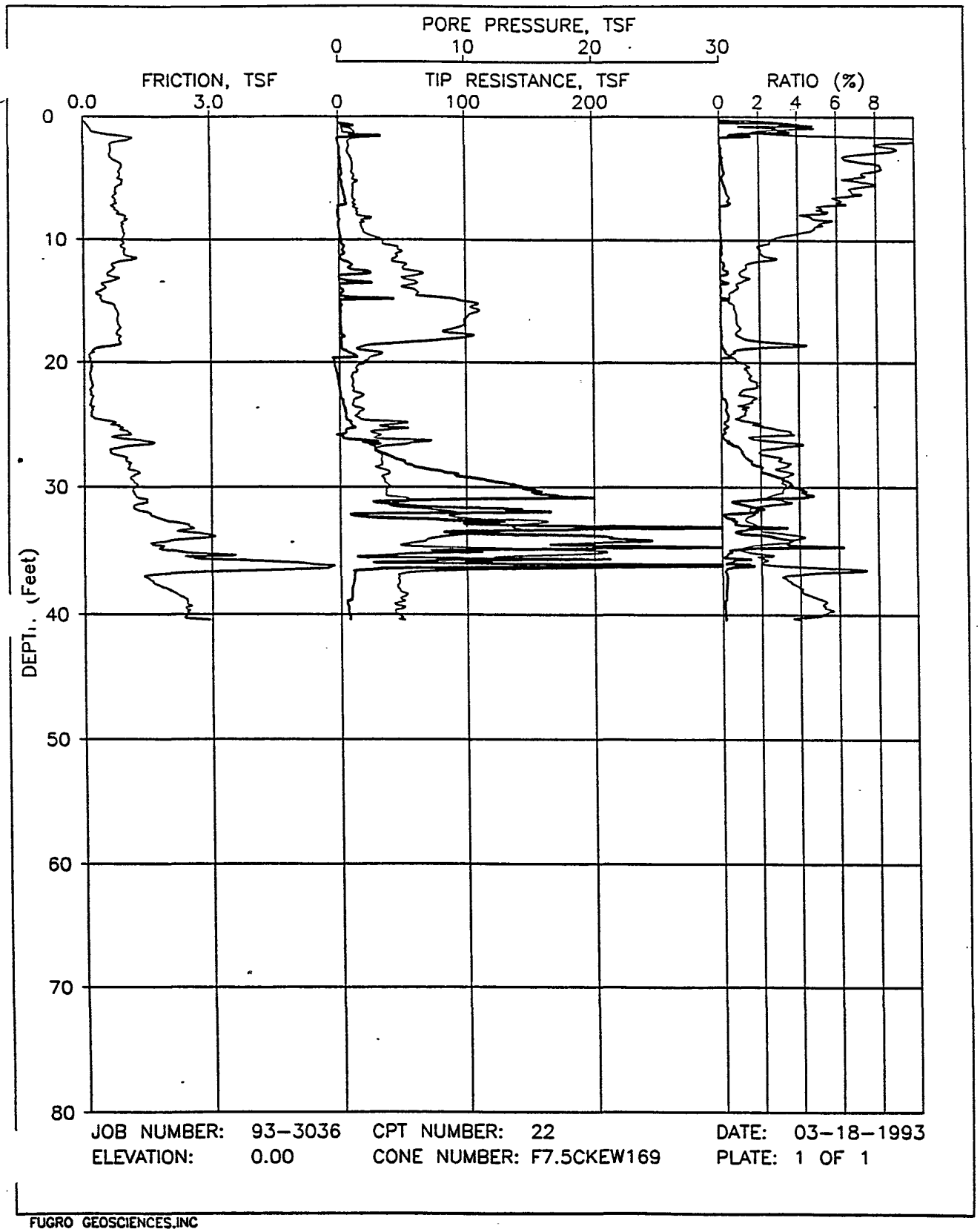

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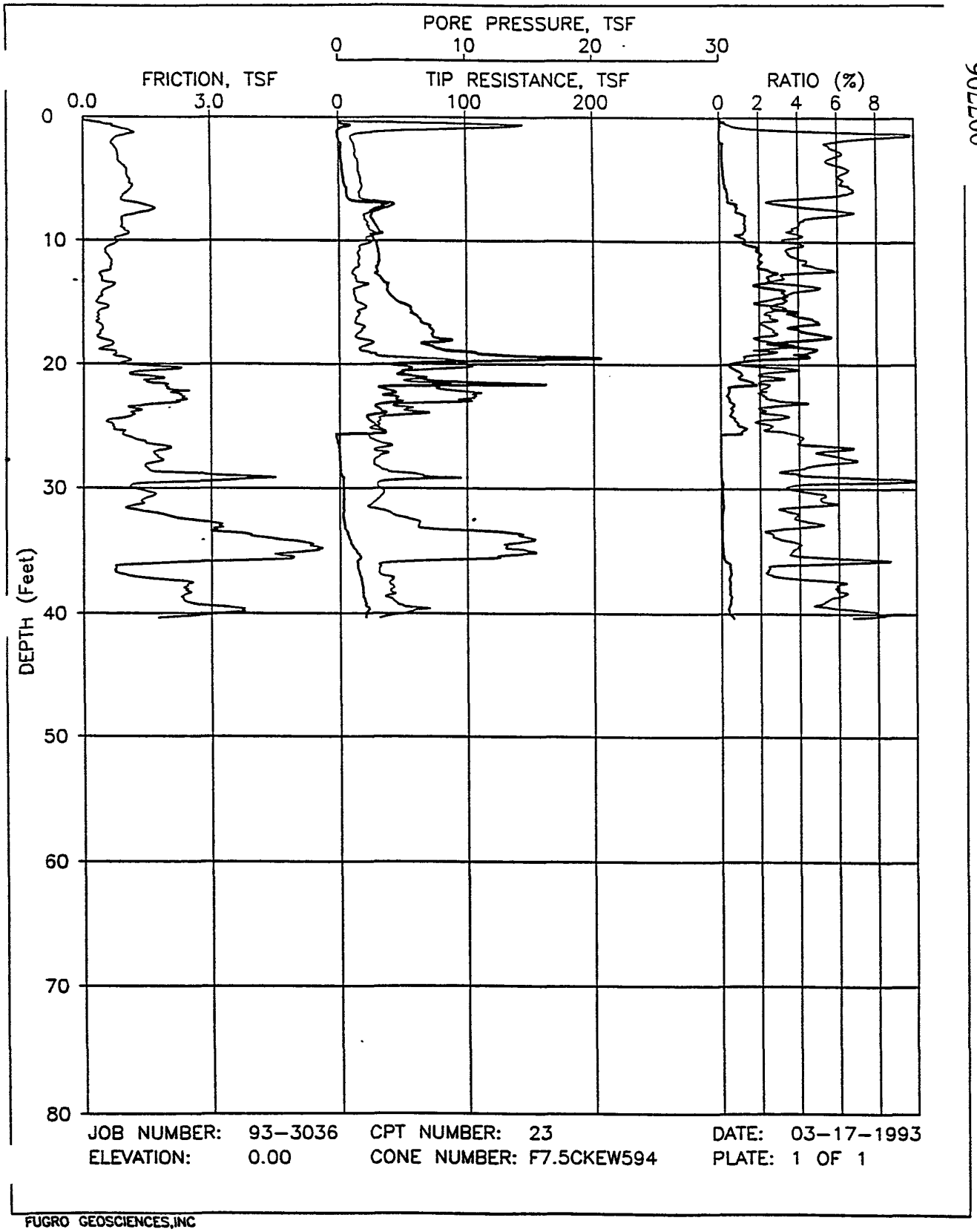

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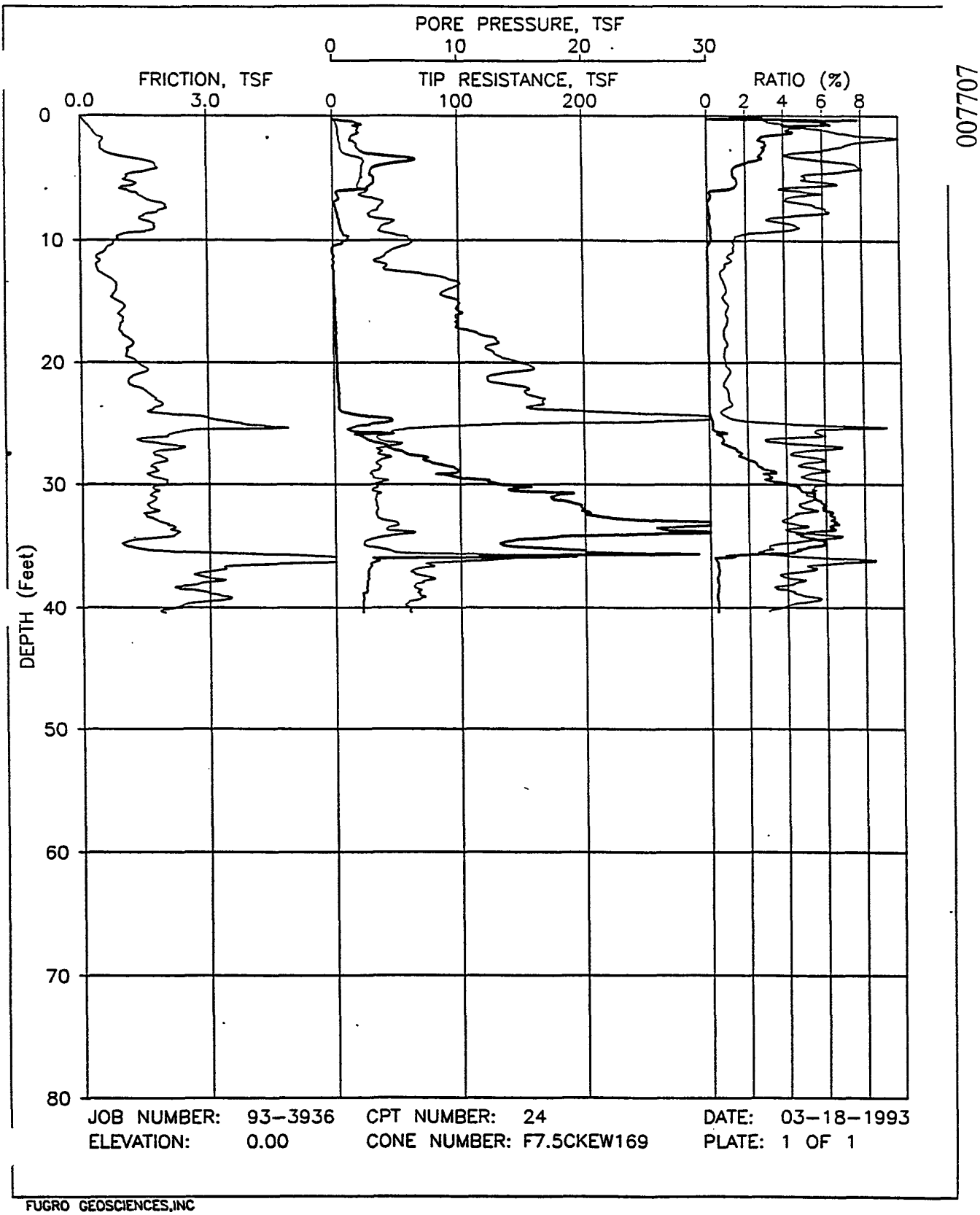

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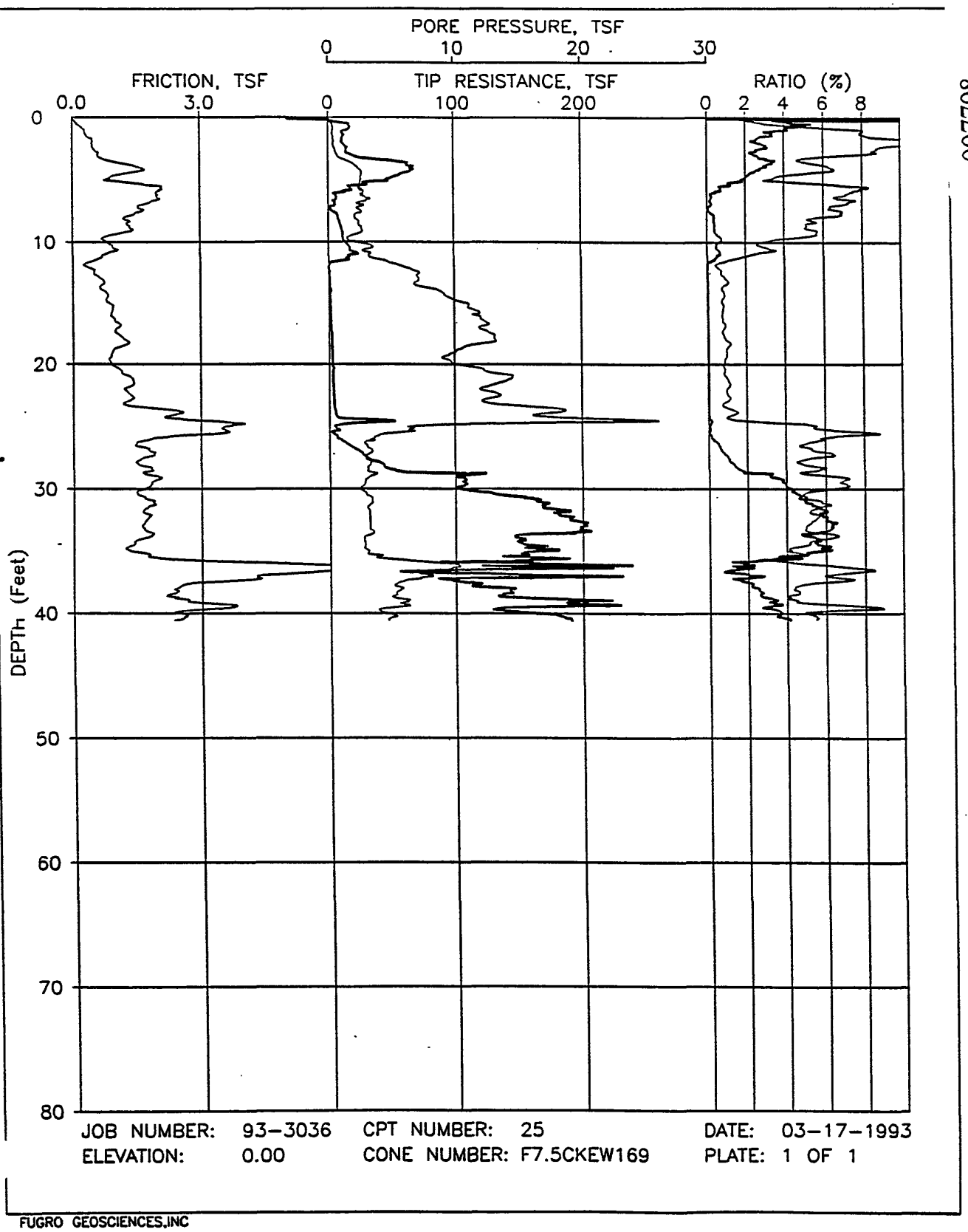

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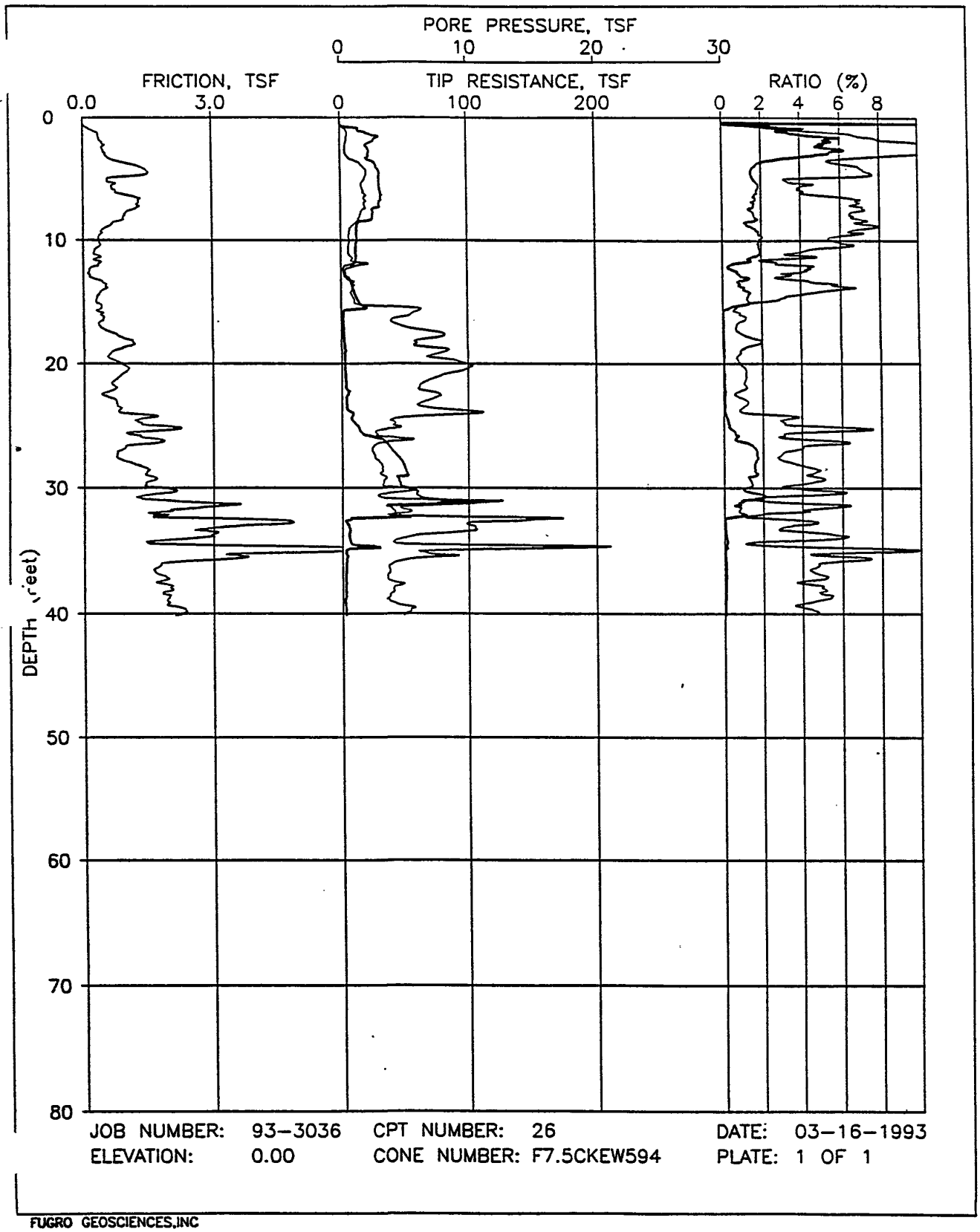

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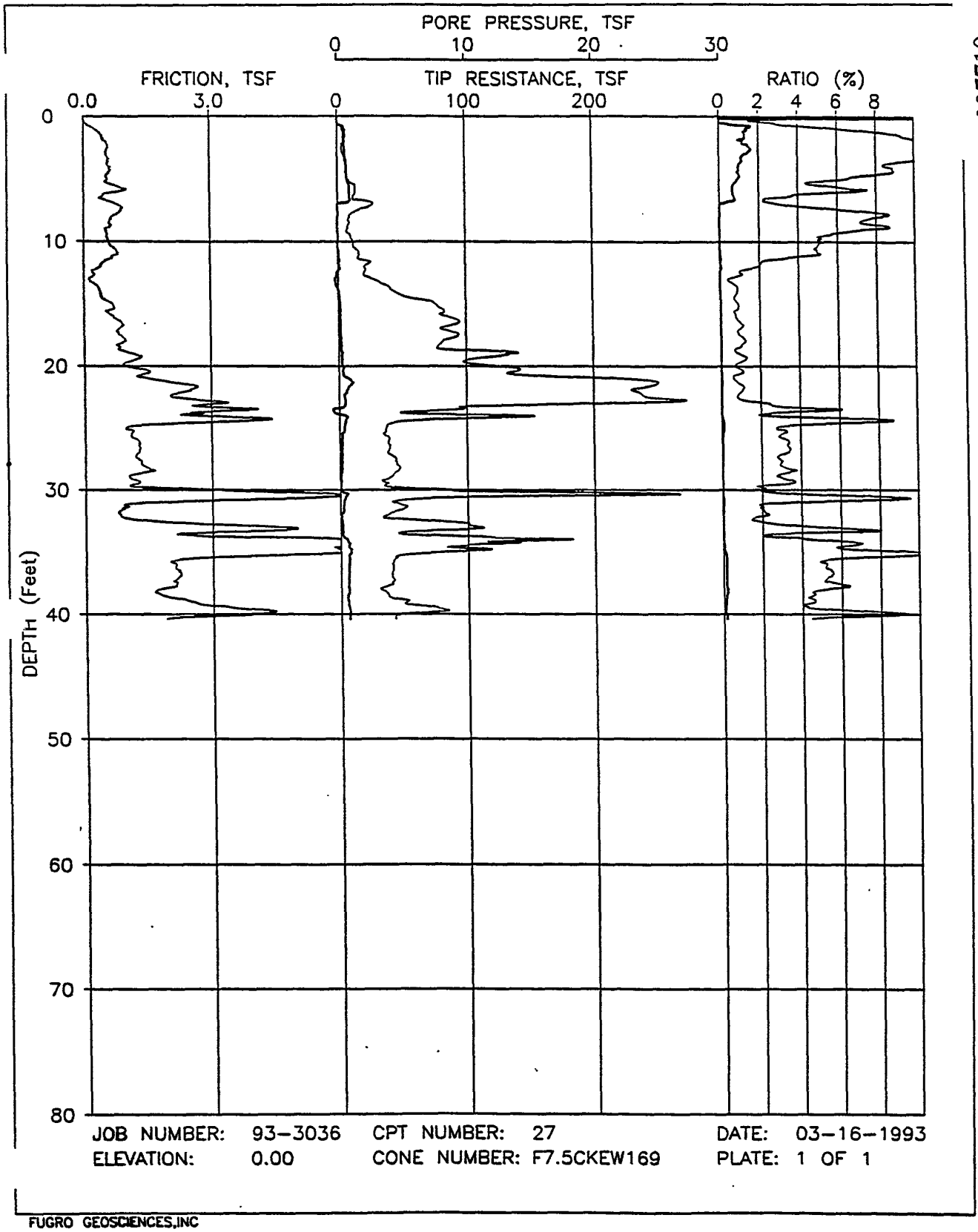

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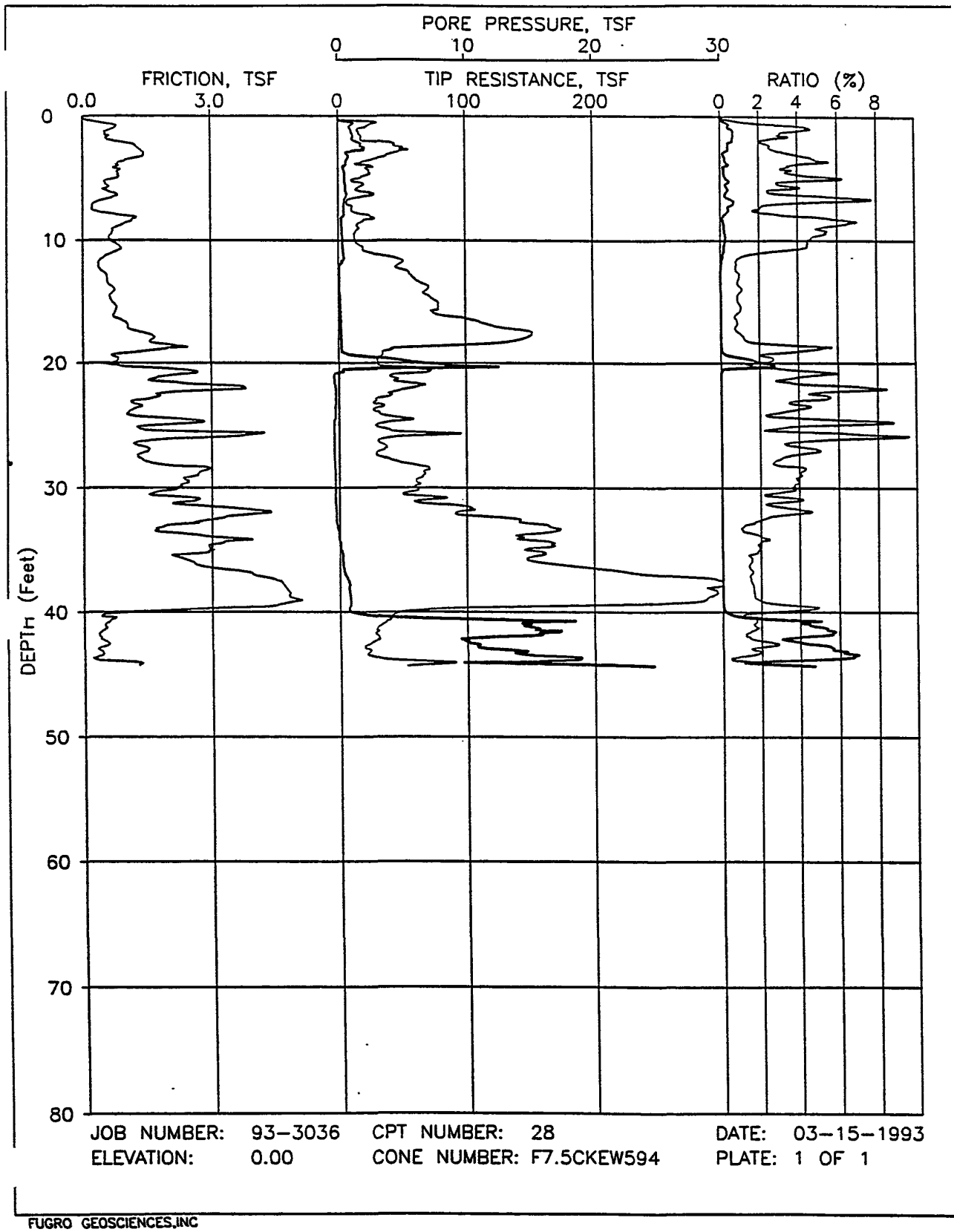

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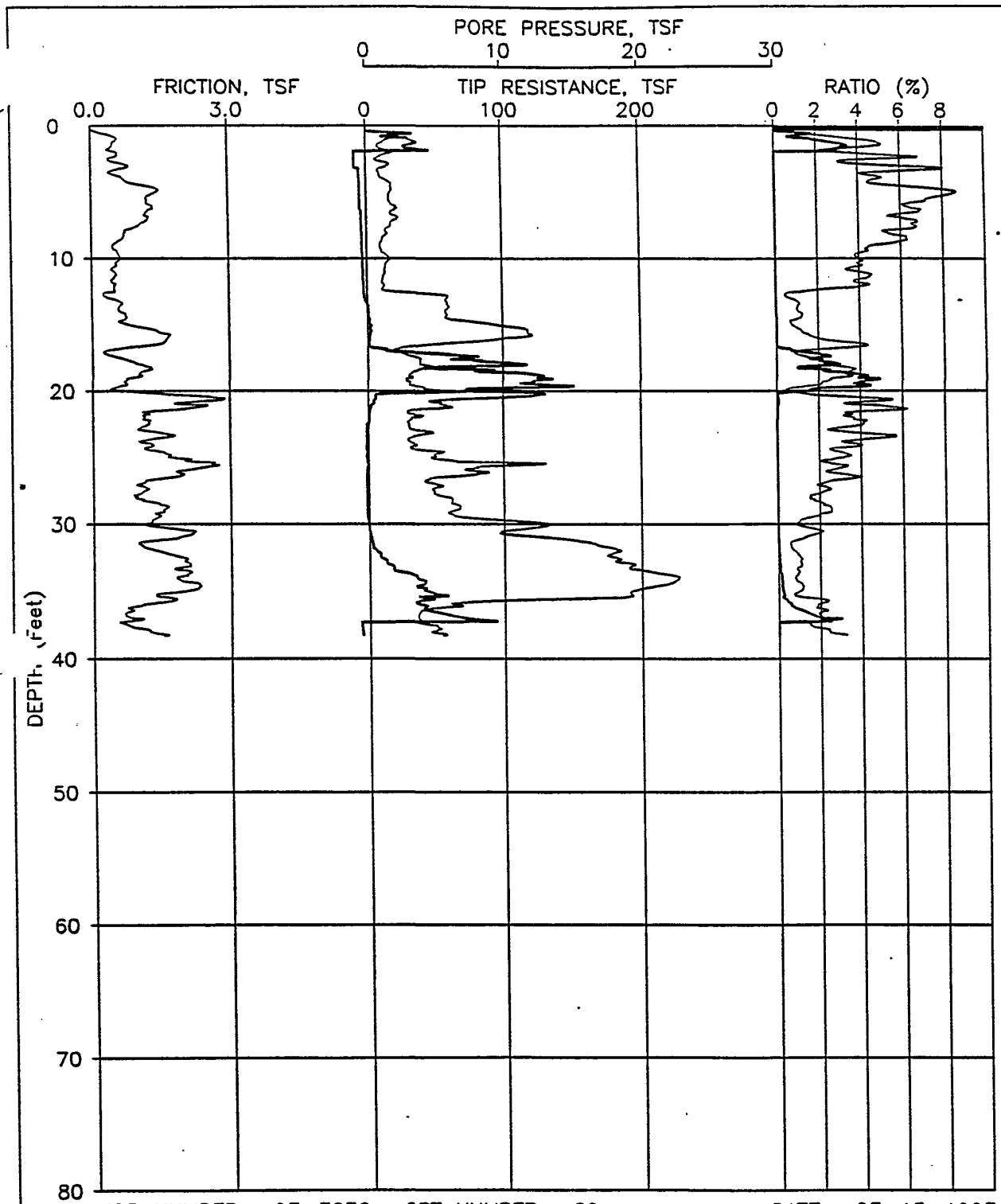

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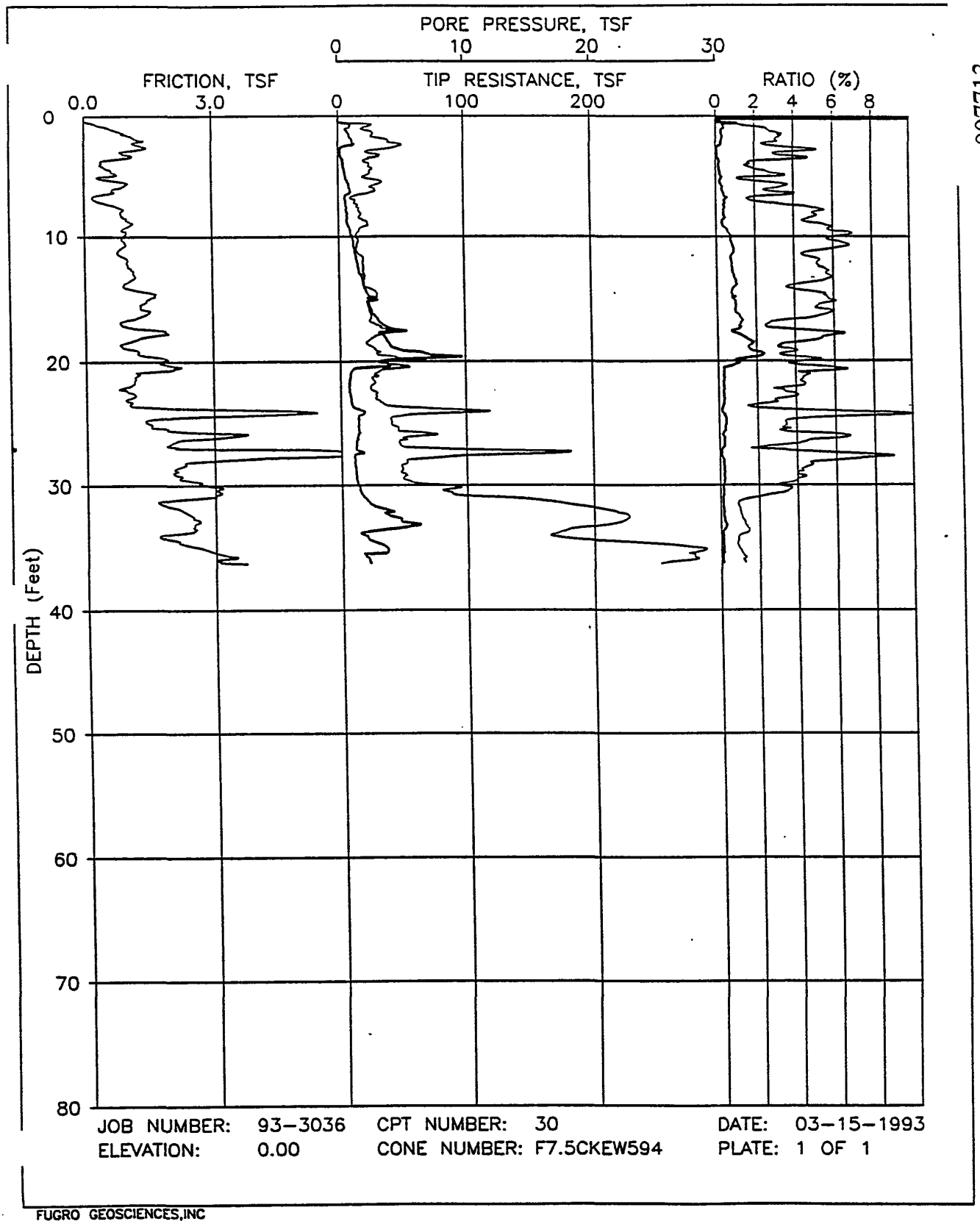

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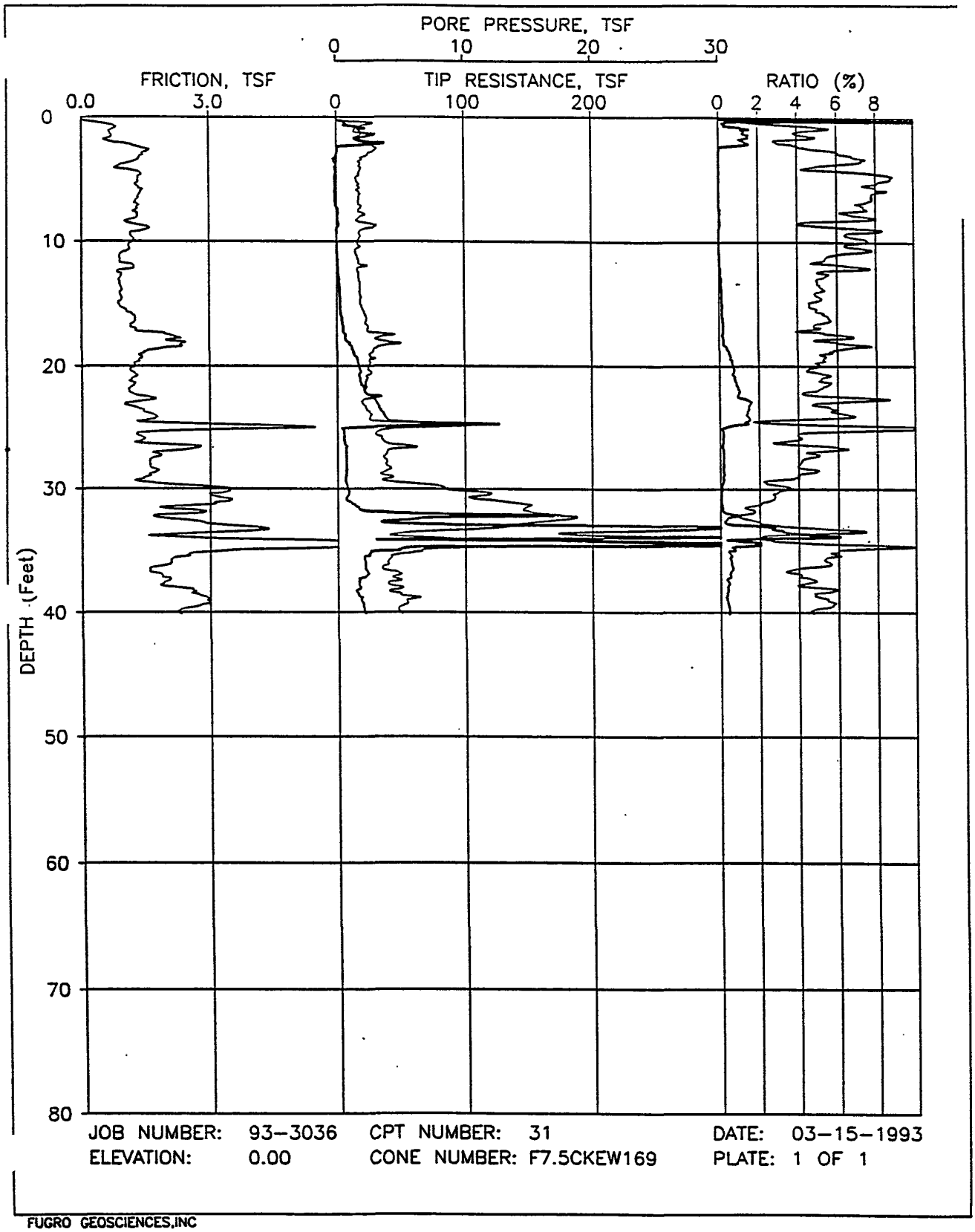

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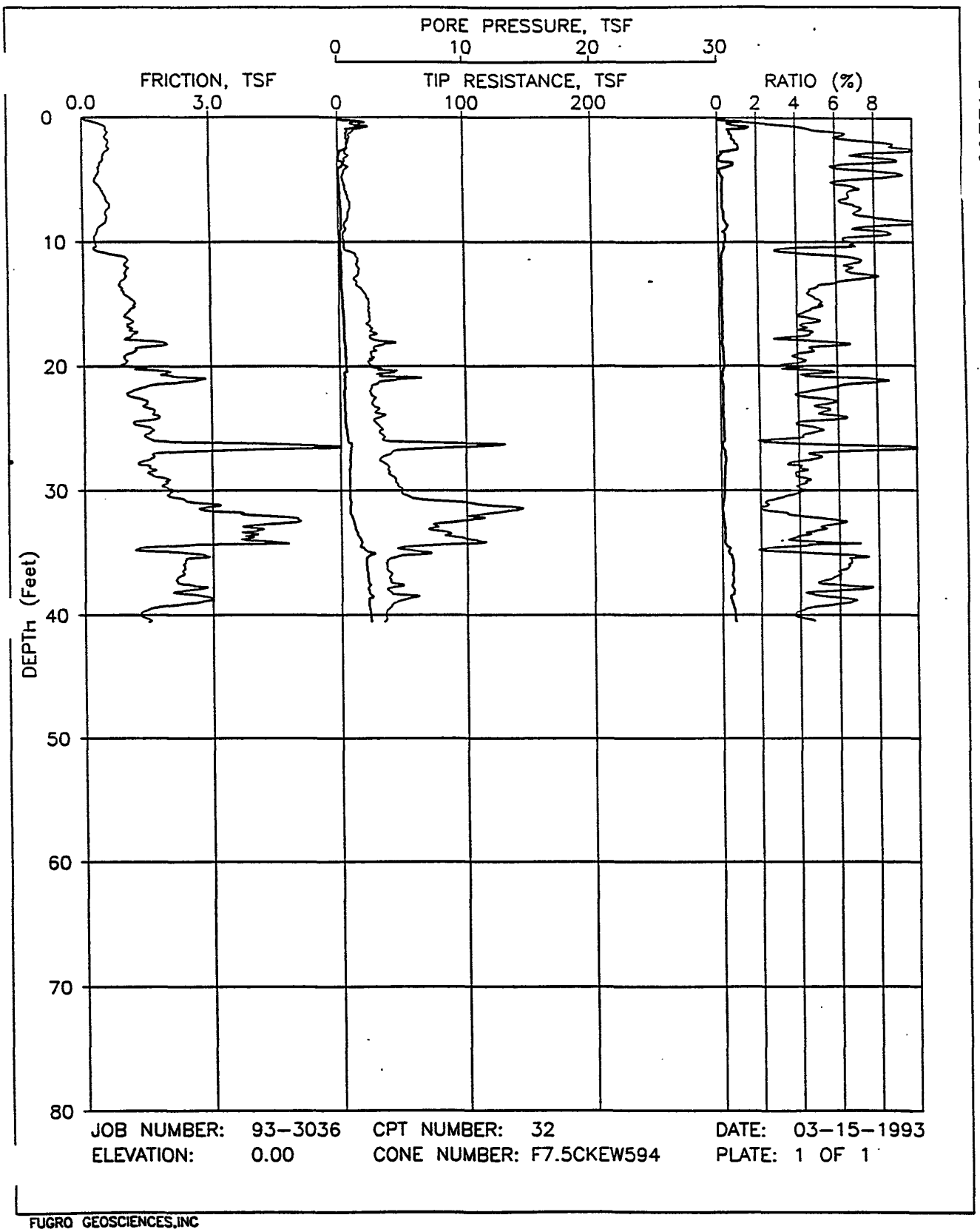

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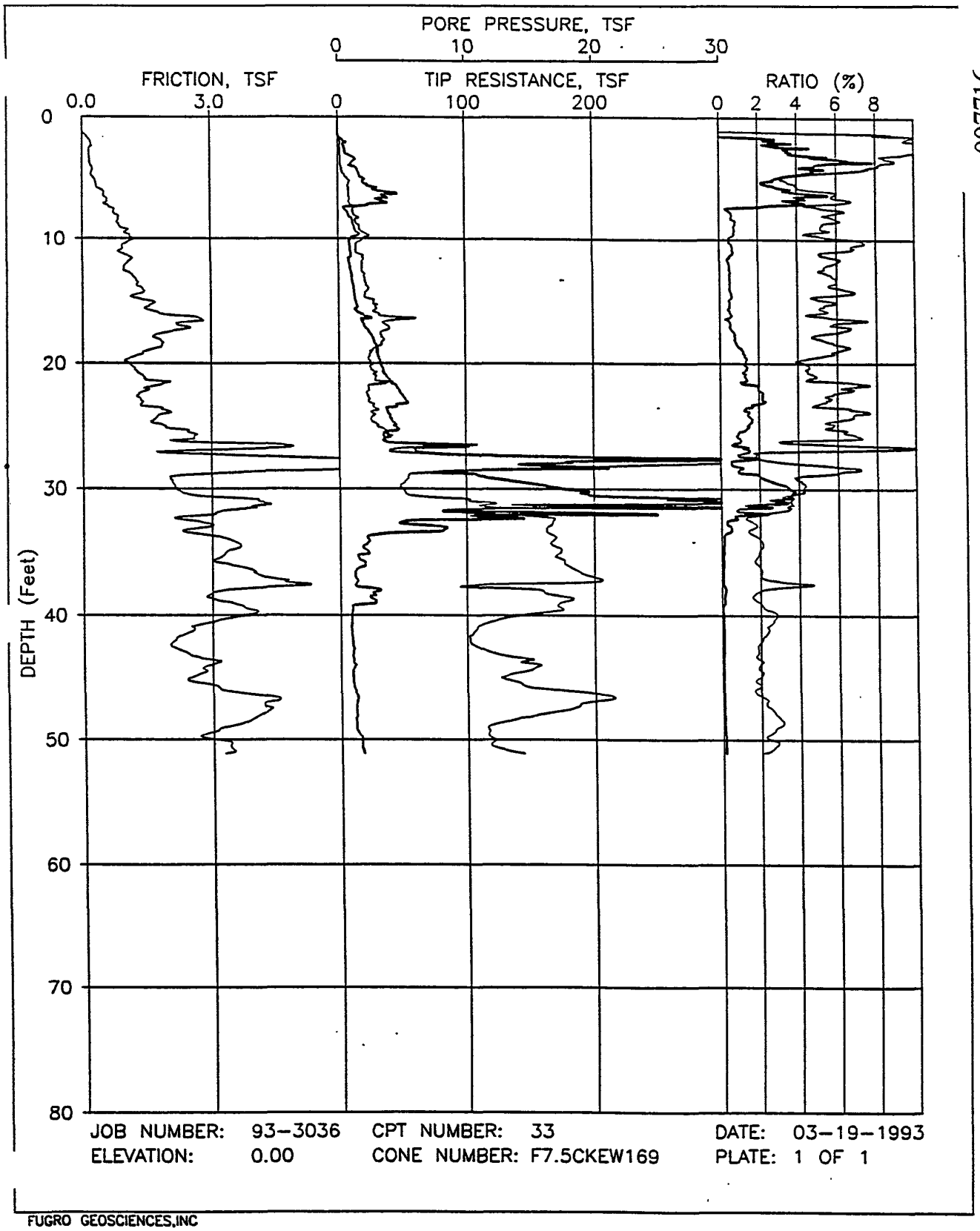

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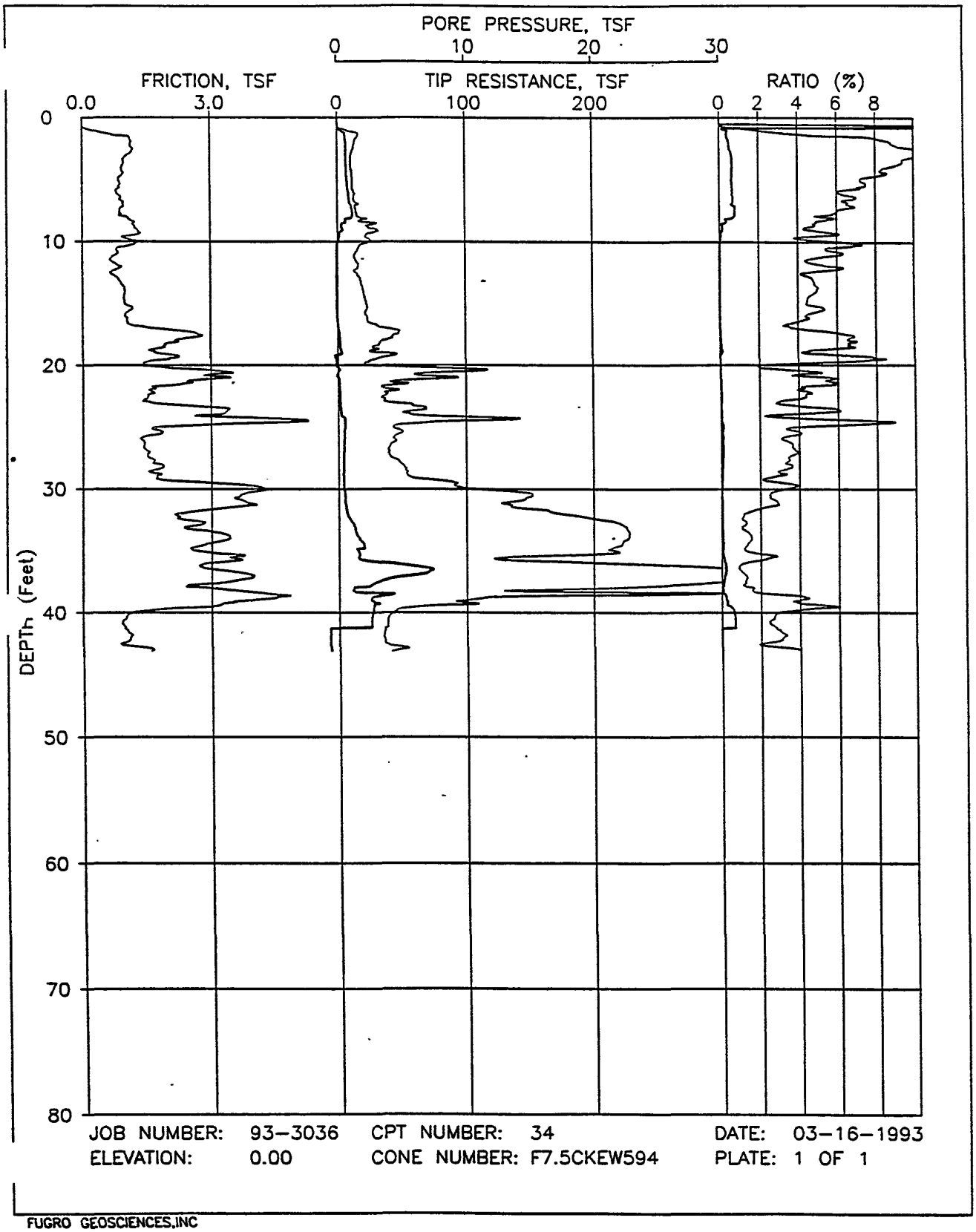

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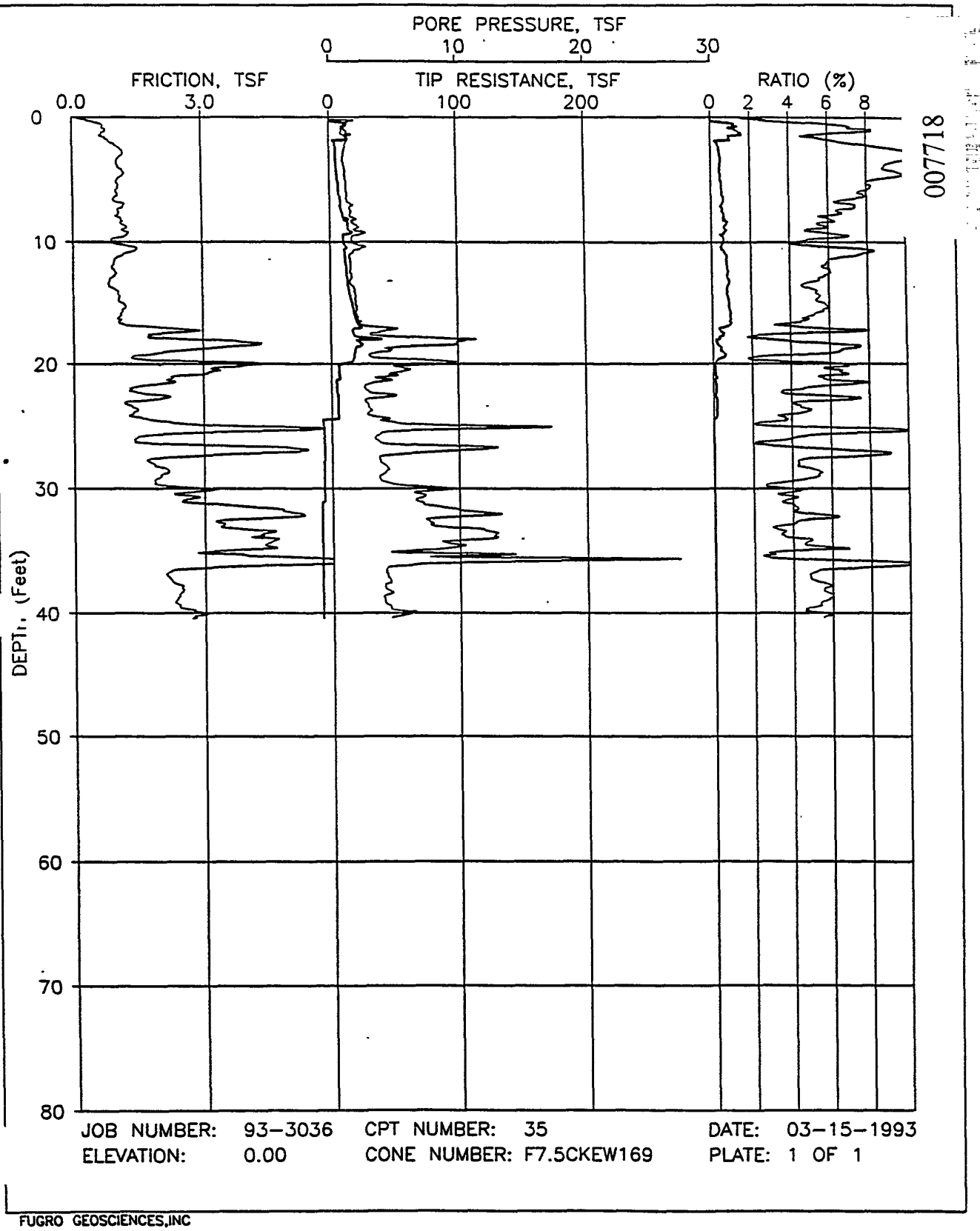

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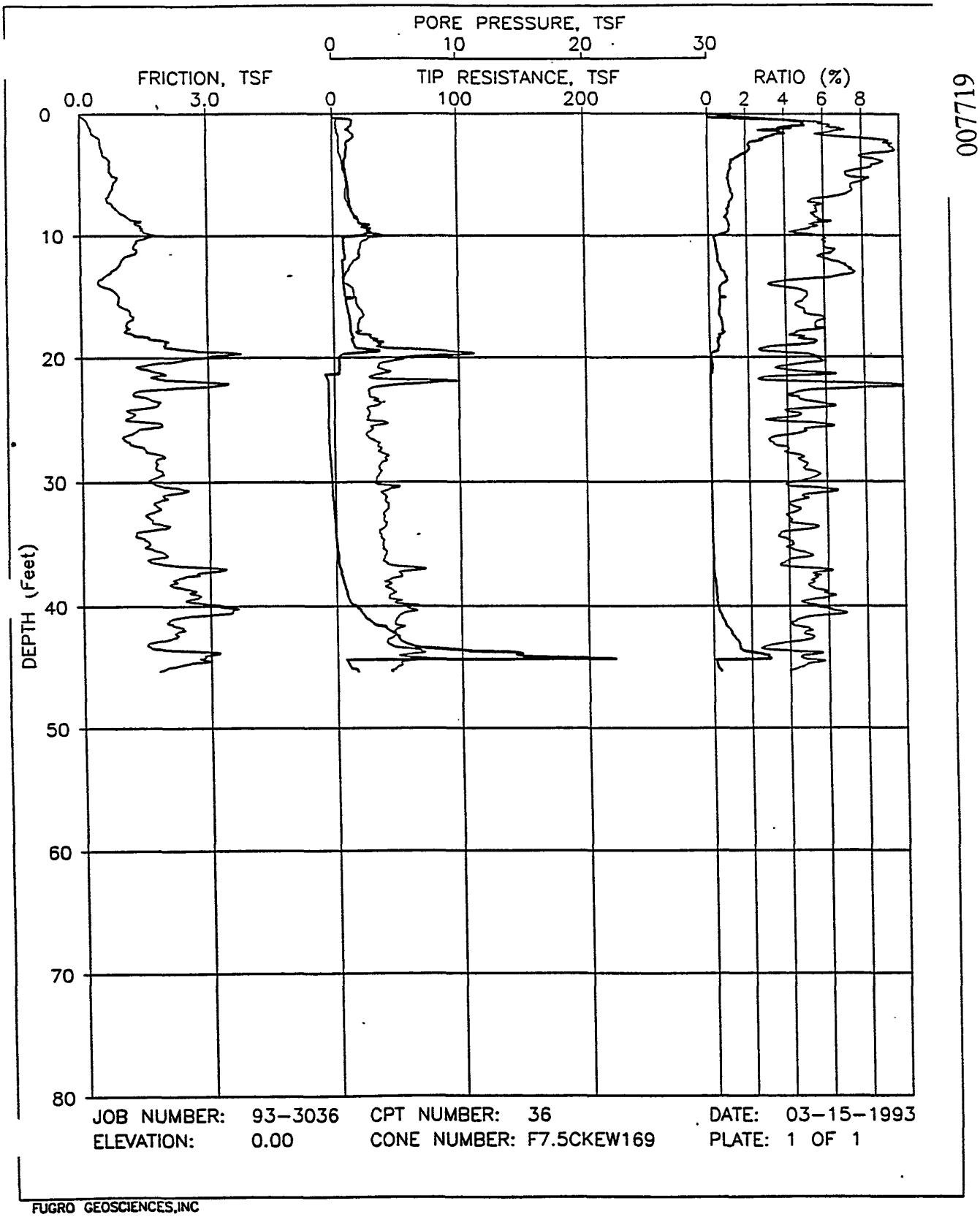

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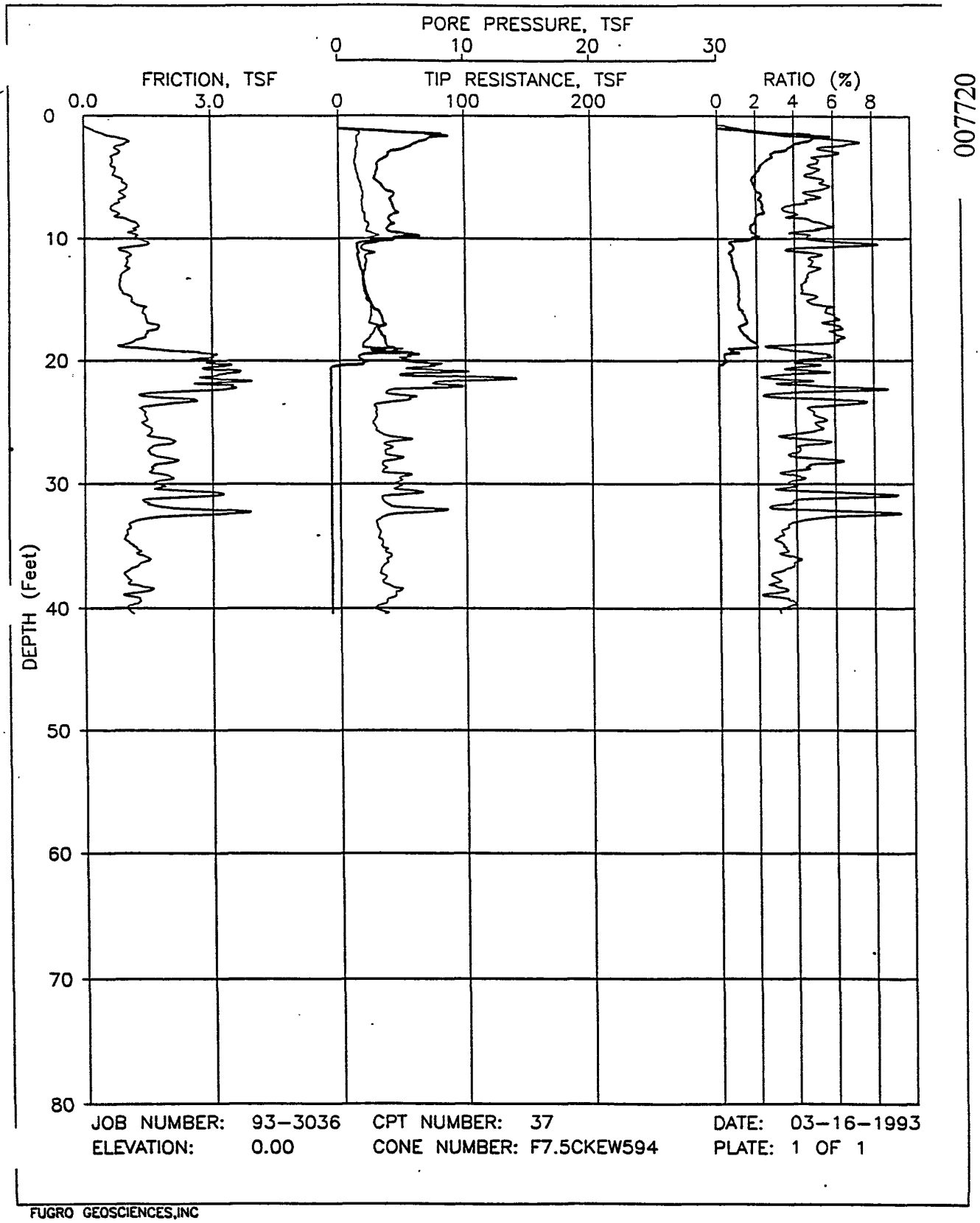
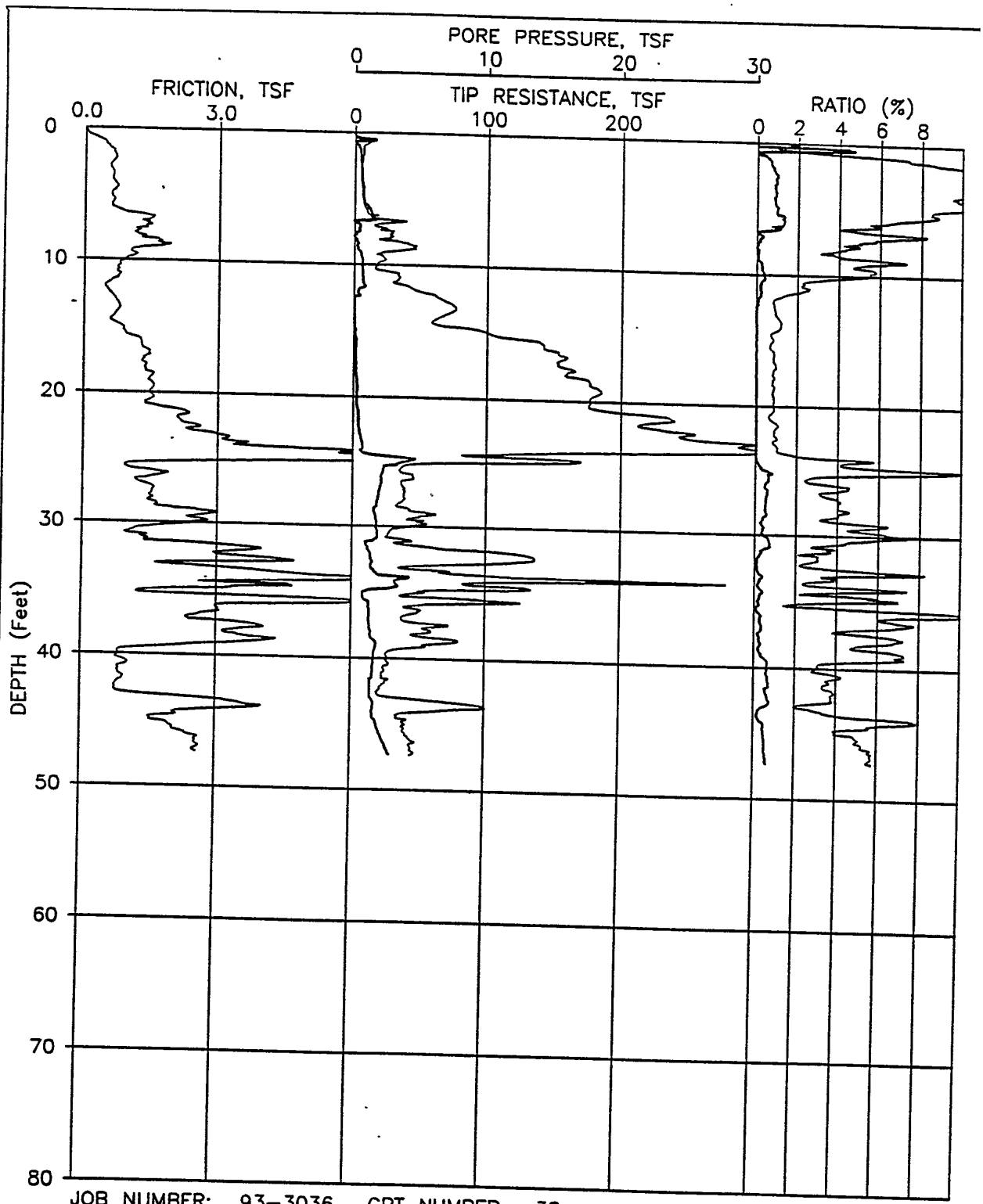


FUGRO GEOSCIENCES,INC

007720



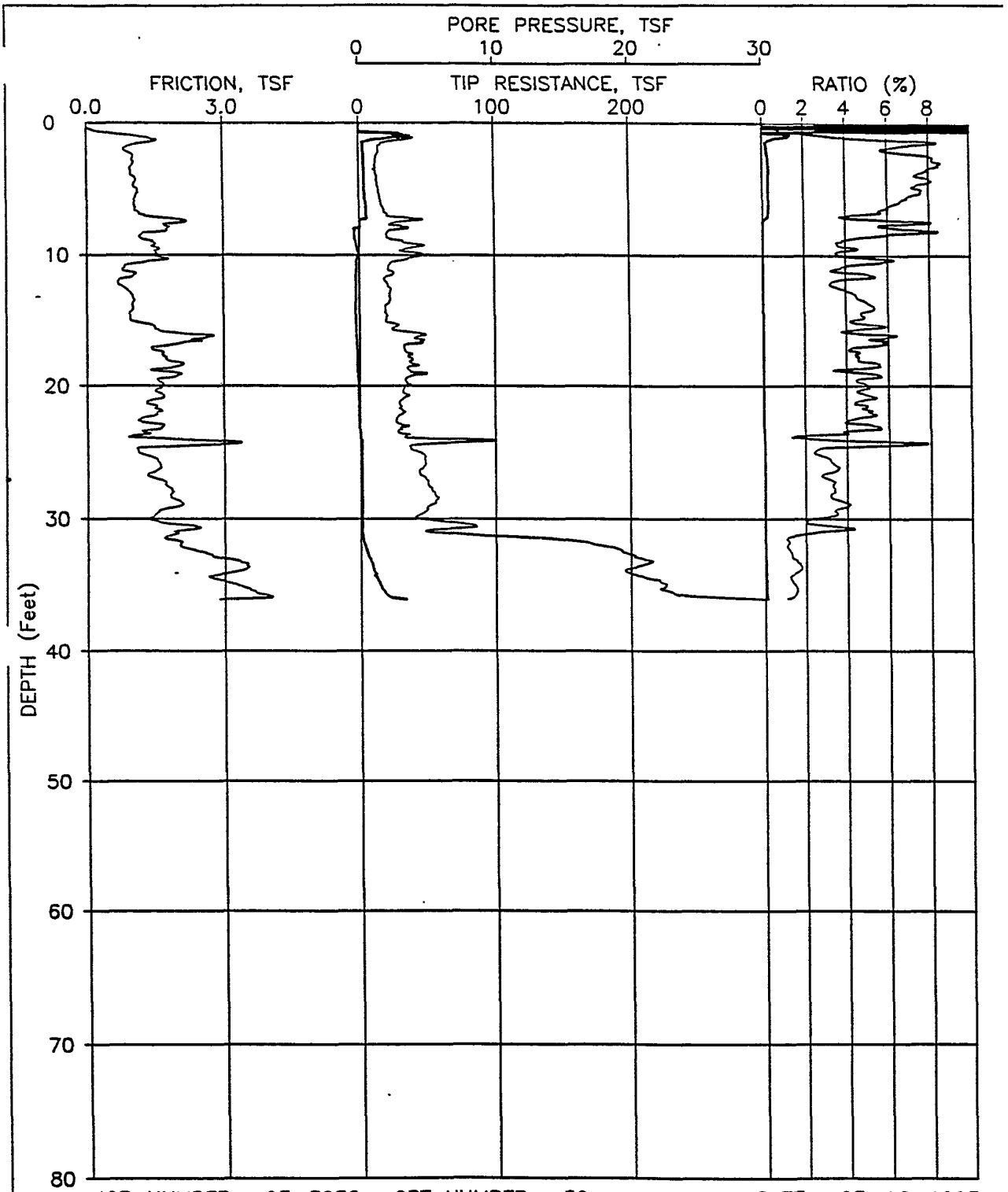
JOB NUMBER: 93-3036
ELEVATION: 0.00

CPT NUMBER: 38
CONE NUMBER: F7.5CKEW169

DATE: 03-20-1993
PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

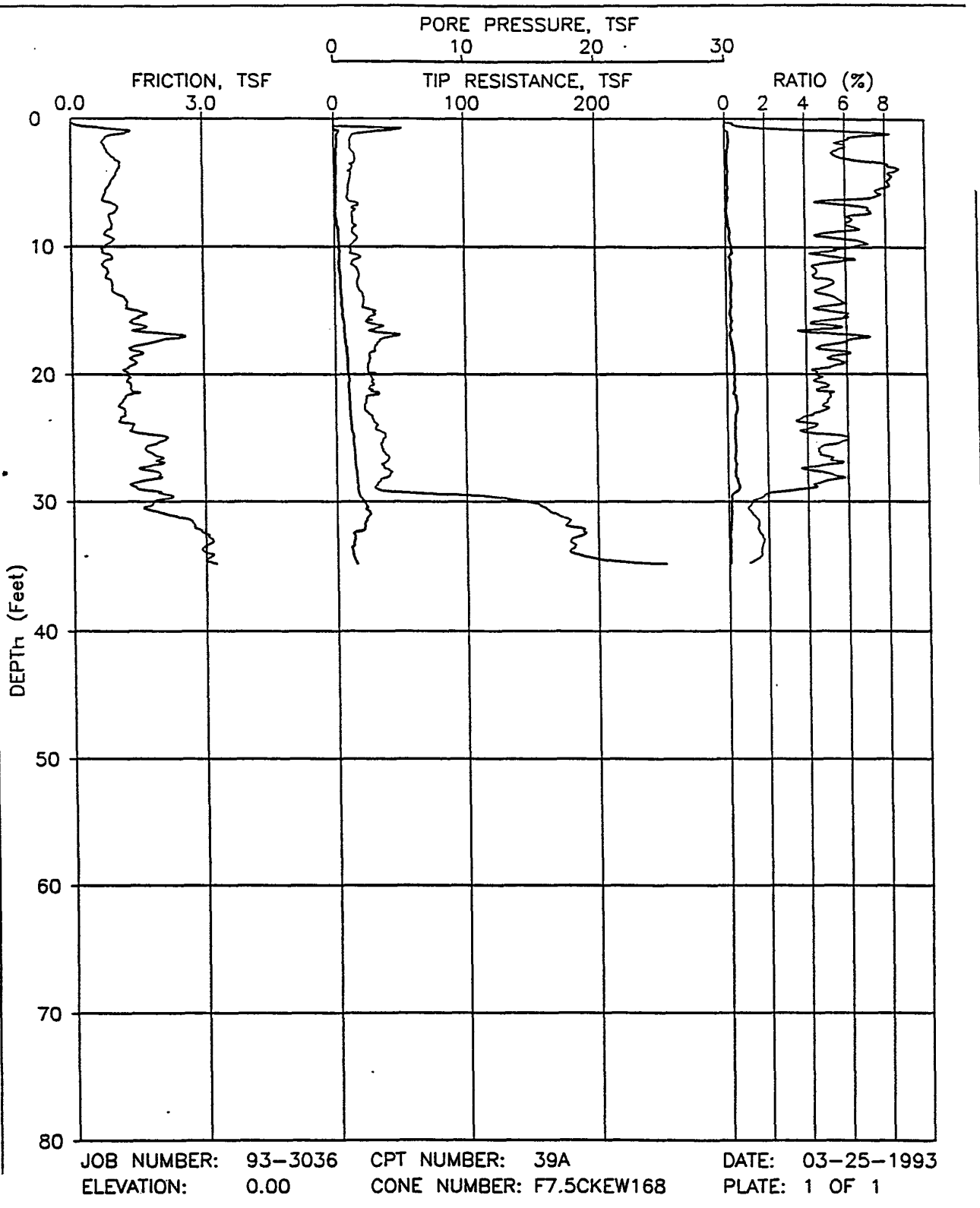
007721



JOB NUMBER: 93-3036 CPT NUMBER: 39 DATE: 03-16-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

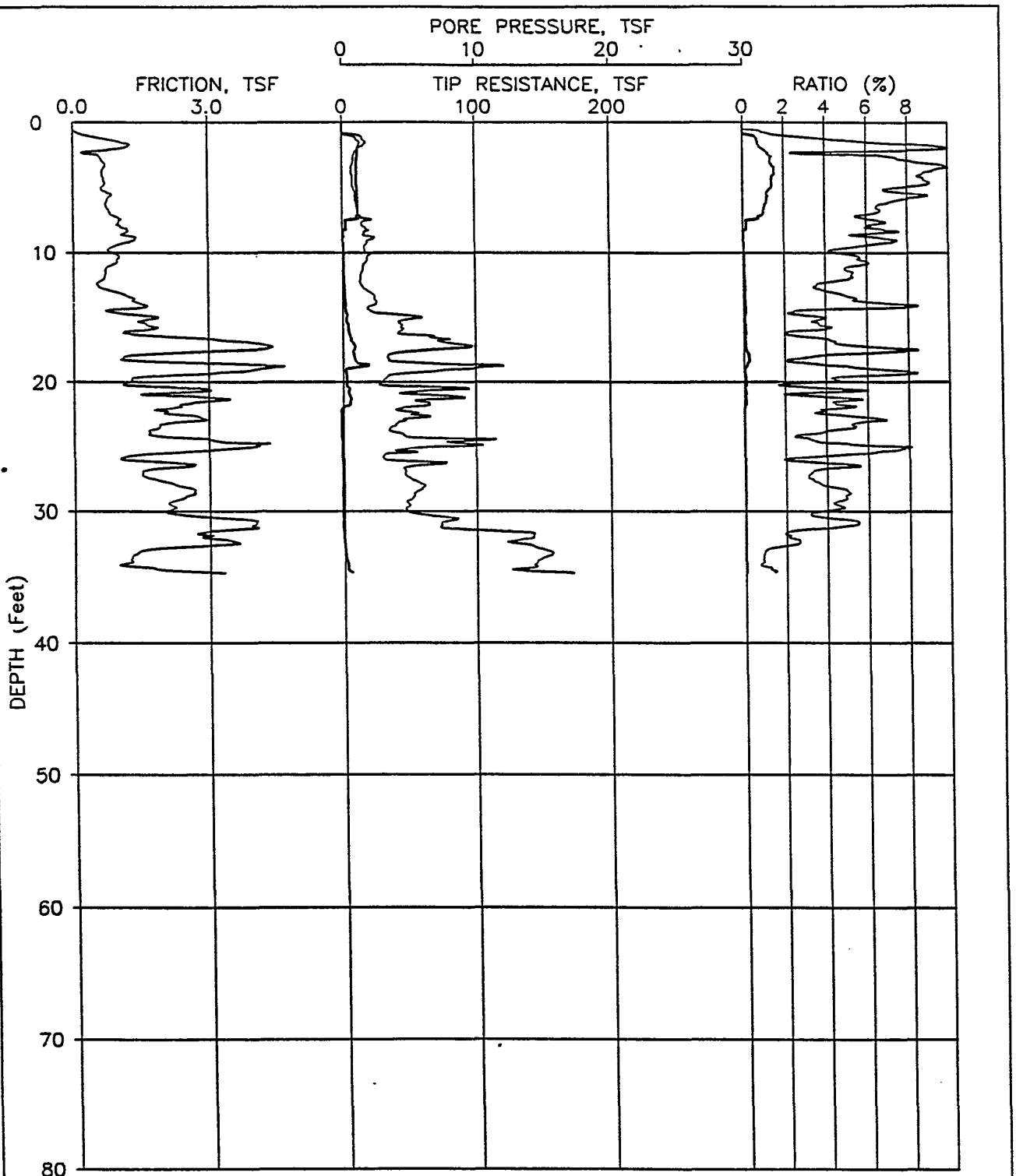
007722



JOB NUMBER: 93-3036 CPT NUMBER: 39A DATE: 03-25-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW168 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

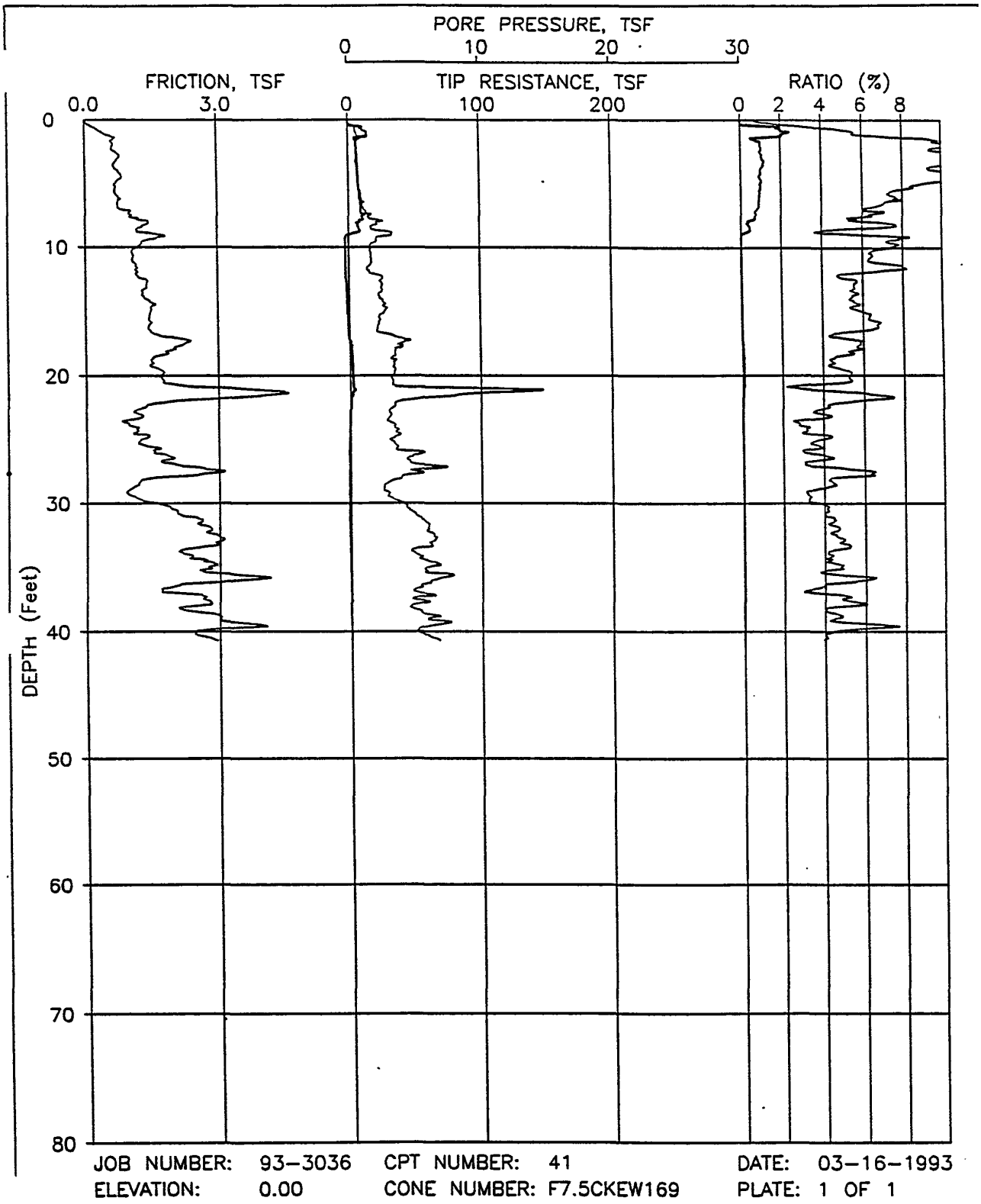
007723



JOB NUMBER: 93-3036 CPT NUMBER: 40 DATE: 03-16-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW594 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

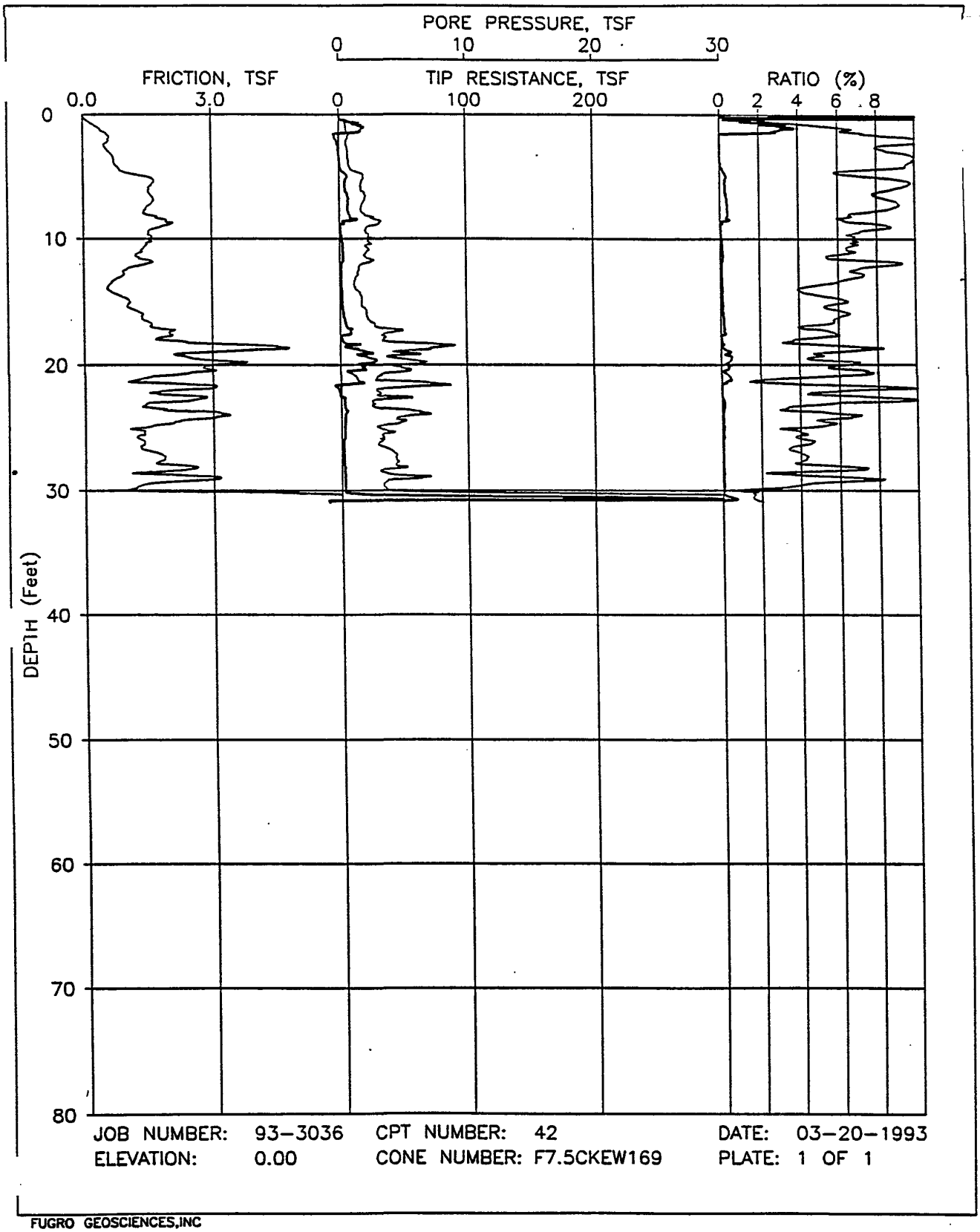
007724



JOB NUMBER: 93-3036 CPT NUMBER: 41 DATE: 03-16-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

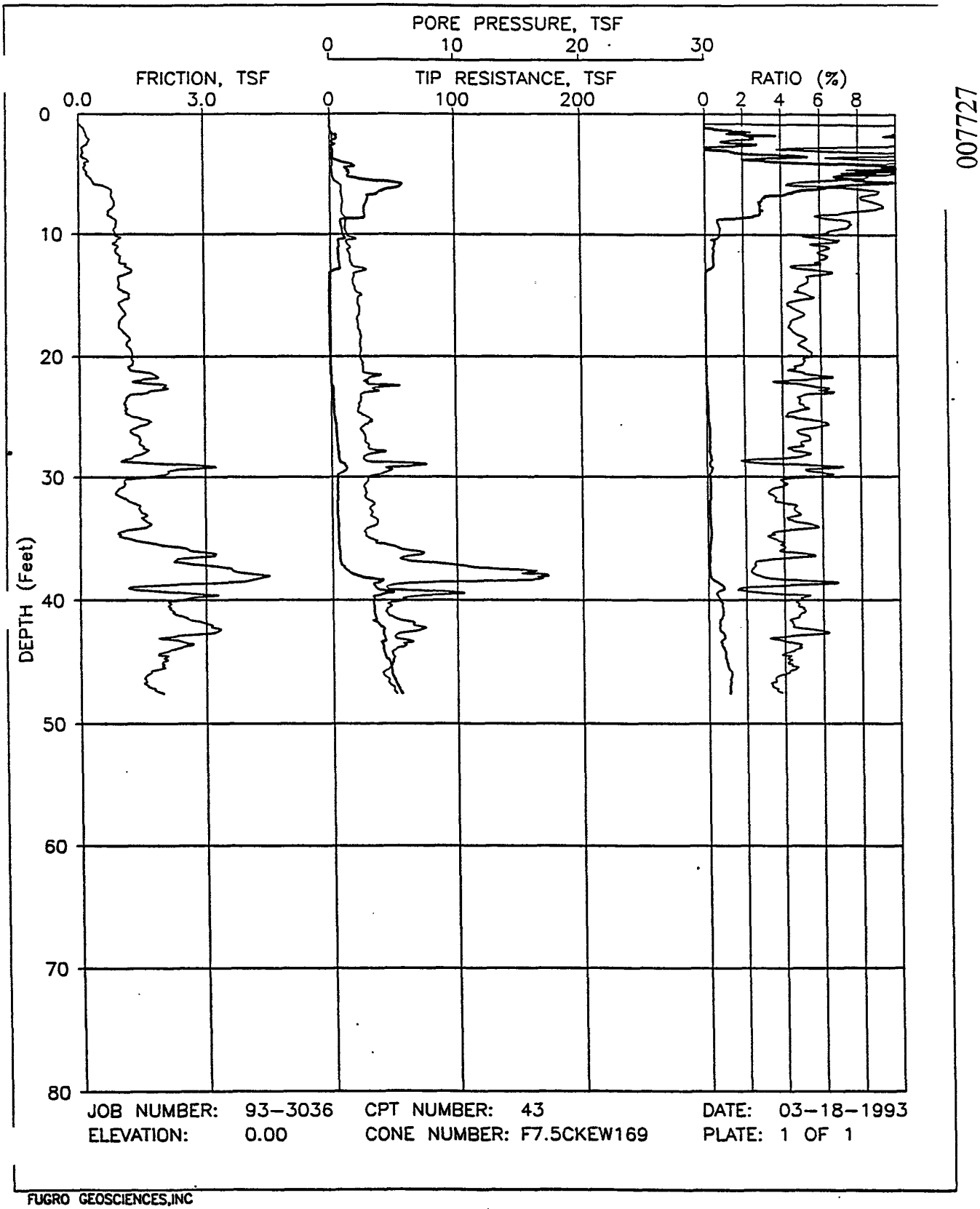
007725



JOB NUMBER: 93-3036 CPT NUMBER: 42 DATE: 03-20-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

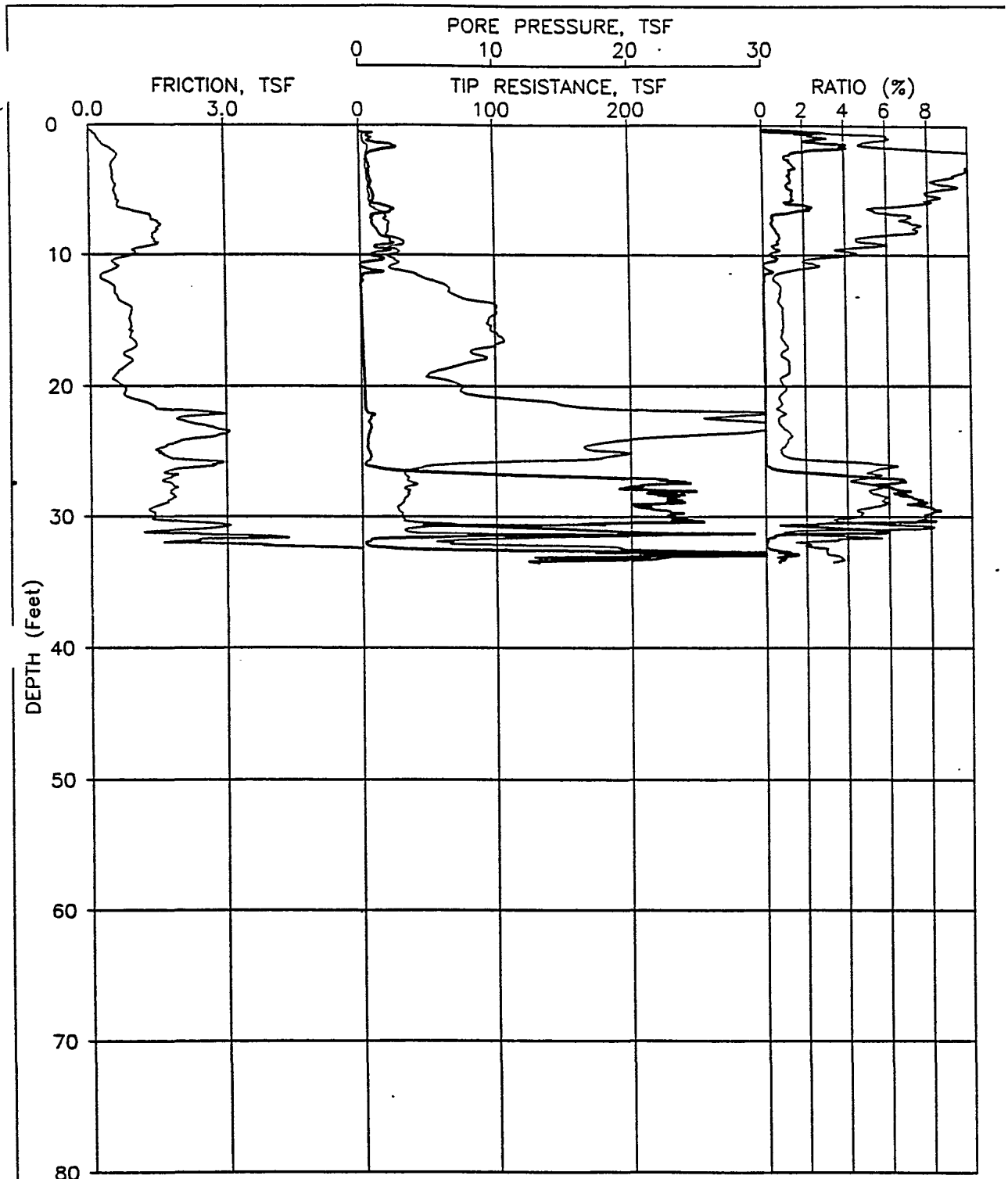
007726



JOB NUMBER: 93-3036 CPT NUMBER: 43 DATE: 03-18-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

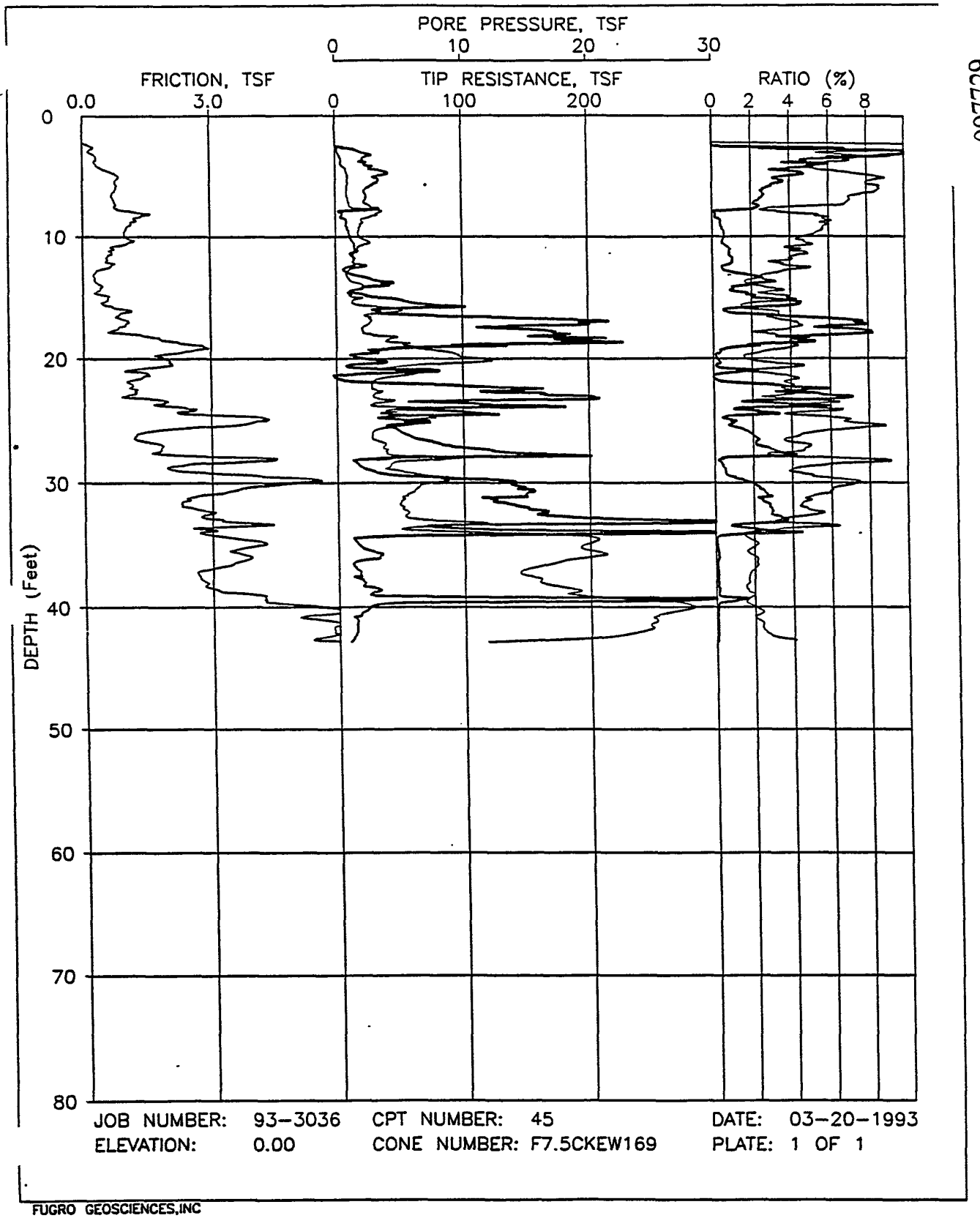
007727



JOB NUMBER: 93-3036 CPT NUMBER: 44 DATE: 03-19-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

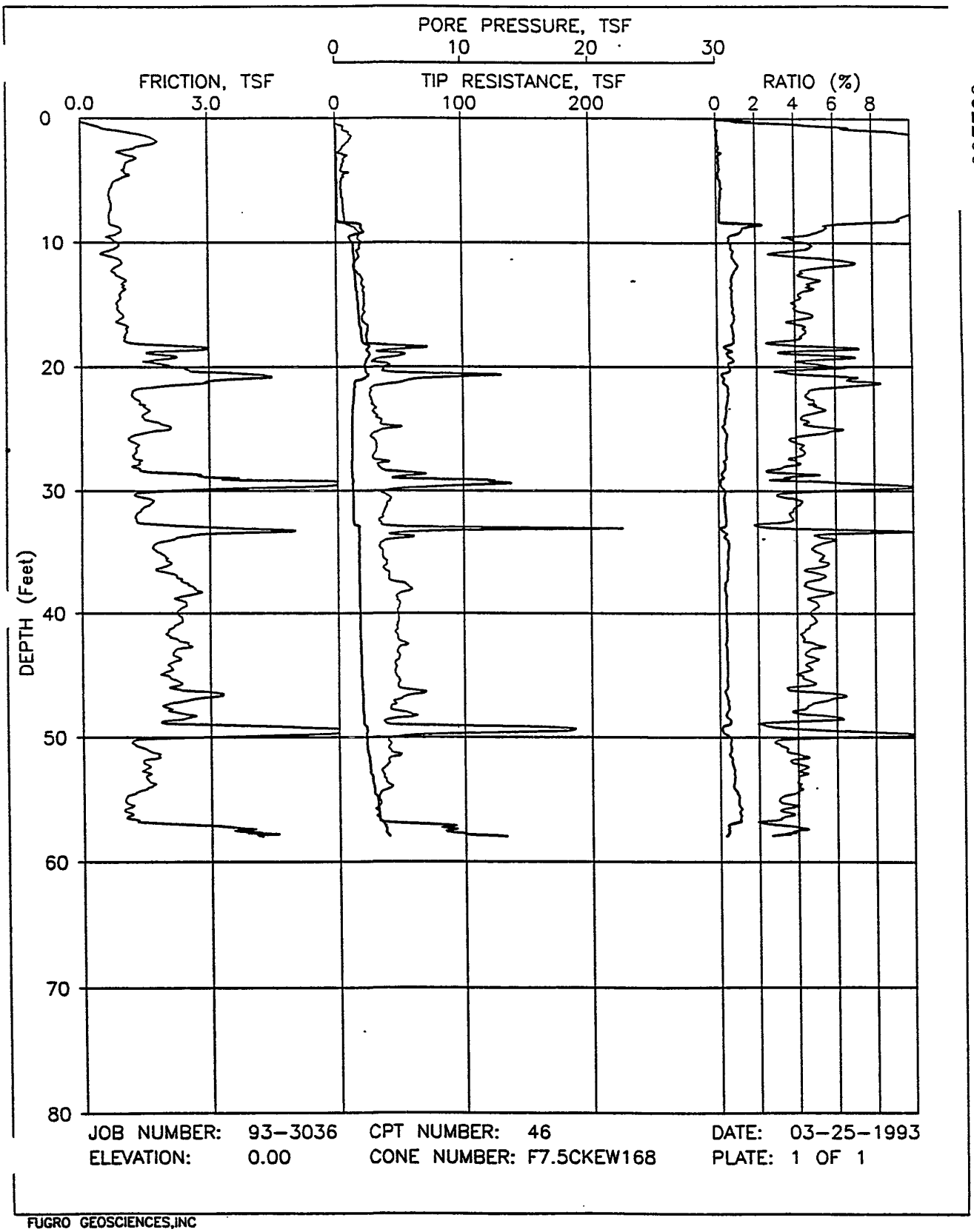
007728



JOB NUMBER: 93-3036 CPT NUMBER: 45 DATE: 03-20-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

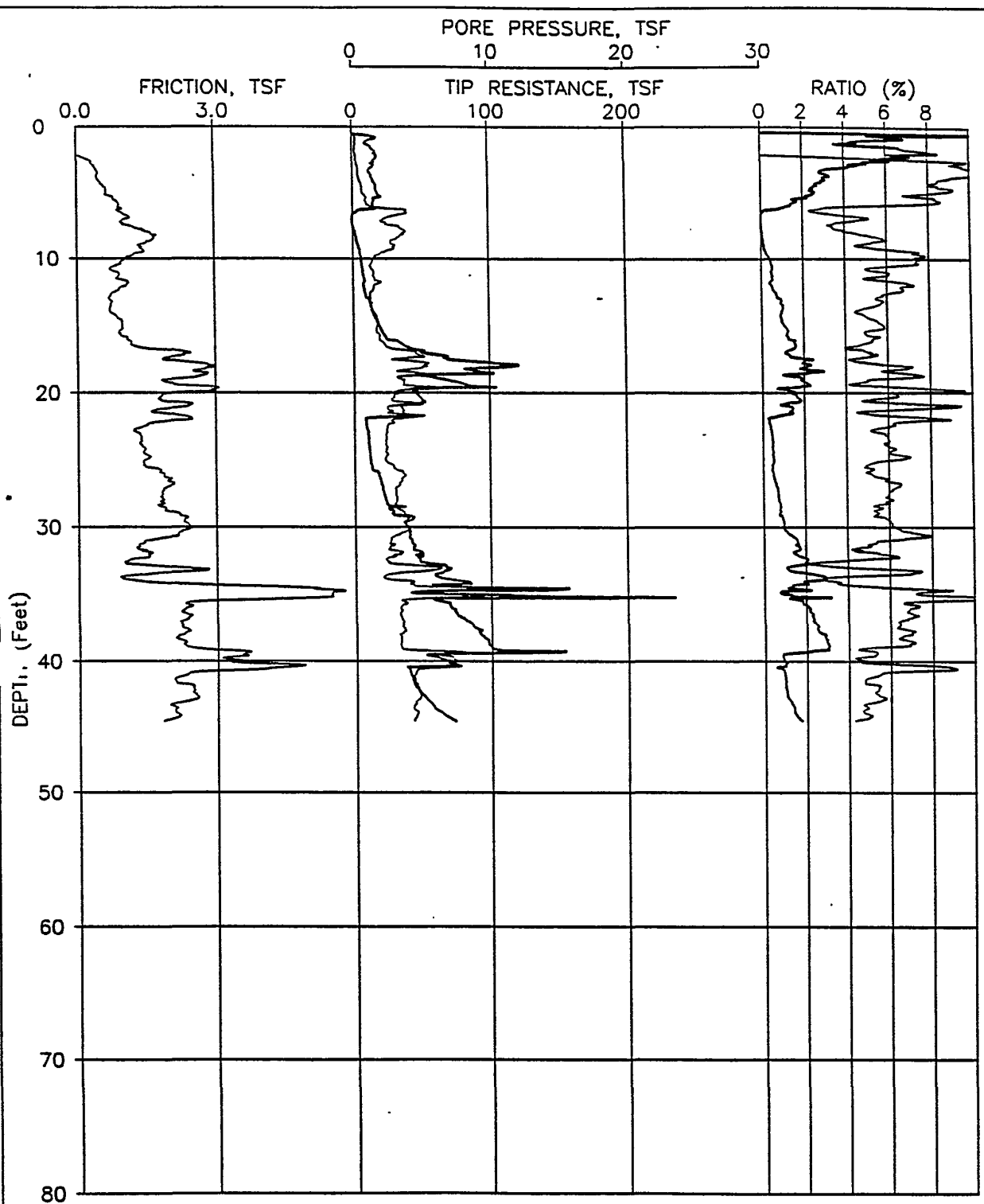
007729



JOB NUMBER: 93-3036 CPT NUMBER: 46 DATE: 03-25-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW168 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

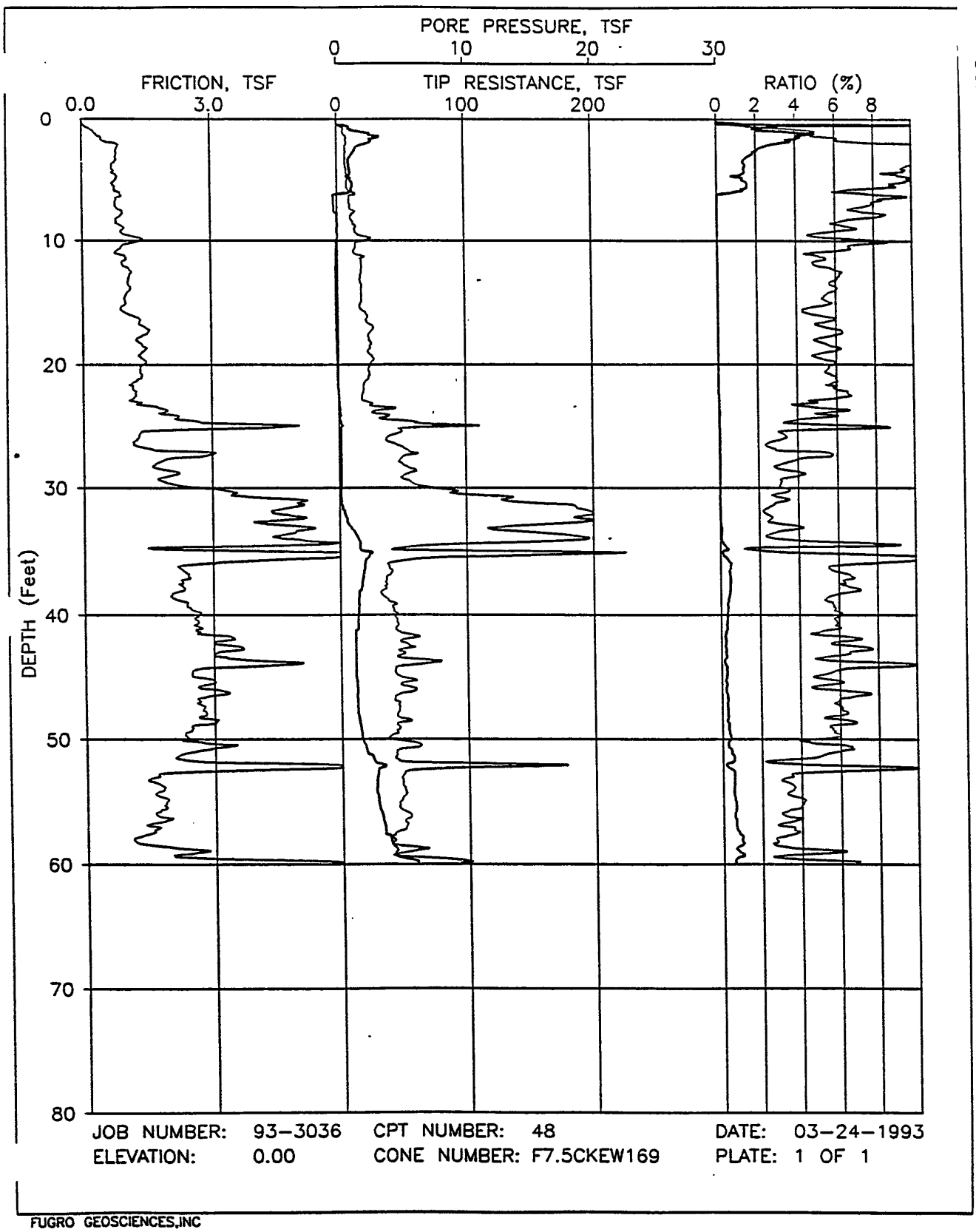
007730



JOB NUMBER: 93-3036 CPT NUMBER: 47 DATE: 03-23-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

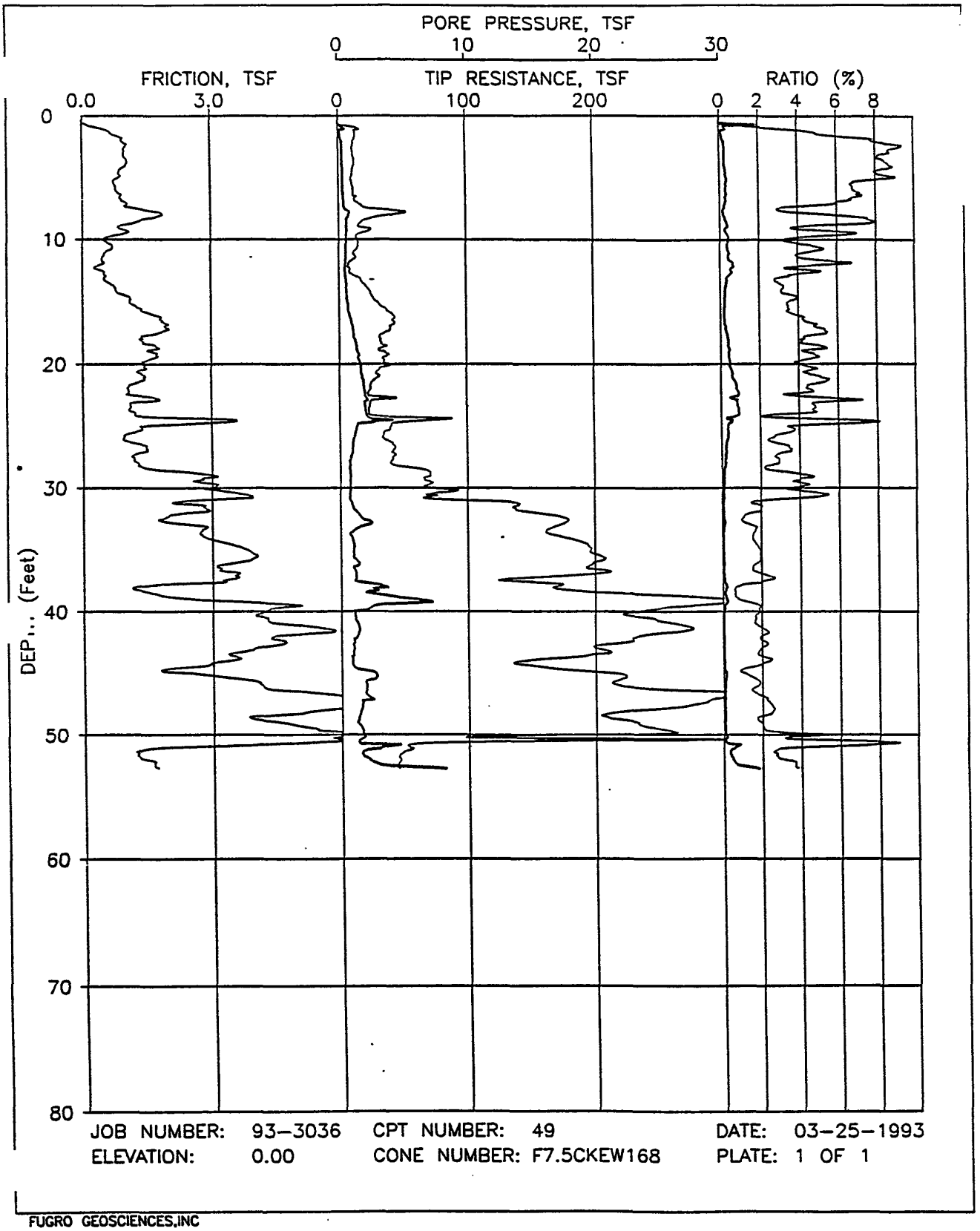
007731



JOB NUMBER: 93-3036 CPT NUMBER: 48 DATE: 03-24-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

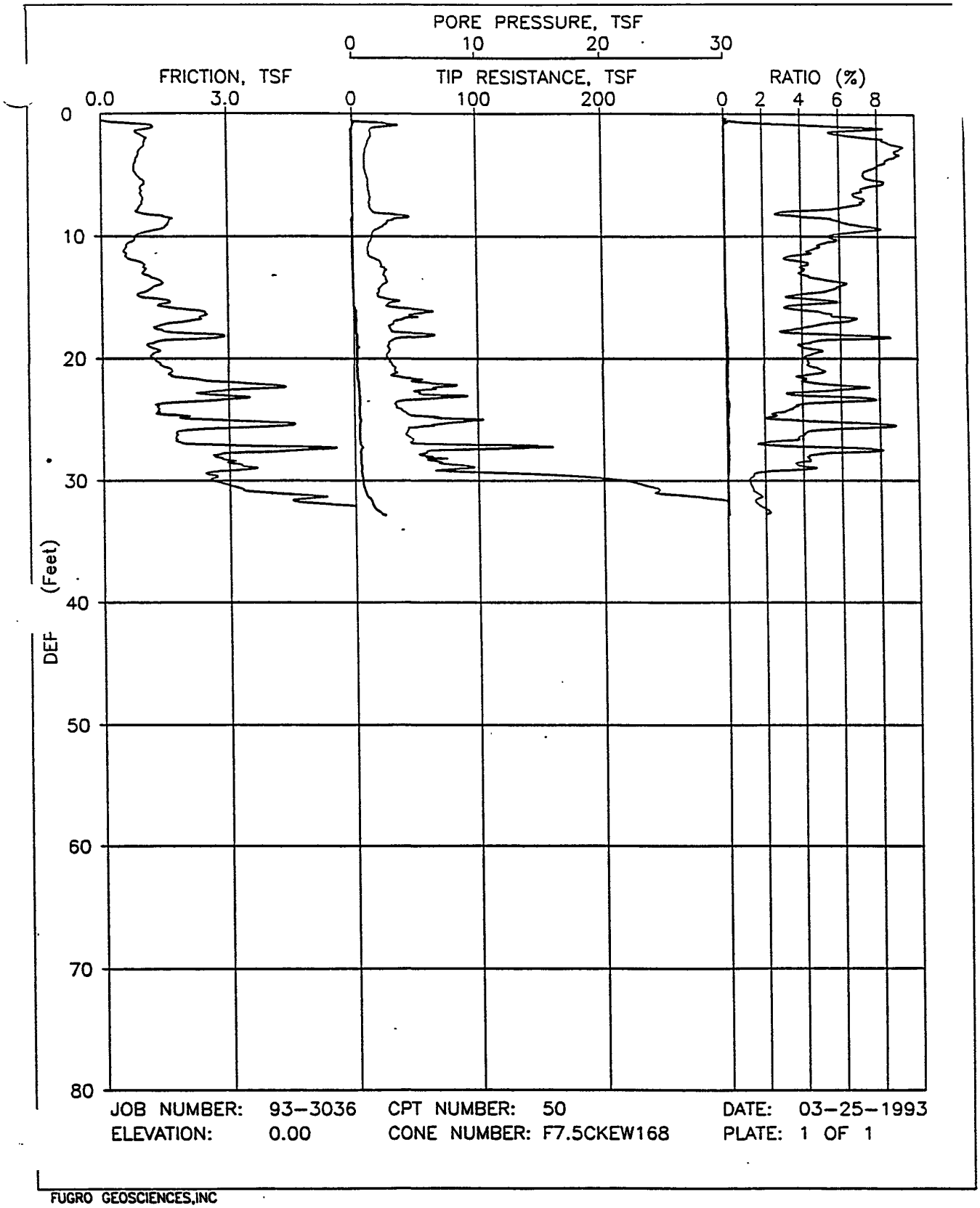
007732



JOB NUMBER: 93-3036 CPT NUMBER: 49 DATE: 03-25-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW168 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

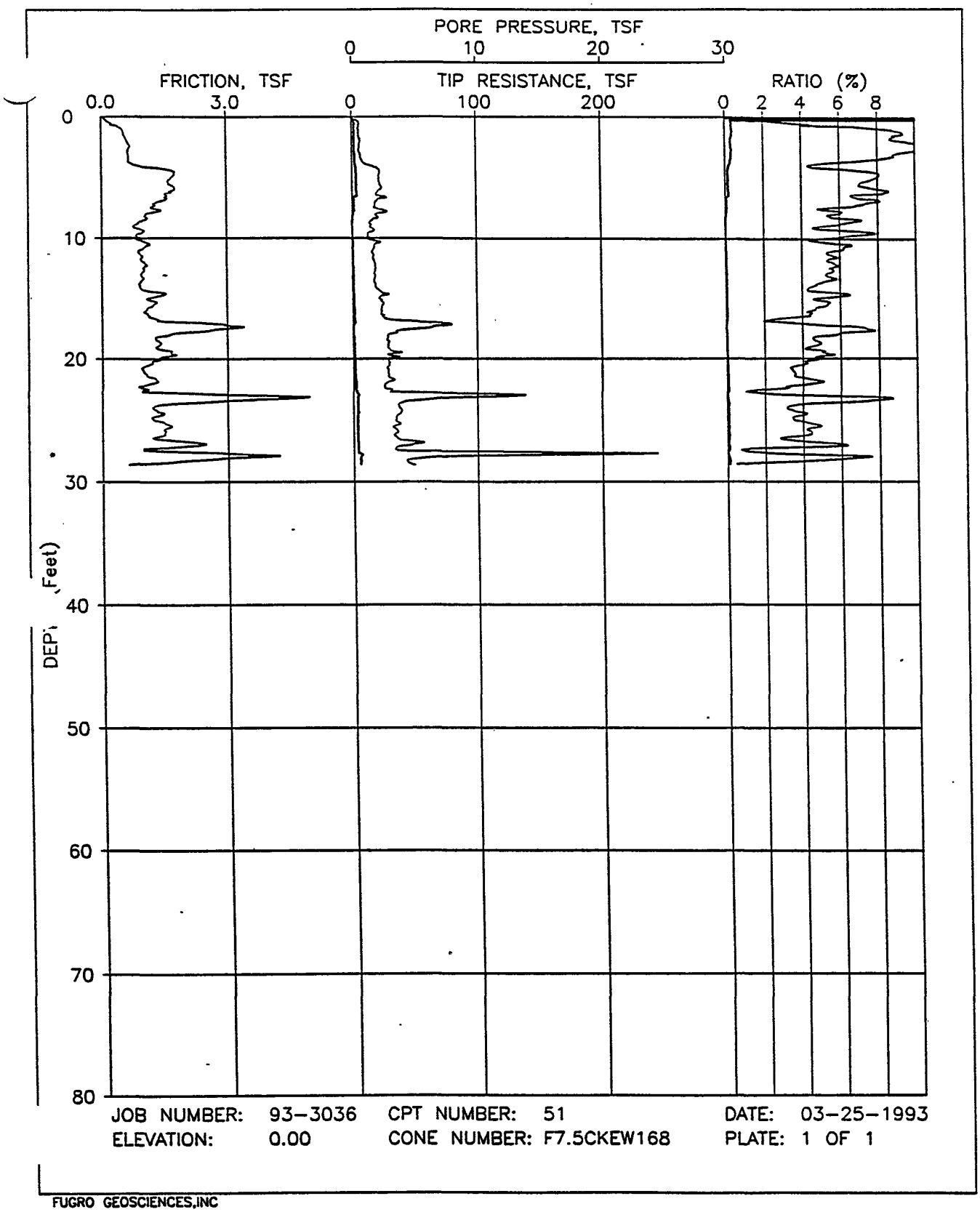
007733



JOB NUMBER: 93-3036 CPT NUMBER: 50 DATE: 03-25-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW168 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

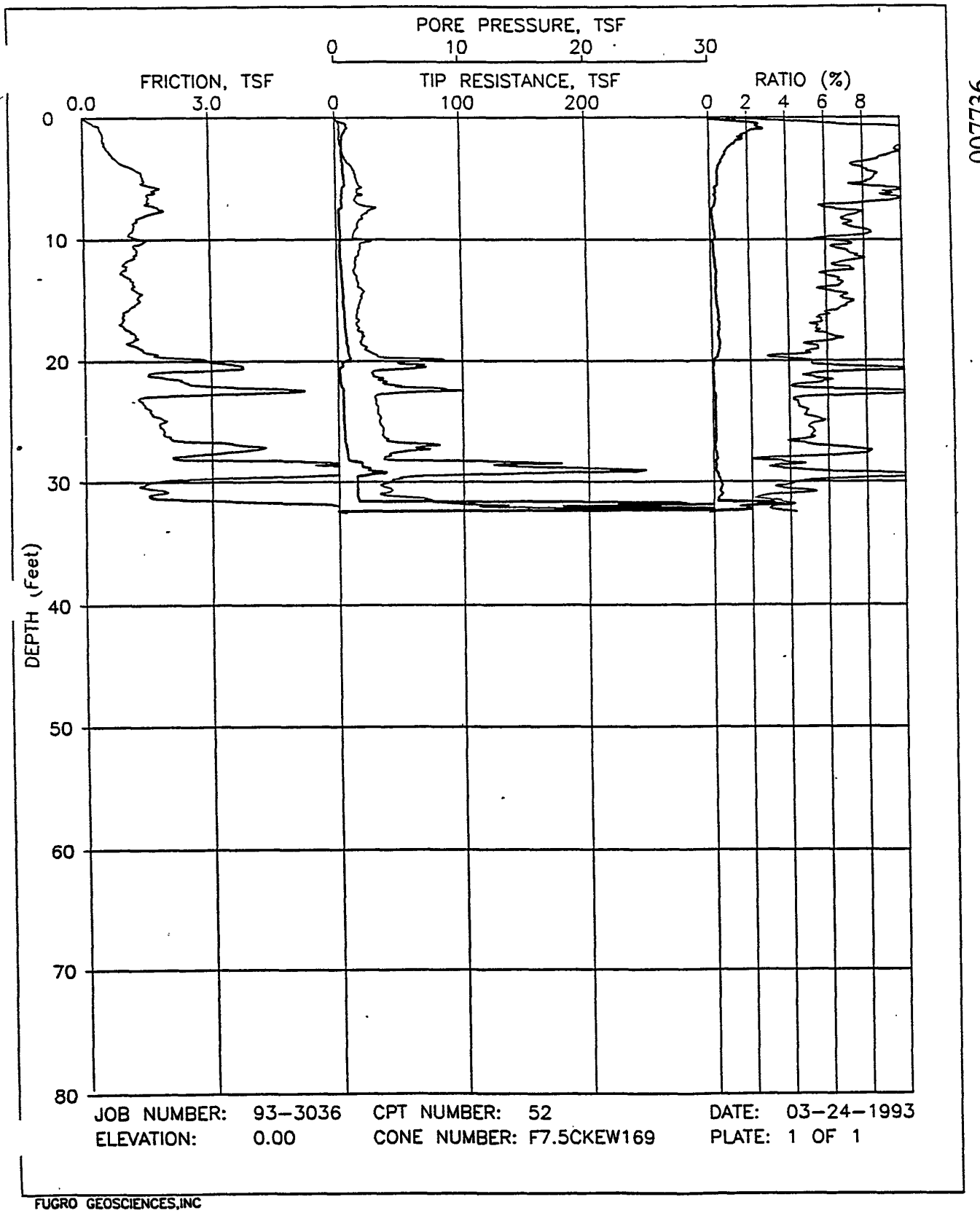
007734



JOB NUMBER: 93-3036 CPT NUMBER: 51 DATE: 03-25-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW168 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

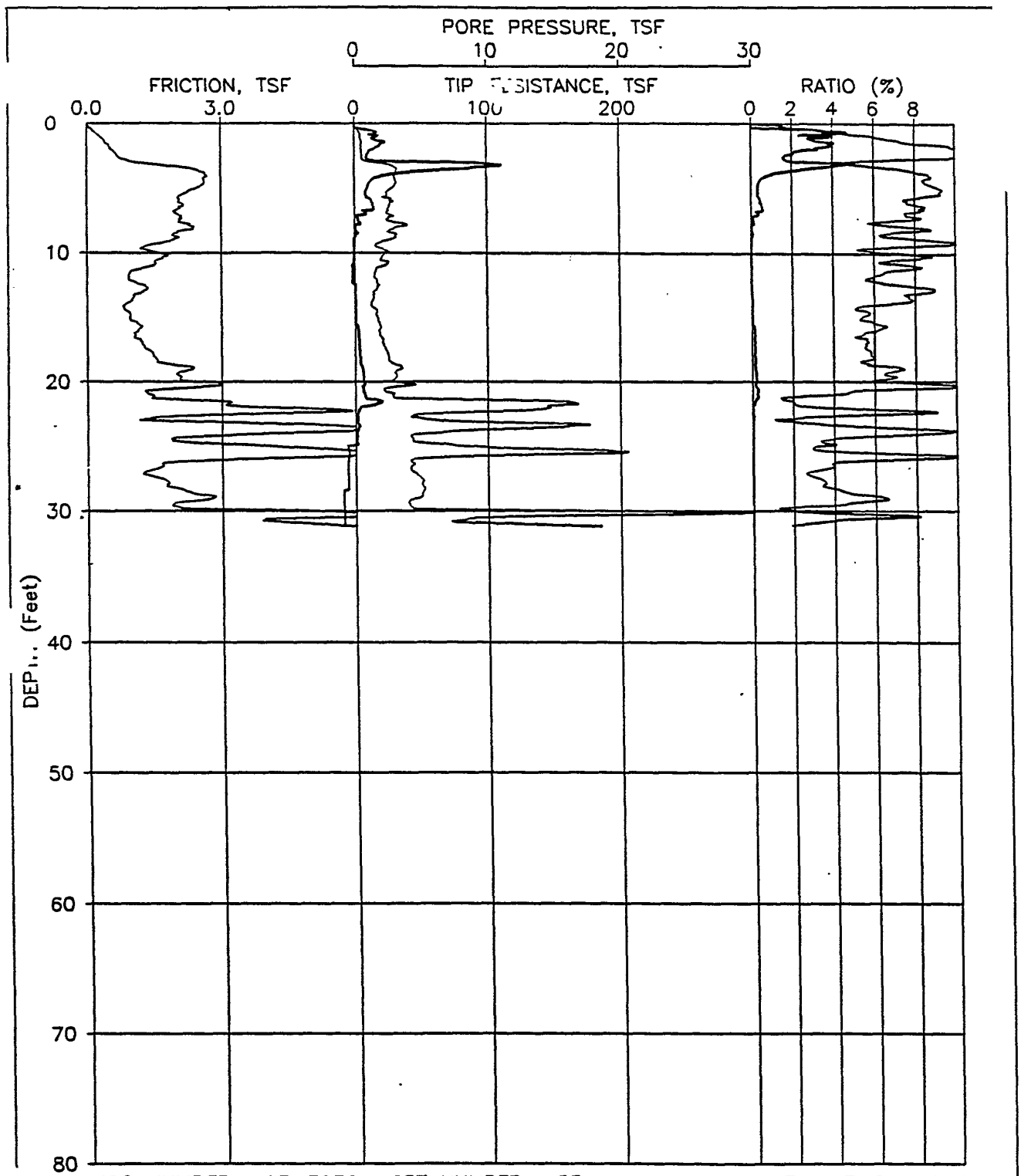
007735



JOB NUMBER: 93-3036 CPT NUMBER: 52 DATE: 03-24-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

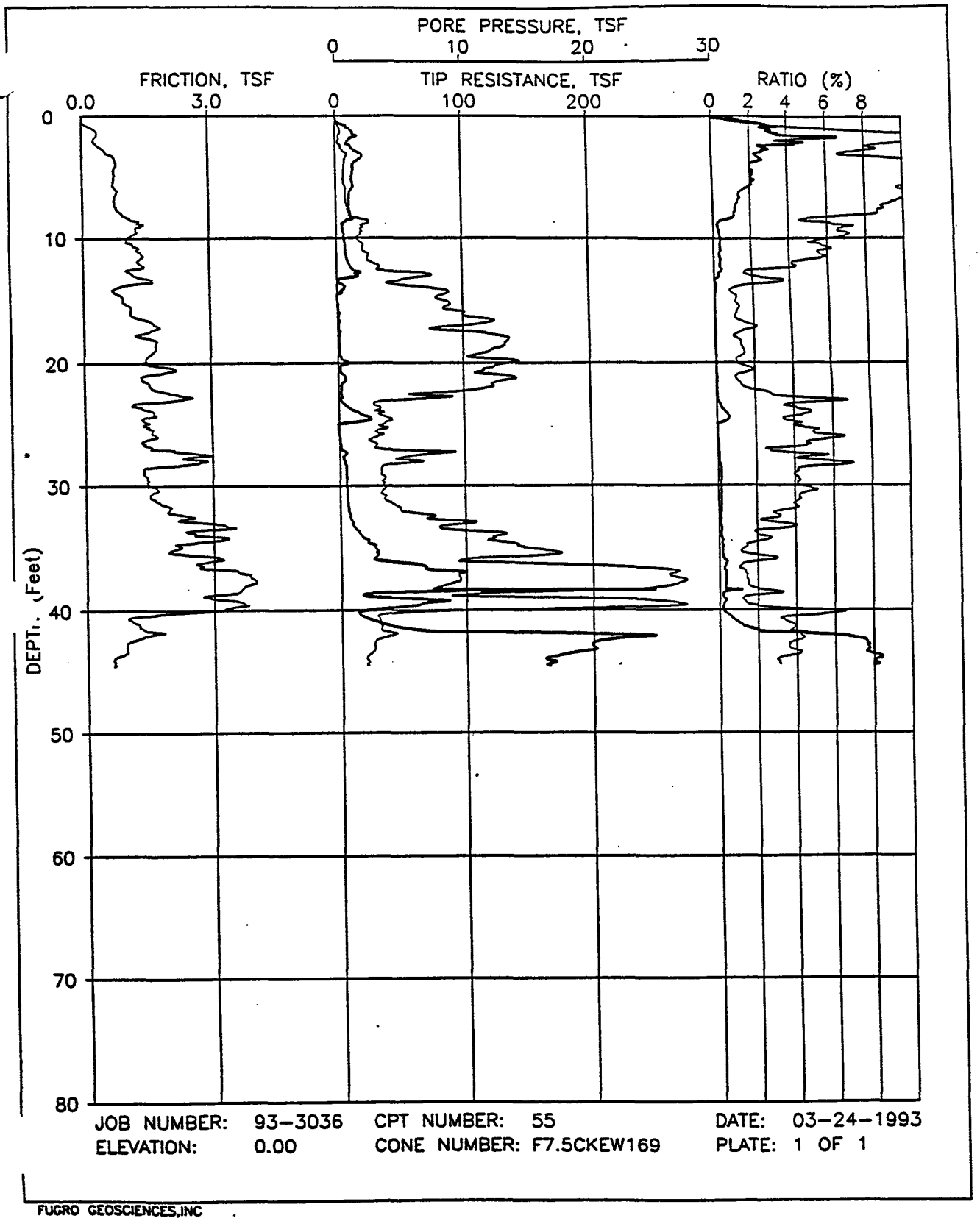
007736



JOB NUMBER: 93-3036 CPT NUMBER: 53 DATE: 03-24-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

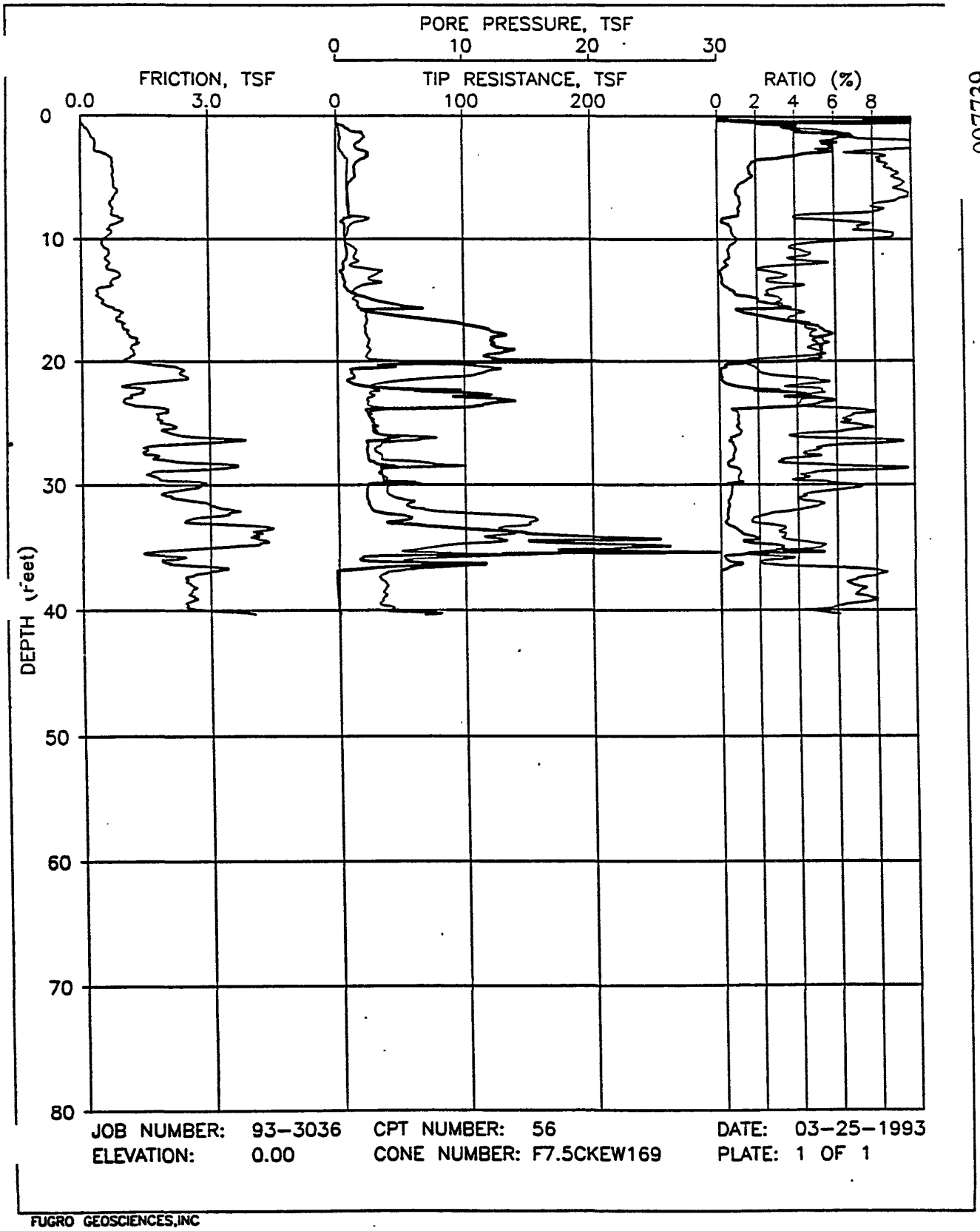
007737



JOB NUMBER: 93-3036 CPT NUMBER: 55 DATE: 03-24-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

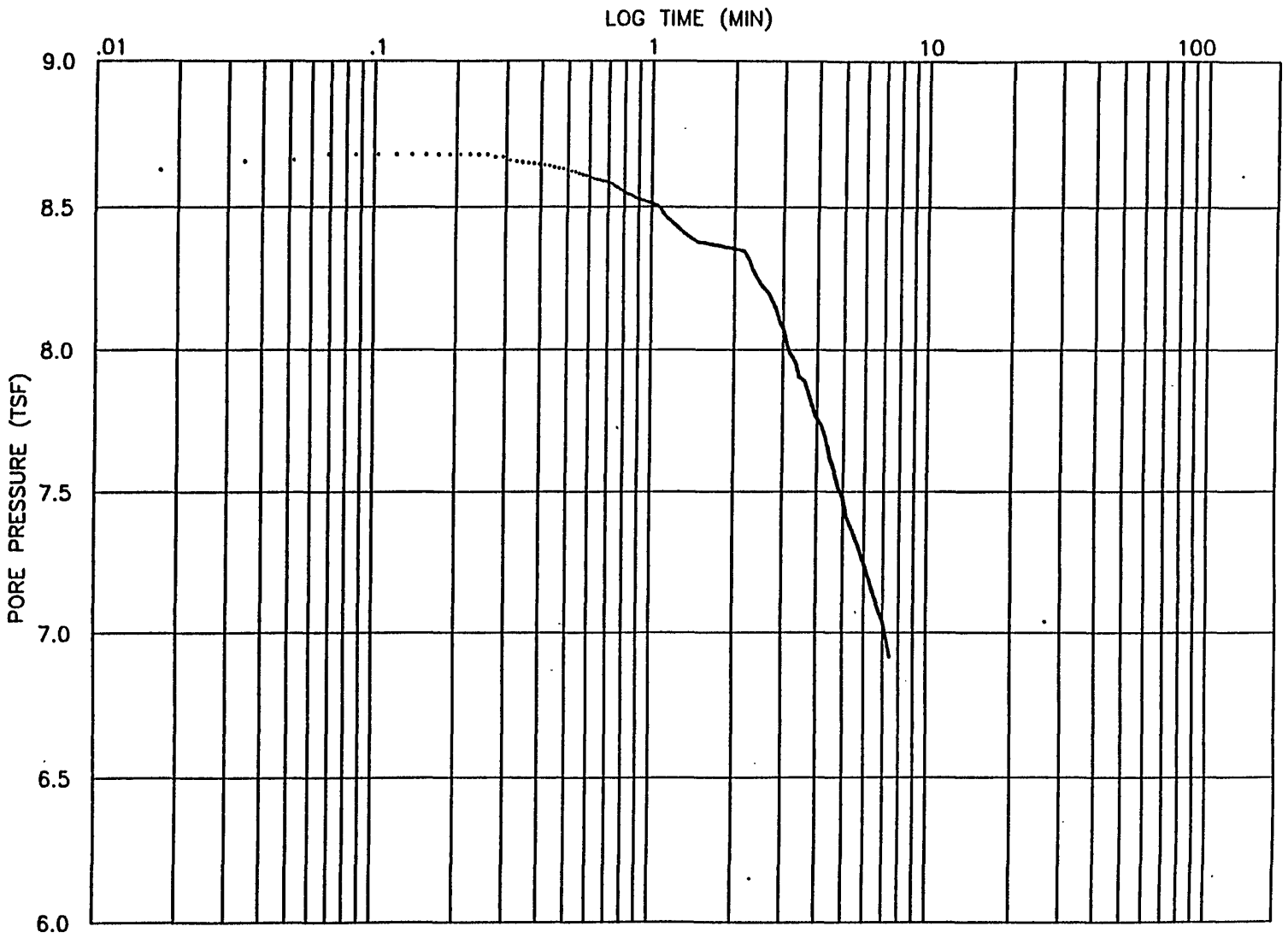
007738



JOB NUMBER: 93-3036 CPT NUMBER: 56 DATE: 03-25-1993
ELEVATION: 0.00 CONE NUMBER: F7.5CKEW169 PLATE: 1 OF 1

FUGRO GEOSCIENCES,INC

007739



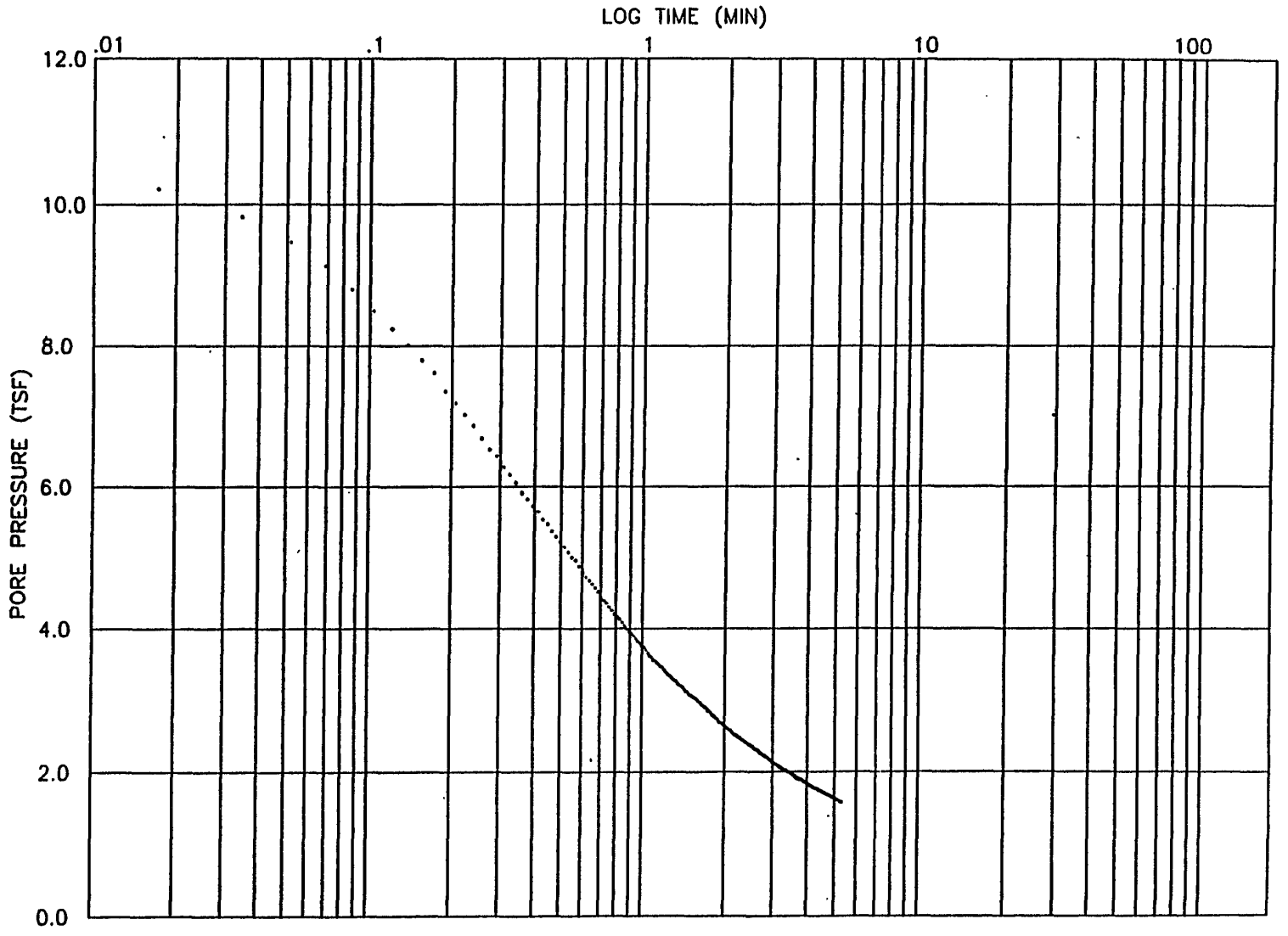
CPT NUMBER: 01
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 19.3 FEET
DATE: 03-17-1993

FUGRO GEOSCIENCES, INC.

007740



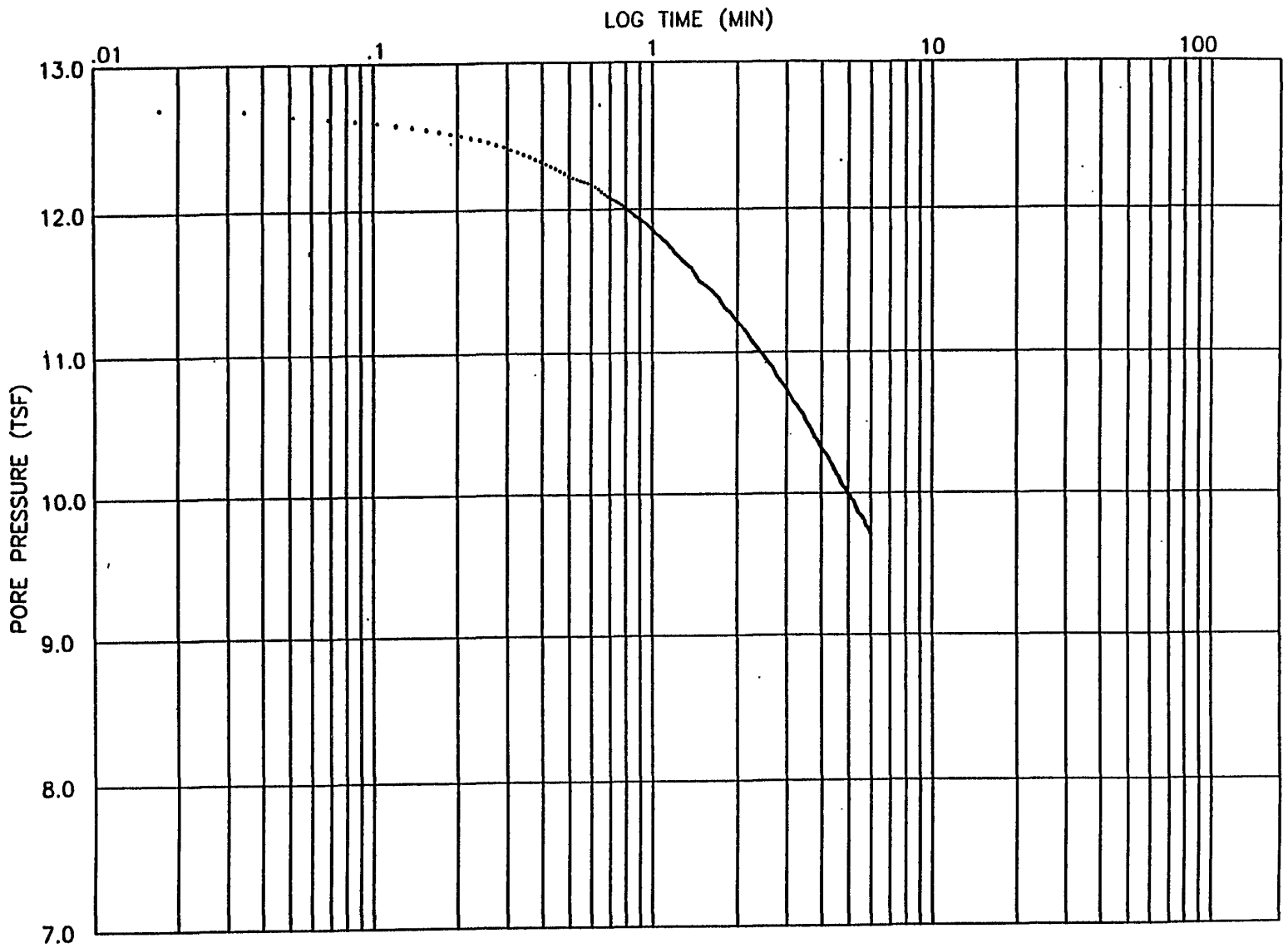
CPT NUMBER: 05
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 35.9 FEET
DATE: 03-20-1993

FUGRO GEOSCIENCES, INC.

007741



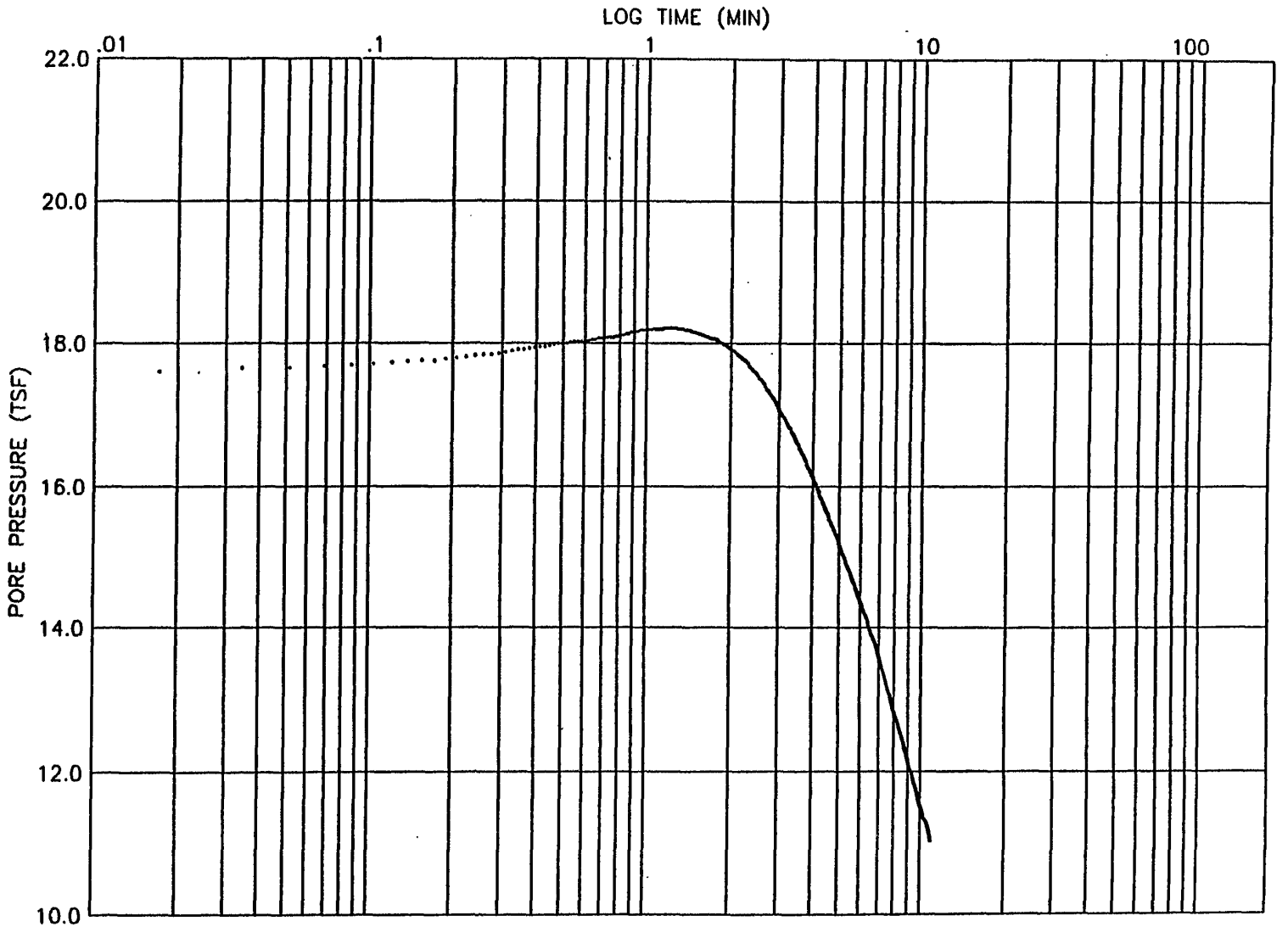
CPT NUMBER: 01
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 41.4 FEET
DATE: 03-17-1993

FUGRO GEOSCIENCES, INC.

007742



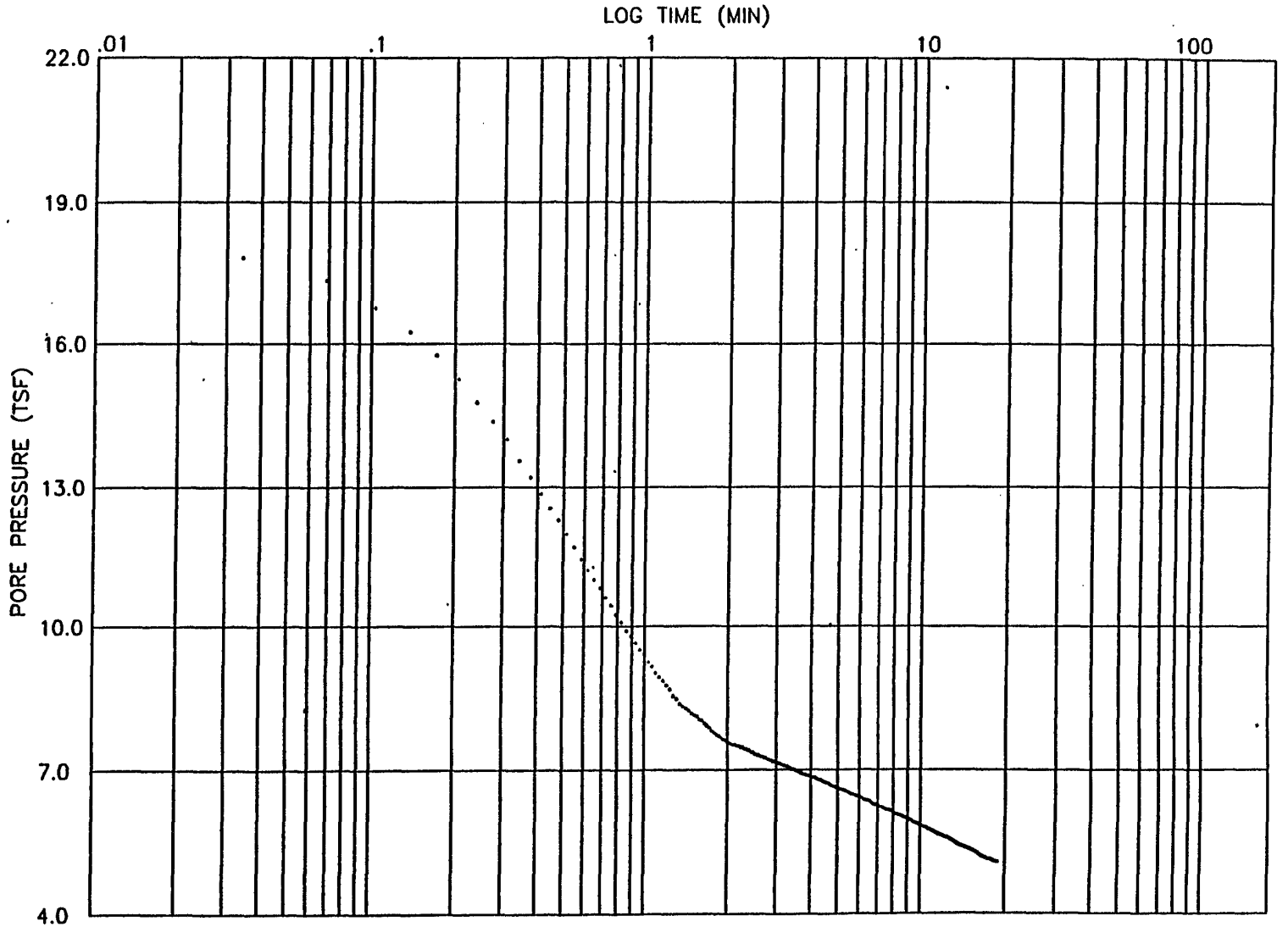
CPT NUMBER: 11
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 38.0 FEET
DATE: 03-17-1993

FUGRO GEOSCIENCES, INC.

007743



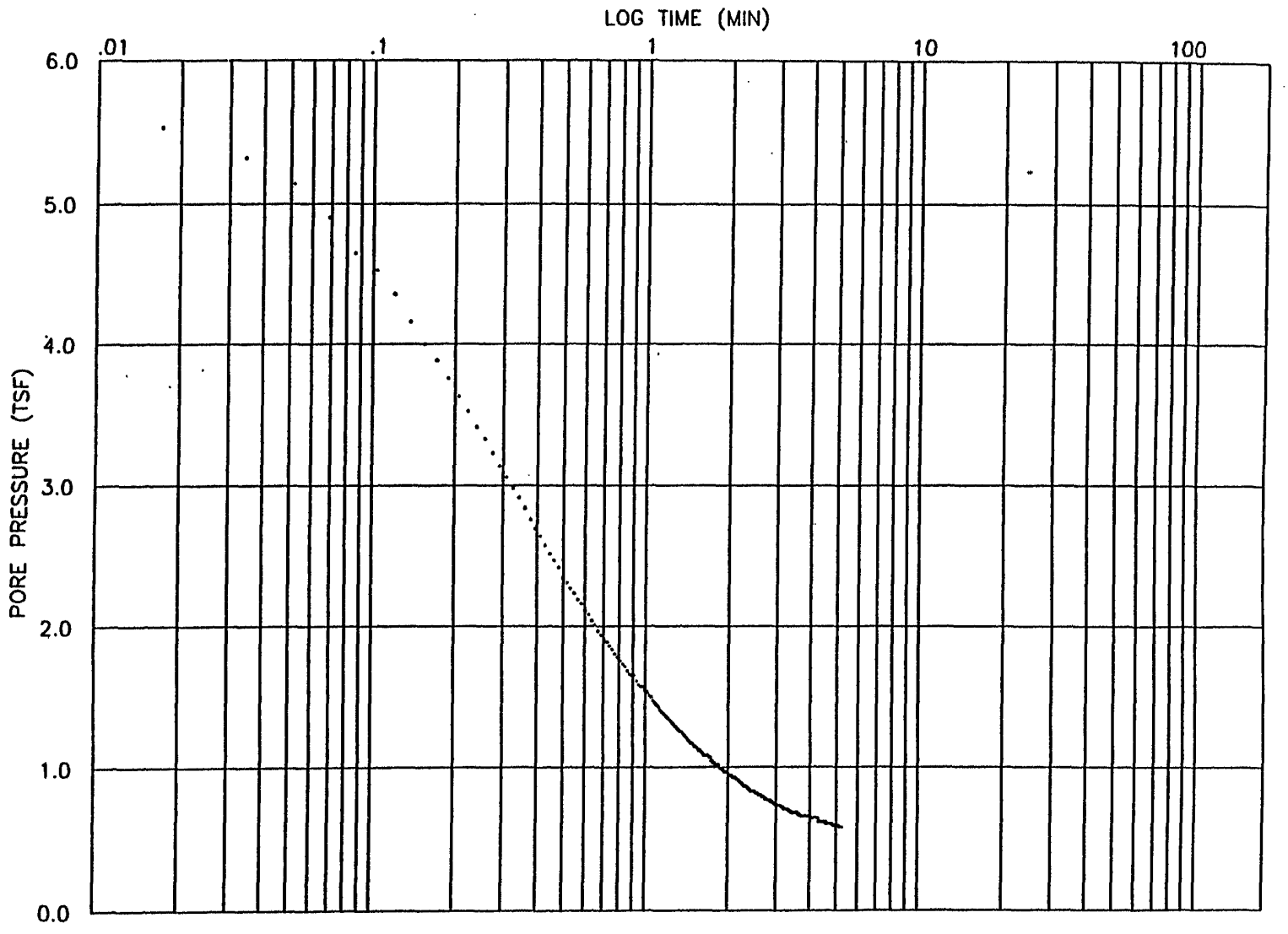
CPT NUMBER: 12
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 32.5 FEET
DATE: 03-17-1993

FUGRO GEOSCIENCES, INC.

007744



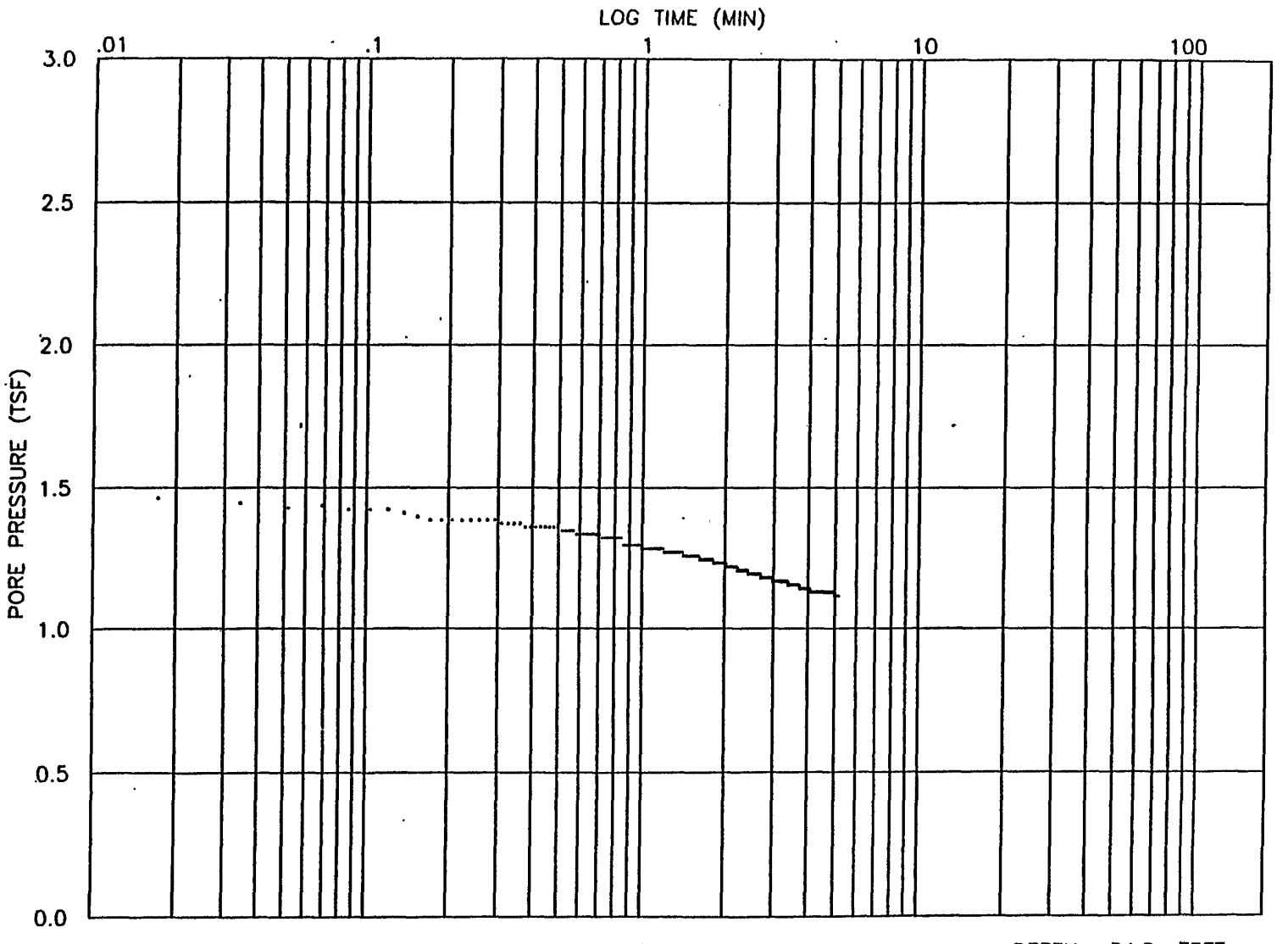
CPT NUMBER: 13
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 37.1 FEET
DATE: 03-19-1993

FUGRO GEOSCIENCES, INC.

007745



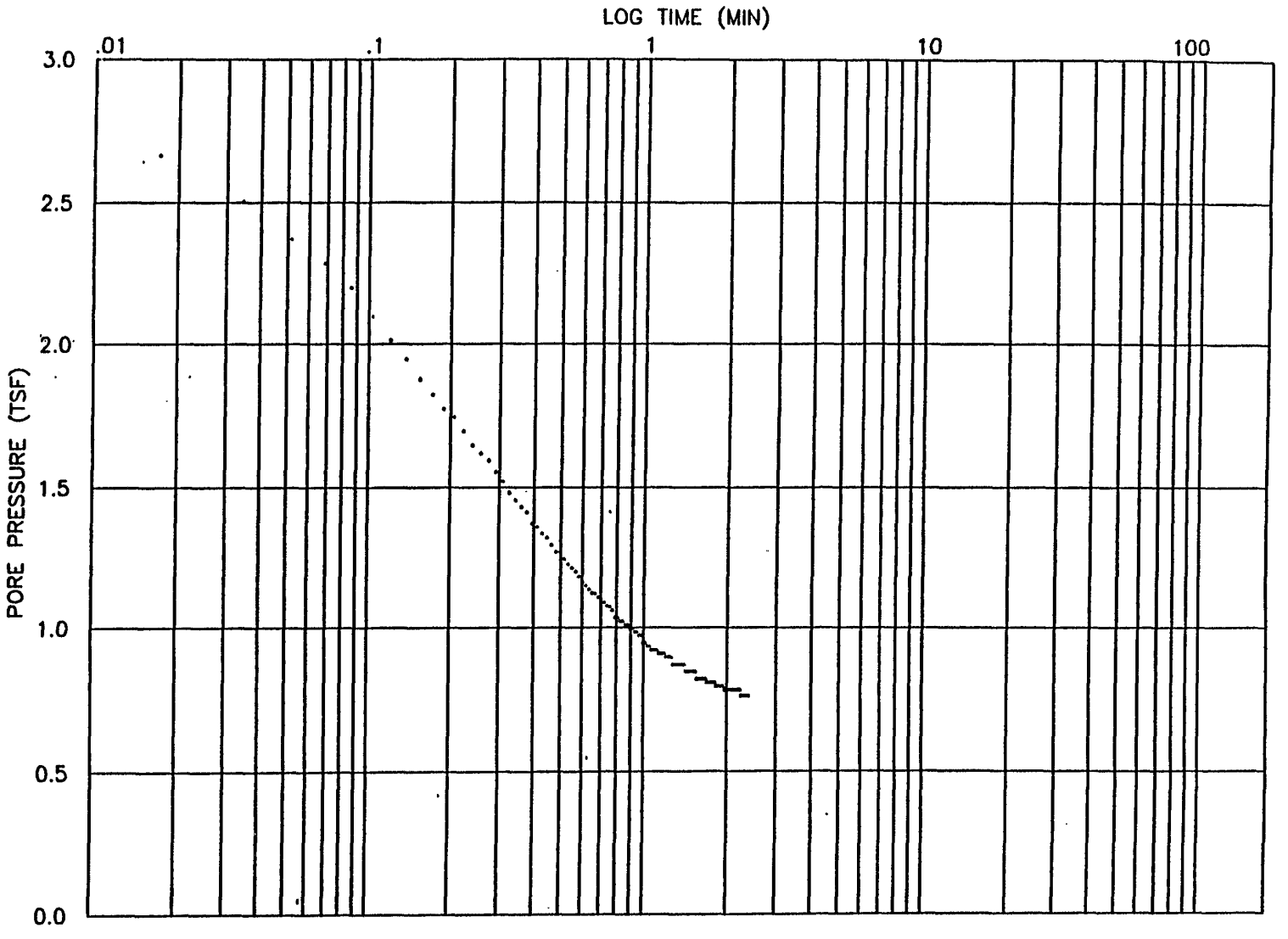
CPT NUMBER: 14
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 34.8 FEET
DATE: 03-19-1993

FUGRO GEOSCIENCES, INC.

007746



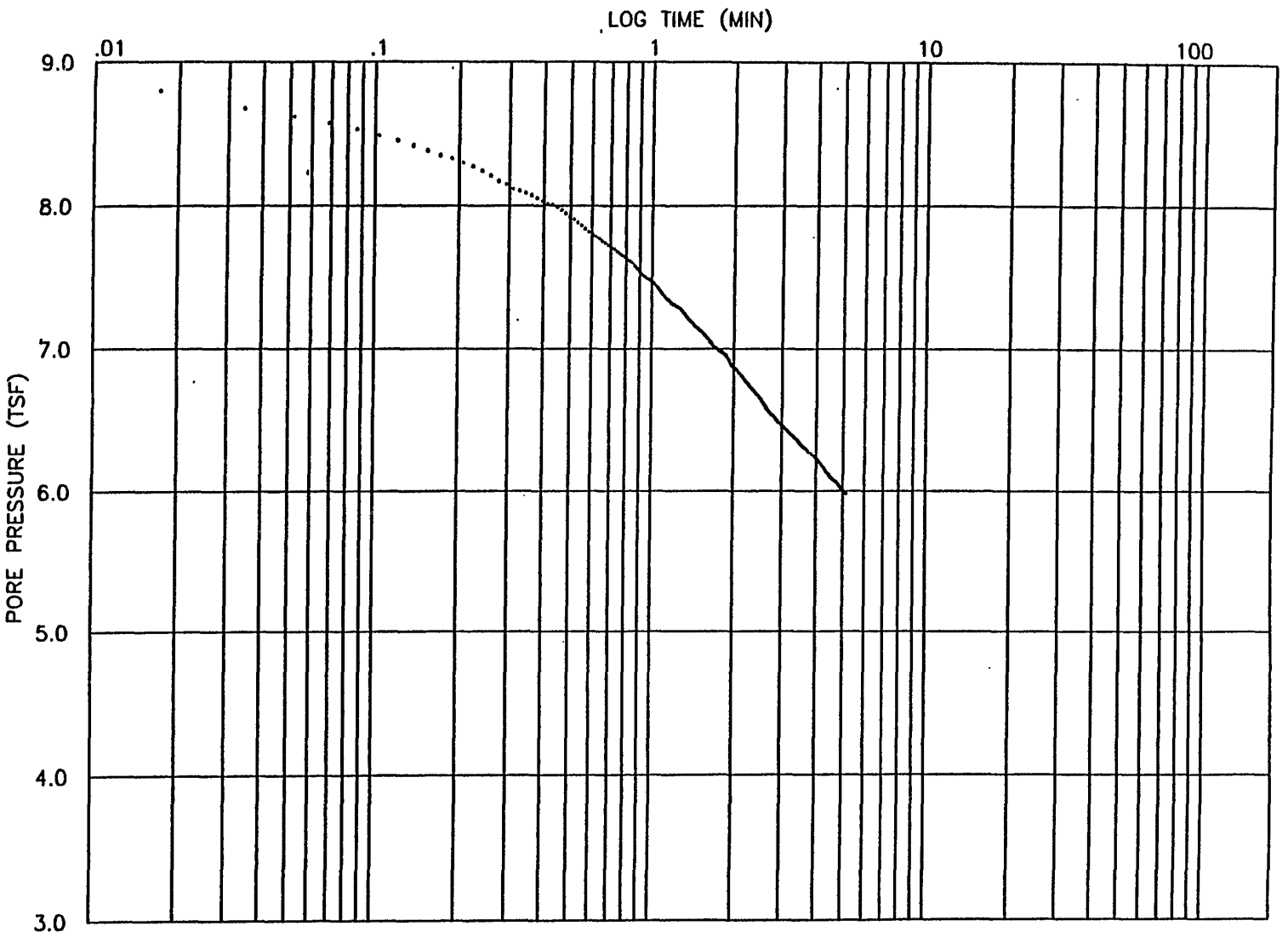
CPT NUMBER: 15
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 36.7 FEET
DATE: 03-19-1993

FUGRO GEOSCIENCES, INC.

007747



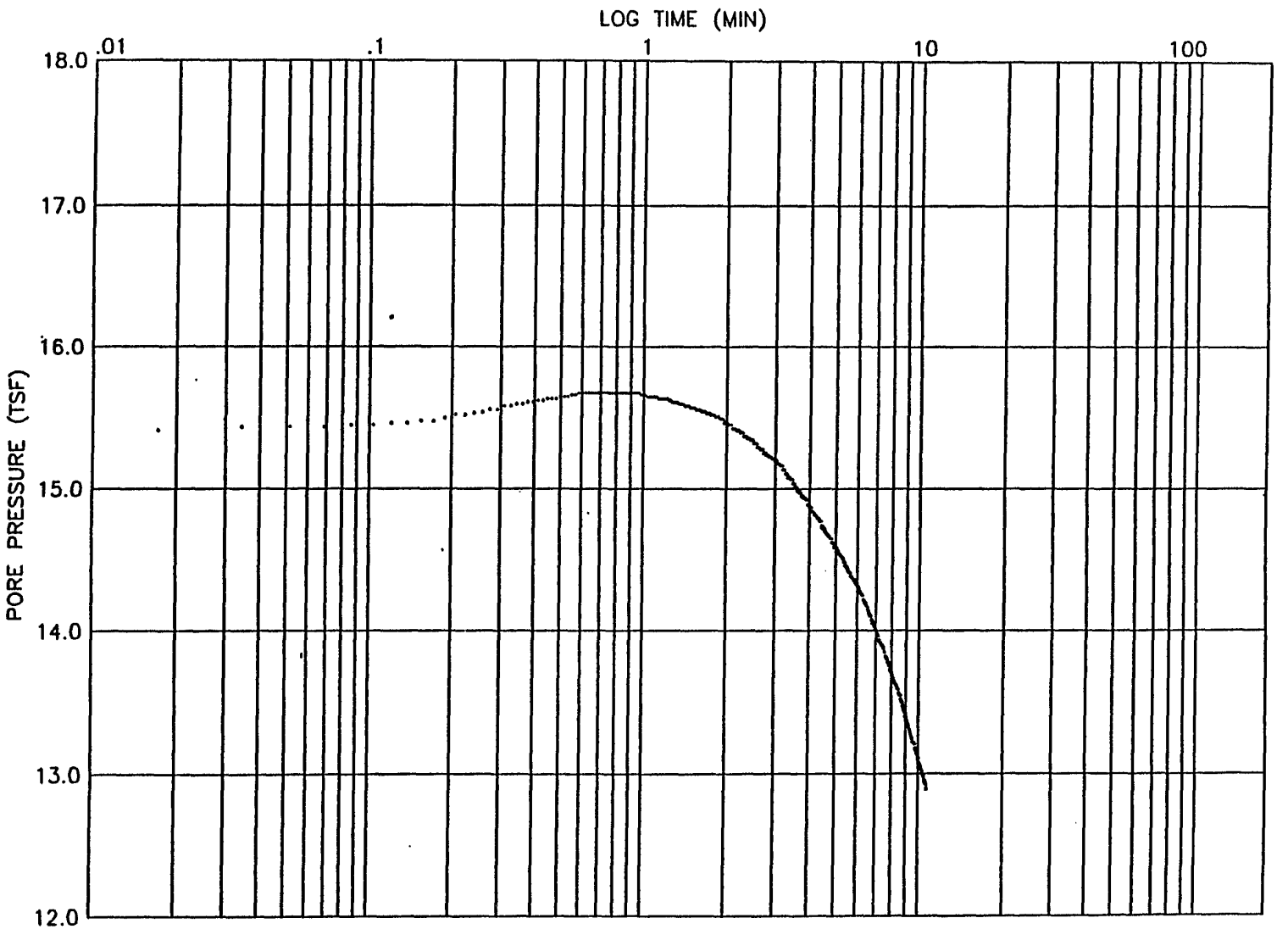
CPT NUMBER: 20
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 21.6 FEET
DATE: 03-17-1993

FUGRO GEOSCIENCES, INC.

007748



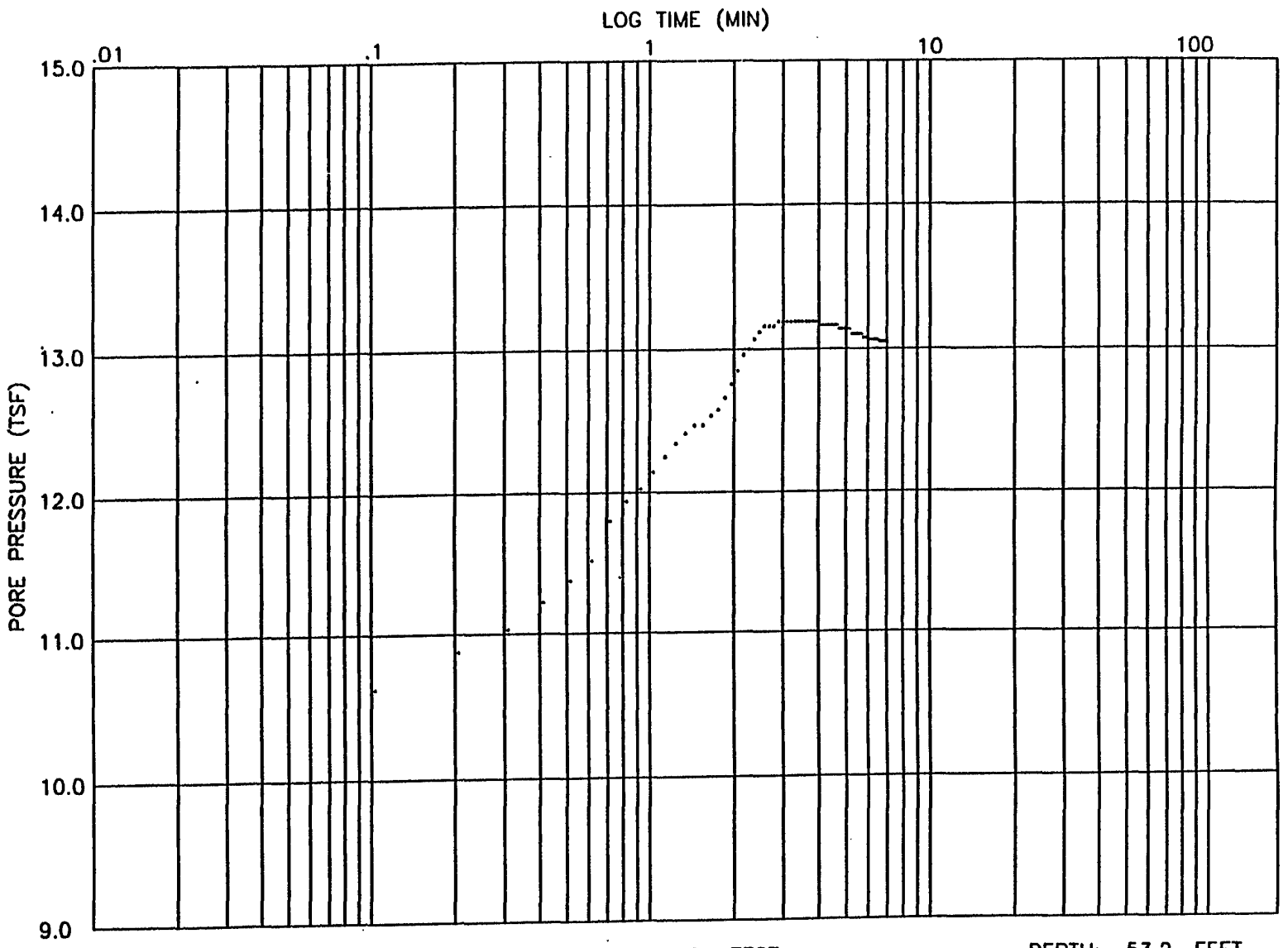
CPT NUMBER: 44
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 26.9 FEET
DATE: 03-19-1993

FUGRO GEOSCIENCES, INC.

007749



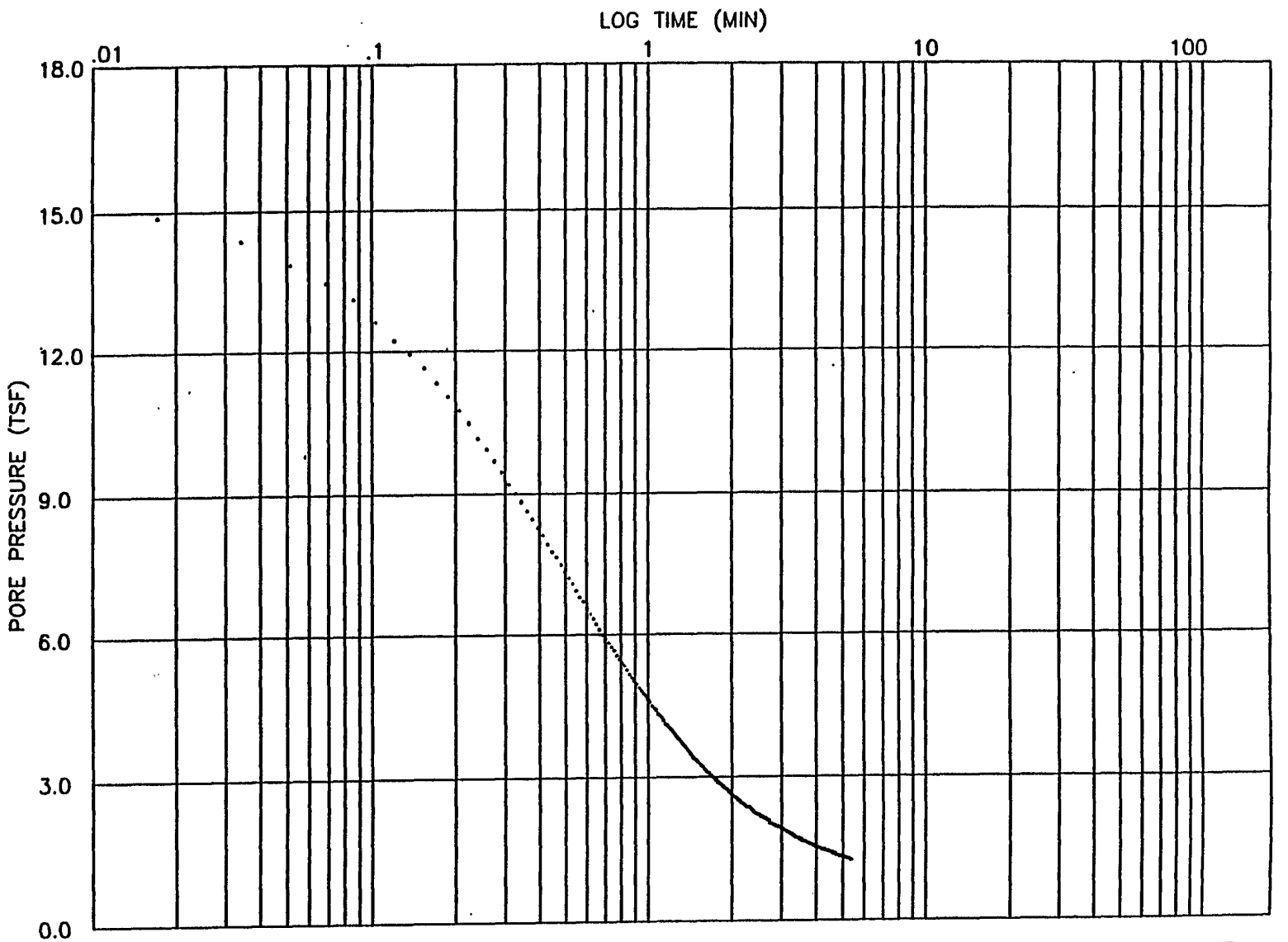
CPT NUMBER: 49
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 53.2 FEET
DATE: 03-25-1993

FUGRO GEOSCIENCES, INC.

007750



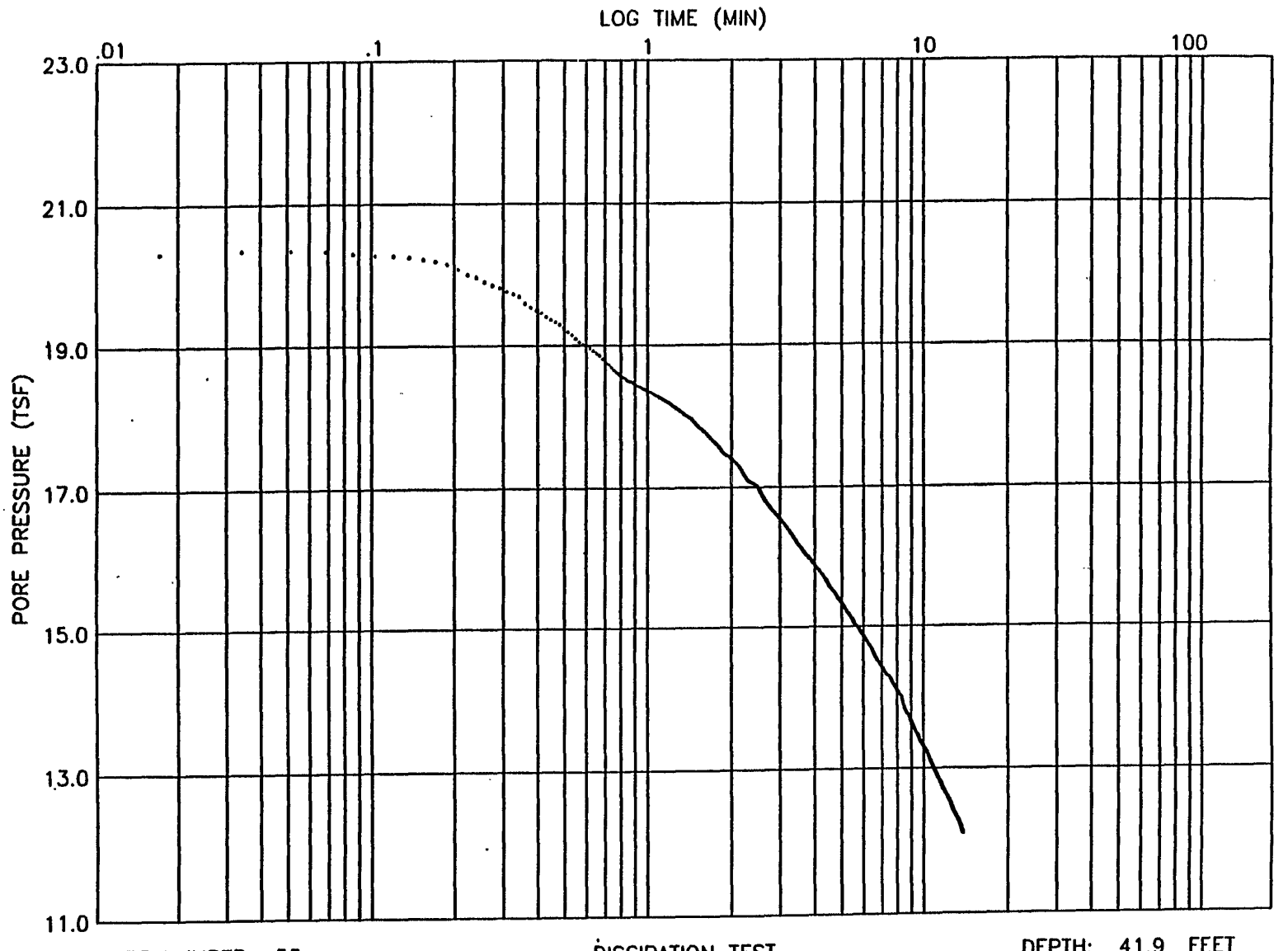
CPT NUMBER: 52
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 32.1 FEET
DATE: 03-24-1993

FUGRO GEOSCIENCES, INC.

007751



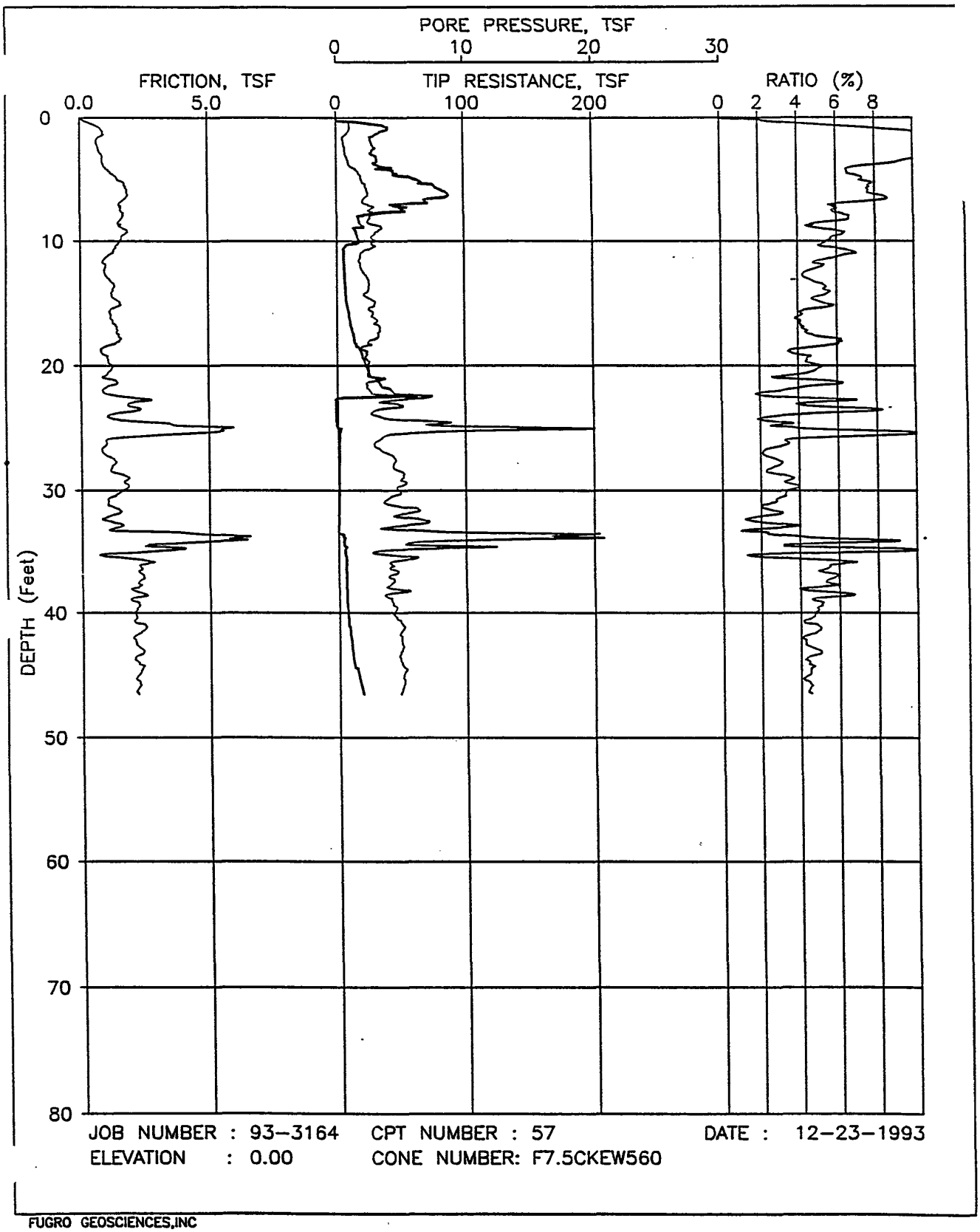
CPT NUMBER: 55
JOB NUMBER: 93-3036

DISSIPATION TEST

DEPTH: 41.9 FEET
DATE: 03-24-1993

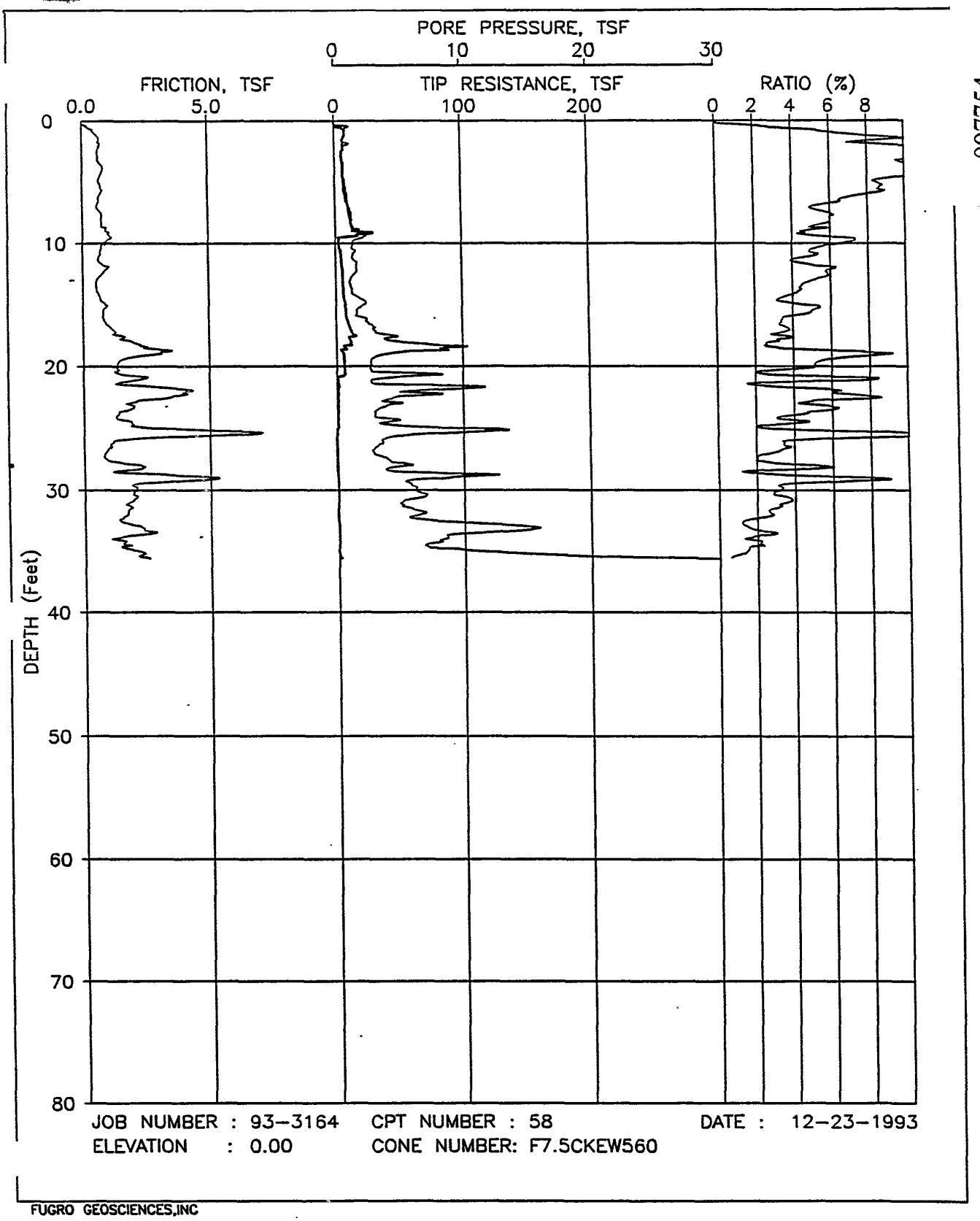
FUGRO GEOSCIENCES, INC.

007752



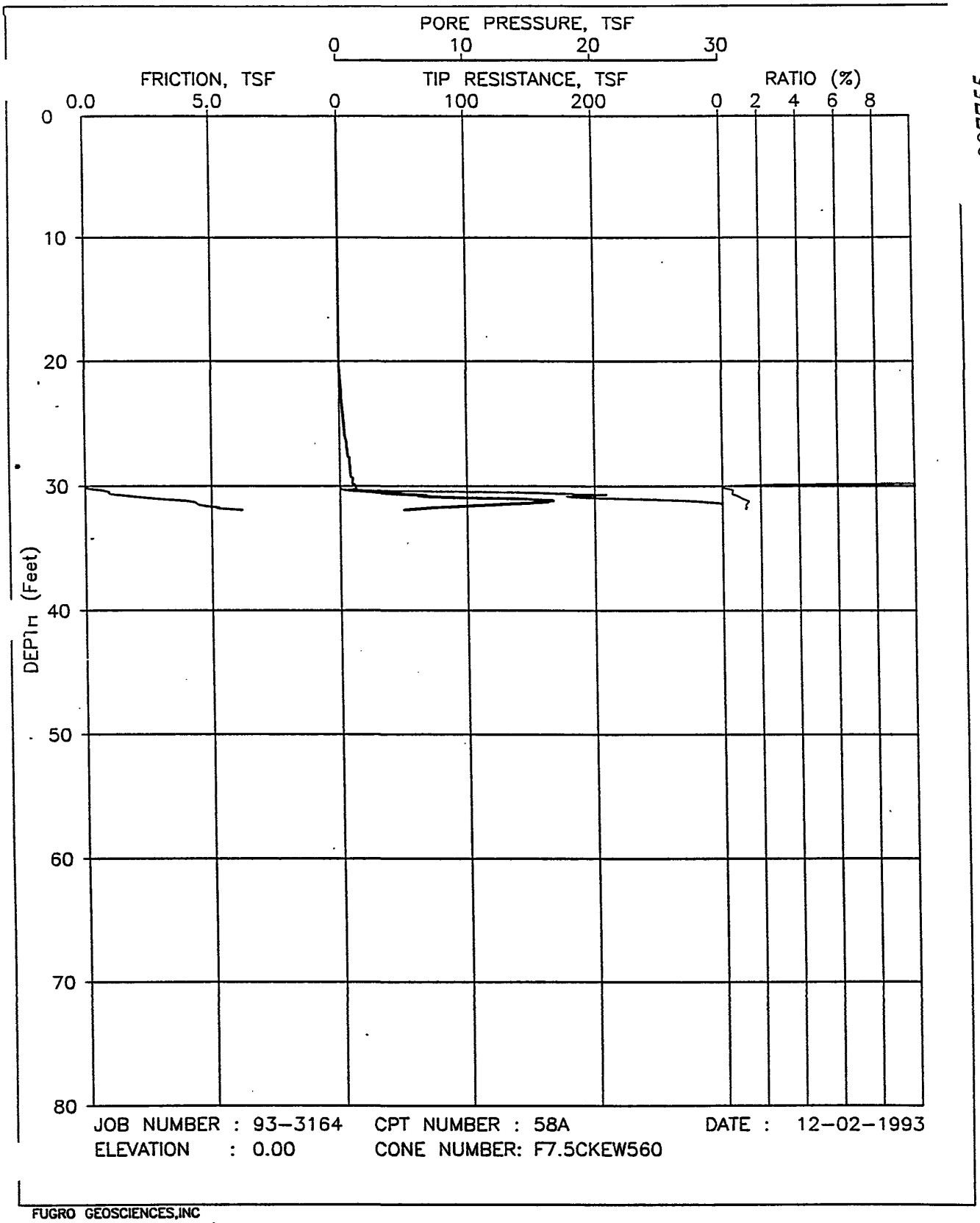
FUGRO GEOSCIENCES,INC

007753



FUGRO GEOSCIENCES,INC

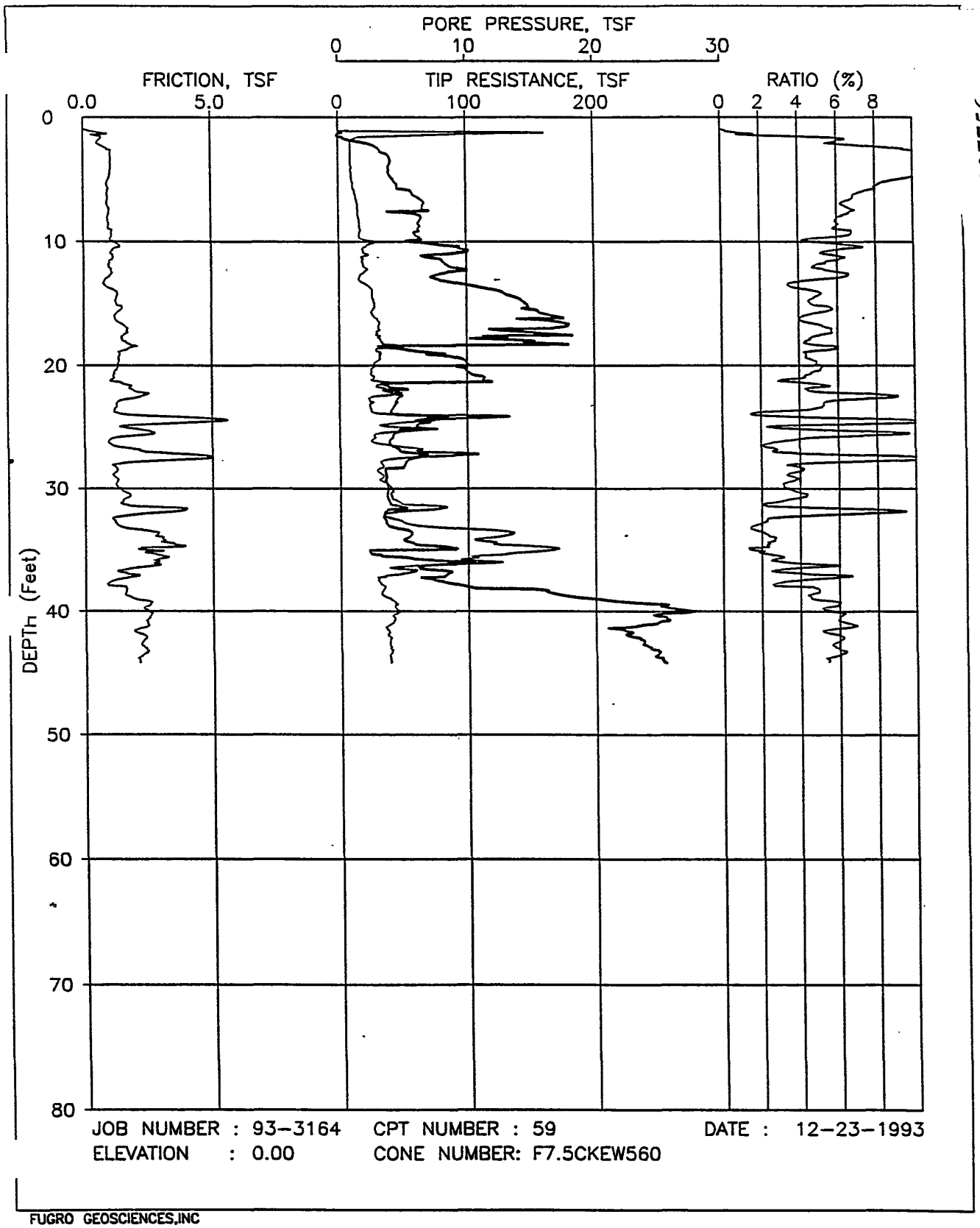
007754



JOB NUMBER : 93-3164 CPT NUMBER : 58A DATE : 12-02-1993
ELEVATION : 0.00 CONE NUMBER: F7.5CKEW560

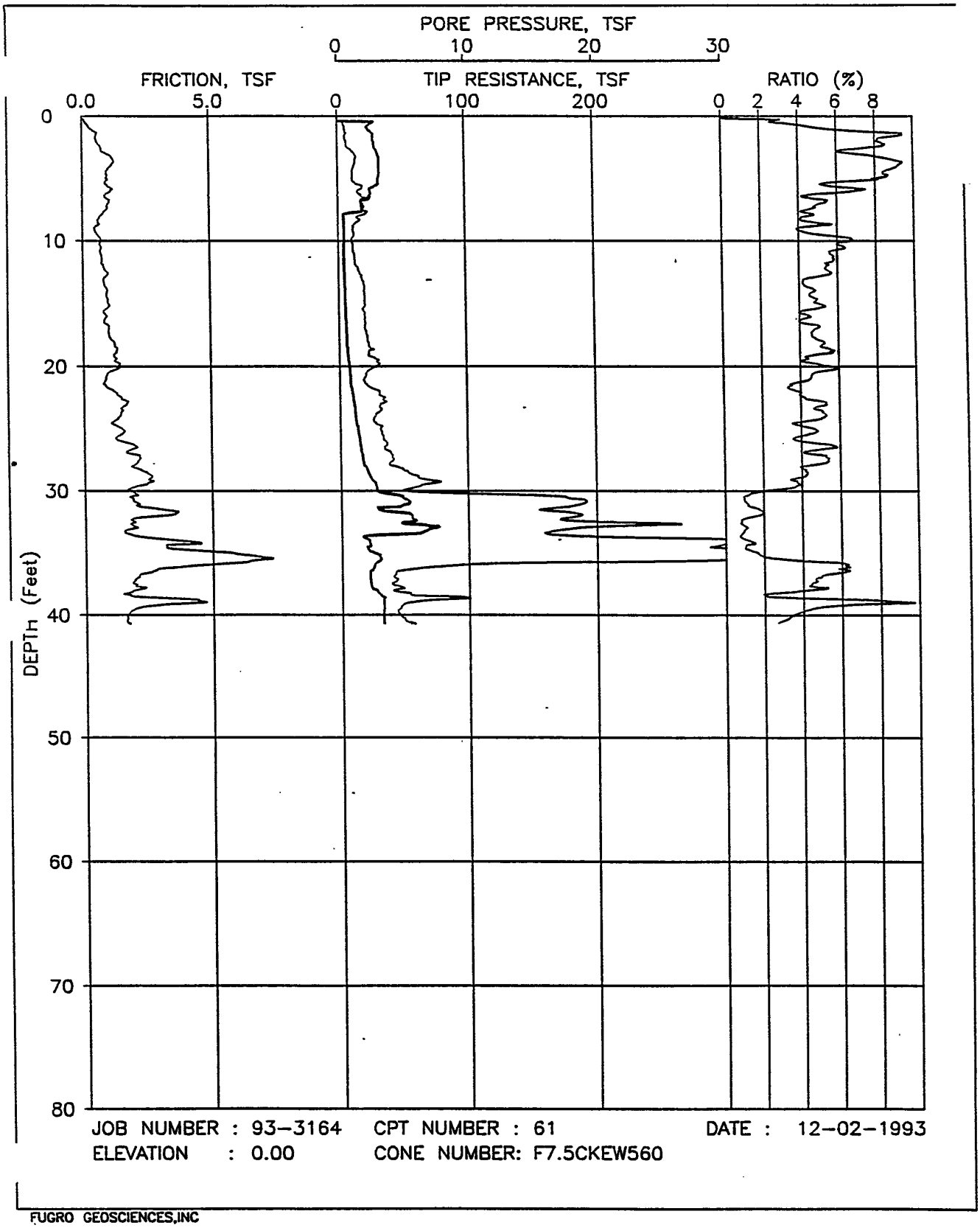
FUGRO GEOSCIENCES,INC

007755



FUGRO GEOSCIENCES,INC

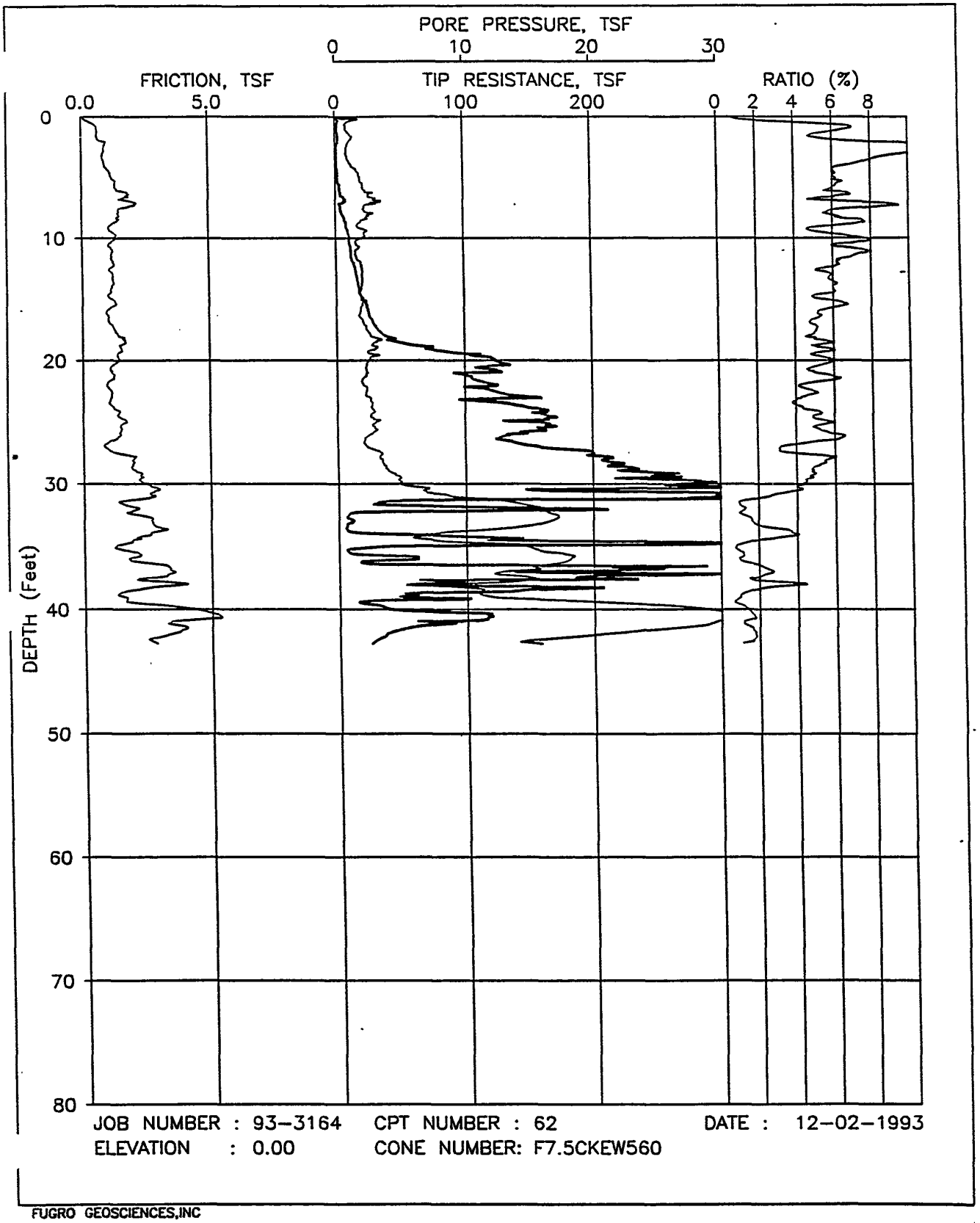
007756



JOB NUMBER : 93-3164 CPT NUMBER : 61 DATE : 12-02-1993
ELEVATION : 0.00 CONE NUMBER: F7.5CKEW560

FUGRO GEOSCIENCES,INC

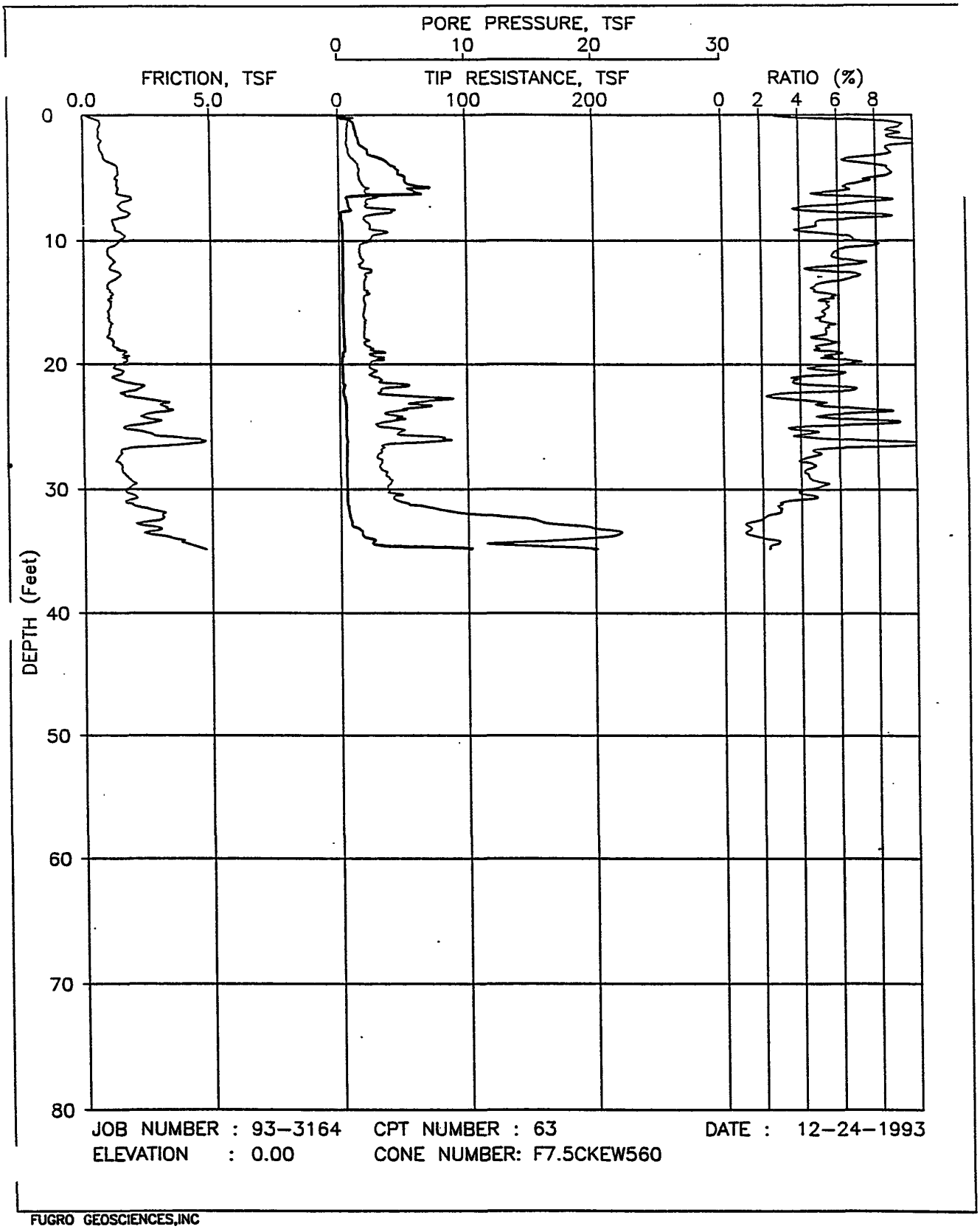
007757



JOB NUMBER : 93-3164 CPT NUMBER : 62 DATE : 12-02-1993
ELEVATION : 0.00 CONE NUMBER: F7.5CKEW560

FUGRO GEOSCIENCES,INC

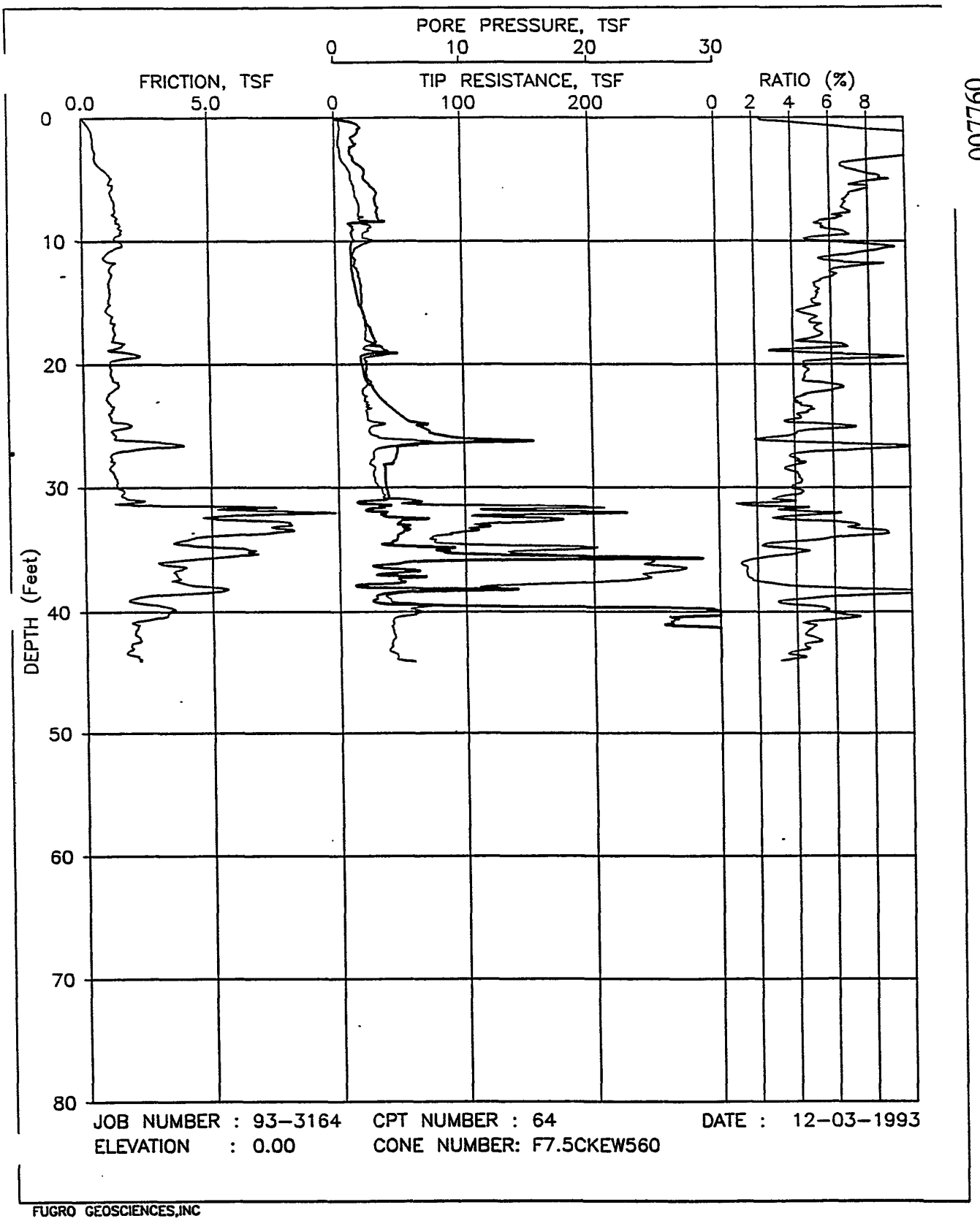
007758



JOB NUMBER : 93-3164 CPT NUMBER : 63 DATE : 12-24-1993
ELEVATION : 0.00 CONE NUMBER: F7.5CKEW560

FUGRO GEOSCIENCES,INC

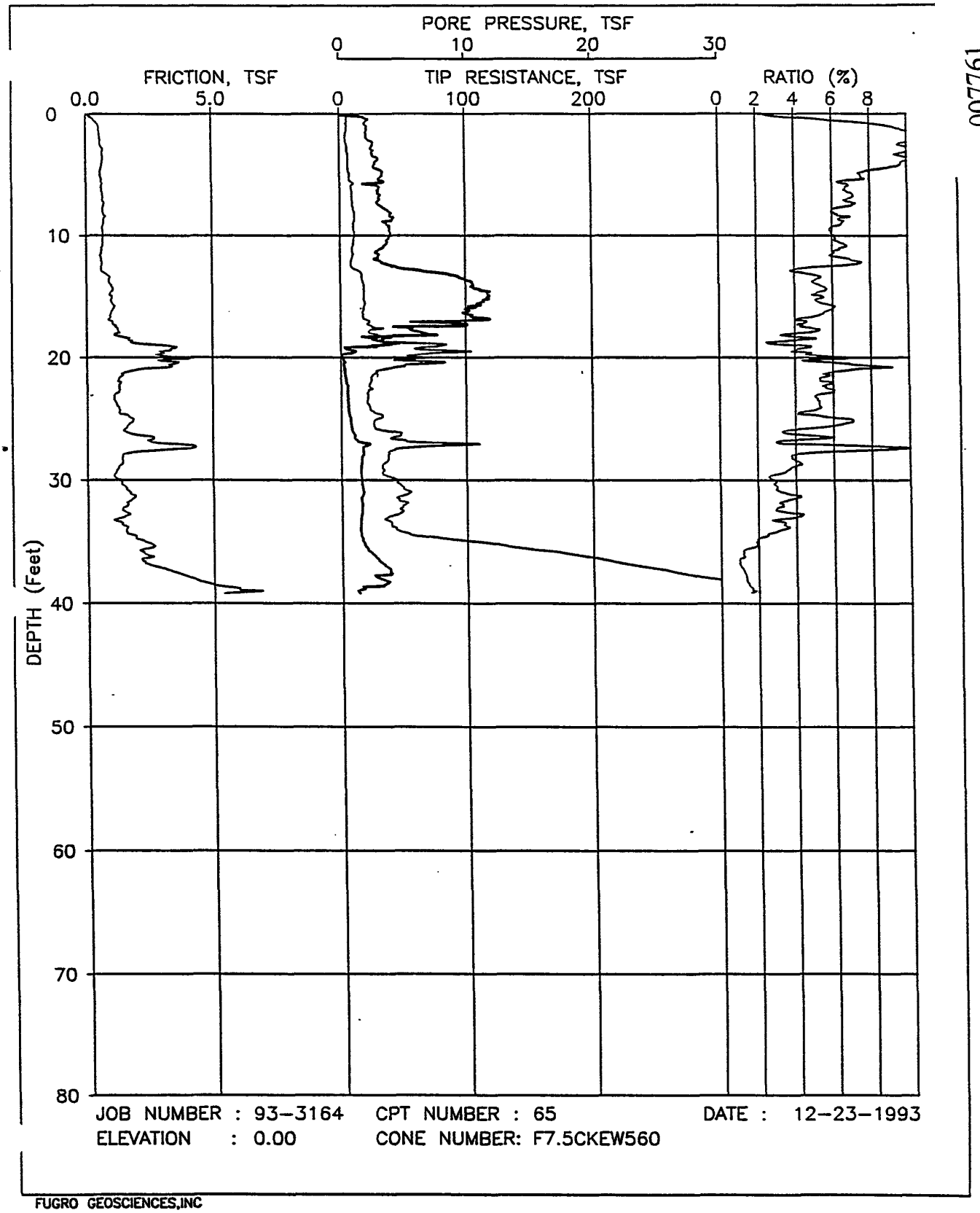
007759



JOB NUMBER : 93-3164 CPT NUMBER : 64 DATE : 12-03-1993
ELEVATION : 0.00 CONE NUMBER: F7.5CKEW560

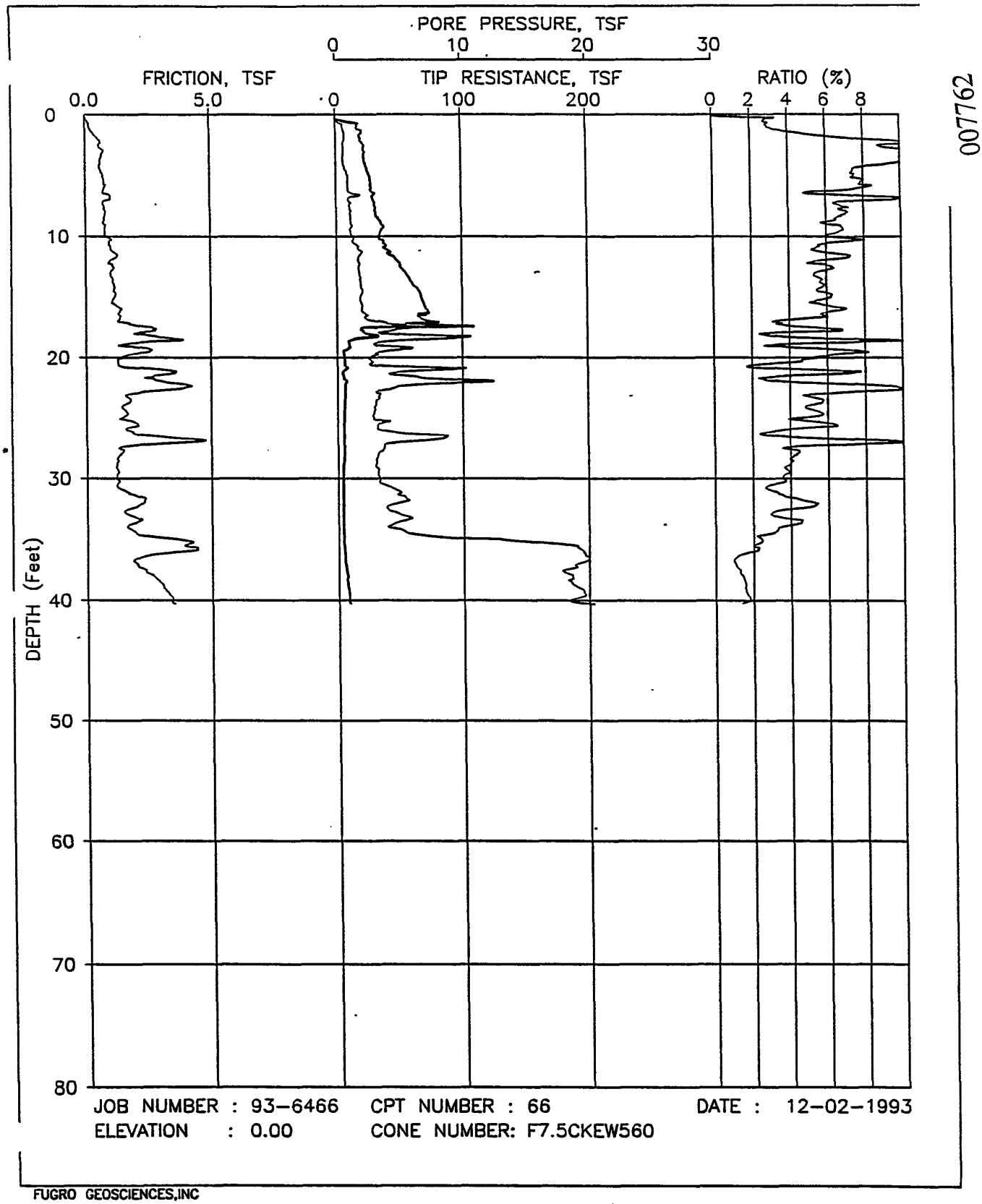
FUGRO GEOSCIENCES,INC

007760



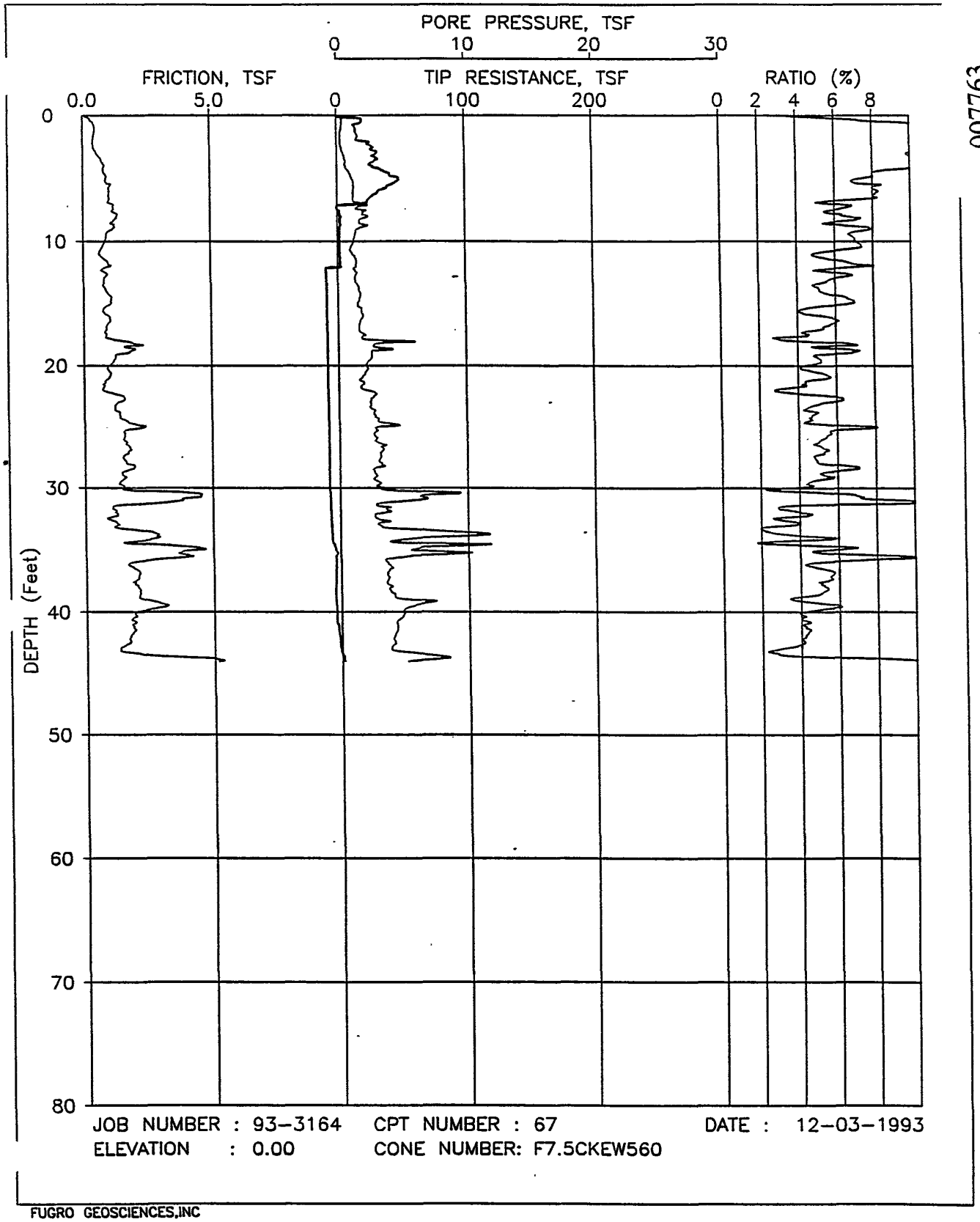
FUGRO GEOSCIENCES,INC

007761



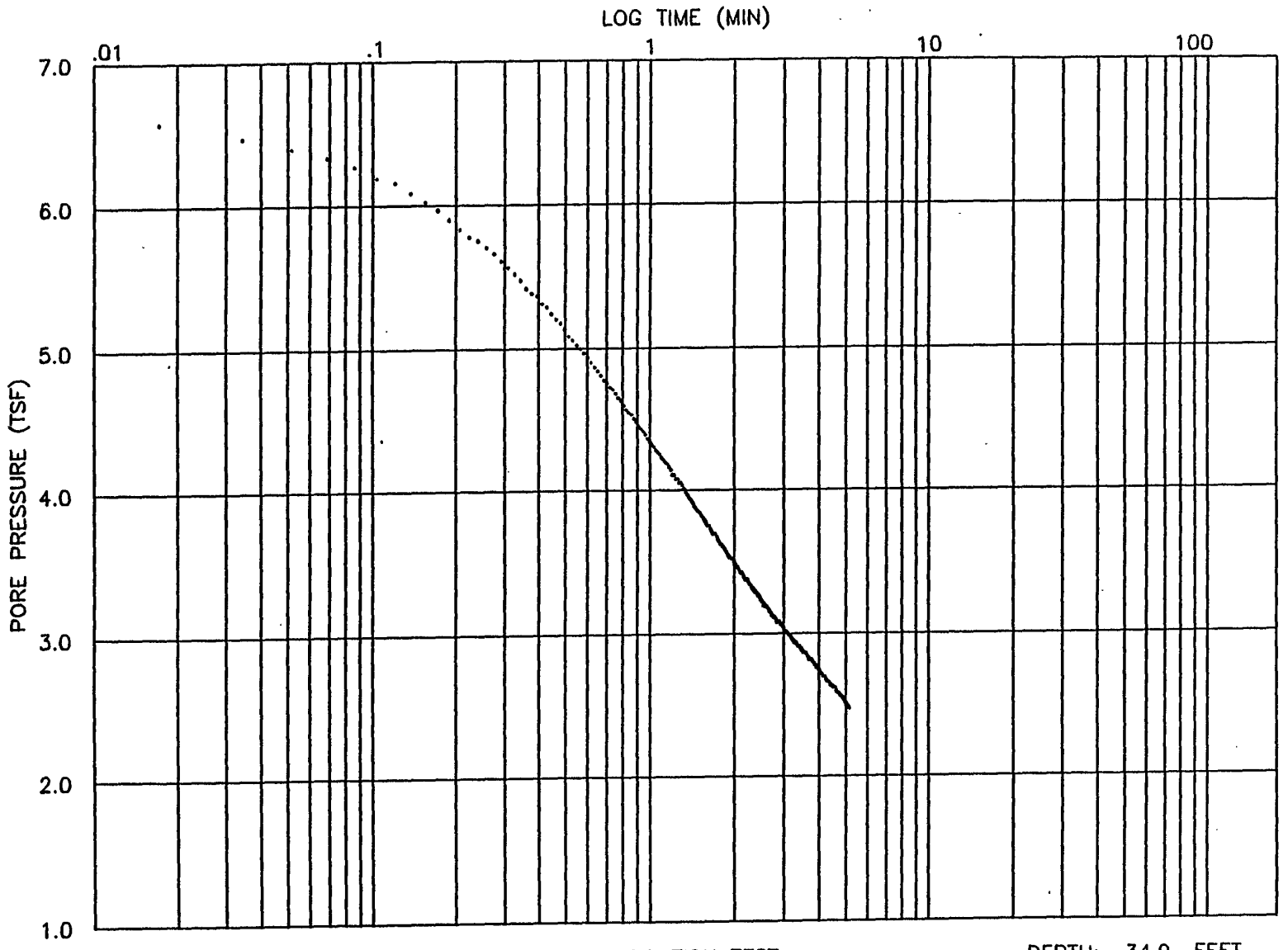
FUGRO GEOSCIENCES,INC

007762



FUGRO GEOSCIENCES,INC

007763



CPT NUMBER: 59
JOB NUMBER: 93-3164

DISSIPATION TEST

DEPTH: 34.9 FEET
DATE: 12-23-1993

FUGRO GEOSCIENCES, INC.

007764

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-1A
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SHELBY TUBES AND 5-FOOT SPLIT BARRELS
BORING LOCATION:	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/31/94 FINISH DATE: 2/4/94	TIME:
START TIME: 1530 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2-FOOT SHELBY TUBE			50%			BUFF TO LIGHT TAN STIFF SANDY CLAY (CL) - CLEAN FILL
					CLEAN FILL	
			50%			
						BLACK STIFF CLAY (CH) BLOCKY W/OCCASIONAL Fe NODULES
			30%	5		
						GRADING TO DARK GRAY
						GRADING TO GRAY W/OCCASIONAL CALCAREOUS NODULES BELOW 7 FEET
			55%			
					CH	
						GRADING TO LIGHT GRAY W/OCCASIONAL YELLOW IRON STAINING
			75%			
				10		LARGE CALCAREOUS NODULES AT 10 FEET
5-FOOT SPLIT BARREL			100%			GRADING TO LIGHT GRAY AND RED STIFF CLAY W/OCCASIONAL Fe AND CALCAREOUS NODULES BELOW 11 FEET
						CALCAREOUS BELOW 12 FEET W/OCCASIONAL CALCAREOUS ZONES
					CH	
						GRADING TO GRAY VERY STIFF CLAY W/YELLOW IRON STAINING THROUGHOUT AND OCCASIONAL Fe AND CALCAREOUS NODULES
				15		
			100%			
				20		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW1A

007765

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-1A
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007766

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SHELBY TUBES AND
BORING LOCATION:	5-FOOT SPLIT BARRELS
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/31/94 FINISH DATE: 2/4/94	TIME:
START TIME: 1530 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	LIGHT GRAY STIFF SLIGHTLY SANDY CLAY (CL) CALCAREOUS W/OCCASIONAL Fe AND CALCAREOUS NODULES
						CALCAREOUS ZONE AT 21.5 FEET AND 22 FEET
						ABUNDANT LARGE Fe IRONSTONES BELOW 23.5 FEET
				25		
			100%			
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL Fe NODULES
					CL	LIGHT GRAY AND RED STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING AND CALCAREOUS NODULES
				30		SILTY IN PART AT 29.5 FEET TO 31 FEET
			100%			BECOMING LIGHT GRAY W/YELLOW IRON STAINING; INCREASING SAND CONTENT TO APPROXIMATELY 25%
						GRADING TO LIGHT GRAY; MOIST
						CALCAREOUS ZONE AT 33.5 FEET, MODERATELY CEMENTED
						CALCAREOUS ZONE AT 34.5 FEET, MODERATELY CEMENTED
				35		SAND CONTENT APPROXIMATELY 40% AT 35 FEET
			100%		SC	LIGHT GRAY AND BROWN CLAYEY VERY FINE-GRAINED SAND (SC); WET
					SM	LIGHT GRAY SILTY VERY FINE-GRAINED SAND (SM)
						BECOMING LIGHT GRAY TO BUFF, DECREASE SILT CONTENT
				40		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW1A2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-1A
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 1/31/94 FINISH DATE: 2/4/94
START TIME: 1530 FINISH TIME: 1030

DRILLING METHOD:
HOLLOW STEM AUGERS

SAMPLING METHOD:
2-FOOT SHELBY TUBES AND
5-FOOT SPLIT BARRELS

SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

007767

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						LIGHT GRAY TO BUFF SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL Fe STAINING AND HARD CALCAREOUS ZONES
					SM	
						GRADING TO RED AND LIGHT GRAY; INCREASE SILT CONTENT
						SLIGHTLY CLAYEY AT 44.5 FEET
				45	CH	RED VERY STIFF CLAY (CH) CALCAREOUS
						BOTTOM OF BORING AT 45 FEET
				50		
				55		
				60		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW1A3

LOG OF BORING NUMBER MW-22
SHEET NUMBER 1 OF 3

LOCATION DIAGRAM:

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" ID HOLLOW STEM AUGER
PROJECT NUMBER: 44101724	W/5' CONTINUOUS SAMPLERS
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: 5 FOOT SPLIT
HOUSTON TX	BARREL TUBES
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/13/93 FINISH DATE: 1/13/93	TIME:
START TIME: 0900 FINISH TIME: 1400	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			25%		1.8	ROAD BASE – CRUSHED CONCRETE
						GREENISH GRAY MEDIUM STIFF CLAY (CH) WITH ABUNDANT RUBBLE AND FILL MATERIAL, POSSIBLE ROAD OR PARKING LOT BASE MATERIAL
						HARD SURFACE – POSSIBLE CONCRETE; APPROX. 2.5'
				5'		
			50%		CH	DARK GRAY VERY STIFF CLAY (CH) WITH FE NODULES AND CALCAREOUS NODULES THROUGHOUT
				10'		
			50%		10.5	
					ML	GREENISH BROWN CLAYEY SILT (ML) W/OCCASIONAL CALCAREOUS NODULES
					CH	GREENISH BROWN AND DARK GRAY MOTTLED CLAY (CH) WITH SILT LENSES AND ABUNDANT CALCAREOUS NODS, FE NODS AND SILTSTONES
						EVIDENCE OF BROWN MEDIUM GRAINED LOOSE SAND
					15.0	
			100%		CL	GRAY STIFF SILTY CLAY (CL) BLOCKY HEAVY FE STAINING W/OCCASIONAL CALCAREOUS NODULES
						GRADING TO YELLOW IRON STAINING INCREASE STIFFNESS LESS BLOCKY
					19.0	LIGHT GRAY STIFF SILTY CLAY (CL) DECREASE IRON STAINING W/OCCASIONAL CALCAREOUS NODS
				20'	CH	LIGHT GRAY STIFF CLAY (CH) SOME YELLOW IRON STAINING W/OCCASIONAL CALCAREOUS NODULES

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M22

007768

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-22
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007769

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" ID HOLLOW STEM AUGER
PROJECT NUMBER: 44101724	W/5' CONTINUOUS SAMPLERS
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: 5 FOOT SPLIT
HOUSTON TX	BARREL TUBES; NO SLEEVES
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/13/93 FINISH DATE: 1/13/93	TIME:
START TIME: 0900 FINISH TIME: 1400	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL						LIGHT GRAY VERY STIFF SLIGHTLY SILTY CLAY (CL) W/OCCASIONAL Fe AND CALCAREOUS NODULES
			100%			
				25'	CL	BECOMING VERY CALCAREOUS W/LARGE COBBLES INCREASE Fe NODULES
						BLACK AND RED IRONSTONE LENSE
			100%			
					29.0	
					CH	LIGHT GRAY VERY STIFF CLAY (CH) W/FE ZONES; VERY CALCAREOUS
				30'		
					31.0	LIGHT GRAY VERY STIFF SLIGHTLY SILTY CLAY (CL) W/FE IRON STAINING
			100%		CL	
						BECOMING SLIGHTLY SANDY/SILTY CLAY (CL)
			80%	35'		
					36.0	
					ML	TAN SILT (ML); SATURATED
						LIGHT GRAY STIFF SANDY CLAY (CL) W/RED FE STAINING; MOIST
					38.0	
						BUFF SILTY VERY FINE GRAINED SAND (SP/SM) OCCASIONAL YELLOW IRON STAINING; MOIST
						INCREASE SILT CONTENT TO APPROX. 35-40% BELOW 39'
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M222

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-22
SHEET NUMBER 3 OF 3

LOCATION DIAGRAM:

007770

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" ID HOLLOW STEM AUGER
PROJECT NUMBER: 44101724	W/5' CONTINUOUS SAMPLERS
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: 5 FOOT SPLIT
HOUSTON TX	BARREL TUBES; NO SLEEVES
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/13/93 FINISH DATE: 1/13/93	TIME:
START TIME: 0900 FINISH TIME: 1400	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2.5' SHELBY			100%		SP/SM	BUFF SILTY VERY FINE GRAINED SAND (SP/SM) W/OCCASIONAL YELLOW IRON STAINING WET
					ML	BUFF SANDY SILT (ML)
					SM	TAN SILTY VERY FINE GRAINED SAND (SM); WET
					43.0	
			90%		CH	LIGHT GRAY VERY STIFF CLAY (CH) W/FE STAINING THROUGHOUT
				45'		BOTTOM OF BORING @ 45 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL

1521M223

LOG OF BORING NUMBER MW-23
SHEET NUMBER 1 OF 3

LOCATION DIAGRAM:

007771

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION: GUYON PROPERTY

START DATE: 1/20/93 FINISH DATE: 1/20/93
START TIME: 1030 FINISH TIME: 1400

DRILLING METHOD: 4 1/4" ID HOLLOW STEM AUGERS
SAMPLING METHOD: SHELBY TUBES TO 15' – 5' SPLIT BARREL TO 41'
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2.5' SHELBY			35%		3"	3–INCHES OF ROAD BASE MATERIAL
						DARK GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
						AND Fe NODULES
			40%			
					CH	
				5'		
			55%			GRADING TO LIGHT GRAY W/YELLOW IRON STAINING
						BELOW 5 FEET
			85%			GRADING TO VERY STIFF LARGE CALCAREOUS NODULES
						BELOW 8 FEET
			85%	10'		
					11'	
						LIGHT GRAY STIFF SILTY CLAY (CL); WITH OCCASIONAL FE AND CALCAREOUS
						NODULES, FE STAINING THROUGHOUT
			80%			
5' SPLIT BARREL						GRADING TO SANDY CLAY (CL) BELOW 14 FEET
				15'		
			40%			GRADING TO VERY STIFF SANDY CLAY (CL) VERY CALCAREOUS
					CL	
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M23

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-23
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007772

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION: GUYON PROPERTY

START DATE: 1/20/93 FINISH DATE: 1/20/93
START TIME: 1030 FINISH TIME: 1400

DRILLING METHOD: 4 1/4" ID HOLLOW STEM AUGERS
SAMPLING METHOD: SHELBY TUBES TO 15' - 5' SPLIT BARREL TO 41'
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			100%			LIGHT GRAY VERY STIFF SANDY CLAY (CL) VERY CALCAREOUS W/OCCASIONAL FE NODULES AND STAINING
					CL	
			100%	25'		CALCAREOUS ZONES DECREASING BELOW 25 FEET
			55%	30'		DECREASING STIFFNESS, BECOMING SLIGHTLY SILTY
					32.5'	
					SM	LIGHT GRAY SILTY VERY FINE GRAINED SAND (SM) W/OCCASIONAL FE STAINING
			100%	35'		GRADING TO BUFF
					38'	
					SC/SM	LIGHT GRAY TO RED CLAYEY SILTY VERY FINE FINE GRAINED SAND (SC/SM). STRONG UNIDENTIFIED ODOR OBSERVED SULFUR COLORED NODULE IN SAMPLE
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M232

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-23
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007773

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" ID HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: SHELBY TUBES
HOUSTON TX	TO 15' – 5' SPLIT BARREL TO 41'
BORING LOCATION: GUYON PROPERTY	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/20/93 FINISH DATE: 1/20/93	TIME:
START TIME: 1030 FINISH TIME: 1400	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL					CH	LIGHT GRAY VERY STIFF CLAY (CH) WITH ABUNDANT FE STAINING
					41.0	AND SOME CALCAREOUS NODULES
						BOTTOM OF BORING @ 41'
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M233

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-24
SHEET NUMBER 1 OF 4
LOCATION DIAGRAM:

007774

CLIENT: SPTCO	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: SPLIT BARREL 2-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/18/93 FINISH DATE: 1/25/93	TIME:
START TIME: 1350 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
4' SPLIT SPOON			16%			RED VERY STIFF CLAY (CH) W/GRAY STREAKS
2' SPLIT SPOON						RED VERY STIFF CLAY (CH) W/OCCASIONAL GRAY STREAKS
				55'		THIN CALCAREOUS ZONE @ 54.5'
			100%			
						RED VERY STIFF CLAY (CH) W/OCCASIONAL GRAY STREAKS
						OCCASIONAL CALCAREOUS NODULES
			100%		CH	
						VERY LITTLE GRAY STREAKS
			90%			
				60'		RED VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
						VERY LITTLE GRAY CLAY STREAKS
			95$			
			75%			
			40%	65'	65'	RED VERY STIFF CLAY (CH) W/OCCASIONAL GRAY STREAKS
			65%			RED STIFF SILTY CLAY (CL)
					CL	
						RED SILTY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
			25%	70'		RED SILTY CLAY (CL) INCREASE STIFFNESS

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M24

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-24
SHEET NUMBER 2 OF 4
LOCATION DIAGRAM:

007775

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 1/21/93 FINISH DATE: 1/25/93
START TIME: 1350 FINISH TIME: 1030

DRILLING METHOD: ROTARY WASH
SAMPLING METHOD: SPLIT BARREL 2-FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON			100%		71.5	RED STIFF SILTY CLAY (CL)
						RED VERY STIFF CLAY (CH)
			100%			
			100%	75'		
			100%			
					CH	
			75%			
				80'		GRADING TO LIGHT GRAY
			95%			
			50%		83.0	
						GRAY STIFF SILTY CLAY (CL) WITH YELLOW IRON STAINING
			95%	85'		
			85%		CL	
					87.0	
			40%			
						GRAY SILTY VERY FINE GRAINED SAND (SM)
			25%	90'	SM	

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M24A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-24
SHEET NUMBER 3 OF 4
LOCATION DIAGRAM:

007776

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 1/21/93 FINISH DATE: 1/25/93
START TIME: 1350 FINISH TIME: 1030

DRILLING METHOD: ROTARY WASH
SAMPLING METHOD: 2-FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON			20%			
					91.5	
						GRAY VERY FINE GRAINED SAND (SP)
			10%			
			10%			
				95'		
			30%			
					SP	
			20%			
			20%	100'		
			20%		102.0	
						LIGHT GRAY FINE TO MEDIUM GRAINED SAND (SW) WELL GRADED
			20%			
			20%	105'		
			20%			
			5%		SW	GRADING TO LIGHT GRAY AND RED
				110'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M24B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-24
SHEET NUMBER 4 OF 4
LOCATION DIAGRAM:

007777

CLIENT: SPTCO	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: SPLIT BARREL 2-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/21/93 FINISH DATE: 1/25/93	TIME:
START TIME: 1350 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON						LIGHT GRAY TO RED FINE TO MEDIUM GRAINED SAND (SW)
					SW	
					114.0	
						RED VERY STIFF CLAY (CH) WITH OCCASIONAL CALCAREOUS NODULES
				115'	CH	
					116.0	BOTTOM OF BORING @ 116.0 FEET
				120'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M24C

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-25
SHEET NUMBER 1 OF 5
LOCATION DIAGRAM:

007778

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 2/18/93 FINISH DATE: 2/22/93
START TIME: 1400 FINISH TIME: 1030

DRILLING METHOD: ROTARY WASH
SAMPLING METHOD: 2 FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON						
				45'		RED VERY STIFF CLAY (CH) W/OCCASIONAL GRAY STREAKS
			80%			AND CALCAREOUS ZONES
					CH	
			80%			
			90%			
				50'		THIN SANDY CLAY LENSE @ 49.5 FEET
			90%			
			90%			RED VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS ZONES
			85%	55'		
					CH	
			60%			
				60'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M25

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-25
SHEET NUMBER 2 OF 5
LOCATION DIAGRAM:

007779

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 2/18/93 FINISH DATE: 2/22/93
START TIME: 1400 FINISH TIME: 1030

DRILLING METHOD: HOLLOW STEM AUGERS
SAMPLING METHOD: 2 FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON			70%			RED VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
					CH	
			65%			
					63.5	
					CL	RED STIFF SILTY CLAY (CL)
			65%			RED VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
				65'	CH	
						RED STIFF SILTY CLAY (CL)
			65%		CL	
			65%			
					69.0	
						RED VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
			65%	70'		
			100%			
			100%			LARGE CALCAREOUS NODULES @ 74.0 FEET
				75'	CH	
			65%			
			65%			GRAY STREAKS BELOW 77.0 FEET
				80'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M25A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-25
SHEET NUMBER 3 OF 5
LOCATION DIAGRAM:

007780

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON TX	2 FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 2/18/93 FINISH DATE: 2/22/93	TIME:
START TIME: 1400 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON			70%			RED VERY STIFF CLAY (CH) W/OCCASIONAL GRAY STREAKS AND CALCAREOUS NODULES
					CH	
			55%		83.0	
					CL	GRAY STIFF SILTY CLAY (CL) W/OLIVE STREAKS
			50%			
				85'		
			35%		86.5	
					SW	GRAY SILTY VERY FINE GRAINED SAND (SW)
			20%			
						RED VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODS
			20%	90'		
			20%			
			20%			
				95'		
			20%		96.0	
						GRAY VERY FINE GRAINED SAND (SP)
			20%			
			20%	100'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M25B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-25
SHEET NUMBER 4 OF 5
LOCATION DIAGRAM:

007781

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 2/18/93 FINISH DATE: 2/22/93
START TIME: 1400 FINISH TIME: 1030

DRILLING METHOD: HOLLOW STEM AUGERS
SAMPLING METHOD: 2 FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON			20%			GRAY VERY FINE GRAINED SAND (SP)
			20%		SW	
			20%	105'		
			20%			SAND COARSENING
			20%		SP	
			65%	110'		
					112.0	
			65%		SC 113.0	GRAY CLAYEY SAND (SC)
					CL 114.0	GRAY STIFF SANDY CLAY (CL)
			40%	115'	CH 115.0	RED VERY STIFF CLAY (CH)
			30%		SP	GRAY FINE GRAINED SAND (SP)
			55%	120'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M25C

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-25
SHEET NUMBER 5 OF 5
LOCATION DIAGRAM:

007782

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 2 FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 2/18/93 FINISH DATE: 2/22/93	TIME:
START TIME: 1400 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CH	RED VERY STIFF CLAY (CH) W/SOME OLIVE STREAKS
				125'		BOTTOM OF BORING @ 124.0 FEET

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M25D

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-27
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007783

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 1/15/93 FINISH DATE: 1/15/93
START TIME: 1415 FINISH TIME: 1700

DRILLING METHOD: 4 1/4" I.D. HOLLOW STEM AUGERS
SAMPLING METHOD: 5' SPLIT BARREL SAMPLERS AND 2.5' SHELBY TUBES
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2.5' SHELBY			70%		FILL	DARK GRAY SANDY CLAY (CL) FILL MATERIAL ROOTS IN UPPER 3"
						REDDISH BROWN SANDY CLAY (CL) FILL MATERIAL
					3.0	
			70%		CH	DARK GRAY STIFF CLAY (CH) W/OCCASIONAL FE NODULES
			70%	5'		
						GRADING TO GRAY VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS COBBLES AND NODULES, FE NODULES AND DARK GRAY STREAKS
			60%			
						INCREASE CALCAREOUS CONTENT AND FE STAINING BELOW 8.5'
			67%	10'	CH	BECOMING RED, BLOCKY AND VERY CALCAREOUS @ 9.9'
						GRADING TO LESS FE STAINING – GRAY VERY STIFF CLAY (CH) W/BLACK STRINGERS AND CALCAREOUS ZONE @ APPROX. 12' AND FE STAINING
					12.5	
			90%		CL	GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING AND OCCASIONAL FE NODULES
						INCREASE SAND CONTENT BELOW 14'
				15'	15.25	
5' SPLIT BARREL			90%		CH	GRAY TO LIGHT GRAY VERY STIFF CLAY (CH) VERY CALCAREOUS W/ABUNDANT CALCAREOUS NODULES OCCASIONAL YELLOW IRON STAINING FE NODULES. BLACK STRINGERS BELOW 18.5'
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M27

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-27
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007784

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 1/15/93 FINISH DATE: 1/15/93
START TIME: 1415 FINISH TIME: 1700

DRILLING METHOD: 4 1/4" I.D. HOLLOW STEM AUGERS
SAMPLING METHOD: 5' SPLIT BARREL SAMPLERS AND 2.5' SHELBY TUBES
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			75%			GRAY VERY STIFF CLAY (CH) VERY CALCAREOUS. CALCAREOUS NODULES THROUGHOUT; FE AND YELLOW STAINING TO 23.5'
					CH	SOME BLACK STAINING
					23.5	
						GRAY MEDIUM STIFF SANDY CLAY (CL) CALCAREOUS NODULES AND FE STAINING BELOW 24.5', BECOMMING CALCAREOUS
				25'		LARGE CALCAREOUS COBBLES BETWEEN 25 AND 26.5'
			60%			GRADING TO CALCAREOUS SANDY CLAY (CL) CALCAREOUS NODULES
					CL	ABSENT BECOMING SLIGHTLY SILTY, WET
						SAND CONTENT INCREASING BELOW 28'
					30.0	
			25%	30'		BROWN VERY FINE GRAINED SAND (SP)
					SP	
					34.75	
				35'	36.0	LIGHT GRAY SANDY/SILTY CLAY (CL) 40% SAND, FE STAINING
			100%			RED AND LIGHT GRAY MOTTLED CALCAREOUS CLAY (CH); BLOCKY
					37.0	
						BOTTOM OF BORING @ 37.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521M272

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28
SHEET NUMBER 1 OF 5
LOCATION DIAGRAM:

007785

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/20/93 FINISH DATE: 4/30/93
START TIME: 1715 FINISH TIME: 1500

DRILLING METHOD: ROTARY WASH
SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						SURFACE CASING TO 44 FEET
				45'		RED AND GRAY VERY STIFF CLAY (CH), SLIGHTLY CALCAREOUS
			50%			
NO SAMPLE DRILLED FROM 49 TO 50 FEET						
			50%	50'		
						GRADING TO RED W/OCCASIONAL GRAY STREAKS
			85%	55'		
			60%			
				60'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M28

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28
SHEET NUMBER 2 OF 5
LOCATION DIAGRAM:

007786

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/20/93 FINISH DATE: 4/30/93
START TIME: 1715 FINISH TIME: 1500

DRILLING METHOD:
SAMPLING METHOD:
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%			RED VERY STIFF CLAY (CH) W/OCCASIONAL GRAY STREAKS, CALCAREOUS
					CH	
			70%		64.0	
					CL	RED STIFF SILTY CLAY (CH)
				65'	65.0	RED VERY STIFF CLAY (CH), CALCAREOUS
					CH	
			70%		68.0	
					CJ	RED STIFF SLIGHTLY SILTY CLAY (CL)
NO SAMPLE DRILLED FROM 49 TO 50 FEET					69.0	RED VERY STIFF CLAY (CH), CALCAREOUS
				70'		
			90%		CH	
					73.0	
					CL	GRAY STIFF SANDY CLAY (CL)
						GRAY SILTY/CLAYEY VERY FINE GRAINED SAND (SM/SC)
			30%	75'		
					SM/SC	INTERBEDDED WITH THIN CLAY ZONES
			50%			
				80'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M28A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28
SHEET NUMBER 3 OF 5
LOCATION DIAGRAM:

007787

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 2 FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/20/93 FINISH DATE: 4/30/93	TIME:
START TIME: 1715 FINISH TIME: 1500	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON			50%		SM 81.0	GRAY SILTY VERY FINE GRAINED SAND (SM)
					SP	GRAYISH-BROWN TO BUF VERY FINE GRAINED SAND (SP)
			25%			
				85'		
						BECOMING COOL AND MOIST
			30%			
				90'	SP	BECOMING WET
			25%			
			50%	95'		WET
					SP	
			50%			
				100'		

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M28B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28
SHEET NUMBER 4 OF 5
LOCATION DIAGRAM:

007788

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD:
	2 FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 2/18/93 FINISH DATE: 2/22/93	TIME:
START TIME: 1400 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON					SC	GRAY CLAYEY VERY FINE GRAINED SAND (SC)
			70%			
					102.5	
					CH	GRAY STIFF CLAY (CH)
			90%		103.5	
					SW	GRAY FINE TO MEDIUM GRAINED SAND (SW) WET
			70%	105'		
			20%			
			40%			
				110'	SW	
			60%			
			60%			
			40%	115'		
			25%			
					SW	
			25%			
				120'		
			25%			

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M28C

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28
SHEET NUMBER 5 OF 5
LOCATION DIAGRAM:

007789

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON TX	2 FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 2/18/93 FINISH DATE: 2/22/93	TIME:
START TIME: 1400 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2' SPLIT SPOON					SW	BUFF FINE TO MEDIUM GRAINED SAND (SW)
					GW	BUFF GRAVELLY SAND (GW)
			60%			BLUEISH GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
					CH	
			90%			GRADING TO GRAY
				125'	125.0	
			90%			GRAY STIFF SANDY CLAY (CL)
						RED AND GRAY VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
			100%		128.0	
						BOTTOM OF BORING @ 128 FEET

GEOLOGIST: BRIAN VanCOMPERNOLLE
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724M28D

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28A
SHEET NUMBER 1 OF 4
LOCATION DIAGRAM:

007790

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 9/14/93 FINISH DATE: 9/16/93	TIME:
START TIME: 1630 FINISH TIME: 1710	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED VERY STIFF CLAY (CH); SLIGHTLY CALCAREOUS W/OCCASIONAL
			50%			GRAY STREAKS
			100%	55	CH	
						OCCASIONAL CALCAREOUS NODULES BELOW 55 FEET
			95%			
			60%			GRAY CALCAREOUS ZONE AT APPROXIMATELY 58.5 FEET
				60	60.0	
					ML	RED SOFT SLIGHTLY CLAYEY SILT (ML)
			85%		CL	RED MEDIUM STIFF SILTY CLAY (CL)
					CH	RED STIFF CLAY (CH); SLIGHTLY CALCAREOUS
			100%			LARGE CALCAREOUS NODULES AT 62 FEET
					ML	RED SOFT SLIGHTLY CLAYEY SILT (ML), MOIST
			100%	65		
					CL	RED STIFF SLIGHTLY SILTY CLAY (CL)
					66.25	
			100%		CH	RED VERY STIFF CLAY (CH), SLIGHTLY CALCAREOUS
			80%			
				70	69.75 SM	GRAY SOFT SILTY VERY FINE-GRAINED SAND (SM), MOIST

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW28AL

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28A
SHEET NUMBER 2 OF 4
LOCATION DIAGRAM:

007791

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 9/14/93 FINISH DATE: 9/16/93
START TIME: 1630 FINISH TIME: 1710

DRILLING METHOD: ROTARY WASH
SAMPLING METHOD:
2-FOOT SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	GRAY TO MEDIUM GRAY STIFF SLIGHTLY SANDY/SILTY CLAY (CL) W/OCCASIONAL Fe STAINING AND CALCAREOUS NODULES
					SC/SM	GRAY MEDIUM STIFF SILTY/CLAYEY VERY FINE-GRAINED SAND, MOIST
			65%		CL	GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
						CALCAREOUS ZONE AT APPROXIMATELY 73.75 FEET - (LARGE NODULES)
					74.25	
			80%	75	SM	BROWN SILTY VERY FINE-GRAINED SAND (SM), MOIST
			50%			
						GRADING TO BUFF, DRY
			50%			4-INCHES OF BROWN, MOIST SILTY SAND
						GRADING TO TAN BROWN, MOIST TO DRY
				80		
			40%			
						GRADING TO BUFF
			90%		GW	COARSE TO VERY COARSE GRAVEL, LOOSE, W/INTERSPERSED CLAY
					SP	OLIVE GREEN TO BUFF VERY FINE-GRAINED SAND (SP), DRY
			25%	85		GRADING TO BUFF, MOIST
			25%			
			25%		SC	OLIVE GREEN TO BROWN CLAYEY SAND (SC), MOIST, COOL
				90		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW28AL2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28A
SHEET NUMBER 3 OF 4
LOCATION DIAGRAM:

007792

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 9/14/93 FINISH DATE: 9/16/93	TIME:
START TIME: 1630 FINISH TIME: 1710	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			25%		SP	BUFF VERY FINE-GRAINED SAND (SP), MOIST COOL
NO SAMPLE RECOVERY FROM 92 - 94 FEET						
			25%	95	SC	BROWN FINE TO COARSE-GRAINED CLAYEY SAND (SC)
					SP	BUFF VERY FINE-GRAINED SAND (SP), WET
			25%			THIN CLAY LENSE AT 96 FEET
			25%			
			25%	100		
			40%			
					SM	BUFF TO BROWN SLIGHTLY SILTY SAND (SM) W/OCCASIONAL CALCAREOUS NODULES AND CLAY
			45%	105	CL	LIGHT GRAY MEDIUM STIFF SANDY CLAY (CL), WET
			30%		SC	GRAY SLIGHTLY CLAYEY MEDIUM-GRAINED SAND (SC)
			20%	110	SP	BUFF TO BROWN MEDIUM-GRAINED SAND (SP)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW28AL3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-28A
SHEET NUMBER 4 OF 4
LOCATION DIAGRAM:

007793

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 9/14/93 FINISH DATE: 9/16/93	TIME:
START TIME: 1630 FINISH TIME: 1710	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			25%		SP	BUFF TO BROWN MEDIUM-GRAINED SAND (SP)
					CH	GRAY STIFF CLAY LENSE W/SHELL FRAGMENTS
			25%		SP	GRAY MEDIUM-GRAINED SAND (SP)
			20%	115	CH	GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES THIN CALCAREOUS ZONE
			15%		SP	BUFF MEDIUM-GRAINED SAND (SP)
			20%		CH	BROWN STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
					SP	BUFF TO BROWN MEDIUM-GRAINED SAND (SP)
			100%	120	CH	LIGHT GRAY VERY STIFF CLAY (CH) W/YELLOW IRON STAINING AND OCCASIONAL CALCAREOUS NODULES THROUGHOUT
			100%			
			100%	125	CL	LIGHT GRAY STIFF SANDY/SILTY CLAY (CL)
			100%		CH	LIGHT GRAY VERY STIFF CLAY (CH) W/Fe STAINING GRADING TO RED W/OCCASIONAL LIGHT GRAY ZONES
				128		BOTTOM OF BORING AT 128 FEET. SAMPLED TO 128 FEET, BUT DID NOT DRILL DOWN BELOW 126 FEET TO MINIMIZE EXCESS BOREHOLE.
				130		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW28AL4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-29
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007794

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/16/93 FINISH DATE: 12/16/93	TIME:
START TIME: 0825 FINISH TIME: 1240	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		FILL 1.5	TAN SANDY SILTY CLAY (CL) W/LARGE ROCK FRAGMENTS – FILL MATERIAL
					CH	DARK GRAY STIFF CLAY (CH), BLOCKY
				5		
			100%			
						GRADING TO LIGHT GREEN AND YELLOW MOTTLED CLAY W/OCCASIONAL CALCAREOUS NODULES
				10		
			100%			
					12.5	LIGHT GREEN MEDIUM STIFF SANDY/SILTY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
						CALCAREOUS NODULES INCREASE BELOW 14 FEET
				15		
			100%			
						DECREASE SILT CONTENT AND CALCAREOUS NODULES BELOW 19 FEET
				20		

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW29L

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-29
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007795

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/16/93 FINISH DATE: 12/16/93	TIME:
START TIME: 0825 FINISH TIME: 1240	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	LIGHT GREEN MEDIUM STIFF SANDY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
					22.0	
					CH	LIGHT GREEN STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES
				25	25.0	
			100%			LIGHT GREEN MEDIUM STIFF SANDY/SILTY CLAY (CL) W/Fe STAINING
				30	30.25	
			100%		SM	LIGHT GREEN AND RED SILTY VERY FINE-GRAINED SAND (SM) W/TRACE OF CLAY
						HARD DRILLING BELOW 32 FEET W/GRAVEL SIZED CALCAREOUS NODULES
						SATURATED AT 32.5 FEET
				35		CLAY AND CALCAREOUS FRAGMENTS
			60%			GRADING TO RED
						MODERATELY CEMENTED SILTY SAND BELOW 39 FEET
				40		

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW29L2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-29
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007796

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/16/93 FINISH DATE: 12/16/93	TIME:
START TIME: 0825 FINISH TIME: 1240	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%			RED SILTY VERY FINE-GRAINED SAND (SM), W/PARTIALLY TO WELL CEMENTED SAND; GRAIN SIZE INCREASE
						GRADING TO TAN AND RED W/OCCASIONAL CALCAREOUS NODULES THROUGHOUT
					SM	
				45		SLIGHT INCREASE IN GRAIN SIZE BELOW 44 FEET OCCASIONAL CEMENTED SAND LENSES
			100%			
					49.25	
				50		RED VERY STIFF CLAY (CH)
					CH	
				55		BOTTOM OF BORING AT 54 FEET

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW29L3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-30
SHEET NUMBER 1 OF 4
LOCATION DIAGRAM:

007797

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/17/93 FINISH DATE: 12/18/93	TIME:
START TIME: 0900 FINISH TIME: 0930	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			90%		CH	GRAY TO GREENISH GRAY STIFF TO MEDIUM STIFF CLAY (CH), BLOCKY IN PART
						GRADING TO GRAY STIFF CLAY (CH)
			100%	5	6.0	
					SM 7.0	TAN SILTY VERY FINE TO FINE-GRAINED SAND (SM)
					CH 9.0	GREEN, GRAY AND ORANGE MOTTLED VERY STIFF CLAY (CH) BLOCKY IN PART
			100%	10	SM 14.2	TAN SILTY VERY FINE-GRAINED SAND (SM) GRAY NODULES THROUGHOUT
			100%	15	CL	GREEN AND TAN MOTTLED VERY STIFF SILTY CLAY (CL) BLOCKY IN PART
						CALCAREOUS NODULES (15%) AT 17.5 TO 19 FEET
				20		

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW30L

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-30
SHEET NUMBER 2 OF 4
LOCATION DIAGRAM:

007798

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/17/93 FINISH DATE: 12/18/93	TIME:
START TIME: 0900 FINISH TIME: 0930	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			90%		CL	GREEN VERY STIFF SLIGHTLY SILTY CLAY (CL) W/OCCASIONAL RED CLAY NODULES, CALCAREOUS
					24.0	
			100%	25	CH	GREEN AND RED VERY STIFF CLAY (CH) W/YELLOW IRON STAINING
					27.5	
			100%	30	CL	GREEN AND YELLOW MEDIUM STIFF SANDY CLAY (CL) INCREASE SAND AND SILT CONTENT
			75%	35		LIGHT GREEN AND RED SILTY VERY FINE-GRAINED SANDY CLAY (CL) SATURATED AT 35.5 FEET
					37.5	
				40	SM	RED SILTY VERY FINE TO FINE-GRAINED GRAVELLY SAND

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW30L2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-30
SHEET NUMBER 3 OF 4
LOCATION DIAGRAM:

007799

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/17/93 FINISH DATE: 12/18/93	TIME:
START TIME: 0900 FINISH TIME: 0930	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED SILTY VERY FINE TO FINE-GRAINED GRAVELLY SAND W/OCCASIONAL
			100%			HARD CEMENTED SAND LENSES
					SM	
						TAN TO RED SILTY VERY FINE GRAINED SAND (SM) W/OCCASIONAL
			100%			CALCAREOUS NODULES AND GREEN CLAY NODULES, CEMENTED
					43.5	SAND FRAGMENTS
					ML	RED VERY FINE-GRAINED SANDY SILT (ML)
			50%	45		RED TO TAN SANDY SILT AND SILTY VERY FINE-GRAINED SAND (SM/ML)
						OCCASIONAL CALCAREOUS NODULES AND CEMENTED SAND FRAGMENTS
					SM/ML	
					48.5	
					CL	RED SILTY/SANDY MEDIUM STIFF CLAY LENSE
			80%	50		RED SILTY VERY FINE-GRAINED SAND (SM)
					SM	
				55		
					59.0	
				60		RED STIFF SANDY/CLAYEY SILT (ML) LOOSING MOISTURE

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW30L3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-30
SHEET NUMBER 4 OF 4
LOCATION DIAGRAM:

007800

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/17/93 FINISH DATE: 12/18/93	TIME:
START TIME: 0900 FINISH TIME: 0930	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED SANDY SILT (ML) NO CLAY NOTED W/OCCASIONAL CALCAREOUS STRINGERS, MOIST
					ML	
				65		
					67.0	
						RED AND GRAY VERY STIFF CLAY (CH)
					CH	
					69.0	
						BOTTOM OF BORING AT 69 FEET
				70		

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

MW30L4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW31A
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007801

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	ROTARY WASH
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/12/94 FINISH DATE: 1/13/94	TIME:
START TIME: 0930 FINISH TIME: 1020	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CH	RED STIFF CLAY (CH); SOME GRAVEL FRAGMENTS RECOVERED WITH SAMPLE
			80%	65		OCCASIONAL CALCAREOUS NODULES
			100%			
			100%		CH/CL	RED MEDIUM STIFF TO STIFF INTERBEDDED CLAY AND SILTY CLAY (CH/CL)
				70		
			60%		CH	RED VERY STIFF CLAY (CH)
					72.25	
			90%		SM	LIGHT GRAY SILTY VERY FINE-GRAINED SAND (SW)
			90%	75	CL	LIGHT GRAY MEDIUM STIFF SANDY/SILTY CLAY (CL)
			75%			OCCASIONAL YELLOW IRON STAINING BELOW 76 FEET
			30%			
				80		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31AL1

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW31A
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007802

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	ROTARY WASH
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/12/94 FINISH DATE: 1/13/94	TIME:
START TIME: 0930 FINISH TIME: 1020	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			16%		CL	LIGHT GRAY MEDIUM STIFF SANDY CLAY (CL)
					SM	BUFF SILTY VERY FINE-GRAINED SAND (SM)
			40%		SP	BUFF TO YELLOW-BROWN FINE-GRAINED SAND (SP)
			50%	85		
			25%			
			30%			
				90		
			30%		SM	LIGHT BLUISH-GRAY SILTY VERY FINE-GRAINED SAND (SM)
					SP	BUFF FINE-GRAINED SAND (SP)
			50%			
			40%	95		
			30%			
			50%			
				100	CL	GRAY MEDIUM STIFF SANDY CLAY (CL)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31AL2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW31A
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007803

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	ROTARY WASH
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/12/94 FINISH DATE: 1/13/94	TIME:
START TIME: 0930 FINISH TIME: 1020	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			50%		CL	DARK GRAY MEDIUM STIFF SANDY CLAY (CL)
					SP	GRAY TO BUFF VERY FINE-GRAINED SAND (SP)
			300%			
			20%	105		BECOMING STIFF
			25%			BECOMING REDDISH-BROWN
						GRADING TO GRAY MEDIUM-GRAINED SAND
			50%		SC/CL	DARK GRAY CLAYEY MEDIUM-GRAINED SAND (SC) AND SANDY CLAY INTERBEDDED
				110	SP	BUFF TO GRAY MEDIUM-GRAINED SAND (SP)
			15%			
			75%		CH	BLUISH-GRAY STIFF CLAY (CH)
			75%	115		BECOMING RED AND GRAY MOTTLED VERY STIFF CLAY (CH)
			90%			
						BOTTOM OF BORING AT 118 FEET
				120		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31AL3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-31
SHEET NUMBER 1 OF 4
LOCATION DIAGRAM:

007804

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/22/93 FINISH DATE: 12/27/93	TIME:
START TIME: 0930 FINISH TIME: 1630	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
				55		
			100%		CH	RED AND GRAY VERY STIFF CLAY (CH)
						(55 TO 61 FEET LOGGED ON 12/20/93)
			90%			
			100%	60		
			95%			
			100%	65	CL	RED MEDIUM STIFF SILTY CLAY (CL)
					CH	RED VERY STIFF CLAY (CH) BLOCKY W/OCCASIONAL CALCAREOUS NODULES SLIGHTLY SILTY AT 65.75 FEET
			80%			
						NO CALCAREOUS NODULES BELOW 67.5 FEET
			100%			
				70		3-INCHES SOFT SILTY CLAY (CL) AT 70 FEET; MOIST

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31L

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-31
SHEET NUMBER 2 OF 4
LOCATION DIAGRAM:

007805

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	ROTARY WASH
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/22/93 FINISH DATE: 12/27/93	TIME:
START TIME: 0930 FINISH TIME: 1630	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			75%		CH	RED VERY STIFF CLAY (CH)
			0%			NO RECOVERY BETWEEN 72 AND 74 FEET
			90%	75	CL	BLUISH GRAY STIFF SANDY CLAY (CL)
						SAND CONTENT INCREASING W/OCCASIONAL YELLOW IRON STAINING
			30%			
						NO YELLOW IRON STAINING BELOW 78 FEET
			30%			
				80		
			25%			BECOMING TAN TO LIGHT GRAY W/THIN BROWN FINE-GRAINED SAND LENSES, DAMP
			50%		SM	YELLOW-BROWN SLIGHTLY SILTY FINE-GRAINED SAND (SM), DAMP
			30%	85		
					SC	LIGHT GRAY AND YELLOW-BROWN CLAYEY FINE-GRAINED SAND (SC), DAMP
			40%		SP	BROWN MEDIUM-GRAINED SAND (SP), WET
					SC	LIGHT GRAY SLIGHTLY CLAYEY FINE-GRAINED SAND (SC), DRY
			40%		SP	REDDISH-BROWN MEDIUM-GRAINED SAND (SP) W/YELLOW IRON STAINING, MOIST
				90		GRADING TO BUFF

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31L2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-31
SHEET NUMBER 3 OF 4
LOCATION DIAGRAM:

007806

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: ROTARY WASH
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/22/93 FINISH DATE: 12/27/93	TIME:
START TIME: 0930 FINISH TIME: 1630	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			40%		SC	REDDISH-BROWN SLIGHTLY CLAYEY FINE-GRAINED SAND (SC), MOIST
						GRADING TO GRAY; MOIST
			25%		SP	BROWN FINE-GRAINED SAND (SP), MOIST TO WET
			40%	95		WET AT 96 FEET
			10%			GRADING TO REDDISH-BROWN
			10%			
			30%	100		
			30%			GRADING TO BROWN AND LIGHT GRAY
			25%	105		
			5%			BROWN AND LIGHT GRAY SAND (SP); 5% RECOVERY AFTER 2 ATTEMPTS BLOW COUNTS ON SAMPLER INDICATED SAND LITHOLOGY
			30%		SP	REDDISH-BROWN FINE-GRAINED SAND (SP)
				110	CL	DARK GRAY MEDIUM STIFF SANDY CLAY (CL) HIGH SAND CONTENT, MOIST

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31L3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-31
SHEET NUMBER 4 OF 4
LOCATION DIAGRAM:

007807

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 12/22/93 FINISH DATE: 12/27/93
START TIME: 0930 FINISH TIME: 1630

DRILLING METHOD:
ROTARY WASH

SAMPLING METHOD:
2-FOOT SPLIT SPOON

SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CL	DARK GRAY MEDIUM STIFF SANDY CLAY (CL)
					SP	DARK GRAY AND BROWN COARSE-GRAINED SAND (SP) W/OCCASIONAL THIN CLAY CLAY STRINGERS
					SP	GRADING TO BROWN MEDIUM-GRAINED SAND (SP)
				115	SP	GRADING TO DARK GRAY W/THIN CLAY STRINGERS
						BLUISH GRAY AND RED VERY STIFF CLAY (CH)
						CALCAREOUS ZONES AT 118.5 AND 119 FEET
				120		NO CALCAREOUS NODULES BELOW 120 FEET
						BOTTOM OF BORING AT 120 FEET; SAMPLED TO 122 FEET
				125		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW31L4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-32
SHEET NUMBER 1 OF 4

LOCATION DIAGRAM:

007808

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: WET ROTARY
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/7/93 FINISH DATE: 12/11/93	TIME:
START TIME: 0945 FINISH TIME: 1115	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			90%		CH	RED VERY STIFF CLAY (CH) W/GRAY AND LIGHT GRAY CALCAREOUS STRINGERS. BLOCKY IN PART
			100%			
			100%	55		
			100%			
			100%			
			60%	60		
			60%		CL	RED SILTY CLAY (CL)
			100%	65	CH	RED STIFF CLAY (CH)
			100%		CL	RED MEDIUM STIFF SILTY CLAY (CL)
			100%		ML	RED CLAYEY SILT (ML)
			100%	70	CH	RED STIFF CLAY (CH) W/GREEN TO BROWN CALCAREOUS STRINGERS

GEOLOGIST: ROBERT COFFMAN & JOHN NORMAN

CHECKED BY: DATE:

DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW32L

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-32
SHEET NUMBER 2 OF 4
LOCATION DIAGRAM:

007809

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: WET ROTARY
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/7/93 FINISH DATE: 12/11/93	TIME:
START TIME: 0945 FINISH TIME: 1115	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			60%		CH	RED STIFF CLAY (CH) W/CALCAREOUS STRINGERS
					ML	LIGHT BLUISH GRAY SANDY SILT W/TRACE OF CLAY, MOIST
			60%		CL	LIGHT BLUISH GRAY MEDIUM STIFF SILTY CLAY (CL) TRACE OF SAND
			80%	75		
			60%		ML	BROWN TO TAN SANDY SILT (ML) W/TRACE OF CLAY
						GRADING TO BLUISH GRAY
			80%		SM	LIGHT BROWN SILTY VERY FINE-GRAINED SAND (SM), MOIST TRACE OF PARTIALLY CEMENTED SAND NODULES
				80		OCCASIONAL BLUE-GRAY STRINGERS
			70%			
						DECREASING GRAIN SIZE
			50%			
			25%	85		
						OCCASIONAL COARSE SIZE PARTIALLY CEMENTED SAND NODULES BECOMING LIGHT GRAY
			30%			
			25%			
				90		

GEOLOGIST: ROBERT COFFMAN & JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW32L2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-32
SHEET NUMBER 3 OF 4
LOCATION DIAGRAM:

007810

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: WET ROTARY
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/7/93 FINISH DATE: 12/11/93	TIME:
START TIME: 0945 FINISH TIME: 1115	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			25%		SM	LIGHT BROWN SILTY VERY FINE-GRAINED SAND (SM), MOIST
			25%			
			50%	95		
			25%			GRADING TO TAN; SLIGHT INCREASE IN GRAIN SIZE W/OCCASIONAL LIGHT GRAY CLAY STRINGERS, MOISTURE APPEARS TO INCREASE
			25%		SM	
			25%	100		GRADING TO BLUISH-GRAY, VERY FINE-GRAINED SAND
			25%			SLIGHT INCREASE IN GRAIN SIZE AGAIN; MOISTURE INCREASING
			30%	105	SP	LIGHT BLUISH-GRAY FINE-GRAINED SAND (SP), WET
			25%			OCCASIONAL CLAY STRINGERS BELOW 107 FEET
			25%	110		

GEOLOGIST: ROBERT COFFMAN & JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW32L3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER MW-32
SHEET NUMBER 4 OF 4
LOCATION DIAGRAM:

007811

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	WET ROTARY
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/7/93 FINISH DATE: 12/11/93	TIME:
START TIME: 0945 FINISH TIME: 1115	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SP	LIGHT GRAY TO TAN VERY FINE TO FINE-GRAINED SAND (SP)
						BECOMING FINE-GRAINED W/OCCASIONAL CLAY STRINGERS
						BECOMING REDDISH-BROWN
				115		
					SM	LIGHT BLUISH-GRAY TO TAN SILTY FINE-GRAINED SAND (SM)
						INCREASING SILT CONTENT
				120	CH	LIGHT BLUISH-GRAY STIFF CLAY (CH)
				125		
						BOTTOM OF BORING AT 126 FEET
				130		

GEOLOGIST: ROBERT COFFMAN & JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES, INC.

MW32L4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER EX-P1
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007812

CLIENT: SPTCO	DRILLING METHOD: 4 1/4" I.D. HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5' SPLIT BARREL SAMPLERS (4" I.D.)
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/15/93 FINISH DATE:	TIME:
START TIME: 1415 FINISH TIME:	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			25%		1.25	1 FOOT 3-INCHES OF ROAD BASE CRUSHED CONCRETE
					CAP	REDDISH BROWN MEDIUM STIFF CLAY (CH) OCCASIONAL CALCAREOUS NODULES, PLASTIC LINER @ 2.5'
					2.0	
						BLACK STIFF CLAY (CH) W/STRONG UNIDENTIFIED ODOR
			50%	5'	CH	ODOR W/OCCASIONAL FE NODULES
						GRADING TO LIGHT GRAY W/ABUNDANT CALCAREOUS NODULES AND OCCASIONAL FE STAINING
			100%	10'		GRADING TO LIGHT GRAY NO CALCAREOUS NODULES
					12.0	SILTY CLAY (CL)
					12.5	CLAYEY SILT (ML)
					13.0	LIGHT GRAY SANDY SILTY CLAY (CL)
					CL	
					14.5	
			30%	15'		LIGHT GRAY FINE GRAINED SAND (SP)
						OCCASIONAL YELLOW IRON STAINING
					SP	
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521EXP

LOG OF BORING NUMBER EX-P1
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007813

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: 4 1/4" I.D. HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5' SPLIT BARREL SAMPLERS (4" I.D.)
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/14/93 FINISH DATE: 1/15/93	TIME:
START TIME: 1401 FINISH TIME: 0920	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			100%		SP	LIGHT GRAY VERY FINE GRAINED SAND (SP) W/OCCASIONAL YELLOW IRON STAINING
					24.5	
			100%	25'	CH	GRAY VERY STIFF CLAY (CH) W/CALCAREOUS ZONES ABUNDANT Fe AND YELLOW IRON STAINING
			50%	30'	30.0 CL	GRAY VERY STIFF SANDY CLAY (CL) YELLOW STAINING THROUGHOUT
			75%	35'	35.0 SP	LIGHT GRAY TO BUFF FINE GRAINED SAND (SP) OCCASIONAL YELLOW IRON STAINING
					37.5 CL	LIGHT GRAY SANDY CLAY (CL) W/SOME YELLOW IRON STAINING
					39.0 SC	LIGHT GRAY CLAYEY SAND (SC) OCCASIONAL YELLOW IRON STAINING FINE GRAINED SAND TO 40.5'
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521EXP2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER EX-P1
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007814

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON TX
BORING LOCATION:

START DATE: 1/14/93 FINISH DATE: 1/15/93
START TIME: 1401 FINISH TIME: 0920

DRILLING METHOD: 4 1/4" I.D. HOLLOW STEM AUGERS
SAMPLING METHOD: 5' SPLIT BARREL
SAMPLERS (4" I.D.)
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			100%		40.5	
						LIGHT GRAY CALCAREOUS CLAY (CH) HEAVY FE STAINING
						APPEARS TO HAVE CALCAREOUS VEINS
					CH	
					45.0	
				45'		BOTTOM OF BORING @ 45 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521EXP3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER P-4
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007815

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" ID HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: 5' SPLIT BARREL
HOUSTON TX	SAMPLERS (4" I.D.) AND 2.5' SHELBY
BORING LOCATION:	TUBES
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/18/93 FINISH DATE: 1/18/93	TIME:
START TIME: 1300 FINISH TIME: 1530	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2.5' SHELBY			75%			ROAD BASE – CRUSHED CONCRETE
					1.25	RED BROWN AND TAN MOTTLED MEDIUM STIFF SANDY CLAY (CL)
					CAP	PLASTIC LINER @ 2.5'
					CH	BLACK STIFF CLAY (CH) W/UNIDENTIFIED ODOR
			67%			
				5'		GRADING TO DARK GRAY STIFF CALY (CH) W/OCCASIONAL FE NODULES
			67%			AND CALCAREOUS NODULES; UNIDENTIFIED ODOR
						GRADING TO GRAY W/INCREASED CALCAREOUS NODULES AND OCCASIONAL
			67%			FE NODULES
				10'		
					11.0	
			67%		CL	GRAY VERY STIFF SANDY CLAY (CL) W/CALCAREOUS NODULES AND
						OCCASIONAL FE NODULES AND YELLOW IRON STAINING
			90%			INCREASING SAND CONTENT TO APPROX. 20% SOME BLACK STRINGERS
5' SPLIT BARREL					15.0	
				15'	SC	BUFF TO LIGHT GRAY CLAYEY SAND (SC) W/YELLOW IRON STAINING
			25%		16.0	
					SP	BUFF TO LIGHT GRAY VERY FINE GRAINED SAND (SP)
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521P4

LOG OF BORING NUMBER P-4
SHEET NUMBER 2 OF 2

LOCATION DIAGRAM:

007816

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: 5' SPLIT BARREL
HOUSTON TX	SAMPLERS (4" I.D.)
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/18/93 FINISH DATE: 1/18/93	TIME:
START TIME: 1300 FINISH TIME: 1530	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
5' SPLIT BARREL			50%			BUFF VERY FINE GRAINED SAND (SP) W/OCCASIONAL LIGHT GRAY CLAY NODULES, WET
					SP	
					25.0	
2.5' SHELBY			75%	25'	CL	REDDISH BROWN SANDY CLAY (CL) MEDIUM STIFF
					26.0	
					CH	LIGHT GRAY VERY STIFF CLAY (CH) W/FE STAINING THROUGHOUT VERTICAL LIGHT GRAY SAND STRINGERS AND CALCAREOUS NODULES
					27.5	
						BOTTOM OF BORING @ 27.5 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521P42

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER P-5
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007817

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 1/19/93 FINISH DATE: 1/19/93
START TIME: 0810 FINISH TIME: 0935

DRILLING METHOD: 4 1/4" ID HOLLOW STEM AUGERS
SAMPLING METHOD: 5' SPLIT BARREL SAMPLERS (4" I.D.) AND 2.5' SHELBY TUBES
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2.5' SHELBY			67%		ROAD BASE 1.25	ROAD BASE – CRUSHED CONCRETE
					CAP 2.5	RED BROWN AND TAN MOTTLED MEDIUM STIFF SANDY CLAY (CL) PLASTIC LINER @ 2.5'; GRADING TO DARK GRAY
			67%		CH	BLACK MEDIUM STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES; ORGANIC MATERIAL @ 4.0'; GRADING TO STIFF; UNIDENTIFIED ODOR
				5'		
			55%			
			55%			DARK GRAY STIFF CLAY (CH) W/OCCASIONAL FE NODULES AND CALCAREOUS NODULES; UNIDENTIFIED ODOR
				10'	10.0	
			67%		CL	GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL FE NODULES AND CALCAREOUS NODULES; UNIDENTIFIED ODOR; CALCAREOUS ZONES W/YELLOW IRON STAINING; SILTY AT BASE
			90%			LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL FE AND CALCAREOUS NODULES, YELLOW STAIN UNIDENTIFIED ODOR; INCREASING SAND CONTENT WITH DEPTH; SOME BLACK STRINGERS
				15'		
			25%		16.0	
5' SPLIT BARREL					SC/SP	BUFF TO LIGHT GRAY CLAYEY SAND (SC) GRADING TO LIGHT GRAY SAND (SP) W/LIGHT GRAY CLAY NODULES; YELLOW IRON STAINING BELOW 17'
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521P5

LOG OF BORING NUMBER P-5
SHEET NUMBER 2 OF 2

LOCATION DIAGRAM:

007818

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL GW RD	4 1/4" ID HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD: 5' SPLIT BARREL
HOUSTON TX	SAMPLERS (4" I.D.) AND 2.5' SHELBY
BORING LOCATION:	TUBES
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 1/19/93 FINISH DATE: 1/19/93	TIME:
START TIME: 0810 FINISH TIME: 0935	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
2.5' SHELBY			07%			BUFF TO LIGHT GRAY SAND (SP) OCCASIONAL YELLOW IRON STAINING
						W/LIGHT GRAY CLAY NODULES
					SP	
					23.0	
			67%		CH	
					24.0	REDDISH BROWN MEDIUM STIFF CLAY (CH)
						BOTTOM OF BORING @ 24 FEET
				25'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1521P52

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-1S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007819

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: .CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/3/94 FINISH DATE: 3/4/94	TIME:
START TIME: 1055 FINISH TIME: 0843	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		FILL 1.5	BUFF TO TAN STIFF SANDY CLAY (CL), CLEAN FILL MATERIAL
					CH	BLACK MEDIUM STIFF CLAY (CL) W/ROOT & OCCASIONAL Fe NODULES
						GRADING TO DARK GRAY AND STIFF
			100%	5		GRADING TO GRAY W/OCCASIONAL LARGE CALCAREOUS NODULES, BECOMING VERY STIFF AND BLOCKY IN PART
						GRADING TO GREENISH GRAY, BECOMING CALCAREOUS
						CALCAREOUS ZONE AT 9 FEET
			100%	10		GRADING TO RED AND GREENISH GRAY MOTTLED VERY STIFF CALCAREOUS CLAY W/OCCASIONAL CALCAREOUS NODULES, Fe NODULES ABSENT
					12.0	
					CL	LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL Fe AND YELLOW IRON STAINING, BLOCKY IN PART, SAND CONTENT APPROX. 15%
			100%	15		BECOMING TAN AND GRAY MOTTLED W/OCCASIONAL Fe AND CALCAREOUS NODULES
						CALCAREOUS ZONE, LOOSE AND FRIABLE AT 16.5 FEET TAN BLOCKY
					17.0	SILTY/SANDY CLAY (CL) W/ABUNDANT CALCAREOUS NODULES
			100%		CL	CALCAREOUS ZONE AT 18.5 FEET SILTY/SANDY CLAY SLIGHTLY WET POSSIBLE PERCHED WATER ZONE 4-INCHES THICK
				20		GRADING TO GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING BLOCKY IN PART, DRY

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL1

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-1S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007820

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE ROAD HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/3/94 FINISH DATE: 3/4/94	TIME:
START TIME: 1055 FINISH TIME: 0843	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING BLOCKY IN PART
					23.0	CAKCAREOUS ZONE AT 22.5 FEET, 6-INCHES THICK, DRY RED AND
					CH	GRAY VERY STIFF CLAY (CH) CALCAREOUS W/WHITE CALCAREOUS VEINS
					CL	VERY FINE SANDY CLAY (CL) ZONE AT 24 FEET
			100%	25	CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS W/CALCAREOUS ZONES THROUGHOUT
					27.5	
					CL	RED AND GRAY STIFF SANDY CLAY (CL) BECOMING SILTY AT 28 FEET
			100%	30		GRADING TO TAN AND LIGHT GRAY MOTTLED STIFF SANDY/SILTY CLAY (CL) CALCAREOUS IN PART W/OCCASIONAL CALCAREOUS NODULES
						CALCAREOUS ZONE AT 33.5 FEET
			80%	35		MOIST W/ABUNDANT CALCAREOUS NODULES
					35.5	
					SM	BUFF TO LIGHT GRAY VERY SILTY, VERY FINE GRAINED SAND (SM) SATURATED
						GRADING TO REDDISH BROWN, SILT CONTENT DECREASING
VERY HARD DRILLING						OCCASIONAL LIGHT GRAY SILTY STRINGERS
				40		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-1S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007821

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX
BORING LOCATION:

START DATE: 3/3/94 FINISH DATE: 3/4/94
START TIME: 1055 FINISH TIME: 0843

DRILLING METHOD: Hollow-stem Auger
SAMPLING METHOD: 5-foot split barrel
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		SM	BROWN SLIGHTLY SILTY VERY FINE-GRAINED SAND (SM) POORLY SORTED, HARD DRILLING
						BROWN MODERATE TO WELL CEMENTED SAND
DRILLED WITH CENTER BIT THROUGH HARD ZONE 42 TO 43.5 FEET						
			100%	45		RED SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL MODERATELY CEMENTED ZONES THROUGHOUT
					SM	
						RED SILTY VERY FINE-GRAINED SAND (SM)
			95%	50		
					SM	INCREASE GRAIN SIZE TO FINE-GRAINED
					54.5	
			95%	55		RED VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
					CH	
					58.5	
						BOTTOM OF BORING AT 58.5 FEET
				60		

GEOLOGIST: Robert Coffman
CHECKED BY:
DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-2S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007822

CLIENT: SOTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/7/94 FINISH DATE: 3/8/94	TIME:
START TIME: 1400 FINISH TIME: 1345	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		Fill	BUFF TO TAN STIFF SANDY CLAY (CL) FILL MATERIAL
					CH	TAN AND BLACK MOTTLED MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND ROOTS
						GRADING TO BLACK
						GRADING TO GRAY
				5		
			100%			GRADING TO GRAY AND STIFF
						GRADING TO GREENISH GRAY W/OCCASIONAL CALCAREOUS NODULES AND LARGE Fe NODULES, BLOCKY IN PART
				10		BECOMING CALCAREOUS; INCREASE CALCAREOUS NODULES
						GRADING TO REDDISH BROWN AND GRAY MOTTLING
			100%			
						GRADING TO RED AND GRAY MOTTLING
					12.0	
					CL	LIGHT GRAY AND TAN VERY STIFF SANDY CLAY (CL) W/OCCASIONAL Fe STAINING AND LARGE CALCAREOUS NODULES
						OCCASIONAL Fe NODULES BELOW 14 FEET
				15		
			100%			
						INCREASE Fe NODULES W/CALCAREOUS ZONE 17 TO 19 FEET
				20		

GEOLOGIST: ROBERT COFFMAN & H. DEAN LOWE
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-2S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007823

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX
BORING LOCATION:

START DATE: 3/7/94 FINISH DATE: 3/8/94
START TIME: 1400 FINISH TIME: 1345

DRILLING METHOD: Hollow-stem Auger
SAMPLING METHOD: 5-foot split barrel
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	TAN AND LIGHT GRAY STIFF SANDY CLAY (CL) W/CALCAREOUS NODULES AND ZONES
						CALCAREOUS ZONE
					23.5	
BEGIN	3/8/94			25	CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS W/CALCAREOUS ZONES THROUGHOUT
				30		
					31.0	WET
					32.0	HARD CEMENTED ZONE (USED INTERNAL BIT) CUTTINGS ARE CALCAREOUS
					CL	WATER BEARING AT 31 FEET RED AND GRAY VERY SILTY CLAY W/ NUMEROUS CALCAREOUS ZONES
					34.0	CALCAREOUS ZONES ARE WATER BEARING
					SC	RED AND GRAY VERY SILTY CLAYEY SAND (SC)
				35	35.0	
					CL-CH	MOSTLY BRICK RED SILTY SANDY LEAN CLAY W/OCCASIONAL THIN FAT CLAY INTERBEDS, NUMEROUS CALCAREOUS ZONES THROUGHOUT
					37.25	
					SM	BRICK RED FINE SILTY SAND; WET
				40		

GEOLOGIST: Robert Coffman & H. Dean Lowe
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL5

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-2S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007824

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX
BORING LOCATION:

START DATE: 3/7/94 FINISH DATE: 3/8/94
START TIME: 1400 FINISH TIME: 1345

DRILLING METHOD: Hollow-stem Auger
SAMPLING METHOD: 5-foot split barrel
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BRICK RED VERY FINE-GRAINED SILTY SAND (SM)
					SM	
					42.0	
					CH	BRICK RED SILTY FAT CLAY W/SILTY LEAN CLAY PATCHES
					SP	42.5 TO 43.0 FEET RED CEMENTED SAND (SP)
						BRICK RED SILTY FAT CLAY W/OCCASIONAL SILTY LEAN CLAY PATCHES
				45	CH/CL	
				50	TD	BOTTOM OF BORING AT 50.0 FEET
				55		
				60		

GEOLOGIST: ROBERT COFFMAN & H. DEAN LOWE
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL6

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-3S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007825

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON , TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/10/94 FINISH DATE: 3/10/94	TIME:
START TIME: 1040 FINISH TIME: 1535	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		FILL	BUFF TO TAN STIFF SANDY CLAY (CL) FILL MATERIAL
					CH	BUFF MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND ROOTS
						GRADING TO DARK GRAY
				5		
			100%			
						GRADING TO GREENISH GRAY
						GRADING TO GREENISH TANW/ABUNDANT LARGE CALCAREOUS NODULES
				10	CH	GRADING TO RED AND LIGHT GRAY, BECOMING CALCAREOUS
			100%			
					12.0	
					CL	BUFF MEDIUM STIFF SANDY/SILTY CLAY (CL) W/SOME YELLOW IRON STAINING; SLIGHTLY MOIST, COHESIVE, BUT FRIABLE
					14.0	
					ML	BUFF SOFT SANDY/CLAYEY SILT (ML); SLIGHT MOISTURE
				15	CL	BUFF MEDIUM STIFF SANDY/SILTY CLAY (CL)
			100%			
						MINOR AMOUNTS OF SILT BELOW 16.5 FEET, BECOMONG STIFF SANDY CLAY CALCAREOUS, DRY
						CALCAREOUS ZONE AY 18.5 FEET
				20		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL7

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-3S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007826

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/10/94 FINISH DATE: 3/10/94	TIME:
START TIME: 1040 FINISH TIME: 1535	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	LIGHT GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING AND OCCASIONAL NODULES
					21.5	
					CH	LIGHT GRAY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL Fe NODULES AND STAINING
						GRADING TO RED AND LIGHT GRAY VERY CALCAREOUS
						CALCAREOUS ZONE AT 24.5 FEET
				25	25.5	
			100%		CL	RED AND BLUISH-GRAY MEDIUM STIFF CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
					30.0	CALCAREOUS ZONE AT 29.75 FEET; WET
				30	ML	RED AND GRAY SLIGHTLY SANDY CLAYEY SILT (ML) WET W/OCCASIONAL LARGE CALCAREOUS NODULES
			100%			
					32.5	
					CH	RED VERY STIFF CALCAREOUS CLAY (CH) W/INTERBEDDED LIGHT GRAY SILTY LENSES, ABUNDANT CALCAREOUS NODULES THROUGHOUT DRY TO MOIST
					35.0	CALCAREOUS ZONE AT 35 FEET
				35	SM	RED VERY SILTY VERY FINE-GRAINED SAND (SM) SATURATED SILT CONTENT APPROX. 40% W/OCCASIONAL POORLY CEMENTED SAND FRAGMENTS
			60%			
				40		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL8

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-3S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007827

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/10/94 FINISH DATE: 3/10/94	TIME:
START TIME: 1040 FINISH TIME: 1535	DATE:

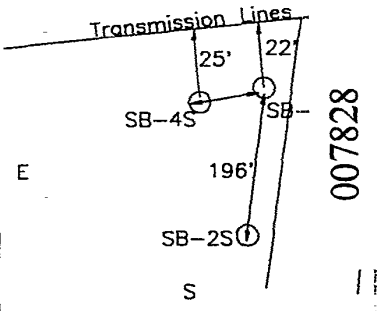
SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			50%			RED SILTY VERY FINE GRAINED SAND (SM) DECREASE SILT CONTENT, SATURATED
					SM	
				45	45.0	
			100%		CL / SM	RED MEDIUM STIFF SILTY/SANDY CLAY (CL) RED SILTY VERY FINE-GRAINED SAND (SM), WET
					CL/ ML	RED MEDIUM STIFF SILTY CLAY TO CLAYEY SILT (CL/ML) RELATIVELY DRY
					48.0	
					SM	RED SILTY FINE-GRAINED SAND (SM), WET
					SP	RED MEDIUM-GRAINED SAND (SP), WET
					CH 50.0	RED VERY STIFF CLAY (CH) CALCAREOUS; DRY
			90%	50	SM	RED VERY SILTY FINE-GRAINED SAND (SM) POORLY CEMENTED AT 51 FEET
						INCREASE GRAIN SIZE; DECREASE SILT 52 TO 53.5 FEET
						GRADING TO CLAY/SILT VERY FINE-GRAINED SAND
					54.0	
				55	CH	RED VERY STIFF CLAY (CH) CALCAREOUS
				60		BOTTOM OF BORING AT 60.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL9

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-4S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM: N



CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/11/94 FINISH DATE: 3/11/94	TIME:
START TIME: 1220 FINISH TIME: 1450	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BLACK MEDIUM STIFF CLAY (CH)
					CH	
					3.0	
						TAN SILTY/CLAYEY VERY FINE-GRAINED SAND (SC) W/THIN SILTY
					SC	CLAY INTERBEDS, Fe STAINING, FEW Fe NODULES NEAR UPPER CONTACT
				5	5.0	
						GRAY GRADING TO YELLOWISH GRAY SILTY FAT CLAY W/OCCASIONAL
						CALCAREOUS NODULES AND OCCASIONAL THIN CALCAREOUS BANDS
					CH	(LESS THAN1" THICK)
						GRADING TO RED AND GRAY MOTTLED SILTY CLAY W/ CALCAREOUS
						NODULES
				10	CH	
					12.0	
					CL	GRAY SILTY SANDY CLAY (CL)
					SC	LIGHT GRAY SILTY CLAYEY SAND (SC)
						TAN-GRAY INTERBEDDED SILTY SANDY CLAY (CL) AND SILTY
					CL/ CH	CLAY W/THIN FINE SAND STRINGERS (CH)
				15		
					16.0	TAN-GRAY SANDY CLAY AT BASE
						TAN CLAY W/SCATTERED BLACK ORGANIC SPLOTCHES
						(ABOUT NICKEL TO QUATER SIZED)
					CH	
				20		

GEOLOGIST: H. DEAN LOWE
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL10

007828

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-4S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007829

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/11/94 FINISH DATE: 3/11/94	TIME:
START TIME: 1220 FINISH TIME: 1450	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%			LIGHT GRAY W/MOTTLED TAN SILTY CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES AMD THIN BANDS
					CH	GRADING TO GRAY CLAY W/BRICK RED MOTTLES W/OCCASIONAL CALCAREOUS NODULES AND THIN BANDS
				25		VERY CALCAREOUS NEAR 25 FEET
					25.5	
			100%		CL	GRAY SANDY CLAY (CL) W/TAN MOTTLING W/OCCASIONAL CALCAREOUS NODULES
						WET AT 30 FEET – NOT SATURATED
				30		
			100%			
					33.75	BRICK RED SANDY CLAY W/GRAY MOTTLING
					Calc.	CALCAREOUS ZONE
				35		
			45%		SM	BRICK RED FINE-GRAINED SILTY SAND (SM) W/GRAY MOTTLING
						NEAR CONTACT – SATURATED
						VERY SILTY FROM 37 TO 39.5 FEET
				40		

GEOLOGIST: H. DEAN LOWE
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL11

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-4S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007830

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/11/94 FINISH DATE: 3/11/94	TIME:
START TIME: 1220 FINISH TIME: 1450	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			30%			RED SILTY VERY FINE-GRAINED SAND (SM)
					SM	OCCASIONAL MODERATELY CEMENTED LENSES
					44.5	
					CH	RED VERY STIFF CLAY (CH) CALCAREOUS W/ CALCAREOUS VEINS
				45	SP	RED FINE-GRAINED SAND (SP) MODERATELY CEMENTED
					CH	RED VERY FINE STIFF CLAY (CH) CALCAREOUS
					50.0	
				50		BOTTOM OF BORING AT 50.0 FEET
				55		
				60		

GEOLOGIST: H. DEAN LOWE
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL12

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-5S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007831

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/14/94 FINISH DATE: 3/14/94	TIME:
START TIME: 0900 FINISH TIME: 1100	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			0%			
						NO RECOVERY, OBSTRUCTION IN TUBE
				5	CH	GRAY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES
			100%			
						GRADING TO GREENISH-GRAY W/OCCASIONAL Fe NODULES AND CALCAREOUS NODULES
						CALCAREOUS ZONE AT 9 FEET
				10		GRADING TO RED W/ABUNDANT CALCAREOUS NODULES
			90%			
						OCCASIONAL Fe NODULES BELOW 11 FEET
					13.0	
					CL	LIGHT GRAY STIFF SANDY/SILTY CLAY (CL) W/YELLOW IRON STAINING
				15		ABUNDANT CALCAREOUS NODULES THROUGHOUT
						NO SILT BELOW 15 FEET
				20		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL13

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-5S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007832

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/14/94 FINISH DATE: 3/14/94	TIME:
START TIME: 0900 FINISH TIME: 1100	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	LIGHT GRAY STIFF SANDY CLAY (CL), BLOCKY IN PART W/YELLOW IRON STAINING, BECOMING CALCAREOUS W/ABUNDANT CALCAREOUS NODULES
					24.0	
			90%	25	CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL LARGE CALCAREOUS NODULES
						BECOMMING STIFF AND BLOCKY, VERY CALCAREOUS
					28.5	CALCAREOUS ZONE AT 28.5 FEET
			100%	30	CL	Light gray stiff sandy clay (CL) with reddish-brown mottles
					32.0	
					SM 33.5	LIGHT GRAY AND REDDISH-BROWN VERY SILTY VERY FINE-GRAINED SAND (SM) MINOR AMOUNTS OF CLAY; WET
				35	SM	RED AND GRAY POORLY CEMENTED CALCAREOUS ZONE 33.5 TO 34 FEET
						RED VERY SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL LIGHT GRAY STREAKS; SATURATED
						DECREASE SILT CONTENT BELOW 37.5 FEET
				40		MODERATELY CEMENTED SAND AT 40 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL14

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER: SB-5S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007833

CLIENT: SOUTJERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 3/14/94 FINISH DATE: 3/14/94
START TIME: 0900 FINISH TIME: 1100

DRILLING METHOD:
SAMPLING METHOD:
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%			RED VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
					45.0	
				45		BOTTOM OF BORING AT 45.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL.15

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-6S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007834

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON , TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/14/94 FINISH DATE: 3/15/94	TIME:
START TIME: 1545 FINISH TIME: 0925	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		FILL	BUFF TO TAN STIFF SANDY CLAY (CL) FILL MATERIAL
					CH	BLACK MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND ROOTS
						GRADING TO DARK GRAY, INCREASE Fe NODULES, NO ROOTS
						GRADING TO GREENISH GRAY W/OCCASIONAL TAN MOTTLES AND CALCAREOUS NODULES
				5		
			100%			BECOMING BLOCKY IN PART, INCREASE CALCAREOUS NODULES
						BECOMING CALCAREOUS
					CH	CALCAREOUS ZONE AT 8.5 FEET
						GRADING TO RED AND LIGHT GRAY
				10		
			100%			
					11.5	
					CL	LIGHT GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING CALCAREOUS
						Fe AND CALCAREOUS NODULES BELOW 13 FEET
				15		CALCAREOUS ZONE AT 14.5 FEET, FRIABLE
			100%			BECOMING SLIGHTLY SILTY
						CALCAREOUS ZONE AT 17 FEET
						LARGE Fe AND CALCAREOUS NODULES BELOW 18 FEET
				20		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL16

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-6S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007835

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON , TX
BORING LOCATION:

START DATE: 3/14/94 FINISH DATE: 3/15/94
START TIME: 1545 FINISH TIME: 0925

DRILLING METHOD: Hollow-stem Auger
SAMPLING METHOD: 5-foot split barrel
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	LIGHT GRAY AND TAN MOTLED SILTY/SANDY CLAY (CL); MOIST
					21.5	BECOMING VERY STIFF
					Calc.	CALCAREOUS ZONE AT 21.5 FEET RED AND WHITE; DRY
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS; BLOCKY W/WHITE CALCAREOUS VEINS
				25		
			20%			
					28.5	
					ML	RED AND GRAY MOTTLED LOOSE CLAYEY SILT (ML); WET
					29.5	VERY CALCAREOUS, BLOCKY
					CL	RED AND GRAY VERY STIFF SANDY CLAY (CL) CALCAREOUS BLOCKY IN PART; DRY
				30		
			9%		31.0	GRADING TO SOFT SILTY/SANDY CLAY (CL) HIGH SAND CONTENT; MOIST
					SM	RED AND LIGHT GRAY VERY SILTY VERY FINE-GRAINED SAND (SM); WET
						DECREASE SILT CONTENT
						GRADING TO RED, SATURATED W/SOME MODERATELY CEMENTED FRAGMENTS
				35		SLIGHT INCREASE IN GRAIN SIZE BELOW 35 FEET
			40%			
				40		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL17

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-6S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007836

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/14/94 FINISH DATE: 3/15/94	TIME:
START TIME: 1545 FINISH TIME: 0925	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			50%		SM	RED SLIGHTLY SILTY VERY FINE-GRAINED SAND (SM); SATURATED
					43.5	
				45	SP	RED VERY FINE-GRAINED SAND (SP); SATURATED
			85%		46.0	
					SM	RED VERY SILTY VERY FINE-GRAINED SAND (SM)
					48.5	
					SP	RED VERY FINE-GRAINED SAND
				50	50.0	
					CH	RED VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
					53.0	
				55		BOTTOM OF BORING AT 53.0 FEET
				60		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL1B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-7S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007837

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/16/94 FINISH DATE: 3/16/94	TIME:
START TIME: 0913 FINISH TIME: 1103	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			80%		FILL	BUFF TO TAN SANDY CLAY FILL MATERIAL
					CH	DARK GREAK MEDIUM STIFF CLAY (CH W/OCCASIONAL Fe NODULES AND ROOTS
						GRADING TO GRAY W/OCCASIONAL CALCAREOUS NODULES
				5		INCREASE CALCAREOUS NODULES
			100%			GRADING TO GREENICH GRAY
						LARGE CALCAREOUS NODULES BETWEEN 7.5 AND 8 FEET
					CH	BECOMING RED AND GRAY MOTTLED AND CALCAREOUS DECREASE CALCAREOUS NODULES
				10		NO Fe NODULES BELOW 10 FEET
			100%			
					11.5	
					CL	LIGHT GRAY TO BUFF STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING AND CALCAREOUS NODULES
						LARGE CALCAREOUS NODULES AND OCCASIONAL Fe NODULES AND BLOCKY BELOW 14 FEET
				15		VERY CALCAREOUS FROM 15 TO 16 FEET
			100%			
						BECOMING STIFF W/LARGE Fe NODULES THROUGHOUT
				20		CALCAREOUS ZONE AT 19.5 FEET, WHITE, CHALKY BECOMING RED AND GRAY MOTTLED

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CTYSTL19

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-7S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007838

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD:
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/16/94 FINISH DATE: 3/16/94	TIME:
START TIME: 0913 FINISH TIME: 1103	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						CALCAREOUSA ZONE AT 20 FEET
			90%		CL	RED AND GRAY MOTTLED STIFF SANDY CLAY (CL) CALCAREOUS
					21.5	OCCASIONAL CALCAREOUS NODULES
						RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
					CH	
					23.0	CALCAREOUS ZONE AT 23 FEET
						RED AND GRAY VERY STIFF SLIGHTLY SANDY CLAY (CL) W/CALCAREOUS
						NODULES
						CALCAREOUS ZONE AT 25 FEET
				25		GRAY MEDIUM STIFF SILTY/SANDY CLAY (CL) CALCAREOUS
			100%			GRADING TO STIFF W/Fe STAINING
					CL	
					29.5	
					ML	RED AND GRAY CLAYEY SLIGHTLY SANDY SILT (ML) CALCAREOUS; MOIST
				30		
			90%			RED AND GRAY SILTY/SANDY CLAY (CL) CALCAREOUS; MOIST
					CL	CALCAREOUS NODULES
					33.0	
					Calc.	MODERATELY CEMENTED CALCAREOUS ZONE (3-INCHES THICK)
					CL	
					34.5	
					ML	LIGHT GRAY SANDY SILT (ML) MOIST W/OCCASIONAL CALCAREOUS NODULES
				35	35.5	AND Fe STAINING; WET
			75%			RED VERY SILTY VERY FINE-GRAINED SAND (SM) WET W/OCCASIONAL
						GRAY SILT ZONES
						SATURATED AT 37 FEET
						BECOMING RED BELOW 38 FEET AND LESS SILTY
					SM	
				40		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL20

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-7S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007839

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/16/94 FINISH DATE: 3/16/94	TIME:
START TIME: 0913 FINISH TIME: 1103	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			60%		SM	RED SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL MODERATELY CEMENTED SAND FRAGMENTS AND LIGHT GRAY SILT NODULES; SATURATED
				45		
			60%		SM	
					48.5	
					CH	RED VERY STIFF CLAY (CH) CLACAREOUS W/OCCASIONAL CALCAREOUS NODULES
				50	SM	REDDISH BROWN FINE-GRAINED SAND (SP) SLIGHT INCREASE IN GRAIN SIZE
			75%			
					53.0	
					SW	BUFF TO MEDIUM-GRAINED SAND (SW)
					54.5	
				55	CH	RED VERY STIFF CLAY (CH) CALCAREOUS
			100%			
					57.5	
						BOTTOM OF BORING AT 57.5 FEET
				60		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL21

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-8S
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

007840

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/17/94 FINISH DATE: 3/17/94	TIME:
START TIME: 1000 FINISH TIME: 1200	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			90%			DARK GRAY AND LIGHT GRAY MOTTLED SOFT TO MEDIUM STIFF CLAY (CH); MOIST, ROOTS
						GRADING TO BLACK W/OCCASIONAL Fe NODULES AND ROOTS
					CH	
						GRADING TO DARK GRAY MEDIUM STIFF
				5		
			100%			
						GRADING TO GRAY W/OCCASIONAL CALCAREOUS NODULES
						GRADING TO GREENISH GRAY, INCREASE CALCAREOUS NODULES W/OCCASIONAL YELLOW IRON STAINING
				10		GRADING TO RED AND LIGHT GRAY MOTTLES, CALCAREOUS
			100%		CH	
					12.0	CALCAREOUS ZONE AT 12 FEET
						LIGHT GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING THROUGHOUT AND OCCASIONAL CALCAREOUS NODULES
					CL	BECOMING BLOCKY IN PART
				15		LARGE CALCAREOUS AND Fe NODULES BELOW 11.5 FEET
						BECOMING VERY CALCAREOUS AND SLIGHTLY SILTY LARGE CALCAREOUS NODULES AT 19 FEET
				20		DECREASE CALCAREOUS/SILT CONTENT

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL22

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-11S
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007841

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION: NEAR CPT-29	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/28/94 FINISH DATE: 4/28/94	TIME:
START TIME: 0915 FINISH TIME: 1215	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			70%		CH	RED AND GRAY MOTTLED VERY STIFF CLAY (CH) VERY CALCAREOUS
					28.5	CALCAREOUS ZONE AT 28.5 FEET
				30	CL	TAN AND BUFF MEDIUM STIFF VERY SANDY CLAY (CL)
			75%			GRADING TO LIGHT GRAY AND TAN
					32.5	
				35	SM	LIGHT GRAY AND BROWN SILTY VERY FINE-GRAINED SAND (SM)
			30%			GRADING TO REDDISH BROWN W/OCCASIONAL CLAYEY NODULES AND LIGHT GRAY STRINGERS
				40	40.0	
			100%		CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
					42.5	
					CL	RED AND GRAY MEDIUM STIFF SANDY/SILTY CLAY (CL)
					43.5	
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
						BOTTOM OF BORING AT 45 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

SB11SA

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-8S
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

007842

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/17/94 FINISH DATE: 3/17/94	TIME:
START TIME: 1000 FINISH TIME: 1200	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CL	LIGHT GRAY AND TAN MOTTLED STIFF SANDY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES THROUGHOUT AND OCCASIONAL Fe STAINING BLOCKY IN PART
					23.0	
					CH	RED AND GRAY MOTTLED VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
				25		CALCAREOUS ZONE AT 25 FEET
			85%			
					27.0	LIGHT GRAY AND CHALKY CALCAREOUS ZONE AT 27 FEET
					CL	LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL REDDISH-BROWN SILTY STRINGERS
					30.0	RED FRIABLE SILTY CALCAREOUS ZONE AT 30 FEET; MOIST
				30	Calc.	
			50%		CL	RED AND LIGHT GRAY MEDIUM STIFF SANDY SILTY CLAY (CL); MOIST
					32.0	
					Calc	LIGHT GRAY AND RED MODERATELY CEMENTED CALCAREOUS ZONE; WET
					SM	RED AND LIGHT GRAY VERY SILTY VERY FINE-GRAINED SAND (SM)
				35		OCCASIONAL POORLY CEMENTED SAND FRAGMENTS
			50%			DECREASE SILT CONTENT
					SM	
				40		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FIGRO GEOSCIENCES, INC.

CRYSTL23

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-8S
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

007843

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/17/94 FINISH DATE: 3/17/94	TIME:
START TIME: 1000 FINISH TIME: 1200	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			35%			RED SILTY VERY FINE-GRAINED SAND (SM)
					SM	
				45		
					46.0	
					SP	RED VERY FINE TO FINE-GRAINED SAND (SP)
					47.5	
					CH	RED VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL CALCAREOUS VEINS
					50.0	
				50		BOTTOM OF BORING AT 50.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FIGRO GEOSCIENCES, INC.

CRYST1L24

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-9S
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007844

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX
BORING LOCATION:

START DATE: 3/17/94 FINISH DATE: 3/18/94
START TIME: 1700 FINISH TIME: 0900

DRILLING METHOD: Hollow-stem Auger
SAMPLING METHOD: 5-foot split barrel
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CH	BLACK SOFT CLAY (CH) WET W/OCCASIONAL ROOTS AND Fe NODULES
						GRADING TO DARK GRAY
				5		GRADING TO GREENISH GRAY, BECOMING CALCAREOUS
			100%			ABUNDANT Fe NODULES AND OCCASIONAL CALCAREOUS NODULES
						GRADING TO GREENISH GRAY RED AND GRAY MOTTLES
						CALCAREOUS NODULES ZONE AT 9.5 FEET
				10		
			100%			
					11.5	
					CL	LIGHT GRAY STIFF SANDY/SILTY CLAY (CL) BLOCKY IN PART W/YELLOW IRON STAINING THROUGHTOUT AND OCCASIONAL Fe NODULES
						NO SILT BELOW 15 FEET W/ABUNDANT CALCAREOUS NODULES
				15		
			95%			
						LARGE CALCAREOUS NODULES AT 16.5 FEET
						CALCAREOUS ZONE, FRIABLE 19 TO 19.5 FEET LARGE Fe NODULES
				20		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL25

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-9S
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007845

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/17/94 FINISH DATE: 3/18/94	TIME:
START TIME: 1700 FINISH TIME: 0900	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
			100%			CALCAREOUS AND YELLOW IRON STAINING
						CALCAREOUS ZONE AT 21.5 FEET W/Fe NODULES, BLOCKY IN PART
					CL	
						BECOMING LIGHT GRAY AND RED DECREASE SAND CONTENT
					24.75	WHITE CHALKY CALCAREOUS ZONES AT 25 FEET
				25	Calc	
					CH	LIGHT GRAY VERY STIFF CLAY (CH) W/TAN AND RED MOTTLES
			100%			CALCAREOUS ZONE AT 26 FEET
						RED AND GRAY STIFF SLIGHTLY SANDY CLAY (CL)
						CLACAREOUS ZONE AT 27 FEET
						REDDISH-BROWN SILTY STRINGERS FROM 27.5 TO 29 FEET
					CL	
						GRADING TO RED AND LIGHT GRAY MEDIUM STIFF SILTY SANDY CLAY (CL),
				30		MOIST SOFT IN PART
			65%			CALCAREOUS ZONE AT 31 FEET
					31.5	MODERATELY CEMENTED CALCAREOUS ZONE AT 31.5 FEET
					ML	LIGHT GRAY SANDY SILT (ML) W/OCCASIONAL Fe STAINING; MOIST
						LIGHT GRAY AND RED SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL MODERATELY CEMENTED SAND FRAGMENTS; WET
					SM/ ML	
				35		PASTY BUT NOT SATURATED
			100%		36.0	RED SLIGHTLY SANDY SILT (ML) W/OCCASIONAL CALCAREOUS NODULES
						RED VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL LIGHT GRAY VERY THIN SILTY LENSES
					CH	
				40		BOTTOM OF BORING AT 40.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL26

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-10S
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007846

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/21/94 FINISH DATE: 3/21/94	TIME:
START TIME: 0955 FINISH TIME: 1117	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED AND DARK GRAY TAN MOTTLED MEDIUM STIFF CLAY (CH)
			95%		CH	POSSIBLE FILL MATERIAL W/OCCASIONAL CALCAREOUS NODULES
					2.0	
					SM	TAN SILTY VERY FINE-GRAINED SAND (SM) W/ORGANIC MATTER
						BLACK MEDIUM STIFF CLAY W/OCCASIONAL Fe NODULES
						GRADING TO DARK GRAY
				5		
			90%			
					CH	
						GRADING TO GRAY AND TAN MOTTLES, BECOMING CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
				10		
			100%			
						GRADING TO GRAY AND RED MOTTLES STIFF
						GRADING TO LIGHT GRAY AND RED
					14.5	
				15		LIGHT GRAY AND TAN MOTTLED STIFF SANDY CLAY (CL) BLOCKY IN PART
			90%			
						SLIGHTLY SILTY AND BLOCKY 16 TO 17 FEET
					CL	OCCASIONAL Fe NODULES AND CALCAREOUS NODULES
				20		LARGE CALCAREOUS NODULES AT 20 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL27

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-10S
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007847

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 3/21/94 FINISH DATE: 3/21/94	TIME:
START TIME: 0955 FINISH TIME: 1117	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						CALCAREOUS ZONE W/LARGE CALCAREOUS NODULES TO 26.5 FEET
			100%			
					CL	
					23.0	LARGE Fe NODULES AT 27.5 FEET
						RED AND LIGHT GRAY VERY STIFF CLAY (CH) CALCAREOUS
						RED AND LIGHT GRAY CALCAREOUS ZONE, FRIABLE
				25	CH	
			100%			
					28.5	WHITE CHALKY CALCAREOUS ZONE
						LIGHT GRAY STIFF SLIGHTLY SANDY CLAY CLAY (CL) W/OCCASIONAL
						SILTY LENSES AND Fe STAINING
				30	CL	
			100%			
						INCREASE Fe STAINING BELOW 33.5 FEET
					34.75	
				35		RED AND GRAY SILTY CLAYEY VERY FINE-GRAINED SAND (SM/SC); WET
			50%			
						BECOMING SLIGHTLY SILTY AND FINE-GRAINED
					SM/SC	
					39.5	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
				40	CH	BOTTOM OF BORING AT 42.5 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CRYSTL28

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-11S
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007848

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION: NEAR CPT-29	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/28/94 FINISH DATE: 4/28/94	TIME:
START TIME: 0915 FINISH TIME: 1215	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			70%		CH	RED AND GRAY MOTTLED VERY STIFF CLAY (CH) VERY CALCAREOUS
					28.5	CALCAREOUS ZONE AT 28.5 FEET
				30	CL	TAN AND BUFF MEDIUM STIFF VERY SANDY CLAY (CL)
			75%			GRADING TO LIGHT GRAY AND TAN
					32.5	
				35	SM	LIGHT GRAY AND BROWN SILTY VERY FINE-GRAINED SAND (SM)
			30%			GRADING TO REDDISH BROWN W/OCCASIONAL CLAYEY NODULES AND LIGHT GRAY STRINGERS
				40	40.0	
			100%		CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
					42.5	
					CL	RED AND GRAY MEDIUM STIFF SANDY/SILTY CLAY (CL)
					43.5	
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
						BOTTOM OF BORING AT 45 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

SB11SA

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-12S
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007849

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION: NEAR CPT-29	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 5/2/94 FINISH DATE: 5/2/94	TIME:
START TIME: 0926 FINISH TIME: 1202	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			75%		CL	LIGHT GRAY AND TAN MOTTLED STIFF SANDY CLAY (CL) W/OCCASIONAL Fe STAINING
			75%	35		
				40	SM	LIGHT GRAY AND REDDISH BROWN MOTTLED SILTY VERY FINE-GRAINED SAND (SM)
			95%		SP	BUFF VERY FINE GRAINED SAND (SP) SLIGHT GRAIN SIZE INCREASE
						GRADING TO LIGHT GRAY CLAYEY SAND (SC) AT BASE
				45	CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
						BOTTOM OF BORING AT 45 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

SB12SA

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-13S
SHEET NUMBER: 1 OF 2
LOCATION DIAGRAM:

007850

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/29/94 FINISH DATE: 4/29/94	TIME:
START TIME: 1330 FINISH TIME: 1415	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			85%		SP	BROWN FINE-GRAINED SAND (SP)
					29.5	
			90%	30	CL	LIGHT GRAY AND TAN MOTTLED STIFF SANDY CLAY (CL) W/OCCASIONAL CALCREOUS NODULES
					33.0	
					SM	LIGHT GRAY AND BROWN MOTTLED SILTY VERY FINE-GRAINED SAND (SM) 3-INCHES STAINED GREENISH BLACK
				35	35.5	
			40%		SP	BROWN FINE-GRAINED SAND SP) WELL ROUNDED BOTTOM HALF OF SAMPLE IS COLOR BANDED BROWN, LIGHT GRAY AND TAN
				40	40.5	
			45%		SM	REDDISH BROWN SILTY VERY FINE-GRAINED SAND (SM)
					44.0	
				45	SP	BROWN VERY FINE-GRAINED SAND (SP)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

SB13SA

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER SB-13S
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007851

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: Hollow-stem Auger
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-foot split barrel
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/29/94 FINISH DATE: 4/29/94	TIME:
START TIME: 1330 FINISH TIME: 1415	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BROWN VERY FINE-GRAINED SAND (SP)
					SP 47.0	
						RED AND GRAY STIFF SILTY CLAY (CL)
					CL 48.5	
						RED VERY STIFF CLAY (CH) CALCAREOUS
					CH 50.0	
				50		BOTTOM OF BORING AT 50.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

SB13SB

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-1A

JOB NUMBER 44101724 INSTALLATION DATE 2/4/94 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 82.24 GROUND SURFACE ELEVATION

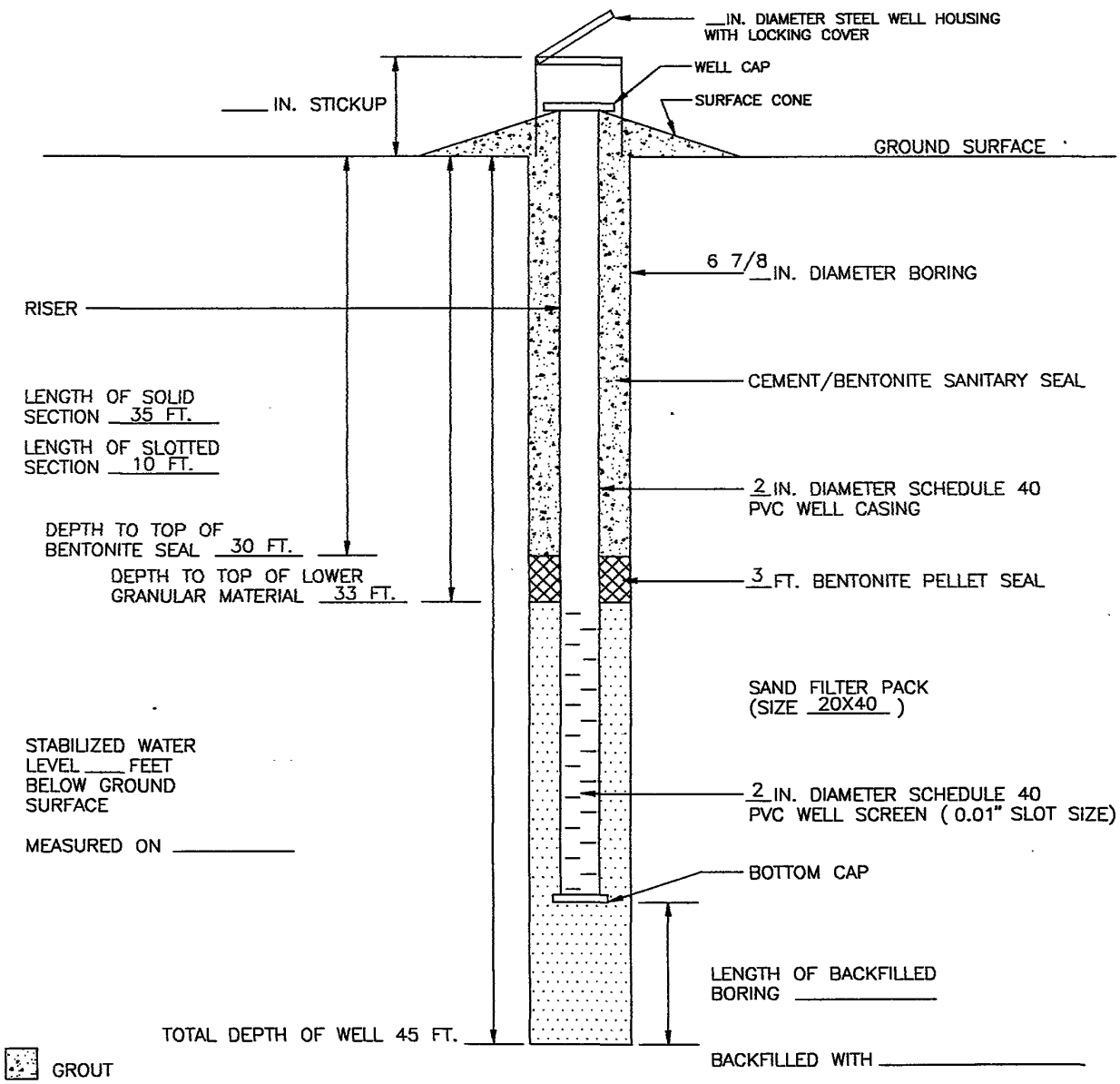
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007852



MW14M

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-22

JOB NUMBER 44101724 INSTALLATION DATE 1/13/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 81.85 GROUND SURFACE ELEVATION 79.68

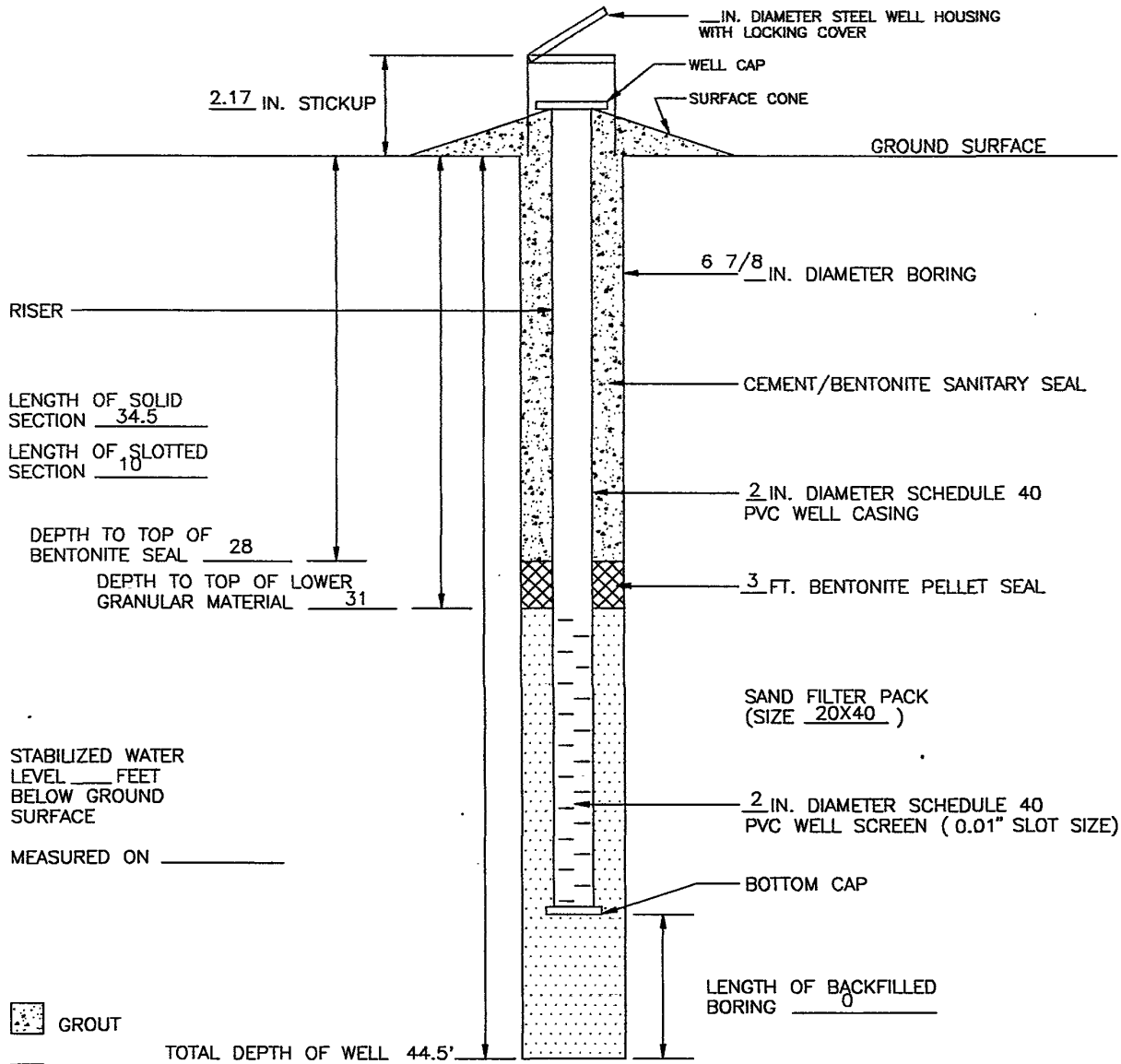
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

007853



MW22

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-23

JOB NUMBER 44101724 INSTALLATION DATE 1/20/93 LOCATION GUYON PROPERTY

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 79.22 GROUND SURFACE ELEVATION 77.37

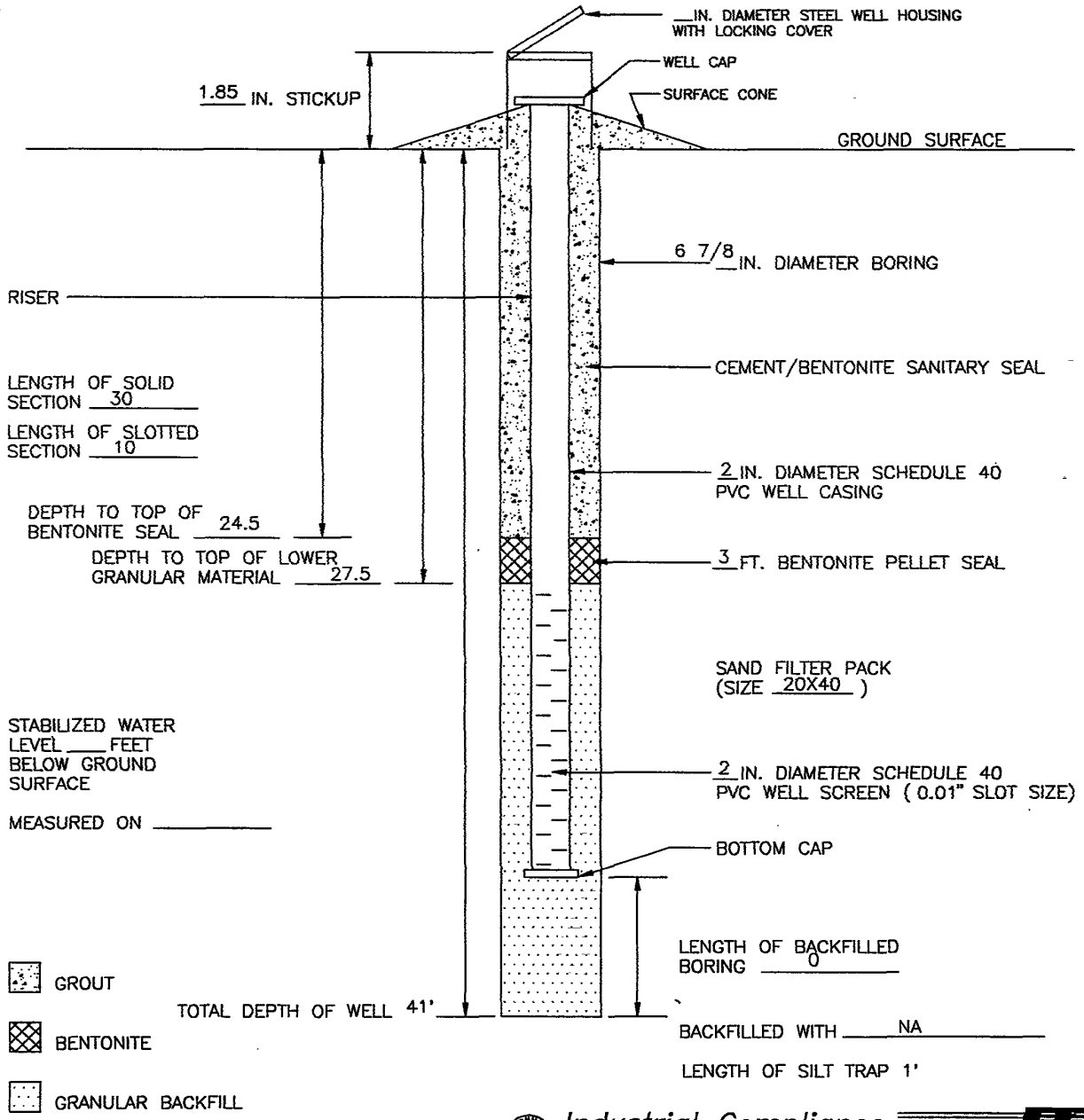
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

007854



MW23

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-24

JOB NUMBER 44101724 INSTALLATION DATE 1/25/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION (80.35 UNTIL MARCH 1994) 82.11 GROUND SURFACE ELEVATION 79.11

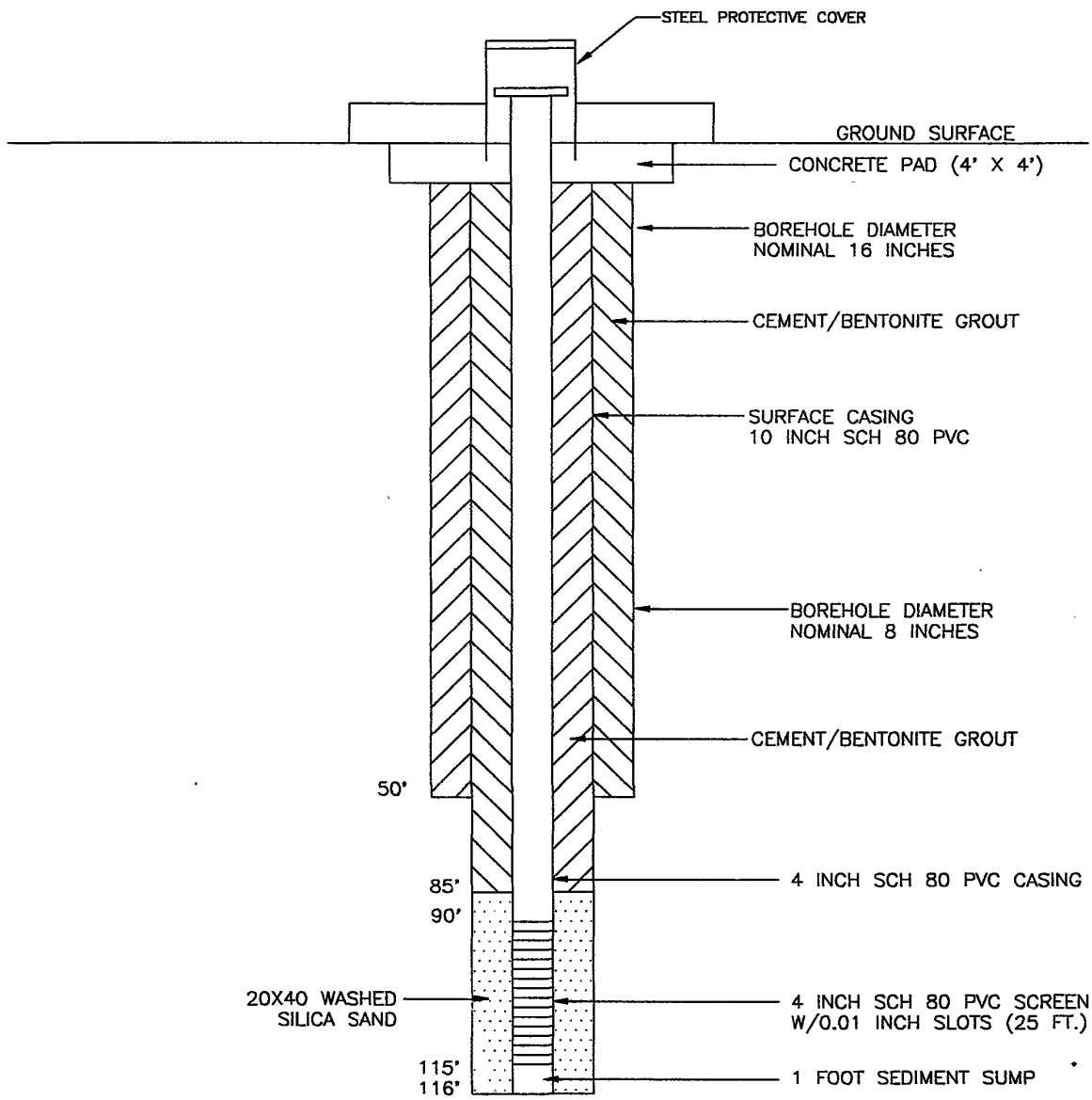
SCREEN DIAMETER AND MATERIAL 4-INCH SCH 80 PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH SCH 80 PVC BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE ROTARY WASH DRILLING CONTRACTOR LAYNE

007855



MW25

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-25

JOB NUMBER 44101724 INSTALLATION DATE 2/23/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 81.35 GROUND SURFACE ELEVATION 79.06

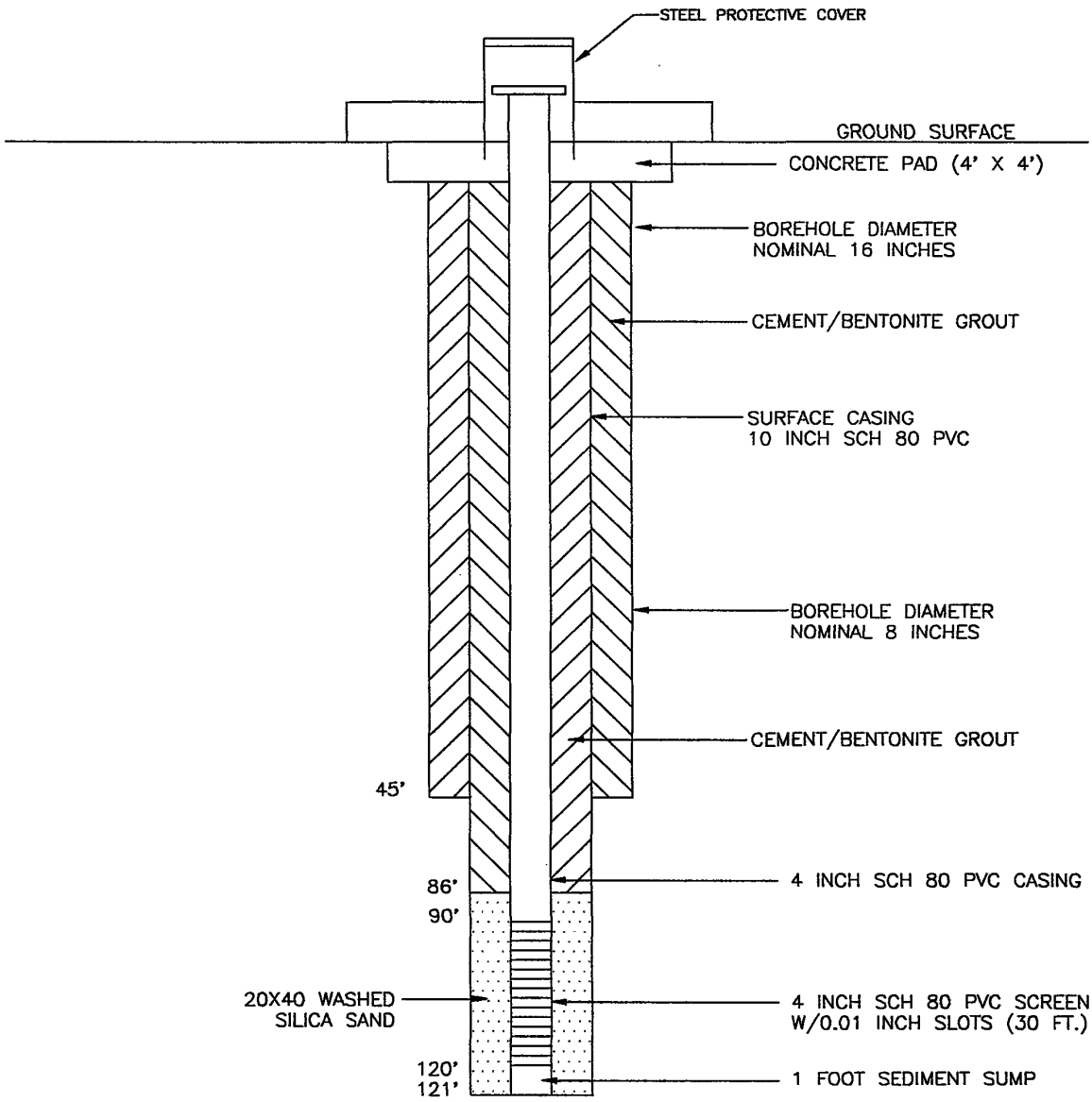
SCREEN DIAMETER AND MATERIAL 4-INCH SCH 80 PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH SCH 80 PVC BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE ROTARY WASH DRILLING CONTRACTOR LAYNE

007856



MW25

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-26

JOB NUMBER 44101724 INSTALLATION DATE 2/12/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 81.57 GROUND SURFACE ELEVATION 79.27

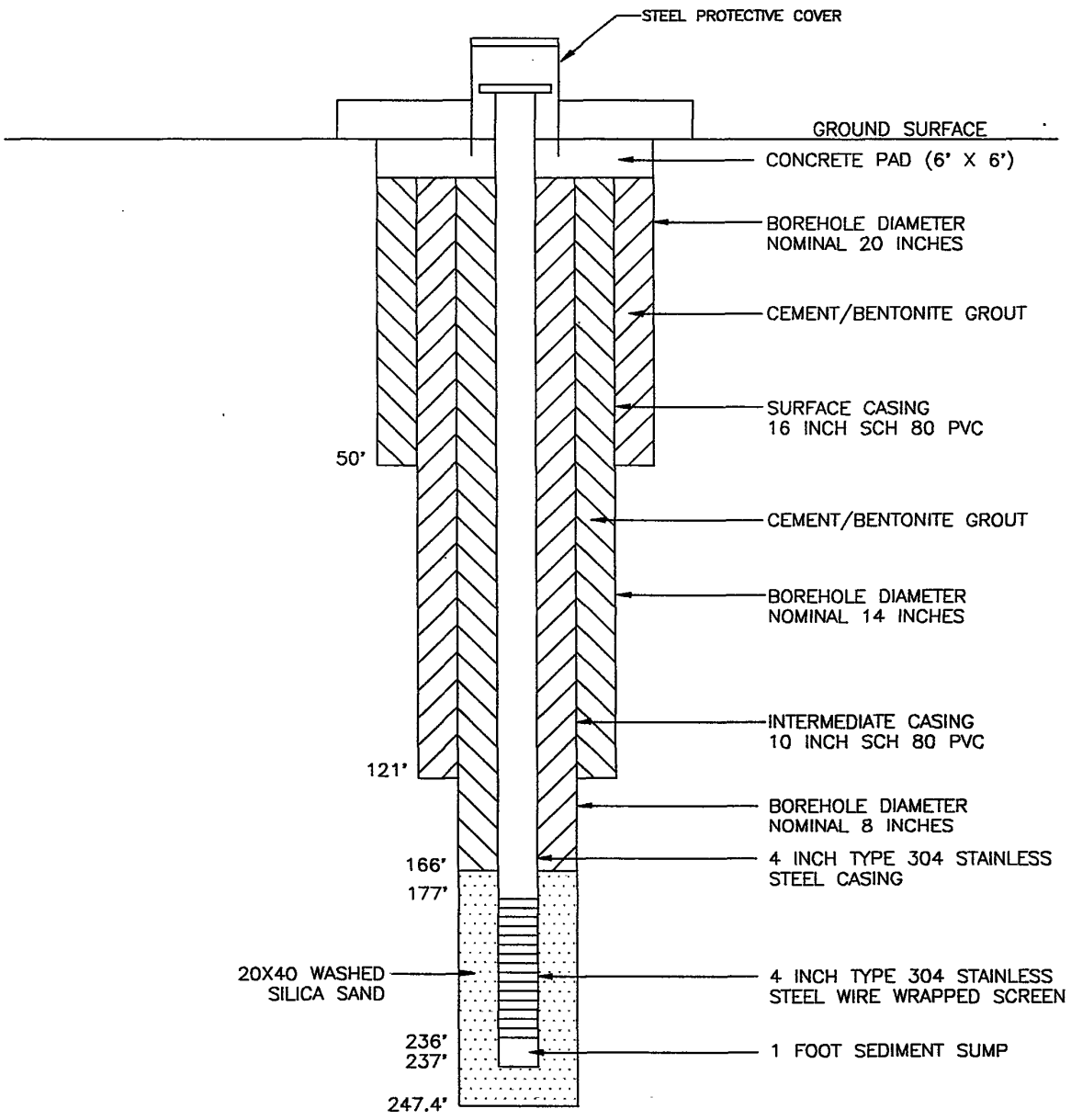
SCREEN DIAMETER AND MATERIAL 4-INCH TYPE 304 STAINLESS STEEL SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH TYPE 304 STAINLESS STEEL BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE ROTARY WASH DRILLING CONTRACTOR LAYNE

007857



MW26

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-27

JOB NUMBER 44101724 INSTALLATION DATE 1/18/93 LOCATION GUYON PROPERTY

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 77.41 GROUND SURFACE ELEVATION 75.55

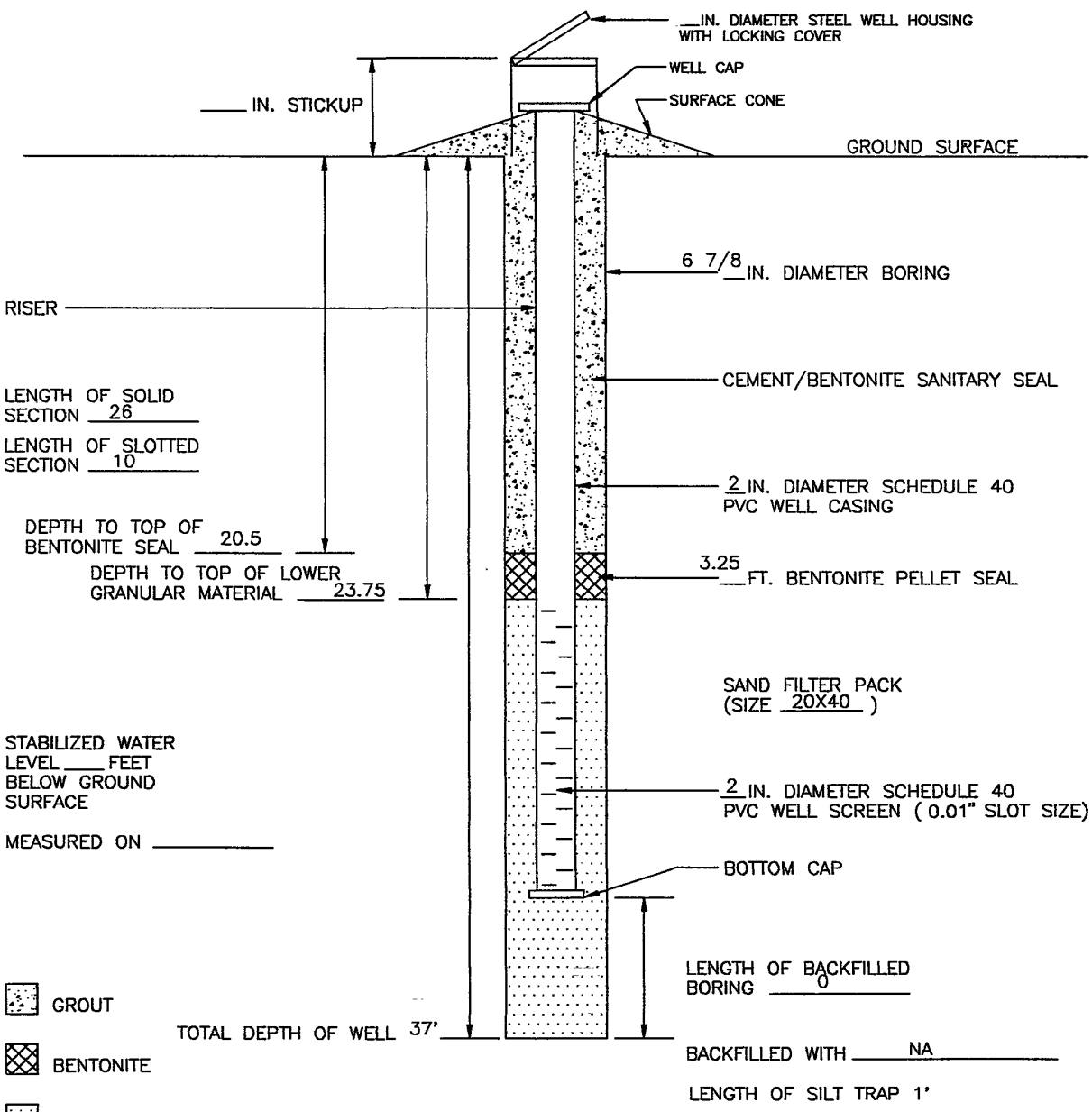
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

007858



MW27

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-28

JOB NUMBER 44101724 INSTALLATION DATE 5/3/93 LOCATION GUYON PROPERTY

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 79.45 GROUND SURFACE ELEVATION 76.80

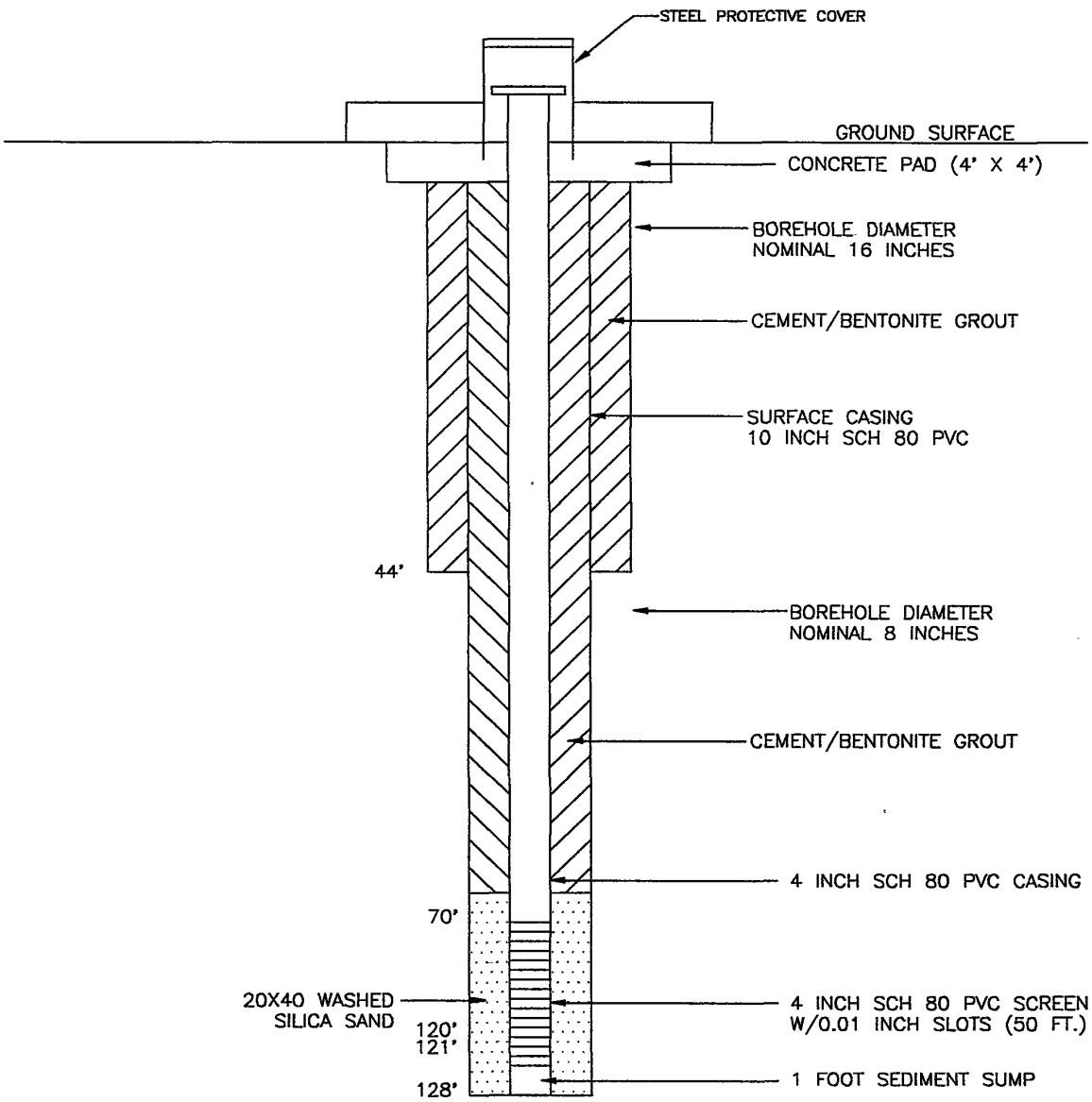
SCREEN DIAMETER AND MATERIAL 4-INCH SCH 80 PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH SCH 80 PVC BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE ROTARY WASH DRILLING CONTRACTOR LAYNE

007859



MW28

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-28A

JOB NUMBER 44101724 INSTALLATION DATE 9/16/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 79.52 GROUND SURFACE ELEVATION

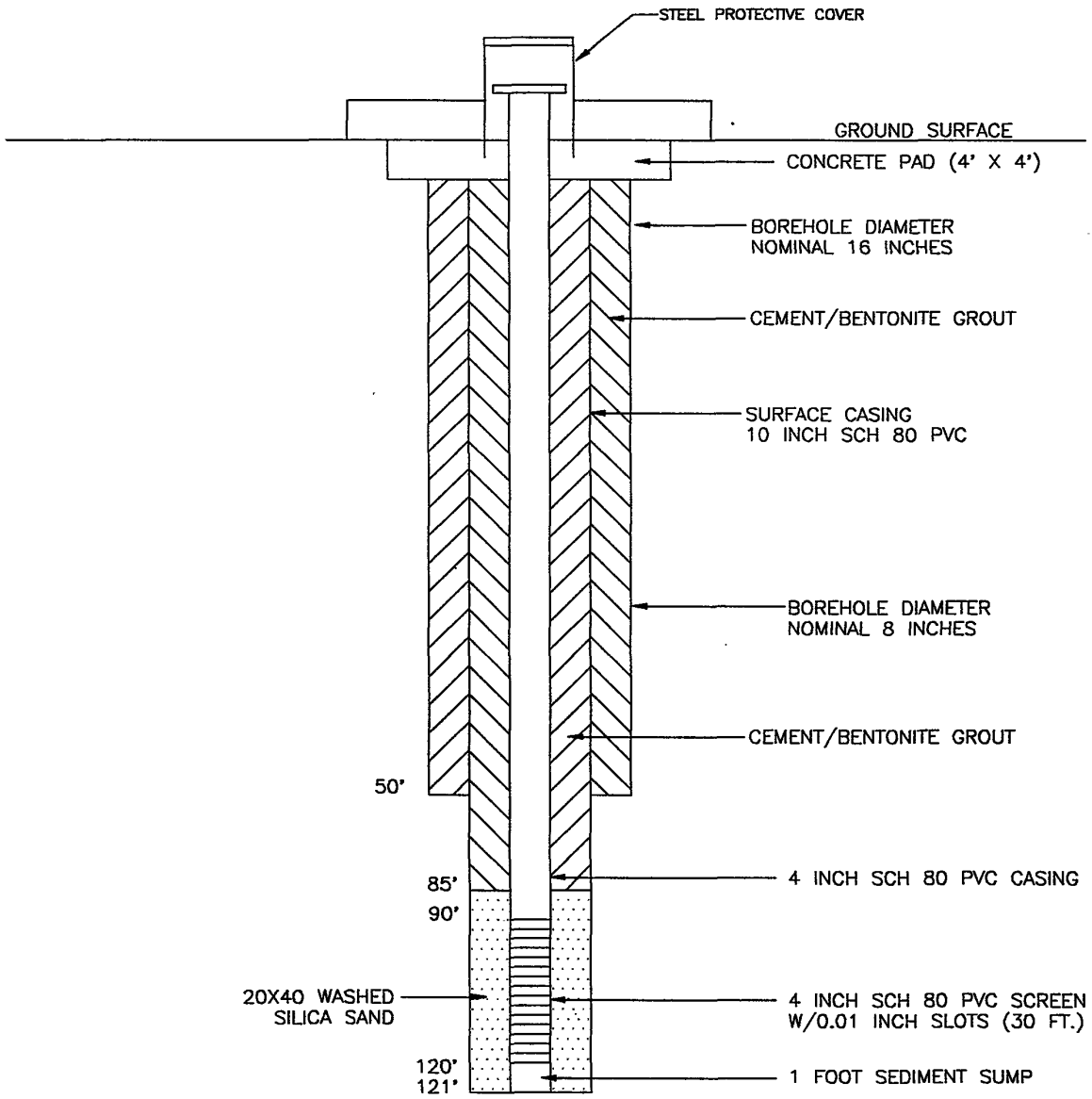
SCREEN DIAMETER AND MATERIAL 4-INCH SCH 80 PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH SCH 80 PVC BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE ROTARY WASH DRILLING CONTRACTOR LAYNE

007860



MW28AW

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-29

JOB NUMBER 44101724 INSTALLATION DATE 12/16/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 79.26 GROUND SURFACE ELEVATION

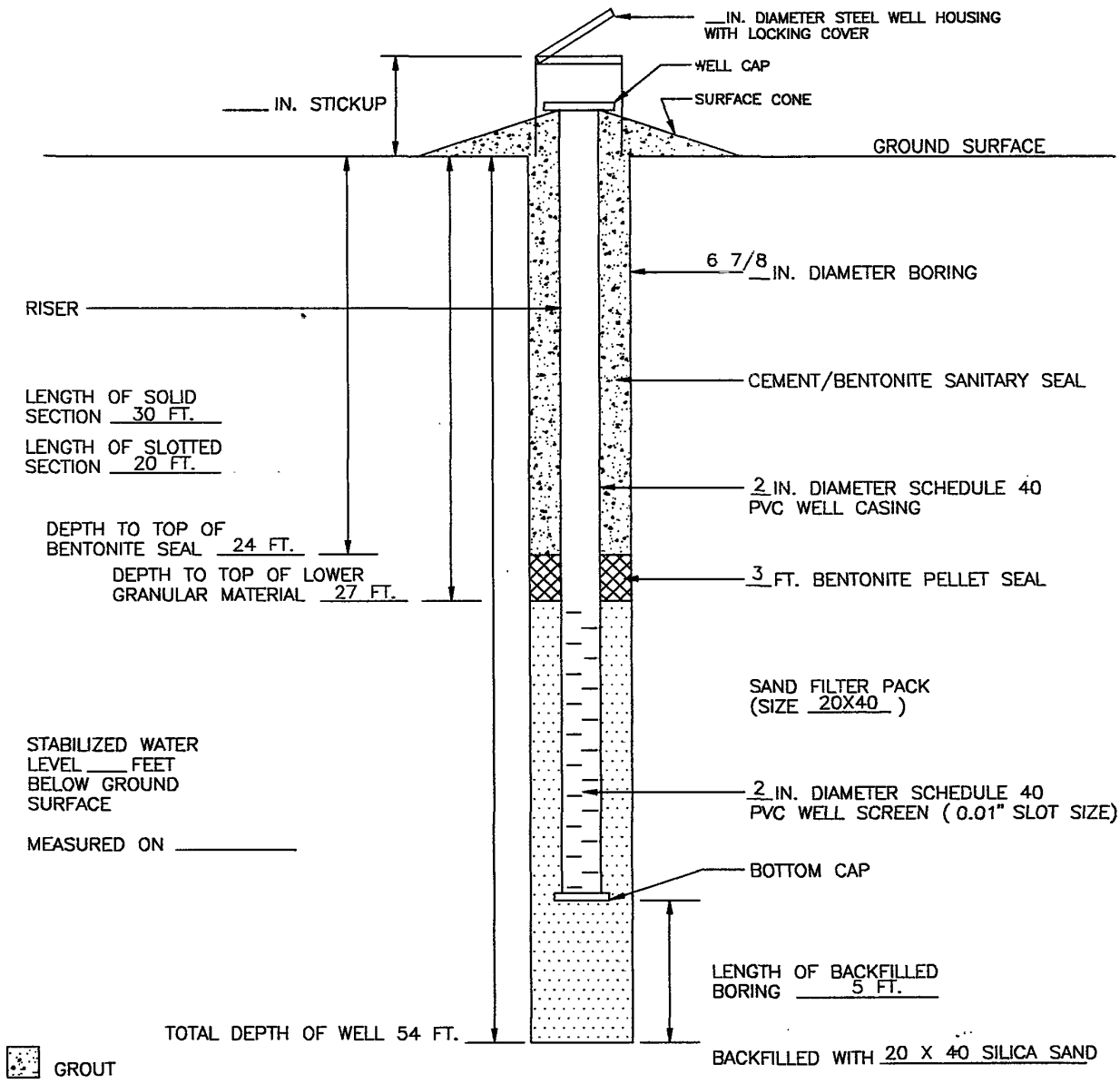
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007861



MW29M

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-30

JOB NUMBER 44101724 INSTALLATION DATE 12/20/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 79.91 GROUND SURFACE ELEVATION

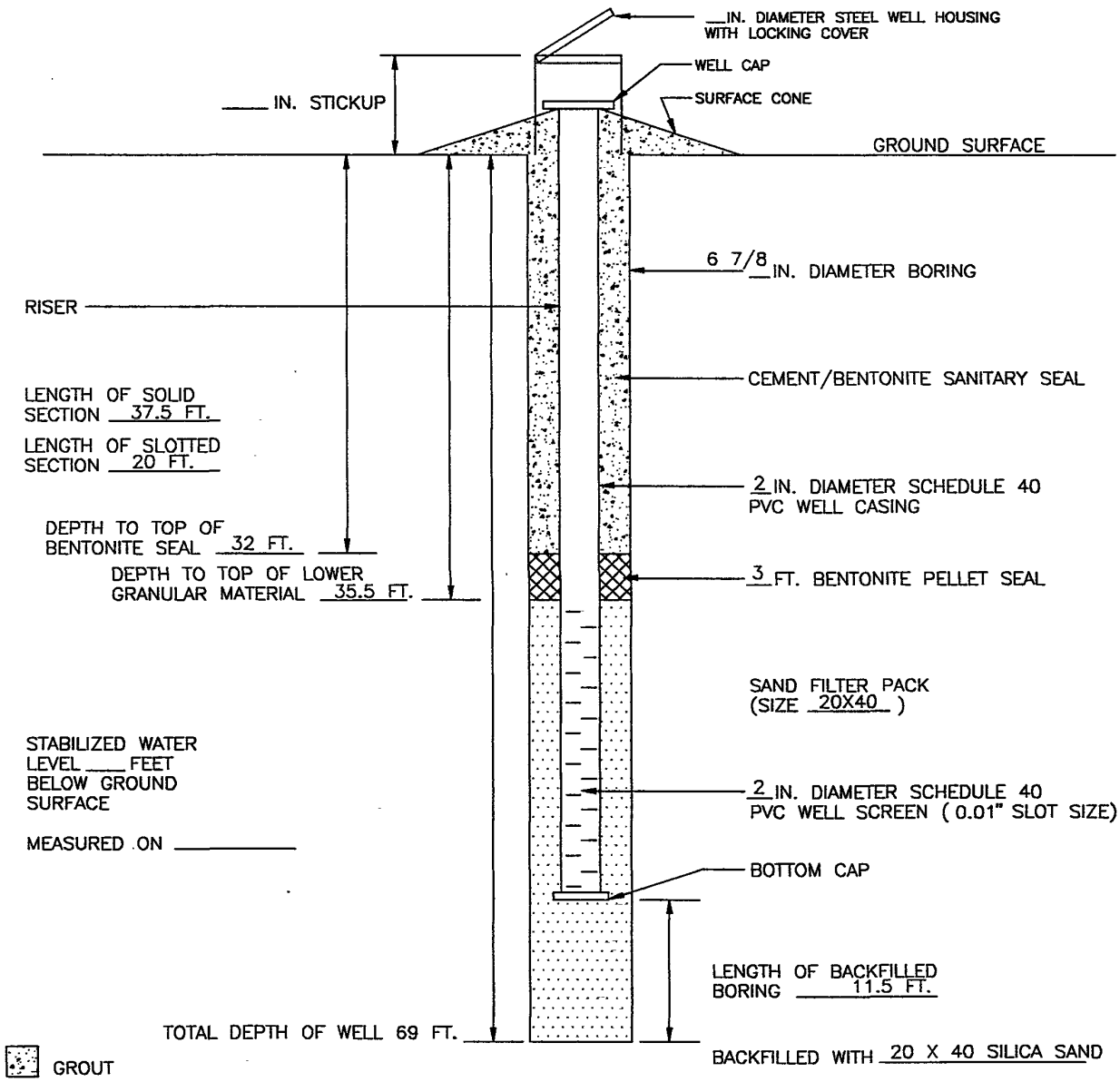
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007862



MW30M

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-31A

JOB NUMBER 44101724 INSTALLATION DATE 1/13/94 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 80.36 GROUND SURFACE ELEVATION

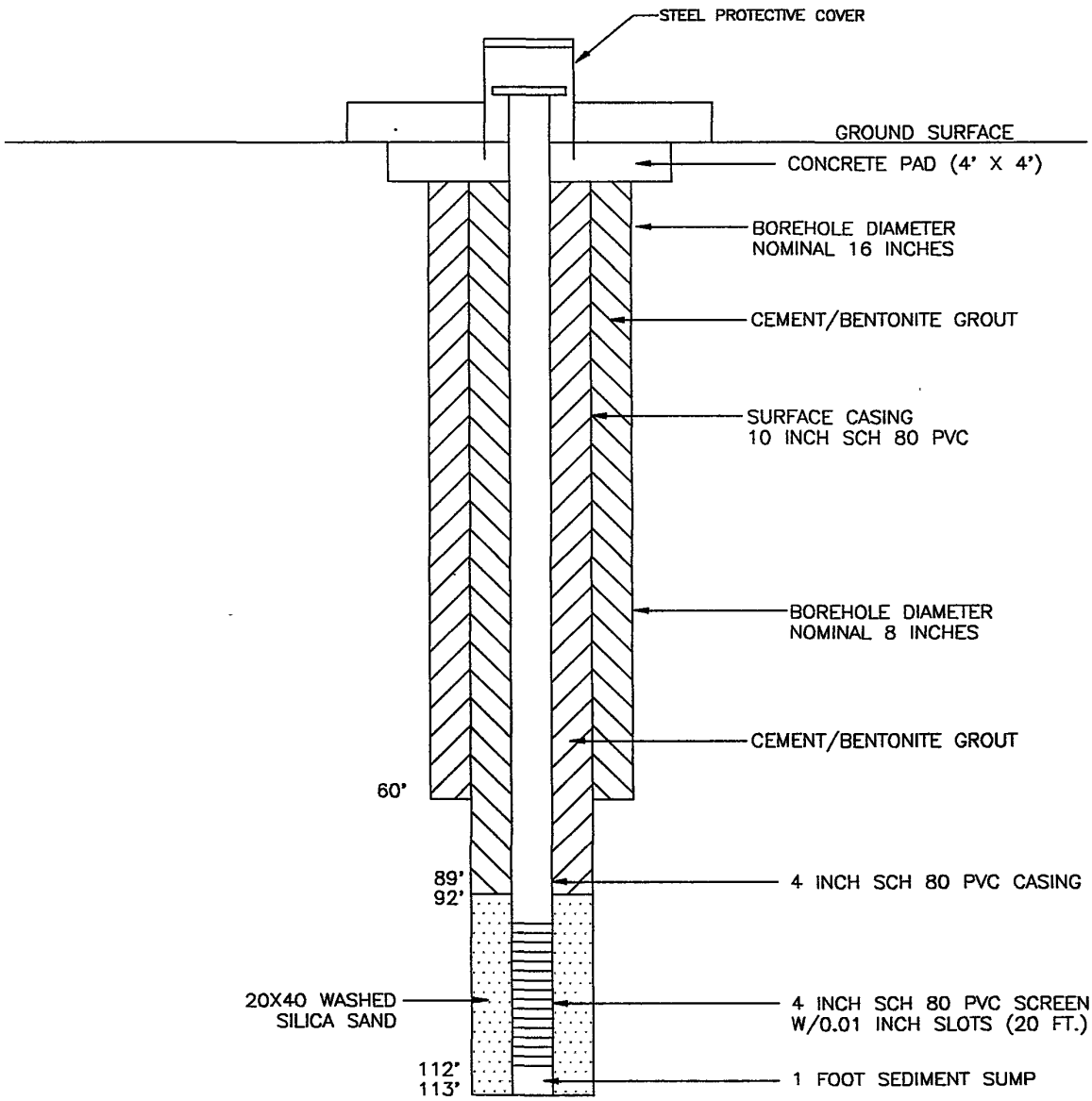
SCREEN DIAMETER AND MATERIAL 4-INCH SHC 80 PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH SHC 80 PVC BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE WET ROTARY DRILLING CONTRACTOR LAYNE

007863



MW31W

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-32

JOB NUMBER 44101724 INSTALLATION DATE 12/10/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 80.44 GROUND SURFACE ELEVATION

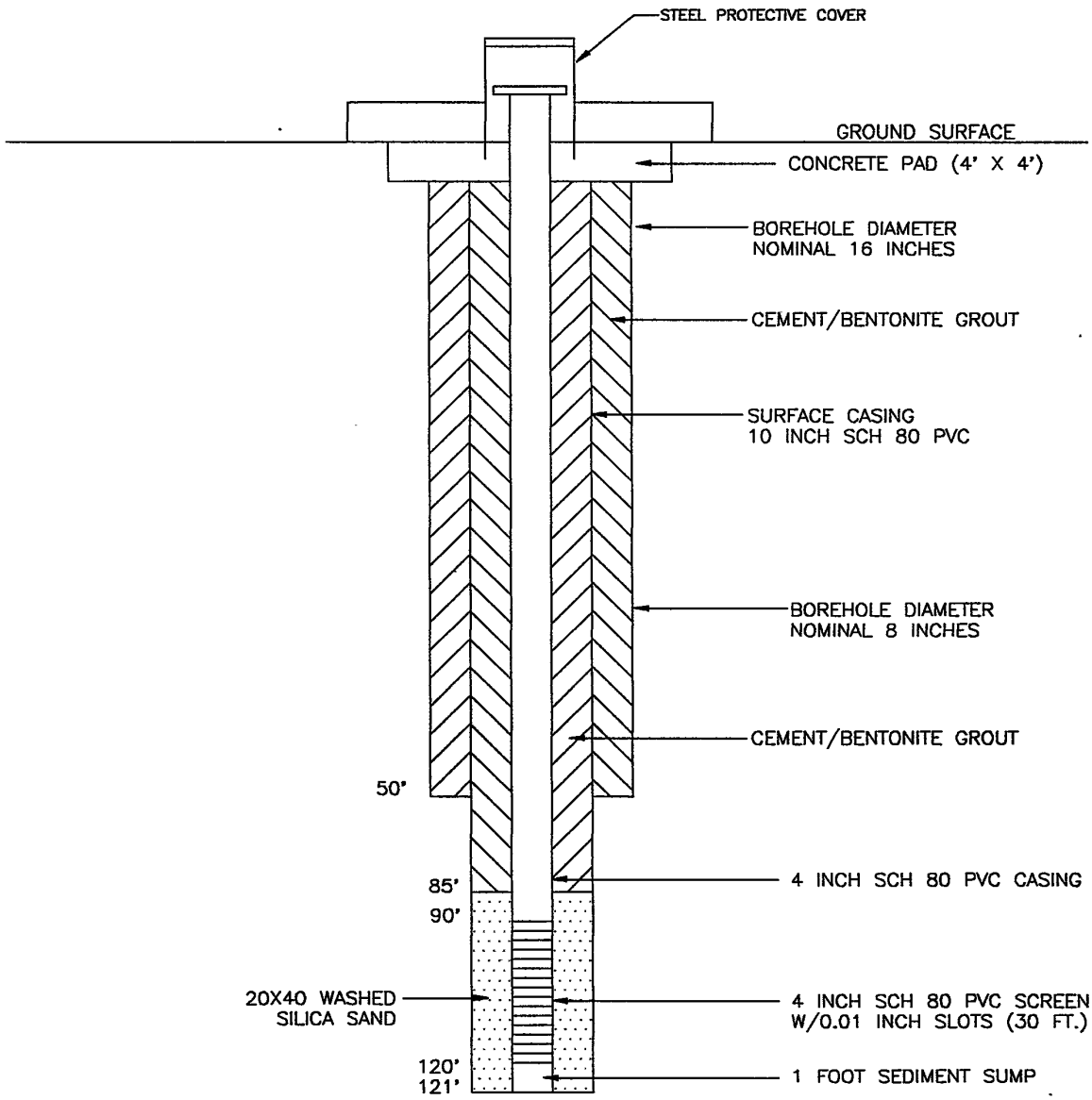
SCREEN DIAMETER AND MATERIAL 4-INCH SCH 80 PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 4-INCH SCH 80 PVC BOREHOLE DIAMETER 8-INCH

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE WET ROTARY DRILLING CONTRACTOR LAYNE

007864



MW32W

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-33 (SB-15) (~~SB-65~~)

JOB NUMBER 44101724 INSTALLATION DATE 3/4/94 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 78.68 GROUND SURFACE ELEVATION 76.44

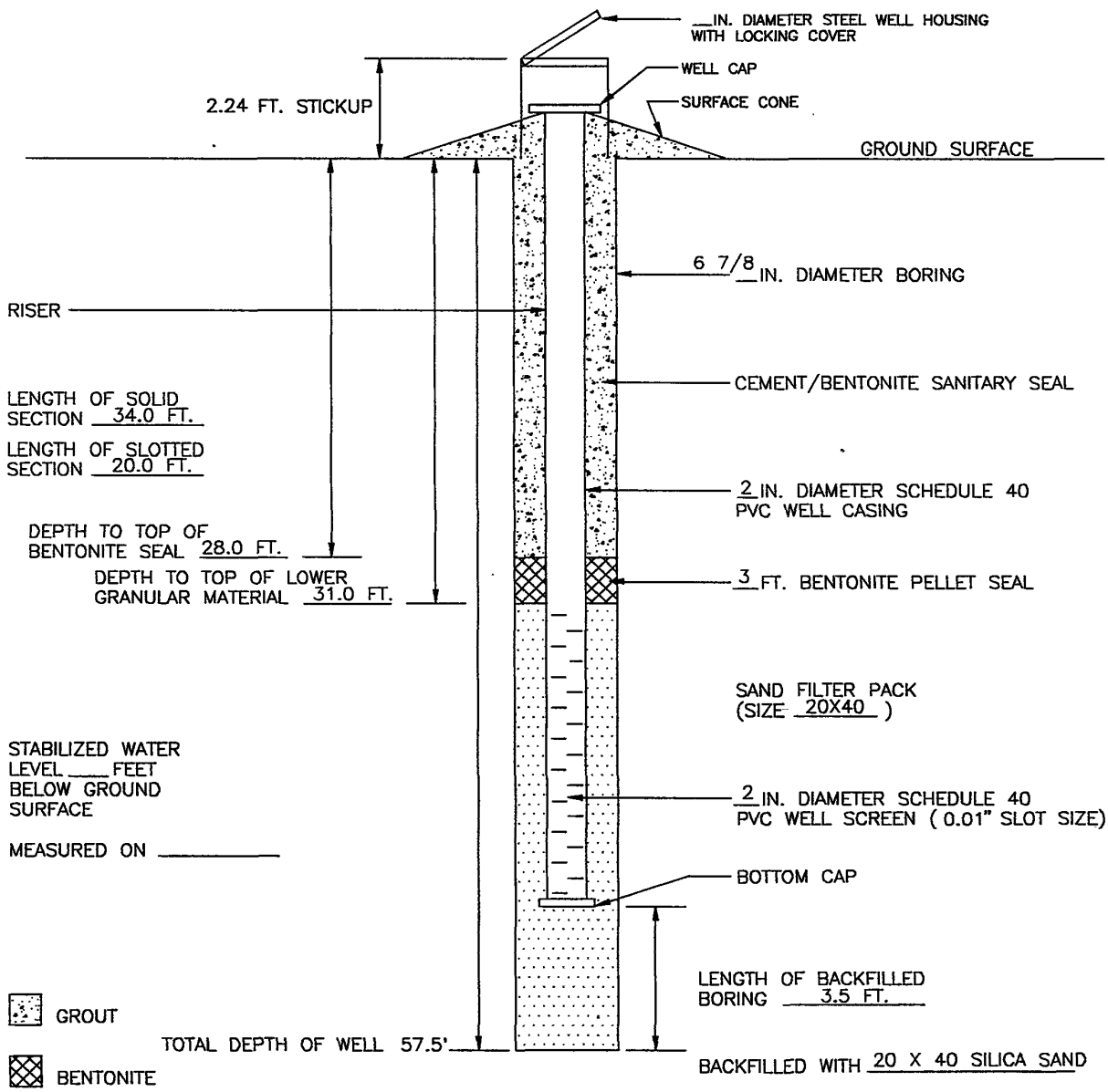
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007865



MW33

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

(SB-65)

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER MW-34 ~~(SB-15~~

JOB NUMBER 44101724 INSTALLATION DATE 3/15/94 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 80.33 GROUND SURFACE ELEVATION 77.32

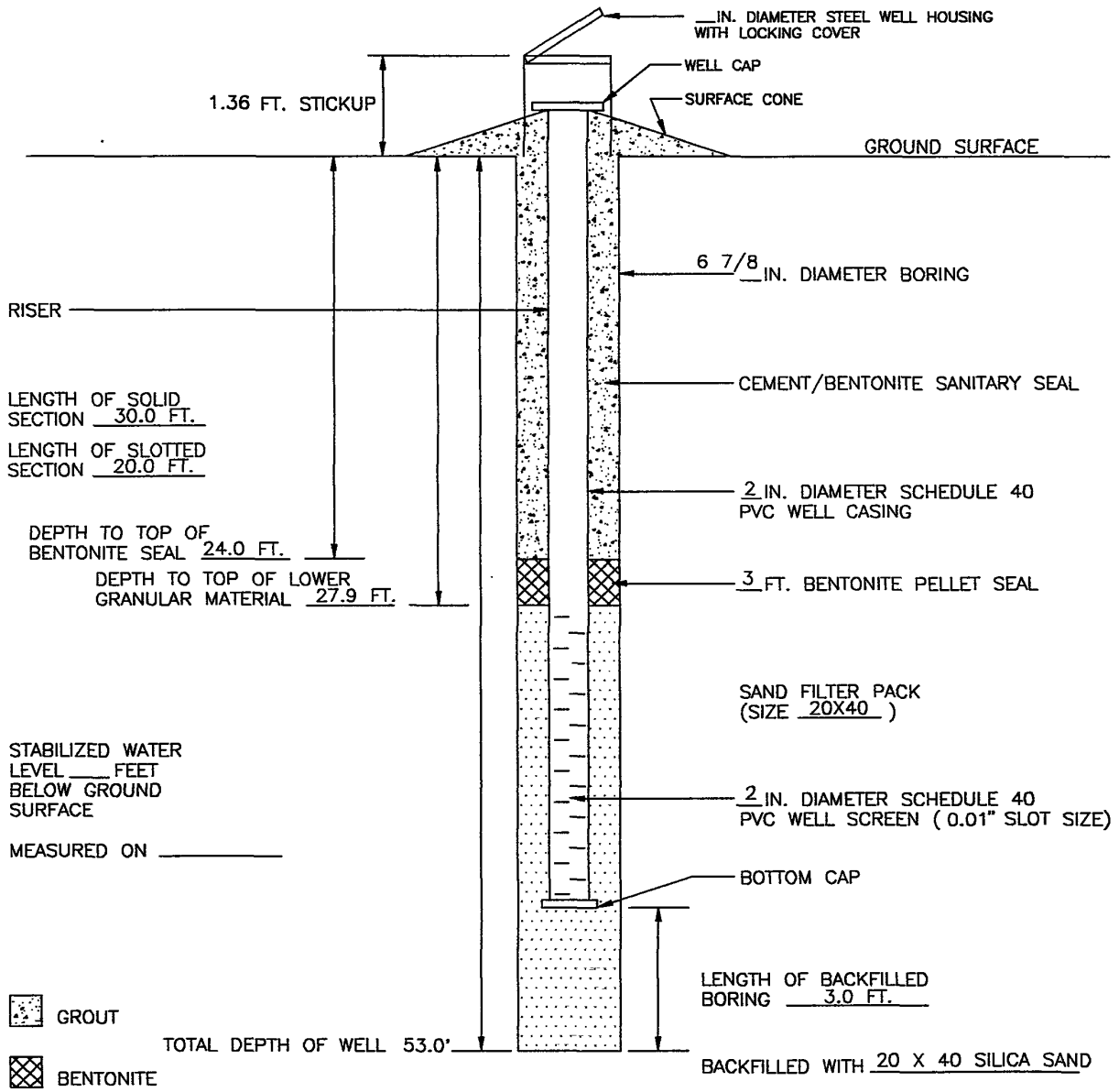
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007866



MW34

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER P-4

JOB NUMBER 44101724 INSTALLATION DATE 1/18/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 80.24 GROUND SURFACE ELEVATION 78.35

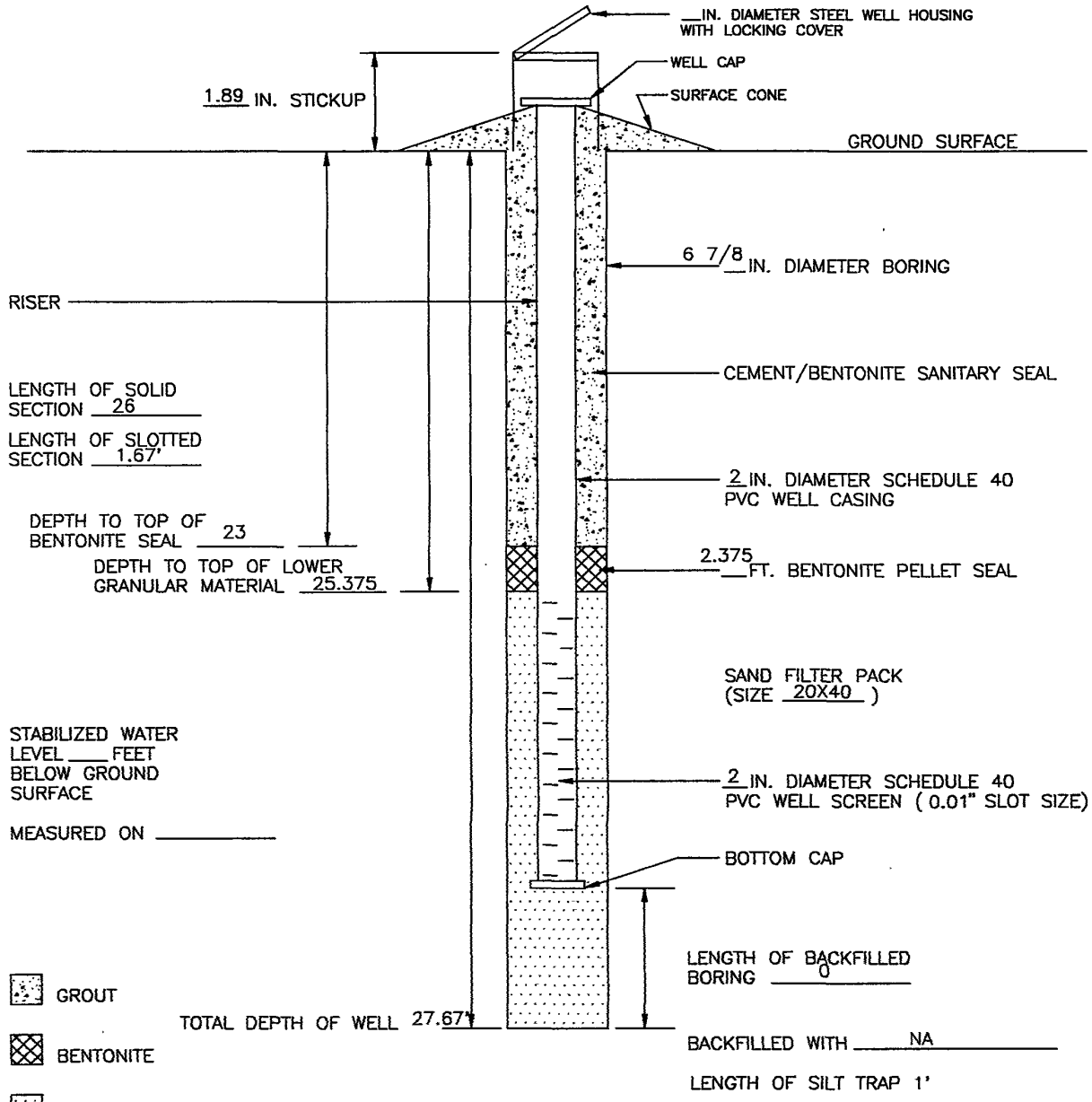
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

007867



Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

P4

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER P-5

JOB NUMBER 44101724 INSTALLATION DATE 1/19/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 81.18 GROUND SURFACE ELEVATION 78.25

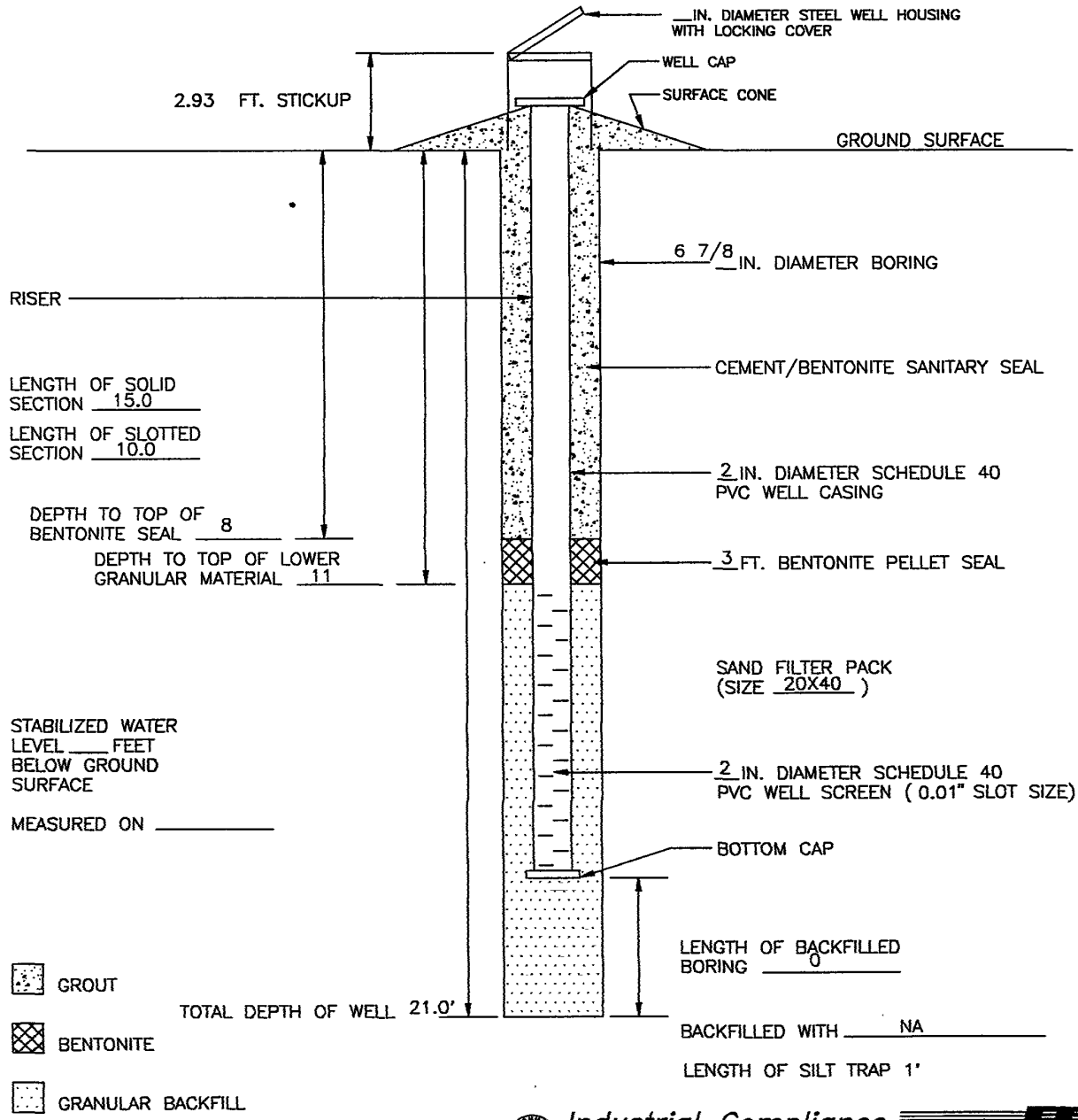
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAI

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

007868



Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

P5

007869

APPENDIX 4 - GROUND WATER MONITORING FIELD DATA SHEETS

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/4/92

Weather Conditions: Sunny light north breeze 50's

007870

Well: MW-1 TD 43.3 2.5" casing

Depth to Water: 17.58' Well Condition:

Calculated Casing Volume: 6.56 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond (µmhos/cm)	Temp	Eh	DO	Notes
1	7.11	5,540	67.0			
2	6.92	6,090	68.8			
3	6.93	5,470	68.6			
4	7.00	5,160	68.7			
impl 5	6.93	6,140	68.6	0.054	1.72 mg/l	10:45 A.M 3-4-93 > sample

25 total gallons purged

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/8/93

Weather Conditions: Sunny South wind 5-10 mph 80's

007871

Well: MW-2 TD 43.87

Depth to Water: 15.51' Well Condition:

Calculated Casing Volume: 7.23 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.00	2.54x1000	78.4			8 gals
2	6.86	3.34x1000	73.7			8 gals
3	6.75	3.77x1000	75.1			8 gals
4	6.76	3.86x1000	75.7			8 gals
Sample	6.73	3.88x1000	78.1	~~-.49~~ -.049	2.1	15 gals 1620 3/8/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

oject Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/8/93

Weather Conditions: Sunny South wind 5-10 mph 80's

007872

Well: mw-3 TD 47.30

Depth to Water: 18.68' Well Condition:

Calculated Casing Volume: 7.30 gals Casing Stickup:

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.98	4.92x1000	73.8			8 gals
2	6.99	4.84x1000	73.4			8 gals
3	6.81	5.13x1000	73.1			8 gals
4	6.83	4.82x1000	74.3			8 gals
mpl	6.85	4.87x1000	75.3	.018	2.2	1745 3/8/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: ROBERT COFFMAN Date: 3/11/93

Weather Conditions: Cloudy East wind 10-15mph 50's

007873

Well: MW-4 TD 110.74

Depth to Water: 101.20 Well Condition:

Calculated Casing Volume: 6.23 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.15	7.89 x 100	69.5			7 gallons
2	7.40	7.60 x 100	70.5			7 gallons 1155
3	7.42	6.79 x 100	72.6			7 gallons 2:25
4	7.57	6.75 x 100	67.6			7 gallons 4:00
Sample	7.50	6.91 x 100	67.1	.010	3.2	4:20 3/11/91

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert T Coffman Date: 3/5/94

Weather Conditions: Partly cloudy, 60's north wind 10 mph

007874

Well: MW-6 TD 43.31

Depth to Water: 15.22' Well Condition:

Calculated Casing Volume: 4.58 gals Casing Stickup:

Field Parameters

*Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.94	3.22x1000	70.6			5 gals
2	6.93	3.04x1000	66.8			5 gals
3	6.94	3.13x1000	69.7			5 gals
4	6.97	3.00x1000	67.3			5 gals
sample	6.97	3.05x1000	68.4	.026	1.2	3.5 gals 1450 3/5/93

total 23.5 gals

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Date:

Weather Conditions:

007875

DO NOT SAMPLE!
per M. Stewart; to be plugged

Well: MW-7 TD 46.16

Depth to Water: 14.86' Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 7/9/93

Weather Conditions: Sunny South wind 10 mph 70's

007876

Well: MW-8 TD 39.40

Depth to Water: 17.16' Well Condition:

Calculated Casing Volume: 5.67 gals Casing Stickup:

Field Parameters

Casing Volume*	pH	Cond	Temp	Eh	DO	Notes
1	7.14	2.71x1000	75.2			1 gallons
2	7.22	2.68x1000	75.3			1 gallon
3	7.16	2.77x1000	75.5			1 gallon
Sample	7.13	2.77x1000	75.1	.086	1.2	
						11:15 AM Sample 3/9/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/9/93

Weather Conditions: Sunny South Wind 10 mph 80's

007877

Well: mw-9 TD 41.36

Depth to Water: 14.07' Well Condition:

Calculated Casing Volume: 4.45 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.83	4.55 x 1000	76.0	✓	3.1	smells like sewer
2	6.76	4.56 x 1000	71.10			
3	6.77	4.66 x 1000	70.4			
4	6.75	4.68 x 1000	70.8			
5	6.84	4.67 x 1000	71.8	.09	3.1	

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/9/93

Weather Conditions: Sunny South wind 10 mph 80's

007878

Well: mw-10 TD 36.24

Depth to Water: 14.19' Well Condition:

Calculated Casing Volume: 6 gallons Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.45	2.82 x 1000	81.7			1 gallons
2	7.28	2.76 x 1000	81.0			1.5 gallons 1:45 P.M.
3	7.04	3.13 x 1000	75.5			1.5 gallons 2:54 pm
4	7.07	3.42 x 1000	75.6			1.5 gallons 3:03 PM.
mpl-	7.09	3.53 x 1000	78.6	.071	10 mg/L	1.5 gallons 3:10 PM 3/9/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007879

Well: mw-11 TD 15.27

Depth to Water: DRY Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert T Coffman Date: 3/5/93

Weather Conditions: Sunny 70's north breeze 5-10 mph

007880

Well: MW-12 TD 29.42

Depth to Water: 13.31' Well Condition:

Calculated Casing Volume: 2.63 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.93	2.16 x 1000	70.6			
2	6.91	1.97 x 1000	69.2			
3	6.85	2.01 x 1000	69.4			
4	6.90	1.96 x 1000	68.2			
Sample	6.87	2.01 x 1000	70.6	.056	3.4	1230

Total of 15 gals purged.

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/5/93

Weather Conditions: Mostly Cloudy north breeze 5-10 mph 60's

007881

Well: mw-13 TD 47.26

Depth to Water: 22.91 Well Condition:

Calculated Casing Volume: 3.97 gals Casing Stickup:

Field Parameters

Casing Volume*	pH	Cond	Temp	Eh	DO	Notes
1	7.27	2.16 x1000	67.8			4 gals (slow recharge)
2	7.25	2.19 x1000	67.6			3 gals wtr lvl @ 32
3	7.32	2.48 x1000	69.3			4 gals bailed
4	7.31	2.43 x1000	66.7			4 gals bailed
Sample	7.45	2.47 x1000	66.4	.060	6.0	

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/4/93

Weather Conditions: Sunny : North wind 5-15 mph 70's

007882

Well: MW-14 TD 24.40

Depth to Water: 15.11' Well Condition:

Calculated Casing Volume: 1.52 gals Casing Stickup:

Field Parameters

Casing Volume*	pH	Cond	Temp	Eh	DO	Notes
1	7.32	1.36 x1000	76.8			
2	7.16	1.51 x1000	71.8			
3	7.12	1.55 x1000	72.8			
4	7.13	1.29 x1000	72.6			
5	7.11	1.37 x1000	73.8	.053	1.8 mg/l	1420 3/4/93

15 total gallons purged

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/4/93

Weather Conditions: Sunny, North wind 5-15mph 70's

007883

Well: mw-15 TD 20.90

Depth to Water: 16.82' Well Condition:

Calculated Casing Volume: 0.67 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.10	2.41 x 1000	71.5			3 gals
2	6.96	2.56 x1000	72.2			1 gal
3	6.97	2.52 x 1000	71.7			1 gal
4	7.06	2.57 x 1000	71.8			1 gal
Sample	7.01	2.61 x 1000	74.8	-031	1.7 mg/L	1530 3/4/93
mple	6.94	2.43 x 1000	65.0	~~-30~~ -034	1.8 mg/l	0855 3/5/93

8 total gallons purged

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/4/93

Weather Conditions: Sunny north wind 5-15 mph 70's

007884

Well: MW-16 TD 21.89

Depth to Water: 15.58 Well Condition:

Calculated Casing Volume: 1.03 gals Casing Stickup:

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.14	3.71x1000	69.8			purged dry w/ pump @ 18' bgs
2	7.16	3.80x1000	70.5			lowered pump to 20' bgs
3	7.34	3.87x1000	70.8			Well is dry
4	7.08	3.93x1000	64.5	.066	5.4	

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

007885

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/8/93

Weather Conditions: Sunny West wind 5-10mph 70's

Well: MW-17A TD ~~15~~ 43.12

Depth to Water: 15.31 Well Condition:

Calculated Casing Volume: 4.53 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.25	9.56x100	74.9			5gals
2	7.35	1.09x1000	72.9			5gals
3	7.24	1.29x1000	73.4	ROC		5gals
sample ~~4~~	7.16	1.28x1000	70.8	~~-12~~	1.7	2 gals 10H
~~5~~				-012		3/8/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/9/93

Weather Conditions: Sunny South Wind 5-15 mph 80's

007886

Well: MW-18 TD 20.09

Depth to Water: 14.88' Well Condition:

Calculated Casing Volume: 0.85 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.44	3.20x1000	73.5			1 gal.
2	6.98	3.69x1000	69.2			1 gal.
3	7.77	3.39x1000	88.4			1 gal.
4	7.77	3.65x1000	81.6			1 gal.
5	7.82	3.59x 1000	74.7	.063	4.3	1 gal. 1105 3/10/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: X 3/5/93

Weather Conditions: Sunny light north wind ≈5mph 60's

007887

Well: MW-19 TD 20.75'

Depth to Water: 13.99' Well Condition:

Calculated Casing Volume: 1.1 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.98	7.28 x100	67.9			1.5 gals
2	6.94	7.39 x100	67.8			1.5 gals
3	6.88	7.87 x100	68.2			1.5 gals
4	~~6.91~~ 6.94	8.14 x100	69.1			2.0 gals
Runoff 5	6.96	8.44 x100	69.8	.045	1.8	1055 3/5/93

6.94 pH

9 total gallons purged

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: ROBERT COFFMAN Date: 3/8/93

Weather Conditions: Sunny South Wind 10-15 mph 70's

007888

Well: MW-20 TD 42.23'

Depth to Water: 14.07' Well Condition:

Calculated Casing Volume: 4.59 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.67	4.76x1000	71.5			5 gals
2	6.63	5.21x1000	69.7			5 gals
3	6.61	5.49x1000	71.6			5 gals
4	6.57	5.50x1000	71.4			5 gals
sample	6.59	5.41x1000	71.8	=007	1.2	8 gals 0435 3/5/93

30 total gallons purged

drum full

* water has a gold color

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

to be measured following evacuation of each well volume. Measurements stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/10/93

Weather Conditions: Sunny South breeze 5mph 60's

007889

Well: MW-21 TD 15.81

Depth to Water: 12.04' Well Condition:

Calculated Casing Volume: 0.61 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.64	1.23X1000	68.9			0.50 gals
2	6.70	1.15X1000	68.7			1.0 gals
3	6.80	1.18X1000	68.8			1.0 gals
Sample	7.18	1.15X1000	72.4	.074	4.7 mg/L	1:30 p.m. 1 hr/s
						3/10/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/10/93

Weather Conditions: Partly Cloudy light South breeze 70's

007890

Well: MW-22 TD 44.31'

Depth to Water: 18.76' Well Condition:

Calculated Casing Volume: 4.16 gal Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.92	6.75 x1000	79.0			
2	6.81	6.65 x1000	77.4			
3	6.74	6.59 x1000	77.4			
4	6.68	6.56 x1000	77.0			
5	6.75	6.65 x1000	79.0	-.018	1.2 mg/L	

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/10/93

Weather Conditions: Partly Cloudy light South breeze 70's

007891

Well: MW-23 TD 41.61

Depth to Water: 18.58 Well Condition:

Calculated Casing Volume: 3.75 gals Casing Stickup:

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	6.74	1.70X1000	72.6			4.5 gals
2	6.88	1.62X1000	72.4			4.5 gals
3	6.86	1.57X1000	71.6			4.5 gals
4	6.83	1.56X1000	71.9			4.5 gals
Sample	6.89	1.59X1000	71.8	-.014	2.5 mg/l	0925 3/10/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: ROBERT COFFMAN Date: 3/12/93

Weather Conditions: Clouds Rain 40's North wind 15-20 mph

007892

Well: MW-24 TD 116.13

Depth to Water: 102.53 102.62 (AD) Well Condition:

Calculated Casing Volume: 8.80 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes	
1	7.32	7.98 X100	62.1			10 gals	1040
2	7.42	9.59 X100	62.6			10 gals	1106
3	7.55	9.15 X100	67.9			8 gals	1310
Sample	7.84	7.96 X100	66.9	.026	~~[illegible]~~ 3.6		1600 3/12/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

1640

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/12/93

Weather Conditions: Cloudy Cold upper 30's North wind 20-25 mph

007893

Well: MW-25 TD 118.5

Depth to Water: 103.06 Well Condition:

Calculated Casing Volume: 10.10 gals Casing Stickup:

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	8.03	7.41 X100	66.8			20 gals purged (clear)
2	8.11	7.07 X100	65.3			10 gals
3	8.08	7.51 X100	66.4			10 gallons
4	7.81	8.04 X100	68.0			10 gallons
~~[illegible]~~	7.55	8.00 X100	64.7	~~[illegible]~~ -.040	1.6 mg/L	3:35 P.M 3/11/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/12/93

Weather Conditions: Cloudy drizzle, low 40's North wind 20-25mph

007894

Well: MW-26 TD

Depth to Water: 174.54 Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.64	5.33 X100	66.0			purged 130 gallons 1220
2	7.61	5.14X100	64.0			purged 40 gals 1320
3	7.60	5.67X100	~~66.4~~ 66.4			40 gals 1516
4	7.73	5.33X100	62.6			55 gals
Sample	7.63	4.77X100	55.3	.020	2.1	30 gals 1630 3/12/93

75 gallons purged during development

water has become cloudy but clear during 3 well volume

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

* Well Volume = 82.42 gals
* Casing Volume = 36.22 gals
Based on 230 foot well

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/10/93

Weather Conditions: Mostly Cloudy southeast wind 5 mph 70's

007895

Well: MW-27 TD 36.91

Depth to Water: 14.66' Well Condition:

Calculated Casing Volume: 3.63 gals Casing Stickup:

Field Parameters

Casing Volume*	pH	Cond	Temp	Eh	DO	Notes
1	7.26	1.42x1000	78.8			5 gallons
2	6.77	1.37x1000	77.1			5 gallons
3	6.99	1.49x1000	77.0			5 gallons
4	6.96	1.50x1000	77.0			5 gallons
Sample	6.86	1.48x1000	80.3	-.05	1.4 mg/l	~~[illegible]~~ 5 gallons

5:05 P.M 3/10/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/8/93

Weather Conditions: Sunny calm winds 60°F

007896

Well: P1A TD 49.69

Depth to Water: 15.82 Well Condition:

Calculated Casing Volume: 22.12 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.12	1.42X1000	70.9			23 gals
2	7.16	1.73X1000	67.7			24 gals
3	7.12	1.84X1000	69.3			25 gals
4	7.14	1.81X1000	70.5	tol		17 gals
Sample	7.11	1.83X1000	70.0	~~-35.0~~ -.035	2.5	8 gals 0950 3/8/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: ROBERT COFFMAN Date: 3/8/93

Weather Conditions: Sunny west wind 5-10 mph 80's

007897

Well: P2A TD 41.48

Depth to Water: 14.50 Well Condition:

Calculated Casing Volume: 4.40 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.12	1.82x1000	78.2			2 gals pumped dry
2	7.37	1.47x1000	77.1			2 gals pumped dry
3						
~~Sample~~	7.02	2.01 x1000	71.4	.055	3.1	0820 3/9/93

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 3/8/93

Weather Conditions: Sunny South wind 5-10

007898

Well: P3 TD 29.97

Depth to Water: 15.33 Well Condition:

Calculated Casing Volume: 2.39 gals Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes
1	7.75	4.10 x 100	69.7			Bailed 3 gals - Dry water is silty
						Not able to collect more than one (1) liter for sample. No field readings taken

Well:

Depth to Water: Well Condition:

Calculated Casing Volume: Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007899

Well: CC1 TD 18.70

Depth to Water: 17.17 Well Condition: _____

Calculated Casing Volume: 1.0 gals Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007900

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007901

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007902

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007903

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: _____ Date: _____

Weather Conditions: _____

007904

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

*Casing Volume	pH	Cond	Temp	Eh	DO	Notes

Well: _____

Depth to Water: _____ Well Condition: _____

Calculated Casing Volume: _____ Casing Stickup: _____

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Notes

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-22-93

Weather Conditions: 66°, SUNNY

007905

Well: MW-1 Total Depth: 43.17'

Depth to Water: 20.12' Well Condition: GOOD

Calculated Casing Volume: ~~15.04~~ 3.80 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.49	6.86 · 1000	69.8			1017	4 GAL
2	6.31	7.21 · 1000	68.9			1020	3.8 GAL
3	6.12	7.81 · 1000	69.0			1026	3.8 GAL
4	6.21	8.09 · 1000	71.5	.041	2.3	1030	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-17-93

Weather Conditions: 70°, SUNNY

007906

Well: ~~EG1~~ MW-2 Total Depth: 43.84

Depth to Water: 16.85 Well Condition: GOOD

Calculated Casing Volume: 4.40 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.03	2.54·1000	63.3			1650	4.5 GAL
2	6.81	3.14·1000	70.2			1654	9.0 GAL
3	6.71	3.47·1000	71.0			1657	13.5 GAL
4	6.72	3.65·1000	68.7			1705	18.0 GAL
5	6.70	3.63·1000	70.1	-.036	0.7	1711	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-22-93

Weather Conditions: 70°, SUNNY

007907

Well: MW-3 Total Depth: 47.93

Depth to Water: 20.38 Well Condition: GOOD

Calculated Casing Volume: 4.5 Casing Stickup:

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.30	3.73·1000	72.0			1113	4.5
2	6.14	4.13·1000	71.0			1116	4.5
3	6.09	4.17·1000	70.3			1120	4.5
4	6.13	4.31·1000	71.0			1122	4.5
5	6.38	4.34·1000	71.8	.024	1.0	1145	STABLE

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: CARY D. CLARK Date: 11-17-93

Weather Conditions: CLEAR SKIES, LIGHT VARIABLE WINDS, 60-65°

007908

Well: MW-4 Total Depth: 110.71

Depth to Water: 101.41 Well Condition: GOOD

Calculated Casing Volume: 6.07 GAL. Casing Stickup: —

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.32	7.95x100	77.7			13:12	6.1 GAL.
2	7.23	7.87x100	75.1			15:17	6.1 GAL.
3	7.50	7.65x100	71.7			16:37	6.1 GAL.
4	7.34	7.92x100	74.9			17:00	6.1 GAL.
5	7.28	8.15x100	75.9			17:48	6.1 GAL.
	7.54	7.93x100		091	3.7	8:48 SAMPLED	11-18-93

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: START INITIAL FLOW WITH PUMP SETTING OF APPROX 275, THEN REDUCE TO 220 FOR BEST RESULTS. (4" DIA.) WELL. WELL TAKES APPROX. 3/4

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: CARY D. CLARK Date: 11-19-93

Weather Conditions:

Well: MW-6 Total Depth: 43.25

Depth to Water: 13.04 Well Condition:

Calculated Casing Volume: 4.10 GAL. Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	8.04	5.20 x 1000	72.9			9:31	4.1 GAL.
2	7.67	5.13 x 1000	73.0			9:40	4.1 "
3	7.76	5.17 x 1000	72.3			9:55	4.1 "
4	7.71	5.23 x 1000	73.1			10:03	4.1 "
5	7.65	5.29 x 1000	72.8			10:10	4.1 "
—	7.89	5.24 x 1000	73.5	108	1.2	10:35	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

007909

roject Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Robert Coffman Date: 11-15-93

Weather Conditions: ~~Quest~~ Overcast, Northwind 10-20 mph 60's

007910

Well: MW-08 Total Depth: 39.36'

Depth to Water: 18.08' Well Condition: OK

Calculated Casing Volume: 3.47 GAL Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.82	2.48x1000	69.9			1550	4.5 gals
2	6.93	2.45x1000	70.6			1603	3.5 gals
3	6.87	2.53x1000	73.0			1620	4.0 gals
4	6.92	2.47x1000	69.9			1635	3.5 gals
5	6.90	2.44x1000	69.1	0.158	1.6	1645	Sample

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Date: 11-19-93

Weather Conditions:

007911

Well: MW-9 Total Depth: 41.31

Depth to Water: 18.21 Well Condition:

Calculated Casing Volume: 3.8 Casing Stickup: —

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.47	497.1000	68.8			1627	3.8
2	6.56	487.1000	68.8			1630	7.6
3	6.69	481.1010	68.8			1633	11.4
4	6.72	496.1000	69.3	-.260	2.0	1635	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: GOOD RECHARGE

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-16-93

Weather Conditions: 66°, RAINING

007912

Well: MW-10 Total Depth: 36.28'

Depth to Water: 16.20' Well Condition: GOOD

Calculated Casing Volume: 3.27 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	5.36	4.12X1000	71.8			0827	@ 3.5 GAL
2	3.88	4.09X1000	73.6			0833	7.0 GAL
3	~~4.15~~ 4.38	4.15X1000	74.4			0840	10.5 GAL
4	2.93	4.40X1000	75.2			0845	14.0 GALL
5	0.45	4.36X1000	76.0			0853	17.5 GAL
1	7.16	3.54X1000	73.2			0953	3.5 GAL
2	7.01	3.46X1000	73.4			0957	7.0 GAL
3	6.93	3.50X1000	73.4			1004	10.5 GA
	6.92						
4	6.92	3.49X	73.4	.104	1.3	1010	14.0 GAL (SAMPLED)

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: pH METER RECALIBRATED AT 9:00 AFTER PUMPING 17.5 GAL.

Post-it™ routing request pad 7664

ROUTING - REQUEST

Please
- [ ] READ
- [ ] HANDLE
- [ ] APPROVE

and
- [ ] FORWARD
- [ ] RETURN
- [ ] KEEP OR DISCARD
- [ ] REVIEW WITH ME

To FIELD PARAMETER SHEETS

Date _____ From _____

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Date: 11-22-93

Weather Conditions: 70-75°, Partly Cloudy,

007913

Well: MW12 Total Depth: 29.90

Depth to Water: 15.03 Well Condition: -

Calculated Casing Volume: ~~4.74~~ 4.84 / 2.42 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
I	6.70	0.9 x 1000	68			1030	0
1	6.39	1.91 x 1000	69.8			1035	2.5
2	6.29	2.03 x 1000	70.5			1039	2.5
3	6.36	1.95 x 1000	69.6			1044	2.5
Sample	6.37	2.03 x 1000	72.3	24 mV	1.1 mg/l	1049	3

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

roject Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: CARY D. CLARK Date: 11-15-93

Weather Conditions: OVERCAST SKIES, LOW 60'S, WIND - N - 10-20, GUSTY

007914

Well: MW-13 Total Depth: 47:23

Depth to Water: 23.29 Well Condition: GOOD

Calculated Casing Volume: 3.9 G Casing Stickup: —

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.26	2.31·1000	69.7			8:35	4 G
2	6.28	2.40·1000	70.4			9:13	4
3	6.59	2.41·1000	71.7			9:45	4
4	6.77	2.68·1000	72.0			10:31	4
	6.73	2.71·1000	73.1	171	2.4	10:50	SAMPLED(1)

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: APPROX. 40 MIN. RECHARGE BETWEEN CASING VOLUMES. PURGED APPROX. 1½ GALS. EVERY 15 MINUTES UNTIL CASING VOLUME OBTAINED.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-18-93

Weather Conditions: 70°, SUNNY

007915

Well: MW-14 Total Depth: 20.40

Depth to Water: 16.21 Well Condition: GOOD

Calculated Casing Volume: 0.68 Casing Stickup:

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.15	1.96·1000	71.0			0904	0.7 GAL
2	6.98	1.77·1000	73.1			0906	1.4 GAL
3	6.92	1.75·1000	72.8			0910	2.1 GAL
4	6.86	1.72·1000	73.6			0914	2.8 GAL
5	6.92	1.75·1000	71.8	.028	2.3	1000	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: WELL RECHARGED FAST ENOUGH FOR CONTINUOUS PURGING.

'roject Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Date: 11-22-93

Weather Conditions: ≈ 75°, partly cloudy, slight breeze

007916

Well: MW-15 Total Depth: 20.06

Depth to Water: 16.90 Well Condition: Good

Calculated Casing Volume: .52 gallons Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
I	7.01	.49 x 1000	73.5			1146	0
1	7.02	.47 x 1000	73.4			1149	1 gal
2	7.03	.47 x 1000	72.7			1202	0.5 gal
3	7.01	1.10 x 1000	77.7			1315	0.5 gal
3.5	7.13	1.01 x 1000	77.6			1325	0.25 gal
	6.78	2.35 x 1000	76.1	-12 mV	3.4 mg/l	1349	0.25 gal

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

1205 Well went dry, went to lunch.
1300 on-site

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-17-93

Weather Conditions: 68°, SUNNY

007917

Well: MW-16 Total Depth: 21.88

Depth to Water: 18.65 Well Condition:

Calculated Casing Volume: 0.53 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.52	0.16x1000	56.8			0826	0.5 GAL
2			70.0			0853	1.0 GAL
1	7.41	4.29·1000	66.3			0911	0.5 GAL
2	7.17	4.42·1000	75.3			1053	1.0 GAL
3	7.13	3.96·1000	63.3	.077	7.3	0735	SAMPLED ON 11-18-93

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: CHANGE COND/TEMP/pH METER @ 0911
V. SLOW RECHARGE AFTER 1.5 GAL (TOTAL PURGED VOLUME @ 0853)
ALLOWED WELL TO RECHARGE OVERNITE. SAMPLED ON 11-18-93

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: CARY D. CLARK Date: 11-19-93

Weather Conditions: 68-70°, CLEAR TO PARTLY CLOUDY SKIES, LIGHT SOUTH WIND

007918

Well: MW-17A Total Depth: 42.85

Depth to Water: 16.49 Well Condition: GOOD

Calculated Casing Volume: 4.3 GAL. Casing Stickup: —

Field Parameters

Casing Volume	pH	ΔC Cond	Temp	Eh	DO	Time	Vol
1	6.82	1 7.05x1000	71.5			11:34	4.3 GAL.
2	6.50	1 7.32x1000	74.5			11:41	4.3 "
3	6.34	1 7.45x1000	75.0			11:46	4.3 "
4	6.47	1 7.56x1000	75.2			11:50	4.3 "
5	6.39	1 7.43x1000	74.8			11:53	4.3 "
—	6.73	1.49x1000	74.2	042	1.4	1210 SAMPLED	

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: HEAVY SEDIMENT / SAND IN WELL UPON INITIAL PURGING, CLEARED AS MORE WATER WAS PURGED FROM WELL.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: CARY D. CLARK Date: 11-16-93 (SAMPLED 11-17-

Weather Conditions: 11-16-93 HEAVY OVERCAST / CLOUDY SKIES, MOD. TO HEAVY RAINS, LOW TO MID 70'S
11-17-93 CLEAR SKIES, LIGHT VARIABLE WINDS, 55-60° F

007919

Well: MW-18 Total Depth: 20.07

Depth to Water: 15.31 Well Condition: GOOD

Calculated Casing Volume: .776 GAL. Casing Stickup: —

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	8.56	7.91x10	68.8			8:34	1 GAL.
2	7.73	3.09x1000	71.1			8:39	
3	7.02	3.73x1000	71.8			11:08	
4	7.11	3.91x1000	68.7			11:41	
5	7.24	4.02x1000	66.7	052	6.3	8:48 (11-17-93)	1 GAL (SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: VERY SLOW RECHARGE. MUST OBTAIN CASING VOLUMES ON DAY ONE AND THEN LET WELL RECHARGE OVERNIGHT IN ORDER TO OBTAIN SAMPLES THE NEXT DAY. AFTER OVERNIGHT RECHARGE, WELL PRODUCES APPROX. 1 1/2 TO 2 GALLONS OF WATER

007920

roject Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-18-93

Weather Conditions: 75°, SUNNY

Well: MW-19 Total Depth: 20.69

Depth to Water: 15.33 Well Condition:

Calculated Casing Volume: .874 Casing Stickup: —

Field Parameters

* Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.65	7.91x100	74.6			16:29	1 GAL.
2	7.02	9.04 x100	74.0			16:34	1 "
3	6.92	8.45x100	74.3			16:37	1 "
4	6.95	8.50x100	74.6			16:42	1 "
5	7.18	8.10x100	74.1			16:48	1 "
—	7.07	8.26x100	73.5	017	1.9	17:17	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: Date: 11-22-93

Weather Conditions: 60-65°, partly cloudy, slight breeze

007921

Well: MW-20 Total Depth:

Depth to Water: Well Condition: Good

Calculated Casing Volume: 17.7 gallons Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
I	5.85	5.28 x 1000	60.4			0805	0
1	5.96	~~5.46~~ 7.43	63.5			0816	18 gal
2	6.05	7.65 x 1000	63.3			0828	18 gal
3	6.15	7.89 x 1000	64.8			0840	18 gal
4							
5							
Sample	6.18	8.23	65.3	.052	3.4 mg/L	0845	

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Start at 0805
Pumped at 140 Hz
Sample at 0845

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-15-93

Weather Conditions: 70°, CLOUDY, WINDY

007922

Well: MW-21 Total Depth: 15.85'

Depth to Water: 13.32' Well Condition: GOOD

Calculated Casing Volume: 0.4 GAL. Casing Stickup: FLUSH MOUNT

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.83	8.34 X100	68.2			13.27	0.5 gals
2	6.85	10.28 X100	73.4			14:15	1.5 GAL
3	6.57	9.83 X100	74.4			14.53	2.0 GAL
4	6.58	9.73 X100	74.5			15.16	2.25 GAL
	6.78	8.02 X100	68.2	134	4.0	16.11	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: V. SLOW RECHARGE, WELL NEEDS NEW SECURITY BOXES. Had to allow well to recharge to get enough water for field readings.

Industrial Compliance

A Subsidiary of
SP Environmental Systems, Inc.

SHEET ____ OF ____ JOB NO. _____

PROJECT _____

BY _____ DATE ___/___/___

CHECKED BY _____ DATE ___/___/___

007923

MW-22

TD: 44.23

DTW: 20.81 Casing Volume 23.44

MW-22 .163

7032

14064

2344

382072 gallons

4 gallon

Well Volume	Temp	Cond x 1000	pH	Eh	DO	Time	Gal
I	72.9	7.17	6.14			1450	0
1	71.3	6.90	6.13			1458	4
2	72.1	7.33	6.07			1505	4
3	72.8	6.92	6.15			1515	4
5	73.7	7.20	6.14	-18 mV	1.1 mg/l	1520	2

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-19-93

Weather Conditions: 65° PTLY CLOUDY

007924

Well: ~~MW-24~~ MW-23 Total Depth: ~~45.97~~ 41.86'

Depth to Water: ~~102.71~~ 19.27' Well Condition:

Calculated Casing Volume: 3.6 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.12	1.72·1000	69.8			0901	4.3
2	7.09	1.64·1000	71.9			0935	3.6
3	6.93	1.66·1000	73.2			0936	3.6
4	6.84	1.65·1000	72.2			0936	3.6
5	6.79	1.76·1000	72.0			0943	3.6
6	6.78	1.76·1000	72.2			0946	3.6
7	6.80	1.76·1000	72.6	.133	1.4	1011	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: STOPPED @ 4.3 GALS. MEASURED DEPTH TO WATER & TOTAL DEPTH BEFORE PURGING AGAIN.
CASING VOLUME (1) – WATER WAS VERY SILTY – PURGED 2 GALLONS TO CLEAN UP.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: CARY D. CLARK Date: 11-18-93

Weather Conditions:

007925

Well: MW-24 Total Depth: 115.91

Depth to Water: 102.71 Well Condition: GOOD

Calculated Casing Volume: 8.62 GAL. Casing Stickup: —

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	5.19	1.11x1000	75.8			11:50	8.7
2	6.80	1.10x1000	74.6			12:02	8.7
3	6.47	1.38x1000	73.5			13:03	8.7
4	6.03	1.30x1000	74.2			13:07	8.7
5	6.03	1.33x1000	73.5			13:13	8.7
6	6.22	1.33x1000	73.7	.021	1.1	14:25	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: CALIBRATED HYDAC METER AFTER CASING VOL. #1.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-18-93

Weather Conditions: 75°, SUNNY

007926

Well: MW-25 Total Depth: 122.50

Depth to Water: 103.90 Well Condition:

Calculated Casing Volume: ~~3.03~~ 12.13 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.28	0.92 · 1000	75.2			1135	12.2 GAL
2	7.25	0.84 · 1000	73.7			1145	24.2 GAL
3	7.15	0.87 · 1000	72.2			1153	36.2 GAL
4	7.17	0.87 · 1000	72.2			1155	48.2 GAL
5	7.06	0.89 · 1000	71.4			1203	60.2 GAL
	7.31	0.91 · 1000	74.3	.018	1.2	1405	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENSE PUFF Date: 11-18-93

Weather Conditions: 75° SUNNY

007927

Well: MW-28A Total Depth: 121.40

Depth to Water: 102.56 Well Condition: GOOD

Calculated Casing Volume: 12.28 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	10.06	0.69-1000	73.7			15:29	12.3 GAL
2	9.18	0.68-1000	72.0			15:34	24.6 GAL
3	8.61	0.67-1000	71.1			15:39	36.9 GAL
4	7.99	0.71-1000	71.2			15:45	49.2 GAL
5	7.80	0.69-1000	70.8			15:50	61.5 GAL
6	7.52	0.69-1000	70.8			15:56	73.8 GAL
7	7.41	0.69-1000	70.5			16:01	86.1 GAL
8	7.39	0.73-1000	70.3			16:07	98.4 GAL
9	7.33	0.70-1000	70.1			16:12	110.7 GAL
10	7.33	0.68-1000	69.8			16:17	123.0 GAL
11	7.36	0.68-1000	69.8			16:23	135.3 GAL
12	7.36	0.70-1000	69.8			16:29	147.6 GAL

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: V. GOOD RECHARGE

13	7.54	0.68-1000	68.5	.083	1.3	16:50	SAMPLED

CE PIA W02P

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENSE PUFF Date: 11-14-93

Weather Conditions: 75°, PTLY CLOUDY

007928

Well: PIA Total Depth: 49.69

Depth to Water: ~~17.70~~ 16.97 Well Condition:

Calculated Casing Volume: 21.3 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	8.06	2.34·1000	75.8			1338	21.3
2	7.36	2.03·1000	74.5			13.46	42.6
3	7.24	2.02·1000	74.4			13.54	63.9
4	7.31	2.06·1000	74.2			1401	85.2
5	7.31	2.10·1000	74.3	.009	0.6	1403	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

cc P2W02P

007929

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-19-93 + 11-22

Weather Conditions: 75°, CLOUDY (11-19-93) / 70°, SUNNY (11-22-93)

Well: P2 Total Depth: 32.43

Depth to Water: 15.97 Well Condition: GOOD

Calculated Casing Volume: 2.68 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	6.36	3.44·1000	70.7			0911	2.0
2	6.39	2.36·1000	71.9			1134	0.25
3	6.43	2.36·1000	71.6			1416	0.50
4	6.83	1.08·1000	71.1	.025	4.9	1530	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: V. SLOW RECHARGE AFTER 2 GALLONS PURGED. CASING VOLUME (1) WAS PURGED ON 11-19-93.

roject Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-19-93 + 11-22-93

Weather Conditions: 11-19-93 70°, CLOUDY, WINDY / 11-22-93 70°, SUNNY

007930

Well: P3 Total Depth: 29.25

Depth to Water: 16.28 Well Condition: GOOD

Calculated Casing Volume: 2.1 Casing Stickup: —

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.76	1.47.1000	70.9			1533	2.0
2	6.76	1.78.1000	66.0			0931	1.5
3	6.93	1.35.1000	72.7			1404	1.0
4	6.86	1.47.1000	72.0	.009	5.1	1510	SAMPLED

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes: V. SLOW RECHARGE AFTER 1 GALLON PURGED. CASING VOLUME (1) WAS PURGED ON 11-19-93.

Project Name: Crystal Chemical Groundwater RD Project Number: 44101724

Name: DENISE PUFF Date: 11-19-93

Weather Conditions: 65°, SUNNY, PTLY CLOUDY

007931

Well: CC-1 Total Depth: 18.71

Depth to Water: 18.51 18.15 REMEASURED ON 11-19-93 Well Condition:

Calculated Casing Volume: 0.37 Casing Stickup:

Field Parameters

Casing Volume	pH	Cond	Temp	Eh	DO	Time	Vol
1	7.20	3.06·1000	69.8			0812	0.4
2	7.32	2.97·1000	70.5			0816	0.8
3	7.45	3.14·1000	70.9			0841	1.2
4	7.35	3.10·1000	71.3	0.042	6.5	1035	SAMPLING

* Field parameters are to be measured following evacuation of each well volume. Measurements shall be allowed to stablize within +/-10% of the previous reading.

Sampling Notes:

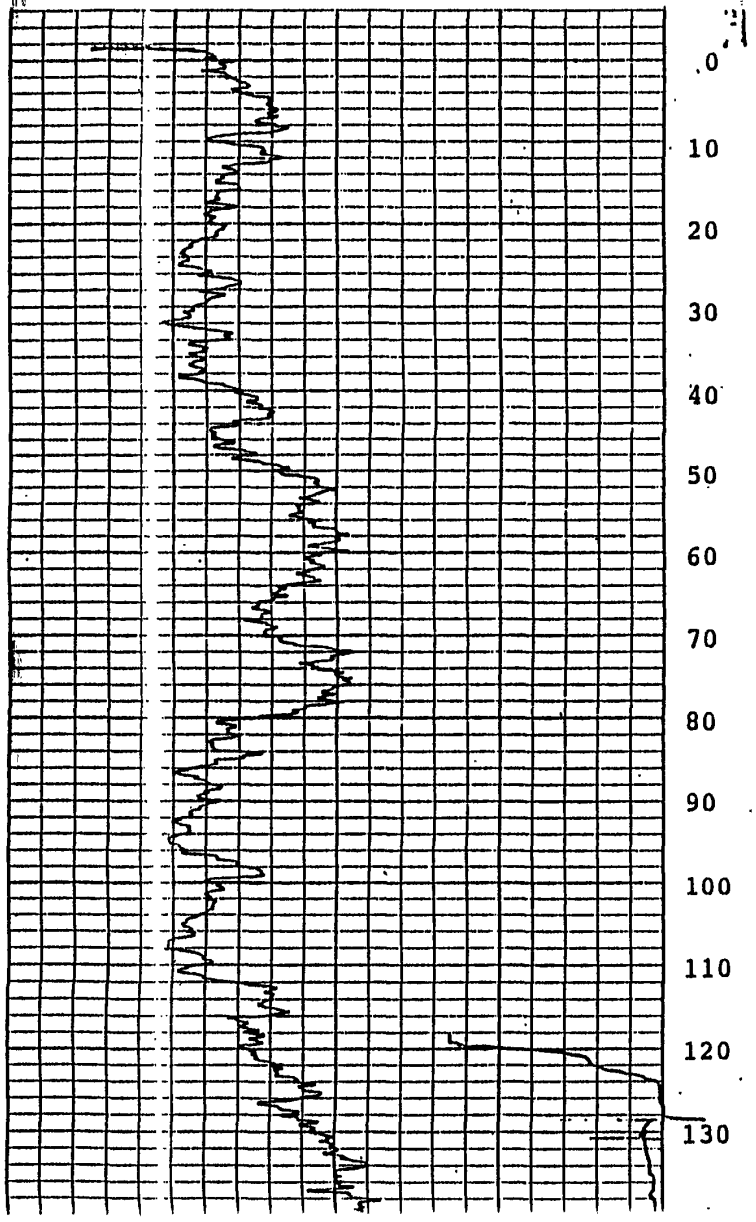
CON-TEX WATER WELL COMPANY

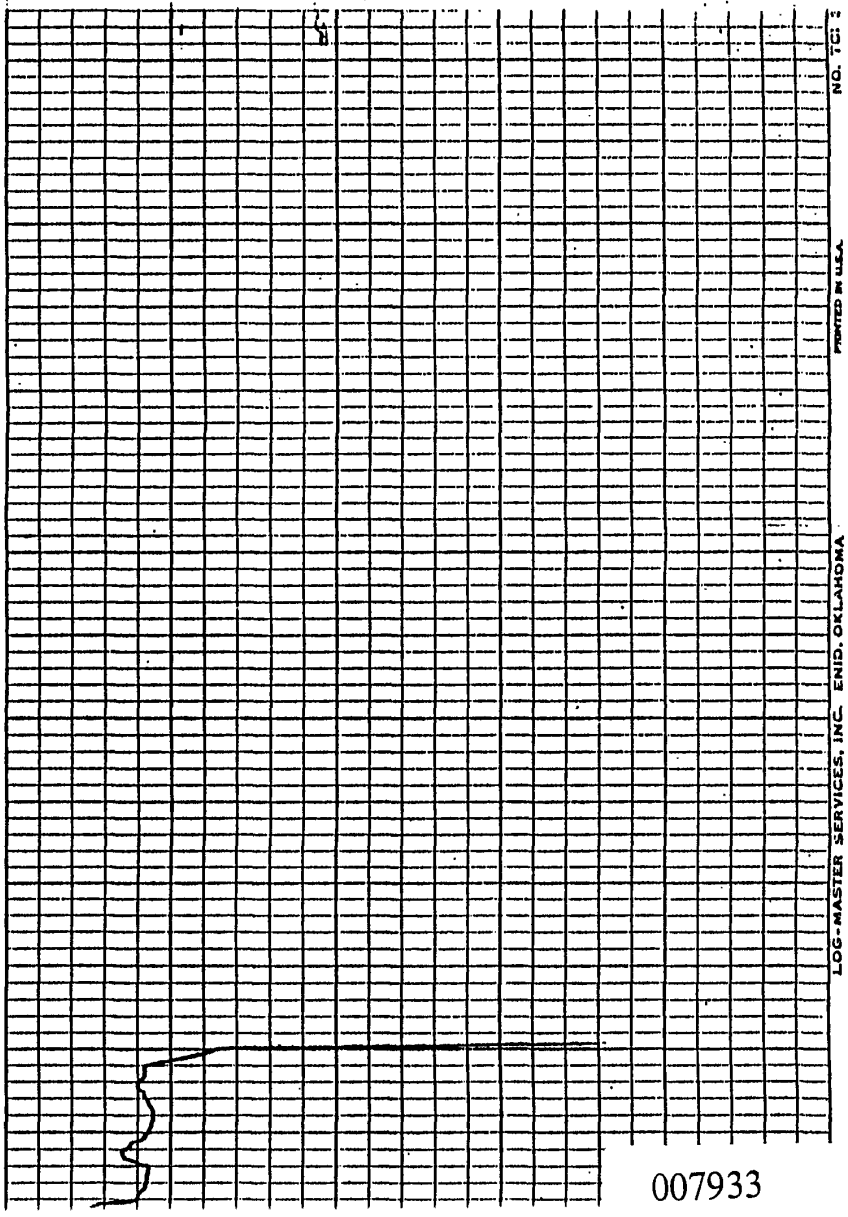
ELECTRIC LOG

DATE: 1/11/93	RUN #: 1	COMPANY: Layne Envirnmental Ser.
DEPTH DRILLER: 247	HOLE SIZE: 9 7/8	WELL: mw-26
DEPTH CON-TEX: 247	FLUID RES.: 17.5 Ohm-meter	COUNTY: Harris
RUN BY: J.Scott	DENS./VISC.: -------	LOCATION: Beltway 8 . & Westpark
WITNESSED BY: Aaron Nesbit	pH/FLUID LOSS: --------	Houston, Texas
DRILLER: A. Nesbit	SOURCE OF SAMPLE: pit	TIME SINCE CIRC.: 10 min
LOG MEASURED FROM: Groud Level		
DRILLING MEASURED FROM: Ground Level		
SERVICE TICKET NO.: 1005		

		DEPTH IN FEET	
Gamma Ray	SP		Single Point Resistivity
T.C. = 2	Range = 25		Range =25
Range = 10mv			

007932





LOG-MASTER SERVICES, INC. ENID, OKLAHOMA
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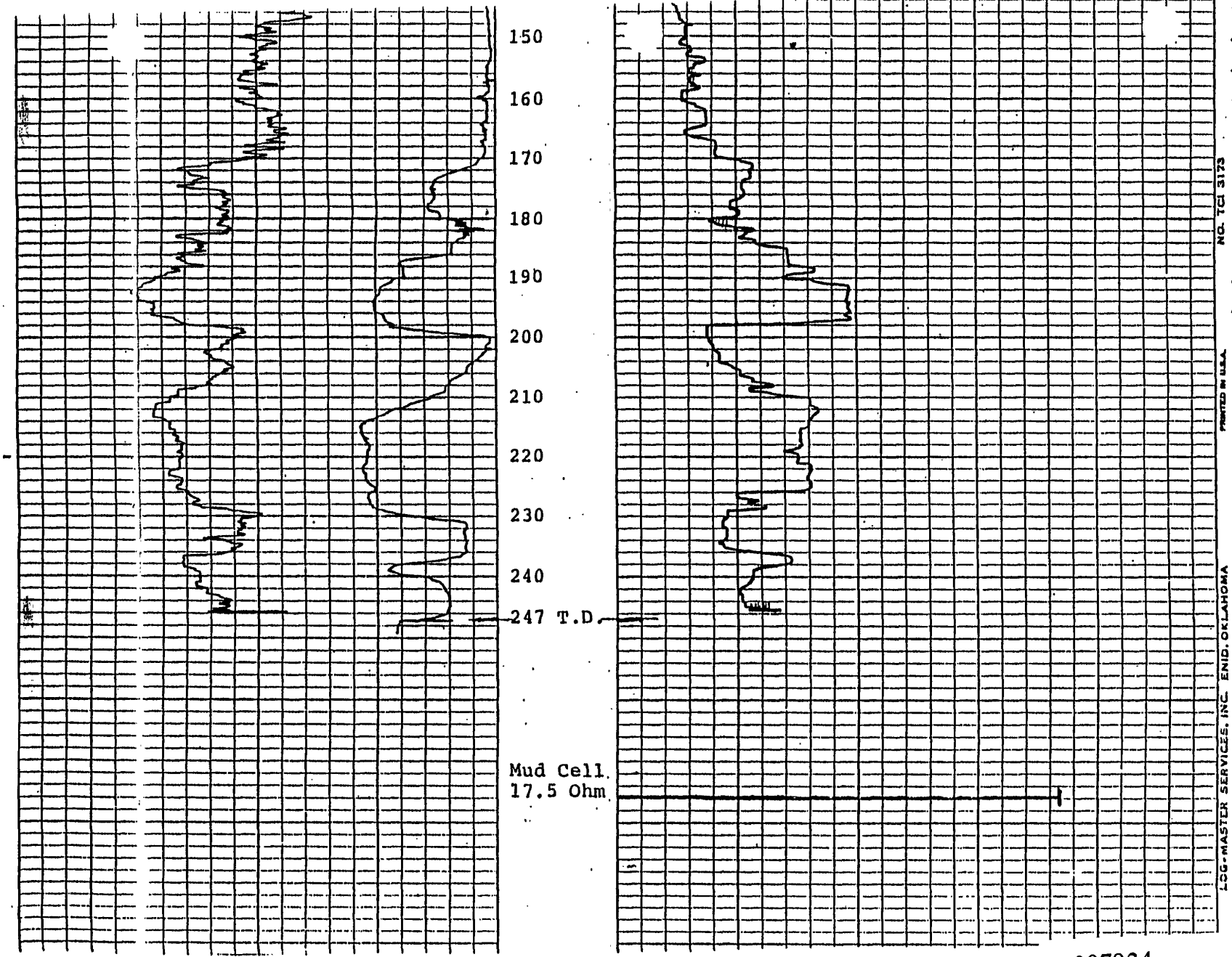
007933

007933



007934

007934

Industrial Compliance
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LOG OF BORING NUMBER FPB-
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007935

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 11/30/93 FINISH DATE: 11/30/93
START TIME: 0945 FINISH TIME: 1100

DRILLING METHOD:
HOLLOW STEM AUGERS

SAMPLING METHOD:
2-FOOT SHELBY TUBE

SURFACE ELEVATION: 77.65
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		CAP 0.75	CHOCOLATE BROWN MEDIUM STIFF CLAY (CH); CLAY CAP FILL
						BLUEISH-GRAY MEDIUM STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING IMMEDIATELY BELOW PLASTIC LINER FROM 0.75-1 FOOT
						BLACK MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe NODULES
			75%			
					CH	
			75%	5		GRADING TO DARK GRAY W/OCCASIONAL LARGE CALCAREOUS NODULES
					5.75	
			100%			DARK GRAY MEDIUM STIFF SANDY CLAY (CL)
					CL	GRADING TO LIGHT GRAY W/ABUNDANT LARGE CALCAREOUS NODULES BELOW 7 FEET AND YELLOW IRON STAINING
			90%			
				10		GRADING TO BUFF STIFF VERY SANDY CLAY (CL), NO CALCAREOUS NODULES, INCREASE YELLOW IRON STAINING
			75%		SW	BUFF TO LIGHT BROWN CLAYEY FINE TO MEDIUM-GRAINED SAND (SW) WELL GRADED
					SC	BUFF TO LIGHT BROWN CLAYEY WELL GRADED SAND (SC)
			50%			BUFF TO LIGHT BROWN FINE TO MEDIUM-GRAINED SAND (SW), MOIST AT 12 FEET.
			50%	15	SW	SATURATED AT 14 FEET
			50%			
			50%			
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB1

Industrial Compliance
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LOG OF BORING NUMBER FPB
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007936

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SHELBY TUBE
BORING LOCATION:	
	SURFACE ELEVATION: 78.52
	WATER LEVEL:
START DATE: 11/30/93 FINISH DATE: 11/30/93	TIME:
START TIME: 1250 FINISH TIME: 1340	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CAP	REDDISH-BROWN MEDIUM STIFF SANDY CLAY (CL) CLAY CAP FILL
			75%		1.0	PLASTIC LINER AT 1 FOOT
						DARK GRAY MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe NODULES
						AND ROOTS
						LARGE CALCAREOUS NODULES BELOW 2 FEET
			60%		CH	
						GRADING TO GRAY
			75%	5		
					6.0	
						GRAY STIFF SLIGHTLY SANDY CLAY (CL) W/OCCASIONAL Fe NODULES AND
			90%			LARGE CALCAREOUS NODULES, OCCASIONAL YELLOW IRON STAINING
					CL	GRADING TO LIGHT GRAY INCREASE CALCAREOUS NODULES AND Fe NODULES
			100%			W/YELLOW IRON STAINING
				10		
			100%			CALCAREOUS ZONE AT 11 FEET
						REDDISH-BROWN SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL CLAY
					SM	AND Fe NODULES
			50%			MOTTLED RED AND LIGHT GRAY BELOW 11.5 FEET
						RED AND BUFF FINE-GRAINED SAND (SP), DAMP
						WET AT 14 FEET
			75%	15	SP	
						BECOMING BROWN AND MEDIUM-GRAINED SAND, SATURATED
			25%			
			25%			
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-3
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007937

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SHELBY TUBE
BORING LOCATION:	
	SURFACE ELEVATION: 78.96
	WATER LEVEL:
START DATE: 11/30/93 FINISH DATE: 11/30/93	TIME:
START TIME: 1420 FINISH TIME: 1515	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			30%		Cap	GREENISH-GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS NODULES AND SAND. CLAY CAP FILL
			0%		CH	OBSTRUCTION ENCOUNTERED AT 1.5 FEET, NO RECOVERY FROM 1.5 TO 4 FEET
			65%	5	CH	DARK GRAY STIFF CLAY (CH) W/OCCASIONAL Fe AND CALCAREOUS NODULES
			80%		CH	INCREASE CALCAREOUS NODULES (LARGE)
			75%		CH	GRADING TO LIGHT GRAY, CALCAREOUS W/ABUNDANT CALCAREOUS NODULES AND ZONES, OCCASIONAL YELLOW IRON STAINING
				10	CH	SOME Fe STAINING NOTED AT 10 FEET
			50%		CL	LIGHT GRAY AND RED MEDIUM STIFF SILTY/SANDY CLAY (CL); CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
			75%		CL	INCREASE SILT CONTENT AT 11.5 FEET; DECREASE CALCAREOUS NODULES
					CL	DECREASE SILT CONTENT AND STIFFNESS
			65%	15	SM/SC	REDDISH-BROWN CLAYEY/SILTY FINE-GRAINED SAND (SM/SC), DAMP
					SM/SC	SOME YELLOW IRON STAINING AT 15.5 FEET
			100%		SM	YELLOW-BROWN SILTY FINE-GRAINED SAND (SM), MOIST
					SM	WET AT 16 FEET
			60%		SM	CLAY LENSE AT 19 FEET; 3-INCHES THICK
				20	CL	LIGHT GRAY LOOSE SANDY CLAY (CL)

BOTTOM OF BORING AT 20 FEET

GEOLOGIST: ROBERT COFFMAN

CHECKED BY: DATE:

DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB3

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-4
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007938

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SHELBY TUBE
BORING LOCATION:	
	SURFACE ELEVATION: 77.52
	WATER LEVEL:
START DATE: 12/1/93 FINISH DATE: 12/1/93	TIME:
START TIME: 0800 FINISH TIME: 0925	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			60%		CAP	GREENISH-GRAY STIFF CLAY (CH); SANDY AT TOP W/OCCASIONAL RED CLAY - CLAY CAP FILL, PLACTIC LINER AT APPROXIMATELY 1-FOOT
			60%		POND FILL	DARK GRAY MEDIUM STIFF CLAY (CH) W/ABUNDANT CALCAREOUS NODULES, BLOCKY, DOES NOT APPEAR TO BE NATIVE MATERIAL, PROBABLE POND BOTTOM OF POND FILL MATERIAL ESTIMATED AT 3.5'
			30%	5	CH	BLACK MEDIUM STIFF TO STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND ROOTS
			75%		CH	GRADING TO MEDIUM GRAY, MEDIUM STIFF, INCREASE CALCAREOUS AND Fe NODULES
			100%		CH	GRADING TO LIGHT GRAY; BECOMING CALCAREOUS
				10	CH	VERY CALCAREOUS W/CALCAREOUS ZONES BELOW 9 FEET
			65%		CL	LIGHT GRAY TO BUFF STIFF SANDY CLAY (CL) W/OCCASIONAL Fe NODULES
					SM/SC	BUFF CLAYEY/SILTY VERY FINE-GRAINED SAND (SM/SC), DAMP
			50%		SM	BUFF SILTY VERY FINE-GRAINED SAND (SM)
					SP	BUFF MEDIUM-GRAINED SAND (SP), WET
			85%	15	SM	BUFF TO LIGHT GRAY SILTY VERY FINE-GRAINED SAND (SM)
			50%		SM	SOME CLAY AT 16 FEET SATURATED AT 16.5 FEET
					SM	OCCASIONAL CLAY LENSES BELOW 17 FEET
			50%		SM	DECREASE SILT CONTENT
				20	SM	

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-4
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007939

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 2-FOOT SHELBY TUBE
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/1/93 FINISH DATE: 12/1/93	TIME:
START TIME: 0800 FINISH TIME: 0925	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			50%		SM	BUFF SLIGHTLY SILTY VERY FINE-GRAINED SAND (SM)
					CL	BUFF TO LIGHT GRAY MEDIUM STIFF SANDY CLAY (CL)
			100%		CH	RED AND GRAY VERY STIFF CLAY (CH), CALCAREOUS W/OCCASIONAL CALCAREOUS NODULES
						BOTTOM OF BORING AT 24 FEET
				25		
				30		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB42

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-5
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007940

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SHELBY TUBE
BORING LOCATION:	
	SURFACE ELEVATION: 78.64
	WATER LEVEL:
START DATE: 12/1/93 FINISH DATE: 12/1/93	TIME:
START TIME: 1045 FINISH TIME: 1125	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			50%		Cap	TAN AND DARK GRAY MOTTLED CLAY (CH) W/OCCASIONAL LARGE CALCAREOUS NODULES. CLAY CAP FILL, PLASTIC LINER AT 1-FOOT
						HIT OBSTRUCTION AT 1.5 FEET. NO RECOVERY FROM 1.5 TO 4 FEET
			0%			
			50%	5	CH	BLACK STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND ROOTS
			50%			GRADING TO DARK GRAY; INCREASE Fe NODULES
			75%			GRADING TO GRAY W/CALCAREOUS NODULES
				10		BECOMING CALCAREOUS
			50%			
						VERY CALCAREOUS AT 11.5 FEET
					CL	REDDISH-BROWN VERY STIFF SLIGHTLY SILTY CLAY (CL) VERY CALCAREOUS
			50%		CH	RED AND GRAY VERY STIFF CLAY (CH) VERY CALCAREOUS W/OCCASIONAL Fe NODULES
			75%	15		CALCAREOUS ZONE
			60%		CL	LIGHT GRAY VERY STIFF SLIGHTLY SANDY CLAY (CL) W/YELLOW IRON STAINING, CALCAREOUS
						OCCASIONAL CALCAREOUS NODULES BELOW 17 FEET
			70%			OCCASIONAL Fe STAINING AT 19.5 FEET
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB5

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-6
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX
BORING LOCATION:

START DATE: 12/1/93 FINISH DATE: 12/1/93
START TIME: 1315 FINISH TIME: 1425

DRILLING METHOD: HOLLOW STEM AUGERS
SAMPLING METHOD: 2-FOOT SHELBY TUBE
SURFACE ELEVATION: 80.77
WATER LEVEL:
TIME:
DATE:

007941

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			0%		ROAD BASE	TEMPORARY ROAD BASE MATERIAL
			100%		POND FILL	BROWN HARD SANDY SILTY CLAY, APPEARES TO BE LIME STABILIZED, VERY FRIABLE W/UNIDENTIFIED ODOR. LOOSE INPART, W/DEBRIS AND WOOD FRAGMENTS. PROBABLE POND FILL MATERIAL
			100%	5		
						BOTTOM OF POND FILL MATERIAL ESTIMATED AT 6'
			25%		CH	DARK GRAY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND CALCAREOUS NODULES
			50%			GRADING TO GRAY W/DECREASING Fe NODULES AND ABUNDANT LARGE CALCAREOUS NODULES
			40%	10		
						BECOMING VERY CALCAREOUS
						RED AT 12 FEET
			25%		CL	RED VERY STIFF SILTY/SANDY CLAY (CL), VERY CALCAREOUS
			40%	15	CH	RED AND GRAY VERY STIFF CLAY (CL) CALCAREOUS W/CALCAREOUS NODULES THROUGHOUT
			45%		CL	LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES AND YELLOW IRON STAINING
			50%			OCCASIONAL Fe NODULES BELOW 19 FEET
				20		INCREASE CALCAREOUS NODULES BELOW 21.5 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY:
DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

BOTTOM OF BORING AT 22 FEET TO COMPENSATE FOR ABOVE GRADE ROAD BASE

FPB6

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-7
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007942

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	2-FOOT SHELBY TUBE
BORING LOCATION:	
	SURFACE ELEVATION: 77.78
	WATER LEVEL:
START DATE: 12/1/93 FINISH DATE: 12/1/93	TIME:
START TIME: 1500 FINISH TIME: 1615	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			0%			NO SAMPLES RECOVERED. DRILLED THROUGH HARD BROWN MATERIAL FROM SURFACE TO 2 FEET BELOW GRADE
			50%		POND FILL	BLACK SOFT CLAY (CH) W/OCCASIONAL Fe NODULES AND CALCAREOUS NODULES, HIGH MOISTURE CONTENT. APPEARS TO BE FILL MATERIAL
			25%	5		BROWN SANDY LOAM MATERIAL W/LARGE ROCKS AND DEBRIS, UNIDENTIFIED ODOR
						BOTTOM OF POND FILL MATERIAL ESTIMATED AT 6'
			50%		CH	LIGHT GRAY SOFT CLAY (CH), MOIST
					CL	LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING
			75%			GRADING TO GREENISH-GRAY
				10		
			80%			INCREASE SAND CONTENT; MEDIUM STIFF
					SM	BUFF SILTY VERY FINE-GRAINED SAND (SM), MOIST
			40%		SP	BUFF VERY FINE GRAINED SAND (SP), DAMP
			75%	15		SATURATED AT 14 FEET
						BOTTOM OF BORING AT 16 FEET
				20		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB7

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-8
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007943

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION: 79.00
	WATER LEVEL:
START DATE: 12/3/93 FINISH DATE: 12/3/93	TIME:
START TIME: 1340 FINISH TIME: 1510	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		Cap	GRAY AND BROWN MEDIUM STIFF CLAY (CH) SANDY ON SURFACE, HARD, CLAY CAP. PLASTIC LINER AT 0.75 FEET
			0%		POND FILL	DRILLED THROUGH HARD BROWN MATERIAL BETWEEN 1 & 2.5 FEET, NO RECOVERY
			50%			BLACK VERY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND ODOR, DOES NOT APPEAR TO BE NATIVE. PROBABLE POND FILL
				5		GREENISH BROWN VERY STIFF SANDY CLAY (CL) W/OCCASIONAL ROCKS (DEBRIS), ODOR
			100%			DARK GRAY VERY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES, ODOR
						CHOCOLATE BROWN SOFT SILTY CLAY MATERIAL, WET AND PASTY TEXTURE IN TOP 3-INCHES, FOLLOWED BY HARD BROWN MATERIAL (3-INCHES) LOOSE BELOW 8.25 FEET W/OCCASIONAL ROCK FRAGMENTS
						BLACK MEDIUM STIFF CLAY W/ROCK FRAGMENTS AT 9.5-10 FEET
						BOTTOM OF POND FILL MATERIAL ESTIMATED AT 9'
					CH	OLIVE GREEN STIFF CLAY (CH), VERY CALCAREOUS
				10		
			100%			OLIVE GREEN AND RED STIFF SANDY CLAY (CL), CALCAREOUS W/Fe NODULES
					CL	DAMP AT 12.5 FEET
						GRADING TO GRAY AND OILVE GREEN
					SC	GRAYISH BUFF CLAYEY VERY FINE-GRAINED SAND (SC)
					SP	TAN FINE-GRAINED SAND (SP), WET
				15		
			60%			
						GRADING TO BUFF
				20		

GEOLOGIST: ROBERT COFFMAN

BOTTOM OF BORING AT 20 FEET

CHECKED BY:

DATE:

DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB8

Industrial Compliance
A Subsidiary of SP Environmental Systems, inc.

LOG OF BORING NUMBER FPB-9
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007944

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION: 79.43
	WATER LEVEL:
START DATE: 12/6/93 FINISH DATE: 12/6/93	TIME:
START TIME: 0900 FINISH TIME: 1035	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						NO SAMPLES RECOVERED; DRILLED THROUGH HARD BROWN MATERIAL FROM SURFACE TO 2.5 FEET BELOW GRADE
						DARK GRAY SOFT TO MEDIUM STIFF CLAY (CH); PROBABLE FILL MATERIAL
						GREENISH GRAY MEDIUM STIFF SANDY CLAY (CL) W/OCCASIONAL Fe NODULES: BLOCKY
				5	POND FILL	GRADING TO DARK GRAY
						3-INCHES OF CHOCOLATE BROWN SOFT SILTY CLAY (CL) W/3-INCHES HARD ZONE IMMEDIATELY BELOW
					POND	BOTTOM OF POND FILL MATERIAL ESTIMATED AT 7.5 FEET
					CH	DARK GRAY AND GRAY STREAKED MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe AND CALCAREOUS NODULES; OCCASIONAL GREENISH GRAY STREAKS
						LIGHT GRAY MEDIUM STIFF VERY SANDY CLAY (CL)
				10		
						GRAY STIFF SLIGHTLY SANDY CLAY (CL) W/OCCASIONAL Fe NODULES AND CALCAREOUS NODULES, CALCAREOUS
					CL	
				15		
						BUFF MEDIUM-GRAINED SAND (SP) W/OCCASIONAL YELLOW IRON STAINING
					SP	
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB9

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-10
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007945

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION: 78.83
	WATER LEVEL:
START DATE: 12/14/93 FINISH DATE: 12/14/93	TIME:
START TIME: 0955 FINISH TIME: 1145	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
NO RECOVERY 0-1 FEET HARD SURFACE					CAP	RED BROWN GREEN AND GRAY MOTTLED MEDIUM STIFF SILTY CLAY (CL)
						CLAY CAP MATERIAL W/SOME SAND AND PEBBLE SIZED CALCAREOUS
						NODULES; ODOR
			100%		POND FILL	
						LIGHT GRAY CLAYEY SILT (ML), DRY
						DARK GRAY STIFF SLIGHTLY SILTY CLAY (CL); BLOCKY IN PART
						W/CALCAREOUS NODULES BELOW 4.5 FEET; ODOR
				5		
			100%			
						3-INCHES OF CHOCOLATE BROWN SOFT SILTY CLAY (CL); MOIST; ODOR
						LIGHT GREEN TO GRAY MEDIUM STIFF SILTY CLAY (CL); ODOR
						BECOMING LOOSE W/CALCAREOUS NODULES; SILT CONTENT INCREASING
				10		
			100%			MOTTLED LIGHT GREEN AND GRAY; CRUMBLES INTO CHUNKS
						BOTTOM OF POND FILL MATERIAL ESTIMATED AT 11.5'
					CL	
				15	SC/SM	LIGHT BROWN TO TAN AND GREEN CLAYEY/SILTY VERY FINE-GRAINED SAND (SC/SM)
			75%			
						NO CLAY BELOW 16 FEET
						GRADING TO REDDISH BROWN
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB10

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-11
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007946

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION: 77.44
	WATER LEVEL:
START DATE: 12/15/93 FINISH DATE: 12/15/93	TIME:
START TIME: 0830 FINISH TIME: 1025	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						TAN, DARK BROWN AND GRAY MOTTLED STIFF CLAY (CH) W/OCCASIONAL
			100%		CAP	CALCAREOUS NODULES
						PLASTIC CAP LINER AT 1.5 FEET
						LIGHT GRAY SILTY/SANDY GRAVEL (GW)
						DARK GRAY MEDIUM STIFF SLIGHTLY SILTY CLAY (CL); ODOR; MOIST
						GRADING TO BROWN W/SAND AND GRAVEL
				5	POND FILL	DARK GRAY STIFF CLAY (CH); MOIST; ODOR
						GRAY MEDIUM STIFF SILTY/SANDY CLAY (CL) W/CALCAREOUS ROCK
			75%			FRAGMENTS
						GRAY VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS FRAGMENTS
				10		LIGHT BROWN SILTY/SANDY CLAY (CL) W/PEBBLE SIZED CALCAREOUS
						NODULES. BOTTOM OF POND FILL MATERIAL ESTIMATED AT 10'
			85%			GRAY AND TAN MOTTLED SILTY/SANDY CLAY (CL); NO ODOR
					CL	
				15	SP	TAN FINE-GRAINED SAND (SP)
			85%			
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB11

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER FPB-12
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007947

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX
BORING LOCATION:

START DATE: 12/10/93 FINISH DATE: 12/10/93
START TIME: 1000 FINISH TIME: 1500

DRILLING METHOD: HOLLOW STEM AUGERS
SAMPLING METHOD: 5-FOOT SPLIT BARREL
SURFACE ELEVATION: 79.30
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
DRILLED TO 4 FEET AND PULLED SAMPLER DUE TO HARD DRILLING					CAP	TAN AND GRAY MEDIUM STIFF SILTY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES THROUGHOUT
						PLASTIC LINER AT 1.5 FEET
			100%		POND FILL	LIGHT GRAY SILT (ML); DRY W/OCCASIONAL CALCAREOUS NODULES
						BROWN CLAYEY SILT (ML)
						BROWN MEDIUM STIFF SILTY CLAY (CL) CALCAREOUS FRAGMENTS THROUGHOUT
4-TO 5 FEET-VERY HARD DRILLING CONTAINED WOOD AND METAL DEBRIS			30%	5		
			30%			GRADING TO TAN VERY DRY SOIL, HARD DRILLING 7 TO 7.5 FEET
				10		TAN CLAYEY SILT (ML) W/CALCAREOUS FRAGMENTS THROUGHOUT
			100%			
						BECOMING GRAVELLY
						BOTTOM OF POND FILL MATERIAL ESTIMATED AT 12'
					CL	RUST AND GREEN MOTTLED MEDIUM STIFF SILTY CLAY (CL) W/CALCAREOUS FRAGMENTS, BLOCKY IN PART, DRY
				15	CH	RED AND GREEN STIFF CLAY (CH)
			100%		CL	YELLOW AND LIGHT GREEN MOTTLED SILTY/SANDY CLAY (CL) CALCAREOUS FRAGMENTS, DRY, VERY HARD
				20		BOTTOM OF BORING AT 20 FEET

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

FPB12

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-39
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007948

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 12/10/93 FINISH DATE: 12/10/93
START TIME: 1000 FINISH TIME: 1500

DRILLING METHOD:
HOLLOW STEM AUGERS

SAMPLING METHOD:
5-FOOT SPLIT BARREL

SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			30%		CL	RED AND GRAY STIFF SANDY CLAY (CL) W/CALCAREOUS NODULES THROUGHOUT
				35		
			15%			
				40	SM	RED AND GRAY SILTY VERY FINE-GRAINED SAND (SM)
			50%			
			100%	45		RED AND GRAY VERY STIFF CLAY (CH)
2-FOOT SHELBY TUBE						
				50		BOTTOM OF BORING AT 46.5 FEET

NOTE: SOIL LITHOLOGY FROM 0-30 FEET SHOWN ON CPT LOG

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT39

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-50
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007949

CLIENT: SOUTHERN PACIFIC LINES
PROJECT NAME: CRYSTAL CHEMICAL
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON, TX
BORING LOCATION:

START DATE: 12/9/93 FINISH DATE: 12/9/93
START TIME: 1435 FINISH TIME: 1640

DRILLING METHOD:
HOLLOW STEM AUGERS

SAMPLING METHOD:
5-FOOT SPLIT BARREL

SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			20%		CL	RED AND GRAY STIFF SANDY CLAY (CL); CALCAREOUS
					SM	REDDISH BROWN SILTY VERY FINE-GRAINED SAND (SM)
				35		
			25%			
					SM	BECOMING REDDISH-BROWN AND GRAY W/OCCASIONAL CALCAREOUS NODULES
				40		
			40%		CH	RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
				45		
			100%			BOTTOM OF BORING AT 45 FEET
						NOTE: SOIL LITHOLOGY FROM 0-30 FEET SHOWN ON CPT LOG
				50		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT50

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-52
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007950

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/13/93 FINISH DATE: 12/13/93	TIME:
START TIME: 0815 FINISH TIME: 1015	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SM	REDDISH-BROWN SILTY VERY FINE-GRAINED SAND (SM), SOME LIGHT GREEN TO GRAY INTERVALS
					ML	RED CLAYEY SILT (ML) OCCASIONAL HARD WHITE CALCAREOUS NODULES AND LAMINATIONS. CLAY CONTENT INCREASING WITH DEPTH
				35	CH	RED VERY STIFF CLAY (CH)
				40	CL	RED STIFF SILTY CLAY (CL)
						BOTTOM OF BORING AT 40 FEET
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				45		
				50		

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT52

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-58
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007951

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/8/93 FINISH DATE: 12/8/93	TIME:
START TIME: 0830 FINISH TIME: 1220	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
				35		
			60%			REDDISH BROWN SLIGHTLY SILTY FINE TO VERY FINE-GRAINED SAND (SM) W/CEMENTED SANDSTONE NODULES, SATURATED
					SM	
			90%	40		
						RED SILTY FINE TO VERY FINE-GRAINED SAND (SM). BASAL PORTION HARD AND PARTIALLY CEMENTED. ONLY ABLE TO ADVANCE 2-FEET.
			90%			
						NO CEMENTATION FROM 42.5 TO 43.5 FEET
						GRADING TO YELLOW, PARTIALLY CEMENTED HARD SAND
				45	CH	RED VERY STIFF CLAY (CH); CALCAREOUS
			90%			
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				50		

GEOLOGIST: JOHN NORMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT58

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-60
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007952

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/10/93 FINISH DATE: 12/10/93	TIME:
START TIME: 0800 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
				35		REDDISH-BROWN AND LIGHT GRAY VERY SILTY FINE-GRAINED SAND (SM)
			90%			W/OCCASIONAL CALCAREOUS NODULES AND LIGHT GRAY CLAY STRINGERS
					SM	
				40		
			50%			
				45	SM	
			30%			REDDISH-BROWN SILTY VERY FINE-GRAINED SAND (SM)
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				50		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT60

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-60
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007953

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/10/93 FINISH DATE: 12/10/93	TIME:
START TIME: 0800 FINISH TIME: 1030	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
					CH	
				55		
						BOTTOM OF BORING AT 55 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT602

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-62
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

007954

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD: HOLLOW STEM AUGERS
PROJECT NAME: CRYSTAL CHEMICAL	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON, TX	SAMPLING METHOD: 5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/7/93 FINISH DATE: 12/7/93	TIME:
START TIME: 0925 FINISH TIME: 1240	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
				35		
			55%			BROWN SILTY VERY FINE-GRAINED SAND (SM) INCREASE IN SILT, BECOMING YELLOW IRON STAINING
					SM	GRADING TO BUFF AND REDDISH-BROWN VERY SILTY SAND
				40	SC	LIGHT GRAY CLAYEY VERY FINE-GRAINED SAND (SC) OCCASIONAL Fe NODULES
			50%		SM	BUFF AND BROWN SILTY VERY FINE-GRAINED SAND (SM)
				45	SM	BECOMING RED AND CLAYEY AT 45 FEET RED SILTY VERY FINE-GRAINED SAND (SM)
			70%			
						2-INCH PARTIALLY CEMENTED ZONE AT 47 FEET
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				50		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT62

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-62
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

007955

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/7/93 FINISH DATE: 12/7/93	TIME:
START TIME: 0925 FINISH TIME: 1240	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			70%			RED SILTY VERY FINE-GRAINED SAND (SM)
	VERY HARD DRILLING					
					SM	
						BECOMING SLIGHTLY SILTY
				55	CH	RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
						BOTTOM OF BORING AT 55 FEET
				60		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT622

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER CPT-63
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007956

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/8/93 FINISH DATE: 12/8/93	TIME:
START TIME: 1530 FINISH TIME: 1735	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			75%		CL	REDDISH-BROWN AND LIGHT GRAY STIFF SANDY CLAY (CL); MOIST W/CALCAREOUS ZONES
					SM	REDDISH-BROWN AND GRAY SILTY VERY FINE-GRAINED SAND (SM), WET
				35	ML	LIGHT GRAY MEDIUM SANDY SILT (ML); CALCAREOUS W/ABUNDANT CALCAREOUS NODULES
			90%		SM	RED SILTY VERY FINE-GRAINED SAND (SM)
						CALCAREOUS ZONE AT 37.5 TO 38 FEET
				40		
			75%			
					CH	RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
				45		BOTTOM OF BORING AT 45 FEET
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				50		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT63

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LOG OF BORING NUMBER CPT-65
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007957

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/6/93 FINISH DATE: 12/6/93	TIME:
START TIME: 1250 FINISH TIME: 1600	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				35		LIGHT GRAY AND RED VERY SILTY VERY FINE-GRAINED SAND (SM),
			20%			SATURATED
					SM	
				40		GRADING TO BROWN, DECREASE IN SILT CONTENT, PARTIALLY CEMENTED,
			30%			HARD DRILLING
				45		RED VERY STIFF CLAY (CH); CALCAREOUS
			100%		CH	
				50		BOTTOM OF BORING AT 50 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT65

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LOG OF BORING NUMBER CPT-66
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

007958

CLIENT: SOUTHERN PACIFIC LINES	DRILLING METHOD:
PROJECT NAME: CRYSTAL CHEMICAL	HOLLOW STEM AUGERS
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD.	SAMPLING METHOD:
HOUSTON, TX	5-FOOT SPLIT BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 12/9/93 FINISH DATE: 12/9/93	TIME:
START TIME: 1100 FINISH TIME: 1430	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						NOTE: SOIL LITHOLOGY FROM 0-35 FEET SHOWN ON CPT LOG
				35		
			65%		CL	LIGHT GRAY MEDIUM STIFF SANDY/SILTY CLAY (CL) W/OCCASIONAL Fe NODULES AND YELLOW IRON STAINING
					SM	LIGHT GRAY SILTY VERY FINE-GRAINED SAND (SM) W/OCCASIONAL YELLOW IRON STAINING .
				40		Fe STAINING BELOW 39 FEET
			50%			
					SM	VERY HARD, MODERATELY CEMENTED SAND AT 44.9 FEET
				45		
			80%			HARD SAND AT 46 FEET
					CH	RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
				50		BOTTOM OF BORING AT 50 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: FUGRO GEOSCIENCES, INC.

CPT66

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN PIEZOMETER FPB-8

JOB NUMBER 44101724 INSTALLATION DATE 12/3/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 81.83 GROUND SURFACE ELEVATION 79.00

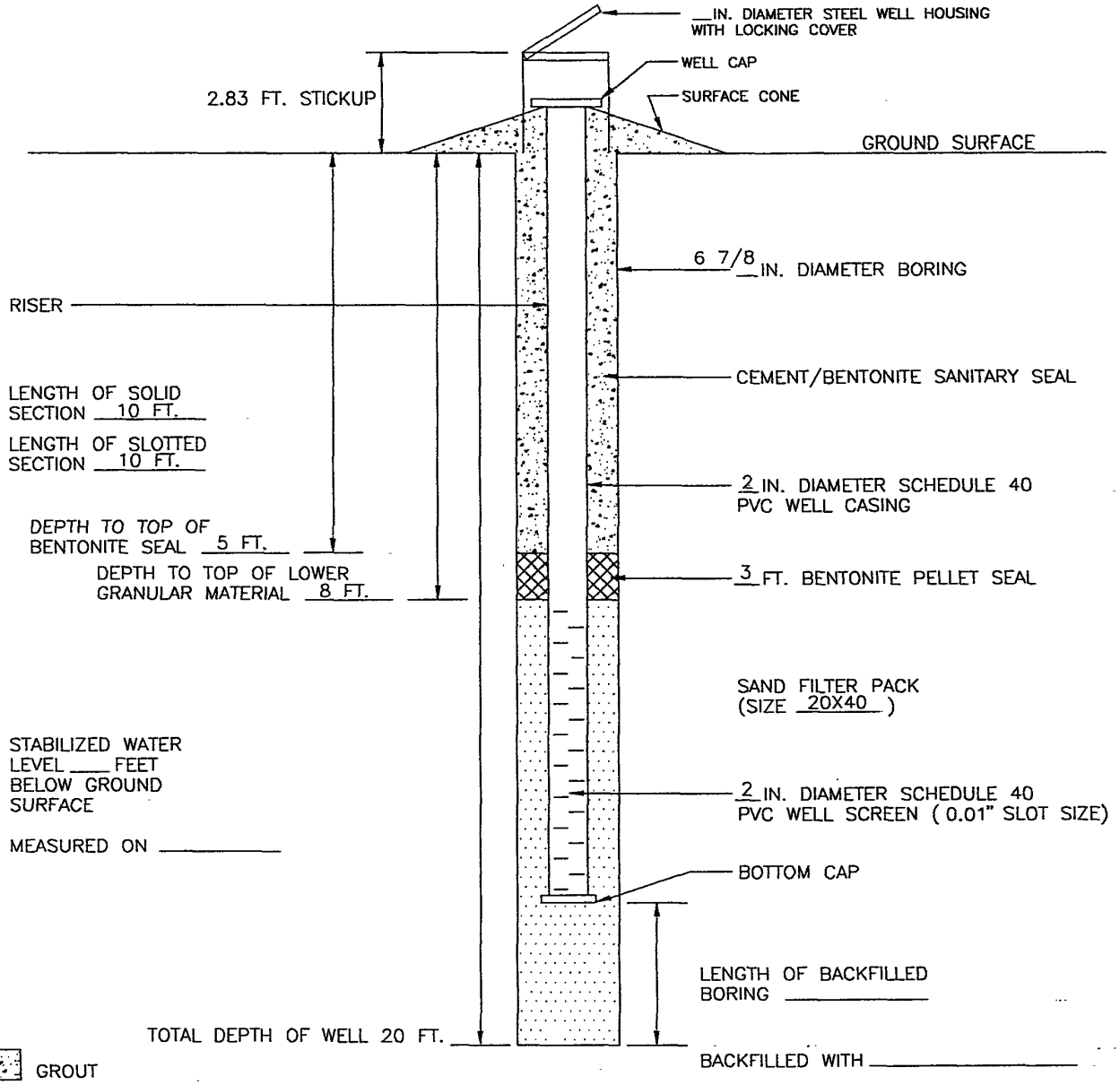
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAI

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007959



FPB8M

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JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN PIEZOMETER FPB-9

JOB NUMBER 44101724 INSTALLATION DATE 12/6/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 82.34 GROUND SURFACE ELEVATION 79.43

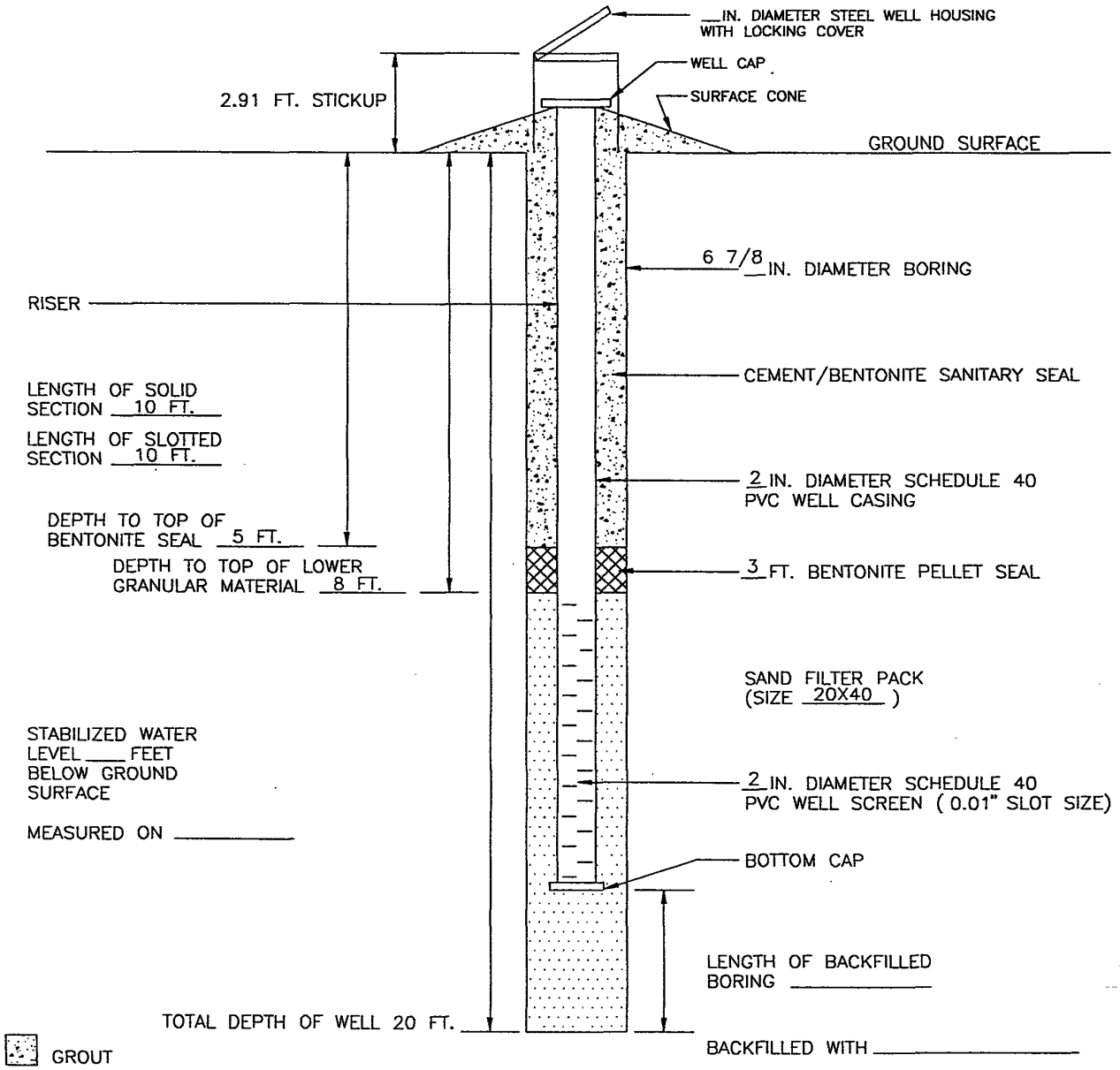
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFM

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007960



FPB9M

Industrial Compliance
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JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN PIEZOMETER FPB-10

JOB NUMBER 44101724 INSTALLATION DATE 12/14/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 81.70 GROUND SURFACE ELEVATION 78.83

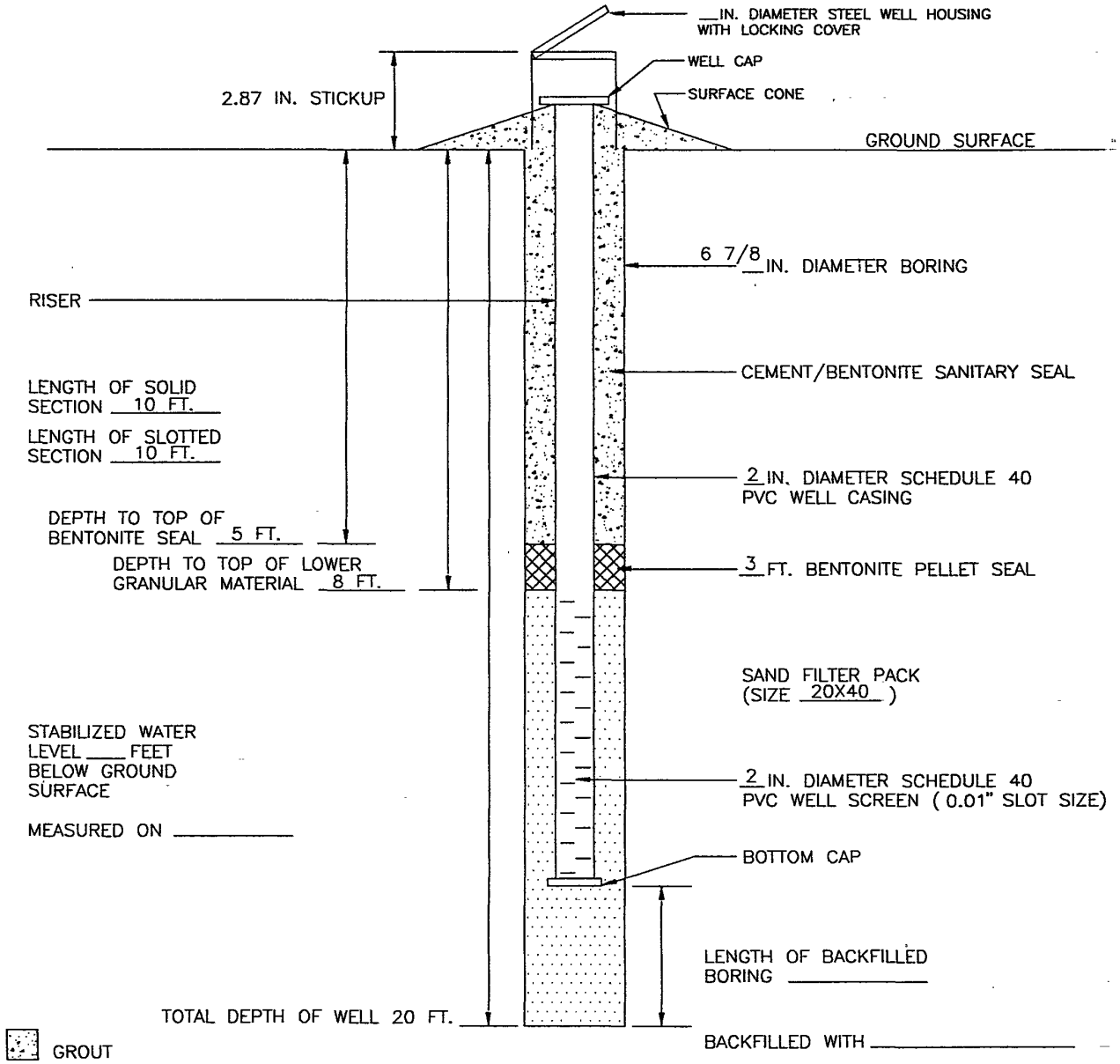
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007961



FPB10M

Industrial Compliance
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JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN PIEZOMETER FPB-11

JOB NUMBER 44101724 INSTALLATION DATE 12/15/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 80.24 GROUND SURFACE ELEVATION 77.44

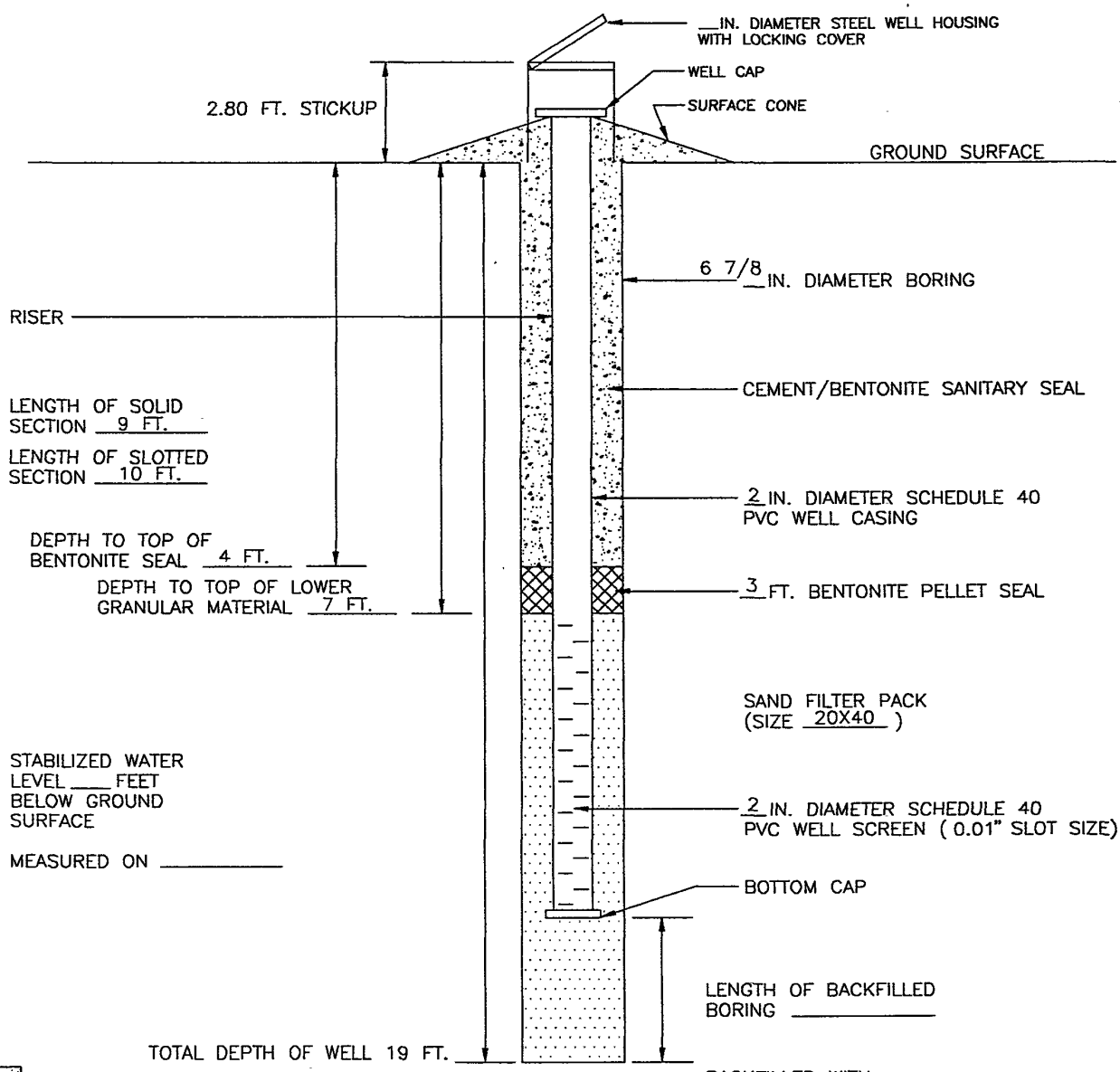
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007962



FPB11M

Industrial Compliance
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JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN PIEZOMETER FPB-12

JOB NUMBER 44101724 INSTALLATION DATE 12/15/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION 82.10 GROUND SURFACE ELEVATION 79.30

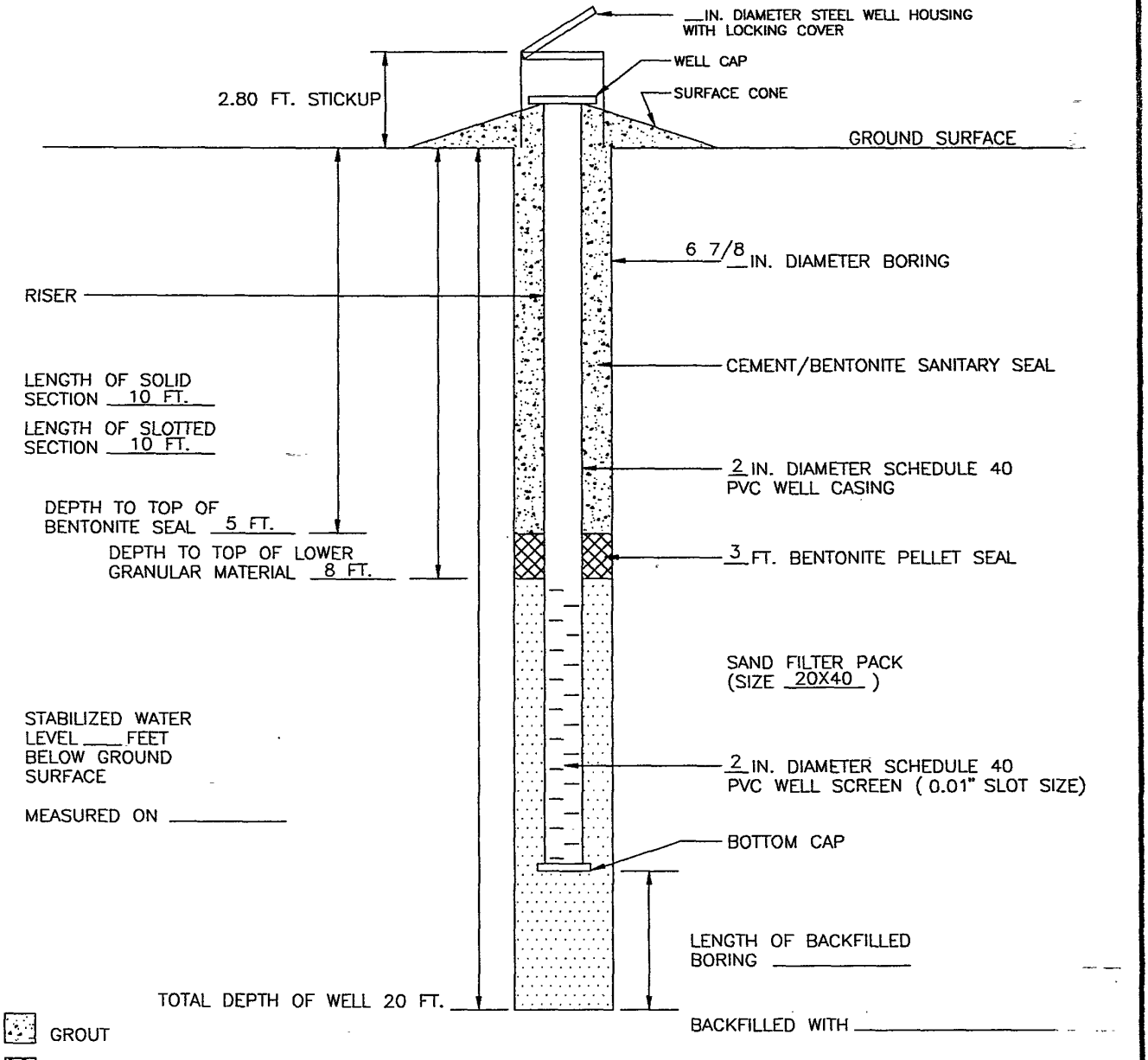
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR FUGRO

007963



FPB12M

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007964

ATTACHMENT II
LABORATORY ANALYTICAL REPORTS

007965

ATTACHMENT II
LABORATORY ANALYTICAL REPORTS

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-1 (4-7)
SAMPLE NO: H262350

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	0.5	mg/kg
2	1620S	Percent Solids at 103C	80.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-1 (7-10)
SAMPLE NO: H262351

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	0.7	mg/kg
2	1620S	Percent Solids at 103C	84.9	%
3	DPACK	CLP Data Package Deliverable	Done	

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007968

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-1 (10-16)
SAMPLE NO: H262352

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	21	mg/kg
2	1620S	Percent Solids at 103C	87.2	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-2 (2-4)
SAMPLE NO: H262353

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2.6	mg/kg
2	I620S	Percent Solids at 103C	78.8	%
3	DPACK	CLP Data Package Deliverable	Done	

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007970

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-2 (6-10)
SAMPLE NO: H262354

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4.3	mg/kg
2	1620S	Percent Solids at 103C	84.7	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-2 (10-12)
SAMPLE NO: H262355

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1.6	mg/kg
2	I620S	Percent Solids at 103C	84.6	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-2 (12-16)
SAMPLE NO: H262356

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	31	mg/kg
2	1620S	Percent Solids at 103C	87.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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007973

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-3 (4-7)
SAMPLE NO: H262357

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2.6	mg/kg
2	1620S	Percent Solids at 103C	78.6	%
3	DPACK	CLP Data Package Deliverable	Done	

*

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007974

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-3 (7-10)
SAMPLE NO: H262358

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	9.1	mg/kg
2	1620S	Percent Solids at 103C	87.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-3 (10-12)
SAMPLE NO: H262359

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	33	mg/kg
2	I620S	Percent Solids at 103C	86.6	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-1 (1)
SAMPLE NO: H262348

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	460	mg/kg
2	1620S	Percent Solids at 103C	73.7	%
3	DPACK	CLP Data Package Deliverable	Done	

FPB-1 to FPB-9

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-1 (2-4)
SAMPLE NO: H262349

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	25	mg/kg
2	1620S	Percent Solids at 103C	82.2	%
3	DPACK*	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-3 (12-14)
SAMPLE NO: H262360

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	0.8	mg/kg
2	1620S	Percent Solids at 103C	85.8	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-3 (14-16)
SAMPLE NO: H262361

DATE SAMPLED: 30-NOV-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	15	mg/kg
2	1620S	Percent Solids at 103C	82.9	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (1)
SAMPLE NO: H262362

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,500	mg/kg
2	1620S	Percent Solids at 103C	76.5	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (1D)
SAMPLE NO: H262540

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,100	mg/kg
2	1620S	Percent Solids at 103C	76.9	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (3)
SAMPLE NO: H262363

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	460	mg/kg
2	1620S	Percent Solids at 103C	79.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

SAMPLE ID: FPB-4 (5)
SAMPLE NO: H262364

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	10	mg/kg
2	I620S	Percent Solids at 103C	79.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (5) MS
SAMPLE NO: H262484

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	18	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

* COMMENTS: * The Matrix Spike recovery is 80.0 %.

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (5) MSD
SAMPLE NO: H262485

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	10 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The Relative Percent Differenceis 0.0 %.

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (7)
SAMPLE NO: H262365

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	I620S	Percent Solids at 103C	81.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (9)
SAMPLE NO: H262366

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	1620S	Percent Solids at 103C	91.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (11)
SAMPLE NO: H262367

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	1620S	Percent Solids at 103C	84.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-4 (13)
SAMPLE NO: H262368

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	1620S	Percent Solids at 103C	85.1	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (1)
SAMPLE NO: H262369

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	850	mg/kg
2	1620S	Percent Solids at 103C	77.4	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (5)
SAMPLE NO: H262370

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	6.5	mg/kg
2	1620S	Percent Solids at 103C	79.5	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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LIMS CLIENT: 0717 0003
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PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (7)
SAMPLE NO: H262371

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2.2	mg/kg
2	1620S	Percent Solids at 103C	77.7	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

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LIMS CLIENT: 0717 0003
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PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (9)
SAMPLE NO: H262372

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	1620S	Percent Solids at 103C	78.2	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (11)
SAMPLE NO: H262373

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	1620S	Percent Solids at 103C	81.2	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (13)
SAMPLE NO: H262374

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	0.6	mg/kg
2	1620S	Percent Solids at 103C	82.7	%
* 3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

SAMPLE ID: FPB-5 (15)
SAMPLE NO: H262375

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1.0	mg/kg
2	I620S	Percent Solids at 103C	81.2	%
* 3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

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ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (17)
SAMPLE NO: H262376

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	0.8	mg/kg
2	I620S	Percent Solids at 103C	86.2	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-5 (19)
SAMPLE NO: H262377

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 0.5	mg/kg
2	1620S	Percent Solids at 103C	85.9	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (3)
SAMPLE NO: H262378

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	7,100	mg/kg
2	1620S	Percent Solids at 103C	71.6	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (5)
SAMPLE NO: H262379

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	26,000	mg/kg
2	1620S	Percent Solids at 103C	65.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (7)
SAMPLE NO: H262380

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,800	mg/kg
2	1620S	Percent Solids at 103C	78.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (9)
SAMPLE NO: H262381

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,900	mg/kg
2	1620S	Percent Solids at 103C	78.8	%
3	DPACK	CLP Data Package Deliverable	Done	

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008003

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (11)
SAMPLE NO: H262382

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,200	mg/kg
2	I620S	Percent Solids at 103C	82.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (13)
SAMPLE NO: H262383

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,700	mg/kg
2	I620S	Percent Solids at 103C	86.5	%
3	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (15)
SAMPLE NO: H262384

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	880	mg/kg
2	1620S	Percent Solids at 103C	77.6	%
3	DPACK	CLP Data Package-Deliverable	Done	

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008006

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (15) MS
SAMPLE NO: H262541

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,100 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The concentration of the analyte prevented accurate determination of the matrix spike recovery.

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008007

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (15) MSD
SAMPLE NO: H262542

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,100 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The Relative Percent Differenceis 22.2 %.

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008008

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (17)
SAMPLE NO: H262385

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	210	mg/kg
2	1620S	Percent Solids at 103C	85.5	%
3	DPACK	CLP Data Package Deliverable	Done	

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008009

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (19)
SAMPLE NO: H262386

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	240	mg/kg
2	1620S	Percent Solids at 103C	84.9	%
3	DPACK	CLP Data Package Deliverable	Done	

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008010

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-6 (21)
SAMPLE NO: H262387

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	230	mg/kg
2	1620S	Percent Solids at 103C	86.4	%
3	DPACK	CLP Data Package Deliverable	Done	

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008011

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-7 (3)
SAMPLE NO: H262388

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,900	mg/kg
2	I620S	Percent Solids at 103C	76.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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008012

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-7 (5)
SAMPLE NO: H262389

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,800	mg/kg
2	I620S	Percent Solids at 103C	87.2	%
3	DPACK	CLP Data Package Deliverable	Done	

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008013

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-7 (7)
SAMPLE NO: H262390

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,200	mg/kg
2	1620S	Percent Solids at 103C	73.3	%
3	DPACK	CLP Data Package Deliverable	Done	

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008014

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-7 (9)
SAMPLE NO: H262391

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,600	mg/kg
2	I620S	Percent Solids at 103C	85.2	%
3	DPACK	CLP Data Package Deliverable	Done	

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008015

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-7 (11)
SAMPLE NO: H262392

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,700	mg/kg
2	I620S	Percent Solids at 103C	88.6	%
3	DPACK	CLP Data Package Deliverable	Done	

*

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-7 (13)
SAMPLE NO: H262393

DATE SAMPLED: 01-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	340	mg/kg
2	1620S	Percent Solids at 103C	91.0	%
3	DPACK	CLP Data Package Deliverable	Done	

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008017

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (1)
SAMPLE NO: H262324

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,600	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	51	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.46	%
4	I490S	Non-aqueous sample pH in Water	9.77	
5	I620S	Percent Solids at 103C	74.5	%
6	DPACK	CLP Data Package Deliverable	Done	

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008018

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (1) MS
SAMPLE NO: H262480

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,600 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The concentration of the analyte prevented accurate determination of the matrix spike recovery.

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008019

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (1) MSD
SAMPLE NO: H262481

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,400 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The Relative Percent Difference is 8.0 %.

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008020

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (5-7)
SAMPLE NO: H262325

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	5,700	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	52	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.13	%
4	I490S	Non-aqueous sample pH in Water	9.36	
5	I620S	Percent Solids at 103C	80.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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008021

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (8-10)
SAMPLE NO: H262326

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	25,000	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	67	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.69	%
>4	I490S	Non-aqueous sample pH in Water	10.33	
5	I620S	Percent Solids at 103C	60.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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008022

LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (10.5)
SAMPLE NO: H262327

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	11,000	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	27	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.04	%
4	I490S	Non-aqueous sample pH in Water	8.88	
5	I620S	Percent Solids at 103C	86.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (11.5)
SAMPLE NO: H262328

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	7,500	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	44	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.05	%
*4	1490S	Non-aqueous sample pH in Water	8.79	
5	1620S	Percent Solids at 103C	84.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FP8-8 (12.5)
SAMPLE NO: H262394

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,800	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	16	meq/100 g
*3	I107S	Carbon, Total Organic (C)	0.02	%
4	I490S	Non-aqueous sample pH in Water	8.61	
5	I620S	Percent Solids at 103C	88.4	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (13.5)
SAMPLE NO: H262329

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,500	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	24	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.05	%
* 4	I490S	Non-aqueous sample pH in Water	8.44	
5	I620S	Percent Solids at 103C	86.4	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (14.5)
SAMPLE NO: H262330

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2,400	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	17	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
4	I490S	Non-aqueous sample pH in Water	8.53	
5	I620S	Percent Solids at 103C	89.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (16)
SAMPLE NO: H262331

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	170	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	5.7	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
4	I490S	Non-aqueous sample pH in Water	8.46	
5	I620S	Percent Solids at 103C	88.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (18)
SAMPLE NO: H262332

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	59	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	2.8	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
* 4	I490S	Non-aqueous sample pH in Water	7.82	
5	I620S	Percent Solids at 103C	81.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-8 (20)
SAMPLE NO: H262333

DATE SAMPLED: 03-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	23	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	1.0	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.01	%
4	1490S	Non-aqueous sample pH in Water	8.18	
5	1620S	Percent Solids at 103C	79.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (2-4)
SAMPLE NO: H262334

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	8,100	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	44	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.50	%
4	I490S	Non-aqueous sample pH in Water	9.66	
5	I620S	Percent Solids at 103C	65.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (4-6.5)
SAMPLE NO: H262335

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,400	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	32	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.19	%
4	I490S	Non-aqueous sample pH in Water	9.29	
5	I620S	Percent Solids at 103C	79.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (6.5)
SAMPLE NO: H262336

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	12,000	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	41	meq/100 g
3	1107S	Carbon, Total Organic (C)	1.04	%
* 4	1490S	Non-aqueous sample pH in Water	9.90	
5	1620S	Percent Solids at 103C	97.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FP8-9 (7-9)
SAMPLE NO: H262337

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,900	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	51	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.56	%
* 4	I490S	Non-aqueous sample pH in Water	8.89	
5	I620S	Percent Solids at 103C	77.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (9.5)
SAMPLE NO: H262338

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,200	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	33	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.04	%
4	I490S	Non-aqueous sample pH in Water	7.94	
5	I620S	Percent Solids at 103C	82.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (10.5)
SAMPLE NO: H262339

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,100	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	25	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.04	%
* 4	1490S	Non-aqueous sample pH in Water	8.05	
5	1620S	Percent Solids at 103C	82.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (11.5)
SAMPLE NO: H262340

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,300	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	33	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.05	%
4	1490S	Non-aqueous sample pH in Water	8.11	
5	1620S	Percent Solids at 103C	82.4	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (12.5)
SAMPLE NO: H262341

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,700	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	36	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.07	%
» 4	1490S	Non-aqueous sample pH in Water	8.28	
5	1620S	Percent Solids at 103C	81.8	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (13.5)
SAMPLE NO: H262342

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	5,800	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	39	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.06	%
* 4	I490S	Non-aqueous sample pH in Water	8.61	
5	I620S	Percent Solids at 103C	81.3	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (14.5)
SAMPLE NO: H262343

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	930	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	15	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
4	I490S	Non-aqueous sample pH in Water	8.31	
5	I620S	Percent Solids at 103C	87.2	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (15.5)
SAMPLE NO: H262344

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	82	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	3.1	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
*4	I490S	Non-aqueous sample pH in Water	8.90	
5	I620S	Percent Solids at 103C	94.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (15.5) MS
SAMPLE NO: H262482

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	100 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The concentration of the analyte prevented accurate determination of the matrix spike recovery.

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (15.5) MSD
SAMPLE NO: H262483

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	88 *	mg/kg
3	DPACK	CLP Data Package Deliverable	Done	

COMMENTS: * The Relative Percent Difference is 7.1 %.

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FP8-9 (16.5)
SAMPLE NO: H262345

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	100	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	1.6	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
4	I490S	Non-aqueous sample pH in Water	8.46	
5	I620S	Percent Solids at 103C	81.2	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (17.5)
SAMPLE NO: H262346

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	100	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	1.5	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.02	%
4	1490S	Non-aqueous sample pH in Water	8.36	
5	1620S	Percent Solids at 103C	82.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-9 (18.5)
SAMPLE NO: H262347

DATE SAMPLED: 06-DEC-93
DATE RECEIVED: 06-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	94	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	1.1	meq/100 g
3	1107S	Carbon, Total Organic (C)	< 0.01	%
4	1490S	Non-aqueous sample pH in Water	8.42	
5	1620S	Percent Solids at 103C	82.3	%
6	DPACK	CLP Data Package Deliverable	Done	

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-8 (1)								SAMPLE NO: H262324		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	36881	36881	19-9081			19-9081	15-DEC-93 0741	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (5-7)								SAMPLE NO: H262325		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	36881	36881	19-9081			19-9081	15-DEC-93 0741	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
MPLE ID: FPB-8 (8-10)								SAMPLE NO: H262326		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	36881	36881	19-9081			19-9081	15-DEC-93 0741	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (10.5)								SAMPLE NO: H262327		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	36881	36881	19-9081			19-9081	15-DEC-93 0741	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (11.5)								SAMPLE NO: H262328		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	36881	36881	19-9081			19-9081	15-DEC-93 0741	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-8 (13.5)								SAMPLE NO: H262329		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	36881	36881	19-9081			19-9081	15-DEC-93 0741	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (14.5)								SAMPLE NO: H262330		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37185	37185	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (16)								SAMPLE NO: H262331		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37185	37185	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (18)								SAMPLE NO: H262332		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37185	37185	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (20)								SAMPLE NO: H262333		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37183	37183	19-9081			19-9081	03-JAN-94 0843	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-9 (2-4)								SAMPLE NO: H262334		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37183	37183	19-9081			19-9081	03-JAN-94 0843	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (4-6.5)								SAMPLE NO: H262335		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37183	37183	19-9081			19-9081	03-JAN-94 0843	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
LE ID: FPB-9 (6.5)								SAMPLE NO: H262336		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37183	37183	19-9081			19-9081	03-JAN-94 0843	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (7-9)								SAMPLE NO: H262337		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37183	37183	19-9081			19-9081	03-JAN-94 0843	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (9.5)								SAMPLE NO: H262338		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37183	37183	19-9081			19-9081	03-JAN-94 0843	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUME.
SAMPLE ID: FPB-9 (10.5)								SAMPLE NO: H262339		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (11.5)								SAMPLE NO: H262340		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
MPLE ID: FPB-9 (12.5)								SAMPLE NO: H262341		
3	I107S	37093	37093	NA			13-90-3	23-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36546	36546	NA			03-209F	09-DEC-93 1200	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (13.5)								SAMPLE NO: H262342		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36521	36521	NA			03-209F	08-DEC-93 1400	SS	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (14.5)								SAMPLE NO: H262343		
3	I107S	37093	37093	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	SAMPLE PREPARATION DATE/TIME	SAMPLE PREPARATION ANALYST	SAMPLE ANALYSIS LR-METHOD	SAMPLE ANALYSIS DATE/TIME	SAMPLE ANALYSIS ANALYST	SAMPLE ANALYSIS INSTRUMEN
SAMPLE ID: FPB-9 (15.5)								SAMPLE NO: H262344		
3	I107S	37111	37111	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37438	37438	NA			19-9045	12-JAN-94 1330	TM	111WAT
5	I620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-9 (16.5)								SAMPLE NO: H262345		
3	I107S	37111	37111	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-9 (17.5)								SAMPLE NO: H262346		
3	I107S	37111	37111	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-9 (18.5)								SAMPLE NO: H262347		
3	I107S	37111	37111	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-1 (1)								SAMPLE NO: H262348		
2	I620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-1 (2-4)									SAMPLE NO: H262349	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-1 (4-7)									SAMPLE NO: H262350	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-1 (7-10)									SAMPLE NO: H262351	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
1PLE ID: FPB-1 (10-16)									SAMPLE NO: H262352	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-2 (2-4)									SAMPLE NO: H262353	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-2 (6-10)									SAMPLE NO: H262354	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	30-DEC-93 1854	CMG	405MET
SAMPLE ID: FPB-2 (10-12)									SAMPLE NO: H262355	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-2 (12-16)									SAMPLE NO: H262356	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-3 (4-7)									SAMPLE NO: H262357	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-3 (7-10)									SAMPLE NO: H262358	
2	1620S	37387	37387	NA			03-209F	10-JAN-94 1430	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	05-JAN-94 1602	GSR	405MET
MPLE ID: FPB-3 (10-12)									SAMPLE NO: H262359	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-3 (12-14)									SAMPLE NO: H262360	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-3 (14-16)									SAMPLE NO: H262361	
2	1620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-4 (1)									SAMPLE NO: H262362	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-4 (3)									SAMPLE NO: H262363	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-4 (5)									SAMPLE NO: H262364	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	30-DEC-93 1720	CMG	405MET
SAMPLE ID: FPB-4 (7)									SAMPLE NO: H262365	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-4 (9)									SAMPLE NO: H262366	
	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-4 (11)									SAMPLE NO: H262367	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-4 (13)									SAMPLE NO: H262368	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (1)									SAMPLE NO: H262369	
2	1620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-5 (5)									SAMPLE NO: H262370	
2	I620S	36521	36521	NA			03-209F	09-DEC-93 1300	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (7)									SAMPLE NO: H262371	
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (9)									SAMPLE NO: H262372	
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (11)									SAMPLE NO: H262373	
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (13)									SAMPLE NO: H262374	
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (15)									SAMPLE NO: H262375	
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-5 (17)									SAMPLE NO: H262376	
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMEN
SAMPLE ID: FPB-5 (19)								SAMPLE NO: H262377		
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-6 (3)								SAMPLE NO: H262378		
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-6 (5)								SAMPLE NO: H262379		
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-6 (7)								SAMPLE NO: H262380		
	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-6 (9)								SAMPLE NO: H262381		
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-6 (11)								SAMPLE NO: H262382		
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET
SAMPLE ID: FPB-6 (13)								SAMPLE NO: H262383		
2	I620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	GSR	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	SAMPLE PREPARATION DATE/TIME	SAMPLE PREPARATION ANALYST	SAMPLE ANALYSIS LR-METHOD	SAMPLE ANALYSIS DATE/TIME	SAMPLE ANALYSIS ANALYST	SAMPLE ANALYSIS INSTRUMENT
SAMPLE ID: FPB-6 (15)								SAMPLE NO: H262384		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-6 (17)								SAMPLE NO: H262385		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-6 (19)								SAMPLE NO: H262386		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-6 (21)								SAMPLE NO: H262387		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-7 (3)								SAMPLE NO: H262388		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-7 (5)								SAMPLE NO: H262389		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-7 (7)								SAMPLE NO: H262390		
2	1620S	36547	36547	NA			03-209F	09-DEC-93 1530	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-7 (9)								SAMPLE NO: H262391		
2	I620S	36548	36548	NA			03-209F	09-DEC-93 1400	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-7 (11)								SAMPLE NO: H262392		
2	I620S	36548	36548	NA			03-209F	09-DEC-93 1400	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-7 (13)								SAMPLE NO: H262393		
2	I620S	36548	36548	NA			03-209F	09-DEC-93 1400	BDB	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
°LE ID: FPB-8 (12.5)								SAMPLE NO: H262394		
3	I107S	37111	37111	NA			13-90-3	28-DEC-93 0900	R M	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	36548	36548	NA			03-209F	09-DEC-93 1400	BDB	004WAT
6	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-8 (1) MS								SAMPLE NO: H262480		
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-8 (1) MSD								SAMPLE NO: H262481		
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36600	36600	47-CLP	12-DEC-93 1000	TM	47-206.2	27-DEC-93 1922	CMG	405MET
SAMPLE ID: FPB-9 (15.5) MS								SAMPLE NO: H262482		
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET

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LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-9 (15.5) MSD									SAMPLE NO: H262483	
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36601	36601	47-CLP	11-DEC-93 0915	SAO	47-206.2	28-DEC-93 1746	CMG	405MET
SAMPLE ID: FPB-4 (5) MS									SAMPLE NO: H262484	
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	29-DEC-93 1547	CMG	405MET
SAMPLE ID: FPB-4 (5) MSD									SAMPLE NO: H262485	
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36602	36602	47-CLP	13-DEC-93 1200	TM	47-206.2	30-DEC-93 1720	CMG	405MET
SAMPLE ID: FPB-4 (1D)									SAMPLE NO: H262540	
2	I620S	37128	37128	NA			03-209F	30-DEC-93 1300	R M	004WAT
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	37616	37616	47-CLP	20-JAN-94 1000	SAO	47-206.2	21-JAN-94 0459	GAB	405MET
SAMPLE ID: FPB-6 (15) MS									SAMPLE NO: H262541	
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET
SAMPLE ID: FPB-6 (15) MSD									SAMPLE NO: H262542	
3	DPACK	0	0	NA			NA	11-JAN-94 1700	SLG	
1	AASSC	36603	36603	47-CLP	13-DEC-93 0200	TM	47-206.2	05-JAN-94 1237	GSR	405MET

LR Method Literature Reference

03 APHA-Standard Methods for the Examination of Water and Wastewater, 16th edition
13 Methods of Soils Analysis, Am Soc of Agronomy, 2nd ed, 1982
19 EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986
47 USEPA CLP SOW of Inorg. Analysis Multi-Conc., SOW #788, revised 2/89.

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LABORATORY CONTROL SAMPLE RECOVERY

TEST CODE	DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
BATCH NO: 36600			SAMPLE NO: H264390
AASSC	CLP - Arsenic, Total (As)	97.4	-
BATCH NO: 36601			SAMPLE NO: H264392
AASSC	CLP - Arsenic, Total (As)	75.3	-
BATCH NO: 36602			SAMPLE NO: H264394
AASSC	CLP - Arsenic, Total (As)	80.4	-
BATCH NO: 36603			SAMPLE NO: H264396
AASSC	CLP - Arsenic, Total (As)	108.7	-
BATCH NO: 36881			SAMPLE NO: H265775
ACECS	Cation Exchange Capacity (CEC)	100.0	-
TCH NO: 37093			SAMPLE NO: H266122
I107S	Carbon, Total Organic (C)	94	-
BATCH NO: 37111			SAMPLE NO: H266151
I107S	Carbon, Total Organic (C)	92.5	-
BATCH NO: 37183			SAMPLE NO: H266261
ACECS	Cation Exchange Capacity (CEC)	92.0	-
BATCH NO: 37185			SAMPLE NO: H266265
ACECS	Cation Exchange Capacity (CEC)	96.7	-
BATCH NO: 37203			SAMPLE NO: H266295
ACECS	Cation Exchange Capacity (CEC)	96.0	-
BATCH NO: 37616			SAMPLE NO: H327993
AASSC	CLP - Arsenic, Total (As)	84.4	-

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METHOD BLANK DATA

TEST CODE	DETERMINATION	RESULT	UNIT
BATCH NO: 36521		SAMPLE NO: H263267	
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 36546		SAMPLE NO: H263302	
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 36547		SAMPLE NO: H263303	
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 36548		SAMPLE NO: H263304	
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 36600		SAMPLE NO: H264391	
AASSC	CLP - Arsenic, Total (As)	< 0.2	mg/kg
CH NO: 36601		SAMPLE NO: H264393	
AASSC	CLP - Arsenic, Total (As)	< 0.2	mg/kg
BATCH NO: 36602		SAMPLE NO: H264395	
AASSC	CLP - Arsenic, Total (As)	< 0.2	mg/kg
BATCH NO: 36603		SAMPLE NO: H264397	
AASSC	CLP - Arsenic, Total (As)	< 0.2	mg/kg
BATCH NO: 36881		SAMPLE NO: H265776	
ACECS	Cation Exchange Capacity (CEC)	0.3	meq/100 g
BATCH NO: 37093		SAMPLE NO: H266123	
BATCH NO: 37128		SAMPLE NO: H266171	
I620S	Percent Solids at 103C	< 0.1	%

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METHOD BLANK DATA

TEST CODE	DETERMINATION	RESULT	UNIT
BATCH NO: 37183			SAMPLE NO: H266262
ACECS	Cation Exchange Capacity (CEC)	< 0.1	meq/100 g
BATCH NO: 37185			SAMPLE NO: H266266
ACECS	Cation Exchange Capacity (CEC)	< 0.1	meq/100 g
BATCH NO: 37203			SAMPLE NO: H266296
ACECS	Cation Exchange Capacity (CEC)	< 0.1	meq/100 g
BATCH NO: 37387			SAMPLE NO: H267581
1620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 37616			SAMPLE NO: H327994
AASSC	CLP - Arsenic, Total (As)	< 0.2	mg/kg

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DUPLICATE AND MATRIX SPIKE DATA

TEST CODE	DETERMINATION	ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE / RPD	MS RESULT	MS % RCVRY
BATCH NO: 36521						SAMPLE NO: H262347	
1620S	Percent Solids at 103C	82.3	82.2	%	0.8		
BATCH NO: 36521						SAMPLE NO: H262453	
1620S	Percent Solids at 103C	76.0	75.4	%	0.8		
BATCH NO: 36546						SAMPLE NO: H262332	
1620S	Percent Solids at 103C	81.0	81.1	%	0.0		
BATCH NO: 36546						SAMPLE NO: H262436	
1620S	Percent Solids at 103C	57.0	57.0	%	0.0		
BATCH NO: 36547						SAMPLE NO: H262371	
1620S	Percent Solids at 103C	77.7	77.7	%	0.0		
TCH NO: 36547						SAMPLE NO: H262381	
1620S	Percent Solids at 103C	78.8	78.4	%	0.0		
BATCH NO: 36548						SAMPLE NO: H262391	
1620S	Percent Solids at 103C	85.2	85.3	%	0.1		
BATCH NO: 36881						SAMPLE NO: H262435	
ACECS	Cation Exchange Capacity (CEC)	13	12	meq/100 g	8.0		
BATCH NO: 37128						SAMPLE NO: H262348	
1620S	Percent Solids at 103C	73.7	73.7	%	---		
BATCH NO: 37128						SAMPLE NO: H262359	
1620S	Percent Solids at 103C	86.6	83.5	%	3.1		
BATCH NO: 37183						SAMPLE NO: H263652	
ACECS	Cation Exchange Capacity (CEC)	48	43	meq/100 g	11.0		

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DUPLICATE AND MATRIX SPIKE DATA

TEST CODE	DETERMINATION	ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE / RPD	MS RESULT	MS % RCVRY
BATCH NO: 37183						SAMPLE NO: H263662	
ACECS	Cation Exchange Capacity (CEC)	1.5	2.3	meq/100 g	.8		
BATCH NO: 37185						SAMPLE NO: H263610	
ACECS	Cation Exchange Capacity (CEC)	4.8	4.5	meq/100 g	6.5		
BATCH NO: 37203						SAMPLE NO: H262339	
ACECS	Cation Exchange Capacity (CEC)	25	26	meq/100 g	3.9		
BATCH NO: 37203						SAMPLE NO: H264206	
ACECS	Cation Exchange Capacity (CEC)	46	43	meq/100 g	6.7		
BATCH NO: 37345						SAMPLE NO: H262324	
I490S	Non-aqueous sample pH in Water	9.77	9.78		0.1		
TCH NO: 37345						SAMPLE NO: H262334	
I490S	Non-aqueous sample pH in Water	9.66	9.65		0.1		
BATCH NO: 37345						SAMPLE NO: H262346	
I490S	Non-aqueous sample pH in Water	8.36	8.34		0.1		
BATCH NO: 37345						SAMPLE NO: H264213	
I490S	Non-aqueous sample pH in Water	7.29	7.30		0.1		
BATCH NO: 37345						SAMPLE NO: H264223	
I490S	Non-aqueous sample pH in Water	8.69	8.71		0.2		
BATCH NO: 37387						SAMPLE NO: H262358	
I620S	Percent Solids at 103C	87.0	87.6	%	0.7		
BATCH NO: 37438						SAMPLE NO: H263994	
I490S	Non-aqueous sample pH in Water	7.98	7.99		0.1		

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DUPLICATE AND MATRIX SPIKE DATA

TEST CODE	DETERMINATION	ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE / RPD	MS RESULT	MS % RCVRY
BATCH NO: 37438						SAMPLE NO: H264946	
I490S	Non-aqueous sample pH in Water	7.62	7.61		0.1		
BATCH NO: 37616						SAMPLE NO: H262540	
AASSC	CLP - Arsenic, Total (As)	1,100	1,100	mg/kg	0.0	1,200 *	---

* The concentration of the analyte prevented accurate determination of the matrix spike recovery.

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~~January 24, 1994~~
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MATRIX SPIKE AND MATIRX SPIKE DUPLICATE DATA

TEST CODE	DETERMINATION	MS RESULT	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PCT RCVRY
BATCH NO: 37093						SAMPLE NO: H262332	
I107S	Carbon, Total Organic (C)	0.62	0.62	%	0.00	90	90.0
BATCH NO: 37093						SAMPLE NO: H262342	
I107S	Carbon, Total Organic (C)	0.064	0.64	%	1.3	89.2	87.9
BATCH NO: 37111						SAMPLE NO: H262344	
I107S	Carbon, Total Organic (C)	0.60	93.9	%	3.3	89.6	

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March 15, 1994
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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (2-4)
SAMPLE NO: H263650

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,950.	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	30	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.49	%
4	I490S	Non-aqueous sample pH in Water	8.52	
5	I620S	Percent Solids at 103C	80.3	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (7)
SAMPLE NO: H263651

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	21,300	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	61	meq/100 g
3	I107S	Carbon, Total Organic (C)	1.7	%
4	I490S	Non-aqueous sample pH in Water	8.78	
5	I620S	Percent Solids at 103C	52.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (7-10)
SAMPLE NO: H263652

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	6,080	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	48	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.15	%
4	I490S	Non-aqueous sample pH in Water	9.42	
5	I620S	Percent Solids at 103C	81.6	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (7-10D)
SAMPLE NO: H263653

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	6,170	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	27	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.14	%
4	I490S	Non-aqueous sample pH in Water	9.31	
5	I620S	Percent Solids at 103C	81.6	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (10.5)
SAMPLE NO: H263654

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,240	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	32	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
* 4	I490S	Non-aqueous sample pH in Water	8.95	
5	I620S	Percent Solids at 103C	83.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (11.5)
SAMPLE NO: H263655

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	932	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	41	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.01	%
4	I490S	Non-aqueous sample pH in Water	8.89	
5	I620S	Percent Solids at 103C	84.3	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (12.5)
SAMPLE NO: H263656

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,070	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	21	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
4	I490S	Non-aqueous sample pH in Water	8.87	
5	I620S	Percent Solids at 103C	84.3	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

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ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (13.5)
SAMPLE NO: H263657

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,890	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	21	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.03	%
4	I490S	Non-aqueous sample pH in Water	8.70	
5	I620S	Percent Solids at 103C	87.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (14.5)
SAMPLE NO: H263658

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	620	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	4.6	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.01	%
* 4	I490S	Non-aqueous sample pH in Water	8.83	
5	I620S	Percent Solids at 103C	90.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (15.5)
SAMPLE NO: H263659

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	474	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	7.8	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.01	%
4	I490S	Non-aqueous sample pH in Water	8.76	
5	I620S	Percent Solids at 103C	81.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (16.5)
SAMPLE NO: H263660

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	85.2	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	4.4	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
» 4	I490S	Non-aqueous sample pH in Water	8.49	
5	I620S	Percent Solids at 103C	81.8	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (17.5)
SAMPLE NO: H263661

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	12.3	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	2.3	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
4	I490S	Non-aqueous sample pH in Water	8.22	
5	I620S	Percent Solids at 103C	82.8	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (18.5)
SAMPLE NO: H263662

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2.9	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	1.5	meq/100 g
3	1107S	Carbon, Total Organic (C)	< 0.01	%
4	1490S	Non-aqueous sample pH in Water	7.98	
5	1620S	Percent Solids at 103C	83.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10 (19.5)
SAMPLE NO: H263663

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3.8	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	2.3	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.04	%
4	I490S	Non-aqueous sample pH in Water	8.12	
5	I620S	Percent Solids at 103C	82.6	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10A (3)
SAMPLE NO: H263664

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3,390	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	38	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.36	%
4	I490S	Non-aqueous sample pH in Water	8.32	
5	I620S	Percent Solids at 103C	77.7	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-10A (7)
SAMPLE NO: H263665

DATE SAMPLED: 14-DEC-93
DATE RECEIVED: 14-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4,800	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	38	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.14	%
4	I490S	Non-aqueous sample pH in Water	9.39	
5	I620S	Percent Solids at 103C	78.4	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

SAMPLE ID: FPB-11 (1.5-3.0)
SAMPLE NO: H264206

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2015	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	46	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.47	%
4	I490S	Non-aqueous sample pH in Water	8.65	
5	I620S	Percent Solids at 103C	67.4	%
6	DPACK	CLP Data Package Deliverable	DONE	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (3.0-4.5)
SAMPLE NO: H264207

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3610	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	20	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.69	%
4	I490S	Non-aqueous sample pH in Water	8.38	
5	I620S	Percent Solids at 103C	74.4	%
6	DPACK	CLP Data Package Deliverable	DONE	

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REPORT OF LABORATORY ANALYSIS

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (5.0-7.5)
SAMPLE NO: H264208

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1,825	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	45	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.43	%
4	I490S	Non-aqueous sample pH in Water	9.06	
* 5	I620S	Percent Solids at 103C	67.2	%
6	DPACK	CLP Data Package Deliverable	DONE	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (7.5-8.0)
SAMPLE NO: H264209

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	498	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	38	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.52	%
* 4	I490S	Non-aqueous sample pH in Water	9.06	
5	I620S	Percent Solids at 103C	72.1	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (8.5-10.0)
SAMPLE NO: H264210

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	480	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	49	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.16	%
4	1490S	Non-aqueous sample pH in Water	8.07	
5	1620S	Percent Solids at 103C	71.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (10.5)
SAMPLE NO: H264211

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	0.79	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	38	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.04	%
4	1490S	Non-aqueous sample pH in Water	7.45	
5	1620S	Percent Solids at 103C	70.5	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (11.5)
SAMPLE NO: H264212

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	1.24	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	35	meq/100 g
3	1107S	Carbon, Total Organic (C)	0.03	%
4	1490S	Non-aqueous sample pH in Water	7.29	
*5	1620S	Percent Solids at 103C	69.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (12.5)
SAMPLE NO: H264213

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2.65	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	19	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
4	I490S	Non-aqueous sample pH in Water	7.29	
5	I620S	Percent Solids at 103C	72.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (13.5)
SAMPLE NO: H264214

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4.69	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	22	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.02	%
»4	I490S	Non-aqueous sample pH in Water	6.98	
5	I620S	Percent Solids at 103C	71.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (14.5)
SAMPLE NO: H264215

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	11.95	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	7.1	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
4	I490S	Non-aqueous sample pH in Water	7.21	
5	I620S	Percent Solids at 103C	73.6	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (15-16.5) GRAB
SAMPLE NO: H264216

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	< 1.0	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	1.7	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
4	I490S	Non-aqueous sample pH in Water	7.52	
5	I620S	Percent Solids at 103C	73.2	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (16.5-18) GRAB
SAMPLE NO: H264217

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4.01	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	3.7	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
*4	I490S	Non-aqueous sample pH in Water	8.17	
5	I620S	Percent Solids at 103C	73.2	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-11 (18-19.5) GRAB
SAMPLE NO: H264218

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	2.89	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	6.8	meq/100 g
3	I107S	Carbon, Total Organic (C)	< 0.01	%
4	I490S	Non-aqueous sample pH in Water	7.17	
5	I620S	Percent Solids at 103C	73.6	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (1.5-4.0)
SAMPLE NO: H264219

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	17,200	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	55	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.71	%
4	I490S	Non-aqueous sample pH in Water	9.77	
5	I620S	Percent Solids at 103C	66.0	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (4-9)
SAMPLE NO: H264220

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	28,200	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	49	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.31	%
4	I490S	Non-aqueous sample pH in Water	9.81	
5	I620S	Percent Solids at 103C	77.6	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (9-14)
SAMPLE NO: H264221

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	6,310	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	27	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.07	%
4	I490S	Non-aqueous sample pH in Water	9.31	
5	I620S	Percent Solids at 103C	85.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

SAMPLE ID: FPB-12 (14-15)
SAMPLE NO: H264222

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	20,440	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	50	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.08	%
4	I490S	Non-aqueous sample pH in Water	8.51	
5	I620S	Percent Solids at 103C	71.5	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
DALLAS, TX 75220-
ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (15-16)
SAMPLE NO: H264223

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	6,600	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	31	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.04	%
4	I490S	Non-aqueous sample pH in Water	8.69	
5	I620S	Percent Solids at 103C	84.9	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (16-17)
SAMPLE NO: H264224

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	3680	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	30	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.03	%
4	I490S	Non-aqueous sample pH in Water	8.33	
* 5	I620S	Percent Solids at 103C	86.3	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (17-18)
SAMPLE NO: H264225

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	4360	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	30	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.06	%
4	I490S	Non-aqueous sample pH in Water	8.64	
5	I620S	Percent Solids at 103C	86.2	%
6	DPACK	CLP Data Package Deliverable	Done	

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LABORATORY ANALYSIS REPORT

CLIENT NAME: INDUSTRIAL COMPLIANCE
ADDRESS: 10025 TECHNOLOGY BLVD WEST STE 147
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ATTENTION: ROBERT COFFMAN

LIMS CLIENT: 0717 0003
PACE PROJECT: H07170003
PACE CLIENT: 620437
P.O. NO: 2126

SAMPLE ID: FPB-12 (18-19)
SAMPLE NO: H264226

DATE SAMPLED: 15-DEC-93
DATE RECEIVED: 17-DEC-93
PROJECT MANAGER: Scott Mayo

LN	TEST CODE	DETERMINATION	RESULT	UNITS
1	AASSC	CLP - Arsenic, Total (As)	5580	mg/kg
2	ACECS	Cation Exchange Capacity (CEC)	28	meq/100 g
3	I107S	Carbon, Total Organic (C)	0.09	%
4	I490S	Non-aqueous sample pH in Water	8.41	
5	I620S	Percent Solids at 103C	86.4	%
6	DPACK	CLP Data Package Deliverable	Done	

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	SAMPLE PREPARATION DATE/TIME	SAMPLE PREPARATION ANALYST	SAMPLE ANALYSIS LR-METHOD	SAMPLE ANALYSIS DATE/TIME	SAMPLE ANALYSIS ANALYST	SAMPLE ANALYSIS INSTRUMENT
SAMPLE ID: FPB-11 (1.5-3.0)								SAMPLE NO: H264206		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	17-JAN-94 0000	DFF	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (3.0-4.5)								SAMPLE NO: H264207		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	17-JAN-94 0000	DFF	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (5.0-7.5)								SAMPLE NO: H264208		
	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	17-JAN-94 0000	DFF	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (7.5-8.0)								SAMPLE NO: H264209		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (8.5-10.0)								SAMPLE NO: H264210		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-11 (10.5)								SAMPLE NO: H264211		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (11.5)								SAMPLE NO: H264212		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (12.5)								SAMPLE NO: H264213		
	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (13.5)								SAMPLE NO: H264214		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (14.5)								SAMPLE NO: H264215		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37203	37203	19-9081			19-9081	04-JAN-94 0754	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	DATE/TIME	ANALYST	SAMPLE ANALYSIS LR-METHOD	DATE/TIME	ANALYST	INSTRUMENT
SAMPLE ID: FPB-11 (15-16.5) GRAB								SAMPLE NO: H264216		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37224	37224	19-9081			19-9081	05-JAN-94 0743	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (16.5-18) GRAB								SAMPLE NO: H264217		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37224	37224	19-9081			19-9081	05-JAN-94 0743	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-11 (18-19.5) GRAB								SAMPLE NO: H264218		
	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37224	37224	19-9081			19-9081	05-JAN-94 0743	GSR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-12 (1.5-4.0)								SAMPLE NO: H264219		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37039	37039	NA			03-209F	27-DEC-93 1600	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-12 (4-9)								SAMPLE NO: H264220		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37126	37126	NA			03-209F	29-DEC-93 0800	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	SAMPLE PREPARATION DATE/TIME	SAMPLE PREPARATION ANALYST	SAMPLE ANALYSIS LR-METHOD	SAMPLE ANALYSIS DATE/TIME	SAMPLE ANALYSIS ANALYST	SAMPLE ANALYSIS INSTRUMENT
SAMPLE ID: FPB-12 (9-14)								SAMPLE NO: H264221		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37126	37126	NA			03-209F	29-DEC-93 0800	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-12 (14-15)								SAMPLE NO: H264222		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37129	37129	NA			03-209F	30-DEC-93 1300	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-12 (15-16)								SAMPLE NO: H264223		
	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37126	37126	NA			03-209F	29-DEC-93 0800	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	17-JAN-94 0000	R M	
SAMPLE ID: FPB-12 (16-17)								SAMPLE NO: H264224		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37126	37126	NA			03-209F	29-DEC-93 0800	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	20-JAN-94 0800	R M	
SAMPLE ID: FPB-12 (17-18)								SAMPLE NO: H264225		
3	I107S	37259	37259	NA			13-90-3	04-JAN-94 0730	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37126	37126	NA			03-209F	29-DEC-93 0800	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	20-JAN-94 0800	R M	

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SUPPLEMENTAL INFORMATION

LN	TEST CODE	LCSR BLNK BATCH	DUP/MS MS/MSD BATCH	SAMPLE PREPARATION LR-METHOD	SAMPLE PREPARATION DATE/TIME	SAMPLE PREPARATION ANALYST	SAMPLE ANALYSIS LR-METHOD	SAMPLE ANALYSIS DATE/TIME	SAMPLE ANALYSIS ANALYST	SAMPLE ANALYSIS INSTRUMENT
SAMPLE ID: FPB-12 (18-19)									SAMPLE NO: H264226	
3	I107S	37260	37260	NA			13-90-3	04-JAN-94 0800	BDB	
4	I490S	37345	37345	NA			19-9045	09-JAN-94 1400	TM	111WAT
5	I620S	37126	37126	NA			03-209F	29-DEC-93 0800	R M	004WAT
6	DPACK	0	0	NA			NA	08-FEB-94 0930	RLK	
2	ACECS	37184	37184	19-9081			19-9081	28-DEC-93 0849	DTR	300MET
1	AASSC	0	0	47-CLP			47-206.2	20-JAN-94 0800	R M	

LR Method Literature Reference

03 APHA-Standard Methods for the Examination of Water and Wastewater, 16th edition
13 Methods of Soils Analysis, Am Soc of Agronomy, 2nd ed, 1982
19 EPA-Test Methods for Evaluating Solid Waste, 3rd ed, Nov. 1986
47 USEPA CLP SOW of Inorg. Analysis Multi-Conc., SOW #788, revised 2/89.

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LABORATORY CONTROL SAMPLE RECOVERY

TEST CODE	DETERMINATION	LCS % RECOVERY	ACCEPTANCE LIMITS
BATCH NO: 37184			SAMPLE NO: H266263
ACECS	Cation Exchange Capacity (CEC)	96.7	-
BATCH NO: 37203			SAMPLE NO: H266295
ACECS	Cation Exchange Capacity (CEC)	96.0	-
BATCH NO: 37224			SAMPLE NO: H266333
ACECS	Cation Exchange Capacity (CEC)	92.0	-
BATCH NO: 37259			SAMPLE NO: H266384
I107S	Carbon, Total Organic (C)	92.4	-
BATCH NO: 37260			SAMPLE NO: H266385
I107S	Carbon, Total Organic (C)	92.0	-

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METHOD BLANK DATA

TEST CODE	DETERMINATION	RESULT	UNIT
BATCH NO: 37039			SAMPLE NO: H266023
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 37126			SAMPLE NO: H266169
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 37129			SAMPLE NO: H266172
I620S	Percent Solids at 103C	< 0.1	%
BATCH NO: 37184			SAMPLE NO: H266264
ACECS	Cation Exchange Capacity (CEC)	0.2	meq/100 g
BATCH NO: 37203			SAMPLE NO: H266296
ACECS	Cation Exchange Capacity (CEC)	< 0.1	meq/100 g
BATCH NO: 37224			SAMPLE NO: H266334
ACECS	Cation Exchange Capacity (CEC)	0.1	meq/100 g

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DUPLICATE AND MATRIX SPIKE DATA

TEST CODE	DETERMINATION	ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE / RPD	MS RESULT	MS % RCVRY
BATCH NO: 37039						SAMPLE NO: H264210	
I620S	Percent Solids at 103C	71.0	70.2	%	0.5		
BATCH NO: 37039						SAMPLE NO: H264241	
I620S	Percent Solids at 103C	79.4	79.4	%	0.0		
BATCH NO: 37126						SAMPLE NO: H264220	
I620S	Percent Solids at 103C	77.6	67.7	%	3.1		
BATCH NO: 37126						SAMPLE NO: H265044	
I620S	Percent Solids at 103C	79.9	83.0	%	9.9		
BATCH NO: 37129						SAMPLE NO: H263829	
I620S	Percent Solids at 103C	72.9	72.3	%	0.6		
BATCH NO: 37129						SAMPLE NO: H264331	
I620S	Percent Solids at 103C	85.9	86.2	%	0.3		
BATCH NO: 37184						SAMPLE NO: H264219	
ACECS	Cation Exchange Capacity (CEC)	55	58	meq/100 g	5.3		
BATCH NO: 37203						SAMPLE NO: H262339	
ACECS	Cation Exchange Capacity (CEC)	25	26	meq/100 g	3.9		
BATCH NO: 37203						SAMPLE NO: H264206	
ACECS	Cation Exchange Capacity (CEC)	46	43	meq/100 g	6.7		
BATCH NO: 37224						SAMPLE NO: H264216	
ACECS	Cation Exchange Capacity (CEC)	1.7	1.8	meq/100 g	5.7		
BATCH NO: 37345						SAMPLE NO: H262324	
I490S	Non-aqueous sample pH in Water	9.77	9.78		0.1		

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DUPLICATE AND MATRIX SPIKE DATA

TEST CODE	DETERMINATION	ORIGINAL RESULT	DUPLICATE RESULT	UNITS	RANGE / RPD	MS RESULT	MS % RCVRY
BATCH NO: 37345						SAMPLE NO: H262334	
I490S	Non-aqueous sample pH in Water	9.66	9.65		0.1		
BATCH NO: 37345						SAMPLE NO: H262346	
I490S	Non-aqueous sample pH in Water	8.36	8.34		0.1		
BATCH NO: 37345						SAMPLE NO: H264213	
I490S	Non-aqueous sample pH in Water	7.29	7.30		0.1		
BATCH NO: 37345						SAMPLE NO: H264223	
I490S	Non-aqueous sample pH in Water	8.69	8.71		0.2		

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008112

MATRIX SPIKE AND MATIRX SPIKE DUPLICATE DATA

TEST CODE	DETERMINATION	MS RESULT	MSD RESULT	UNITS	RPD	MS PCT RCVRY	MSD PCT RCVRY
BATCH NO: 37259					SAMPLE NO: H264206		
I107S	Carbon, Total Organic (C)	0.93	0.95	%	2.6	70.8	72.7
	* Recovery of the spike indicates the presence of a matrix interference. This should be considered in evaluating the data.						
BATCH NO: 37259					SAMPLE NO: H264216		
I107S	Carbon, Total Organic (C)	0.60	0.59	%	1.7	90.9	90.8
BATCH NO: 37260					SAMPLE NO: H264226		
I107S	Carbon, Total Organic (C)	0.64	0.62	%	3.2	83.3	81.5

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159103

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CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd
Ste 147 Dallas Tx 75220
Phone: (214) 352-9400

Report To: Same
Bill To: Same
P.O. # / Billing Reference
Project Name / No. Crystal 44101724

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): Robert Coffman
Sampler Signature: [signature]
Date Sampled: 11-30-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	ANALYSES REQUEST: Total Arsenic	REMARKS
1	FPB-1 (1)	0950	soil		1	X				X	standard
2	FPB-1 (2-4')	1000			1	X				X	turnaround
3	FPB-1 (4-7)	1010			1	X				X	
4	FPB-1 (7-10)	1020			1	X				X	
5	FPB-1 (10-16)	1025			1	X				X	
6	FPB-2 (2-4)	1300			1	X				X	
7	FPB-2 (6-10)	1315			1	X				X	
8	FPB-2 (10-12)	1320			1	X				X	

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	[signature]	12-6-93	1510

Additional Comments

Fax Prelim results to Robert Coffman
(214) 352-3200

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTI(

008113

15910

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THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd
Ste 147 Dallas, TX 75220
Phone: (214) 352-9400

Report To: SAME
Bill To: SAME
P.O. # / Billing Reference:
Project Name / No.: Crystal 44101724

Pace Client No.:
Pace Project Manager:
Pace Project No.:
*Requested Due Date:

Sampled By (PRINT): ROBERT COFFMAN
Sampler Signature: [signature]
Date Sampled: 11-30-93 & 12-1-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			ANALYSES REQUEST: Total Arsenic	REMARKS
1	FPB-2 (12-14)	1325	Soil		1	X						X	Standard
2	FPB-3 (4-7)	1445	↓		1	X						X	turnaround
3	FPB-3 (7-10)	1505			1	X						X	
4	FPB-3 (10-12)	1512			1	X						X	
5	FPB-3 (12-14)	1518			1	X						X	
6	FPB-3 (14-16)	1525			1	X						X	
12-1-93	FPB-4 (1)	0850			2	X						X	2 containers
12-1-93	FPB-4 (3)	0800	↓		1	X						X	

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	[signature]	12-6-93	1520

Additional Comments
Fax Prelim Results to Robert Coffman
(214) 352-3200

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIO

008114

pace INCORPORATED
THE ASSURANCE OF QUALITY

15879

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd Ste 147
Dallas, TX 75220
Phone: (214) 352-9400

Report To: SAME
Bill To: SAME
P.O. # / Billing Reference: on-file
Project Name / No.: Crystal 44101724

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): Robert Coffman
Sampler Signature: Robert E [illegible]
Date Sampled: 12-1-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			ANALYSES REQUEST: Total Arsenic	REMARKS
1	FPB-4 (5)	0830	Soil		1	X						X	Standard
2	FPB-4 (7)	0845			1								turnaround
3	FPB-4 (9)	0900			1								
4	FPB-4 (11)	0915			1								
5	FPB-4 (13)	0925			1								
6	FPB-5 (1)	1050			1								
7	FPB-5 (5)	1055			1								
8	FPB-5 (7)	1100			1								

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Joey Collab	[illegible]	12-6-93	1570

Additional Comments

Fax Prelim results to Robert Coffman
(214) 352-3200

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIO

008115

158790

pace INCORPORATED
THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd Ste 147
Dallas, TX 75220
Phone: (214) 352-9400

Report To: Same
Bill To: Same
P.O. # / Billing Reference: on file
Project Name / No.: Crystal 44101724

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): Robert Coffman
Sampler Signature: [signature]
Date Sampled: 12-1-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA		ANALYSES REQUEST: Total Arsenic	REMARKS
1	FPB-5 (9)	1103	Soil		1	X					X	Standard turnaround
2	FPB-5 (11)	1110			1							
3	FPB-5 (13)	1115			1							
4	FPB-5 (15)	1120			1							
5	FPB-5 (17)	1123			1							
6	FPB-5 (19)	1125			1							
7	FPB-6 (3)	1322			1							
8	FPB-6 (5)	1330			1							

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					[signature]	[signature] - Pace	12-6-93	1570

Additional Comments

Fax prelim results to Robert Coffman

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTION

008116

PACE INCORPORATED
THE ASSURANCE OF QUALITY

158800

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd Ste 147
Dallas TX 75220
Phone: (214) 352 9400

Report To: S Amos
Bill To: S Amos
P.O. # / Billing Reference
Project Name / No.: Crystal 44101724

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): Robert Coffman
Sampler Signature: Robert Coffman
Date Sampled: 12-1-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			ANALYSES REQUEST: Total Arsenic	REMARKS
1	FPB-6 (7)	1335	Soil		1	X						X	Standard
2	FPB-6 (9)	1342			1								turnaround
3	FPB-6 (11)	1350			1								
4	FPB-6 (13)	1355			1								
5	FPB-6 (15)	1400			1								
6	FPB-6 (17)	1410			1								
7	FPB-6 (19)	1415			1								
8	FPB-6 (21)	1425			1								

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	SHIPMENT METHOD RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					[illegible signature]	[illegible signature] Pace	12-6-93	1570

Additional Comments

Fax Prelim Results to Robert Coffman
(214) 352-3206

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIO

008117

008117

PACE INC. PORATED
THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd ste 147
Dallas TX 75220
Phone: (214) 352-9400

Report To: SAME
Bill To: SAME
P.O. # / Billing Reference
Project Name / No. Crystal 44/01724

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): ROBERT COFFMAN
Sampler Signature: Robert E Coffman
Date Sampled: 12-1-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			ANALYSES REQUEST: Total Arsenic	REMARKS
1	FPB-7 (3)	1545	Soil		1	X						X	
2	FPB-7 (5)	1550			1								
3	FPB-7 (7)	1555			1								
4	FPB-7 (9)	1600			1								
5	FPB-7 (10)	1605			1								
6	FPB-7 (13)	1610			1								
7													
8													

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	[signature]	12-6-93	1510

Additional Comments

Fax results to Robert Coffman
(214) 352-3200

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

008118

PACE INCORPORATED
THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd ste 147
Dallas TX 75220
Phone: (214) 352-9400

Report To: SAME
Bill To: SAME
P.O. # / Billing Reference: on file
Project Name / No.: Crystal 44401724

Pace Client No.:
Pace Project Manager:
Pace Project No.:
*Requested Due Date:

Sampled By (PRINT): Robert Coffman
Sampler Signature: [signature]
Date Sampled: 12-3-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			Total Arsenic	CEC	TOC	pH	REMARKS
1	FPB-B (1)	1400	Soil		1	X						X	X	X	X	Standard turnaround
	FPB-B (5-7)	1410														
2	FPB-B (8-10)	1415														
	FPB-B (10.5)	1425														
3	FPB-B (11.5)	1430														
	FPB-B (12.5)	1445														
4	FPB-B (13.5)	1450														
	FPB-B (14.5)	1455														
5	FPB-B (16)	1500														
6	FPB-B (18)	1505														
7	FPB-B (20)	1510														
8																

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					[signature]	[signature]	12-6-93	5:00
						[signature]	12-6-93	1510

Additional Comments

- fax to Robert Coffman

(4) ~~352-9446~~ 352-3400

1-210-223-3241-393

SEE REVERSE SIDE FOR INSTRUCTIONS

008119

100100

INCORPORATED
THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 10025 West Technology Blvd Ste 147
Dallas TX 75220
Phone: (214) 352-9400

Report To: SAME
Bill To: SAME
P.O. # / Billing Reference: on file
Project Name / No.: Crystal 44101724

Pace Client No.:
Pace Project Manager:
Pace Project No.:
*Requested Due Date:

Sampled By (PRINT): ROBERT COFFMAN
Sampler Signature: [signature]
Date Sampled: 12-6-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA			Total Arsenic	CEC	TOC	pH	REMARKS
1	FPB-9 (2-4)	0905	Soil		1	X						X	X	X	X	Standard Turnaround
	FPB-9 (4-6.5)	0910			1											
2	FPB-9 (6.5)	0907			1											
	FPB-9 (7-9)	0912			1											
3	FPB-9 (9.5)	0915			1											
	FPB-9 (10.5)	0925			1											
4	FPB-9 (11.5)	0928			1											
	FPB-9 (12.5)	0931			1											
5	FPB-9 (13.5)	0934			1											
	FPB-9 (14.5)	0950			1											
6	FPB-9 (15.5)	0952			1											
	FPB-9 (16.5)	0954			1											
7	FPB-9 (17.5)	0958			1											
	FPB-9 (18.5)	1005			1											
8																

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	SHIPMENT METHOD RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature]	[signature]	12-6-93	1510
		[signature]	12-6-93	1570

Additional Comments

Fax Prelim Results to Robert Coffman
(214) 352-3200

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

008120

008121

159212

INCORPORATED
THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Industrial Compliance
Address: 1005 West Technology Blvd Ste 147
Dallas, Tx 75220
Phone: (214) 352-9400

Report To: SAME
Bill To: SAME
P.O. # / Billing Reference: 2126
Project Name / No.: Crystal 44101724

Pace Client No.:
Pace Project Manager:
Pace Project No.:
*Requested Due Date:

Sampled By (PRINT): Robert Coffman
Sampler Signature: [signature]
Date Sampled: 12-15-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	ANALYSES REQUEST: Total Arsenic	CEC	TOC	pH	REMARKS
1	FPB-11 (1.5-3.0)	0850	Soil		1	X				X	X	X	X	
2	FPB-11 (3.0-4.5)	0900			1									
3	FPB-11 (5-7.5)	0920			1									
4	FPB-11 (7.5-8.5)	0925			1									
5	FPB-11 (8.5-10.0)	0930			1									
6	FPB-11 (10.5)	1005			1									
7	FPB-11 (11.5)	1010			1									
8	FPB-11 (13.5)	1015			1									

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[signature] / IC	[signature]	12-17-93	1:50

[illegible]

SEE REVERSE SIDE FOR INSTRUCTIONS

4

008121

INCORPORATED
THE [illegible]RANCE OF QUALITY

CHAIN-OF-[illegible]ODY RECORD
Analytical [illegible]st

Client [illegible]

Address [illegible] 117

[illegible]

Phone [illegible]

Report To: SAWE

Bill To: SAWE

P.O. # / Billing Reference 2126

Project Name / No. Crystal 44101774

Pace Client No.

Pace Project Manager

Pace Project No.

*Requested Due Date:

Sampled By (PRINT): [illegible]

Sampler Signature [illegible]

Date Sampled 12-15-93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA			ANALYSES REQUEST: Total Arsenic	CEC	TOC	pH					REMARKS
1	FPB-11 (13.5)	1020	soil		1	X						X	V	X	X					
2	FPB-11 (14.5)	1025			1															
3	FPB-11 (15-16.5) grab	[illegible]			1															
4	FPB-11 (16.5-18) grab	[illegible]			1															
5	FPB-11 (18-19.5) grab	[illegible]			1															
6	FPB-12 (1.5-4.0)	1340			1															
7	FPB-12 (4.9)	1421			1															
8	FPB-12 (7.14)	1437			1															

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[illegible] / IC	[illegible]	[illegible]	[illegible]

[illegible]

SEE REVERSE SIDE FOR INSTRUCTIONS

008122

008122

100214

PACE INCORPORATED
THE ASSURANCE OF QUALITY

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client [illegible]
Address [illegible]
[illegible]
Phone [illegible]

Report To: [illegible]
Bill To: [illegible]
P.O. # / Billing Reference [illegible]
Project Name / No. [illegible]

Pace Client No.
Pace Project Manager
Pace Project No.
*Requested Due Date:

Sampled By (PRINT): [illegible]
Sampler Signature: [illegible]
Date Sampled

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA			ANALYSES REQUEST: Total Metals	CEC	TOC	pH					REMARKS
1	FPB 12 (14'-15') 12-15-93	1502	Soil		1	X						X	X	X	X					
2	FPB 12 (15'-16') 12-15-93	1505	Soil		1	X						X	X	X	X					
3	FPB 12 (16'-17') 12-15-93	1506	Soil		1	X						X	X	X	X					
4	FPB-12 (17'-18') 12-15-93	1510	Soil		1	X						X	X	X	X					
5	FPB 12 (18'-19') 12-15-93	1514	Soil		1	X						X	X	X	X					
6																				
7																				
8																				

COOLER NOS.	BAILERS	SHIPMENT METHOD: OUT / DATE	RETURNED / DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	[illegible] IC	[illegible] / PACE	12-17	3:30

Additional Comments

H2604206-206

4

SEE REVERSE SIDE FOR INSTRUCTIONS

008123

008123

File
4410734-10-36

McBride-Ratcliff and Associates, Inc.
A Subsidiary of The Badger Company, Inc.

Badger
A Raytheon Company

008124

February 10, 1994
MRA Project No. 94-0034

Industrial Compliance
9290 Bond, Suite 102
Overland Park, Kansas 66214

ATTENTION: Mr. Pat Goeke

CRYSTAL C
IC PROJECT

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 9

To Pat / Robert	From
Co.	Co.
Dept.	Phone #
Fax #	Fax #

Dear Mr. Goeke:

We are pleased to transmit the results of the laboratory tests that you requested. The tests were performed according to the instructions contained on the chain of custody documents received with the samples except as noted below.

Scope

The scope of this project is limited to laboratory testing and reporting of data. No engineering opinions or evaluation of laboratory data, other than assessment of test quality, is included.

Samples

The samples were delivered to the McBride-Ratcliff and Associates, Inc. geotechnical laboratory on February 1, 1994, by a representative from Industrial Compliance. The soil samples were contained in sealed, thin-wall metal sample tubes. The soil samples were hydraulically extruded from the sample tubes as needed for testing.

Laboratory Testing

The following table shows the types and number of tests performed and the test methods used:

Test Description	Number of Tests	ASTM Test Method
Water Content	4	D 2216
Unit Dry Weight	4	D 2937
Specific Gravity	4	D 854
Sieve Analysis with Hydrometer	4	D 422

7220 Langtry ▪ Houston, Texas 77040-6698 ▪ (713) 460-3766 ▪ Fax (713) 939-9604 ▪ Fax (713) 460-8945

SUMMARY OF LABORATORY TESTS

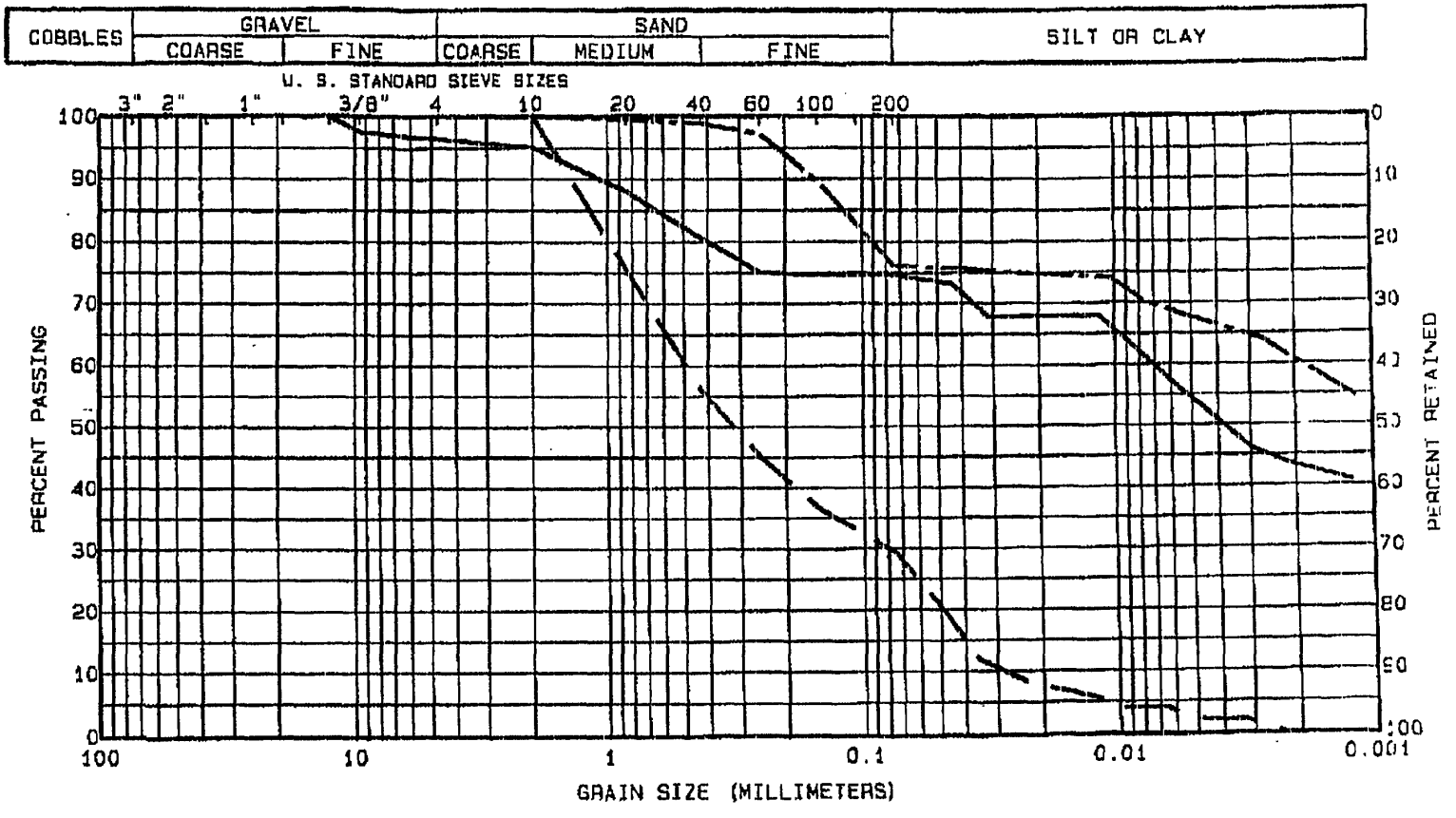
Sample Identification	Water Content (%)	Unit Wet Weight (pcf)	Unit Dry Weight (pcf)	Specific Gravity	Fraction Finer than #200 Sieve (%)	Soil Description
CS-4 (4-6)	16	138	119	2.77	75	Tan SILTY CLAY w/ crushed limestone
CS-5 (4-6)	47	107	73	2.60	29	Dark Gray SILTY SAND
CS-6 (11.5-13.5)	9	117	107	2.72	30	Tan CLAYEY SAND
CS-6A (5-7)	27	108	85	2.75	76	Gray and Tan SANDY CLAY

MRA No. 94-0034
Figure No. -1-

McBride-Ratcliff and Associates, Inc
A Raytheon Company

008125

GRAIN SIZE DISTRIBUTION



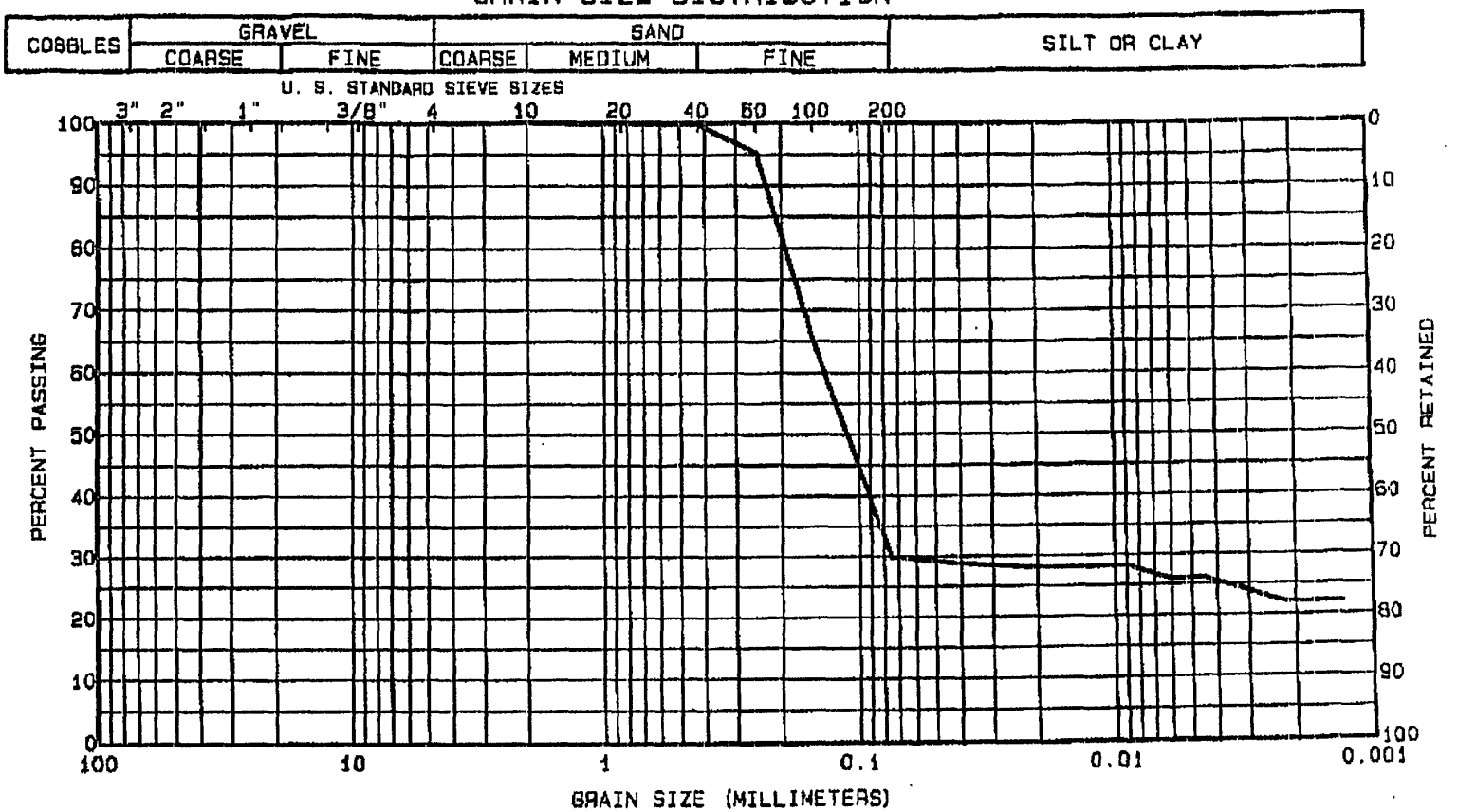
Boring No.	Depth, (feet)	Comments	Classification	Symbol
CS-4	4-6		SILTY CLAY W/ LIMESTO	———
CS-5	4-6		SILTY SAND	—— -
CS-6A	5-7		SANDY CLAY	—— - -

File No. 94-0034
Figure No. 2

McBride-Ratcliff and Associates, Inc.

008126

GRAIN SIZE DISTRIBUTION



Boring No.	Depth, (feet)	Comments	Classification	Symbol
CS-6	11.5-13.5		CLAYEY SAND	

File No. 94-0034
Figure No. 3

McBride-Ratcliff and Associates, Inc.

008127

008128

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9461 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1435 FAX (713)928-9063

LABORATORY IDENTIFICATION
J56203 - 1

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CS-4 4'-6'	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHANGE#
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DET. LIMIT	REG. LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.0369	0.01		%	FLMAOM3.2.15	02/15/94	12:30	SS

Approved By : [signature] Lab Director/Lab Manager

008129

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9461 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1486 FAX (713)928-9063

LABORATORY IDENTIFICATION
J56203 - 2

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CS-5 [illegible]	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DET. LIMIT	REG. LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.1561	0.01		%	FLMAONS.2.13	02/15/94	12:30	SK

Approved By : [signature]

008130

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9481 HOUSTON, TEXAS 77281
TELEPHONE (713)928-2701 (800)472-1498 FAX (713)928-9063

LABORATORY IDENTIFICATION
J56203 - 3

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CS-6 11.5'-13.5'	McBride-Ratcliff & Associates Construction Materials	Jose A. Lopez

PROJECT #	PROJECT NAME	PO #	RELEASE #	CHANGE #
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DETECTION LIMIT	REG. LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.0849	0.01		%	FLMAOM3.2.13	02/15/94	12:30	as

Approved By : Jose Lopez

008131

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9481 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1486 FAX (713)928-9063

LABORATORY IDENTIFICATION
J56203 - 4

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CE-6A-5'-7'	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DET. LIMIT	REG. LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.0708	0.01		%	FLMAON3.2.13	02/15/94	12:30	SS

Approved By : [signature]

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PW-1
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008132

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1010 FINISH TIME: 1145	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) - FILL MATERIAL
			100%			
					4.0	
				5'	CH	BLACK MEDIUM STIFF CLAY (CH) W/OCCASIONAL FE NODULES AND SOME SHELL FRAGMENTS
						GRADING TO DARK GRAY; NO SHELL FRAGMENTS; ABUNDANT CALCAREOUS NODULES
			90%		8.0	
					CL	GRAY MEDIUM STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING FE NODULES AND SOME CALCAREOUS NODULES
					10.0	
				10'	ML	GRAY SOFT SANDY/CLAYEY SILT (ML) W/YELLOW IRON STAINING; MOIST
			20%		SP	BUFF VERY FINE GRAINED SAND (SP); WET
			50%	15'		
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PW1

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PW-1
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008133

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1010 FINISH TIME: 1145	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CL	GRAY STIFF SLIGHTLY SANDY CLAY (CL) W/YELLOW IRON STAINING, CALCAREOUS IN-PART
					25.0	
						RED AND GRAY VERY STIFF CLAY (CH), CALCAREOUS
			100%			
				25'	CH	
					26.5	CALCAREOUS ZONE @ 26.5 FEET
			100%			GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
						BECOMING YELLOW IRON STAINED BELOW 27.5 FEET
					CL	
				30'	30.0	
					ML	GRAY MEDIUM STIFF SANDY SILT (ML) W/YELLOW IRON AND FE STAINING; MOIST
					32.0	
			90%		SM	GRAY SOFT SILTY VERY FINE GRAINED SAND (SM) W/FE AND YELLOW IRON STAINING
						BECOMING SLIGHTLY SILTY BELOW 34 FEET; WET
				35'		
			90%		SM	
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PW1A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PW-1
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008134

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1010 FINISH TIME: 1145	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SM	REDDISH BROWN SOFT SLIGHTLY SILTY VERY FINE GRAINED SAND (SM)
					42.5	
			100%		CH	RED AND GRAY VERY STIFF CLAY (CH)
						BOTTOM OF BORING @ 43.0 FEET
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PW1B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PW-2
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

008135

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/25/93 FINISH DATE: 4/25/93	TIME:
START TIME: 0810 FINISH TIME: 0850	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) - FILL MATERIAL
					2.5	
			95%		CH	DARK GRAY MEDIUM STIFF CLAY (CH) W/CALCAREOUS NODULES
				5'		
						GRADING TO GRAY W/YELLOW IRON STAINING
			100%			
				10'		
					12.0	
			80%		SP	BUFF VERY FINE GRAINED SAND (SP)
				15'		
			70%			
					19.0	
					CL	GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING
				20'		BOTTOM OF BORING @ 20.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PW2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-1
SHEET NUMBER 1 OF 3

LOCATION DIAGRAM:

008136

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/21/93 FINISH DATE: 4/21/93	TIME:
START TIME: 1410 FINISH TIME: 1620	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER			90%		FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
						LOOSE BETWEEN 3 AND 4 FEET; VERY SANDY
				5'		
			90%		7.0	
					CH 8.0	DARK GRAY AND TAN MOTTLED SOFT SANDY CLAY (CL)
					SW	BUFF FINE TO MEDIUM GRAINED SAND (SW) ANGULAR AND VERY POORLY CEMENTED, DRY; PROBABLE FILL
				10'	10.5	
			100%		CL	DARK GRAY MEDIUM STIFF SILTY CLAY (CL) W/OCCASIONAL SHELL FRAGMENTS AND CALCAREOUS NODULES THROUGHOUT
					13.0	
					ML	DARK GRAY MEDIUM STIFF CLAYEY SILT (ML); LOOSE; MOIST
				15'		DARK GRAY TO GRAY MEDIUM STIFF CLAYEY/SANDY SILT (ML)
						DARK GRAY SOFT SANDY SILT (ML); WET
			50%		16.0	6" ZONE OF SHELL GRAGMENTS
					SP	BUFF VERY FINE GRAINED SAND (SP)
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT1

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-1
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008137

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/21/93 FINISH DATE: 4/21/93	TIME:
START TIME: 1410 FINISH TIME: 1620	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER					SP	BUFF VERY FINE GRAINED SAND (SP)
			30%			
				25'	25.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
					27.0	
			95%		CL	GRAY VERY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING THROUGHOUT
						GRADING TO MEDIUM STIFF
				30'	30.5	
					ML	LIGHT GRAY SOFT SANDY SILT (ML) MOIST W/FE STAINING
			100%		32.5	
					SM	LIGHT GRAY SILTY VERY FINE GRAINED SAND (SM) W/FE STAINING THROUGHOUT
				35'		
			50%			
				40'	SM	

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT1A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-1
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008138

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/21/93 FINISH DATE: 4/21/93
START TIME: 1410 FINISH TIME: 1620

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH.	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER			100%		CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
				45'	45.0	BOTTOM OF BORING @ 45.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT1B

LOG OF BORING NUMBER PT-2
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008139

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 0815 FINISH TIME: 0940	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER					FILL	REDDISH BROWN MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
			100%			
					4.5	
				5'	CH	DARK GRAY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES
			100%			GRADING TO GRAY W/LARGE CALCAREOUS COBBLES
						BECOMING CALCAREOUS @ 9 FEET W/YELLOW IRON STAINING
				10'	10.0	
					CL	GRAY SOFT SILTY CLAY (CL); MOIST
			50%		12.5	
					SC/SM	GRAY TO BUFF CLAYEY/SILTY VERY FINE GRAINED SAND (SC/SM); MOIST
				15'	SP	BUFF VERY FINE GRAINED SAND (SP); WET
SAMPLER STUCK IN AUGER			40%			
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT2

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-2
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008140

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 0815 FINISH TIME: 0940	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER					SP	BROWN VERY FINE GRAINED SAND (SP); WET
	SAMPLER	STUCK	10%			
					22.5	
					CL	REDDISH BROWN MEDIUM STIFF SANDY CLAY (CL) SLIGHTLY SILTY; MOIST
					24.5	
				25'	CH	RED AND GRAY VERY STIFF CLAY (CH); WHITE CALCAREOUS ZONE @ 24.75 FEET
			100%		27.5	
					CL	REDDISH BROWN MEDIUM STIFF SANDY CLAY (CL), SLIGHTLY SILTY; MOIST
					29.5	
				30'	CH	RED AND GRAY VERY STIFF CLAY (CH); WHITE CALCAREOUS ZONE @ 29.75 FEET
			100%		CL	LIGHT GRAY STIFF SANDY CLAY (CL)
					ML	LIGHT GRAY MEDIUM STIFF SANDY SILT (ML) W/YELLOW IRON STAINING BELOW 32 FEET; WET
					34.5	
				35'	SM	REDDISH BROWN SILTY VERY FINE GRAINED SAND (SM)
			100%		36.5	
					ML	RED AND GRAY SANDY SILT (ML) W/OCCASIONAL CALCAREOUS NODULES
					37.5	
					SM	RED SLIGHTLY SILTY VERY FINE GRAINED SAND (SM)
					39.5	
				40'	SP	REDDISH BROWN VERY FINE GRAINED SAND (SP)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT2A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-2
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008141

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/22/93 FINISH DATE: 4/22/93
START TIME: 0815 FINISH TIME: 0940

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
			100%		SP	REDDISH BROWN VERY FINE GRAINED SAND (SP)
					41.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH)
					42.0	
						BOTTOM OF BORING @ 42.0 FEET
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT2B

LOG OF BORING NUMBER PT-3
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008142

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FT BARREL
	ST-SHELBY TUBE
BORING LOCATION:	CS-CALIFORNIA TYPE SAMPLER
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1110 FINISH TIME: 1350	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER					FILL	RED MEDIUM STIFF SANDY CLAY (CL); MOIST - FILL MATERIAL
			90%		3.0	
					CH	DARK GRAY MEDIUM STIFF CLAY (CH)
				5'		GRADING TO GRAY W/OCCASIONAL CALCAREOUS NODULES AND Fe NODULES
						BECOMING STIFF BELOW 5 FEET
						CALCAREOUS ZONE @ 6 FEET
			100%			CALCAREOUS ZONE BETWEEN 7.0-7.5 FEET, YELLOW IRON STAINING
						INCREASE FE NODULES BELOW 9 FEET
				10'	10.5	
					CL 11.5	GRAY MEDIUM STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING; DAMP
			100%		ML 13.5	LIGHT GRAY TO BUFF SANDY SILT (ML) SOFT; MOIST
					SP	BUFF VERY FINE GRAINED SAND (SP); WET
				15'		
CS						
		75%	50%			
					19.5	
				20'	CH	RED AND GRAY VERY STIFF CLAY (CH); VERY CALCAREOUS

GEOLOGIST: ROBERT COFFMAN	
CHECKED BY:	DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.	

1724PT3

LOG OF BORING NUMBER PT-3
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

008143

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FT BARREL
	ST-SHELBY TUBE
BORING LOCATION:	CS-CALIFORNIA TYPE SAMPLER
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1110 FINISH TIME: 1350	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CH	RED AND GRAY VERY STIFF CLAY (CH); VERY CALCAREOUS
						CALCAREOUS ZONE @ 22 FEET
						BECOMMING LESS CALCAREOUS
						GRADING TO GRAY W/YELLOW IRON STAINING, LESS STIFF
				25'		
ST	SHELBY BROKE OFF. OVERDRILLED W/BARREL SAMPLER, DID NOT RECOVER SHELBY INTACT					
					27.0	
					CL	GRAY VERY SANDY CLAY (CL) W/YELLOW IRON STAINING
			45%			
				30'	30.5	
					ML	BUFF TO BROWN SANDY SILT (ML); SOFT; WET
					32.5	
			65%		SP	BUFF VERY FINE GRAINED SAND (SP) YELLOW IRON STAINING
				35'		
CS		80%			SP	
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT3A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-3
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008144

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FT BARREL
	ST-SHELBY TUBE
BORING LOCATION:	CS-CALIFORNIA TYPE SAMPLER
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1110 FINISH TIME: 1350	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SP	REDDISH BROWN VERY FINE GRAINED SAND (SP)
					42.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH)
					44.0	
						BOTTOM OF BORING @ 44.0 FEET
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT3B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-4
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008145

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON TX
BORING LOCATION:

START DATE: 4/22/93 FINISH DATE: 4/22/93
START TIME: 1530 FINISH TIME: 1830

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FT LONG CONTINUOUS BARREL
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) - FILL MATERIAL
			100%			
				5'		
			90%		FILL	
				10'	9.75	
					CH 11.0	DARK GRAY MEDIUM STIFF CLAY (CH) W/CALCAREOUS NODULES
					FILL 12.0	RED VERY FINE GRAINED SAND (SP) - PROBABLE FILL
			50%		CH	DARK GRAY MEDIUM STIFF CLAY (CH)
					SP	BUFF VERY FINE GRAINED SAND (SP)
				15'		
					SP	
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT4

LOG OF BORING NUMBER PT-4
SHEET NUMBER 2 OF 3

LOCATION DIAGRAM:

008146

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1530 FINISH TIME: 1830	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SP	BUFF VERY FINE GRAINED SAND (SP)
	NO SAMPLE RECOVERED USING BASKET		0%			
				25'	25.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH), CALCAREOUS
			100%		27.0	
					CL	GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
				30'		
			70%		32.0	
					ML 33.0	GRAY TO BUFF VERY SANDY SILT (ML); MOIST
					SP	*BUFF TO BROWN VERY FINE GRAINED SAND (SP); WET*
				35'		
					37.0	
			70%		ML	GRAY SOFT SANDY SILT (ML) W/YELLOW IRON STAINING
					39.0	
				40'	SP	BUFF VERY FINE GRAINED SAND (SP)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT4A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-4
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008147

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1530 FINISH TIME: 1830	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER			75%		SP	BUFF VERY FINE GRAINED SAND (SP)
				45'	45.0	
			100%		CH	RED AND GRAY VERY STIFF CLAY (CH)
				50'	50.0	
						BOTTOM OF BORING @ 50 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT4B

LOG OF BORING NUMBER PT-5
SHEET NUMBER 1 OF 3

LOCATION DIAGRAM:

008148

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1010 FINISH TIME: 1415	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
			100%			
					3.5	
					CH	BLACK MEDIUM STIFF CLAY (CH) W/FE NODULES
				5'		GRADING TO DARK GRAY W/CALCAREOUS AND Fe NODULES AND YELLOW IRON STAINING
			90%			
						GRADING TO GRAY
					8.0	
					CL	GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
					10.0	
				10'	ML	GRAY SOFT SANDY SILT (ML) W/YELLOW IRON STAINING; MOIST
					11.0	
					SP	BUFF VERY FINE GRAINED SAND (SP); WET
			75%			
				15'		
			100%			
					17.5	
					CL	GRAY VERY STIFF SLIGHTLY SANDY CLAY (CL) W/CALCAREOUS NODULES THROUGHOUT AND YELLOW IRON STAINING
					19.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH)
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT5

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-5
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008149

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1010 FINISH TIME: 1415	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED AND GRAY VERY STIFF CLAY (CH)
			100%		CH	
				25'	25.0	
						GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
			90%		CL	
					28.75	
						GRAY SOFT SANDY SILT (ML); MOIST
				30'	ML	
			70%			
					32.5	
					SP	GRAY TO BUFF VERY FINE GRAINED SAND (SP)
					34.0	
						GRAY SLIGHTLY SILTY SAND (SM)
				35'	SM	
					36.0	
						BUFF VERY FINE GRAINED SAND (SP)
			60%		SP	
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT5A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-5
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008150

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1010 FINISH TIME: 1415	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BUFF VERY FINE GRAINED SAND (SP)
			80%		SP	
					42.0	
						RED AND GRAY VERY STIFF CLAY (CH) (3")
						BOTTOM OF BORING @ 42.0 FEET
					CH	
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT5B

LOG OF BORING NUMBER PT-6
SHEET NUMBER 1 OF 2

LOCATION DIAGRAM:

008151

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1640 FINISH TIME: 1725	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED VERY SANDY CLAY (CL) – FILL MATERIAL
			50%			
				5'		
			50%			
					8.5	
					CH	DARK GRAY MEDIUM STIFF CLAY (CH) W/Fe NODULES AND OCCASIONAL CALCAREOUS NODULES
				10'		GRADING TO GRAY
					11.0	
					CL	GRAY MEDIUM STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
			50%		12.5	
					SP	BUFF VERY FINE GRAINED SAND (SP)
				15'		
			10%			
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT6

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-6
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

008152

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1640 FINISH TIME: 1725	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SP	BUFF VERY FINE GRAINED SAND (SP)
					23.0	
					CL	GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
				25'	25.0	BOTTOM OF BORING @ 25.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT6A

LOG OF BORING NUMBER PT-7
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

008153

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/22/93 FINISH DATE: 4/22/93	TIME:
START TIME: 1405 FINISH TIME: 1500	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
			50%			
					4.0	
						BLACK MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe AND CALCAREOUS NODULES
				5'		
						GRADING TO DARK GRAY, CALCAREOUS
			100%			
					CH	
				10'		GRADING TO GRAY
					11.0	
					CL	GRAY STIFF SANDY/SILTY CLAY (CL)
			75%		ML 12.5	GRAY TO BUFF SANDY SILT (ML)
					SP	BUFF VERY FINE GRAINED SAND (SP)
				15'		
			50%			
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT7

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-7
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

008154

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/22/93 FINISH DATE: 4/22/93
START TIME: 1405 FINISH TIME: 1500

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BUFF VERY FINE GRAINED SAND (SP)
					SP	
			100%			
					24.5	
					CH	RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
				25'		BOTTOM OF BORING @ 25.0 FEET
				30'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT7A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-8
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

008155

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1620 FINISH TIME: 1700	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
			50%		2.5	
				5'	CH	DARK GRAY STIFF CLAY (CH) W/OCCASIONAL Fe AND CALCAREOUS NODULES
			100%		9.5	
				10'	CL	GRAY MEDIUM STIFF SANDY CLAY (CL) W/OCCASIONAL YELLOW IRON STAINING
					ML 12.0	LIGHT GRAY SOFT SANDY SILT (ML) W/OCCASIONAL Fe NODULES; MOIST
			60%		SP	BUFF VERY FINE GRAINED SAND (SP)
				15'	SP	
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT8

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-8
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

008156

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/23/93 FINISH DATE: 4/23/93
START TIME: 1620 FINISH TIME: 1700

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SP	BUFF VERY FINE GRAINED SAND (SP)
					25.0	
				25'	CH	RED AND GRAY VERY STIFF CLAY (CH)
					26.0	
						BOTTOM OF BORING @ 26.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT8A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-9
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

008157

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/25/93 FINISH DATE: 4/25/93	TIME:
START TIME: 0810 FINISH TIME: 0850	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
					4.0	
					CH	DARK GRAY MEDIUM STIFF CLAY (CH)
				5'		
						GRADING TO GRAY
					9.5	
				10'	CL	GRAY STIFF SANDY CLAY (CL)
					11.0	
					ML 12.0	GRAY SANDY SILT (ML)
					SP	BUFF VERY FINE GRAINED SAND (SP)
				15'		
					19.5	
				20'	CL	GRAY STIFF SANDY CLAY (CL) CALCAREOUS W/CALCAREOUS NODULES

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT9

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-10
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

008158

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/23/93 FINISH DATE: 4/23/93
START TIME: 1335 FINISH TIME: 1450

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
			100%			
				5'		
					7.0	
			70%		CH	BLACK MEDIUM STIFF CLAY (CH) W/Fe NODULES AND OCCASIONAL CALCAREOUS NODULES
						GRADING TO GRAY W/YELLOW IRON STAINING
				10'		
					11.5	
			40%		FILL	REDDISH BROWN FINE TO MEDIUM GRAINED SAND (SW) SLIGHTLY CLAYEY – PROBABLE FILL
					15.0	EVIDENCE OF SAND IN SAMPLE SHOE
				15'	SP	BUFF VERY FINE GRAINED SAND (SP); WET
			40%			
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724P10

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-10
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

008159

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/23/93 FINISH DATE: 4/23/93	TIME:
START TIME: 1335 FINISH TIME: 1450	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SP	BUFF VERY FINE GRAINED SAND (SP)
					24.0	
					CL	GRAY STIFF SANDY CLAY (CL) W/YELLOW IRON STAINING
				25'	25.5	
						BOTTOM OF BORING @ 25.5 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724P10A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PT-11
SHEET NUMBER 1 OF 1
LOCATION DIAGRAM:

008160

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/25/93 FINISH DATE: 4/25/93	TIME:
START TIME: 1315 FINISH TIME: 1345	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
BARREL SAMPLER					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
					2.5	
			60%		CH	DARK GRAY MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe AND CALCAREOUS NODULES
				5'		
						SHELL FRAGMENTS @ 6 FEET
			100%		7.5	GRADING TO GRAY
					CL	GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL Fe NODULES AND YELLOW IRON STAINING
				10'		
			80%		12.0	
					ML/SM	GRAY SOFT SANDY SILT/SILTY SAND (ML/SM); MOIST
					SP	BUFF VERY FINE GRAINED SAND (SP); WET
				15'		
			40%			
					19.75	
				20'	CL	GRAY STIFF SANDY CLAY (CL) W/Fe NODULES AND YELLOW IRON STAINING

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PT11

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PS-1
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

008161

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/25/93 FINISH DATE: 4/25/93
START TIME: 1030 FINISH TIME: 1200

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED MEDIUM STIFF SANDY CLAY (CL) – FILL MATERIAL
					2.5	
			100%			DARK GRAY MEDIUM STIFF CLAY (CH)
				5'	CH	GRADING TO GRAY W/OCCASIONAL CALCAREOUS AND Fe NODULES
					7.0	
			90%		CL	GRAY MEDIUM STIFF SANDY/SILTY CLAY (CL) SLIGHTLY CALCAREOUS W/Fe NODULES AND YELLOW IRON STAINING
					9.0	
				10'	SM	REDDISH BROWN SILTY VERY FINE GRAINED SAND (SM); POSSIBLE FILL
			90%		12.5	
					SP	BUFF VERY FINE GRAINED SAND (SP)
				15'	15.0	
			100%		CL	GRAY STIFF SANDY CLAY (CL) W/CALCAREOUS NODULES AND YELLOW IRON STAINING
					19.75	
				20'	CH	RED AND GRAY VERY STIFF CLAY (CH) @ 19.75 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PS1

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER PS-1
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

008162

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 4-FOOT LONG SPLIT SPOON
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/25/93 FINISH DATE: 4/25/93	TIME:
START TIME: 1030 FINISH TIME: 1200	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
ST			60%		CL	GRAY SANDY CLAY (CL)
					22.0	
ST			65%		CH	RED AND GRAY VERY STIFF CLAY (CH)
					24.0	
						BOTTOM OF BORING @ 24.0 FEET
				25'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724PS1A

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-1

JOB NUMBER 44101724 INSTALLATION DATE 4/21/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

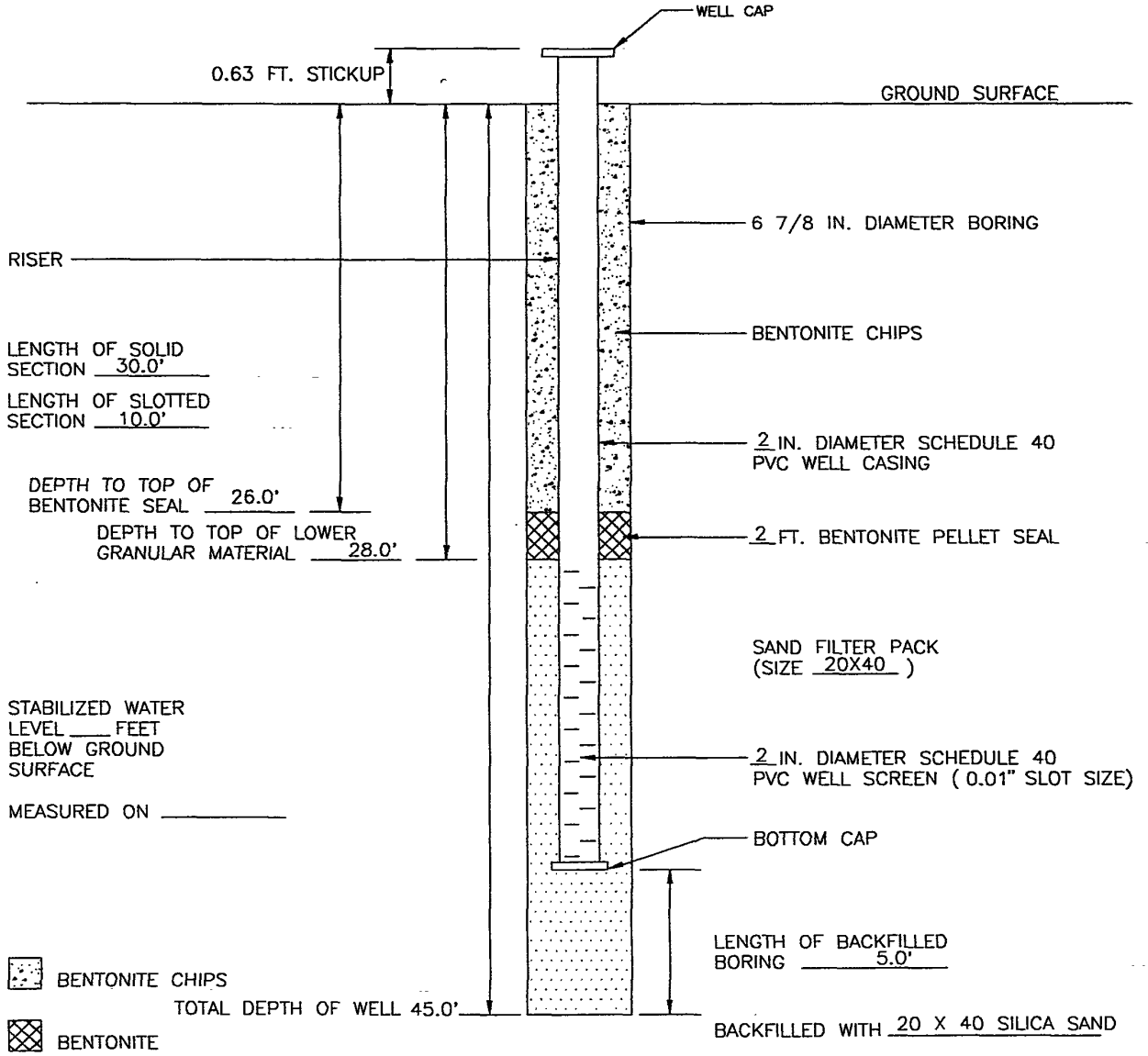
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008163



PT1X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-2

JOB NUMBER 44101724 INSTALLATION DATE 4/22/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

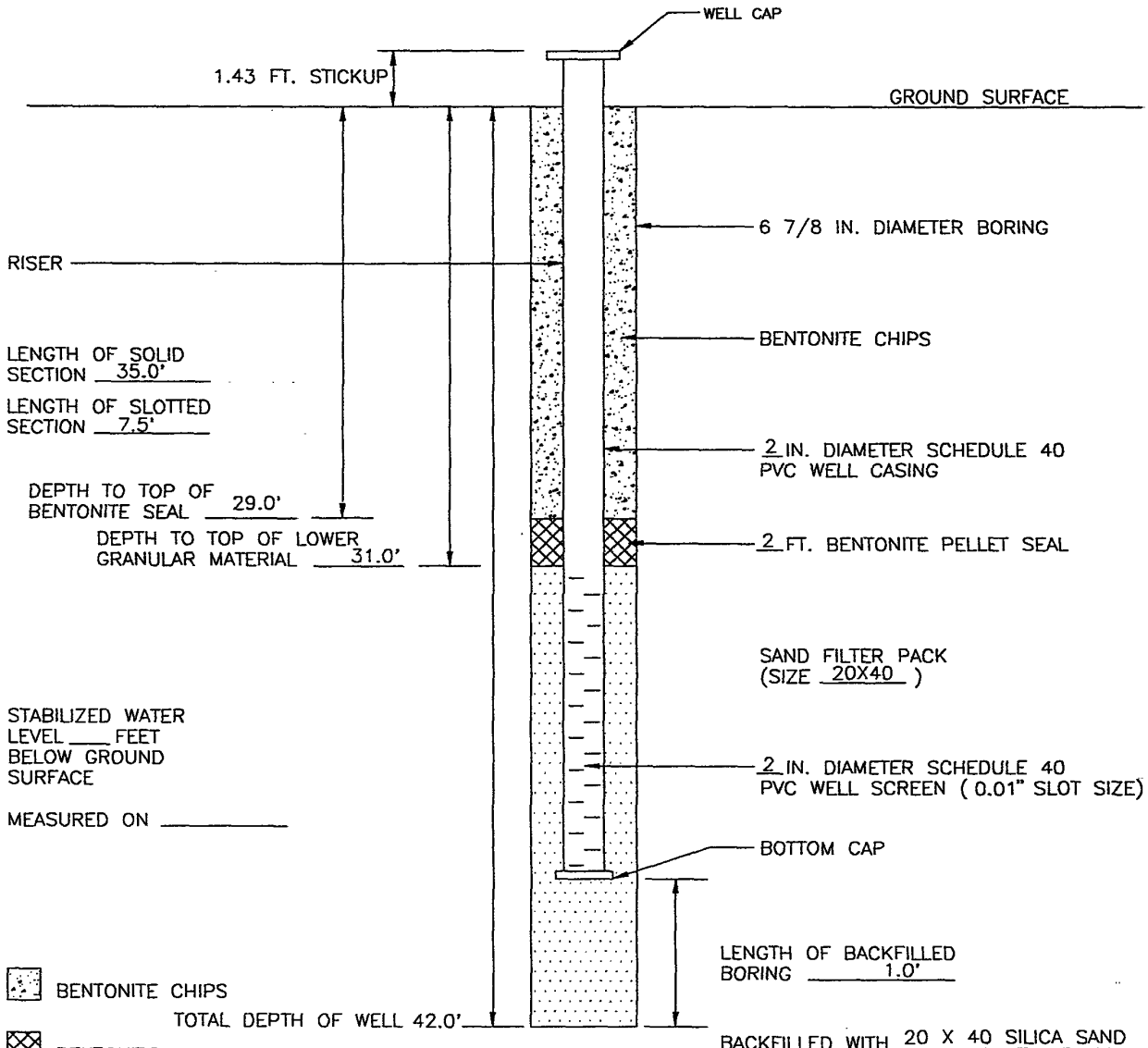
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008164



PT2X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-3

JOB NUMBER 44101724 INSTALLATION DATE 4/22/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

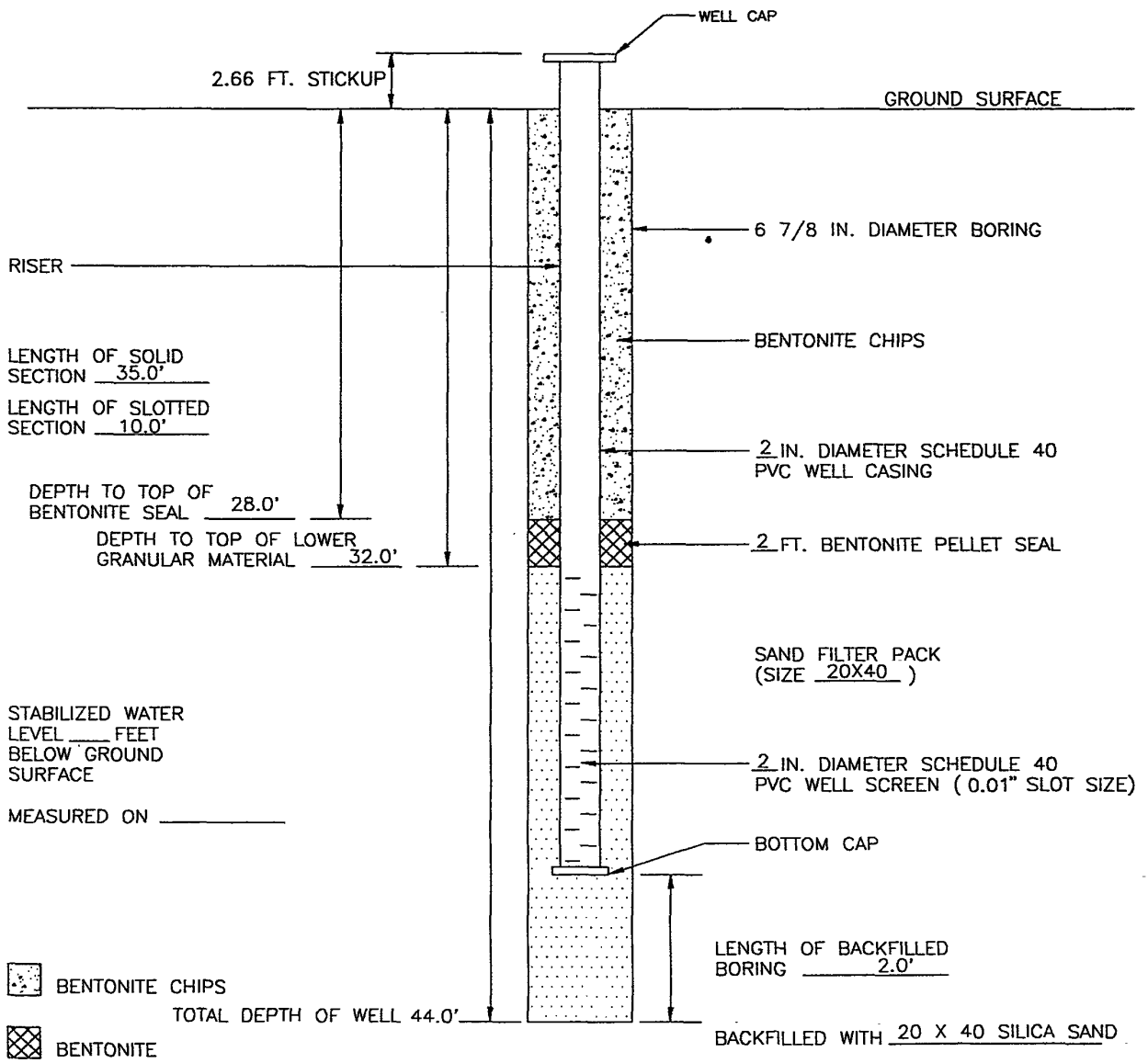
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAI

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008165



PT3X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-4

JOB NUMBER 44101724 INSTALLATION DATE 4/23/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

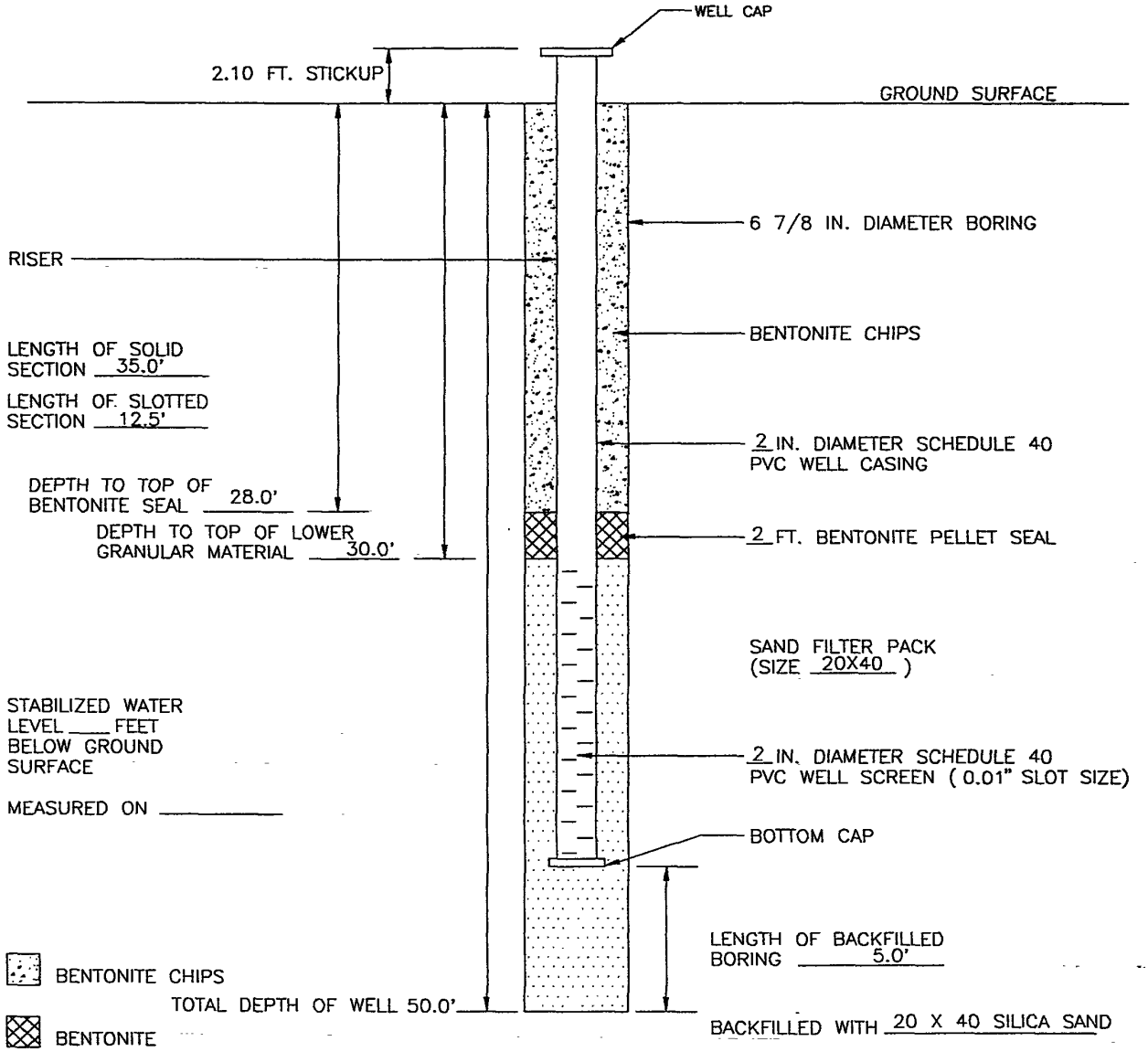
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMA

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008166



PT4X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-5

JOB NUMBER 44101724 INSTALLATION DATE 4/23/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

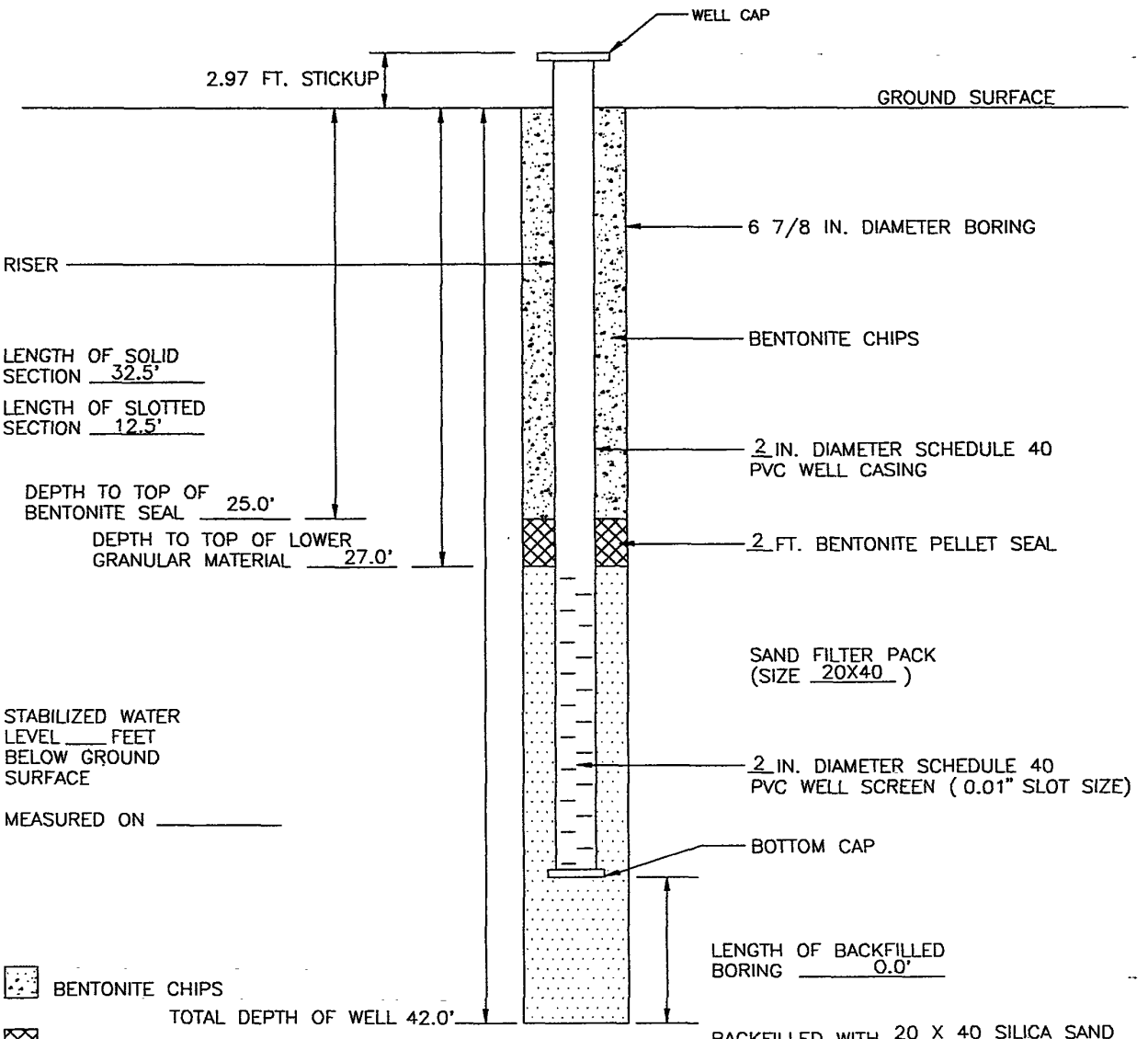
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008167



PT5X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-6

JOB NUMBER 44101724 INSTALLATION DATE 4/23/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

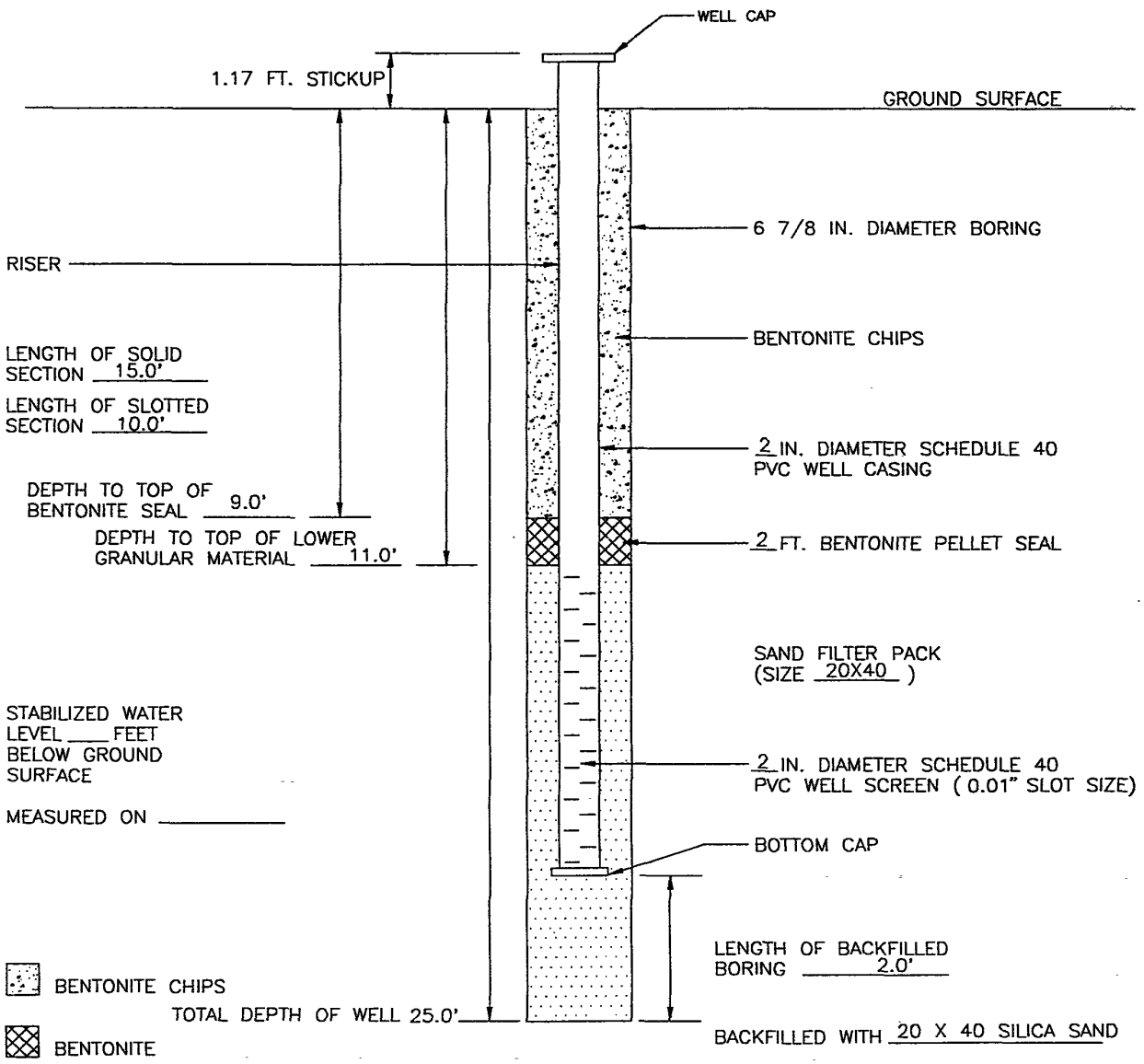
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008168



PT6X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-7

JOB NUMBER 44101724 INSTALLATION DATE 4/22/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

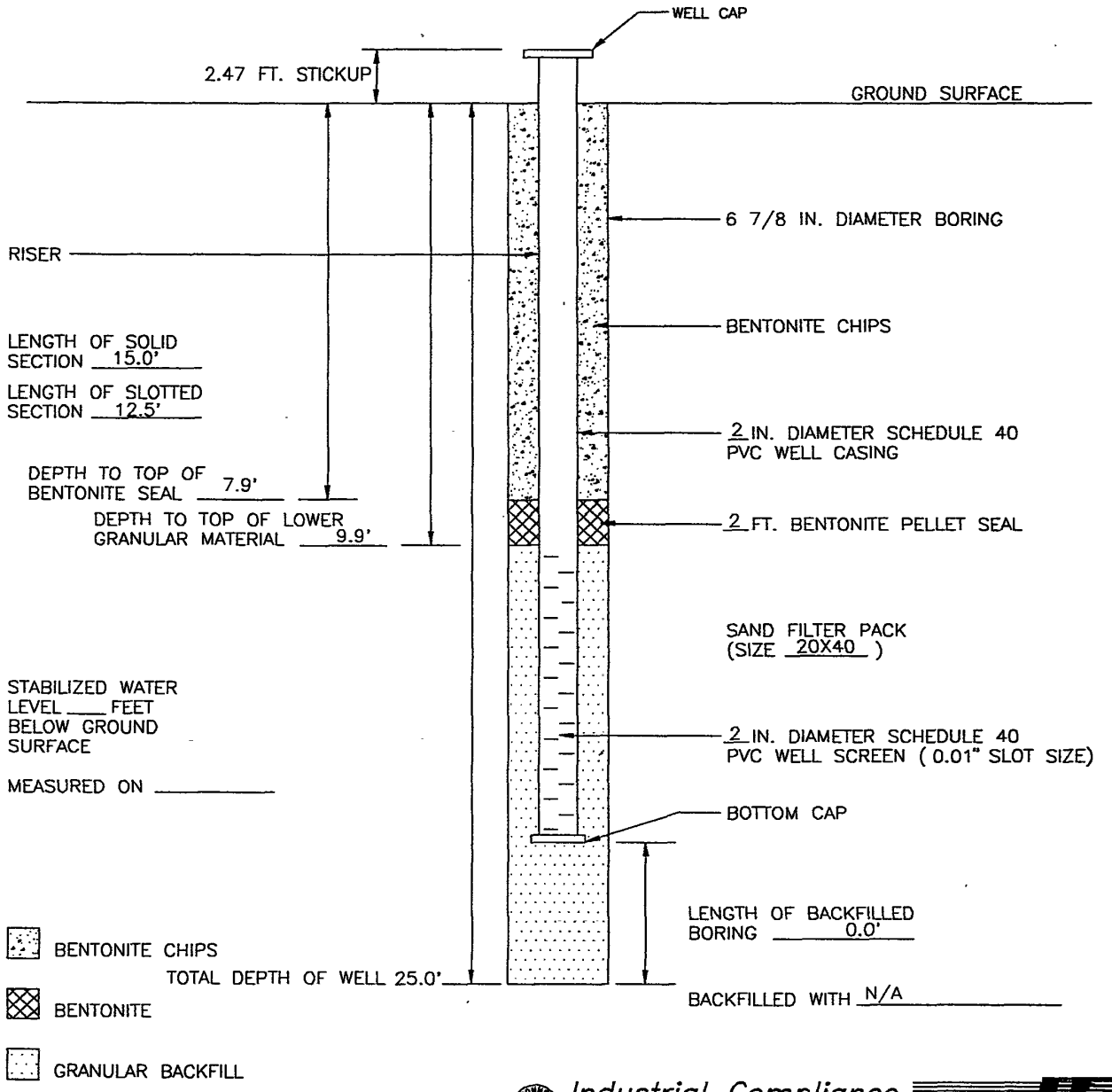
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008169



PT7X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-8

JOB NUMBER 44101724 INSTALLATION DATE 4/23/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

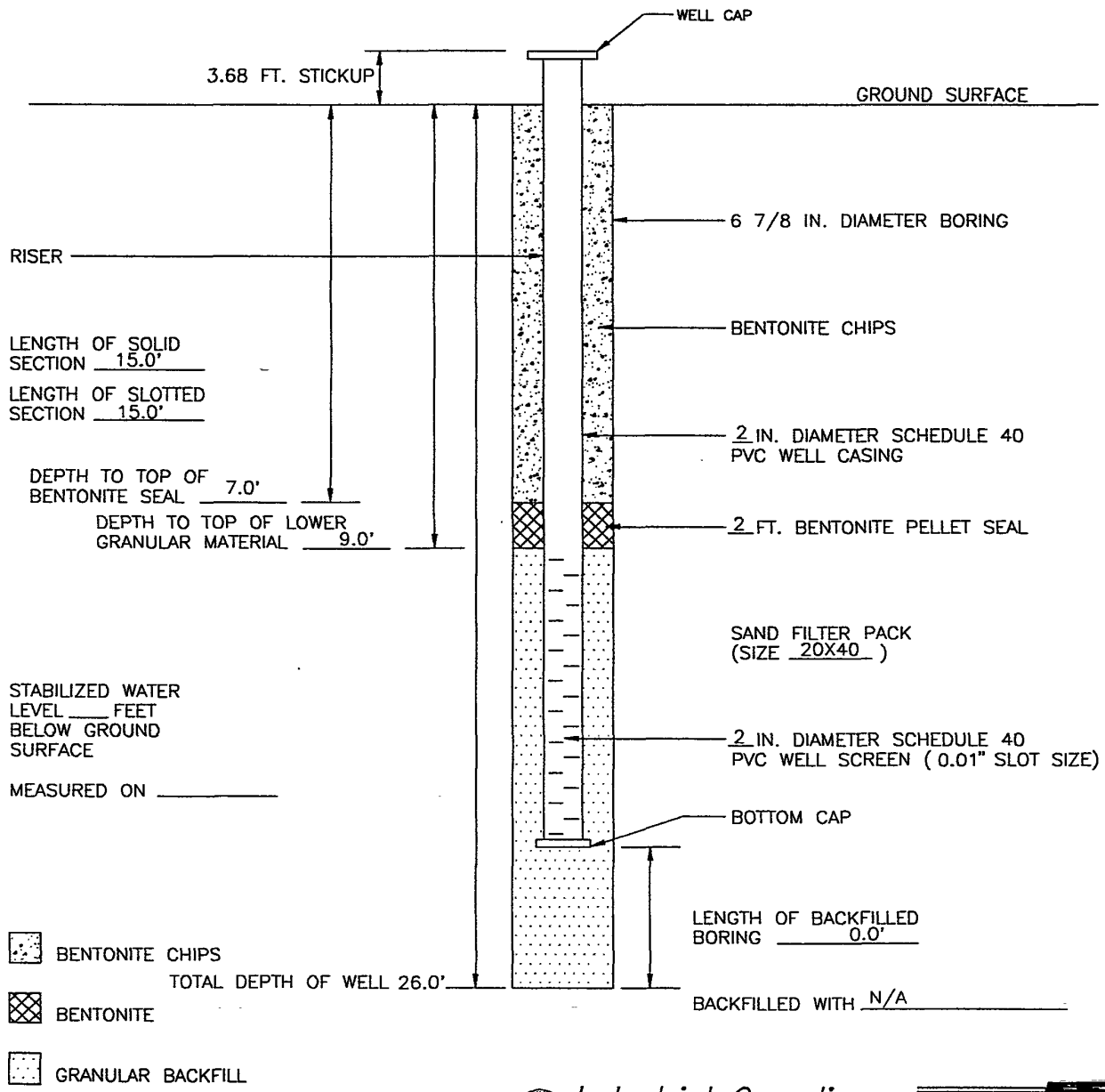
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008170



Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

PT8X

008170

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-9

JOB NUMBER 44101724 INSTALLATION DATE 4/25/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

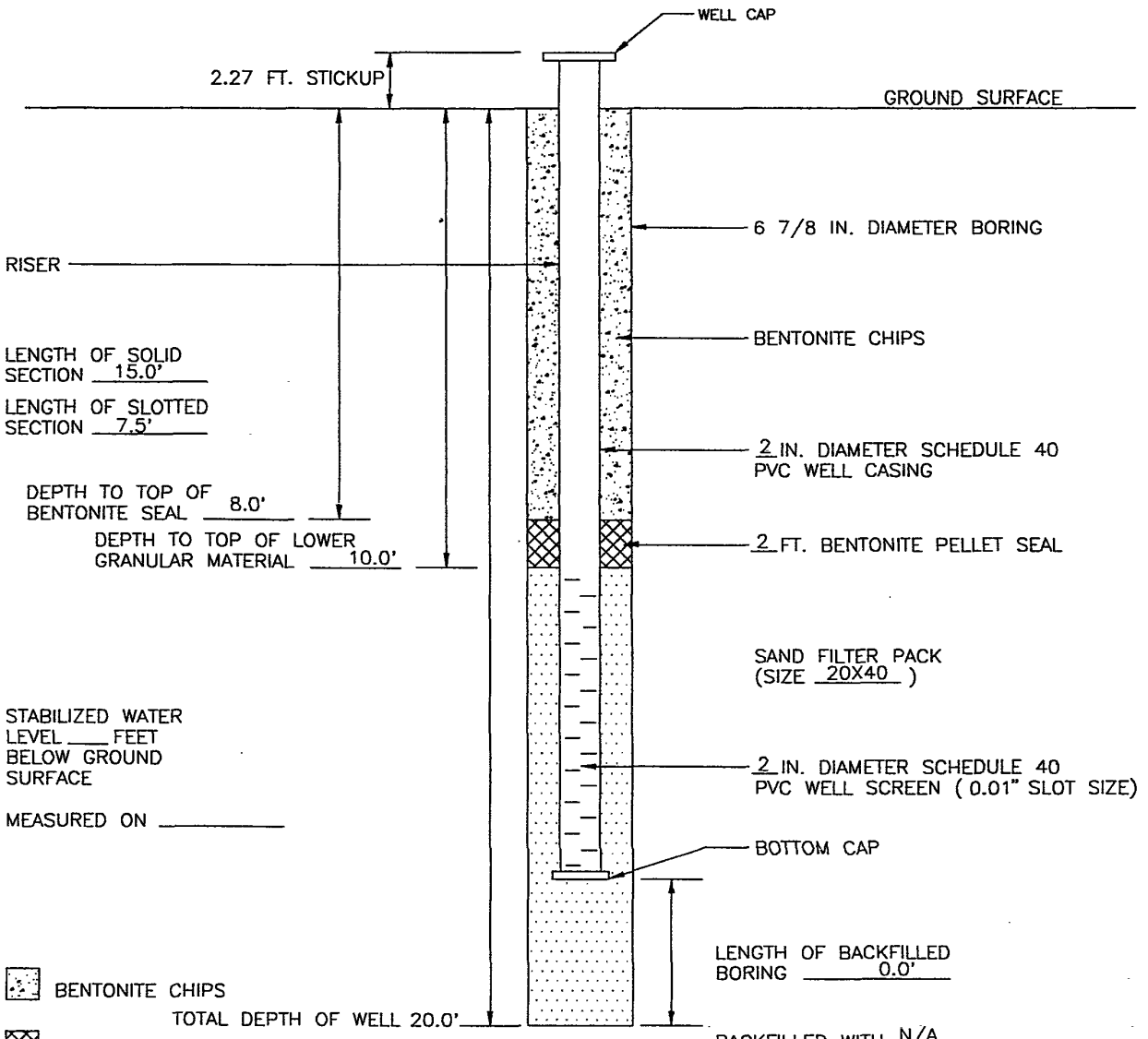
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008171



Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

PT9X

008171

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-10

JOB NUMBER 44101724 INSTALLATION DATE 4/23/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

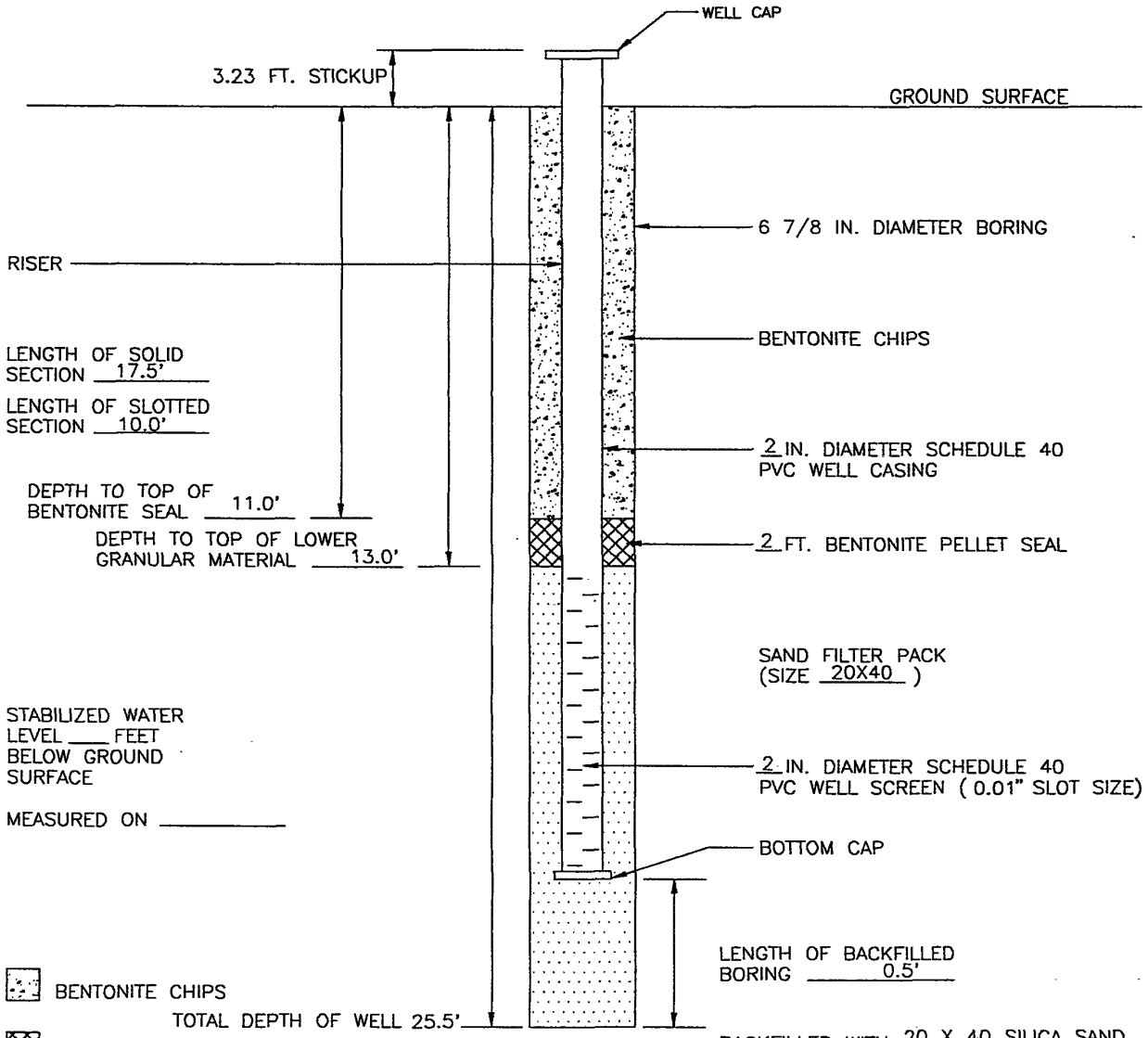
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008172



1724PT10

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PT-11

JOB NUMBER 44101724 INSTALLATION DATE 4/25/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

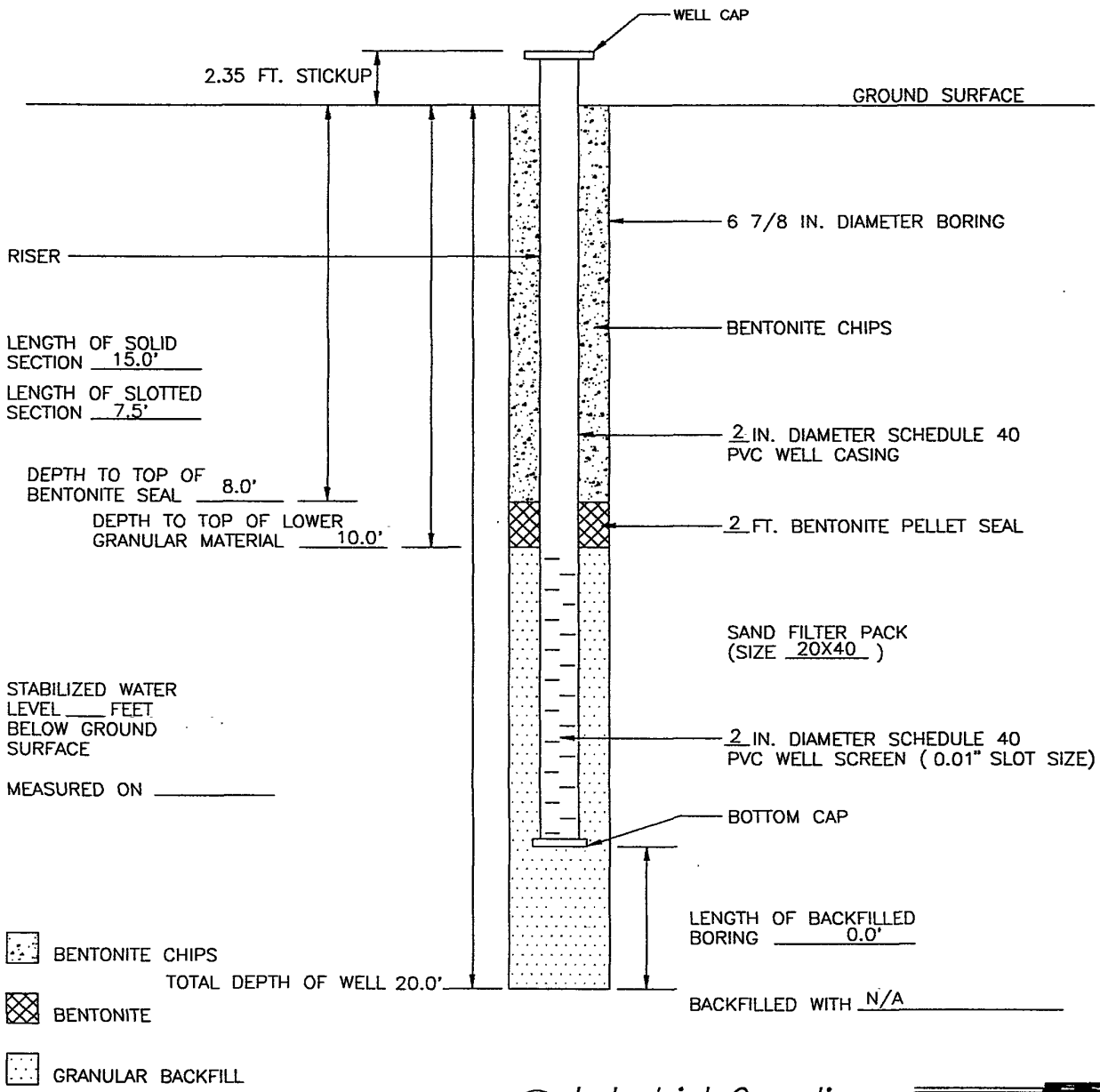
SCREEN DIAMETER AND MATERIAL 2-INCH PVC SLOT SIZE 0.01

RISER DIAMETER AND MATERIAL 2-INCH PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008173



PT11X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

JOB NAME CRYSTAL CHEMICAL GROUND WATER REMEDIAL DESIGN WELL NUMBER PS-1

JOB NUMBER 44101724 INSTALLATION DATE 4/25/93 LOCATION

DATUM FOR WATER LEVEL MEASUREMENT

DATUM ELEVATION GROUND SURFACE ELEVATION

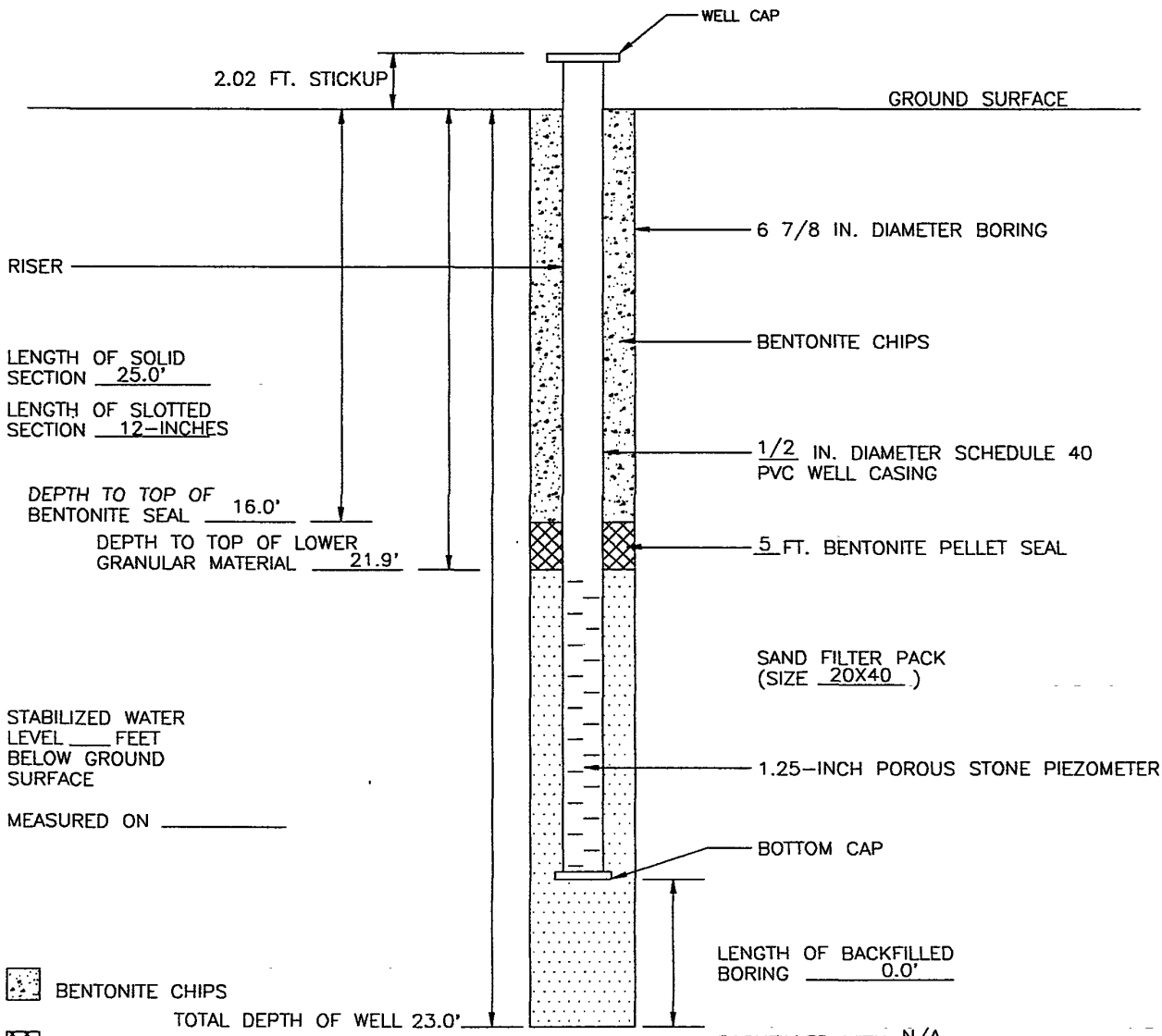
SCREEN DIAMETER AND MATERIAL 1.25 IN. POROUS STONE SLOT SIZE

RISER DIAMETER AND MATERIAL 1.5 IN. PVC BOREHOLE DIAMETER 6 7/8 IN.

GRANULAR BACKFILL MATERIAL 20 X 40 SILICA SAND REPRESENTATIVE ROBERT COFFMAN

DRILLING TECHNIQUE 4 1/4-INCH HOLLOW STEM AUGERS DRILLING CONTRACTOR LAYNE

008174



PS1X

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

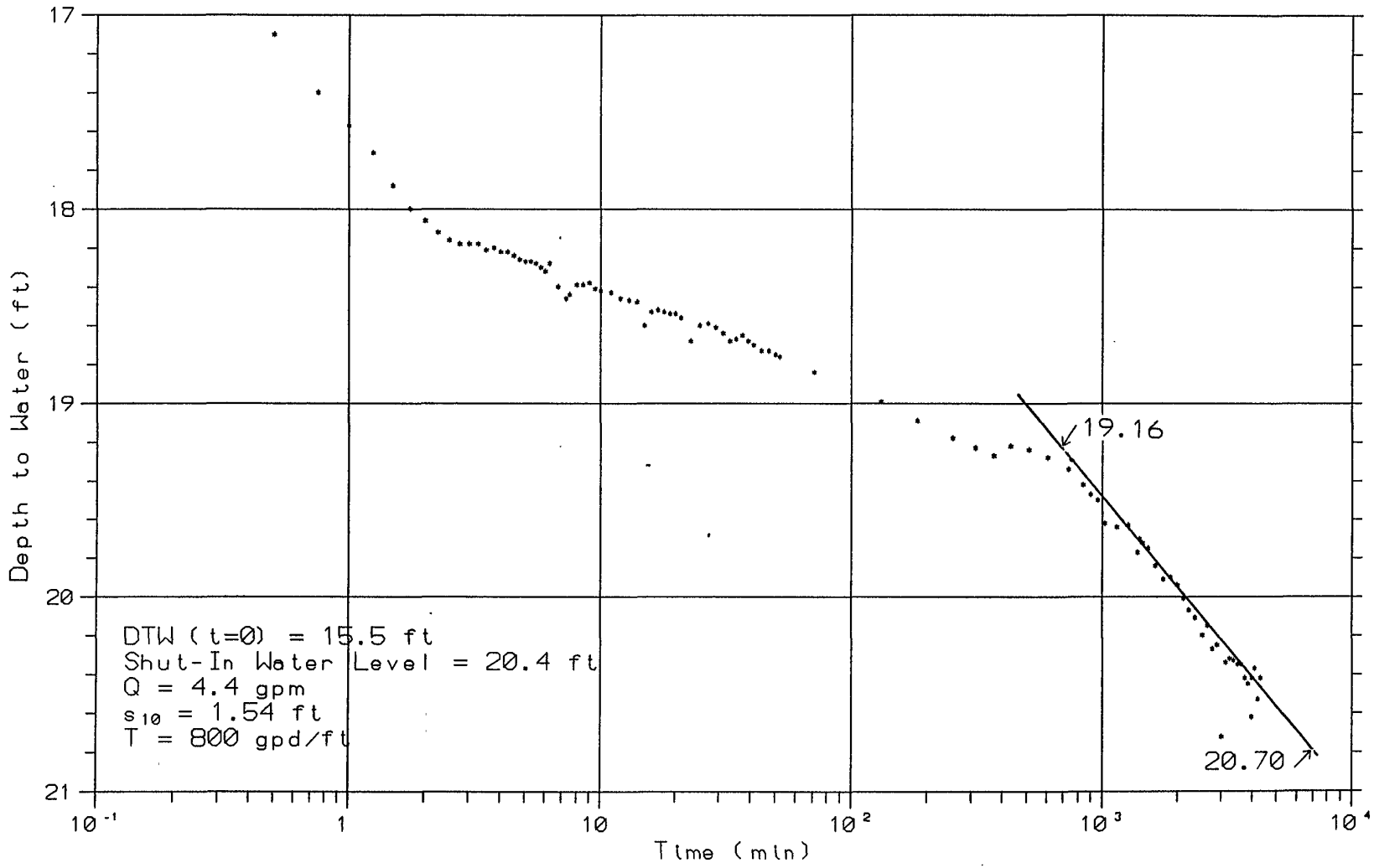


Figure 1. Depth to Water vs. Pumping Time, Well PW-02
15-foot Sand

008175

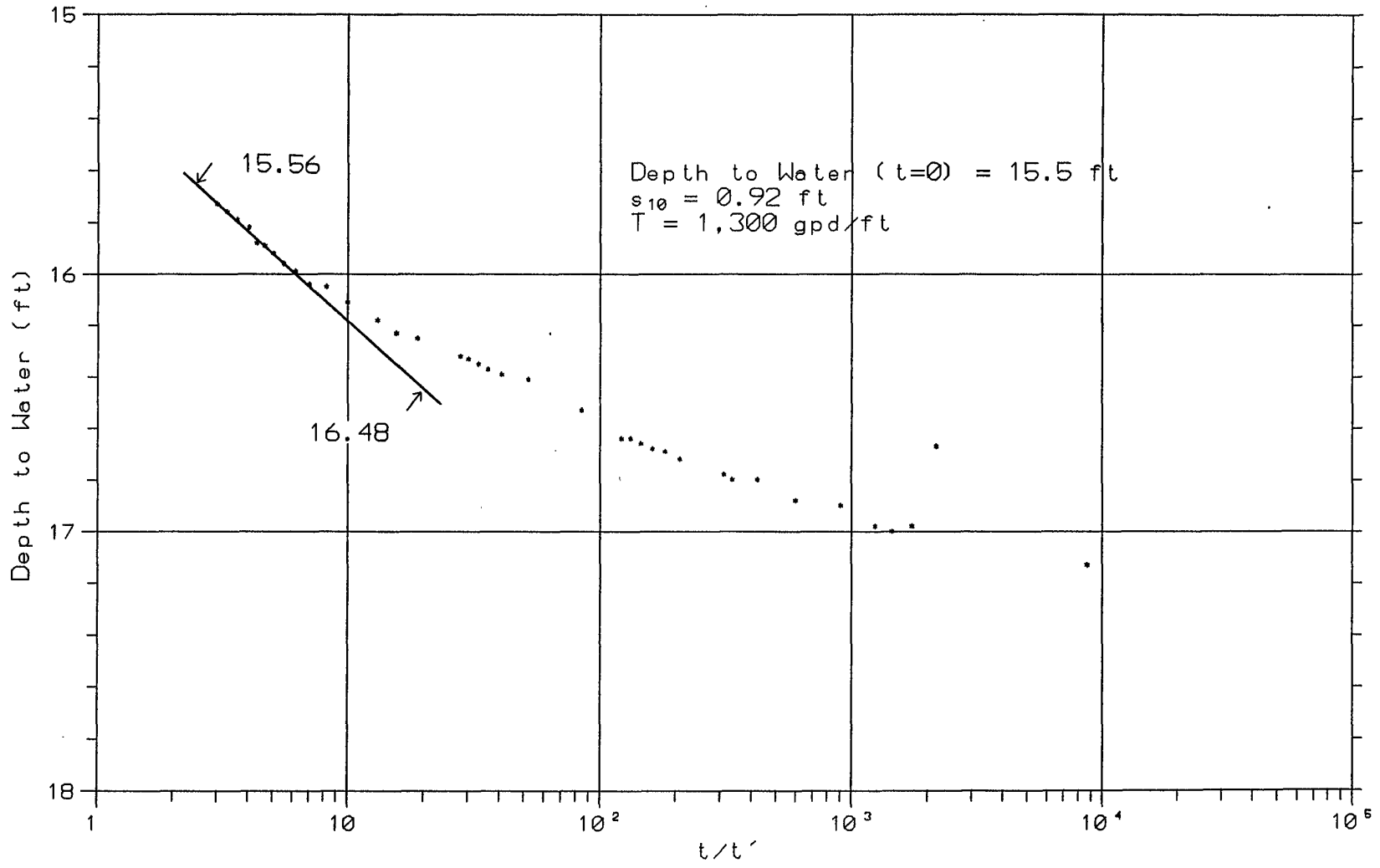


Figure 2. Depth to Water vs. t/t′, Well PW-02
15-foot Sand

008176

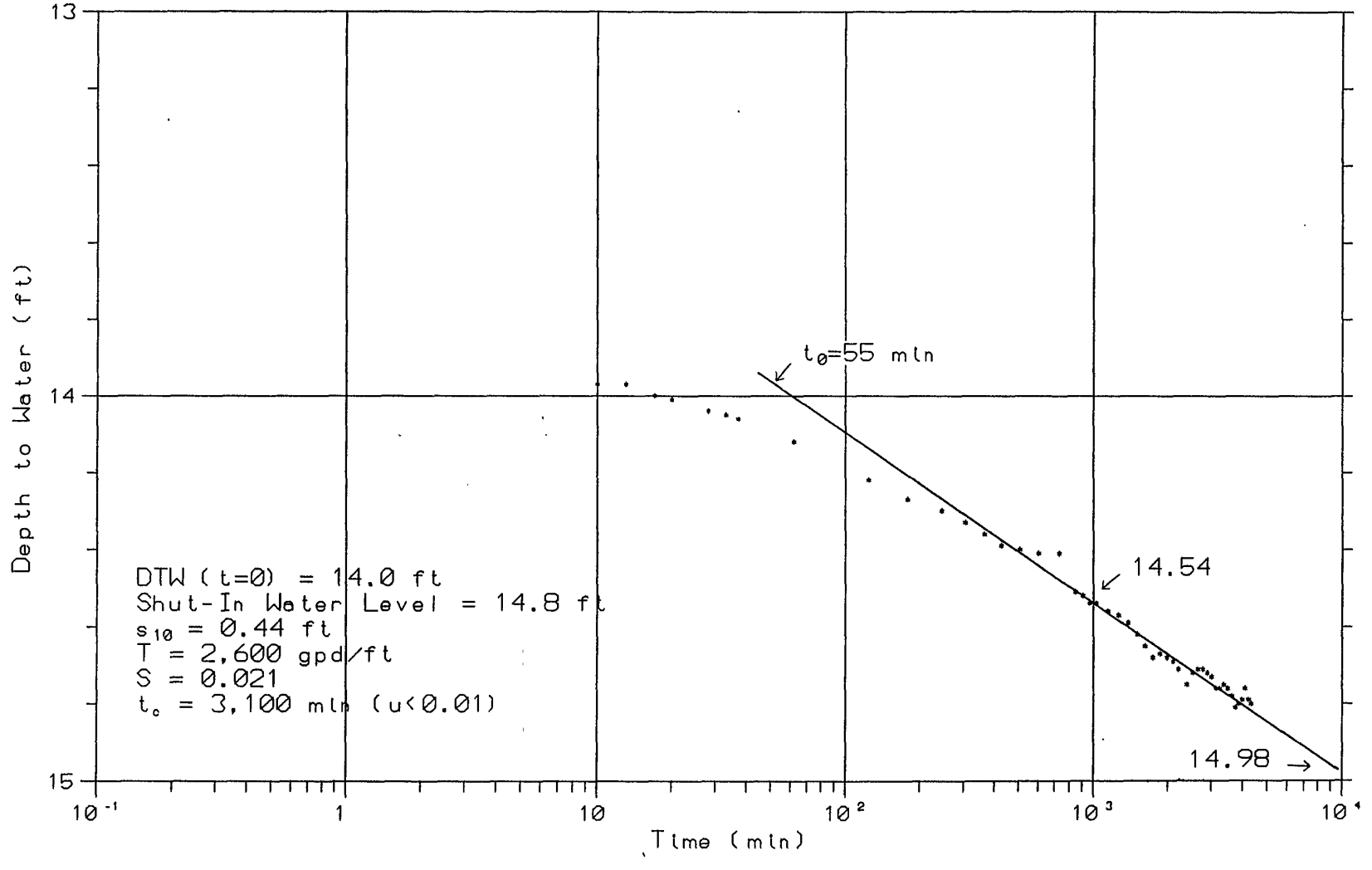


Figure 3. Depth to Water vs. Pumping Time, Well PT-06
15-foot Sand

008177

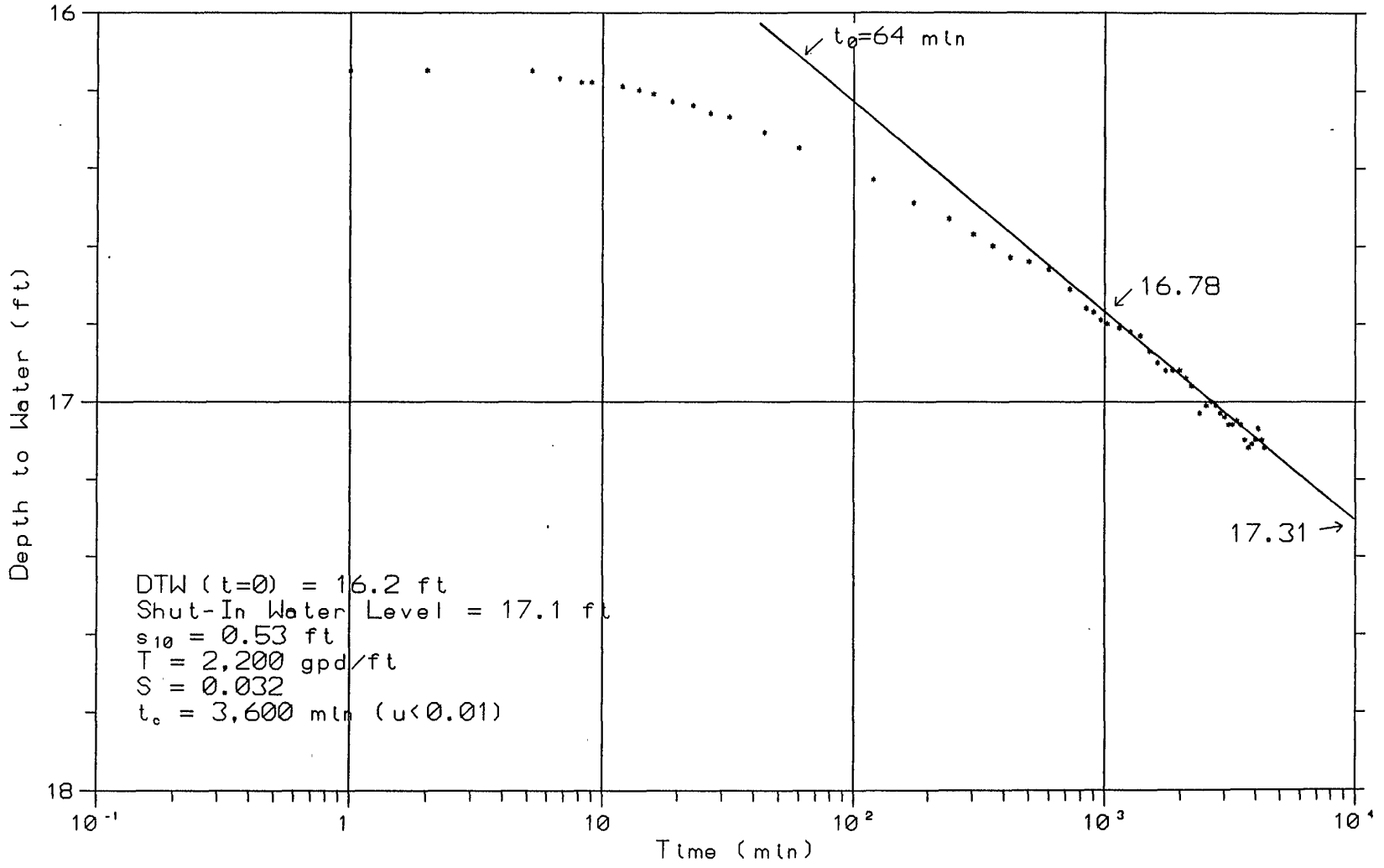


Figure 4. Depth to Water vs. Pumping Time, Well PT-07
15-foot Sand

008178

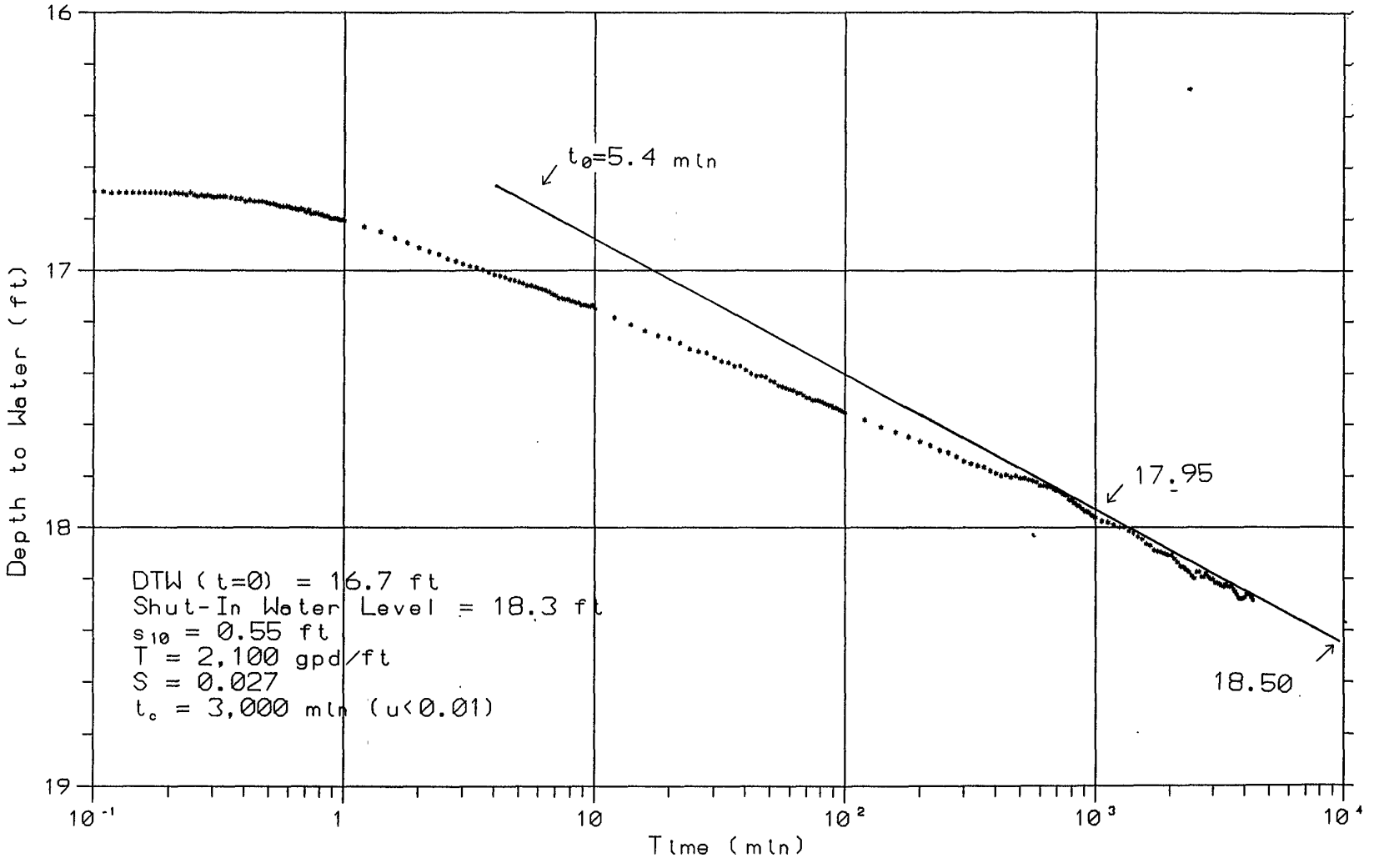


Figure 5. Depth to Water vs. Pumping Time, Well PT-08
15-foot Sand

008179

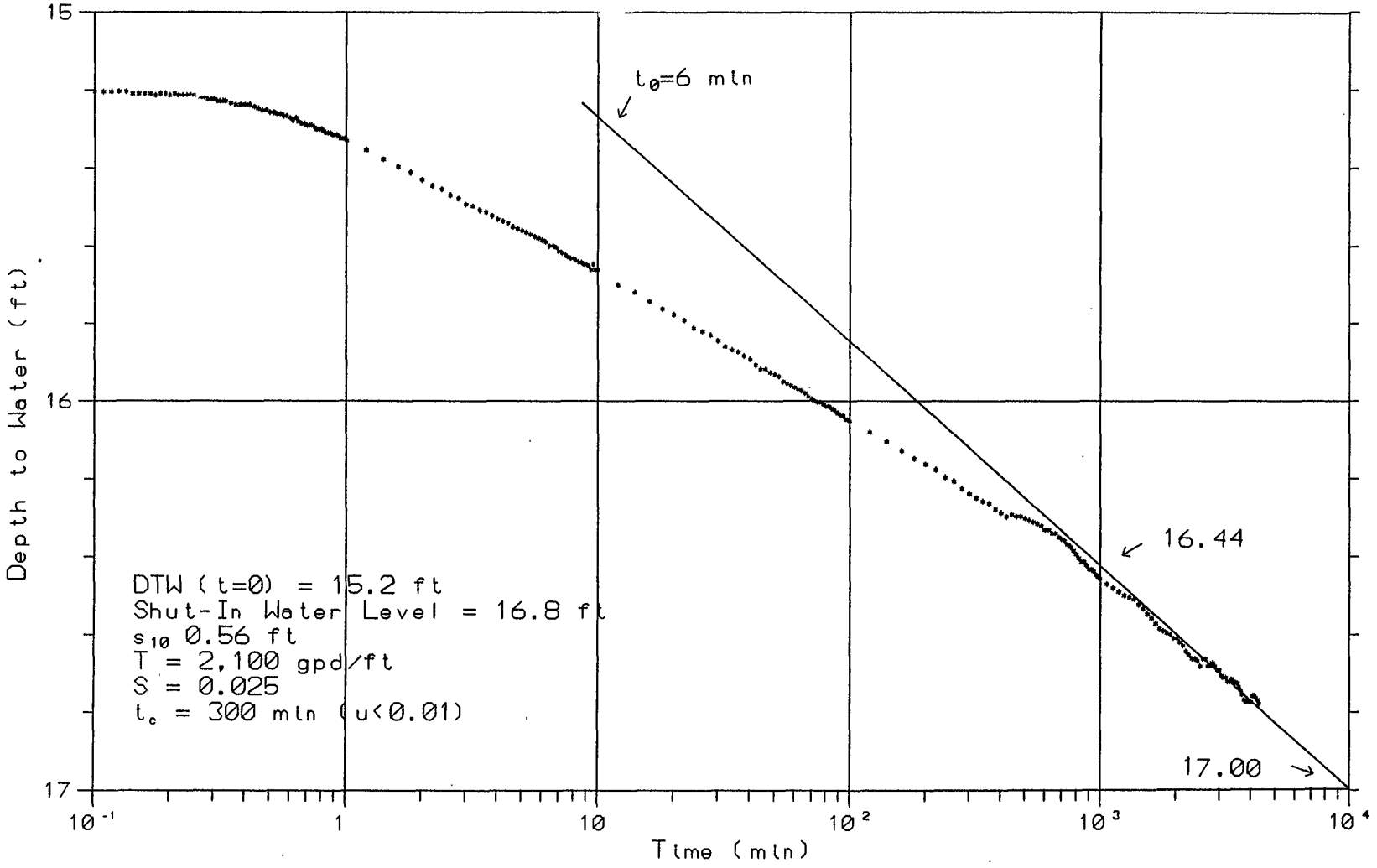


Figure 6. Depth to Water vs. Pumping Time, Well PT-09
15-foot Sand

008180

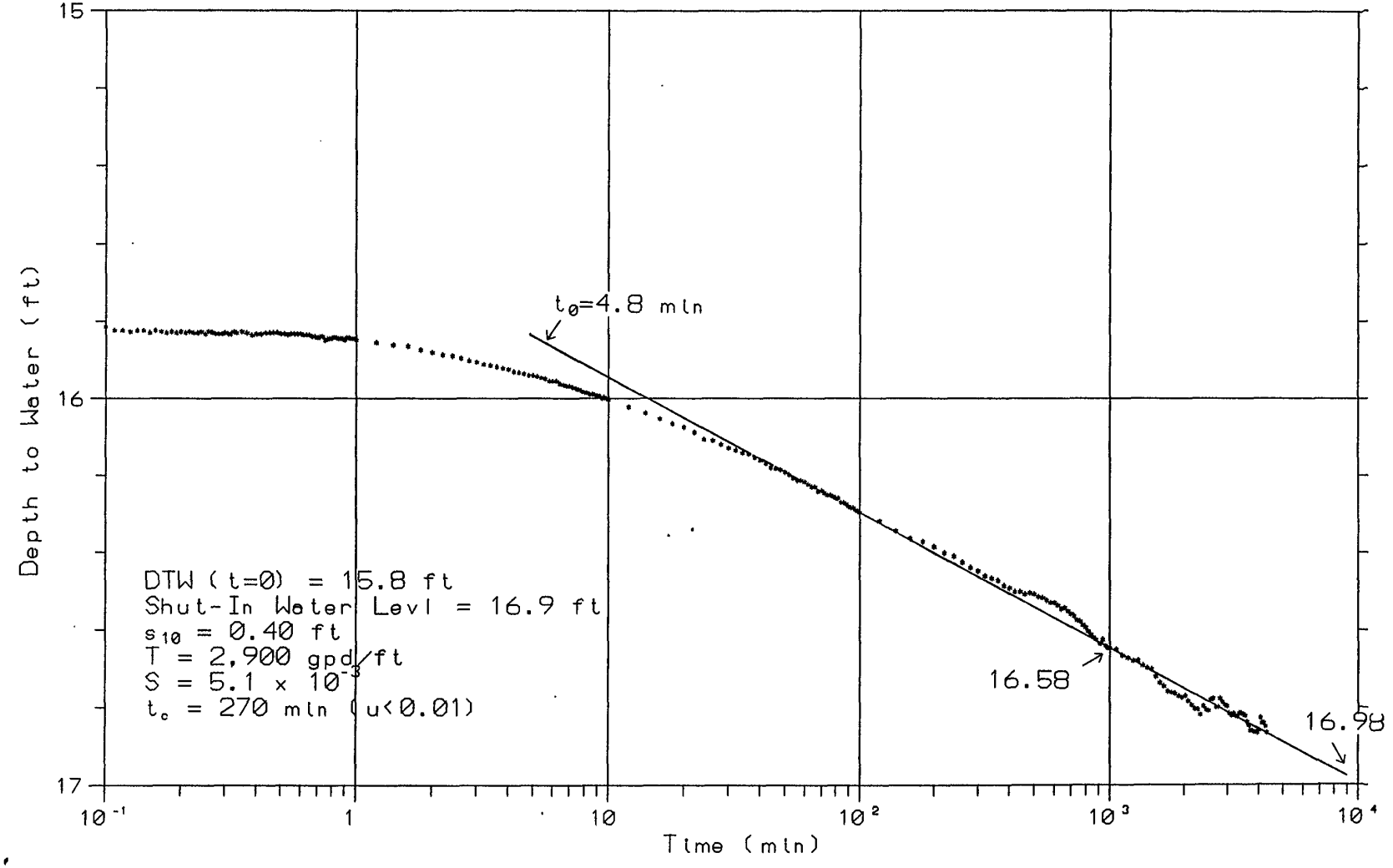


Figure 7. Depth to Water vs. Pumping Time, Well PT-10
15-foot Sand

008181

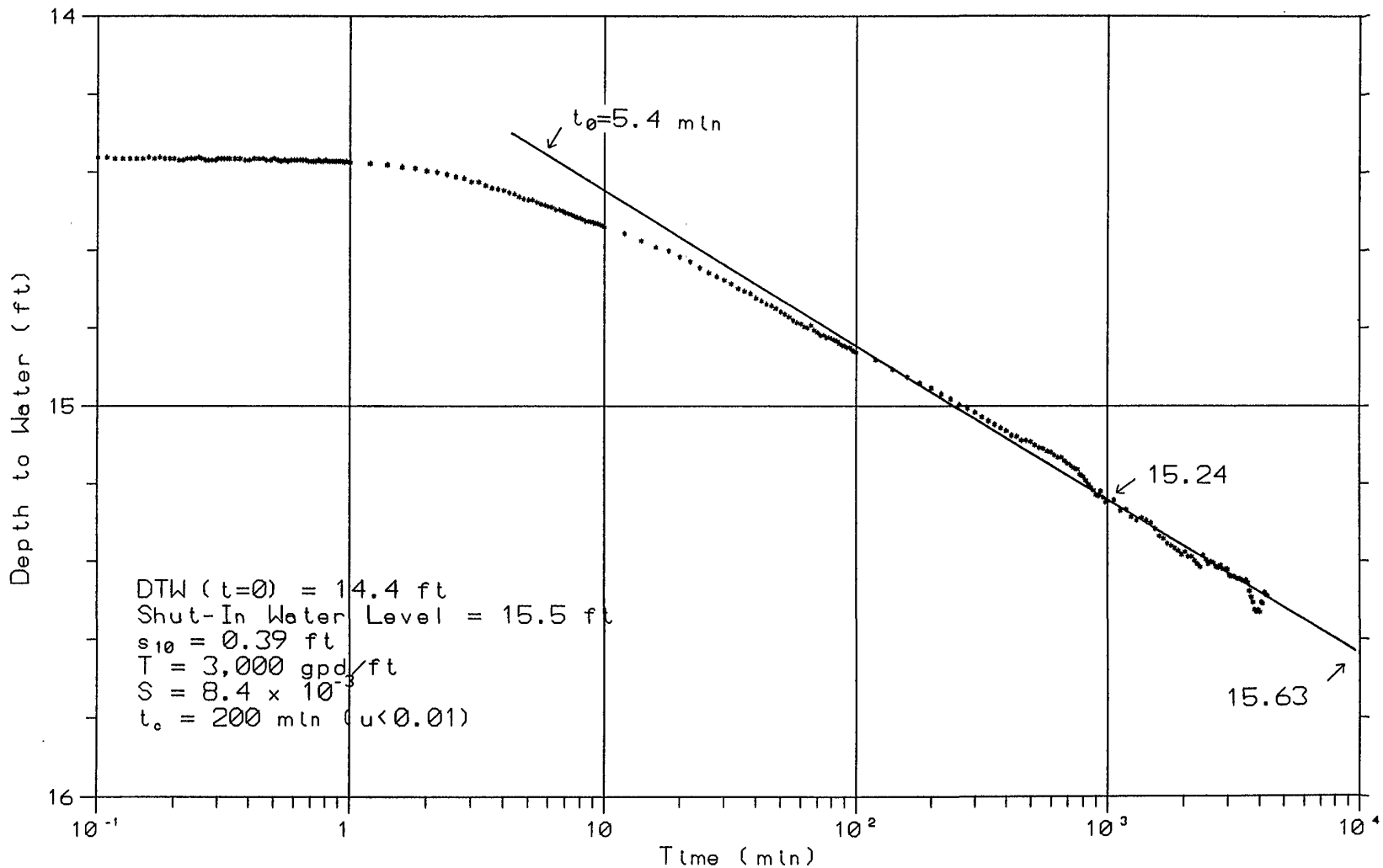


Figure 8. Depth to Water vs. Pumping Time, Well PT-11
15-foot Sand

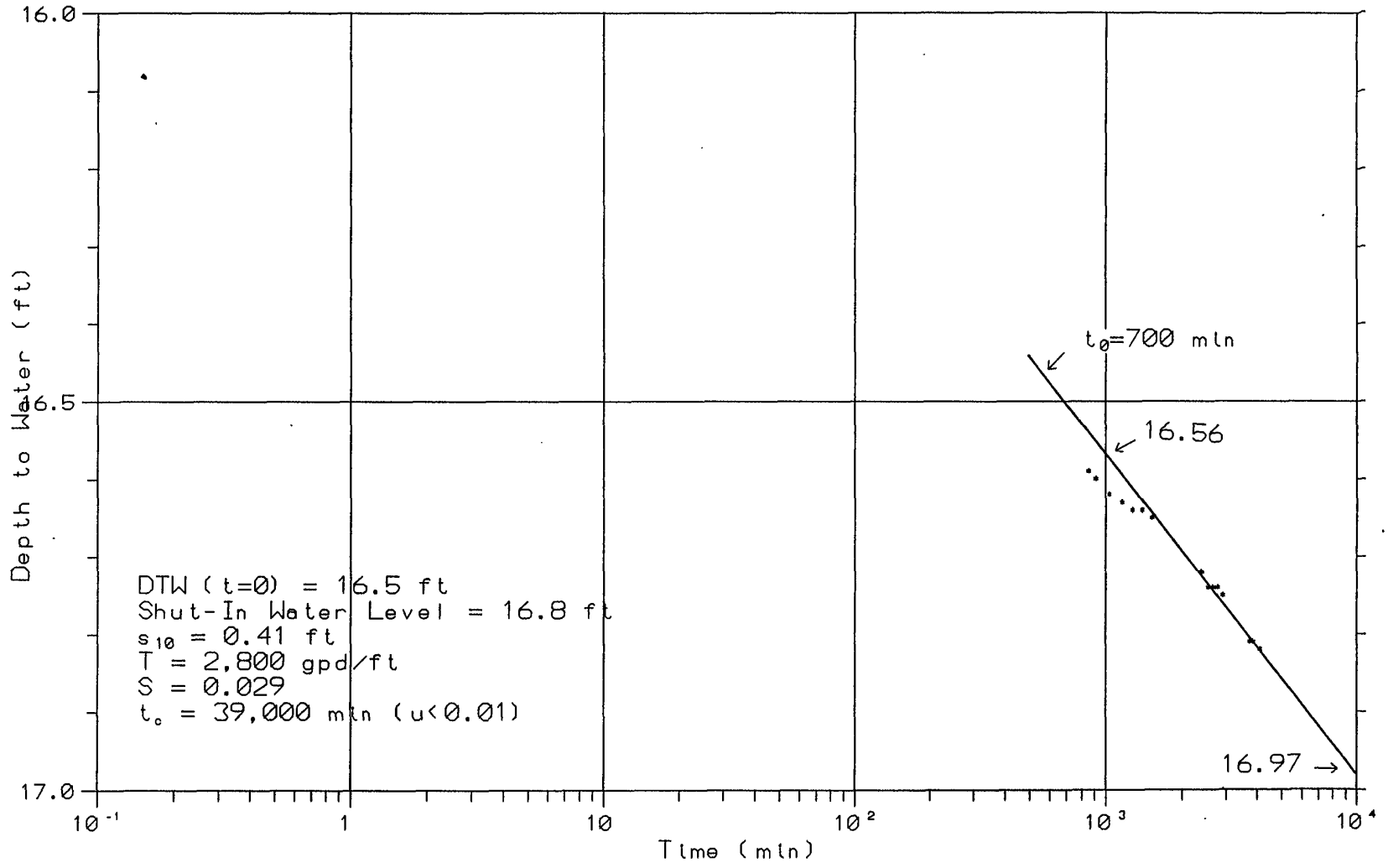


Figure 9. Depth to Water vs. Pumping Time, Well P-4
15-foot Sand

008183

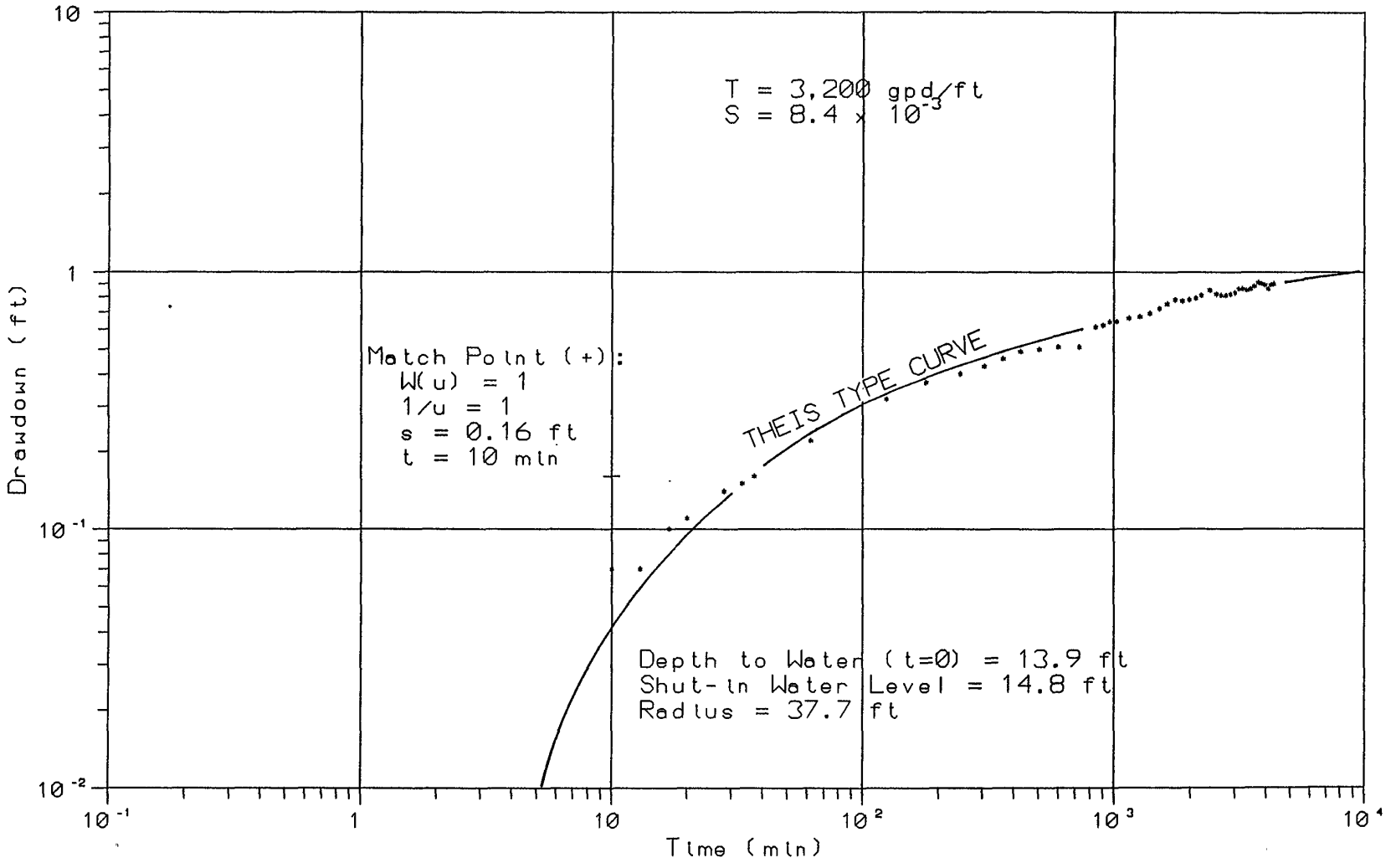


Figure 10. Drawdown vs. Pumping Time, Well PT-06
15-foot Sand

008184

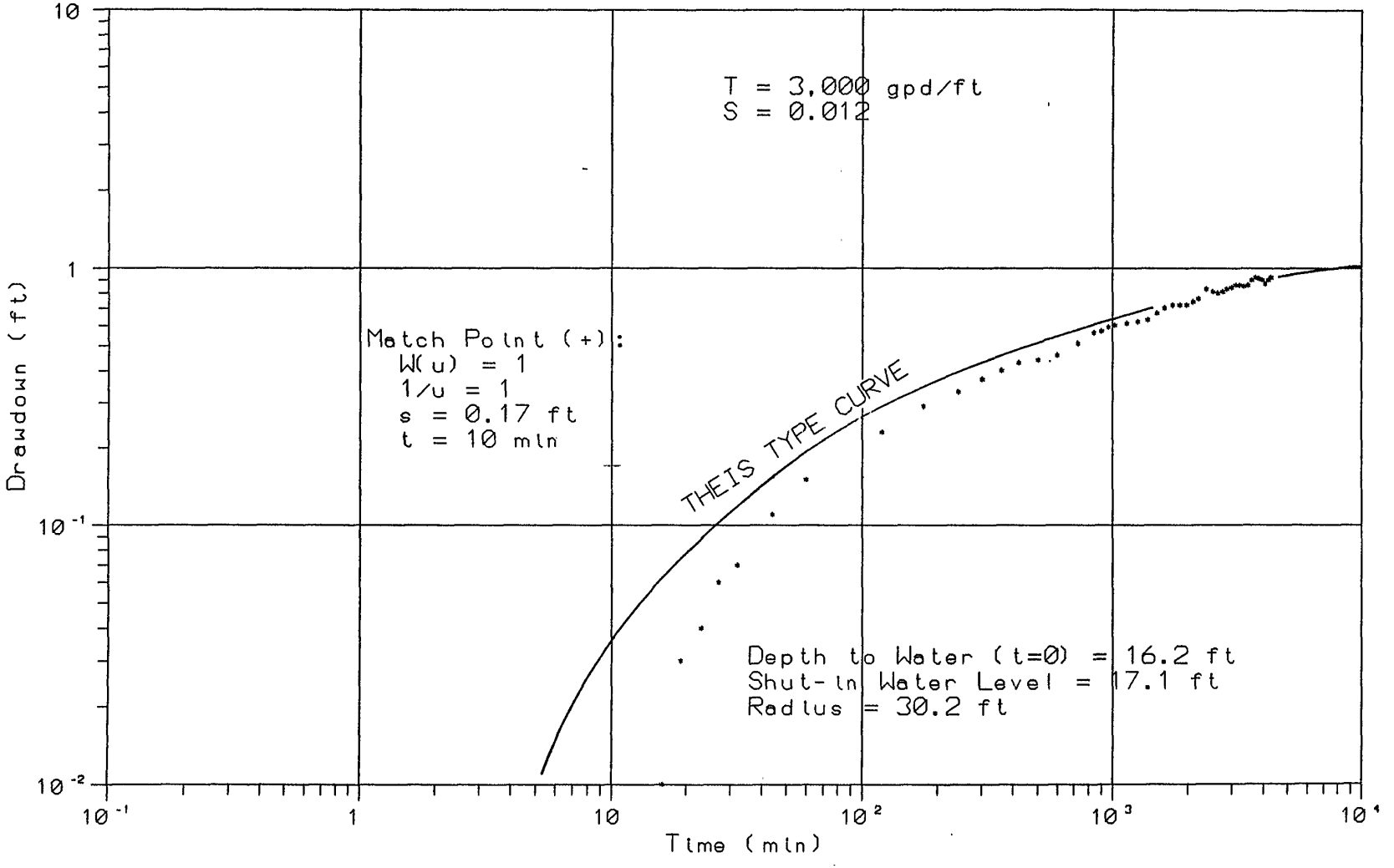


Figure 11. Drawdown vs. Pumping Time, Well PT-07
15-foot Sand

008185

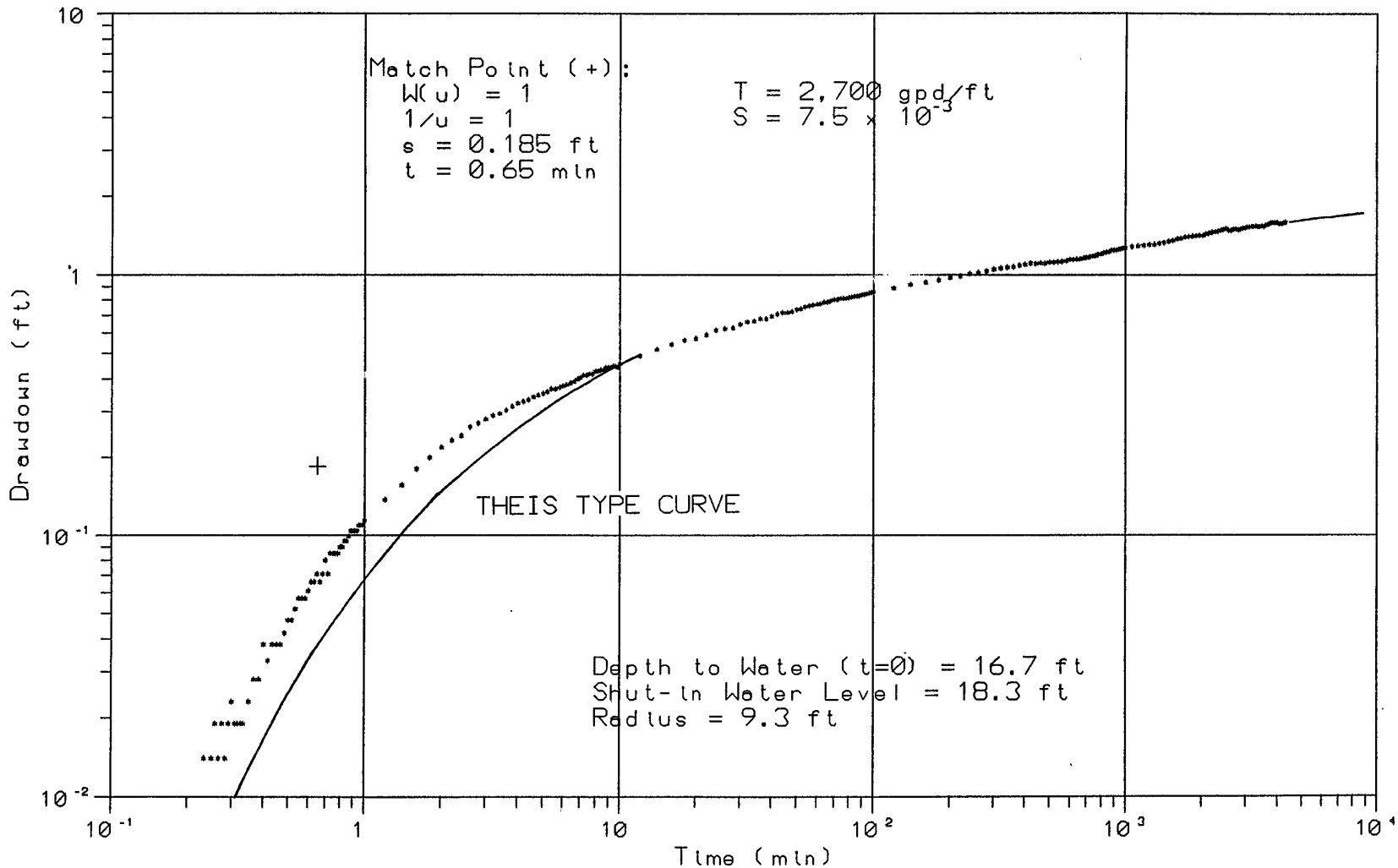


Figure 12. Drawdown vs. Pumping Time, Well PT-08
15-foot Sand

008186

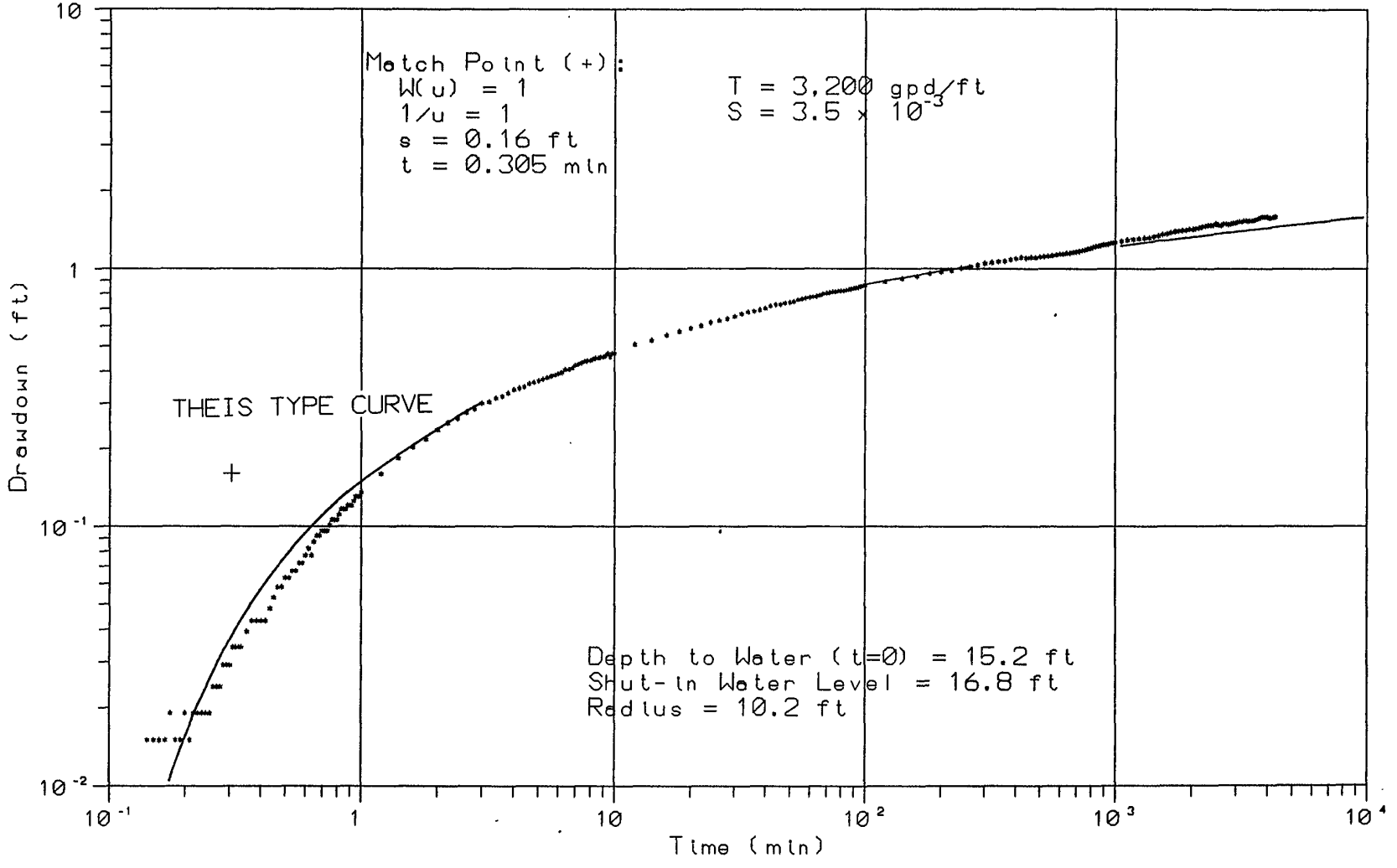


Figure 13. Drawdown vs. Pumping Time, Well PT-09
15-foot Sand

008187

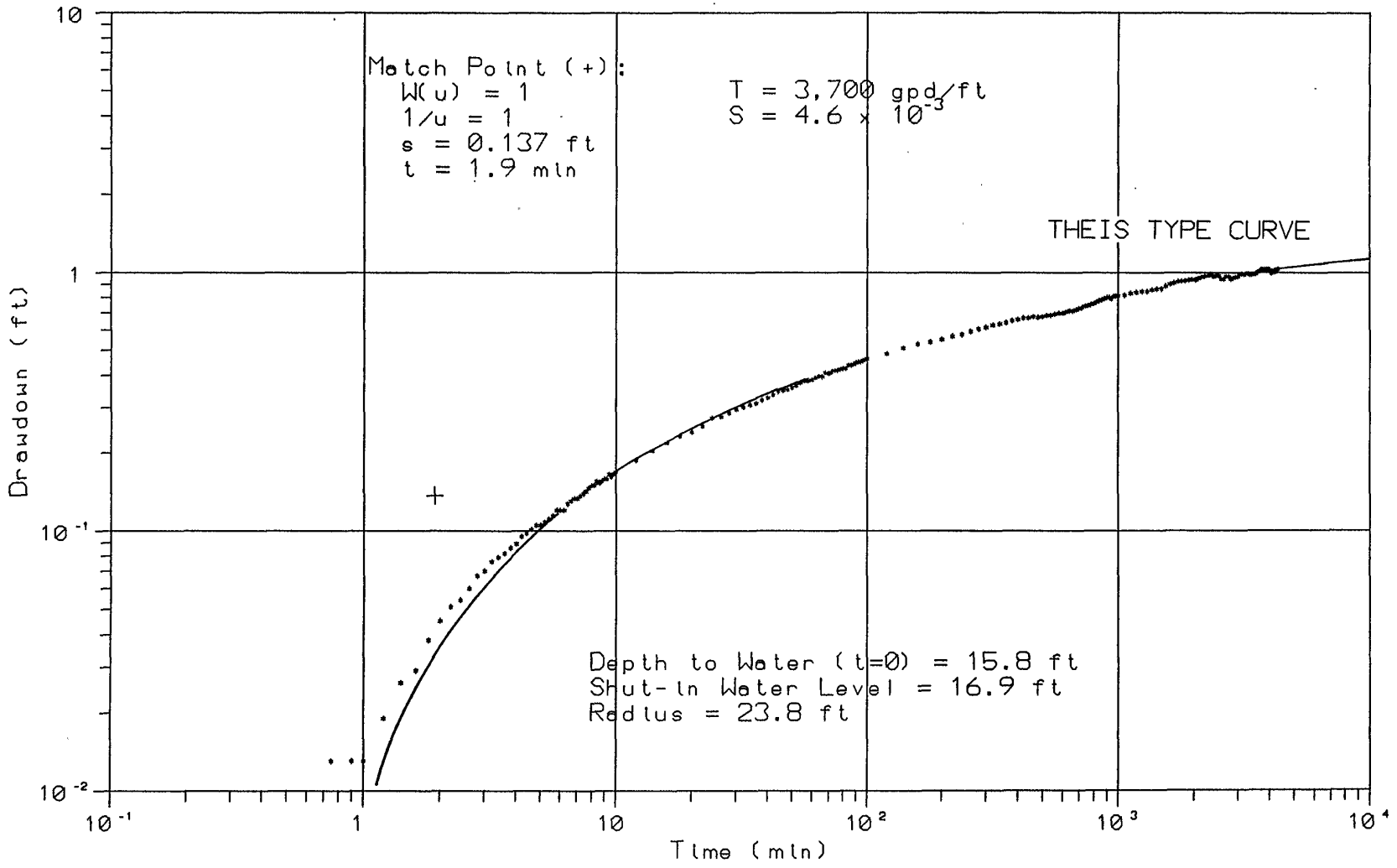


Figure 14. Drawdown vs. Pumping Time, Well PT-10
15-foot Sand

008188

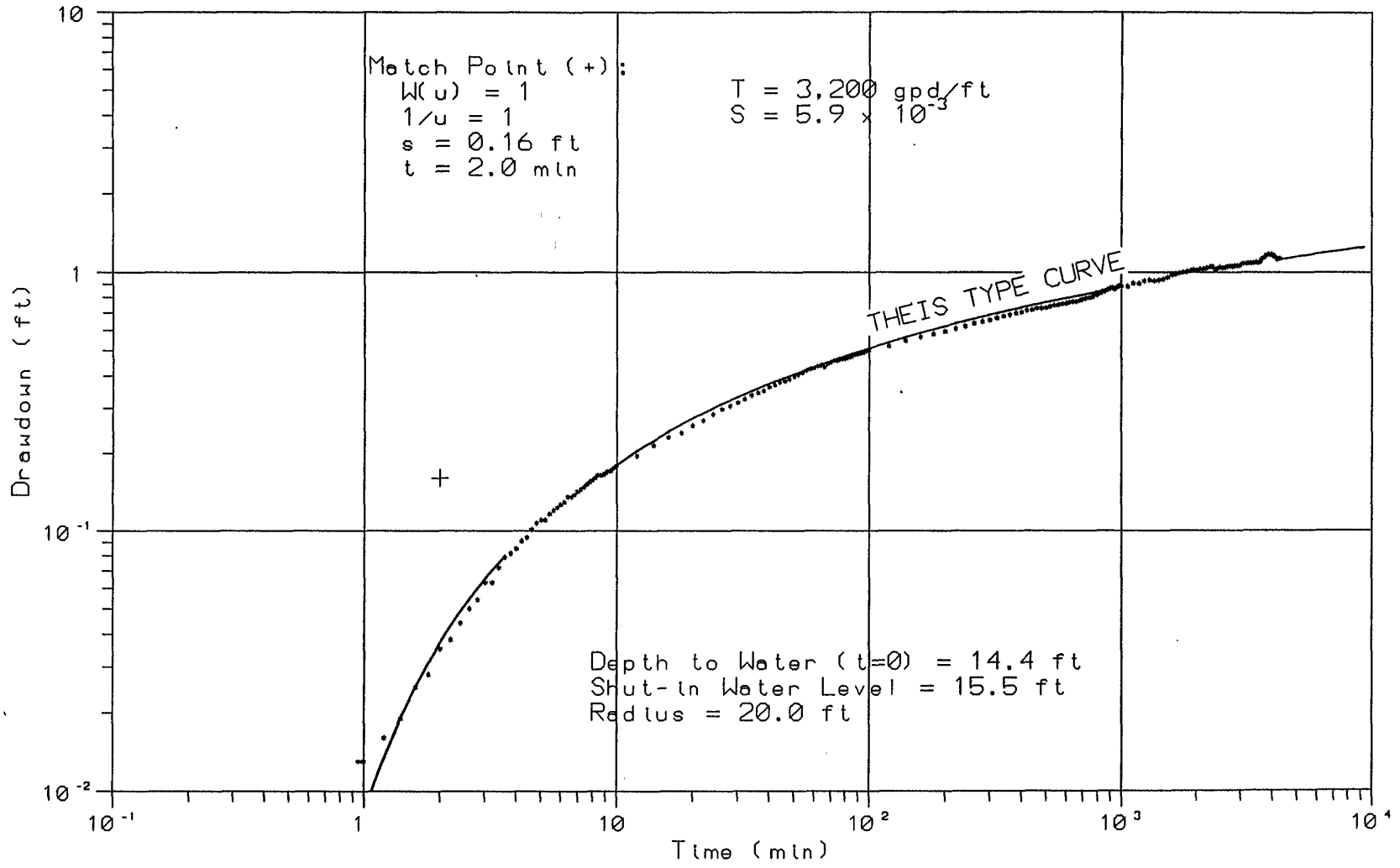


Figure 15. Drawdown vs. Pumping Time, Well PT-11
15-foot Sand

008189

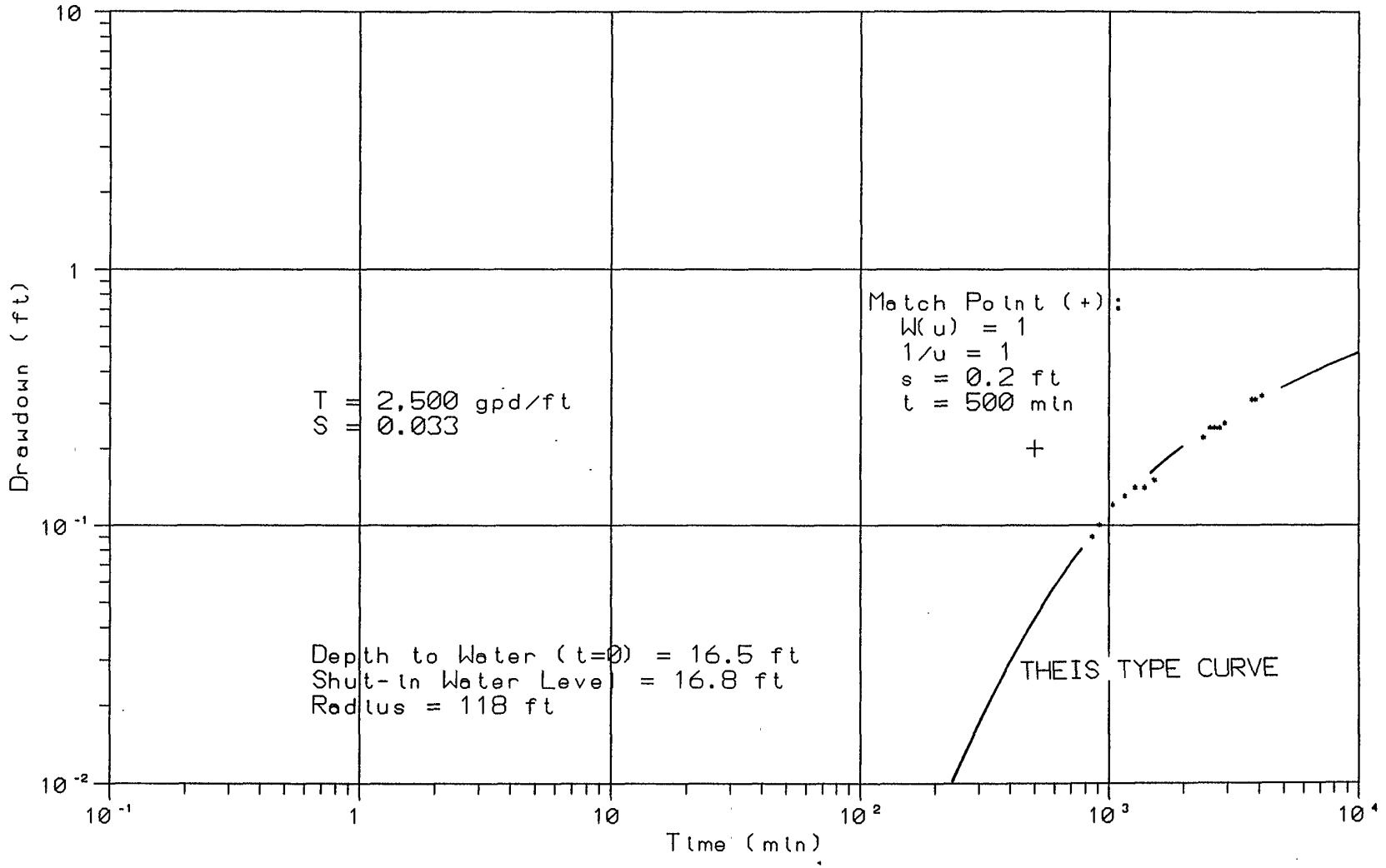


Figure 16. Drawdown vs. Pumping Time, Well P-4
15-foot Sand

008190

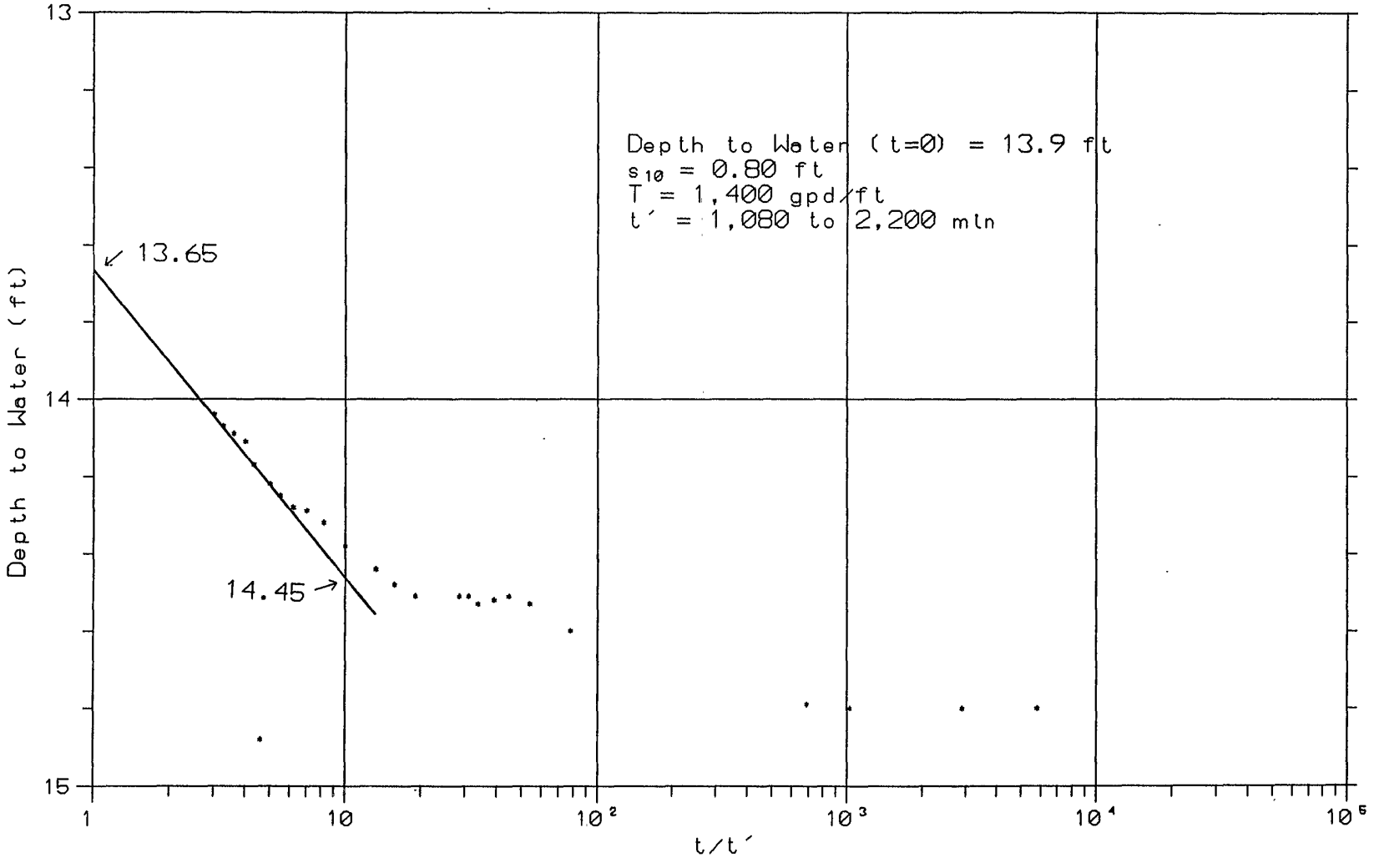


Figure 17. Depth to Water vs. t/t', Well PT-06
15-foot Sand

008191

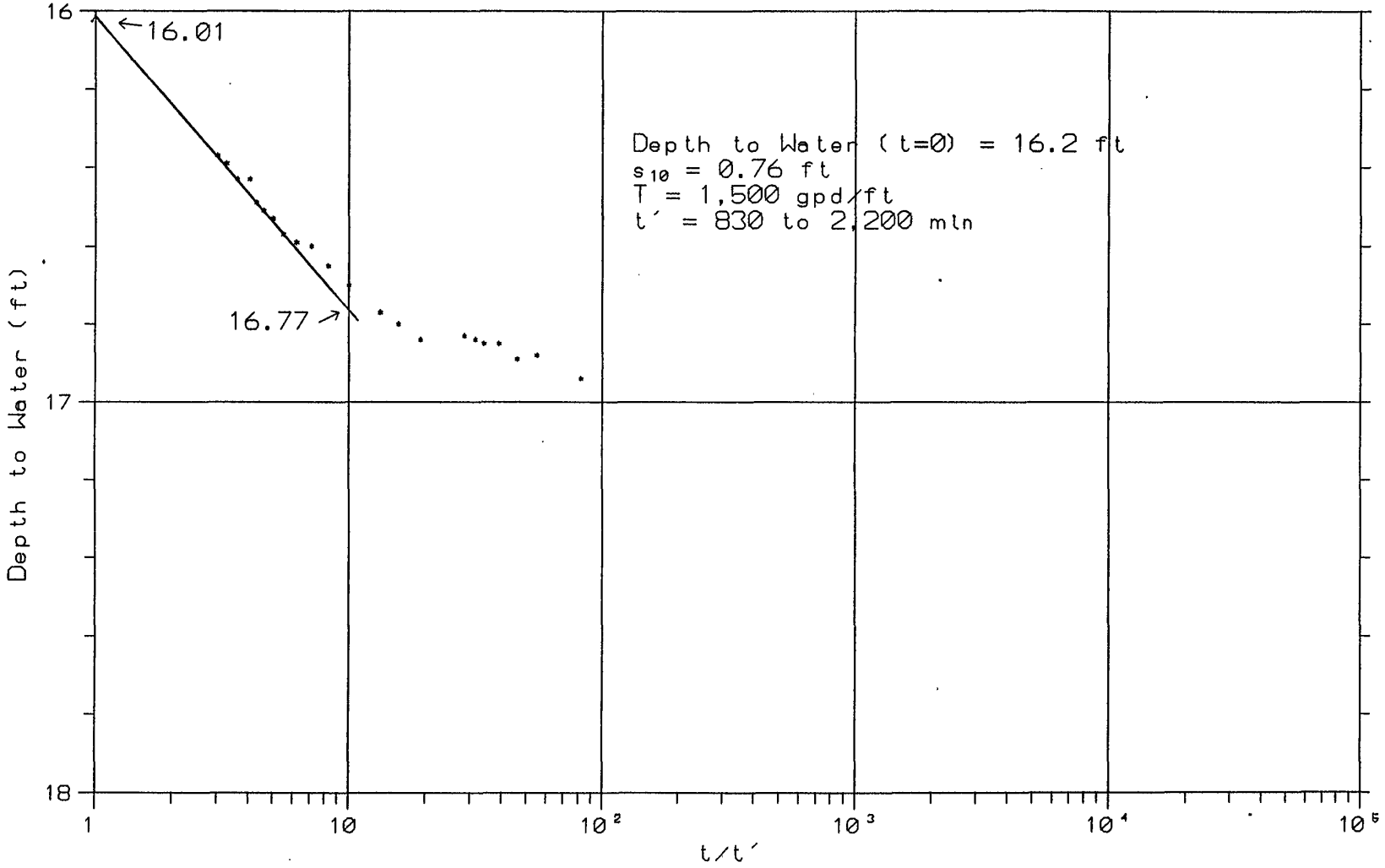


Figure 18. Depth to Water vs. t/t′, Well PT-07
15-foot Sand

008192

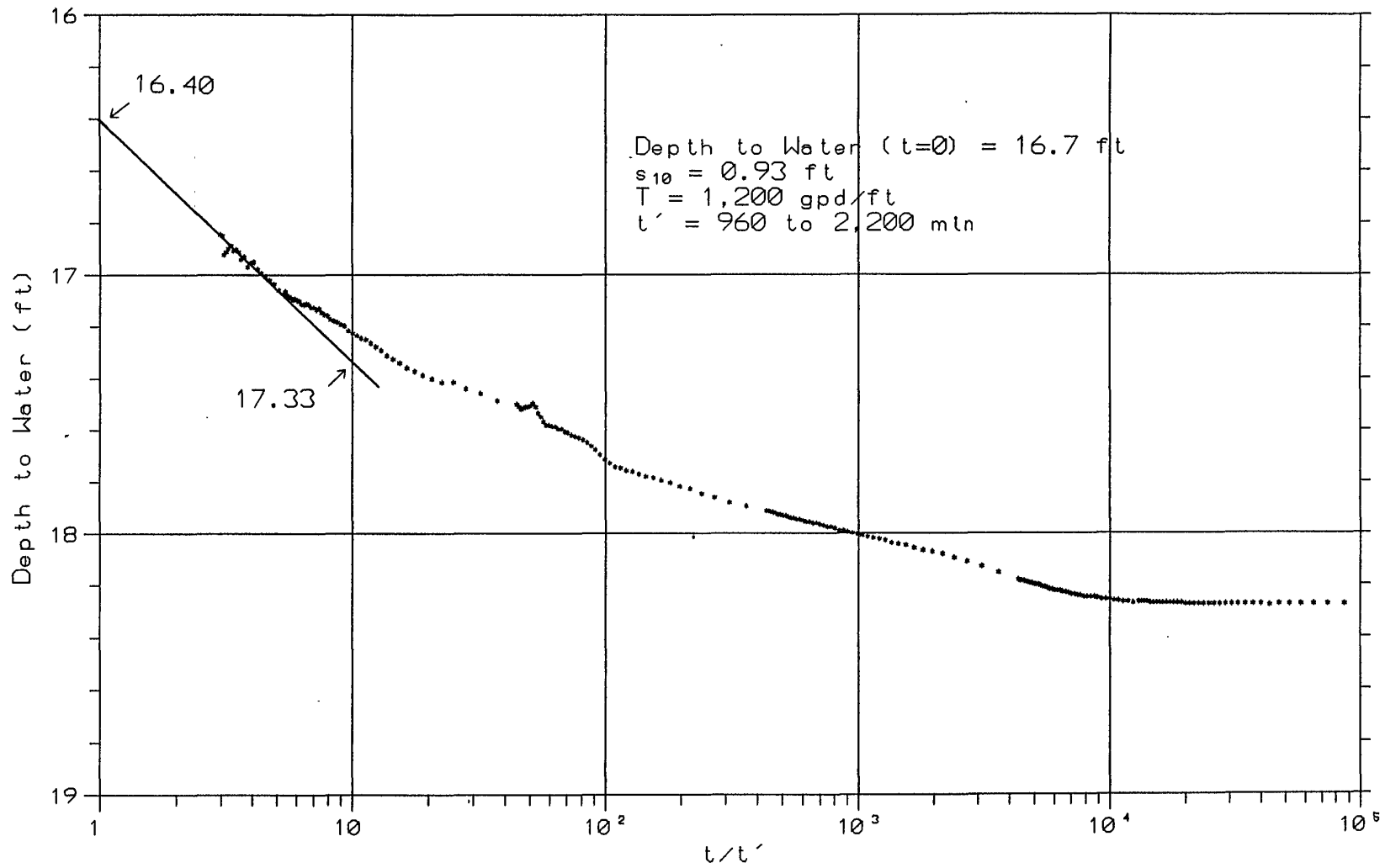


Figure 19. Depth to Water vs. t/t′, Well PT-08
15-foot Sand

008193

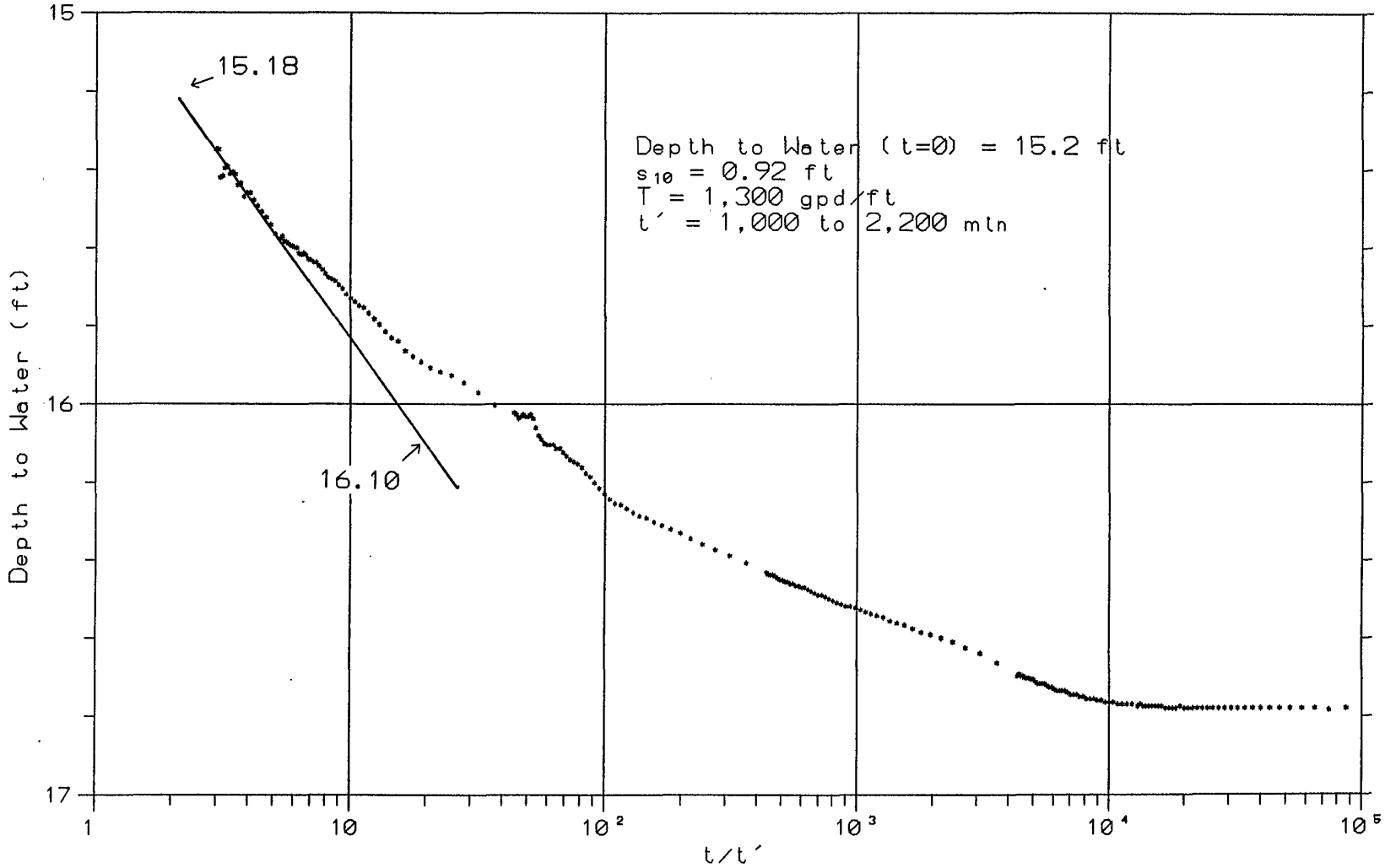


Figure 20. Depth to Water vs. t/t′, Well PT-09
15-foot Sand

008194

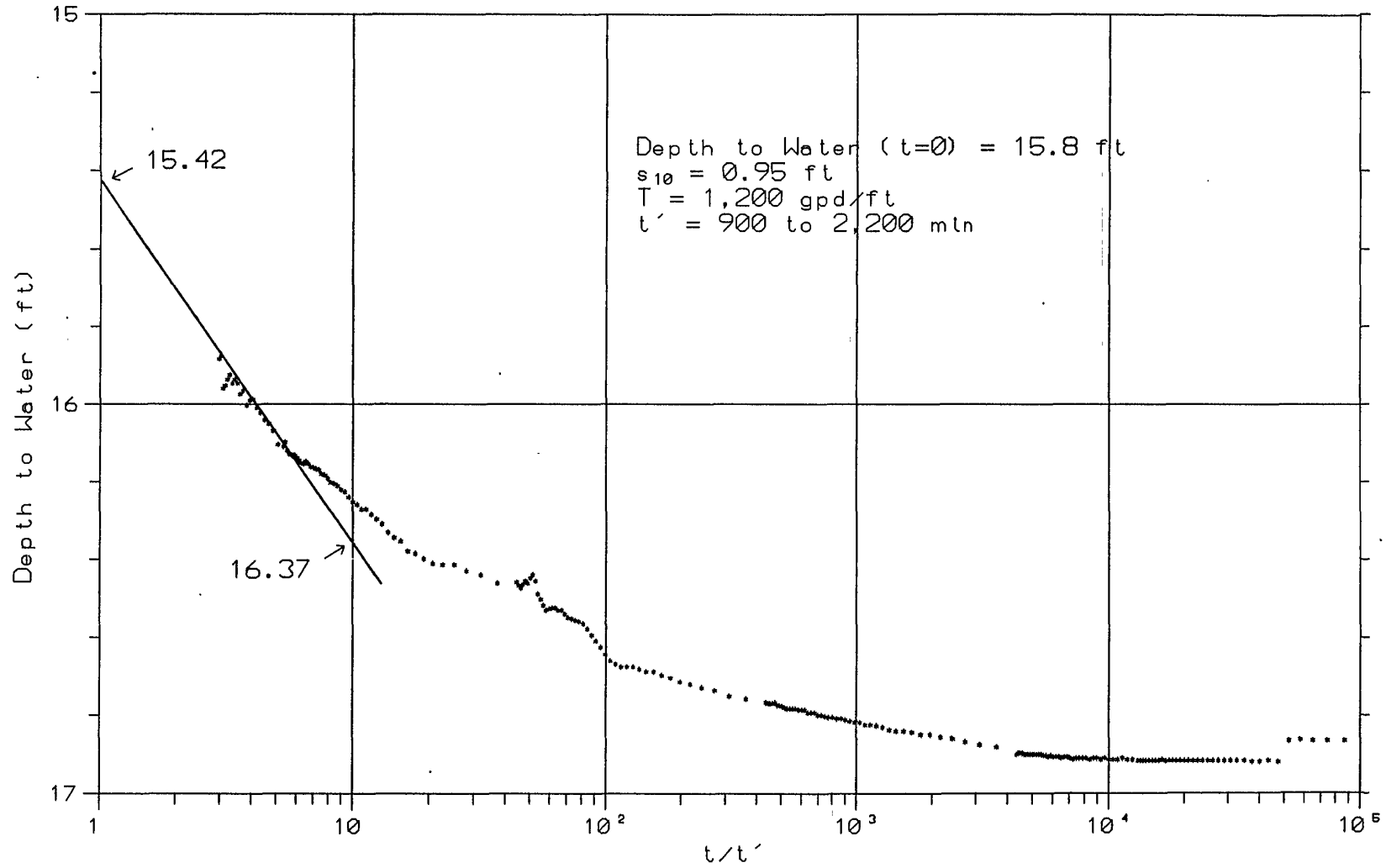


Figure 21. Depth to Water vs. t/t′, Well PT-10
15-foot Sand

008195

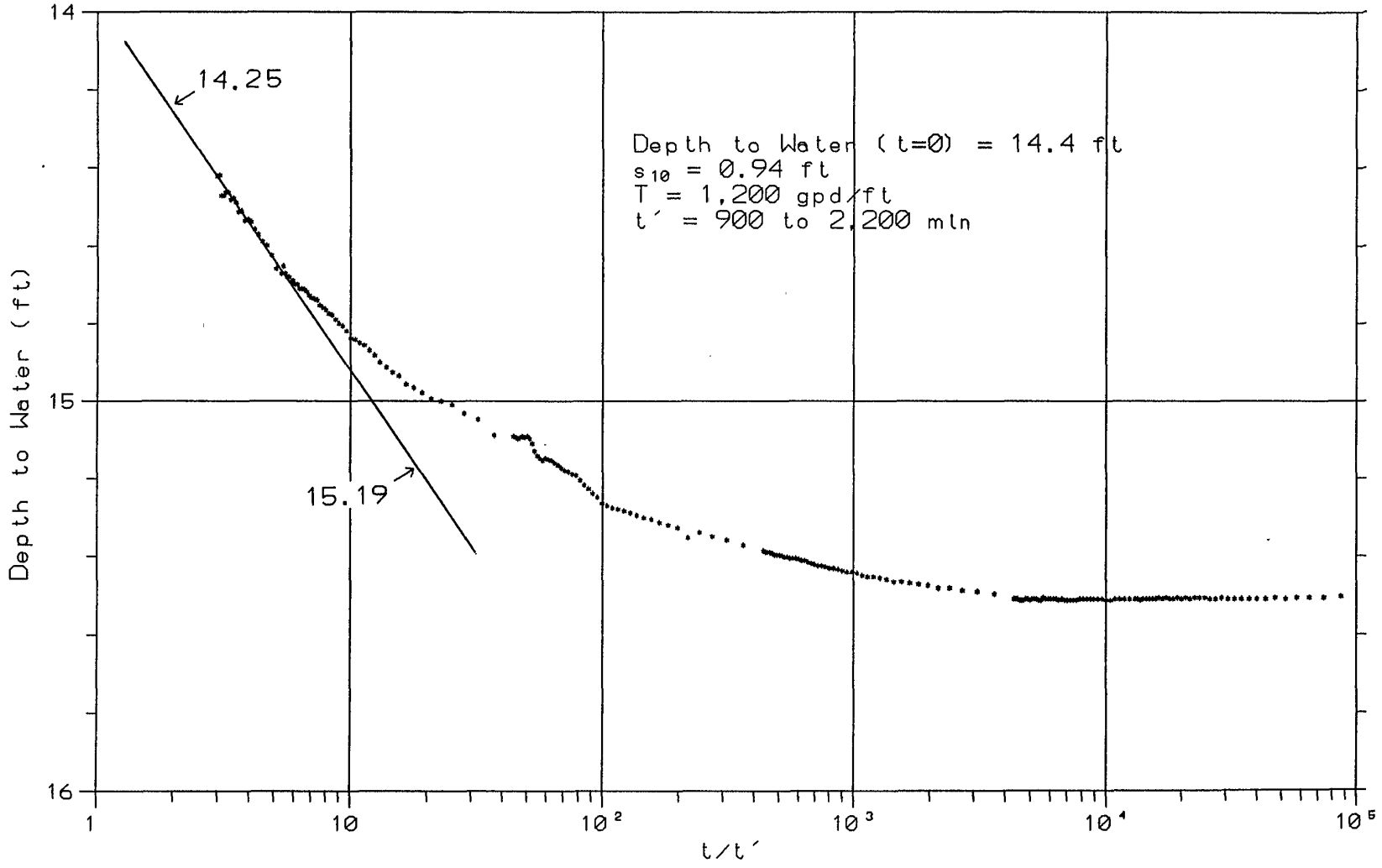


Figure 22. Depth to Water vs. t/t′, Well PT-11
15-foot Sand

008196

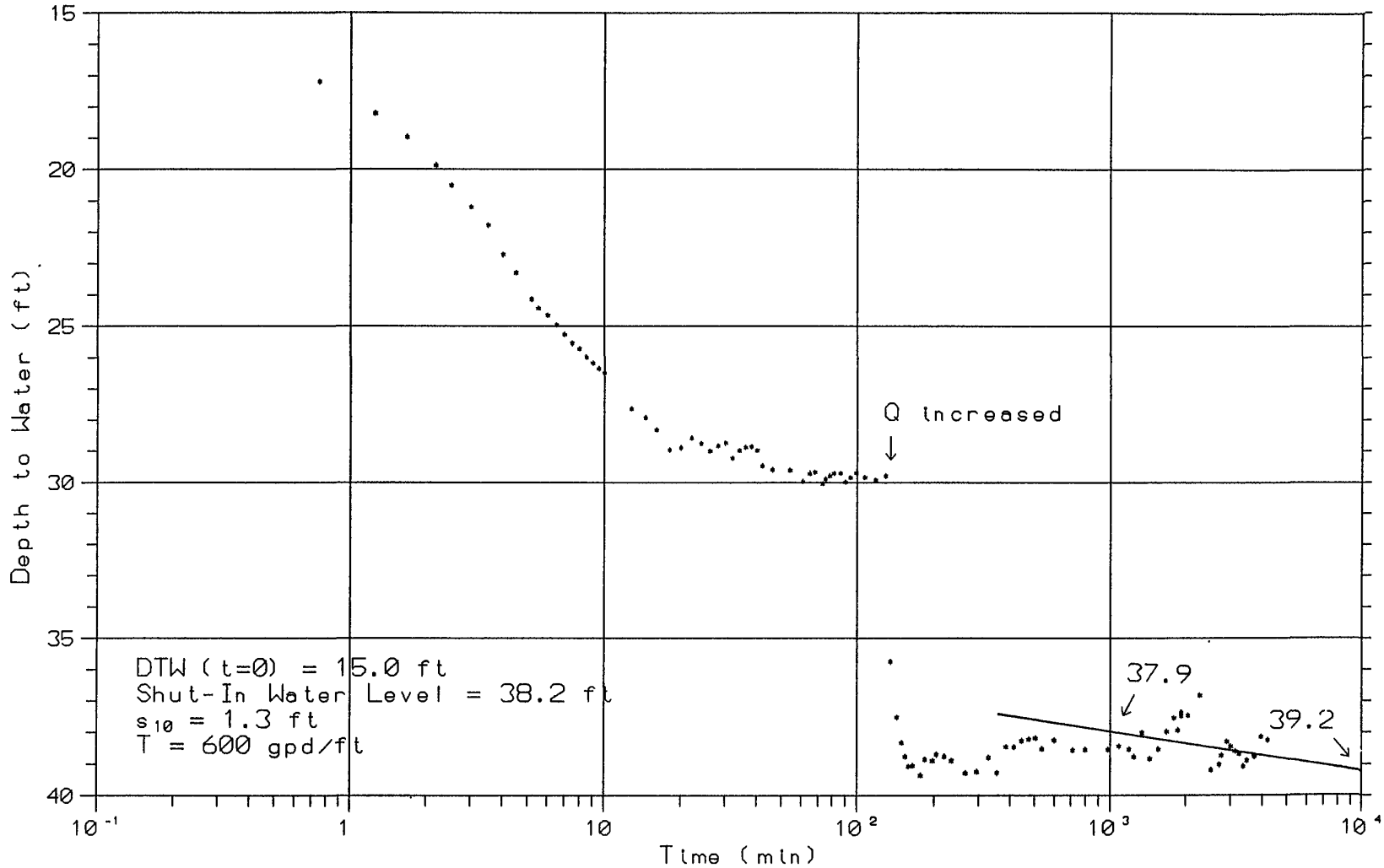


Figure 23. Depth to Water vs. Pumping Time, Well PW-01
35-foot Sand

008197

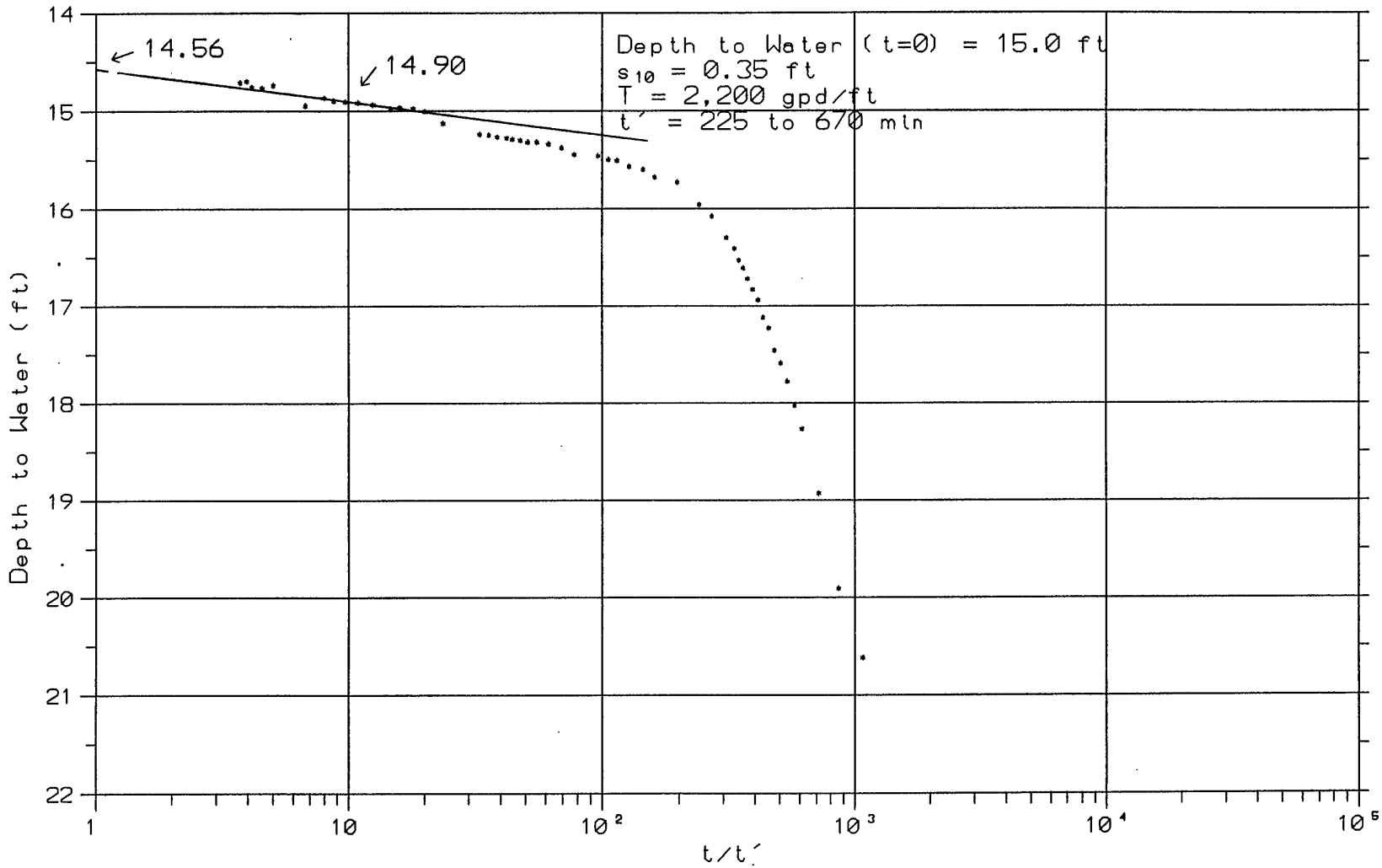


Figure 24. Depth to Water vs. t/t′, Well PW-01
35-foot Sand

008198

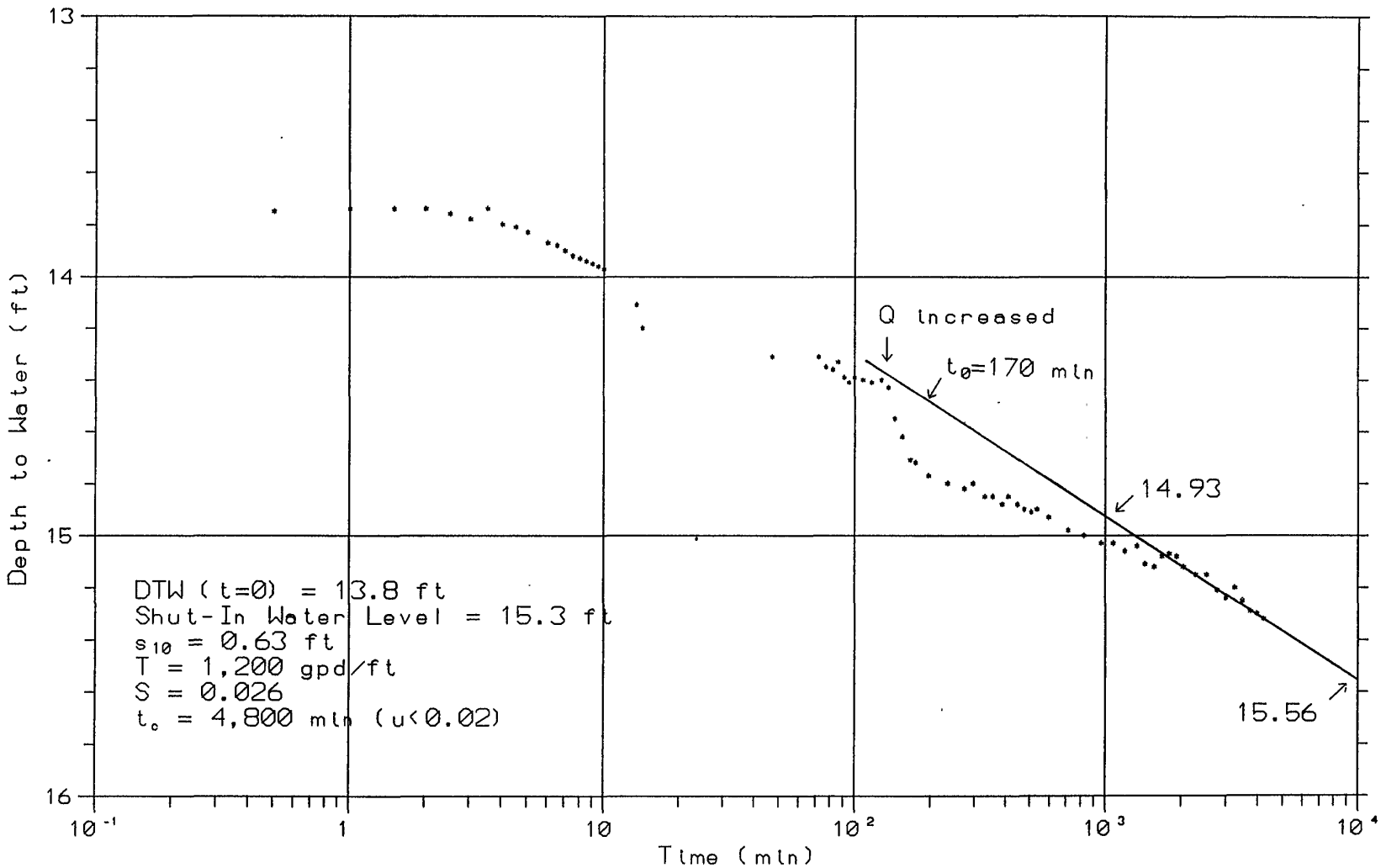


Figure 25. Depth to Water vs. Pumping Time, Well PT-01
35-foot Sand

008199

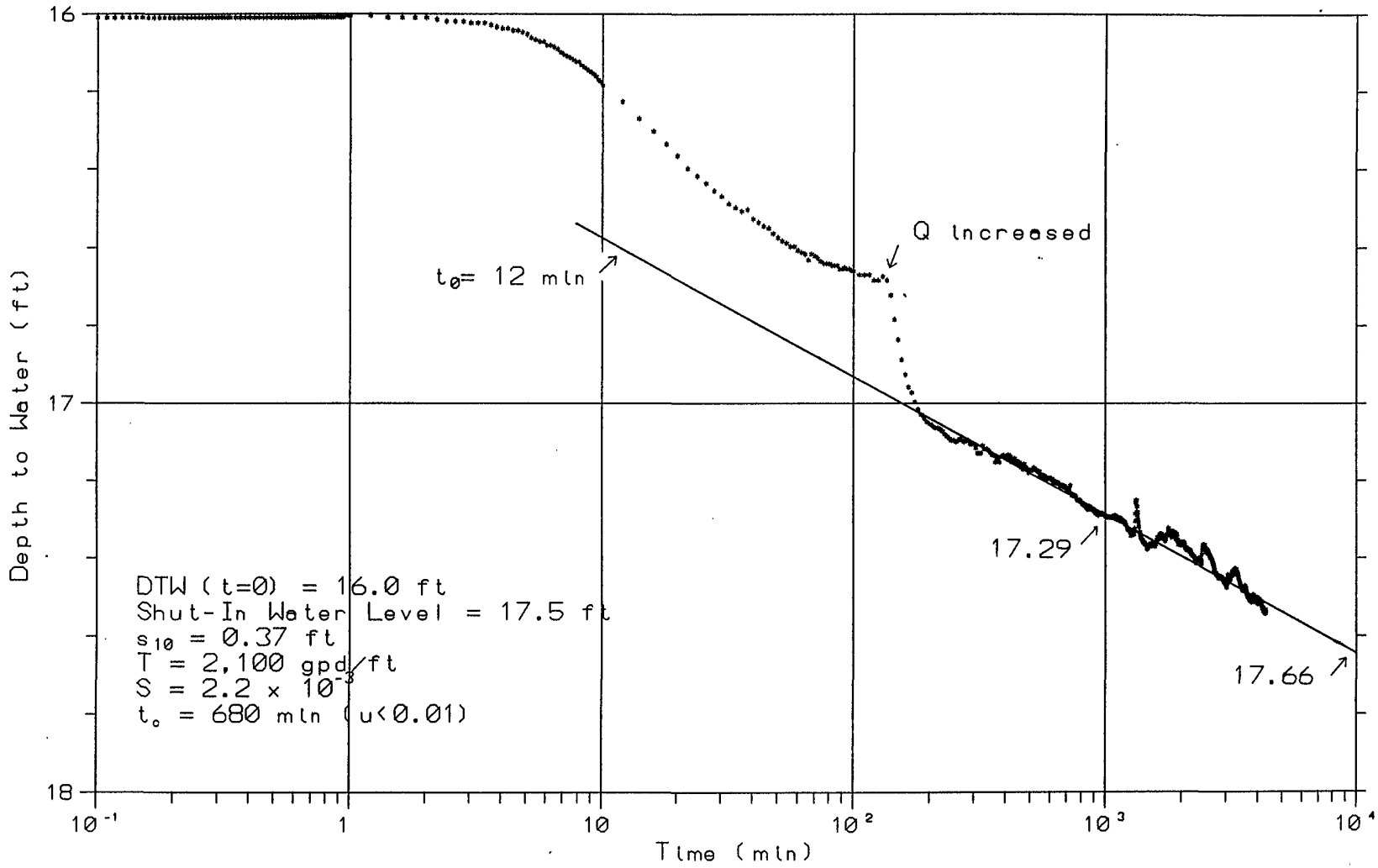


Figure 26. Depth to Water vs. Pumping Time, Well PT-02
35-foot Sand

008200

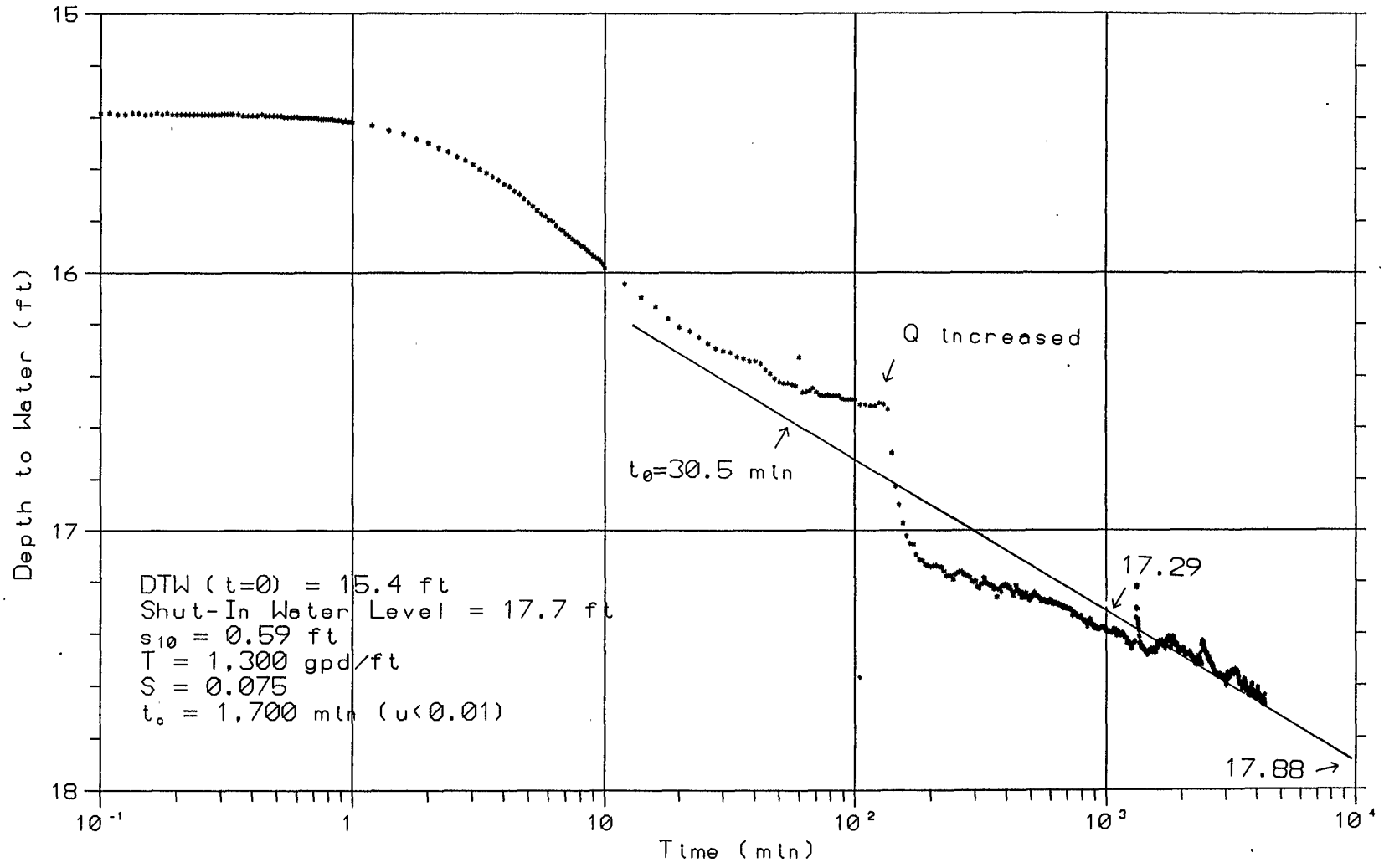


Figure 27. Depth to Water vs. Pumping Time, Well PT-03
35-foot Sand

008201

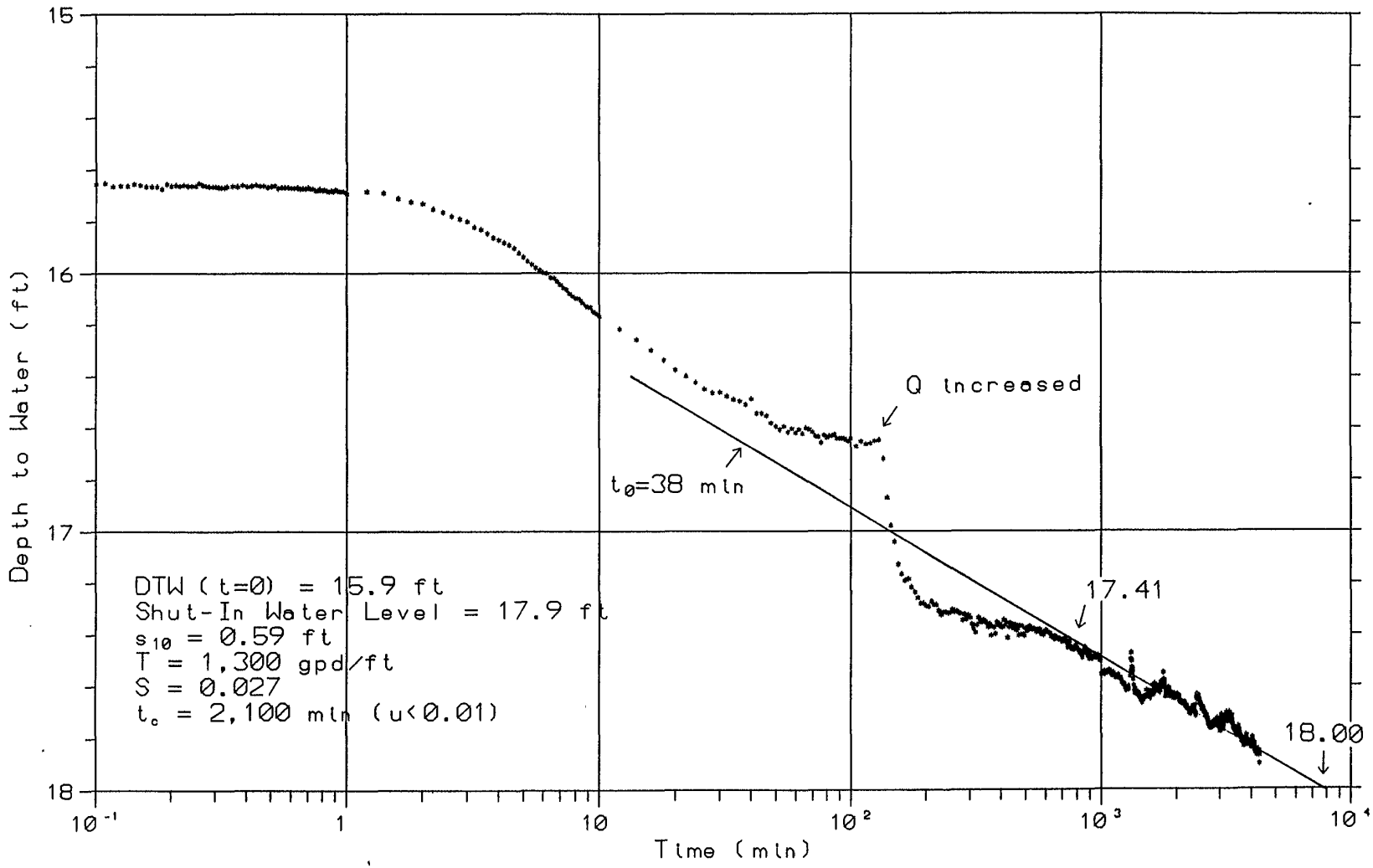


Figure 28. Depth to Water vs. Pumping Time, Well PT-04
35-foot Sand

008202

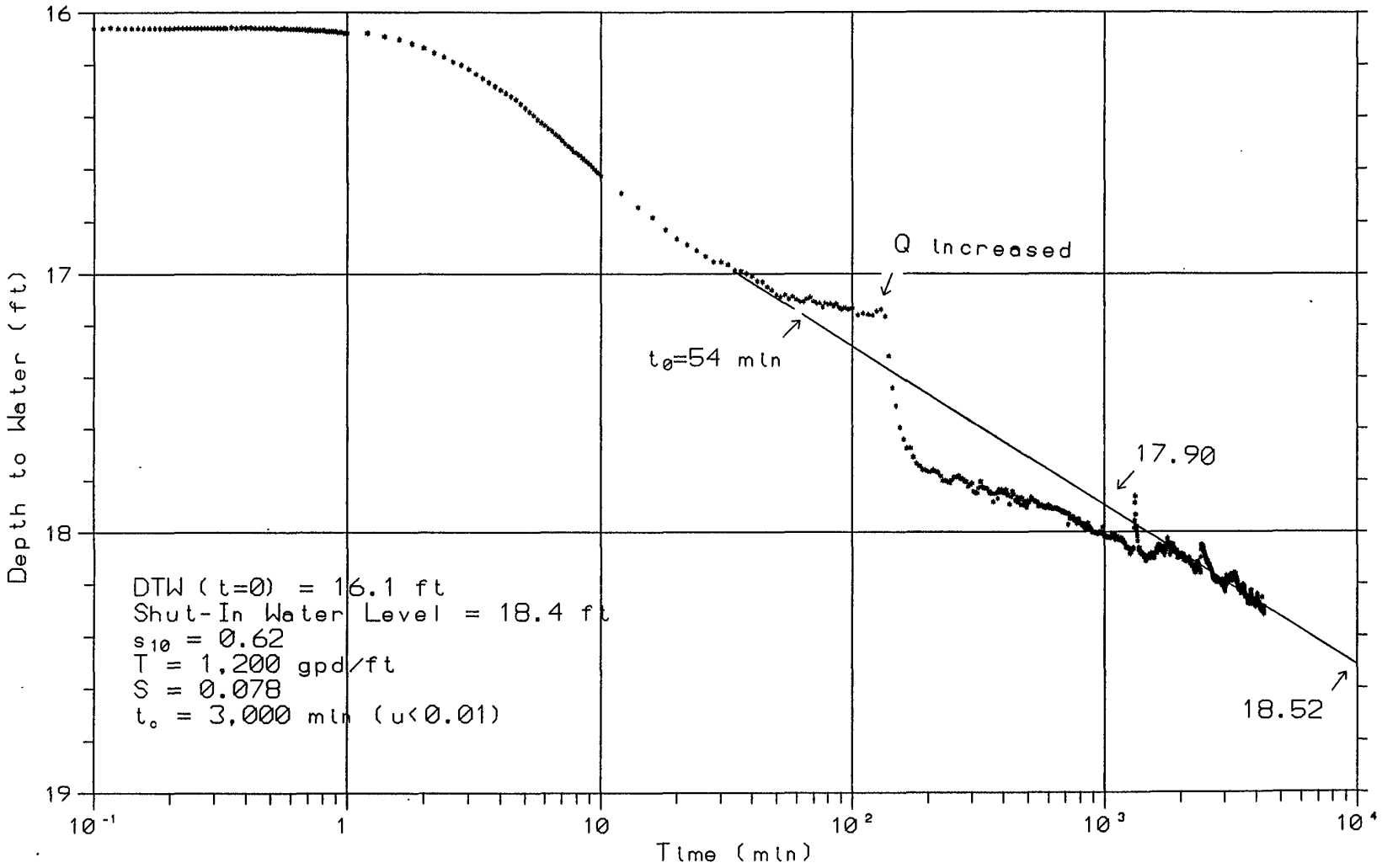


Figure 29. Depth to Water vs. Pumping Time, Well PT-05
35-foot Sand

008203

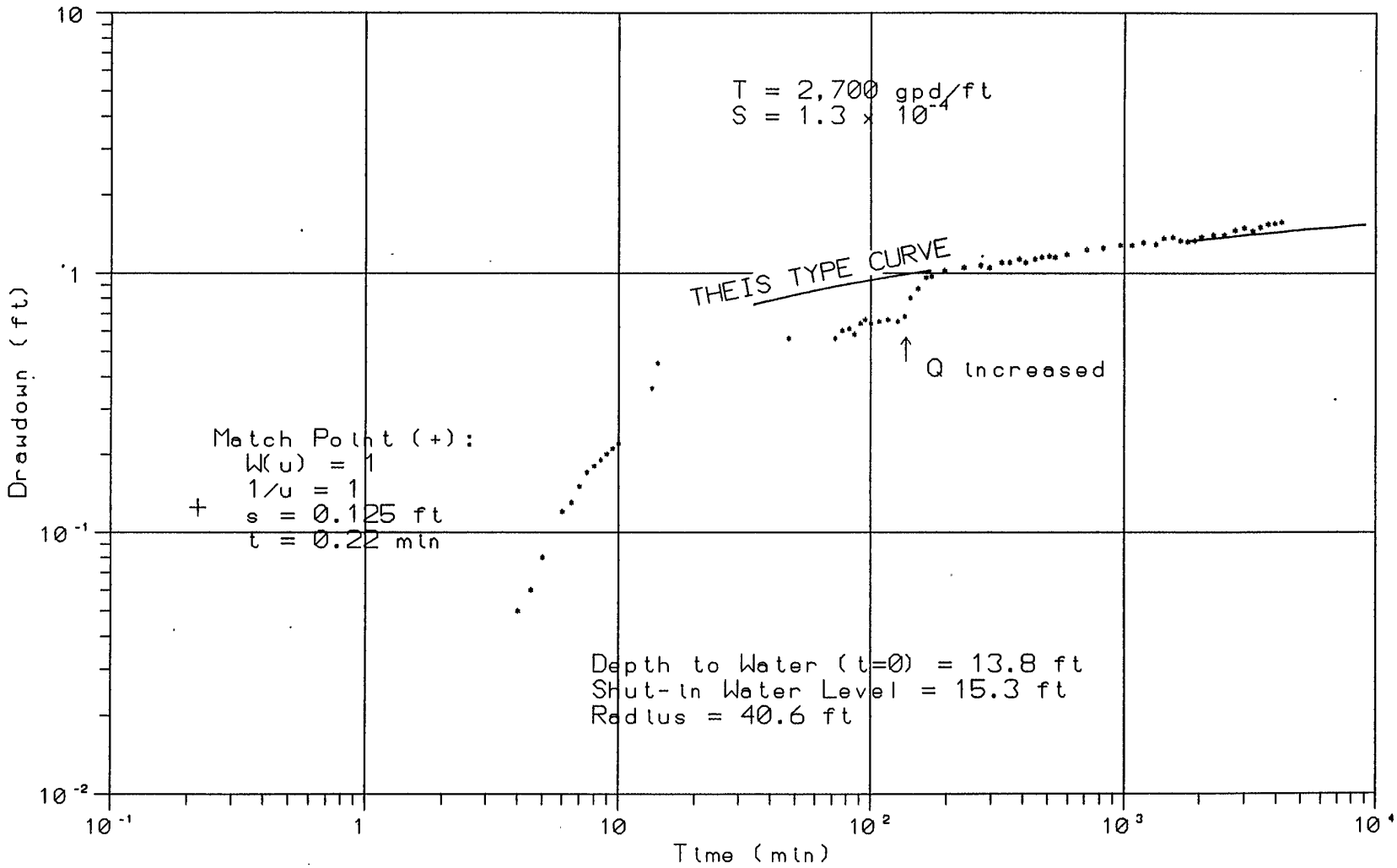


Figure 30. Drawdown vs. Pumping Time, Well PT-01
35-foot Sand

008204

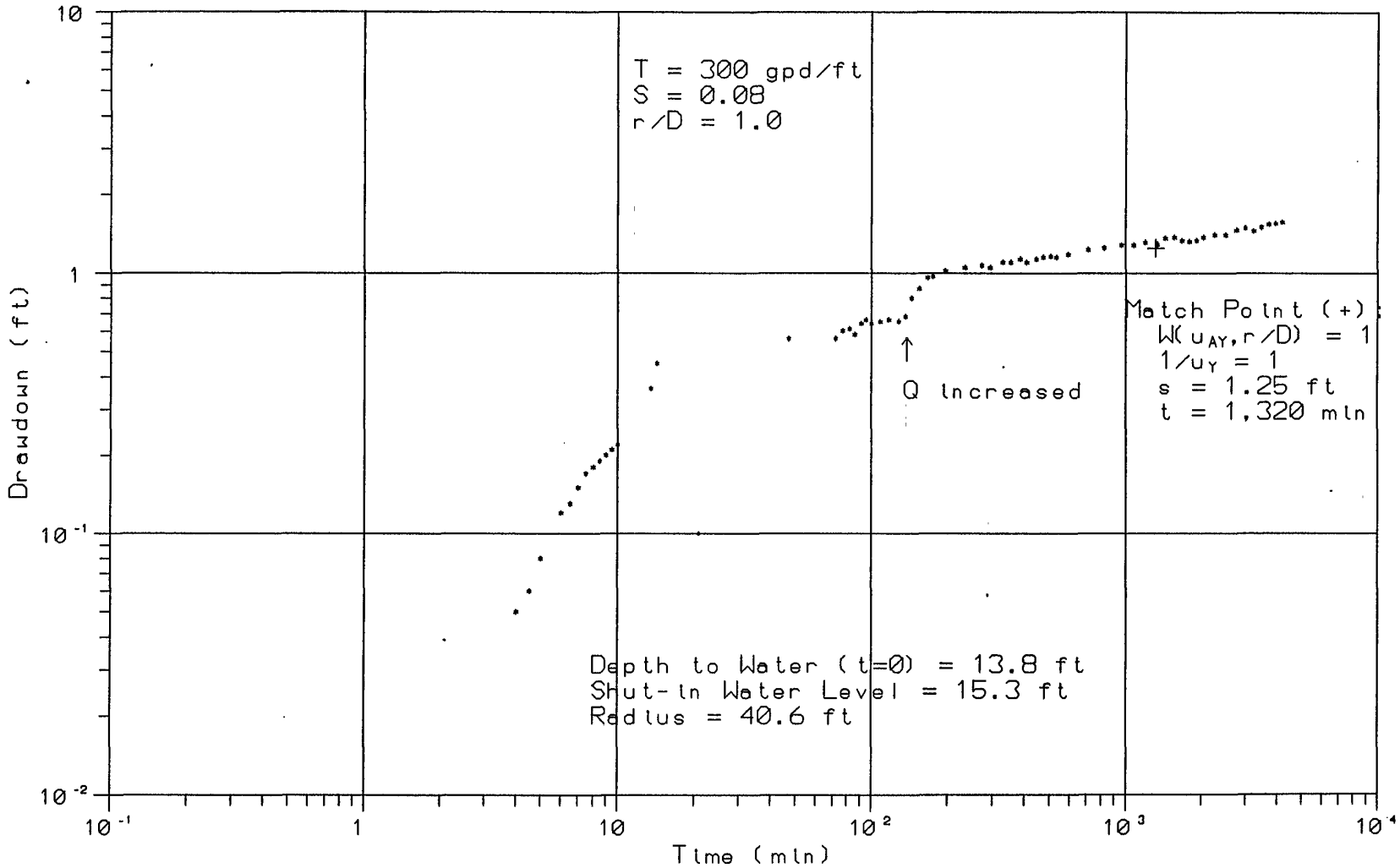


Figure 31. Drawdown vs. Pumping Time, Well PT-01
35-foot Sand

008205

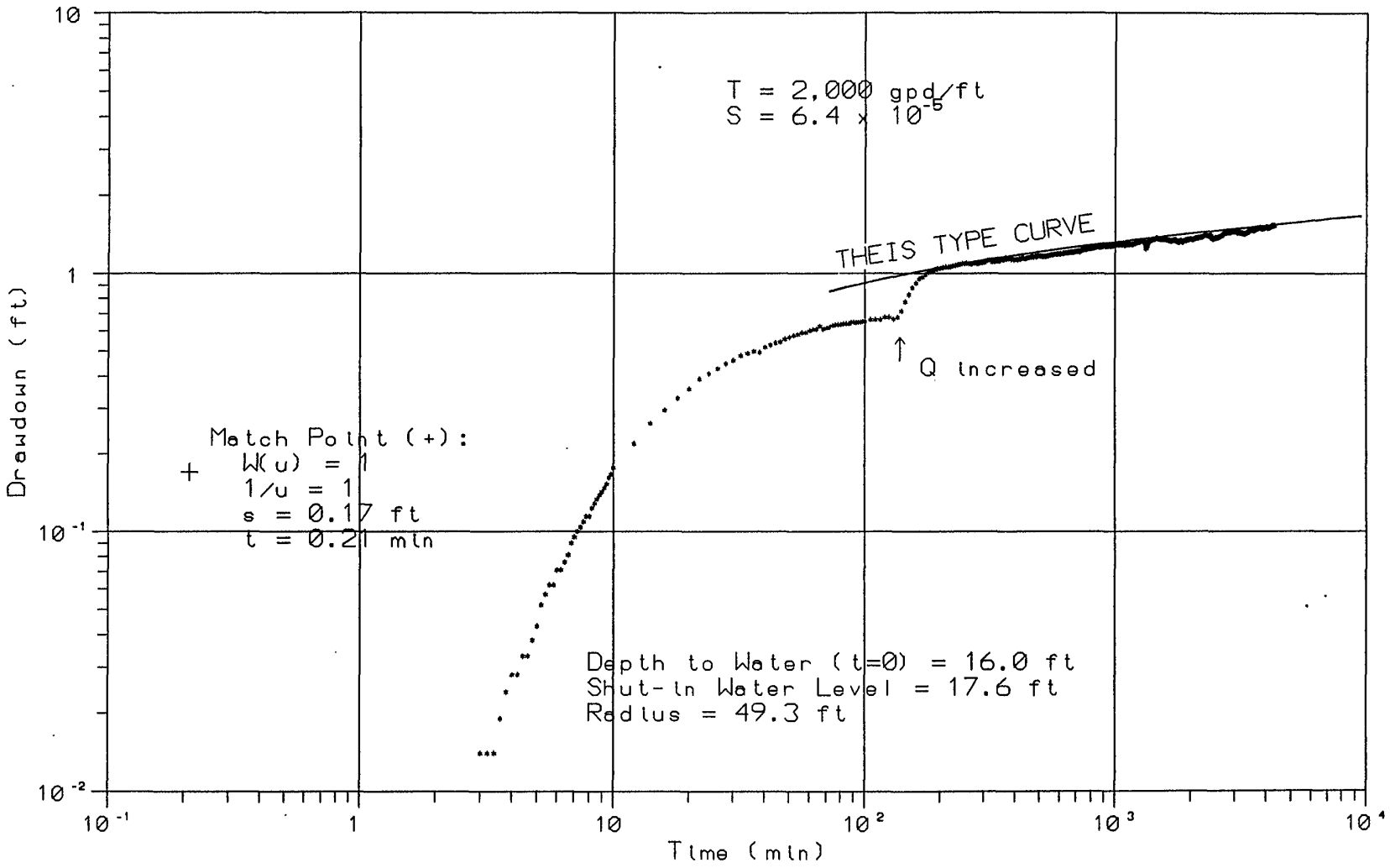


Figure 32. Drawdown vs. Pumping Time, Well PT-02
35-foot Sand

008206

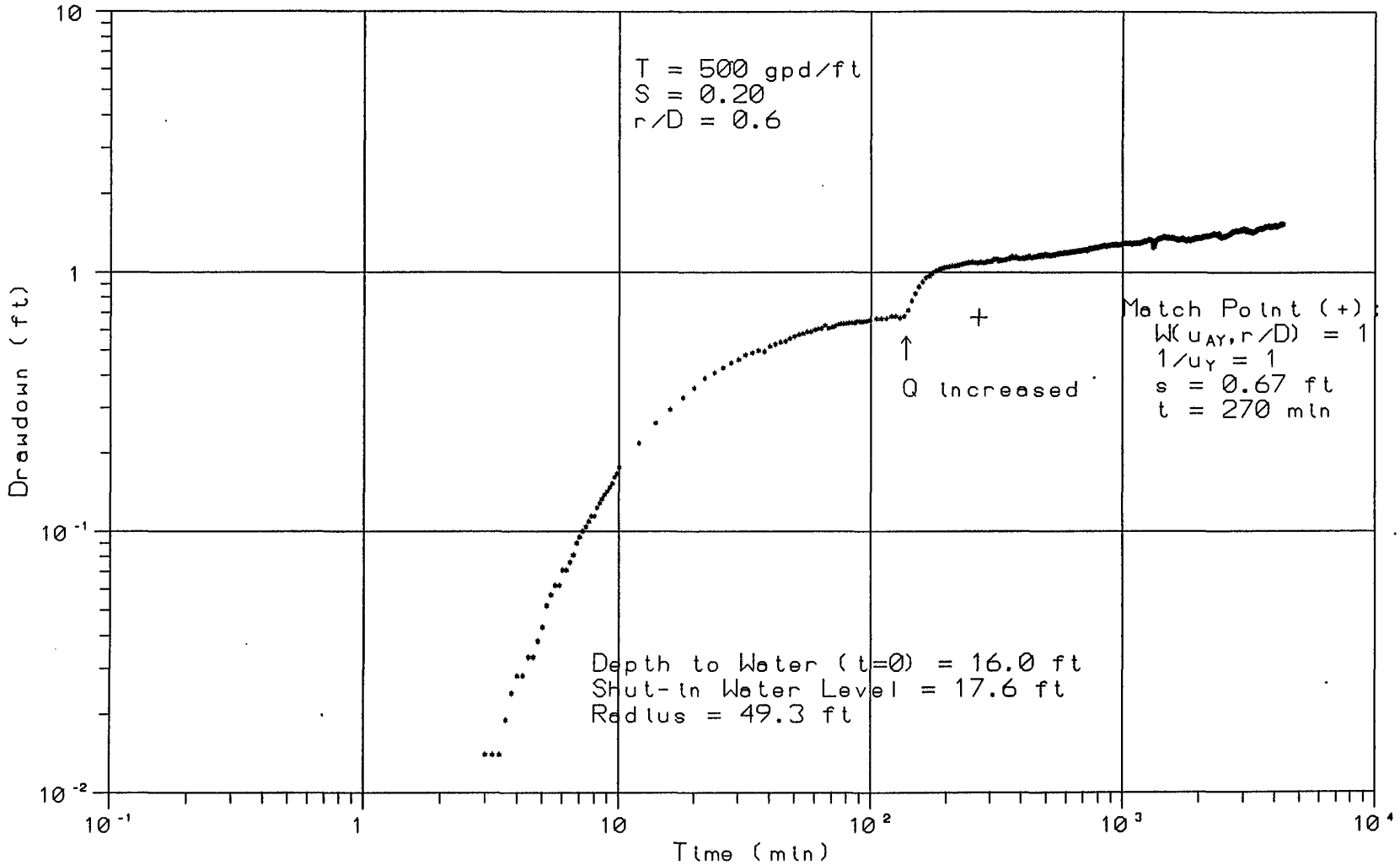


Figure 33. Drawdown vs. Pumping Time, Well PT-02
35-foot Sand

008207

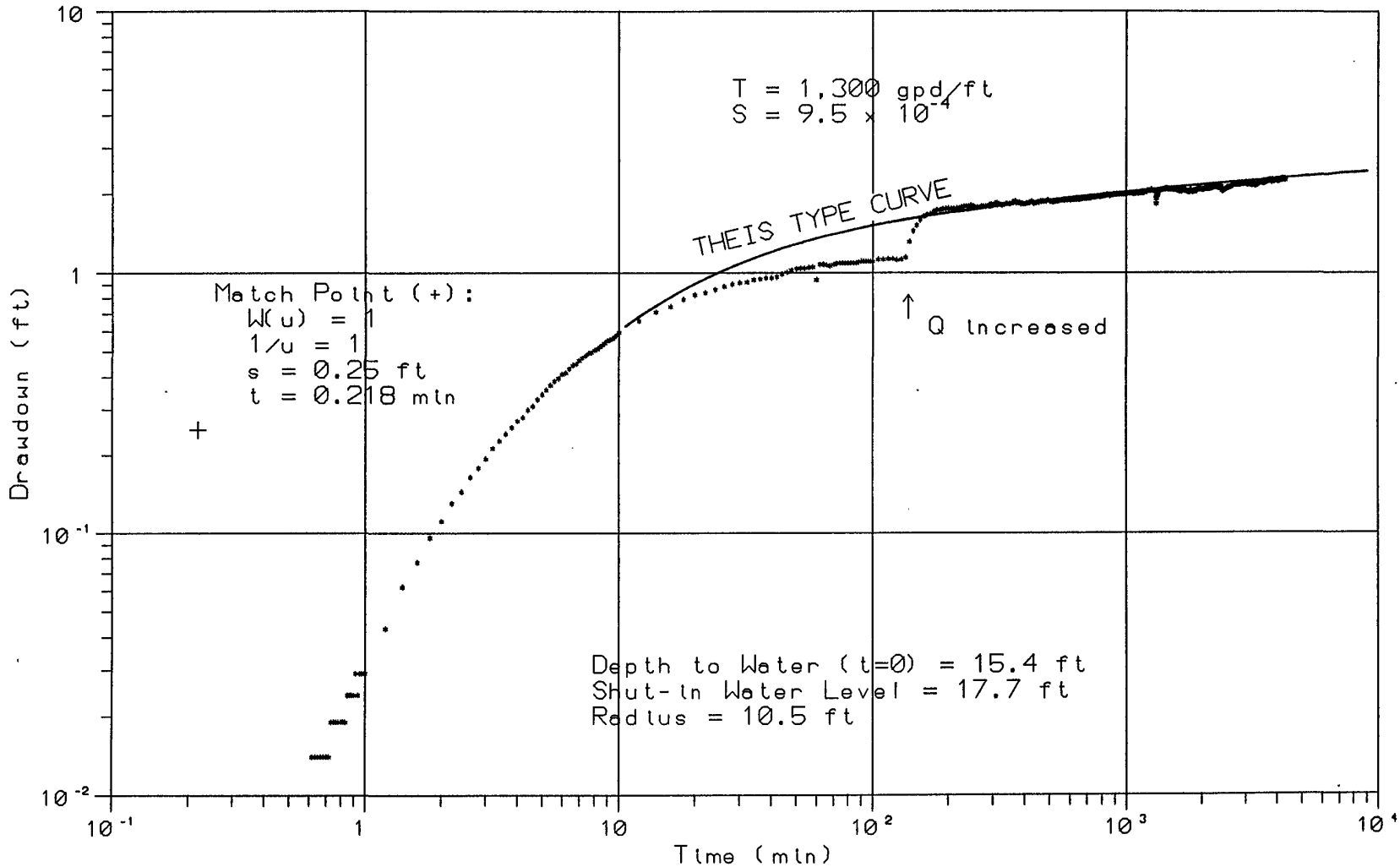


Figure 34. Drawdown vs. Pumping Time, Well PT-03
35-foot Sand

008208

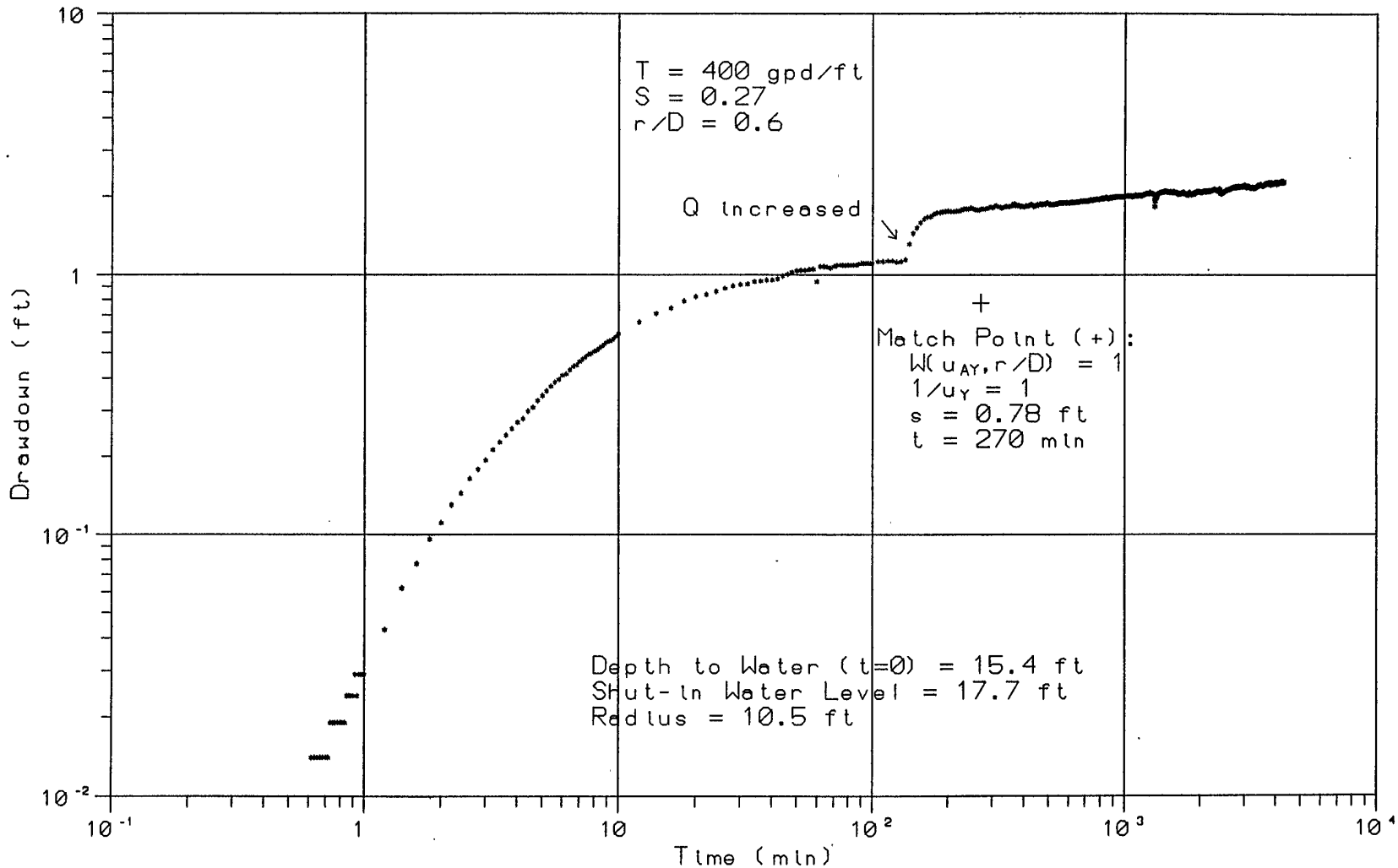


Figure 35. Drawdown vs. Pumping Time, Well PT-03
35-foot Sand

008209

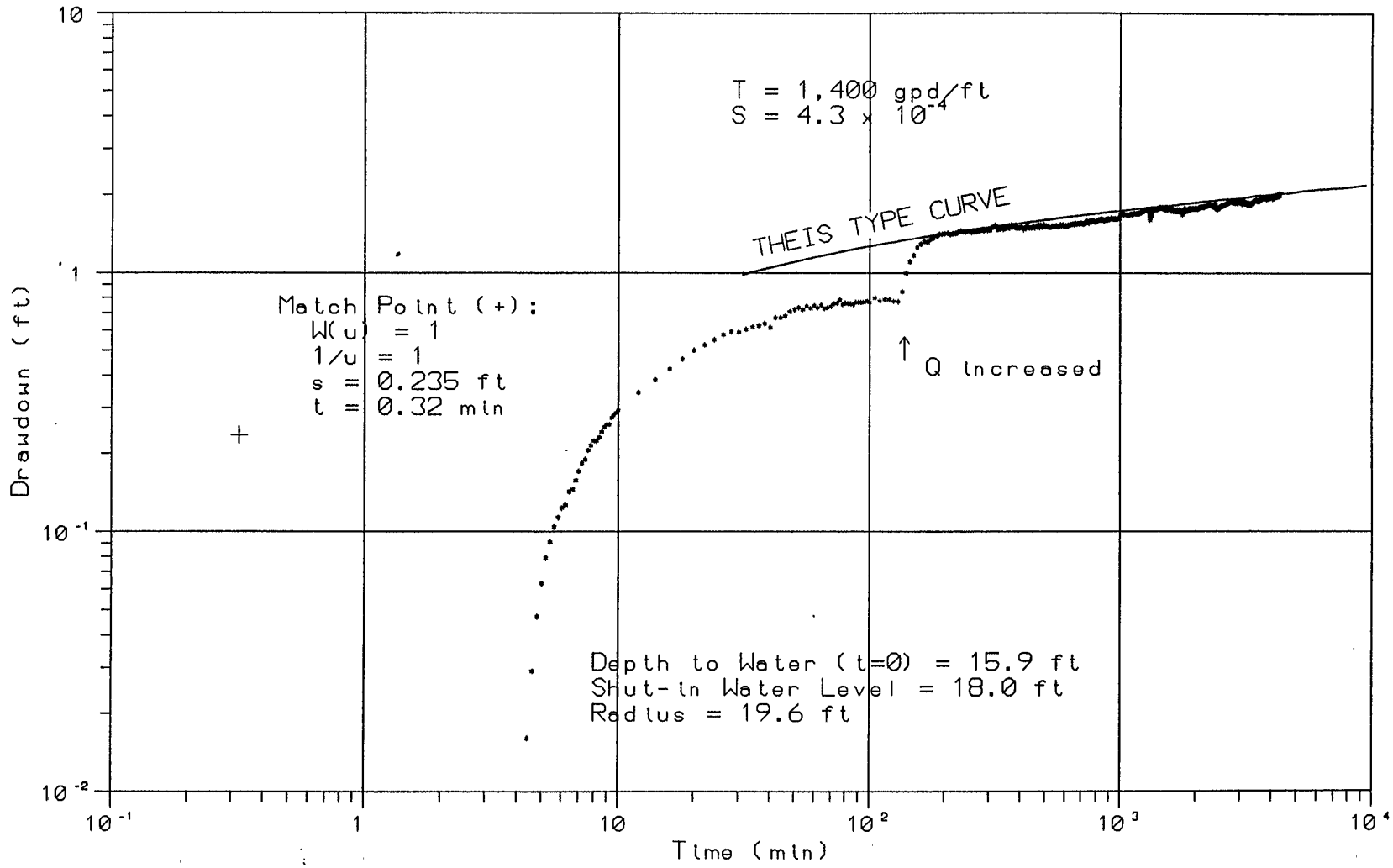


Figure 36. Drawdown vs. Pumping Time, Well PT-04
35-foot Sand

008210

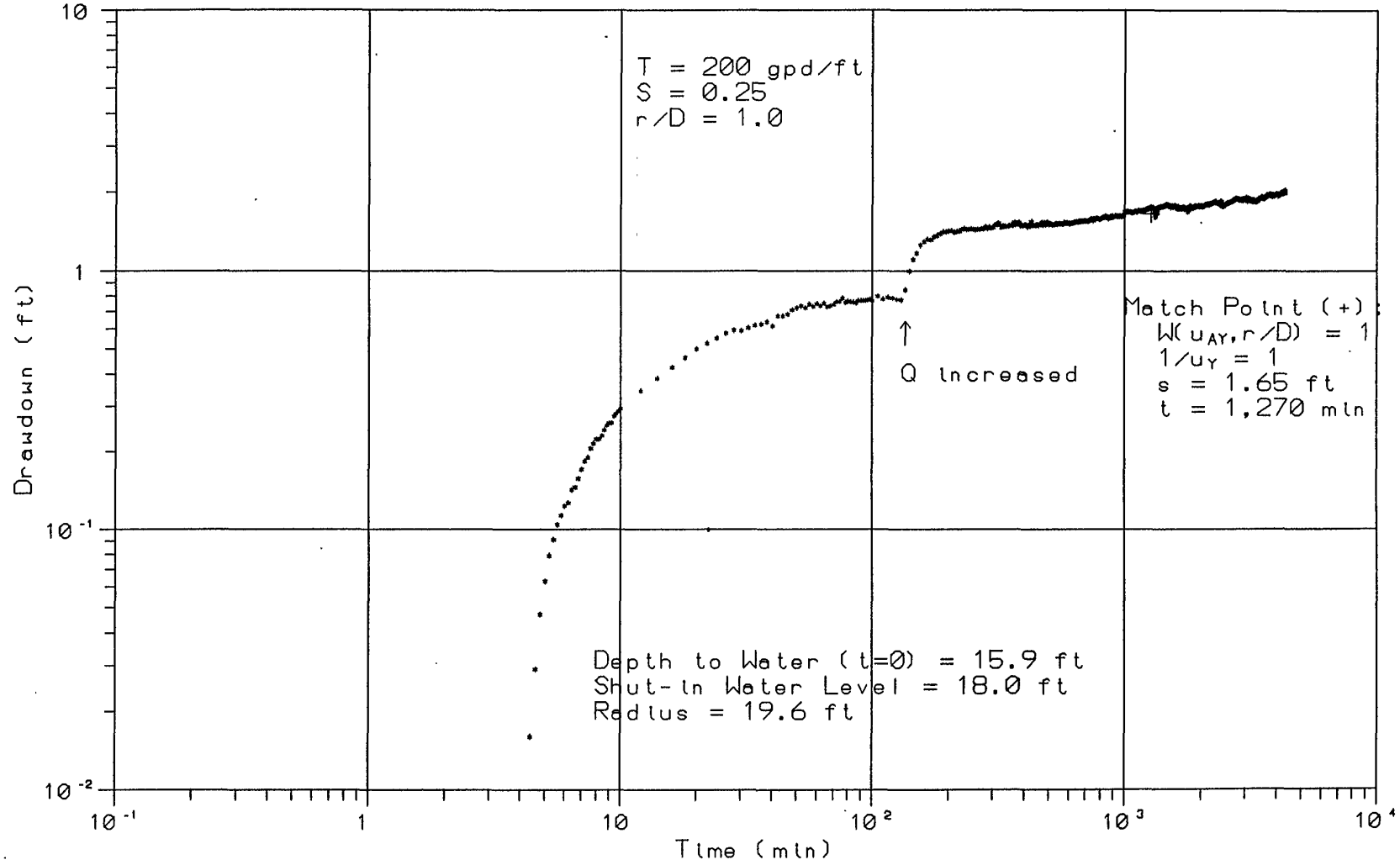


Figure 37. Drawdown vs. Pumping Time, Well PT-04
35-foot Sand

008211

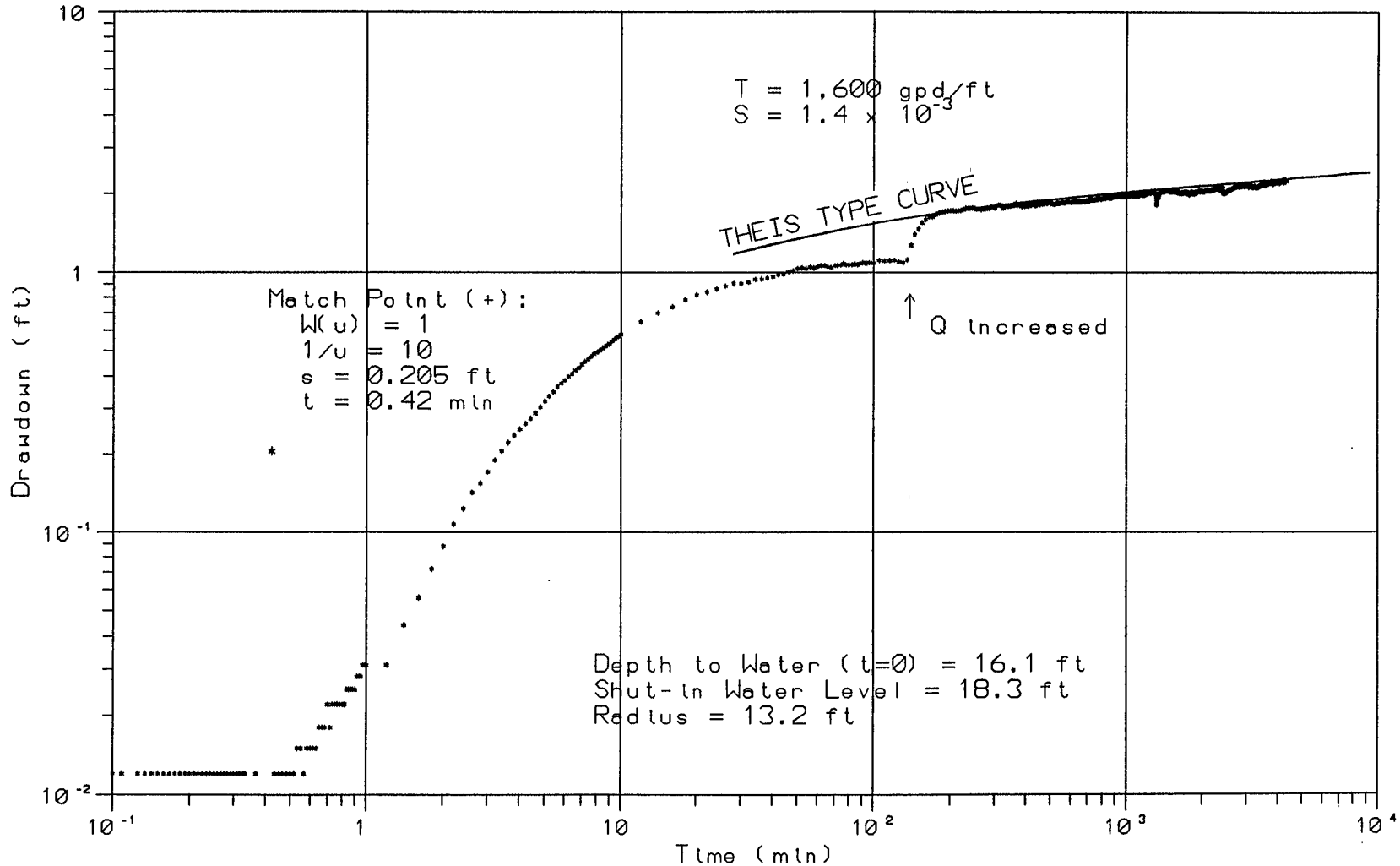


Figure 38. Drawdown vs. Pumping Time, Well PT-05
35-foot Sand

008212

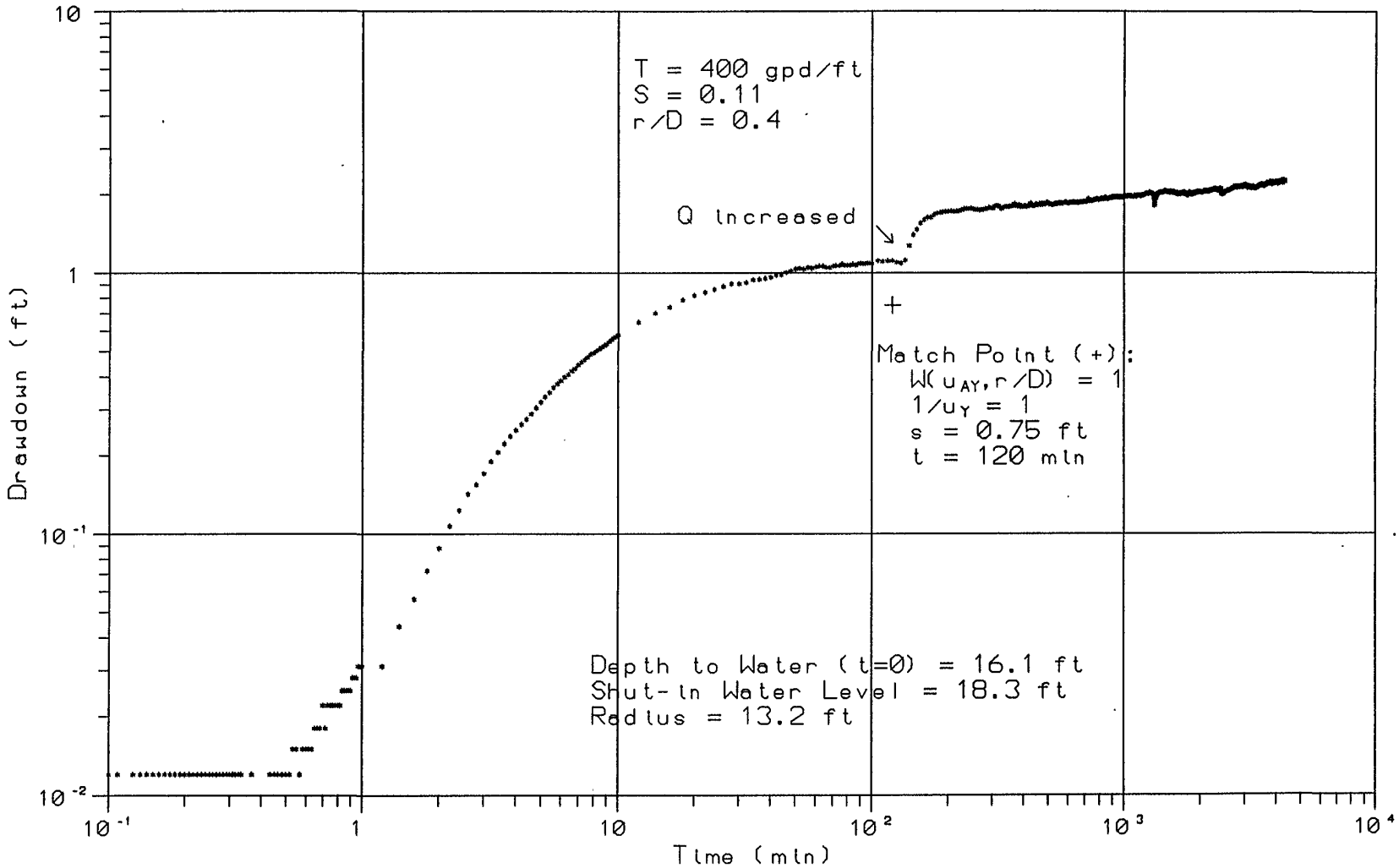


Figure 39. Drawdown vs. Pumping Time, Well PT-05
35-foot Sand

008213

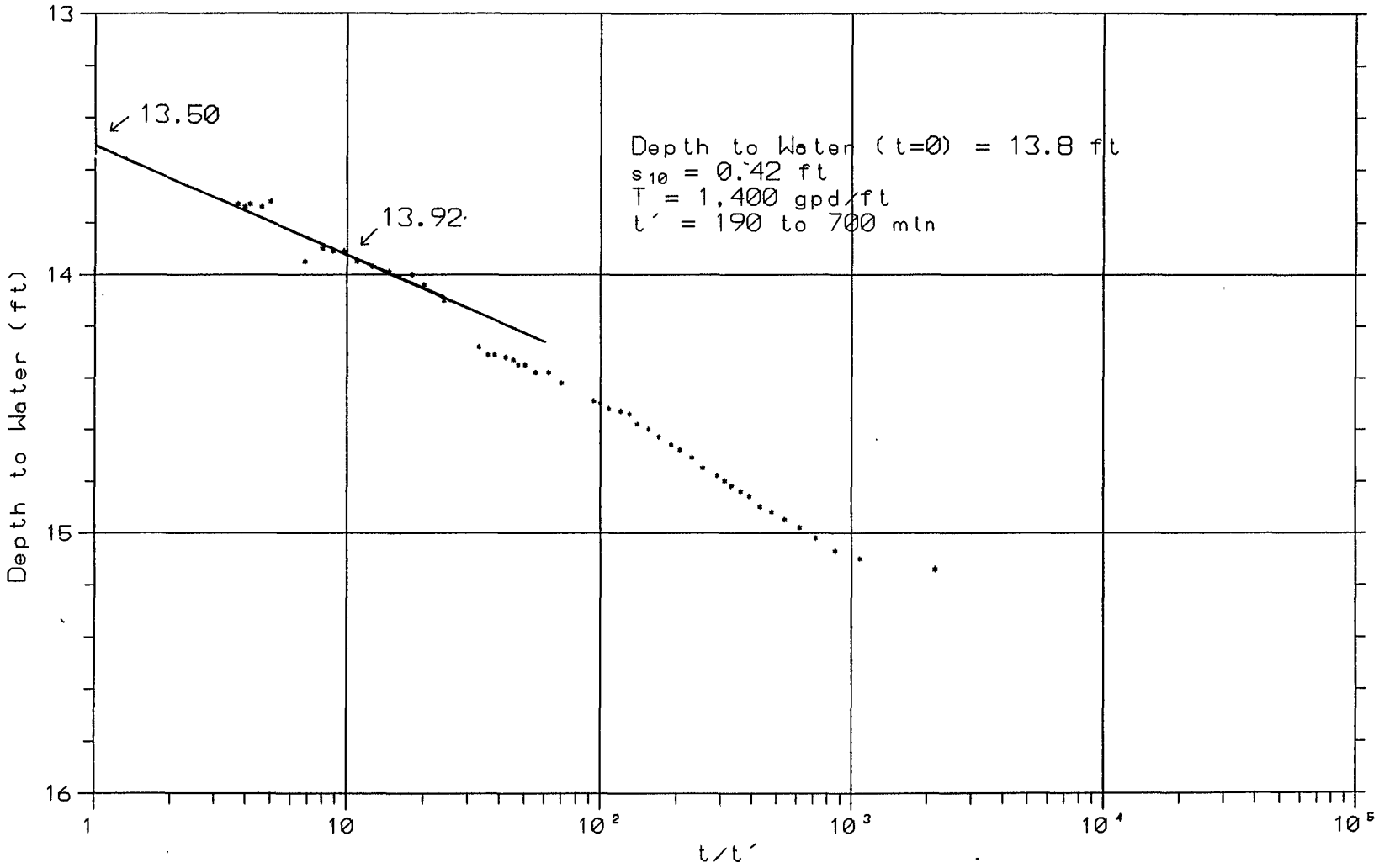


Figure 40. Depth to Water vs. t/t', Well PT-01
35-foot Sand

008214

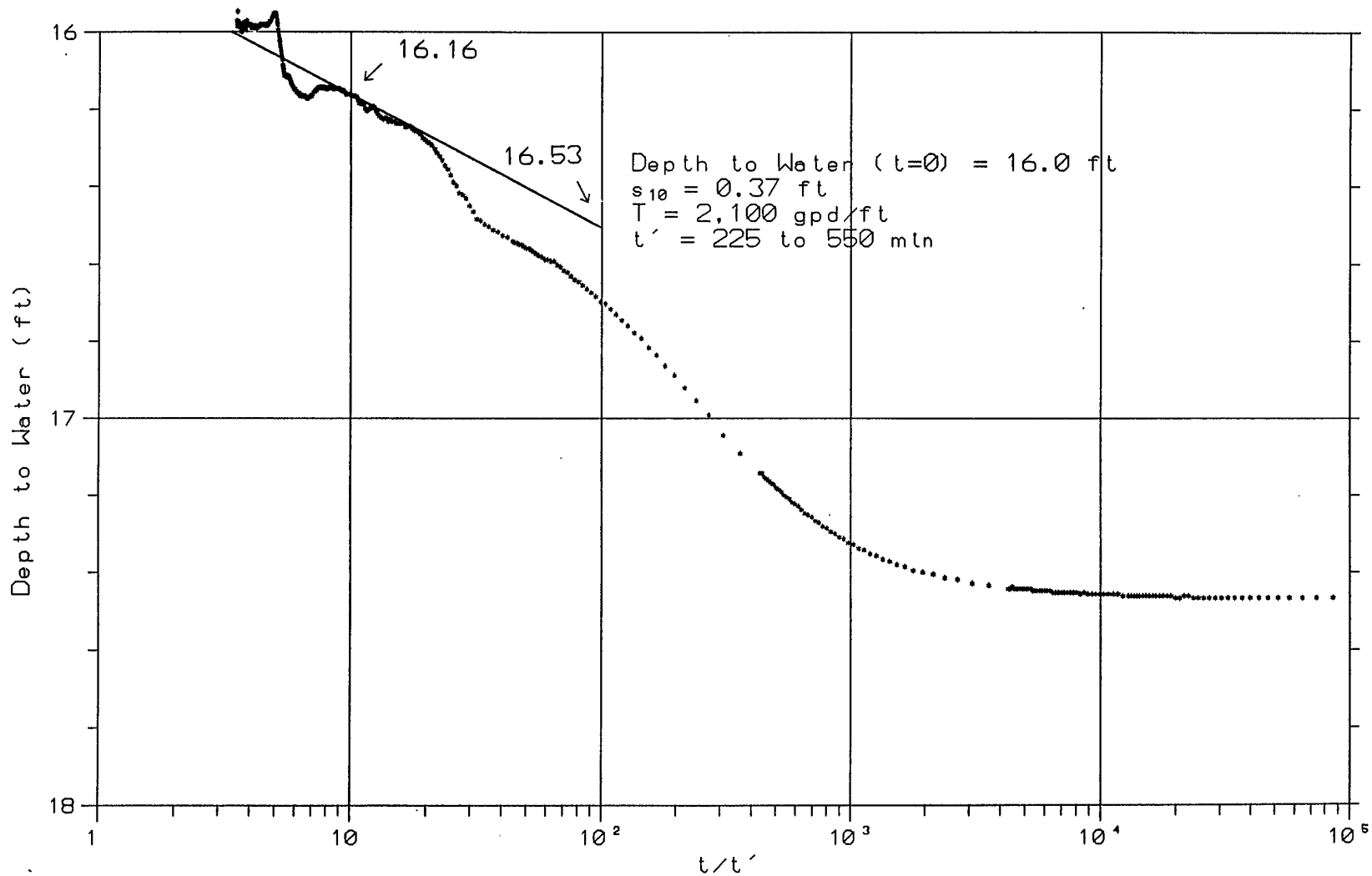


Figure 41. Depth to Water vs. t/t´, Well PT-02
35-foot Sand

008215

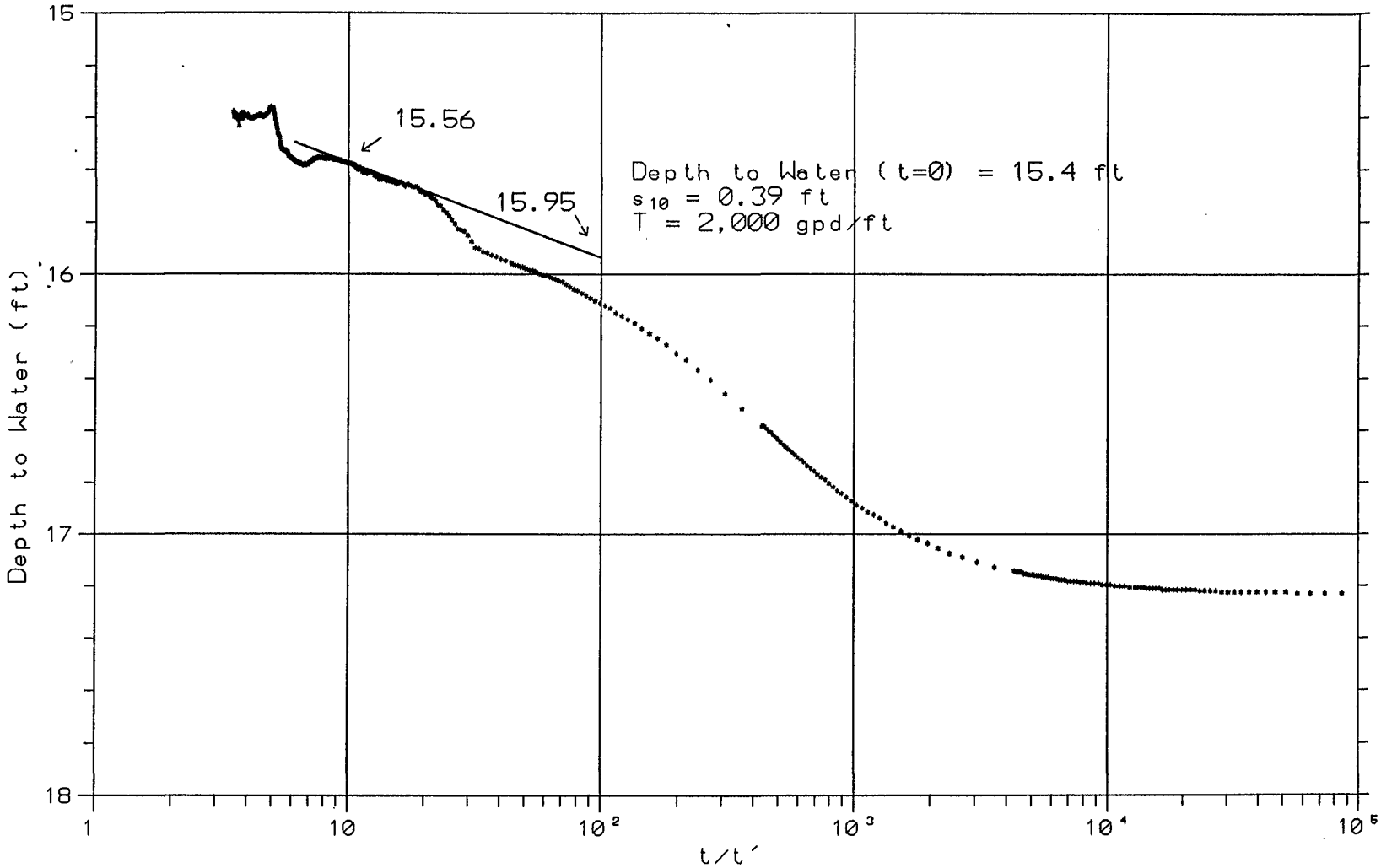


Figure 42. Depth to Water vs. t/t′, Well PT-03
35-foot Sand

008216

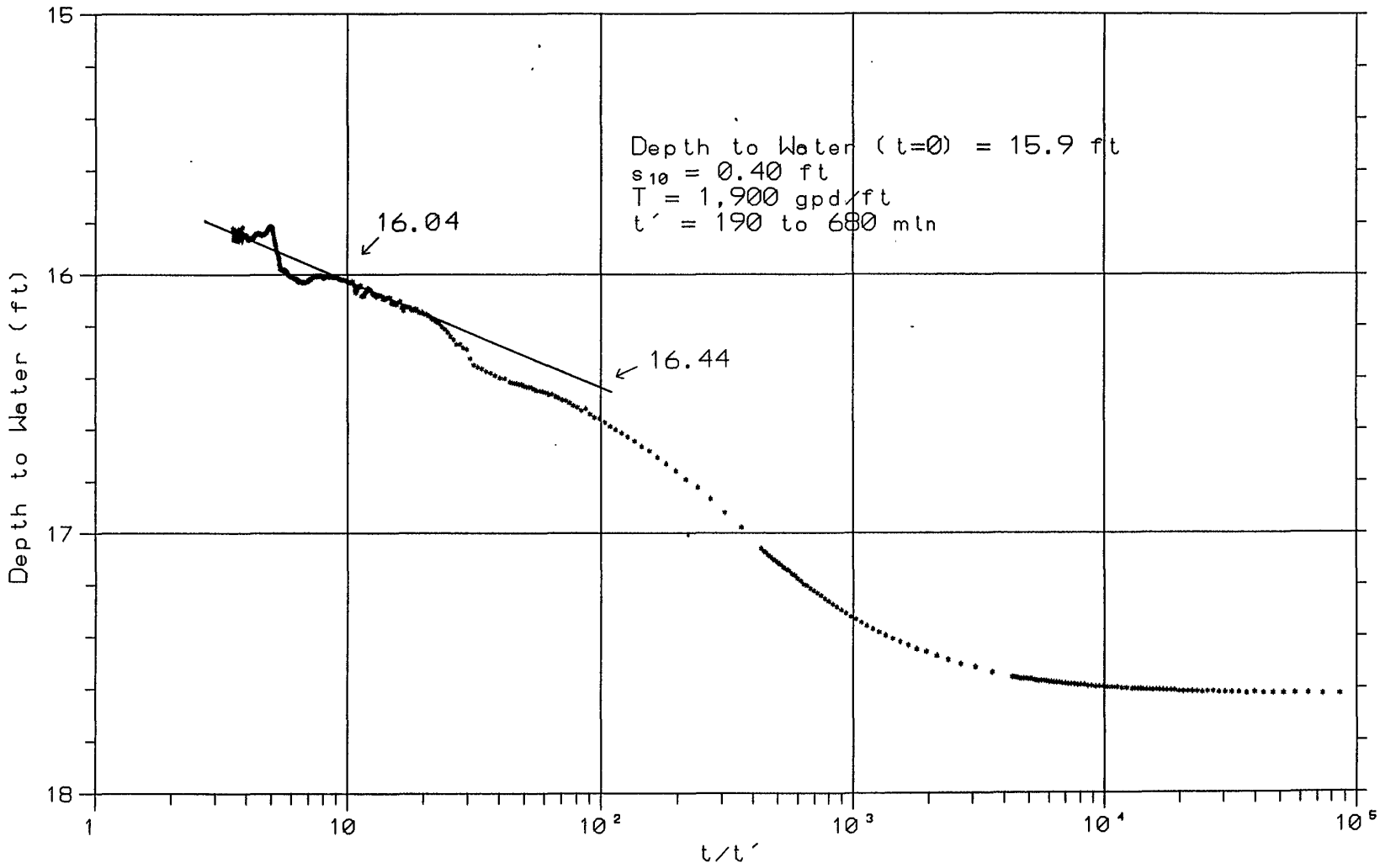


Figure 43. Depth to Water vs. t/t′, Well PT-04
35-foot Sand

008217

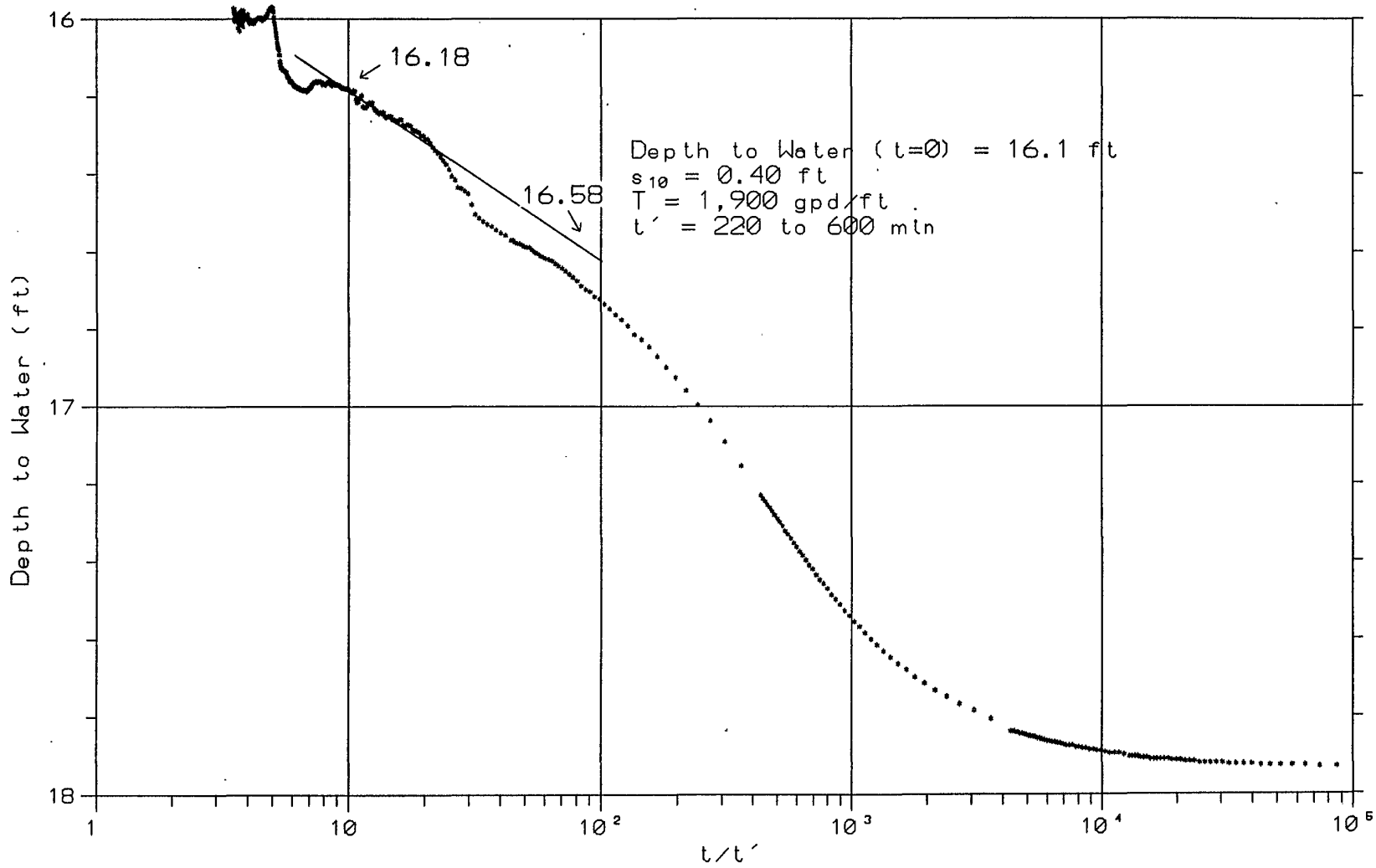
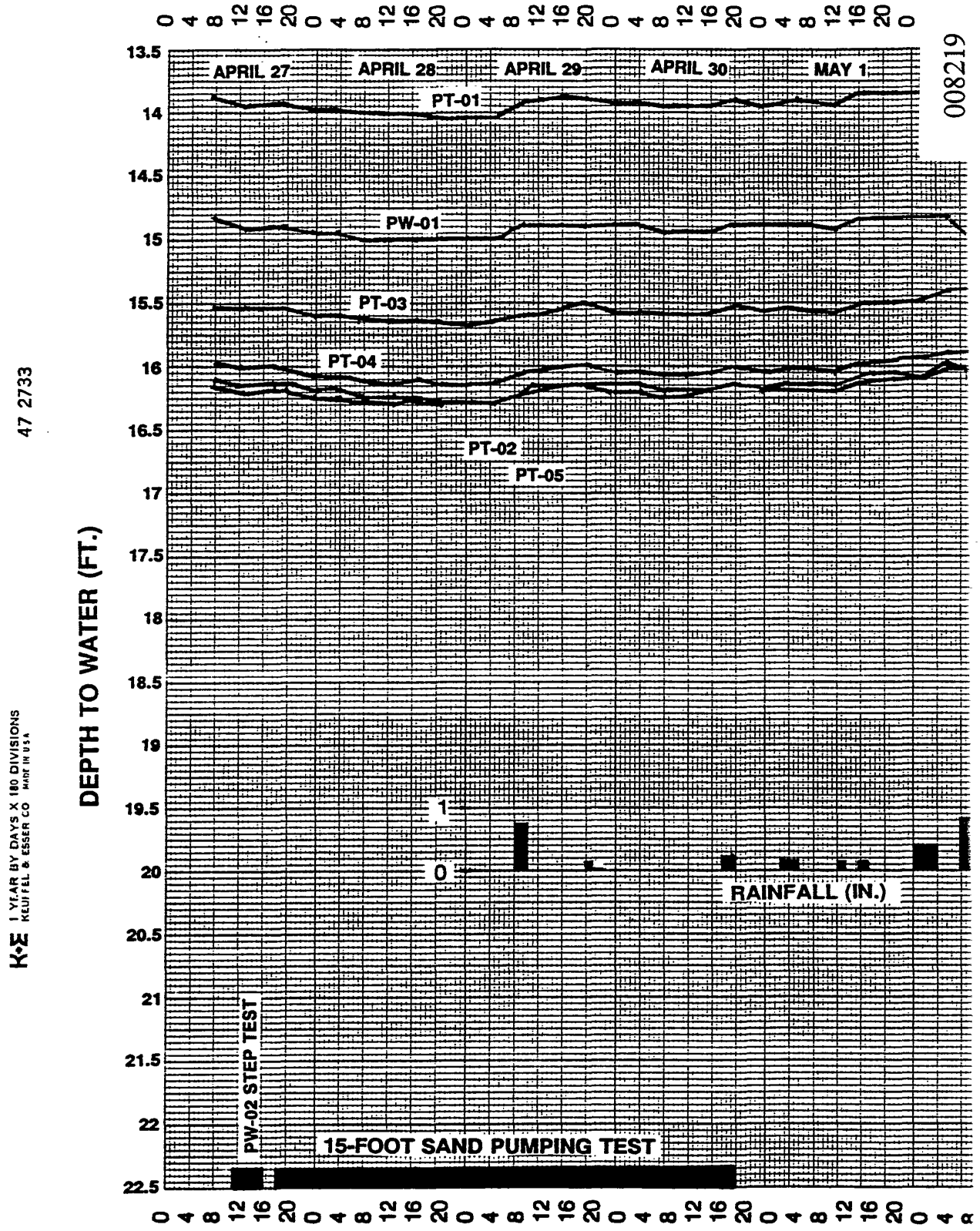


Figure 44. Depth to Water vs. t/t′, Well PT5
35-foot Sand

008218

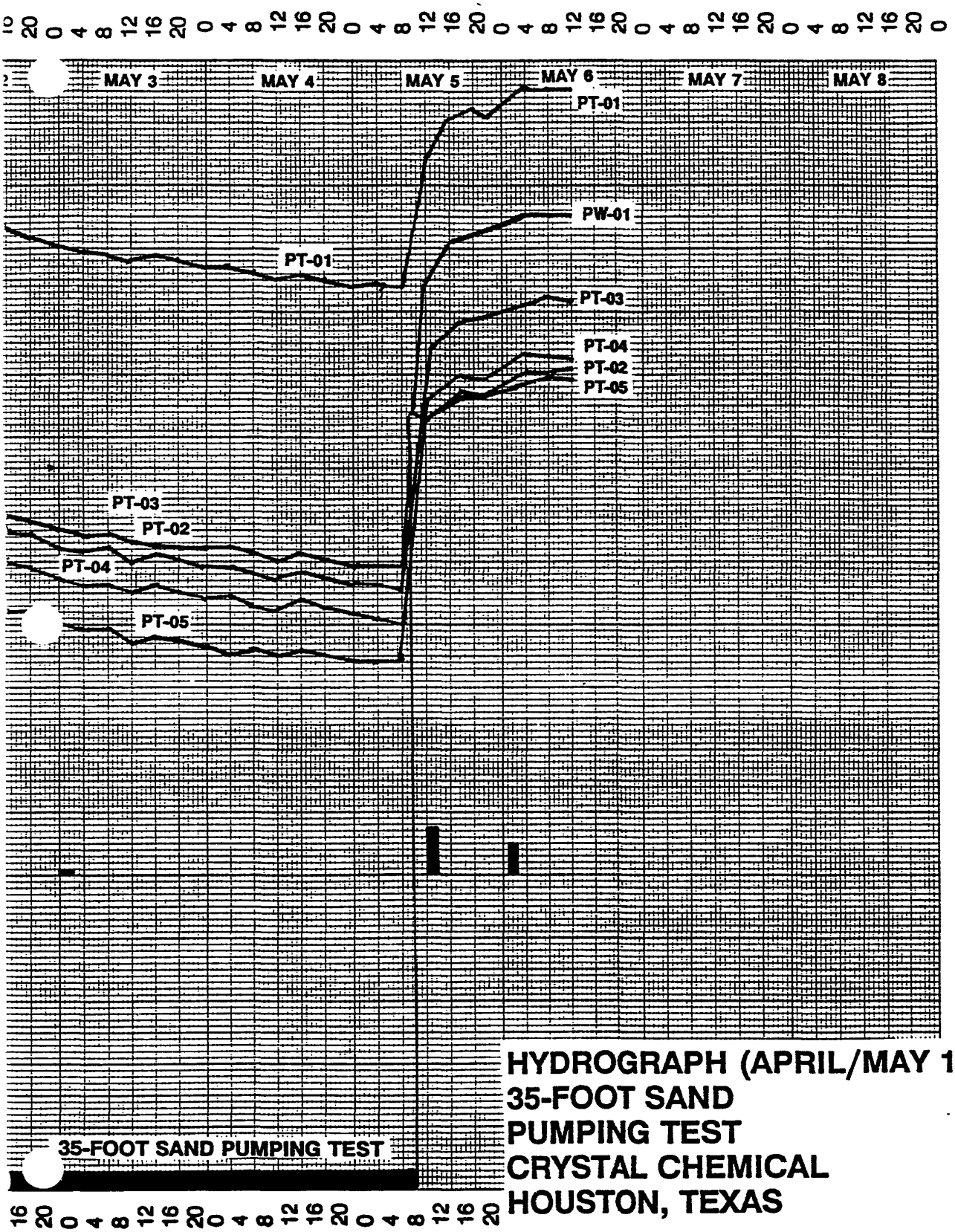


K+E 1 YEAR BY DAYS X 180 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A.

47 2733

008219

008219

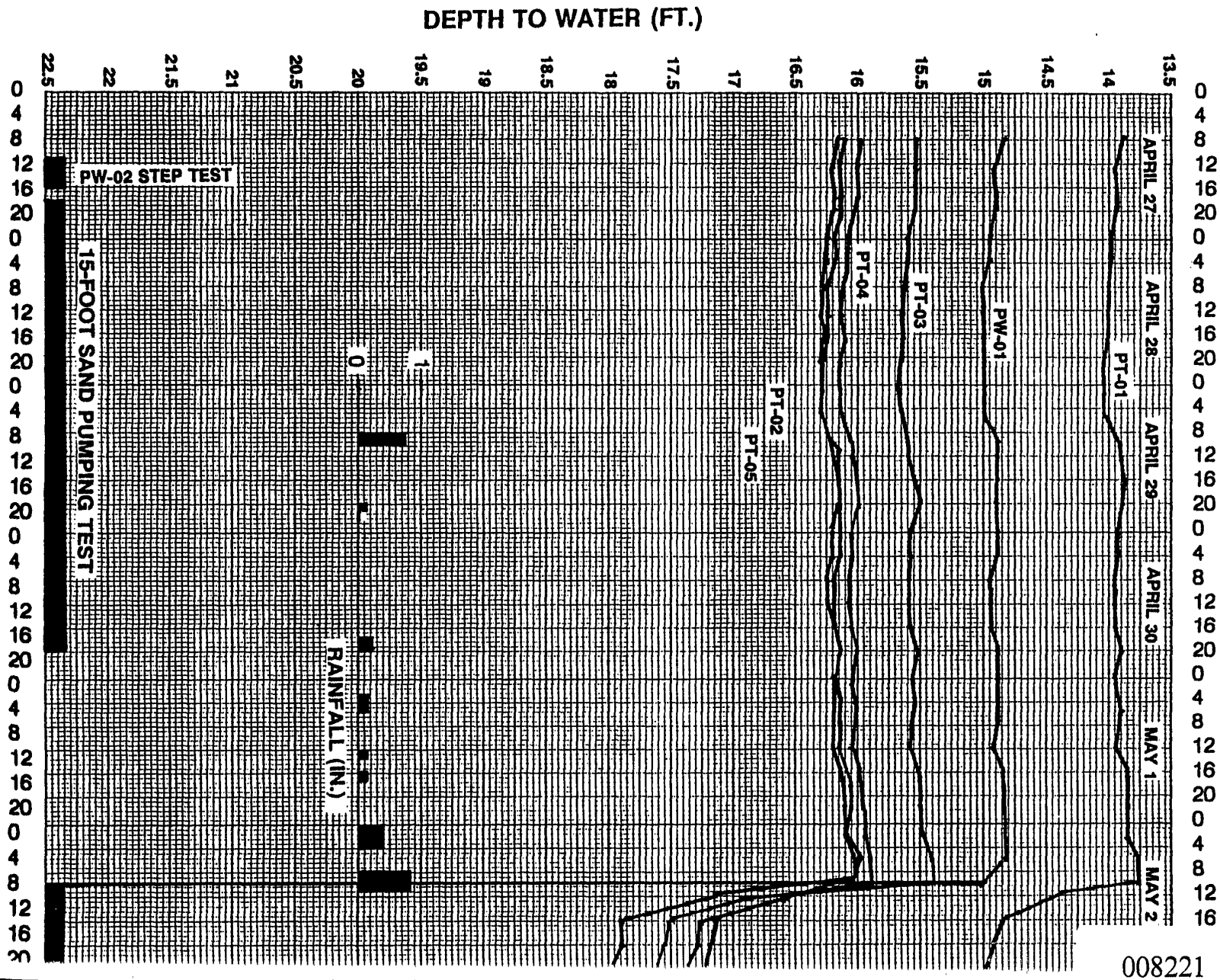


HYDROGRAPH (APRIL/MAY 1993)
35-FOOT SAND
PUMPING TEST
CRYSTAL CHEMICAL
HOUSTON, TEXAS

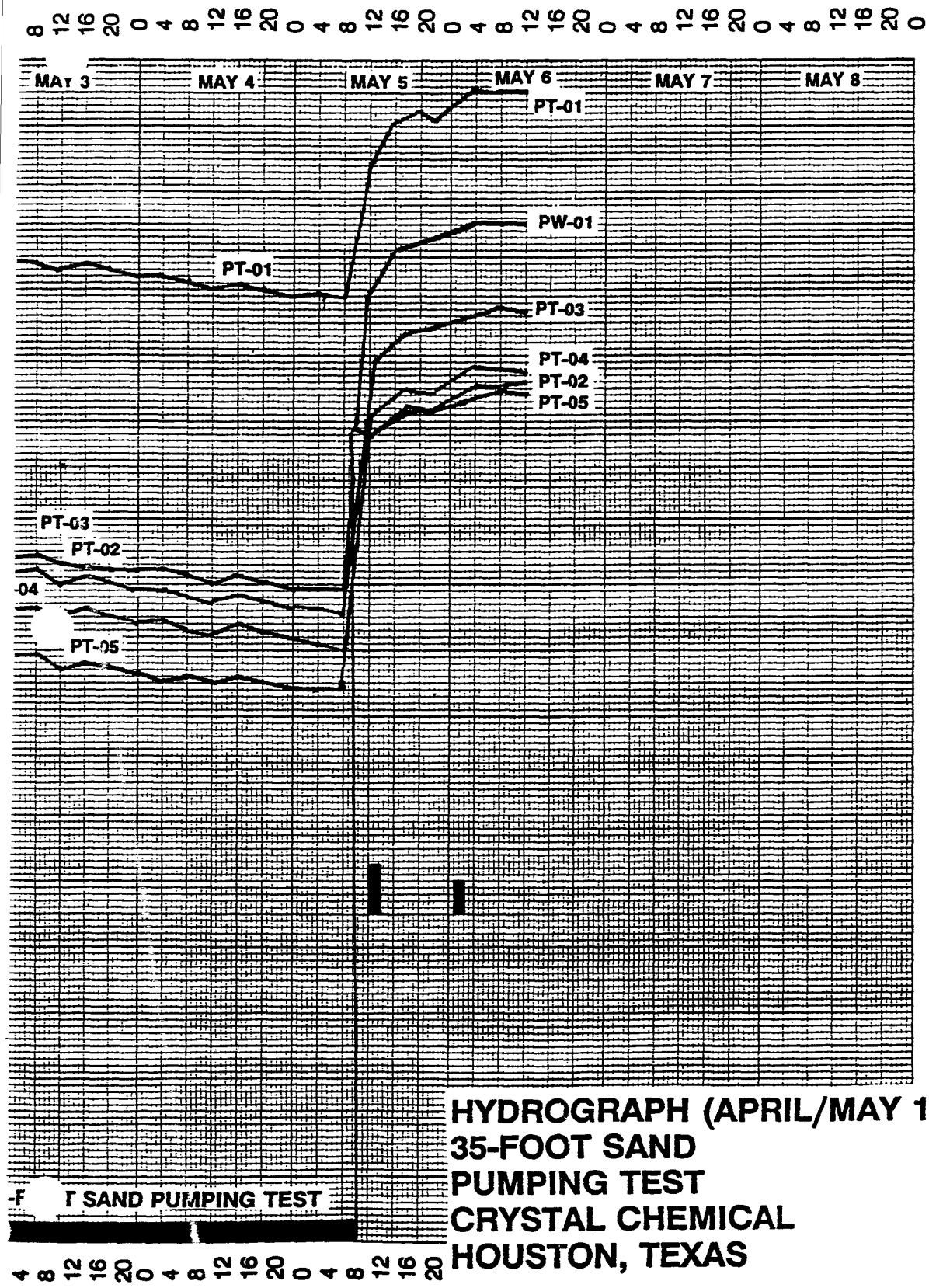
008220

K+E 1 YEAR BY DAYS X 180 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

47 2733

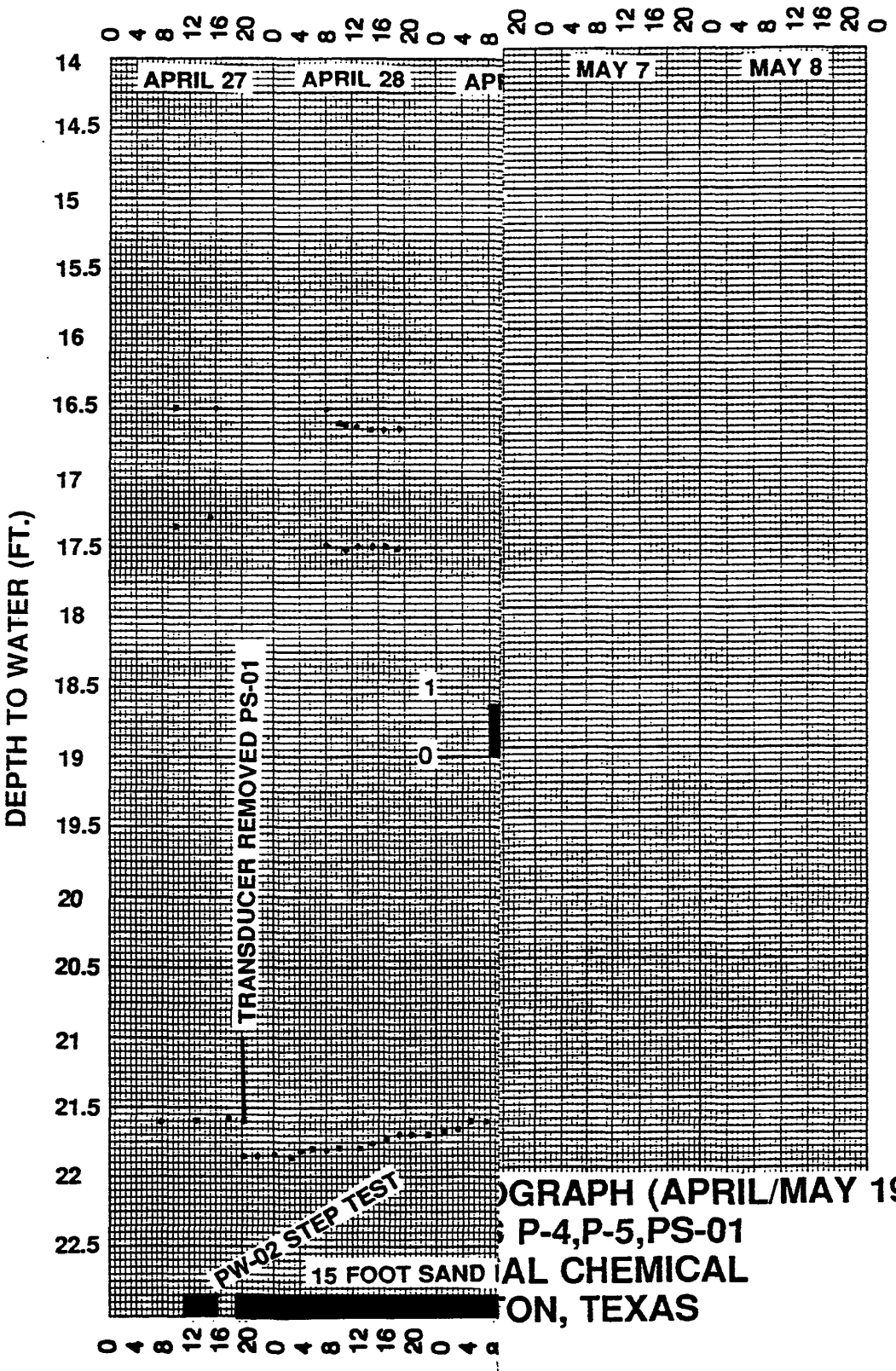


008221



HYDROGRAPH (APRIL/MAY 1993)
35-FOOT SAND
PUMPING TEST
CRYSTAL CHEMICAL
HOUSTON, TEXAS

008222



GRAPH (APRIL/MAY 1993)
P-4,P-5,PS-01
AL CHEMICAL
ON, TEXAS

K+E 1 YEAR BY DAYS X 180 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
47 2733
008223
008223

WELL PW-01

35-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008224

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-26-93	1731.00	17.31	14.81	63.29
04-27-93	740.00	31.40	14.86	63.24
04-27-93	1249.00	36.49	14.92	63.18
04-27-93	1321.00	37.21	14.91	63.19
04-27-93	1406.00	38.06	14.90	63.20
04-27-93	1436.00	38.36	14.91	63.19
04-27-93	1506.00	39.06	14.91	63.19
04-27-93	1740.00	41.40	14.89	63.21
04-27-93	1839.00	42.39	14.90	63.20
04-27-93	1905.00	43.05	14.90	63.20
04-27-93	2005.00	44.05	14.91	63.19
04-27-93	2059.00	44.59	14.94	63.16
04-27-93	2206.00	46.06	14.94	63.16
04-27-93	2305.00	47.05	14.94	63.16
04-28-93	4.00	48.04	14.96	63.14
04-28-93	107.00	49.07	14.96	63.14
04-28-93	226.00	50.26	14.96	63.14
04-28-93	404.00	52.04	14.96	63.14
04-28-93	610.00	54.10	14.96	63.14
04-28-93	808.00	56.08	14.99	63.11
04-28-93	907.00	57.07	14.99	63.11
04-28-93	1007.00	58.07	15.01	63.09
04-28-93	1106.00	59.06	15.01	63.09
04-28-93	1308.00	61.08	15.00	63.10
04-28-93	1509.00	63.09	15.00	63.10
04-28-93	1707.00	65.07	14.99	63.11
04-28-93	1912.00	67.12	15.00	63.10
04-28-93	2103.00	69.03	15.01	63.09
04-28-93	2307.00	71.07	15.02	63.08
04-29-93	103.00	73.03	15.02	63.08
04-29-93	303.00	75.03	15.01	63.09
04-29-93	501.00	77.01	15.01	63.09
04-29-93	653.00	78.53	15.02	63.08
04-29-93	948.00	81.48	14.91	63.19
04-29-93	1216.00	84.16	14.91	63.19
04-29-93	1411.00	86.11	14.87	63.23
04-29-93	1609.00	88.09	14.88	63.22
04-29-93	1805.00	90.05	14.88	63.22
04-29-93	2015.00	92.15	14.89	63.21
04-29-93	2206.00	94.06	14.91	63.19
04-29-93	2400.00	96.00	14.92	63.18
04-30-93	209.00	98.09	14.91	63.19
04-30-93	406.00	100.06	14.91	63.19
04-30-93	606.00	102.06	14.91	63.19
04-30-93	205.00	98.05	14.95	63.15

WELL PW-01

35-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008225

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-30-93	1008.00	106.08	14.95	63.15
04-30-93	1208.00	108.08	14.94	63.16
04-30-93	1408.00	110.08	14.90	63.20
04-30-93	1611.00	112.11	14.92	63.18
04-30-93	1758.00	113.58	14.94	63.16
04-30-93	1827.00	114.27	14.91	63.19
04-30-93	1839.00	114.39	14.91	63.19
04-30-93	1932.00	115.32	14.91	63.19
04-30-93	1955.00	115.55	14.90	63.20
04-30-93	2004.00	116.04	14.88	63.22
04-30-93	2009.00	116.09	14.88	63.22
04-30-93	2023.00	116.23	14.89	63.21
04-30-93	2035.00	116.35	14.89	63.21
04-30-93	2048.00	116.48	14.89	63.21
04-30-93	2210.00	118.10	14.92	63.18
04-30-93	2305.00	119.05	14.94	63.16
05-01-93	2402.00	120.02	14.92	63.18
05-01-93	206.00	122.06	14.91	63.19
05-01-93	406.00	124.06	14.90	63.20
05-01-93	604.00	126.04	14.91	63.19
05-01-93	804.00	128.04	14.91	63.19
05-01-93	1004.00	130.04	14.92	63.18
05-01-93	1210.00	132.10	14.93	63.17
05-01-93	1406.00	134.06	14.85	63.25
05-01-93	1559.00	135.59	14.85	63.25
05-01-93	1802.00	138.02	14.83	63.27
05-01-93	2208.00	142.08	14.84	63.26
05-02-93	200.00	146.00	14.85	63.25
05-02-93	630.00	150.30	14.77	63.33
05-02-93	940.00	153.40	14.75	63.35
05-02-93	948.00	153.48	15.03	63.07
05-02-93	1006.00	154.06	16.00	62.10
05-02-93	1006.75	154.07	17.20	60.90
05-02-93	1007.25	154.07	18.22	59.88
05-02-93	1007.67	154.08	18.97	59.13
05-02-93	1008.15	154.08	19.88	58.22
05-02-93	1008.50	154.09	20.52	57.58
05-02-93	1009.00	154.09	21.22	56.88
05-02-93	1009.50	154.10	21.79	56.31
05-02-93	1010.00	154.10	22.72	55.38
05-02-93	1010.50	154.11	23.30	54.80
05-02-93	1010.50	154.11	24.15	53.95
05-02-93	1011.00	154.11	24.44	53.66
05-02-93	1012.00	154.12	24.66	53.44
05-02-93	1012.50	154.13	24.97	53.13

WELL PW-01

35-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008226

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
05-02-93	1013.00	154.13	25.27	52.83
05-02-93	1013.50	154.14	25.55	52.55
05-02-93	1014.00	154.14	25.73	52.37
05-02-93	1014.50	154.15	25.99	52.11
05-02-93	1015.00	154.15	26.18	51.92
05-02-93	1015.50	154.16	26.36	51.74
05-02-93	1016.00	154.16	26.50	51.60
05-02-93	1018.75	154.19	27.64	50.46
05-02-93	1020.50	154.21	27.93	50.17
05-02-93	1022.00	154.22	28.32	49.78
05-02-93	1024.00	154.24	28.96	49.14
05-02-93	1026.00	154.26	28.90	49.20
05-02-93	1028.00	154.28	28.58	49.52
05-02-93	1030.00	154.30	28.76	49.34
05-02-93	1032.00	154.32	29.00	49.10
05-02-93	1034.00	154.34	28.83	49.27
05-02-93	1036.00	154.36	28.73	49.37
05-02-93	1038.00	154.38	29.23	48.87
05-02-93	1040.00	154.40	28.98	49.12
05-02-93	1042.00	154.42	28.88	49.22
05-02-93	1044.00	154.44	28.86	49.24
05-02-93	1046.00	154.46	28.99	49.11
05-02-93	1048.00	154.48	29.48	48.62
05-02-93	1052.00	154.52	29.60	48.50
05-02-93	1100.00	155.00	29.62	48.48
05-02-93	1107.00	155.07	29.98	48.12
05-02-93	1111.00	155.11	29.73	48.37
05-02-93	1114.00	155.14	29.68	48.42
05-02-93	1119.00	155.19	30.05	48.05
05-02-93	1121.00	155.21	29.90	48.20
05-02-93	1124.00	155.24	29.80	48.30
05-02-93	1127.00	155.27	29.72	48.38
05-02-93	1132.00	155.32	29.72	48.38
05-02-93	1136.00	155.36	30.00	48.10
05-02-93	1140.00	155.40	29.85	48.25
05-02-93	1145.00	155.45	29.70	48.40
05-02-93	1153.00	155.53	29.85	48.25
05-02-93	1204.00	156.04	29.93	48.17
05-02-93	1215.00	156.15	29.80	48.30
05-02-93	1221.00	156.21	35.75	42.35
05-02-93	1229.00	156.29	37.52	40.58
05-02-93	1235.00	156.35	38.33	39.77
05-02-93	1240.00	156.40	38.77	39.33
05-02-93	1245.00	156.45	39.08	39.02
05-02-93	1251.00	156.51	39.06	39.04

WELL PW-01

35-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008227

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
05-02-93	1303.00	157.03	39.37	38.73
05-02-93	1310.00	157.10	38.86	39.24
05-02-93	1323.00	157.23	38.90	39.20
05-02-93	1330.00	157.30	38.70	39.40
05-02-93	1345.00	157.45	38.77	39.33
05-02-93	1400.00	158.00	38.90	39.20
05-02-93	1432.00	158.32	39.30	38.80
05-02-93	1500.00	159.00	39.25	38.85
05-02-93	1533.00	159.33	38.80	39.30
05-02-93	1600.00	160.00	39.29	38.81
05-02-93	1630.00	160.30	38.46	39.64
05-02-93	1659.00	160.59	38.47	39.63
05-02-93	1729.00	161.29	38.27	39.83
05-02-93	1759.00	161.59	38.22	39.88
05-02-93	1830.00	162.30	38.19	39.91
05-02-93	1900.00	163.00	38.53	39.57
05-02-93	2004.00	164.04	38.25	39.85
05-02-93	2157.00	165.57	38.57	39.53
05-02-93	2325.00	167.25	38.55	39.55
05-03-93	225.00	170.25	38.55	39.55
05-03-93	412.00	172.12	38.44	39.66
05-03-93	556.00	173.56	38.54	39.56
05-03-93	653.00	174.53	38.78	39.32
05-03-93	827.00	176.27	38.02	40.08
05-03-93	1006.00	178.06	38.85	39.25
05-03-93	1205.00	180.05	38.54	39.56
05-03-93	1404.00	182.04	37.98	40.12
05-03-93	1602.00	184.02	37.55	40.55
05-03-93	1705.00	185.05	37.94	40.16
05-03-93	1802.00	186.02	37.38	40.72
05-03-93	1804.00	186.04	37.48	40.62
05-03-93	2006.00	188.06	37.47	40.63
05-03-93	2355.00	191.55	36.83	41.27
05-04-93	401.00	196.01	39.20	38.90
05-04-93	715.00	199.15	39.03	39.07
05-04-93	808.00	200.08	38.74	39.36
05-04-93	1030.00	202.30	38.30	39.80
05-04-93	1205.00	204.05	38.45	39.65
05-04-93	1405.00	206.05	38.60	39.50
05-04-93	1604.00	208.04	38.69	39.41
05-04-93	1800.00	210.00	39.08	39.02
05-04-93	1954.00	211.54	38.90	39.20
05-04-93	2350.00	215.50	38.78	39.32
05-04-93	2400.00	216.00	38.73	39.37
05-05-93	351.00	219.51	38.15	39.95

WELL PW-01

35-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008228

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
05-05-93	802.00	224.02	38.25	39.85
05-05-93	946.00	225.46	28.00	50.10
05-05-93	950.00	225.50	20.62	57.48
05-05-93	951.00	225.51	19.91	58.19
05-05-93	952.00	225.52	18.93	59.17
05-05-93	953.00	225.53	18.27	59.83
05-05-93	953.50	225.54	18.03	60.07
05-05-93	954.00	225.54	17.78	60.32
05-05-93	954.50	225.55	17.59	60.51
05-05-93	955.00	225.55	17.46	60.64
05-05-93	955.50	225.56	17.23	60.87
05-05-93	956.00	225.56	17.12	60.98
05-05-93	956.50	225.57	16.94	61.16
05-05-93	957.00	225.57	16.83	61.27
05-05-93	957.50	225.58	16.72	61.38
05-05-93	958.00	225.58	16.61	61.49
05-05-93	958.50	225.59	16.53	61.57
05-05-93	959.00	225.59	16.41	61.69
05-05-93	1000.00	226.00	16.30	61.80
05-05-93	1002.00	226.02	16.08	62.02
05-05-93	1004.00	226.04	15.96	62.14
05-05-93	1008.00	226.08	15.73	62.37
05-05-93	1013.00	226.13	15.68	62.42
05-05-93	1016.00	226.16	15.60	62.50
05-05-93	1020.00	226.20	15.57	62.53
05-05-93	1020.00	226.20	15.51	62.59
05-05-93	1024.00	226.24	15.50	62.60
05-05-93	1027.00	226.27	15.46	62.64
05-05-93	1031.00	226.31	15.45	62.65
05-05-93	1042.00	226.42	15.38	62.72
05-05-93	1049.00	226.49	15.34	62.76
05-05-93	1057.00	226.57	15.34	62.76
05-05-93	1105.00	227.05	15.32	62.78
05-05-93	1112.00	227.12	15.32	62.78
05-05-93	1118.00	227.18	15.30	62.80
05-05-93	1125.00	227.25	15.29	62.81
05-05-93	1130.00	227.30	15.28	62.82
05-05-93	1140.00	227.40	15.27	62.83
05-05-93	1149.00	227.49	15.25	62.85
05-05-93	1200.00	228.00	15.24	62.86
05-05-93	1255.00	228.55	15.13	62.97
05-05-93	1331.00	229.31	15.01	63.09
05-05-93	1358.00	229.58	14.98	63.12
05-05-93	1433.00	230.33	14.97	63.13
05-05-93	1500.00	231.00	14.98	63.12

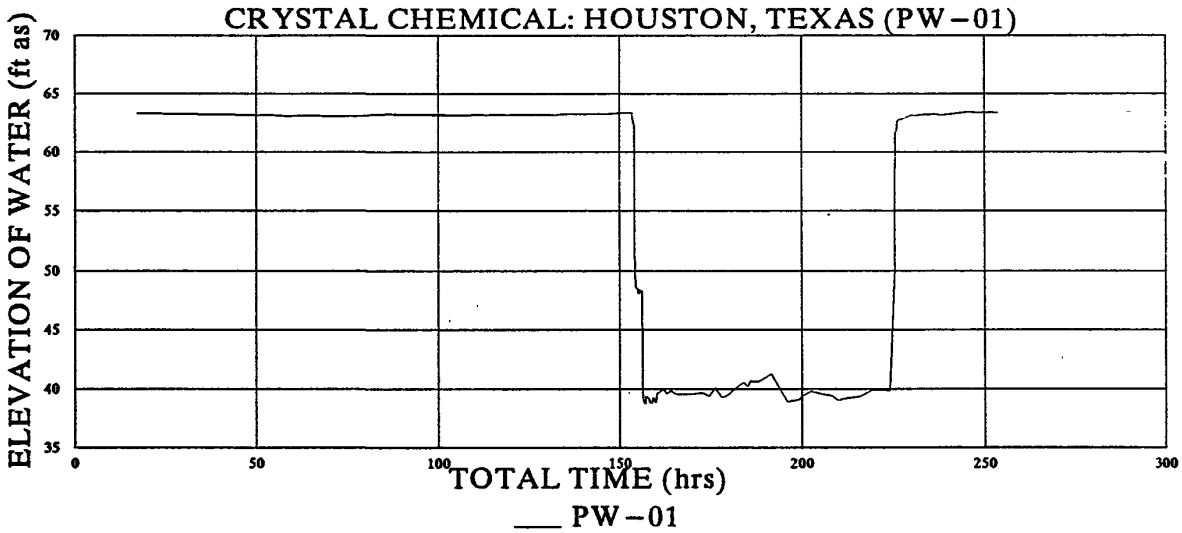
WELL PW-01

35-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008229

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
05-05-93	1600.00	232.00	14.94	63.16
05-05-93	1700.00	233.00	14.92	63.18
05-05-93	1800.00	234.00	14.91	63.19
05-05-93	1900.00	235.00	14.90	63.20
05-05-93	2000.00	236.00	14.87	63.23
05-05-93	2213.00	238.13	14.95	63.15
05-06-93	335.00	243.35	14.74	63.36
05-06-93	556.00	245.56	14.66	63.44
05-06-93	833.00	248.33	14.76	63.34
05-06-93	1000.00	250.00	14.70	63.40
05-06-93	1206.00	252.06	14.71	63.39
05-06-93	1406.00	254.06	14.76	63.34

OBSERVATION WELL PW-01



WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008230

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-26-93	1704.00	17.04	15.36	63.94
04-27-93	745.00	31.45	15.44	63.86
04-27-93	1040.00	34.40	15.44	63.86
04-27-93	1054.00	34.54	16.12	63.18
04-27-93	1055.75	34.56	16.30	63.00
04-27-93	1056.00	34.56	16.28	63.02
04-27-93	1056.25	34.56	16.27	63.03
04-27-93	1056.50	34.57	16.27	63.03
04-27-93	1056.75	34.57	16.27	63.03
04-27-93	1057.00	34.57	16.27	63.03
04-27-93	1057.25	34.57	16.17	63.13
04-27-93	1057.50	34.58	16.18	63.12
04-27-93	1057.75	34.58	16.18	63.12
04-27-93	1058.00	34.58	16.18	63.12
04-27-93	1058.25	34.58	16.19	63.11
04-27-93	1058.50	34.59	16.20	63.10
04-27-93	1059.00	34.59	16.20	63.10
04-27-93	1059.75	34.60	16.18	63.12
04-27-93	1100.00	35.00	16.17	63.13
04-27-93	1100.50	35.01	16.19	63.11
04-27-93	1101.00	35.01	16.17	63.13
04-27-93	1101.50	35.02	16.18	63.12
04-27-93	1102.00	35.02	16.18	63.12
04-27-93	1102.50	35.03	16.18	63.12
04-27-93	1103.00	35.03	16.19	63.11
04-27-93	1103.50	35.04	16.20	63.10
04-27-93	1104.00	35.04	16.20	63.10
04-27-93	1104.50	35.05	16.18	63.12
04-27-93	1105.00	35.05	16.20	63.10
04-27-93	1106.00	35.06	16.20	63.10
04-27-93	1107.00	35.07	16.22	63.08
04-27-93	1109.00	35.09	16.23	63.07
04-27-93	1111.00	35.11	16.30	63.00
04-27-93	1113.00	35.13	16.26	63.04
04-27-93	1114.00	35.14	16.25	63.05
04-27-93	1116.00	35.16	16.27	63.03
04-27-93	1118.00	35.18	16.37	62.93
04-27-93	1119.50	35.20	16.27	63.03
04-27-93	1122.00	35.22	16.30	63.00
04-27-93	1124.00	35.24	16.28	63.02
04-27-93	1127.00	35.27	16.30	63.00
04-27-93	1129.00	35.29	16.29	63.01
04-27-93	1132.00	35.32	16.30	63.00
04-27-93	1137.00	35.37	16.50	62.80
04-27-93	1140.00	35.40	16.35	62.95

WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-27-93	1144.00	35.44	16.34	62.96
04-27-93	1147.00	35.47	16.35	62.95
04-27-93	1151.00	35.51	16.34	62.96
04-27-93	1154.00	35.54	16.35	62.95
04-27-93	1155.00	35.55	16.38	62.92
04-27-93	1156.00	35.56	16.60	62.70
04-27-93	1157.00	35.57	16.70	62.60
04-27-93	1158.00	35.58	16.81	62.49
04-27-93	1159.00	35.59	16.84	62.46
04-27-93	1200.00	36.00	16.77	62.53
04-27-93	1201.00	36.01	16.75	62.55
04-27-93	1202.00	36.02	16.75	62.55
04-27-93	1204.00	36.04	16.75	62.55
04-27-93	1206.00	36.06	16.76	62.54
04-27-93	1212.00	36.12	16.78	62.52
04-27-93	1217.00	36.17	16.78	62.52
04-27-93	1222.00	36.22	16.79	62.51
04-27-93	1226.00	36.26	16.80	62.50
04-27-93	1230.00	36.30	16.82	62.48
04-27-93	1236.00	36.36	16.81	62.49
04-27-93	1240.00	36.40	16.81	62.49
04-27-93	1245.00	36.45	16.81	62.49
04-27-93	1250.00	36.50	16.82	62.48
04-27-93	1254.00	36.54	16.81	62.49
04-27-93	1257.00	36.57	17.47	61.83
04-27-93	1258.00	36.58	17.47	61.83
04-27-93	1300.00	37.00	17.47	61.83
04-27-93	1302.00	37.02	17.49	61.81
04-27-93	1304.00	37.04	17.51	61.79
04-27-93	1306.00	37.06	17.50	61.80
04-27-93	1308.00	37.08	17.52	61.78
04-27-93	1310.00	37.10	17.53	61.77
04-27-93	1320.00	37.20	17.53	61.77
04-27-93	1329.00	37.29	17.57	61.73
04-27-93	1333.00	37.33	18.81	60.49
04-27-93	1335.00	37.35	18.37	60.93
04-27-93	1337.00	37.37	18.40	60.90
04-27-93	1340.00	37.40	18.46	60.84
04-27-93	1345.00	37.45	18.50	60.80
04-27-93	1350.00	37.50	18.53	60.77
04-27-93	1355.00	37.55	18.57	60.73
04-27-93	1400.00	38.00	18.57	60.73
04-27-93	1411.00	38.11	18.61	60.69
04-27-93	1420.00	38.20	18.65	60.65
04-27-93	1430.00	38.30	18.71	60.59

008231

008231

WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008232

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-27-93	1440.00	38.40	18.68	60.62
04-27-93	1441.00	38.41	18.70	60.60
04-27-93	1450.00	38.50	18.72	60.58
04-27-93	1500.00	39.00	18.73	60.57
04-27-93	1510.00	39.10	18.76	60.54
04-27-93	1515.00	39.15	16.56	62.74
04-27-93	1516.00	39.16	16.00	63.30
04-27-93	1518.00	39.18	15.98	63.32
04-27-93	1519.00	39.19	15.97	63.33
04-27-93	1522.00	39.22	15.93	63.37
04-27-93	1524.00	39.24	15.90	63.40
04-27-93	1527.00	39.27	15.87	63.43
04-27-93	1733.00	41.33	15.54	63.76
04-27-93	1800.15	42.00	17.10	62.20
04-27-93	1800.50	42.01	17.40	61.90
04-27-93	1800.75	42.01	17.57	61.73
04-27-93	1801.00	42.01	17.71	61.59
04-27-93	1801.25	42.01	17.88	61.42
04-27-93	1801.50	42.02	18.00	61.30
04-27-93	1801.75	42.02	18.06	61.24
04-27-93	1802.00	42.02	18.12	61.18
04-27-93	1802.25	42.02	18.16	61.14
04-27-93	1802.50	42.03	18.18	61.12
04-27-93	1802.75	42.03	18.18	61.12
04-27-93	1803.00	42.03	18.18	61.12
04-27-93	1803.25	42.03	18.21	61.09
04-27-93	1803.50	42.04	18.20	61.10
04-27-93	1803.75	42.04	18.22	61.08
04-27-93	1804.00	42.04	18.22	61.08
04-27-93	1804.25	42.04	18.24	61.06
04-27-93	1804.50	42.05	18.26	61.04
04-27-93	1804.75	42.05	18.27	61.03
04-27-93	1805.00	42.05	18.27	61.03
04-27-93	1805.25	42.05	18.28	61.02
04-27-93	1805.50	42.06	18.30	61.00
04-27-93	1805.75	42.06	18.32	60.98
04-27-93	1806.00	42.06	18.28	61.02
04-27-93	1806.50	42.07	18.40	60.90
04-27-93	1807.00	42.07	18.46	60.84
04-27-93	1807.25	42.07	18.44	60.86
04-27-93	1807.75	42.08	18.39	60.91
04-27-93	1808.25	42.08	18.39	60.91
04-27-93	1808.75	42.09	18.38	60.92
04-27-93	1809.25	42.09	18.41	60.89
04-27-93	1809.75	42.10	18.42	60.88

WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008233

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-27-93	1810.75	42.11	18.43	60.87
04-27-93	1811.75	42.12	18.46	60.84
04-27-93	1812.75	42.13	18.47	60.83
04-27-93	1813.75	42.14	18.48	60.82
04-27-93	1814.75	42.15	18.50	60.80
04-27-93	1815.75	42.16	18.53	60.77
04-27-93	1816.75	42.17	18.52	60.78
04-27-93	1817.75	42.18	18.53	60.77
04-27-93	1818.75	42.19	18.54	60.76
04-27-93	1819.75	42.20	18.54	60.76
04-27-93	1820.75	42.21	18.56	60.74
04-27-93	1822.75	42.23	18.68	60.62
04-27-93	1824.75	42.25	18.60	60.70
04-27-93	1826.75	42.27	18.59	60.71
04-27-93	1828.75	42.29	18.61	60.69
04-27-93	1830.75	42.31	18.64	60.66
04-27-93	1832.75	42.33	18.68	60.62
04-27-93	1834.75	42.35	18.67	60.63
04-27-93	1836.75	42.37	18.65	60.65
04-27-93	1838.75	42.39	18.68	60.62
04-27-93	1840.75	42.41	18.70	60.60
04-27-93	1843.75	42.44	18.73	60.57
04-27-93	1846.75	42.47	18.73	60.57
04-27-93	1849.75	42.50	18.75	60.55
04-27-93	1852.00	42.52	18.76	60.54
04-27-93	1911.00	43.11	18.84	60.46
04-27-93	2011.00	44.11	18.99	60.31
04-27-93	2103.00	45.03	19.09	60.21
04-27-93	2212.00	46.12	19.18	60.12
04-27-93	2311.00	47.11	19.23	60.07
04-28-93	10.00	48.10	19.27	60.03
04-28-93	111.00	49.11	19.22	60.08
04-28-93	230.00	50.30	19.24	60.06
04-28-93	408.00	52.08	19.28	60.02
04-28-93	615.00	54.15	19.34	59.96
04-28-93	800.00	56.00	19.42	59.88
04-28-93	900.00	57.00	19.47	59.83
04-28-93	1000.00	58.00	19.50	59.80
04-28-93	1100.00	59.00	19.62	59.68
04-28-93	1300.00	61.00	19.64	59.66
04-28-93	1500.00	63.00	19.63	59.67
04-28-93	1700.00	65.00	19.77	59.53
04-28-93	1701.00	65.01	19.77	59.53
04-28-93	1720.00	65.20	19.70	59.60
04-28-93	1800.00	66.00	19.72	59.58

WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-28-93	1917.00	67.17	19.75	59.55
04-28-93	2106.00	69.06	19.84	59.46
04-28-93	2310.00	71.10	19.91	59.39
04-29-93	112.00	73.12	19.90	59.40
04-29-93	313.00	75.13	19.94	59.36
04-29-93	509.00	77.09	20.01	59.29
04-29-93	658.00	78.58	20.07	59.23
04-29-93	915.00	81.15	20.11	59.19
04-29-93	1200.00	84.00	20.20	59.10
04-29-93	1400.00	86.00	20.15	59.15
04-29-93	1600.00	88.00	20.27	59.03
04-29-93	1800.00	90.00	20.25	59.05
04-29-93	2000.00	92.00	20.22	59.08
04-29-93	2200.00	94.00	20.34	58.96
04-29-93	2354.00	95.54	20.32	58.98
04-30-93	159.00	97.59	20.33	58.97
04-30-93	400.00	100.00	20.35	58.95
04-30-93	557.00	101.57	20.35	58.95
04-30-93	800.00	104.00	20.42	58.88
04-30-93	1000.00	106.00	20.45	58.85
04-30-93	1200.00	108.00	20.62	58.68
04-30-93	1220.00	108.20	20.42	58.88
04-30-93	1400.00	110.00	20.37	58.93
04-30-93	1415.00	110.15	20.37	58.93
04-30-93	1600.00	112.00	20.53	58.77
04-30-93	1750.00	113.50	20.42	58.88
04-30-93	1808.50	114.09	17.13	62.17
04-30-93	1810.00	114.10	16.67	62.63
04-30-93	1810.50	114.11	16.98	62.32
04-30-93	1811.00	114.11	17.00	62.30
04-30-93	1811.50	114.12	16.98	62.32
04-30-93	1812.75	114.13	16.90	62.40
04-30-93	1815.25	114.15	16.88	62.42
04-30-93	1818.50	114.19	16.80	62.50
04-30-93	1821.00	114.21	16.80	62.50
04-30-93	1822.00	114.22	16.78	62.52
04-30-93	1829.00	114.29	16.72	62.58
04-30-93	1832.00	114.32	16.69	62.61
04-30-93	1835.00	114.35	16.68	62.62
04-30-93	1838.00	114.38	16.66	62.64
04-30-93	1841.00	114.41	16.64	62.66
04-30-93	1844.00	114.44	16.64	62.66
04-30-93	1900.00	115.00	16.53	62.77
04-30-93	1933.00	115.33	16.51	62.79
04-30-93	1957.00	115.57	16.39	62.91

008234

008234

WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008235

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
04-30-93	2012.00	116.12	16.37	62.93
04-30-93	2024.00	116.24	16.35	62.95
04-30-93	2037.00	116.37	16.33	62.97
04-30-93	2049.00	116.49	16.32	62.98
04-30-93	2211.00	118.11	16.25	63.05
04-30-93	2306.00	119.06	16.23	63.07
05-01-93	4.00	120.04	16.18	63.12
05-01-93	210.00	122.10	16.11	63.19
05-01-93	409.00	124.09	16.05	63.25
05-01-93	607.00	126.07	16.04	63.26
05-01-93	808.00	128.08	15.99	63.31
05-01-93	1007.00	130.07	15.96	63.34
05-01-93	1210.00	132.10	15.92	63.38
05-01-93	1407.00	134.07	15.89	63.41
05-01-93	1600.00	136.00	15.88	63.42
05-01-93	1803.00	138.03	15.82	63.48
05-01-93	2207.00	142.07	15.79	63.51
05-02-93	200.00	146.00	15.76	63.54
05-02-93	634.00	150.34	15.73	63.57
05-02-93	1119.00	155.19	15.70	63.60
05-02-93	1206.00	156.06	15.73	63.57
05-02-93	1305.00	157.05	15.75	63.55
05-02-93	1405.00	158.05	15.74	63.56
05-02-93	1504.00	159.04	15.72	63.58
05-02-93	1605.00	160.05	15.70	63.60
05-02-93	1659.00	160.59	15.70	63.60
05-02-93	1805.00	162.05	15.70	63.60
05-02-93	1905.00	163.05	15.68	63.62
05-02-93	2005.00	164.05	15.69	63.61
05-02-93	2207.00	166.07	15.70	63.60
05-02-93	2356.00	167.56	15.70	63.60
05-03-93	220.00	170.20	15.70	63.60
05-03-93	409.00	172.09	15.68	63.62
05-03-93	608.00	174.08	15.67	63.63
05-03-93	830.00	176.30	15.72	63.58
05-03-93	1009.00	178.09	15.71	63.59
05-03-93	1227.00	180.27	15.70	63.60
05-03-93	1408.00	182.08	15.64	63.66
05-03-93	1605.00	184.05	15.64	63.66
05-03-93	1805.00	186.05	15.63	63.67
05-03-93	2008.00	188.08	15.64	63.66
05-03-93	2357.00	191.57	15.67	63.63
05-04-93	409.00	196.09	15.65	63.65
05-04-93	813.00	200.13	15.68	63.62
05-04-93	1208.00	204.08	15.69	63.61

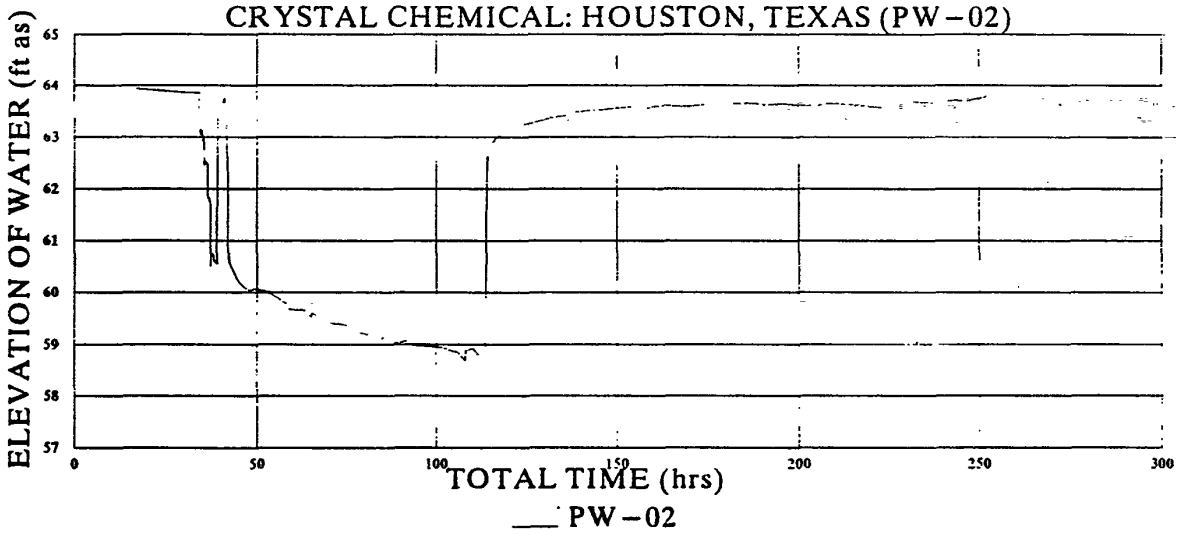
WELL PW-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008236

Date	Time M.W1	Time w1	DTW (ft)	EOW (ft as)
05-04-93	1605.00	208.05	15.64	63.66
05-04-93	1857.00	210.57	15.65	63.65
05-05-93	6.00	216.06	15.68	63.62
05-05-93	405.00	220.05	15.70	63.60
05-05-93	817.00	224.17	15.73	63.57
05-05-93	1005.00	226.05	15.69	63.61
05-05-93	1256.00	228.56	15.71	63.59
05-05-93	1338.00	229.38	15.73	63.57
05-05-93	1508.00	231.08	15.62	63.68
05-05-93	1604.00	232.04	15.61	63.69
05-05-93	2215.00	238.15	15.63	63.67
05-06-93	338.00	243.38	15.58	63.72
05-06-93	630.00	246.30	15.60	63.70
05-06-93	837.00	248.37	15.57	63.73
05-06-93	1215.00	252.15	15.51	63.79
05-06-93	1412.00	254.12	15.57	63.73

OBSERVATON WELL PW-02



WELL PT-01

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1734.00	17.34	13.86	62.64
04-27-93	737.00	31.37	13.88	62.62
04-27-93	1245.00	36.45	13.94	62.56
04-27-93	1317.00	37.17	13.94	62.56
04-27-93	1403.00	38.03	13.94	62.56
04-27-93	1433.00	38.33	13.94	62.56
04-27-93	1602.00	40.02	13.94	62.56
04-27-93	1736.00	41.36	13.93	62.57
04-27-93	1838.00	42.38	13.94	62.56
04-27-93	1903.00	43.03	13.94	62.56
04-27-93	2005.00	44.05	13.95	62.55
04-27-93	2058.00	44.58	13.97	62.53
04-27-93	2205.00	46.05	13.98	62.52
04-27-93	2305.00	47.05	13.98	62.52
04-28-93	3.00	48.03	13.98	62.52
04-28-93	106.00	49.06	14.00	62.50
04-28-93	225.00	50.25	13.99	62.51
04-28-93	403.00	52.03	13.99	62.51
04-28-93	610.00	54.10	13.99	62.51
04-28-93	807.00	56.07	14.02	62.48
04-28-93	906.00	57.06	14.02	62.48
04-28-93	1006.00	58.06	14.04	62.46
04-28-93	1106.00	59.06	14.03	62.47
04-28-93	1306.00	61.06	14.03	62.47
04-28-93	1506.00	63.06	14.03	62.47
04-28-93	1704.00	65.04	14.03	62.47
04-28-93	1910.00	67.10	14.03	62.47
04-28-93	2100.00	69.00	14.04	62.46
04-28-93	2303.00	71.03	14.05	62.45
04-29-93	102.00	73.02	14.05	62.45
04-29-93	302.00	75.02	14.04	62.46
04-29-93	500.00	77.00	14.04	62.46
04-29-93	652.00	78.52	14.05	62.45
04-29-93	948.00	81.48	13.91	62.59
04-29-93	1212.00	84.12	13.91	62.59
04-29-93	1408.00	86.08	13.88	62.62
04-29-93	1606.00	88.06	13.87	62.63
04-29-93	1803.00	90.03	13.89	62.61
04-29-93	2006.00	92.06	13.90	62.60
04-29-93	2204.00	94.04	13.93	62.57
04-29-93	2356.00	95.56	13.93	62.57
04-30-93	201.00	98.01	13.93	62.57
04-30-93	403.00	100.03	13.93	62.57
04-30-93	603.00	102.03	13.94	62.56
04-30-93	811.00	104.11	13.97	62.53

008237

008237

WELL PT-01

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008238

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-30-93	1007.00	106.07	13.96	62.54
04-30-93	1208.00	108.08	13.96	62.54
04-30-93	1405.00	110.05	13.92	62.58
04-30-93	1608.00	112.08	13.94	62.56
04-30-93	1756.00	113.56	13.97	62.53
04-30-93	1905.00	115.05	13.95	62.55
04-30-93	1930.00	115.30	13.92	62.58
04-30-93	1948.00	115.48	13.90	62.60
04-30-93	2003.00	116.03	13.90	62.60
04-30-93	2021.00	116.21	13.90	62.60
04-30-93	2032.00	116.32	13.90	62.60
04-30-93	2046.00	116.46	13.90	62.60
04-30-93	2207.00	118.07	13.95	62.55
04-30-93	2302.00	119.02	13.95	62.55
05-01-93	2.00	120.02	13.94	62.56
05-01-93	204.00	122.04	13.94	62.56
05-01-93	405.00	124.05	13.91	62.59
05-01-93	603.00	126.03	13.92	62.58
05-01-93	803.00	128.03	13.93	62.57
05-01-93	1003.00	130.03	13.98	62.52
05-01-93	1207.00	132.07	13.95	62.55
05-01-93	1403.00	134.03	13.90	62.60
05-01-93	1557.00	135.57	13.85	62.65
05-01-93	1758.00	137.58	13.83	62.67
05-01-93	2202.00	142.02	13.84	62.66
05-02-93	200.00	146.00	13.85	62.65
05-02-93	630.00	150.30	13.77	62.73
05-02-93	1006.00	154.06	13.77	62.73
05-02-93	1006.50	154.07	13.75	62.75
05-02-93	1007.00	154.07	13.74	62.76
05-02-93	1007.50	154.08	13.74	62.76
05-02-93	1008.00	154.08	13.74	62.76
05-02-93	1008.50	154.09	13.76	62.74
05-02-93	1009.00	154.09	13.78	62.72
05-02-93	1009.50	154.10	13.74	62.76
05-02-93	1010.00	154.10	13.80	62.70
05-02-93	1010.50	154.11	13.81	62.69
05-02-93	1011.00	154.11	13.83	62.67
05-02-93	1012.00	154.12	13.87	62.63
05-02-93	1012.50	154.13	13.88	62.62
05-02-93	1013.00	154.13	13.90	62.60
05-02-93	1013.50	154.14	13.92	62.58
05-02-93	1014.00	154.14	13.93	62.57
05-02-93	1014.50	154.15	13.94	62.56
05-02-93	1015.00	154.15	13.95	62.55

WELL PT-01

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008239

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1015.50	154.16	13.96	62.54
05-02-93	1016.00	154.16	13.97	62.53
05-02-93	1019.50	154.20	14.11	62.39
05-02-93	1020.25	154.20	14.20	62.30
05-02-93	1053.00	154.53	14.31	62.19
05-02-93	1118.00	155.18	14.31	62.19
05-02-93	1123.00	155.23	14.35	62.15
05-02-93	1128.00	155.28	14.36	62.14
05-02-93	1132.00	155.32	14.33	62.17
05-02-93	1137.00	155.37	14.39	62.11
05-02-93	1141.00	155.41	14.41	62.09
05-02-93	1146.00	155.46	14.39	62.11
05-02-93	1154.00	155.54	14.40	62.10
05-02-93	1203.00	156.03	14.41	62.09
05-02-93	1214.00	156.14	14.40	62.10
05-02-93	1222.00	156.22	14.43	62.07
05-02-93	1230.00	156.30	14.55	61.95
05-02-93	1240.00	156.40	14.62	61.88
05-02-93	1252.00	156.52	14.71	61.79
05-02-93	1300.00	157.00	14.72	61.78
05-02-93	1322.00	157.22	14.77	61.73
05-02-93	1400.00	158.00	14.80	61.70
05-02-93	1438.00	158.38	14.82	61.68
05-02-93	1500.00	159.00	14.80	61.70
05-02-93	1535.00	159.35	14.85	61.65
05-02-93	1600.00	160.00	14.85	61.65
05-02-93	1632.00	160.32	14.88	61.62
05-02-93	1654.00	160.54	14.85	61.65
05-02-93	1731.00	161.31	14.88	61.62
05-02-93	1800.00	162.00	14.90	61.60
05-02-93	1832.00	162.32	14.91	61.59
05-02-93	1900.00	163.00	14.90	61.60
05-02-93	2000.00	164.00	14.93	61.57
05-02-93	2159.00	165.59	14.98	61.52
05-02-93	2352.00	167.52	15.00	61.50
05-03-93	212.00	170.12	15.03	61.47
05-03-93	402.00	172.02	15.03	61.47
05-03-93	602.00	174.02	15.06	61.44
05-03-93	826.00	176.26	15.04	61.46
05-03-93	1005.00	178.05	15.11	61.39
05-03-93	1212.00	180.12	15.12	61.38
05-03-93	1405.00	182.05	15.08	61.42
05-03-93	1602.00	184.02	15.07	61.43
05-03-93	1801.00	186.01	15.08	61.42
05-03-93	2004.00	188.04	15.12	61.38

WELL PT-01

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008240

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-03-93	2353.00	191.53	15.15	61.35
05-04-93	359.00	195.59	15.15	61.35
05-04-93	807.00	200.07	15.21	61.29
05-04-93	1204.00	204.04	15.24	61.26
05-04-93	1601.00	208.01	15.20	61.30
05-04-93	1953.00	211.53	15.25	61.25
05-04-93	2359.00	215.59	15.29	61.21
05-05-93	358.00	219.58	15.30	61.20
05-05-93	810.00	224.10	15.32	61.18
05-05-93	946.00	225.46	15.32	61.18
05-05-93	948.00	225.48	15.14	61.36
05-05-93	950.00	225.50	15.10	61.40
05-05-93	951.00	225.51	15.07	61.43
05-05-93	952.00	225.52	15.02	61.48
05-05-93	953.00	225.53	14.98	61.52
05-05-93	954.00	225.54	14.95	61.55
05-05-93	955.00	225.55	14.92	61.58
05-05-93	956.00	225.56	14.90	61.60
05-05-93	957.00	225.57	14.86	61.64
05-05-93	958.00	225.58	14.84	61.66
05-05-93	959.00	225.59	14.82	61.68
05-05-93	1000.00	226.00	14.80	61.70
05-05-93	1001.00	226.01	14.78	61.72
05-05-93	1003.00	226.03	14.75	61.75
05-05-93	1005.00	226.05	14.71	61.79
05-05-93	1007.00	226.07	14.58	61.92
05-05-93	1009.00	226.09	14.66	61.84
05-05-93	1011.00	226.11	14.63	61.87
05-05-93	1014.00	226.14	14.60	61.90
05-05-93	1017.00	226.17	14.58	61.92
05-05-93	1020.00	226.20	14.45	62.05
05-05-93	1023.00	226.23	14.43	62.07
05-05-93	1026.00	226.26	14.52	61.98
05-05-93	1029.00	226.29	14.50	62.00
05-05-93	1032.00	226.32	14.49	62.01
05-05-93	1048.00	226.48	14.42	62.08
05-05-93	1057.00	226.57	14.38	62.12
05-05-93	1105.00	227.05	14.38	62.12
05-05-93	1113.00	227.13	14.35	62.15
05-05-93	1119.00	227.19	14.35	62.15
05-05-93	1124.00	227.24	14.33	62.17
05-05-93	1131.00	227.31	14.32	62.18
05-05-93	1141.00	227.41	14.31	62.19
05-05-93	1150.00	227.50	14.31	62.19
05-05-93	1201.00	228.01	14.28	62.22

WELL PT-01

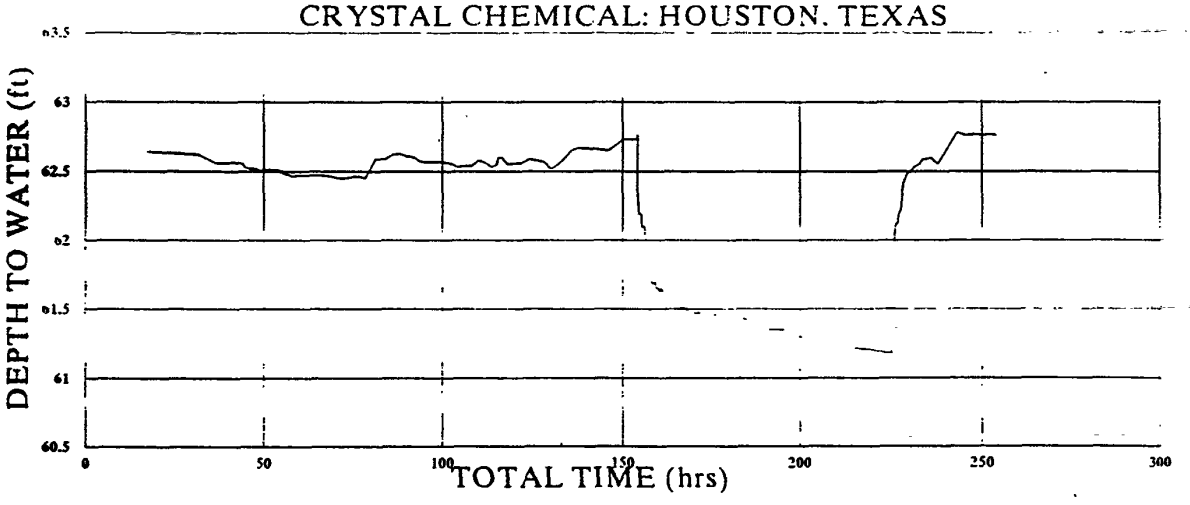
35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008241

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-05-93	1253.00	228.53	14.10	62.40
05-05-93	1330.00	229.30	14.04	62.46
05-05-93	1400.00	230.00	14.00	62.50
05-05-93	1433.00	230.33	14.01	62.49
05-05-93	1503.00	231.03	13.99	62.51
05-05-93	1558.00	231.58	13.97	62.53
05-05-93	1700.00	233.00	13.95	62.55
05-05-93	1800.00	234.00	13.91	62.59
05-05-93	1900.00	235.00	13.91	62.59
05-05-93	2000.00	236.00	13.90	62.60
05-05-93	2200.00	238.00	13.95	62.55
05-06-93	330.00	243.30	13.72	62.78
05-06-93	555.00	245.55	13.74	62.76
05-06-93	832.00	248.32	13.73	62.77
05-06-93	1000.00	250.00	13.74	62.76
05-06-93	1213.00	252.13	13.73	62.77
05-06-93	1405.00	254.05	13.74	62.76

OBSERVATION WELL PT-01

CRYSTAL CHEMICAL: HOUSTON, TEXAS



PT-01

WELL PT-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

Date	Time M.P2	Time P2	DTW (ft)	EOW (ft as)
04-26-93	1658.00	16.58	16.07	62.73
04-27-93	735.00	31.35	16.10	62.70
04-27-93	1246.00	36.46	16.16	62.64
04-27-93	1318.00	37.18	16.16	62.64
04-27-93	1404.00	38.04	16.15	62.65
04-27-93	1434.00	38.34	16.15	62.65
04-27-93	1503.00	39.03	16.15	62.65
04-27-93	1737.00	41.37	16.14	62.66
04-27-93	1800.50	42.01	16.14	62.66
04-27-93	1801.50	42.02	16.14	62.66
04-27-93	1809.50	42.10	16.14	62.66
04-27-93	1822.00	42.22	16.14	62.66
04-27-93	1845.00	42.45	16.15	62.65
04-27-93	1901.00	43.01	16.15	62.65
04-27-93	2001.00	44.01	16.15	62.65
04-27-93	2056.00	44.56	16.18	62.62
04-27-93	2201.00	46.01	16.19	62.61
04-27-93	2302.00	47.02	16.20	62.60
04-28-93	0.00	48.00	16.21	62.59
04-28-93	102.00	49.02	16.21	62.59
04-28-93	222.00	50.22	16.21	62.59
04-28-93	400.00	52.00	16.21	62.59
04-28-93	607.00	54.07	16.21	62.59
04-28-93	805.00	56.05	16.24	62.56
04-28-93	903.00	57.03	16.24	62.56
04-28-93	1003.00	58.03	16.25	62.55
04-28-93	1103.00	59.03	16.25	62.55
04-28-93	1304.00	61.04	16.26	62.54
04-28-93	1504.00	63.04	16.25	62.55
04-28-93	1703.00	65.03	16.24	62.56
04-28-93	1908.00	67.08	16.25	62.55
04-28-93	2058.00	68.58	16.27	62.53
04-28-93	2301.00	71.01	16.27	62.53
04-29-93	59.00	72.59	16.27	62.53
04-29-93	259.00	74.59	16.26	62.54
04-29-93	455.00	76.55	16.27	62.53
04-29-93	648.00	78.48	16.27	62.53
04-29-93	944.00	81.44	16.22	62.58
04-29-93	1209.00	84.09	16.17	62.63
04-29-93	1406.00	86.06	16.12	62.68
04-29-93	1604.00	88.04	16.14	62.66
04-29-93	1800.00	90.00	16.13	62.67
04-29-93	2201.00	94.01	16.17	62.63
04-29-93	2355.00	95.55	16.17	62.63
04-30-93	159.00	97.59	16.18	62.62

008242

008242

WELL PT-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

008243

Date	Time M.P2	Time P2	DTW (ft)	EOW (ft as)
04-30-93	400.00	100.00	16.17	62.63
04-30-93	600.00	102.00	16.18	62.62
04-30-93	807.00	104.07	16.20	62.60
04-30-93	1003.00	106.03	16.20	62.60
04-30-93	1206.00	108.06	16.20	62.60
04-30-93	1403.00	110.03	16.16	62.64
04-30-93	1607.00	112.07	16.18	62.62
04-30-93	1754.00	113.54	16.21	62.59
04-30-93	1902.00	115.02	16.20	62.60
04-30-93	1929.00	115.29	16.16	62.64
04-30-93	1945.00	115.45	16.14	62.66
04-30-93	2001.00	116.01	16.14	62.66
04-30-93	2019.00	116.19	16.14	62.66
04-30-93	2030.00	116.30	16.14	62.66
04-30-93	2045.00	116.45	16.14	62.66
04-30-93	2208.00	118.08	16.18	62.62
04-30-93	2301.00	119.01	16.20	62.60
04-30-93	2355.00	119.55	16.18	62.62
05-01-93	200.00	122.00	16.16	62.64
05-01-93	400.00	124.00	16.15	62.65
05-01-93	600.00	126.00	16.14	62.66
05-01-93	802.00	128.02	16.16	62.64
05-01-93	1001.00	130.01	16.16	62.64
05-01-93	1205.00	132.05	16.18	62.62
05-01-93	1401.00	134.01	16.10	62.70
05-01-93	1555.00	135.55	16.09	62.71
05-01-93	1755.00	137.55	16.07	62.73
05-01-93	2202.00	142.02	16.18	62.62
05-02-93	200.00	146.00	16.09	62.71
05-02-93	630.00	150.30	16.01	62.79
05-02-93	737.00	151.37	16.02	62.78
05-02-93	958.00	153.58	16.04	62.76
05-02-93	1110.00	155.10	16.61	62.19
05-02-93	1201.00	156.01	16.60	62.20
05-02-93	1307.00	157.07	17.00	61.80
05-02-93	1408.00	158.08	17.10	61.70
05-02-93	1506.00	159.06	17.12	61.68
05-02-93	1606.00	160.06	17.16	61.64
05-02-93	1701.00	161.01	17.15	61.65
05-02-93	1806.00	162.06	17.16	61.64
05-02-93	1907.00	163.07	17.18	61.62
05-02-93	2007.00	164.07	17.20	61.60
05-02-93	2210.00	166.10	17.23	61.57
05-02-93	2350.00	167.50	17.27	61.53
05-03-93	222.00	170.22	17.29	61.51

WELL PT-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

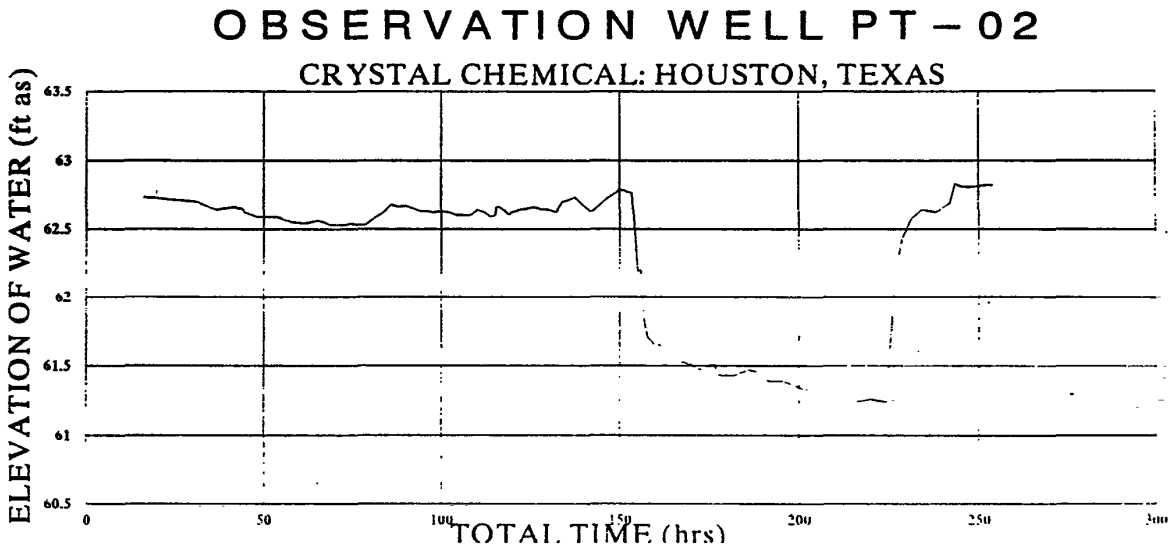
008244

Date	Time M.P2	Time P2	DTW (ft)	EOW (ft as)
05-03-93	354.00	171.54	17.32	61.48
05-03-93	558.00	173.58	17.33	61.47
05-03-93	823.00	176.23	17.28	61.52
05-03-93	1003.00	178.03	17.37	61.43
05-03-93	1231.00	180.31	17.37	61.43
05-03-93	1403.00	182.03	17.37	61.43
05-03-93	1600.00	184.00	17.35	61.45
05-03-93	1800.00	186.00	17.33	61.47
05-03-93	2003.00	188.03	17.34	61.46
05-03-93	2352.00	191.52	17.41	61.39
05-04-93	355.00	195.55	17.41	61.39
05-04-93	806.00	200.06	17.46	61.34
05-04-93	1201.00	204.01	17.49	61.31
05-04-93	1600.00	208.00	17.45	61.35
05-04-93	1950.00	211.50	17.50	61.30
05-04-93	2356.00	215.56	17.56	61.24
05-05-93	354.00	219.54	17.54	61.26
05-05-93	806.00	224.06	17.56	61.24
05-05-93	1023.00	226.23	16.72	62.08
05-05-93	1036.00	226.36	16.68	62.12
05-05-93	1251.00	228.51	16.38	62.42
05-05-93	1506.00	231.06	16.23	62.57
05-05-93	1802.00	234.02	16.16	62.64
05-05-93	2200.00	238.00	16.18	62.62
05-06-93	200.00	242.00	16.11	62.69
05-06-93	340.00	243.40	15.97	62.83
05-06-93	551.00	245.51	15.99	62.81
05-06-93	830.00	248.30	15.99	62.81
05-06-93	1214.00	252.14	15.98	62.82
05-06-93	1400.00	254.00	15.98	62.82

WELL PT-02

15-FOOT SAND
OBSERVATION WELL
E-LINE DATA

Date	Time M.P2	Time P2	DTW (ft)	EOW (ft as)



008245

008245

WELL PT-03

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1717.00	17.17	15.48	62.52
04-27-93	739.00	31.39	15.53	62.47
04-27-93	905.00	33.05	15.53	62.47
04-27-93	1250.00	36.50	15.53	62.47
04-27-93	1342.00	37.42	15.57	62.43
04-27-93	1408.00	38.08	15.57	62.43
04-27-93	1437.00	38.37	15.57	62.43
04-27-93	1508.00	39.08	15.57	62.43
04-27-93	1742.00	41.42	15.55	62.45
04-27-93	1840.00	42.40	15.58	62.42
04-27-93	1906.00	43.06	15.56	62.44
04-27-93	2007.00	44.07	15.57	62.43
04-27-93	2100.00	45.00	15.59	62.41
04-27-93	2207.00	46.07	15.60	62.40
04-27-93	2306.00	47.06	15.61	62.39
04-28-93	6.00	48.06	15.62	62.38
04-28-93	108.00	49.08	15.63	62.37
04-28-93	227.00	50.27	15.62	62.38
04-28-93	405.00	52.05	15.62	62.38
04-28-93	611.00	54.11	15.62	62.38
04-28-93	808.00	56.08	15.65	62.35
04-28-93	908.00	57.08	15.65	62.35
04-28-93	1007.00	58.07	15.67	62.33
04-28-93	1107.00	59.07	15.66	62.34
04-28-93	1307.00	61.07	15.66	62.34
04-28-93	1507.00	63.07	15.65	62.35
04-28-93	1705.00	65.05	15.65	62.35
04-28-93	1911.00	67.11	15.66	62.34
04-28-93	2101.00	69.01	15.67	62.33
04-28-93	2304.00	71.04	15.68	62.32
04-29-93	103.00	73.03	15.68	62.32
04-29-93	303.00	75.03	15.67	62.33
04-29-93	503.00	77.03	15.66	62.34
04-29-93	653.00	78.53	15.68	62.32
04-29-93	949.00	81.49	15.59	62.41
04-29-93	1212.00	84.12	15.58	62.42
04-29-93	1409.00	86.09	15.52	62.48
04-29-93	1607.00	88.07	15.54	62.46
04-29-93	1803.00	90.03	15.52	62.48
04-29-93	2007.00	92.07	15.53	62.47
04-29-93	2204.00	94.04	15.56	62.44
04-29-93	2357.00	95.57	15.57	62.43
04-30-93	201.00	98.01	15.56	62.44
04-30-93	404.00	100.04	15.58	62.42
04-30-93	604.00	102.04	15.59	62.41

008246

008246

WELL PT-03

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008247

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-30-93	813.00	104.13	15.61	62.39
04-30-93	1008.00	106.08	15.60	62.40
04-30-93	1209.00	108.09	15.60	62.40
04-30-93	1406.00	110.06	15.55	62.45
04-30-93	1609.00	112.09	15.57	62.43
04-30-93	1757.00	113.57	15.59	62.41
04-30-93	1840.00	114.40	15.56	62.44
04-30-93	1906.00	115.06	15.58	62.42
04-30-93	1930.00	115.30	15.54	62.46
04-30-93	1951.00	115.51	15.53	62.47
04-30-93	2006.00	116.06	15.53	62.47
04-30-93	2021.00	116.21	15.53	62.47
04-30-93	2032.00	116.32	15.53	62.47
04-30-93	2046.00	116.46	15.53	62.47
04-30-93	2208.00	118.08	15.59	62.41
04-30-93	2303.00	119.03	15.54	62.46
05-01-93	2.00	120.02	15.58	62.42
05-01-93	207.00	122.07	15.56	62.44
05-01-93	406.00	124.06	15.55	62.45
05-01-93	605.00	126.05	15.56	62.44
05-01-93	804.00	128.04	15.57	62.43
05-01-93	1004.00	130.04	15.58	62.42
05-01-93	1207.00	132.07	15.58	62.42
05-01-93	1404.00	134.04	15.51	62.49
05-01-93	1557.00	135.57	15.51	62.49
05-01-93	2203.00	142.03	15.49	62.51
05-02-93	202.00	146.02	15.51	62.49
05-02-93	530.00	149.30	15.42	62.58
05-02-93	736.00	151.36	15.40	62.60
05-02-93	1000.00	154.00	15.42	62.58
05-02-93	1020.00	154.20	16.17	61.83
05-02-93	1048.00	154.48	16.40	61.60
05-02-93	1103.00	155.03	16.49	61.51
05-02-93	1204.00	156.04	16.55	61.45
05-02-93	1303.00	157.03	17.15	60.85
05-02-93	1403.00	158.03	17.22	60.78
05-02-93	1502.00	159.02	17.20	60.80
05-02-93	1602.00	160.02	17.27	60.73
05-02-93	1656.00	160.56	17.26	60.74
05-02-93	1802.00	162.02	17.29	60.71
05-02-93	1902.00	163.02	17.30	60.70
05-02-93	2002.00	164.02	17.30	60.70
05-02-93	2201.00	166.01	17.34	60.66
05-02-93	2355.00	167.55	17.39	60.61
05-03-93	215.00	170.15	17.43	60.57

WELL PT-03

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-03-93	403.00	172.03	17.43	60.57
05-03-93	604.00	174.04	17.47	60.53
05-03-93	827.00	176.27	17.42	60.58
05-03-93	1006.00	178.06	17.52	60.48
05-03-93	1210.00	180.10	17.52	60.48
05-03-93	1405.00	182.05	17.47	60.53
05-03-93	1602.00	184.02	17.47	60.53
05-03-93	1802.00	186.02	17.49	60.51
05-03-93	2005.00	188.05	17.51	60.49
05-03-93	2354.00	191.54	17.56	60.44
05-04-93	404.00	196.04	17.55	60.45
05-04-93	809.00	200.09	17.60	60.40
05-04-93	1205.00	204.05	17.65	60.35
05-04-93	1602.00	208.02	17.59	60.41
05-04-93	1953.00	211.53	17.64	60.36
05-05-93	3.00	216.03	17.69	60.31
05-05-93	354.00	219.54	17.70	60.30
05-05-93	811.00	224.11	17.74	60.26
05-05-93	1009.00	226.09	16.29	61.71
05-05-93	1041.00	226.41	16.10	61.90
05-05-93	1254.00	228.54	15.80	62.20
05-05-93	1510.00	231.10	15.65	62.35
05-05-93	1807.00	234.07	15.58	62.42
05-05-93	2213.00	238.13	15.60	62.40
05-06-93	33.00	240.33	15.40	62.60
05-06-93	559.00	245.59	15.42	62.58
05-06-93	835.00	248.35	15.41	62.59
05-06-93	1211.00	252.11	15.43	62.57
05-06-93	1410.00	254.10	15.43	62.57

008248

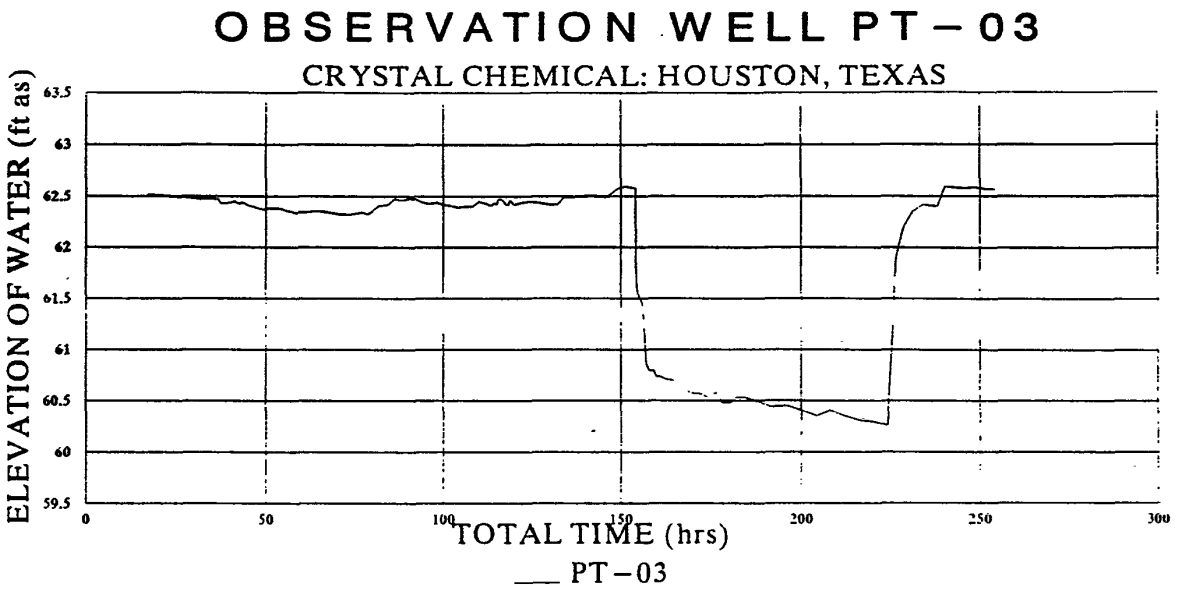
008248

WELL PT-03

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008249



008249

WELL PT-04

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008250

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1705.00	17.05	15.93	62.67
04-27-93	744.00	31.44	15.97	62.63
04-27-93	1108.00	35.08	15.98	62.62
04-27-93	1122.00	35.22	15.98	62.62
04-27-93	1136.00	35.36	15.98	62.62
04-27-93	1225.00	36.25	16.02	62.58
04-27-93	1242.00	36.42	16.04	62.56
04-27-93	1315.00	37.15	16.03	62.57
04-27-93	1401.00	38.01	16.02	62.58
04-27-93	1430.00	38.30	16.02	62.58
04-27-93	1459.00	38.59	16.02	62.58
04-27-93	1733.00	41.33	16.00	62.60
04-27-93	1802.00	42.02	16.00	62.60
04-27-93	1805.00	42.05	16.00	62.60
04-27-93	1811.00	42.11	16.00	62.60
04-27-93	1817.00	42.17	15.98	62.62
04-27-93	1821.00	42.21	16.01	62.59
04-27-93	1830.00	42.30	16.01	62.59
04-27-93	1835.00	42.35	16.02	62.58
04-27-93	1843.00	42.43	15.98	62.62
04-27-93	1903.00	43.03	16.02	62.58
04-27-93	2002.00	44.02	16.03	62.57
04-27-93	2056.00	44.56	16.05	62.55
04-27-93	2202.00	46.02	16.06	62.54
04-27-93	2302.00	47.02	16.07	62.53
04-28-93	1.00	48.01	16.08	62.52
04-28-93	104.00	49.04	16.10	62.50
04-28-93	223.00	50.23	16.08	62.52
04-28-93	608.00	54.08	16.09	62.51
04-28-93	805.00	56.05	16.11	62.49
04-28-93	904.00	57.04	16.11	62.49
04-28-93	1004.00	58.04	16.13	62.47
04-28-93	1104.00	59.04	16.12	62.48
04-28-93	1310.00	61.10	16.13	62.47
04-28-93	1510.00	63.10	16.12	62.48
04-28-93	1708.00	65.08	16.11	62.49
04-28-93	1914.00	67.14	16.12	62.48
04-28-93	2104.00	69.04	16.14	62.46
04-28-93	2308.00	71.08	16.15	62.45
04-29-93	100.00	73.00	16.14	62.46
04-29-93	300.00	75.00	16.13	62.47
04-29-93	456.00	76.56	16.13	62.47
04-29-93	650.00	78.50	16.13	62.47
04-29-93	945.00	81.45	16.04	62.56
04-29-93	1217.00	84.17	16.03	62.57

WELL PT-04

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008251

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	1412.00	86.12	16.00	62.60
04-29-93	1610.00	88.10	16.00	62.60
04-29-93	1807.00	90.07	16.00	62.60
04-29-93	2016.00	92.16	16.01	62.59
04-29-93	2206.00	94.06	16.04	62.56
04-30-93	1.00	96.01	16.04	62.56
04-30-93	204.00	98.04	16.04	62.56
04-30-93	407.00	100.07	16.04	62.56
04-30-93	608.00	102.08	16.06	62.54
04-30-93	808.00	104.08	16.08	62.52
04-30-93	1004.00	106.04	16.08	62.52
04-30-93	1206.00	108.06	16.07	62.53
04-30-93	1408.00	110.08	16.03	62.57
04-30-93	1612.00	112.12	16.04	62.56
04-30-93	1759.00	113.59	16.05	62.55
04-30-93	1825.00	114.25	16.04	62.56
04-30-93	1834.00	114.34	16.03	62.57
04-30-93	1909.00	115.09	16.05	62.55
04-30-93	1933.00	115.33	16.04	62.56
04-30-93	1957.00	115.57	16.02	62.58
04-30-93	2010.00	116.10	16.00	62.60
04-30-93	2029.00	116.29	16.01	62.59
04-30-93	2035.00	116.35	16.01	62.59
04-30-93	2048.00	116.48	16.01	62.59
04-30-93	2211.00	118.11	16.05	62.55
04-30-93	2306.00	119.06	16.05	62.55
04-30-93	2400.00	120.00	16.05	62.55
05-01-93	201.00	122.01	16.04	62.56
05-01-93	401.00	124.01	16.02	62.58
05-01-93	606.00	126.06	16.03	62.57
05-01-93	806.00	128.06	16.03	62.57
05-01-93	1008.00	130.08	16.04	62.56
05-01-93	1210.00	132.10	16.04	62.56
05-01-93	1407.00	134.07	15.98	62.62
05-01-93	1600.00	136.00	15.97	62.63
05-01-93	1802.00	138.02	15.95	62.65
05-01-93	2206.00	142.06	15.94	62.66
05-02-93	200.00	146.00	15.96	62.64
05-02-93	634.00	150.34	15.89	62.71
05-02-93	742.00	151.42	15.88	62.72
05-02-93	1000.00	154.00	15.88	62.72
05-02-93	1046.00	154.46	16.71	61.89
05-02-93	1108.00	155.08	16.78	61.82
05-02-93	1206.00	156.06	16.88	61.72
05-02-93	1306.00	157.06	17.40	61.20

WELL PT-04

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008252

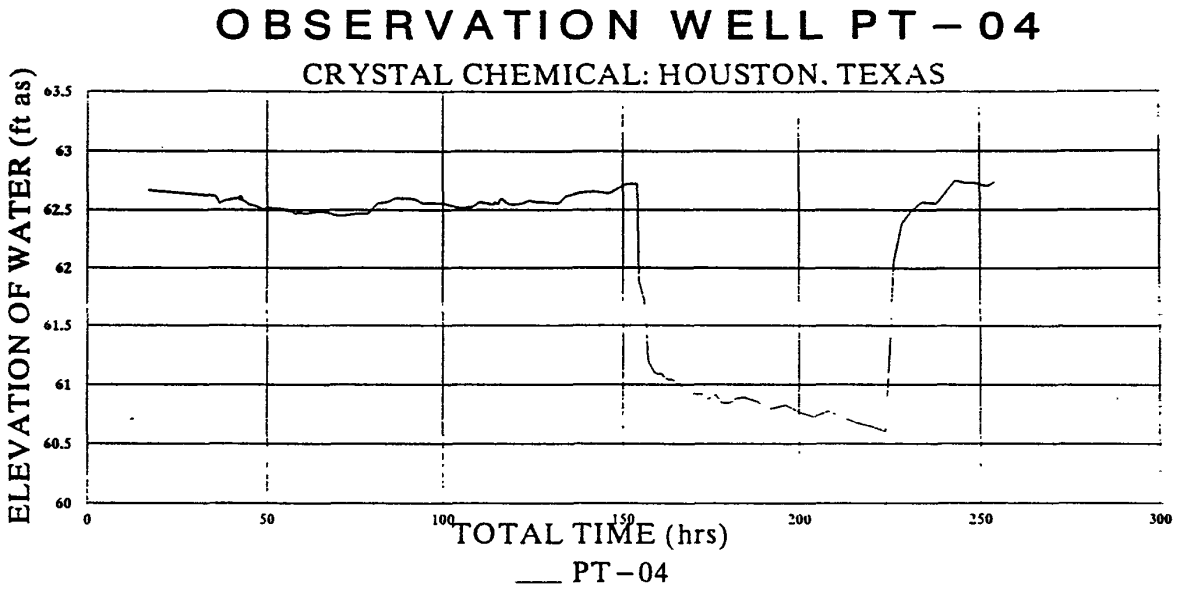
Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1406.00	158.06	17.46	61.14
05-02-93	1505.00	159.05	17.50	61.10
05-02-93	1605.00	160.05	17.51	61.09
05-02-93	1658.00	160.58	17.50	61.10
05-02-93	1805.00	162.05	17.55	61.05
05-02-93	1905.00	163.05	17.56	61.04
05-02-93	2004.00	164.04	17.56	61.04
05-02-93	2206.00	166.06	17.60	61.00
05-02-93	2351.00	167.51	17.64	60.96
05-03-93	219.00	170.19	17.68	60.92
05-03-93	408.00	172.08	17.68	60.92
05-03-93	607.00	174.07	17.73	60.87
05-03-93	829.00	176.29	17.69	60.91
05-03-93	1008.00	178.08	17.76	60.84
05-03-93	1225.00	180.25	17.76	60.84
05-03-93	1408.00	182.08	17.72	60.88
05-03-93	1605.00	184.05	17.71	60.89
05-03-93	1805.00	186.05	17.73	60.87
05-03-93	2008.00	188.08	17.75	60.85
05-03-93	2357.00	191.57	17.81	60.79
05-04-93	408.00	196.08	17.78	60.82
05-04-93	812.00	200.12	17.84	60.76
05-04-93	1208.00	204.08	17.88	60.72
05-04-93	1604.00	208.04	17.83	60.77
05-04-93	1956.00	211.56	17.88	60.72
05-05-93	5.00	216.05	17.93	60.67
05-05-93	404.00	220.04	17.96	60.64
05-05-93	815.00	224.15	18.00	60.60
05-05-93	1013.00	226.13	16.70	61.90
05-05-93	1038.00	226.38	16.55	62.05
05-05-93	1256.00	228.56	16.22	62.38
05-05-93	1507.00	231.07	16.11	62.49
05-05-93	1804.00	234.04	16.03	62.57
05-05-93	2214.00	238.14	16.04	62.56
05-06-93	336.00	243.36	15.85	62.75
05-06-93	602.00	246.02	15.87	62.73
05-06-93	837.00	248.37	15.87	62.73
05-06-93	1215.00	252.15	15.90	62.70
05-06-93	1411.00	254.11	15.86	62.74

WELL PT-04

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008253



WELL PT-05

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008254

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1715.00	17.15	16.10	62.50
04-27-93	743.00	31.43	16.15	62.45
04-27-93	1252.00	36.52	16.21	62.39
04-27-93	1343.00	37.43	16.19	62.41
04-27-93	1409.00	38.09	16.19	62.41
04-27-93	1439.00	38.39	16.19	62.41
04-27-93	1509.00	39.09	16.19	62.41
04-27-93	1743.00	41.43	16.18	62.42
04-27-93	1842.00	42.42	16.18	62.42
04-27-93	1909.00	43.09	16.19	62.41
04-27-93	2008.00	44.08	16.20	62.40
04-27-93	2101.00	45.01	16.22	62.38
04-27-93	2209.00	46.09	16.22	62.38
04-27-93	2308.00	47.08	16.23	62.37
04-28-93	7.00	48.07	16.25	62.35
04-28-93	109.00	49.09	16.25	62.35
04-28-93	228.00	50.28	16.25	62.35
04-28-93	406.00	52.06	16.25	62.35
04-28-93	613.00	54.13	16.25	62.35
04-28-93	811.00	56.11	16.27	62.33
04-28-93	909.00	57.09	16.26	62.34
04-28-93	1009.00	58.09	16.29	62.31
04-28-93	1108.00	59.08	16.29	62.31
04-28-93	1310.00	61.10	16.28	62.32
04-28-93	1508.00	63.08	16.28	62.32
04-28-93	1707.00	65.07	16.27	62.33
04-28-93	1913.00	67.13	16.28	62.32
04-28-93	2102.00	69.02	16.30	62.30
04-28-93	2306.00	71.06	16.31	62.29
04-29-93	105.00	73.05	16.30	62.30
04-29-93	305.00	75.05	16.29	62.31
04-29-93	504.00	77.04	16.29	62.31
04-29-93	656.00	78.56	16.30	62.30
04-29-93	952.00	81.52	16.21	62.39
04-29-93	1045.00	82.45	16.21	62.39
04-29-93	1214.00	84.14	16.20	62.40
04-29-93	1410.00	86.10	16.15	62.45
04-29-93	1608.00	88.08	16.16	62.44
04-29-93	1806.00	90.06	16.15	62.45
04-29-93	2009.00	92.09	16.17	62.43
04-29-93	2205.00	94.05	16.19	62.41
04-29-93	2358.00	95.58	16.20	62.40
04-30-93	23.00	96.23	16.19	62.41
04-30-93	406.00	100.06	16.19	62.41
04-30-93	607.00	102.07	16.21	62.39

WELL PT-05

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008255

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-30-93	814.00	104.14	16.23	62.37
04-30-93	1009.00	106.09	16.22	62.38
04-30-93	1210.00	108.10	16.22	62.38
04-30-93	1407.00	110.07	16.18	62.42
04-30-93	1610.00	112.10	16.20	62.40
04-30-93	1758.00	113.58	16.22	62.38
04-30-93	1831.00	114.31	16.20	62.40
04-30-93	1840.00	114.40	16.18	62.42
04-30-93	1908.00	115.08	16.21	62.39
04-30-93	1931.00	115.31	16.17	62.43
04-30-93	1952.00	115.52	16.15	62.45
04-30-93	2013.00	116.13	16.15	62.45
04-30-93	2022.00	116.22	16.16	62.44
04-30-93	2034.00	116.34	16.16	62.44
04-30-93	2047.00	116.47	16.16	62.44
04-30-93	2207.00	118.07	16.21	62.39
04-30-93	2304.00	119.04	16.21	62.39
05-01-93	3.00	120.03	16.20	62.40
05-01-93	208.00	122.08	16.19	62.41
05-01-93	407.00	124.07	16.18	62.42
05-01-93	606.00	126.06	16.18	62.42
05-01-93	806.00	128.06	16.19	62.41
05-01-93	1006.00	130.06	16.21	62.39
05-01-93	1208.00	132.08	16.20	62.40
05-01-93	1405.00	134.05	16.13	62.47
05-01-93	1558.00	135.58	16.13	62.47
05-01-93	1800.00	138.00	16.11	62.49
05-01-93	2205.00	142.05	16.12	62.48
05-02-93	204.00	146.04	16.12	62.48
05-02-93	633.00	150.33	16.05	62.55
05-02-93	745.00	151.45	16.05	62.55
05-02-93	1001.00	154.01	16.05	62.55
05-02-93	1047.00	154.47	17.01	61.59
05-02-93	1054.00	154.54	17.04	61.56
05-02-93	1103.00	155.03	17.11	61.49
05-02-93	1205.00	156.05	17.15	61.45
05-02-93	1304.00	157.04	17.75	60.85
05-02-93	1405.00	158.05	17.80	60.80
05-02-93	1503.00	159.03	17.80	60.80
05-02-93	1603.00	160.03	17.90	60.70
05-02-93	1707.00	161.07	17.85	60.75
05-02-93	1804.00	162.04	17.91	60.69
05-02-93	1904.00	163.04	17.92	60.68
05-02-93	2004.00	164.04	17.90	60.70
05-02-93	2205.00	166.05	17.96	60.64

WELL PT-05

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008256

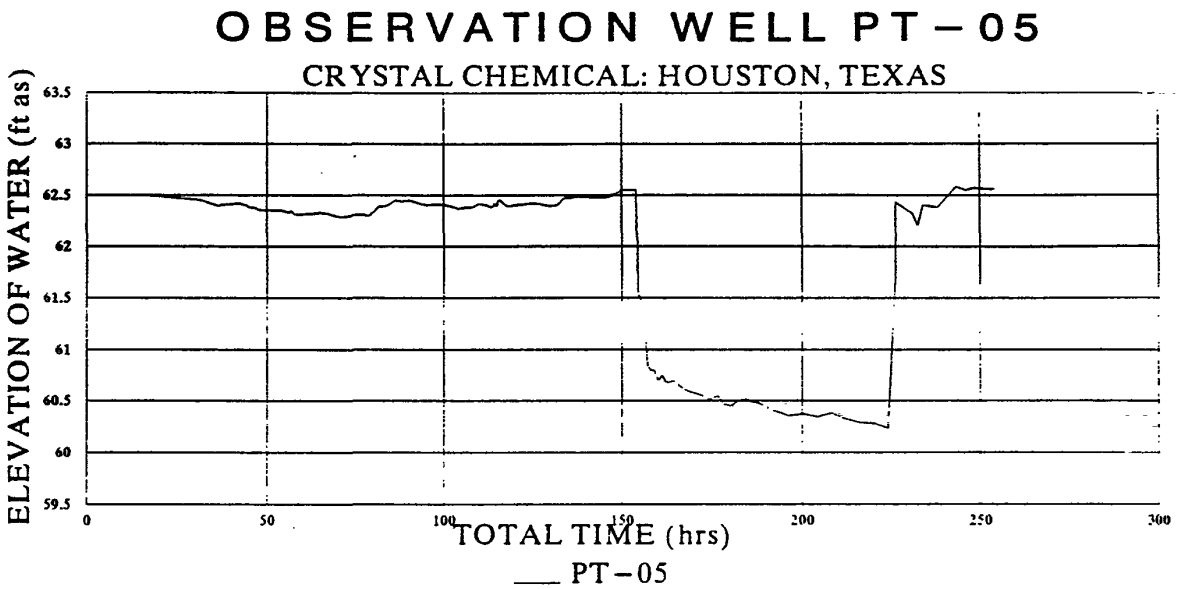
Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	2356.00	167.56	18.00	60.60
05-03-93	217.00	170.17	18.03	60.57
05-03-93	406.00	172.06	18.05	60.55
05-03-93	606.00	174.06	18.09	60.51
05-03-93	828.00	176.28	18.05	60.55
05-03-93	1008.00	178.08	18.14	60.46
05-03-93	1208.00	180.08	18.15	60.45
05-03-93	1406.00	182.06	18.10	60.50
05-03-93	1604.00	184.04	18.09	60.51
05-03-93	1804.00	186.04	18.11	60.49
05-03-93	2007.00	188.07	18.13	60.47
05-03-93	2356.00	191.56	18.19	60.41
05-04-93	407.00	196.07	18.25	60.35
05-04-93	811.00	200.11	18.23	60.37
05-04-93	1207.00	204.07	18.26	60.34
05-04-93	1603.00	208.03	18.22	60.38
05-04-93	1955.00	211.55	18.27	60.33
05-05-93	4.00	216.04	18.31	60.29
05-05-93	401.00	220.01	18.32	60.28
05-05-93	812.00	224.12	18.37	60.23
05-05-93	1012.00	226.12	16.91	61.69
05-05-93	1039.00	226.39	16.17	62.43
05-05-93	1510.00	231.10	16.28	62.32
05-05-93	1654.00	232.54	16.40	62.20
05-05-93	1806.00	234.06	16.20	62.40
05-05-93	2211.00	238.11	16.22	62.38
05-06-93	334.00	243.34	16.02	62.58
05-06-93	601.00	246.01	16.05	62.55
05-06-93	836.00	248.36	16.03	62.57
05-06-93	1209.00	252.09	16.04	62.56
05-06-93	1408.00	254.08	16.04	62.56

WELL PT-05

35-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008257



WELL PT-06

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008258

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1709.00	17.09	13.73	63.97
04-27-93	736.00	31.36	13.80	63.90
04-27-93	1130.00	35.30	13.86	63.84
04-27-93	1147.00	35.47	13.88	63.82
04-27-93	1205.00	36.05	13.90	63.80
04-27-93	1220.00	36.20	13.98	63.72
04-27-93	1244.00	36.44	13.97	63.73
04-27-93	1317.00	37.17	14.00	63.70
04-27-93	1403.00	38.03	14.07	63.63
04-27-93	1432.00	38.32	14.10	63.60
04-27-93	1501.00	39.01	14.13	63.57
04-27-93	1735.00	41.35	13.90	63.80
04-27-93	1810.00	42.10	13.97	63.73
04-27-93	1813.00	42.13	13.97	63.73
04-27-93	1817.00	42.17	14.00	63.70
04-27-93	1820.00	42.20	14.01	63.69
04-27-93	1828.00	42.28	14.04	63.66
04-27-93	1833.00	42.33	14.05	63.65
04-27-93	1837.00	42.37	14.06	63.64
04-27-93	1902.00	43.02	14.12	63.58
04-27-93	2004.00	44.04	14.22	63.48
04-27-93	2058.00	44.58	14.27	63.43
04-27-93	2204.00	46.04	14.30	63.40
04-27-93	2304.00	47.04	14.33	63.37
04-28-93	2.00	48.02	14.36	63.34
04-28-93	105.00	49.05	14.39	63.31
04-28-93	225.00	50.25	14.40	63.30
04-28-93	402.00	52.02	14.41	63.29
04-28-93	609.00	54.09	14.41	63.29
04-28-93	807.00	56.07	14.51	63.19
04-28-93	906.00	57.06	14.52	63.18
04-28-93	1006.00	58.06	14.54	63.16
04-28-93	1105.00	59.05	14.54	63.16
04-28-93	1306.00	61.06	14.56	63.14
04-28-93	1505.00	63.05	14.57	63.13
04-28-93	1704.00	65.04	14.59	63.11
04-28-93	1910.00	67.10	14.62	63.08
04-28-93	2100.00	69.00	14.65	63.05
04-28-93	2303.00	71.03	14.68	63.02
04-29-93	101.00	73.01	14.67	63.03
04-29-93	302.00	75.02	14.68	63.02
04-29-93	500.00	77.00	14.69	63.01
04-29-93	651.00	78.51	14.71	62.99
04-29-93	947.00	81.47	14.75	62.95
04-29-93	1211.00	84.11	14.72	62.98

WELL PT-06

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008259

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	1407.00	86.07	14.71	62.99
04-29-93	1605.00	88.05	14.71	62.99
04-29-93	1802.00	90.02	14.71	62.99
04-29-93	2006.00	92.06	14.73	62.97
04-29-93	2203.00	94.03	14.76	62.94
04-29-93	2356.00	95.56	14.76	62.94
04-30-93	200.00	98.00	14.75	62.95
04-30-93	402.00	100.02	14.76	62.94
04-30-93	602.00	102.02	14.78	62.92
04-30-93	811.00	104.11	14.81	62.89
04-30-93	1006.00	106.06	14.80	62.90
04-30-93	1207.00	108.07	14.79	62.91
04-30-93	1405.00	110.05	14.76	62.94
04-30-93	1608.00	112.08	14.79	62.91
04-30-93	1756.00	113.56	14.79	62.91
04-30-93	1808.75	114.09	14.80	62.90
04-30-93	1809.50	114.10	14.80	62.90
04-30-93	1812.25	114.12	14.80	62.90
04-30-93	1814.40	114.14	14.79	62.91
04-30-93	1904.00	115.04	14.60	63.10
04-30-93	1929.00	115.29	14.53	63.17
04-30-93	1947.00	115.47	14.51	63.19
04-30-93	2001.00	116.01	14.52	63.18
04-30-93	2020.00	116.20	14.53	63.17
04-30-93	2032.00	116.32	14.51	63.19
04-30-93	2045.00	116.45	14.51	63.19
04-30-93	2207.00	118.07	14.51	63.19
04-30-93	2302.00	119.02	14.48	63.22
05-01-93	1.00	120.01	14.44	63.26
05-01-93	203.00	122.03	14.38	63.32
05-01-93	404.00	124.04	14.32	63.38
05-01-93	602.00	126.02	14.29	63.41
05-01-93	803.00	128.03	14.28	63.42
05-01-93	1003.00	130.03	14.25	63.45
05-01-93	1206.00	132.06	14.22	63.48
05-01-93	1403.00	134.03	14.18	63.52
05-01-93	1556.00	135.56	14.17	63.53
05-01-93	1757.00	137.57	14.11	63.59
05-01-93	2202.00	142.02	14.09	63.61
05-02-93	203.00	146.03	14.07	63.63
05-02-93	630.00	150.30	14.04	63.66
05-02-93	1025.00	154.25	14.03	63.67
05-02-93	1036.00	154.36	14.05	63.65
05-02-93	1058.00	154.58	14.05	63.65
05-02-93	1100.00	155.00	14.02	63.68

WELL PT-06

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008260

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1203.00	156.03	14.00	63.70
05-02-93	1400.00	158.00	14.00	63.70
05-02-93	1500.00	159.00	14.00	63.70
05-02-93	1600.00	160.00	14.00	63.70
05-02-93	1655.00	160.55	14.00	63.70
05-02-93	1800.00	162.00	14.00	63.70
05-02-93	1900.00	163.00	13.98	63.72
05-02-93	2000.00	164.00	13.98	63.72
05-02-93	2200.00	166.00	14.00	63.70
05-02-93	2352.00	167.52	14.00	63.70
05-03-93	213.00	170.13	13.98	63.72
05-03-93	401.00	172.01	13.99	63.71
05-03-93	602.00	174.02	14.00	63.70
05-03-93	825.00	176.25	14.02	63.68
05-03-93	1004.00	178.04	14.02	63.68
05-03-93	1222.00	180.22	13.99	63.71
05-03-93	1404.00	182.04	13.96	63.74
05-03-93	1601.00	184.01	13.95	63.75
05-03-93	1801.00	186.01	13.93	63.77
05-03-93	2004.00	188.04	13.95	63.75
05-03-93	2353.00	191.53	13.98	63.72
05-04-93	358.00	195.58	13.96	63.74
05-04-93	807.00	200.07	14.01	63.69
05-04-93	1203.00	204.03	14.01	63.69
05-04-93	1601.00	208.01	13.97	63.73
05-04-93	1952.00	211.52	13.99	63.71
05-04-93	2358.00	215.58	14.02	63.68
05-05-93	357.00	219.57	14.00	63.70
05-05-93	809.00	224.09	14.04	63.66
05-05-93	1029.00	226.29	14.03	63.67
05-05-93	1035.00	226.35	14.13	63.57
05-05-93	1203.00	228.03	14.06	63.64
05-05-93	1504.00	231.04	13.95	63.75
05-05-93	1658.00	232.58	14.07	63.63
05-05-93	1801.00	234.01	13.91	63.79
05-05-93	2200.00	238.00	13.95	63.75
05-06-93	329.00	243.29	13.90	63.80
05-06-93	832.00	248.32	13.86	63.84
05-06-93	1213.00	252.13	13.85	63.85
05-06-93	1404.00	254.04	13.82	63.88

WELL PT-06

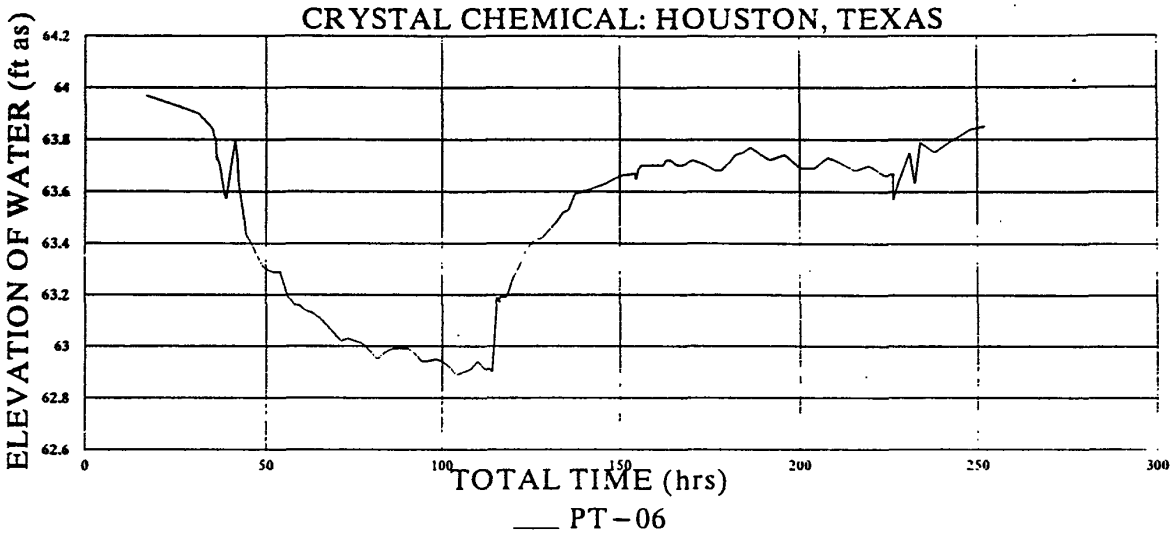
15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008261

OBSERVATION WELL PT-06

CRYSTAL CHEMICAL: HOUSTON, TEXAS



WELL PT-07

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008262

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1659.00	16.59	15.96	63.94
04-27-93	806.00	32.06	16.03	63.87
04-27-93	1115.00	35.15	16.07	63.83
04-27-93	1119.00	35.19	16.04	63.86
04-27-93	1126.00	35.26	16.17	63.73
04-27-93	1138.00	35.38	16.18	63.72
04-27-93	1152.00	35.52	16.31	63.59
04-27-93	1209.00	36.09	16.20	63.70
04-27-93	1227.00	36.27	16.19	63.71
04-27-93	1246.00	36.46	16.20	63.70
04-27-93	1318.00	37.18	16.23	63.67
04-27-93	1404.00	38.04	16.29	63.61
04-27-93	1435.00	38.35	16.33	63.57
04-27-93	1504.00	39.04	16.36	63.54
04-27-93	1738.00	41.38	16.15	63.75
04-27-93	1800.00	42.00	16.15	63.75
04-27-93	1801.00	42.01	16.15	63.75
04-27-93	1802.00	42.02	16.15	63.75
04-27-93	1805.00	42.05	16.15	63.75
04-27-93	1806.67	42.07	16.17	63.73
04-27-93	1808.15	42.08	16.18	63.72
04-27-93	1809.00	42.09	16.18	63.72
04-27-93	1812.00	42.12	16.19	63.71
04-27-93	1814.00	42.14	16.20	63.70
04-27-93	1816.00	42.16	16.21	63.69
04-27-93	1819.00	42.19	16.23	63.67
04-27-93	1823.00	42.23	16.24	63.66
04-27-93	1827.00	42.27	16.26	63.64
04-27-93	1832.00	42.32	16.27	63.63
04-27-93	1844.00	42.44	16.31	63.59
04-27-93	1900.00	43.00	16.35	63.55
04-27-93	2000.00	44.00	16.43	63.47
04-27-93	2055.00	44.55	16.49	63.41
04-27-93	2201.00	46.01	16.53	63.37
04-27-93	2301.00	47.01	16.57	63.33
04-27-93	2359.00	47.59	16.60	63.30
04-28-93	102.00	49.02	16.63	63.27
04-28-93	222.00	50.22	16.64	63.26
04-28-93	359.00	51.59	16.66	63.24
04-28-93	606.00	54.06	16.71	63.19
04-28-93	804.00	56.04	16.76	63.14
04-28-93	903.00	57.03	16.77	63.13
04-28-93	1003.00	58.03	16.79	63.11
04-28-93	1102.00	59.02	16.80	63.10
04-28-93	1303.00	61.03	16.81	63.09

WELL PT-07

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008263

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-28-93	1503.00	63.03	16.82	63.08
04-28-93	1702.00	65.02	16.83	63.07
04-28-93	1907.00	67.07	16.87	63.03
04-28-93	2057.00	68.57	16.90	63.00
04-28-93	2300.00	71.00	16.92	62.98
04-29-93	59.00	72.59	16.92	62.98
04-29-93	259.00	74.59	16.92	62.98
04-29-93	454.00	76.54	16.94	62.96
04-29-93	648.00	78.48	16.96	62.94
04-29-93	942.00	81.42	17.03	62.87
04-29-93	1208.00	84.08	17.01	62.89
04-29-93	1405.00	86.05	17.00	62.90
04-29-93	1602.00	88.02	17.01	62.89
04-29-93	1800.00	90.00	17.03	62.87
04-29-93	2003.00	92.03	17.04	62.86
04-29-93	2200.00	94.00	17.06	62.84
04-29-93	2355.00	95.55	17.06	62.84
04-30-93	159.00	97.59	17.05	62.85
04-30-93	400.00	100.00	17.06	62.84
04-30-93	600.00	102.00	17.10	62.80
04-30-93	806.00	104.06	17.12	62.78
04-30-93	1003.00	106.03	17.11	62.79
04-30-93	1205.00	108.05	17.10	62.80
04-30-93	1403.00	110.03	17.07	62.83
04-30-93	1606.00	112.06	17.10	62.80
04-30-93	1754.00	113.54	17.12	62.78
04-30-93	1808.50	114.09	17.11	62.79
04-30-93	1811.75	114.12	17.11	62.79
04-30-93	1813.25	114.13	17.11	62.79
04-30-93	1815.00	114.15	17.11	62.79
04-30-93	1901.00	115.01	16.94	62.96
04-30-93	1928.00	115.28	16.88	63.02
04-30-93	1945.00	115.45	16.89	63.01
04-30-93	2001.00	116.01	16.85	63.05
04-30-93	2018.00	116.18	16.85	63.05
04-30-93	2030.00	116.30	16.84	63.06
04-30-93	2045.00	116.45	16.83	63.07
04-30-93	2205.00	118.05	16.84	63.06
04-30-93	2301.00	119.01	16.80	63.10
04-30-93	2400.00	120.00	16.77	63.13
05-01-93	200.00	122.00	16.70	63.20
05-01-93	400.00	124.00	16.65	63.25
05-01-93	600.00	126.00	16.60	63.30
05-01-93	800.00	128.00	16.59	63.31
05-01-93	1000.00	130.00	16.57	63.33

WELL PT-07

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008264

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-01-93	1205.00	132.05	16.53	63.37
05-01-93	1400.00	134.00	16.51	63.39
05-01-93	1555.00	135.55	16.49	63.41
05-01-93	1750.00	137.50	16.43	63.47
05-01-93	2200.00	142.00	16.43	63.47
05-02-93	200.00	146.00	16.39	63.51
05-02-93	630.00	150.30	16.37	63.53
05-02-93	1019.00	154.19	16.35	63.55
05-02-93	1028.00	154.28	16.37	63.53
05-02-93	1038.00	154.38	16.38	63.52
05-02-93	1117.00	155.17	16.35	63.55
05-02-93	1200.00	156.00	16.35	63.55
05-02-93	1307.00	157.07	16.35	63.55
05-02-93	1408.00	158.08	16.38	63.52
05-02-93	1506.00	159.06	16.35	63.55
05-02-93	1600.00	160.00	16.36	63.54
05-02-93	1701.00	161.01	16.30	63.60
05-02-93	1807.00	162.07	16.30	63.60
05-02-93	1908.00	163.08	16.32	63.58
05-02-93	2007.00	164.07	16.32	63.58
05-02-93	2211.00	166.11	16.35	63.55
05-02-93	2350.00	167.50	16.35	63.55
05-03-93	223.00	170.23	16.31	63.59
05-03-93	357.00	171.57	16.31	63.59
05-03-93	559.00	173.59	16.33	63.57
05-03-93	825.00	176.25	16.34	63.56
05-03-93	1002.00	178.02	16.34	63.56
05-03-93	1232.00	180.32	16.32	63.58
05-03-93	1402.00	182.02	16.31	63.59
05-03-93	1559.00	183.59	16.27	63.63
05-03-93	1759.00	185.59	16.26	63.64
05-03-93	2000.00	188.00	16.26	63.64
05-03-93	2351.00	191.51	16.30	63.60
05-04-93	355.00	195.55	16.27	63.63
05-04-93	806.00	200.06	16.32	63.58
05-04-93	1200.00	204.00	16.32	63.58
05-04-93	1600.00	208.00	16.27	63.63
05-04-93	2000.00	212.00	16.29	63.61
05-04-93	2355.00	215.55	16.31	63.59
05-05-93	353.00	219.53	16.31	63.59
05-05-93	806.00	224.06	16.33	63.57
05-05-93	1022.00	226.22	16.32	63.58
05-05-93	1250.00	228.50	16.37	63.53
05-05-93	1337.00	229.37	16.34	63.56
05-05-93	1506.00	231.06	16.27	63.63

WELL PT-07

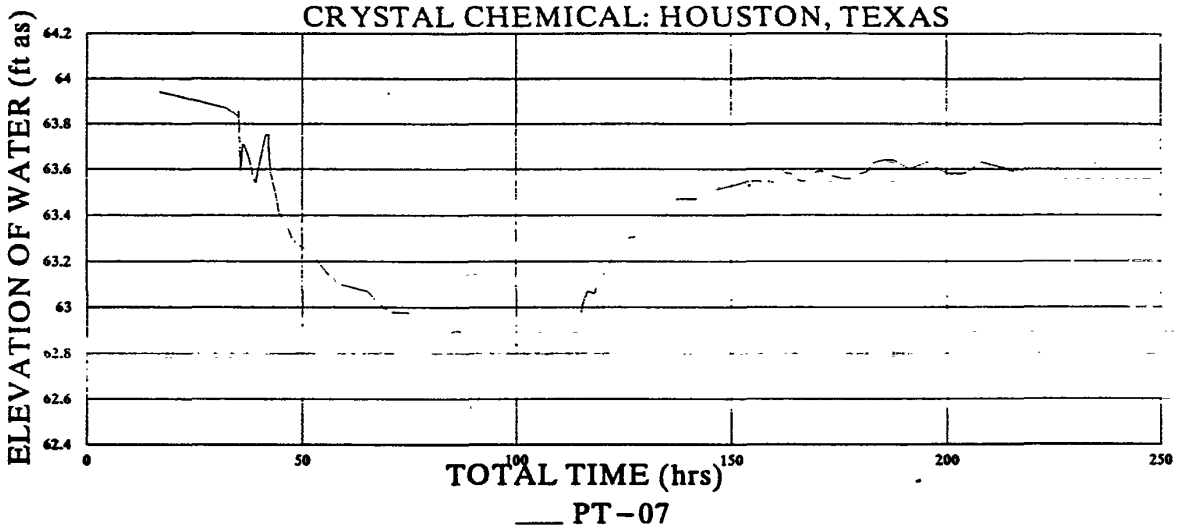
15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008265

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-05-93	1803.00	234.03	16.25	63.65
05-05-93	2200.00	238.00	16.33	63.57
05-06-93	201.00	242.01	16.31	63.59
05-06-93	340.00	243.40	16.21	63.69
05-06-93	553.00	245.53	16.25	63.65
05-06-93	830.00	248.30	16.23	63.67
05-06-93	1214.00	252.14	16.21	63.69
05-06-93	1400.00	254.00	16.21	63.69

OBSERVATION WELL PT-07

CRYSTAL CHEMICAL: HOUSTON, TEXAS



WELL PT-08

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008266

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1702.00	17.02	16.50	63.90
04-27-93	805.00	32.05	16.57	63.83
04-27-93	929.00	33.29	16.57	63.83
04-27-93	1110.00	35.10	16.73	63.67
04-27-93	1141.00	35.41	16.82	63.58
04-27-93	1153.00	35.53	16.86	63.54
04-27-93	1208.00	36.08	16.98	63.42
04-27-93	1228.00	36.28	17.02	63.38
04-27-93	1247.00	36.47	16.99	63.41
04-27-93	1319.00	37.19	17.14	63.26
04-27-93	1405.00	38.05	17.38	63.02
04-27-93	1435.00	38.35	17.43	62.97
04-27-93	1505.00	39.05	17.48	62.92
04-27-93	1739.00	41.39	16.70	63.70
04-27-93	1812.50	42.13	17.18	63.22
04-27-93	1825.00	42.25	17.26	63.14
04-27-93	1827.00	42.27	17.30	63.10
04-27-93	1840.00	42.40	17.36	63.04
04-27-93	1848.00	42.48	17.41	62.99
04-27-93	1910.00	43.10	17.50	62.90
04-27-93	2000.00	44.00	17.60	62.80
04-27-93	2010.00	44.10	17.60	62.80
04-27-93	2102.00	45.02	17.66	62.74
04-27-93	2211.00	46.11	17.71	62.69
04-27-93	2310.00	47.10	17.76	62.64
04-28-93	9.00	48.09	17.79	62.61
04-28-93	110.00	49.10	17.81	62.59
04-28-93	229.00	50.29	17.83	62.57
04-28-93	407.00	52.07	17.85	62.55
04-28-93	614.00	54.14	17.89	62.51
04-28-93	803.00	56.03	17.94	62.46
04-28-93	911.00	57.11	17.95	62.45
04-28-93	1010.00	58.10	17.97	62.43
04-28-93	1110.00	59.10	17.98	62.42
04-28-93	1312.00	61.12	18.00	62.40
04-28-93	1611.00	64.11	18.01	62.39
04-28-93	1709.00	65.09	18.03	62.37
04-28-93	1915.00	67.15	18.06	62.34
04-28-93	2105.00	69.05	18.09	62.31
04-28-93	2308.00	71.08	18.10	62.30
04-29-93	107.00	73.07	18.12	62.28
04-29-93	307.00	75.07	18.13	62.27
04-29-93	508.00	77.08	18.14	62.26
04-29-93	657.00	78.57	18.17	62.23
04-29-93	918.00	81.18	18.21	62.19

WELL PT-08

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008267

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	1219.00	84.19	18.21	62.19
04-29-93	1413.00	86.13	18.21	62.19
04-29-93	1612.00	88.12	18.21	62.19
04-29-93	1808.00	90.08	18.22	62.18
04-29-93	2016.00	92.16	18.24	62.16
04-29-93	2207.00	94.07	18.25	62.15
04-30-93	1.00	96.01	18.26	62.14
04-30-93	205.00	98.05	18.26	62.14
04-30-93	407.00	100.07	18.27	62.13
04-30-93	608.00	102.08	18.30	62.10
04-30-93	815.00	104.15	18.30	62.10
04-30-93	1011.00	106.11	18.30	62.10
04-30-93	1211.00	108.11	18.30	62.10
04-30-93	1409.00	110.09	18.27	62.13
04-30-93	1613.00	112.13	18.30	62.10
04-30-93	1800.00	114.00	18.31	62.09
04-30-93	1824.00	114.24	17.83	62.57
04-30-93	1911.00	115.11	17.62	62.78
04-30-93	2012.00	116.12	17.51	62.89
04-30-93	2025.00	116.25	17.48	62.92
04-30-93	2037.00	116.37	17.46	62.94
04-30-93	2050.00	116.50	17.45	62.95
04-30-93	2211.00	118.11	17.41	62.99
04-30-93	2307.00	119.07	17.36	63.04
05-01-93	3.00	120.03	17.32	63.08
05-01-93	210.00	122.10	17.25	63.15
05-01-93	409.00	124.09	17.20	63.20
05-01-93	609.00	126.09	17.15	63.25
05-01-93	808.00	128.08	17.13	63.27
05-01-93	1007.00	130.07	17.10	63.30
05-01-93	1211.00	132.11	17.06	63.34
05-01-93	1408.00	134.08	17.01	63.39
05-01-93	1601.00	136.01	17.02	63.38
05-01-93	1803.00	138.03	16.96	63.44
05-01-93	2208.00	142.08	16.93	63.47
05-02-93	203.00	146.03	16.91	63.49
05-02-93	635.00	150.35	16.88	63.52
05-02-93	1020.00	154.20	16.86	63.54
05-02-93	1029.00	154.29	16.87	63.53
05-02-93	1039.00	154.39	16.90	63.50
05-02-93	1109.00	155.09	16.88	63.52
05-02-93	1206.00	156.06	16.85	63.55
05-02-93	1306.00	157.06	16.90	63.50
05-02-93	1406.00	158.06	16.86	63.54
05-02-93	1505.00	159.05	16.88	63.52

WELL PT-08

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008268

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1605.00	160.05	16.85	63.55
05-02-93	1700.00	161.00	16.82	63.58
05-02-93	1806.00	162.06	16.84	63.56
05-02-93	1907.00	163.07	16.80	63.60
05-02-93	2006.00	164.06	16.83	63.57
05-02-93	2209.00	166.09	16.85	63.55
05-02-93	2358.00	167.58	16.85	63.55
05-03-93	221.00	170.21	16.83	63.57
05-03-93	411.00	172.11	16.81	63.59
05-03-93	609.00	174.09	16.82	63.58
05-03-93	831.00	176.31	16.85	63.55
05-03-93	1010.00	178.10	16.85	63.55
05-03-93	1228.00	180.28	16.83	63.57
05-03-93	1409.00	182.09	16.78	63.62
05-03-93	1606.00	184.06	16.78	63.62
05-03-93	1807.00	186.07	16.78	63.62
05-03-93	2009.00	188.09	16.77	63.63
05-03-93	2358.00	191.58	16.80	63.60
05-04-93	411.00	196.11	16.80	63.60
05-04-93	805.00	200.05	16.83	63.57
05-04-93	1209.00	204.09	16.83	63.57
05-04-93	1607.00	208.07	16.79	63.61
05-04-93	1957.00	211.57	16.80	63.60
05-05-93	7.00	216.07	16.82	63.58
05-05-93	407.00	220.07	16.83	63.57
05-05-93	819.00	224.19	16.84	63.56
05-05-93	1016.00	226.16	16.87	63.53
05-05-93	1257.00	228.57	16.86	63.54
05-05-93	1337.00	229.37	16.89	63.51
05-05-93	1507.00	231.07	16.77	63.63
05-05-93	1803.00	234.03	16.74	63.66
05-05-93	2215.00	238.15	16.77	63.63
05-06-93	338.00	243.38	16.71	63.69
05-06-93	605.00	246.05	16.71	63.69
05-06-93	838.00	248.38	16.73	63.67
05-06-93	1215.00	252.15	16.71	63.69
05-06-93	1414.00	254.14	16.71	63.69

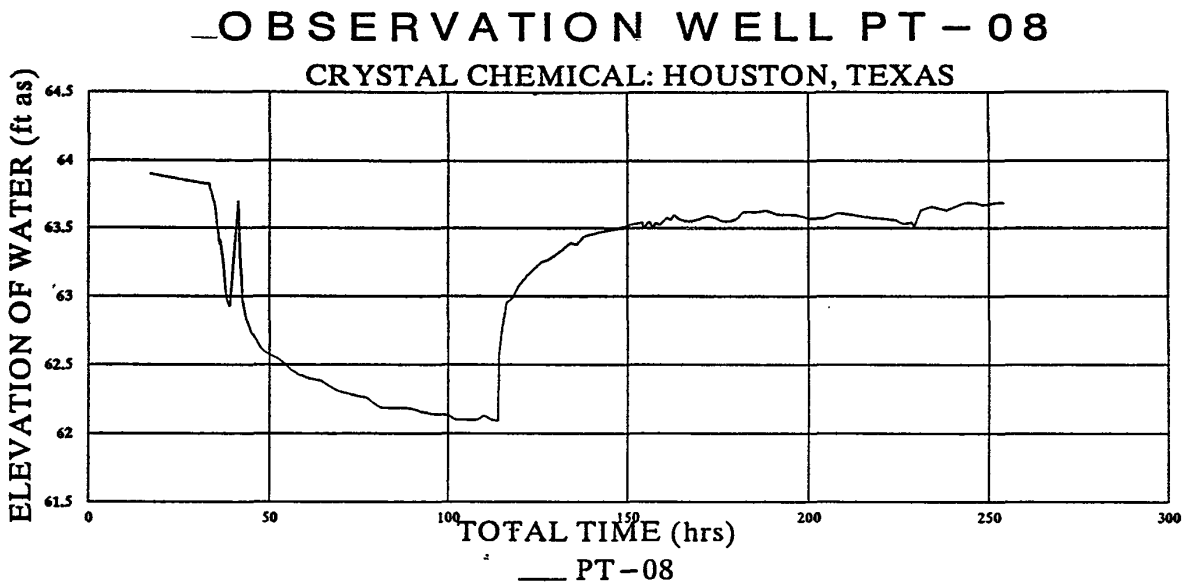
008268

WELL PT-08

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008269

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)



WELL PT-09

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008270

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1703.00	17.03	15.00	63.90
04-27-93	819.00	32.19	15.07	63.83
04-27-93	1112.00	35.12	15.28	63.62
04-27-93	1143.00	35.43	15.33	63.57
04-27-93	1210.00	36.10	15.49	63.41
04-27-93	1232.00	36.32	15.52	63.38
04-27-93	1248.00	36.48	15.50	63.40
04-27-93	1343.00	37.43	15.67	63.23
04-27-93	1410.00	38.10	15.90	63.00
04-27-93	1440.00	38.40	15.95	62.95
04-27-93	1510.00	39.10	15.99	62.91
04-27-93	1743.00	41.43	15.21	63.69
04-27-93	1822.00	42.22	15.76	63.14
04-27-93	1834.00	42.34	15.83	63.07
04-27-93	1847.00	42.47	15.91	62.99
04-27-93	1863.00	42.63	15.92	62.98
04-27-93	1909.00	43.09	16.00	62.90
04-27-93	2010.00	44.10	16.10	62.80
04-27-93	2102.00	45.02	16.17	62.74
04-27-93	2210.00	46.10	16.21	62.69
04-27-93	2309.00	47.09	16.26	62.64
04-28-93	8.00	48.08	16.28	62.62
04-28-93	110.00	49.10	16.31	62.59
04-28-93	229.00	50.29	16.33	62.57
04-28-93	407.00	52.07	16.35	62.55
04-28-93	614.00	54.14	16.39	62.51
04-28-93	802.00	56.02	16.45	62.45
04-28-93	910.00	57.10	16.45	62.45
04-28-93	1010.00	58.10	16.47	62.43
04-28-93	1109.00	59.09	16.48	62.42
04-28-93	1313.00	61.13	16.50	62.40
04-28-93	1611.00	64.11	16.51	62.39
04-28-93	1708.00	65.08	16.53	62.37
04-28-93	1915.00	67.15	16.56	62.34
04-28-93	2104.00	69.04	16.59	62.31
04-28-93	2308.00	71.08	16.61	62.29
04-29-93	106.00	73.06	16.62	62.28
04-29-93	306.00	75.06	16.64	62.26
04-29-93	507.00	77.07	16.65	62.25
04-29-93	656.00	78.56	16.68	62.22
04-29-93	953.00	81.53	16.69	62.21
04-29-93	1218.00	84.18	16.70	62.20
04-29-93	1413.00	86.13	16.71	62.19
04-29-93	1611.00	88.11	16.71	62.19
04-29-93	1808.00	90.08	16.72	62.18

WELL PT-09

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008271

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	2017.00	92.17	16.74	62.16
04-29-93	2206.00	94.06	16.76	62.14
04-29-93	2400.00	96.00	16.75	62.15
04-30-93	205.00	98.05	16.75	62.15
04-30-93	408.00	100.08	16.78	62.12
04-30-93	609.00	102.09	16.80	62.10
04-30-93	815.00	104.15	16.81	62.09
04-30-93	1010.00	106.10	16.81	62.09
04-30-93	1211.00	108.11	16.81	62.09
04-30-93	1409.00	110.09	16.79	62.11
04-30-93	1613.00	112.13	16.81	62.09
04-30-93	1800.00	114.00	16.81	62.09
04-30-93	1823.00	114.23	16.28	62.62
04-30-93	1833.00	114.33	16.03	62.87
04-30-93	1837.00	114.37	16.03	62.87
04-30-93	1909.00	115.09	16.16	62.74
04-30-93	1935.00	115.35	16.05	62.85
04-30-93	1938.00	115.38	16.03	62.87
04-30-93	2011.00	116.11	16.03	62.87
04-30-93	2025.00	116.25	16.00	62.90
04-30-93	2037.00	116.37	15.99	62.91
04-30-93	2049.00	116.49	15.98	62.92
04-30-93	2212.00	118.12	15.92	62.98
04-30-93	2307.00	119.07	15.88	63.02
05-01-93	3.00	120.03	15.84	63.06
05-01-93	209.00	122.09	15.76	63.14
05-01-93	409.00	124.09	15.71	63.19
05-01-93	608.00	126.08	15.66	63.24
05-01-93	808.00	128.08	15.64	63.26
05-01-93	1006.00	130.06	15.61	63.29
05-01-93	1210.00	132.10	15.56	63.34
05-01-93	1407.00	134.07	15.55	63.35
05-01-93	1559.00	135.59	15.52	63.38
05-01-93	1803.00	138.03	15.47	63.43
05-01-93	2207.00	142.07	15.44	63.46
05-02-93	200.00	146.00	15.42	63.48
05-02-93	633.00	150.33	15.39	63.51
05-02-93	1022.00	154.22	15.37	63.53
05-02-93	1030.00	154.30	15.40	63.50
05-02-93	1040.00	154.40	15.40	63.50
05-02-93	1120.00	155.20	15.40	63.50
05-02-93	1207.00	156.07	15.38	63.52
05-02-93	1305.00	157.05	15.39	63.51
05-02-93	1407.00	158.07	15.40	63.50
05-02-93	1504.00	159.04	15.38	63.52

008271

WELL PT-09

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008272

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1604.00	160.04	15.35	63.55
05-02-93	1659.00	160.59	15.35	63.55
05-02-93	1805.00	162.05	15.35	63.55
05-02-93	1906.00	163.06	15.33	63.57
05-02-93	2005.00	164.05	15.35	63.55
05-02-93	2208.00	166.08	15.37	63.53
05-02-93	2357.00	167.57	15.36	63.54
05-03-93	221.00	170.21	15.36	63.54
05-03-93	410.00	172.10	15.33	63.57
05-03-93	608.00	174.08	15.33	63.57
05-03-93	830.00	176.30	15.36	63.54
05-03-93	1010.00	178.10	15.36	63.54
05-03-93	1408.00	182.08	15.31	63.59
05-03-93	1605.00	184.05	15.29	63.61
05-03-93	1806.00	186.06	15.29	63.61
05-03-93	2009.00	188.09	15.29	63.61
05-03-93	2358.00	191.58	15.30	63.60
05-04-93	410.00	196.10	15.30	63.60
05-04-93	813.00	200.13	15.33	63.57
05-04-93	1209.00	204.09	15.34	63.56
05-04-93	1606.00	208.06	15.30	63.60
05-04-93	1957.00	211.57	15.31	63.59
05-05-93	6.00	216.06	15.33	63.57
05-05-93	406.00	220.06	15.35	63.55
05-05-93	818.00	224.18	15.37	63.53
05-05-93	1017.00	226.17	15.37	63.53
05-05-93	1039.00	226.39	15.38	63.52
05-05-93	1257.00	228.57	15.36	63.54
05-05-93	1508.00	231.08	15.28	63.62
05-05-93	1805.00	234.05	15.27	63.63
05-05-93	2215.00	238.15	15.21	63.69
05-06-93	337.00	243.37	15.21	63.69
05-06-93	604.00	246.04	15.22	63.68
05-06-93	838.00	248.38	15.24	63.66
05-06-93	1216.00	252.16	15.22	63.68
05-06-93	1413.00	254.13	15.23	63.67

WELL PT-09

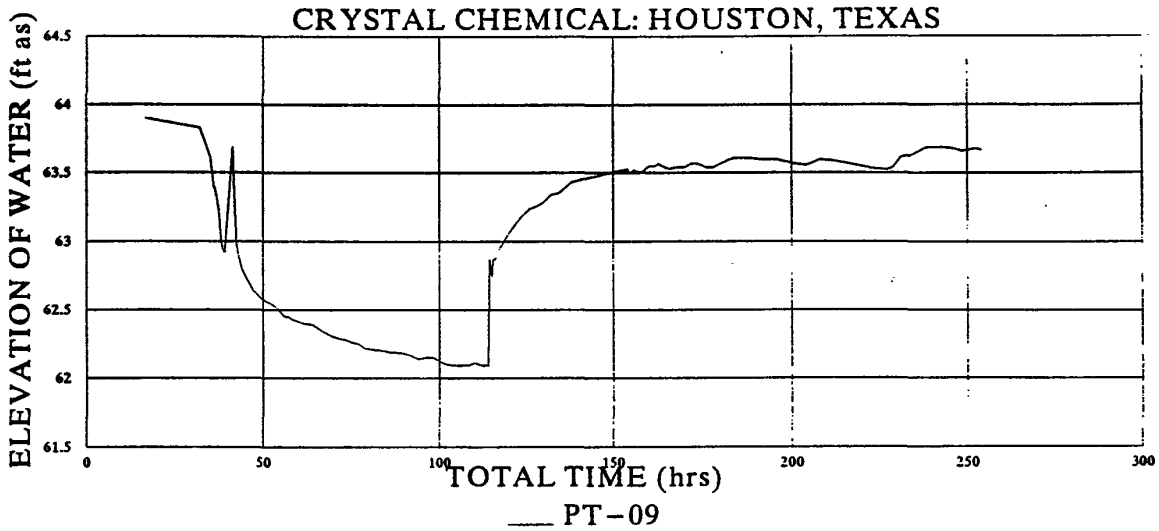
15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008273

OBSERVATION WELL PT-09

CRYSTAL CHEMICAL: HOUSTON, TEXAS



WELL PT-10

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008274

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1706.00	17.06	15.75	63.85
04-27-93	827.00	32.27	15.72	63.88
04-27-93	1131.00	35.31	15.85	63.75
04-27-93	1149.00	35.49	15.86	63.74
04-27-93	1206.00	36.06	15.91	63.69
04-27-93	1221.00	36.21	15.98	63.62
04-27-93	1243.00	36.43	15.98	63.62
04-27-93	1316.00	37.16	16.04	63.56
04-27-93	1402.00	38.02	16.16	63.44
04-27-93	1433.00	38.33	16.20	63.40
04-27-93	1500.00	39.00	16.24	63.36
04-27-93	1734.00	41.34	15.84	63.76
04-27-93	1829.00	42.29	16.13	63.47
04-27-93	1836.00	42.36	16.15	63.45
04-27-93	1904.00	43.04	16.24	63.36
04-27-93	2003.00	44.03	16.39	63.21
04-27-93	2047.00	44.47	16.36	63.24
04-27-93	2203.00	46.03	16.43	63.17
04-27-93	2303.00	47.03	16.47	63.13
04-28-93	2.00	48.02	16.50	63.10
04-28-93	104.00	49.04	16.52	63.08
04-28-93	224.00	50.24	16.54	63.06
04-28-93	401.00	52.01	16.56	63.04
04-28-93	508.00	53.08	16.61	62.99
04-28-93	806.00	56.06	16.65	62.95
04-28-93	905.00	57.05	16.67	62.93
04-28-93	1005.00	58.05	16.67	62.93
04-28-93	1104.00	59.04	16.69	62.91
04-28-93	1305.00	61.05	16.71	62.89
04-28-93	1505.00	63.05	16.72	62.88
04-28-93	1703.00	65.03	16.73	62.87
04-28-93	1909.00	67.09	16.76	62.84
04-28-93	2049.00	68.49	16.79	62.81
04-28-93	2302.00	71.02	16.82	62.78
04-29-93	101.00	73.01	16.81	62.79
04-29-93	301.00	75.01	16.84	62.76
04-29-93	458.00	76.58	16.84	62.76
04-29-93	651.00	78.51	16.86	62.74
04-29-93	946.00	81.46	16.90	62.70
04-29-93	1210.00	84.10	16.88	62.72
04-29-93	1407.00	86.07	16.88	62.72
04-29-93	1605.00	88.05	16.87	62.73
04-29-93	1801.00	90.01	16.89	62.71
04-29-93	2005.00	92.05	16.90	62.70
04-29-93	2202.00	94.02	16.92	62.68

WELL PT-10

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008275

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	2355.00	95.55	16.92	62.68
04-30-93	200.00	98.00	16.91	62.69
04-30-93	401.00	100.01	16.91	62.69
04-30-93	601.00	102.01	16.96	62.64
04-30-93	810.00	104.10	16.97	62.63
04-30-93	1005.00	106.05	16.97	62.63
04-30-93	1207.00	108.07	16.96	62.64
04-30-93	1404.00	110.04	16.94	62.66
04-30-93	1607.00	112.07	16.96	62.64
04-30-93	1755.00	113.55	16.96	62.64
04-30-93	1910.00	115.10	16.61	62.99
04-30-93	2000.00	116.00	16.53	63.07
04-30-93	2019.00	116.19	16.53	63.07
04-30-93	2031.00	116.31	16.50	63.10
04-30-93	2045.00	116.45	16.50	63.10
04-30-93	2206.00	118.06	16.47	63.13
04-30-93	2302.00	119.02	16.42	63.18
05-01-93	1.00	120.01	16.41	63.19
05-01-93	202.00	122.02	16.34	63.26
05-01-93	403.00	124.03	16.28	63.32
05-01-93	601.00	126.01	16.25	63.35
05-01-93	802.00	128.02	16.22	63.38
05-01-93	1002.00	130.02	16.20	63.40
05-01-93	1206.00	132.06	16.16	63.44
05-01-93	1402.00	134.02	16.12	63.48
05-01-93	1556.00	135.56	16.11	63.49
05-01-93	1756.00	137.56	16.06	63.54
05-01-93	2202.00	142.02	16.03	63.57
05-02-93	200.00	146.00	16.00	63.60
05-02-93	603.00	150.03	15.99	63.61
05-02-93	1007.00	154.07	16.00	63.60
05-02-93	1037.00	154.37	16.02	63.58
05-02-93	1059.00	154.59	16.01	63.59
05-02-93	1202.00	156.02	16.00	63.60
05-02-93	1302.00	157.02	16.00	63.60
05-02-93	1400.00	158.00	16.00	63.60
05-02-93	1500.00	159.00	16.00	63.60
05-02-93	1601.00	160.01	16.00	63.60
05-02-93	1655.00	160.55	15.96	63.64
05-02-93	1801.00	162.01	15.96	63.64
05-02-93	1902.00	163.02	15.96	63.64
05-02-93	2001.00	164.01	15.97	63.63
05-02-93	2200.00	166.00	15.98	63.62
05-02-93	2351.00	167.51	15.99	63.61
05-03-93	214.00	170.14	15.99	63.61

WELL PT-10

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-03-93	400.00	172.00	15.99	63.61
05-03-93	600.00	174.00	16.00	63.60
05-03-93	825.00	176.25	16.00	63.60
05-03-93	1003.00	178.03	16.01	63.59
05-03-93	1223.00	180.23	15.99	63.61
05-03-93	1404.00	182.04	15.94	63.66
05-03-93	1600.00	184.00	15.92	63.68
05-03-93	1800.00	186.00	15.92	63.68
05-03-93	2004.00	188.04	15.92	63.68
05-03-93	2352.00	191.52	15.96	63.64
05-04-93	357.00	195.57	15.93	63.67
05-04-93	807.00	200.07	15.97	63.63
05-04-93	1202.00	204.02	15.99	63.61
05-04-93	1600.00	208.00	15.94	63.66
05-04-93	1952.00	211.52	15.97	63.63
05-04-93	2400.00	216.00	15.99	63.61
05-05-93	356.00	219.56	16.00	63.60
05-05-93	808.00	224.08	16.03	63.57
05-05-93	1028.00	226.28	16.00	63.60
05-05-93	1035.00	226.35	16.03	63.57
05-05-93	1257.00	228.57	16.01	63.59
05-05-93	1505.00	231.05	15.89	63.71
05-05-93	1801.00	234.01	15.84	63.76
05-05-93	2200.00	238.00	15.88	63.72
05-06-93	328.00	243.28	15.74	63.86
05-06-93	553.00	245.53	15.85	63.75
05-06-93	831.00	248.31	15.81	63.79
05-06-93	1212.00	252.12	15.81	63.79
05-06-93	1402.00	254.02	15.80	63.80

008276

008276

WELL PT-10

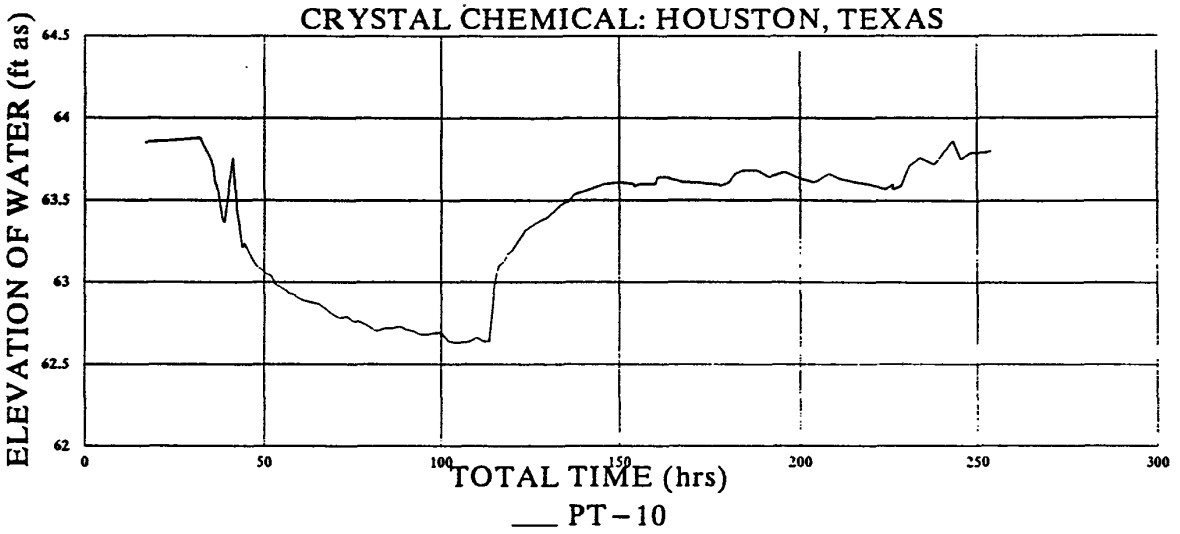
15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008277

OBSERVATION WELL PT-10

CRYSTAL CHEMICAL: HOUSTON, TEXAS



WELL PT-11

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008278

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1714.00	17.14	14.17	63.93
04-27-93	812.00	32.12	14.22	63.88
04-27-93	925.00	33.25	14.23	63.87
04-27-93	1117.00	35.17	14.30	63.80
04-27-93	1120.00	35.20	14.33	63.77
04-27-93	1128.00	35.28	14.33	63.77
04-27-93	1145.00	35.45	14.37	63.73
04-27-93	1203.00	36.03	14.42	63.68
04-27-93	1215.00	36.15	14.49	63.61
04-27-93	1237.00	36.37	14.51	63.59
04-27-93	1248.00	36.48	14.50	63.60
04-27-93	1320.00	37.20	14.58	63.52
04-27-93	1407.00	38.07	14.71	63.39
04-27-93	1436.00	38.36	14.76	63.34
04-27-93	1507.00	39.07	14.80	63.30
04-27-93	1740.00	41.40	14.37	63.73
04-27-93	1818.00	42.18	14.60	63.50
04-27-93	1840.00	42.40	14.72	63.38
04-27-93	1905.00	43.05	14.80	63.30
04-27-93	2006.00	44.06	14.89	63.21
04-27-93	2059.00	44.59	14.95	63.15
04-27-93	2206.00	46.06	14.99	63.11
04-27-93	2307.00	47.07	15.04	63.06
04-28-93	5.00	48.05	15.07	63.03
04-28-93	107.00	49.07	15.10	63.00
04-28-93	227.00	50.27	15.12	62.98
04-28-93	404.00	52.04	15.14	62.96
04-28-93	611.00	54.11	15.19	62.91
04-28-93	810.00	56.10	15.23	62.87
04-28-93	909.00	57.09	15.25	62.85
04-28-93	1007.00	58.07	15.26	62.84
04-28-93	1108.00	59.08	15.28	62.82
04-28-93	1309.00	61.09	15.30	62.80
04-28-93	1508.00	63.08	15.31	62.79
04-28-93	1707.00	65.07	15.34	62.76
04-28-93	1913.00	67.13	15.36	62.74
04-28-93	2103.00	69.03	15.39	62.71
04-28-93	2306.00	71.06	15.41	62.69
04-29-93	105.00	73.05	15.43	62.67
04-29-93	305.00	75.05	15.44	62.66
04-29-93	505.00	77.05	15.45	62.65
04-29-93	655.00	78.55	15.48	62.62
04-29-93	951.00	81.51	15.46	62.64
04-29-93	1214.00	84.14	15.50	62.60
04-29-93	1411.00	86.11	15.51	62.59

WELL PT-11

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008279

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	1610.00	88.10	15.51	62.59
04-29-93	1805.00	90.05	15.53	62.57
04-29-93	2010.00	92.10	15.55	62.55
04-29-93	2206.00	94.06	15.56	62.54
04-29-93	2400.00	96.00	15.57	62.53
04-30-93	204.00	98.04	15.57	62.53
04-30-93	405.00	100.05	15.57	62.53
04-30-93	607.00	102.07	15.60	62.50
04-30-93	814.00	104.14	15.61	62.49
04-30-93	1009.00	106.09	15.62	62.48
04-30-93	1210.00	108.10	15.62	62.48
04-30-93	1407.00	110.07	15.61	62.49
04-30-93	1611.00	112.11	15.62	62.48
04-30-93	1758.00	113.58	15.63	62.47
04-30-93	1828.00	114.28	15.36	62.74
04-30-93	1908.00	115.08	15.30	62.80
04-30-93	1932.00	115.32	15.21	62.89
04-30-93	1954.00	115.54	15.20	62.90
04-30-93	2008.00	116.08	15.18	62.92
04-30-93	2023.00	116.23	15.16	62.94
04-30-93	2035.00	116.35	15.15	62.95
04-30-93	2048.00	116.48	15.14	62.96
04-30-93	2210.00	118.10	15.09	63.01
04-30-93	2304.00	119.04	15.05	63.05
05-01-93	3.00	120.03	15.02	63.08
05-01-93	208.00	122.08	14.95	63.15
05-01-93	409.00	124.09	14.89	63.21
05-01-93	604.00	126.04	14.86	63.24
05-01-93	804.00	128.04	14.81	63.29
05-01-93	1005.00	130.05	14.79	63.31
05-01-93	1209.00	132.09	14.75	63.35
05-01-93	1405.00	134.05	14.71	63.39
05-01-93	1559.00	135.59	14.69	63.41
05-01-93	1801.00	138.01	14.66	63.44
05-01-93	2206.00	142.06	14.61	63.49
05-02-93	200.00	146.00	14.59	63.51
05-02-93	630.00	150.30	14.55	63.55
05-02-93	1024.00	154.24	14.53	63.57
05-02-93	1034.00	154.34	14.53	63.57
05-02-93	1042.00	154.42	14.54	63.56
05-02-93	1101.00	155.01	14.57	63.53
05-02-93	1120.00	155.20	14.50	63.60
05-02-93	1205.00	156.05	14.52	63.58
05-02-93	1304.00	157.04	14.53	63.57
05-02-93	1404.00	158.04	14.54	63.56

WELL PT-11

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008280

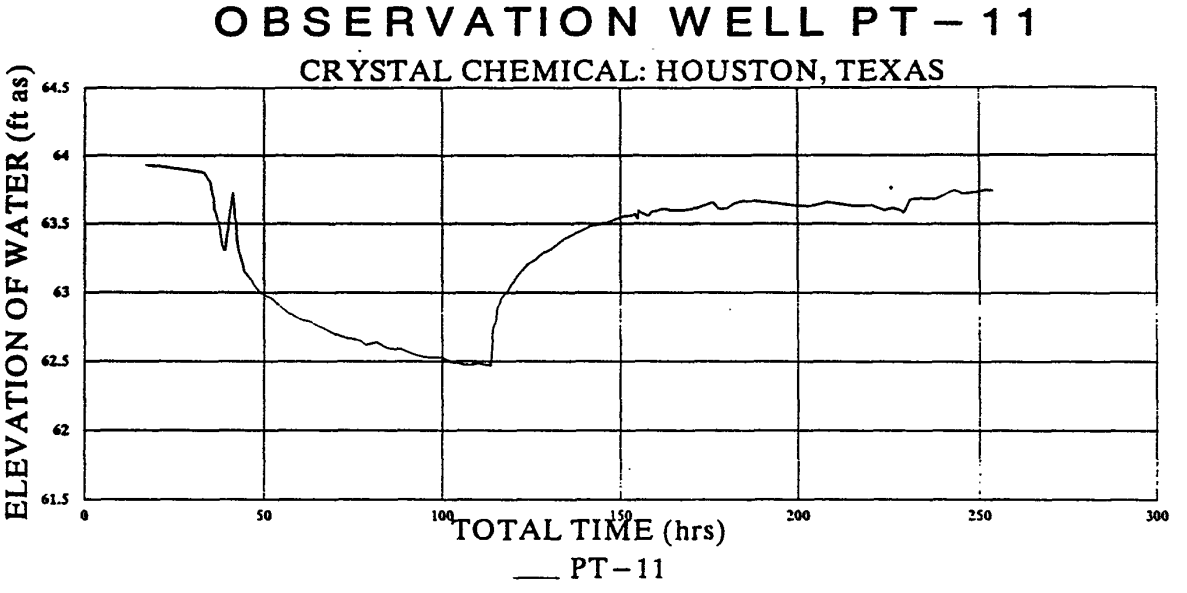
Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1503.00	159.03	14.51	63.59
05-02-93	1603.00	160.03	14.51	63.59
05-02-93	1658.00	160.58	14.50	63.60
05-02-93	1803.00	162.03	14.49	63.61
05-02-93	1904.00	163.04	14.49	63.61
05-02-93	2003.00	164.03	14.50	63.60
05-02-93	2204.00	166.04	14.50	63.60
05-02-93	2354.00	167.54	14.50	63.60
05-03-93	217.00	170.17	14.49	63.61
05-03-93	405.00	172.05	14.48	63.62
05-03-93	827.00	176.27	14.44	63.66
05-03-93	1007.00	178.07	14.49	63.61
05-03-93	1207.00	180.07	14.49	63.61
05-03-93	1407.00	182.07	14.45	63.65
05-03-93	1604.00	184.04	14.43	63.67
05-03-93	1803.00	186.03	14.43	63.67
05-03-93	2007.00	188.07	14.43	63.67
05-03-93	2356.00	191.56	14.44	63.66
05-04-93	810.00	200.10	14.47	63.63
05-04-93	1207.00	204.07	14.47	63.63
05-04-93	1603.00	208.03	14.44	63.66
05-04-93	1954.00	211.54	14.45	63.65
05-05-93	2.00	216.02	14.47	63.63
05-05-93	403.00	220.03	14.46	63.64
05-05-93	814.00	224.14	14.50	63.60
05-05-93	1007.00	226.07	14.48	63.62
05-05-93	1255.00	228.55	14.50	63.60
05-05-93	1339.00	229.39	14.52	63.58
05-05-93	1509.00	231.09	14.42	63.68
05-05-93	1806.00	234.06	14.41	63.69
05-05-93	2203.00	238.03	14.42	63.68
05-06-93	331.00	243.31	14.35	63.75
05-06-93	557.00	245.57	14.38	63.72
05-06-93	834.00	248.34	14.37	63.73
05-06-93	1208.00	252.08	14.35	63.75
05-06-93	1407.00	254.07	14.36	63.74

WELL PT-11

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008281



008281

WELL P-4

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008282

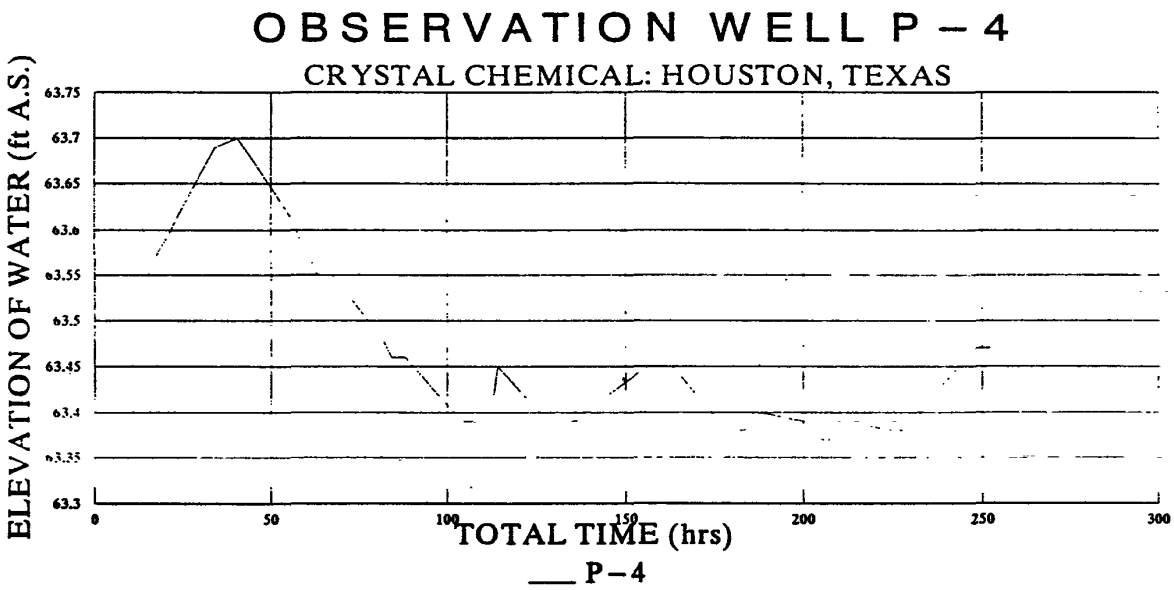
Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1754.00	17.54	16.63	63.57
04-27-93	1010.00	34.10	16.51	63.69
04-27-93	1632.00	40.32	16.50	63.70
04-28-93	816.00	56.16	16.59	63.61
04-28-93	915.00	57.15	16.60	63.60
04-28-93	1114.00	59.14	16.62	63.58
04-28-93	1317.00	61.17	16.63	63.57
04-28-93	1514.00	63.14	16.65	63.55
04-28-93	1712.00	65.12	16.65	63.55
04-28-93	1921.00	67.21	16.65	63.55
04-29-93	956.00	81.56	16.72	63.48
04-29-93	1221.00	84.21	16.74	63.46
04-29-93	1417.00	86.17	16.74	63.46
04-29-93	1615.00	88.15	16.74	63.46
04-29-93	1830.00	90.30	16.75	63.45
04-30-93	819.00	104.19	16.81	63.39
04-30-93	1015.00	106.15	16.81	63.39
04-30-93	1214.00	108.14	16.81	63.39
04-30-93	1412.00	110.12	16.82	63.38
04-30-93	1612.00	112.12	16.81	63.39
04-30-93	1802.00	114.02	16.75	63.45
05-01-93	810.00	128.10	16.81	63.39
05-01-93	1010.00	130.10	16.81	63.39
05-01-93	1235.00	132.35	16.82	63.38
05-01-93	1411.00	134.11	16.81	63.39
05-01-93	1609.00	136.09	16.81	63.39
05-01-93	1806.00	138.06	16.80	63.40
05-02-93	1210.00	156.10	16.75	63.45
05-02-93	1310.00	157.10	16.75	63.45
05-02-93	1410.00	158.10	16.75	63.45
05-02-93	1510.00	159.10	16.75	63.45
05-02-93	1610.00	160.10	16.75	63.45
05-02-93	1710.00	161.10	16.75	63.45
05-02-93	1810.00	162.10	16.75	63.45
05-02-93	1910.00	163.10	16.75	63.45
05-03-93	833.00	176.33	16.81	63.39
05-03-93	1234.00	180.34	16.83	63.37
05-03-93	1410.00	182.10	16.82	63.38
05-03-93	1612.00	184.12	16.82	63.38
05-03-93	1810.00	186.10	16.81	63.39
05-03-93	2012.00	188.12	16.80	63.40
05-04-93	815.00	200.15	16.81	63.39
05-04-93	1212.00	204.12	16.83	63.37
05-04-93	1608.00	208.08	16.83	63.37
05-04-93	2000.00	212.00	16.81	63.39

WELL P-4

15-FOOT SAND
OBSSERVATION WELL
E-LINE DATA

008283

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-05-93	827.00	224.27	16.82	63.38
05-05-93	1045.00	226.45	16.82	63.38
05-05-93	1300.00	229.00	16.82	63.38
05-05-93	1514.00	231.14	16.81	63.39
05-05-93	1811.00	234.11	16.79	63.41
05-06-93	821.00	248.21	16.73	63.47
05-06-93	1220.00	252.20	16.73	63.47



WELL P-5

CALCARECUS CLAY
OBSSERVATION WELL
E-LINE DATA

008284

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1757.00	17.57	17.23	63.97
04-27-93	1013.00	34.13	17.33	63.87
04-27-93	1534.00	39.34	17.28	63.92
04-28-93	815.00	56.15	17.49	63.71
04-28-93	915.00	57.15	17.51	63.69
04-28-93	1113.00	59.13	17.52	63.68
04-28-93	1316.00	61.16	17.51	63.69
04-28-93	1513.00	63.13	17.50	63.70
04-28-93	1712.00	65.12	17.50	63.70
04-28-93	1921.00	67.21	17.52	63.68
04-29-93	955.00	81.55	17.61	63.59
04-29-93	1220.00	84.20	17.50	63.70
04-29-93	1416.00	86.16	17.58	63.62
04-29-93	1614.00	88.14	17.59	63.61
04-29-93	1829.00	90.29	17.50	63.70
04-30-93	818.00	104.18	17.70	63.50
04-30-93	1014.00	106.14	17.69	63.51
04-30-93	1214.00	108.14	17.58	63.62
04-30-93	1412.00	110.12	17.62	63.58
04-30-93	1619.00	112.19	17.63	63.57
04-30-93	1802.00	114.02	17.66	63.54
05-01-93	810.00	128.10	17.65	63.55
05-01-93	1010.00	130.10	17.67	63.53
05-01-93	1235.00	132.35	17.65	63.55
05-01-93	1411.00	134.11	17.61	63.59
05-01-93	1609.00	136.09	17.60	63.60
05-01-93	1805.00	138.05	17.56	63.64
05-02-93	1210.00	156.10	17.60	63.60
05-02-93	1310.00	157.10	17.60	63.60
05-02-93	1410.00	158.10	17.60	63.60
05-02-93	1510.00	159.10	17.60	63.60
05-02-93	1610.00	160.10	17.60	63.60
05-02-93	1810.00	162.10	17.60	63.60
05-02-93	1910.00	163.10	17.60	63.60
05-03-93	833.00	176.33	17.64	63.56
05-03-93	1012.00	178.12	17.65	63.55
05-03-93	1233.00	180.33	17.62	63.58
05-03-93	1410.00	182.10	17.59	63.61
05-03-93	1611.00	184.11	17.56	63.64
05-03-93	1808.00	186.08	17.53	63.67
05-03-93	2012.00	188.12	17.54	63.66
05-04-93	815.00	200.15	17.62	63.58
05-04-93	1211.00	204.11	17.64	63.56
05-04-93	1608.00	208.08	17.57	63.63
05-04-93	1959.00	211.59	17.58	63.62

WELL P – 5

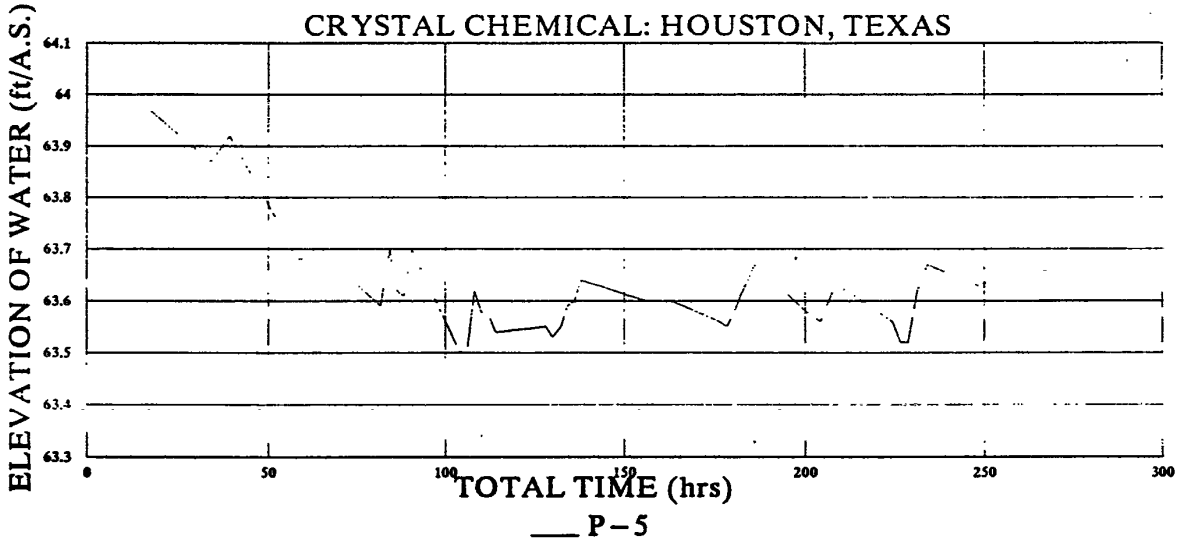
CALCARECUS CLAY
OBSSERVATION WELL
E–LINE DATA

008285

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05–05–93	826.00	224.26	17.64	63.56
05–05–93	1044.00	226.44	17.68	63.52
05–05–93	1259.00	228.59	17.68	63.52
05–05–93	1513.00	231.13	17.58	63.62
05–05–93	1810.00	234.10	17.53	63.67
05–06–93	821.00	248.21	17.57	63.63
05–06–93	1220.00	252.20	17.56	63.64

OBSERVATION WELL P – 5

CRYSTAL CHEMICAL: HOUSTON, TEXAS



WELL PS-01

15/35 CONFINING UNIT
PIEZOMETER
E-LINE DATA

008286

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-26-93	1720.00	17.20	21.90	55.50
04-27-93	751.00	31.51	21.60	55.80
04-27-93	1342.00	37.42	21.60	55.80
04-27-93	1407.00	38.07	21.59	55.81
04-27-93	1437.00	38.37	21.59	55.81
04-27-93	1508.00	39.08	21.59	55.81
04-27-93	1742.00	41.42	21.57	55.83
04-27-93	1841.00	42.41	21.86	55.54
04-27-93	1907.00	43.07	21.85	55.55
04-27-93	2007.00	44.07	21.85	55.55
04-27-93	2100.00	45.00	21.85	55.55
04-27-93	2208.00	46.08	21.84	55.56
04-27-93	2306.00	47.06	21.84	55.56
04-27-93	7.00	48.07	21.84	55.56
04-27-93	107.00	49.07	21.84	55.56
04-27-93	227.00	50.27	21.84	55.56
04-27-93	405.00	52.05	21.82	55.58
04-27-93	612.00	54.12	21.81	55.59
04-27-93	809.00	56.09	21.81	55.59
04-27-93	908.00	57.08	21.81	55.59
04-27-93	1008.00	58.08	21.80	55.60
04-27-93	1107.00	59.07	21.79	55.61
04-27-93	1308.00	61.08	21.77	55.63
04-27-93	1507.00	63.07	21.75	55.65
04-27-93	1706.00	65.06	21.72	55.68
04-28-93	1912.00	67.12	21.71	55.69
04-28-93	2102.00	69.02	21.70	55.70
04-28-93	2305.00	71.05	21.69	55.71
04-28-93	104.00	73.04	21.57	55.83
04-28-93	304.00	75.04	21.64	55.76
04-28-93	501.00	77.01	21.61	55.79
04-28-93	654.00	78.54	21.62	55.78
04-28-93	950.00	81.50	21.60	55.80
04-28-93	1213.00	84.13	21.58	55.82
04-28-93	1410.00	86.10	21.55	55.85
04-28-93	1608.00	88.08	21.53	55.87
04-28-93	1804.00	90.04	21.51	55.89
04-28-93	2008.00	92.08	21.49	55.91
04-28-93	2205.00	94.05	21.48	55.92
04-29-93	2357.00	95.57	21.46	55.94
04-29-93	202.00	98.02	21.43	55.97
04-29-93	405.00	100.05	21.42	55.98
04-29-93	605.00	102.05	21.41	55.99
04-29-93	813.00	104.13	21.40	56.00
04-29-93	1008.00	106.08	21.39	56.01

WELL PS-01

15/35 CONFINING UNIT
PIEZOMETER
E-LINE DATA

008287

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
04-29-93	1209.00	108.09	21.35	56.05
04-29-93	1406.00	110.06	21.31	56.09
04-29-93	1610.00	112.10	21.29	56.11
04-29-93	1757.00	113.57	21.28	56.12
04-29-93	1813.00	114.13	21.24	56.16
04-30-93	1814.00	114.14	21.24	56.16
04-30-93	1830.00	114.30	21.25	56.15
04-30-93	1840.00	114.40	21.25	56.15
04-30-93	1907.00	115.07	21.26	56.14
04-30-93	1931.00	115.31	21.24	56.16
04-30-93	1951.00	115.51	21.24	56.16
04-30-93	2007.00	116.07	21.24	56.16
04-30-93	2022.00	116.22	21.26	56.14
04-30-93	2032.00	116.32	21.26	56.14
04-30-93	2046.00	116.46	21.26	56.14
04-30-93	2207.00	118.07	21.27	56.13
04-30-93	2304.00	119.04	21.26	56.14
04-30-93	3.00	120.03	21.26	56.14
04-30-93	207.00	122.07	21.23	56.17
04-30-93	406.00	124.06	21.21	56.19
04-30-93	605.00	126.05	21.21	56.19
04-30-93	805.00	128.05	21.17	56.23
04-30-93	1005.00	130.05	21.15	56.25
04-30-93	1208.00	132.08	21.12	56.28
04-30-93	1404.00	134.04	21.09	56.31
04-30-93	1558.00	135.58	21.07	56.33
04-30-93	1759.00	137.59	21.04	56.36
05-01-93	2205.00	142.05	21.00	56.40
05-01-93	200.00	146.00	20.96	56.44
05-01-93	632.00	150.32	20.90	56.50
05-01-93	1002.00	154.02	20.84	56.56
05-01-93	1016.00	154.16	20.82	56.58
05-01-93	1017.00	154.17	20.86	56.54
05-01-93	1026.00	154.26	20.85	56.55
05-01-93	1035.00	154.35	20.87	56.53
05-01-93	1056.00	154.56	20.88	56.52
05-01-93	1104.00	155.04	20.88	56.52
05-02-93	1122.00	155.22	20.88	56.52
05-02-93	1204.00	156.04	20.90	56.50
05-02-93	1303.00	157.03	20.88	56.52
05-02-93	1403.00	158.03	20.87	56.53
05-02-93	1503.00	159.03	20.85	56.55
05-02-93	1602.00	160.02	20.85	56.55
05-02-93	1657.00	160.57	20.81	56.59
05-02-93	1803.00	162.03	20.81	56.59

WELL PS-01

15/35 CONFINING UNIT
PIEZOMETER
E-LINE DATA

008288

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)
05-02-93	1903.00	163.03	20.80	56.60
05-02-93	2003.00	164.03	20.78	56.62
05-02-93	2202.00	166.02	20.78	56.62
05-02-93	2355.00	167.55	20.78	56.62
05-02-93	216.00	170.16	20.75	56.65
05-02-93	404.00	172.04	20.75	56.65
05-02-93	605.00	174.05	20.72	56.68
05-02-93	828.00	176.28	20.71	56.69
05-02-93	1007.00	178.07	20.70	56.70
05-03-93	1016.00	178.16	20.86	56.54
05-03-93	1209.00	180.09	20.68	56.72
05-03-93	1405.00	182.05	20.65	56.75
05-03-93	1602.00	184.02	20.62	56.78
05-03-93	1802.00	186.02	20.59	56.81
05-03-93	2006.00	188.06	20.57	56.83
05-03-93	2355.00	191.55	20.54	56.86
05-03-93	405.00	196.05	20.50	56.90
05-03-93	810.00	200.10	20.48	56.92
05-03-93	1206.00	204.06	20.45	56.95
05-03-93	1602.00	208.02	20.38	57.02
05-04-93	1954.00	211.54	20.35	57.05
05-04-93	3.00	216.03	20.32	57.08
05-04-93	400.00	220.00	20.31	57.09
05-04-93	812.00	224.12	20.26	57.14
05-05-93	1006.00	226.06	20.23	57.17
05-05-93	1040.00	226.40	20.25	57.15
05-05-93	1258.00	228.58	20.19	57.21
05-05-93	1510.00	231.10	20.12	57.28
05-05-93	1807.00	234.07	20.09	57.31
05-05-93	2212.00	238.12	20.06	57.34
05-05-93	332.00	243.32	19.98	57.42
05-05-93	500.00	245.00	19.97	57.43
05-05-93	835.00	248.35	19.95	57.45
05-06-93	1210.00	252.10	19.91	57.49
05-06-93	1409.00	254.09	19.91	57.49

WELL PS-01

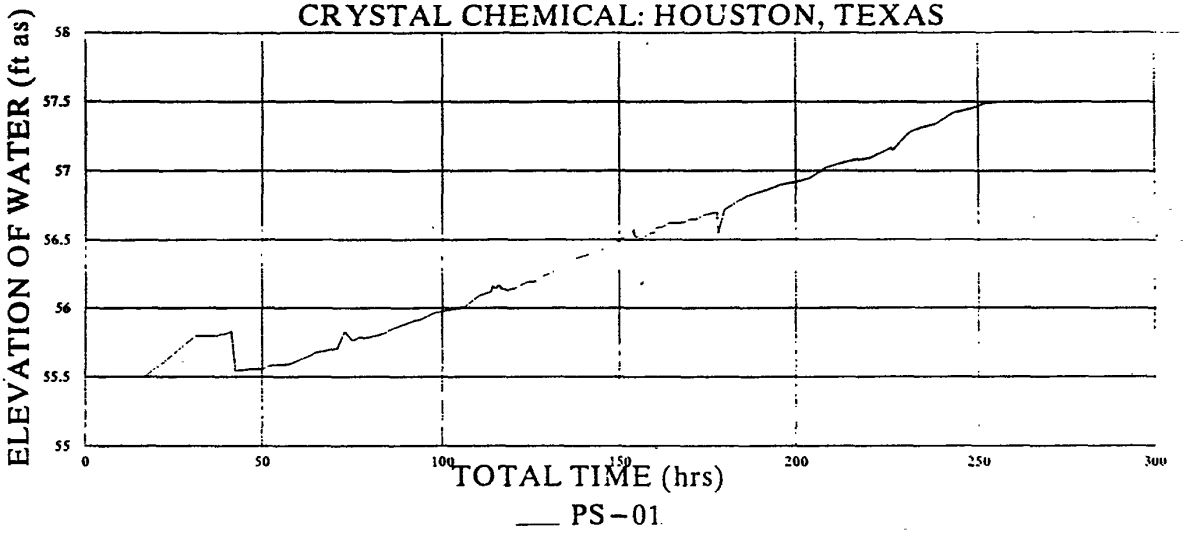
15/35 CONFINING UNIT
PIEZOMETER
E-LINE DATA

Date	Time M	Time (hrs)	DTW (ft)	EOW (ft as)

008289

PIEZOMETER PS-01

CRYSTAL CHEMICAL: HOUSTON, TEXAS



008289

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008290

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/19/93 FINISH DATE: 4/19/93	TIME:
START TIME: 1100 FINISH TIME: 1300	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						GREENISH BROWN SOFT CLAY (CH) MOIST, SLIGHTLY MOTTLED LIGHT GRAY AND GREENISH BROWN @ 2.5 FEET
					CH	
					2.5'	
BARREL			100%		FILL	LIGHT BROWN FILL (ROAD BASE) HARD BALCK MEDIUM STIFF CLAY (CH)
				5'		
ST		50%				
			100%			GRADING TO DARK GRAY; STIFF
					CH	
						CALCAREOUS NODULES BELOW 9 FEET
				10'		GRADING TO GREENISH GRAY W/Fe NODULES AND YELLOW IRON STAINING
			100%			BECOMING CALCAREOUS BETWEEN 12-13 FEET
						RED AND GRAY VERY STIFF CLAY (CH) W/OCCASIONAL FE AND CALCAREOUS NODULES
				15'		VERY STIFF
ST		70%				GRADING TO LIGHT GRAY
			90%		17.0	
						LIGHT GRAY STIFF SILTY CLAY (CL) W/OCASSIONAL Fe NODULES, YELLOW IRON STAINING
					CL	
				20'		
						GRADING TO RED AND LIGHT GRAY

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G1

LOG OF BORING NUMBER G-1
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

008291

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION: CRYSTAL SITE; ADJACENT TO CPT #3	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/19/93 FINISH DATE: 4/19/93	TIME:
START TIME: 1100 FINISH TIME: 1300	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					20.5	GRAY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES AND YELLOW IRON
						STAINING, SLIGHTLY CALCAREOUS THROUGHOUT
					CH	
						LARGE CALCAREOUS NODULES @ 26.5 FEET
			95%			LARGE CALCAREOUS NODULES @ 27.5 FEET
						OCCASIONAL Fe STAINING BELOW 24.5 FEET
				25'		
ST		80%				BLACK STRINGERS @ 26 FEET
						GRADING TO VERY CALCAREOUS CLAY (CH) W/HEAVY Fe AND YELLOW IRON STAINING, BLOCKY
			90%			
					CH	
				30'		
					31.5	
			100%			GRAY MEDIUM STIFF SANDY/SILTY CLAY (CL) HEAVY Fe STAINING NOT CALCAREOUS
						GRADING TO STIFF SANDY CLAY (CL) HEAVY Fe AND YELLOW IRON STAINING W/OCCASIONAL CALCAREOUS NODULES
					CL	
				35'		
					35.5	
						BROWN SATURATED SILT (ML)
ST		95%	80%		ML	GRADING TO LIGHT GRAY AND BROWN SANDY SILT (ML)
						OCCASIONAL SANDY CLAY ZONES LIGHT GRAY
					38.5	
						REDDISH BROWN/GRAY SOFT SANDY CLAY (CL)
				40'		
						GRADING TO RED AND LIGHT GRAY

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G1A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-1
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008292

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/19/93 FINISH DATE: 4/19/93	TIME:
START TIME: 1100 FINISH TIME: 1300	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						REDDISH BROWN MEDIUM STIFF SANDY SILT (ML) MOIST
						STAINING, SLIGHTLY CALCAREOUS THROUGHOUT
					ML	
					42.5	
			80%			LIGHT GRAY AND RED VERY STIFF CLAY (CL) W/OCCASIONAL
						CALCAREOUS ZONES
					CH	
					45.0	
				45'		BOTTOM OF BORING @ 45.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G1B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-2
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008293

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 1700 FINISH TIME: 1850	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BLACK STIFF CLAY (CH) W/ Fe NODULES
			100%		CH	
ST		50%		5'		
			90%			CALCAREOUS NODULES BELOW 7.5 FEET
				10'		GRADING TO DARK GRAY
			100%		CH	GRADING TO RED AND GRAY BECOMING CALCAREOUS, INCREASE CALCAREOUS NODULES
				15'		GRADING TO GRAY W/YELLOW IRON STAINING
					16.5	
			100%		CL	GRAY SILTY CLAY (CL) W/YELLOW IRON STAINING
					CH	GRAY STIFF CLAY (CH) W/YELLOW IRON STAINING
					19.0	
				20'	ML	GRAY CLAYEY SILT (ML) W/YELLOW IRON STAINING

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G2

LOG OF BORING NUMBER G-2
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	ST– SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 1700 FINISH TIME: 1850	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
ST		90%			CL	GRAY MEDIUM STIFF SILTY CLAY (CL) VERY CALCAREOUS W/OCCASIONAL /Fe NODULES
					22.0	
			100%			GRAY STIFF SANDY/SILTY CLAY (CL) W/OCCASIONAL Fe NODULES AND YELLOW IRON STAINING
ST		95%				
				25'		
						CALCAREOUS NODULES @ 26 FEET
					CL	
			100%			
				30'		
					31.0	
					SM	GRAY SILTY VERY FINE GRAINED SAND (SM) W/YELLOW IRON STAINING
ST		80%				
				35'		BECOMING REDDISH BROWN
						POORLY CEMENTED SAND @ 37 FEET
						VERY HARD MODERATELY CEMENTED CALCAREOUS ZONE @ 38 FEET
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172462A

008294

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-2
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008295

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 1700 FINISH TIME: 1850	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					SM	REDDISH BROWN SLIGHTLY SILTY SAND (SM) POORLY CEMENTED IN PART
				45'		NO CEMENTING
					SM	
				50'		
					52.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
				55'		
ST		90%				
					57.0	
						BOTTOM OF BORING @ 57 FEET
				60'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172432B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-3
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008296

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/19/93 FINISH DATE: 4/19/93	TIME:
START TIME: 1610 FINISH TIME: 1810	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CAP	GREENISH BROWN STIFF CLAY (CH) W/LIMESTONE AGGREGATE AND HUMIC MATERIAL CLAY CAP FILL
			100%			PLASTIC LINER @ 3'
ST		50%			3.0	
					CH	BLACK STIFF CLAY (CH)
				5'		GRADING TO GREENISH BLACK W/OCCASIONAL Fe NODULES AND CALCAREOUS NODULES
			100%			
ST		60%				INCREASE Fe AND CALCAREOUS NODULES BELOW 8 FEET
				10'		GRADING TO RED AND GRAY BECOMING CALCAREOUS W/CALCAREOUS ZONES
			90%			
					CH	VERY CALCAREOUS BETWEEN 11 AND 14 FEET
				15'		CALCAREOUS ZONE 14.5 – 15.5 FEET GRADING TO GRAY W/YELLOW IRON STAINING AND Fe NODULES, STIFF SLIGHTLY CALCAREOUS
			100%			
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172403

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-3
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008297

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON TX
BORING LOCATION:

START DATE: 4/19/93 FINISH DATE: 4/19/93
START TIME: 1610 FINISH TIME: 1810

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT BARREL
CS - CALIFORNIA SAMPLING
ST - SHELBY TUBE
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
ST		90%			CH	GRAY VERY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS AND Fe NODULES NON-CALCAREOUS
			90%			BECOMING CALCAREOUS AGAIN W/VERY CALCAREOUS ZONE @ 23 FEET, 24-25 FEET. INCREASE YELLOW IRON STAINING BELOW 23 FEET
						GRADING TO RED AND GRAY VERY CALCAREOUS THROUGHOUT BLACK STREAKS @ 24.5 FEET
				25'		
ST		70%	90%		CH	
				30'		
					31.5	
			100%		CL	RED AND GRAY VERY STIFF SANDY CLAY (CL) W/OCCASIONAL CALCAREOUS NODULES
ST		75%			34.5	
				35'	SC	BROWN TO BUFF SLIGHTLY CLAYEY VERY FINE GRAINED SAND (SC) SATURATED
						LESS MOISTURE BELOW 37 FEET
ST		100%				
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G3A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-3
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008298

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON TX
BORING LOCATION: CRYSTAL SITE; ADJACENT TO CPT #3

START DATE: 4/19/93 FINISH DATE: 4/19/93
START TIME: 1610 FINISH TIME: 1810

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT BARREL
CS - CALIFORNIA SAMPLING
ST - SHELBY TUBE
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					40.75	BROWN TO BUFF SLIGHTLY CLAYEY VERY FINE GRAINED SAND (SC)
CS		100%			CH	RED AND GRAY VERY STIFF CLAY (CH)
					43.0	
						BOTTOM OF BORING @ 43.0 FEET
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172463B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-4
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008299

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/20/93 FINISH DATE: 4/20/93
START TIME: 0930 FINISH TIME: 1115

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT BARREL
CS - CALIFORNIA SAMPLING
ST - SHELBY TUBE
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						GREENISH BROWN STIFF CLAY (CH) CLAY CAP FILL
					CAP	BROWN AND LOOSE @ 2.5 FEET STRONG UNIDENTIFIED ODOR
			50%		3.0	
						BLACK MEDIUM STIFF CLAY (CH) W/OCCASIONAL Fe AND CALCAREOUS NODULES SLIGHTLY MOIST
				5'		GRADING TO DARK GRAY
ST		50%				
			100%		CH	
				10'		GRADING TO GRAY STIFF CLAY (CH) W/Fe NODULES AND LARGE CALCAREOUS NODULES
					CH	CALCAREOUS ZONE @ 12 FEET
			100%			CALCAREOUS ZONE @ 13 FEET
						GRADING TO RED AND GRAY BECOMING CALCAREOUS
				15'		
ST		70%			17.0	
			100%			GRAY MEDIUM STIFF SILTY CLAY (CL) W/Fe AND YELLOW IRON STAINING SLIGHTLY CALCAREOUS
					CL	CALCAREOUS ZONE @ 18 FEET
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G4

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-4
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008300

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT BARREL
	CS – CALIFORNIA SAMPLING
BORING LOCATION:	ST – SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/20/93 FINISH DATE: 4/20/93	TIME:
START TIME: 0930 FINISH TIME: 1115	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CL	
					22.0	
			80%			GRAY STIFF CLAY (CH) W/Fe NODULES AND YELLOW IRON STAINING, CALCAREOUS
						GRADING TO VERY CALCAREOUS
ST		70%		25'		CALCAREOUS ZONE @ 25-27 FEET
			100%			GRADING TO Fe AND YELLOW IRON STAINING
					CH	
						CALCAREOUS ZONE
				30'		CALCAREOUS ZONE
			90%			
						CALCAREOUS ZONE
ST		70%				
					34.75	
				35'		BROWN SANDY SILT (ML) W/YELLOW IRON STAINING WET
					ML	
			90%		37.0	
						BROWN SILTY VERY FINE GRAINED SAND (SM) W/Fe STAINING AND GRAY CLAY ZONES
					SM	
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G4A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-4
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008301

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5 FOOT BARREL CALIFORNIA SAMPLING
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/20/93 FINISH DATE: 4/20/93	TIME:
START TIME: 0930 FINISH TIME: 1115	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						BROWN TO GRAY VERY FINE GRAINED SAND (SM) W/Fe STAINING
					SM	
CS		100%				
					43.5	
						LIGHT GRAY AND RED VERY STIFF CLAY (CH)
				45'		
			100%		CH	
ST					48.5	
						BOTTOM OF BORING @ 48.5 FEET
				50'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G4B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-5
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008302

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT BARREL
	CS- CALIFORNIA SAMPLING
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/20/93 FINISH DATE: 4/20/93	TIME:
START TIME: 1600 FINISH TIME: 1730	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CAP	GREENISH BLACK MEDIUM STIFF CLAY (CH); CLAY CAP FILL
			70%			
					3.5	PLASTIC LINER @ 3.5 FEET
					CH	GRAY AND BROWN MOTTLED STIFF CLAY (CH)
					FILL	ASPHALTIC FILL MATERIAL
				5'	CH	BLACK STIFF CLAY (CH)
			100%			GRADING TO DARK GRAY W/OCCASIONAL CALCAREOUS AND Fe NODULES
ST		50%				GRADING TO GREENISH GRAY CALCAREOUS ZONE @ 9 FEET
					9.0	
				10'	CL	GREENISH GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL Fe NODULES AND YELLOW IRON STAINING
ST		80%				
					14.0	
			100%	15'	SP	BROWN VERY FINE GRAINED SAND (SP)
ST		90%			18.0	
				20'	ML	LIGHT GRAY MEDIUM STIFF SANDY SILT (ML)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G5

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-5
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008303

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT BARREL
	CS- CALIFORNIA SAMPLING
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/20/93 FINISH DATE: 4/20/93	TIME:
START TIME: 1600 FINISH TIME: 1730	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						LIGHT GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL Fe NODULES AND
					CL	CALCAREOUS ZONES
ST		90%				CALCAREOUS ZONE
						BECOMING CALCAREOUS W/Fe STAINING
				25'		
					26.0	
					CH	GRAY VERY STIFF CLAY (CH) CALCAREOUS W/Fe STAINING THROUGHOUT
ST		50%				
					29.0	
				30'		RED AND GRAY MEDIUM STIFF SANDY CLAY (CL) CALCAREOUS
					CL	
						CALCAREOUS ZONES BELOW 32 FEET
					32.5	
			100%		SM	REDDISH BROWN SILTY VERY FINE GRAINED SAND (SM)
ST		100%				GRADING TO GREENISH BROWN
				35'		GRADING TO GRAY
			100%			
					39.0	
ST		90%			CH	LIGHT GRAY AND RED VERY STIFF CLAY (CH)
				40'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172565A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-5
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008304

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX
BORING LOCATION:

START DATE: 4/20/93 FINISH DATE: 4/20/93
START TIME: 1600 FINISH TIME: 1730

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT BARREL
CS- CALIFORNIA SAMPLING
ST- SHELBY TUBE
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
ST		90%			CH	LIGHT GRAY AND RED VERY STIFF CLAY (CH)
					41.0	
						BOTTOM OF BORING @ 41.0 FEET
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172435B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-6
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008305

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT BARREL
	CS- CALIFORNIA SAMPLER (TYP.)
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/21/93 FINISH DATE: 4/21/93	TIME:
START TIME: 0850 FINISH TIME: 1050	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED STIFF CLAY (CH)
					FILL	
			80%			
					3.0	
						DARK GRAY STIFF CLAY (CH) W/OCCASIONAL Fe NODULES
				5'		
					CH	
			100%			
ST		100%				
				10'		GRADING TO GRAY W/LARGE CALCAREOUS COBBLES, BECOMING CALCAREOUS
					CH	
					12.5	
						BROWN VERY FINE GRAINED SAND (SP)
ST		50%	100%	15'		
					SP	
					19.0	
ST		100%			SC	BUFF TO BROWN CLAYEY SAND (SC) W/OCCASIONAL YELLOW IRON STAINING
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G6

LOG OF BORING NUMBER G-6
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008306

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT BARREL
	CS- CALIFORNIA SAMPLER (TYP.)
BORING LOCATION:	ST- SHELBY TUBE
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/21/93 FINISH DATE: 4/21/93	TIME:
START TIME: 0850 FINISH TIME: 1050	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
ST		100%			21.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH); CALCAREOUS
ST		100%				
						BECOMING VERY CALCAREOUS, LESS IRON STAINING
				25'		
					26.5	
ST		100%			CL	
						GRAY STIFF SANDY CLAY (CL) W/OCCASIONAL Fe AND YELLOW
				30'	30.0	IRON STAINING
					ML	GRAY MEDIUM STIFF SANDY SILT (ML) W/OCCASIONAL Fe AND YELLOW IRON STAINING
					32.0	
					SM	GRAY SOFT SILTY VERY FINE GRAINED SAND (SM) W/OCCASIONAL YELLOW IRON STAINING
					SP	GRAY TO BUFF VERY FINE GRAINED SAND (SP) YELLOW IRON STAINING
ST		100%	100%	35'	SM	GRAY SOFT SILTY VERY FINE GRAINED SAND (SM) W/OCCASIONAL YELLOW IRON STAINING
					36.0	
					SP	BROWN VERY FINE GRAINED SAND (SP)
					37.0	
					SM	BUFF TO LIGHT GRAY SOFT SILTY SAND (SM) W/OCCASIONAL Fe STAINING
					38.0	
					CH	RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
				40'		

GEOLOGIST: ROBERT COFFMAN	
CHECKED BY:	DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.	

172406A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-6
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008307

CLIENT: SPTCO
PROJECT NAME: CRYSTAL CHEMICAL GW RD
PROJECT NUMBER: 44101724
PROJECT LOCATION: 3502 ROGERDALE RD.
HOUSTON TX
BORING LOCATION:

START DATE: 4/21/93 FINISH DATE: 4/21/93
START TIME: 0850 FINISH TIME: 1050

DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 5-FOOT BARREL
CS- CALIFORNIA SAMPLER (TYP.)
ST- SHELBY TUBE
SURFACE ELEVATION:
WATER LEVEL:
TIME:
DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
						BECOMING VERY CALCAREOUS AND BLOCKY BETWEEN 39.5 -40.0 FEET
ST					CH	NON-BLOCKY
					44.0	
						BOTTOM OF BORING @ 44.0 FEET
				45'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

1724G6B

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-7
SHEET NUMBER 1 OF 2
LOCATION DIAGRAM:

008308

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 0845 FINISH TIME: 1000	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED AND GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS AND Fe NODULES. PROBABLE FILL
					1.5	GRADING TO GRAY
					CH	BLACK MEDIUM STIFF CLAY (CH) W/Fe NODULES
			80%			
				5'		GRADING TO DARK GRAY
			100%		CH	GRADING TO GRAY W/LARGE CALCAREOUS COBBLES BECOMING CALCAREOUS BELOW 7.5 FEET
				10'		GRADING TO VERY STIFF RED AND GRAY CLAY (CH) CALCAREOUS
			100%			CALCAREOUS ZONE @ 12.5 FEET
					14.0	
				15'	CL	GRAY MEDIUM STIFF SLIGHTLY SANDY/SILTY CLAY (CL) W/YELLOW IRON STAINING
			90%			GRAY STIFF SLIGHTLY SILTY CLAY (CL) (NO SAND) CALCAREOUS W/CALCAREOUS NODULES AND YELLOW IRON STAINING
						CALCAREOUS ZONE @ 19-20 FEET
				20'		

GEOLOGIST: ROBERT COFFMAN	
CHECKED BY:	DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.	

172467

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-7
SHEET NUMBER 2 OF 2
LOCATION DIAGRAM:

008309

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 0845 FINISH TIME: 1000	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS AND Fe
						CALCAREOUS ZONE @ 22 FEET
			90%		CH	
						CALCAREOUS ZONE @ 24-25 FEET
				25'		
						FE STAINING BELOW 26.5 FEET
			90%		CH	
					29.5	
				30'		GRAY AND RED SOFT CLAYEY SILT (ML) WET
						CALCAREOUS ZONE 30-31 FEET
			100%		ML	GRAY SOFT SANDY SILT (ML)
						CALCAREOUS ZONE @ 32.5 FEET
					CL	RED AND GRAY SANDY CLAY (CL)
					34.0	
						RED AND GRAY VERY STIFF CLAY (CH)
			90%	35'		CALCAREOUS ZONE
					CH	
					37.5	
						GRAY MEDIUM STIFF SANDY SILT (ML) W/Fe STAINING
					ML	
					39.5	
				40'	CH	RED AND GRAY VERY STIFF CLAY (CH)

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172467A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-8
SHEET NUMBER 1 OF 3
LOCATION DIAGRAM:

008310

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 1105 FINISH TIME: 1205	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					FILL	RED AND GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS AND Fe
					1.0	NODULES. PROBABLE FILL
						BLACK STIFF CLAY (CH) W/OCCASIONAL Fe NODS
			100%		CH	
				5'		
			100%		CH	GRADING TO DARK GRAY W/OCCASIONAL CALCAREOUS NODULES
						FE STAINING BELOW 9.0 FEET, BECOMING CALCAREOUS
				10'		GRADING TO RED AND GRAY VERY STIFF CLAY (CH) CALCAREOUS
			100%			W/OCCASIONAL CALCAREOUS NODULES
						GRADING TO GRAY STIFF W/OCCASIONAL Fe NODULES AND YELLOW
				15'		IRON STAINING
			100%		CH	
						CALCAREOUS ZONE @ 18.5 FEET
				20'		

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172438

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-8
SHEET NUMBER 2 OF 3
LOCATION DIAGRAM:

008311

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 1105 FINISH TIME: 1205	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
					CH	GRAY STIFF CLAY (CH) W/OCCASIONAL CALCAREOUS AND Fe NODULES
					21.0	CALCAREOUS
						GRAY MEDIUM STIFF SILTY CLAY (CL) W/OCCASIONAL Fe NODULES:
						CALCAREOUS
			90%		CL	
						CALCAREOUS ZONE 23.5-25.0 FEET
				25'		
						GRADING TO GRAY STIFF SANDY CLAY (CL) CALCAREOUS W/Fe NODULES
						AND Fe STAINING
			80%		CL	
						BECOMMING SANDY AND SILTY BELOW 28.5 FEET
				30'		
						BECOMMING RED AND GRAY
			80%		CL	
						CALCAREOUS ZONE @ 32.5-34.0 FEET
					34.0	
					ML	RED SANDY SILT (ML) W/CALCAREOUS NODULES MOIST
				35'	35.5	
						RED SILTY VERY FINE GRAINED SAND (SM) WET
			75%		SM	
				40'		

GEOLOGIST: ROBERT COFFMAN	
CHECKED BY:	DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.	

172468A

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

LOG OF BORING NUMBER G-8
SHEET NUMBER 3 OF 3
LOCATION DIAGRAM:

008312

CLIENT: SPTCO	DRILLING METHOD: HOLLOW STEM AUGER
PROJECT NAME: CRYSTAL CHEMICAL GW RD	
PROJECT NUMBER: 44101724	
PROJECT LOCATION: 3502 ROGERDALE RD. HOUSTON TX	SAMPLING METHOD: 5-FOOT LONG CONTINUOUS BARREL
BORING LOCATION:	
	SURFACE ELEVATION:
	WATER LEVEL:
START DATE: 4/26/93 FINISH DATE: 4/26/93	TIME:
START TIME: 1105 FINISH TIME: 1205	DATE:

SAMPLER TYPE	SAMPLE NO. & DEPTH	OVA READING	SPT RECOVERY	DEPTH IN FEET	SOIL GRAPH	SOIL DESCRIPTION AND DRILLING CONDITIONS
						RED AND GRAY STIFF CLAY (CL) MOIST
						CALCAREOUS
			90%		CL	
				45'		
					46.5	
						RED VERY STIFF CLAY (CH)
			80%		CH	
					50.0	
				50'		BOTTOM OF BORING @ 50.0 FEET

GEOLOGIST: ROBERT COFFMAN
CHECKED BY: DATE:
DRILLING CONTRACTOR: LAYNE ENVIRONMENTAL SERVICES INC.

172438B

McBride-Ratcliff and Associates, Inc.
A Subsidiary of The Badger Company, Inc.

Badger
A Raytheon Compa

008313

June 8, 1993
MRA Project No. 93-0182

Industrial Compliance
9290 Bond, Suite 102
Overland Park, Kansas 66214

ATTENTION: Mr. Pat Goeke

CRYSTAL CHEMICAL SITE
IC PROJECT NO. 44101724-02

Dear Mr. Goeke:

We are pleased to transmit the results of the laboratory tests that you requested. The tests were performed according to the laboratory assignment sheets contained in your facsimile transmittal received on May 3, 1993.

Scope

The scope of this project is limited to laboratory testing and reporting of data. No engineering opinions or evaluation of laboratory data, other than assessment of test quality, is included.

Samples

On April 27, 1993, a MRA representative was dispatched to the Crystal Chemical site, in Houston, Texas, to obtain the samples from an Industrial Compliance representative. The soil samples were contained in thin-wall metal sampling tubes and clear acrylic liners. A table containing an inventory of the samples received is shown on Figure 1.

Laboratory Testing

A table displaying the type, number of tests performed, and the test methods used is shown on Figure 1. The tests were performed in general accordance with the test methods shown. The results of the laboratory tests are summarized on Figures No. 2 through 4. The grain size distribution curves are contained on Figures 5 through 11. The results of the hydraulic conductivity tests are summarized on Figures 12 through 14. The results of the consolidation tests and the total organic content tests are contained in Appendices A and B, respectively. Discussions of the individual tests, where necessary, are included in the following paragraphs.

Hydraulic Conductivity Tests. Twelve (12) hydraulic conductivity tests were performed. ASTM Test Method D5084, falling head - rising tailwater option, was used to measure the coefficients of permeability

7220 Langtry • Houston, Texas 77040-6698 • (713) 460-3766 • Fax (713) 939-9604 • Fax (713) 460-8945

008314

for all of the samples tested. Some samples were assigned to be tested for hydraulic conductivity using constant head procedures per ASTM D2434. However, because of the quantities of soil finer than a #200 sieve and coefficients of permeability (k) less than 10^{-3} centimeters/second, these tests were performed using the ASTM Method D5084. According to your instructions, the effective confining pressures for the hydraulic conductivity tests were calculated using an average buoyant weight for the overlying soils and assuming the static water level was at ground surface. Based on laboratory test data, the average buoyant weight used was 67 pcf.

Consolidation Tests. Four (4) consolidation tests were performed. According to your instructions, a hysteresis loop and a final rebound was included in each test.

Closing Remarks

We appreciate the opportunity to serve you. If you have any questions about the laboratory testing program, please call.

Sincerely,
McBRIDE-RATCLIFF AND ASSOCIATES, INC.

Floyd L. Fuqua, Associate
Laboratory Manager

Reviewed By: Marie Johnson Stavich

Enclosures:

008314

TYPE AND NUMBER OF TESTS PERFORMED

Test Description	Number of Tests	ASTM Test Method
Water Content	2	D 2216
Liquid and Plastic Limits	14	D 4318
Specific Gravity	15	D 854
Sieve Analysis	13	D 422
Sieve Analysis with Hydrometer	8	D 422
Unit Dry Weight	13	
Unconfined Compression Test	7	D 2166
Hydraulic Conductivity Test	12	D 5084
Consolidation Test	4	D 2435
Total Organic Content	8	EPA FLMAOM 3.2.13

SAMPLE INVENTORY

Boring No.	Depth (feet)	Type	Boring No.	Depth (feet)	Type	Boring No.	Depth (feet)	Type
G-1	5-7	Tube	G-3	38-40	Liner	G-5	39-41	Tube
	15-17	Tube		40.5-43	Liner			
	25-27	Tube				G-6	8-10	Tube
	36-38	Tube	G-4	5-7	Tube		14-16	Tube
				15-17	Tube		19-21	Liner
G-2	5-7	Tube		24-26	Tube		23-25	Liner
	20-22	Tube		32-34	Tube		27-29	Tube
	24-26	Tube		41-43.5	Liner		34-36	Tube
	33-35	Liner		46.5-49	Liner		42-44	Tube
	55-57	Tube						
			G-5	7-9	Tube	PT-3	17.5-20	Liner
G-3	3-5	Tube		12-14	Tube			
	8-10	Tube		16-18	Tube	PF-3	37.5-40	Liner
	20-22	Tube		20-22	Tube			
	27-29	Tube		26-28	Tube	PS-1	22-24	Liner
	33-35	Tube		33-35	Tube			

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008315

SUMMARY OF RATORY TESTS

Boring No.	Sample Depth (feet)	Moisture Content (%)	Dry Density (pcf)	Atterberg Limits			Finer than #200 Sieve (%)	Unconfined Compressive Strength		Specific Gravity	Soil Classification
				Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)		Maximum Strength (tsf)	Failure Strain (%)		
G-1	5-7	31	91	74	22	52		1.26	6.3	2.62	Stiff Dark Gray and Tan CLAY w/ ferrous nodules
	15-17	24	104	68	19	49		1.26	1.4		Stiff Red and Tan CLAY w/ calcareous nodules and clay stones
	25-27	18	117	51	15	36	84			2.65	Tan and Gray CLAY
	36-38	20	113				25			2.64	Tan and Light Gray SILTY FINE SAND
G-2	20-22	19	114	46	16	30		1.93	3.5		Stiff Light Gray and Tan SANDY CLAY w/ ferrous and calcareous nodules
	33-35						19				Tan and Light Gray SILTY FINE SAND
	55-57	23	103	67	24	43	100			2.69	Redish-Brown and Gray CLAY
G-3	32-35	19	108				13			2.59	Tan and Light Gray FINE SAND
	38-40						11				Tan and Light Gray FINE SAND
G-4	5-7	32	89	76	25	51		1.15	4.2		Stiff Dark Gray and Tan CLAY w/ ferrous nodules and a gaseous odor
	15-17	29	99	66	20	46		1.48	4.6		Stiff Redish-Brown and Gray CLAY w/ calcareous nodules

McBride-Ratcliff and Associates, Inc.
Project No. 93-0182
Figure No. -2-

008316

SUMMARY OF LABORATORY TESTS

Boring No.	Sample Depth (feet)	Moisture Content (%)	Dry Density (pcf)	Atterberg Limits			Finer than #200 Sieve (%)	Unconfined Compressive Strength		Specific Gravity	Soil Classification
				Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)		Maximum Strength (tsf)	Failure Strain (%)		
G-4	24-26	19		44	15	29	78				Light Gray and Tan SANDY CLAY w/ ferrous and calcareous nodules
	41-43.5						15				Light Gray and Tan SILTY FINE SAND
G-5	7-9	17	112	60	20	40		2.54	10.5		Very Stiff Gray and Tan CLAY w/ ferrous nodules and small gravel
	12-14	21	104				30	0.54	3.5	2.66	Firm Tan and Gray SANDY CLAY w/ sand partings
	16-18	20	107				10			2.64	Tan and Gray FINE SAND
	26-28	20	113	54	21	33	92			2.71	Red and Gray CLAY w/ calcareous nodules
	33-35	17	113				23			2.65	Tan and Light Gray SILTY FINE SAND
	39-41	25	103	59	23	36	99			2.75	Red and Tan CLAY
G-6	14-16						9				Tan and Light Gray FINE SAND
	19-21						44				Tan and Light Gray SILTY FINE SAND
	23-25	24	105	57	20	37	87			2.60	Tan and Light Gray CLAY
	34-36	19	110				17			2.69	Tan and Light Gray SILTY FINE SAND

McBride-Ratcliff and Associates, Inc.
Project No. 93-0182
Figure No. -3-

008317

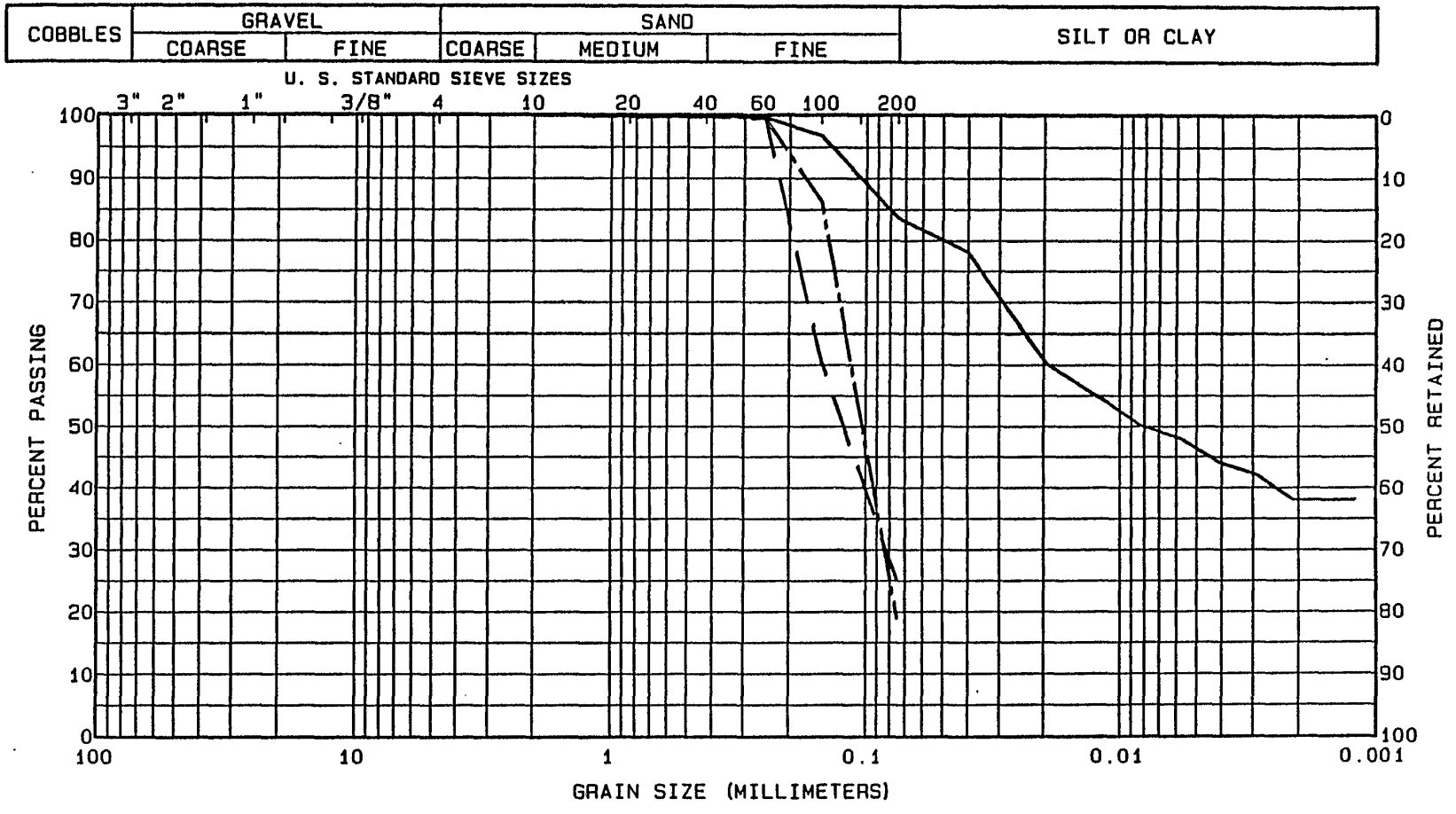
SUMMARY OF L ATORY TESTS

Boring No.	Sample Depth (feet)	Moisture Content (%)	Dry Density (pcf)	Atterberg Limits			Finer than #200 Sieve (%)	nconfined Compressive Strength		Specific Gravity	Soil Classification
				Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)		Maximum Strength (tsf)	Failure Strain (%)		
G-6	42-44	25	107	40	17	23	97			2.66	Redish-Brown and Gray SILTY CLAY
PT-3	17.5-20	20	107				5			2.65	Tan and Gray SAND
PF-3	37.5-40						9				Tan and Light Gray FINE SAND
PS-1	22-24	24	105	48	16	32	90			2.68	Redish-Brown and Gray SILTY CLAY

McBride-Ratcliff and Associates, Inc.
Project No. 93-0182
Figure No. -4-

008318

GRAIN SIZE DISTRIBUTION



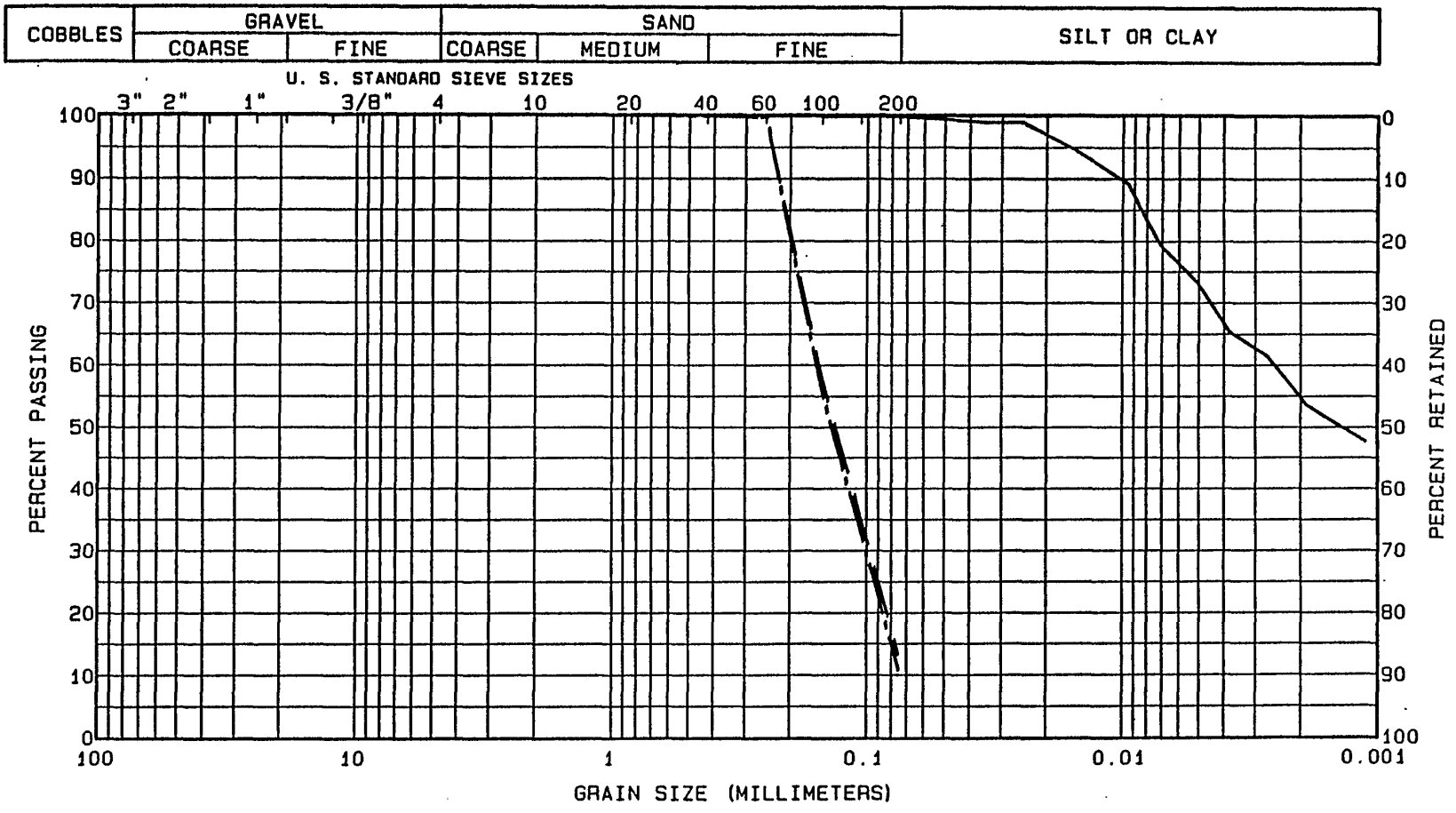
Boring No.	Depth, (feet)	Comments	Classification	Symbol
G-1	25-27		CLAY	———
G-1	36-38		SILTY FINE SAND	— —
G-2	33-35		SILTY FINE SAND	— - —

File No. 93-0182
Figure No. 5

McBride-Ratcliff and Associates, Inc.

008319

GRAIN SIZE DISTRIBUTION



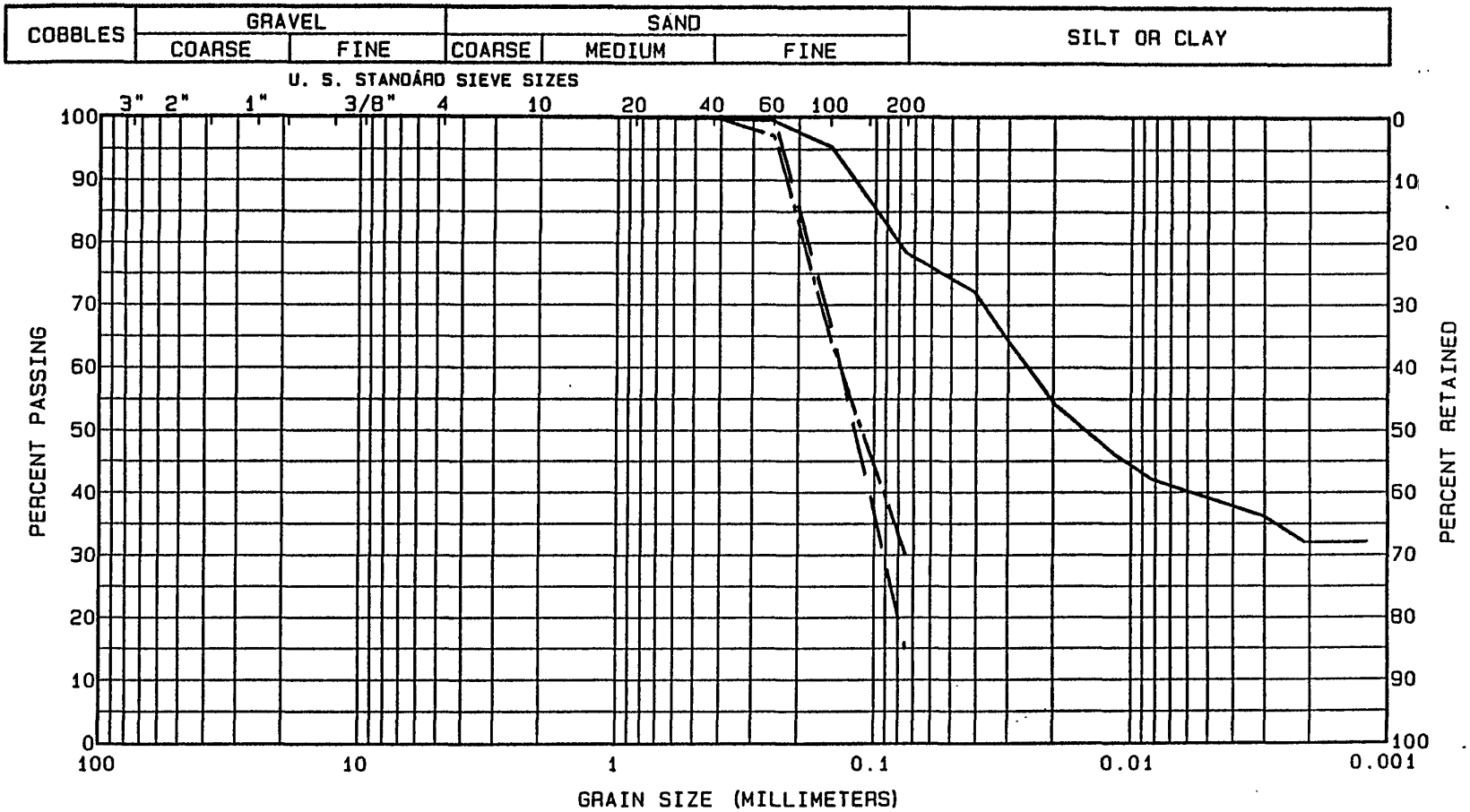
Boring No.	Depth, (feet)	Comments	Classification	Symbol
G-2	55-57		CLAY	———
G-3	33-35		FINE SAND	— — —
G-3	38-40		FINE SAND	— - -

File No. 93-0182
Figure No. 6

McBride-Ratcliff ar

008320

GRAIN SIZE DISTRIBUTION



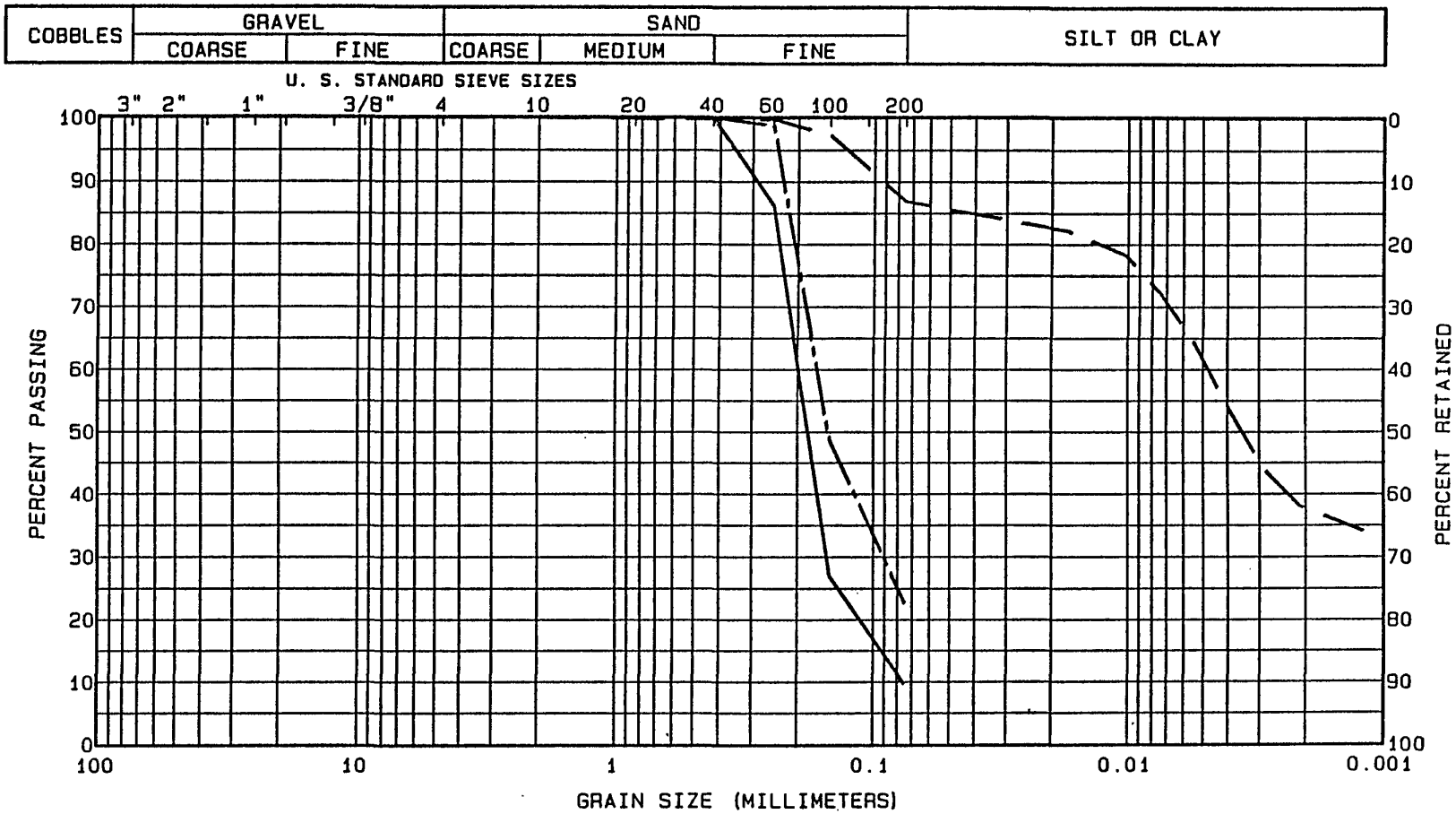
Boring No.	Depth, (feet)	Comments	Classification	Symbol
G-4	24-26		SANDY CLAY	———
G-4	41-43.5		SILTY FINE SAND	—— —
G-5	12-14	SAND POCKETS	SANDY CLAY	—— - —

File No. 93-0182
Figure No. 7

McBride-Ratcliff an

008321

GRAIN SIZE DISTRIBUTION



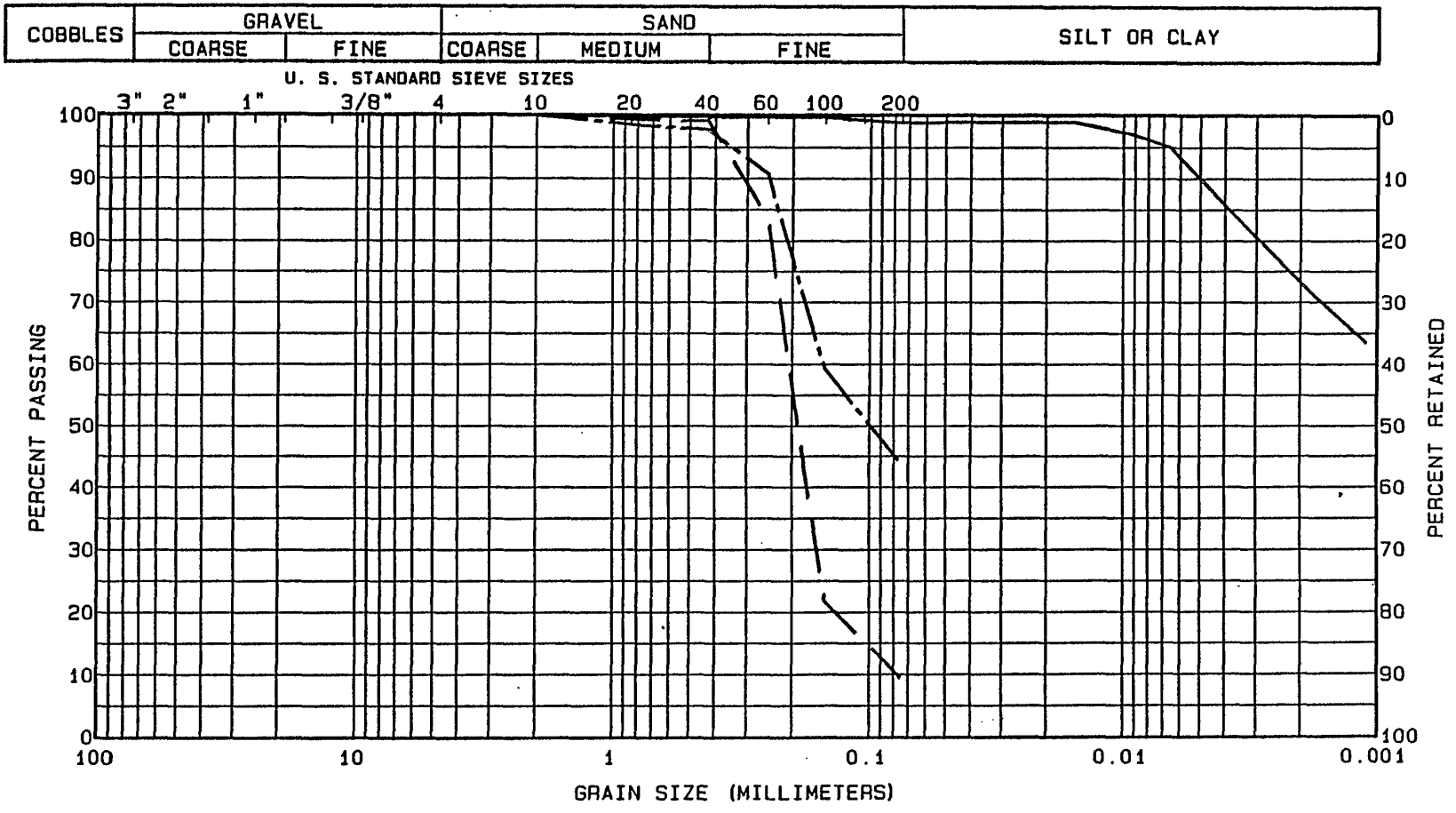
Boring No.	Depth, (feet)	Comments	Classification	Symbol
G-5	16-18		FINE SAND	———
G-5	26-28		CLAY	— —
G-5	33-35		SILTY FINE SAND	—— - -

File No. 93-0182
Figure No. 8

McBride-Ratcliff &

008322

GRAIN SIZE DISTRIBUTION



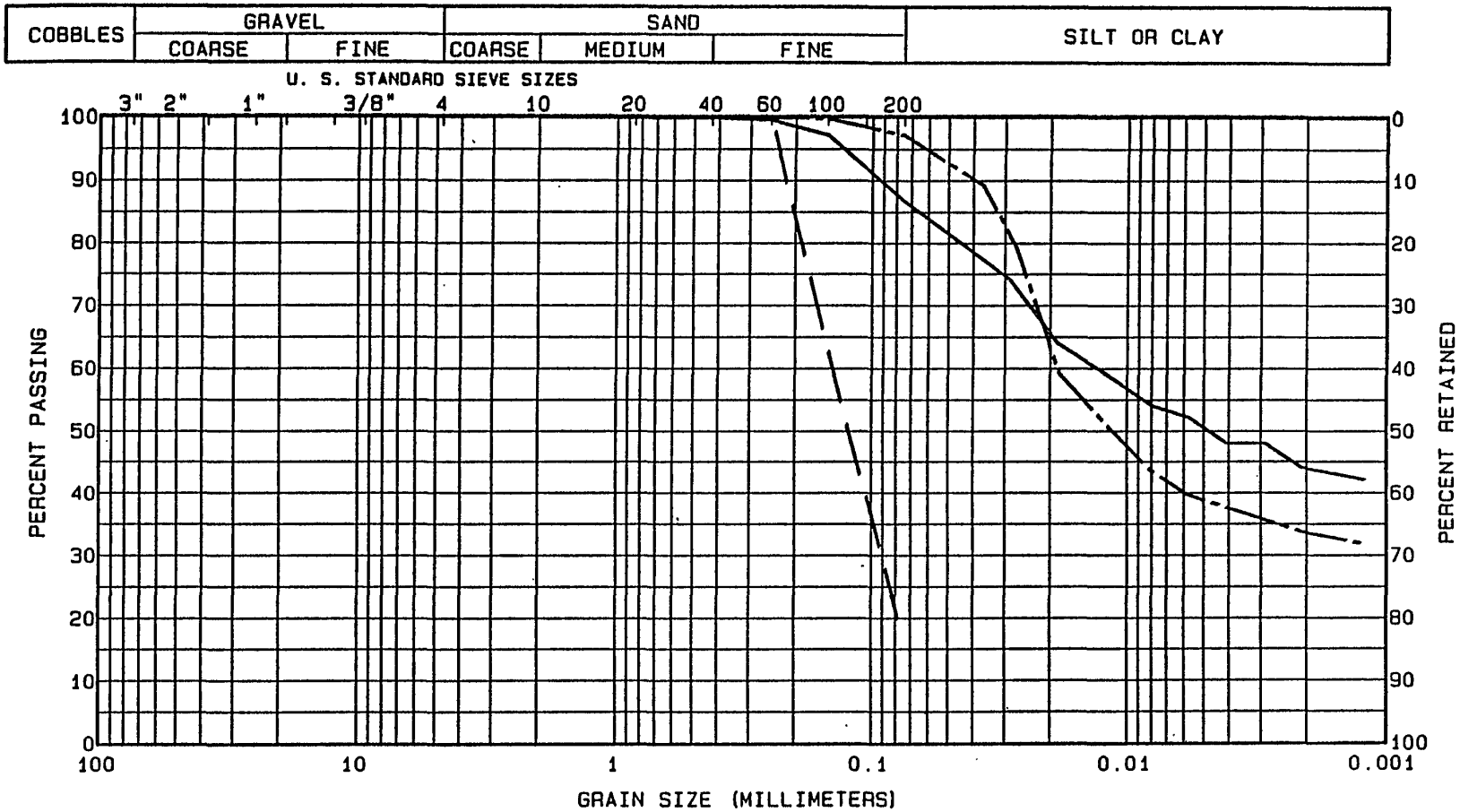
Boring No.	Depth, (feet)	Comments	Classification	Symbol
G-5	39-41		CLAY	———
G-6	14-16		FINE SAND	— —
G-6	19-21		SILTY FINE SAND	— - -

File No. 93-0182
Figure No. 9

McBride-Ratcliff &

008323

GRAIN SIZE DISTRIBUTION



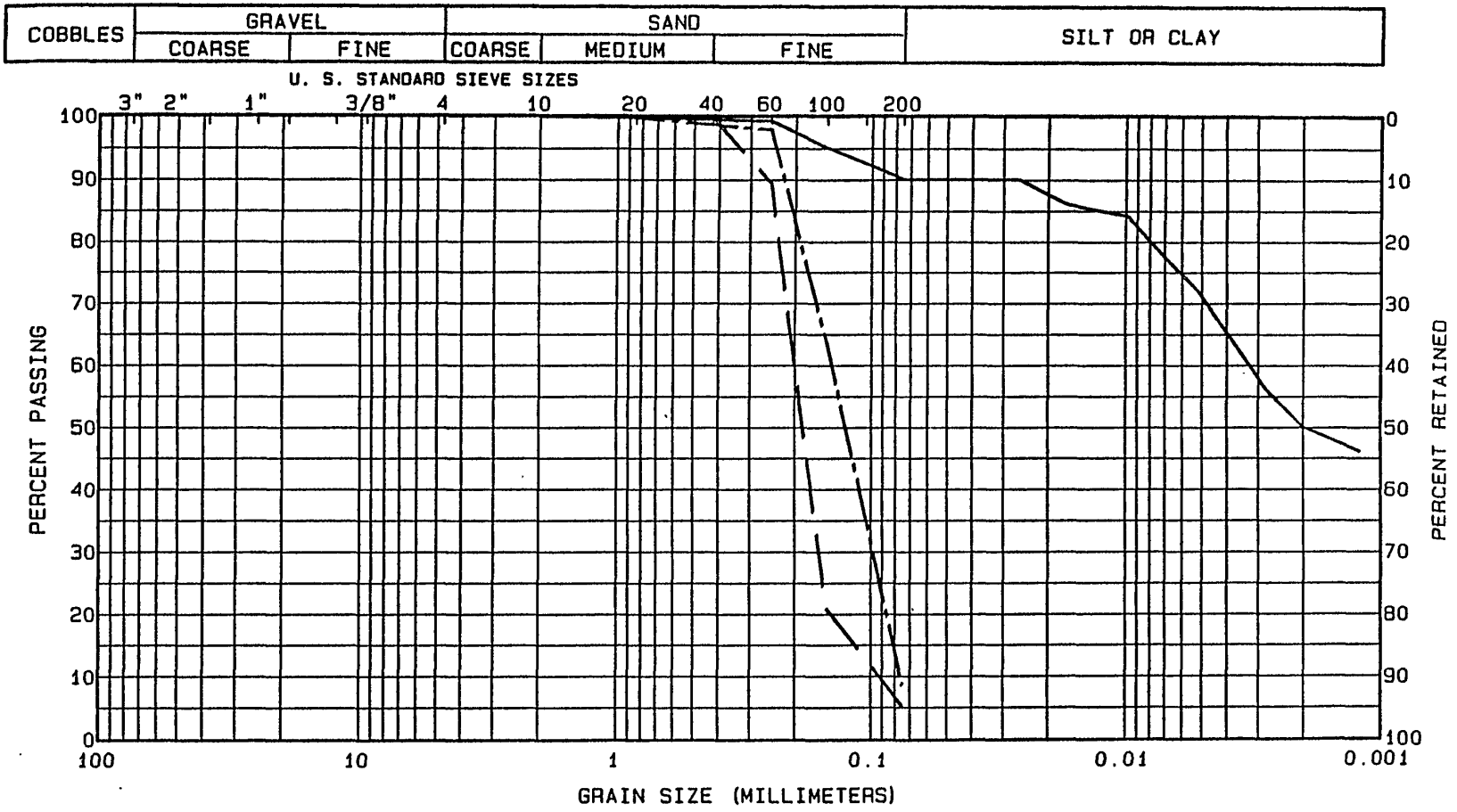
Boring No.	Depth, (feet)	Comments	Classification	Symbol
G-6	23-25		CLAY	———
G-6	34-36		SILTY FINE SAND	—— —
G-6	42-44		SILTY CLAY	—— - —

File No. 93-0182
Figure No. 10

McBride-Ratcliff and

008324

GRAIN SIZE DISTRIBUTION



Boring No.	Depth, (feet)	Comments	Classification	Symbol
PS-1	22-24		SILTY CLAY	———
PT-3	17-20		FINE SAND	—— —
PF-3	37.5-40		FINE SAND	—— - -

File No. 93-0182
Figure No. 11

McBride-Ratcliff a

008325

RESULTS OF HYDRAULIC CONDUCTIVITY TESTS
ASTM D 5084

Boring Number	G-1	G-1	G-3	G-5
Depth (feet)	25-27	36-38	33-35	12-14
Soil Type	Clay	Silty Fine Sand	Fine Sand	Sandy Clay
INITIAL CONDITIONS				
Moisture Content, %	18	20	19	20
Unit Wet Weight, pcf	138	135	128	130
Unit Dry Weight, pcf	117	113	108	108
Void Ratio, e	0.418	0.461	0.532	0.530
FINAL CONDITIONS				
Moisture Content, %	19	19	22	21
Unit Wet Weight, pcf	134	134	134	135
Unit Dry Weight, pcf	112	112	110	111
Void Ratio, e	0.472	0.472	0.502	0.486
TEST CONDITIONS				
Cell Pressure, psi	63	68	66	57
Head Pressure, psi	53	53	53	53
Tail Pressure, psi	50	50	50	50
Average Gradient	28	30	27	30
Hydraulic Conductivity, cm/sec	9.5×10^{-10}	1.0×10^{-9}	4.3×10^{-5}	6.5×10^{-6}

008326

McBride-Ratcliff and Associates, Inc.
Project No. 93-0182
Figure No. -12-

RESULTS OF HYDRAULIC CONDUCTIVITY TESTS
ASTM D 5084

Boring Number	G-5	G-5	G-5	G-5
Depth (feet)	16-18	26-28	33-35	39-41
Soil Type	Fine Sand	Clay	Silty Fine Sand	Clay
INITIAL CONDITIONS				
Moisture Content, %	20	20	17	25
Unit Wet Weight, pcf	129	135	132	130
Unit Dry Weight, pcf	107	113	113	103
Void Ratio, e	0.544	0.471	0.471	0.631
FINAL CONDITIONS				
Moisture Content, %	21	18	21	27
Unit Wet Weight, pcf	132	136	133	125
Unit Dry Weight, pcf	109	115	110	98
Void Ratio, e	0.517	0.433	0.502	0.716
TEST CONDITIONS				
Cell Pressure, psi	58	63	66	68
Head Pressure, psi	53	53	53	56
Tail Pressure, psi	50	50	50	53
Average Gradient	27	28	27	26
Hydraulic Conductivity, cm/sec	8.7×10^{-5}	4.3×10^{-9}	1.2×10^{-4}	5.7×10^{-10}

008327

McBride-Ratcliff and Associates, Inc.
Project No. 93-0182
Figure No. -13-

RESULTS OF HYDRAULIC CONDUCTIVITY TESTS
ASTM D 5084

Boring Number	G-6	G-6	G-6	PS-1
Depth (feet)	23-25	34-36	42-44	22-24
Soil Type	Clay	Silty Fine Sand	Silty Clay	Silty Clay
INITIAL CONDITIONS				
Moisture Content, %	24	19	25	24
Unit Wet Weight, pcf	130	130	133	131
Unit Dry Weight, pcf	105	110	107	105
Void Ratio, e	0.580	0.511	0.582	0.575
FINAL CONDITIONS				
Moisture Content, %	24	17	23	22
Unit Wet Weight, pcf	129	134	132	131
Unit Dry Weight, pcf	104	115	107	107
Void Ratio, e	0.586	0.441	0.569	0.549
TEST CONDITIONS				
Cell Pressure, psi	61	67	70	61
Head Pressure, psi	57	53	56	53
Tail Pressure, psi	55	50	53	50
Average Gradient	26	34	26	28
Hydraulic Conductivity, cm/sec	1.1×10^{-8}	8.5×10^{-6}	4.9×10^{-9}	1.4×10^{-8}

008328

McBride-Ratcliff and Associates, Inc.
Project No. 93-0182
Figure No. -14-

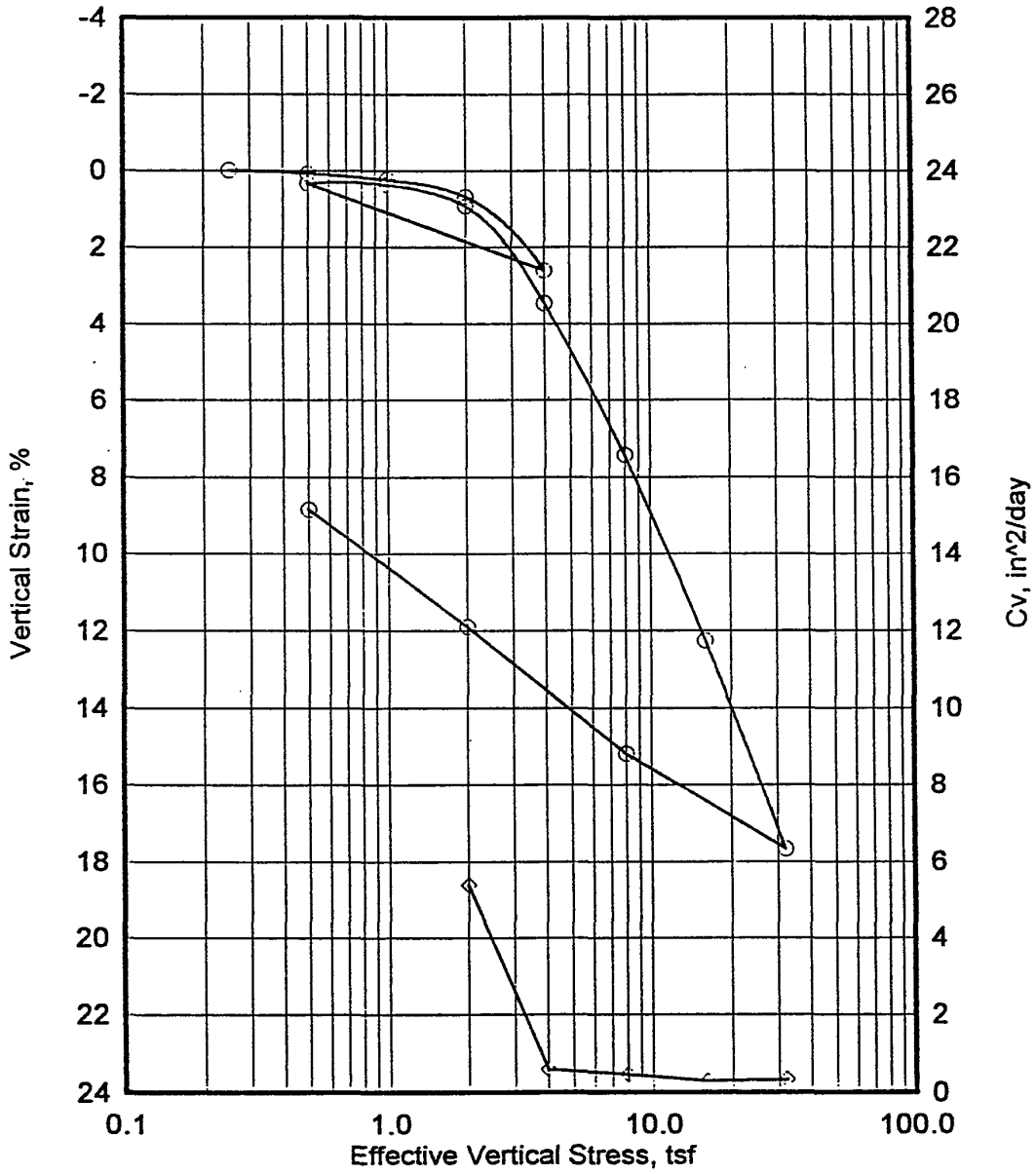
008329

APPENDIX A

CONSOLIDATION TEST
ASTM D2435

008330

Project Number 93-0182



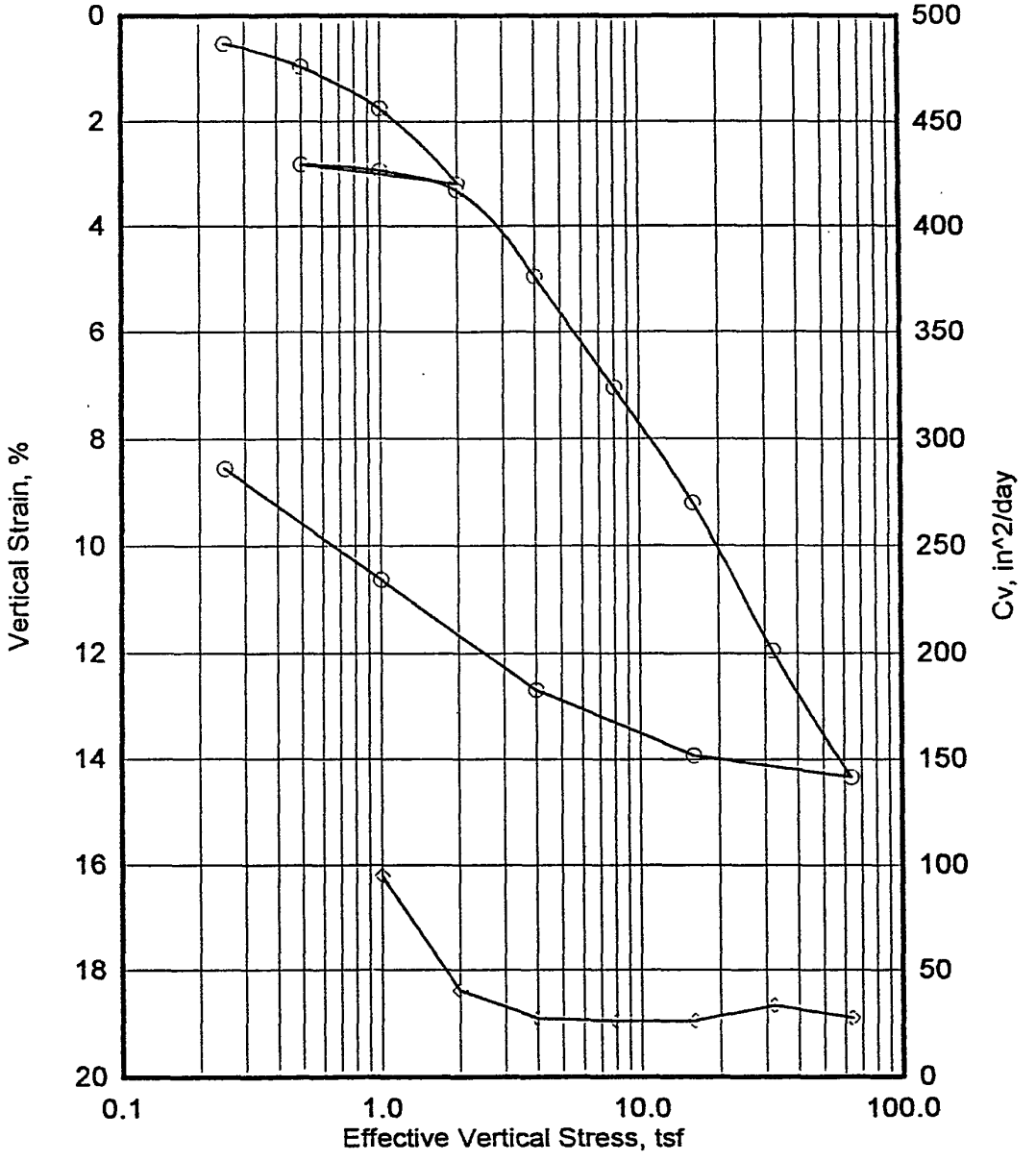
Boring No.	Depth (ft.)	Initial Moisture (%)	Initial Dry Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)
G-1	5-7	31	92	74	52

McBride-Ratcliff and Associates, Inc.

CONSOLIDATION TEST
ASTM D2435

008331

Project Number 93-0182



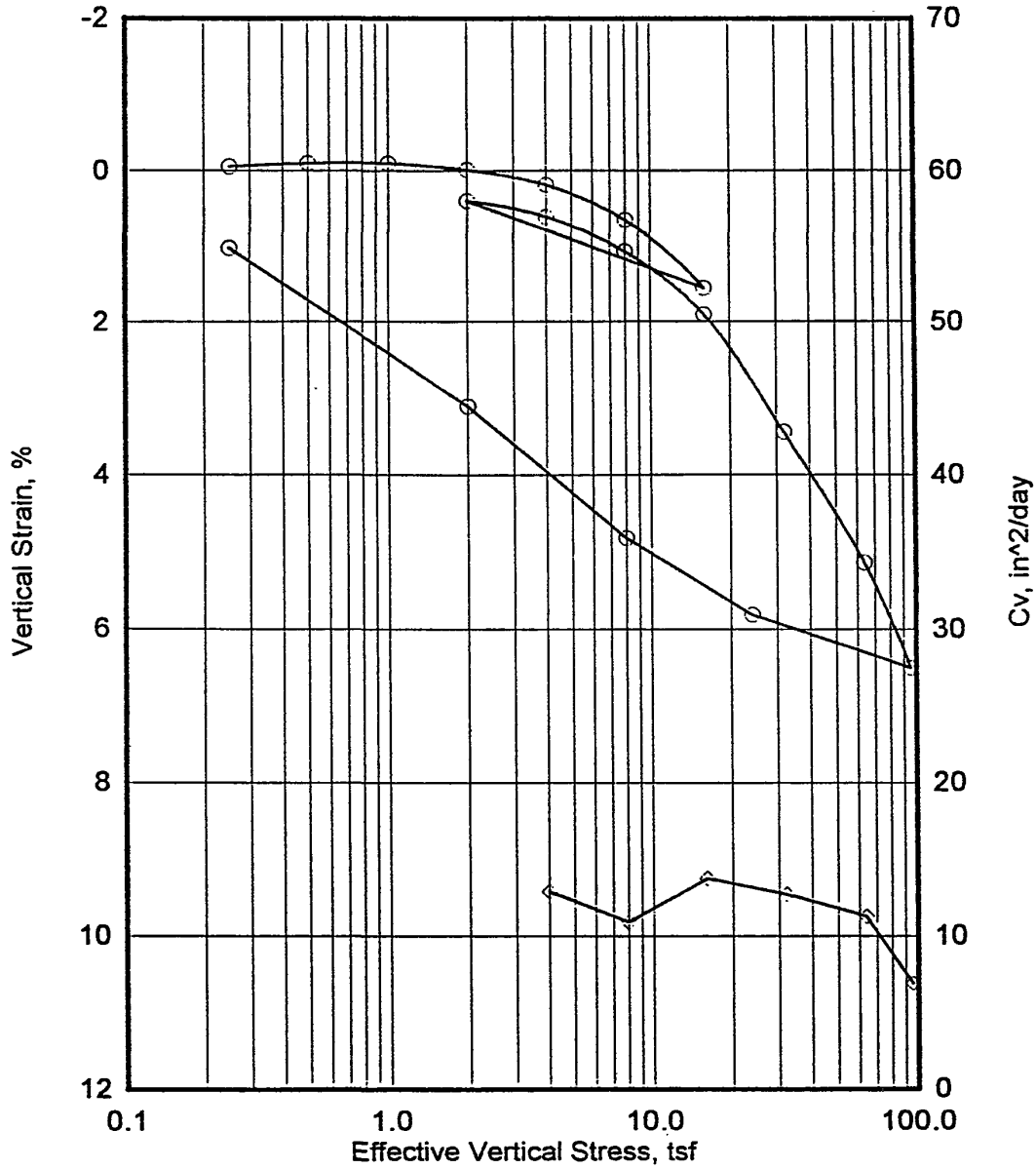
Boring No.	Depth (ft.)	Initial Moisture (%)	Initial Dry Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)
G-5	12-14	23	104		

McBride-Ratcliff and Associates, Inc.

CONSOLIDATION TEST
ASTM D2435

008332

Project Number 93-0182



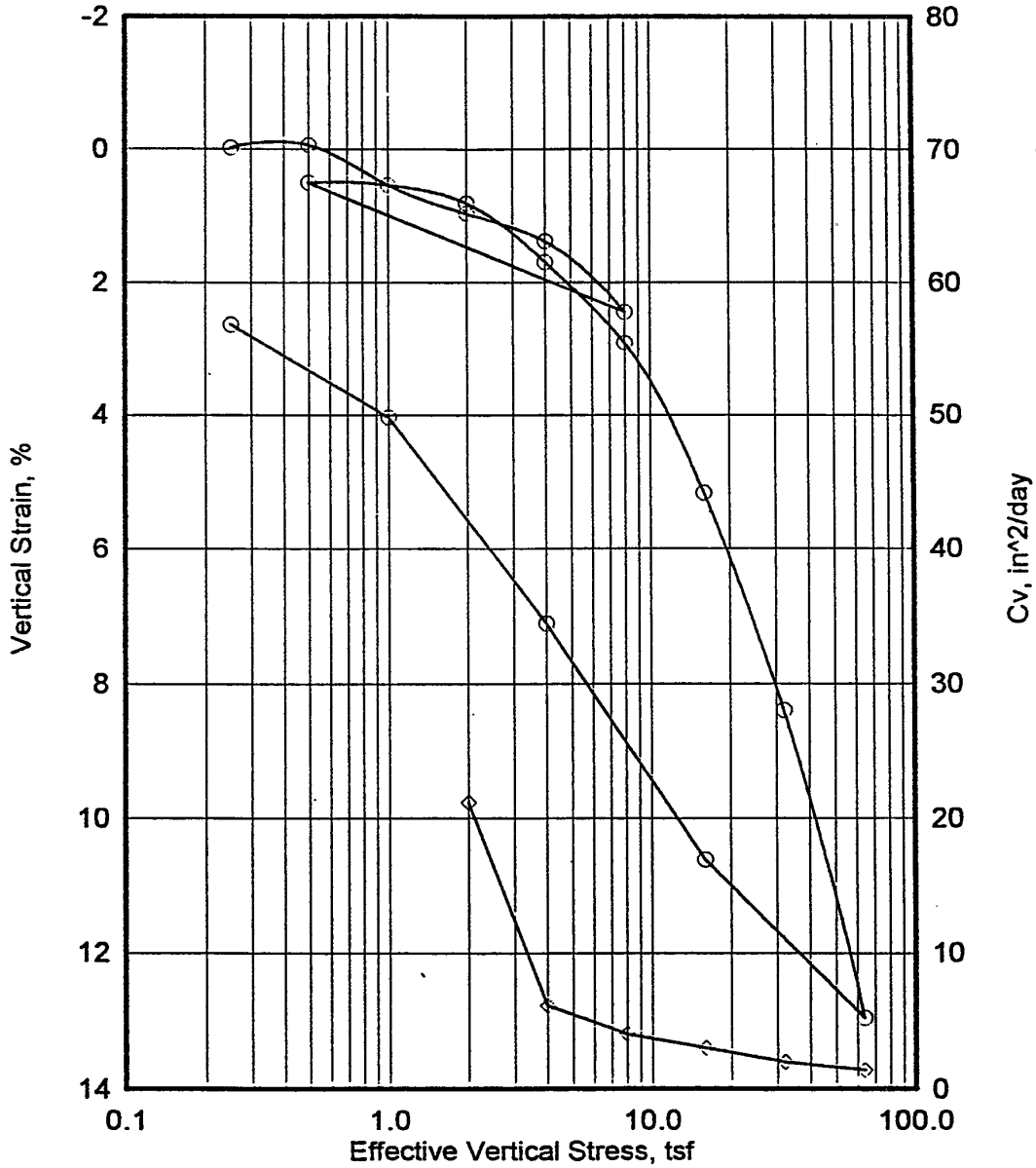
Boring No.	Depth (ft.)	Initial Moisture (%)	Initial Dry Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)
G-5	26-28	11	127	37	23

McBride-Ratcliff and Associates, Inc.

CONSOLIDATION TEST
ASTM D2435

008333

Project Number 93-0182



Boring No.	Depth (ft.)	Initial Moisture (%)	Initial Dry Weight (pcf)	Liquid Limit (%)	Plasticity Index (%)
G-5	39-41	23	105	59	36

McBride-Ratcliff and Associates, Inc.

APPENDIX B

008334

MBA LABS

MICROBIOLOGICAL AND BIOCHEMICAL
ASSAY LABORATORIES
P.O. BOX 9461 Houston, TEXAS 77261 340 South 66th Street Houston, TEXAS 77011
PHONE NO. (713)928-2701 FAX NO (713)928-9063 TOLL FREE (800)472-1485

CERTIFICATE OF ANALYSIS

008335

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	5-25-93
DATE COMPLETED:	5-27-93
LABORATORY REPORT NUMBER:	J52740-1
CUSTOMER IDENTIFICATION:	PS-1 22-24
DATE/TIME SAMPLED:	5-25-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0183

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	5-27-93	16:00	SS	0.1611	%

Reported By: Joe Lyore 06/08/93 Lab Director/Lab Manager
(Signature/Date)

These results pertain only to the samples described on this report and cannot be modified/reproduced without the written permission from MBA Labs and/or the Client.

MBA LABS

MICROBIOLOGICAL AND BIOCHEMICAL
ASSAY LABORATORIES
P.O. BOX 9461 Houston, TEXAS 77261 340 South 66th Street Houston, TEXAS 77011
PHONE NO. (713)928-2701 FAX NO (713)928-9063 TOLL FREE (800)472-1485

008336

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-7
CUSTOMER IDENTIFICATION:	PT - 3 17 - 20'
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.4417	%

QA/QC Data:

PARAMETER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
	J52824-5	%	0.4007	0.5153			

Reported By: _____ 06/08/93 Lab Director/Lab Manager
(Signature/Date)

These results pertain only to the samples described on this report, and cannot be modified/reproduced without the written permission from MBA Labs and/or the Client.

MBA LABS

MICROBIOLOGICAL AND BIOCHEMICAL
ASSAY LABORATORIES
P.O. BOX 9461 Houston, TEXAS 77261 340 South 66th Street Houston, TEXAS 77011
PHONE NO. (713)928-2701 FAX NO (713)928-9063 TOLL FREE (800)472-1485

008337

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-1
CUSTOMER IDENTIFICATION:	G - 1 36 - 38' Top
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.4826	%

QA/QC Data:

P	METER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
		J52824-5	%	0.4007	0.5153			

Reported By: _____ 06/08/93 Lab Director/Lab Manager
(Signature/Date)

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MBA LABS

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008338

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-2
CUSTOMER IDENTIFICATION:	G - 3 33 - 35' Middle
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.5153	%

QA/QC Data:

PARAMETER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
	J52824-5	%	0.4007	0.5153			

Reported By: Jeri Krause 06/08/93 Lab Director/Lab Manager
(Signature/Date)

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008339

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-3
CUSTOMER IDENTIFICATION:	G - 5 12 - 14' Bottom
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.4826	%

QA/QC Data:

PARAMETER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
	J52824-5	%	0.4007	0.5153			

Reported By: _____ 06/08/93 Lab Director/Lab Manager
(Signature/Date)

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MICROBIOLOGICAL AND BIOCHEMICAL ASSAY LABORATORIES

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008340

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-4
CUSTOMER IDENTIFICATION:	G - 5 16 - 18' Top
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.3599	%

QA/QC Data:

PARAMETER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
	J52824-5	%	0.4007	0.5153			

Reported By: _____ 06/08/93 Lab Director/Lab Manager
(Signature/Date)

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008341

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-5
CUSTOMER IDENTIFICATION:	G - 5 33 - 35' Top
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.4580	%

QA/QC Data:

PARAMETER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
TOC	J52824-5	%	0.4007	0.5153			

Reported By: _____ 06/08/93 Lab Director/Lab Manager
(Signature/Date)

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PHONE NO. (713)928-2701 FAX NO (713)928-9063 TOLL FREE (800)472-1485

008342

CERTIFICATE OF ANALYSIS

RECEIVED FROM:	McBride - Ratcliff & Associates
SUBMITTED BY:	Jose Lopez
DATE RECEIVED:	6-01-93
DATE COMPLETED:	6-04-93
LABORATORY REPORT NUMBER:	J52824-6
CUSTOMER IDENTIFICATION:	G - 6 34 - 36' Top
DATE/TIME SAMPLED:	6-01-93
SAMPLE TYPE:	Soil
PROJECT NUMBER:	93-0182

PARAMETER	METHOD	DATE	TIME	ANALYST	RESULTS	UNITS
TOC	FLMAOM3.2.13	6-03-93	09:00	SS	0.4007	%

QA/QC Data:

AMETER	JOB NUMBER	UNITS	SAMPLE RESULT	DUPLICATE RESULT	SAMPLE SPIKE	ACTUAL SPIKE	PERCENT RECOVERY
OC	J52824-5	%	0.4007	0.5153			

Reported By: _____ 06/08/93 Lab Director/Lab Manager
(Signature/Date)

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File
4410724-10-3655

McBride-Ratcliff and Associates, Inc.
A Subsidiary of The Badger Company, Inc.

Badger
A Raytheon Company

February 10, 1994
MRA Project No. 94-0034

008343

Industrial Compliance
9290 Bond, Suite 102
Overland Park, Kansas 66214

ATTENTION: Mr. Pat Goeke

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 9

To Pat / Robert	From
Co.	Co.
Dept.	Phone #
Fax #	Fax #

CRYSTAL C
IC PROJECT

Dear Mr. Goeke:

We are pleased to transmit the results of the laboratory tests that you requested. The tests were performed according to the instructions contained on the chain of custody documents received with the samples except as noted below.

Scope

The scope of this project is limited to laboratory testing and reporting of data. No engineering opinions or evaluation of laboratory data, other than assessment of test quality, is included.

Samples

The samples were delivered to the McBride-Ratcliff and Associates, Inc. geotechnical laboratory on February 1, 1994, by a representative from Industrial Compliance. The soil samples were contained in sealed, thin-wall metal sample tubes. The soil samples were hydraulically extruded from the sample tubes as needed for testing.

Laboratory Testing

The following table shows the types and number of tests performed and the test methods used:

Test Description	Number of Tests	ASTM Test Method
Water Content	4	D 2216
Unit Dry Weight	4	D 2937
Specific Gravity	4	D 854
Sieve Analysis with Hydrometer	4	D 422

7220 Langtry ▪ Houston, Texas 77040-6698 ▪ (713) 460-3766 ▪ Fax (713) 939-9604 ▪ Fax (713) 460-8945

SUMMARY OF LABORATORY TESTS

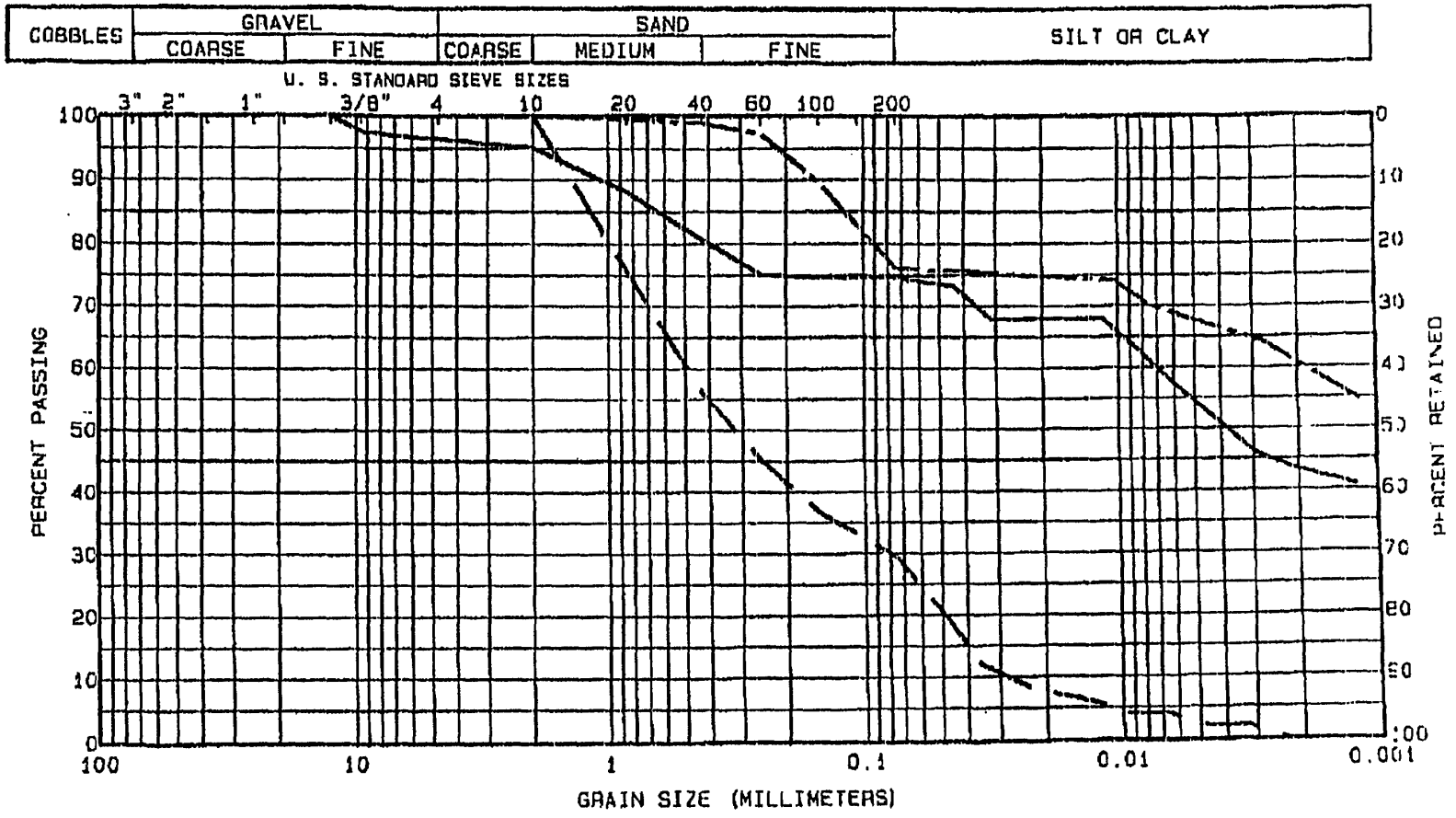
Sample Identification	Water Content (%)	Unit Wet Weight (pcf)	Unit Dry Weight (pcf)	Specific Gravity	Fraction Finer than #200 Sieve (%)	Soil Description
CS-4 (4-6)	16	138	119	2.77	75	Tan SILTY CLAY w/ crushed limestone
CS-5 (4-6)	47	107	73	2.60	29	Dark Gray SILTY SAND
CS-6 (11.5-13.5)	9	117	107	2.72	30	Tan CLAYEY SAND
CS-6A (5-7)	27	108	85	2.75	76	Gray and Tan SANDY CLAY

MRA No. 94-0034
Figure No. -1-

McBride-Ratcliff and Associates, Inc

008344

GRAIN SIZE DISTRIBUTION



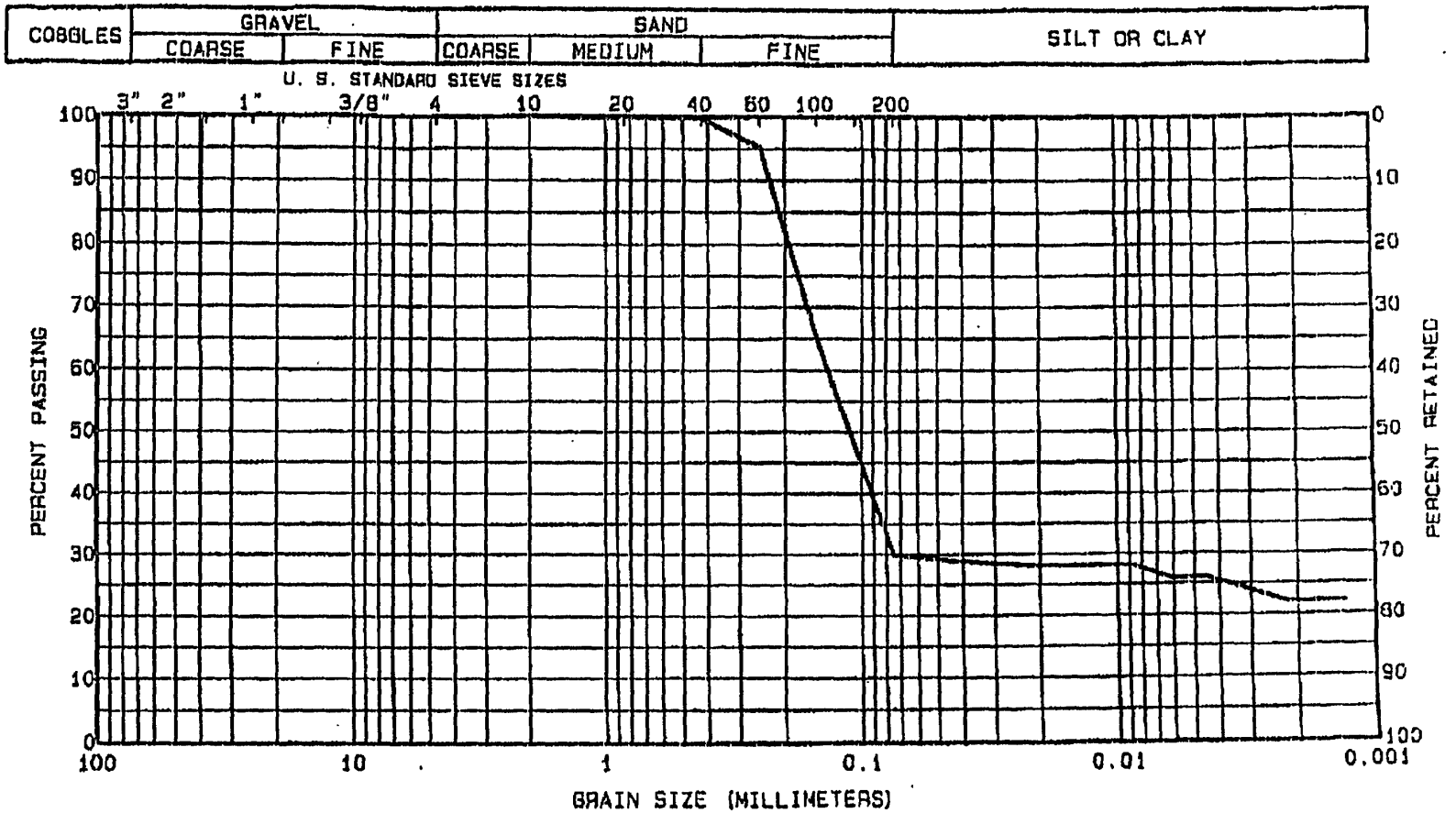
Boring No.	Depth, (feet)	Comments	Classification	Symbol
CS-4	4-6		SILTY CLAY W/ LIMESTO	———
CS-5	4-6		SILTY SAND	— — —
CS-6A	5-7		SANDY CLAY	— - -

File No. 94-0034
Figure No. 2

McBride-Ratcliff and Associates, Inc

008345

GRAIN SIZE DISTRIBUTION



Boring No.	Depth, (feet)	Comments	Classification	Symbol
CS-6	11.5-13.5		CLAYEY SAND	

File No. 94-0034
Figure No. 3

McBride-Ratcliff and Associates, Inc.

008346

008346

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 8461 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1488 FAX (713)928-9063

LABORATORY IDENTIFICATION: J56203 - 1

008347

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CS-4 4'-6'	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DET. LIMIT	REG. LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.0349	0.01		%	FLMAOM3.2.15	02/15/94	12:30	SS

Approved By : [signature] Lab Director/Lab Manager

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9461 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1486 FAX (713)928-9083

LABORATORY IDENTIFICATION
J56203 - 2

008348

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CS-5 4'-6'	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DET LIMIT	REG LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.1561	0.01		%	FLMAGN3.2.13	02/15/94	12:30	SS

Approved By : Jose Kaur

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9461 HOUSTON, TEXAS 77281
TELEPHONE (713)928-2701 (800)472-1488 FAX (713)928-9063

LABORATORY IDENTIFICATION
J56203 - 5

008349

ANALYSIS CERTIFICATE

02/16/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CS-6 11.5'-13.5'	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGES
94-0036				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DETECTION LIMIT	REGULATORY LEVEL	UNITS	METHOD	DATE	TIME	INIT
TOC	0.0849	0.01		%	FLMAON3.2.15	02/15/94	12:30	as

Approved By : Jose Lopez

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 8461 HOUSTON, TEXAS 77261
TELEPHONE (713)926-2701 (800)472-1486 FAX (713)928-9069

LABORATORY ADMINISTRATION
54203 - 4

008350

ANALYSIS CERTIFICATE

02/18/94

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
CE-GA-5-47	McBride-Ratcliff & Associates Construction Materials	Jose A.Lopez

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#
94-0034				

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
02/11/94	02/15/94	SOIL	GRAB	REFRIG	GLASS	02/11/94	00:00

REGULATORY PERMIT	FLOW

PARAMETER	RESULT	DET LIMIT	REG LEVEL	UNITS	METHOD	DATE	TIME	INT
TOC	0.0708	0.01		%	FLMAONS.2.13	02/15/94	12:30	CC

Approved By : [signature]