START: 825 FT		DATE: 04/25/95 TIME: 08:03
GAMMA-RAY	A 19	GUARD RESISTIVITY
150 API Units 250	Depths	0 Ohm-Meters 1000
50 150	5"/100'	0 200

Previous

ELECTRIC LOG

welenco

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:NORTH END OF WINDSOR RD.
WELL:MW-19
COMPANY:LANG EXPLORATORY DRILLING

COMPANY LANG EXPLORATORY DRILLING
WELL MW-19
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
NORTH END OF WINDSOR RD.

Sec. Twp. Rge.

Other Services
GR/CRD
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	2/27/95			
Run No.	ONE			
Depth-Driller	589′			
Depth-Logger	589′			
Btm Log Interval	588′			
Top Log Interval	49′			
Casing Driller	14" @ 50′	@	@	@
Casing Logger	50′			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density / Viscosity	N/A N/A			
pH / Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	19.2 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	19.2 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time: End Circulation	1300			
Time: Logger on bottom	15:13			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. / Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	--			

CWP DRS 1.2616

Scale Down Hole
Scale Up Hole
Depth
Type Log

Scale Ranges

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
ONE	T-130	NORMAL	FREE	

CALIBRATION DATA

Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	BKG CPS	STD CPS

Fold Here

Changes in Mud Type or Additional Samples
Date / Sample No.
Depth Driller
Type Fluid
Dens / Visc
pH / Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source RMF / Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT
REFERENCE LITERATURE:

REMARKS:

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Welenco

64" NORMAL
OHM-METERS
0 100 500

16" NORMAL
OHM-METERS
0 100 500

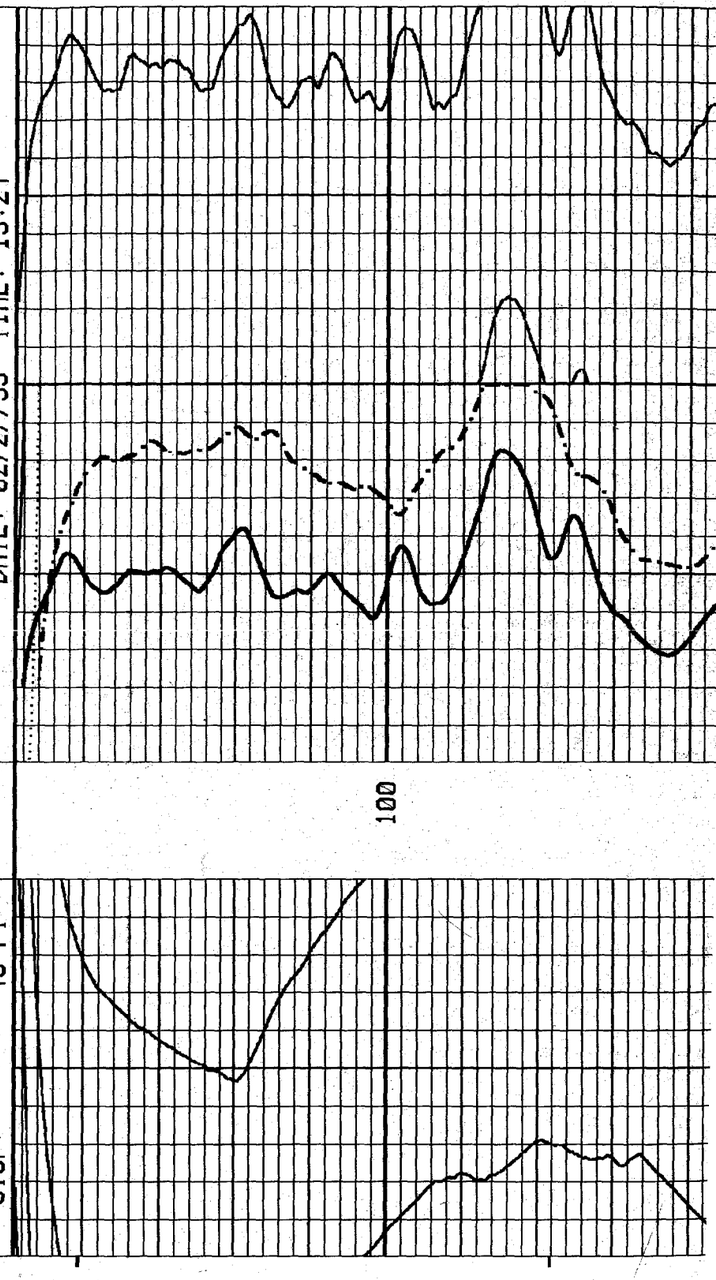
POINT RESISTANCE
25 OHMS per division

L 24
Depths 5"/100′

- S.P. +
5 MILLIVOLTS per division

DATE: 02/27/95 TIME: 15:24

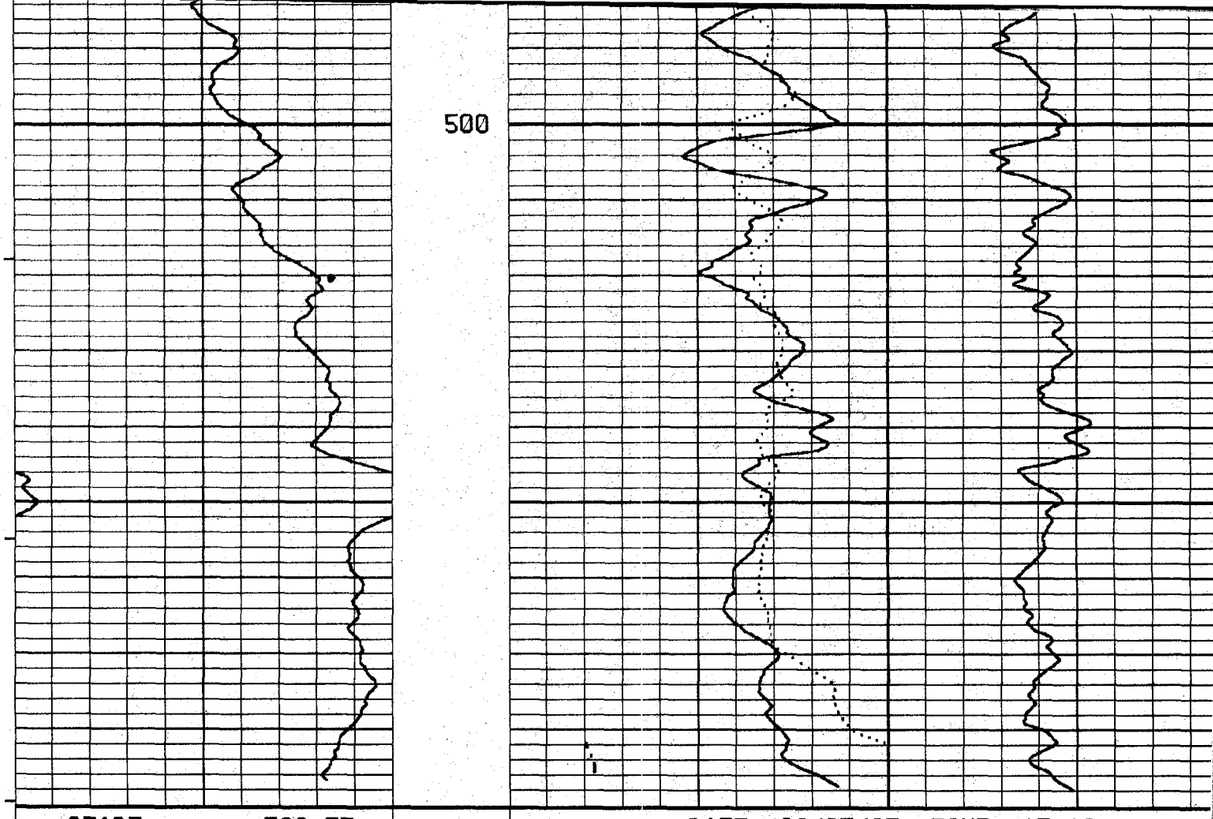
STOP: 49 FT



200

300

400



START: 588 FT		DATE: 02/27/95 TIME: 15:13	
		64" NORMAL 0 OHM-METERS 500 0 100	
- S. P. + 5 MILLIVOLTS per division	L 24 Depths 5"/100'	16" NORMAL 0 OHM-METERS 500 0 100	POINT RESISTANCE 25 OHMS per division

welenco

GUARD RESISTIVITY
GAMMA-RAY LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:NORTH END OF WINDSOR RD.
WELL:MW-19
COMPANY:LANG EXPLORATORY DRILLING

COMPANY LANG EXPLORATORY DRILLING
WELL MW-19
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
NORTH END OF WINDSOR RD.
Sec. Twp. Rge.

Other Services
E-LOG
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K. B.
D. F.
G. L.

Date	2/27/95			
Run No.	ONE			
Depth-Driller	589′			
Depth-Logger	589′			
Btm Log Interval	588′			
Top Log Interval	47′			
Casing Driller	14" @ 50′	@	@	@
Casing Logger	50′			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density / Viscosity	N/A N/A			
pH / Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	19.2 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	19.2 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time: End Circulation	1300			
Time: Logger on bottom	15:13			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. / Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	--			

Fold Here

CWP DRS 1.2616

Scale Changes
Type Log Depth Scale Up Hole Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
ONE	13	GUARD	FREE	121

CALIBRATION DATA

Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	GAMMA RAY BKG CPS	GAMMA RAY STD CPS

Changes in Mud Type or Additional Samples

Date	Sample No	Depth Driller	Type Fluid	Dens / Visc	pH / Fluid Loss	Source of Sample	Rm @ Meas Temp	Rmf @ Meas Temp	Rmc @ Meas Temp	Source RMF / Rmc	Rm @ BHT	Rmf @ BHT	Rmc @ BHT

REFERENCE LITERATURE:

REMARKS:

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Welenco

GUARD RESISTIVITY
Ohm-Meters
0 1000
0 200

DATE: 02/27/95 TIME: 15:56

100

L 25
Depths 5"/100′

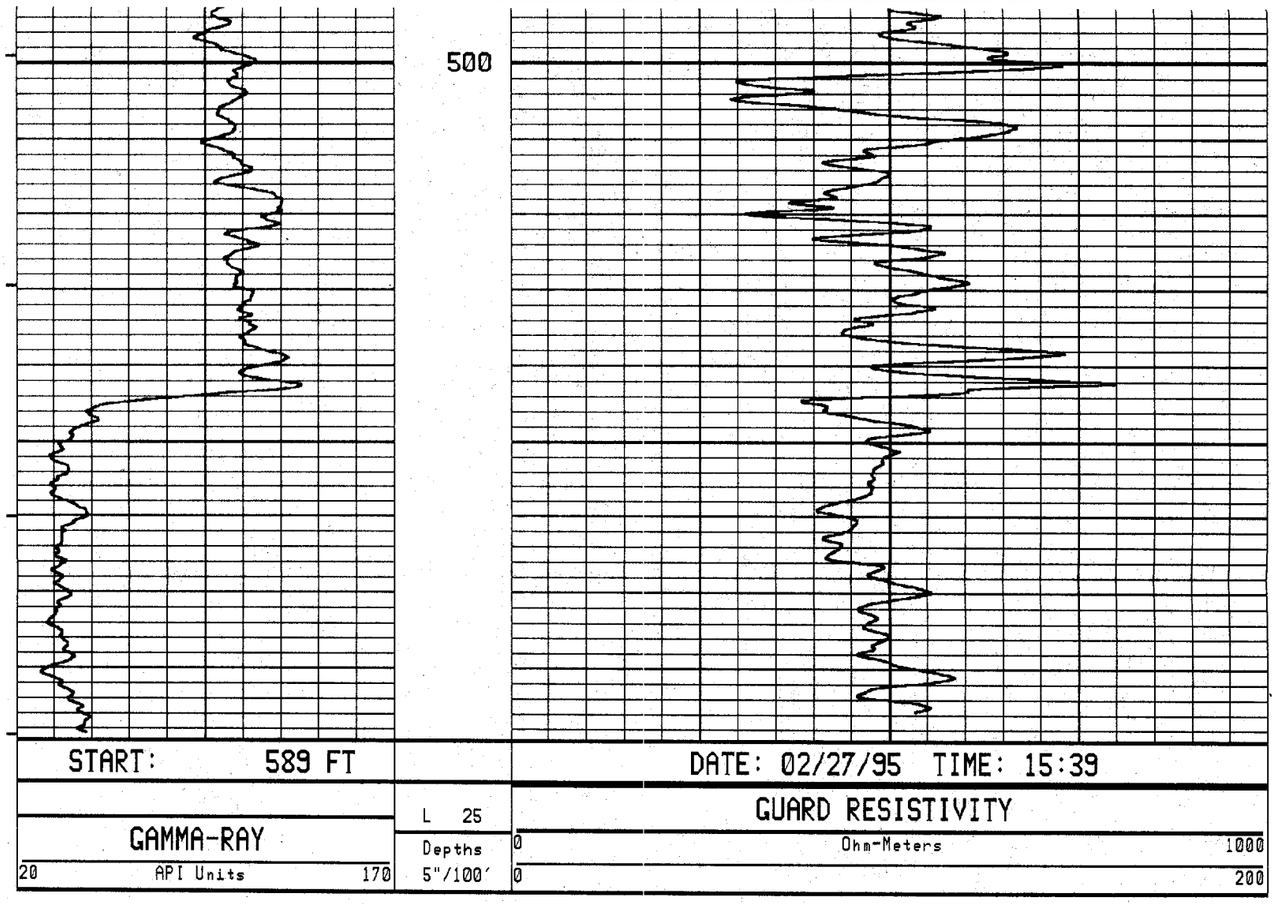
GAMMA-RAY
API Units
20 170

STOP: 47 FT

200

300

400



START: 589 FT

DATE: 02/27/95 TIME: 15:39

GAMMA-RAY

20 API Units 170

L 25

Depths

5"/100'

GUARD RESISTIVITY

0 Ohm-Meters 1000

0 200

welenco

ELECTRIC LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:LINCOLN @ MOUNTAIN VIEW
WELL:MW-20
COMPANY:LANG EXPLORATORY DRILLING

COMPANY LANG EXPLORATORY DRILLING
WELL MW-20
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
LINCOLN @ MOUNTAIN VIEW
Sec. Twp. Rge.

Other Services
GR/GRD
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K. B.
D. F.
G. L.

Date	3/29/95			
Run No.	ONE			
Depth-Driller	1008'			
Depth-Logger	1008'			
Btm Log Interval	1008'			
Top Log Interval	47'			
Casing Driller	14" @ 50'	@	@	@
Casing Logger	50'			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density | Viscosity	N/A N/A			
pH | Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	33.3 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	33.3 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time End Circulation	3/28/95			
Time Logger on bottom	8:56			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. | Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	V. RICHARDS			

CWF ORS 1.2616

Scale Ranges
Scale Down Hole
Scale Up Hole
Depth
Type Log

EQUIPMENT DATA

	Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
	ONE	T-130	NORMAL	FREE	

CALIBRATION DATA

	Run No.	16" Normal Zero	16" Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	BKG CPS	STD CPS
o		o	o	o	o	o			

Changes in Mud Type or Additional Samples
Date | Sample No.
Depth Driller
Type Fluid
Dens | Visc
pH | Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source Rmf | Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT
REFERENCE LITERATURE:

REMARKS:

Fold Here

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Welenco

64" NORMAL
OHM-METERS
0 100 500

16" NORMAL
OHM-METERS
0 100 500

POINT RESISTANCE
25 OHMS per division

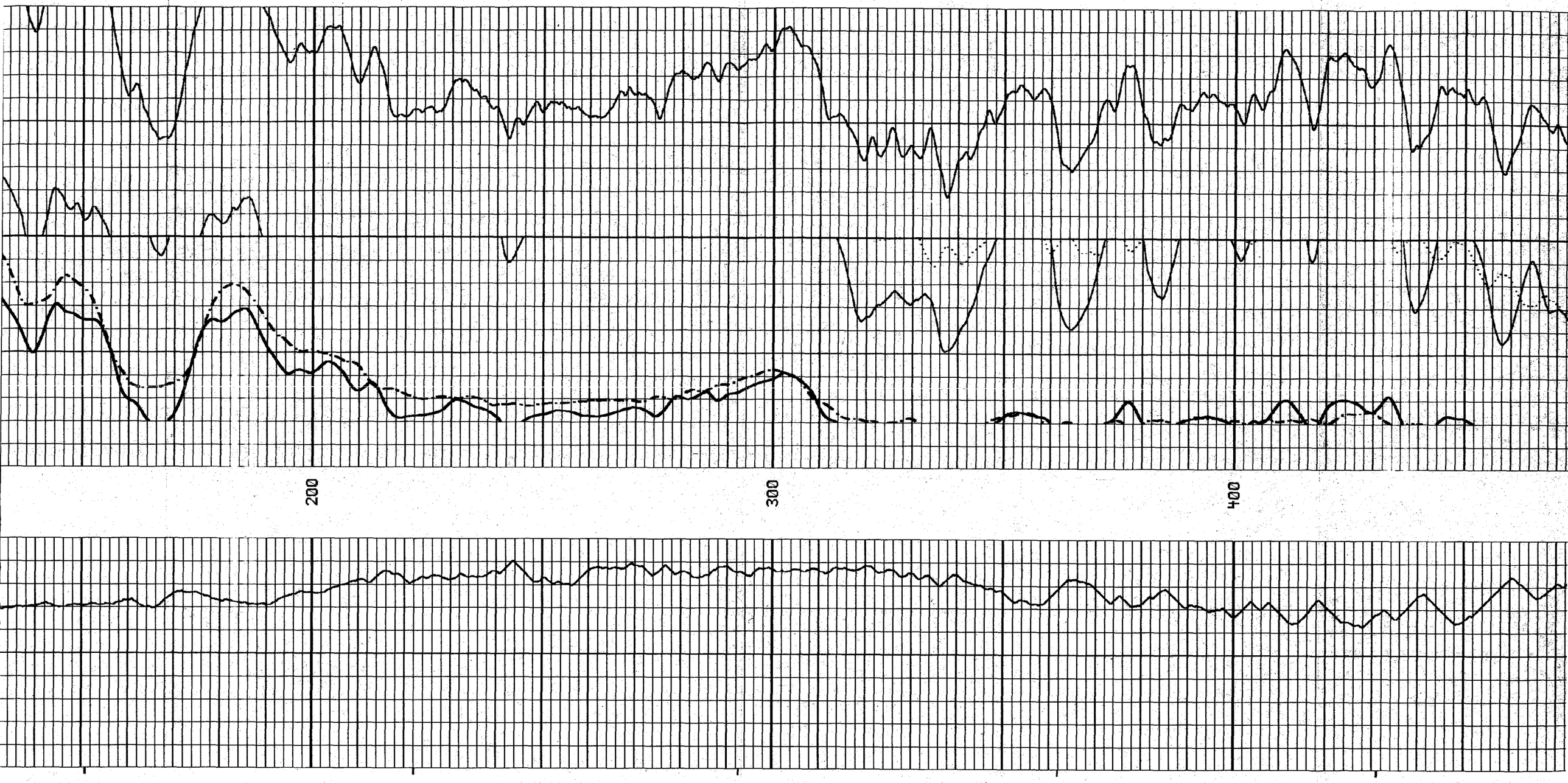
P 10 per division

Depths 5"/100'

- S.P. +
15 MILLIVOLTS per division

STOP: 47 FT

100

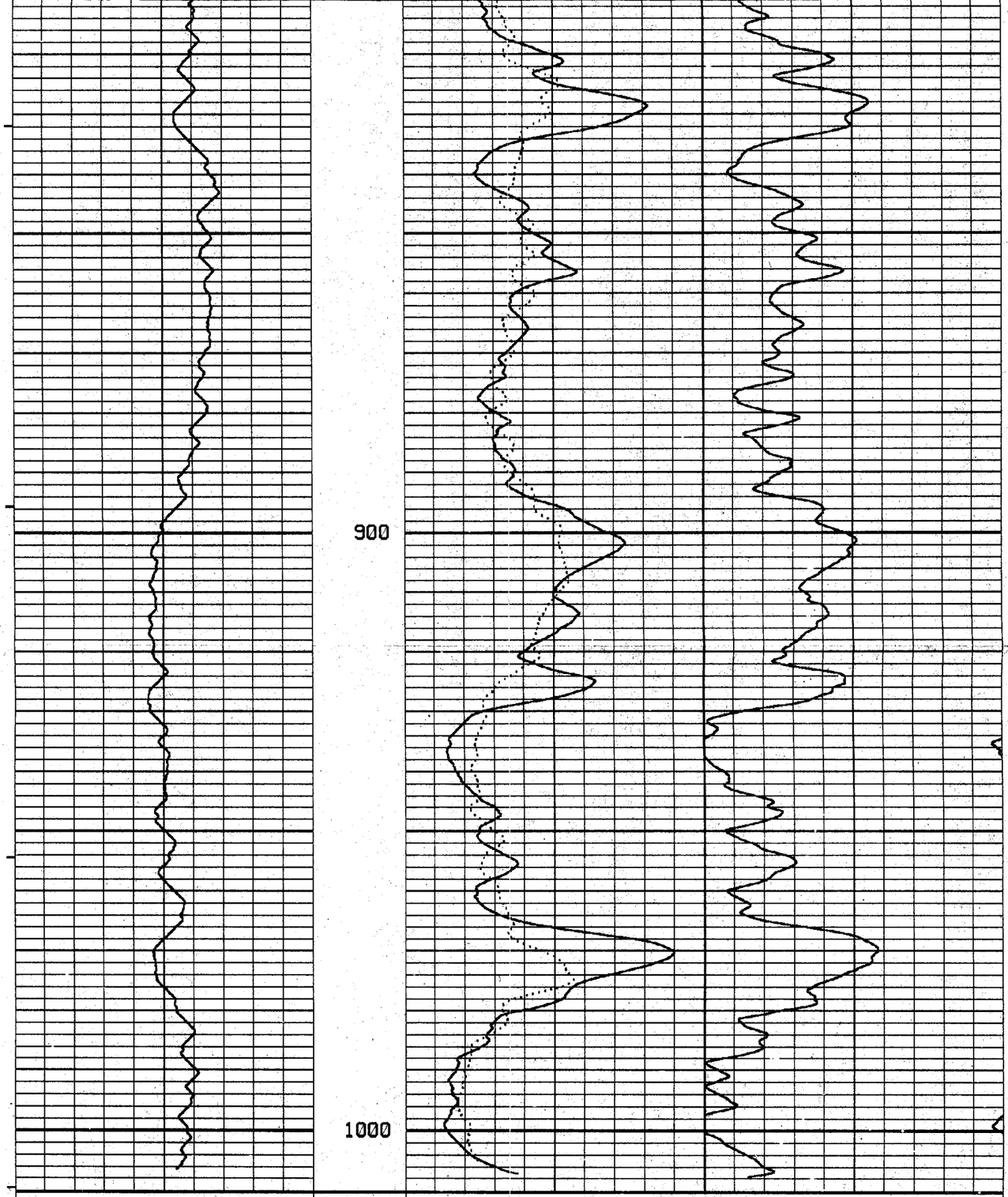

200
300
400

500

600

700

800



START: 1008 FT

DATE: 03/29/95 TIME: 08:56

64" NORMAL
0 OHM-METERS 500
0 100

- S.P. +
15 MILLIVOLTS
per division

P 10
Depths
5"/100'

16" NORMAL
0 OHM-METERS 500
0 100

POINT RESISTANCE
25 OHMS
per division

welenco

GUARD RESISTIVITY
GAMMA-RAY LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:LINCOLN @ MOUNTAIN VIEW
WELL:MW-20
COMPANY:LANG EXPLORATORY DRILLING

COMPANY LANG EXPLORATORY DRILLING
WELL MW-20
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
LINCOLN @ MOUNTAIN VIEW

Sec. Twp. Rge.

Other Services
E-LOG
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	3/29/95								
Run No.	ONE								
Depth-Driller	1008′								
Depth-Logger	1008′								
Btm Log Interval	1008′								
Top Log Interval	44′								
Casing Driller	14" @ 50′		@		@		@		
Casing Logger	50′								
Bit Size	12.25"								
Type Fluid in Hole	WATER								
Density | Viscosity	N/A	N/A							
pH | Fluid Loss	N/A	N/A cc		cc		cc		cc	
Source of Sample	PIT								
Rm @ Meas. Temp.	33.3 @ 75 °F		@	°F	@	°F	@	°F	
Rmf @ Meas. Temp.	33.3 @ 75 °F		@	°F	@	°F	@	°F	
Rmc @ Meas. Temp.	N/A @ N/A °F		@	°F	@	°F	@	°F	
Source of Rmf and Rmc	MEAS	N/A							
Rm @ BHT	N/A @ N/A °F		@	°F	@	°F	@	°F	
Time: End Circulation	3/28/95								
Time: Logger on bottom	8:56								
Max Rec Temp Deg. F	N/A	°F		°F		°F		°F	
Equip No. | Location	L-14	L.A.							
Recorded By	RIDDER								
Witnessed By	V. RICHARDS								

CWP DRS 1.2616

Scale Changes
Type Log
Depth
Scale Up Hole
Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
ONE	13	GUARD	FREE	121

CALIBRATION DATA

Run No.	16" Normal Zero	16" Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	GAMMA RAY BKG CPS	GAMMA RAY STD CPS

Fold Here

Changes in Mud Type or Additional Samples
Date | Sample No.
Depth Driller
Type Fluid
Dens | Visc
pH | Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source RMF | Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT

Run No.	Rm @ BHT	Rmf @ BHT	Rmc @ BHT
	o	o	o

REFERENCE LITERATURE:

REMARKS:

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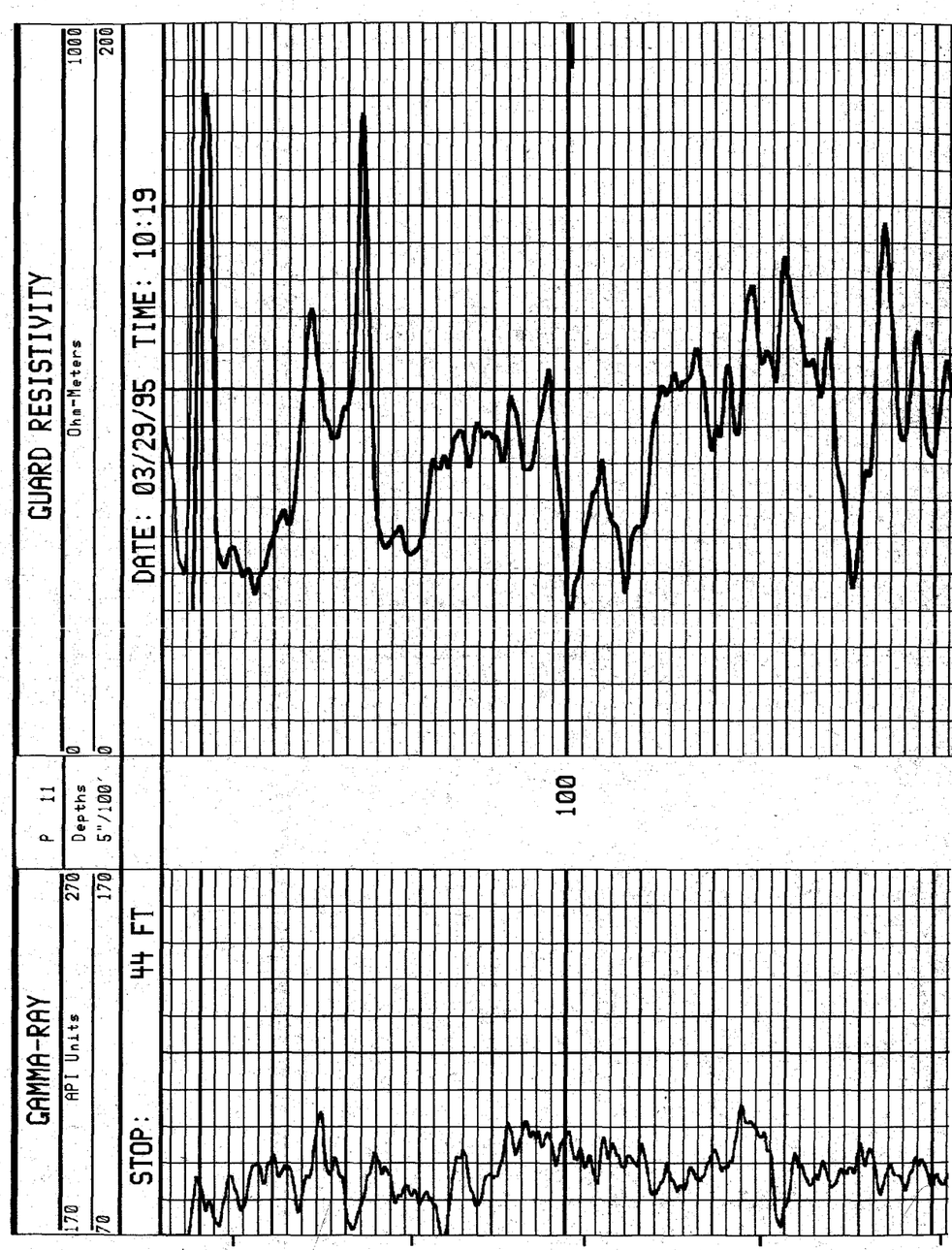
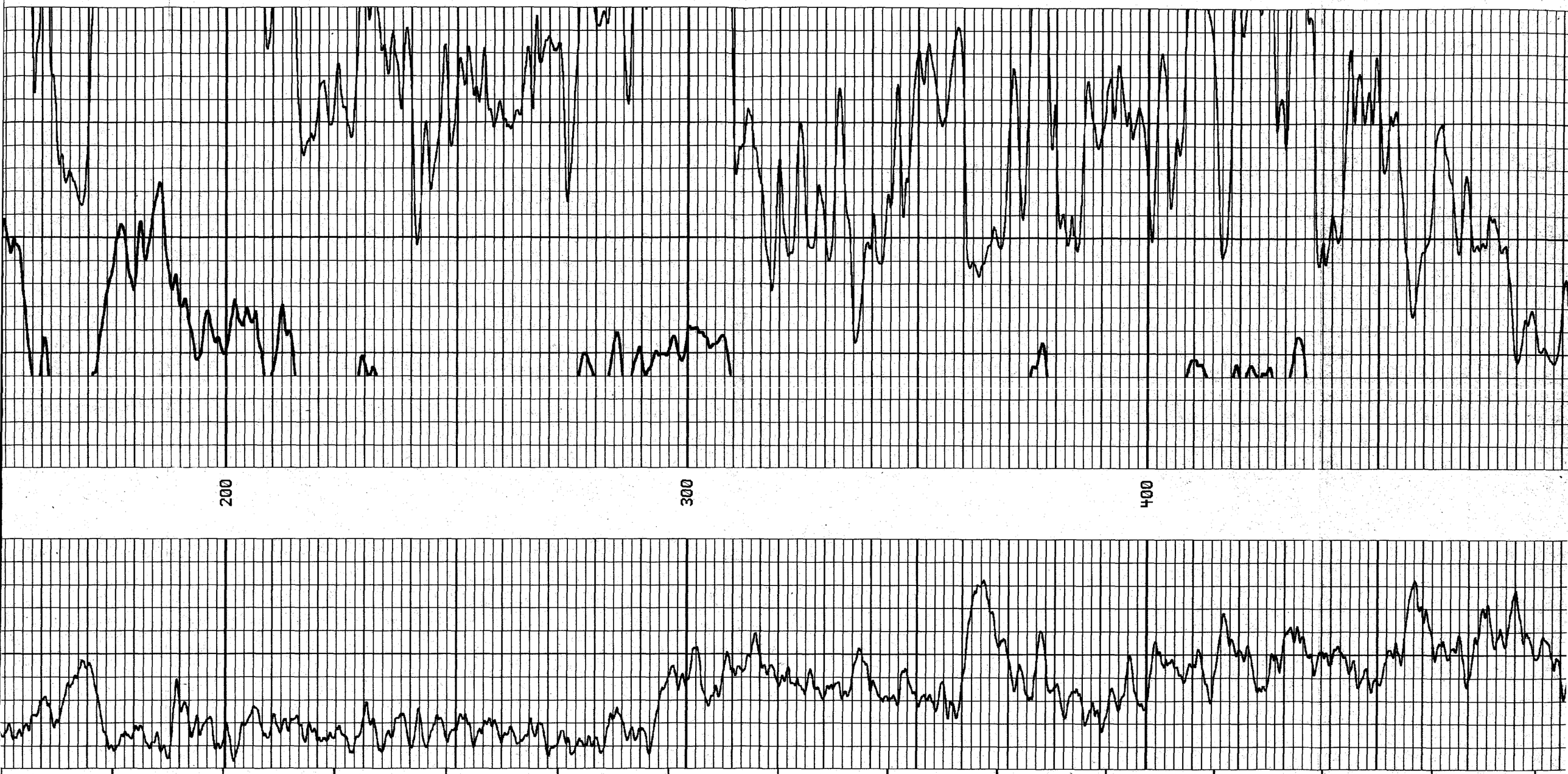
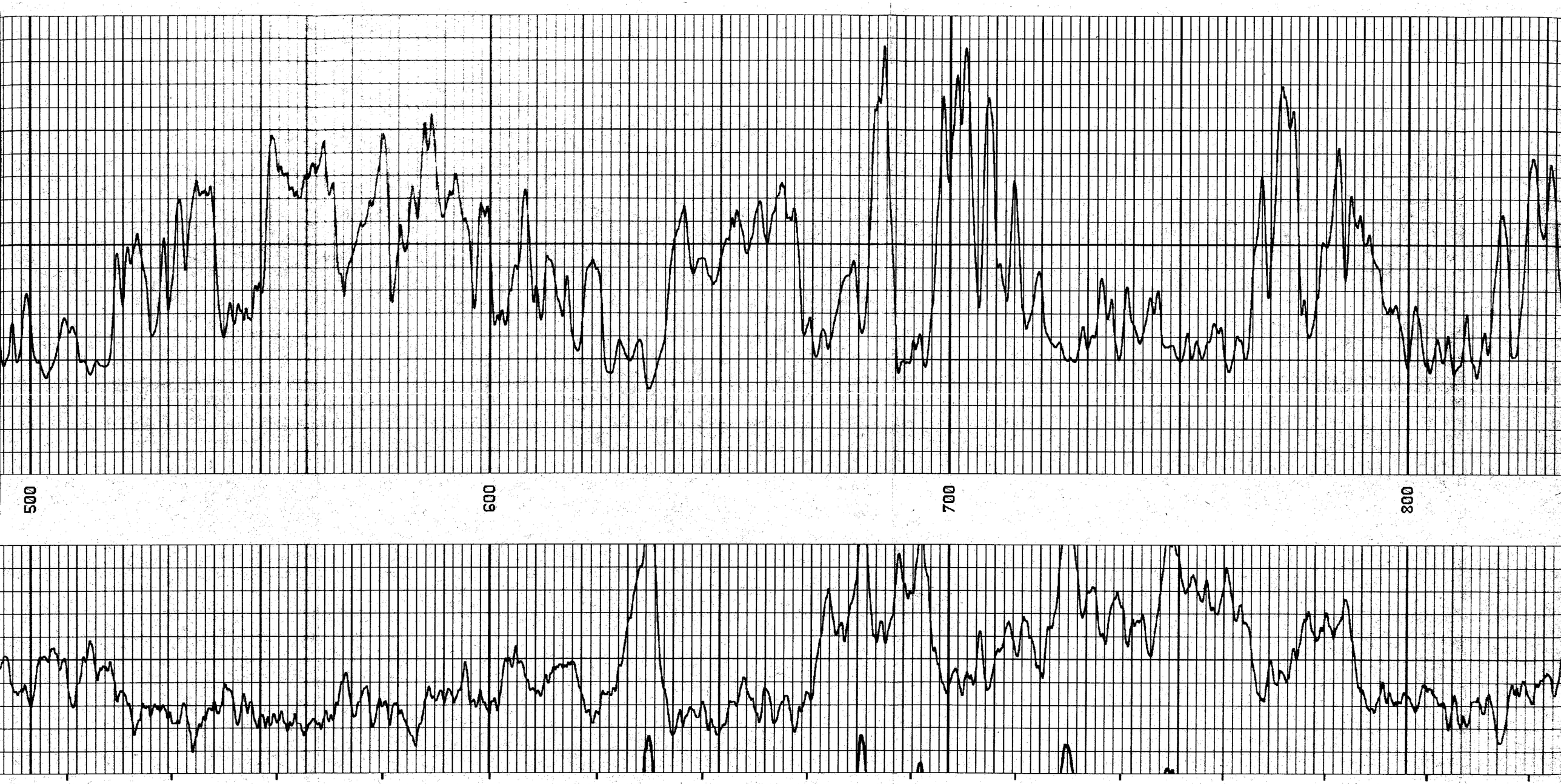
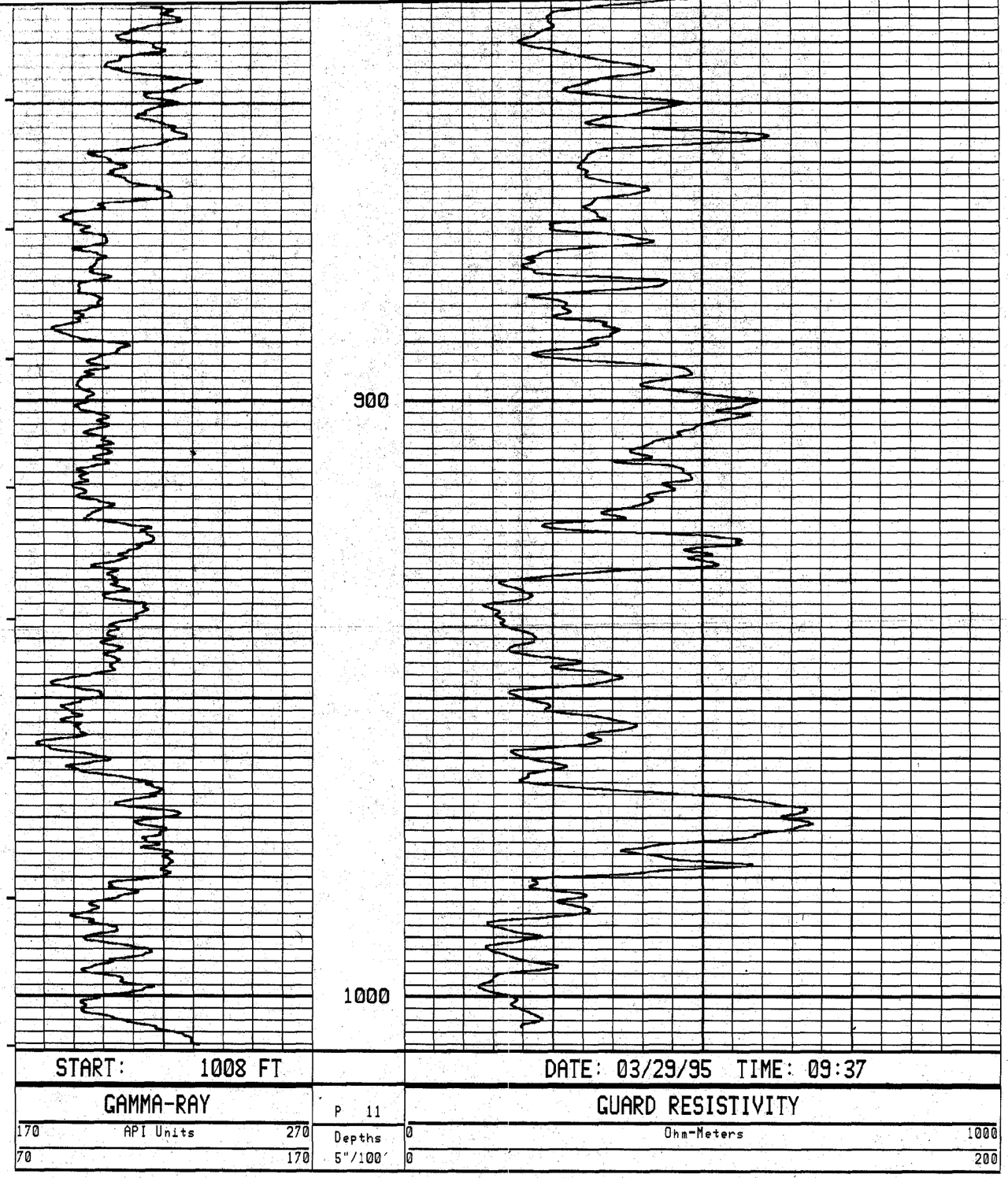
Welenco




200
300
400


500
600
700
800



START: 1008 FT

DATE: 03/29/95 TIME: 09:37

GAMMA-RAY			P 11	GUARD RESISTIVITY		
170	API Units	270	Depths	0	Ohm-Meters	1000
70		170	5"/100'	0		200

welenco

ELECTRIC LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:OAK GROVE PARK
WELL:MW-21
COMPANY:LANG EXPLORATORY DRILLING
FOSTER-WHEELER

COMPANY LANG EXPLORATORY DRILLING
WELL MW-21
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
OAK GROVE PARK
Sec. Twp. Rge.

Other Services
GR/GRD
CALIPER

Permanent datum GROUND LEVEL Elev. 1065′
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K. B.
D. F.
G. L.

Date	2/2/95				
Run No.	ONE				
Depth-Driller	445′				
Depth-Logger	445′				
Btm Log Interval	445′				
Top Log Interval	48′				
Casing Driller	14" @ 48′	@	@	@	
Casing Logger	48′				
Bit Size	12.25"				
Type Fluid in Hole	BENTONITE				
Density | Viscosity	N/A N/A				
pH | Fluid Loss	N/A N/A cc	cc	cc	cc	
Source of Sample	PIT				
Rm @ Meas. Temp.	31.25 @ 75 °F	@ °F	@ °F	@ °F	
Rmf @ Meas. Temp.	31.7 @ 75 °F	@ °F	@ °F	@ °F	
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F	
Source of Rmf and Rmc	MEAS N/A				
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F	
Time: End Circulation	13:30				
Time: Logger on bottom	16:04				
Max Rec Temp Deg. F	N/A °F	°F	°F	°F	
Equip No. | Location	L-14 L.A.				
Recorded By	RIDDER				
Witnessed By	V. RICHARDS				

CWP DRS 1.2616

Scale Changes
Type Log
Depth
Scale Up Hole
Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
ONE	T-130	NORMAL	FREE	

CALIBRATION DATA

Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	BKG CPS	STD CPS
1								

Changes in Mud Type or Additional Samples

Date | Sample No.	Depth Driller	Type Fluid	Dens | Visc	pH | Fluid Loss	Source of Sample	Rm @ Meas Temp	Rmf @ Meas Temp	Rmc @ Meas Temp	Source RMF | Rmc	Rm @ BHT	Rmf @ BHT	Rmc @ BHT
						@	@	@		@	@	@

REFERENCE LITERATURE:

REMARKS:

Fold Here

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Welenco

NOTICE: All interpretations are opinions

POINT RESISTANCE
10 OHMS per division

64" NORMAL
OHM-METERS
0 500 100

16" NORMAL
OHM-METERS
0 500 100

DATE: 02/02/95 TIME: 16:13

J 6
Depths 5"/100′

- S.P. +
5 MILLIVOLTS per division

STOP: 48 FT

100

DATE: 02/02/95 TIME: 16:04

64" NORMAL
OHM-METERS
0 500
0 100

16" NORMAL
OHM-METERS
0 500
0 100

POINT RESISTANCE
10 OHMS
per division

J 6
Depths
5"/100'

START: 445 FT

- S.P. +
5 MILLIVOLTS
per division

200

300

400

GUARD RESISTIVITY
GAMMA-RAY LOG

welenco

COUNTY: LOS ANGELES CA.
FIELD: JPL
LOCATION: OAK GROVE PARK
WELL: MW-21
COMPANY: LANG EXPLORATORY DRILLING
FOSTER-WHEELER

COMPANY LANG EXPLORATORY DRILLING
WELL MW-21
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
OAK GROVE PARK

Sec. Twp. Rge.

Other Services
E-LOG
CALIPER'

Permanent datum GROUND LEVEL Elev. 1065'
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	2/2/95			
Run No.	ONE			
Depth-Driller	445'			
Depth-Logger	445'			
Btm Log Interval	445'			
Top Log Interval	46'			
Casing Driller	14" @ 48'	@	@	@
Casing Logger	48'			
Bit Size	12.25"			
Type Fluid in Hole	BENTONITE			
Density / Viscosity	N/A N/A			
pH / Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	31.25 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	31.7 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time: End Circulation	13:30			
Time: Logger on bottom	16:04			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. / Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	V. RICHARDS			

CWP DRS 1.2616

Fold Here

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
ONE	T-130	NORMAL	FREE	

CALIBRATION DATA

Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	GAMMA RAY BKG CPS	GAMMA RAY STD CPS

Changes in Mud Type or Additional Samples

Date / Sample No.	Depth Driller	Type Fluid	Dens / Visc	pH / Fluid Loss	Source of Sample	Rm @ Meas Temp	Rmf @ Meas Temp	Rmc @ Meas Temp	Source RMF / Rmc	Rm @ BHT	Rmf @ BHT	Rmc @ BHT
						o	o	o		o	o	o

REFERENCE LITERATURE:

REMARKS:

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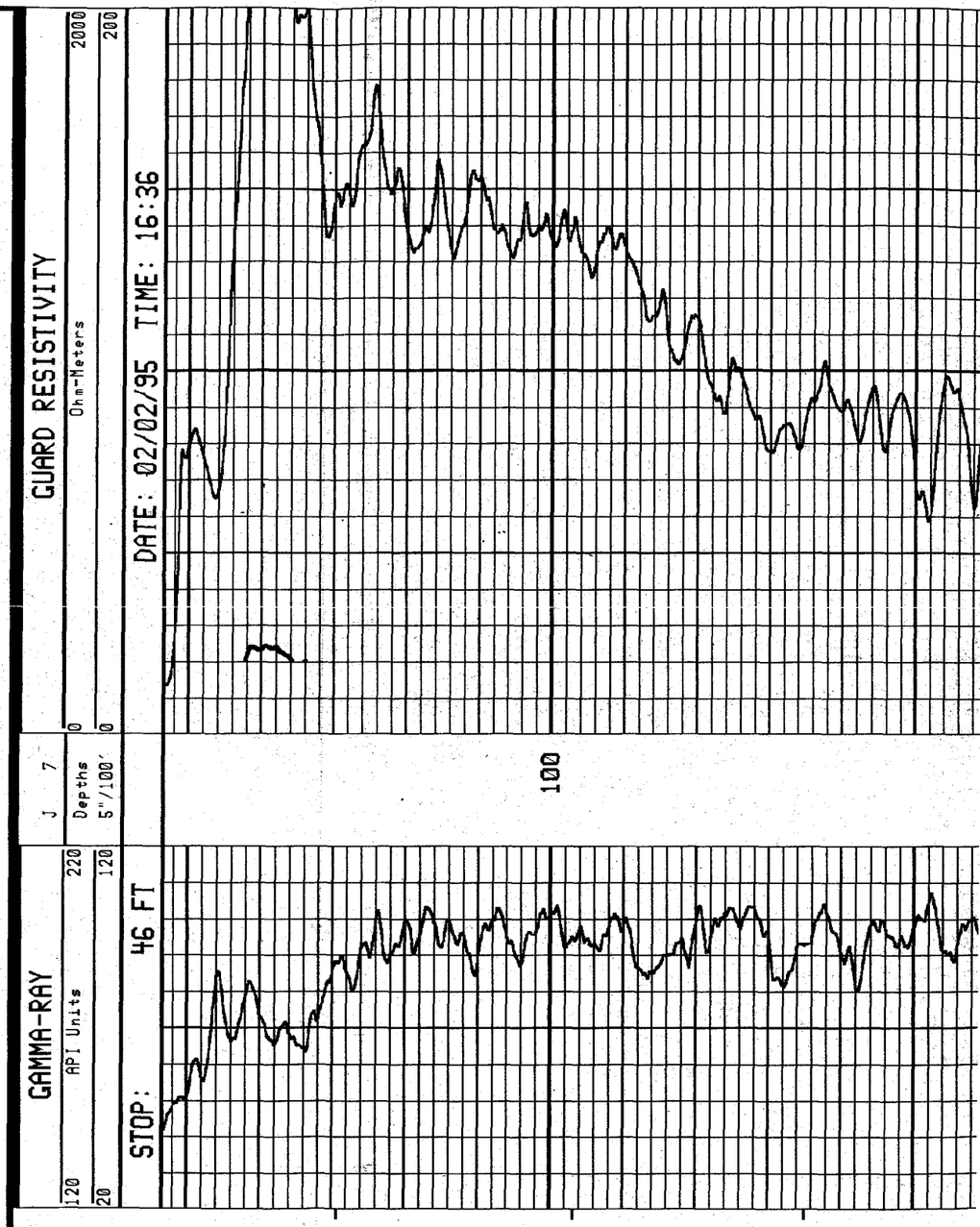
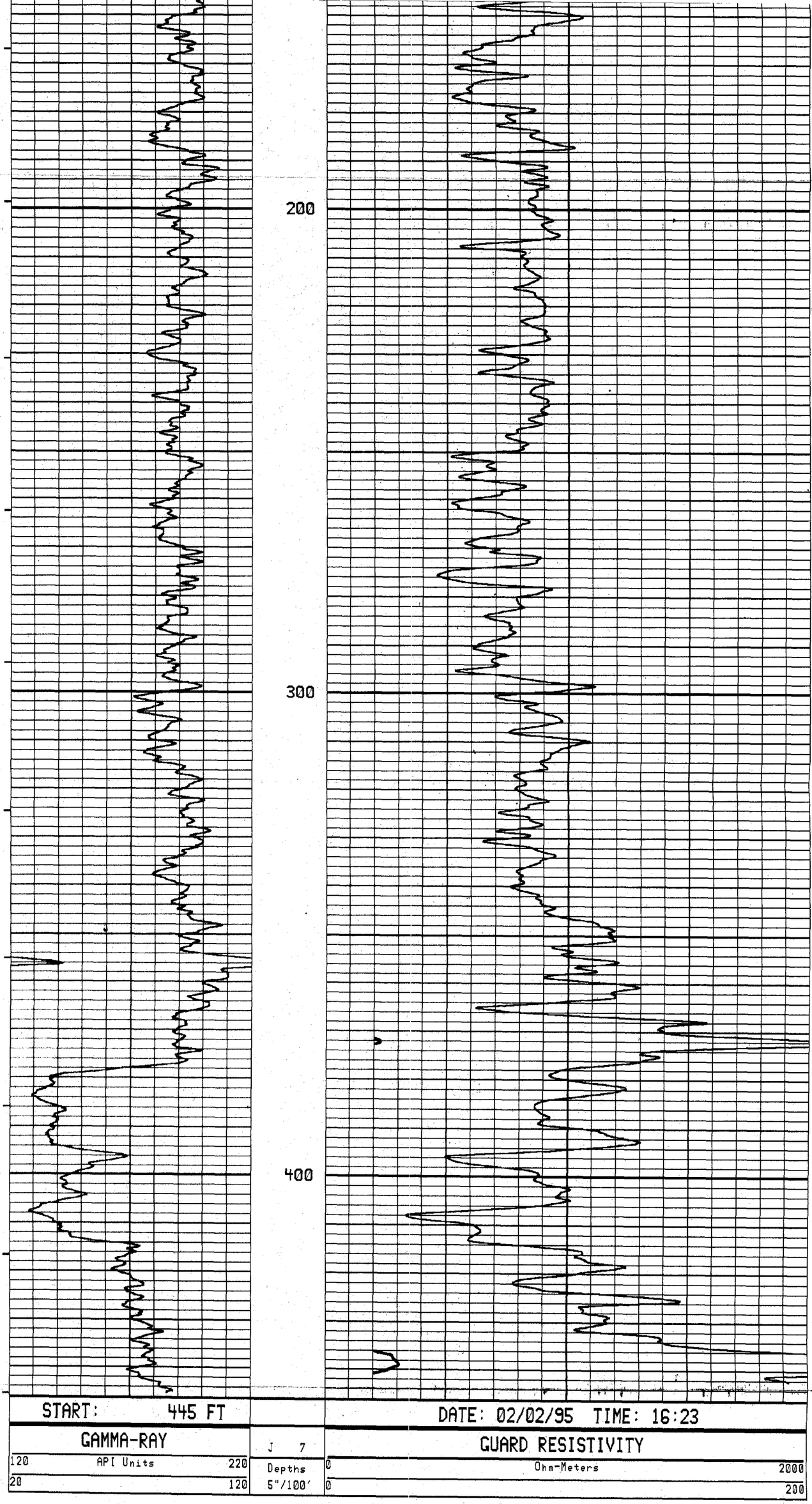
Welenco





START: 445 FT

DATE: 02/02/95 TIME: 16:23

GAMMA-RAY			J 7	GUARD RESISTIVITY	
120	API Units	220	Depths	0	2000
20		120	5"/100'	0	200

welenco

ELECTRIC LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:MAIN BLDG
WELL:MW-22
COMPANY:LANG EXPLORATORY DRILLING
FOSTER-WHEELER

COMPANY LANG EXPLORATORY DRILLING
WELL MW-22
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
MAIN BLDG
Sec. Twp. Rge.

Other Services
GR/GRD
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K. B.
D. F.
G. L.

Date	7/30/97			
Run No.	ONE			
Depth-Driller	770'			
Depth-Logger	770'			
Btm Log Interval	770'			
Top Log Interval	35'			
Casing Driller	16" @ 34'	@	@	@
Casing Logger	NOT REACHED			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density / Viscosity	N/A N/A			
pH / Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	12.8 @ 12.8 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	75 @ 12.8 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	75 @ 12.8 °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	12.8 75			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time End Circulation	11:00			
Time Logger on bottom	15:22			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. / Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	M. CUTLER			

CWP DRS 1.2616

Scale Changes
Scale Up Hole
Scale Down Hole
Type Log
Depth

EQUIPMENT DATA
Run No. ONE
Tool No. T-106
Tool Type NORMAL
Tool Pos. FREE
Gamma Ray Tool No.

CALIBRATION DATA
Run No.
16" Normal Zero
16" Normal Int. Cal
Induction Loop Cal
Induction Tool Zero
Induction Tool Cal
GAMMA RAY API SCALE
BKG CPS
STD CPS

Fold Here

Changes in Mud Type or Additional Samples
Date / Sample No.
Depth Driller
Type Fluid
Dens / Visc
pH / Fluid Loss
Source of Sample
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Source Rmf / Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT
REFERENCE LITERATURE:

REMARKS:

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Welenco

NOTICE:

64" NORMAL
OHM-METERS
0 2000

16" NORMAL
OHM-METERS
0 2000
0 200

POINT RESISTANCE
10 OHMS
per division

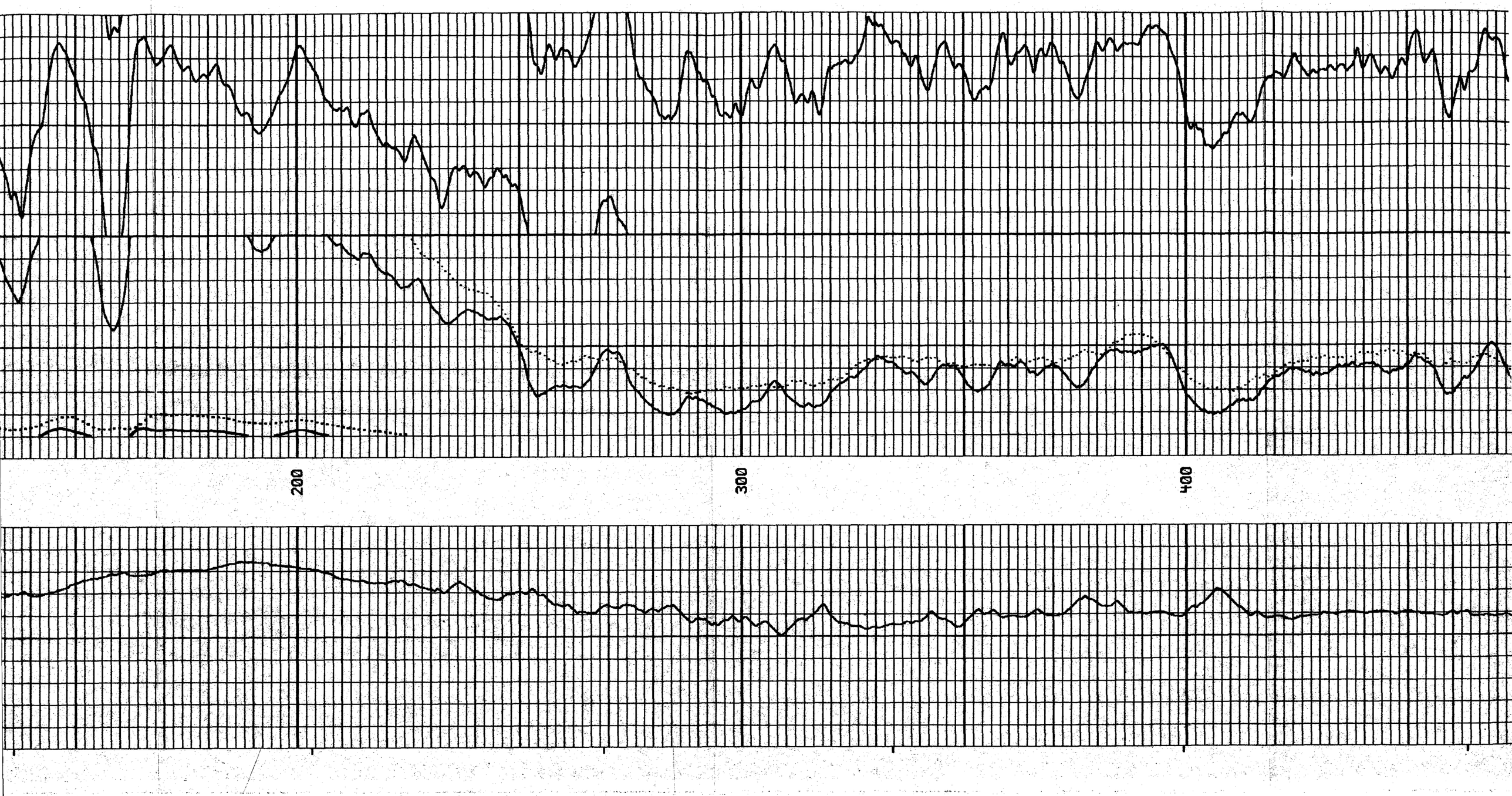
DATE: 07/30/97 TIME: 16:02

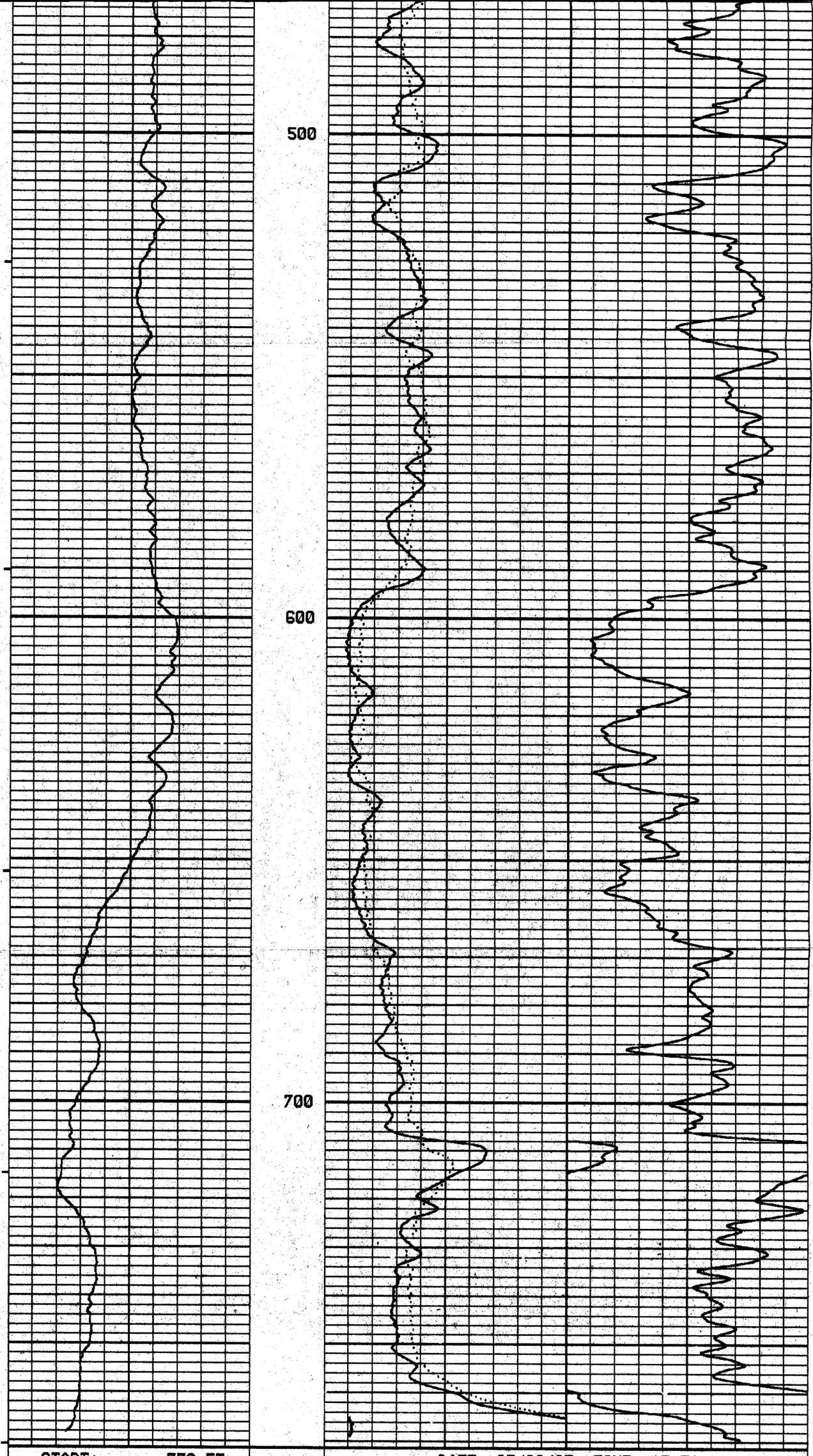
K 7
Depths 5"/100'

- S.P. +
20 MILLIVOLTS
per division

STOP: 35 FT

100


200
300
400



START: 770 FT

DATE: 07/30/97 TIME: 15:51

64" NORMAL
0 OHM-METERS 2000
0 200

16" NORMAL
0 OHM-METERS 2000
0 200

- S.P. +
20 MILLIVOLTS
per division

K 7
Depths
5"/100'

POINT RESISTANCE
10 OHMS
per division

welenco

GUARD RESISTIVITY
GAMMA-RAY LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:MAIN BLDG
WELL:MW-22
COMPANY:LANG EXPLORATORY DRILLING
FOSTER-WHEELER

COMPANY LANG EXPLORATORY DRILLING
WELL MW-22
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
MAIN BLDG
Sec. Twp. Rge.

Other Services
E-LOG
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	7/30/97			
Run No.	ONE			
Depth-Driller	770'			
Depth-Logger	770'			
Btm Log Interval	770'			
Top Log Interval	0'			
Casing Driller	16" @ 34'	@	@	@
Casing Logger	34'			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density / Viscosity	N/A N/A			
pH / Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	12.8 @ 12.8°F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	75 @ 12.8°F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	75 @ 12.8°F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	12.8 75			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time End Circulation	11:00			
Time Logger on bottom	15:22			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. / Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	M. CUTLER			

CWP DRS 1.2616

Scale Changes
Type Log
Depth
Scale Up Hole
Scale Down Hole

EQUIPMENT DATA

Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
ONE	13	GUARD	FREE	121

CALIBRATION DATA

Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	BKG CPS	STD CPS
	o	o		o		o		
	o	o		o		o		
	o	o		o		o		

Changes in Mud Type or Additional Samples
Date / Sample No.
Depth Driller
Type Fluid
Dens / Visc
pH / Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source RMF / Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT
REFERENCE LITERATURE:

REMARKS:

Fold Here

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Welenco

GUARD RESISTIVITY
2000
400
Ohm-Meters
0
0
DATE: 07/30/97 TIME: 16:44

K 8
Depths 5"/100'

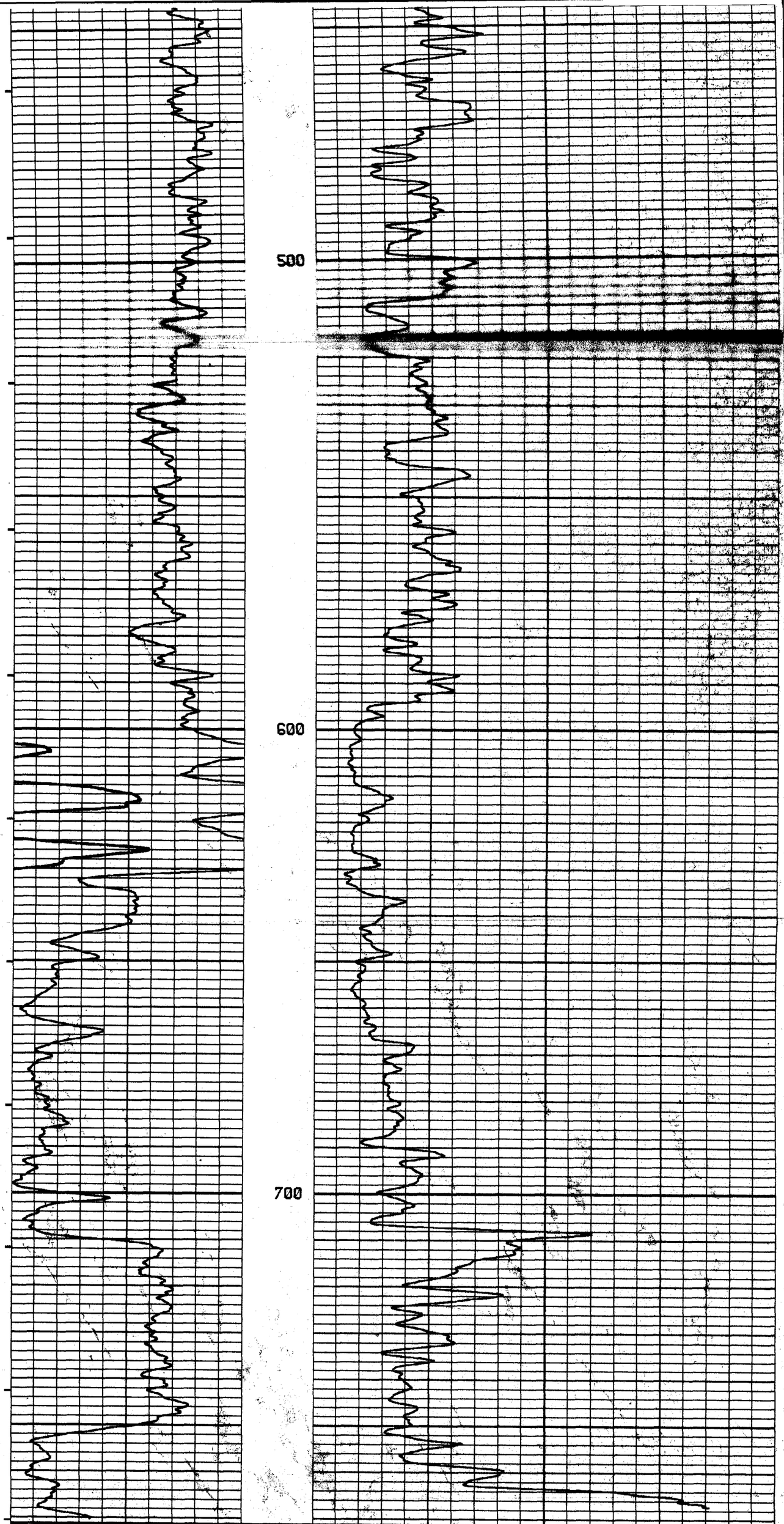
0
100

GAMMA-RAY
240
140
API Units
.140
40
STOP: -1 FT

200

300

400



START: 770 FT

DATE: 07/30/97 TIME: 16:19

GAMMA-RAY

K 8

GUARD RESISTIVITY

GUARD RESISTIVITY

0	Ohm-Meters	2000
0		400

140	API Units	240
40		140

K	Depths	
8	5"/100'	
0		0
0		0

ELECTRIC LOG

welenco

COUNTY: LOS ANGELES CA
FIELD: JPL
LOCATION: BLDG 633
WELL: MW-23
COMPANY: LANG EXPLORATORY DRILLING

COMPANY LANG EXPLORATORY DRILLING
WELL MW-23
FIELD JPL
COUNTY LOS ANGELES STATE CA

LOCATION
BLDG 633
Sec. Twp. Rge.

Other Services
GR/GRD
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	7/16/97				
Run No.	ONE				
Depth-Driller	651′				
Depth-Logger	651′				
Btm Log Interval	651′				
Top Log Interval	50′				
Casing Driller	16" @ 50′	@	@	@	
Casing Logger	50′				
Bit Size	12.25"				
Type Fluid in Hole	WATER				
Density | Viscosity	N/A N/A				
pH | Fluid Loss	N/A N/A cc	cc	cc	cc	
Source of Sample	PIT				
Rm @ Meas. Temp.	24.5 @ 75 °F	@ °F	@ °F	@ °F	
Rmf @ Meas. Temp.	24.5 @ 75 °F	@ °F	@ °F	@ °F	
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F	
Source of Rmf and Rmc	MEAS N/A				
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F	
Time End Circulation	10:30				
Time Logger on bottom	14:40				
Max Rec Temp Deg. F	N/A °F	°F	°F	°F	
Equip No. | Location	L-14 L.A.				
Recorded By	RIDDER				
Witnessed By	--				

CWP DRS 1.2616

Scale Changes
Type Log
Depth
Scale Up Hole
Scale Down Hole

EQUIPMENT DATA
Run No. ONE
Tool No. T-106
Tool Type NORMAL
Tool Pos. FREE
Gamma Ray Tool No.

CALIBRATION DATA
Run No.
16"Normal Zero
16"Normal Int. Cal
Induction Loop Cal
Induction Tool Zero
Induction Tool Cal
GAMMA RAY API SCALE
BKG CPS
STD CPS

Fold Here

Changes in Mud Type or Additional Samples
Date \| Sample No.
Depth Driller
Type Fluid
Dens \| Visc
pH \| Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source RMF \| Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT
REFERENCE LITERATURE:

REMARKS:

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Welenco

64" NORMAL
OHM-METERS
0 1000 200

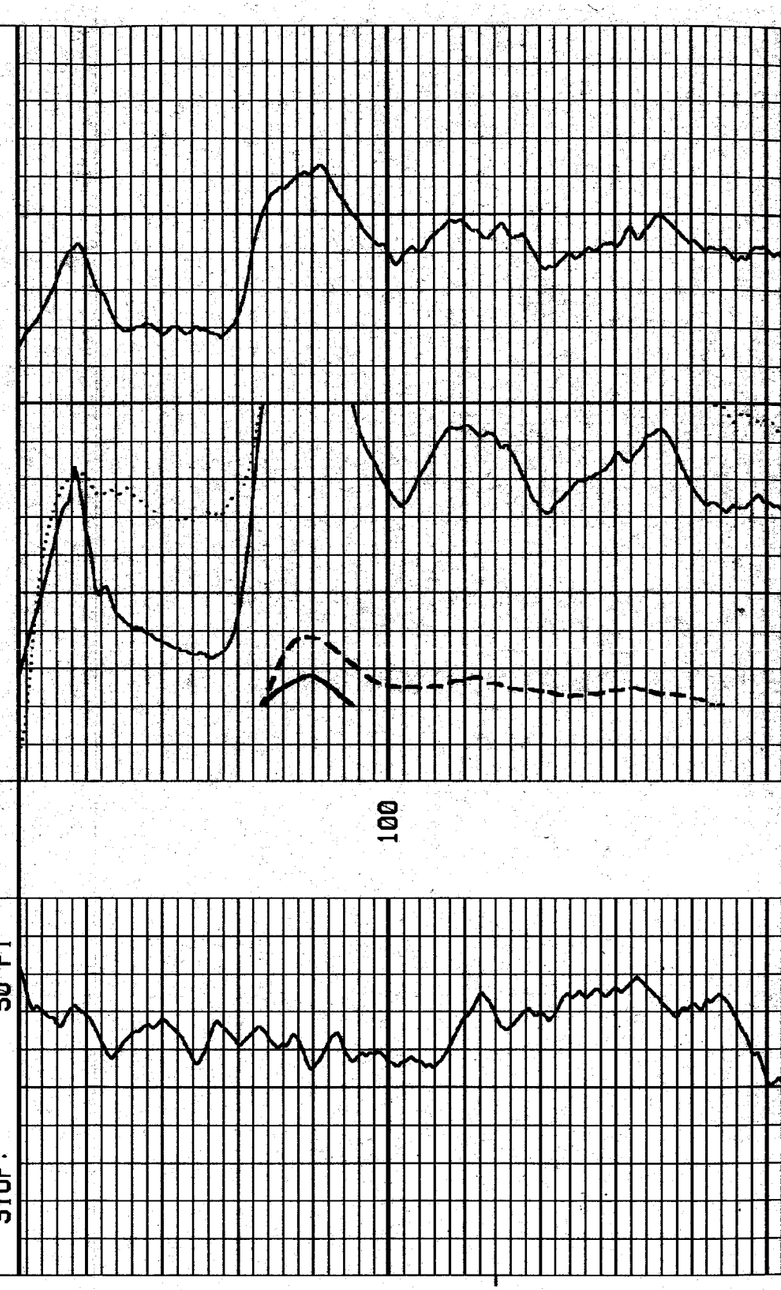
16" NORMAL
OHM-METERS
0 1000 200

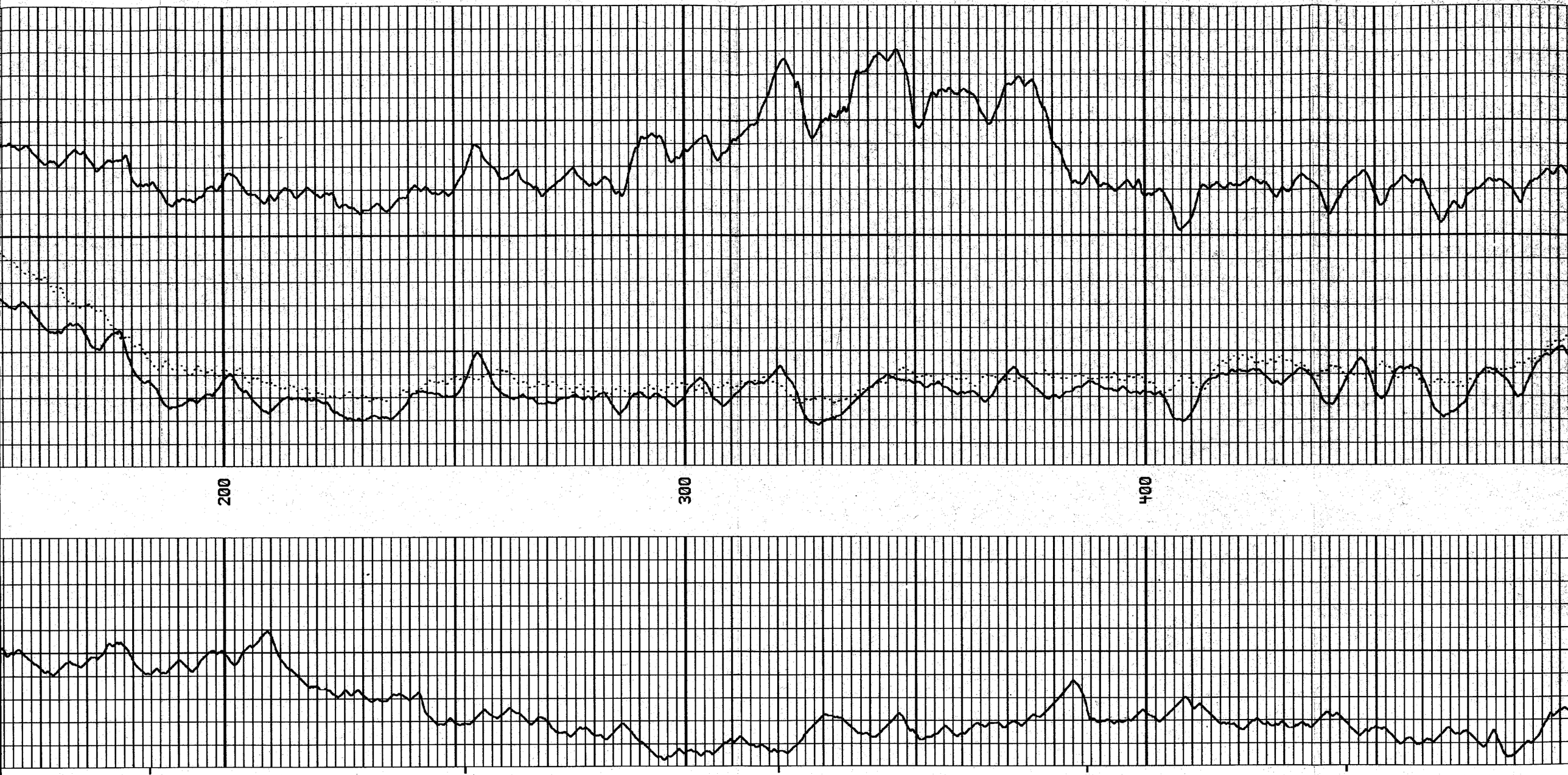
POINT RESISTANCE
25 OHMS
Per division

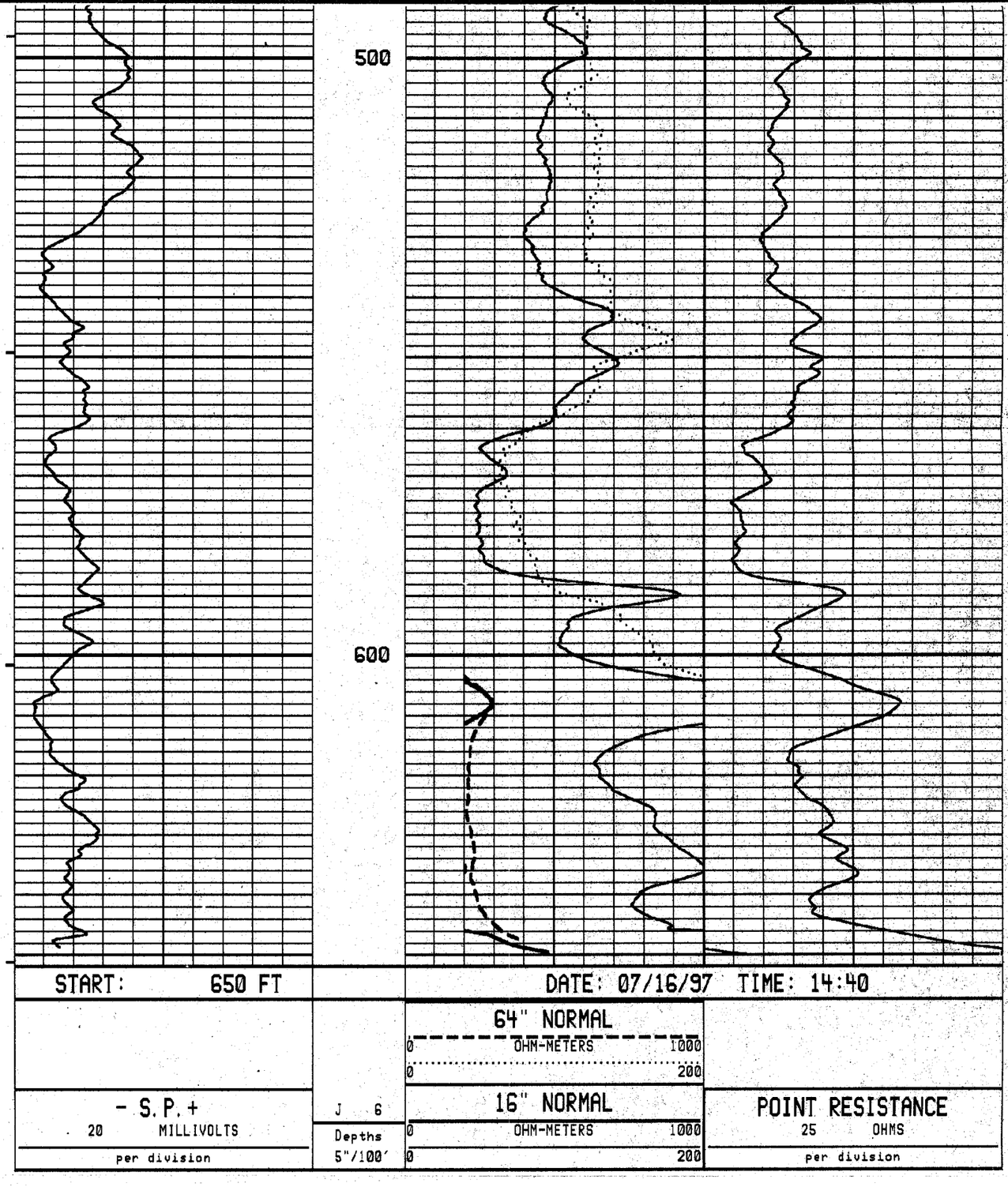
J 6
Depths 5"/100′

- S.P. +
20 MILLIVOLTS
per division

STOP: 50 FT




200
300
400



START: 650 FT

DATE: 07/16/97 TIME: 14:40

64" NORMAL
0 OHM-METERS 1000
0 200

- S. P. +
20 MILLIVOLTS
per division

J 6
Depths
5"/100'

16" NORMAL
0 OHM-METERS 1000
0 200

POINT RESISTANCE
25 OHMS
per division

GUARD RESISTIVITY
GAMMA-RAY LOG

welenco

COUNTY: LOS ANGELES CA
FIELD: JPL
LOCATION: BLDG 633
WELL: MW-23
COMPANY: LANG EXPLORATORY DRILLING

COMPANY LANG EXPLORATORY DRILLING
WELL MW-23
FIELD JPL
COUNTY LOS ANGELES STATE CA

LOCATION
BLDG 633

Sec. Twp. Rge.

Other Services
GR/GRD
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	7/16/97			
Run No.	ONE			
Depth-Driller	651′			
Depth-Logger	651′			
Btm Log Interval	651′			
Top Log Interval	0′			
Casing Driller	16" @ 50′	@	@	@
Casing Logger	50′			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density / Viscosity	N/A N/A			
pH / Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	24.5 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	24.5 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time: End Circulation	10:30			
Time: Logger on bottom	14:40			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. / Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	--			

CWP DRS 1.2616

Fold Here

Changes in Mud Type or Additional Samples

Scale Changes

Date / Sample No	Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth Driller				
Type Fluid				

EQUIPMENT DATA

Dens / Visc	Run No.	Tool No.	Tool Type	Tool Pos.	Gamma Ray Tool No.
pH / Fluid Loss	ONE	13	GUARD	FREE	121
Source of Sample					
Rm @ Meas Temp					
Rmf @ Meas Temp					
Rmc @ Meas Temp					
Source RMF / Rmc					
Rm @ BHT					
Rmf @ BHT					
Rmc @ BHT					

CALIBRATION DATA

Run No.	16"Normal Zero	16"Normal Int. Cal	Induction Loop Cal	Induction Tool Zero	Induction Tool Cal	GAMMA RAY API SCALE	BKG CPS	STD CPS

REFERENCE LITERATURE:

REMARKS:

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Welenco

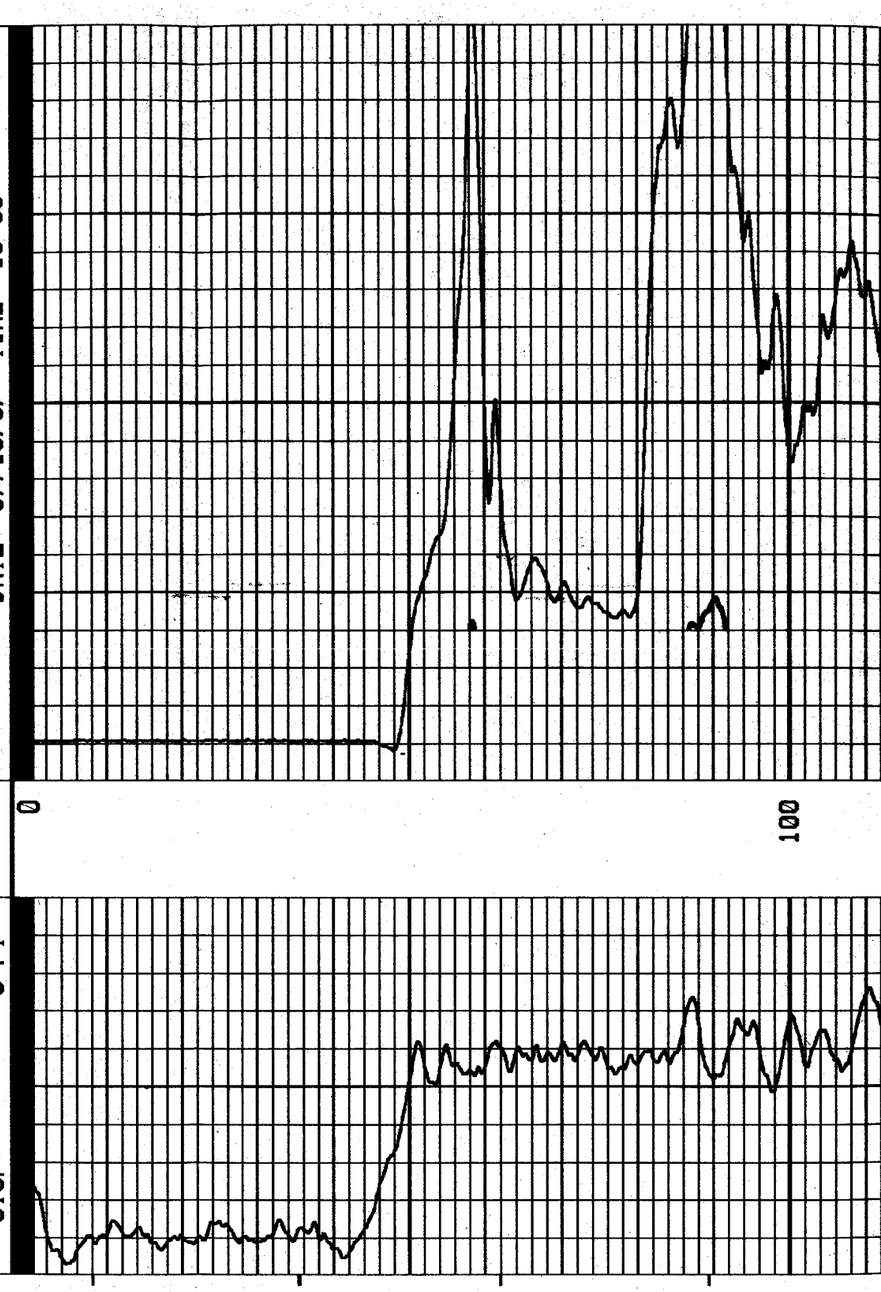
GUARD RESISTIVITY
Ohm-Meters
0 2000
0 400

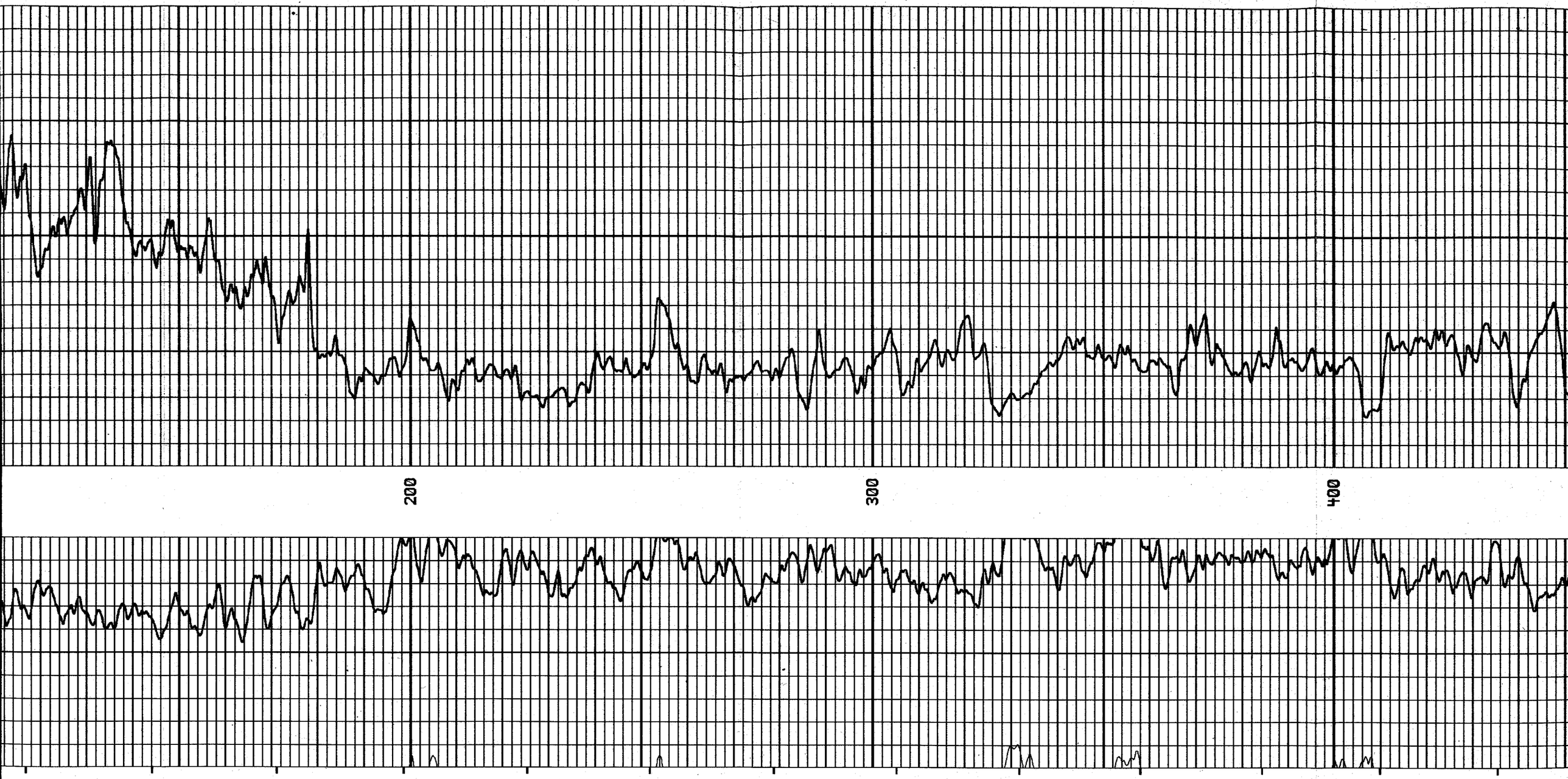
DATE: 07/16/97 TIME: 15:50

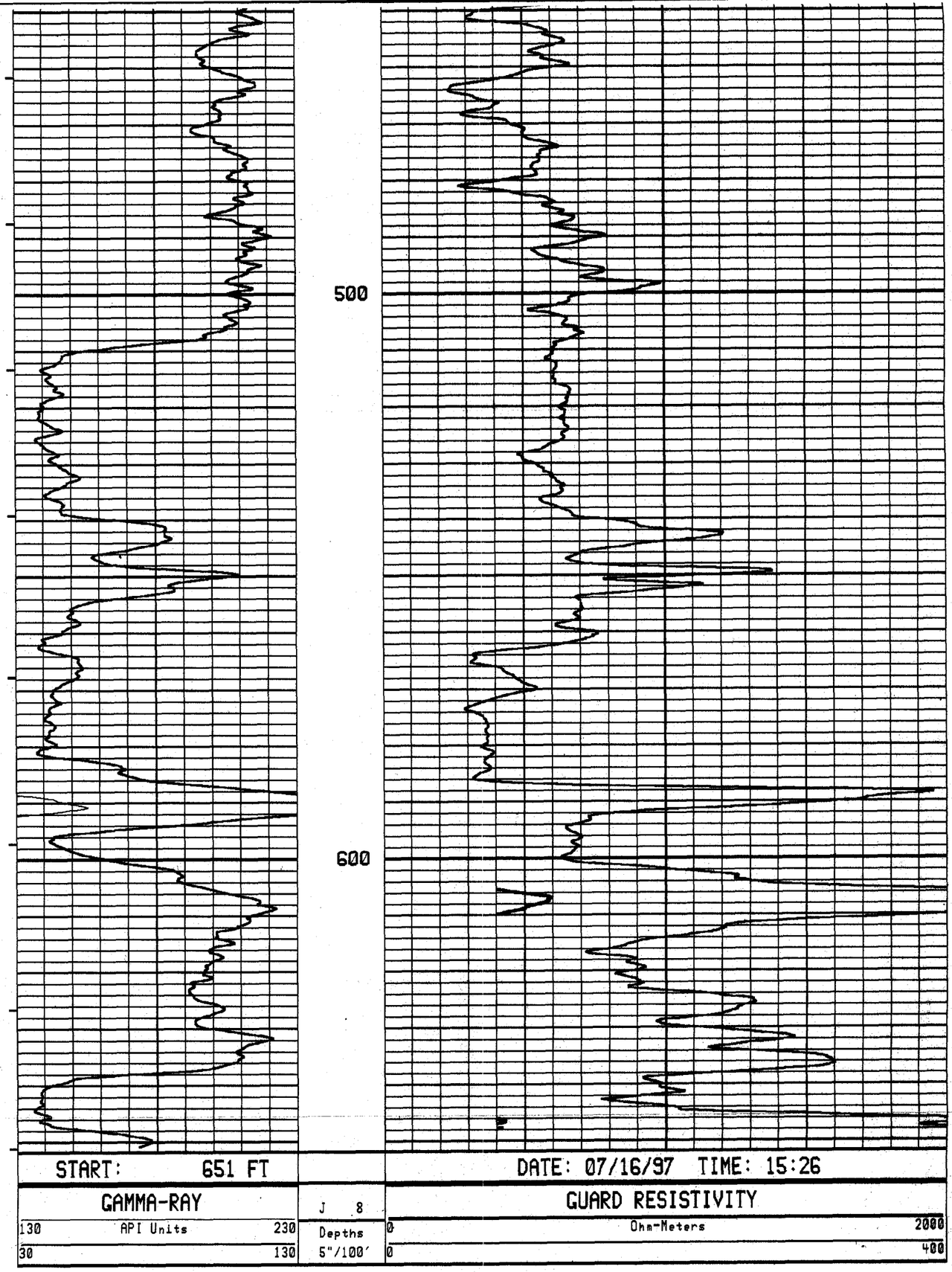
GAMMA-RAY
API Units
130 230
30 130

J 8
Depths
5"/100′

STOP: 0 FT




200
300
400


500
600
START: 651 FT
DATE: 07/16/97 TIME: 15:26
GAMMA-RAY
J 8
GUARD RESISTIVITY
130
API Units
230
Depths
0
Ohm-Meters
2000
30
130
5"/100'
0
400

welenco

ELECTRIC LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:BLDG 79
WELL:MW-24
COMPANY:LANG EXPLORATORY DRILLING
FOSTER-WHEELER

COMPANY LANG EXPLORATORY DRILLING
WELL MW-24
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
BLDG 79
Sec. Twp. Rge.

Other Services
GR/GRD
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	6/28/97			
Run No.	ONE			
Depth-Driller	780'			
Depth-Logger	780'			
Btm Log Interval	779'			
Top Log Interval	43'			
Casing Driller	16" @ 48'	@	@	@
Casing Logger	48'			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density | Viscosity	N/A N/A			
pH | Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	25.0 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	25.0 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time End Circulation	11:00			
Time Logger on bottom	16:41			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. | Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	M. CUTLER			

CWP DRS 1.2616

Scale Changes
Type Log | Depth | Scale Up Hole | Scale Down Hole

EQUIPMENT DATA
Run No. | Tool No. | Tool Type | Tool Pos. | Gamma Ray Tool No.
ONE | T-106 | NORMAL | FREE

CALIBRATION DATA
Run No. | 16"Normal Zero | 16"Normal Int. Cal | Induction Loop Cal | Induction Tool Zero | Induction Tool Cal | GAMMA RAY API SCALE | BKC CPS | STD CPS

Fold Here

Changes in Mud Type or Additional Samples
Date | Sample No. | Depth Driller | Type Fluid | Dens | Visc | pH | Fluid Loss | Source of Sample | Rm @ Meas Temp | Rmf @ Meas Temp | Rmc @ Meas Temp | Source RMF | Rmc | Rm @ BHT | Rmf @ BHT | Rmc @ BHT

REFERENCE LITERATURE:

REMARKS:

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Welenco

64" NORMAL
OHM-METERS
0 1000 200

16" NORMAL
OHM-METERS
0 1000 200

POINT RESISTANCE
OHMS
30
per division

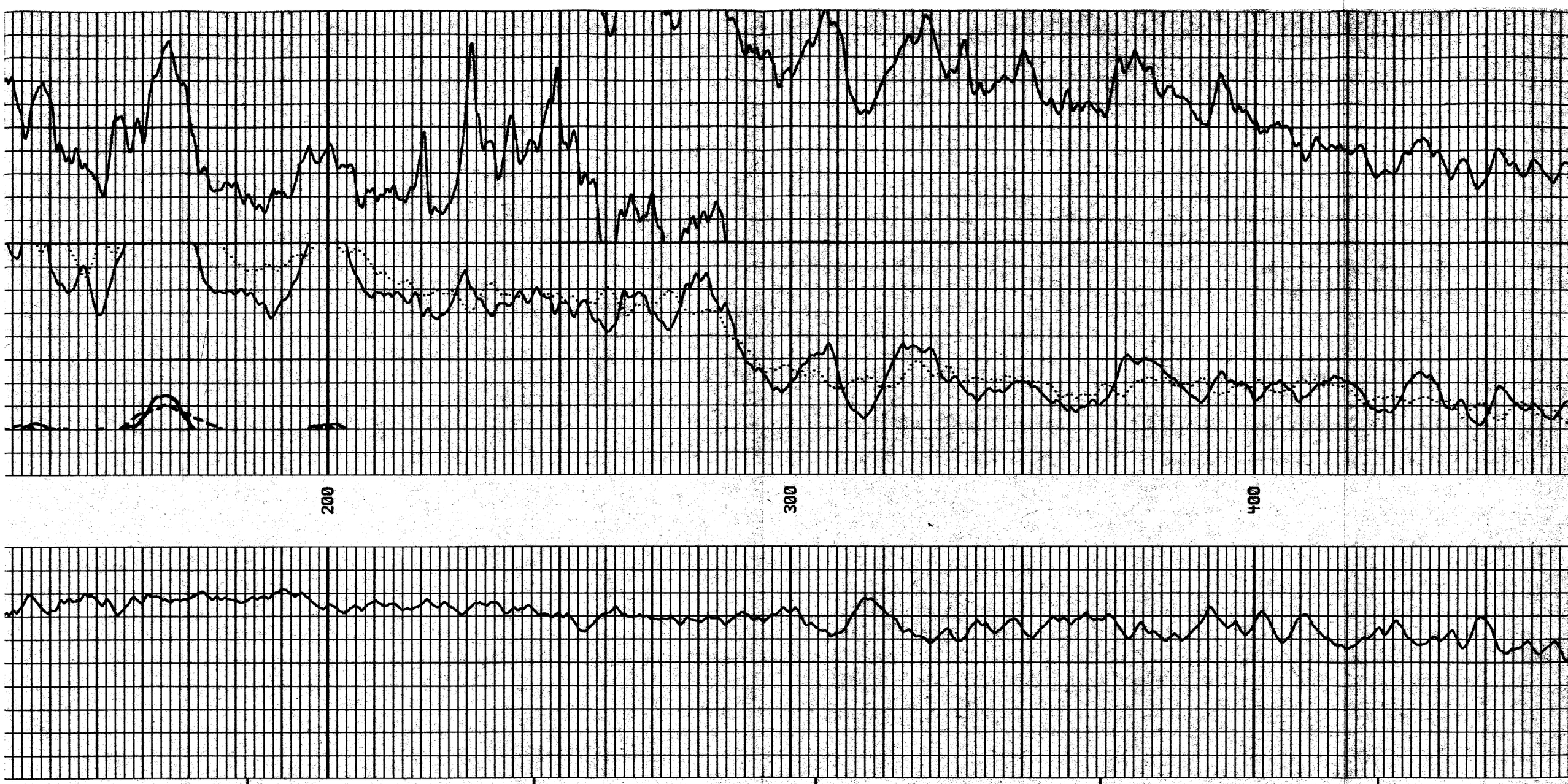
DATE: 06/28/97 TIME: 16:54

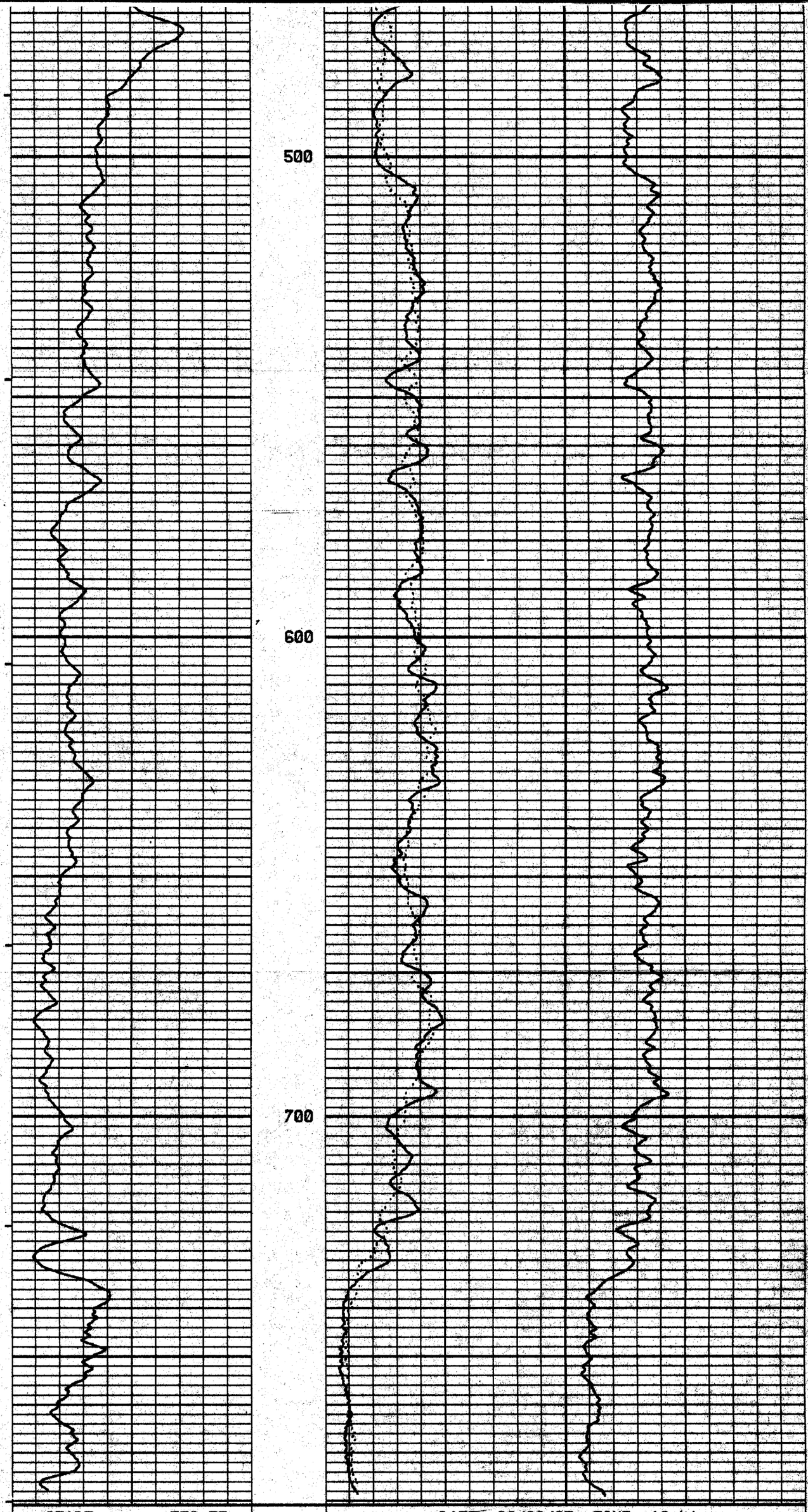
100

H 7
Depths 5"/100'

- S.P. +
5 MILLIVOLTS
per division

STOP: 43 FT


200
300
400



START: 779 FT

DATE: 06/28/97 TIME: 16:41

64" NORMAL

0 OHM-METERS 1000

0 200

- S.P. +

H 7

16" NORMAL

POINT RESISTANCE

GAMMA-RAY			H	S	GUARD RESISTIVITY		
150	API Units	250	Depths		0	Ohm-Meters	2000
50		150	5"/100'		0		400

welenco

GUARD RESISTIVITY
GAMMA-RAY LOG

COUNTY:LOS ANGELES CA.
FIELD:JPL
LOCATION:BLDG 79
WELL:MW-24
COMPANY:LANG EXPLORATORY DRILLING
FOSTER-WHEELER

COMPANY LANG EXPLORATORY DRILLING
WELL MW-24
FIELD JPL
COUNTY LOS ANGELES STATE CA.

LOCATION
BLDG 79
Sec. Twp. Rge.

Other Services
E-LOG
CALIPER

Permanent datum GROUND LEVEL Elev. N/A
Log Measured From GROUND LEVEL 0 Above Perm. Datum
Drilling Measured From GROUND LEVEL

Elev.: K.B.
D.F.
G.L.

Date	6/28/97			
Run No.	ONE			
Depth-Driller	780′			
Depth-Logger	780′			
Btm Log Interval	779′			
Top Log Interval	40′			
Casing Driller	16" @ 48′	@	@	@
Casing Logger	48′			
Bit Size	12.25"			
Type Fluid in Hole	WATER			
Density | Viscosity	N/A N/A			
pH | Fluid Loss	N/A N/A cc	cc	cc	cc
Source of Sample	PIT			
Rm @ Meas. Temp.	25.0 @ 75 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	25.0 @ 75 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	N/A @ N/A °F	@ °F	@ °F	@ °F
Source of Rmf and Rmc	MEAS N/A			
Rm @ BHT	N/A @ N/A °F	@ °F	@ °F	@ °F
Time: End Circulation	11:00			
Time: Logger on bottom	16:41			
Max Rec Temp Deg. F	N/A °F	°F	°F	°F
Equip No. | Location	L-14 L.A.			
Recorded By	RIDDER			
Witnessed By	M. CUTLER			

CWP DRS 1.2616

Scale Changes
Type Log | Depth | Scale Up Hole | Scale Down Hole

EQUIPMENT DATA
Run No. | Tool No. | Tool Type | Tool Pos. | Gamma Ray Tool No.
ONE | 13 | GUARD | FREE |

CALIBRATION DATA
Run No. | 16"Normal Zero | 16"Normal Int. Cal | Induction Loop Cal | Induction Tool Zero | Induction Tool Cal | GAMMA RAY API SCALE | BKG CPS | STD CPS
1 | 0 | 0 | 0 | 0 | 0 | | | |

Fold Here

Changes in Mud Type or Additional Samples
Date | Sample No.
Depth Driller
Type Fluid
Dens | Visc
pH | Fluid Loss
Source of Sample
Rm @ Meas Temp
Rmf @ Meas Temp
Rmc @ Meas Temp
Source RMF | Rmc
Rm @ BHT
Rmf @ BHT
Rmc @ BHT
REFERENCE LITERATURE:

REMARKS:

NOTICE: All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.
Welenco

GUARD RESISTIVITY
0 Ohm-Meters 2000
0 400

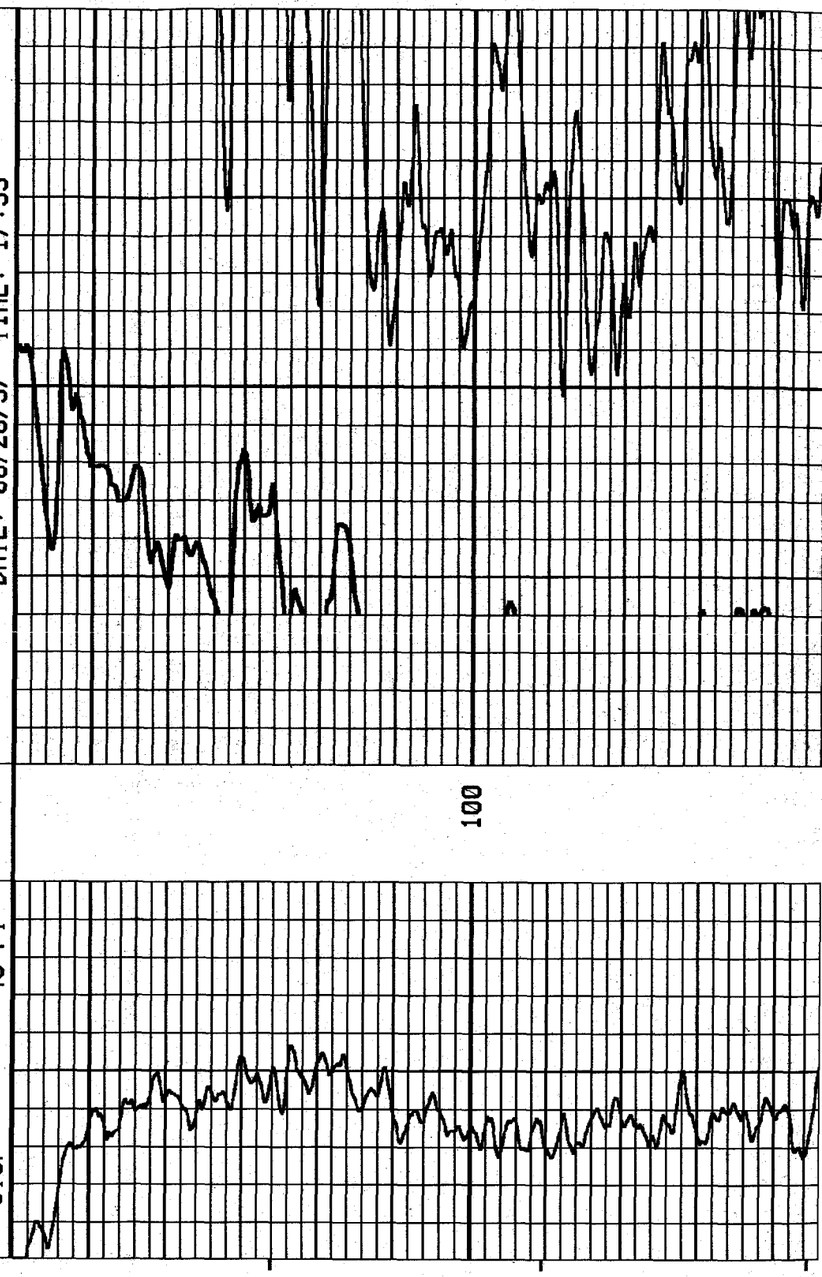
H 9 Depths 5"/100′

GAMMA-RAY
150 API Units 250
50 150

STOP: 40 FT

DATE: 06/28/97 TIME: 17:53

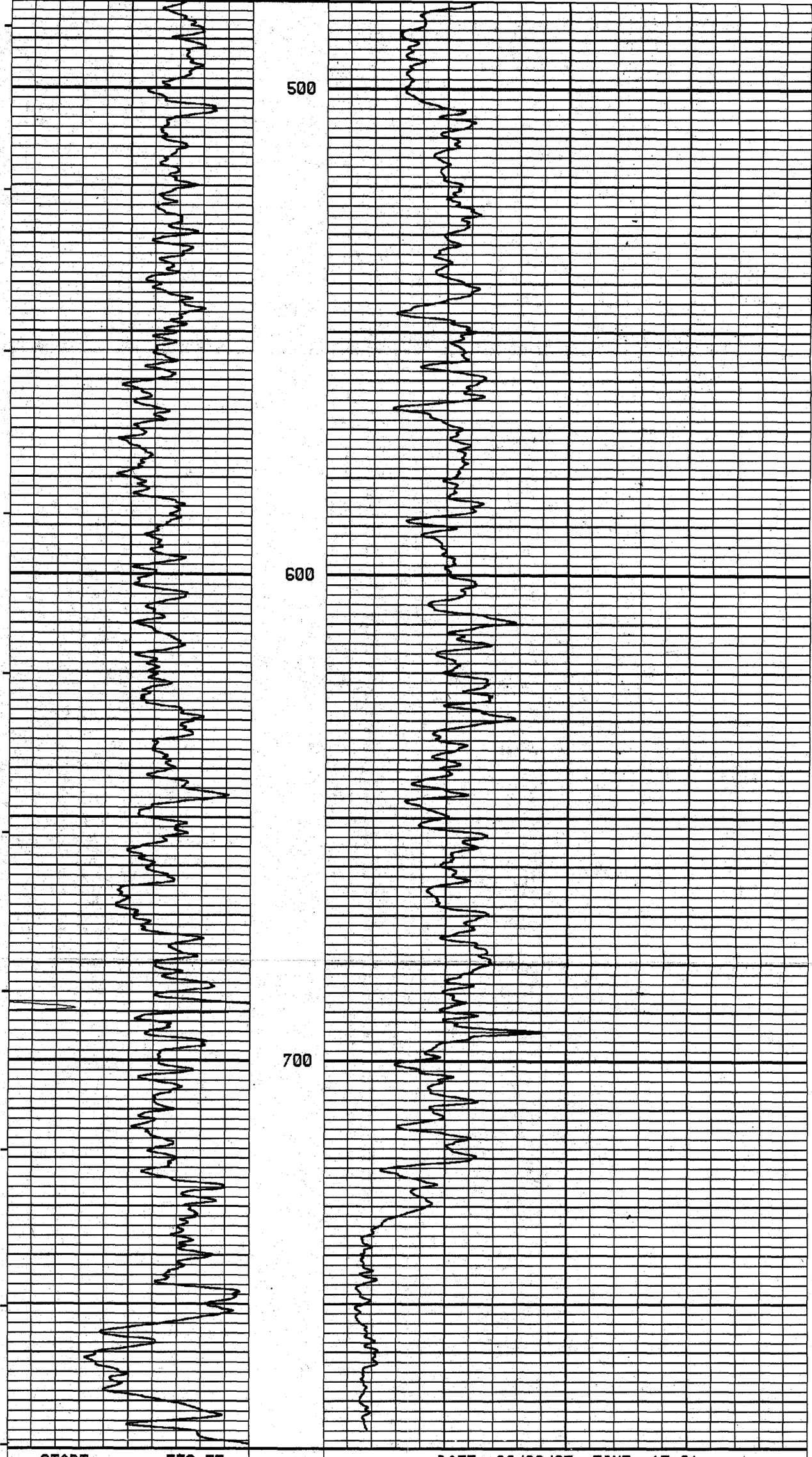
100



200

300

400



START: 779 FT

DATE: 06/28/97 TIME: 17:31

GAMMA-RAY

150 API Units 250

50 150

H 9

Depths

5"/100'

GUARD RESISTIVITY

0 Ohm-Meters 2000

0 400

APPENDIX D

GRAPHS OF AQUIFER TEST DATA FROM JPL GROUNDWATER MONITORING WELLS

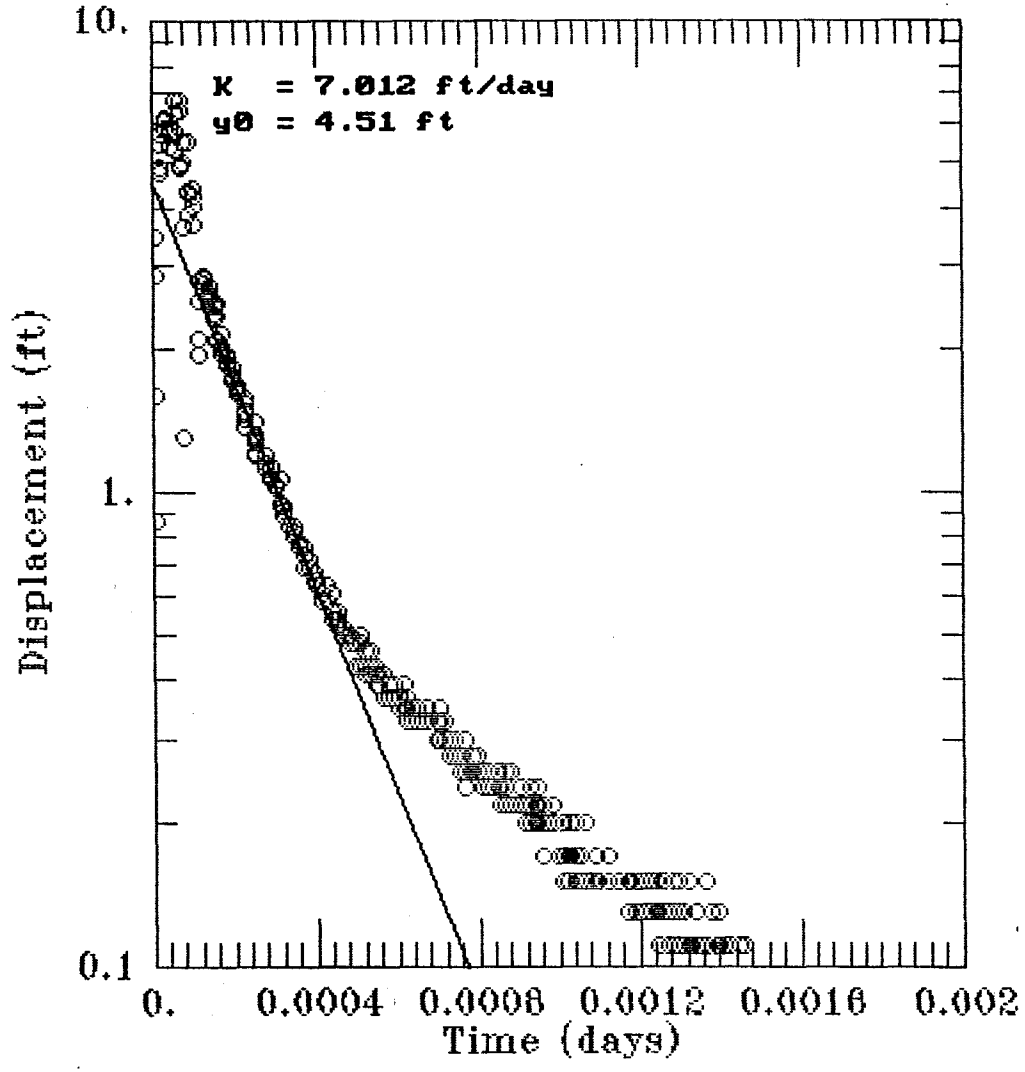


Figure D-1

MW-1:
Slug Test No. 1

Jet Propulsion Laboratory

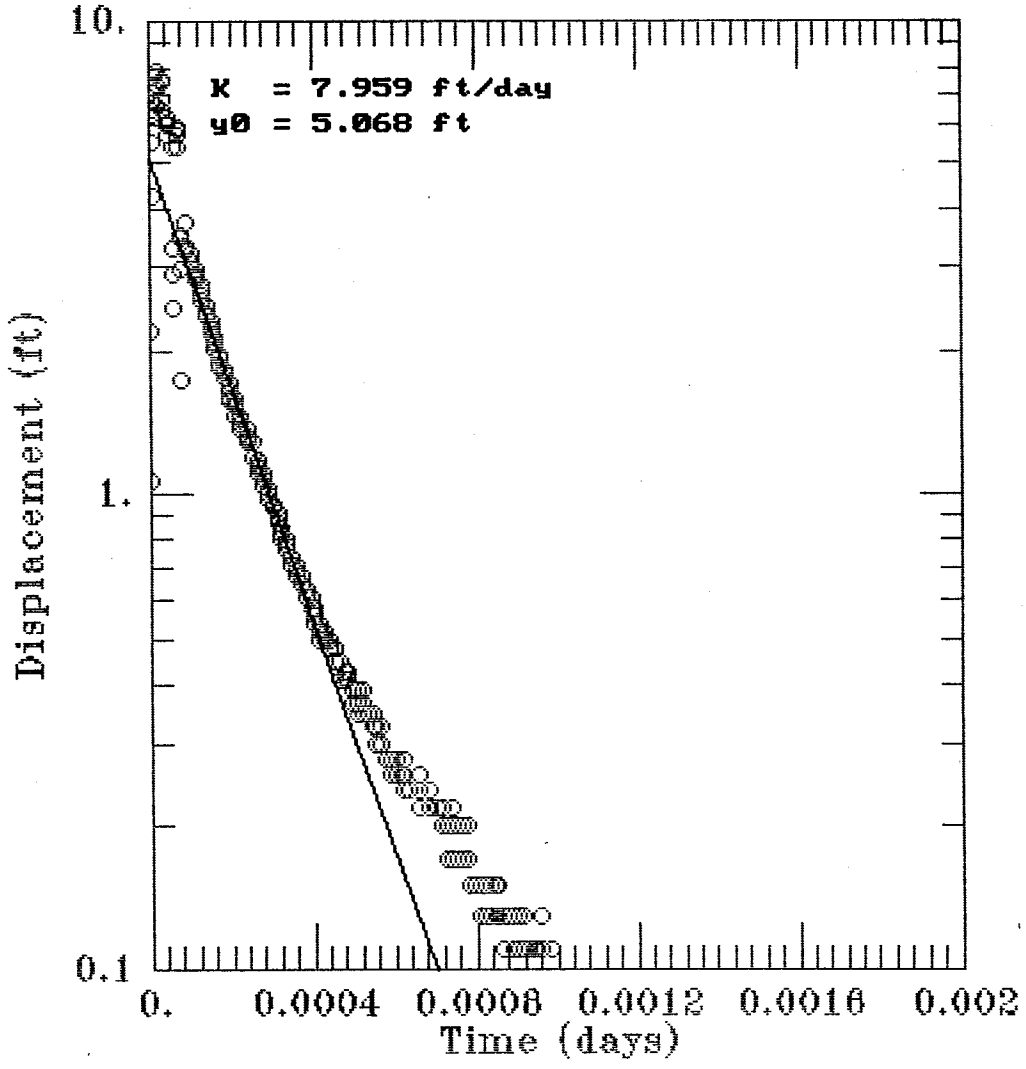


Figure D-2

MW-1:
Slug Test No. 2

Jet Propulsion Laboratory

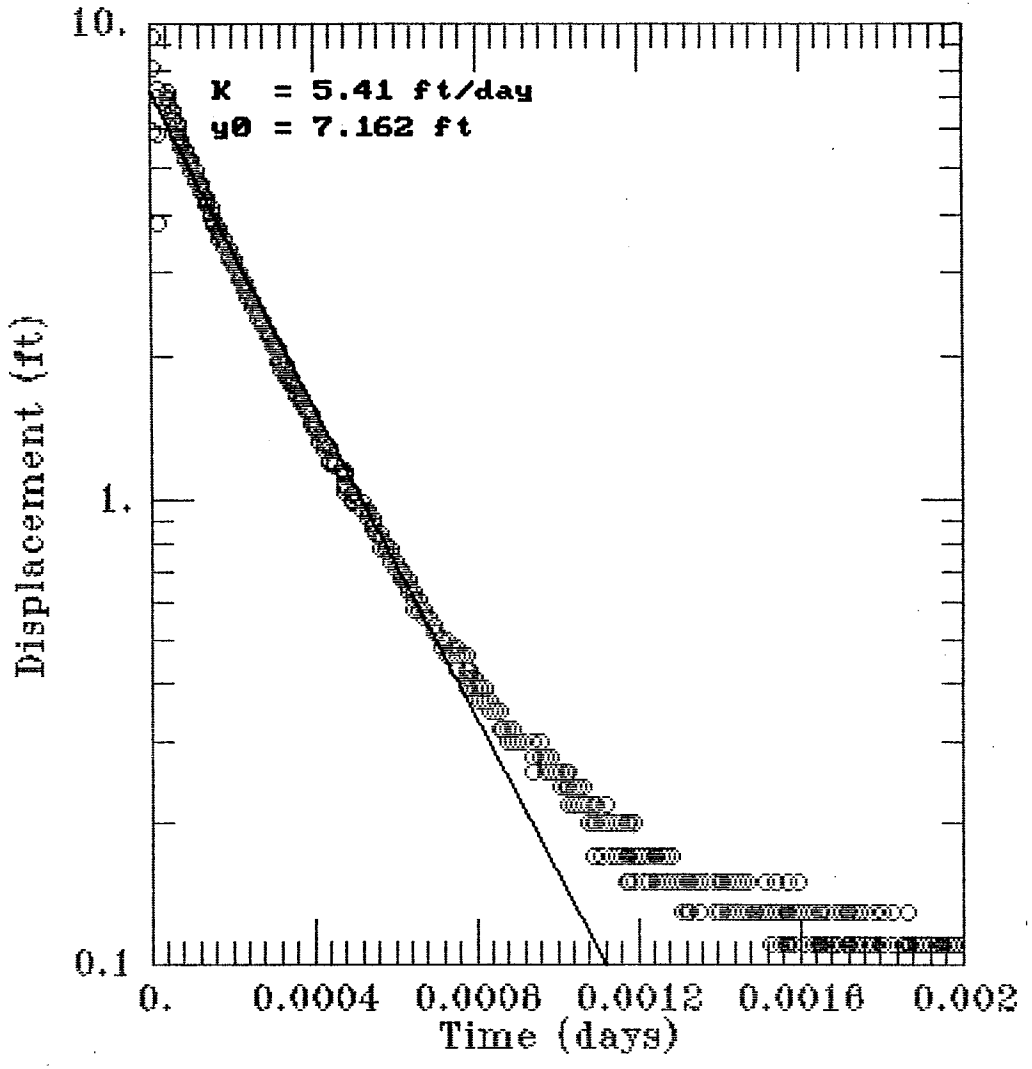


Figure D-3

MW-1:
Bail Test No. 2

Jet Propulsion Laboratory

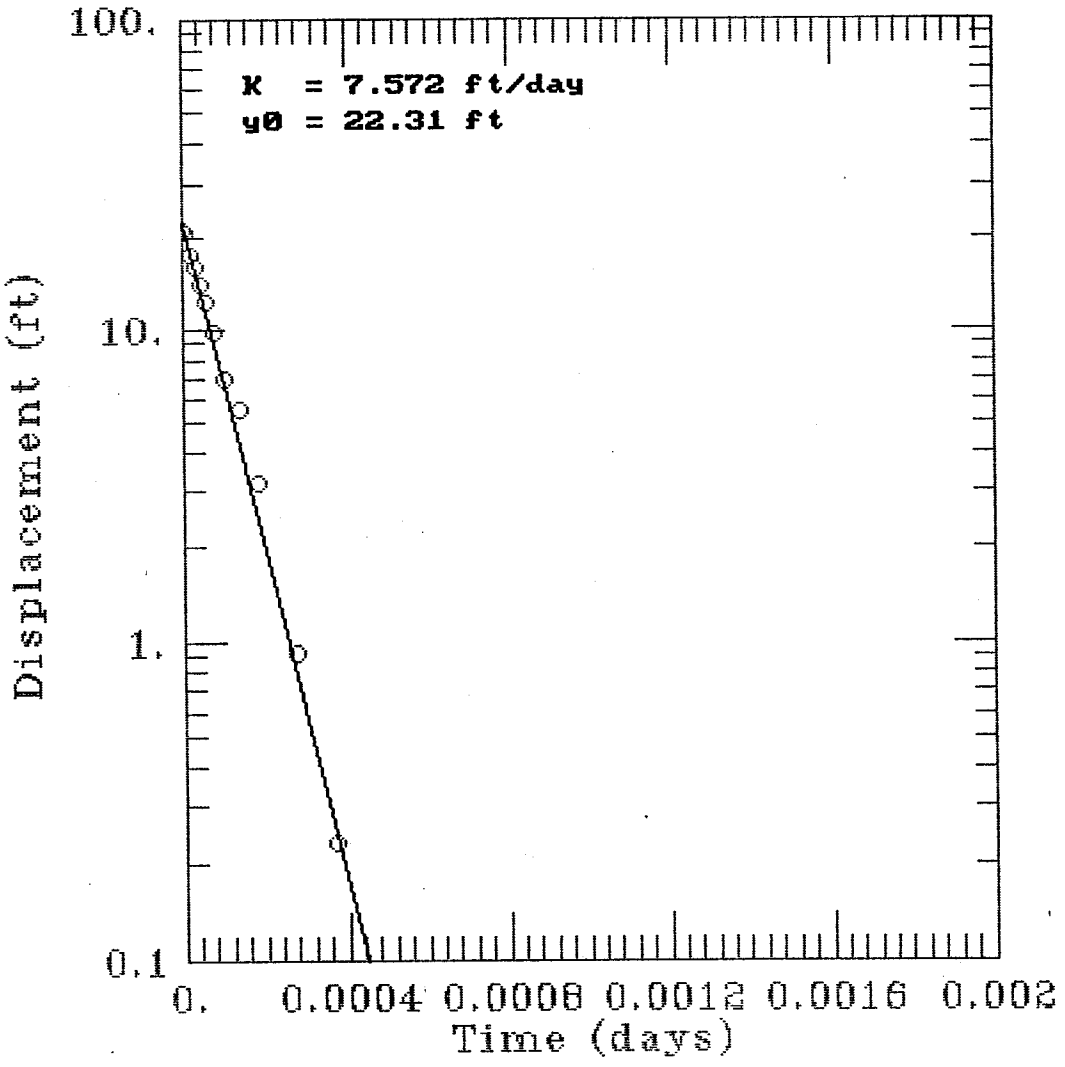


Figure D-4

MW-3:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

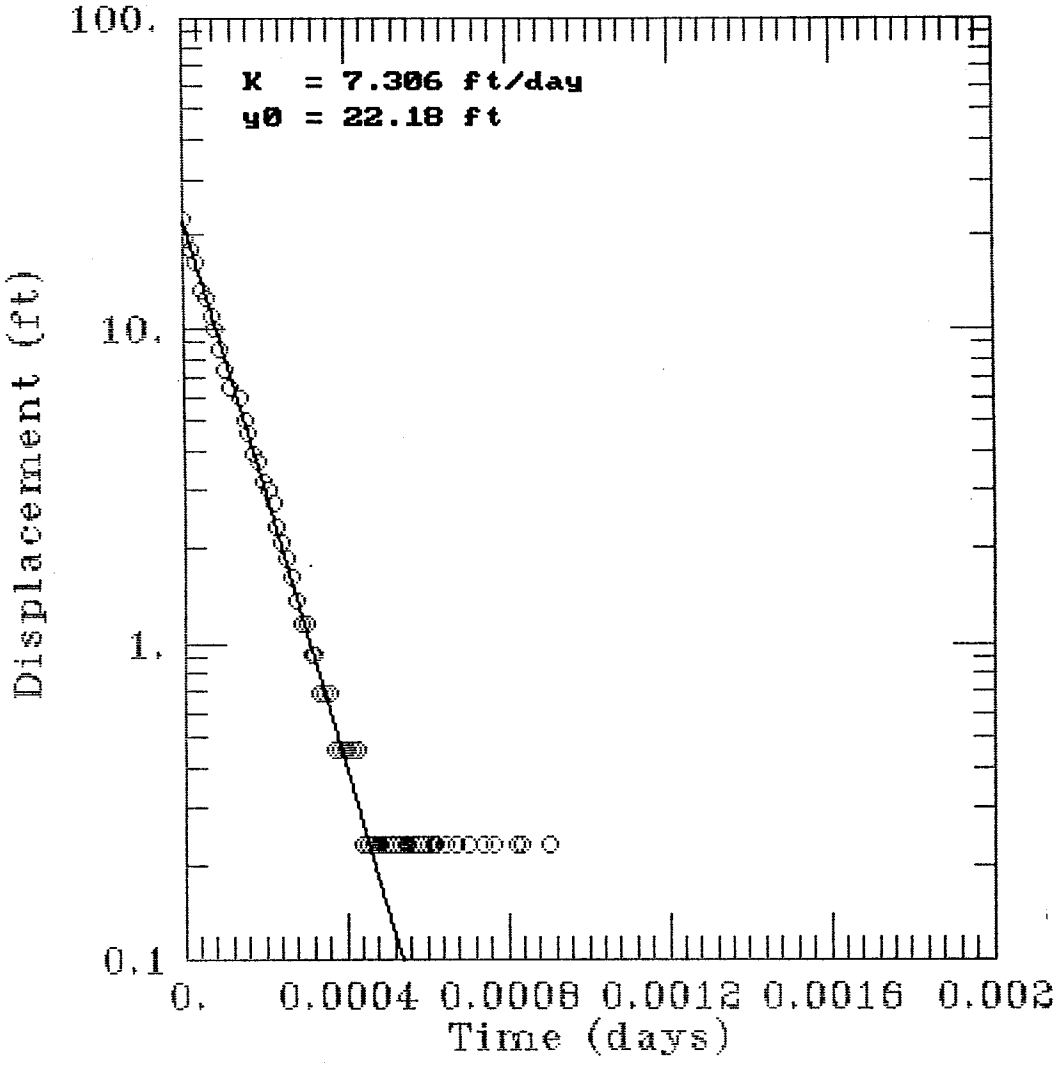


Figure D-5

MW-3:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

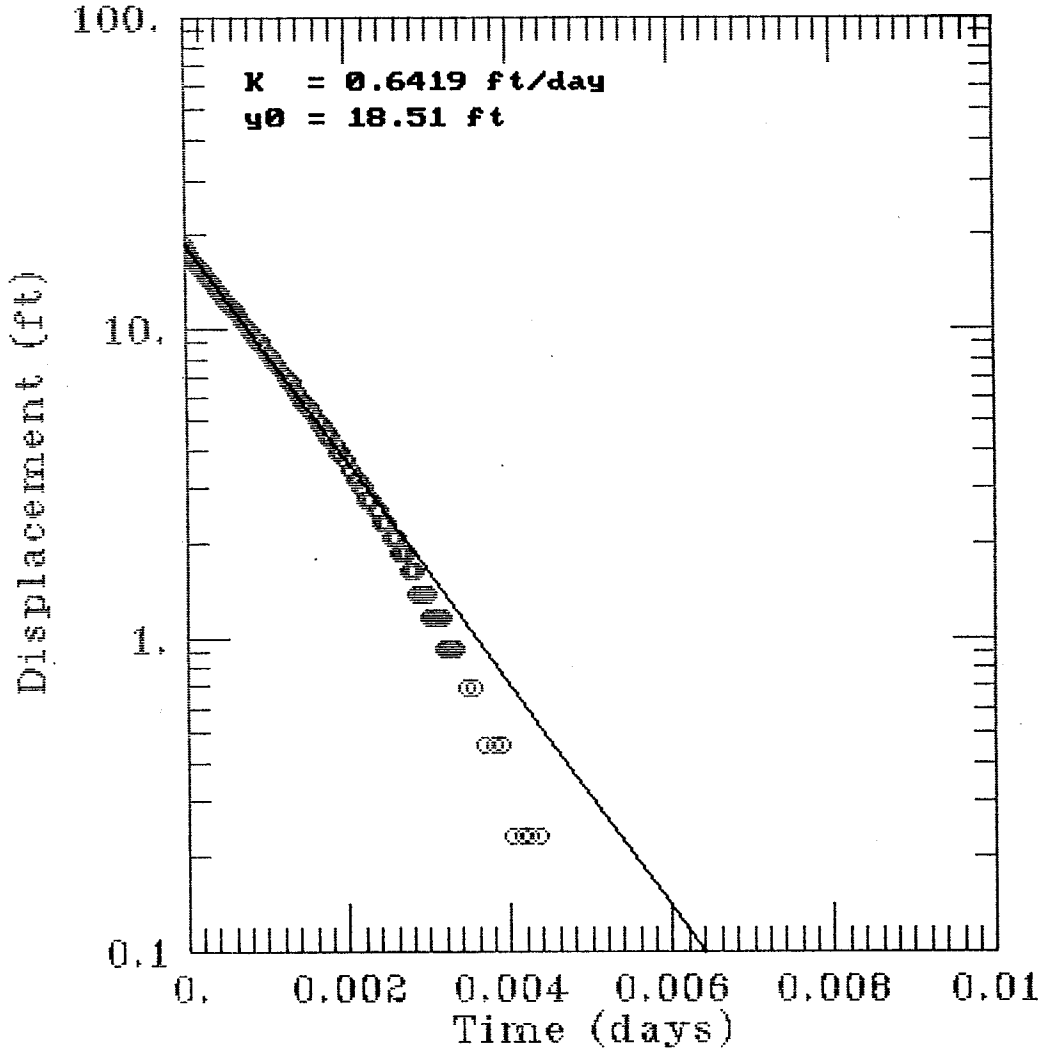


Figure D-6

MW-3:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

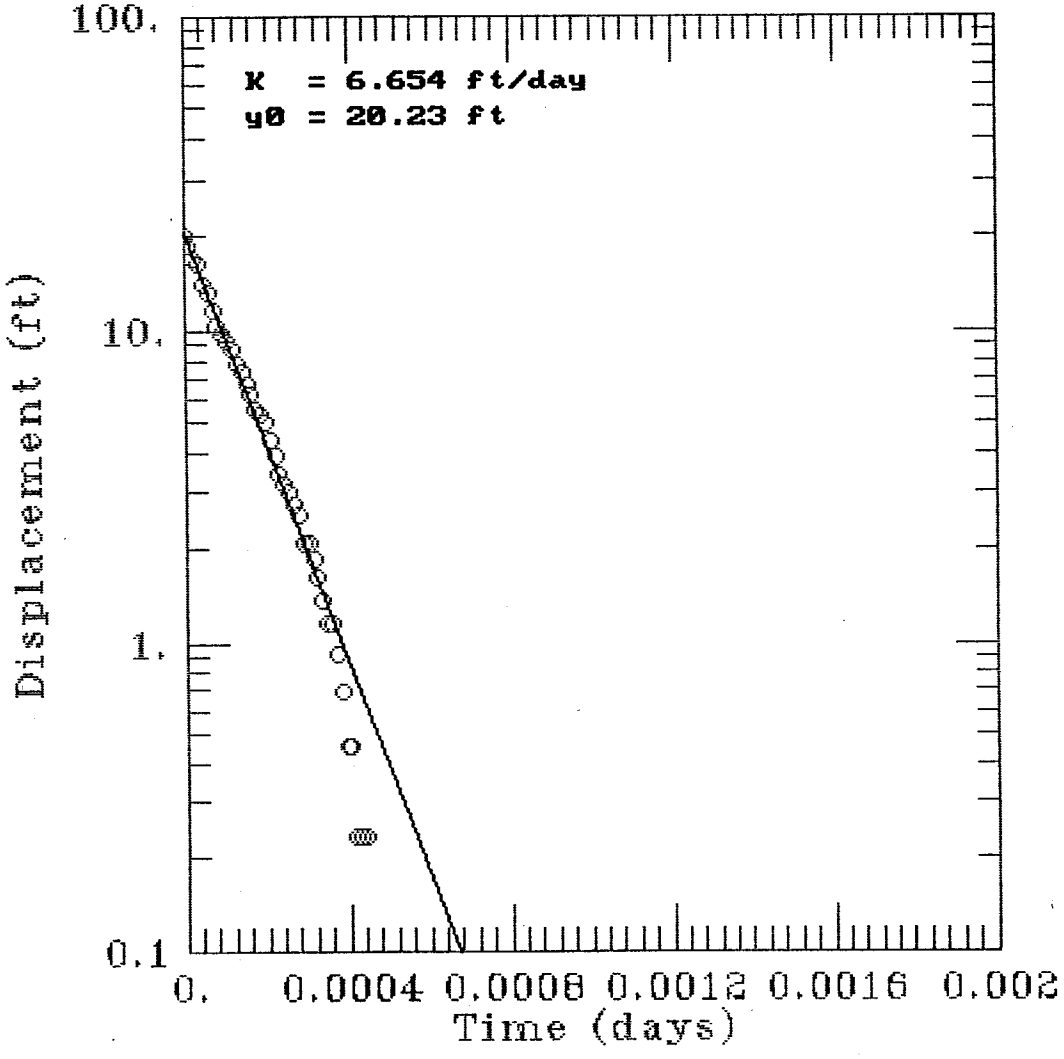


Figure D-7

MW-3:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

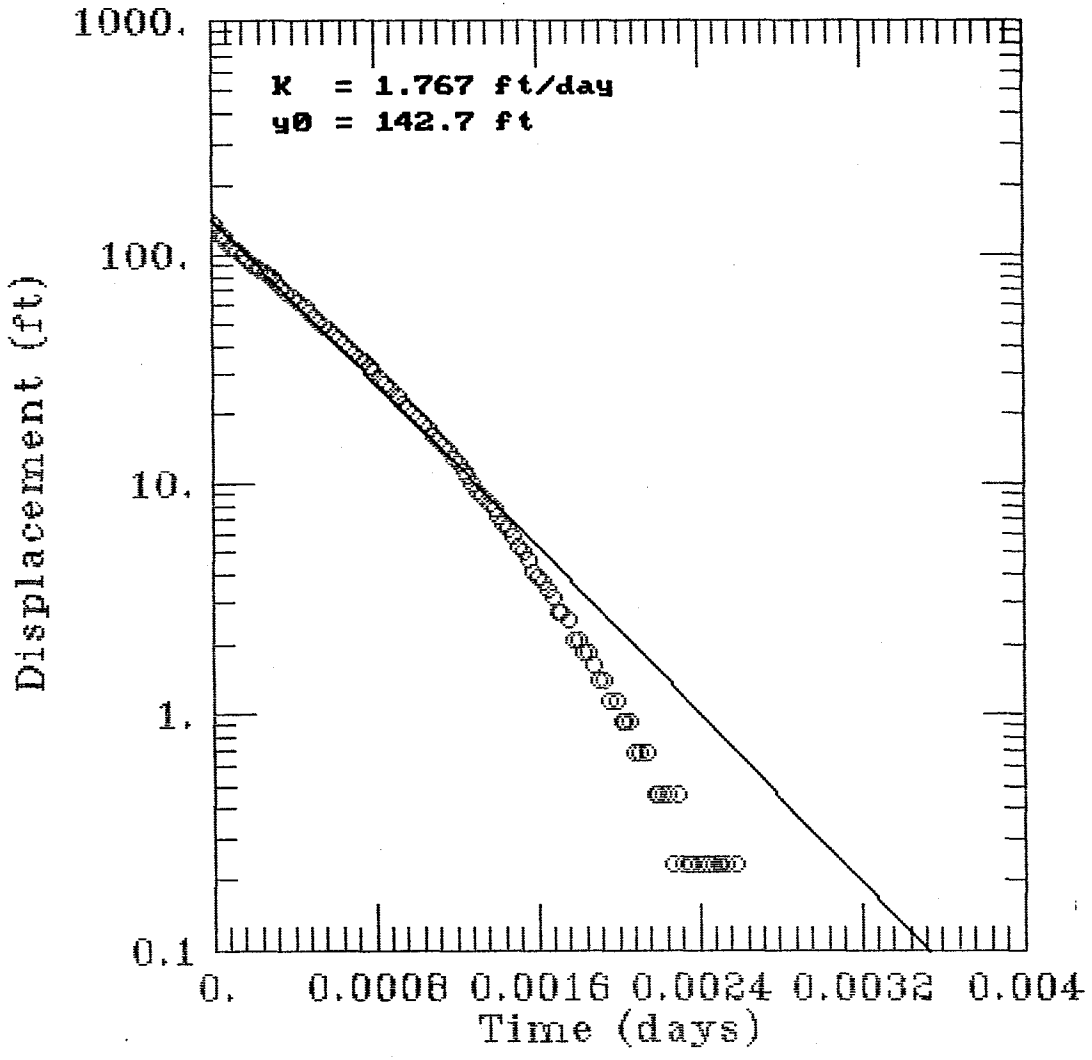


Figure D-8

MW-3:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

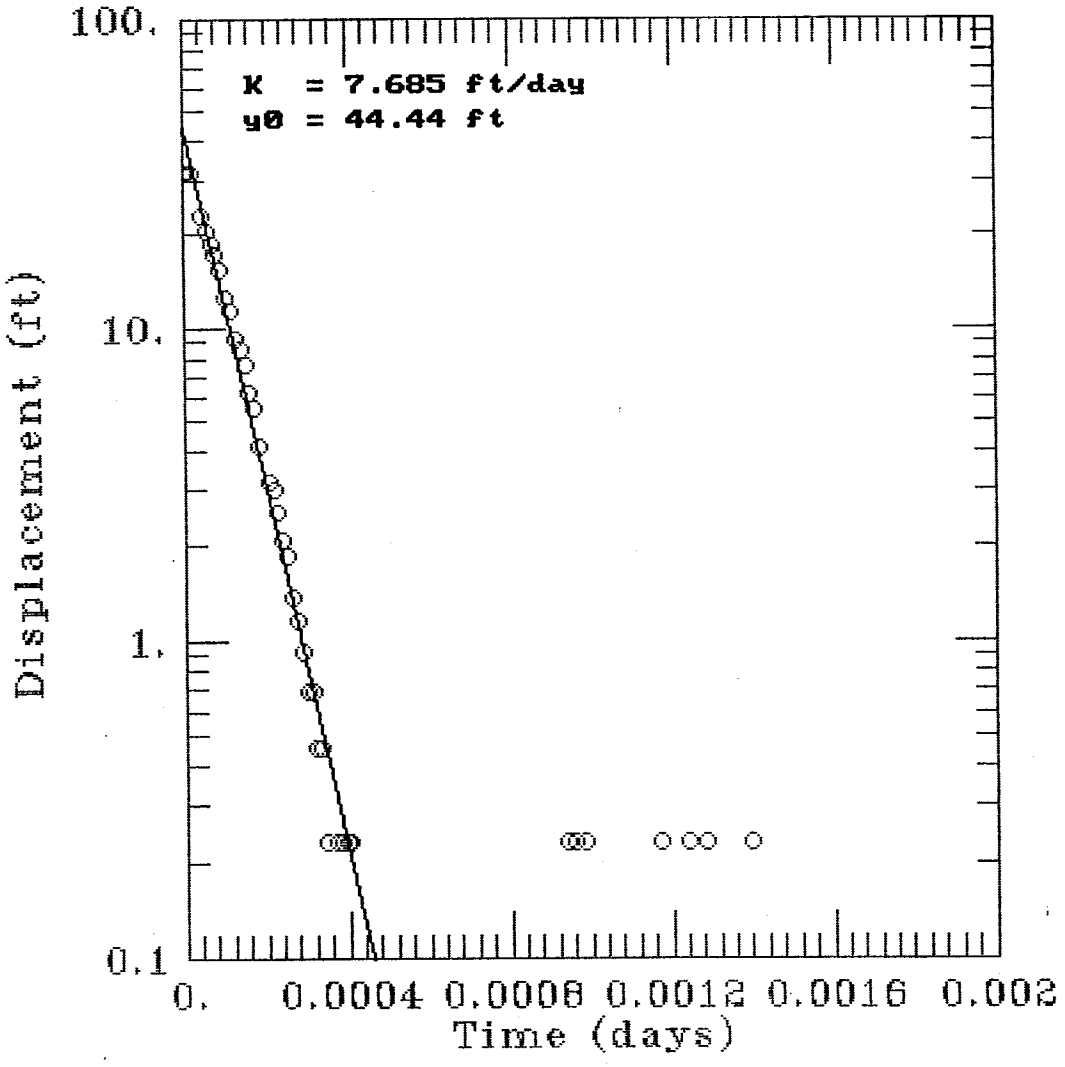


Figure D-9

MW-4:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

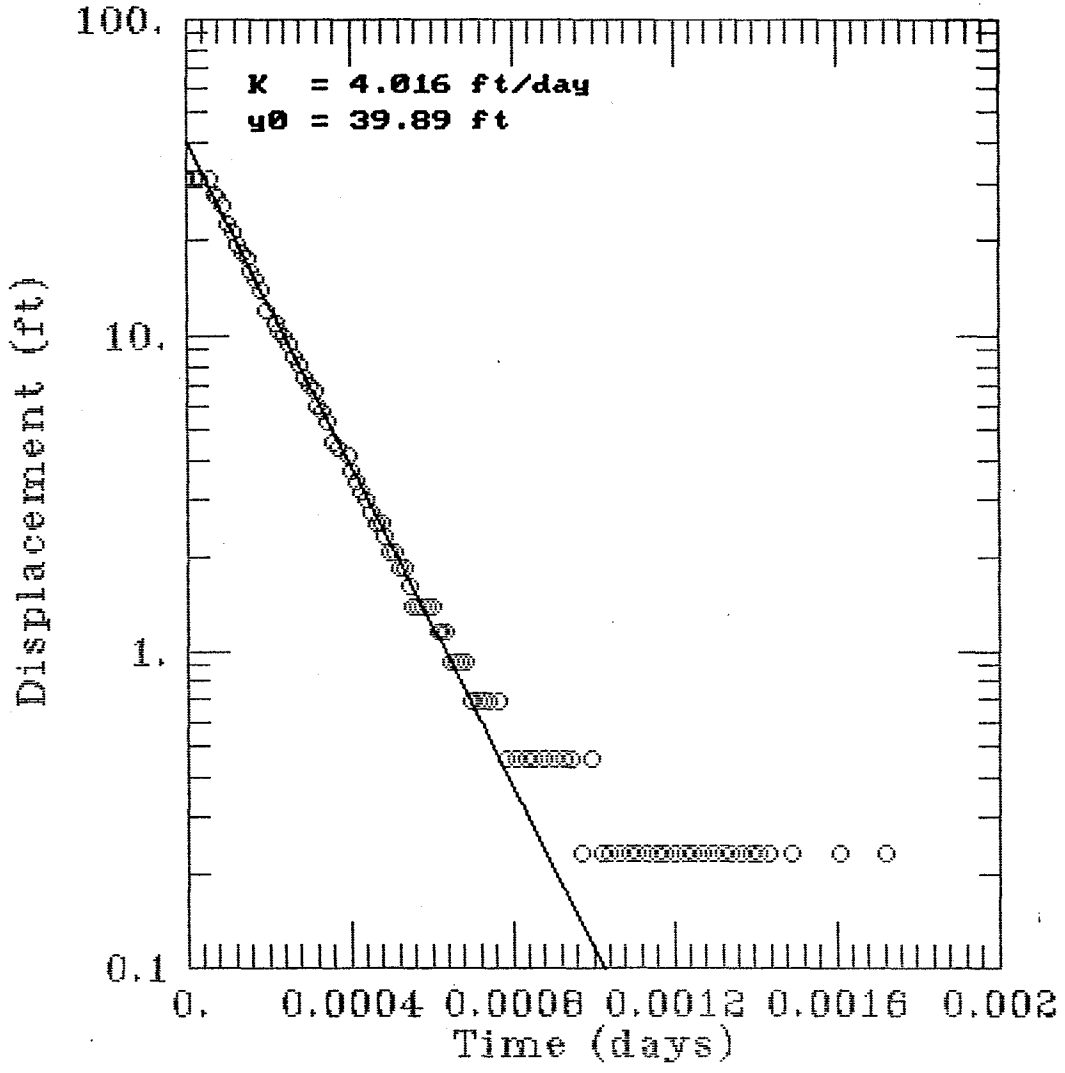


Figure D-10

MW-4:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

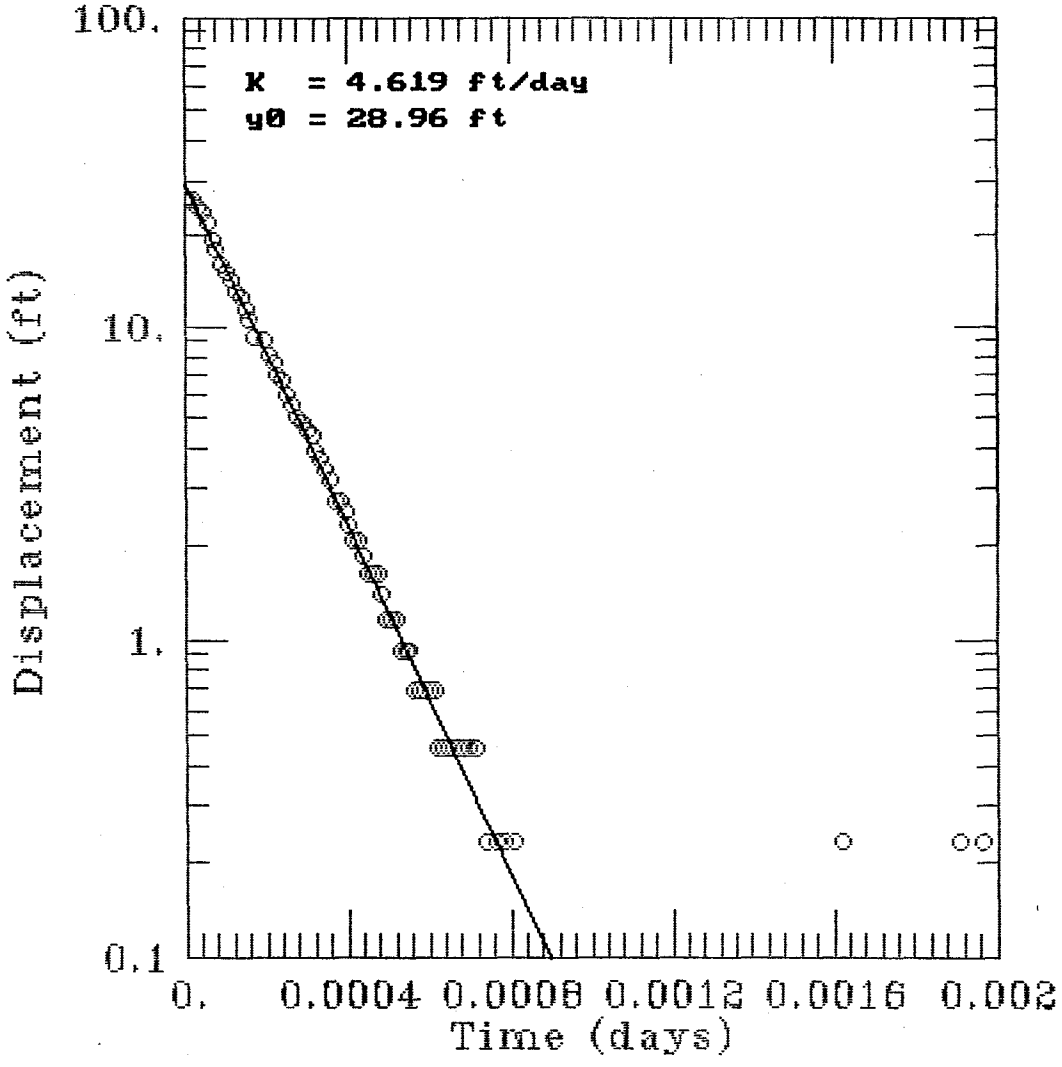


Figure D-11

MW-4:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

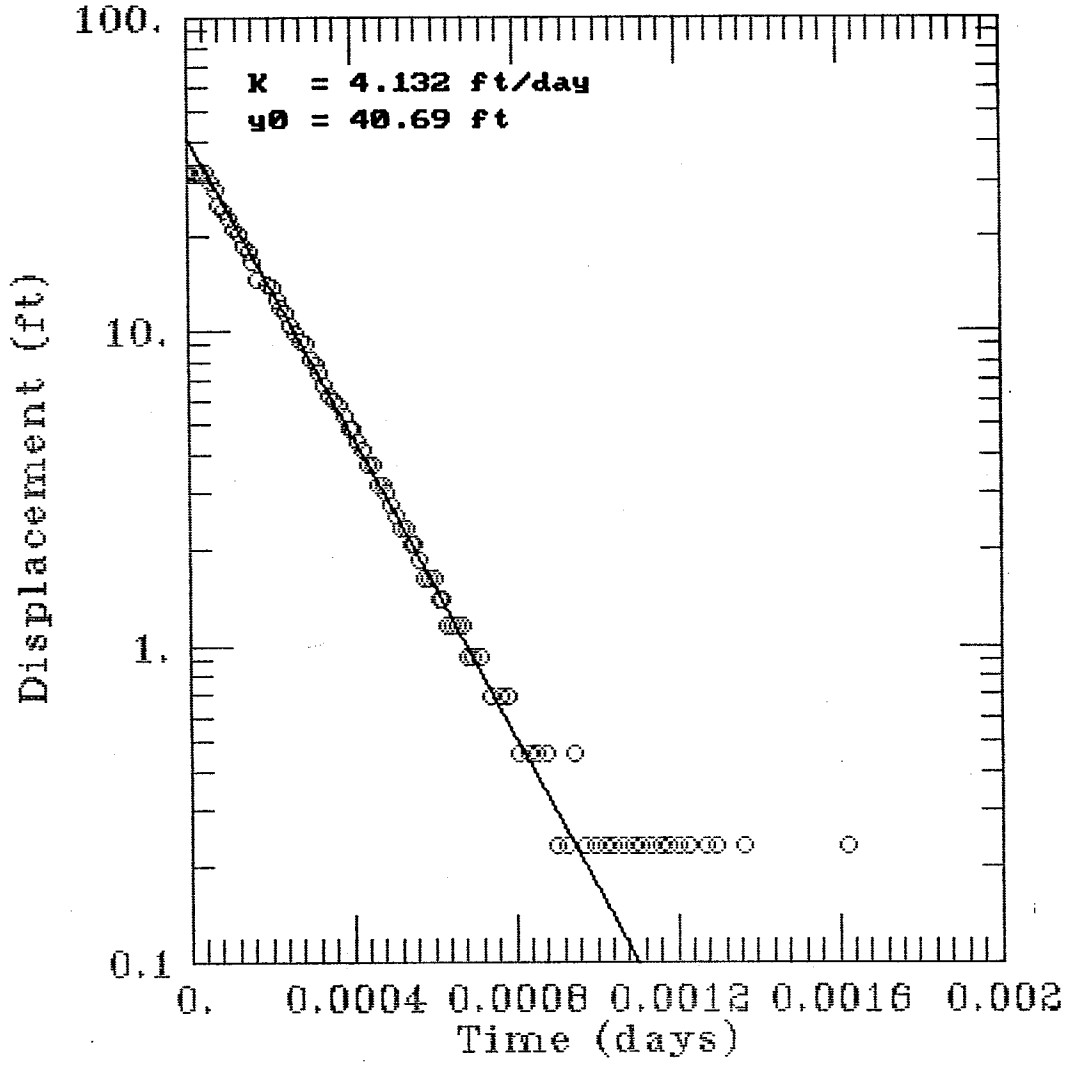


Figure D-12

MW-4:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

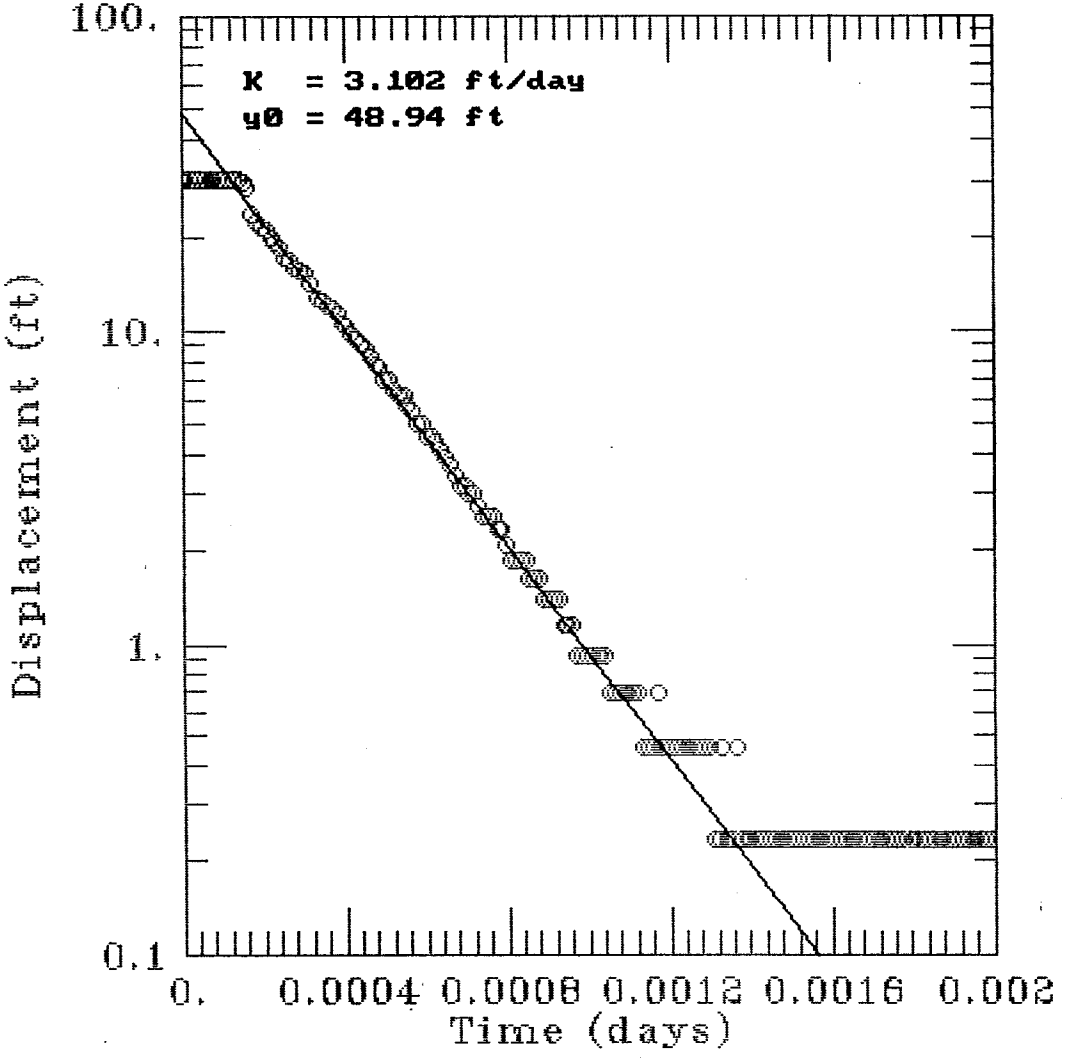


Figure D-13

MW-4:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

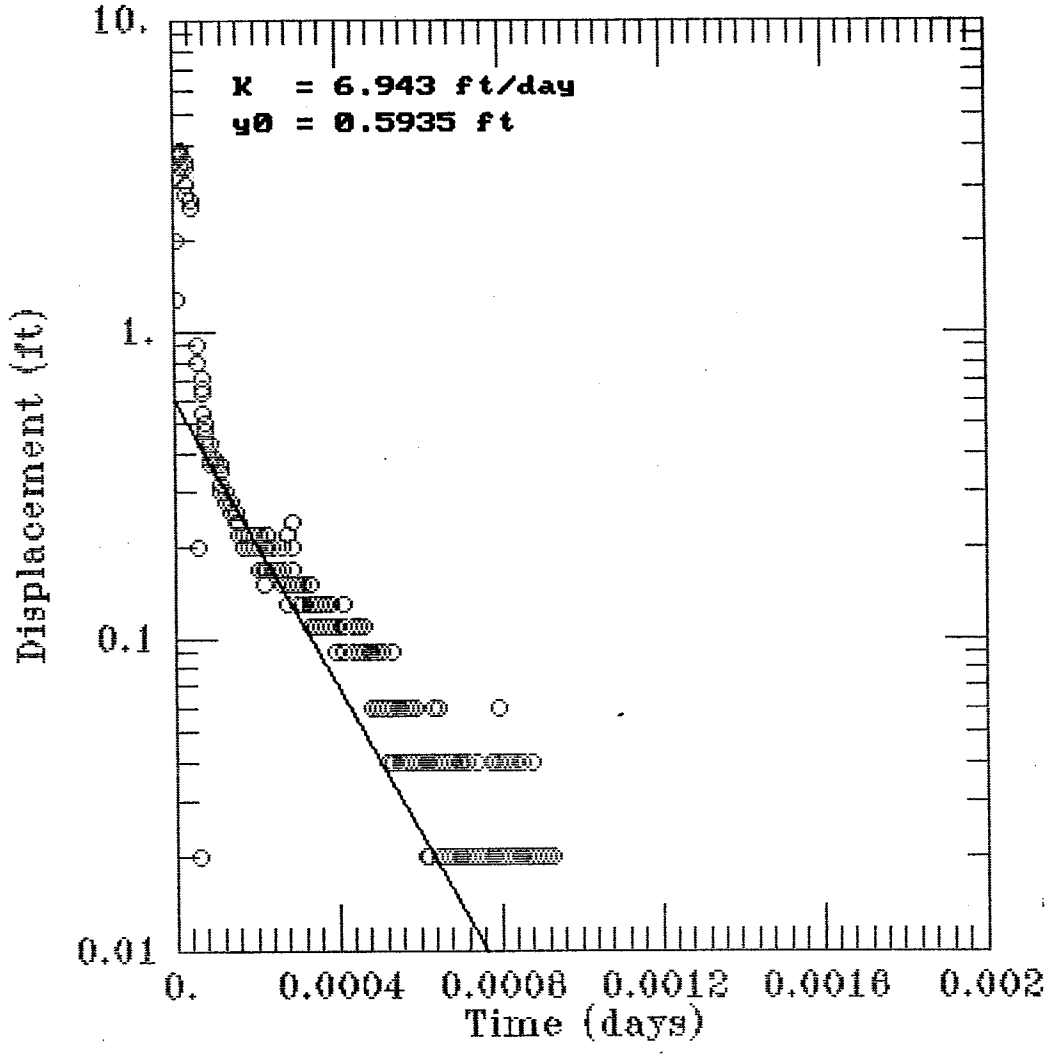


Figure D-14

MW-5:
Slug Test No. 1

Jet Propulsion Laboratory

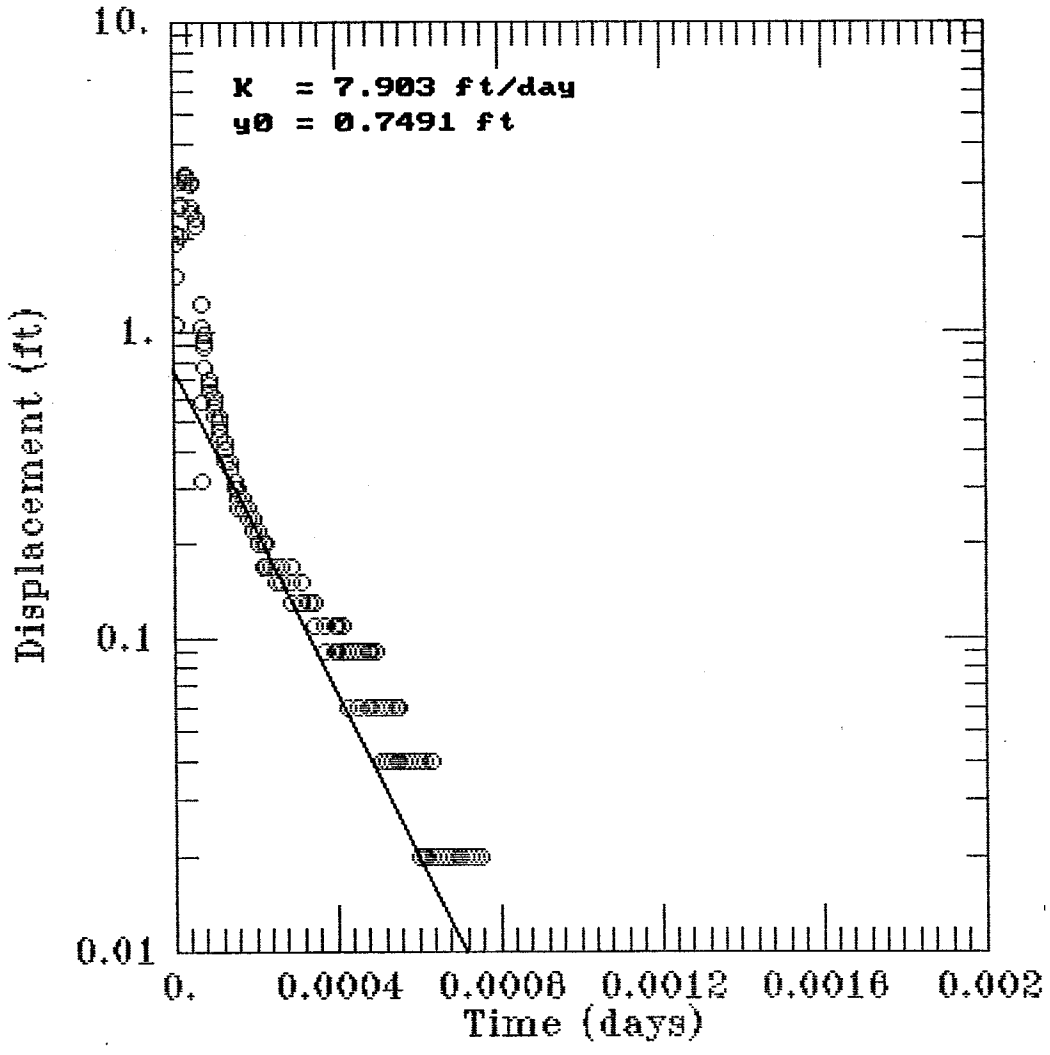


Figure D-15

MW-5:
Slug Test No. 2

Jet Propulsion Laboratory

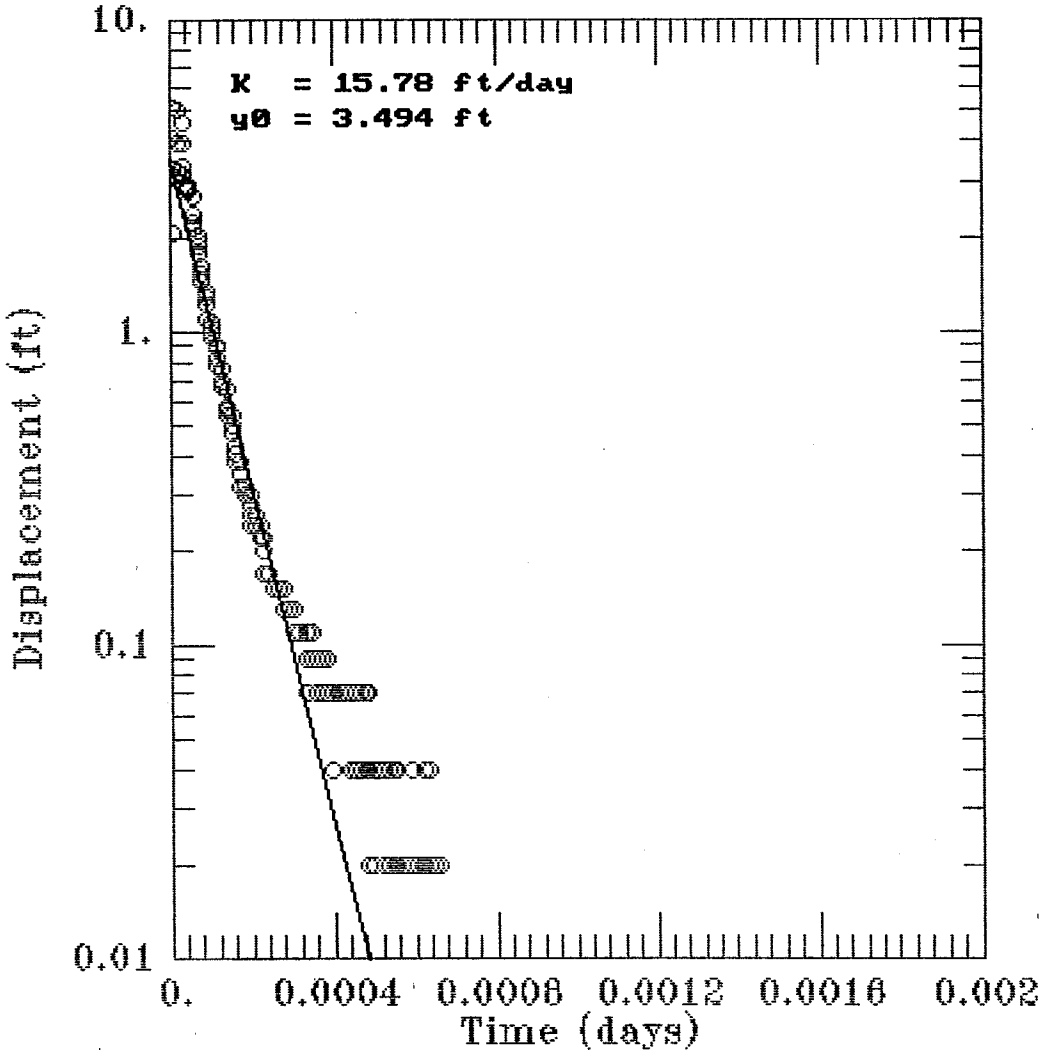


Figure D-16

MW-5:
Bail Test No. 2

Jet Propulsion Laboratory

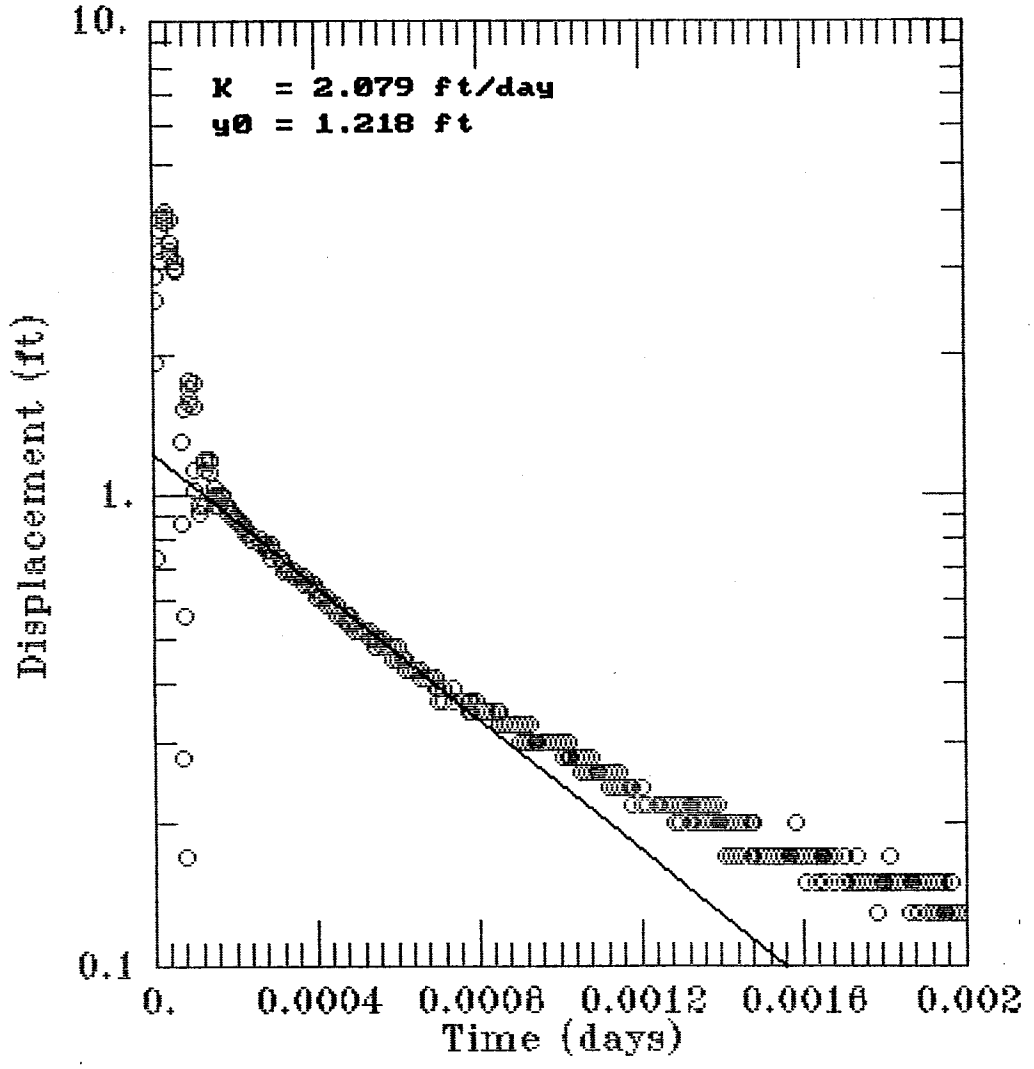


Figure D-17

MW-6:
Slug Test No. 1

Jet Propulsion Laboratory

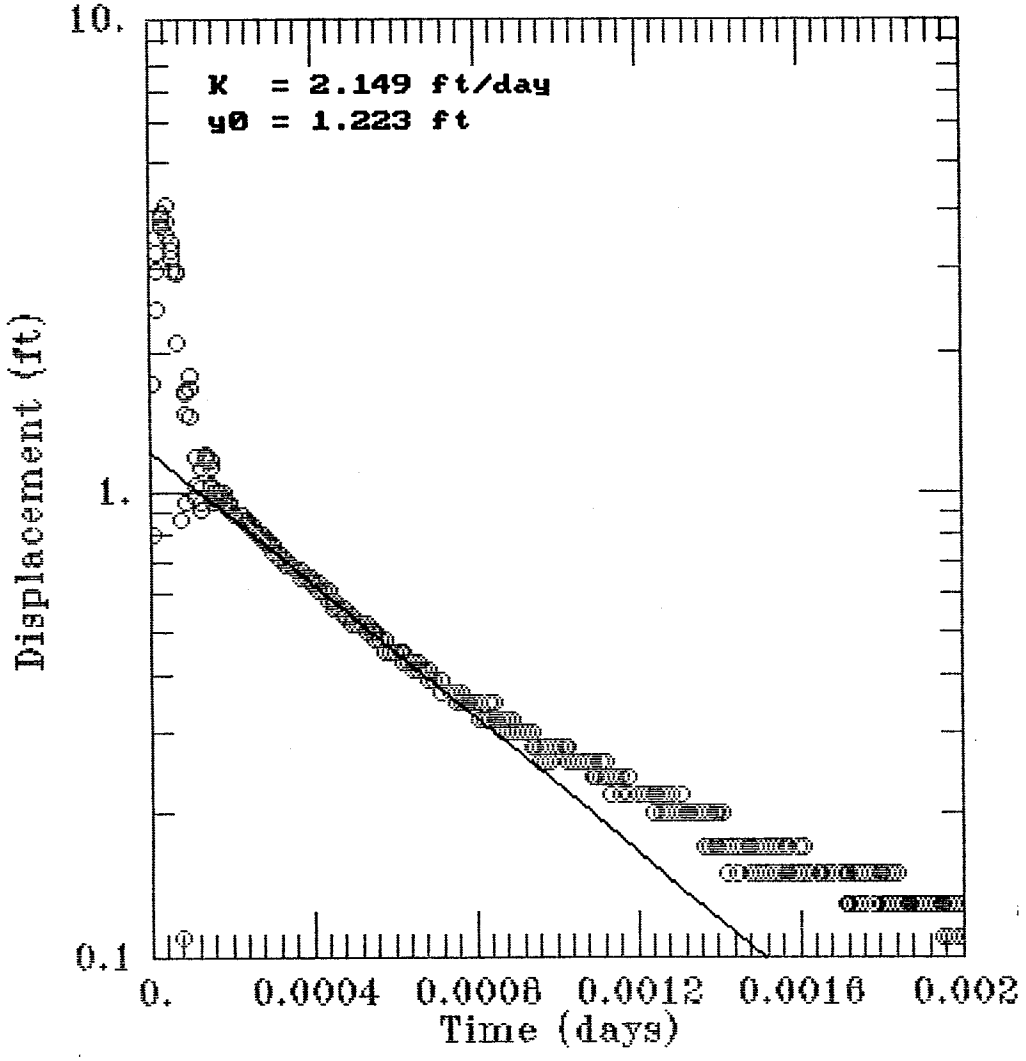


Figure D-18

MW-6:
Slug Test No. 2

Jet Propulsion Laboratory

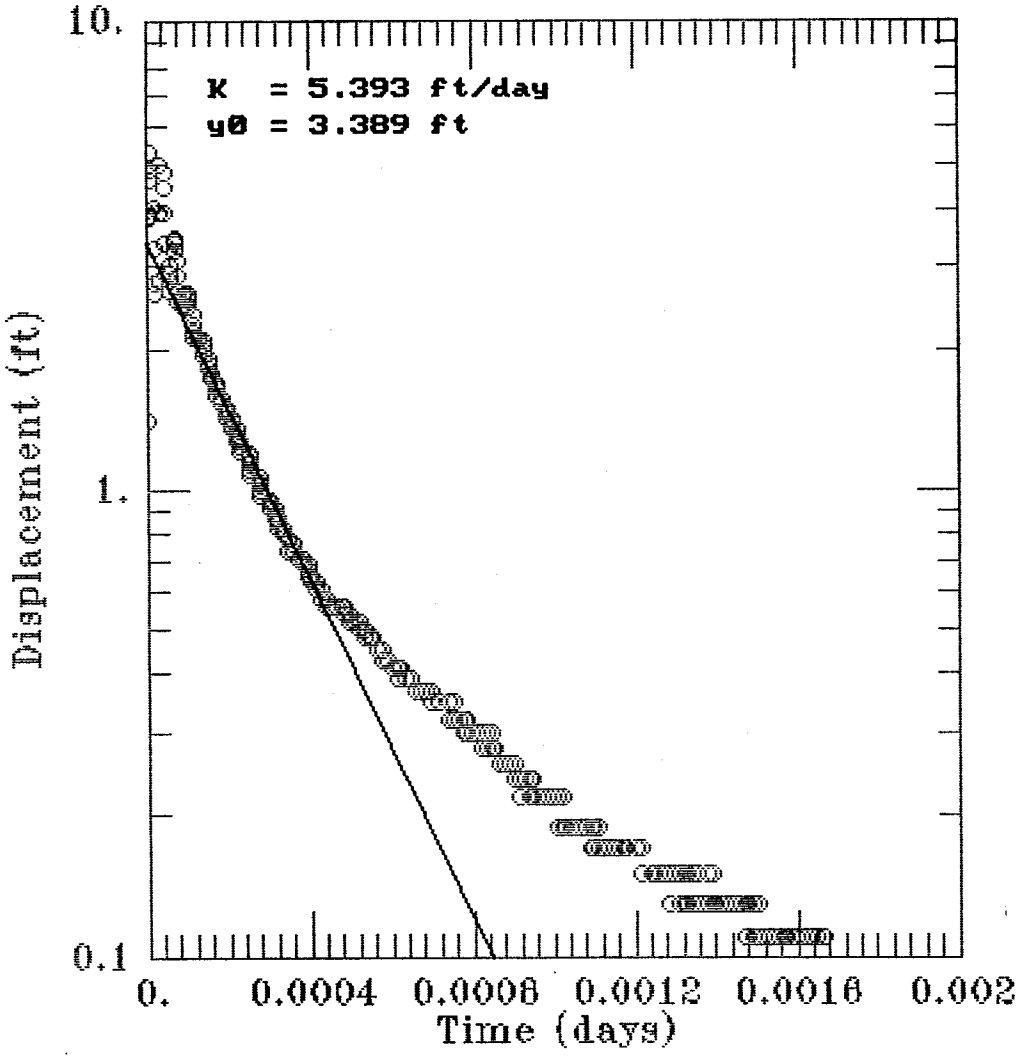


Figure D-19

MW-6:
Bail Test No. 1

Jet Propulsion Laboratory

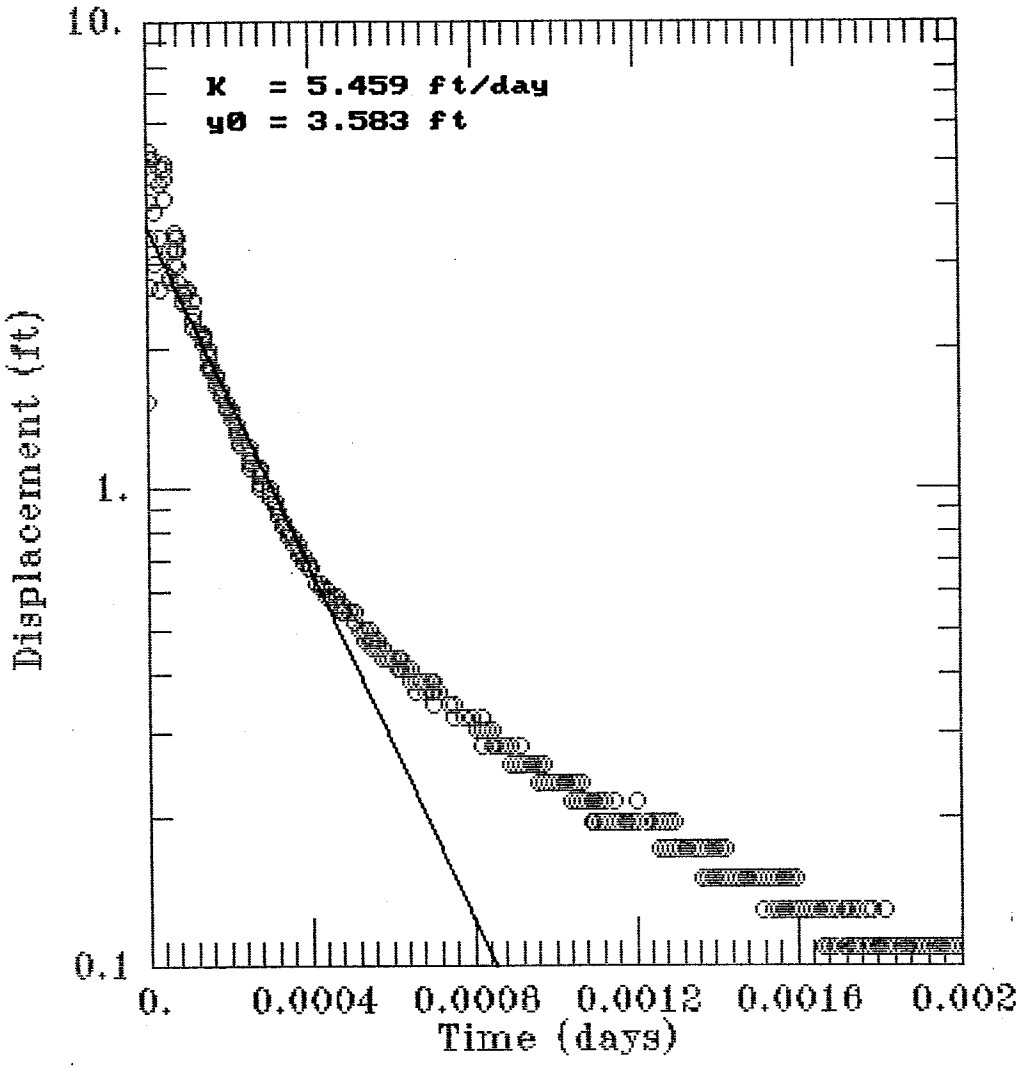


Figure D-20

MW-6:
Bail Test No. 2

Jet Propulsion Laboratory

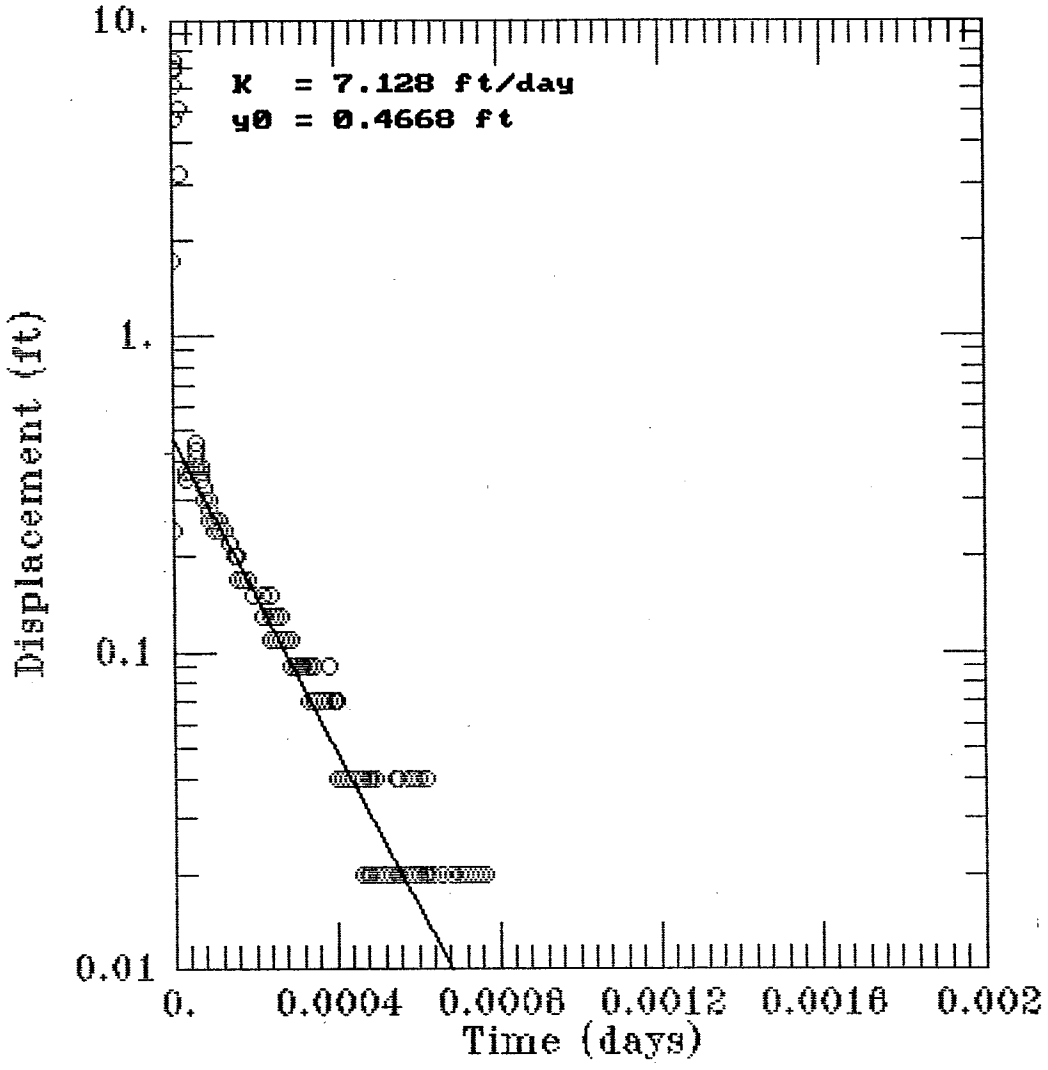


Figure D-21

MW-7:
Slug Test No. 1

Jet Propulsion Laboratory

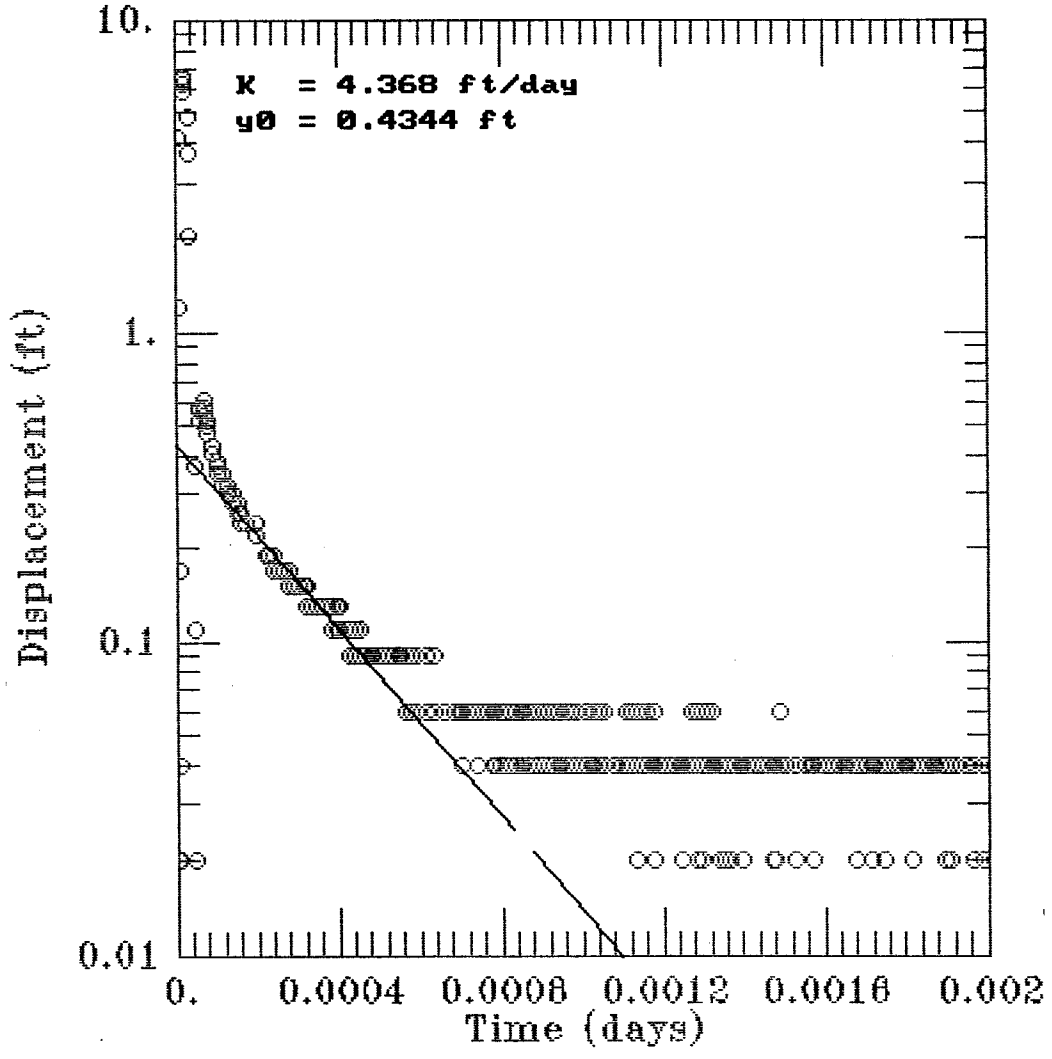


Figure D-22

MW-7:
Slug Test No. 2

Jet Propulsion Laboratory

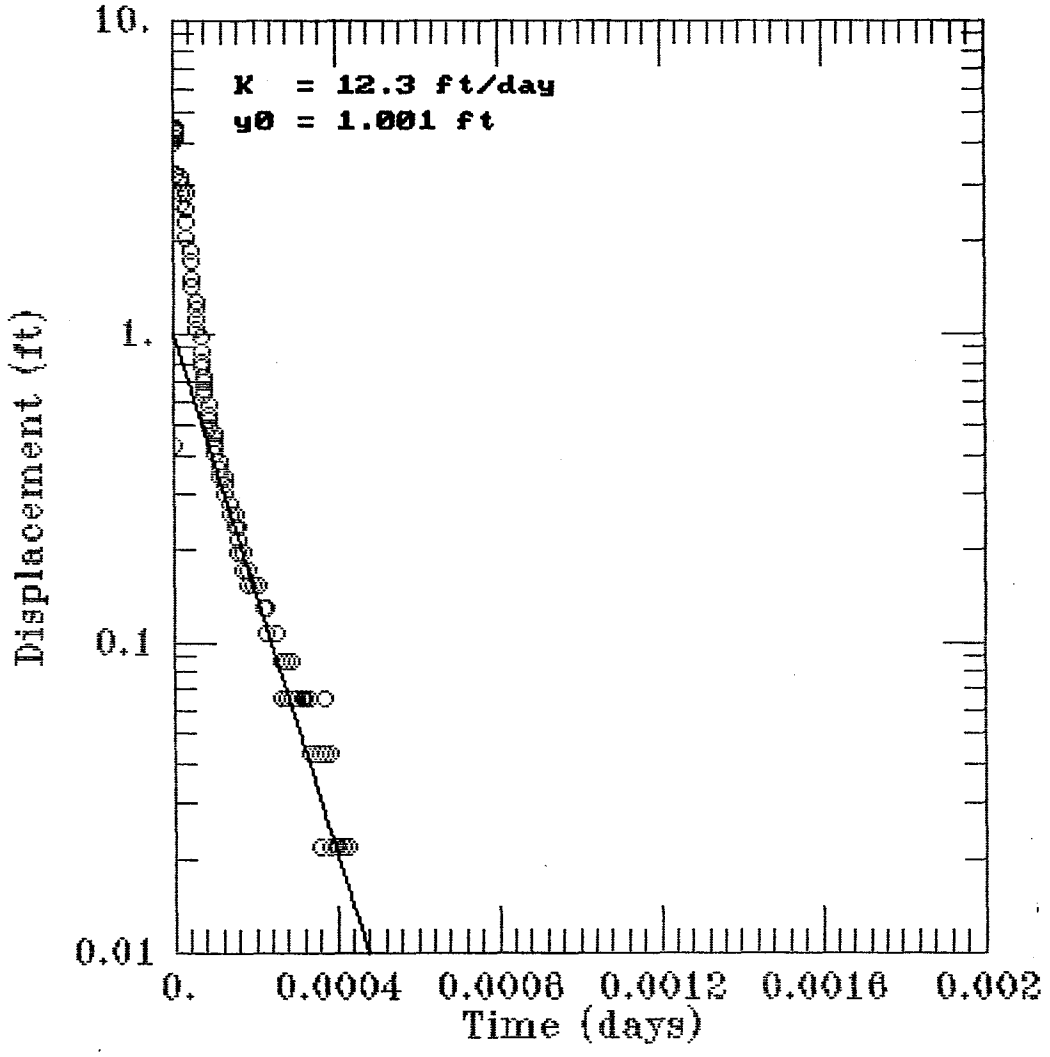


Figure D-23

MW-7:
Bail Test No. 1

Jet Propulsion Laboratory

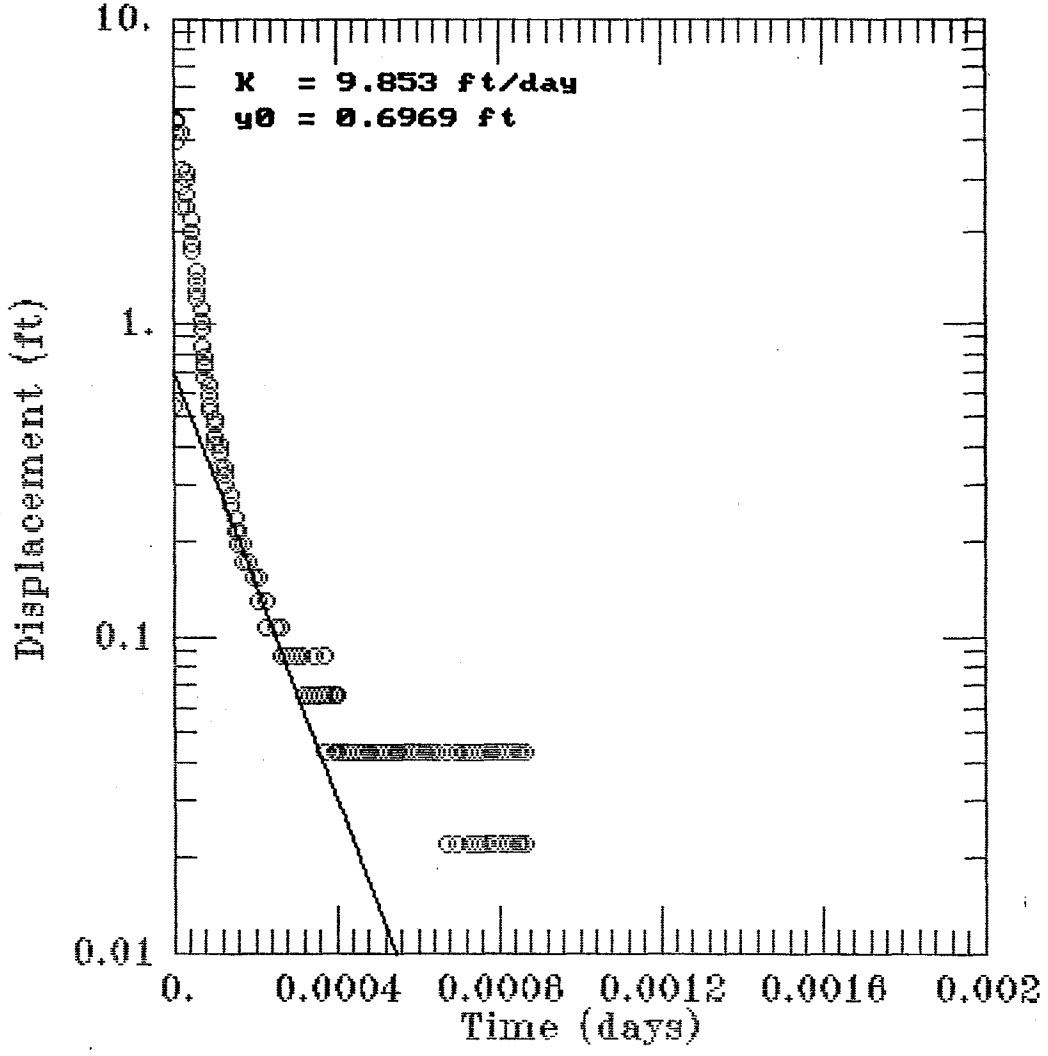


Figure D-24

MW-7:
Bail Test No. 2

Jet Propulsion Laboratory

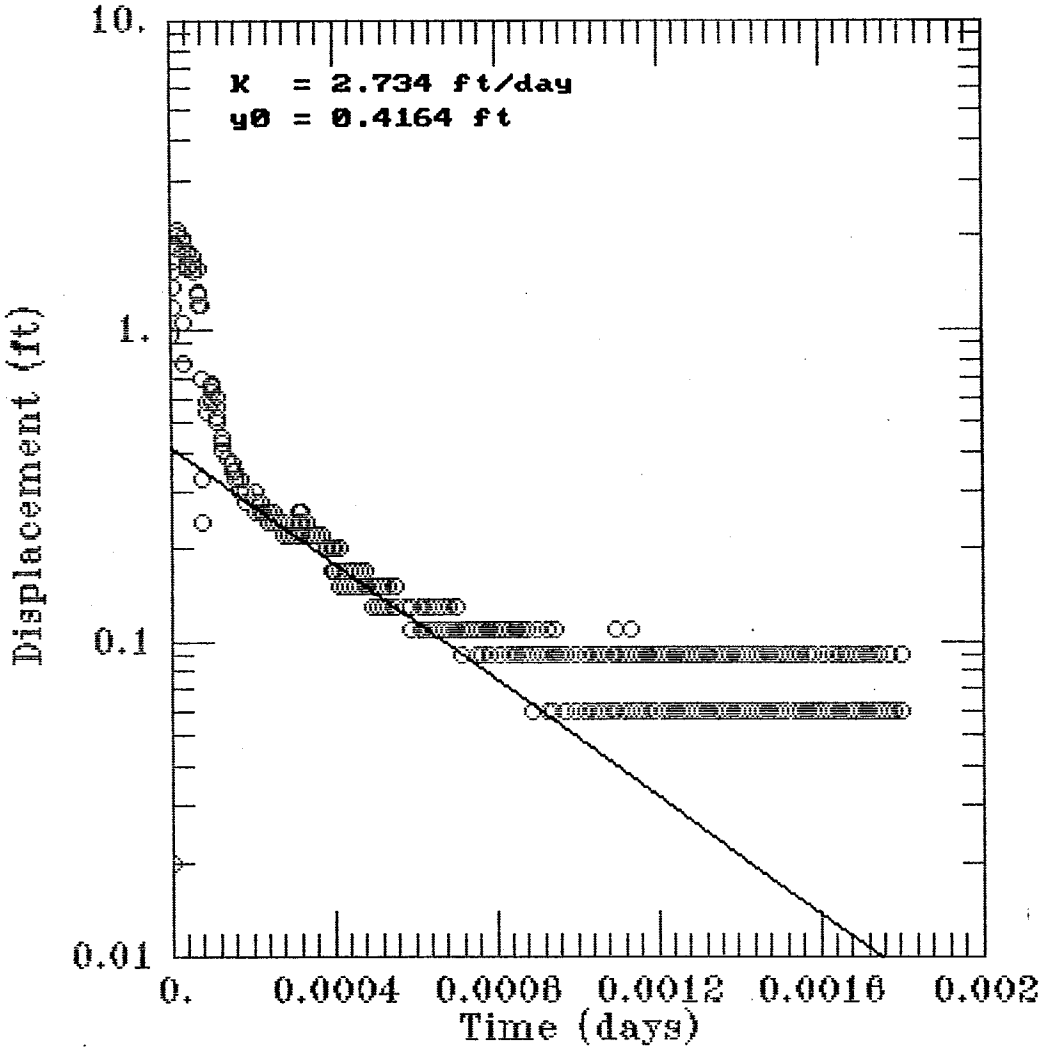


Figure D-25

MW-8:
Slug Test No. 1

Jet Propulsion Laboratory

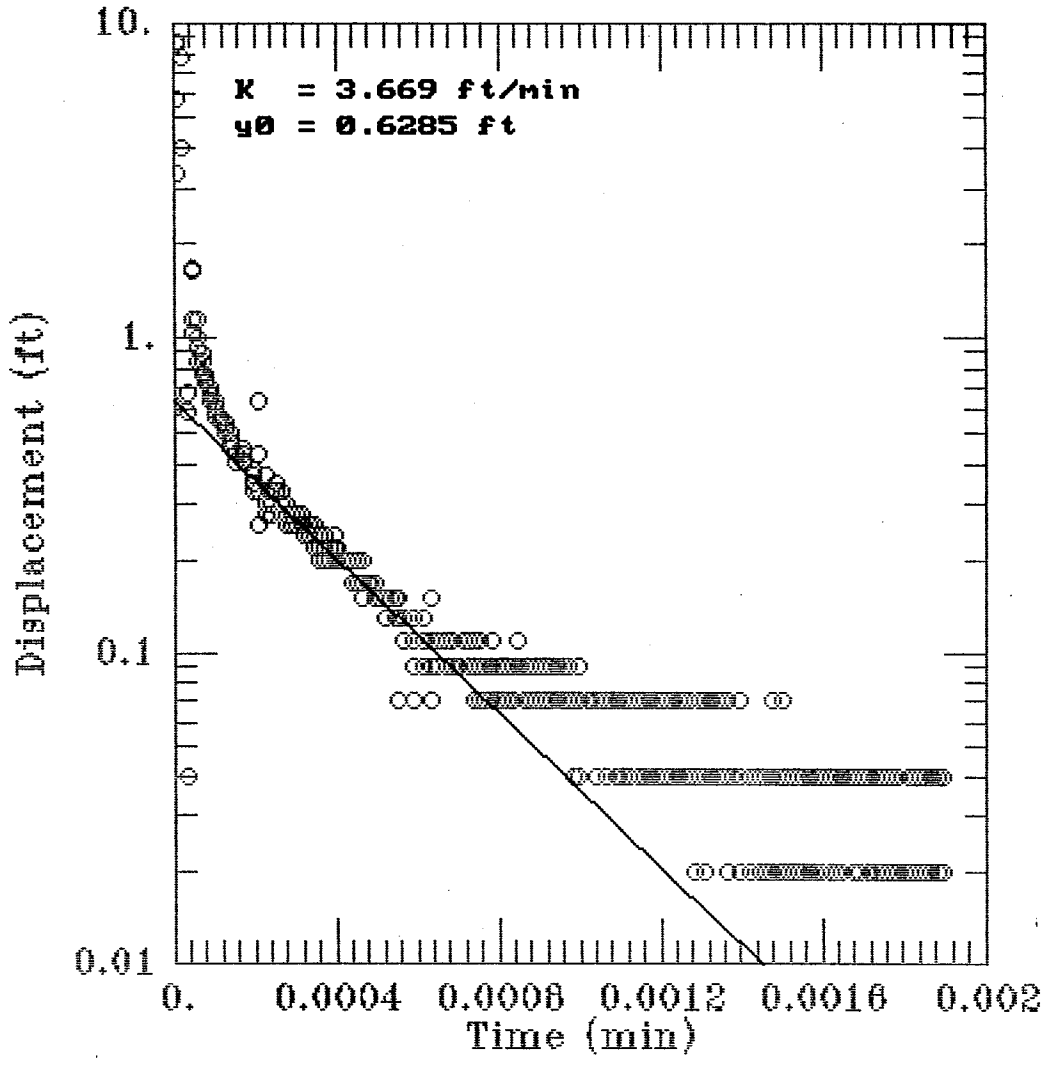


Figure D-26

MW-8:
Slug Test No. 2

Jet Propulsion Laboratory

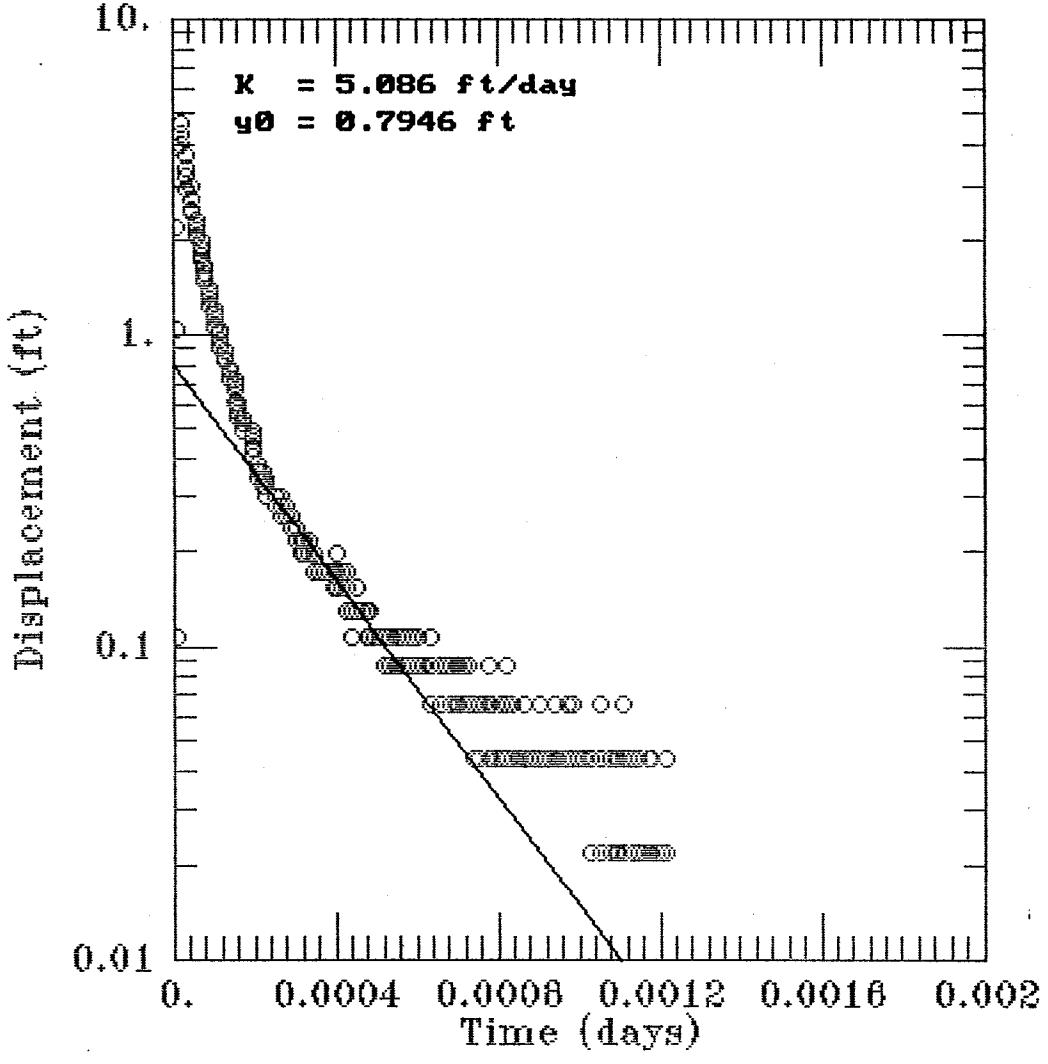


Figure D-27

MW-8:
Bail Test No. 2

Jet Propulsion Laboratory

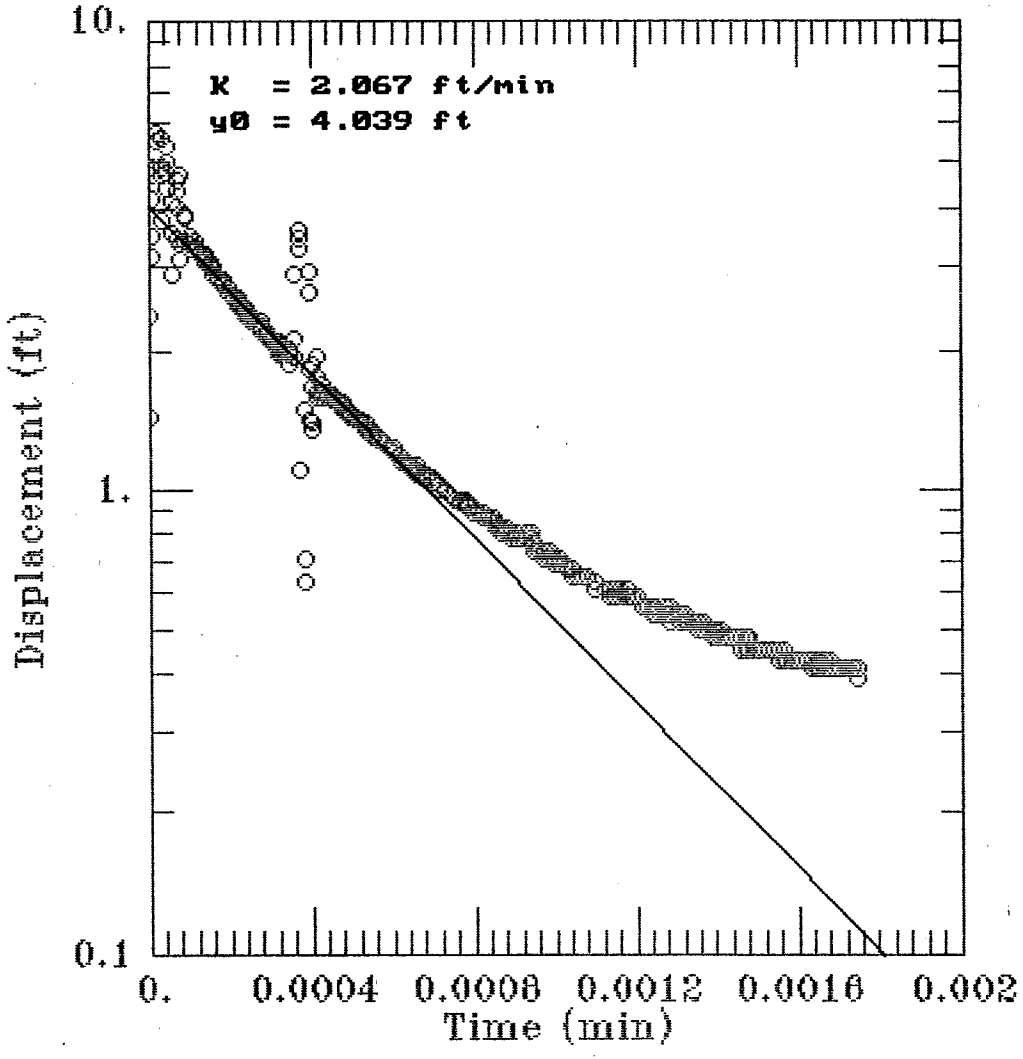


Figure D-28

MW-9:
Slug Test No. 1

Jet Propulsion Laboratory

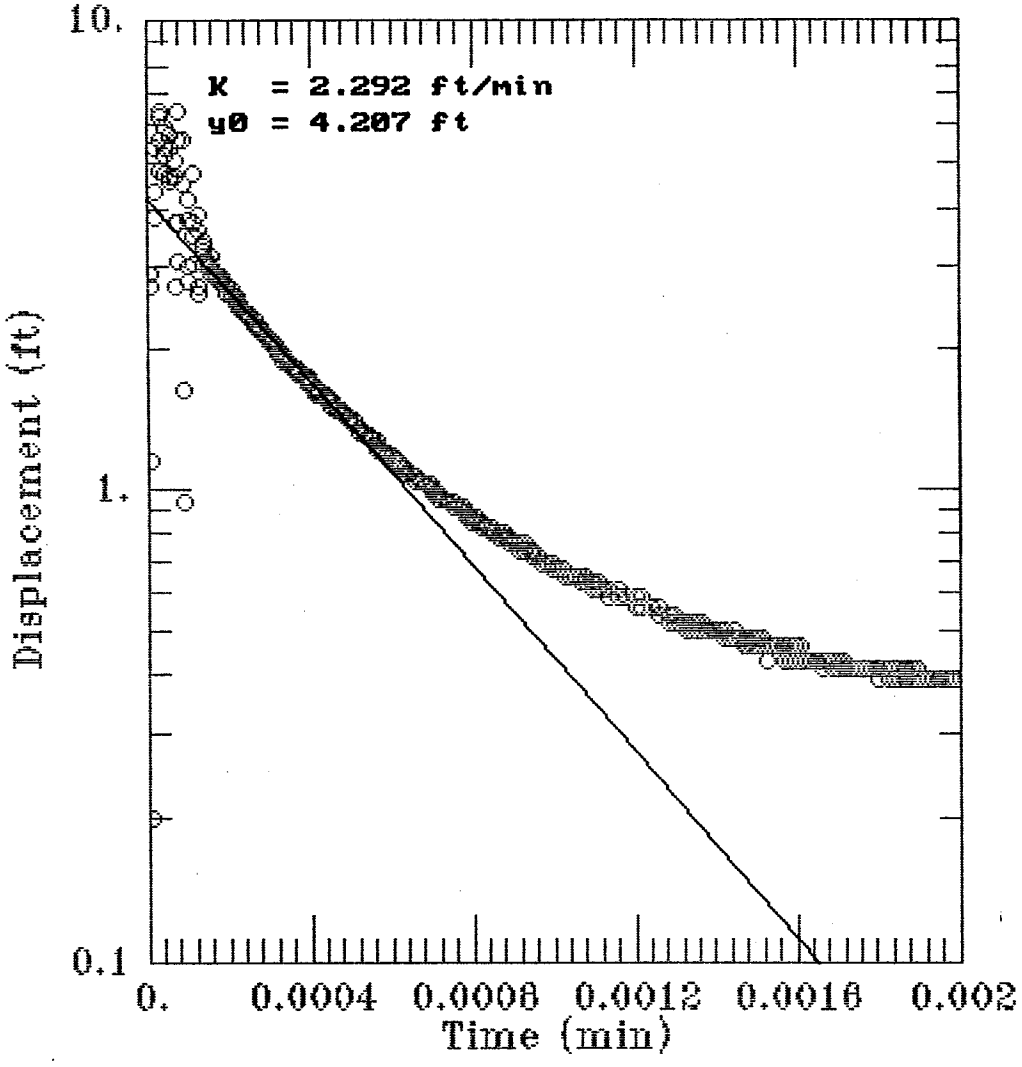


Figure D-29

MW-9:
Slug Test No. 2

Jet Propulsion Laboratory

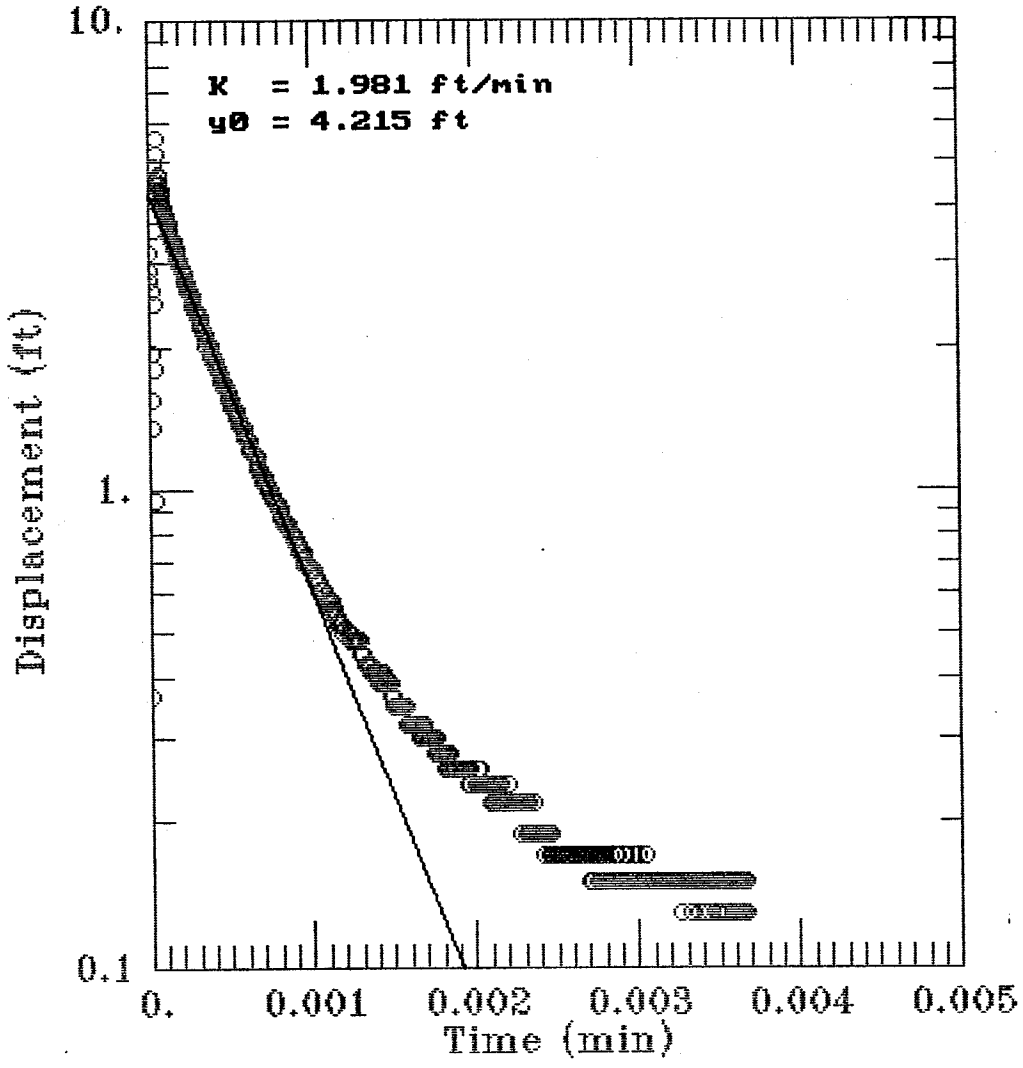


Figure D-30

MW-9:
Bail Test No. 2

Jet Propulsion Laboratory

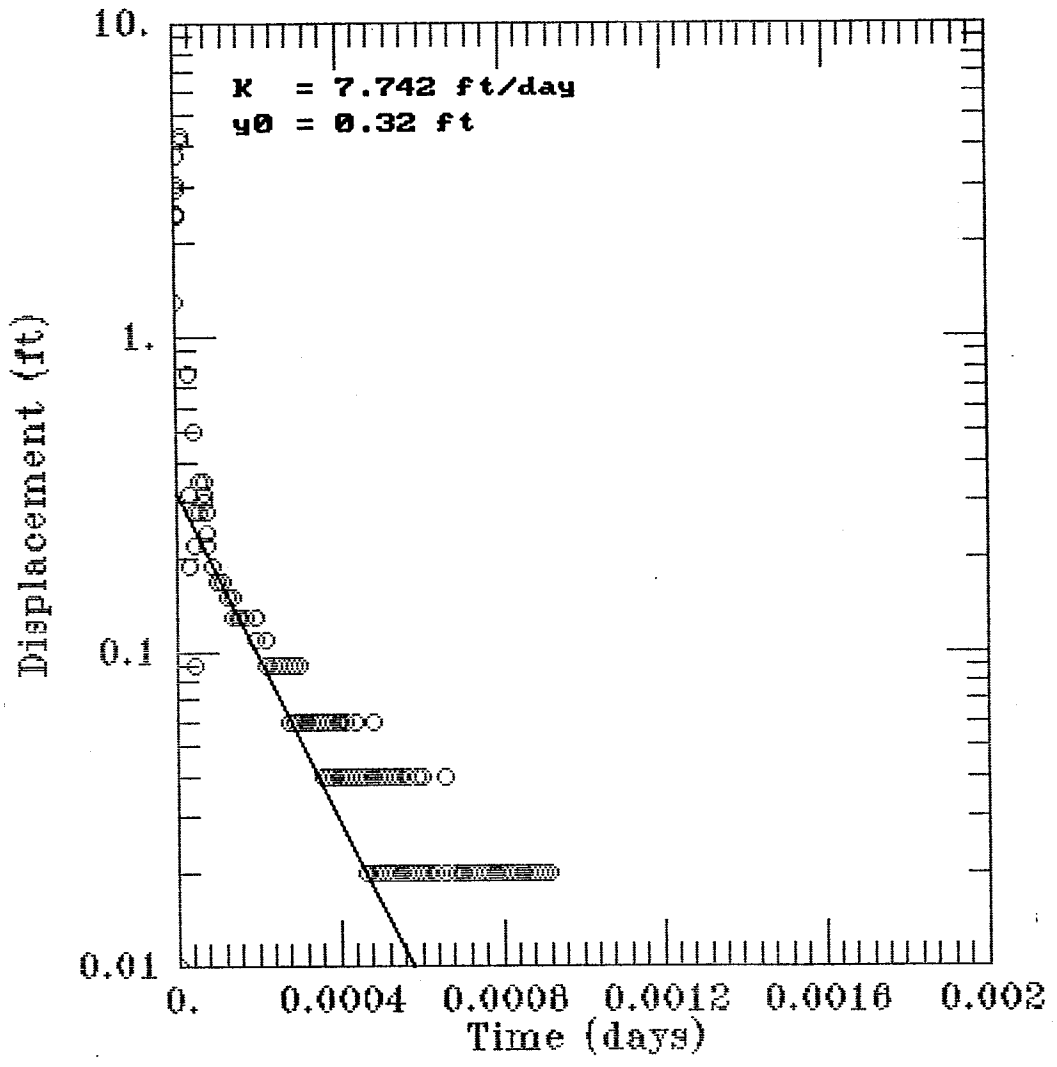


Figure D-31

MW-10:
Slug Test No. 1

Jet Propulsion Laboratory

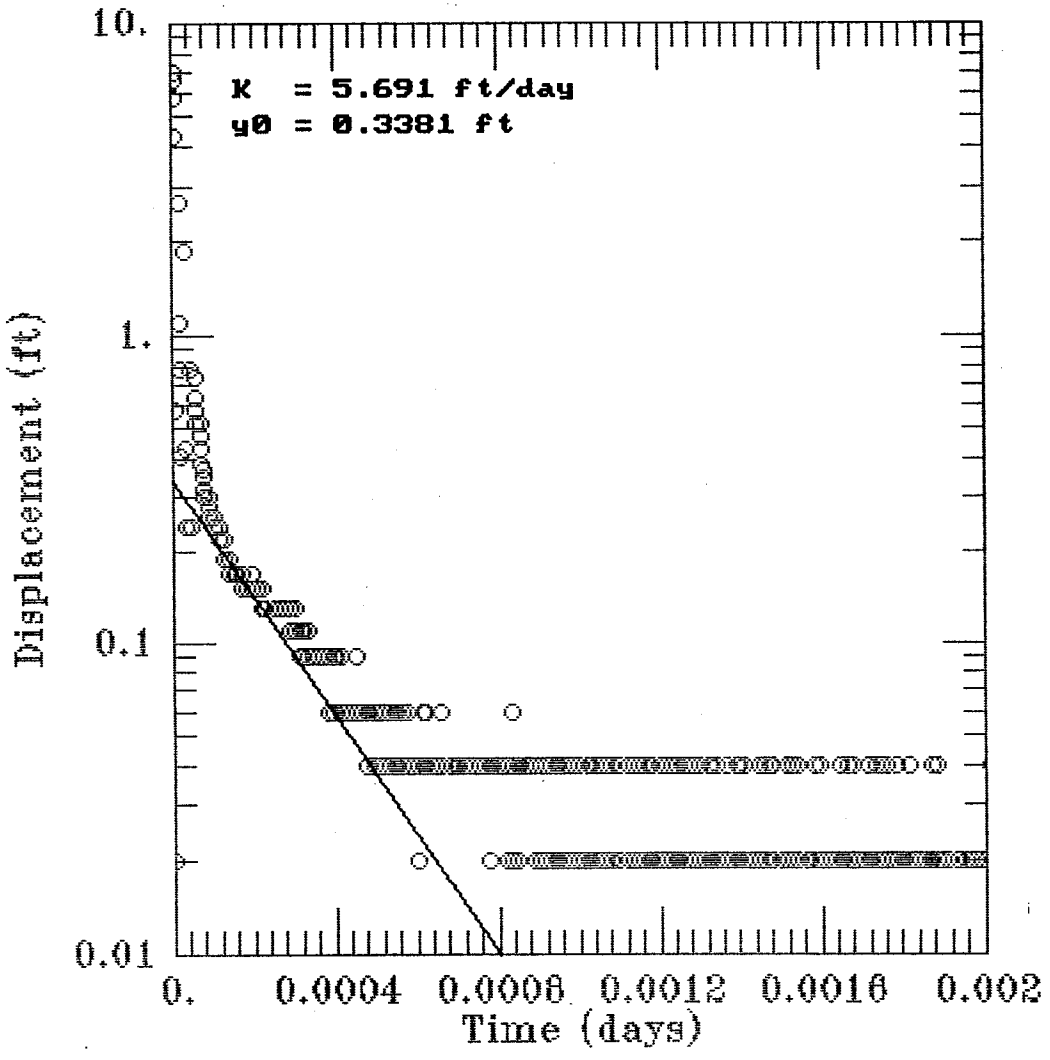


Figure D-32

MW-10:
Slug Test No. 2

Jet Propulsion Laboratory

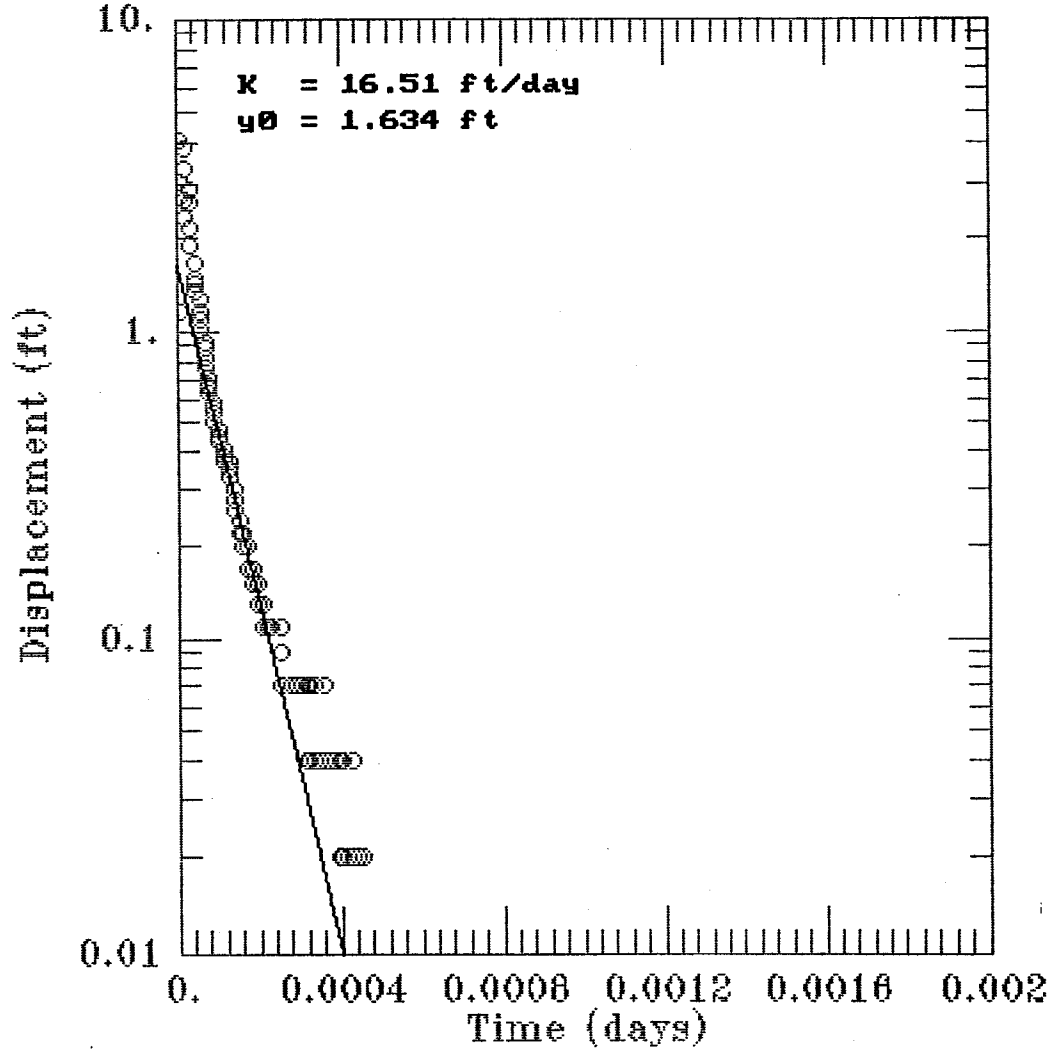


Figure D-33

MW-10:
Bail Test No. 2

Jet Propulsion Laboratory

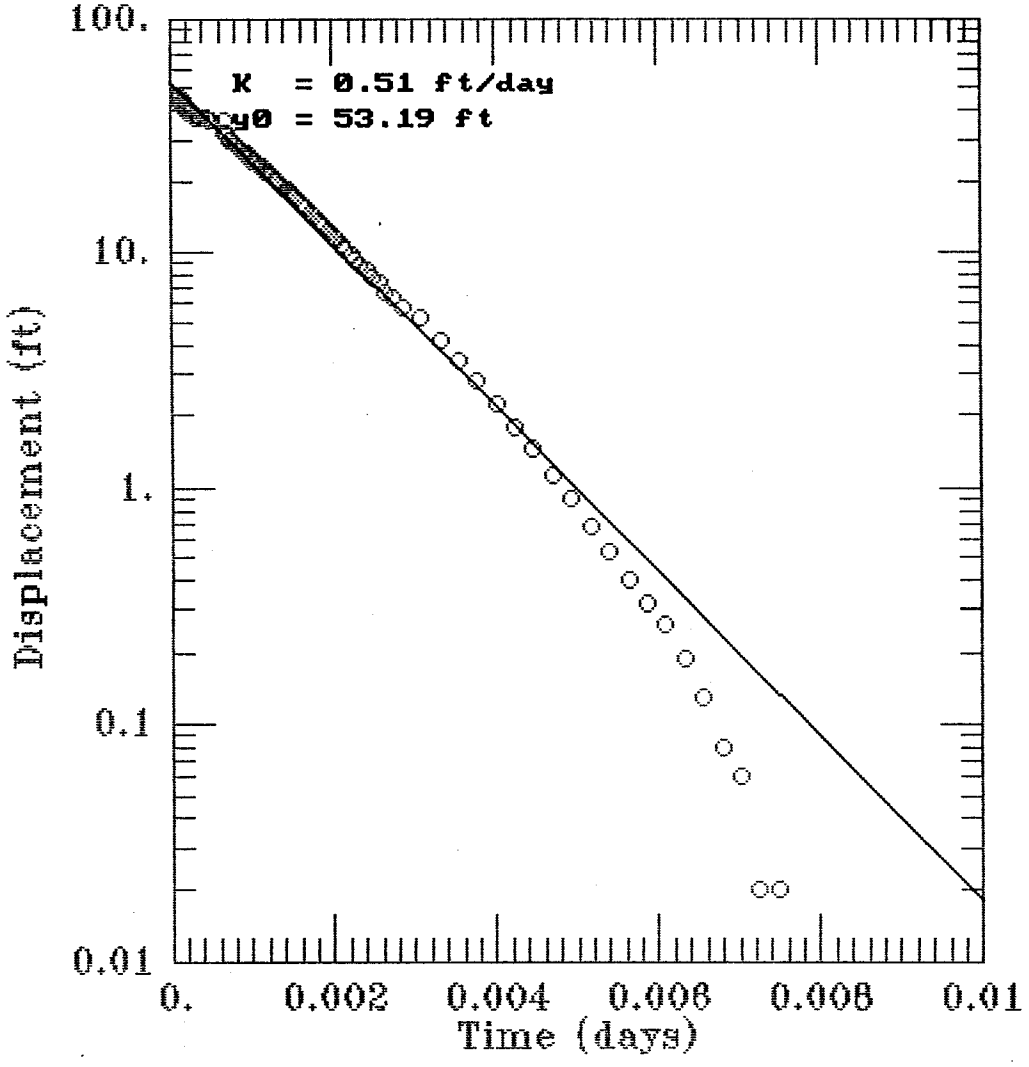


Figure D-34

MW-11:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

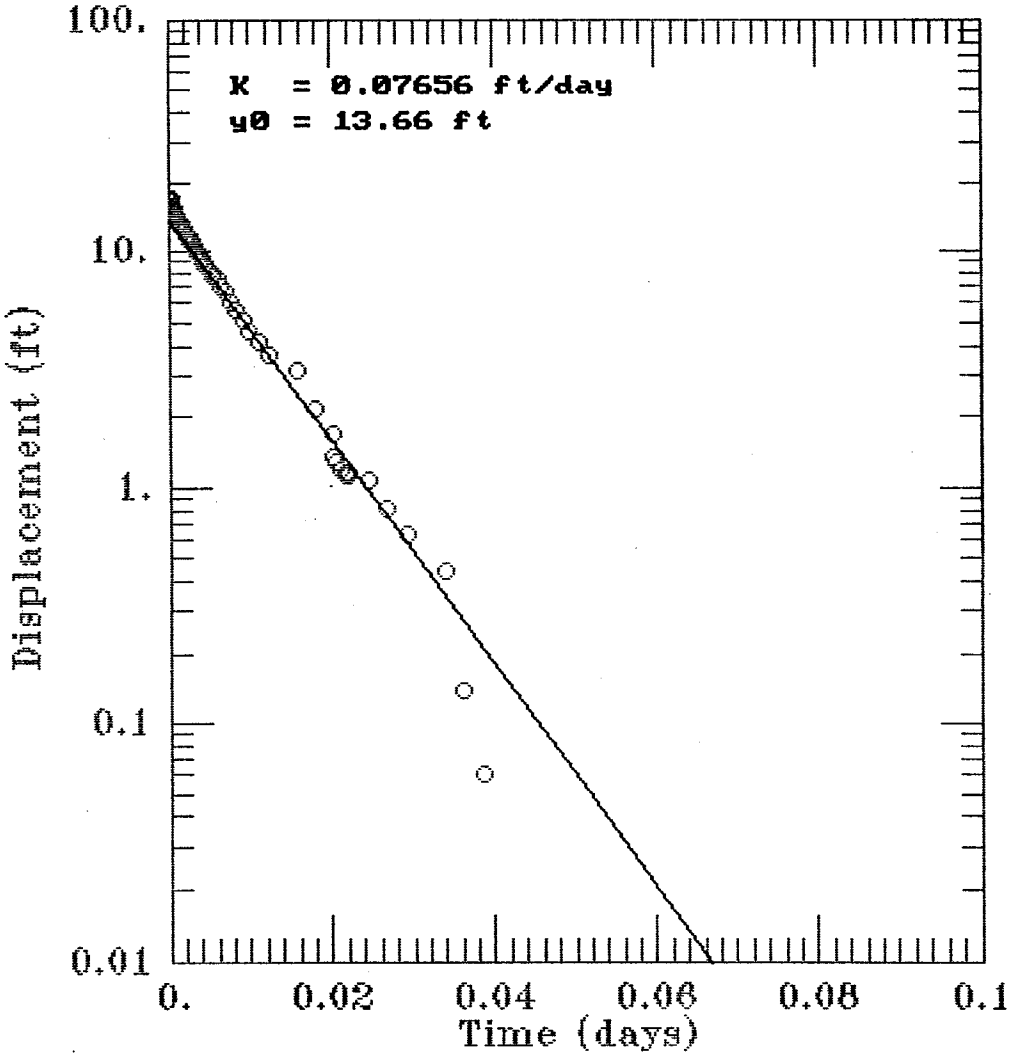


Figure D-35

MW-11:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

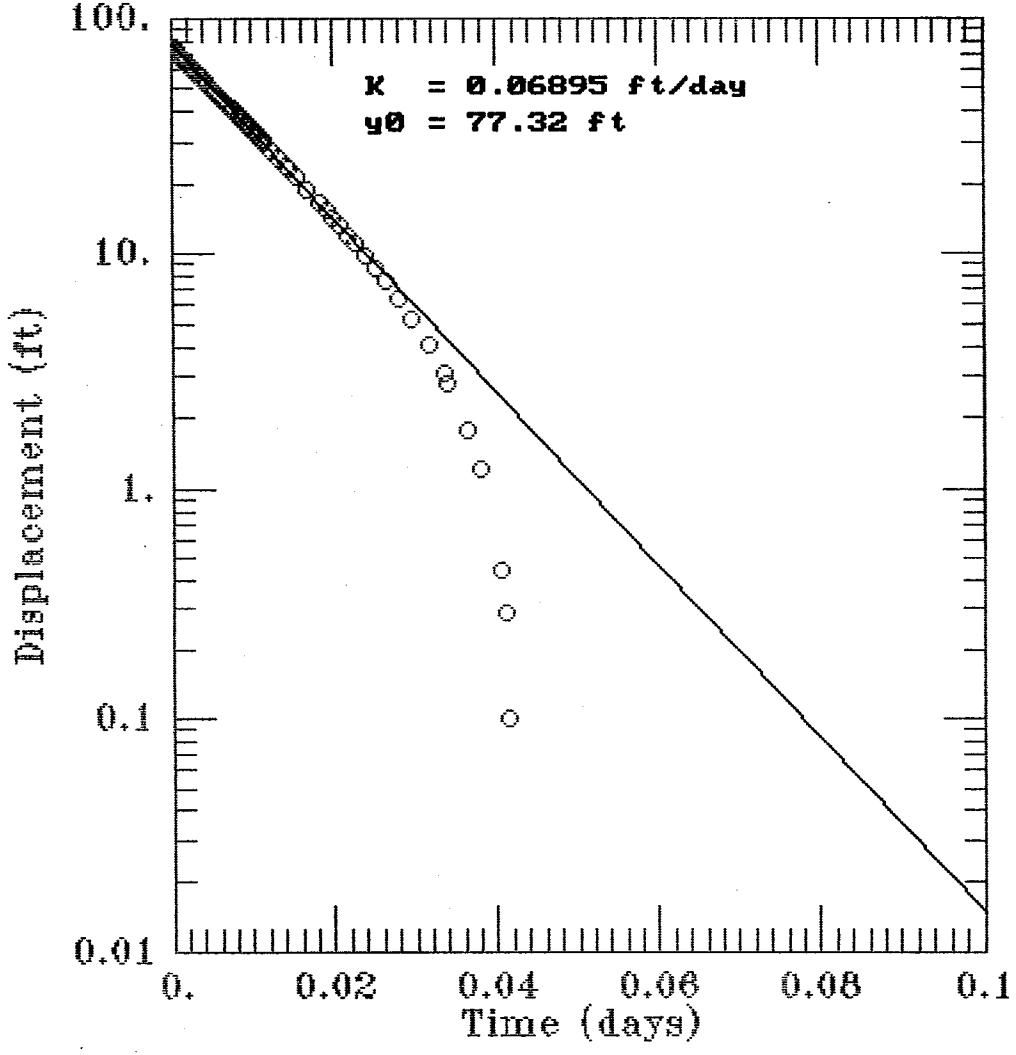


Figure D-36

MW-11:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

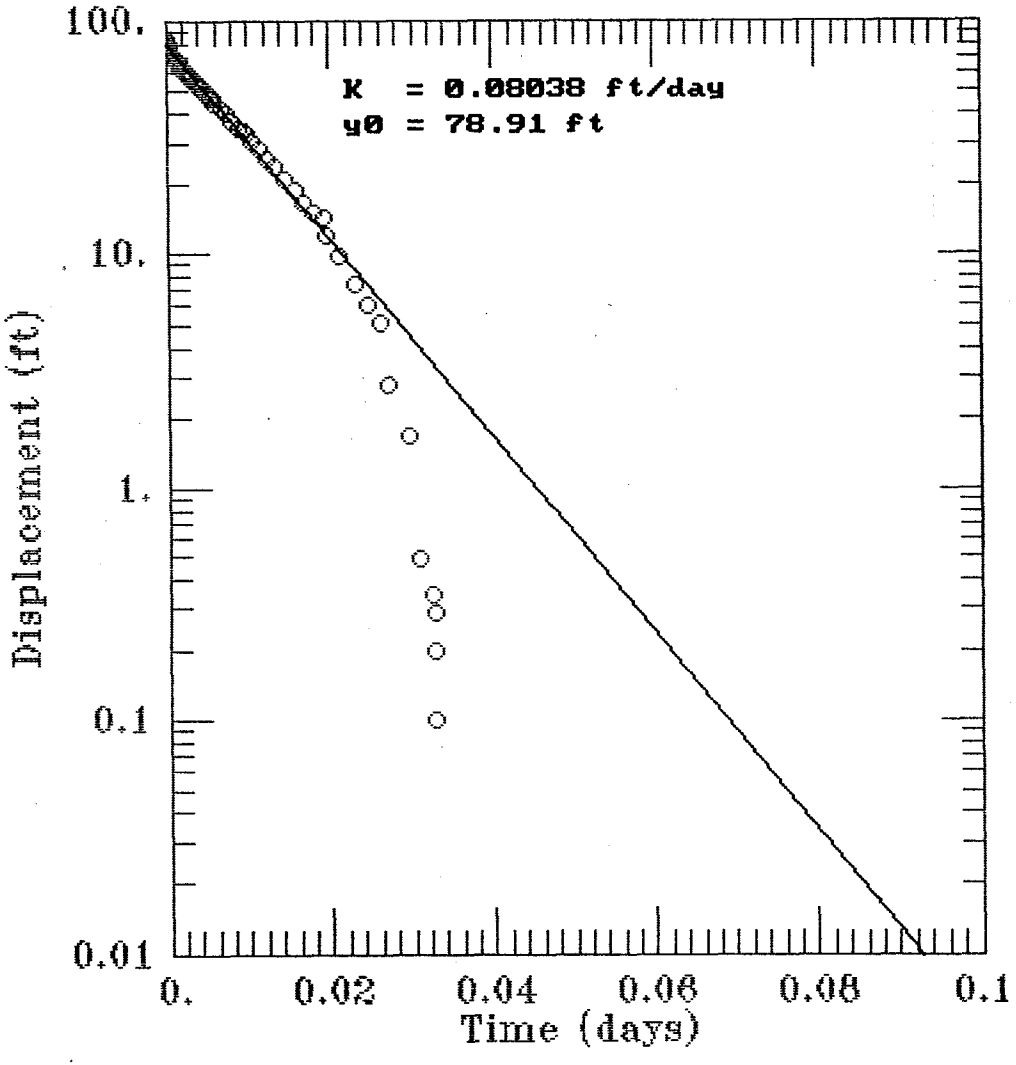


Figure D-37

MW-11:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

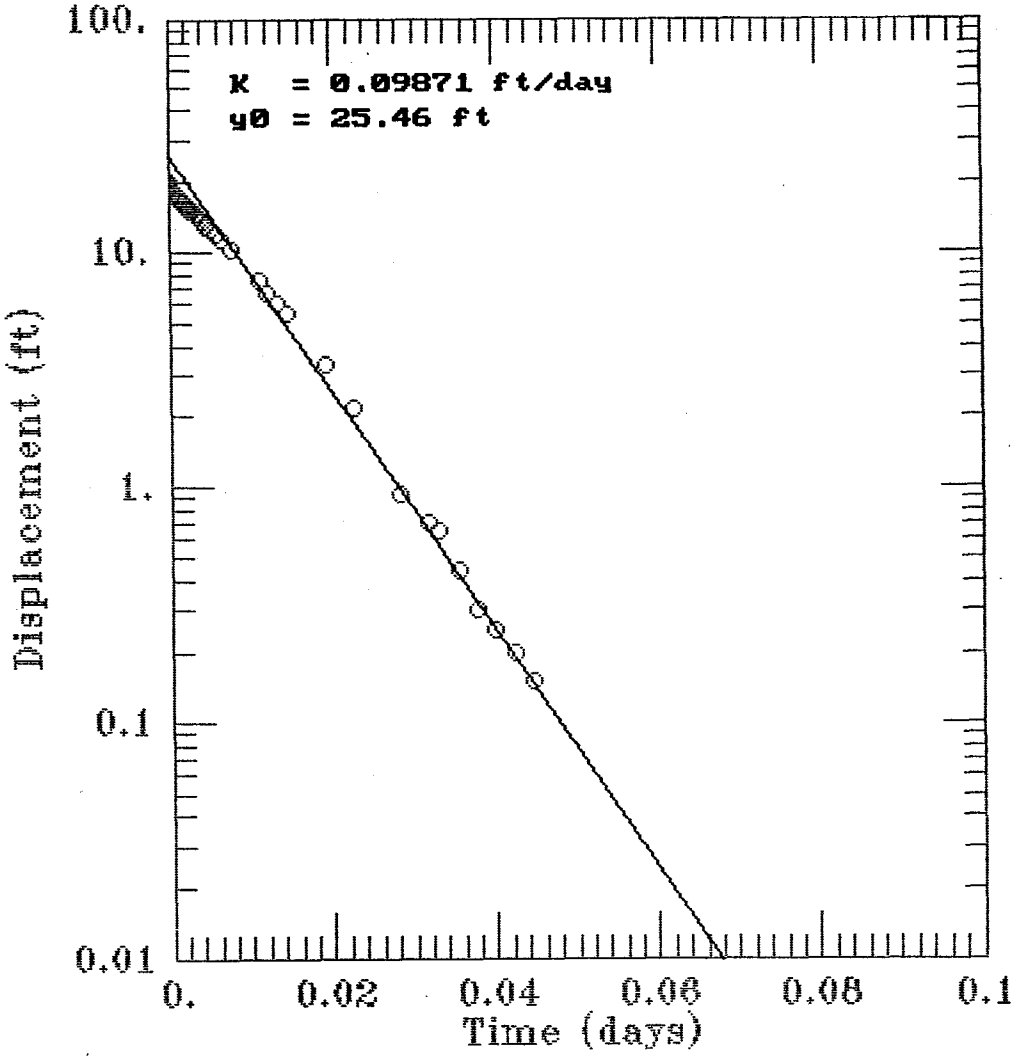


Figure D-38

MW-11:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

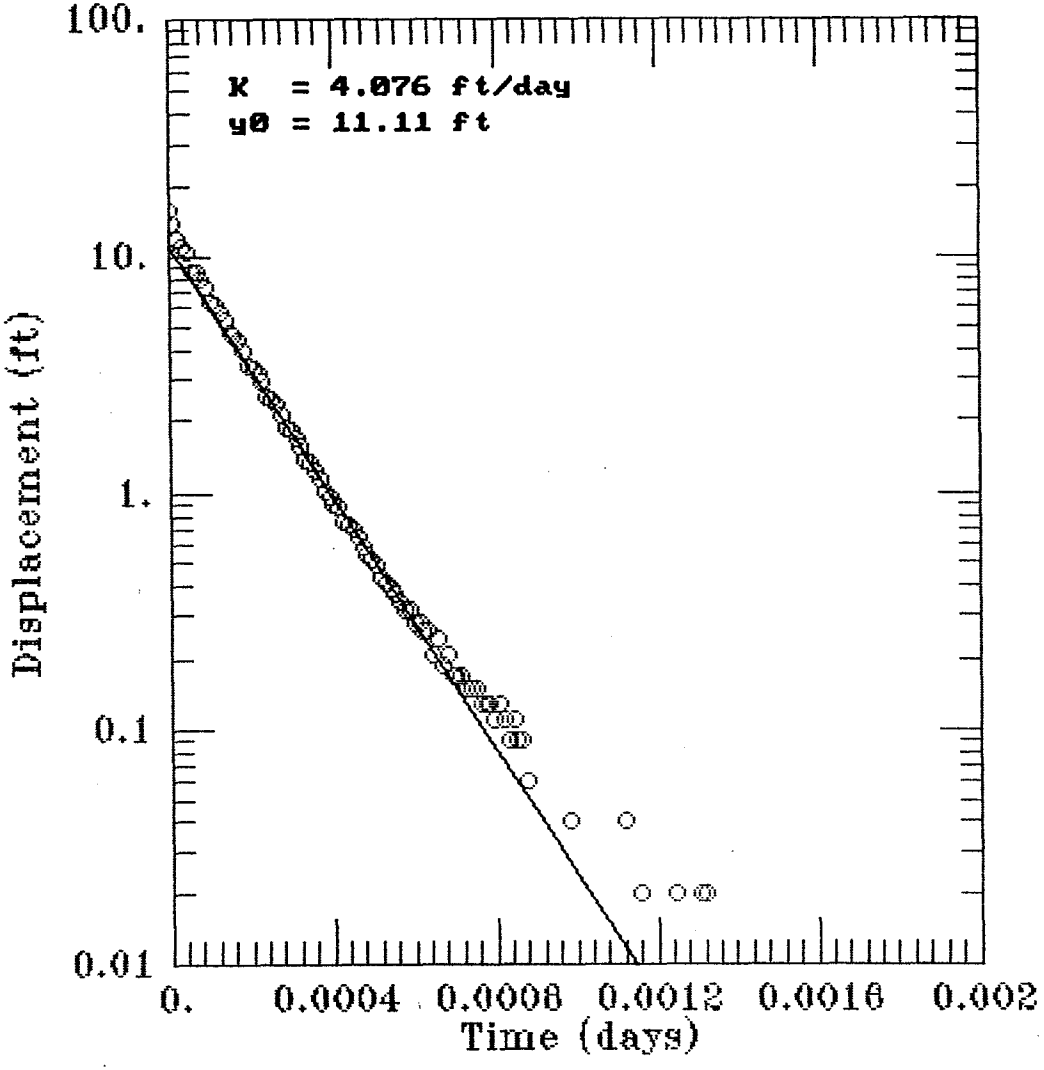


Figure D-39

MW-12:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

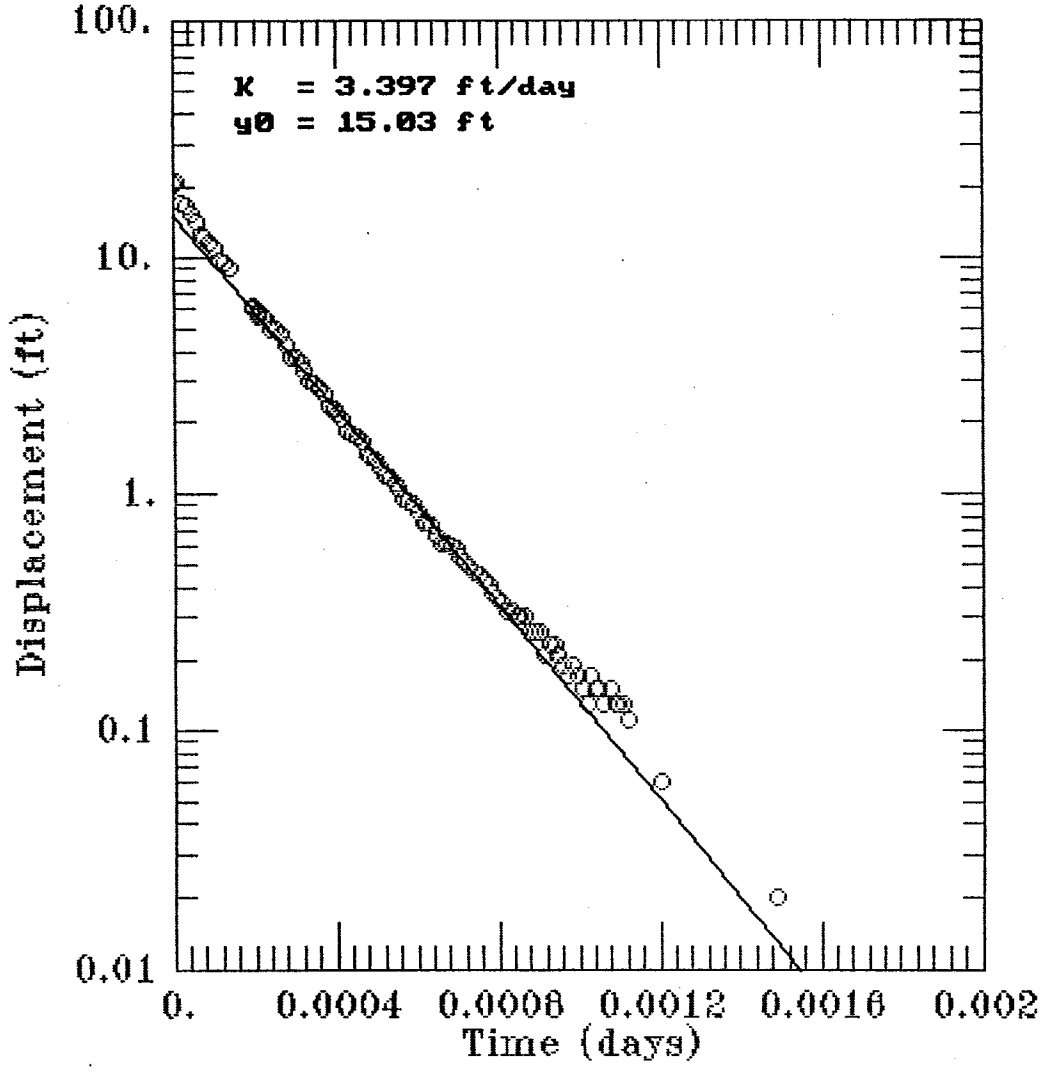


Figure D-40

MW-12:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

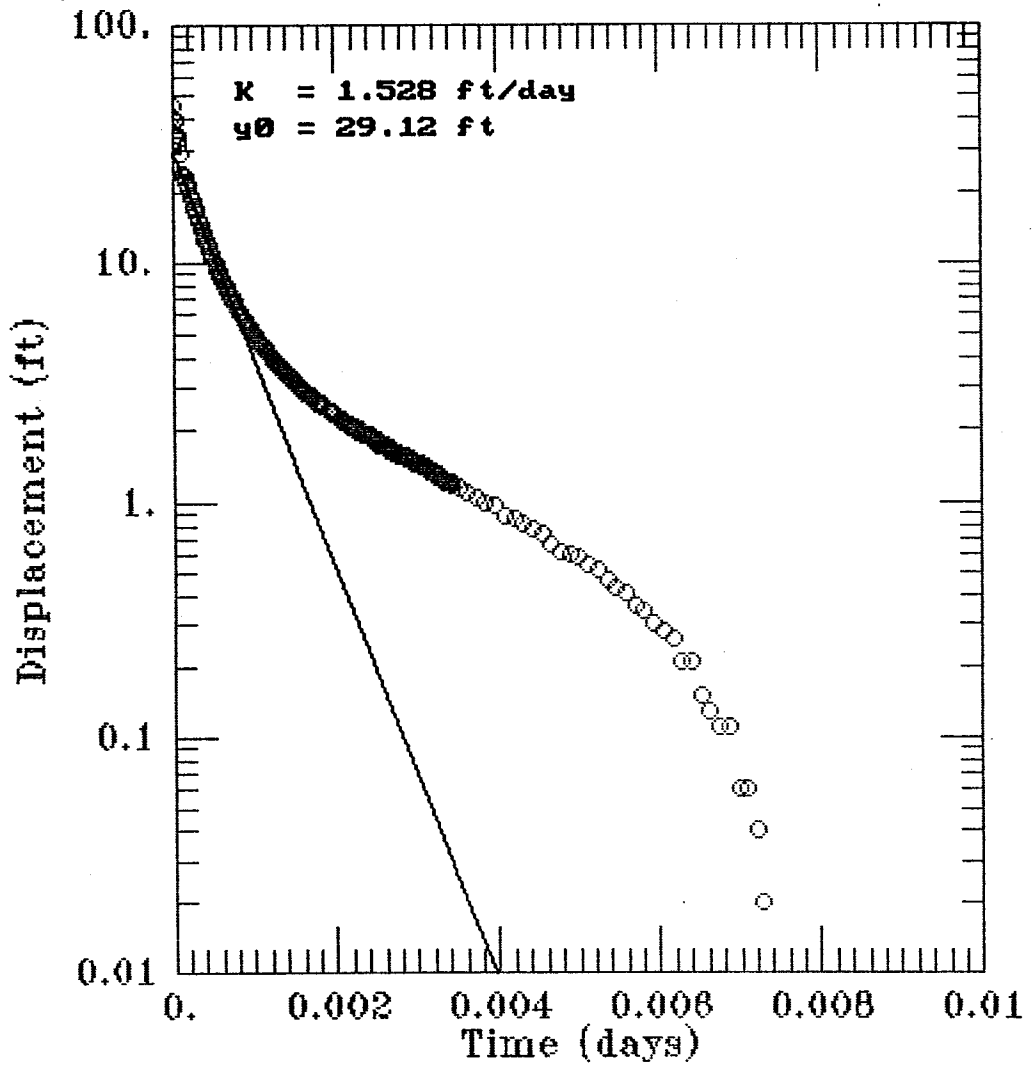


Figure D-41

MW-12:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

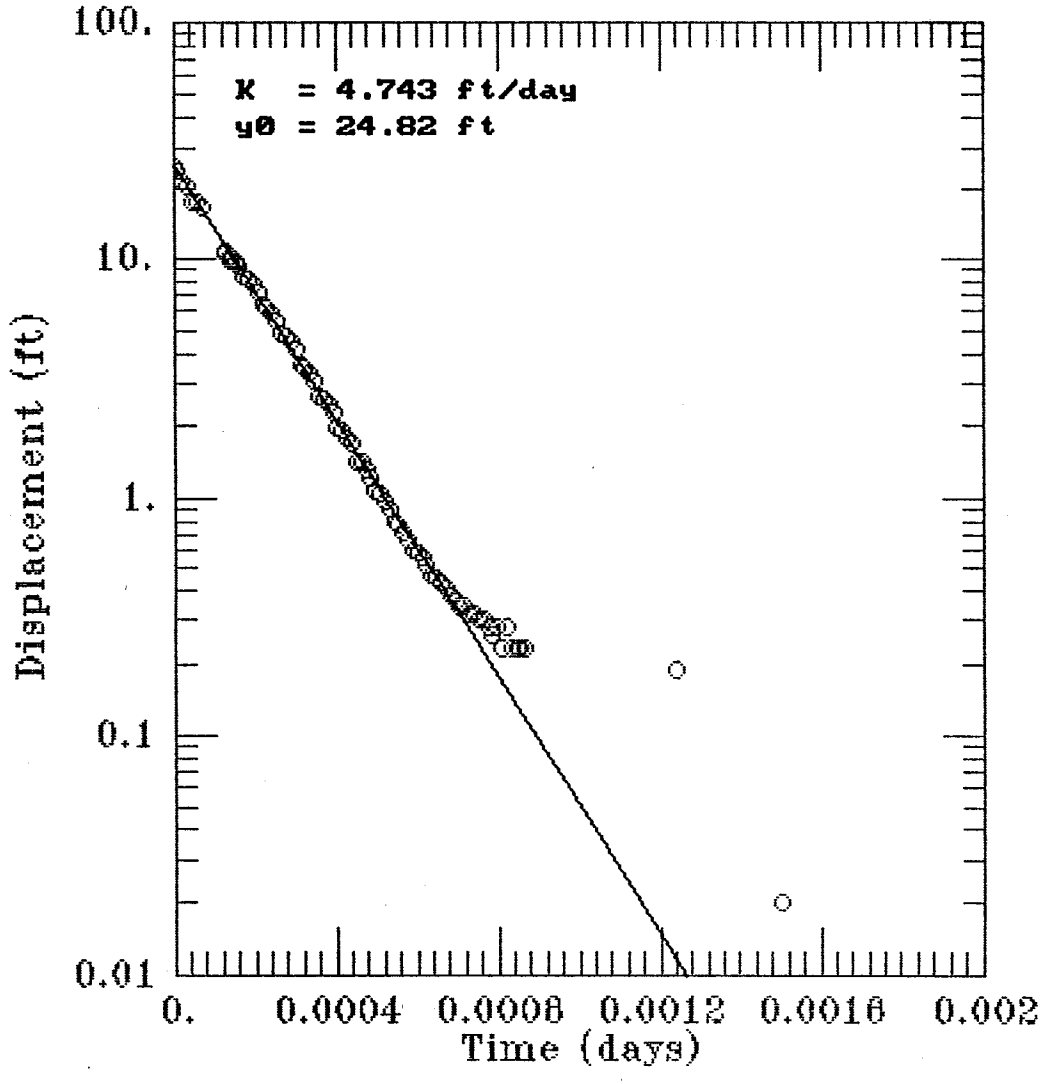


Figure D-42

MW-12:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

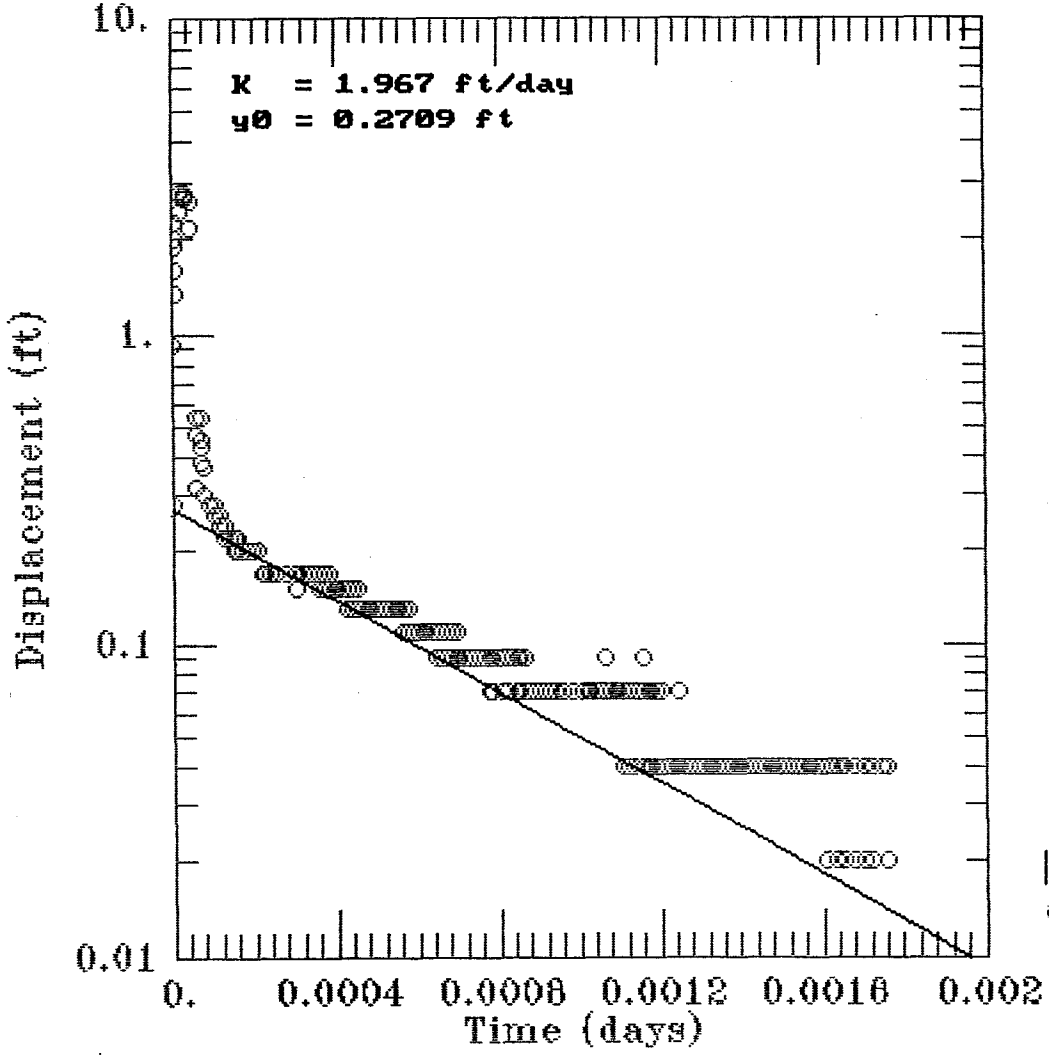


Figure D-43

MW-13:
Slug Test No. 1

Jet Propulsion Laboratory

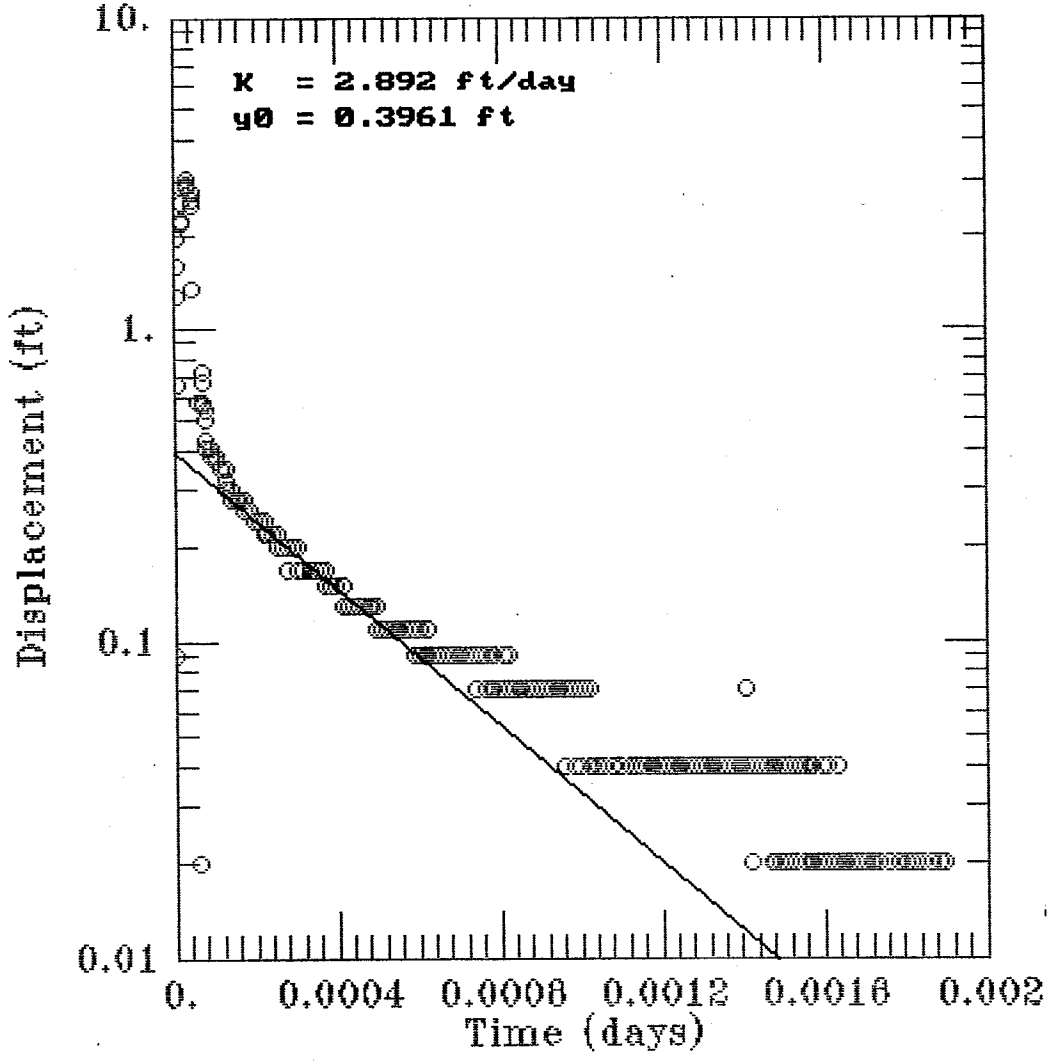


Figure D-44

MW-13:
Slug Test No. 2

Jet Propulsion Laboratory

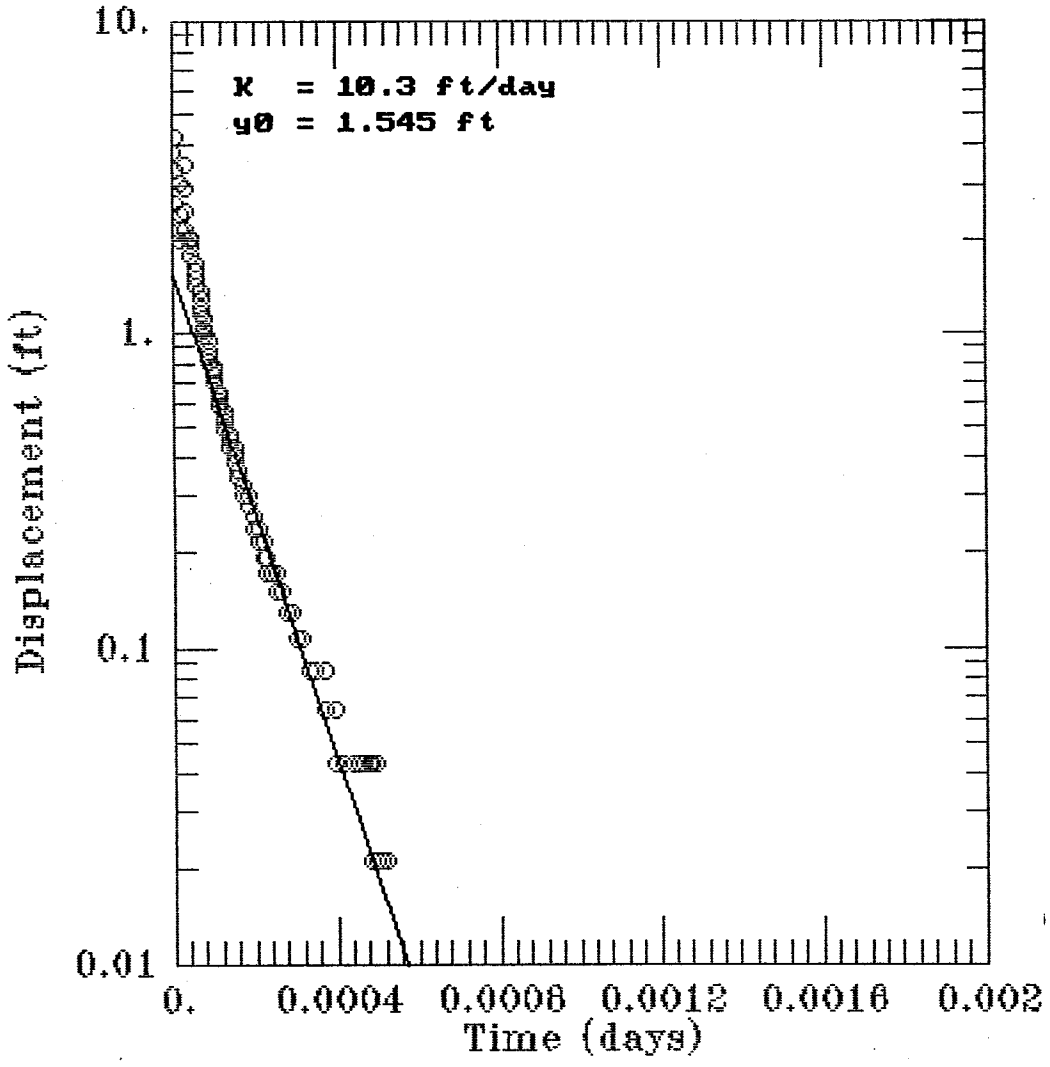


Figure D-45

MW-13:
Bail Test No. 2

Jet Propulsion Laboratory

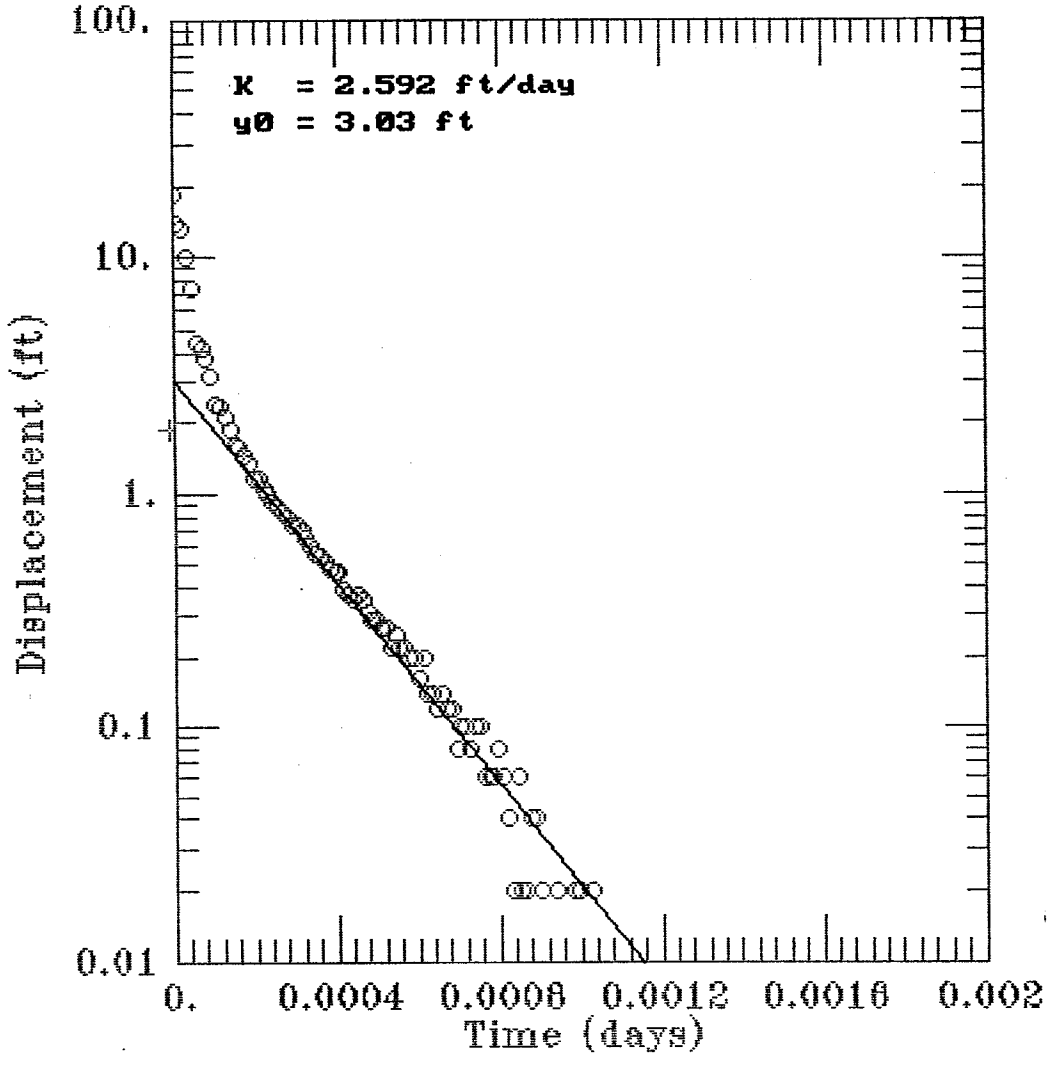


Figure D-46

MW-14:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

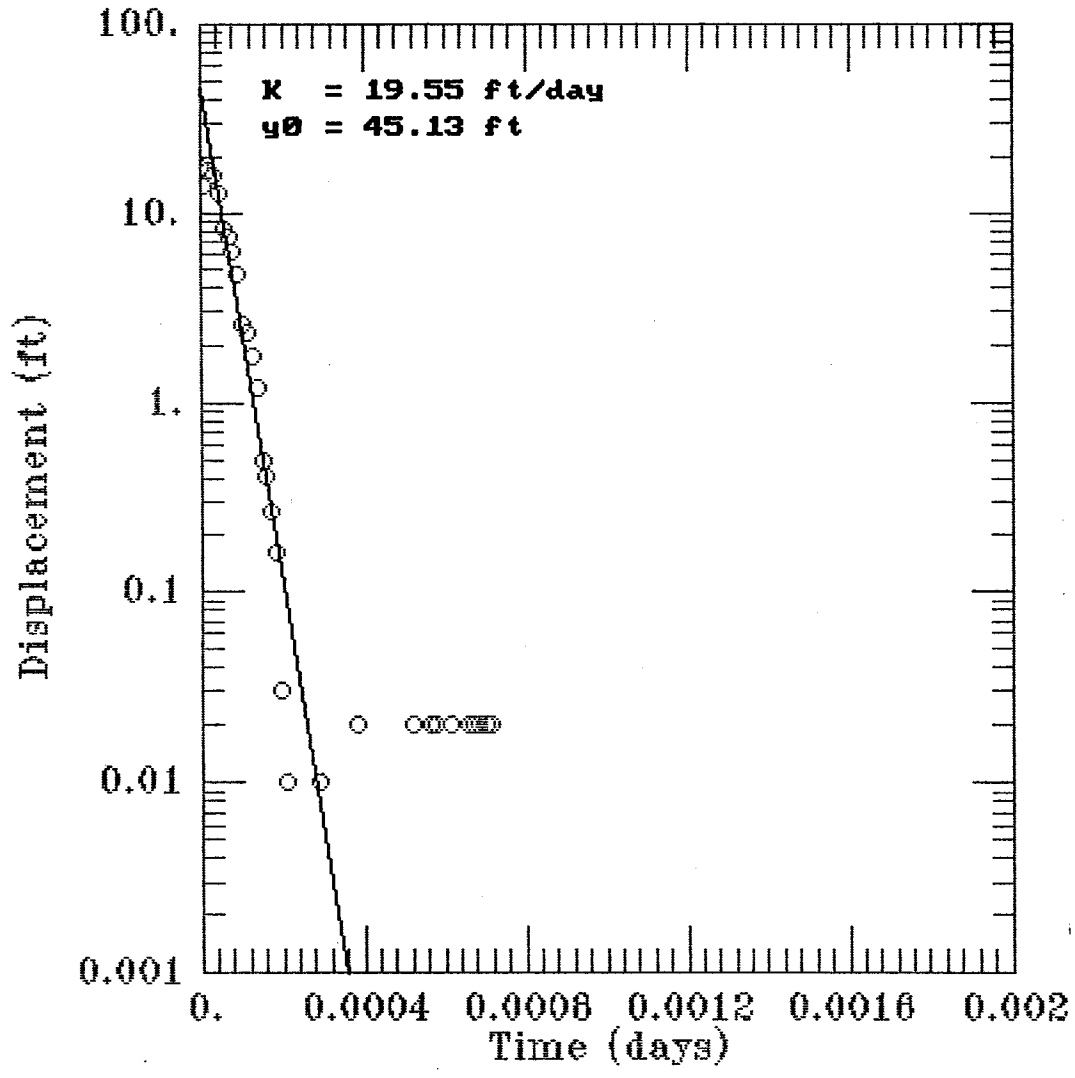


Figure D-47

MW-14:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

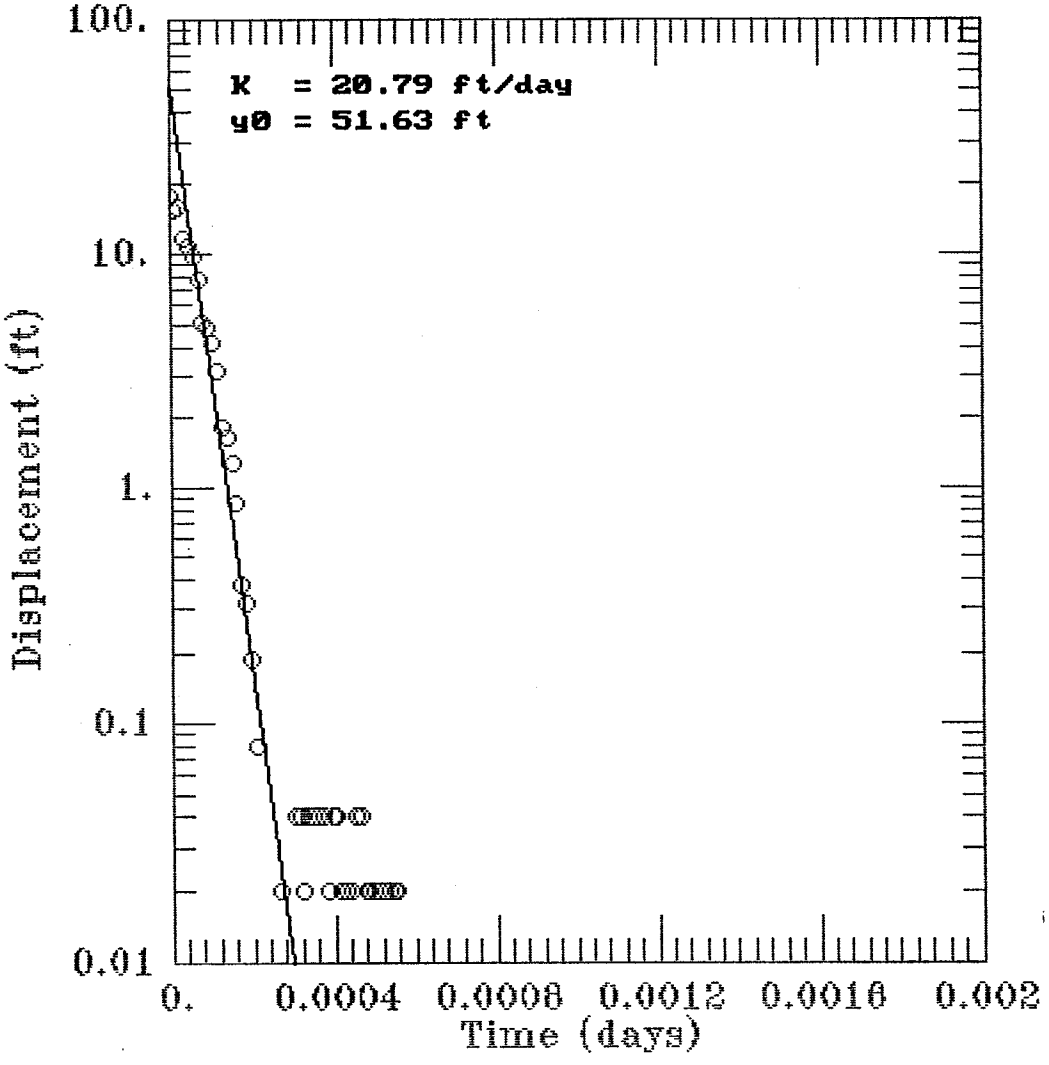


Figure D-48

MW-14:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

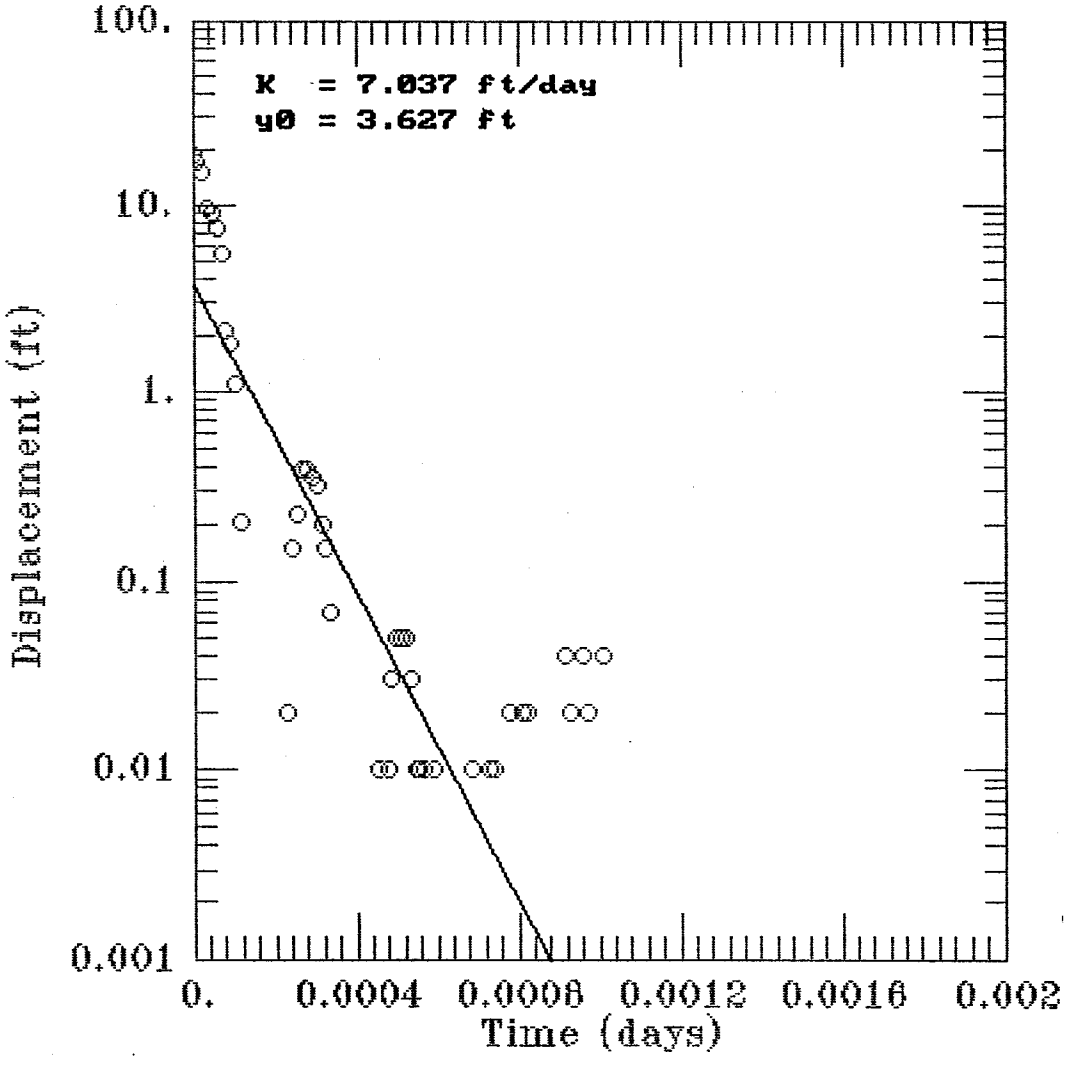


Figure D-49

MW-14:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

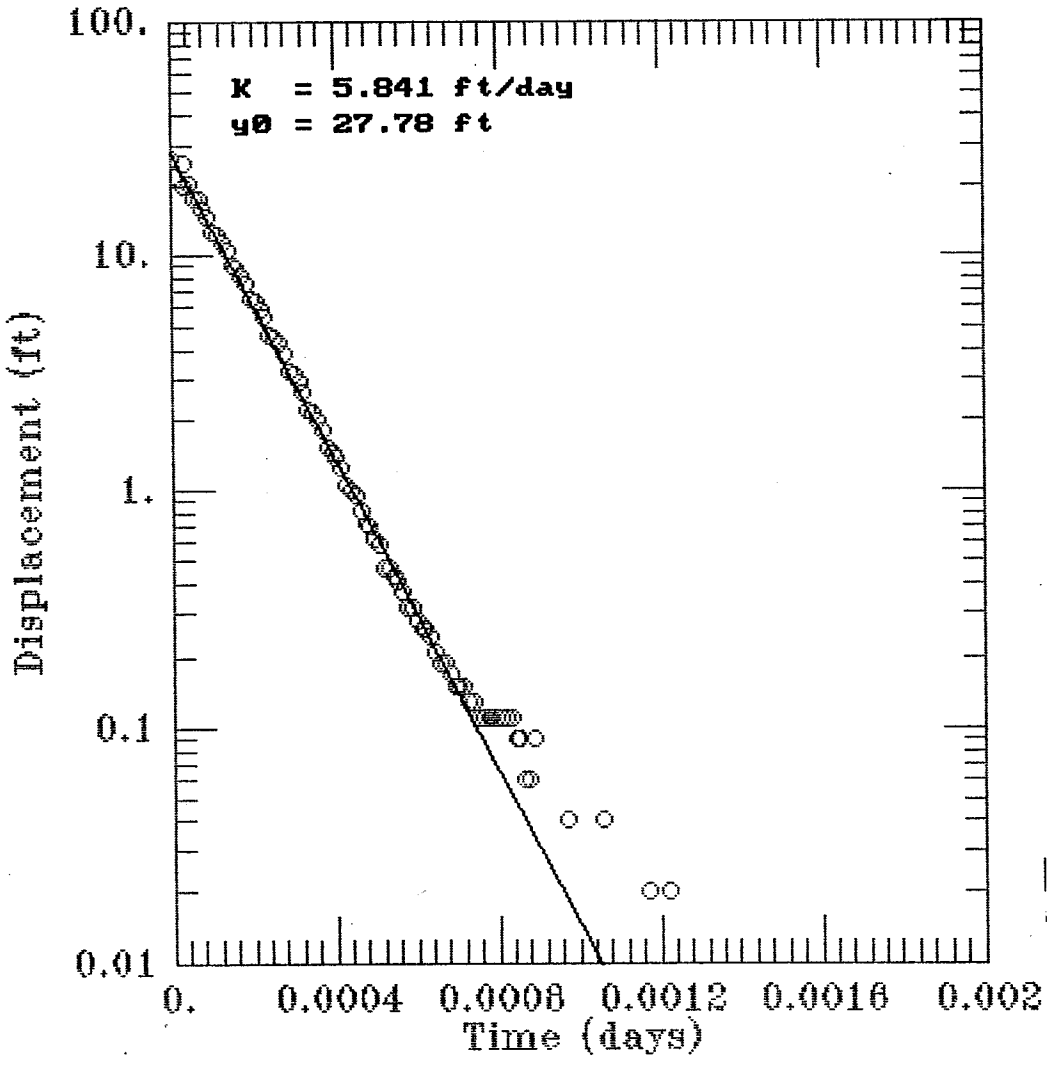


Figure D-50

MW-14:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

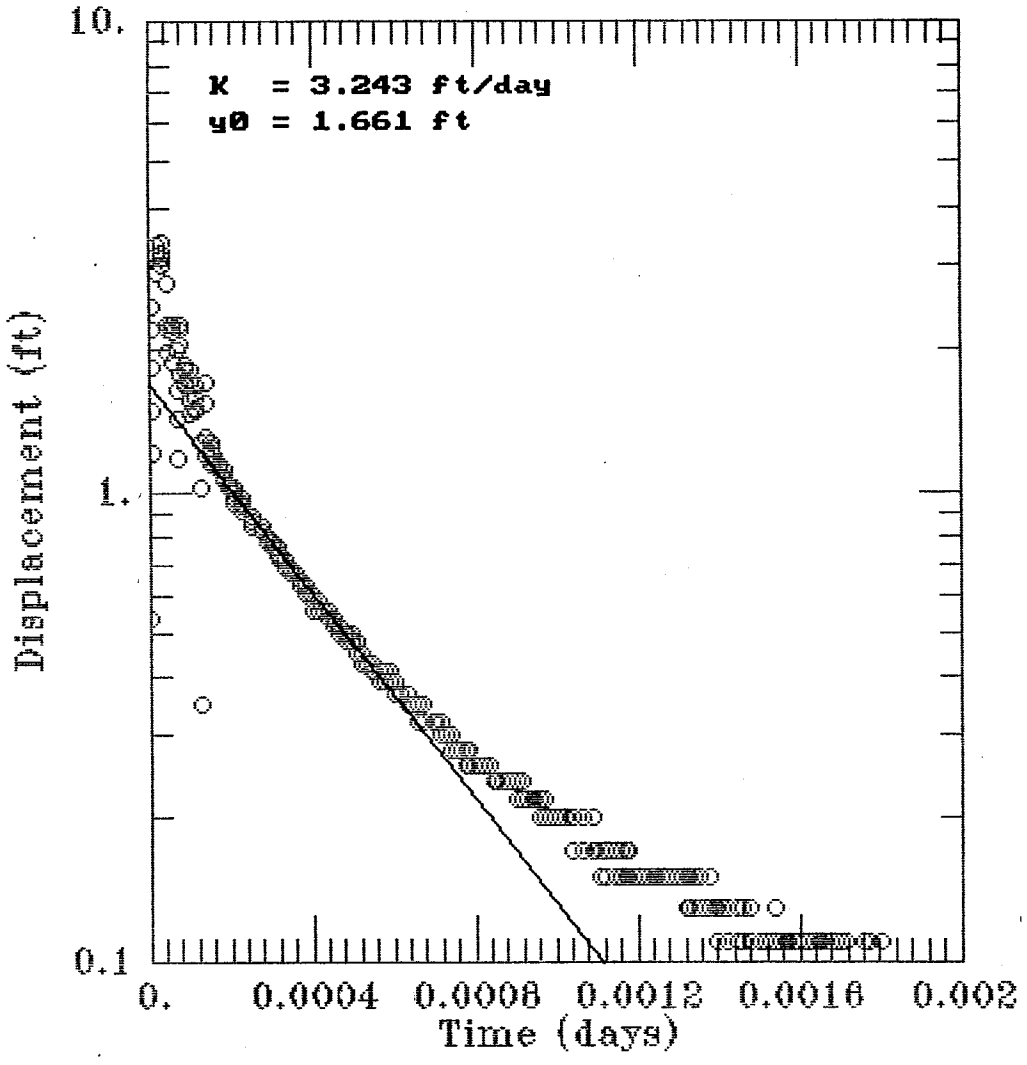


Figure D-51

MW-15:
Slug Test No. 1

Jet Propulsion Laboratory

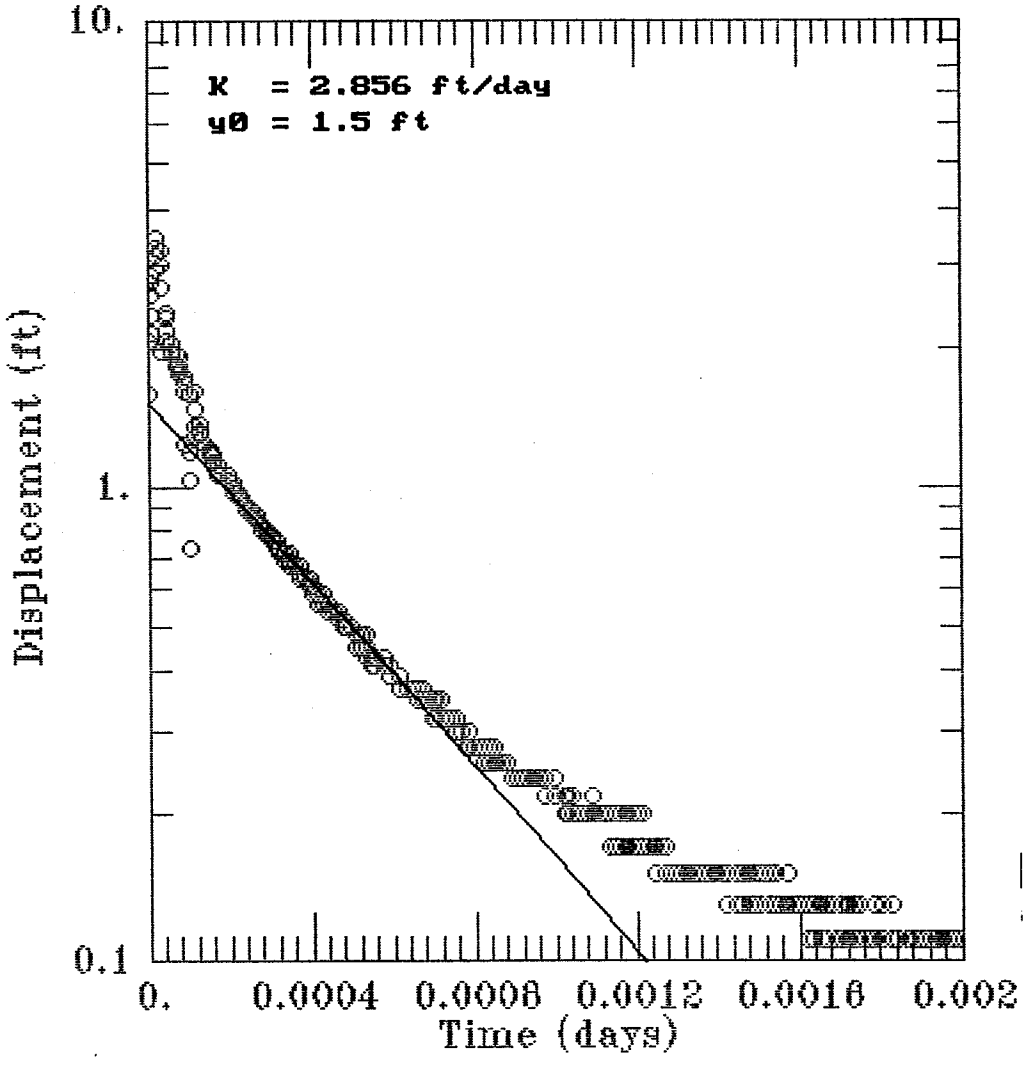


Figure D-52

MW-15:
Slug Test No. 2

Jet Propulsion Laboratory

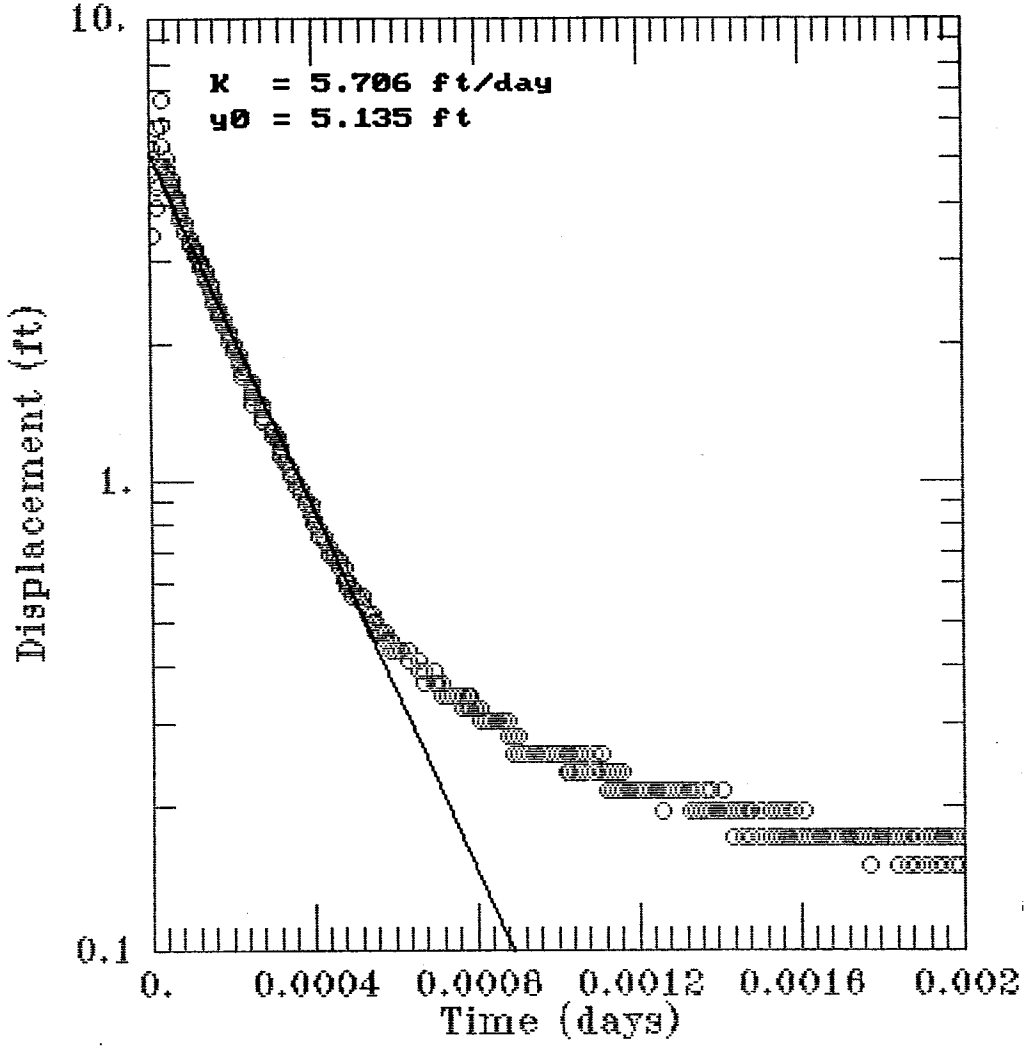


Figure D-53

MW-15:
Bail Test No. 1

Jet Propulsion Laboratory

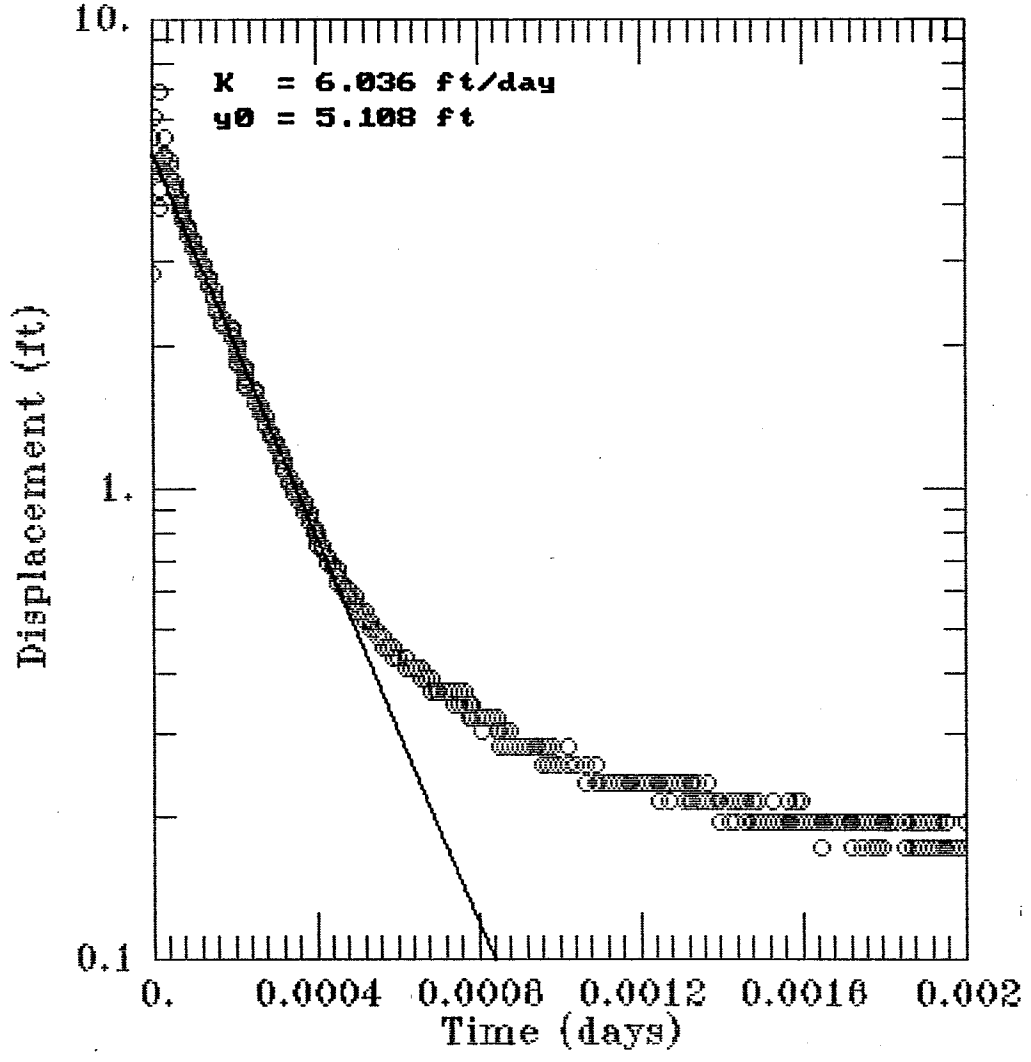


Figure D-54

MW-15:
Bail Test No. 2

Jet Propulsion Laboratory

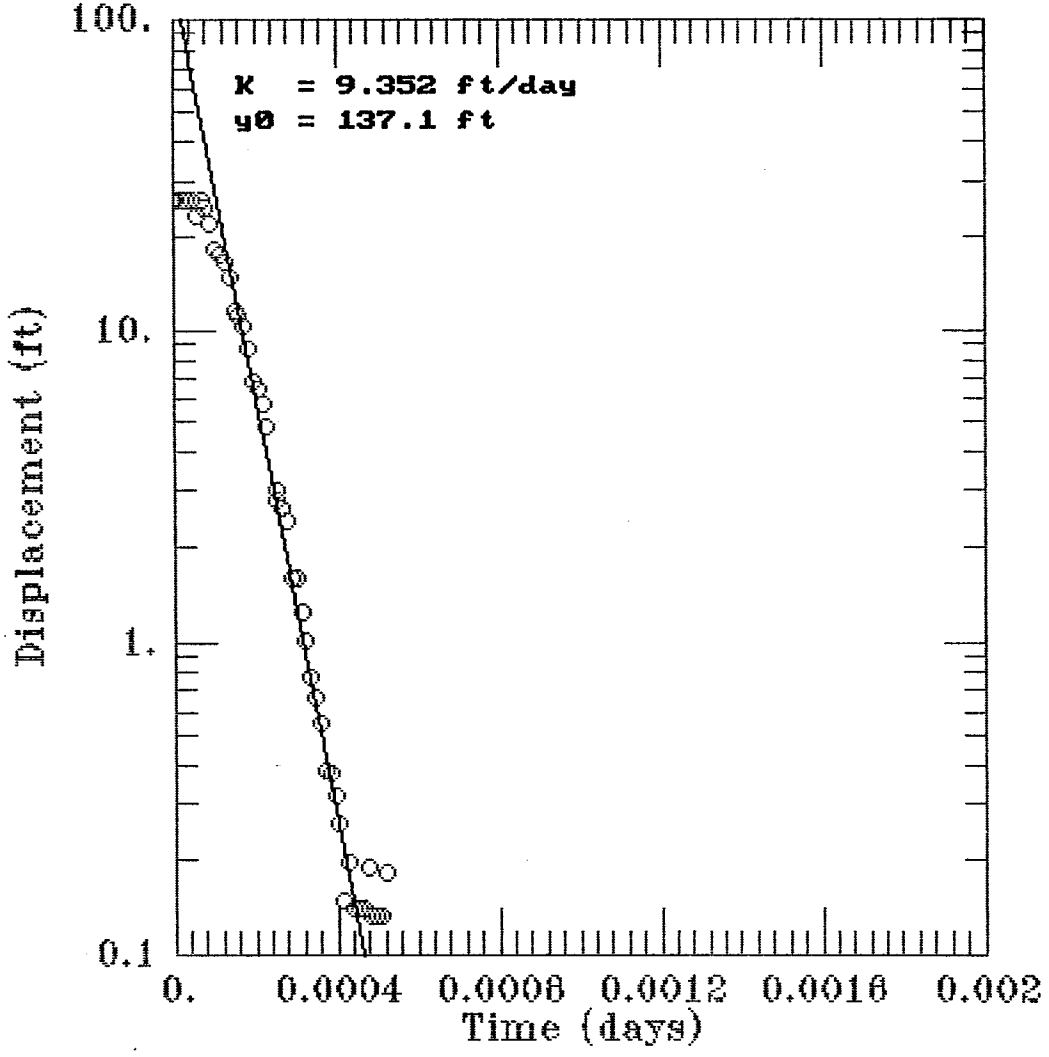


Figure D-55

MW-17:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

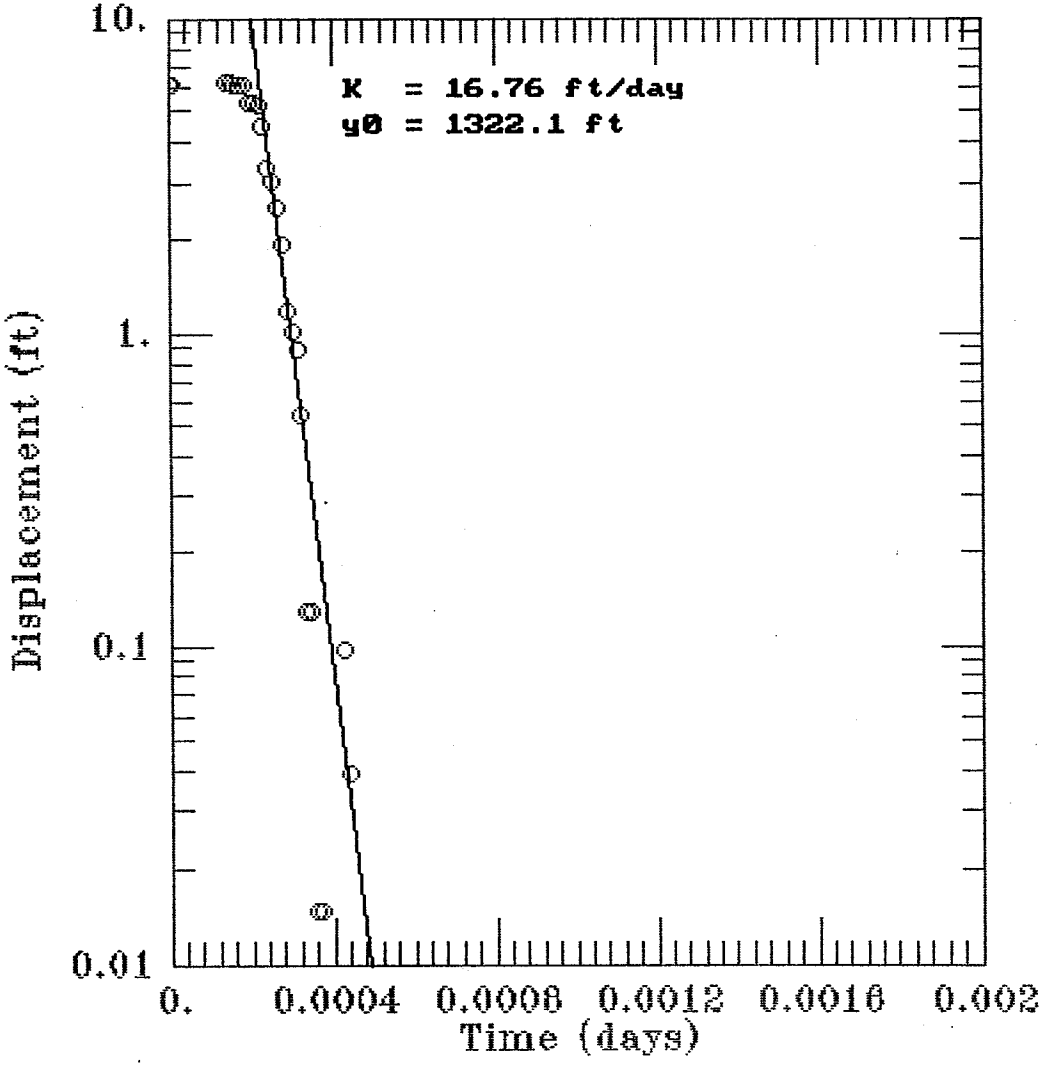


Figure D-56

MW-17:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

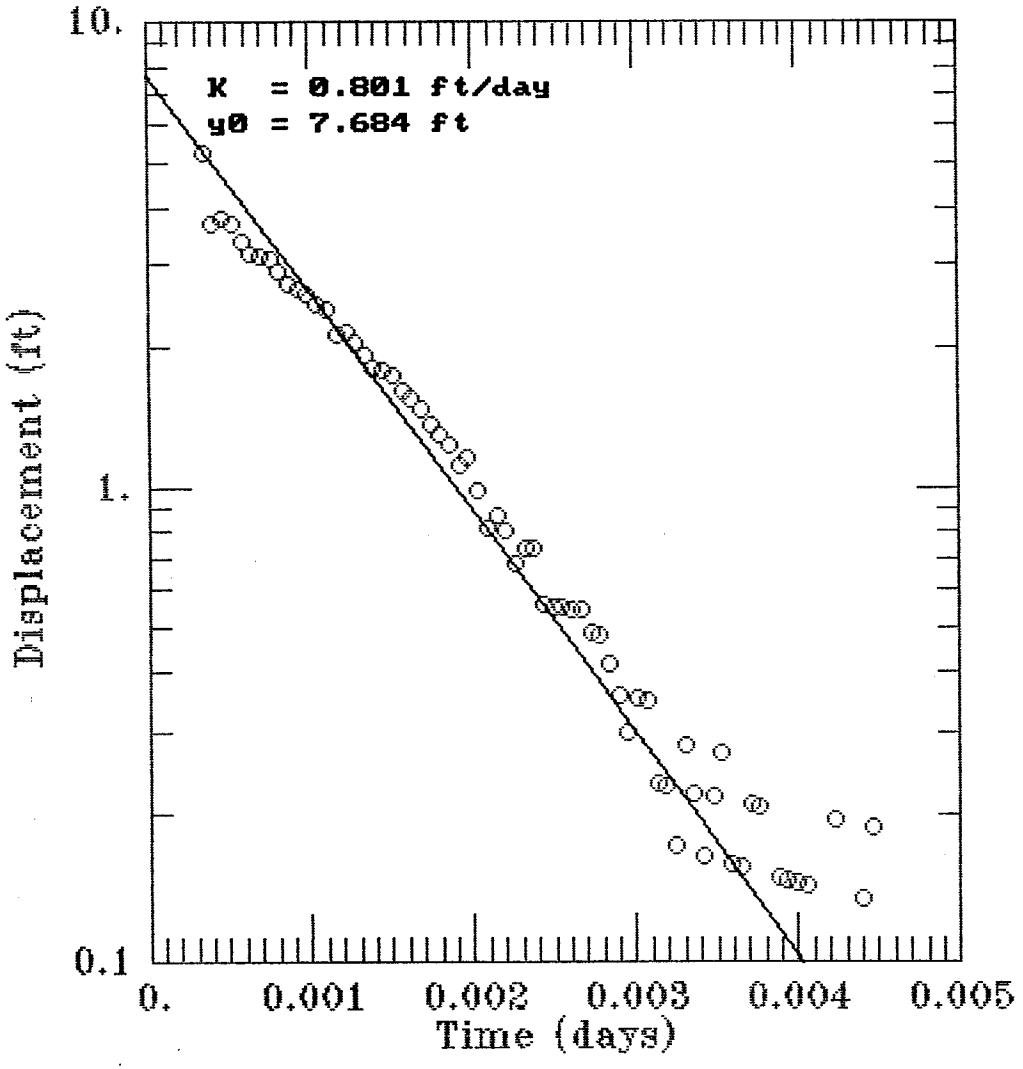


Figure D-57

MW-17:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

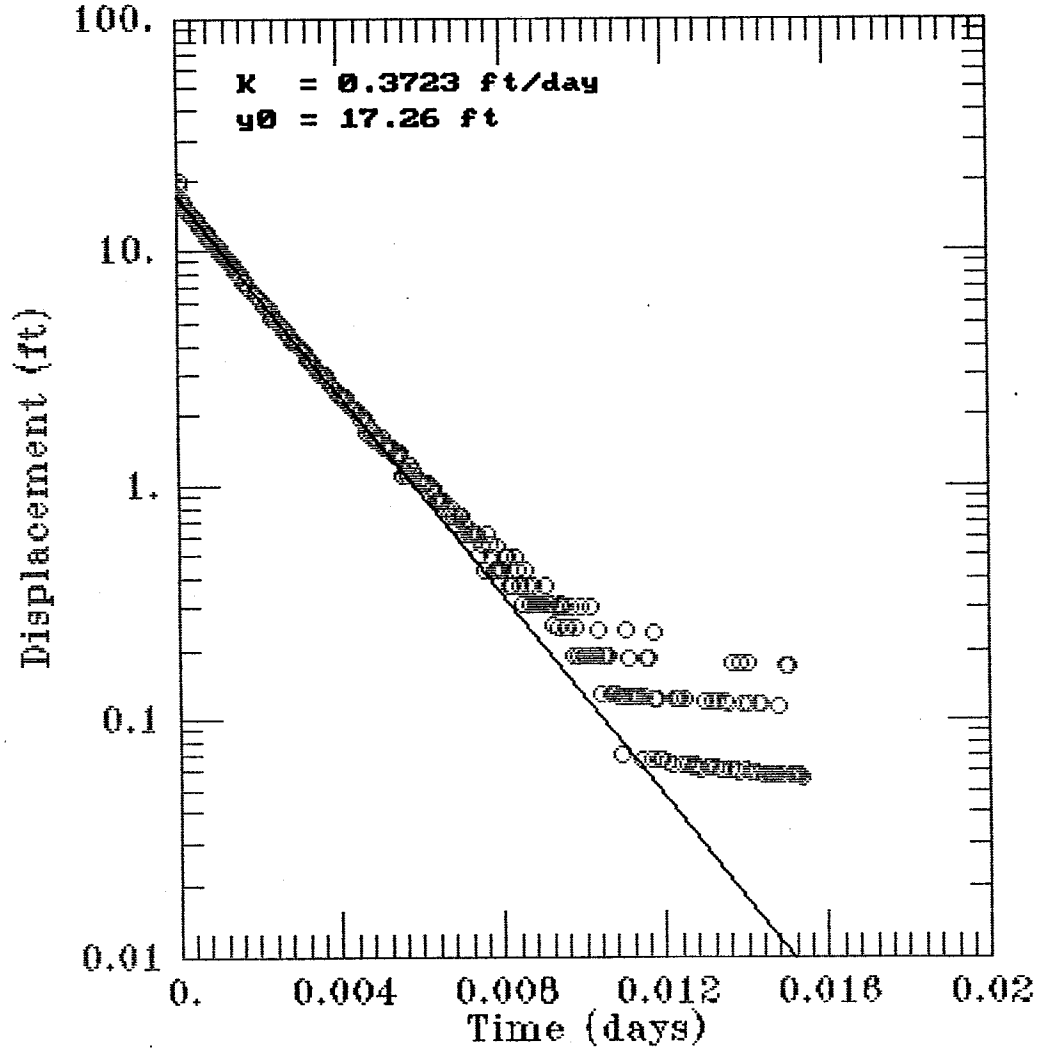


Figure D-58

MW-17:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

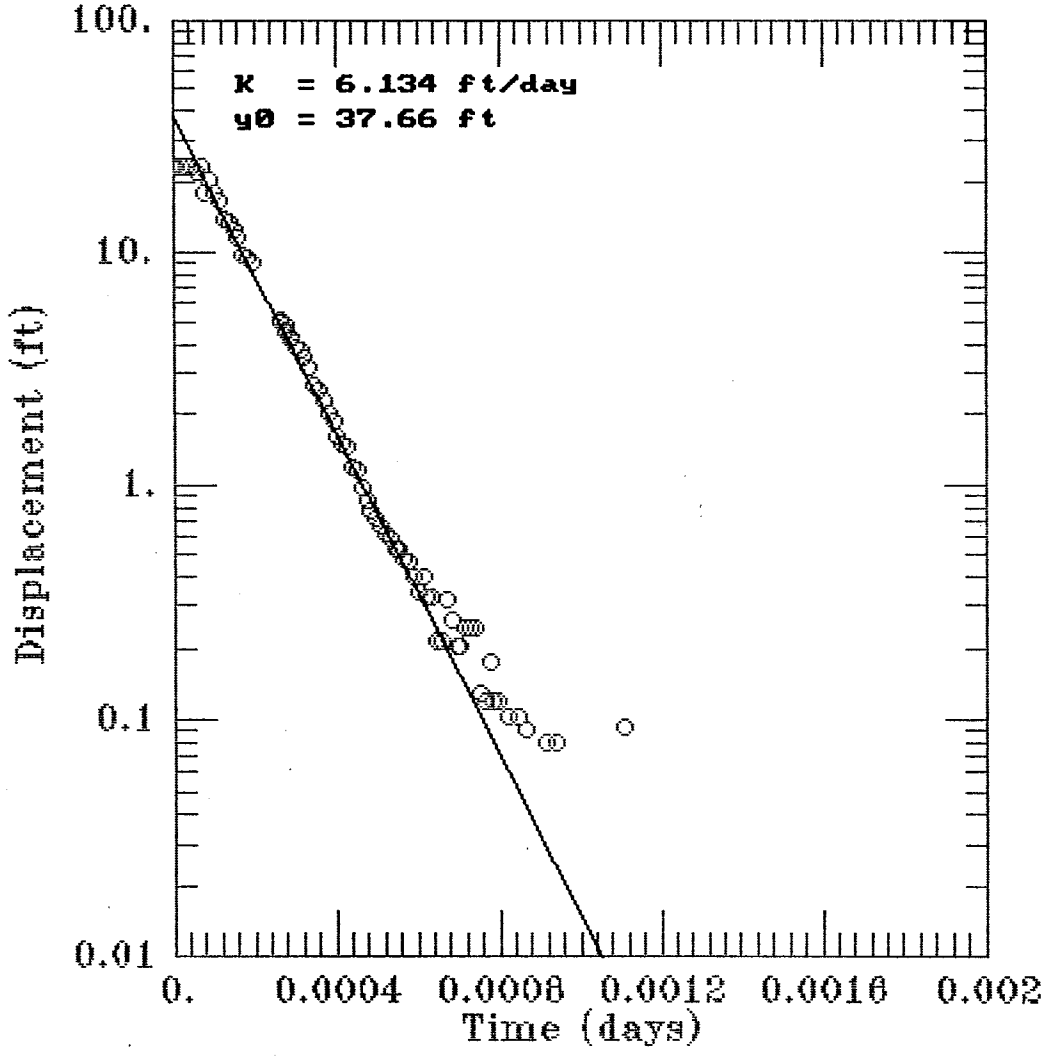


Figure D-59

MW-17:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

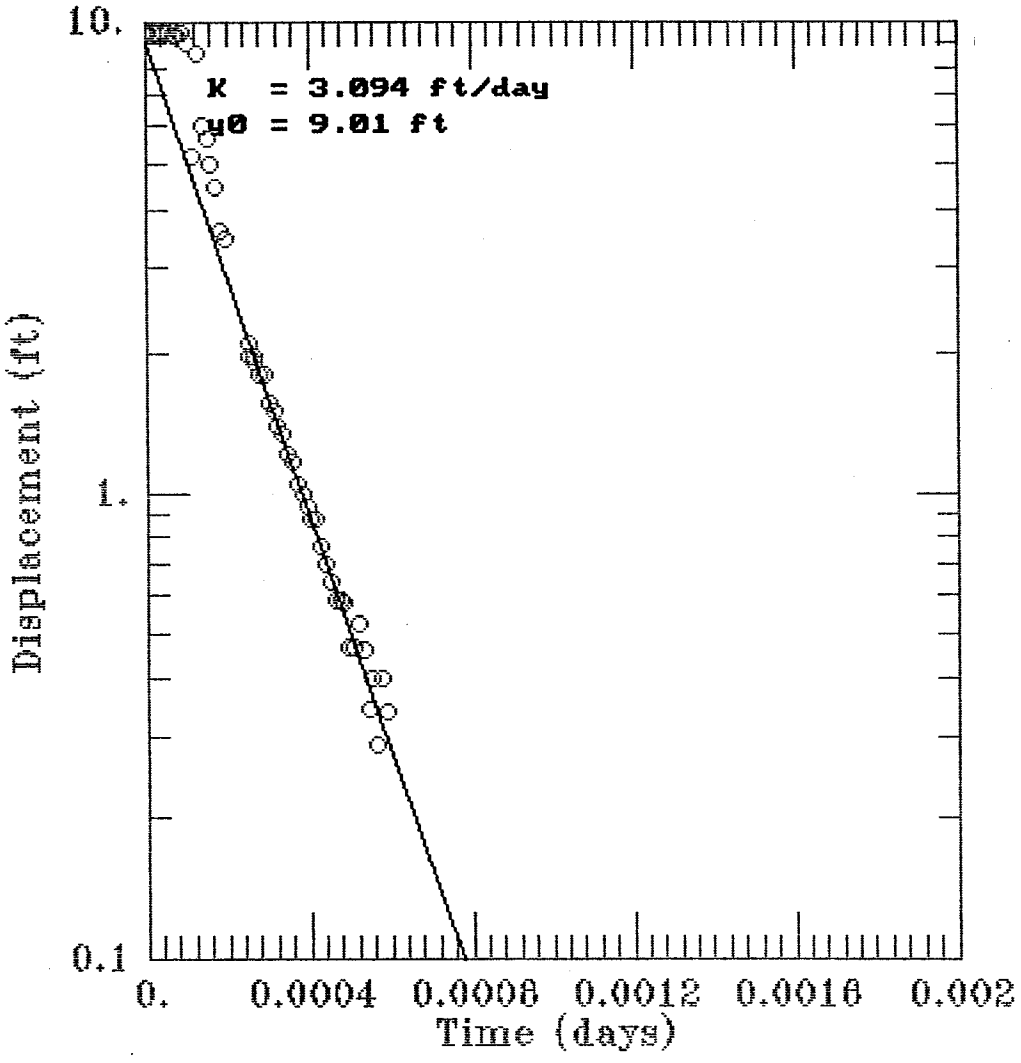


Figure D-60

MW-18:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

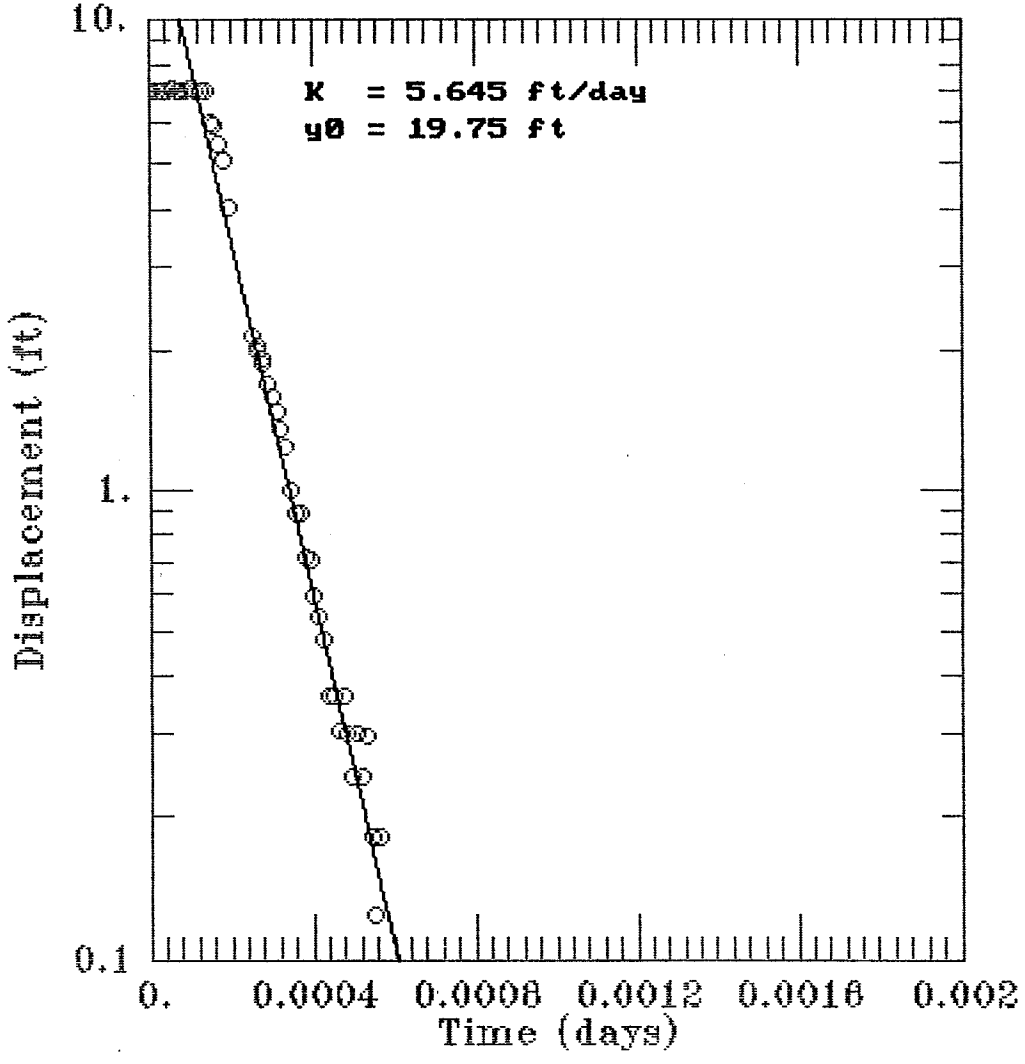


Figure D-61

MW-18:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

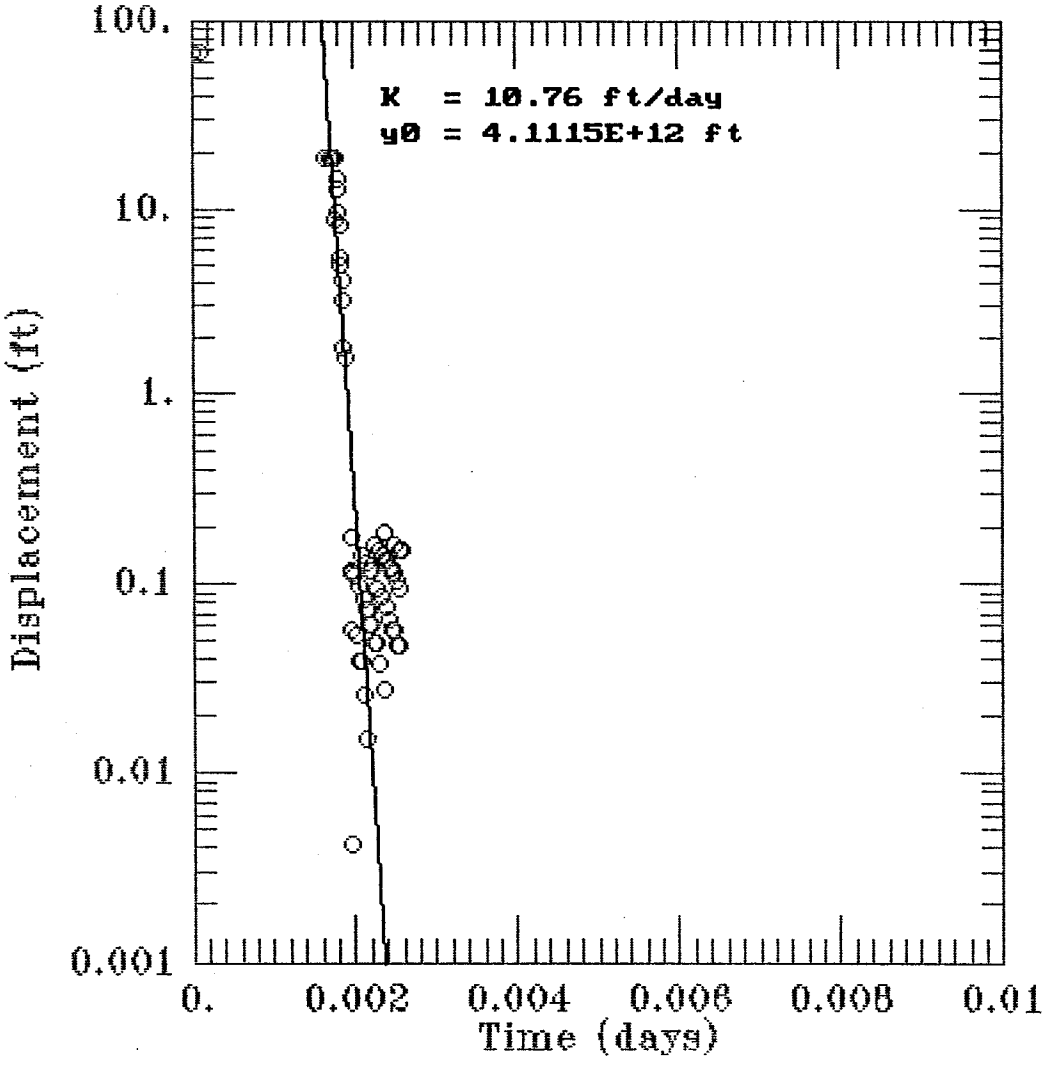


Figure D-62

MW-18:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

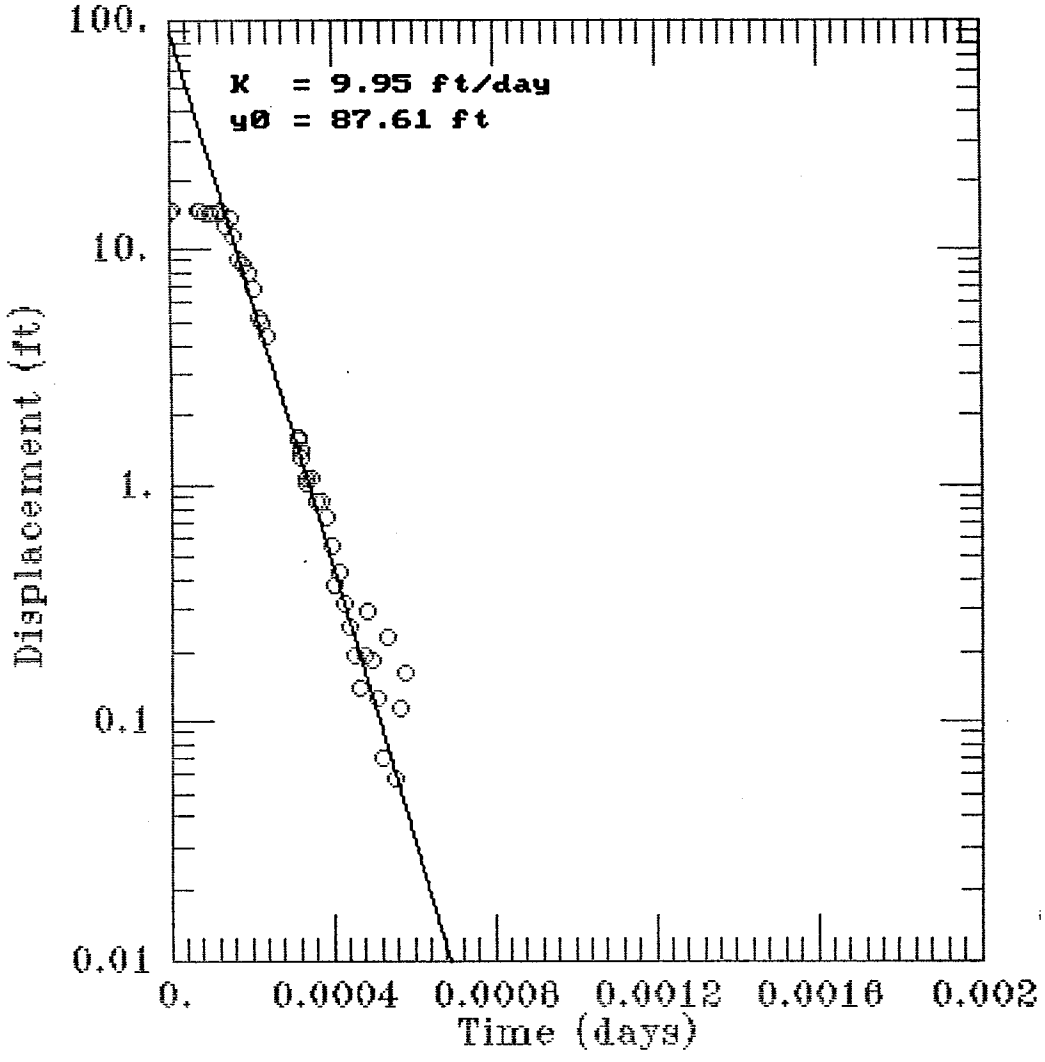


Figure D-63

MW-18:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

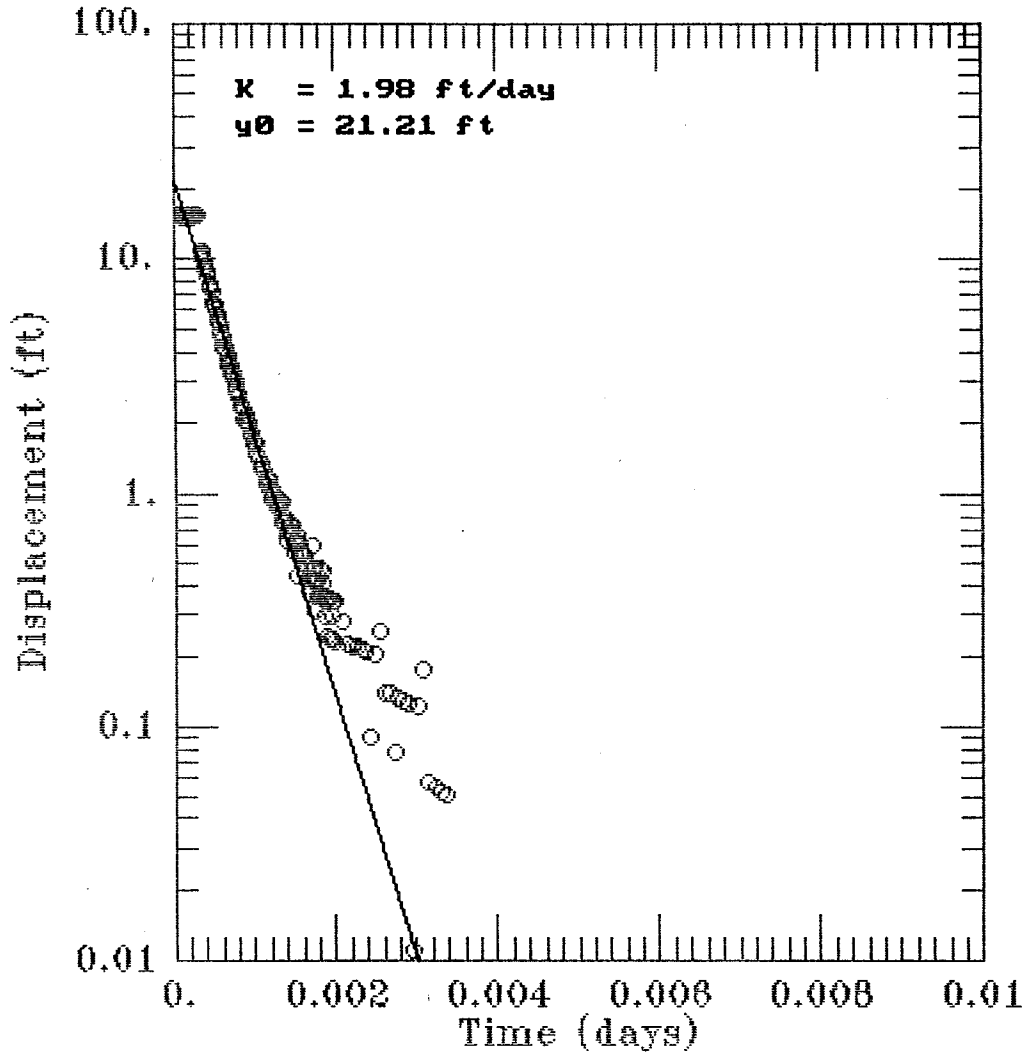


Figure D-64

MW-18:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

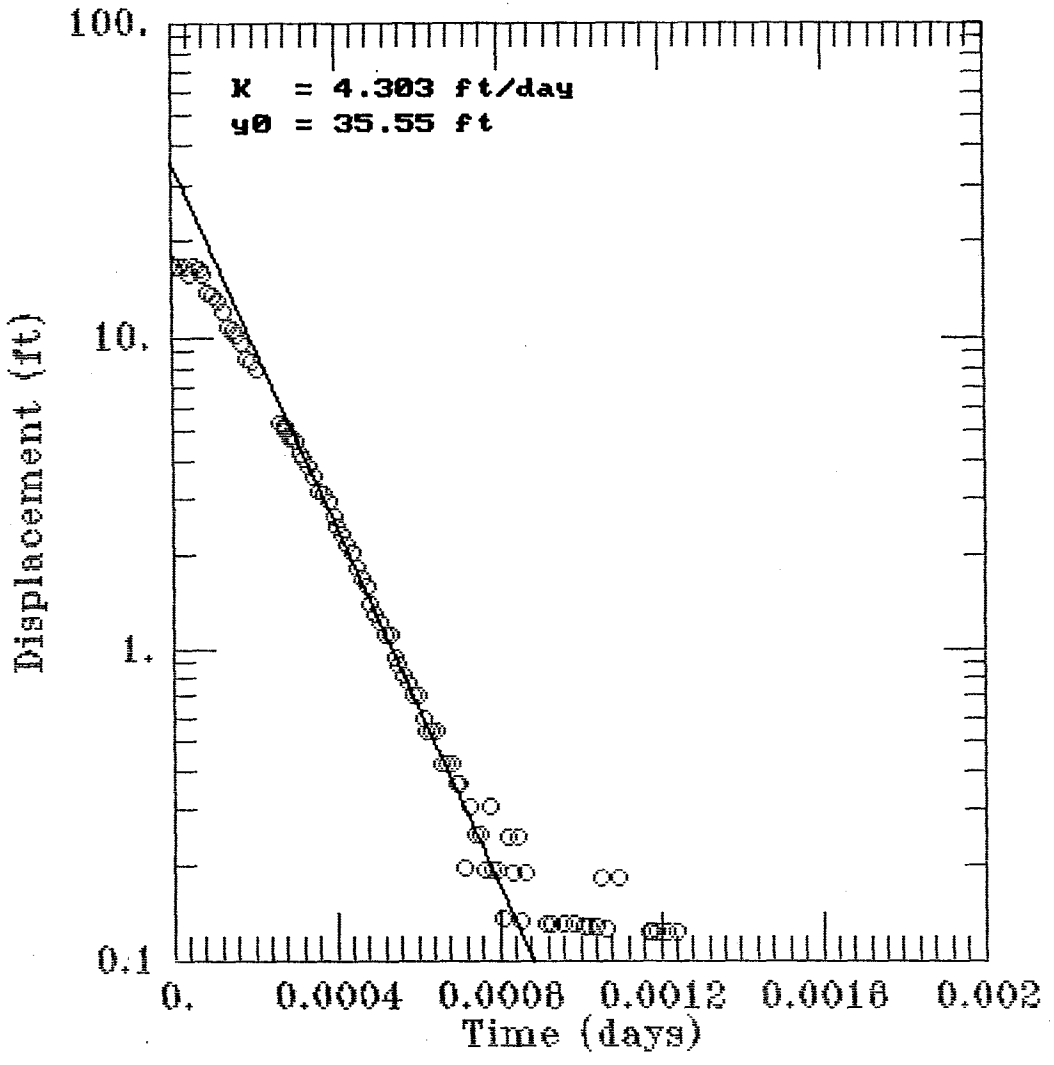


Figure D-65

MW-19:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

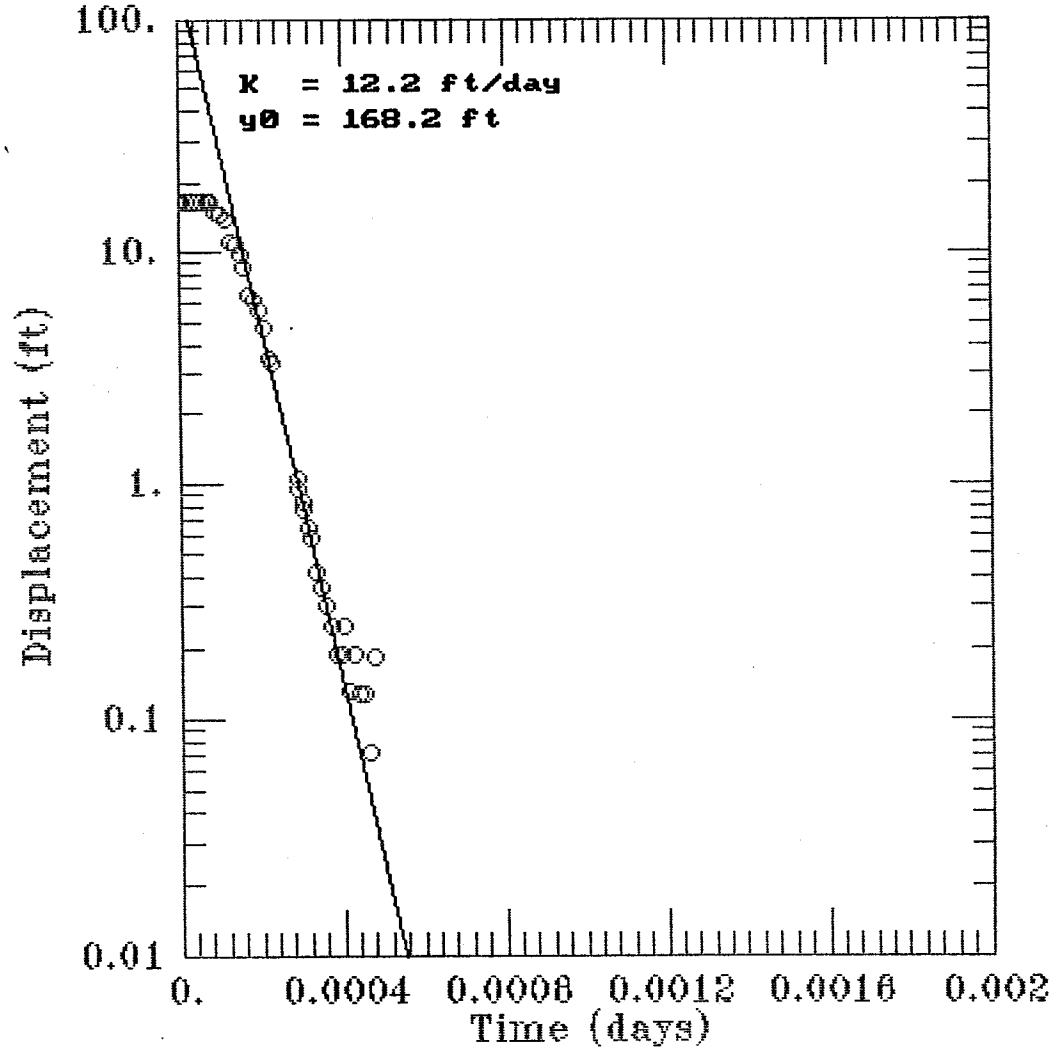


Figure D-66

MW-19:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

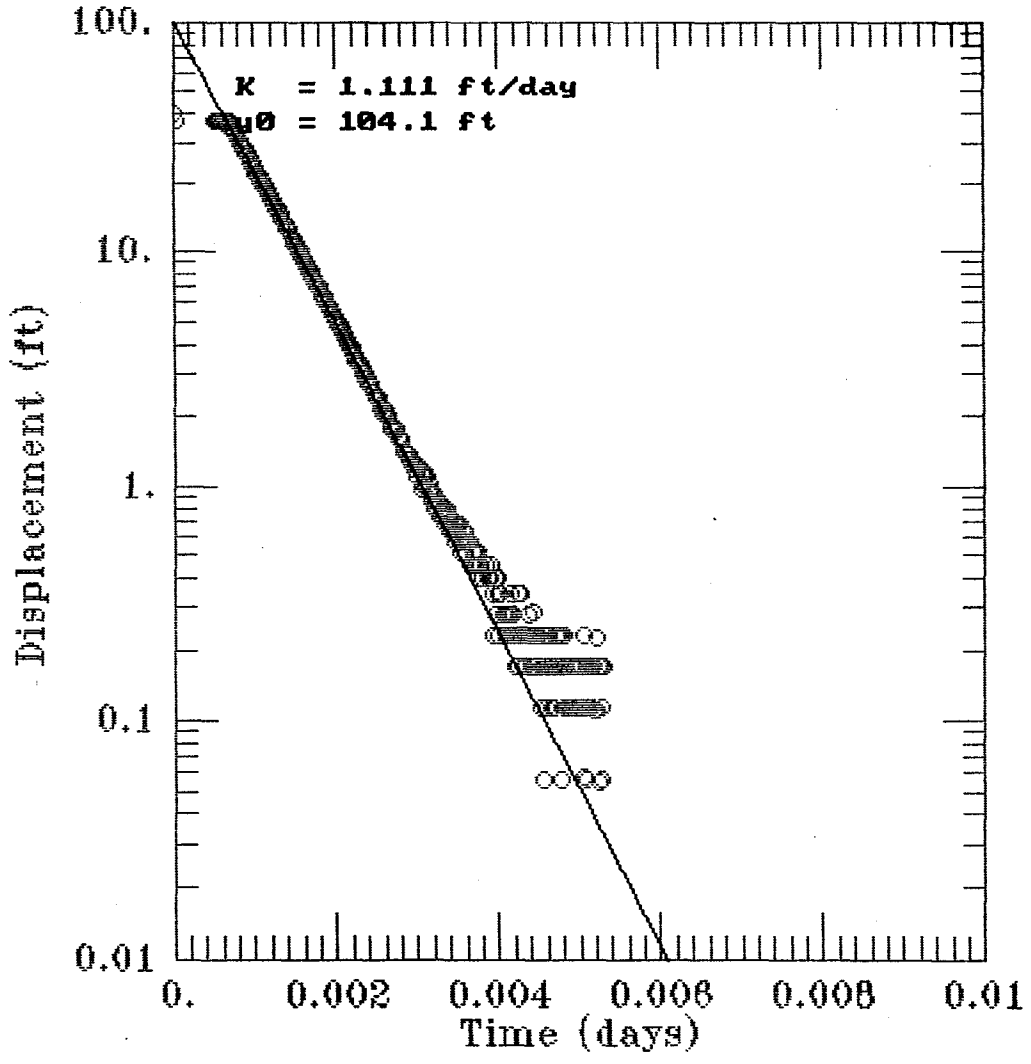


Figure D-67

MW-19:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

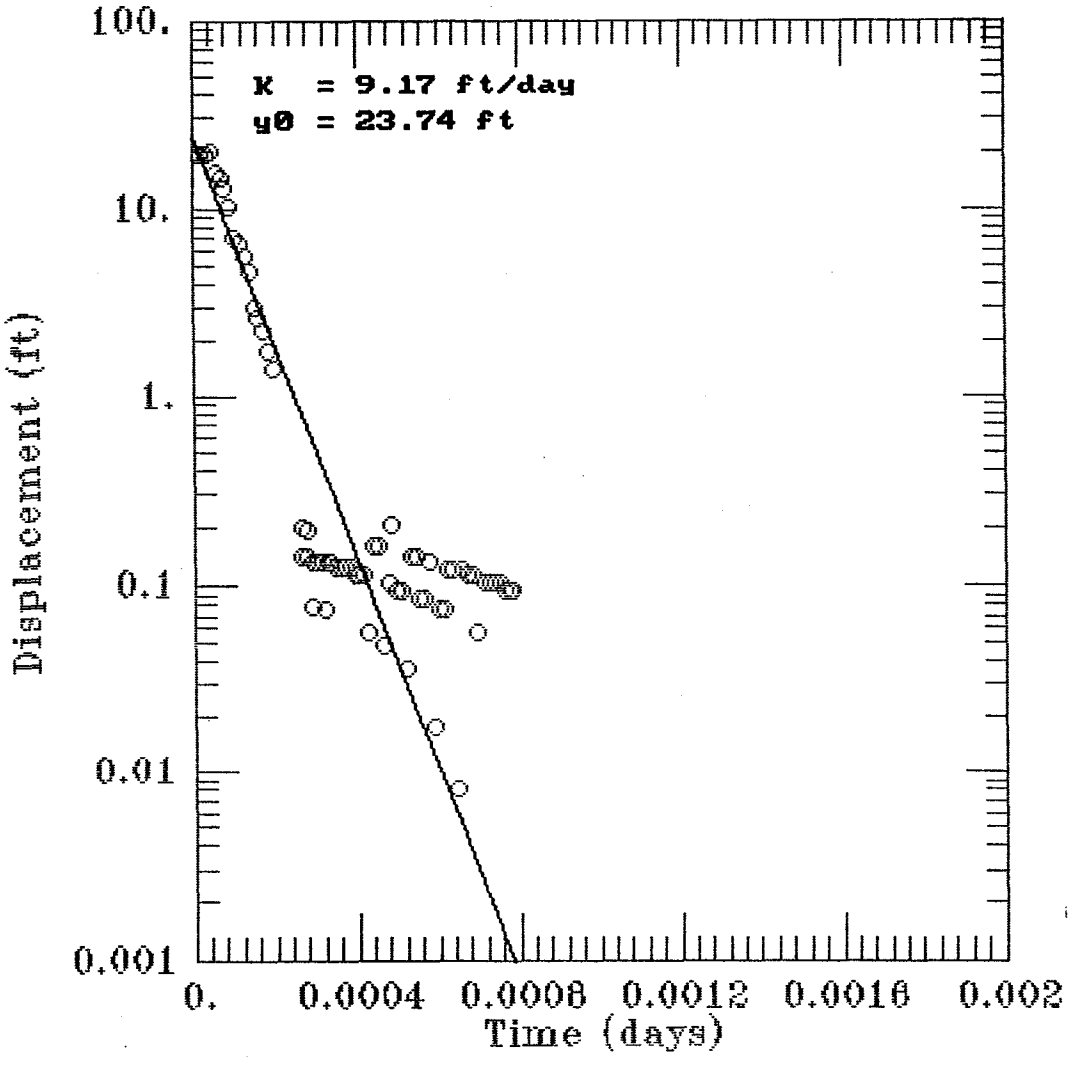


Figure D-68

MW-19:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

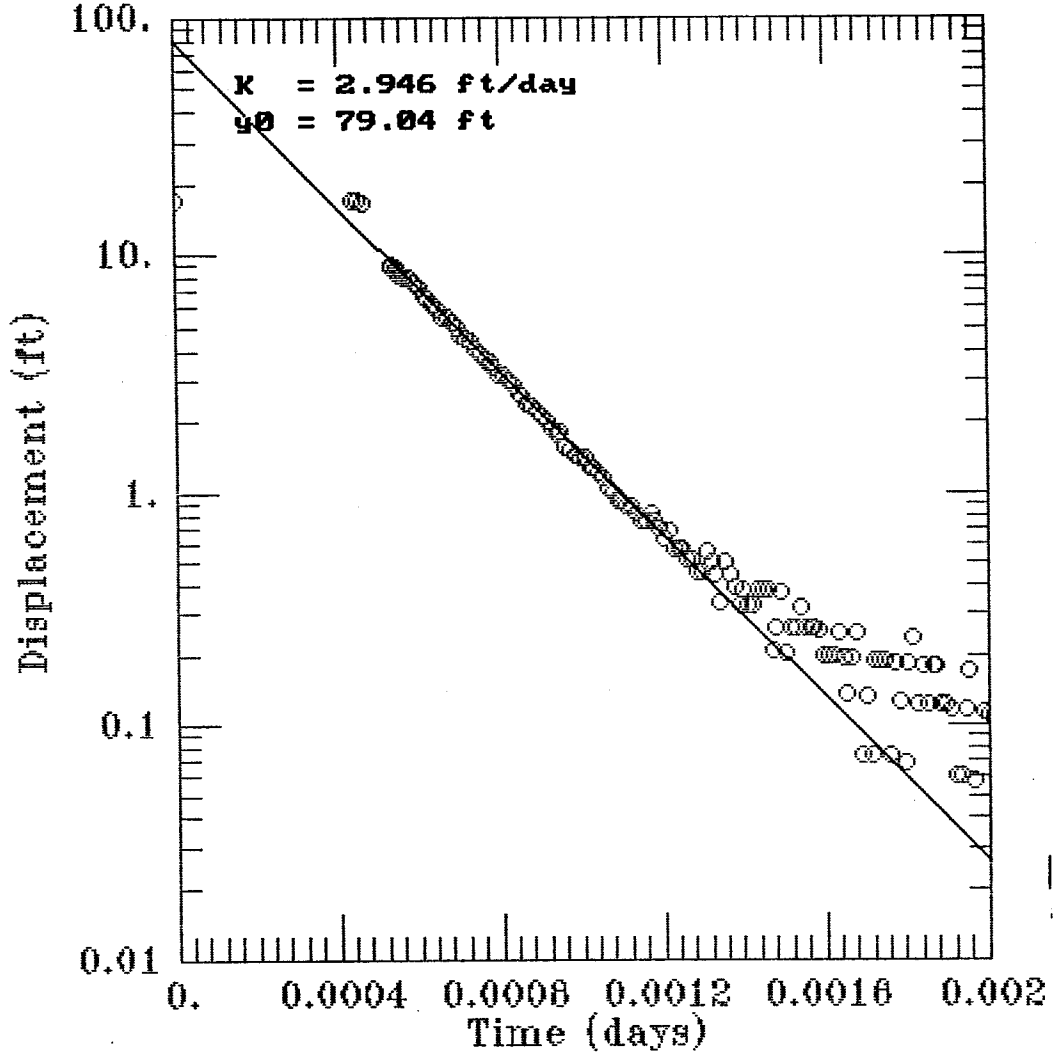


Figure D-69

MW-19:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

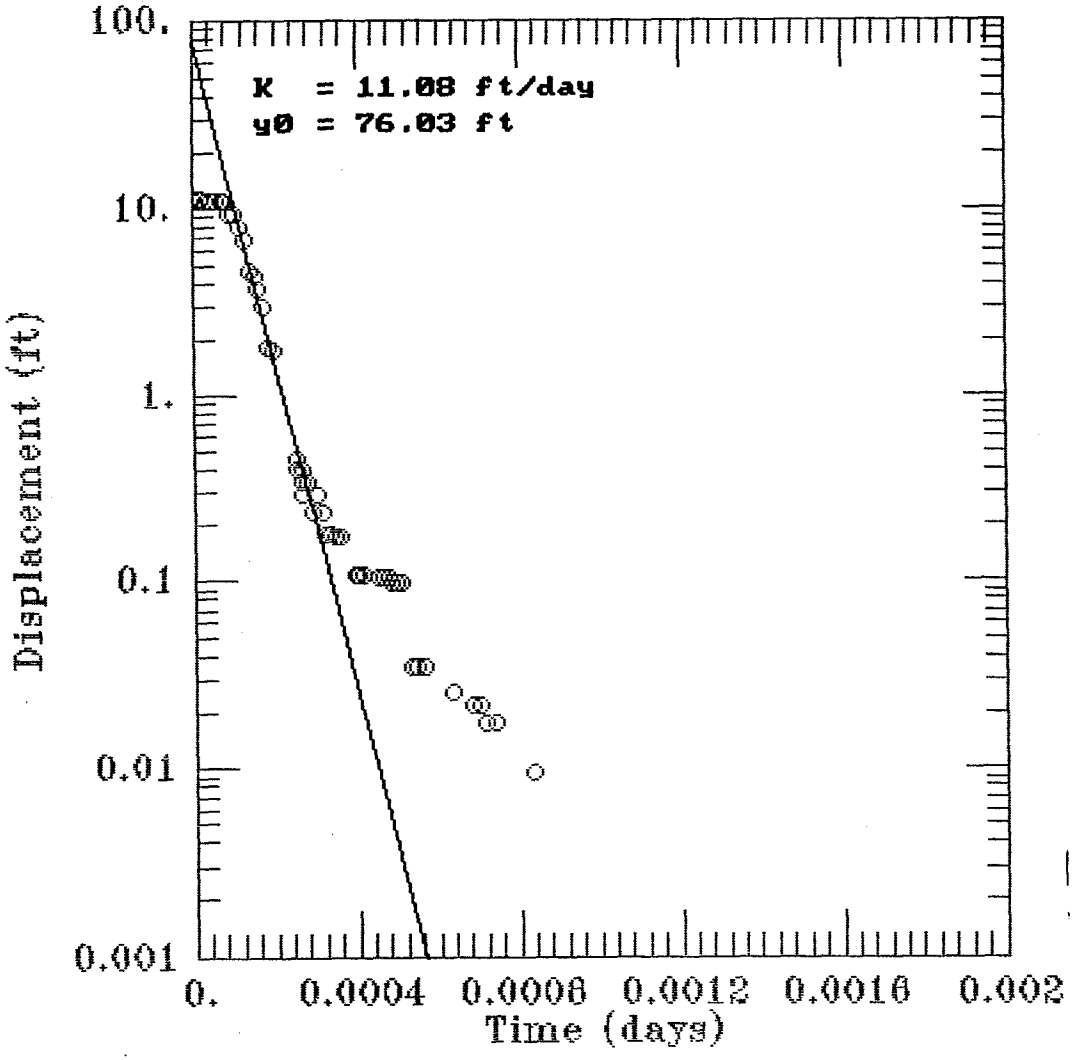


Figure D-70

MW-20:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

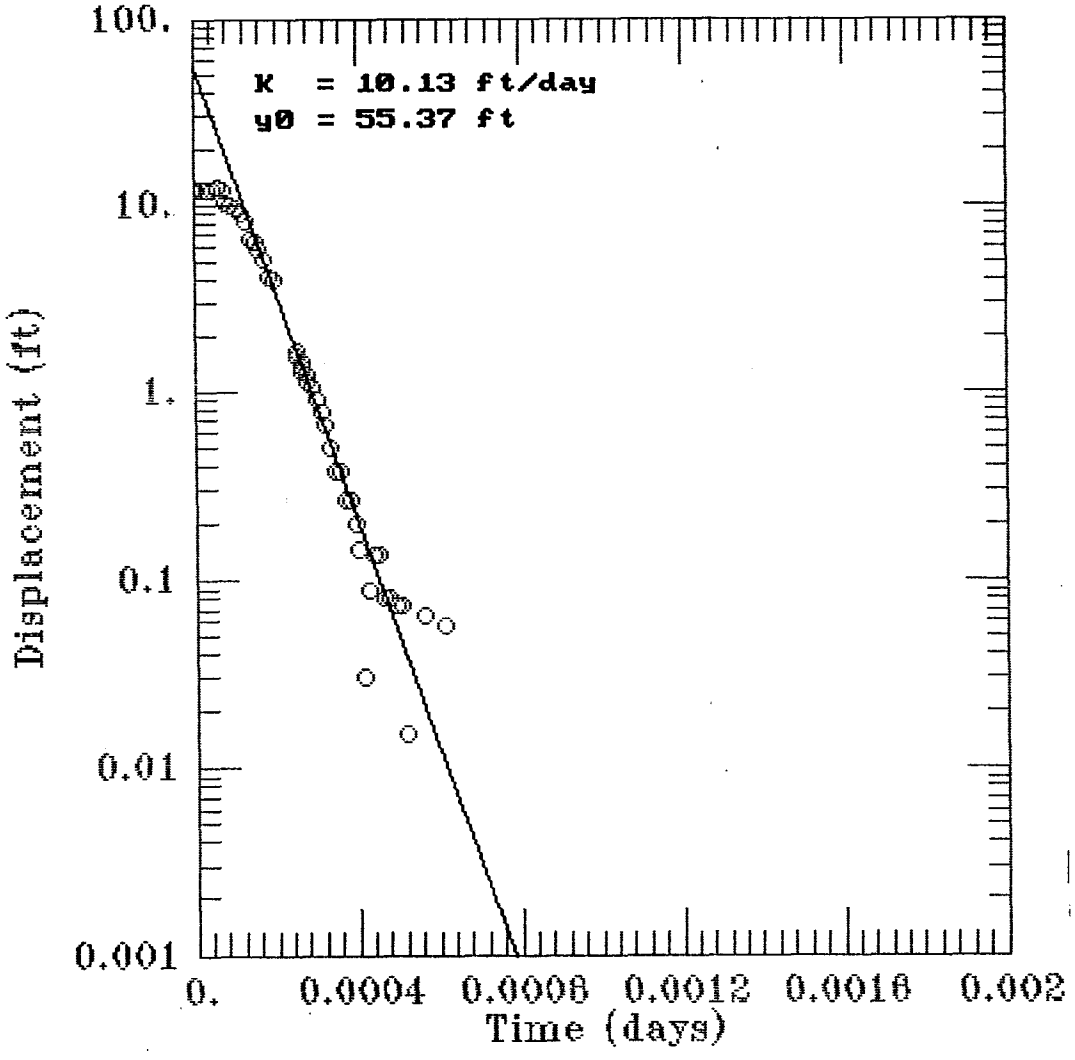


Figure D-71

MW-20:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

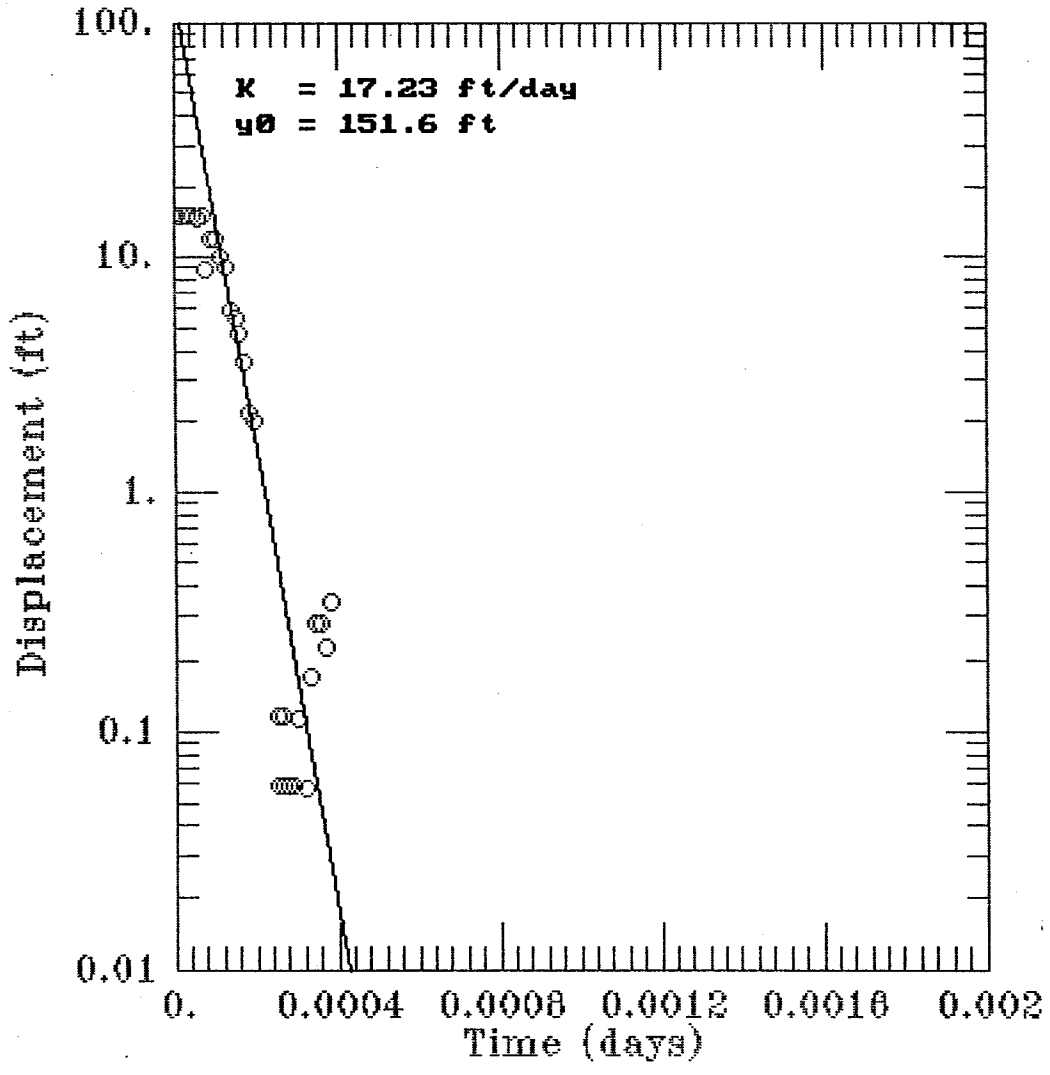


Figure D-72

MW-20:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

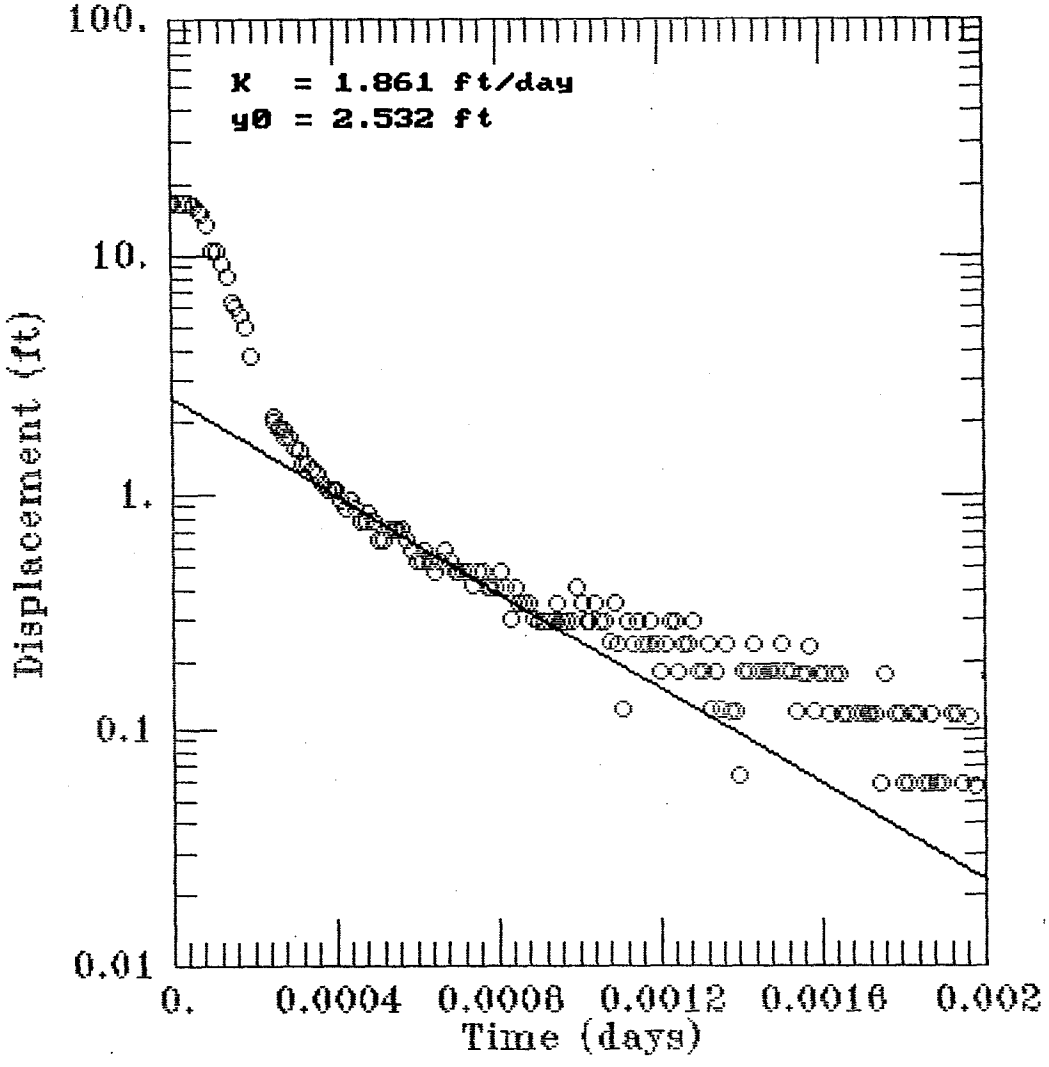


Figure D-73

MW-20:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

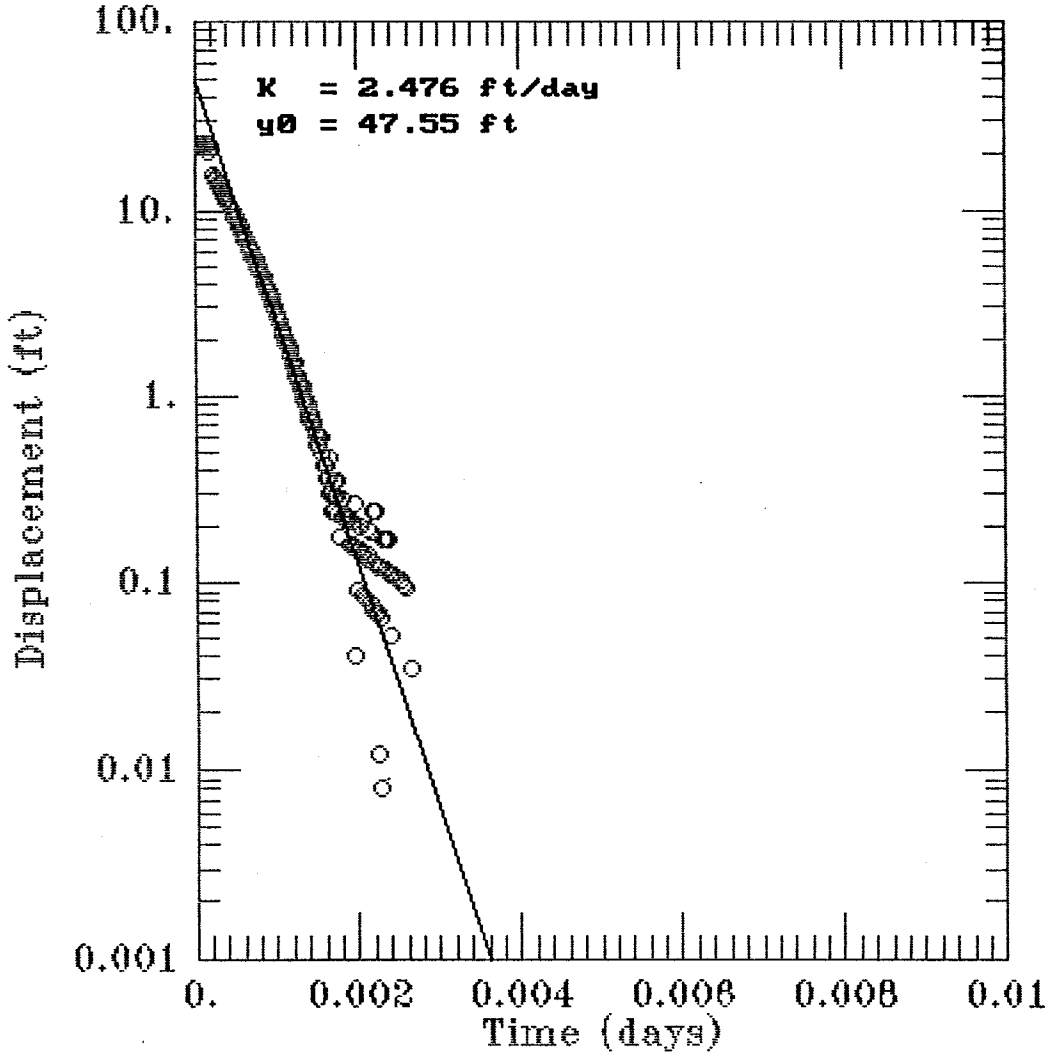


Figure D-74

MW-20:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

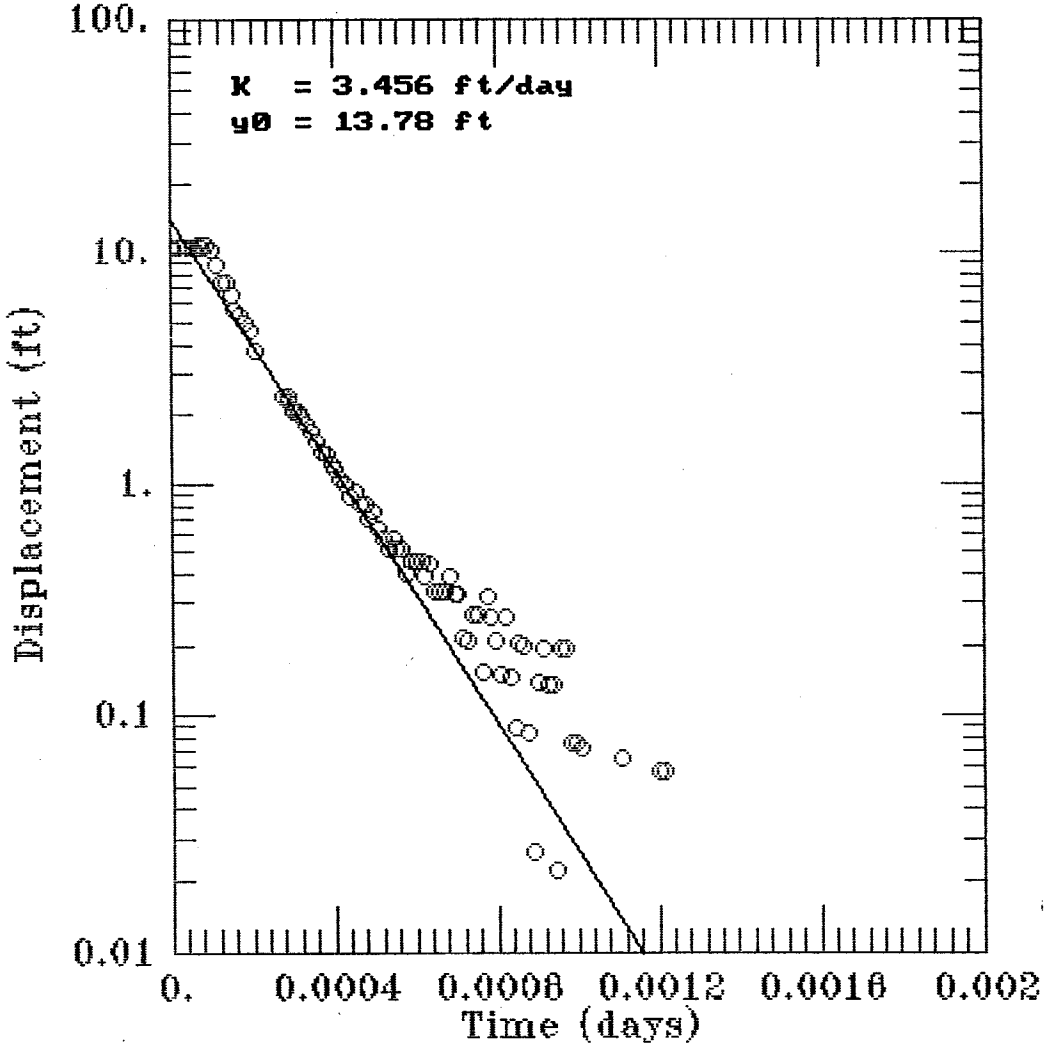


Figure D-75

MW-21:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

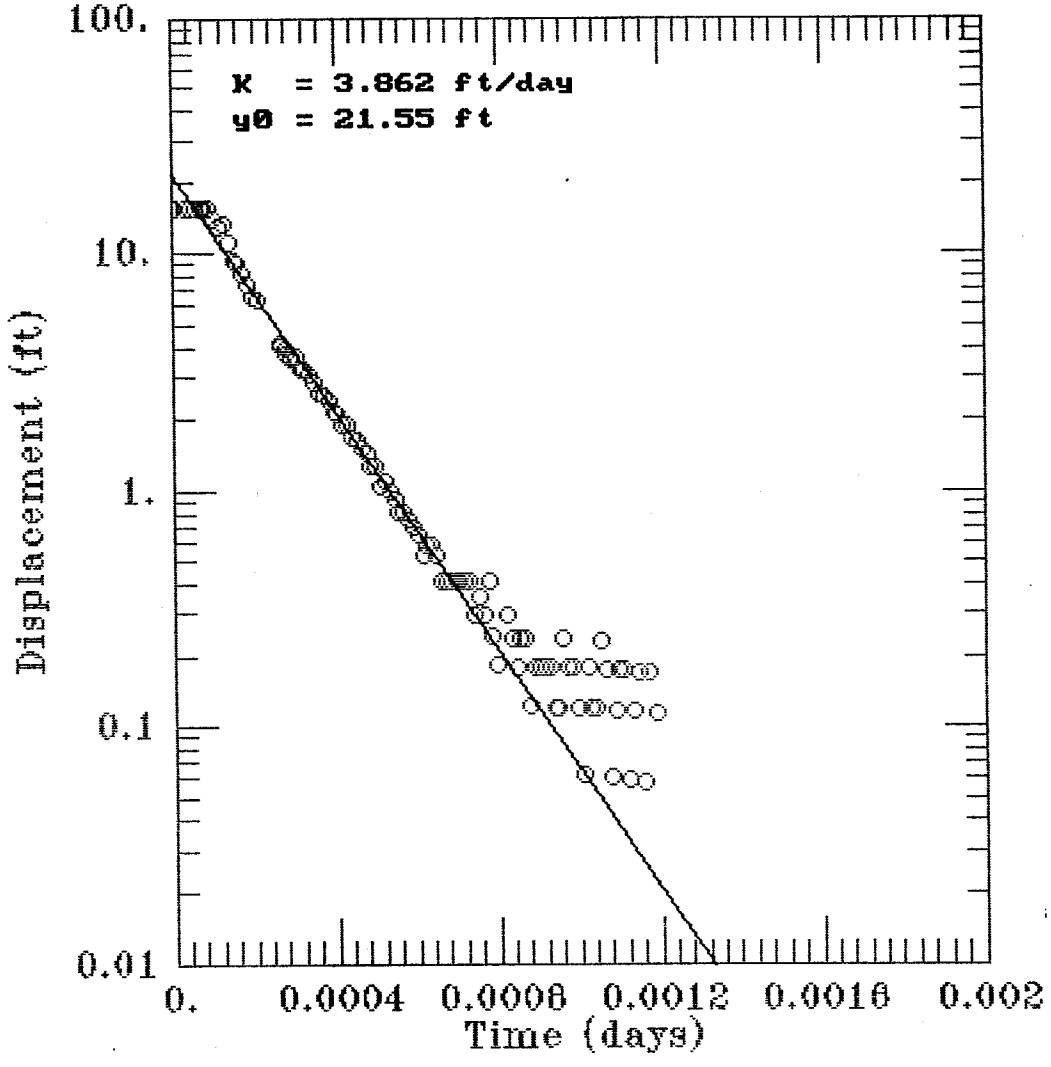


Figure D-76

MW-21:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

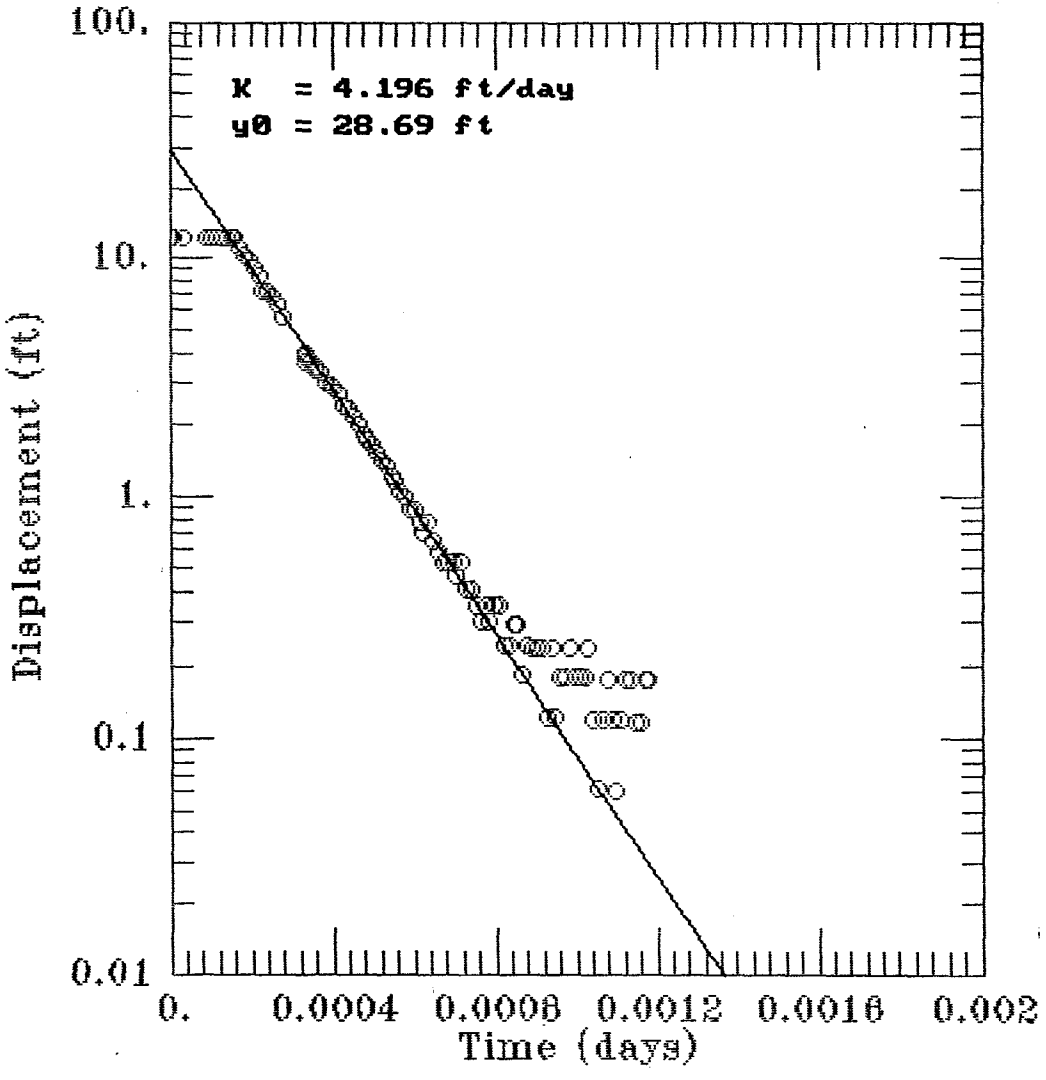


Figure D-77

MW-21:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

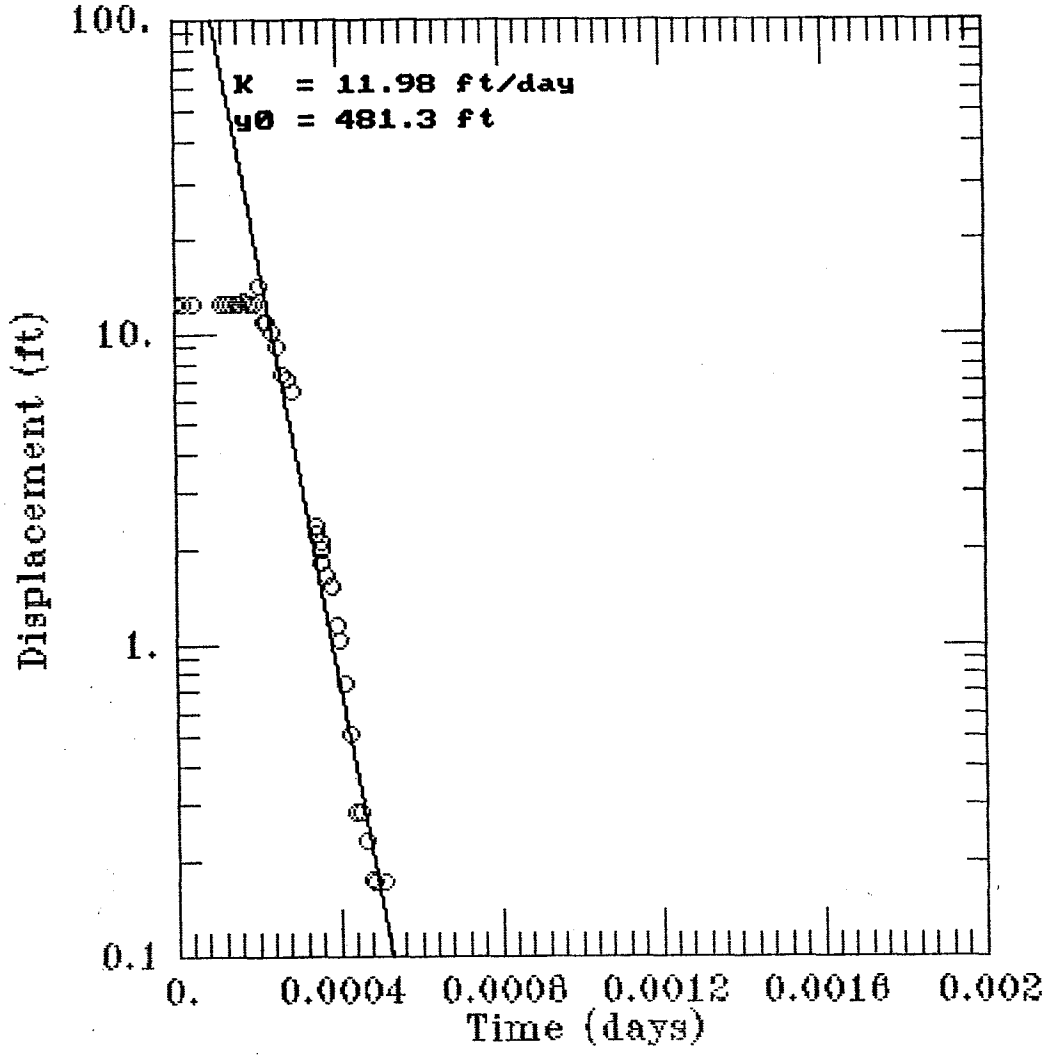


Figure D-78

MW-21:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

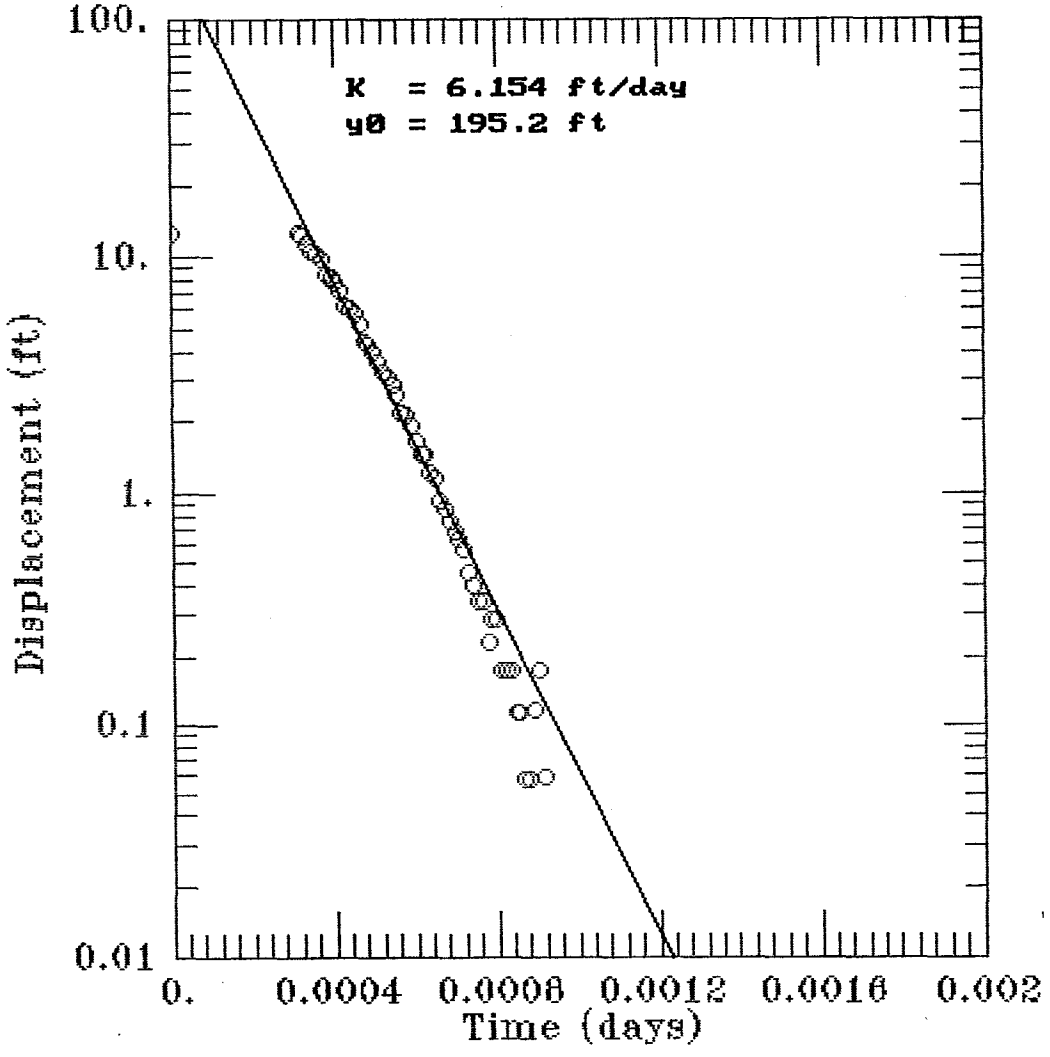


Figure D-79

MW-21:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

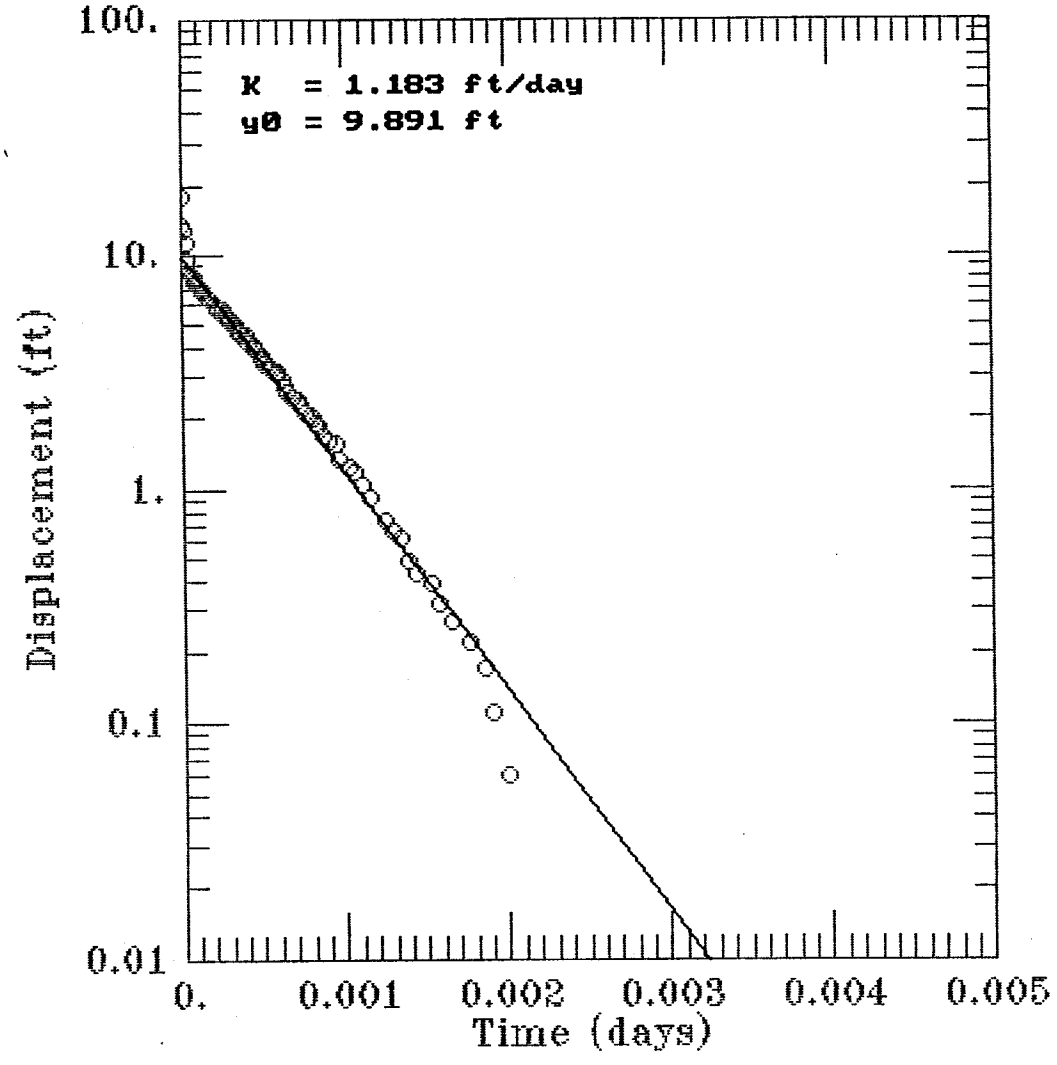


Figure D-80

MW-22:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

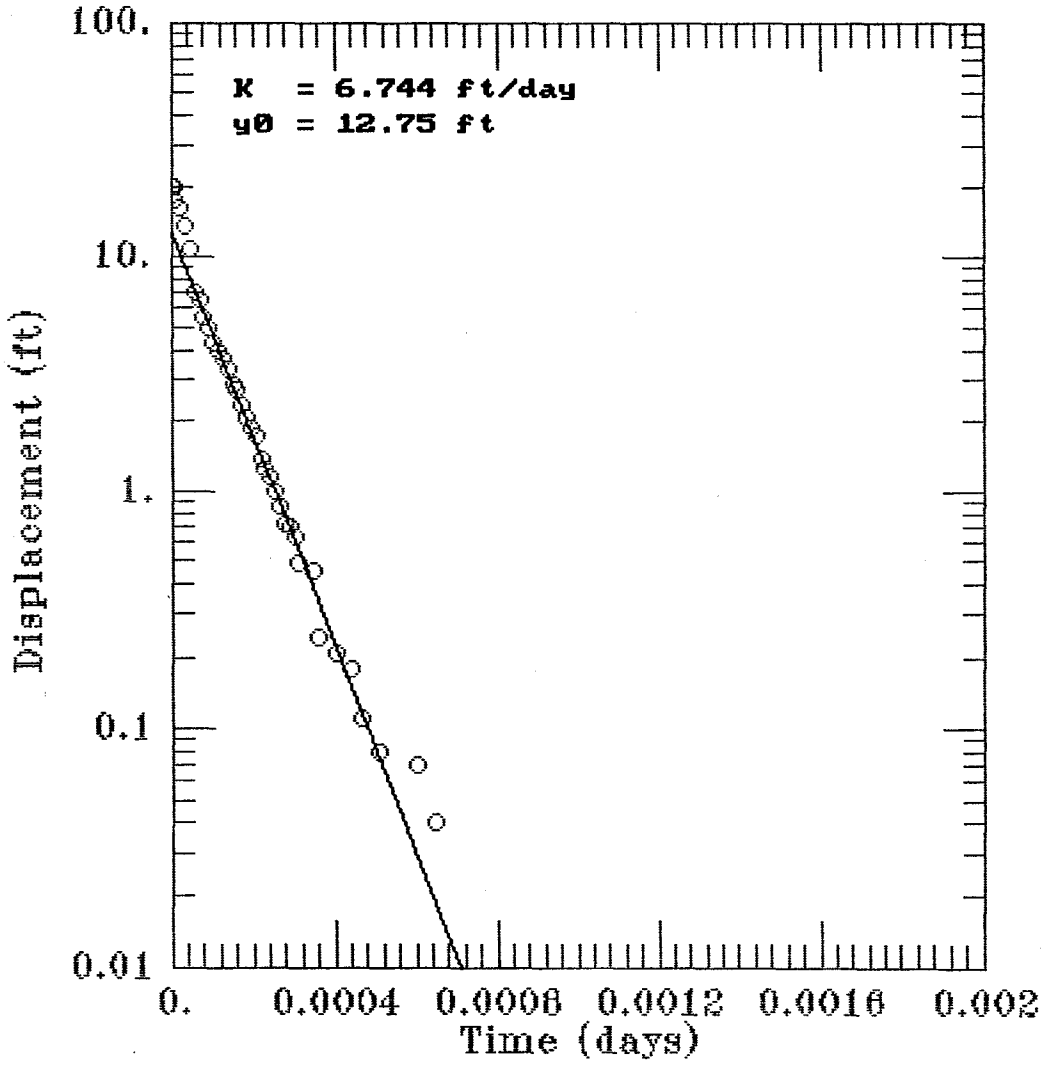


Figure D-81

MW-22:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

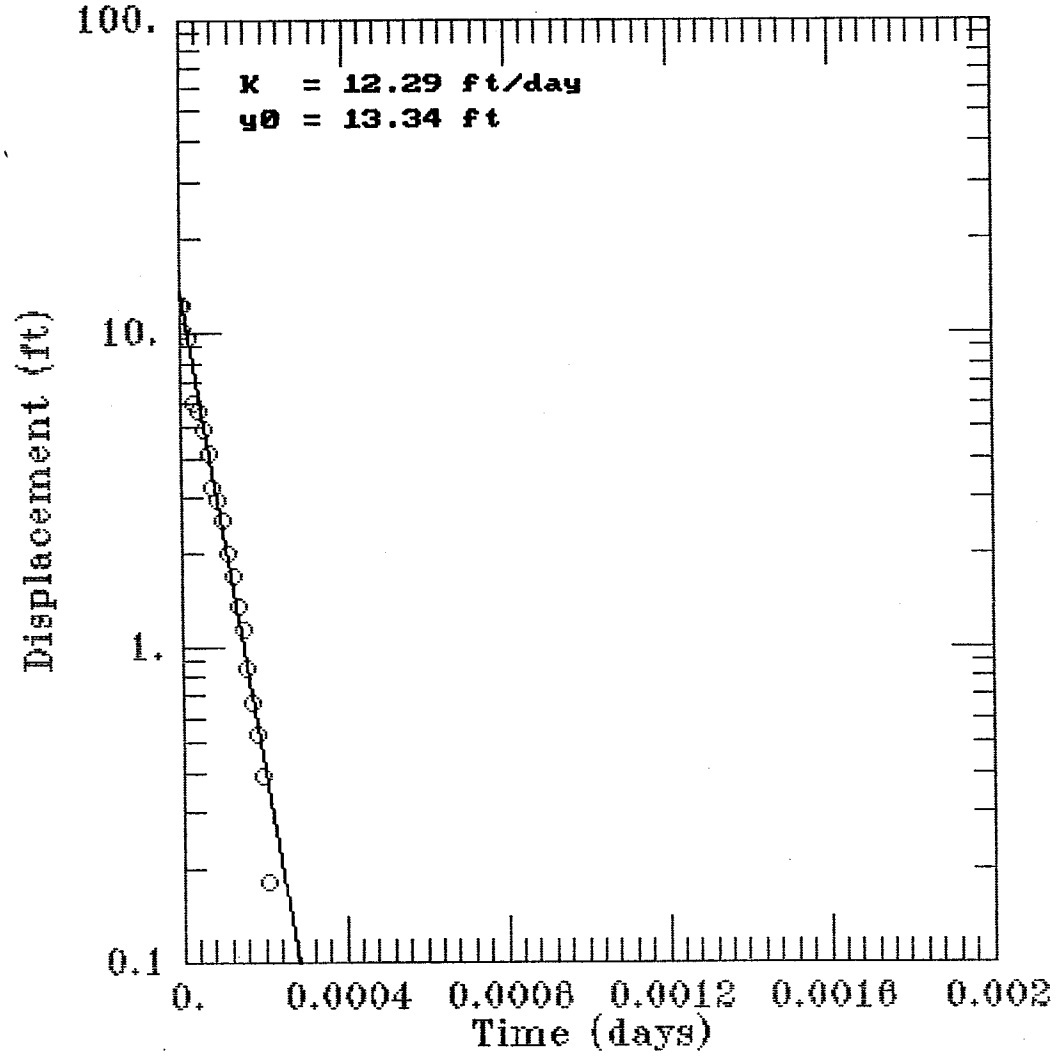


Figure D-82

MW-22:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

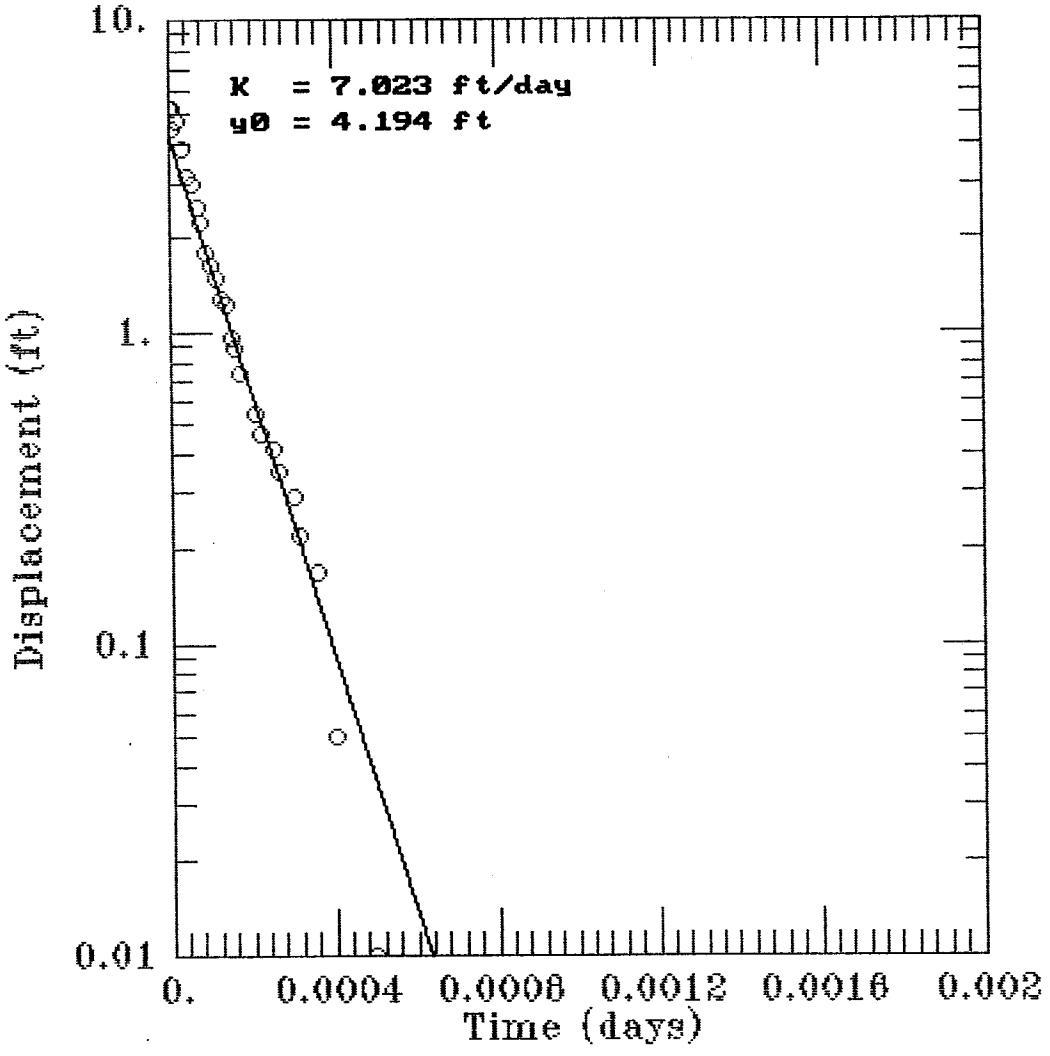


Figure D-83

MW-22:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

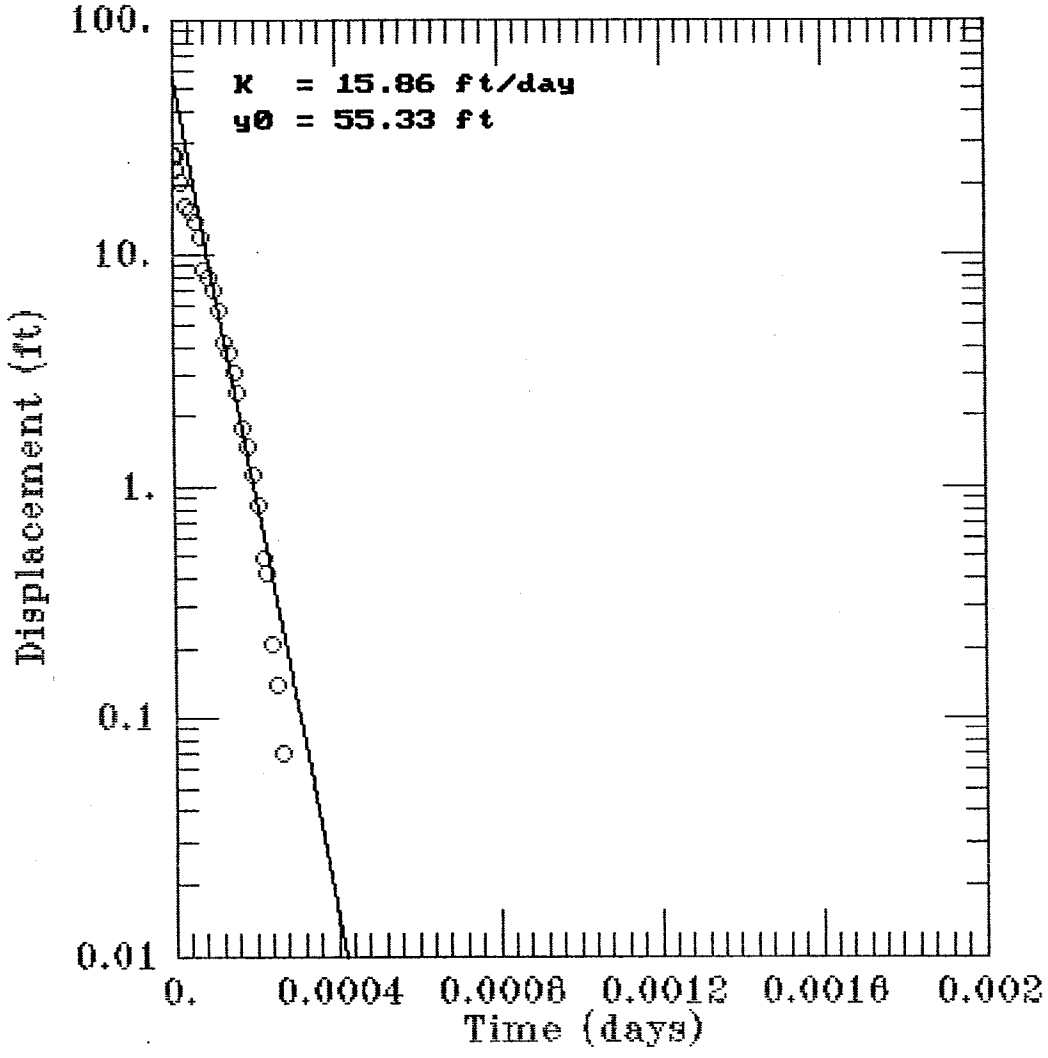


Figure D-84

MW-22:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

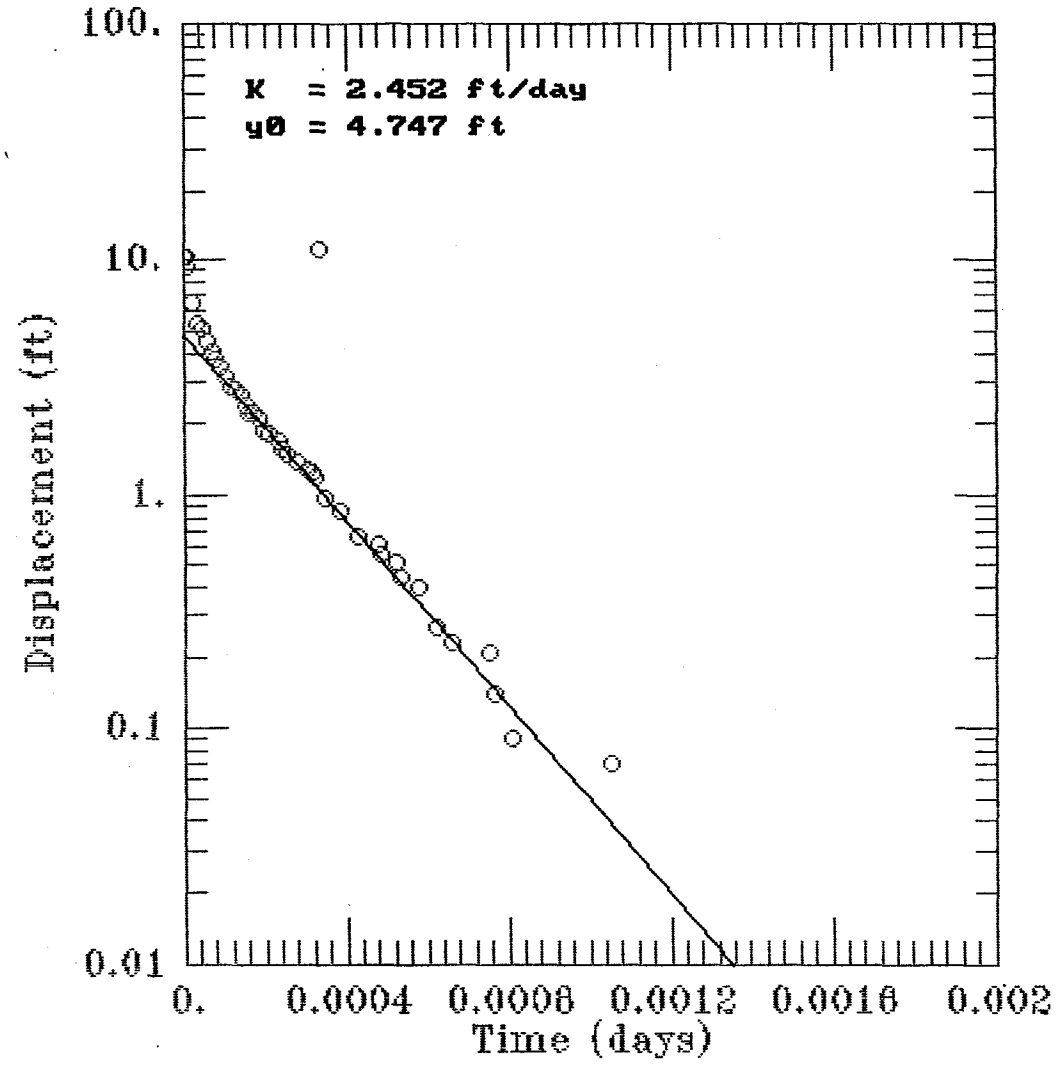


Figure D-85

MW-23:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

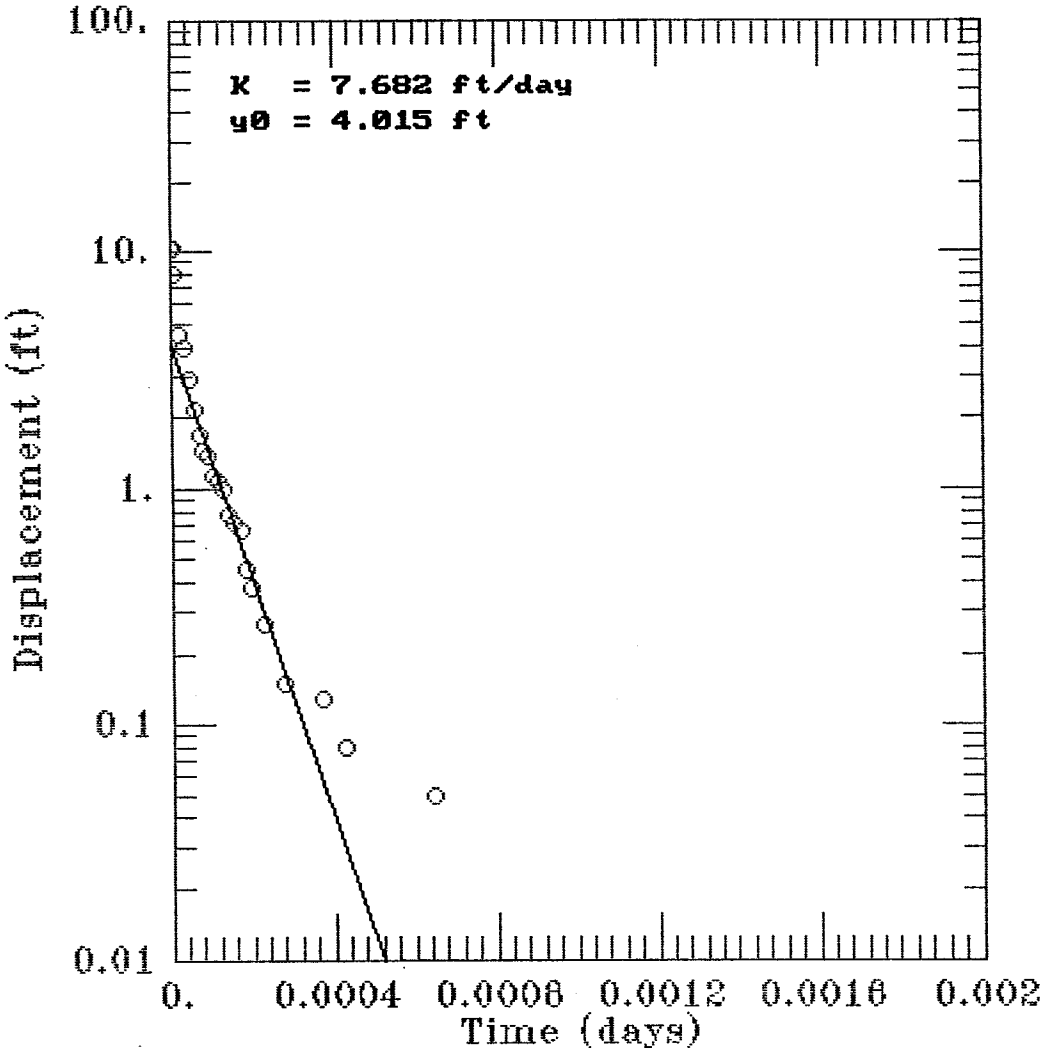


Figure D-86

MW-23:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

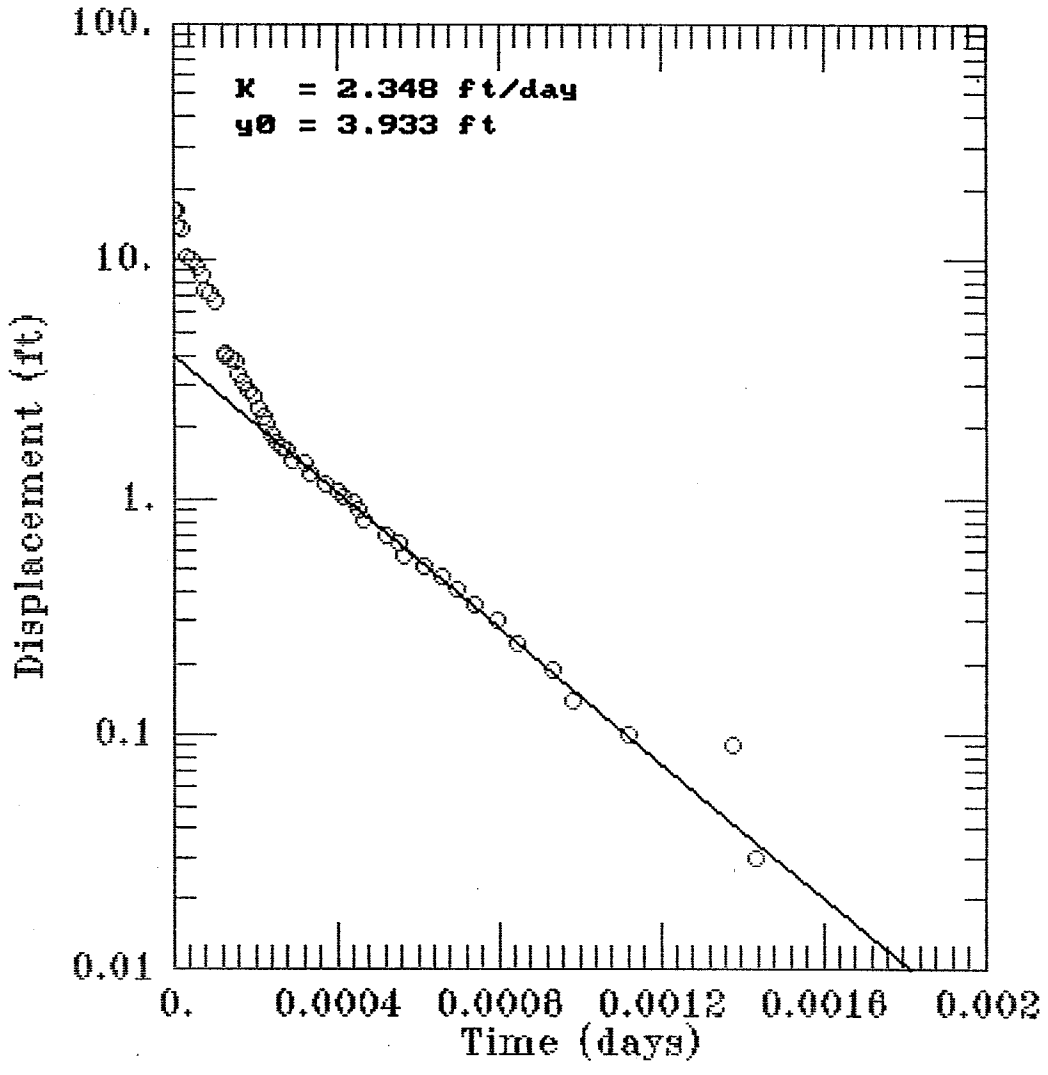


Figure D-87

MW-23:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

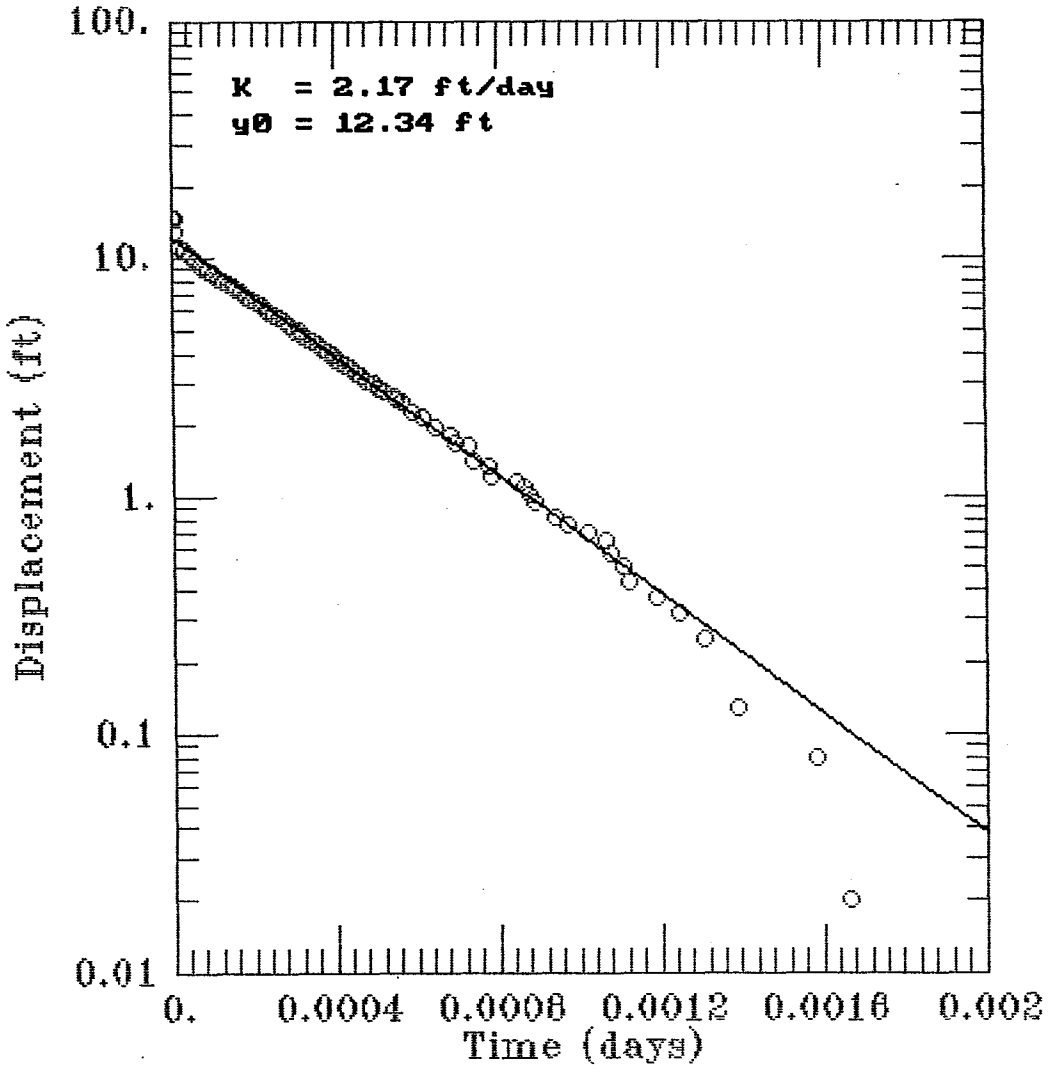


Figure D-88

MW-23:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

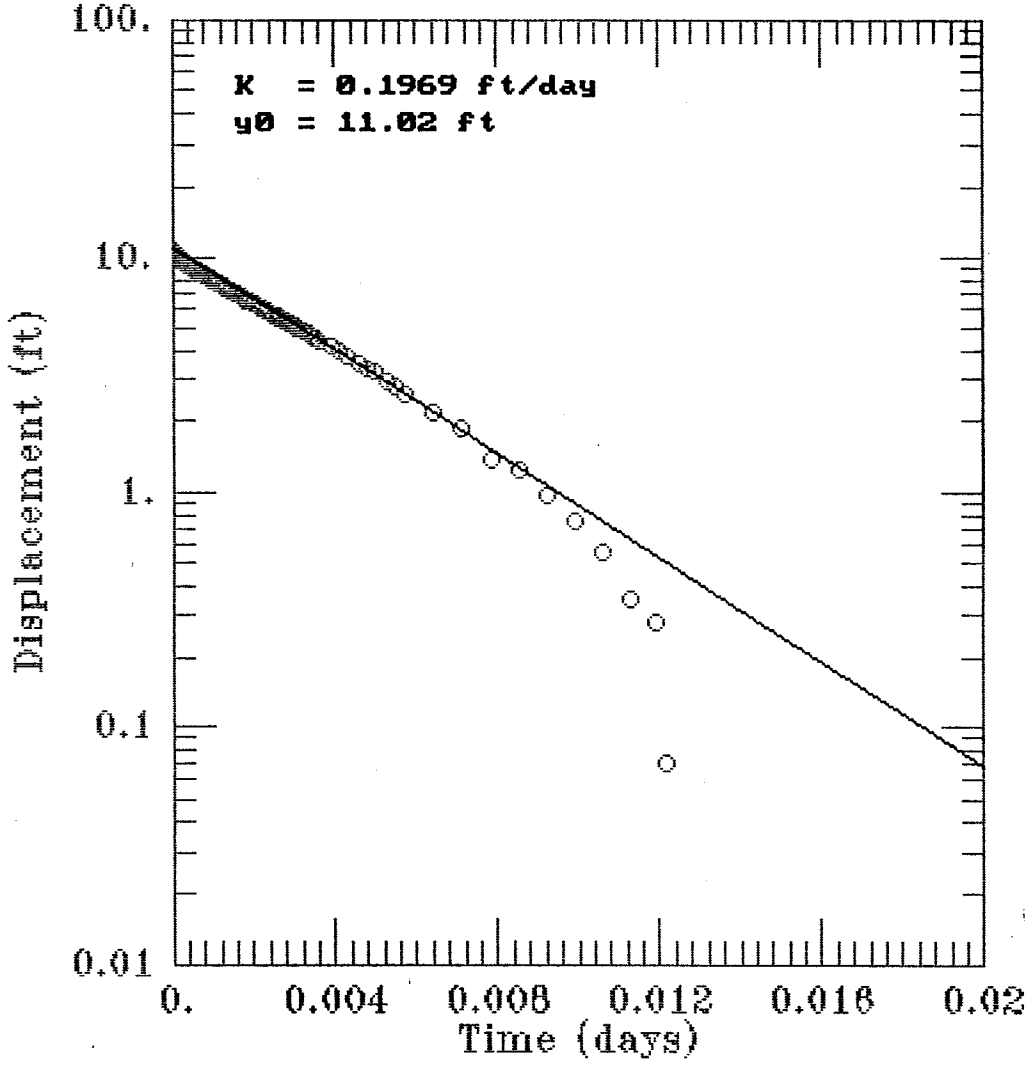


Figure D-89

MW-23:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

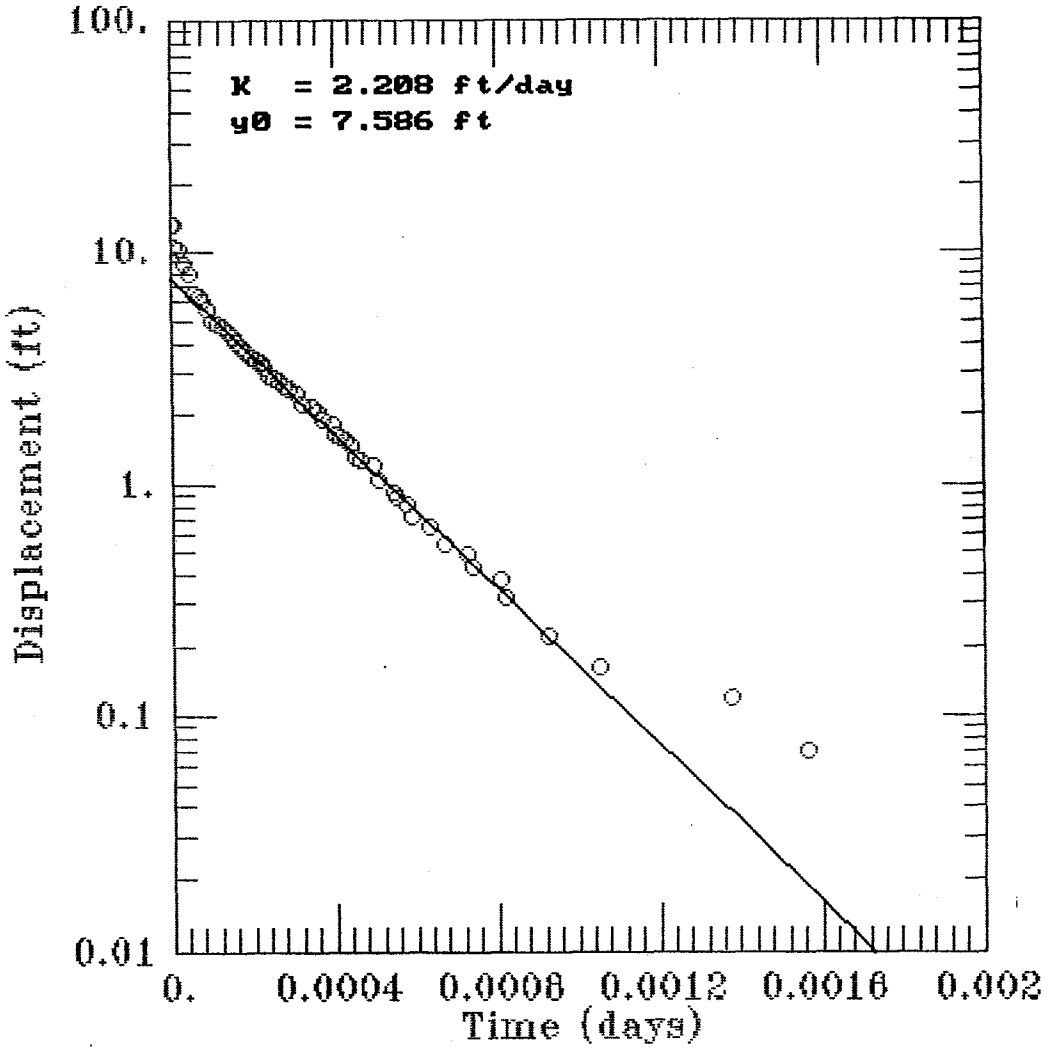


Figure D-90

MW-24:
Screen 1 Rising-Head Test

Jet Propulsion Laboratory

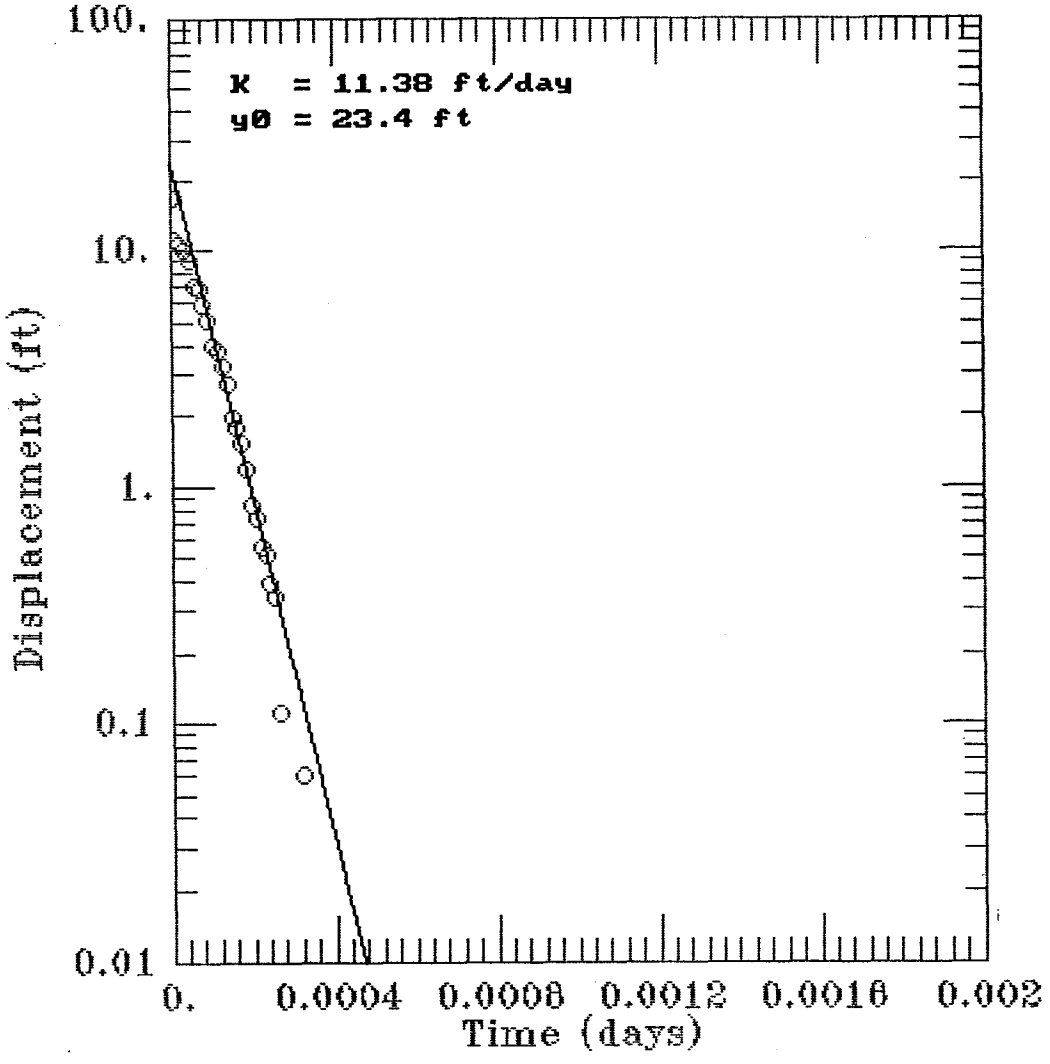


Figure D-91

MW-24:
Screen 2 Rising-Head Test

Jet Propulsion Laboratory

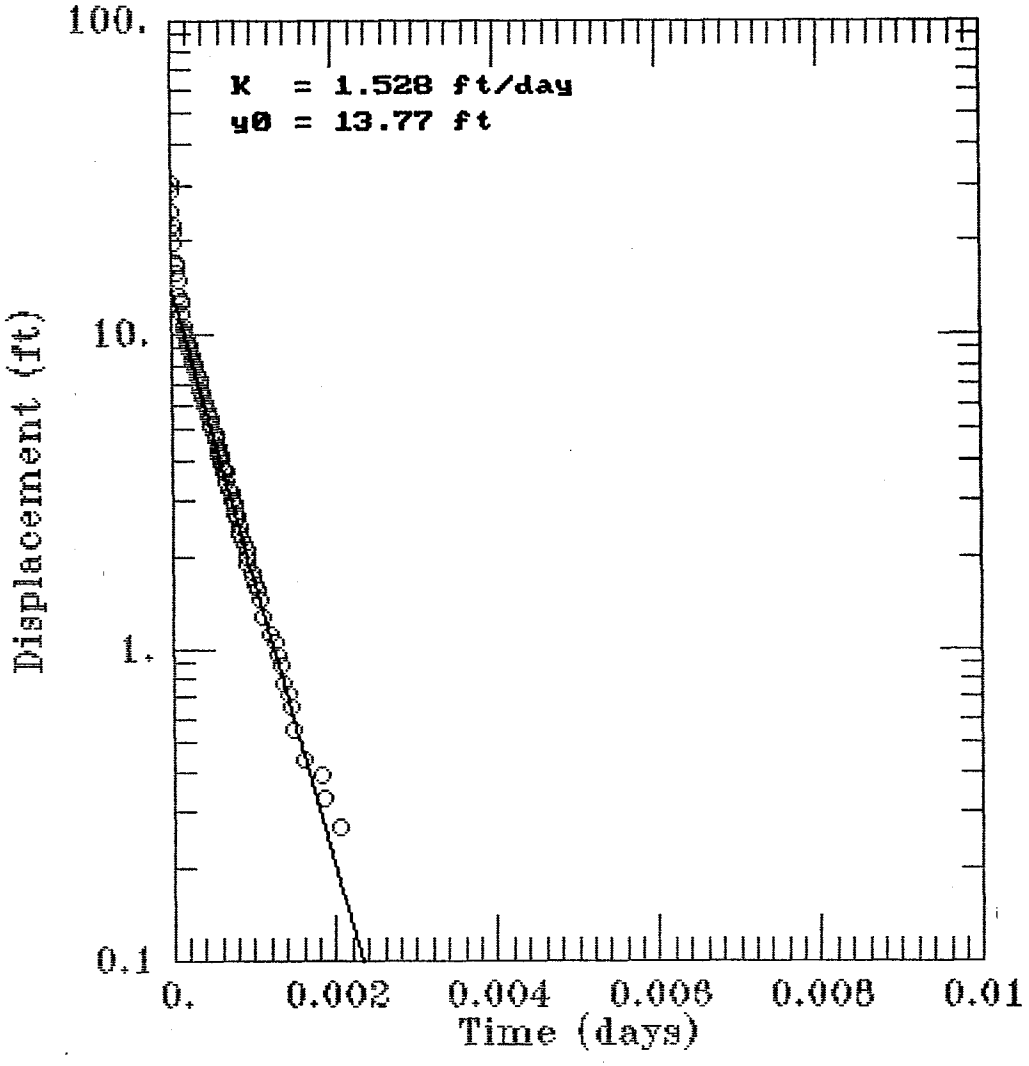


Figure D-92

MW-24:
Screen 3 Rising-Head Test

Jet Propulsion Laboratory

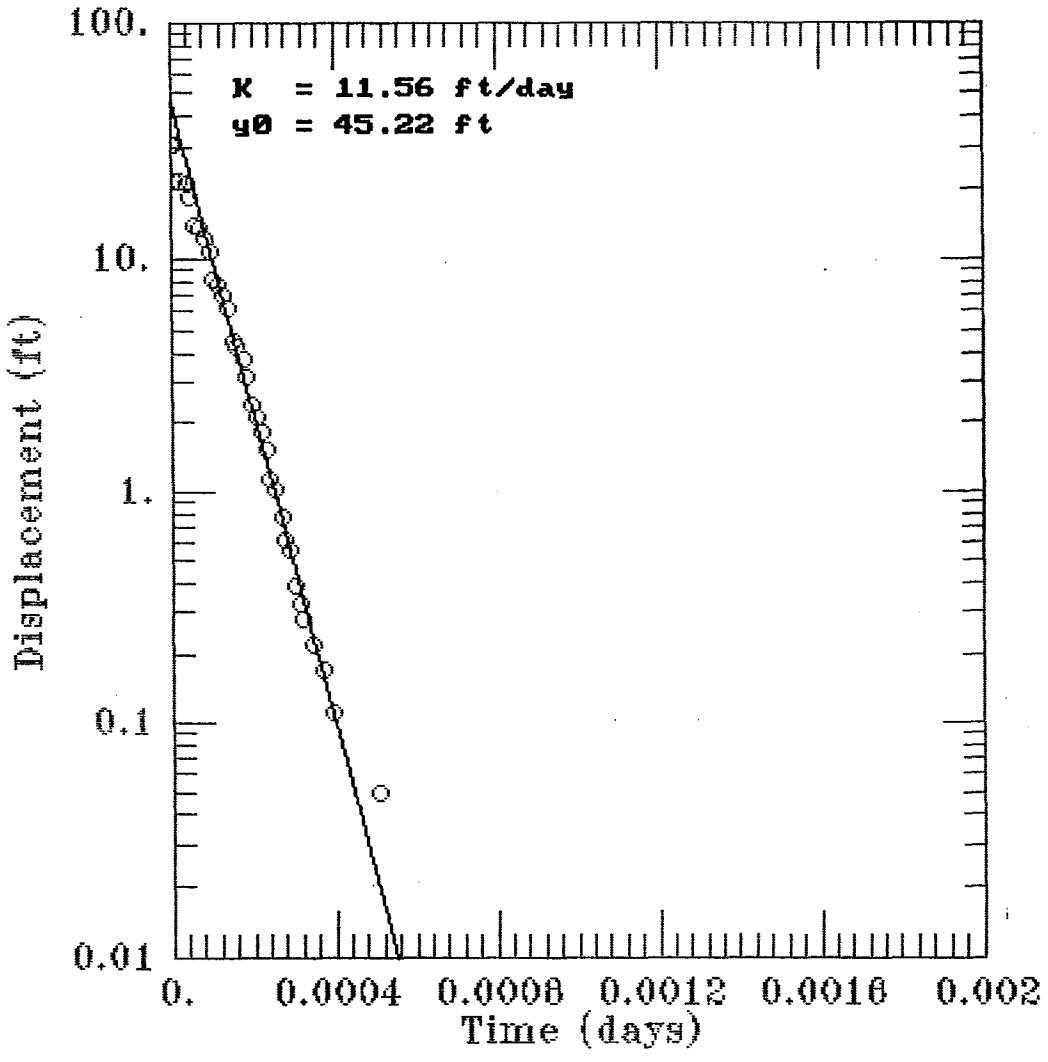


Figure D-93

MW-24:
Screen 4 Rising-Head Test

Jet Propulsion Laboratory

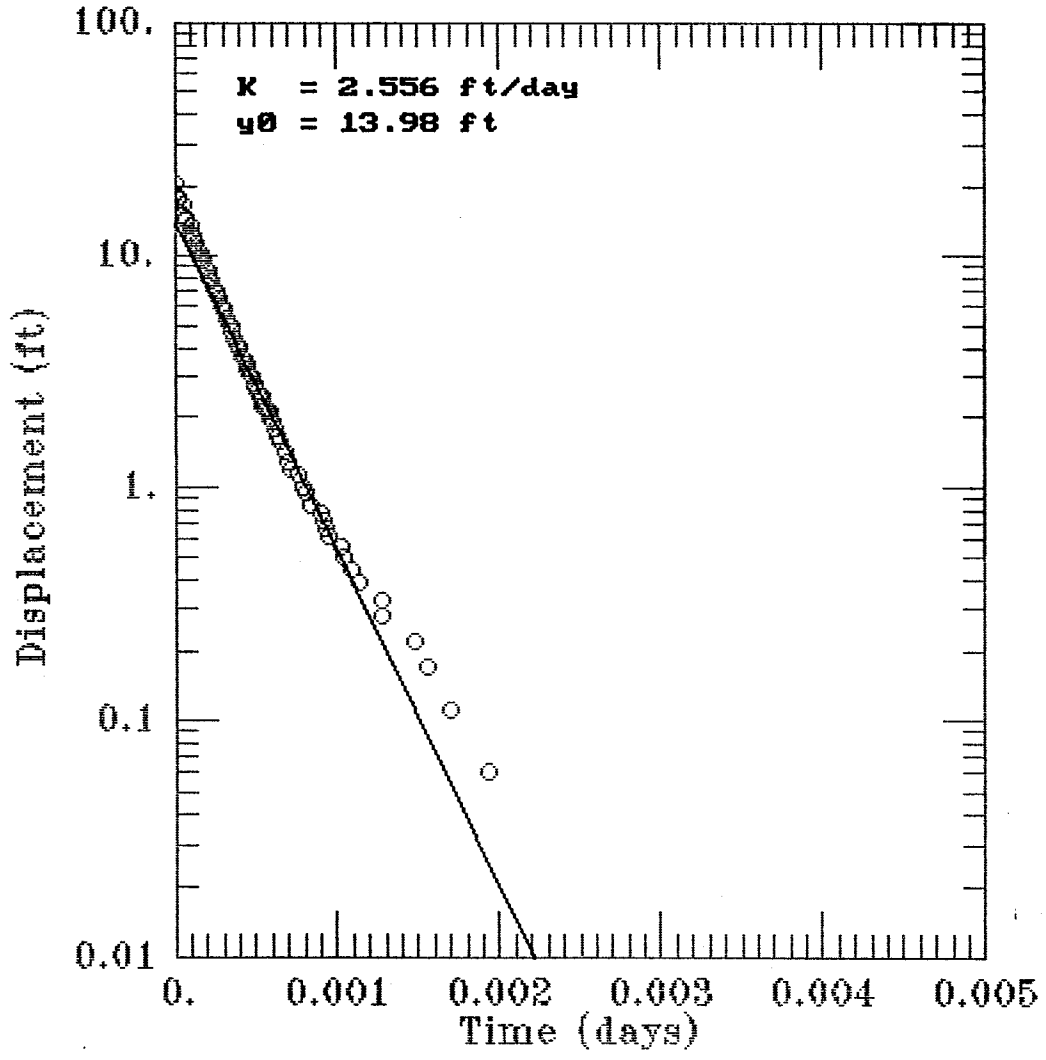


Figure D-94

MW-24:
Screen 5 Rising-Head Test

Jet Propulsion Laboratory

APPENDIX E

STIFF DIAGRAMS FROM WATER CHEMISTRY DATA COLLECTED DURING THE OU-1/OU-3 RI

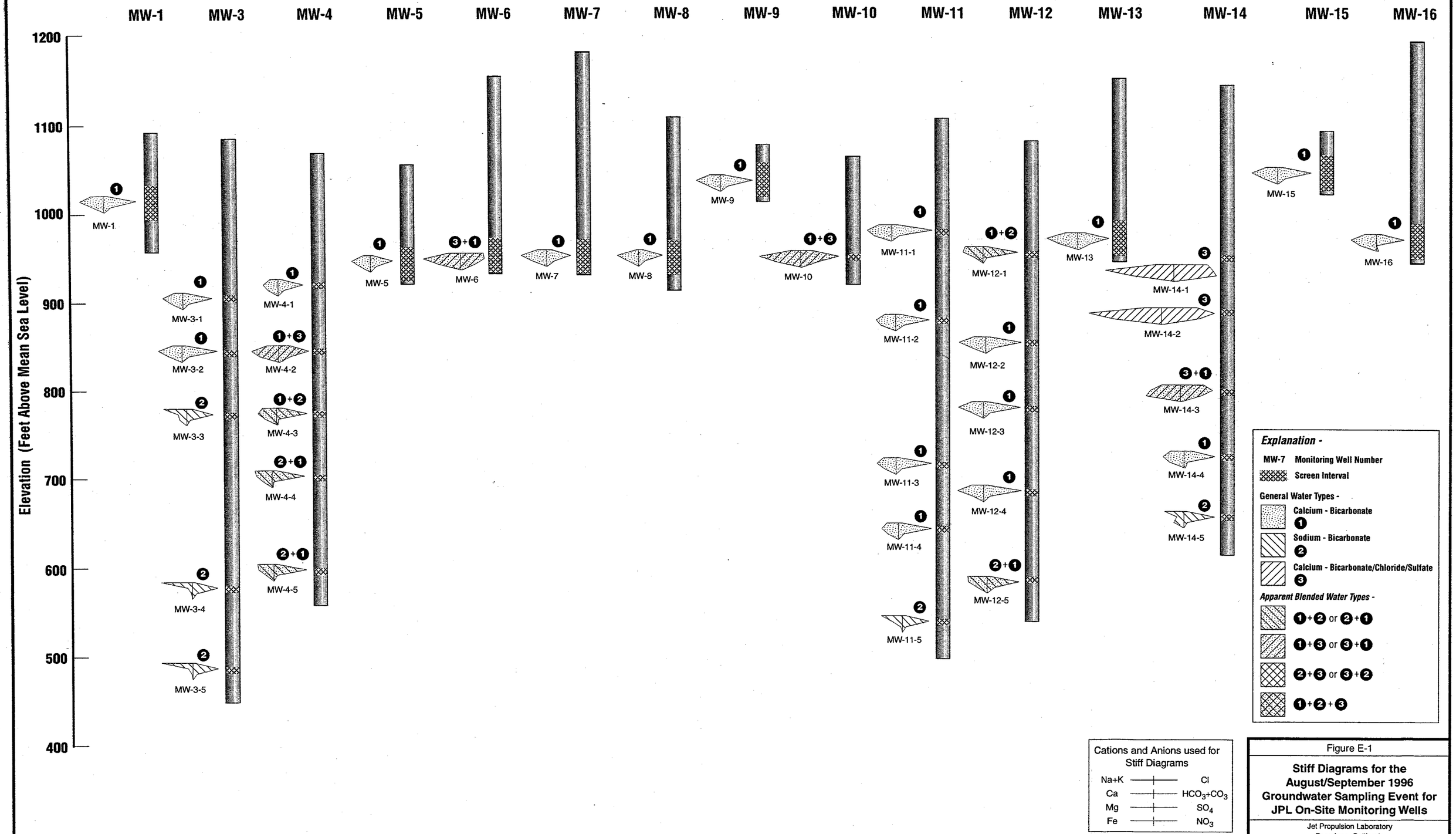
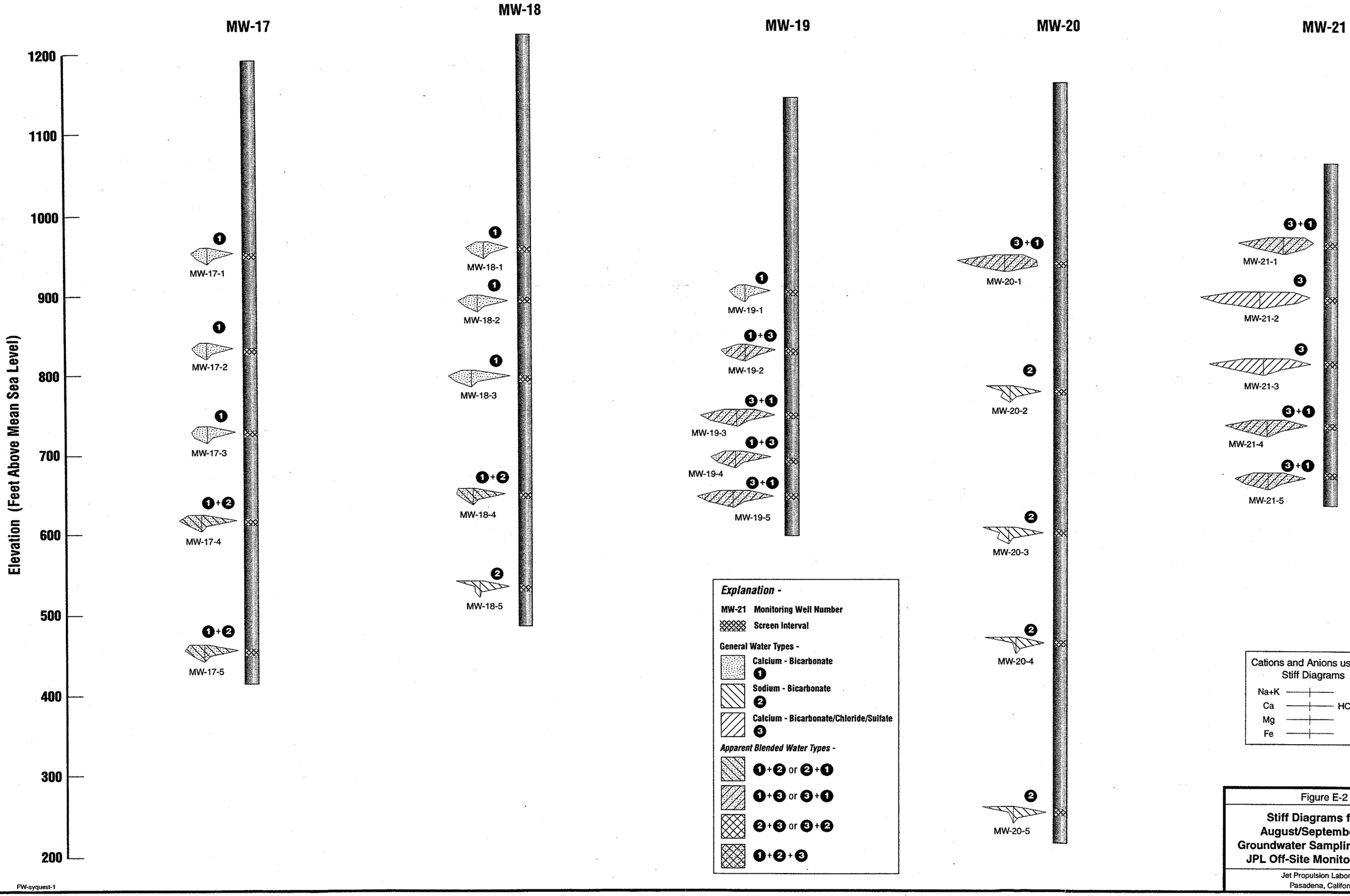


Figure E-1

Stiff Diagrams for the August/September 1996 Groundwater Sampling Event for JPL On-Site Monitoring Wells

Jet Propulsion Laboratory
Pasadena, California

FW-syquest-1

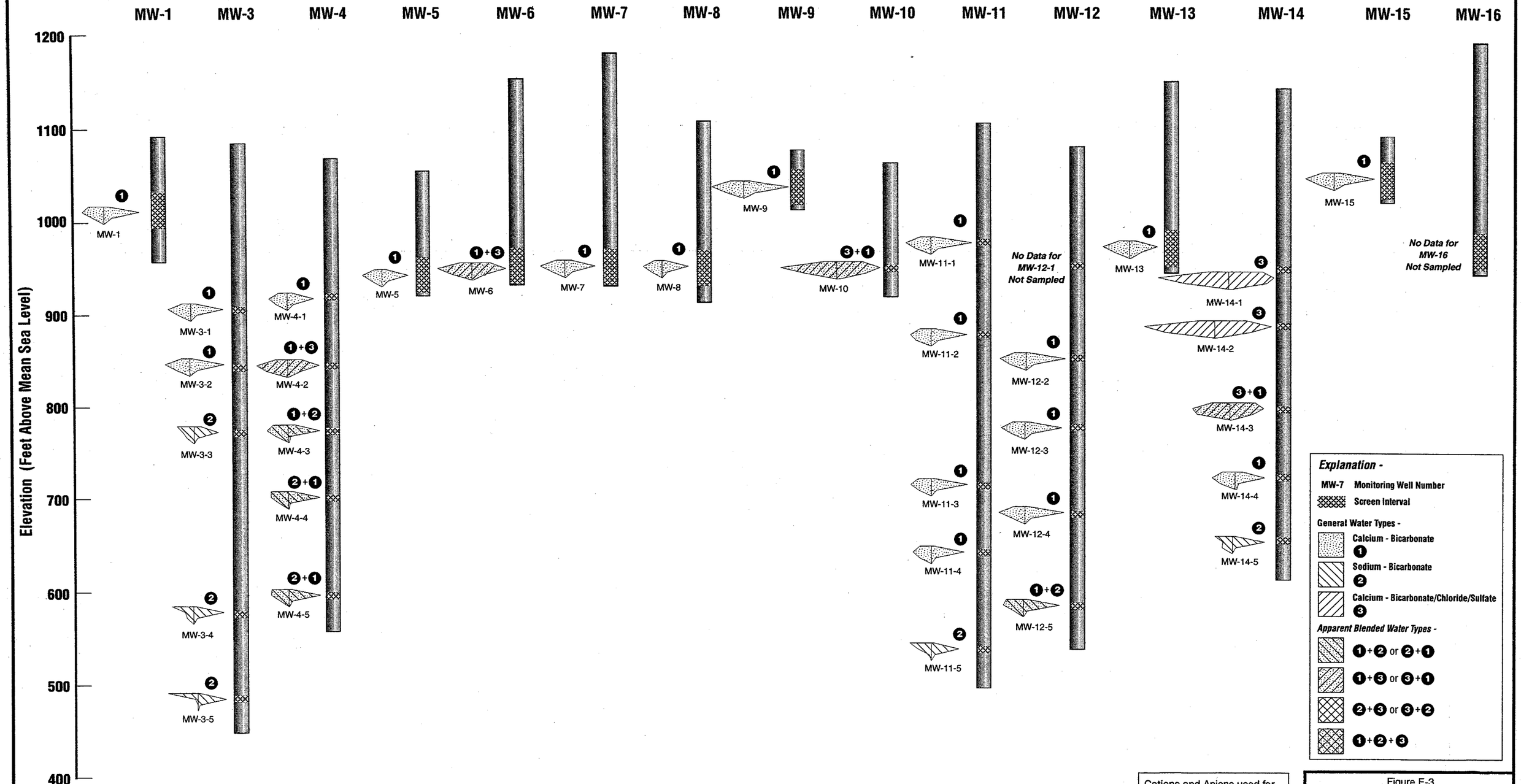


FW-syquest-1

Figure E-2

Stiff Diagrams for the August/September 1996 Groundwater Sampling Event for JPL Off-Site Monitoring Wells

Jet Propulsion Laboratory
Pasadena, California



Cations and Anions used for Stiff Diagrams

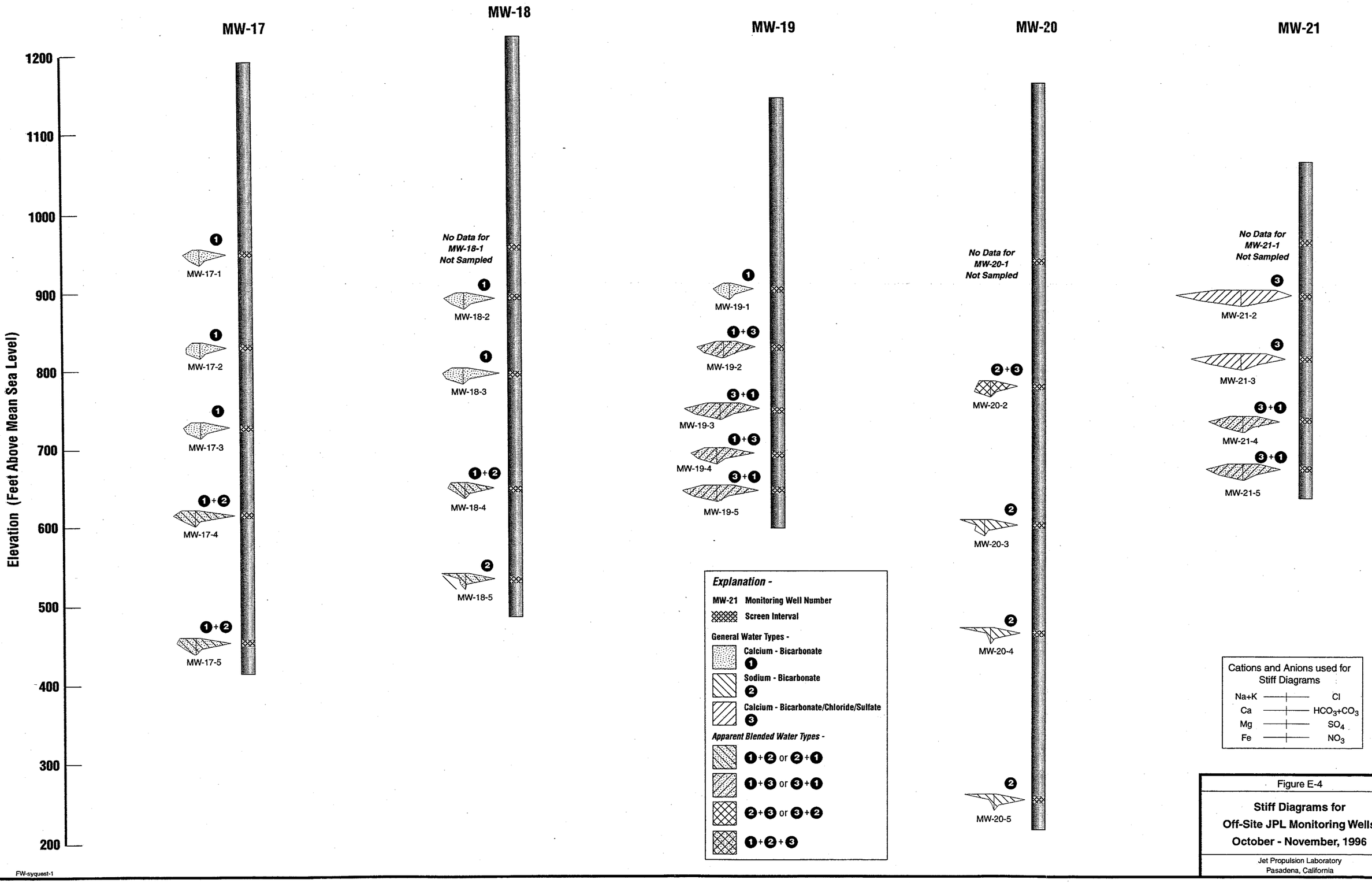
Na+K	Cl
Ca	HCO_3+CO_3
Mg	SO_4
Fe	NO_3

Figure E-3

Stiff Diagrams for On-Site JPL Monitoring Wells October - November, 1996

Jet Propulsion Laboratory
Pasadena, California

FW-syquest-1



FW-syquest-1

Figure E-4

Stiff Diagrams for Off-Site JPL Monitoring Wells October - November, 1996

Jet Propulsion Laboratory
Pasadena, California

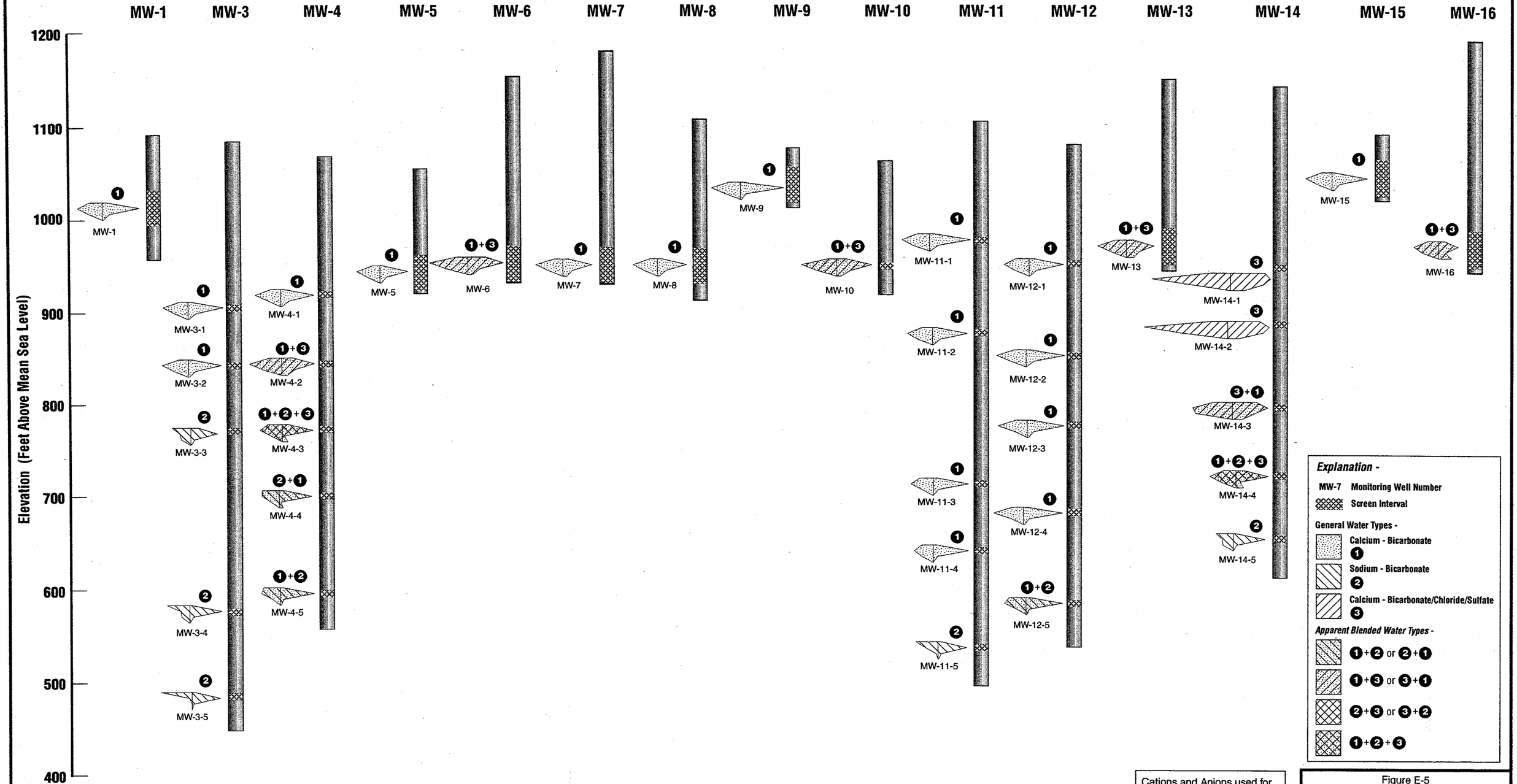
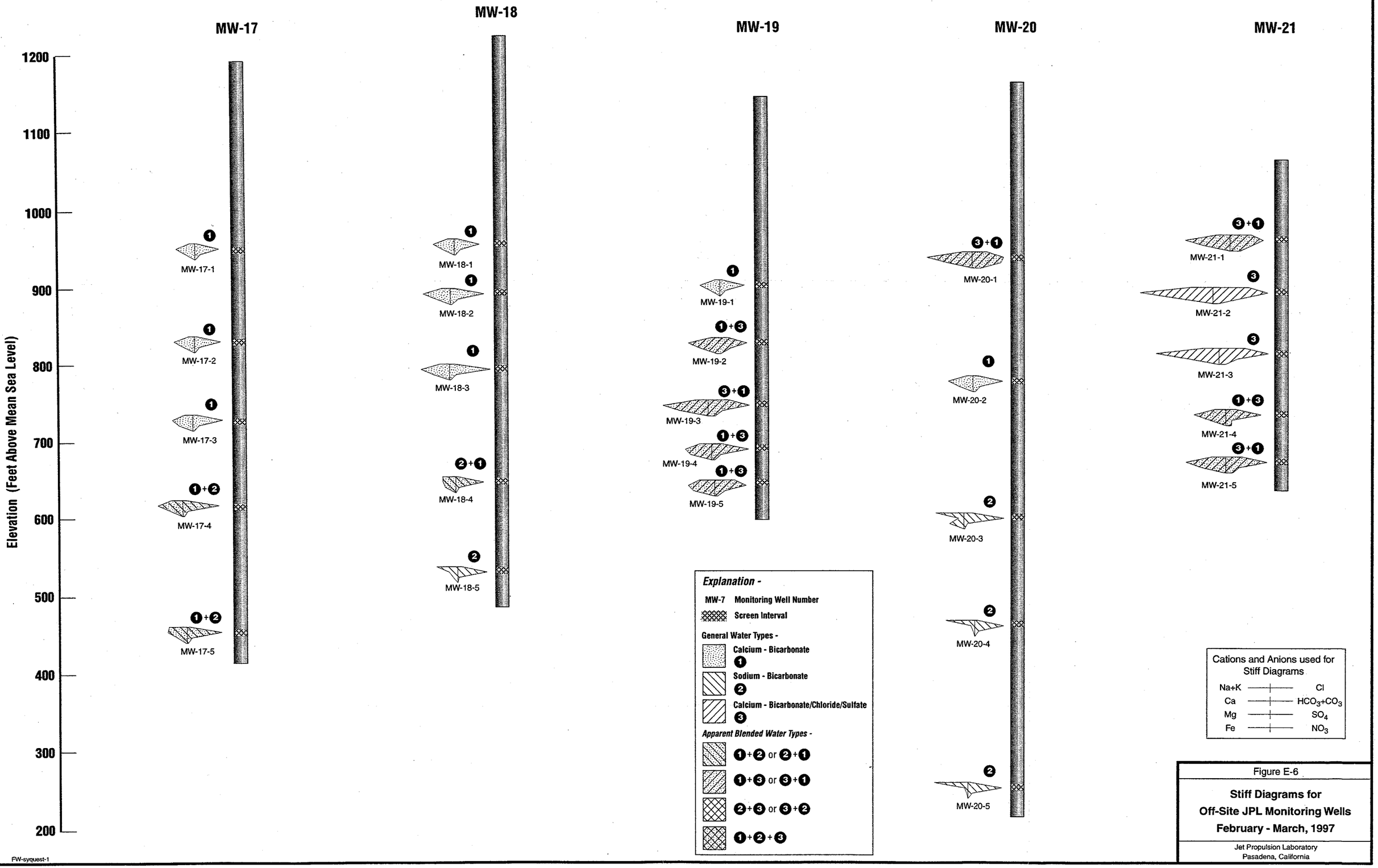


Figure E-5

Stiff Diagrams for On-Site JPL Monitoring Wells February - March, 1997

Jet Propulsion Laboratory
Pasadena, California

FW-syquest-1

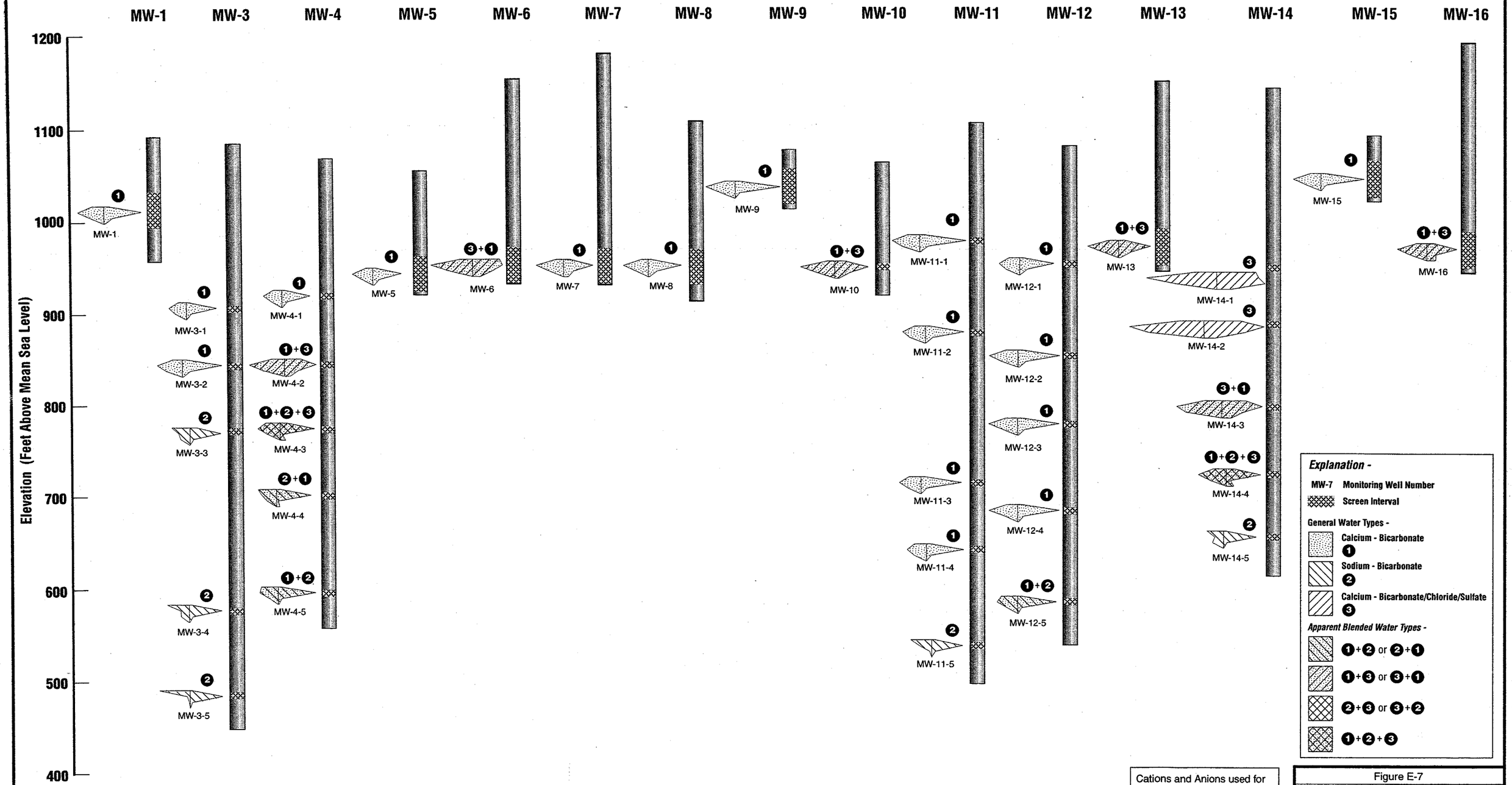


FW-syquest-1

Figure E-6

Stiff Diagrams for Off-Site JPL Monitoring Wells February - March, 1997

Jet Propulsion Laboratory
Pasadena, California

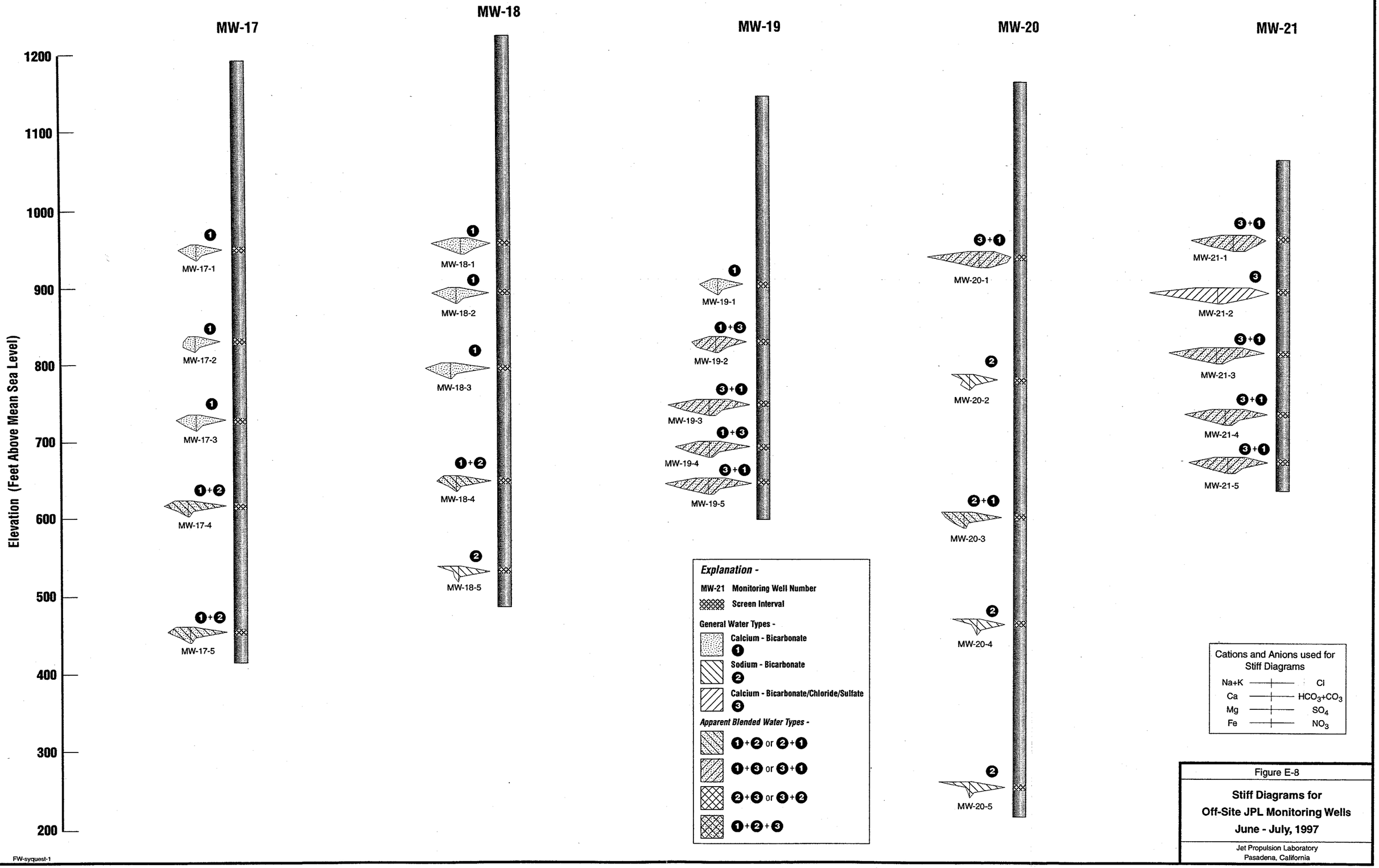


FW-syquest-1

Figure E-7

Stiff Diagrams for On-Site JPL Monitoring Wells June - July, 1997

Jet Propulsion Laboratory
Pasadena, California



FW-syquest-1

Figure E-8

Stiff Diagrams for Off-Site JPL Monitoring Wells June - July, 1997

Jet Propulsion Laboratory
Pasadena, California

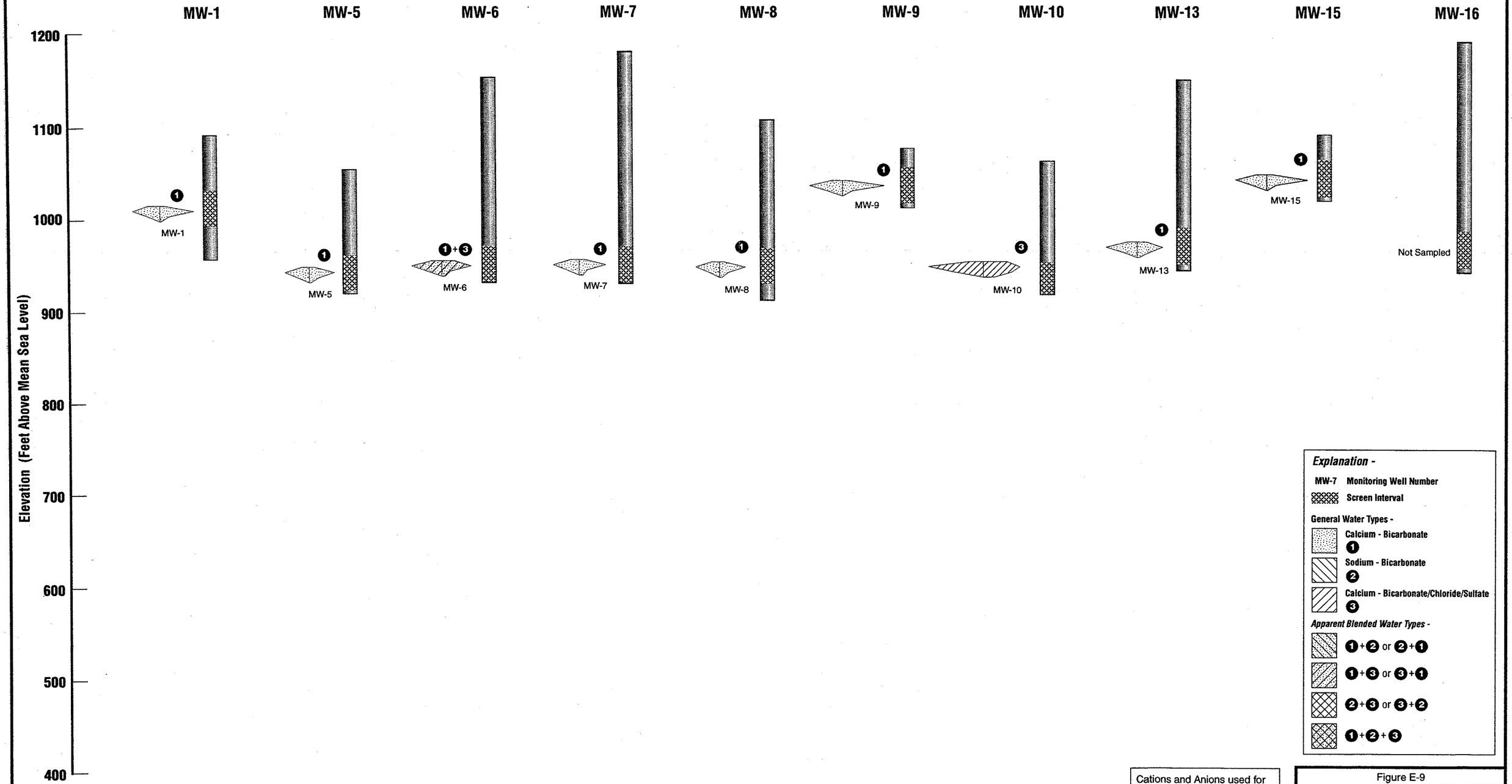


Figure E-9

Stiff Diagrams for On-Site JPL Shallow Monitoring Wells September - October, 1997

Jet Propulsion Laboratory
Pasadena, California

FW-syquest-1

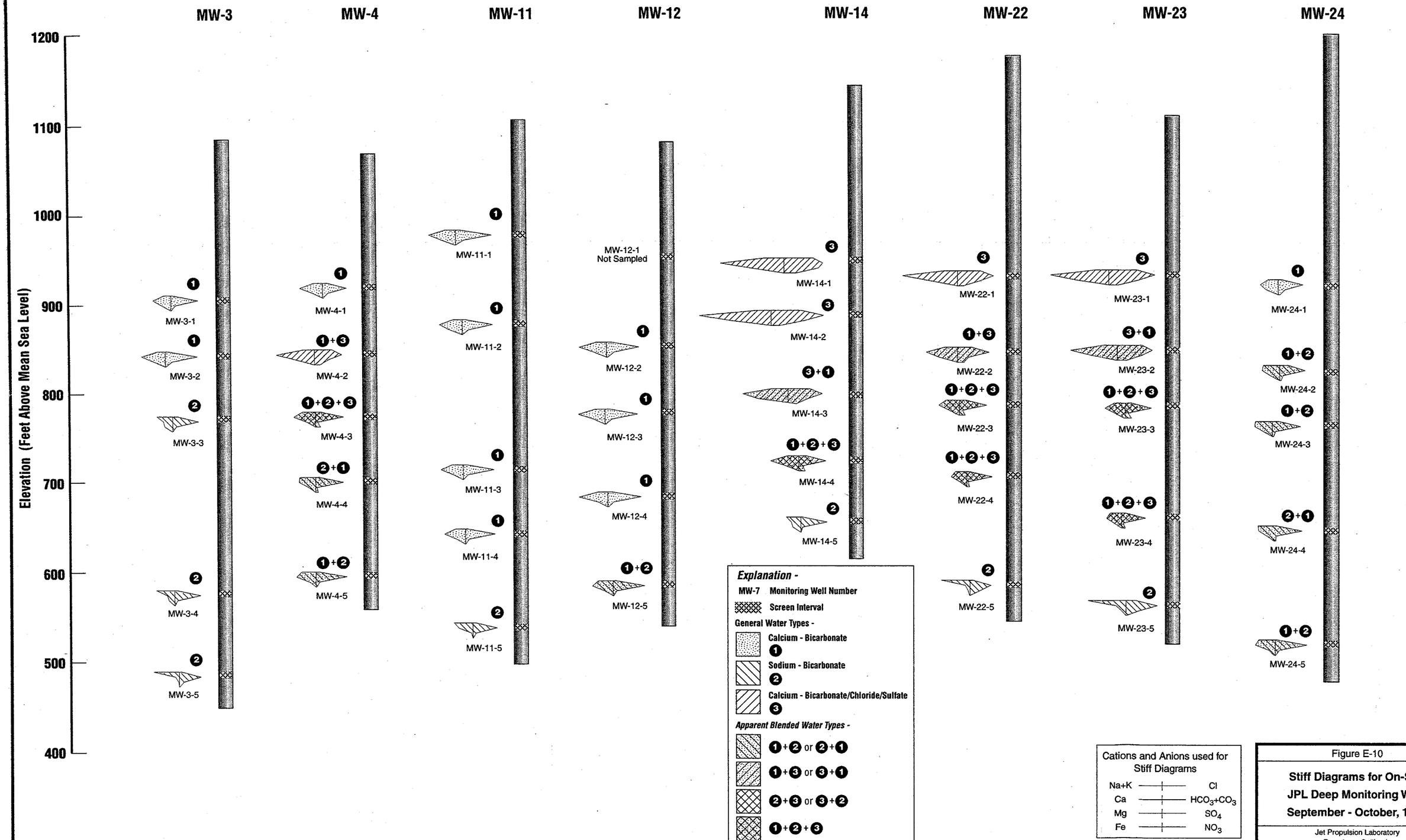


Figure E-10

Stiff Diagrams for On-Site JPL Deep Monitoring Wells September - October, 1997

Jet Propulsion Laboratory
Pasadena, California

FW-syquest-1

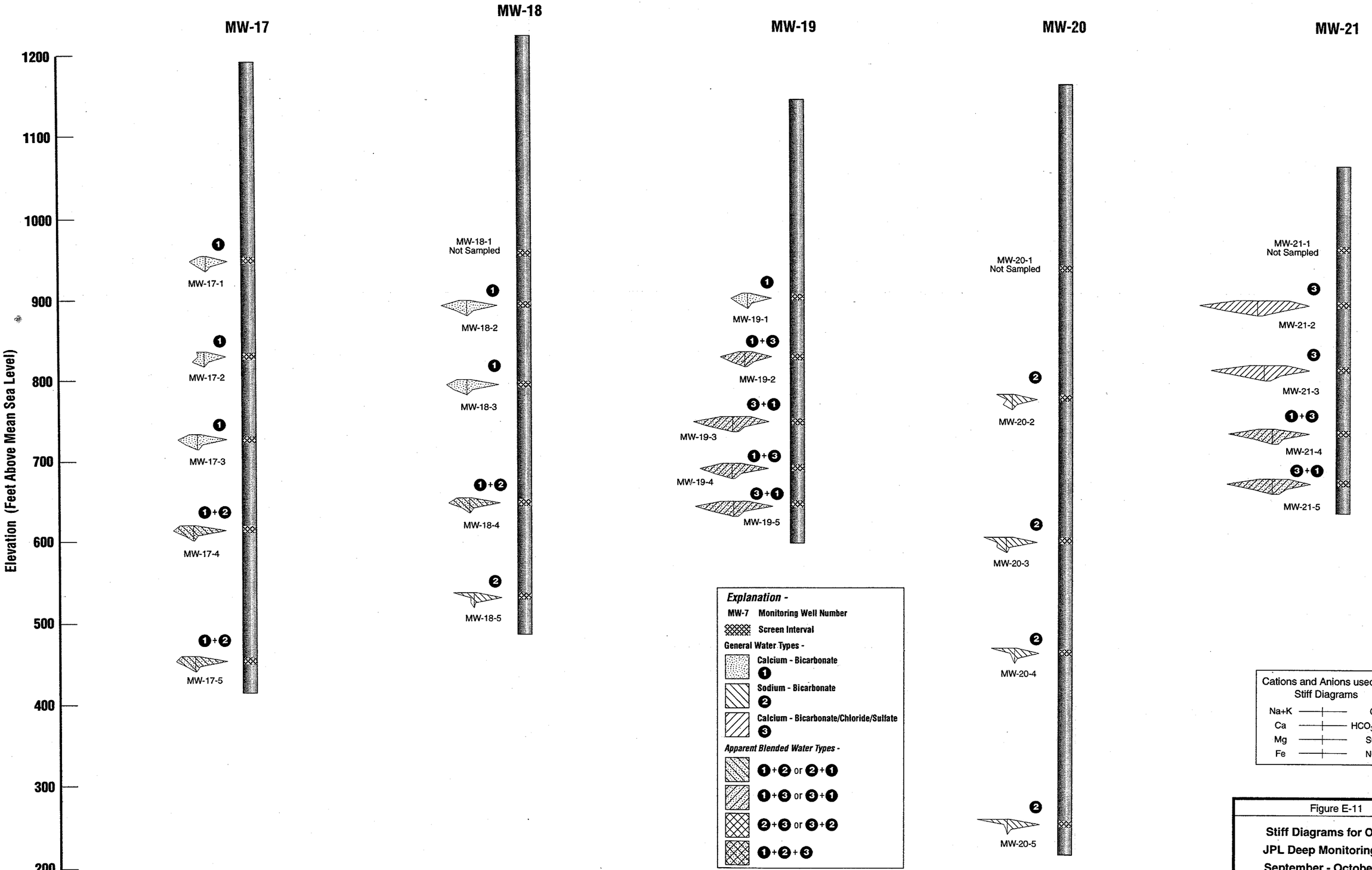
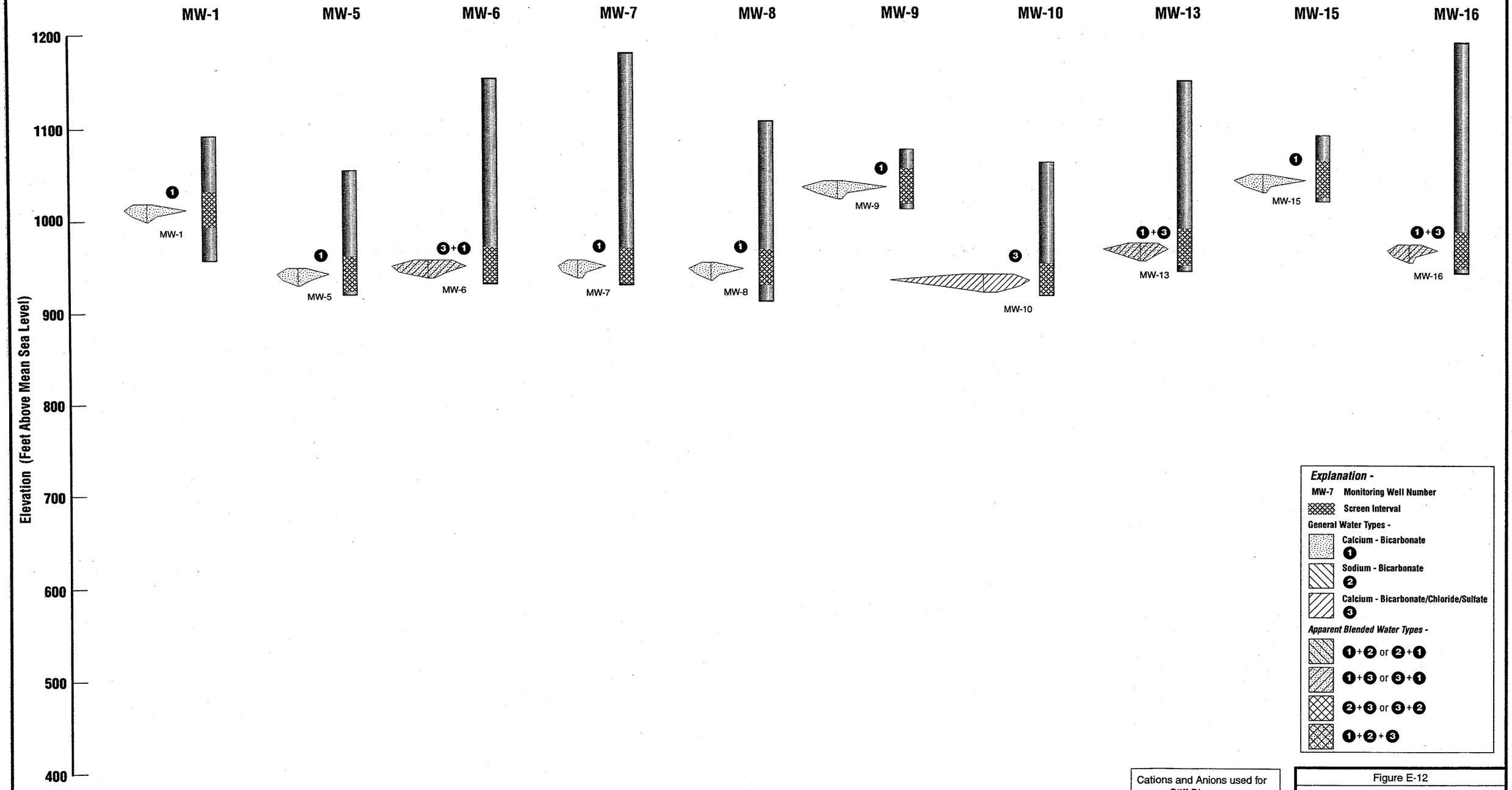


Figure E-11

Stiff Diagrams for Off-Site JPL Deep Monitoring Wells September - October, 1997

Jet Propulsion Laboratory
Pasadena, California

FW-syquest-1



Explanation -

MW-7 Monitoring Well Number

Screen Interval

General Water Types -

Calcium - Bicarbonate ❶

Sodium - Bicarbonate ❷

Calcium - Bicarbonate/Chloride/Sulfate ❸

Apparent Blended Water Types -

❶+❷ or ❷+❶

❶+❸ or ❸+❶

❷+❸ or ❸+❷

❶+❷+❸

Cations and Anions used for Stiff Diagrams

Na+K	Cl
Ca	HCO_3+CO_3
Mg	SO_4
Fe	NO_3

Figure E-12

Stiff Diagrams for On-Site JPL Shallow Monitoring Wells January - February, 1998

Jet Propulsion Laboratory
Pasadena, California

1572.0233

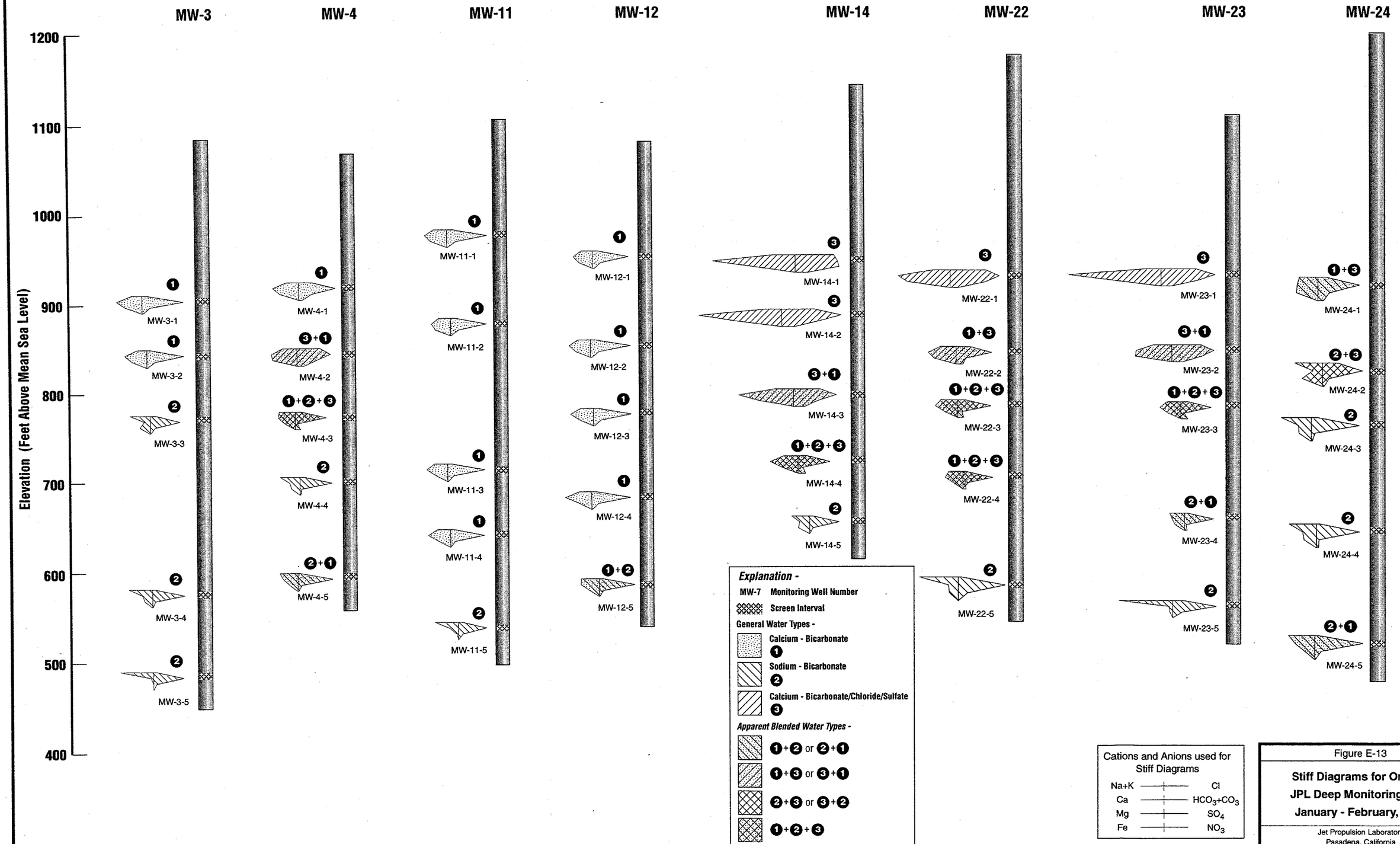


Figure E-13

Stiff Diagrams for On-Site JPL Deep Monitoring Wells January - February, 1998

Jet Propulsion Laboratory
Pasadena, California

1572.0233

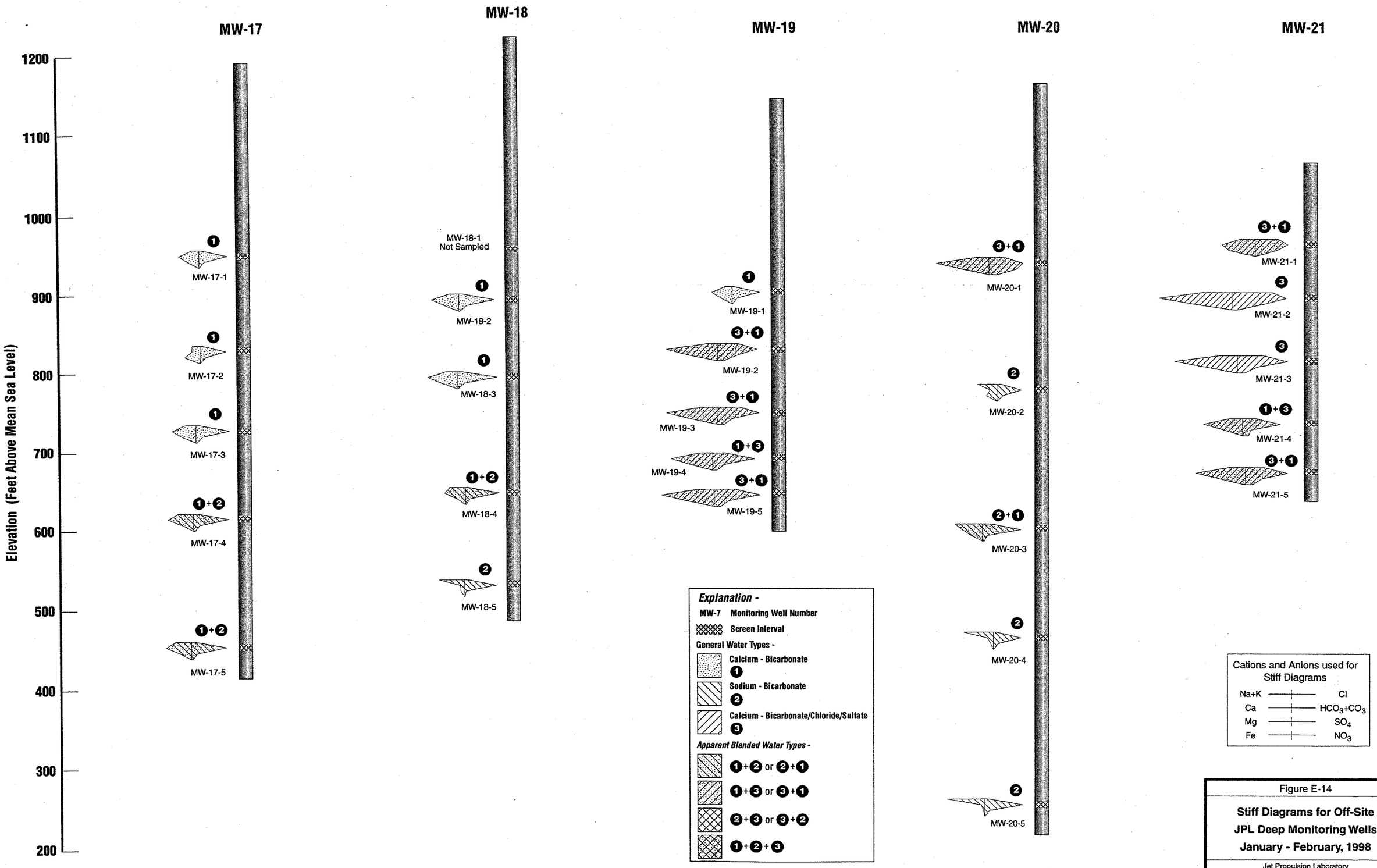


Figure E-14

Stiff Diagrams for Off-Site JPL Deep Monitoring Wells January - February, 1998

Jet Propulsion Laboratory
Pasadena, California

1572.0233

APPENDIX F

HYDROGRAPHS OF EACH JPL MULTI-PORT WELL WITH MONTHLY PRECIPITATION DATA, MUNICIPAL WELL PRODUCTION VOLUMES AND SPREADING BASIN VOLUMES (AUGUST, 1995 THROUGH MARCH, 1998)

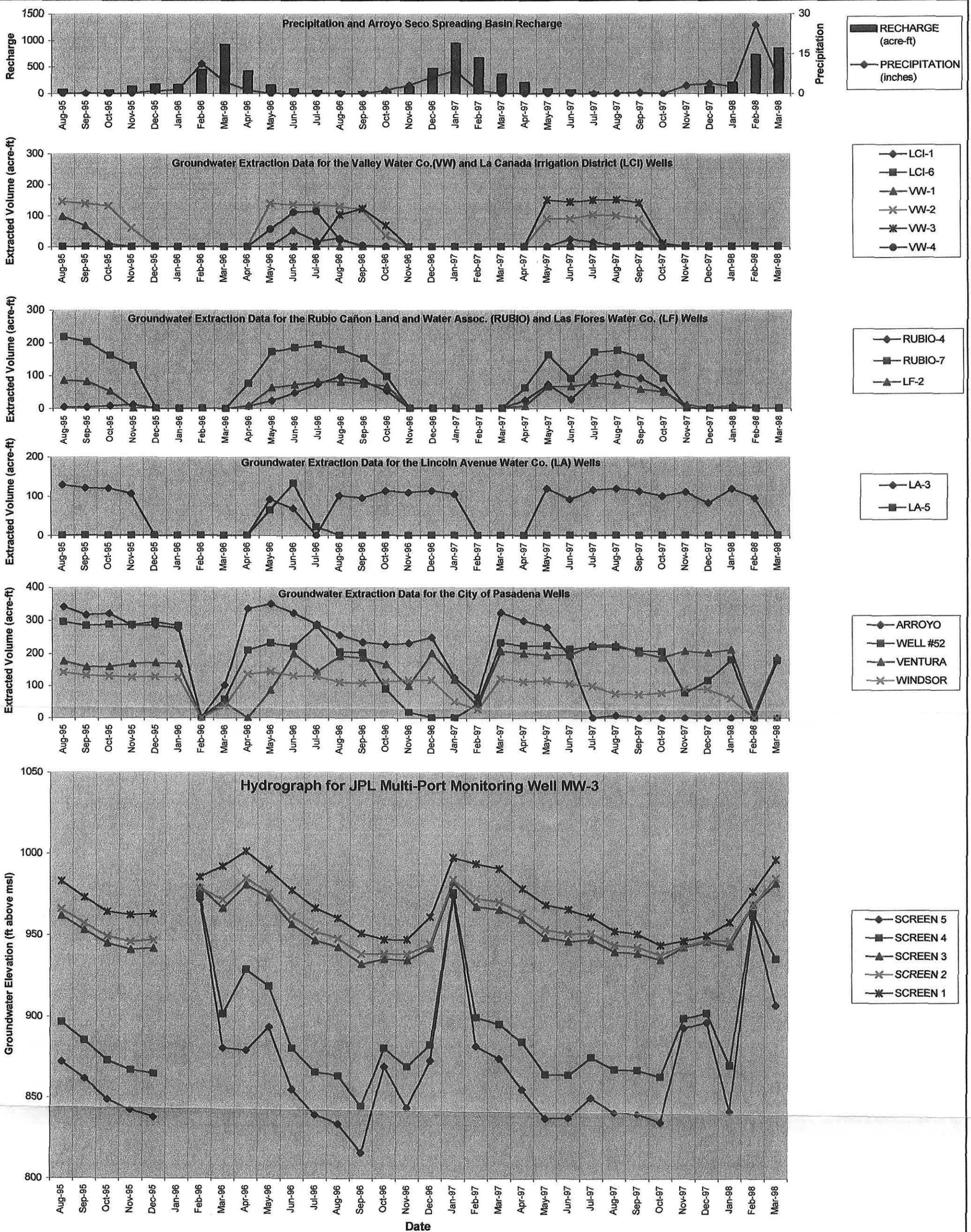


Figure F-1

Municipal Well Pumping Volumes, Precipitation Data, Spreading Basin Data and *Hydrograph for MW-3*

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Continue