

AUTHORITY TO
DRILL A WELL

Exploratory
Development ☒



Delineation
Service ☐

AUTHORITY TO DRILL A WELL APPLICATION

This application is submitted with Section 82 of the Canada Oil and Gas Drilling Regulations. When approved under Section 83 of the Regulations, it is the requisite authority for the commencement of drilling operations.

Well Name in Full: CHEVRON ET AL McKay Lakes O-80

Operator: CHEVRON CANADA RESOURCES

Drilling Program No: N/A

Contractor: Akita Drilling

Permit or Lease No: EL380

Drilling Rig or Unit: Akita Drilling #48 UE

Estimated Well Cost: \$3,000,000

Location Unit: O

Section: 80

Grid Area: 60° 20', 123° 15'

Coordinates: Lat: 60°19'49.955"N

Long: 123°29'03.462"W

Area: Fort Liard, Northwest Territories

Field/Pool: N/A

Elevation-RT/KB: 299 m

(ASL)

Seafloor: N/A

Approx. Spud Date: August 10, 1999

Estimated Days on Location: 25

(BRT)

Anticipated Total Depth: 1200 m

Target Horizon(s): Mattson & Flett

EVALUATION PROGRAM

Ten meter sample intervals: None

Five meter sample intervals: 350 m - TD

Canned sample intervals: None

Conventional cores at: N/A

Logs and Tests Platform Express-DSI; 350 m - TD

Optional: Platform express - HALS; 350 m - TD

CASING AND CEMENTING PROGRAM

O.C. (mm)	Weight (kg/m)	Grade	Depth (mKB)	Cementing Program
406	Conductor		20	Cement to surface
244.4	53.57	K-55	350	Cement to surface
177.8	34.24	K-55	600	Cement to surface

B O.P. Equipment: 346mm, 35Mpa; 2 X Pipe rams, blind ram, & annular

Other Information:

Contingent casing & cementing program:

Surface and production same as above

Slotted Liner:

139.7	23.07	K-55	500 - 1200	N/A
-------	-------	------	------------	-----

Signed: _____

Miles N. Sweep, P.Eng.

Title: Well Construction Engineer

Date: June 30, 1999

Company: Chevron Canada Resources

APPROVAL

An approved copy of this notice is to be posted at each wellsite

Signed: _____

Chief Conservation Officer

Date: _____

File: 9211-C04-1-2, WID 1866

UWI 3000806070123150

Canada

**WELL
TERMINATION
RECORD (with
attachment)**

NEB/ONE

National Energy
BoardOffice national
de l'énergie

1999 OCT 20 P 2: 09

WELL TERMINATION RECORD

SALLE DU COURIER

This record is submitted in compliance with Section 184 of the Canada Oil and Gas Drilling Regulations

Well Name: Chevron et al McKay Lakes O-80..... Area: O-80.....
Grid Area: 60°20', 123°15'..... Field/Pool: Mattson Injection.....
Interest Identifier: Mattson..... Final Coordinates: Lat: 60°19'49.955"..... Long: 123°29'3.462".....
Drilling Unit: Akita Drilling Rig #48..... Elevations-KB/RT 299.6m..... (ASL) GL/Seafloor 292.32m.....
Spud Date: August 24, 1999..... R.R.: September 8, 1999..... Total Depth: 1028m.....

O.D. (mm)	Weight (kg/m)	Grade	Depth Set (m KB)	Cement (m³)
508.....	78.55.....		18.3m.....	Class G (5.32m³).....
244.5.....	53.57.....	K55.....	359.21.....	Class G (24.32m³).....
177.8.....	34.24.....	K55.....	502.9.....	Class G (7.22m³).....

PLUGGING PROGRAM

Approval of the following program was obtained by (person)..... from
(person)..... of the....., by means of
..... on..... 19..

Type of Plug	Interval (m KB)	Felt	Cement (m³)
.....			
.....			
.....			
.....			
.....			

Lost Circulation/Overpressure Zones:.....

Equipment left on Seafloor (Describe):.....

Provision for Re-entry (Describe and attach sketch):.....

Cores: Type:..... Intervals:.....

Other Downhole Completion/Suspension Equipment: 88 9mm, 13.84kg/m, J-55 tubing, & retrievable packer.....

CERTIFICATION

I certify on the basis of personal knowledge of operations undertaken at the above named well that the above information is accurate.

Signed:..... Title: Well Construction Engineer.....

Name: Miles Sweep, P.Eng. Date: October 20, 1999.....

Company: Chevron Canada Resources

Acknowledged by:.....

Chief Conservation Officer

Well Status

Suspended ☐Completed ☒Abandoned ☐

Date: Nov 4/99

File: 9211-C004-1-2

WID: 1866

UWI 3000806020123150

Chevron Canada Resources

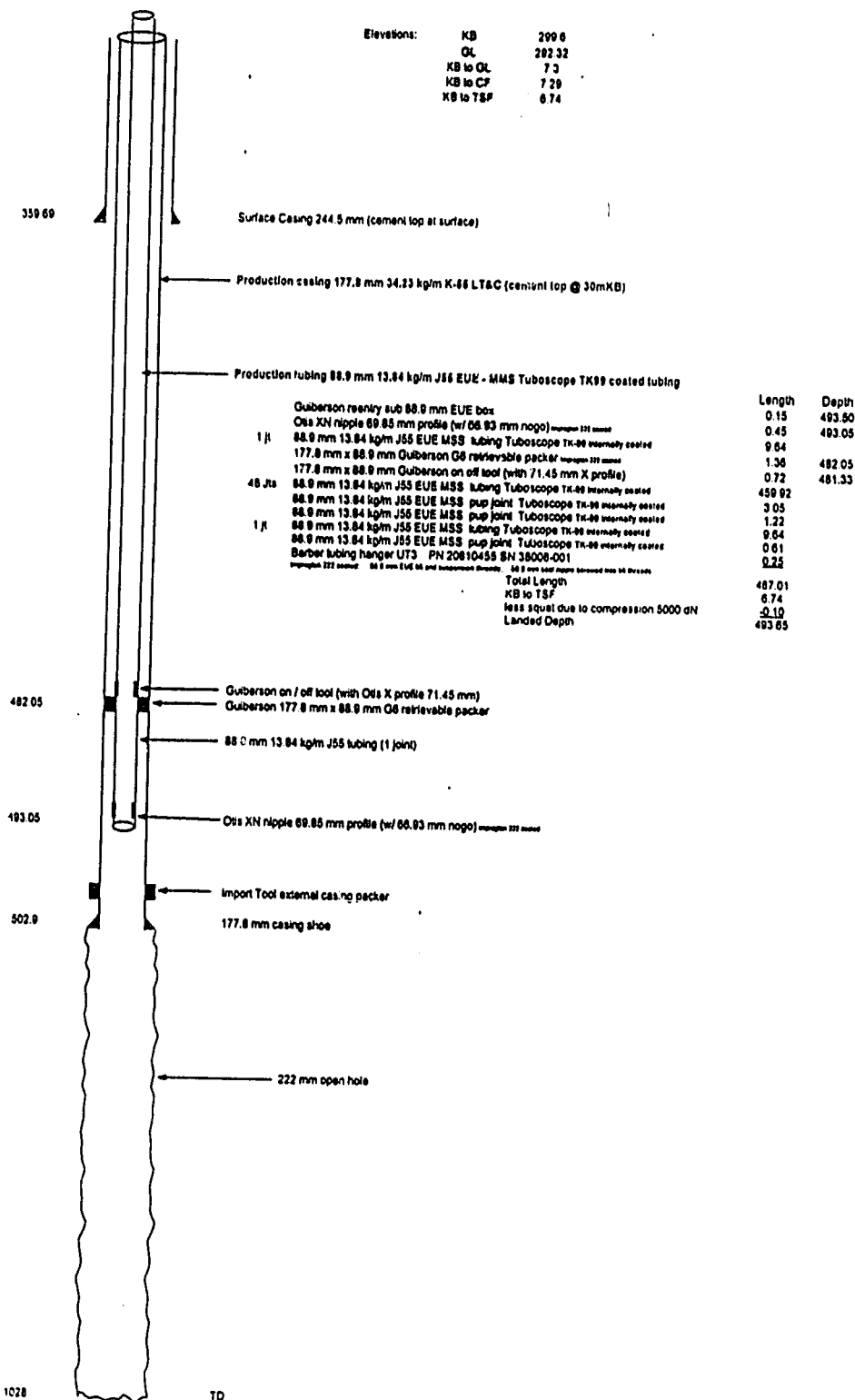
Chevron et al McKay Lakes O-80
(grid section 80°20', 123°18')

Wellbore Diagram



Chevron

Elevations:	KB	209.6
	OL	292.32
	KB to OL	7.3
	KB to CP	7.29
	KB to TSF	6.74



FINAL WELL REPORT

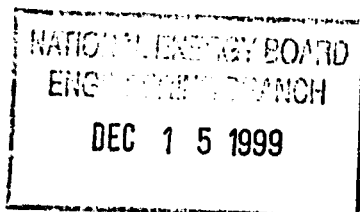
N.E.B. COPY

FINAL WELL REPORT
CHEVRON CANADA RESOURCES
CHEVRON ET AL MCKAY LAKES O-80

Grid: 60° 20', 123°29'

DATE: December 13, 1999

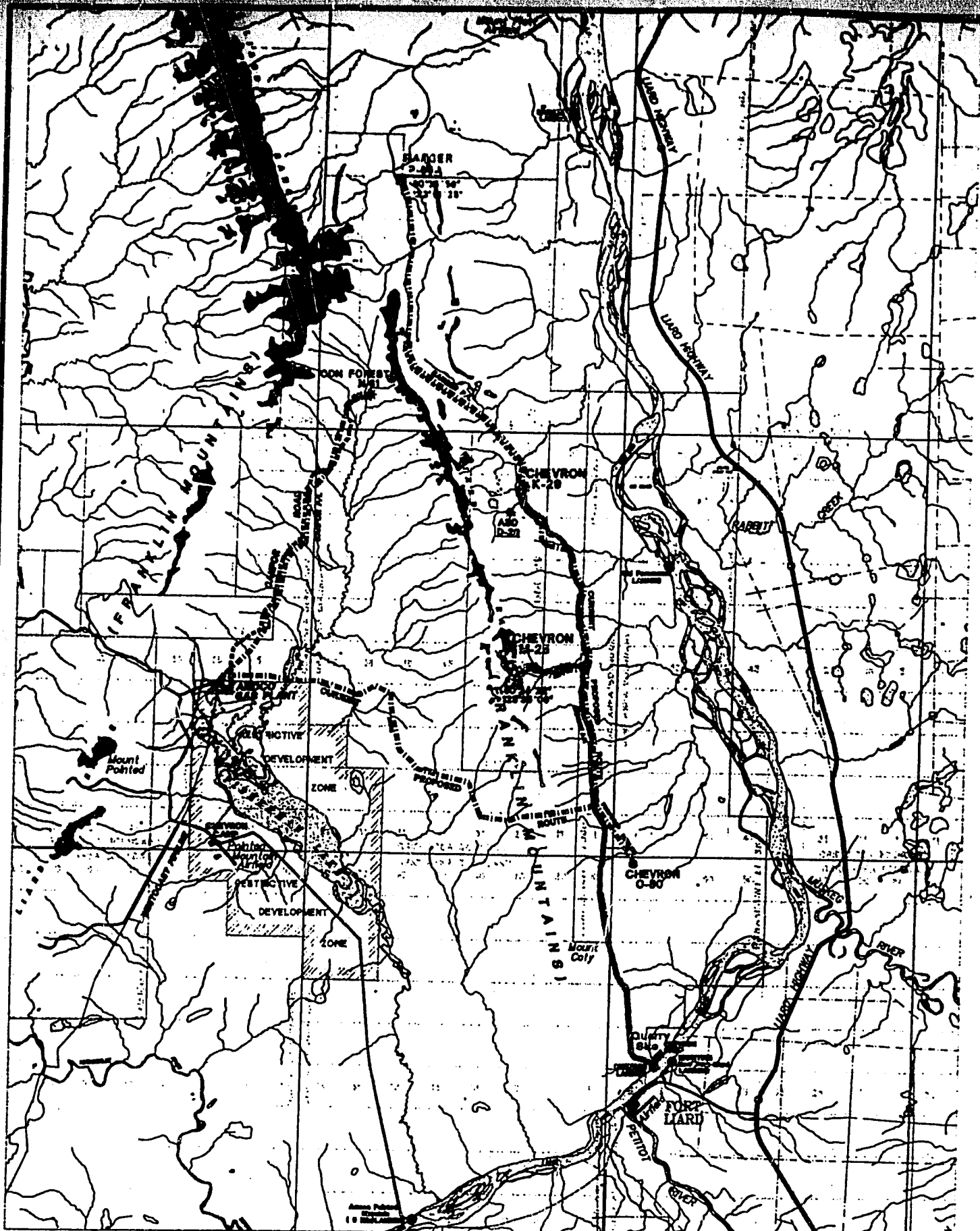
COMPANY REPRESENTATIVE: Miles Sweep



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LEGEND

CHEVRON WELLS SHOWN THIS	■	GAS PIPELINES	---
FOREIGN WELLS SHOWN THIS	■	50 FOOT CONTOUR INTERVAL SHOWN	---
PROPOSED ACCESS ROADS	---	AIRSTRIP SHOWN THIS	---
PROPOSED PIPELINES	---	WRECKERS CABIN	■
DEVELOPED ACCESS ROADS	---	TOWN/CITY	■
PRIMARY HIGHWAY	---	CAMP LOCATION	■
PROPOSED HIGHWAY	---	OIL AND GAS DISPOSITIONS CURRENT TO JULY 31, 1990	---
EXISTING ACCESS ROADS	---	SIL = SIGNIFICANT DISCOVERY LICENCE	---
RIVER ROADS	---	EL = EXPLORATION LICENCE	---
		PL = LEASE	---

CHEVRON CANADA RESOURCES LIMITED

MAP SHOWING
COMPILE PLAN
FORT LIARD, N.W.T.



NOVEMBER 16, 1990

CHALLENGER 300 8840 FISHER ROAD S.E.
CALGARY, ALBERTA
T2M 0Y1 CANADA
PH (403) 253-8900

SECTION DETAIL
SCALE 1:100 000

A. INTRODUCTION

Chevron Canada Resources drilled a 1028m vertical disposal well which spudded on August 24, 1999 and finishing on September 8, 1999 to evaluate disposal potential in the Mattson formation.

The drilling contractor was Akita Drilling Rig #48E, based out of Calgary, Alberta. The drilling rig used was a Diesel Electric land rig rated for 5000 m. The rig had a 174 m³ mud system, but due to summer drilling of the well, there were no boilers on location.

The well was drilled on Exploration License # 380, in which Chevron has a 26.56 % working interest. Authority to Drill #WID 1866 was issued to Chevron on August 4, 1999.

The well which was located approximately 10 km north of the Ft. Liard settlement, lies on the eastern flank of the Franklin Mountains along the southwestern margin of the Nahanni disturbed belt. The exact co-ordinates of the well are as follows:

Latitude: 60°19'49.955" N
Longitude: 123°29'03.462" W

Cancor Rathole Inc. moved a rig onto the location on August 18, and in 6 hours completed drilling the 609.6mm conductor hole, which had a total depth of 18.3m. The conductor hole was drilled without fluid, and conductor casing was pressure cemented into place. The pipe was 508mm, 78.55kg/m and was cemented with 7 tonnes of Class G cement + 3% CaCl + 1% dispersant, and ½ % antifoam. The conductor hole was drilled through silty clay.

The Akita 48E drilling rig was moved onto the location August 21, 1999 and the well spudded on August 24, 1999 at 1115 hours to drill the 349 mm surface hole to a depth of 186 m. At 186m the bit was pulled out of the hole, and replaced with a 311mm bit. The 311mm surface hole continued to 363 and ended in the Garbutt formation.

Surface casing was 224.5mm K55 53.57kg/m LT&C casing, and was cemented with 32m³ of Class G + 35% D66 +2% S1 + 0.5% D65 + 0.2% D46. There were good mud returns reported throughout the cement job, with 5 m³ cement returns.

The BOP's were installed and pressure tested. The choke manifold, flare lines, blind rams, top & bottom pipe rams, kill valves, HCR, manual mudsaver valve, manual relief valve, stabbing valve, and acutator valve were pressure tested to 1,400 kPa low and 34,500 kPa high for 15 minutes each. The accumulator was tested to 1,400 kPa low and 17,500 kPa high for 15 minutes.

The float collar and shoe were drilled out on August 29, 1999. A formation integrity test was done at 366m, and the test gradient was taken to 18 kPa/m. The 222 mm main hole was

drilled ahead to 1028mMD, ending 71m into the Flett formation.

The open hole was logged by Schlumberger. Log run # 1 was an AIT-HRMS-HGNS-DSI from total depth to surface casing. Log run # 2 was an CMR, and was run from total depth to 410m. Following logging, two DSTs were run. DST #1 was over the Mattson Sand (594 – 606m). DST #2 was also over the Mattson Sand (485-492m). Intermediate casing, 177.8mm 34.5kg/m K-55 LT&C, was set at 502.9m and cemented with 7.22 m³ Class G + 35%D66 + 0.5%D65 + 2.0% S1 + 0.2% D46. Good mud returns were reported throughout the cement job, with 2.5 m³ chemical wash returns, indicating cement top at 30m below surface. The BOPs were installed and pressure tested to 1400kPa low, 34,500kPa high. The rig was turned over to completion operations.

The cement plug was drilled out on September 9, 1999. The wellbore was acid washed with 15% HCl, then displaced with 1075kg/m³ NaCl brine.

On September 10, 1999 the rig ran an 88.9mm, 13.84kg/m³ TK99-coated tubing string, which landed at 493.65m. A Barber wellhead was installed and the annulus pressure tested to 1400kPa low / 21,000kPa high. An injectivity test ran from September 11 – 17. Once recorders were removed from the wellbore, the well was secured, and is now waiting for facilities to be in place to begin injection.

B. GENERAL DATA

- | | | |
|----|--------------------------------|--------------------------------|
| 1. | Well Name: | Chevron et al McKay Lakes O-80 |
| | Authority to Drill a Well No.: | WID # 1866 |
| | Exploration Agreement Number: | EL#380 |
| | Location Unit: | O |
| | Section: | 80 |
| | Grid Area: | 60°20', 123°29' |
| | Classification: | Development |
| 2. | Well Location: | O-80 |
| | Coordinates: | Latitude: 60°19'49.955"N |
| | | Longitude: 123°29'03.462"W |

3. Unique Well Identifier: 300O806020123150
4. Operator: Chevron Canada Resources
5. Contractor: Akita Drilling
6. Drilling Unit: Rig #48E
Diesel Electric, Land Rig
7. Position Keeping: Not Applicable, Land Rig
8. Support Craft (Helicopter): supplied by Deh Cho Helicopters and
Cooper Barging
9. Drilling Unit Performance: satisfactory
10. Difficulties and Delays: remote access
11. Total Well Cost: \$680MM for access road and lease
preparation
\$1740MM to drill
\$220MM to stimulate and test
12. Bottom Hole Well Co-ordinates from Surface Location: same as surface

C. SUMMARY OF DRILLING OPERATIONS

1. Elevations:
Ground: 292.32 m above sea level
KB: 300.0 m above sea level
KB To Casing Flange: 7.7m (KB to CF)
2. Total Depth:
MD: 1028.0 mKB
TVD: 1028.0 mKB
3. Date and Hour Spudded: August 24, 1999 @ 1115hrs
4. Date Drilling Completed: September 4, 1999
5. Date of Rig Release: September 8, 1999 (released to completion)

operations)

6. Well status: Completed for injection.
7. Hole Sizes and Depths:
- | | |
|-----------------|----------------------|
| Conductor Hole: | 609.6 mm to 18.3 mKB |
| Surface Hole: | 349.5 mm to 186 mKB |
| | 311mm to 363mKB |
| Main Hole: | 222 mm to 1028 mKB |
8. Casing and Cementing Record:
- Conductor Hole:
- | | |
|-------------------|-------------------------------------|
| Casing Size: | 508 mm |
| Casing Weight: | 78.55 kg/m |
| Number of Joints: | 2 |
| Thread: | Welded |
| Depth Set: | 18.3 m (KB) |
| Cut Height: | Surface |
| Cut off Depth: | Surface |
| Date Set: | August 19, 1999 |
| Cement Volume: | 7 Tonnes |
| Cement Type: | Class G |
| Additives: | 3% CaCl+1% dispersant+1/2% antifoam |
- Surface Hole:
- | | |
|---------------------|-----------------|
| Casing Size: | 224.5 mm |
| Casing Weight: | 53.57 kg/m |
| Casing Grade: | K-55 |
| Casing Make: | Siderka |
| Number of Joints: | 29 |
| Thread: | LT&C |
| Depth Set: | 359.21m (KB) |
| Cut Height: | surface |
| Date Set: | August 28, 1999 |
| Float Shoe Depth: | 359.21 m |
| Float Collar Depth: | 358.91 m |
| Cut Off Depth: | surface |
- | | |
|----------------|----------|
| Cement Volume: | 32 m3 |
| Cement Type: | Class G |
| Additives: | 0.5% D65 |
| | 2% S1 |
| | 0.2% D46 |

35% D66
Cement Top: Surface
Casing Bowl Size: 279 x 244 mm
Casing Bowl Make: Barber

Main Hole:

Casing Size: 177.8 mm
Casing Weight: 34.5 kg/m
Casing Grade: K-55
Casing Make: Siderka / Algoma
Number of Joints: 36
Thread: LT&C
Depth Set: 502.9 mKB
Cut Height: surface
Date Set: September 7, 1999
Float Shoe Depth: 502.9m
Float Collar Depth: 499.28 m
Cut Off Depth: surface

Cement Volume: 7.22 m3
Cement Type: Class G
Additives: 0.5% D65
2% S1
0.2% D46
35% D66
Cement Top: 30mKB
Casing Bowl Size: 279 x 244 mm
Casing Bowl Make: Barber

Tubing:

Tubing Size: 88.9 mm
Tubing Weight: 13.84kg/m
Tubing Grade: J-55
Tubing Make: Tuboscope
Number of Joints: 50
Thread: EUE
Depth Set (MD): 493.05m
Cut Height: surface
Date Set: September 10, 1999
Casing Bowl Size: 279 x 244 mm
Casing Bowl Make: Barber

9. Drilling Fluid:

Conductor Hole: Drilled without fluids.
Surface Hole: Gel-Chem Spud Mud
Properties: Viscosity: 45 sec/L
Weight: 1080 kg/m³

pH: 8.8
 Water loss: 9.2 cc
 Solids: 5.00
 Gels: 2.0/4.0
 Filter Cake: unavailable
 PV / YP: 19 / 5

Main Hole: Clay Based Non-dispersed
 Properties: Viscosity: 71 sec/L
 Weight: 1120 kg/m³
 pH: 10.8
 Water loss: 6.0 cc
 Solids: 8.0
 Gels: 5 / 17
 Filter Cake: unavailable
 PV / YP: 27/18

10. Fishing Operations: n/a

11. Well Kicks and Well Control Operations: n/a

12. Formation Integrity Tests: Surface
 Depth: 366 m
 Fluid Density: 1005 kg/m³
 Test Gradient: 18 kPa/m
 Equivalent Mud Weight 1840 kg/m³
 Casing Setting Depth: 363 mKB

13. Time Distribution: A daily time distribution can be found on the daily reports.

Time Break Down

<u>Activity</u>	<u>Days</u>
Drilling:	5.74
Surveying:	0.31
Circulating:	0.55
Cementing:	0.14
WOC:	0.25
Rig Service:	0.39
Rig Repair:	0.39
Tripping, Reaming:	2.46
Running casing:	1.26
Logging:	0.00
Rig Up / Rig Down:	1.42
Other:	2.24

14. Deviation Survey: As this was a planned vertical well, the only surveys run were

Totco surveys, to ensure the wellbore did not deviate from its vertical path. The results of the surveys were as follows:

Depth	Deviation (°)
31.3	.25
110	.5
146	.5
176	.75
217	1.0
250	.75
277	1.0
305	1.0
330	1.0
355	1.125
601	2.25
686	2.0
857	3.125
943	2.5

15. Abandonment Plugs: n/a

16. Composite Well Record: submitted September 8, 1999 with striplog

17. Completion Record:

Start Date: September 10, 1999

Finish Date: September 18, 1999

Contractor: Akita 48E

Completion Summary:

Injection tested from September 10 – 17, 1999. Install back pressure valve assembly September 18, 1999.

Final Well Configuration: See Appendices 2 & 3

D: GEOLOGY

GEOLOGICAL SUMMARY

The geological report and striplog were submitted to the NEB on September 8, 1999.

Log Tops

Formation	Subsea Depth(m)	mKB Depth	Lithology
Scatter	191.6	108	Sandstone
Garbutt	57.6	242	Shale
Chinkeh	-116.4	416	Siltstone
Mattson	-135.4	435	Sandstone
Flett	-657.4	957	Limestone
Total Depth	-728.4	1028	Limestone

DRILL STEM TESTS: results submitted with Formation Test and Injection Test Summary, dated October 13, 1999

WELL EVALUATION

The following logs were run:

Total Depth Logging Run

Run #	Log Name	Depth (m)
1	AIT-HRMS-HGNS-DSI	TD to 410m
2	CMR	TD to 410m

MUD SALINITY: submitted with geological information September 8, 1999

GAS, OIL, & WATER ANALYSES: see Appendix 5

FORMATION STIMULATION AND TEST RESULTS

As per Formation Test and Injection Test Summary, dated October 13, 1999.

DETAILED TEST PRESSURE DATA READINGS:

As per Formation Test and Injection Test Summary, dated October 13, 1999

E. ENVIRONMENTAL WELL ANALYSIS

- no environmental incidents occurred during these operations

Appendix 2: Wellbore Diagram

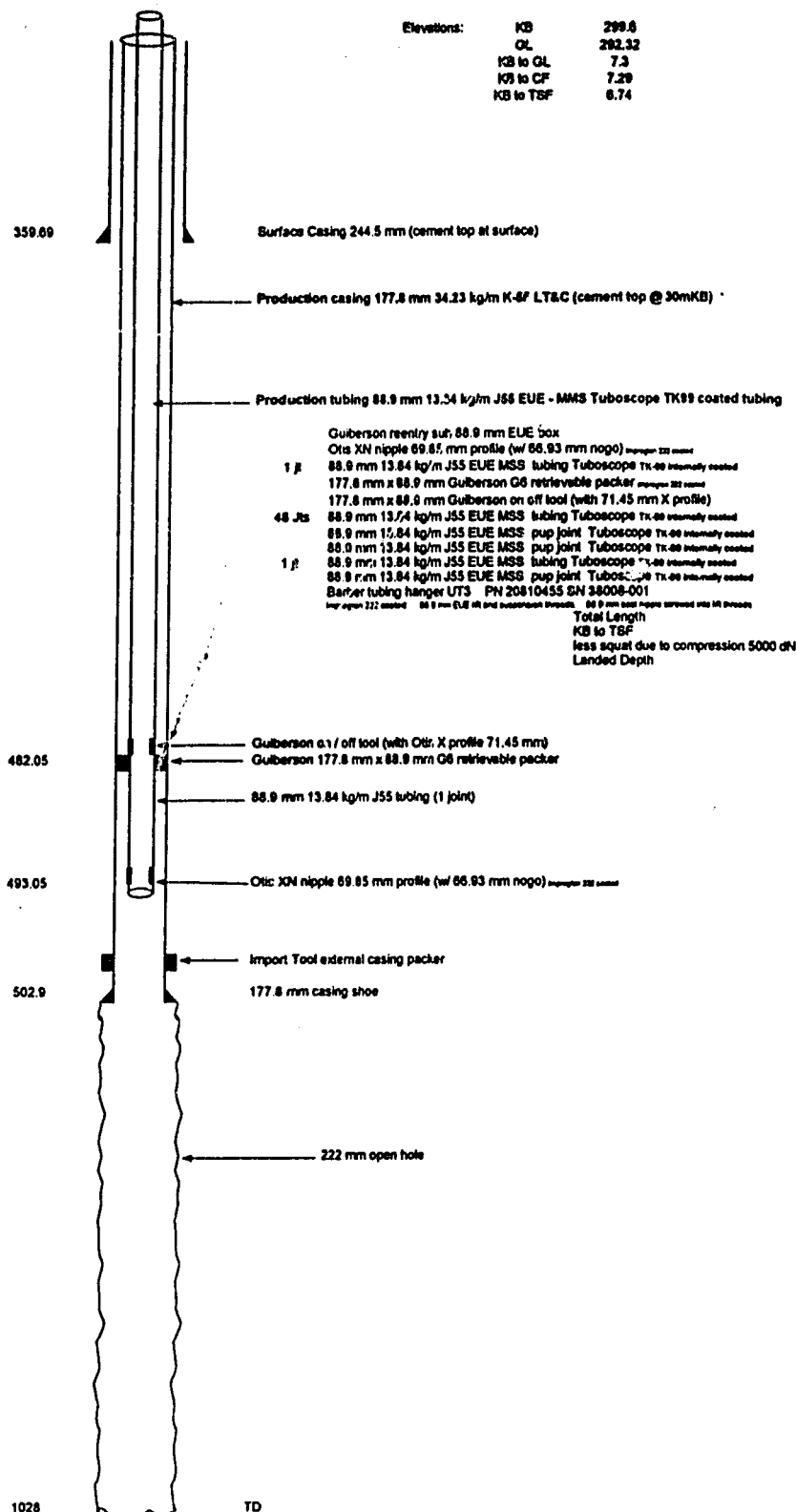
Chevron Canada Resources

Chevron et al McKay Lakes O-80
(grid section 60°20', 123°15')

Wellbore Diagram

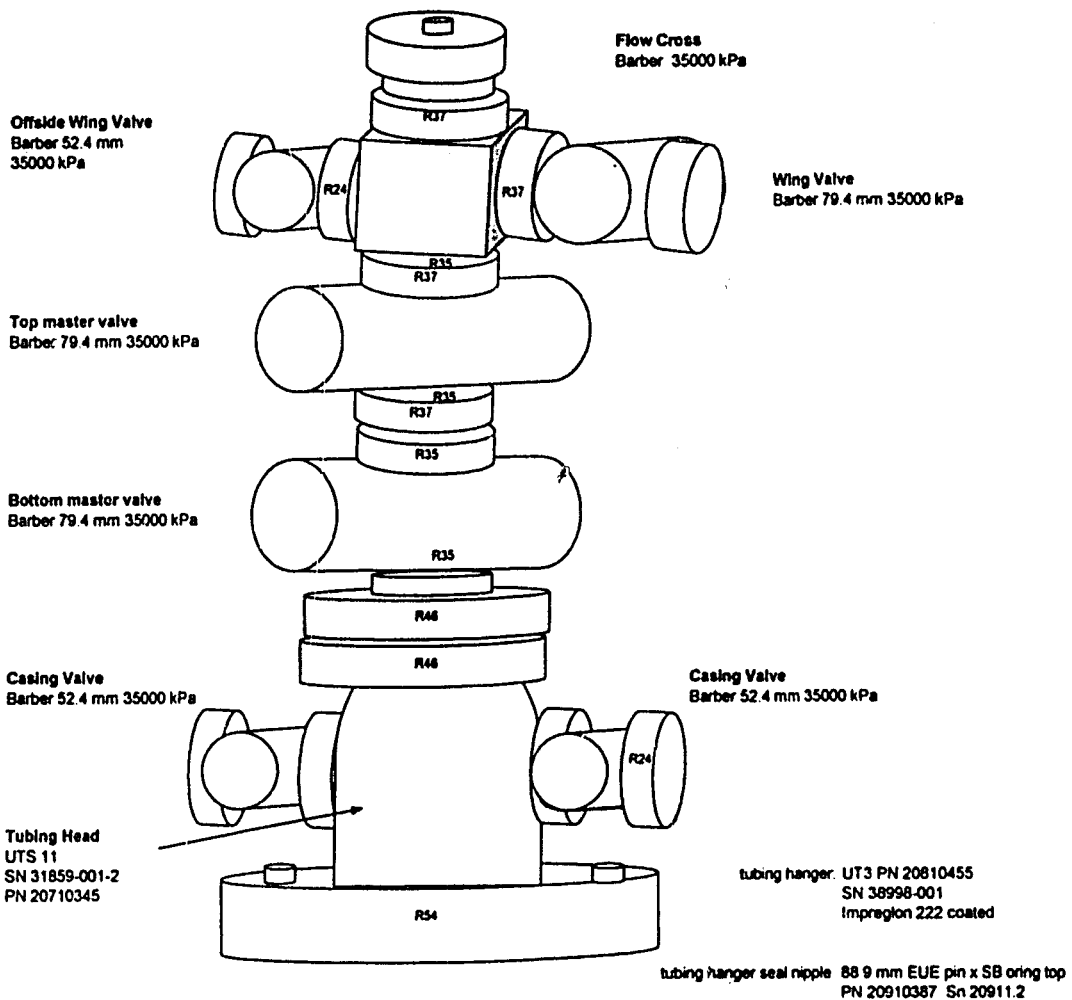


Elevations:	KB	299.6
	OL	292.32
	KB to OL	7.3
	KB to CF	7.29
	KB to T&F	6.74



Appendix 3: Wellhead Diagram

Wellhead Cap Barber type TA-2
1 1/2 threads 88.9 mm EUE



Appendix 4:

Well Stratigraphy Column

Chevron et al McKay Lakes O- 80

60° 20' , 123° 15'

Grd = 292.32 m

KB = 299.6 m

MEASURED DEPTH (m)	LITHOLOGY	FORMATION	REMARKS
108		Scatter	Sandstone, light gray to tan gray, very fine to fine grained, quartzose, siliceous
242		Garbutt	Shale, dark gray to black, micromicaceous, fissile, silty
359.7		Surface Casing	
416		Chinkeh	Siltstone, medium gray to brown gray, dolomitic slightly argillaceous
435		Mattson	Sandstone, light gray, quartzose, very fine to medium grained, siliceous, dolomitic, black shale laminations, porosities range from tight to excellent
502.9		Intermediate Casing	
957		Flett	Limestone, medium gray to brown gray, fine to very coarse crinoidal packstone, slightly argillaceous, very fossiliferous
1028		Total Depth (Flett)	

G05913_01

Appendix 5: Water Analyses



Container Identification PB 1A		Laboratory Number WG42689A											
Operator Name CHEVRON CANADA RESOURCES LIMITED													
Unique Well Identifier 0-80 NWT	Well Name CHEVRON etal MCKAY LAKES 0-80		Elevation KB m 299.60 GRD m 292.32										
Field or Area MCKAY LAKES	Pool or Zone MATTSON SAND	Sampler's Company BAKER											
Test Type DST	Test No. 1	Test Recovery SP: #1 TOP	Name of Sampler										
Test Interval or Perfs 594.00-608.00 mKB		Sampling Point N/A	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Separator</th> <th>Reservoir</th> <th>Source</th> <th>Sampled</th> <th>Received</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	Separator	Reservoir	Source	Sampled	Received					
Separator	Reservoir	Source	Sampled	Received									
Date Sampled Sep 05, 1999	Date Received Sep 15, 1999	Date Reported Sep 17, 1999	Analyst LN										
Other Information													

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	612.5	0.278	26.6
K	17.9	0.008	0.5
Ca	9.0	0.004	0.2
Mg	12.1	0.006	0.5
Fe	19.3	0.009	0.3

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	48.2	0.022	1.4
HCO ₃	1064.7	0.484	17.4
SO ₄	353.2	0.161	3.7
CO ₃	62.5	0.028	1.0
OH	Nil	Nil	Nil

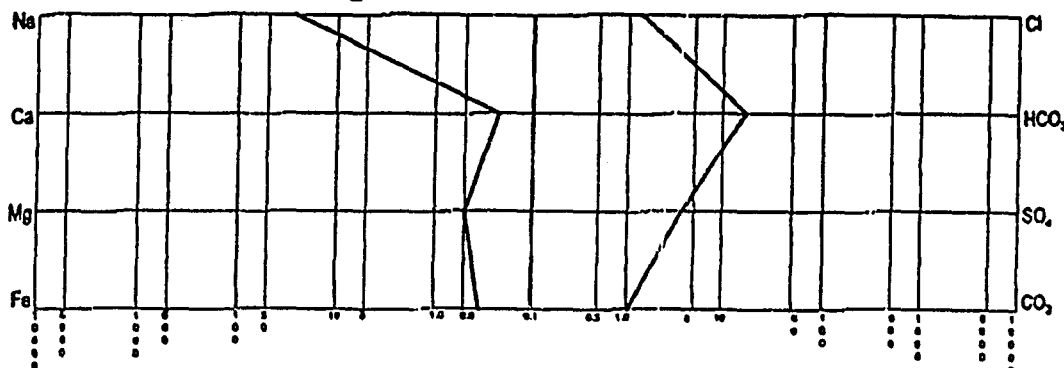
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	2199
Observed Ph	8.71
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	1.005
Resistivity / OHM-m (25°C)	3.610
Salinity ‰	0.01

Total Cations 29.2

Total Anions 27.2

Logarithmic Pattern mmol/L





Container Identification		Laboratory Number	
PB 2B		WG42689B	
Operator Name			
CHEVRON CANADA RESOURCES LIMITED			
Unique Well Identifier		Well Name	
0-80 NWT		CHEVRON etal MCKAY LAKES 0-80	
		Elevation	
		KB m 299.60 GRD m 292.32	
Field or Area		Pool or Zone	
MCKAY LAKES		MATTSON SAND	
Sampler's Company			
BAKER			
Test Type	Test No.	Test Recovery	Name of Sampler
DST	1	SP: #2	
Test Interval or Ports		Sampling Point	
594.00-608.00		N/A	
mKB		Pressure (kPa) Temperature (°C)	
		Separator	Reservoir
		Source	Sampled
		Received	
Date Sampled		Date Received	
Sep 05, 1999		Sep 15, 1999	
Date Reported		Analyst	
Sep 17, 1999		LN	
Other Information			

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	500.0	0.278	21.7
K	19.1	0.011	0.5
Ca	6.0	0.003	0.1
Mg	14.9	0.008	0.6
Fe	21.9	0.012	0.4

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	68.3	0.038	1.9
HCO ₃	778.6	0.432	12.8
SO ₄	345.9	0.192	3.6
CO ₃	46.9	0.026	0.8
OH	Nil	Nil	Nil

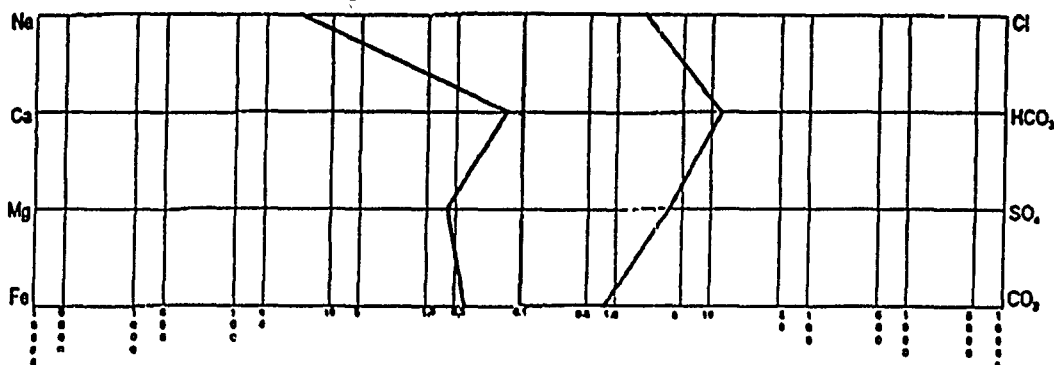
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1801
Observed Ph	9.08
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	1.003
Resistivity / OHM-m (25°C)	4.440
Salinity %	0.01

Total Cations **24.5**

Total Anions **22.7**

Logarithmic Pattern mmol/L





Container Identification
PB 3C

Laboratory Number
WG42689C

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	MATTSON SAND	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	1	SP: #3	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
564.00-608.00	N/A					
mKB		Pressure (kPa)	Temperature (°C)			

Date Sampled	Date Received	Date Reported	Analyst
Sep 05, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	347.0	0.233	15.1
K	14.0	0.009	0.4
Ca	37.0	0.025	0.9
Mg	27.0	0.018	1.1
Fe	4.6	0.003	0.1

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	68.5	0.046	1.9
HCO ₃	683.3	0.458	11.2
SO ₄	310.0	0.208	3.2
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

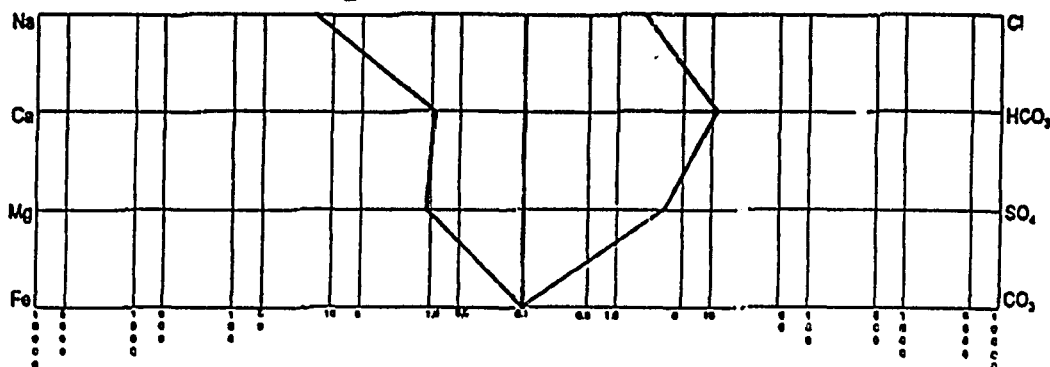
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1491
Observed Ph	7.94
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	5.800
Salinity ‰	0.01

Total Cations 19.7

Total Anions 19.6

Logarithmic Pattern mmol/L





Container Identification		Laboratory Number																			
PB 4D		WG42689D																			
Operator Name																					
CHEVRON CANADA RESOURCES LIMITED																					
Unique Well Identifier	Well Name		Elevation																		
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">KB m</td> <td style="text-align: center;">299.60</td> <td style="text-align: center;">GRD m</td> <td style="text-align: center;">292.32</td> </tr> </table>	KB m	299.60	GRD m	292.32														
KB m	299.60	GRD m	292.32																		
Field or Area	Pool or Zone	Sampler's Company																			
MCKAY LAKES	MATTSON SAND	BAKER																			
Test Type	Test No.	Test Recovery	Name of Sampler																		
DST	1	SP: #4																			
Test Interval or Perfs		Sampling Point	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Pressure (kPa)</td> <td style="text-align: center;">Separator</td> <td style="text-align: center;">Reservoir</td> <td style="text-align: center;">Source</td> <td style="text-align: center;">Sampled</td> <td style="text-align: center;">Received</td> </tr> <tr> <td style="text-align: center;">594.00-606.00</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">mKB</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Pressure (kPa)	Separator	Reservoir	Source	Sampled	Received	594.00-606.00						mKB					
Pressure (kPa)	Separator	Reservoir		Source	Sampled	Received															
594.00-606.00																					
mKB																					
		N/A																			
Date Sampled	Date Received	Date Reported	Analyst																		
Sep 05, 1999	Sep 15, 1999	Sep 17, 1999	LN																		
Other Information																					

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	205.0	0.159	8.9
K	12.0	0.009	0.3
Ca	74.2	0.058	1.9
Mg	60.9	0.047	2.5
Fe	0.2	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	31.6	0.025	0.9
HCO ₃	603.8	0.468	9.9
SO ₄	301.4	0.234	3.1
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

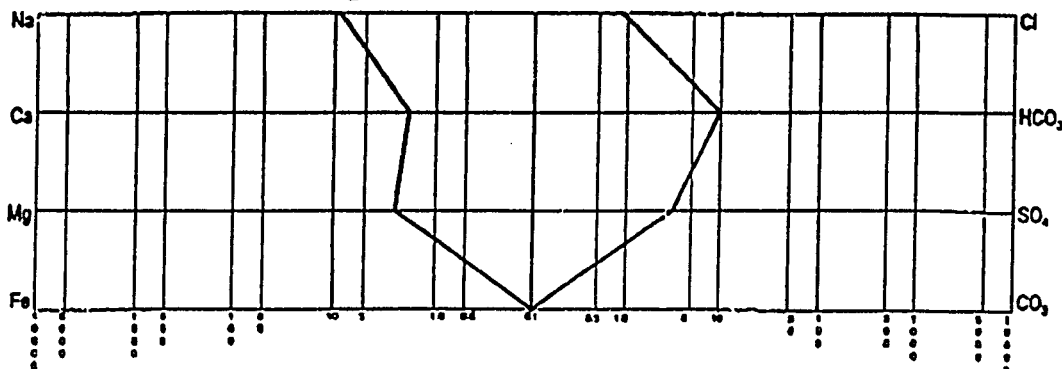
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1239
Observed Ph	7.31
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	6.329
Salinity ‰	0.01

Total Cations 17.9

Total Anions 17.1

Logarithmic Pattern mmol/L





Container Identification PB 5E		Laboratory Number WG42689E											
Operator Name CHEVRON CANADA RESOURCES LIMITED													
Unique Well Identifier 0-80 NWT	Well Name CHEVRON etal MCKAY LAKES 0-80		Elevation KB m 299.60 GRD m 292.32										
Field or Area MCKAY LAKES	Pool or Zone MATTSON SAND	Sampler's Company BAKER											
Test Type DST	Test No. 1	Test Recovery SP: #5	Name of Sampler										
Test Interval or Perfs 594.00-608.00 mKB		Sampling Point N/A	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Separator</th> <th>Reservoir</th> <th>Source</th> <th>Sampled</th> <th>Received</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	Separator	Reservoir	Source	Sampled	Received					
Separator	Reservoir	Source	Sampled	Received									
Date Sampled Sep 05, 1999	Date Received Sep 15, 1999	Date Reported Sep 17, 1999	Analyst LN										
Other Information													

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	160.0	0.118	7.0
K	12.6	0.009	0.3
Ca	97.9	0.072	2.4
Mg	81.4	0.060	3.3
Fe	0.1	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	54.5	0.040	1.5
HCO ₃	603.8	0.445	9.9
SO ₄	346.0	0.255	3.6
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

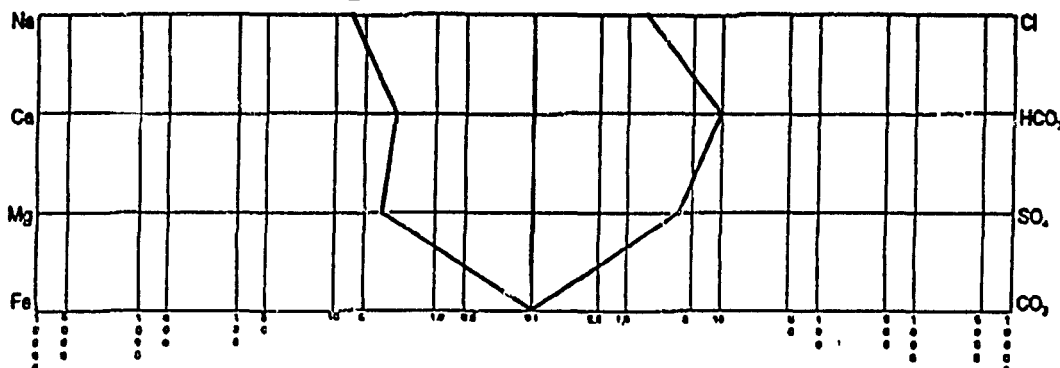
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1356
Observed Ph	7.26
H ₂ S (25°C) mg/L	17.04
Relative Density (25°C)	0.995
Resistivity / Ohm-m (25°C)	6.536
Salinity %	0.01

Total Cations **18.9**

Total Anions **18.6**

Logarithmic Pattern mmol/L





Container Identification
PB 6F

Laboratory Number
WG42689F

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	MATTSON SAND	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	1	SP: #6	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
604.00-608.00	N/A					
mKB		Pressure (kPa)	Temperature (°C)			

Date Sampled	Date Received	Date Reported	Analyst
Sep 05, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	135.0	0.097	5.9
K	12.8	0.009	0.3
Ca	100.0	0.072	2.5
Mg	90.2	0.065	3.7
Fe	0.3	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	37.6	0.027	1.1
HCO ₃	635.6	0.457	10.4
SO ₄	380.4	0.273	4.0
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

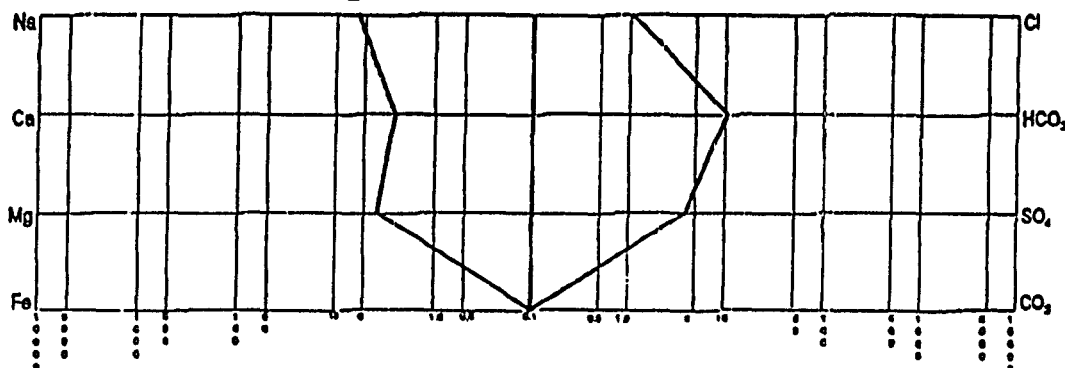
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	139.1
Observed Ph	7.43
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	6.369
Salinity ‰	0.01

Total Cations 18.6

Total Anions 19.4

Logarithmic Pattern mmol/L





Container Identification
PB 7G

Laboratory Number
WG42689G

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	MATTSON SAND	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	1	SP: #7	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
594.00-606.00	N/A					
mKB		Pressure (kPa)				
		Temperature (°C)				

Date Sampled	Date Received	Date Reported	Analyst
Sep 05, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	134.0	0.097	5.8
K	13.3	0.010	0.3
Ca	101.0	0.073	2.5
Mg	91.8	0.066	3.8
Fe	0.5	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	31.4	0.023	0.9
HCO ₃	651.5	0.471	10.7
SO ₄	359.6	0.260	3.7
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

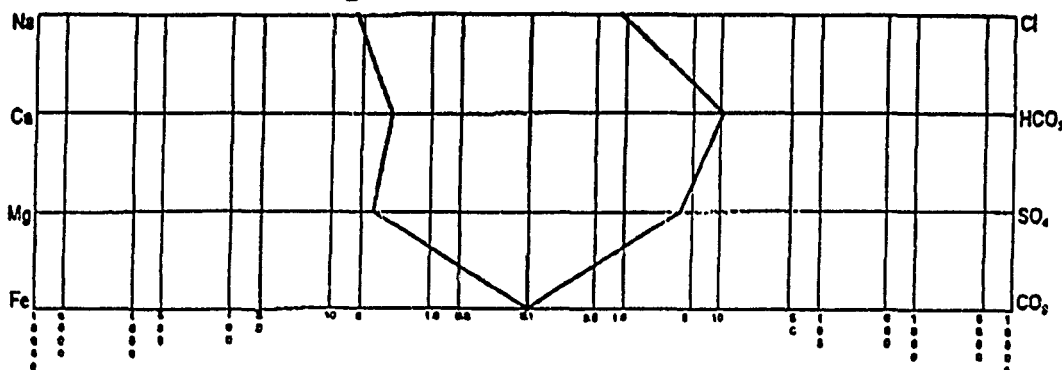
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1383
Observed Ph	7.44
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	6,452
Salinity ‰	0.01

Total Cations 18.8

Total Anions 19.0

Logarithmic Pattern mmol/L





Container Identification
PB 8H

Laboratory Number
WG42589H

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	MATTSON SAND	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	1	SP: #8 BOTTOM	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
594.00-608.00 mKB	N/A					
		Pressure (l:Pa)				
		Temperature (°C)				

Date Sampled	Date Received	Date Reported	Analyst
Sep 05, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	154.0	0.108	6.7
K	13.4	0.009	0.3
Ca	94.1	0.066	2.3
Mg	87.6	0.061	3.6
Fe	0.2	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	59.0	0.041	1.7
HCO ₃	667.4	0.468	10.9
SO ₄	350.5	0.246	3.6
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

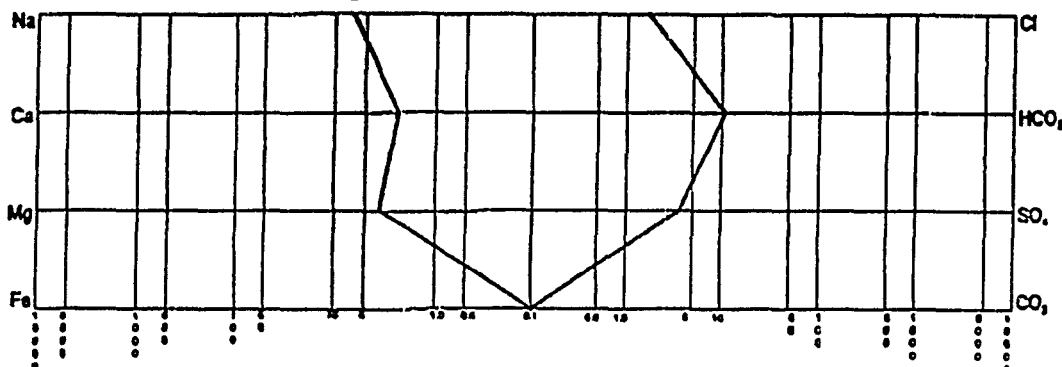
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1426
Observed Ph	7.47
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	6.289
Salinity %	0.01

Total Cations 18.9

Total Anions 19.9

Logarithmic Pattern mmol/L





Container Identification		Laboratory Number	
PB 101		WG426891	
Operator Name			
CHEVRON CANADA RESOURCES LIMITED			
Unique Well Identifier		Well Name	
0-80 NWT		CHEVRON et al MCKAY LAKES 0-80	
Elevation		Elevation	
KB m 299.60		GRD m 292.32	
Field or Area		Pool or Zone	
MCKAY LAKES		MATTSON SAND	
Sampler's Company			
BAKER			
Test Type		Test Recovery	
DST		SP: BHS #111	
Test No.		Name of Sampler	
1			
Test Interval or Perfs		Sampling Point	
594.00-608.00		BHS	
mKB			
		Pressure (kPa)	
		Temperature (°C)	
		Separator	
		Reservoir	
		Source	
		Sampled	
		Received	
Date Sampled		Date Received	
Sep 05, 1999		Sep 15, 1999	
Date Reported		Analyst	
Sep 15, 1999		KK	
Other Information			

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	119.8	0.086	5.2
K	13.8	0.010	0.4
Ca	112.2	0.081	2.8
Mg	110.8	0.080	4.6
Fe	7.9	0.006	0.1

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	62.4	0.045	1.8
HCO ₃	555.2	0.401	9.1
SO ₄	403.3	0.291	4.2
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

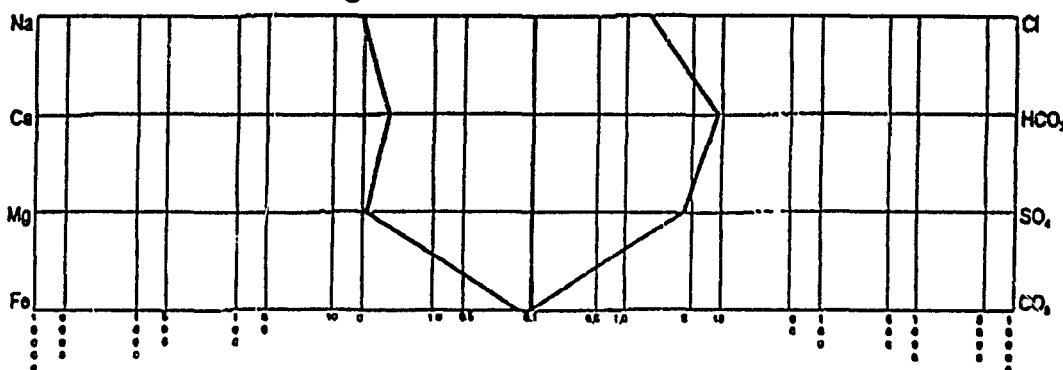
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1386
Observed Ph	7.97
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	6.450
Salinity ‰	0.01

Total Cations 20.6

Total Anions 19.3

Logarithmic Pattern mmol/L





Container Identification
PB 11J

Laboratory Number
WG42689J

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	NOT APPLICABLE	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	2	SP: 1 - TOP, FORMATION - FANTASQUE	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
485.00-492.00	N/A					
mKB						

Date Sampled	Date Received	Date Reported	Analyst
Sep 06, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	476.5	0.255	20.7
K	15.9	0.009	0.4
Ca	8.9	0.005	0.2
Mg	14.7	0.008	0.6
Fe	22.1	0.012	0.4

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	37.1	0.020	1.0
HCO ₃	1080.6	0.579	17.7
SO ₄	203.5	0.109	2.1
CO ₃	7.8	0.004	0.1
OH	Nil	Nil	Nil

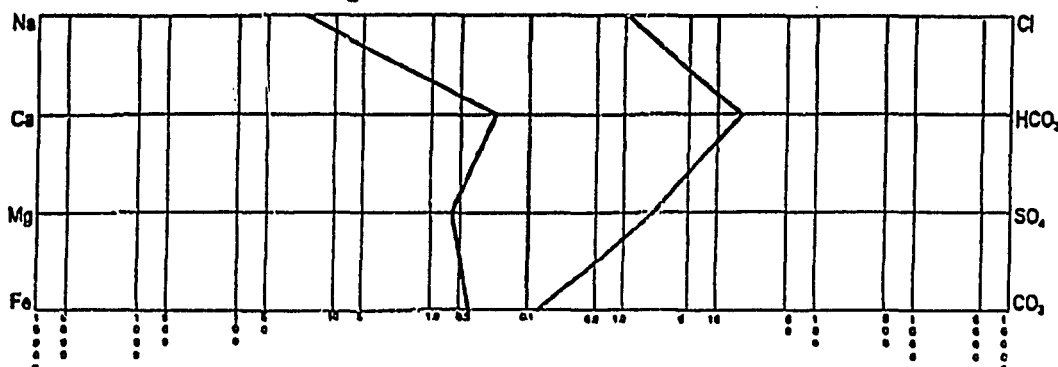
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1867
Observed Ph	8.65
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	1.007
Resistivity / OHM·m (25°C)	4.710
Salinity ‰	0.01

Total Cations 23.6

Total Anions 23.1

Logarithmic Pattern mmol/L





Container Identification		Laboratory Number	
PB 12K		WG42689K	
Operator Name			
CHEVRON CANADA RESOURCES LIMITED			
Unique Well Identifier	Well Name		Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80		KB m 299.60 GRD m 292.32
Field or Area	Pool or Zone	Sampler's Company	
MCKAY LAKES	NOT APPLICABLE	BAKER	
Test Type	Test No.	Test Recovery	Name of Sampler
DST	2	SP: #2, FORMATION - FANTASQUE	
Test Interval or Perfs		Sampling Point	
486.00-492.00 mKB		N/A	
		Pressure (kPa)	
		Temperature (°C)	
Date Sampled		Date Received	Date Reported
Sep 06, 1999		Sep 15, 1999	Sep 17, 1999
			Analyst
			LN
Other Information			

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	262.0	0.247	11.4
K	13.5	0.013	0.3
Ca	19.1	0.018	0.5
Mg	13.2	0.012	0.5
Fe	1.8	0.002	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	29.9	0.028	0.8
HCO ₃	651.5	0.613	10.7
SO ₄	63.4	0.060	0.7
CO ₃	7.8	0.007	0.1
OH	Nil	Nil	Nil

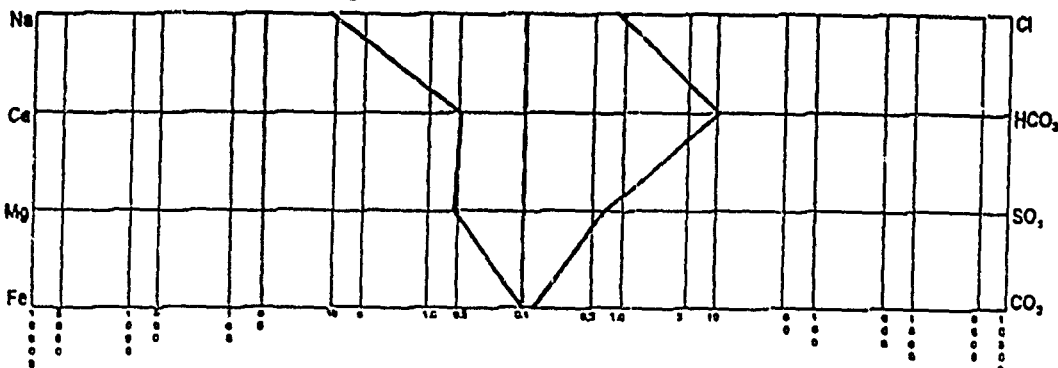
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	1062
Observed Ph	8.52
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / Ohm-m (25°C)	6.170
Salinity ‰	0.01

Total Cations 13.8

Total Anions 13.0

Logarithmic Pattern mmol/L





Container Identification
PB 13L

Laboratory Number
WG42689L

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	NOT APPLICABLE	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	2	SP: #3, FORMATION -FANTASQUE	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
485.00-492.00	N/A					
mKB		Pressure (kPa)				
		Temperature (°C)				

Date Sampled	Date Received	Date Reported	Analyst
Sep 06, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	81.4	0.098	3.5
K	19.5	0.024	0.5
Ca	63.2	0.076	1.6
Mg	34.3	0.042	1.4
Fe	0.6	0.001	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	16.8	0.020	0.5
HCO ₃	603.8	0.731	9.9
SO ₄	6.8	0.008	0.1
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

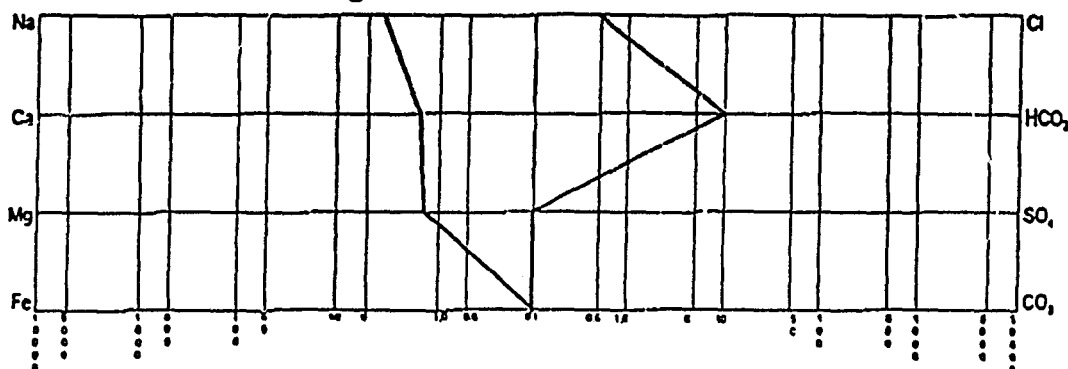
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	826
Observed Ph	7.91
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	10.030
Salinity ‰	0.00

Total Cations 10.0

Total Anions 10.5

Logarithmic Pattern mmol/L





Container Identification
PB 14M

Laboratory Number
WG42689M

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	NOT APPLICABLE	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	2	SP: #4, FORMATION - FANTASQUE	

Test Interval or Perfs	Sampling Point	Separator	Reservoir	Source	Sampled	Received
485.00-492.00	N/A					
mKB		Pressure (kPa)				
		Temperature (°C)				

Date Sampled	Date Received	Date Reported	Analyst
Sep 06, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	71.5	0.089	3.1
K	20.9	0.026	0.5
Ca	65.4	0.081	1.6
Mg	35.8	0.045	1.5
Fe	0.4	0.001	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	15.5	0.021	0.5
HCO ₃	507.9	0.731	9.6
SO ₄	5.4	0.007	0.1
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

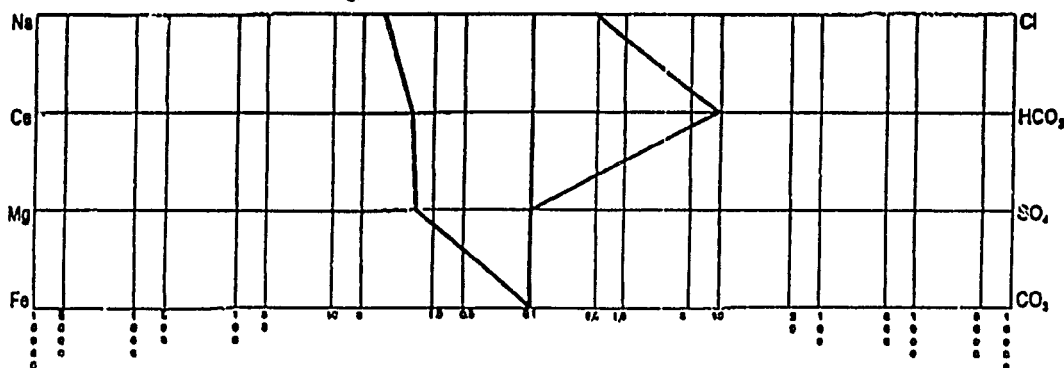
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	803
Observed Ph	7.81
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	10.820
Salinity ‰	0.00

Total Cations **9.9**

Total Anions **10.2**

Logarithmic Pattern mmol/L





Container Identification
PB 15N

Laboratory Number
WG42689N

Operator Name
CHEVRON CANADA RESOURCES LIMITED

Unique Well Identifier	Well Name	Elevation
0-80 NWT	CHEVRON et al MCKAY LAKES 0-80	KB m 299.60 GRD m 292.32

Field or Area	Pool or Zone	Sampler's Company
MCKAY LAKES	NOT APPLICABLE	BAKER

Test Type	Test No.	Test Recovery	Name of Sampler
DST	2	SP: #5, FORMATION - FANTASQUE	

Test Interval or Ports	Sampling Point	Separator	Reservoir	Source	Sampled	Received
486.00-492.00	N/A					
mKB		Pressure (kPa)				
		Temperature (°C)				

Date Sampled	Date Received	Date Reported	Analyst
Sep 06, 1999	Sep 15, 1999	Sep 17, 1999	LN

Other Information

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	61.4	0.076	2.7
K	12.5	0.015	0.3
Ca	73.9	0.091	1.6
Mg	45.1	0.055	1.9
Fe	0.5	0.001	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	16.4	0.020	0.5
HCO ₃	587.9	0.723	9.6
SO ₄	15.0	0.018	0.2
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

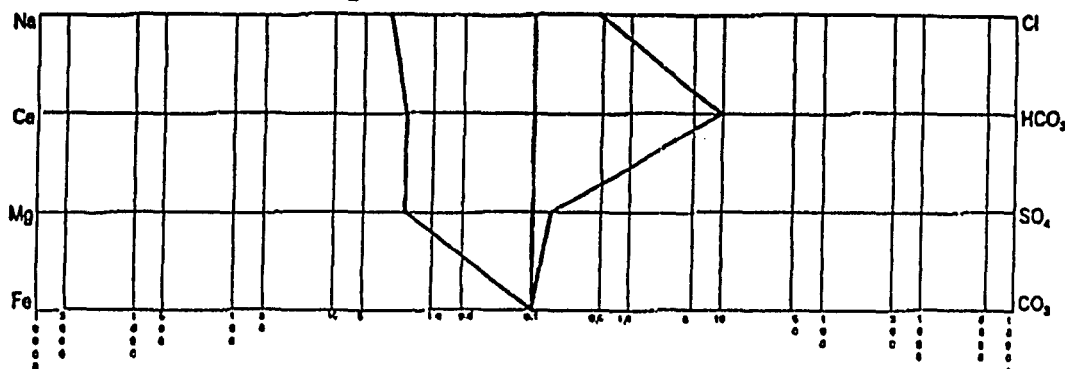
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	812
Observed Ph	7.81
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.994
Resistivity / OHM-m (25°C)	10.550
Salinity ‰	0.00

Total Cations 10.4

Total Anions 10.4

Logarithmic Pattern mmol/L





Container Identification PB 160		Laboratory Number WG426890	
Operator Name CHEVRON CANADA RESOURCES LIMITED			
Unique Well Identifier 0-80 NWT	Well Name CHEVRON et al MCKAY LAKES 0-80		Elevation KB m 299.60 GRD m 292.32
Field or Area MCKAY LAKES	Pool or Zone NOT APPLICABLE	Sampler's Company BAKER	
Test Type DST	Test No. 2	Test Recovery SP: #6 - BOTTOM; FORMATION: FANTASQUE	Name of Sampler
Test Interval or Perfs - 485.00-492.00 mKB		Sampling Point N/A	Separator Reservoir Source Sampled Received _____ _____ _____ _____ _____ Pressure (kPa) Temperature (°C)
Date Sampled Sep 06, 1999	Date Received Sep 15, 1999	Date Reported Sep 17, 1999	Analyst LN
Other Information			

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	61.0	0.077	2.7
K	12.5	0.016	0.3
Ca	72.4	0.091	1.8
Mg	45.8	0.057	1.9
Fe	0.2	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	16.4	0.021	0.5
HCO ₃	572.1	0.717	9.4
SO ₄	16.9	0.021	0.2
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

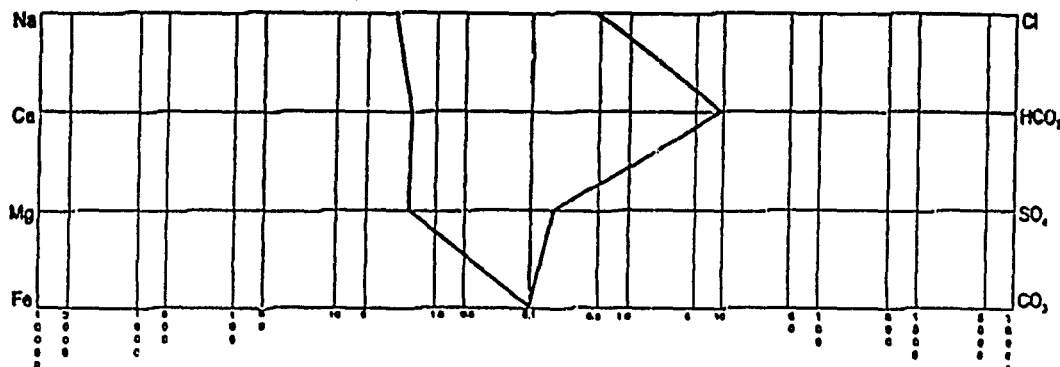
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	797
Observed Ph	7.61
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	10.490
Salinity ‰	0.00

Total Cations **10.4**

Total Anions **10.2**

Logarithmic Pattern mmol/L





Container Identification		Laboratory Number																
PB 17P		WG42689P																
Operator Name																		
CHEVRON CANADA RESOURCES LIMITED																		
Unique Well Identifier	Well Name		Elevation															
0-80 NWT	CHEVRON etal MCKAY LAKES 0-80		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">KB m</td> <td style="text-align: center;">299.60</td> <td style="text-align: center;">GRD m</td> <td style="text-align: center;">292.32</td> </tr> </table>	KB m	299.60	GRD m	292.32											
KB m	299.60	GRD m	292.32															
Field or Area	Pool or Zone	Sampler's Company																
MCKAY LAKES		BAKER																
Test Type	Test No.	Test Recovery	Name of Sampler															
DST	2	SP: BHS #222; FORMATION: FANTASQUE																
Test Interval or Perfs		Sampling Point	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Separator</td> <td style="text-align: center;">Reservoir</td> <td style="text-align: center;">Source</td> <td style="text-align: center;">Sampled</td> <td style="text-align: center;">Received</td> </tr> <tr> <td style="text-align: center;">485.00-492.00</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">mKB</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Separator	Reservoir	Source	Sampled	Received	485.00-492.00					mKB				
Separator	Reservoir	Source	Sampled	Received														
485.00-492.00																		
mKB																		
		BHS	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Pressure (kPa)</td> <td></td> </tr> <tr> <td style="text-align: center;">Temperature (°C)</td> <td></td> </tr> </table>	Pressure (kPa)		Temperature (°C)												
Pressure (kPa)																		
Temperature (°C)																		
Date Sampled	Date Received	Date Reported	Analyst															
Sep 06, 1999	Sep 15, 1999	Sep 15, 1999	KK															
Other Information																		

Cations

ION	mg/L	Mass Fraction	mmol/L
Na	66.5	0.081	2.9
K	11.7	0.014	0.3
Ca	88.8	0.109	2.2
Mg	42.1	0.052	1.7
Fe	0.3	Trace	Trace

Anions

ION	mg/L	Mass Fraction	mmol/L
Cl	43.2	0.053	1.2
HCO ₃	540.3	0.662	8.9
SO ₄	23.8	0.029	0.2
CO ₃	Nil	Nil	Nil
OH	Nil	Nil	Nil

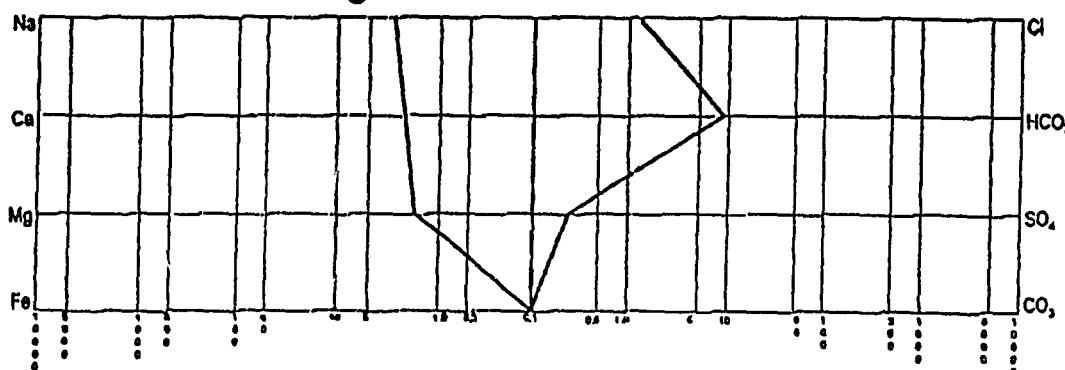
Other Measurements

Measurement	Value
Total Dissolved Solids (Calculated) mg/L	816
Observed Ph	7.89
H ₂ S (25°C) mg/L	N/D
Relative Density (25°C)	0.995
Resistivity / OHM-m (25°C)	10.300
Salinity %	0.01

Total Cations 11.1

Total Anions 10.6

Logarithmic Pattern mmol/L



Geological Report

1866
N.E.B. COPY

Geological Report

on

McKay Lakes O-80

Unit O Section 80

Well Reached Total Depth on
Sep 4, 1999 @ 08:30

for

CHEVRON CANADA RESOURCES

Prepared For: Darcy Deibert
Chevron Canada Resources

Prepared By: Brock Lillico
Lillico Petroleum Consultants

Brock Lillico

RD
CH
SEP - 8 1999

Well Summary

Storage Units: Metric

Well Information

Operator: CHEVRON CANADA RESOURCES
Well Name: McKay Lakes O-80
Location: Unit O Section 80
UWI: 300O806020123150
Pool: WILDCAT
Field: WILDCAT
Province / State: NWT
Country: CANADA
License Number: EL380

Surface Node	Hole Type:	Fault Indicator:
Co-ordinates	Latitude: 60.3000000	Longitude: 123.2500000
N / S:		
E / W:		

Bottom Hole Node	Latitude:	Longitude:
Co-ordinates		
N / S:		
E / W:		

Elevations	Reference:
Ground Elevation: 292.32	Kelly Bushing to Ground: 7.27
Kelly Bushing Elevation: 299.60	Cut (-):
Casing Flange Elevation:	Fill (+):

Total Depth	Measured Depth	True Vertical Depth
Total Depth Driller (Tally):	1,028.00	1,028.00
Total Depth Driller (Strap or SLM):	1,025.25	1,025.25
Total Depth Logger:	1,028.00	1,028.00

Miscellaneous Depths	Plugback Depth:	Water Depth Reference:
Whipstock or Sidetrack Depth:		Water Depth:

Well Summary

Drilling Contractor: AKITA DRILLING RIG 48	Spud Date: Aug 24, 1999 @ 11:15
Rig Release Date:	Total Depth Date: Sep 4, 1999 @ 08:30

Cores	#	Formation	Interval	Cut	Recovered	%
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CHEVRON CANADA RESOURCES
UWI 300O806020123150

McKay Lakes O-80
Unit O Section 80
Page 2-1

Casing Data Summary

Storage Units:

Metric

Casing Type	Casing Size	Casing Landed @	Hole Size
Surface	244.0	359.20	311.0

Bit Record Table (IADC Grading System)

Storage Units:

Metric

**** For more detailed Bit Information refer to Bit Record ****

Bit #	Make	Type	IADC		Depth In	Depth Out	Made	Hours	Avg. P.R.	I.A.D.C. Bit Condition											
			S	T						I	O	MDC	Loc	B	G	ODC	RP1	RP2			
1	REED	Y11			0.0	186.0	186.0	18.75	9.9	6	6	WT	A	8	3	NO	TQ				
2	REED	HP43A			186.0	363.0	177.0	15.00	11.8	2	3	NO	A	E	I	NO	TD				
3	REED	EHT11			363.0	421.0	58.0	6.00	9.7	5	6	WT	A	5	1	NO	PR				
4	REED	EHP53A			421.0	657.0	236.0	34.30	6.9	4	8	FC	A	E	2	RG	TQ				
5	REED	HP61			657.0	767.0	110.0	15.50	7.1	2	8	RG	A	E	2	BT	TQ				
6	RBI	C45LRGS			767.0	882.0	115.0	17.50	6.6	3	8	RG	H	F	3	CI	TQ				
7	RBI	C47LRGD			882.0	973.0	91.0	18.50	4.9	2	3	BT	A	E	2	ER	TQ				
8	HW	ATJ-55R			973.0	1,028.0	55.0	10.50	5.2								TD				

Total Rotating Hours: 136.05

CHEVRON CANADA RESOURCES
UWI 3000806020123150

McKay Lakes O-80
Unit O Section 80
Page 5-1

Wireline Logging Summary

Storage Units:

Metric

Logging Suite Number: 1
Wireline Logging Company: Schlumberger
District: Grande Prairie
Witness: Brock Lillico

Engineer: Ken Clasper
Unit Number: 2034

Was Pressure Control Equipment Utilized:
Was the Logging Job Mechanically Assisted:

Maximum Deviation: 3.000
Hole Size: 222.0

Total Lost Time: 0.00
Loggers' Total Down Time: 0.00
Total Job Time (From Rig up to Rig down): 14.50

	Measured Depth	True Vertical Depth
Casing Depth Driller	363.00	
Casing Depth Logger	359.50	
Total Depth Driller (Tally)	1,028.00	1,028.00
Total Depth Driller (Strap or SLM)	1,025.25	

General Remarks: Hole in good shape, hole volume 29m3 SLB, calculated 26m3, 13% out of gauge.

Logging Run #: 1
Date: Sep 4, 1999

Drilling Fluid Data

Drilling Fluid Type: Gel Chem Polymer
Fluid Density: 1080 Viscosity: 56 pH: 9.5 Fluid Loss: 5.5

Mud Resistivity (Rm): 3.66 @ 24.0 °
Mud Resistivity (Rm) @ BHT: 2.71 @ 40.0 ° Maximum Temperature: 40.0 °
Mud Filtrate Resistivity (Rmf): 5.09 @ 21.0 ° Source (Rmf): Filter Pres Flowline
Mud Cake Resistivity (Rmc): 2.35 @ 18.0 ° Source (Rmc): Filter Pres Flowline

Logging Run Information

Date on Bottom: Sep 4, 1999
Total Depth Logger: 1,028.00 (MD) 1,028.00 (TVD)

Logging Tools: Platform Express Compensated Neutron Litho Density Log - Array Induction RXO Log - Microlog - Dipole Shear Sonic Imager, 1028-359m, Ran Gamma Ray Log to Surface.

Remarks: Job went very well, no tight spots, no fill, good calibrations.

Hole Conditions: Hole in good shape.

Wireline Logging Summary

Storage Units: Metric

Logging Run #: 2
Date: Sep 4, 1999

Drilling Fluid Data

Drilling Fluid Type: Gel Chem Polymer
Fluid Density: 1080 Viscosity: 56 pH: 9.5 Fluid Loss: 5.5
Mud Resistivity (Rm): 3.66 @ 24.0 °
Mud Resistivity (Rm) @ BHT: 2.71 @ 40.0 ° Maximum Temperature: 40.0 °
Mud Filtrate Resistivity (Rmf): 5.09 @ 21.0 ° Source (Rmf): Filter Pres Flowline
Mud Cake Resistivity (Rmc): 2.35 @ 18.0 ° Source (Rmc): Filter Pres Flowline

Logging Run Information

Date on Bottom: Sep 4, 1999
Total Depth Logger: 1,028.00 (MD) 1,028.00 (TVD)

Logging Tools: CMR; 970-420m

Remarks: Logging went well, slow running tool at 75m/hr; tuning before and after logging overlap fairly well. Permeabilities range into the thousands of millidarcys.

Hole Conditions: Hole in good shape.

Drill Stem Test Report

Storage Units: Metric

Run #: 1 Date: Sep 5, 1999
Test #: 1 Misrun:
Test Company: Baker Closed Chamber Company:
Representative: Newhook, McNally, Lillico Representative: Sheldon Prysunka
Unit #: K.B. Elevation: 299.60
Test Type: Inflate Straddle

Formations Tested From the: MATTSON SANDSTONE
To the: MATTSON SANDSTONE

Test Interval: From: 594.00 (MD) To: 606.00 (MD) (12.00)
From: 594.00 (TVD) To: 606.00 (TVD) (12.00)

Total Depth: (MD) (TVD) (At the time of the Test)

String Configuration:

Drilling Fluid Type and Properties: MD 1090, Visc 70, WL 6.0, pH 10.5, mud in good shape.

Cushion Type / Amount: No Cushion

Hole Condition: Hole in good shape.

Bottom Hole Temperature: 40 ° Tool Chased Distance: 0.0 Mud Drop: 0.0

Period	Initial Pressure	Final Pressure	Times	Flow Description	Choke Type	Orifice Diameter	Units
Time / Pressure / Flow Rate Measurements							
Flow 1	891.0	1,415.0	5	Pre-flow: Weak Air Blow increasing to Good Air Blow in 2.5 minutes, steady throughout, No Gas to Surface.			
					IHP 6278 kPa		
					FHP 5930 kPa		
Initial Shut-in		5,435.0	60				
Valve Open	1,339.0	4,305.0	90	Weak Air Blow increasing to Good Air Blow in 3 minutes, steady for 70 minutes, slowly decreasing for duration, No Gas to Surface.			
Final Shut in		5,381.0	120				

Recovery: 400 meters total; 100m muddy fresh water, 300m fresh water.

Analyses: 8 water samples taken by tester to AGAT Grande Prairie

Remarks: Test was operationally successful.

Directional Survey Points

Storage Units: Metric

Survey Type: drift / single shot

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
31.00	31.00	0.250					
50.00	50.00	0.875					
80.00	80.00	0.750					
110.00	110.00	0.500					
146.00	146.00	0.500					
176.00	176.00	0.750					
203.00	203.00	1.500					
217.00	217.00	1.000					
250.00	250.00	0.750					
277.00	277.00	1.000					
305.00	305.00	1.000					
330.00	330.00	1.000					
355.00	355.00	1.125					
414.00	414.00	1.125					
514.00	514.00	2.000					
601.00	601.00	2.250					
686.00	686.00	2.000					
774.00	774.00	2.875					
857.00	857.00	3.125					
943.00	943.00	2.500					
1,019.00	1,019.00	3.000					

Formation Top Summary

Storage Units:

Metric

Kelly Bushing Elevation: 299.60
Ground Elevation: 292.32

Casing Flange Elevation:

**** All Depths measured from Kelly Bushing Elevation ****

Group Formation Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
SCATTER	110.00	100.00	100.00	108.00	108.00	191.60	123.00
GARBUTT	260.00	233.00	233.00	231.00	231.00	68.60	185.00
CHINKEH	450.00	415.00	415.00	416.00	416.00	-116.40	16.00
FANTASQUE	460.00	433.00	433.00	432.00	432.00	-132.40	83.00
MATTSON	550.00	515.00	515.00	515.00	515.00	-215.40	442.00
FLETT	1,155.00	960.00	960.00	957.00	957.00	-657.40	71.00
TOTAL DEPTH		1,028.00	1,028.00	1,028.00	1,028.00	-728.40	

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 299.60
Ground Elevation: 292.32

Casing Flange Elevation:

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: CHINKEH
Member:
Boundary Type: conformable
Fault Type:

Era:
Series:
Period: Cretaceous
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	415.00	415.00	-115.40	18.00
Log Top	416.00	416.00	-116.40	16.00

Evaluation:

The Chinkeh is SILTSTONE, medium gray to brown gray, quartzose, dolomitic, siliceous, slightly argillaceous, hard, tight, dull orange fluorescence in part, patchy fair yellow orange cut fluorescence, scattered Chert fragments, light gray to light to medium brown, spicules, trace translucent with conchoidal fracture, silty in part grading to very siliceous hard Siltstone, scattered SHALE, medium to dark gray, micromicaceous, blocky, calcareous, silty to very silty in part. Background gas while drilling the Chinkeh was low and uneventful ranging from .0058% to .022%.

Conclusion:

The Chinkeh has no hydrocarbon potential at this location.

Group:
Formation: FANTASQUE
Member:
Boundary Type: unconformable
Fault Type:

Era:
Series:
Period: Permian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	433.00	433.00	-133.40	82.00
Log Top	432.00	432.00	-132.40	83.00

Evaluation:

The Fantasque is SANDSTONE, light gray to light to medium gray brown, quartzose, very fine grained, subangular, well sorted, siliceous in part, slightly dolomitic in part, glauconite, slightly argillaceous in part, pyritic matrix in part, friable in part, streaks poor to fair porosity, very faint orange cut fluorescence in part, scattered pyrobitumen, scattered Chert, light gray, yellow tan in part, silty and sandy, fossiliferous, trace Crinoids, tight, no shows, interbedded Siltstone, medium gray, quartzose, very argillaceous, micaceous, tight, no shows. At 455-460m the sample had abundant loose disaggregated grains, indicated fair porosity, no shows. After penetrating this sandstone, the mud system (at a density of 1020kg/m³) started gaining volume at up to 1.5m³/hr. No signs of gas showed up at surface, and the mud chloride content, which was at 150mg/l, never changed. Indications are that this flow was a fresh water flow. Background gas ranged from .0015% to .0071%, with a small peak at 438m .0189%.

Conclusion:

The Fantasque has poor potential for hydrocarbon production. There appears to be slightly overpressured fresh water at 455-460m.

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 299.60
Ground Elevation: 292.32

Casing Flange Elevation:

All Depths Measured from Kelly Bushing Elevation

Group:
Formation: MATTSON
Member:
Boundary Type: unconformable
Fault Type:

Era:
Series:
Period: Mississippian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	515.00	515.00	-215.40	445.00
Log Top	515.00	515.00	-215.40	442.00

Evaluation:

The Mattson is interbedded SANDSTONE and Shale. SANDSTONE, light gray to very light gray, quartzose, mainly very fine to fine grained with fine to medium grained sand down to 570m then predominately fine grained to very fine to fine grained sand to the base of Mattson, subangular to subrounded, generally well sorted, slightly siliceous to very siliceous and hard in part, clean, dolomitic in part, very rarely argillaceous, some dark gray to black Shale laminations, friable in part with scattered loose disaggregated grains, porosities range from tight to streaks of excellent porosity, no live oil staining, no live fluorescence, some dead oil staining at 540-620m with weak orange cut fluorescence in part. There are some streaks of Sandstone cemented tight with calcareous and dolomitic cement and minor thin stringers of sandy Dolomite to 2m thick, and a sandy Limestone unit at 525-532m. Shale, very dark gray to black, dark brown gray in part, medium to dark gray green and waxy in part, sandy, micaceous, silty with scattered Siltstone laminations, minor pyrite, trace carbonaceous at 795m and at 935m (both of these spots show very low density log response, coaly). The best looking Sandstone sections for porosity from samples include: 515-525m; 575-585m; 595-610m; 620-635m; 650-655m; 660-715m; and 855-870m. Sandstone intervals with 15% or greater density porosity include: 515-519m; 535-537m; 577-585m; 594-610m; 623-625m; 654-656m; 689-691m; and 763-768m.

Conclusion:

The Mattson is very porous, but looks water wet from samples and logs.

Group:
Formation: FLETT
Member:
Boundary Type: conformable
Fault Type:

Era:
Series:
Period: Mississippian
Stage:
Age (Approx): Million years.

	Measured Depth	True Vertical Depth	Subsea	Thickness
Sample Top	960.00	960.00	-660.40	
Log Top	957.00	957.00	-657.40	

Evaluation:

The Flett is LIMESTONE, light to medium gray to brown gray, fine to very coarse grained Crinoidal fragmental Packstone, slightly argillaceous in part, very fossiliferous, Crinoids, Brachiopods, trace Ostracods, trace Bryozoans, trace pellets, tight, no shows, trace stylolites, scattered Chert, light to medium gray, translucent in part. Background gas ranged from .0058% to .038% with small peaks at 986m .05%, and at 1000m .035%.

Conclusion:

The Flett has no hydrocarbon production potential at this location due to lack of porosity and shows.

CHEVRON CANADA RESOURCES
UWI 3000806020123150

McKay Lakes O-80
Unit O Section 80
Page 17-2

Formation Evaluations

Storage Units:

Metric

Kelly Bushing Elevation: 299.60
Ground Elevation: 292.32

Casing Flange Elevation:

All Depths Measured from Kelly Bushing Elevation

Sample Descriptions

Storage Units:

Metric

75.00 to 80.00 (5.00)	SANDSTONE light gray to light brown with various colored quartz grains, very fine to coarse grained angular fragments to rounded grains, poor sorting, siliceous when very fine grained, pitted in some coarse grains, streaks poor porosity, no shows, minor Siltstone, light gray to light yellow gray, quartzose, tight, no shows, trace fragments of granite boulders with very coarse quartz crystal fragments, mica and feldspars, (uphole?)
80.00 to 85.00 (5.00)	SANDSTONE as above, multi colored sand with very fine to fine grained cemented SANDSTONE, fine to very coarse loose quartz grains, subangular to loose rounded grains, poor sorting, siliceous in part, trace poor porosity, no shows, scattered Siltstone, light gray to light brown, yellow in part, siliceous, tight, increasing Claystone, medium to dark gray, very soft, easily washed away while cleaning
85.00 to 90.00 (5.00)	SANDSTONE as above, multi colored, very fine to fine grained in part, with abundant loose medium to very coarse grains, poor porosity in part, no shows, scattered Siltstone, light gray to light gray brown, yellow gray in part, siliceous, tight, no shows, increasing Claystone, medium to dark gray, very soft and washed away while cleaning, very poor samples, mud rings forming while drilling
90.00 to 95.00 (5.00)	Claystone medium to dark gray, soft, poor samples mud rings forming while drilling, scattered loose sand grains, multi colored, fine to very coarse grained, subangular to rounded
95.00 to 100.00 (5.00)	Claystone medium to dark gray as above, sample easily washed away while cleaning, scattered loose fine to very coarse sand grains
100.00 to 105.00 (5.00)	SANDSTONE light yellow to light gray, very fine to fine grained, subangular, fair sorting, siliceous, streaks poor to fair porosity, no shows, abundant loose fine to very coarse quartz grains, minor granitic boulder fragments with coarse quartz crystals, mica and feldspars, (uphole?)
105.00 to 110.00 (5.00)	SAND light gray to light yellow gray quartz grains, minor dark gray Chert grains, medium to coarse grained, subangular to rounded, poor sorting, limonite staining in part, pitted, all loose grains, indicated fair porosity, no shows, trace feldspar grains
110.00 to 115.00 (5.00)	SAND as above, loose fine to coarse grains, indicated fair porosity, no shows, interbedded SANDSTONE, light gray to light yellow gray, very fine to fine grained, subangular, fair sorting, siliceous, slightly argillaceous with limonitic staining, trace poor porosity, no shows, trace granitic boulder fragments
115.00 to 120.00 (5.00)	SANDSTONE wide variety of material in this sample including scattered Sandstone, light gray to yellow gray to orange, very fine to medium grained, mainly tight, no shows, Chert and quartz pebbles, pitted in part, granitic and syenitic fragments with mica, scattered Sandstone, light gray to yellow gray to orange, very fine to medium grained, mainly tight, no shows, minor Dolomite and Limestone, trace Siltstone and Shale, drilling rate slowed through this section (abundant uphole sloughing?)

Sample Descriptions

Storage Units:

Metric

120.00 to 125.00 (5.00)	SAND light brown to tan brown, red brown in part, quartzose to arkosic, medium to coarse grained, subangular to rounded, fair sorting, no cement, sample looks like unconsolidated sand, indicated fair porosity, no shows, minor Sandstone, light gray, very fine to fine grained, subangular, fair sorting, siliceous, poor porosity, no shows
125.00 to 130.00 (5.00)	SANDSTONE light gray to light yellow gray, red brown in part, quartzose to arkosic, very fine to fine grained, subangular, fair sorting, siliceous, slightly dolomitic in part, trace poor porosity, no shows, abundant loose medium to very coarse sand grains, variety of fragments including granite, syenite, dolomite, chert, and siltstone, (uphole?)
130.00 to 135.00 (5.00)	SANDSTONE light gray to light yellow gray as above, very fine to fine grained, subangular, fair sorting, siliceous, poor to fair porosity, no fluorescence, trace pyrobitumen in rare part, abundant loose medium to very coarse sand grains (uphole?)
135.00 to 140.00 (5.00)	SANDSTONE as above, increasing loose coarse material to 90% of sample, medium to very coarse quartz grains, some feldspar, trace chert, minor granite and syenite fragments, (uphole caving?)
140.00 to 145.00 (5.00)	SANDSTONE as above, light gray to light tan gray, very fine to fine grained, trace poor porosity, no shows, sample predominately loose medium to coarse quartz grains, trace igneous boulder fragments, (uphole?)
145.00 to 150.00 (5.00)	SANDSTONE light gray to light yellow gray, quartzose, very fine to fine grained, subangular, fair sorting, siliceous in part, streaks poor porosity, no shows, abundant loose medium to coarse quartz grains
150.00 to 155.00 (5.00)	SANDSTONE as above, sample mainly medium to coarse quartz grains, trace feldspar grains, trace granitic fragments with mica (uphole cavings)
155.00 to 160.00 (5.00)	SANDSTONE as above, light gray to light yellow gray, quartzose, very fine to fine grained, siliceous in part, streaks poor porosity, no shows, abundant loose unconsolidated medium to coarse quartz grains, poor samples
160.00 to 165.00 (5.00)	SANDSTONE as above, light gray to light yellow gray, siliceous, trace pyritic matrix, mainly tight, no shows, sample is 95% medium to coarse quartz grains (uphole sloughing?)
165.00 to 170.00 (5.00)	SANDSTONE as above, scattered Siltstone, medium gray, quartzose, very argillaceous, tight, no shows, sample mainly loose unconsolidated medium to very coarse quartz grains and minor granitic fragments (uphole cavings)

Sample Descriptions

Storage Units: Metric

170.00 to 175.00 (5.00)	SHALE medium to dark gray, silty, micromicaceous, minor Siltstone as above, trace Sandstone, light to medium gray, very fine grained, subangular, fair sorting, argillaceous, siliceous, silty, tight, no shows, sample mainly uphole medium to coarse unconsolidated grains
175.00 to 180.00 (5.00)	SHALE medium to dark gray, micromicaceous, silty, trace carbonaceous, slightly sandy in part, trace Siltstone, medium gray, quartzose, argillaceous, tight, no shows, abundant uphole caving
180.00 to 185.00 (5.00)	SHALE dark gray, micromicaceous, silty, sandy in part, interbedded Siltstone, medium to dark gray, very argillaceous, sandy in part, minor Sandstone, light to medium gray, quartzose, very fine grained, subangular, fair sorting, argillaceous, slightly siliceous, tight, no shows, abundant uphole cavings
185.00 to 190.00 (5.00)	SHALE dark gray, micromicaceous, silty to very silty, trace pyrite, scattered Siltstone, medium to dark gray, very argillaceous, tight, no shows, abundant loose medium to coarse sand grains, poor sample, tripped for drillbit
190.00 to 195.00 (5.00)	SANDSTONE medium gray, silt to very fine grained, subangular, well sorted, argillaceous, trace carbonaceous specks, trace pyritic matrix, tight, no shows, scattered Shale as above, dark gray, silty, slightly carbonaceous in part, trace Siltstone, medium gray, very argillaceous, tight, samples cleaning up, less uphole material
195.00 to 200.00 (5.00)	SANDSTONE medium gray to medium brown gray, quartzose, very fine to fine grained, subangular, fair sorting, micaceous, slightly siliceous, argillaceous, pyritic in part, trace carbonaceous specks, trace poor porosity, no shows
200.00 to 205.00 (5.00)	SHALE dark gray to black, micromicaceous, slightly silty in part, slightly bituminous, trace pyrite, scattered Sandstone as above
205.00 to 210.00 (5.00)	SANDSTONE dark gray to dark brown gray, quartzose, very fine grained, subangular, well sorted, slightly siliceous, argillaceous, glauconitic, mainly tight with trace poor porosity, no shows, minor Shale, dark gray to very dark gray, micromicaceous, silty in part, sandy in part, trace pyrite, trace siderite, trace Siltstone, dark gray, argillaceous to very argillaceous, micromicaceous, trace carbonaceous specks, tight, no shows
210.00 to 215.00 (5.00)	SANDSTONE medium gray to gray brown, very fine grained, subangular, well sorted, slightly siliceous, slightly calcareous to dolomitic in part, micaceous, argillaceous, mainly tight with trace poor porosity, good yellow orange cut fluorescence, trace pyrite
215.00 to 220.00 (5.00)	SANDSTONE as above, medium gray to gray brown, very fine grained, well sorted, friable in part, argillaceous with shaly laminations and streaks, trace poor porosity, good yellow orange cut fluorescence

Sample Descriptions

Storage Units: Metric

220.00 to 225.00 (5.00)	SANDSTONE mainly medium gray, gray brown in part, very fine grained, subangular, well sorted, slightly siliceous, silty, argillaceous, tight, no shows, minor Shale, dark gray, micromicaceous, sandy to very sandy in part, micromicaceous, trace pyrite
225.00 to 233.00 (8.00)	SANDSTONE medium to dark gray, mainly quartzose, very fine grained, subangular, well sorted, slightly siliceous, argillaceous to very argillaceous, silty, micaceous, tight, no shows, scattered Shale, dark gray to black, micromicaceous, silty and sandy in part, trace pyrite
233.00 to 240.00 (7.00)	SHALE dark gray, micromicaceous, silty to very silty in part, scattered Siltstone, medium to dark gray to brown gray, very argillaceous, sandy grading to very fine grained Sandstone in part, tight
240.00 to 245.00 (5.00)	SHALE dark gray to black, micromicaceous, silty to very silty, trace pyrite, decreasing Siltstone as above
245.00 to 250.00 (5.00)	SHALE dark gray to black as above, silty in part, trace pyrite, trace siderite, minor Siltstone, medium to dark gray, very argillaceous, micromicaceous, tight, no shows, trace SANDSTONE streak, medium gray brown, silt to very fine grained, subangular, fair sorting, argillaceous, slightly siliceous, tight, no shows
250.00 to 255.00 (5.00)	SHALE dark gray, micromicaceous, fissile, fossiliferous with trace shell fragments, silty in part, trace Sandstone streak as above, medium gray, silt to very fine grained, argillaceous, micaceous, tight, no shows
255.00 to 260.00 (5.00)	SHALE as above, trace pyrite, trace siderite, interbedded Siltstone, medium brown gray, salt and pepper, argillaceous, tight, no shows
260.00 to 265.00 (5.00)	SILTSTONE medium gray brown as above, salt and pepper, argillaceous, micromicaceous, tight, no shows, trace pyrite
265.00 to 270.00 (5.00)	SHALE dark gray to black, micromicaceous, silty to very silty, trace pyrite, trace siderite, minor Siltstone as above
270.00 to 275.00 (5.00)	SHALE as above, dark gray to black, micromicaceous, silty, trace Siltstone streaks
275.00 to 280.00 (5.00)	SHALE dark gray to black, micromicaceous, fissile in part, silty to very silty in part, trace pyrite trace Siltstone, medium gray to medium brown gray, argillaceous, sandy in part, tight, no shows, scattered uphole medium to coarse grained unconsolidated sand cavings

Sample Descriptions

Storage Units: Metric

280.00 to 285.00 (5.00)	SHALE dark gray to black, micromicaceous, silty in part, trace Siltstone streaks
285.00 to 290.00 (5.00)	SHALE very dark gray to black, micromicaceous, fissile, silty in part, slightly fossiliferous with trace fish scales
290.00 to 295.00 (5.00)	SHALE medium to dark gray, micromicaceous, silty to very silty in part, slightly sideritic and blocky in part, trace Ironstone stringers
295.00 to 300.00 (5.00)	SHALE dark gray to black, micromicaceous, fissile, slightly silty in part with trace Siltstone stringers
300.00 to 305.00 (5.00)	SHALE dark gray as above, micromicaceous, fissile, silty in part, trace siderite
305.00 to 310.00 (5.00)	SHALE as above, micromicaceous, fissile, slightly fossiliferous, trace shell fragments, trace pyrite, trace Siltstone laminations, trace Ironstone
310.00 to 315.00 (5.00)	SHALE dark gray to black, micromicaceous, fissile, slightly silty in part, fossiliferous, trace fish scales, trace pyrite
315.00 to 320.00 (5.00)	SHALE as above, trace siderite
320.00 to 325.00 (5.00)	SHALE dark gray, micromicaceous, fissile, trace pyrite, trace fish scales
325.00 to 330.00 (5.00)	SHALE as above, silty streaks, trace pyrite
330.00 to 335.00 (5.00)	SHALE dark gray to black, micromicaceous, fissile, slightly sideritic in part
335.00 to 340.00 (5.00)	SHALE as above, micromicaceous, fissile, fossiliferous with trace pyritized worm burrows
340.00 to 350.00 (10.00)	SHALE dark gray, micromicaceous, fissile, slightly silty in part, trace pyrite
350.00 to 360.00 (10.00)	SHALE dark gray as above, micromicaceous, fissile, slightly silty in part, trace pyrite, trace siderite
360.00 to 370.00 (10.00)	SHALE dark gray, micromicaceous, fissile, slightly fossiliferous, trace shell fragments

Sample Descriptions

Storage Units:

Metric

370.00 to 380.00 (10.00)	SHALE dark gray as above, micromicaceous, fissile, slightly fossiliferous, trace fish remnants, trace siderite
380.00 to 390.00 (10.00)	SHALE dark gray, micromicaceous, fissile, trace fish bones and scales, trace siderite
390.00 to 400.00 (10.00)	SHALE dark gray as above, micromicaceous, fissile, slightly fossiliferous, trace pyrite, trace siderite, minor Bentonite streaks, off white, very soft, sandy and micaceous in part
400.00 to 410.00 (10.00)	SHALE dark gray, micromicaceous, fissile, slightly fossiliferous with trace fish remnants, trace pyrite, trace Bentonite stringers, off white to light gray, soft
410.00 to 415.00 (5.00)	SHALE dark gray as above, micromicaceous, fissile, trace pyrite, trace Bentonite streaks, trace Chert fragments, light gray to light brown, translucent
415.00 to 420.00 (5.00)	SILTSTONE medium gray to brown gray, quartzose, dolomitic, siliceous, slightly argillaceous, hard, tight, dull orange fluorescence in part, patchy fair yellow orange cut fluorescence, scattered Chert fragments, light gray to light to medium brown, spicules, trace translucent with conchoidal fracture, silty in part grading to very siliceous Siltstone
420.00 to 425.00 (5.00)	SHALE medium gray, calcareous to dolomitic, fossiliferous, silty to very silty in part, scattered Siltstone, medium gray brown, calcareous, argillaceous, tight, no shows
425.00 to 430.00 (5.00)	SHALE medium to dark gray, micromicaceous, blocky, calcareous, silty to very silty in part, scattered Siltstone as above, medium gray to gray brown, sandy, calcareous to dolomitic, argillaceous, tight, mainly no shows, dull yellow orange cut fluorescence in part
430.00 to 435.00 (5.00)	SANDSTONE light to medium gray, quartzose, fine grained, subangular, well sorted, slightly siliceous, friable in part, fair porosity, no shows, interbedded Siltstone as above, medium gray to gray brown, sandy grading to very fine grained Sandstone in part, dolomitic in part, argillaceous, tight, mainly no shows, patchy dull orange cut fluorescence in part
435.00 to 440.00 (5.00)	SANDSTONE light gray, quartzose, very fine grained, subangular, well sorted, siliceous in part, trace glauconite, pyritic matrix in part, friable in part, streaks poor to fair porosity, no fluorescence, trace pyrobitumen
440.00 to 445.00 (5.00)	SANDSTONE light gray to light to medium gray brown, mainly quartzose, very fine to fine grained, subangular, well sorted, siliceous, slightly dolomitic in part, glauconite, slightly argillaceous in part, friable in part, streaks poor porosity, no shows, trace pyrobitumen, trace Chert, light gray, yellow tan in part, silty and sandy, fossiliferous,

Sample Descriptions

Storage Units:

Metric

trace Crinoids, tight, no shows

445.00 to 450.00
(5.00)**SANDSTONE**

medium brown to gray brown, quartzose, very fine to fine grained, subangular, well sorted, siliceous, friable in part, glauconitic, pyritic in part, poor to fair porosity, very faint orange cut fluorescence, scattered pyrobitumen, trace Dolomite streaks, light to medium gray, microcrystalline, slightly argillaceous, tight, no shows, trace Chert, light tan brown, sandy

450.00 to 455.00
(5.00)**SANDSTONE**

as above, medium brown to gray brown, very fine to fine grained, siliceous, argillaceous, trace glauconite, mainly tight with trace poor porosity, faint orange cut fluorescence, scattered pyrobitumen

455.00 to 460.00
(5.00)**SANDSTONE**

medium gray to brown gray, quartzose, very fine to fine grained, trace medium grained, subangular to subrounded, fair sorting, siliceous, argillaceous, friable with abundant loose disaggregated grains, indicated fair porosity, no shows, trace pyrobitumen, interbedded Siltstone, medium gray, quartzose, very argillaceous, micaceous, tight, no shows

460.00 to 465.00
(5.00)**SILTSTONE**

medium gray, quartzose, argillaceous to very argillaceous, micromicaceous, sandy, tight, no shows, scattered Sandstone as above, very fine to fine grained, siliceous, rare trace carbonaceous inclusions, streaks poor porosity, no shows, trace SANDSTONE, light brown, quartzose, very fine to fine grained, highly silicified grading to Chert, tight

465.00 to 470.00
(5.00)**SANDSTONE**

light to medium gray, quartzose, fine grained, subangular, well sorted, siliceous, slightly kaolinitic with trace kaolin grains, trace glauconite, friable with scattered loose disaggregated grains, poor to fair porosity, no shows, trace pyrobitumen, trace Sandstone, medium gray brown, quartzose, very fine to fine grained, subangular, fair sorting, very siliceous grading to sandy Chert, slightly dolomitic, tight, no shows, hard

470.00 to 475.00
(5.00)**SANDSTONE**

medium gray to medium brown gray, quartzose, very fine to fine grained, subangular, fair sorting, siliceous in part, slightly dolomitic in part, silty, slightly kaolinitic, argillaceous in part with trace Shale breaks, mainly tight with streaks poor porosity, no shows

475.00 to 480.00
(5.00)**SILTSTONE**

medium gray to gray brown, quartzose, sandy grading to very fine grained Sandstone in part, slightly dolomitic, siliceous, argillaceous, micromicaceous, tight, no shows, minor Chert, medium gray brown, sandy texture

480.00 to 485.00
(5.00)**SANDSTONE**

medium brown to gray brown, quartzose, glauconite, very fine to medium grained, trace coarse grains, subangular to rounded, poor sorting, siliceous, slightly kaolinitic with minor kaolin grains, argillaceous, streaks poor porosity, dead oil staining, fair yellow orange cut fluorescence, minor Siltstone as above

Sample Descriptions

Storage Units:

Metric

485.00 to 490.00 (5.00)	SANDSTONE medium brown as above, very fine to medium grained with minor coarse grains, subangular to rounded, poor sorting, siliceous, glauconite, poor to fair porosity, dead oil staining with fair orange cut fluorescence
490.00 to 495.00 (5.00)	SANDSTONE as above, very fine to fine grained with scattered medium to coarse grains, subangular to rounded, poor sorting, siliceous, slightly dolomitic, argillaceous in part, glauconite, mainly poor porosity, streaks fair porosity, patchy dead oil staining, fair orange cut fluorescence, minor Chert, light to medium gray, tan brown in part, sandy, pyritic
495.00 to 500.00 (5.00)	SILTSTONE medium gray, quartzose, dolomitic, siliceous, sandy, argillaceous, micaceous, tight, no shows, minor Sandstone as above, trace Chert
500.00 to 505.00 (5.00)	SILTSTONE as above, dolomitic, siliceous, argillaceous, tight no shows, minor Shale, dark brown gray, micromicaceous, silty and sandy in part
505.00 to 510.00 (5.00)	SHALE dark gray to dark brown gray as above, micromicaceous, silty to very silty in part, sandy in part, scattered Siltstone, medium to dark gray brown, quartzose, dolomitic, argillaceous to very argillaceous, tight, no shows, trace Sandstone, light gray, clean, quartzose, very fine to fine grained, subangular, fair sorting, siliceous, trace poor porosity, no shows
510.00 to 515.00 (5.00)	SHALE medium to dark gray brown, silty to very silty grading to argillaceous Siltstone, dolomitic, scattered Dolomite, dark gray brown, microcrystalline, argillaceous, silty and sandy, tight, no shows, minor pyrite, trace Sandstone as above
515.00 to 520.00 (5.00)	SANDSTONE very light gray, quartzose, fine to medium grained, subangular to subrounded, fair sorting, slightly siliceous, clean, friable with scattered loose disaggregated grains, good porosity, no shows
520.00 to 525.00 (5.00)	SANDSTONE very light gray as above, clean, quartzose, fine to medium grained, calcareous in part, fair to good porosity, no shows, scattered Shale, medium gray to green gray, waxy, micromicaceous, minor Limestone, light to medium gray brown, cryptocrystalline, sandy, silty, shaly streaks, tight, no shows
525.00 to 530.00 (5.00)	LIMESTONE medium gray to medium brown gray, cryptocrystalline, sandy to very sandy grading to calcareous SANDSTONE in part, slightly argillaceous, silty, tight, no shows, trace pyrite, trace Chert
530.00 to 535.00 (5.00)	SANDSTONE light to medium gray to brown gray, quartzose, fine to medium grained, subrounded, fair sorting, very calcareous, slightly argillaceous, tight, no shows, interbedded LIMESTONE as above, trace Shale, medium gray to green gray, calcareous, sandy, slightly fossiliferous with trace Crinoids

Sample Descriptions

Storage Units:

Metric

535.00 to 540.00 (5.00)	SANDSTONE very light gray to light gray, quartzose, very fine to fine grained, trace medium grains, subangular to subrounded, fair sorting, calcareous, dolomitic in part, tight, no shows, trace pyrite, minor sandy Limestone as above
540.00 to 545.00 (5.00)	SANDSTONE medium gray to gray brown, mainly quartzose, very fine to medium grained, subangular to subrounded, poor sorting, dolomitic, slightly argillaceous in part, mainly tight with trace poor porosity, patchy dead oil staining, fair yellow orange cut fluorescence, scattered Shale, medium green gray, silty and sandy in part, waxy in part, slightly dolomitic, trace pyrite, minor sandy LIMESTONE as above
545.00 to 550.00 (5.00)	SANDSTONE medium gray, quartzose, very fine to fine grained, subangular, fair sorting, calcareous to dolomitic, argillaceous, siliceous in part, mainly tight, decreasing dead oil staining, scattered green gray Shale as above, silty to very silty, trace dark gray Shale, silty to very silty grading to argillaceous Siltstone, trace pyrite
550.00 to 555.00 (5.00)	SHALE dark gray to dark brown gray, silty, sandy to very sandy grading to very argillaceous Sandstone, scattered Siltstone, medium to dark gray, argillaceous to very argillaceous, sandy, tight, no shows, minor Sandstone, medium to dark gray to dark brown gray, quartzose, very fine to fine grained, subangular, fair sorting, siliceous, pyritic matrix in part, argillaceous, streak poor porosity, scattered dead oil staining, no fluorescence, no cut fluorescence, minor pyrobitumen
555.00 to 560.00 (5.00)	SANDSTONE light gray to light brown gray, quartzose, very fine to medium grained, subangular to subrounded, poor sorting, dolomitic to very dolomitic grading to sandy Dolomite in part, tight, trace spotty dead oil staining, scattered Shale, medium green gray as above, sandy to very sandy in part, minor Dolomite, medium gray, very fine to fine crystalline, sandy to very sandy in part, tight, no shows
560.00 to 565.00 (5.00)	SANDSTONE as above, very dolomitic grading to sandy DOLOMITE
565.00 to 570.00 (5.00)	SANDSTONE medium gray to medium brown gray, quartzose, very fine to medium grained, subangular to subrounded, poor sorting, very dolomitic, argillaceous in part, tight, patchy dead oil staining, weak orange cut fluorescence only, minor Dolomite, medium gray, very fine to medium crystalline, sandy in part, shaly laminations, tight, spotty dead oil staining, scattered Shale, medium to dark gray to green gray, micromicaceous, silty, slightly dolomitic, slightly fossiliferous, trace Crinoids, trace Ostracods
570.00 to 575.00 (5.00)	SANDSTONE medium to brown gray, quartzose, very fine to fine grained, subangular to subrounded, fair sorting, siliceous, slightly argillaceous to very argillaceous in part, pyritic in part, poor porosity, dead oil staining, no fluorescence, no cut fluorescence, scattered Shale, medium to dark gray to green gray as above, silty in part, pyritic with scattered disseminated microcrystalline pyrite, trace Siltstone, medium to dark gray, dolomitic, very argillaceous, tight, no shows, trace Dolomite, light to medium gray, fine

Sample Descriptions

Storage Units

Metric

to medium crystalline, sandy in part, tight, no shows

575.00 to 585.00
(10.00)

SANDSTONE

medium gray to gray brown, very fine to fine grained, subangular to subrounded, fair sorting, siliceous, friable in part with scattered loose disaggregated grains, poor to fair porosity, abundant dead oil staining, fair yellow orange cut fluorescence only, interbedded SHALE, medium to dark gray to green gray, micromicaceous, silty in part, waxy in part, trace Dolomite stringers, medium gray to gray brown, fine to coarse crystalline, slightly fossiliferous with trace Crinoid remnants, tight, no shows

585.00 to 590.00
(5.00)

SANDSTONE

medium gray, medium brown gray in part, quartzose, very fine to fine grained, subangular, fair sorting, siliceous to very siliceous, hard, vitreous, argillaceous to very argillaceous in part, slightly dolomitic in part, silty, micaceous in part, tight, no shows, interbedded SHALE medium to dark green gray as above

590.00 to 595.00
(5.00)

SANDSTONE

medium gray brown as above, very fine to fine grained, siliceous to very siliceous, hard, tight, patchy dead oil staining, fair yellow orange cut fluorescence, scattered Shale, medium to dark gray to green gray, waxy in part, pyritic, slightly dolomitic in part, silty

595.00 to 600.00
(5.00)

SANDSTONE

medium gray brown, quartzose, fine grained, subangular, well sorted, slightly siliceous, pyritic, slightly argillaceous with trace green Shale laminations, friable with abundant loose disaggregated grains, fair to good porosity, patchy dead oil staining, no dry fluorescence, fair slow streaming yellow orange cut fluorescence

600.00 to 605.00
(5.00)

SANDSTONE

medium gray brown, mainly quartzose, very fine to fine grained, subangular to subrounded, moderately well sorted, siliceous, slightly argillaceous, friable with scattered loose grains, fair porosity, very faint cut fluorescence only, trace pyrite

605.00 to 610.00
(5.00)

SANDSTONE

medium gray to gray brown as above, very fine to fine grained, subangular to subrounded, moderately well sorted, siliceous, slightly argillaceous, decreasing porosity to poor to fair, patchy dead oil staining, fair yellow orange cut fluorescence, interbedded SHALE, medium to dark gray to green gray, micromicaceous, fissile in part, silty in part, pyritic with scattered disseminated pyrite

610.00 to 615.00
(5.00)

SHALE

dark gray to very dark gray, slightly dolomitic, silty in part, scattered SANDSTONE, dark gray, silt to very fine grained, slightly siliceous, very argillaceous grading to sand, Shale, tight, no shows

615.00 to 620.00
(5.00)

SANDSTONE

medium brown gray, very fine to fine grained, subangular to subrounded, fair sorting, siliceous, argillaceous with minor green Shale laminations, mainly tight, patchy dead oil staining, weak orange cut fluorescence, interbedded Siltstone, light green gray to medium gray, very argillaceous, slightly dolomitic, sandy, micromicaceous, tight, no shows, trace pyrite

Sample Descriptions

Storage Units:

Metric

620.00 to 625.00 (5.00)	SANDSTONE very light gray, clean, quartzose, very fine to lower case fine grained, subangular, well sorted, slightly siliceous, very friable, fair to good porosity, no shows, scattered SANDSTONE, light gray, quartzose very fine to fine grained, subangular to subrounded, well sorted, very dolomitic, tight, no shows
625.00 to 630.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular, well sorted, very dolomitic grading to sandy DOLOMITE, hard, tight, no shows, interbedded SANDSTONE, very light gray, quartzose, very fine grained, subangular, well sorted, slightly siliceous, friable, fair to good porosity, no shows, trace green Shale streaks
630.00 to 635.00 (5.00)	SANDSTONE very light gray, quartzose, clean, very fine to lower case fine grained, subangular, well sorted, slightly siliceous, dolomitic in part, friable, fair porosity, no shows, interbedded SANDSTONE, medium gray, silt to very fine grained, dolomitic, slightly siliceous, argillaceous, tight, no shows, scattered Shale, medium to dark green gray, micromicaceous, waxy, silty in part
635.00 to 640.00 (5.00)	SANDSTONE medium gray, quartzose, silt to very fine grained, subangular, fair sorting, dolomitic, argillaceous to very argillaceous, micromicaceous, trace pyritic matrix, tight, no shows, scattered SHALE, medium to dark gray to green gray, waxy, pyritic, silty in part, sandy to very sandy in part
640.00 to 645.00 (5.00)	SILTSTONE light green gray to light to medium gray, quartzose, siliceous, dolomitic in part, argillaceous to very argillaceous, pyritic, sandy grading to very fine grained Sandstone in part, micromicaceous, tight, no shows, scattered Shale, medium to dark gray to green gray, micromicaceous, silty in part, trace pyrite
645.00 to 650.00 (5.00)	SILTSTONE as above, mainly medium green gray, very argillaceous, micromicaceous, sandy, tight, no shows, scattered Shale, medium to dark green gray, silty and sandy in part, scattered SANDSTONE, light gray to very light gray, quartzose, clean, very fine to fine grained, subangular, well sorted, slightly siliceous, dolomitic in part, trace poor porosity, no shows
650.00 to 655.00 (5.00)	SANDSTONE light gray, quartzose, fine grained, subangular to subrounded, well sorted, clean, slightly siliceous, friable, fair to good porosity, no shows, interbedded SANDSTONE, light gray, quartzose, fine to medium grained, subangular to subrounded, fair sorting, dolomitic to very dolomitic grading to sandy Dolomite in part, pyritic, tight, no shows
655.00 to 660.00 (5.00)	SANDSTONE light gray, quartzose, fine grained, subangular to subrounded, well sorted, slightly siliceous, very friable with abundant loose disaggregated grains, indicated good porosity, no shows, trace pyrite, poor sample
660.00 to 665.00 (5.00)	SANDSTONE as above, sample is all disaggregated fine quartz grains, indicated good porosity, no shows

665.00 to 670.00 (5.00)	SANDSTONE light gray to very light gray, quartzose, very fine to fine grained, subangular to subrounded, fair sorting, siliceous, slightly calcareous in part, friable, fair to good porosity, no shows, scattered SANDSTONE, light gray, quartzose, very fine to medium grained, subangular to subrounded, poor sorting, calcareous to very calcareous, trace carbonaceous laminations, tight, no shows, trace pyrite
670.00 to 675.00 (5.00)	SANDSTONE light gray, quartzose, mainly fine grained, some very fine grained, minor medium grains, subangular to subrounded, well sorted, slightly siliceous, pyritic in part, abundant loose disaggregated grains, good porosity, no shows
675.00 to 680.00 (5.00)	SANDSTONE light gray as above, fine grained, siliceous, very friable, good porosity, no shows, scattered SANDSTONE, light to medium gray, quartzose, very fine to medium grained, subangular, fair sorting, very dolomitic, tight, no shows
680.00 to 685.00 (5.00)	SANDSTONE medium gray, very fine to fine grained, subangular, fair sorting, very dolomitic, argillaceous to very argillaceous, pyritic, tight, no shows, scattered Dolomite, light to medium gray, very fine to medium crystalline, sandy to very sandy in part, slightly argillaceous, tight, no shows, scattered SANDSTONE, light gray as above, fine grained, very friable with good porosity, no shows
685.00 to 690.00 (5.00)	SANDSTONE very light gray, quartzose, fine grained, subangular to subrounded, well sorted, slightly siliceous, very friable, abundant disaggregated grains, good porosity, no shows, minor SANDSTONE, light gray, quartzose, fine to medium grained, subangular to subrounded, fair sorting, dolomitic to very dolomitic, pyritic in part, tight, no shows, trace Shale streaks, dark gray, micromicaceous, sandy
690.00 to 695.00 (5.00)	SANDSTONE light gray, quartzose, fine to medium grained, subangular to subrounded, fair sorting, siliceous, friable, scattered loose grains, fair to good porosity, no shows, minor Siltstone, light to medium gray, green gray in part, quartzose, siliceous, dolomitic in part, argillaceous with scattered varved argillaceous laminations, tight, no shows, trace Shale, very dark gray to black, micromicaceous, silty
695.00 to 700.00 (5.00)	SANDSTONE light gray, quartzose, fine grained, subangular to subrounded, well sorted, slightly siliceous, pyritic with scattered loose pyrite, friable with abundant loose grains, fair to good porosity, no shows, interbedded SHALE, very dark gray to black, silty, micaceous
700.00 to 705.00 (5.00)	SANDSTONE light to medium gray, quartzose, very fine grained, subangular, well sorted, silty, siliceous, argillaceous trace varved laminations in part, micromicaceous, pyritic, tight, no shows, minor Sandstone, medium gray brown, quartzose, very fine to fine grained, subangular, fair sorting, siliceous, trace poor porosity, dead oil staining in part, no dry fluorescence, weak orange cut fluorescence, trace clean very light gray porous Sandstone as above, minor SHALE, dark gray to black, micaceous, silty

Sample Descriptions

Storage Units: Metric

705.00 to 710.00 (5.00)	SANDSTONE light gray, quartzose, fine grained, subangular to subrounded, well sorted, siliceous in part, friable, fair to good porosity, no shows, trace pyrite
710.00 to 715.00 (5.00)	SANDSTONE light gray as above, very fine to fine grained, siliceous, dolomitic in part, friable in part, scattered black argillaceous laminations, poor to fair porosity, no shows, interbedded SHALE, very dark gray to black, micaceous, silty and sandy, trace pyrite
715.00 to 720.00 (5.00)	SHALE very dark gray to black, dark brown gray in part, micaceous, silty with scattered Siltstone laminations, minor pyrite, interbedded SANDSTONE, light gray, quartzose, silt to very fine grained, trace fine grained, subangular to subrounded, fair sorting, siliceous, dolomitic, argillaceous with black Shale laminations, mainly tight with trace poor porosity, no shows, trace Siltstone, light to medium gray, quartzose, siliceous, dolomitic, micromicaceous, trace pyrite, tight, no shows
720.00 to 725.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, fair sorting, siliceous and very hard in part, dolomitic in part, slightly kaolinitic, trace poor porosity, no shows, scattered SHALE as above, dark gray to black, sandy, micaceous, trace pyrite, trace Siltstone, light to medium gray, sandy with very fine grained sand, dolomitic, argillaceous, siliceous in part, tight, no shows
725.00 to 730.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, fair sorting, siliceous, trace carbonaceous inclusions, poor porosity, no shows, interbedded SHALE, dark gray to black, micaceous, silty, sandy, trace pyrite, scattered Siltstone laminations, medium gray, siliceous and hard, dolomitic in part, tight, no shows
730.00 to 735.00 (5.00)	SANDSTONE light gray, quartzose, fine to medium grained, subangular to subrounded, moderately well sorted, slightly siliceous, slightly kaolinitic, friable with abundant loose disaggregated grains, indicated fair to good porosity, no shows, trace Shale, very dark gray to black, micaceous
735.00 to 740.00 (5.00)	SANDSTONE light to medium gray, quartzose, silt to very fine grained, trace fine grained, subangular to subrounded, fair sorting, siliceous, argillaceous with scattered black Shale laminations, tight, no shows, minor Shale, very dark gray to black as above, micaceous, silty and sandy in part, scattered light gray Sandstone as above, fine grained, friable, poor to fair porosity, no shows
740.00 to 745.00 (5.00)	SANDSTONE light gray to light brown gray, quartzose, very fine to fine grained, subangular to subrounded, moderately well sorted, silty, siliceous, slightly kaolinitic, slightly argillaceous with minor dark gray Shale laminations, mainly tight with trace poor porosity, no shows, scattered SHALE, very dark gray to black, micaceous, silty and sandy in part, trace pyrite
745.00 to 750.00 (5.00)	SANDSTONE as above, light gray, quartzose, very fine to fine grained, siliceous, trace poor porosity, no shows, increasing interbedded SHALE, very dark gray to black, micaceous, silty

Sample Descriptions

Storage Units: Metric

	with scattered thin Siltstone laminations, sandy to very sandy in part, trace pyrite
750.00 to 755.00 (5.00)	SHALE very dark gray to black, micaceous, fissile, silty with scattered Siltstone laminations, slightly sandy in part, trace pyrite, minor Sandstone, light to medium gray to brown gray, quartzose, very fine to fine grained, subangular, fair sorting, siliceous, argillaceous, kaolinitic in part, silty, slightly carbonaceous in part, tight, no shows
755.00 to 760.00 (5.00)	SHALE dark gray to black as above, dark brown gray in part, silty and sandy, trace pyrite, minor Sandstone, light gray, quartzose, very fine to fine grained, subangular to subrounded, fair sorting, siliceous to very siliceous, argillaceous with scattered dark gray Shale laminations, mainly tight with trace poor porosity, no shows, trace Siltstone, light to medium gray, siliceous, argillaceous, tight
760.00 to 765.00 (5.00)	SHALE as above, very dark gray to black, silty and sandy, carbonaceous laminations, scattered Sandstone, light to medium gray, quartzose, very fine to fine grained, subangular, fair sorting, siliceous to very siliceous, hard, silty in part, slightly argillaceous with black Shale laminations, tight, no shows, minor Siltstone stringers
765.00 to 770.00 (5.00)	SHALE dark gray as above, silty and sandy in part, scattered Sandstone as above, poor sample, bit-trip
770.00 to 775.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, kaolinitic, slightly carbonaceous, scattered black Shale laminations, pyritic in part, friable, streaks poor porosity, no shows, scattered Shale dark gray to black as above
775.00 to 780.00 (5.00)	SANDSTONE light gray as above, mainly very fine to fine grained, some fine to medium grained, siliceous, friable, streak fair porosity, no shows, increasing interbedded SHALE, very dark gray to black, micromicaceous, fissile in part, silty in part, sandy with scattered floating sand grains, minor pyrite
780.00 to 785.00 (5.00)	SHALE very dark gray to black, micaceous, fissile in part, silty with scattered Siltstone laminations, sandy in part, carbonaceous in part, trace pyrite, trace Sandstone as above
785.00 to 790.00 (5.00)	SHALE as above, very dark gray to black, micaceous, silty and sandy in part, trace Sandstone as above
790.00 to 795.00 (5.00)	SANDSTONE very light gray, quartzose, very fine grained, subangular to subrounded, well sorted, slightly siliceous, slightly carbonaceous, friable, fair porosity, no shows, scattered Sandstone, light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, slightly kaolinitic, dolomitic in part, mainly tight with streaks poor porosity, no shows, trace pyrite

Sample Descriptions

Storage Units: Metric

795.00 to 800.00 (5.00)	SANDSTONE light gray to very light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, kaolinitic, friable in part, mainly tight with streaks poor to fair porosity, no shows, scattered SHALE, dark gray to black, micromicaceous, silty in part, slightly carbonaceous, minor siderite
800.00 to 805.00 (5.00)	SANDSTONE as above, very fine to fine grained, siliceous, slightly kaolinitic, argillaceous in part, friable in part with streaks poor porosity, no shows, scattered SHALE as above, trace pyrite
805.00 to 810.00 (5.00)	SANDSTONE light gray as above, quartzose, very fine to fine grained, slightly siliceous, kaolinitic, scattered black argillaceous laminations, friable with streaks poor to fair porosity, no shows, decreasing dark gray to black Shale as above, trace pyrite
810.00 to 815.00 (5.00)	SANDSTONE light gray to very light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, kaolinitic, minor carbonaceous inclusions, trace dark gray argillaceous laminations, friable in part, mainly tight with streaks poor to fair porosity, no shows, trace Shale as above, dark gray to black, micaceous, sandy, trace pyrite
815.00 to 820.00 (5.00)	SANDSTONE light gray as above, very fine to fine grained, trace medium grained, siliceous, slightly sideritic in part, kaolinitic, mainly tight with trace poor porosity, no shows, minor Ironstone, medium brown to gray brown, sandy with floating sand grains in part to very sandy grading to sideritic Sandstone in part, tight, no shows
820.00 to 825.00 (5.00)	SANDSTONE light gray to very light gray, light brown gray in part, quartzose, mainly fine grained, subangular to subrounded, well sorted, siliceous, dolomitic in part, kaolinitic, trace dark gray argillaceous laminations, friable in part, mainly tight with streaks poor to fair porosity, no shows, scattered sandy Ironstone as above, trace Shale streaks, very dark gray to black, rare trace green waxy Shale
825.00 to 830.00 (5.00)	SANDSTONE light gray to light brown gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, kaolinitic, dolomitic to slightly sideritic in part, friable in part, mainly tight with trace poor porosity, no shows, trace Shale streaks, medium to dark gray, green gray in part, micromicaceous, sandy in part, trace pyrite
830.00 to 835.00 (5.00)	SANDSTONE light gray brown, very fine to fine grained, subangular to subrounded, well sorted, slightly siliceous, kaolinitic, trace carbonaceous specks, streak poor to fair porosity, no shows, trace Shale streaks, dark gray to black, micromicaceous, silty in part with minor thin Siltstone laminations, trace pyrite
835.00 to 840.00 (5.00)	SANDSTONE light gray, quartzose, very fine grained, subangular to subrounded, well sorted, siliceous to very siliceous and hard in part, slightly kaolinitic, scattered thin black Shale laminations, tight, no shows

Sample Descriptions

Storage Units:

Metric

840.00 to 845.00 (5.00)	SANDSTONE light gray to very light gray, quartzose, very fine grained as above, subangular to subrounded, well sorted, slightly siliceous to very siliceous and hard in part, kaolinitic, friable in part, trace poor porosity, no shows
845.00 to 850.00 (5.00)	SHALE dark gray to very dark gray, micromica ceous, fissile, scattered pyrite, trace siderite, trace green gray Shale laminations, scattered Siltstone laminations and inclusions
850.00 to 855.00 (5.00)	SANDSTONE very light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, slightly kaolinitic in part, very friable in part, streak fair to good porosity, no dry fluorescence, patchy fair orange cut fluorescence, minor pyrobitumen in part, scattered SHALE as above
855.00 to 860.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, slightly siliceous, slightly kaolinitic in part, very friable with scattered loose grains, fair to good porosity, fair orange cut fluorescence, scattered pyrobitumen
860.00 to 865.00 (5.00)	SANDSTONE light brown, quartzose, fine grained, subangular to subrounded, well sorted, slightly siliceous, very friable, abundant loose disaggregated grains, fair to good porosity, no shows
865.00 to 870.00 (5.00)	SANDSTONE light gray brown as above, light gray in part, quartzose, fine grained, siliceous and hard in part, fair to good porosity, no shows, minor SHALE, dark gray to black, very dark gray to black and trace gray green, pyritic
870.00 to 875.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous to very siliceous and hard in part, kaolinitic, slightly pyritic, trace dark gray Shale laminations, friable in part, mainly tight with trace poor porosity, no shows
875.00 to 880.00 (5.00)	SANDSTONE as above, light gray to very light gray, quartzose, very fine to fine grained, siliceous, kaolinitic, friable in part, streaks poor to fair porosity, no shows
880.00 to 885.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, very siliceous and hard in part, kaolinitic, friable in part, mainly tight with trace poor porosity, no shows, trace dark gray Shale laminations, micaceous
885.00 to 890.00 (5.00)	SANDSTONE light gray as above, very fine to fine grained, siliceous, kaolinitic, tight with trace poor porosity, no shows, trace Sandstone, light to medium gray, quartzose, very fine to medium grained, subangular to subrounded, fair sorting, siliceous, dolomitic, kaolinitic, argillaceous in part with trace thin Shale laminations, tight, no shows
890.00 to 895.00 (5.00)	SANDSTONE very light gray, quartzose, very fine grained, subangular, well sorted, siliceous, kaolinitic, tight, no shows, trace pyrite, minor dark gray to black Shale laminations and

Sample Descriptions

Storage Units:

Metric

	stringers
895.00 to 900.00 (5.00)	SANDSTONE very light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, kaolinitic, friable in part with trace poor porosity, no shows, trace dark gray Shale laminations, trace Sandstone, medium gray, very fine to fine grained, siliceous, dolomitic, argillaceous to very argillaceous, silty, tight, no shows
900.00 to 905.00 (5.00)	SANDSTONE light gray to very light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, very siliceous and hard in part, vitreous, kaolinitic, minor dark gray to black Shale laminations, trace poor porosity, no shows, minor medium gray argillaceous SANDSTONE as above
905.00 to 910.00 (5.00)	SANDSTONE as above, light gray to very light gray, very fine to fine grained, siliceous, kaolinitic, tight, no shows
910.00 to 915.00 (5.00)	SANDSTONE medium gray, quartzose, very fine to fine grained, subangular to subrounded, fair sorting, very dolomitic, very argillaceous, pyritic, tight, no shows, scattered SHALE, medium to dark gray to green gray, very sandy, pyritic, minor Dolomite, medium brown gray, microcrystalline to very fine crystalline, sandy, argillaceous with scattered medium green gray argillaceous laminations, fossiliferous, trace Crinoids, tight, no shows
915.00 to 920.00 (5.00)	SHALE medium to dark gray green, sandy to very sandy, waxy in part, very dark gray to black in part, fissile, micaceous, silty in part with trace siliceous Siltstone laminations, scattered SANDSTONE, light to medium gray, quartzose, very fine to fine grained, subangular to subrounded, siliceous, kaolinitic, argillaceous with scattered dark gray Shale laminations in part, tight, no shows
920.00 to 925.00 (5.00)	SHALE medium to dark green gray, micromicaceous, sandy to very sandy in part, interbedded SANDSTONE as above, medium gray, very fine to fine grained, very dolomitic, very argillaceous, tight, no shows, trace Dolomite, medium gray as above, very sandy grading to dolomitic Sandstone, tight, no shows, trace pyrite
925.00 to 930.00 (5.00)	SANDSTONE light gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, kaolinitic, tight, no shows, scattered Siltstone, medium gray to medium green gray, quartzose, siliceous, dolomitic, very argillaceous, hard, tight, no shows, scattered SHALE, medium to dark green gray, micromicaceous, sandy
930.00 to 935.00 (5.00)	SANDSTONE light to gray, quartzose, very fine to fine grained, subangular to subrounded, well sorted, siliceous, dolomitic in part, kaolinitic, tight, no shows, trace Siltstone, medium gray to medium green gray as above, very argillaceous, hard, tight, no shows, scattered SHALE, medium to dark green gray, micromicaceous, sandy, carbonaceous with thin carbonaceous and coaly laminations, trace siderite, trace pyrite

Sample Descriptions

Storage Units:

Metric

935.00 to 940.00 (5.00)	SHALE dark gray to very dark gray to black, medium gray green in part, micromicaceous, sandy with scattered floating sandy grains, silty in part, carbonaceous laminations, scattered Dolomite, medium brown, very fine to fine crystalline, sandy, argillaceous, very pyritic, tight, no shows, scattered Sandstone as above
940.00 to 945.00 (5.00)	SHALE dark gray to black, gray green in part as above, sandy, scattered DOLOMITE as above, medium brown to gray brown, very fine to fine crystalline, sandy, fossiliferous, trace Crinoids, Ostracods, tight, no shows
945.00 to 950.00 (5.00)	DOLOMITE medium brown, very fine to fine crystalline, fossiliferous, Crinoids, tight, no shows, interbedded SHALE as above, medium to dark gray to green gray, micromicaceous, fissile, sandy in part, trace pyrite
950.00 to 955.00 (5.00)	SHALE dark gray to black, dark brown gray in part, micaceous, fissile, slightly calcareous and fossiliferous in part, trace Crinoids, sandy in part, minor Dolomite as above
955.00 to 960.00 (5.00)	LIMESTONE medium gray brown to medium gray, cryptocrystalline, silt to fine grained Packstone, argillaceous, silty, abundant fossil fragments with Crinoids, trace Ostracods, trace Brachiopods, tight, no shows, interbedded SHALE as above, dark gray to black, greer gray in part, micaceous, silty, sandy to very sandy in part, trace pyrite
960.00 to 965.00 (5.00)	DOLOMITE mainly medium brown, medium to dark brown to dark gray brown in part, very fine to fine crystalline, argillaceous, slightly calcareous, fossiliferous, Crinoids, Ostracods, tight, no shows, scattered LIMESTONE as above, argillaceous, silty, fossiliferous, Crinoids, trace Ostracods, trace Brachiopods, trace Bryozoans, tight, no shows
965.00 to 970.00 (5.00)	LIMESTONE light gray brown, fine to coarse grained fragmental Packstone, slightly argillaceous, fossiliferous, Crinoids, Brachiopods, trace pellets, tight, no shows, trace pyrite
970.00 to 975.00 (5.00)	LIMESTONE light to medium gray brown as above, fine to coarse grained fragmental Packstone, very fossiliferous, abundant coarse Crinoidal fragments, Brachiopods, trace Bryozoans, tight, no shows
975.00 to 980.00 (5.00)	LIMESTONE medium gray to brown gray, fine to very coarse grained Crinoidal Packstone, slightly argillaceous in part, very fossiliferous, Crinoids, Brachiopods, trace Ostracods, trace pellets, tight, no shows, trace stylolites
980.00 to 985.00 (5.00)	LIMESTONE medium gray to brown gray as above, fine to very coarse grained Packstone, very fossiliferous, Crinoids, Brachiopods, trace Ostracods, trace pellets, tight, no shows, trace stylolites

Sample Descriptions

Storage Units:

Metric

985.00 to 990.00 (5.00)	LIMESTONE light to medium gray to brown gray, fine to very coarse grained Packstone, slightly argillaceous in part, very fossiliferous, Crinoids, Brachiopods, trace Bryozoans, trace Ostracods, trace pellets, tight, no shows, trace stylolites, rare trace Chert
990.00 to 995.00 (5.00)	LIMESTONE light to medium gray to brown gray as above, fine to very coarse grained Packstone, slightly argillaceous, very fossiliferous, tight, no shows, scattered LIMESTONE, dark gray brown, microcrystalline, dolomitic, fossiliferous, tight, no shows, scattered Chert, light to medium gray, translucent in part
995.00 to 1,000.00 (5.00)	LIMESTONE light gray to light brown gray, fine to very coarse grained Packstone, slightly argillaceous in part, very fossiliferous, Crinoids, trace pellets, tight, no shows, trace stylolites, scattered Chert fragments
1,000.00 to 1,005.00 (5.00)	LIMESTONE light gray to light brown gray as above, Packstone, tight, no shows, scattered LIMESTONE, dark gray brown, microcrystalline to very fine crystalline, Wackestone, very argillaceous, slightly dolomitic in part, fossiliferous, Crinoids, tight, no shows, trace Chert
1,005.00 to 1,010.00 (5.00)	LIMESTONE light gray to light brown gray, fine to very coarse grained Packstone, chalky in part, slightly argillaceous in part, very fossiliferous, Crinoids, Brachiopods, trace pellets, tight, no shows, trace stylolites, scattered LIMESTONE, dark gray brown, microcrystalline to very fine crystalline, Wackestone, very argillaceous grading to Marlstone in part, fossiliferous, Crinoids, tight, no shows, trace Chert
1,010.00 to 1,015.00 (5.00)	LIMESTONE light gray to light to medium brown gray, fine to very coarse grained Packstone, chalky in part, slightly argillaceous in part, very fossiliferous, Crinoids, trace pellets, tight, no shows, trace stylolites, abundant Shale, dark gray, micromicaceous, fissile, sloughing?
1,015.00 to 1,020.00 (5.00)	LIMESTONE light gray to light brown gray, fine to very coarse grained Packstone, chalky in part, slightly argillaceous in part, very fossiliferous, abundant Crinoids, Brachiopods, trace Ostracods, trace pellets, tight, no shows, trace stylolites, scattered Chert fragments, light to dark gray
1,020.00 to 1,028.00 (8.00)	LIMESTONE as above, light gray to light to medium brown gray, dark gray brown in part, fine to very coarse grained fragmental Packstone, slightly argillaceous in part, very fossiliferous, Crinoids, Brachiopods, trace pellets, tight, no shows, trace stylolites, trace pyrite, increasing Chert, light to dark gray, medium to dark gray brown in part, translucent in part, hard

SAMPLE LOG

1866

N.L. 2Y

Well Information

Operator: **CHEVRON CANADA RESOURCES**

Well Name: **McKay Lakes O-80**

Location: **Unit O Section 80**

UWI: **300O806020123150**

Pool: **WILDCAT**

Field: **WILDCAT**

Province / State: **NWT**

Country: **CANADA**

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SEP - 8 1999

Elevations

Reference: _____ Ground: **292.32m**

Cut(-) / Fill(+): _____ Kelly Bushing: **299.6m**

K.B. to Ground: **7.27m** Casing Flange: _____ m

Total Depth

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	1028m	1028m
Drillers TD (Strap or SLM)	1025.25m	1025.25m
Loggers TD	1028m	1028m

Surface Co - Ordinates

Well Type: **Straight**

Longitude: **123.25** N / S Co - Ordinates: _____

Latitude: **60.3** E / W Co - Ordinates: _____

Bottom Hole Co - Ordinates

Longitude: _____ N / S Co - Ordinates: _____

Latitude: _____ E / W Co - Ordinates: _____

Well Summary

Spud Date: **Aug 24, 1999 @ 11:15hrs**

TD Date: **Sep 4, 1999 @ 08:30hrs**

Rig Release Date: _____

Contractor: **AKITA DRILLING RIG 48**

Drilling Fluid Summary

Fluid Type	From	To
Light Gel Chem System	0m	363m
Gel Chem Polymer	363m	1028m

Casing Summary

Type	Hole Size	Casing Size	Landed
Surface	311mm	244mm	359.2m

Work Schedule

Contractor	Geologist	Log Interval	Dates Logged
Lillico Petroleum Consultants	Brock Lillico	75m - 1028m	Aug 24, 1999 - Sep 5, 1999
Lillico Petroleum Consultants	Cathy Lillico	75m - 1028m	Aug 24, 1999 - Sep 4, 1999

Remarks

Legend

Rock Types and Thin Beds

Whole Bed	Stringer	Nodule	Breccia	Clast	Pebble	Grain	Rock Type
							Anhydrite - primary
							Anhydrite - secondary
							Argillite
							Barite
							Bentonite
							Breccia
							Calcareous
							Cement
							Conglomerate - mixed
							Conglomerate - dark chert
							Conglomerate - light chert
							Conglomerate - varicolored chert
							Chert - dark
							Chert - fossiliferous
							Chert - light
							Chert - tripolitic
							Chert - varicolored
							Claystone - colored
							Claystone - gray
							Coal
							Dolomite
							Ferruginous
							Feldspar
							Gypsum
							Igneous - acidic

Whole Bed	Stringer	Nodule	Breccia	Clast	Pebble	Grain	Rock Type
							Igneous - basic
							Igneous - metamorphic
							Limestone - grain supported
							Limestone - mud supported
							Manganese
							Marlstone - calcareous
							Marlstone - dolomitic
							Phosphate
							Pyrite
							Quartz
							Salt
							Shale - black
							Shale - medium gray
							Shale - dark gray
							Shale - medium to dark gray
							Shale - dark colored
							Shale - light to medium colored
							Shale - medium to dark colored
							Shale - medium colored
							Siderite
							Sandstone
							Siltstone
							Till - glacial
							Volcanic (Tuff)
							Welded Volcanic (Tuff)

Accessories

	Anhydritic		Cherty - tripolitic		Illitic		Salt casts
	Argillaceous		Cherty - varicolored		Kaolinitic		Sandy
	Baritic		Chloritic		Lithic Fragment		Sideritic
	Bentonitic		Clayey		Marly - calcareous		Siliceous
	Bituminous		Dolomitic		Marly - dolomitic		Silty
	Calcareous		Ferruginous staining		Micromicaeous		Slickenside
	Carbonaceous		Fractures		Mixed layer clayey		Stylolitic
	Cherty - dark		Glaucinitic		Montmorillonitic		Tuffaceous
	Cherty - fossiliferous		Gypsiferous		Phosphate pellets		Zeolitic
	Cherty - light		Gibbsitic		Pyritic		

Matrix

	Argillaceous		Marl - dolomitic
	Bentonite		Micrite
	Bituminous		Mixed Clay
	Clay		Montmorillonite
	Chlorite		Sand
	Gibbsite		Silt
	Illite		Sparry Calcite
	Kaolinite		Zeolite
	Marl - calcareous		

Cement

	Anhydritic		Gypsiferous
	Baritic		Hematitic
	Bituminous		Limonitic
	Calcareous		Pyritic
	Chert - dark		Salt
	Chert - light		Sideritic
	Dolomitic		Siliceous
	Ferruginous		

Miscellaneous Grains

	Biotite		Mineral crystal		Orthoclase
	Glaucinite		Mineral - dark		Plagioclase
	Mica flakes		Muscovite		Sand grain

Textures

C	Chalky	L	Lithographic
CX	Cryptocrystalline	mx	Microcrystalline
e	Earthy		

Core Track

	Indicates Cored Interval
	Indicates Lost Core

Test Track

	Indicates Tested Interval
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Fossils (Rock Builders)

Aggregate grains	Coral - head	Oncolite
Algae - laminations	Coral - colonial	Oolite
Algae - non descript	Coral - solitary	Ostracod
Algae - ootoid	Crinoid	Pelecypod
Algae - skeletal	Diatom	Pellet
Amphipora	Echnoid	Pisolite
Belemnite	Echnoid - spine	Plant Remains
Bioclastic	Fish Remains	Scaphopod
Brachiopod	Euryamphipora	Spicule
Bryozoa	Foraminifera	Sponge
Calciaphera	Fossil	Stromatoporoid
Cephalopod	Fragmental	Stromatoporoid - bulbous
Chaetetes	Gastropod	Stromatoporoid - massive
Coated grain	Graptolite	Stromatoporoid - tabular
Conodont	Hydrozoa	Tentaculites
Coral	Intraclast	Trilobite
Coral - branching	Mollusc	

Wentworth Grain / Crystal Size Scale Chart

Clastic Rocks Common Name	Crystalline Rocks Common Name	Lower Size Limit (mm)	Upper Size Limit (mm)	Size Grades Phi (Ø)
Clay	Cryptocrystalline	0.00098	0.004	+10 to +9
Very Fine Silt	Very Finely Microcrystalline	0.004	0.008	+8
Fine Silt	Finely Microcrystalline	0.008	0.016	+7
Medium Silt	Medium Microcrystalline	0.016	0.031	+6
Coarse Silt	Coarsely Microcrystalline	0.031	0.0625	+5
Very Fine Sand	Very Finely Crystalline	0.0625	0.125	+4
Fine Sand	Finely Crystalline	0.125	0.25	+3
Medium Sand	Medium Crystalline	0.25	0.5	+2
Coarse Sand	Coarsely Crystalline	0.5	1.0	+1
Very Coarse Sand	Finely Megacrystalline	1.0	2.0	0
Granules	Coarsely Megacrystalline	2.0	4.0	-1
Fine Pebbles		4.0	8.0	-2
Medium pebbles		8.0	16.0	-3
Coarse Pebbles		16.0	32.0	-4
Very Coarse pebbles		32.0	64.0	-5
Cobbles		64.0	256.0	-6 to -7
Boulders		256.0	infinity	-8 to -9

The size measure Phi is equal to the negative logarithm to the base 2 of the size in millimeters.

Thus 1 mm = 0 Phi and 1/2 mm = +1 Phi and 1/4 mm = +2 Phi etc.

Porosity Type Track

e	Earthy - low permeability - crystals / grains less than 1 / 16 mm
□	Fenestral - voids from gas bubbles - shrinkage cracks - birdseye texture
F	Fracture
X	Intercrystalline - Interfragmental - Intergranular
◇	Interoolitic - Interpelletoidal
J	Moldic
O	Organic - Bridged - Intrafossil
P	Pinpoint - voids less than 1 / 16 mm
V	Vuggy - voids greater than 1 / 16 mm

Diagenesis Track

⊥	Calcification - Calichified
∠	Dolomitization
⊙	Diagenetically mottled
↘	Fracturing
⓪	Leaching
◇	Metasomatism - Replacement - Allotropic recrystallization - Inversion - Transformation
Pd	Pressure Deformation
Rx	Recrystallization - Strain recrystallization - Grain growth
△	Silicification
⊖	Solution cavity filled - Geopetal structure
~	Stylolitic
W	Weathering

Degree of Diagenesis is in (%) percent. ? Indicates questionable interpretation.

Oil Show Track

●	Even staining (75 - 100% of the rock is stained) - fluoresces in solvent
⊙	Spotted staining (50 - 75% of the rock is stained) - fluoresces in solvent
⊖	Spotted staining (25 - 50% of the rock is stained) - fluoresces in solvent
⊙	Spotted staining (1 - 25% of the rock is stained) - fluoresces in solvent
○	Questionable oil staining - No fluorescents in solvent
D	Dead oil staining - asphaltic - bitumen - pyrobitumen etc.
F	Fluoresces - no visible oil staining

Sorting Track

vP	Very poorly sorted - > 10 phi size grade classes
P	Poorly sorted - 6-10 phi size grade classes
M	Moderately sorted - 3-6 phi size grade classes
mW	Moderately well sorted - 2-3 phi size grade classes
W	Well sorted - < 2 phi size grade classes

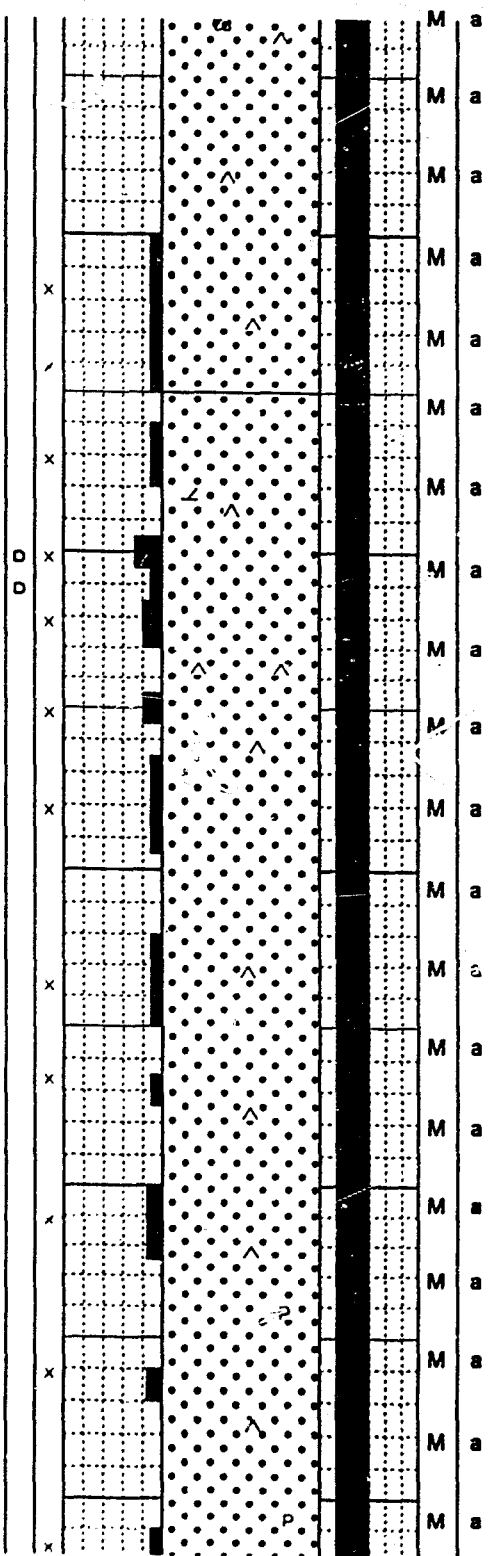
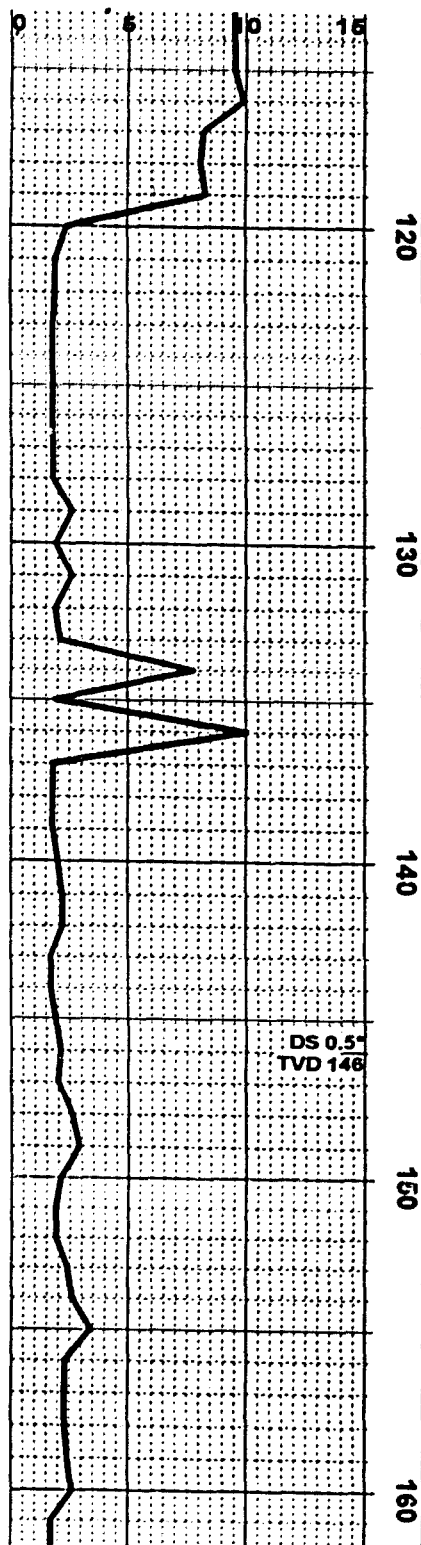
Rounding Track

vA	Very Angular	r	Subrounded
A	Angular	R	Rounded
a	Subangular	wR	Well Rounded

Framework Track

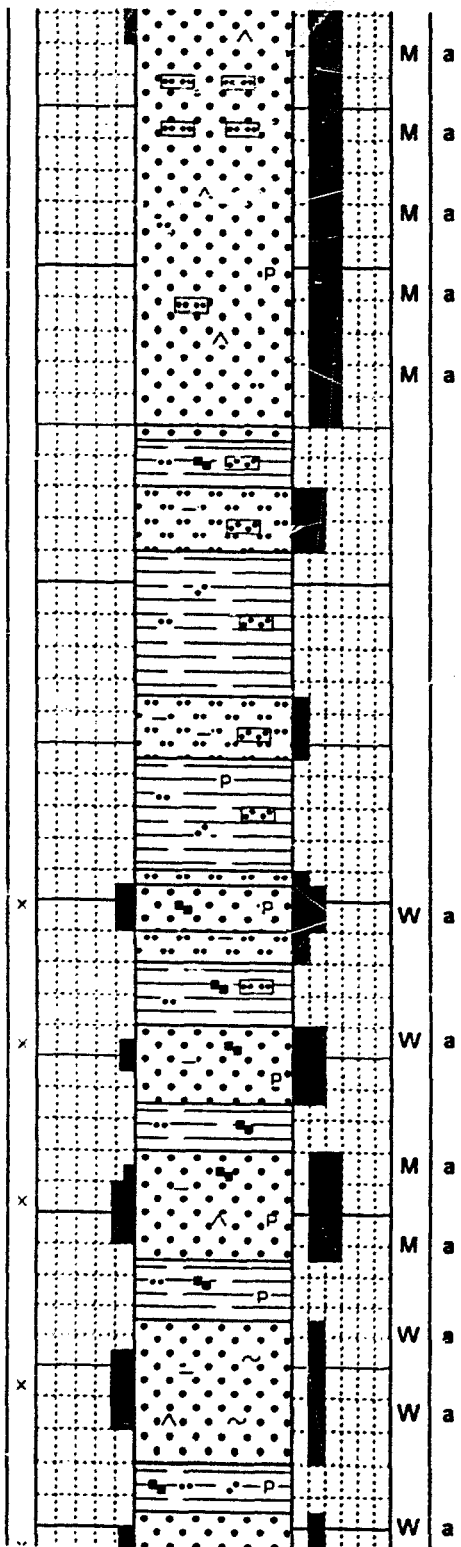
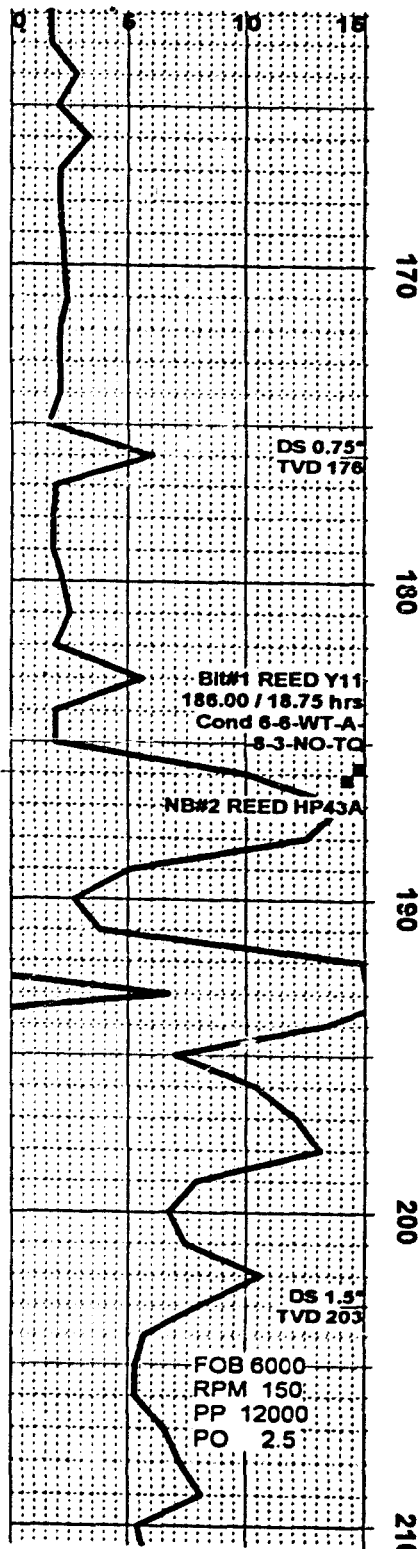
Framework is a ratio between clastic material greater than 1/16 mm and primary void filler less than 1/16 mm. ? indicates questionable interpretation

Drilling Progress		Formation Tops (Short Name)	Test	Core	Porosity Type	Oil Show	Porosity (%)	Interpreted Lithology	Grain Size (mm)	Sorting	Rounding	Framework	Lithology Description
Date	Measured Depth												
Aug 24, 1999	Drill Rate (min/m) DS 0.75" TVD 80 Drilling 349mm Surface hole with REED Y11	80											SS: lt gy to lt brn, vf to c gred, ang frags to rdd grs, p srlg, sils, str p por, no shows, mnr Stst, lt gy to lt yel gy, qtzs, tt, no shows, frags of granitic boulders / vc qtz x frags, mica & felds, (uphole?) MD 1073 Visc 42 pH 10.5 SS: aa, multi cold sd / vf to f gred cmd SS, f to vc loose qtz grs, sbang to loose rdd grs, sils, tr p por, scat Stst, lt gy to lt brn, yel ip, sils, tt, incrg Clyst, dk gy, v soft, washed away while cleaning SS: aa, multi cold, vf to f gred ip, / abnt loose m to v c grs, p por ip, no shows, scat Stst, lt gy to lt gy brn, yel gy ip, sils, tt, no shows, incrg Clyst, soft and washed while cleaning, poor samples Clyst: m to dk gy, soft, p samples mud rings forming while drilling, scat loose sd grs, multi cold, f to v c gred, sbang to rdd Clyst: m to dk gy aa, sample easily washed away while cleaning, scat loose f to v c sd grs
Aug 25, 1999	Drill Rate (min/m) SCATTER (TVD: 100) (SSL: 191.50) DS 0.5" TVD 110	100											SS: lt yel to lt gy, vf to f gred, sbang, fr srlg, sils, str p to fr por, no shows, abnt loose f to v c qtz grs, mnr granitic boulder frags / c qtz xls, mica & flds, (uphole?) SD: lt gy to lt yel gy qtz grs, mnr dk gy Ch grs, m to c gred, sbang to rdd, p srlg, lmn stng ip, pitted, all loose grs, indicated fr por, no shows, tr fld grs SD: aa, loose f to c grs, indicated fr por, no shows, intbd SS, lt gy to lt yel gy, vf to f gred, sbang, fr srlg, sils, sily arg / lmn stng tr p por no shows tr granitic MD 1065 Visc 40 pH 9.5

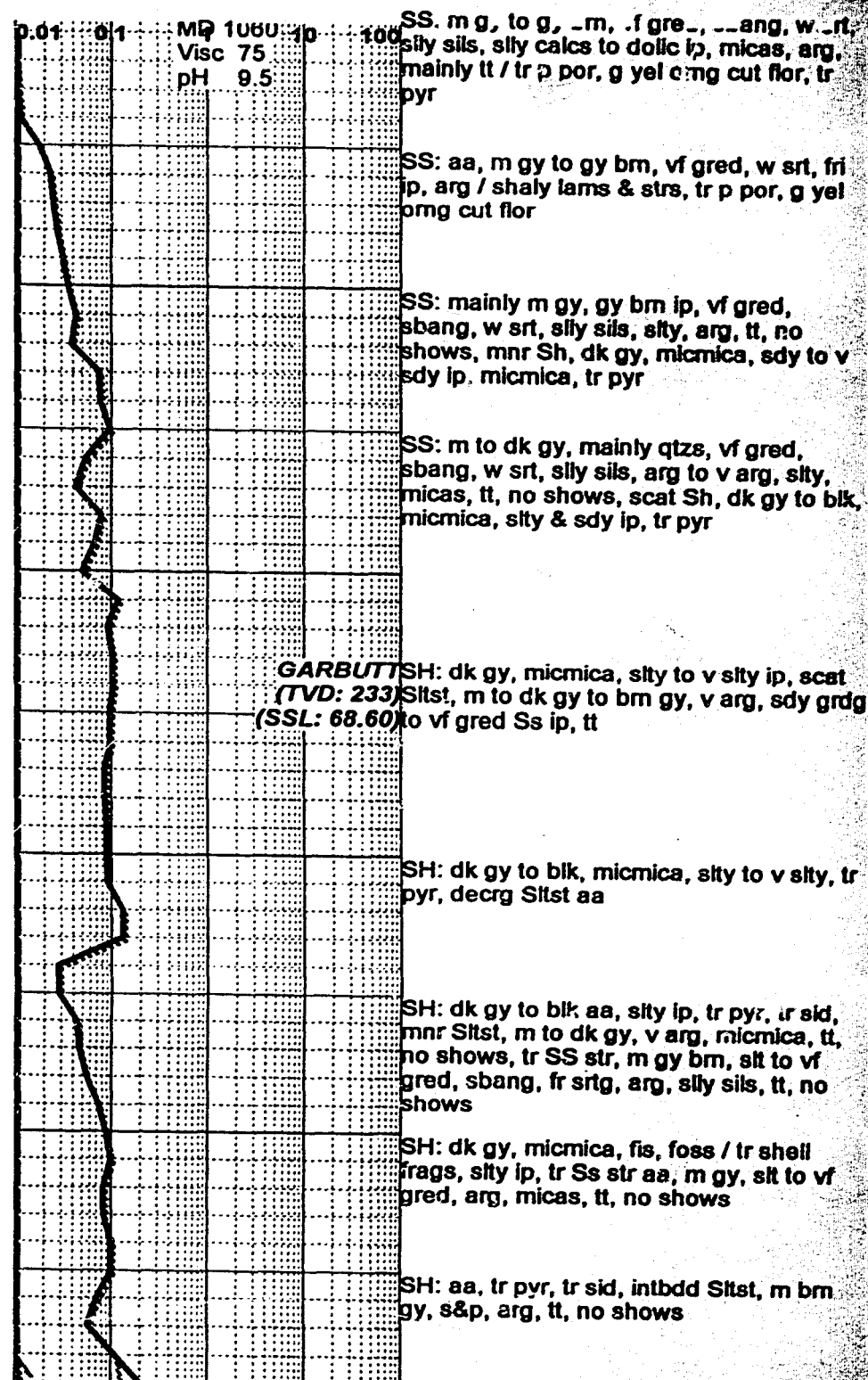
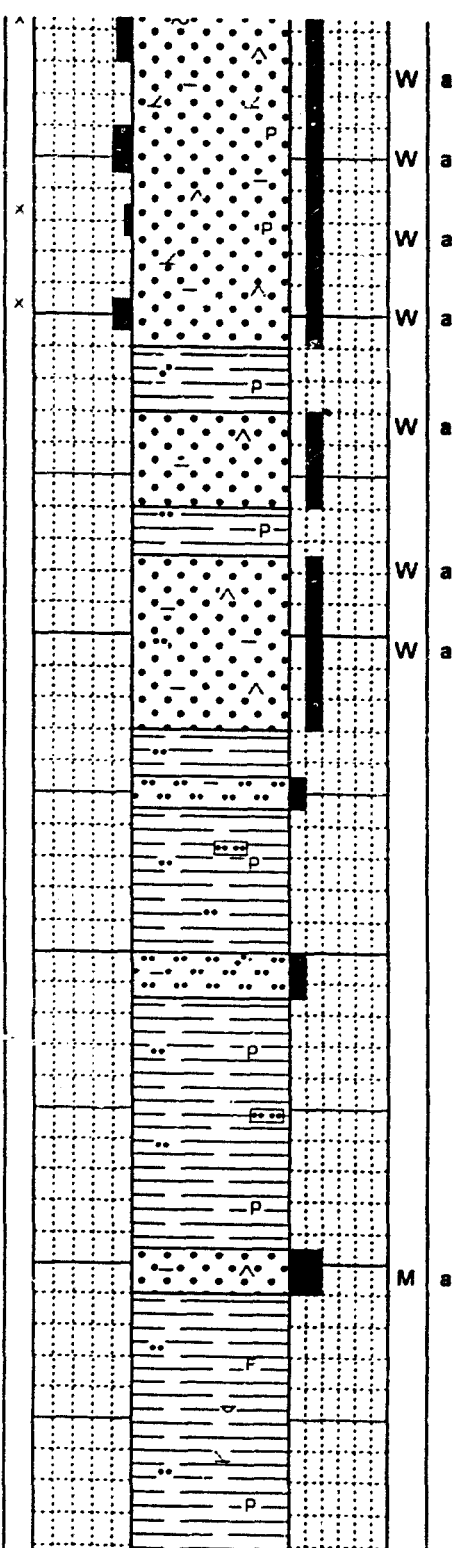
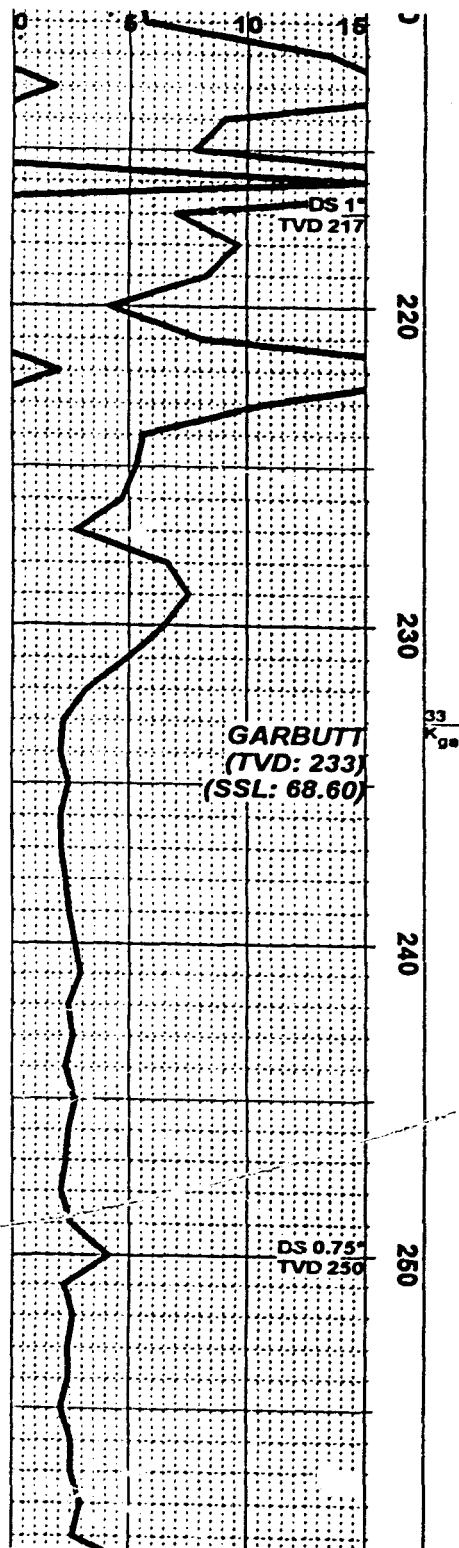


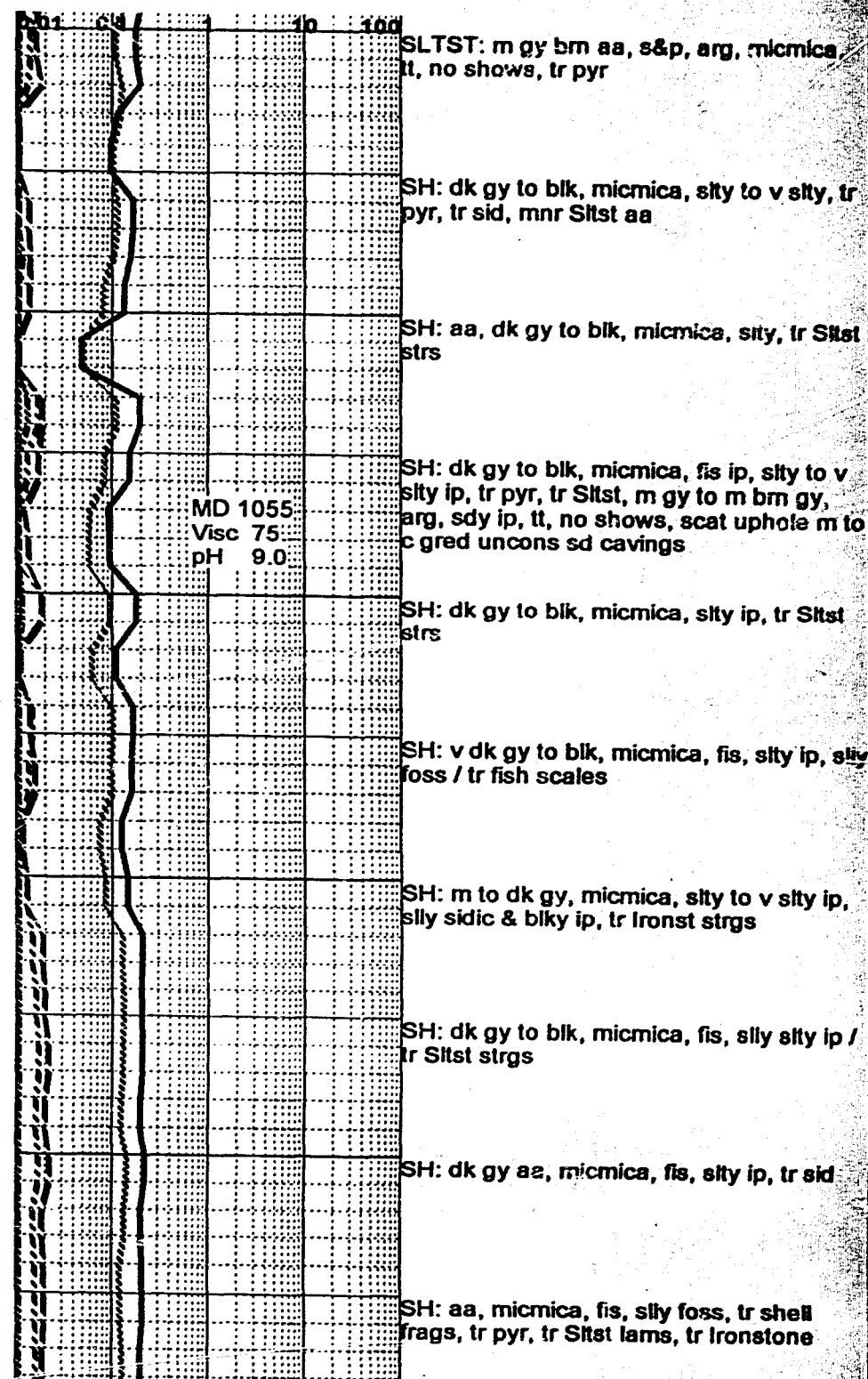
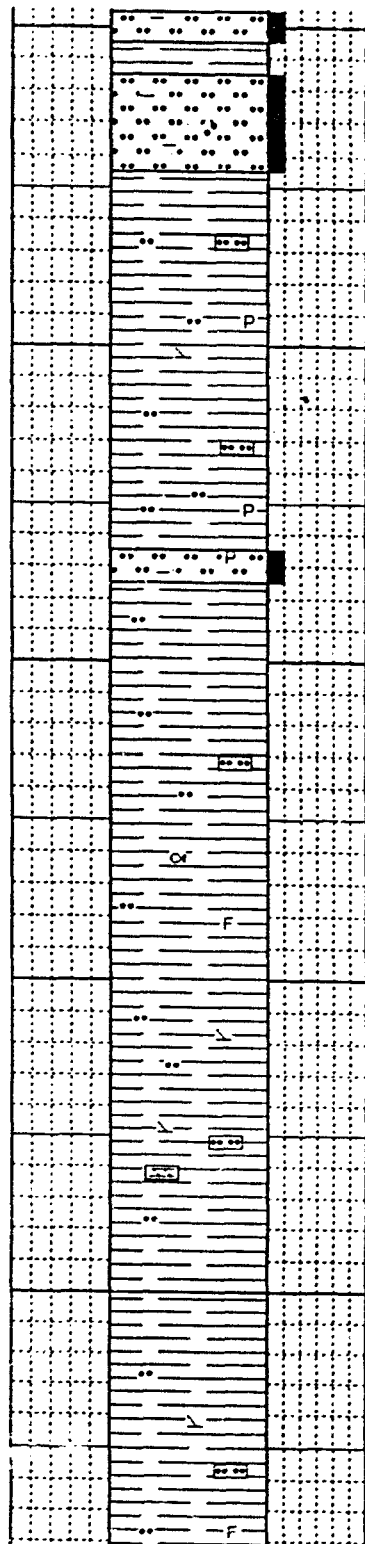
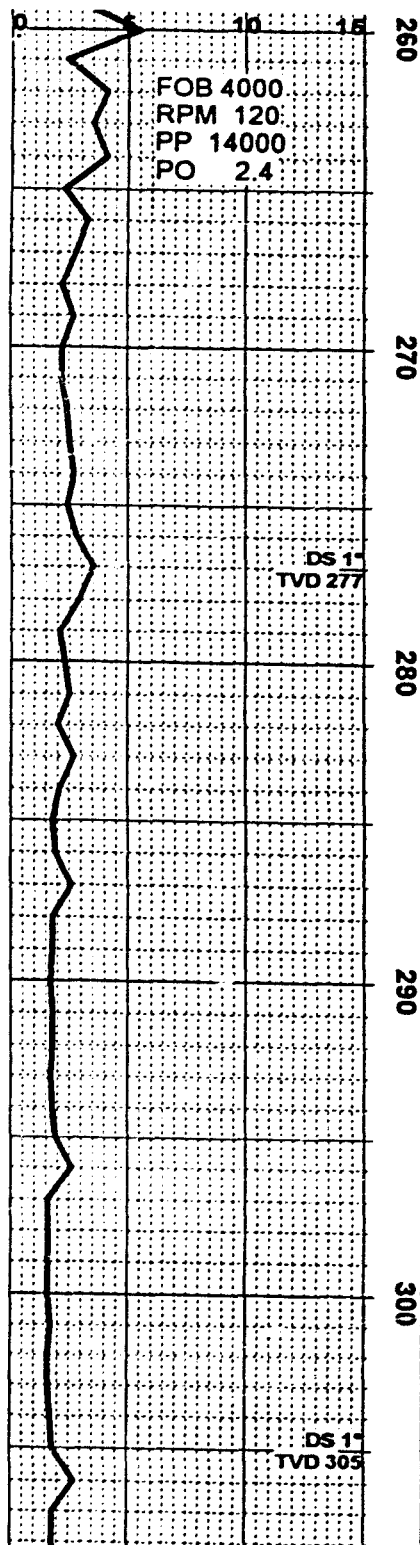
		ing, tr p por, no shows, tr granitic boulder frags
		SS: wide variety of material in this sample including scat Ss, lt gy to yel gy to omg, vf to m gred, mainly lt, no shows, Cht & qtz pbls, pitted ip, granitic frags / mica, sloughing
		SD: lt bm to tan bm, red bm ip, qtzs to arkic, m to c gred, sbang to rdd, fr srtg, no cmt, uncons sd, indicated fr por, no shows, mnr Ss, lt gy, vf to f gred, sbang, fr srtg, sils, p por, no shows
		SS: lt gy to lt yel gy, red bm ip, qtzs, vf to f gred, sbang, fr srtg, sils, silly dolc ip, tr p por, no shows, abnt loose m to vc sd grs, variety of frags like granite, syenite, dol, cht, & slst, (uphole?)
		SS: lt gy to lt yel gy aa, vf to f gred, sbang, fr srtg, sils, p to fr por, no flor, tr pyrbt in rare part, abnt loose m to vc sd grs (uphole?)
		SS: aa, incrg loose c material to 90% of sample, m to vc qtz grs, some fld, tr cht, mnr granite & syenite frags, (uphole caving?)
	MD 1060 Visc 53 pH 9.0	SS: aa, lt gy to lt tan gy, vf to f gred, tr p por, no shows, sample predly loose m to c qtz grs, tr igneous boulder frags, (uphole?)
		SS: lt gy to lt yel gy, qtzs, vf to f gred, sbang, fr srtg, sils ip, strs p por, no shows, abnt loose m to c qtz grs
		SS: aa, sample mainly m to c qtz grs, tr fld grs, tr granitic frags / mica (uphole cavings)
		SS: aa, lt gy to lt yel gy, qtzs, vf to f gred, sils ip, strs p por, no shows, abnt loose uncons m to c qtz grs, poor samples
		SS: aa, lt gy to lt yel gy, sils, tr pyric mtr, mainly lt, no shows, sample is 95% m to c t or u hole loughing

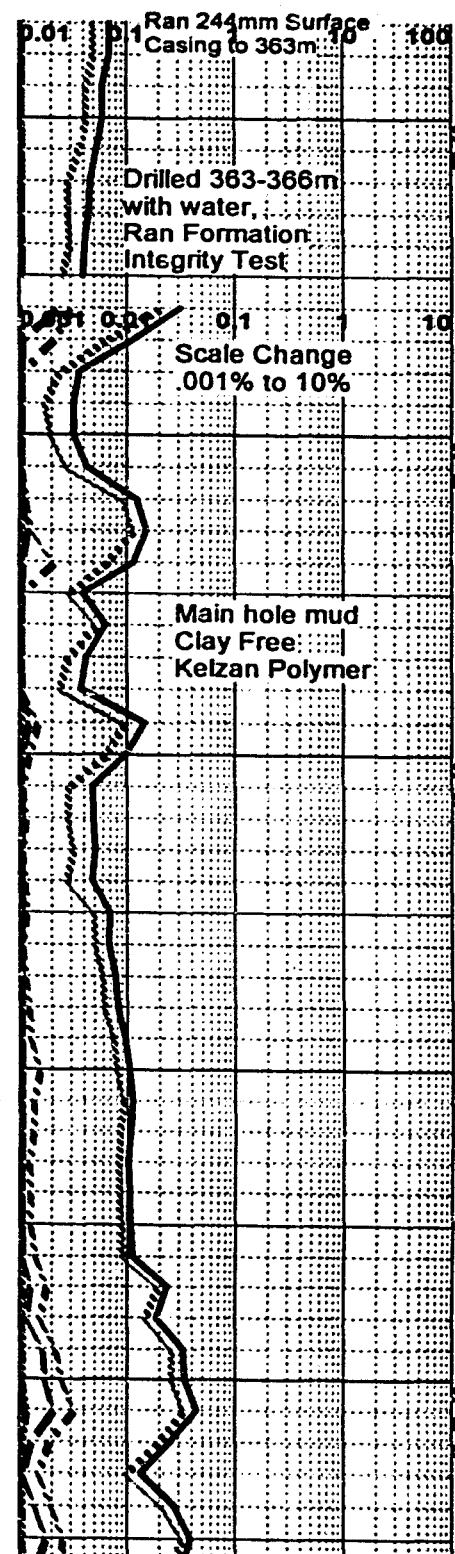
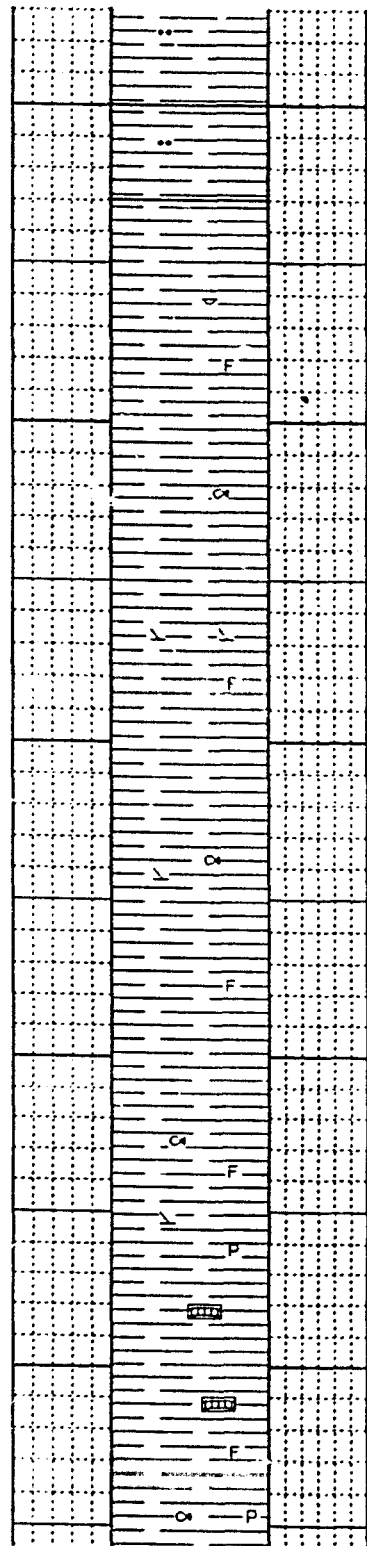
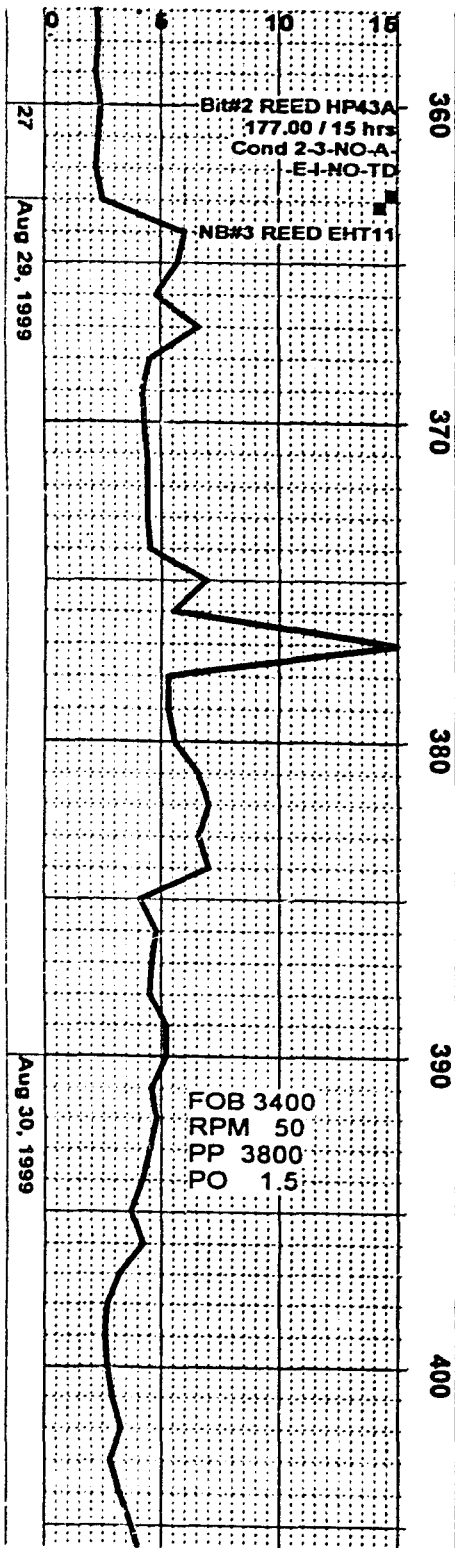
Aug 26, 1999

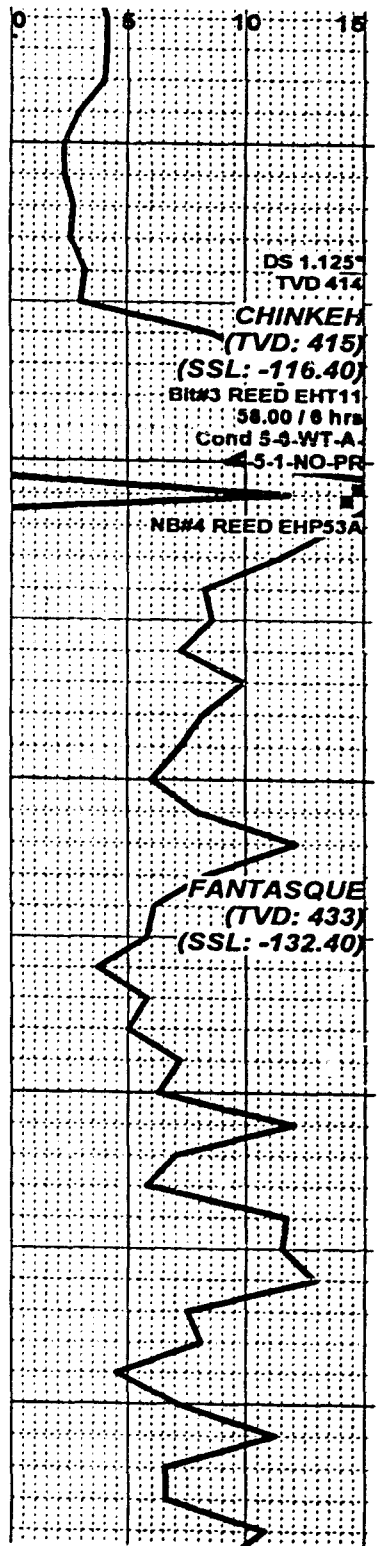


	qtz grs (uphole sloughing?)
	SS: aa, scat Siltst, m gy, qtzs, v arg, tt, no shows, sample mainly loose unconcs m to vc qtz grs & mnr granitic frags (uphole cavings)
	SH: m to dk gy, slty, micmica, mnr Siltst aa, tr Ss, lt to m gy, vf gred, sbang, fr arg, arg, sils, slty, tt, no shows, sample mainly uphole m to c unconcs grs
	SH: m to dk gy, micmica, slty, tr carb, slty sdy ip, tr Siltst, m gy, qtzs, arg, tt, no shows, abnt uphole caving
MD 1080 Visc 50 pH 9.0	SH: dk gy, micmica, slty, sdy ip, intbd Siltst, m to dk gy, v arg, sdy ip, mnr Ss, lt to m gy, qtzs, vf gred, sbang, fr arg, arg, slty sils, tt, no shows, abnt uphole cavings
	SH: dk gy, micmica, slty to v slty, tr pyr, scat Siltst, m to dk gy, v arg, tt, no shows, abnt loose m to c sd grs, poor sample, tripped for drillbit
	SS: m gy, slt to vf gred, sbang, w srl, arg, tr carb specks, tr pyritic mbc, tt, no shows, scat Sh aa, dk gy, slty, slty carb ip, tr Siltst, m gy, v arg, tt, samples cleaning up, less uphole material
	SS: m gy to m bm gy, qtzs, vf to f gred, sbang, fr srlg, micas, slty sils, arg, pyric ip, tr carb specks, tr p por, no shows
	SH: dk gy to blk, micmica, slty slty ip, slty bits, tr pyr, scat Ss aa
	SS: dk gy, qtzs, vf gred, slty sils, arg, glaucic, mainly tt / tr p por, no shows, mnr Sh, dk gy to v dk gy, micmica, slty, sdy, tr pyr, tr sid, tr Siltst, dk gy, arg to v arg, micmica, tr carb specks, tt
	SS: m gy to gv hm, vf gred, sbang, w srl

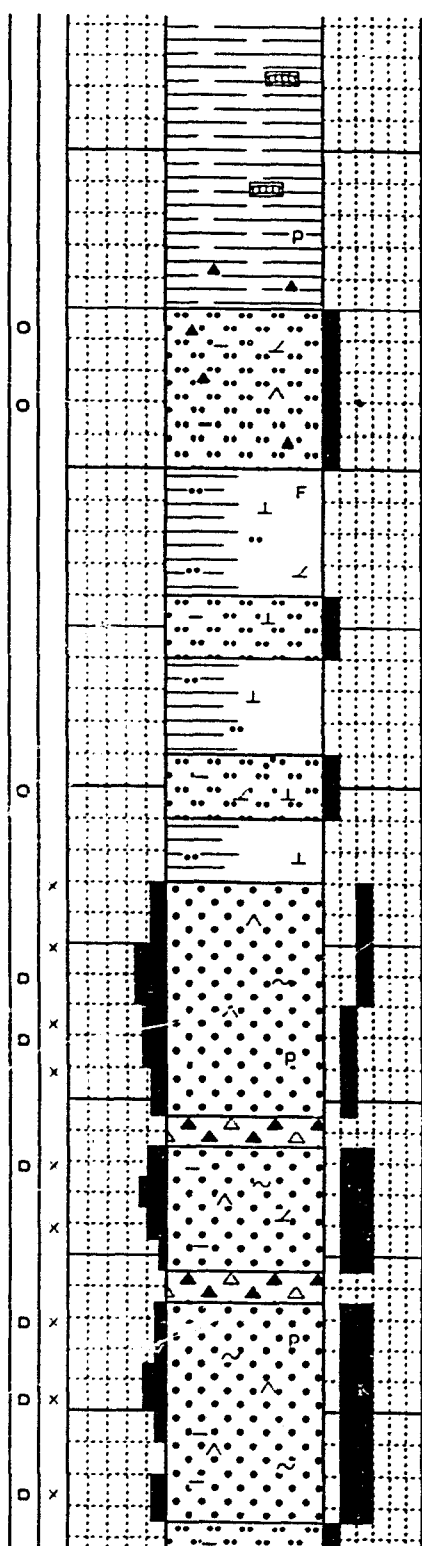




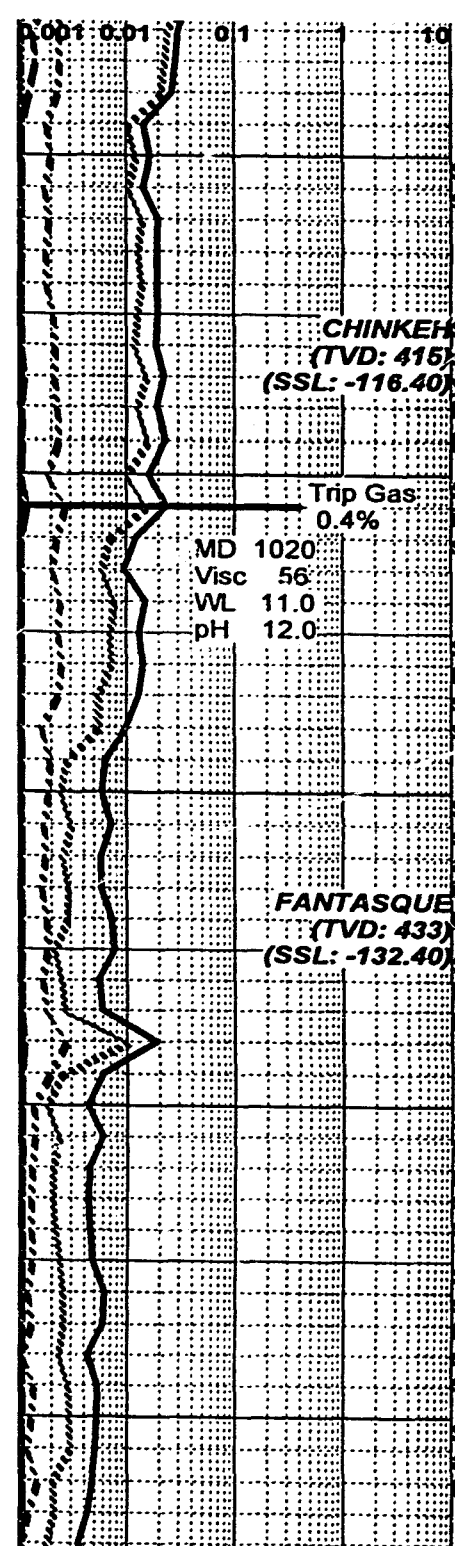




410
420
430
440
450



W a
W a
W a
W a
W a
W a
W a



0.001 0.01 0.1 10

SH: dk gy aa, micmica, fis, tr pyr, tr Bent
strs, tr Cht frags, lt gy to lt bm, trnsi

CHINKEH
(TVD: 415)
(SSL: -116.40)
yel ong cut flor, scat Cht frags, lt gy to lt
to m bm, spics, tr trmsl / conch frac, slty ip
grdg to v sils Sltst

Trip Gas: 0.4%
MD 1020
Visc 56
WL 11.0
pH 12.0

SH: m gy, calcs to dolic, foss, slty to v slty
ip, scat Sltst, m gy bm, calcs, arg, tt, no
shows

SH: m to dk gy, micmica, blk, calcs, slty
to v slty ip, scat Sltst aa, m gy to gy bm,
sdy, calcs to dolic, arg, tt, mainly no
shows, dull yel ong cut flor ip

FANTASQUE
(TVD: 433)
(SSL: -132.40)

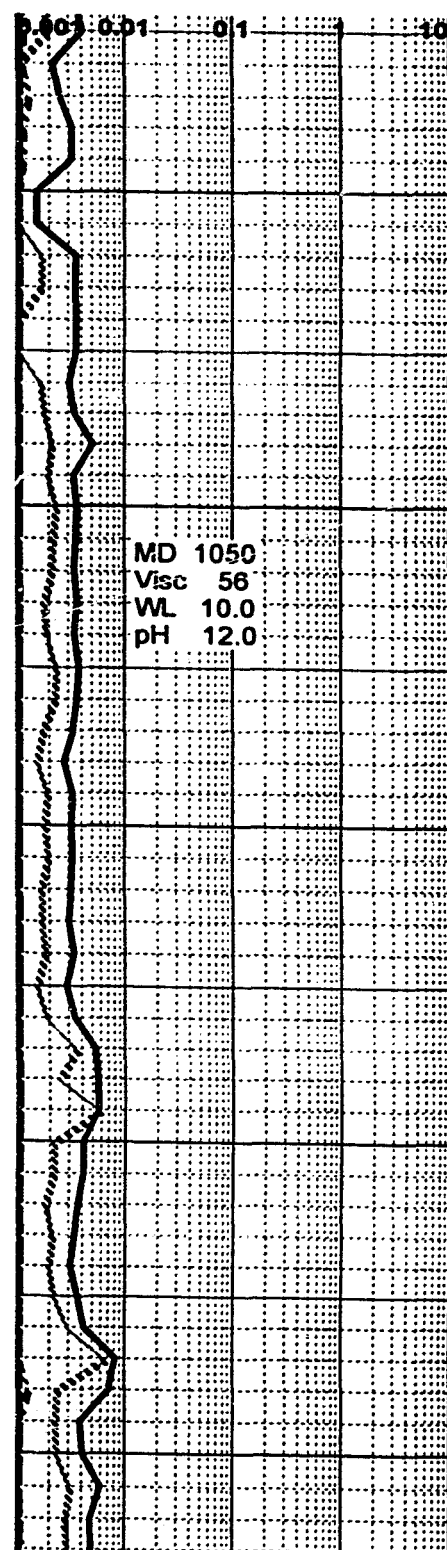
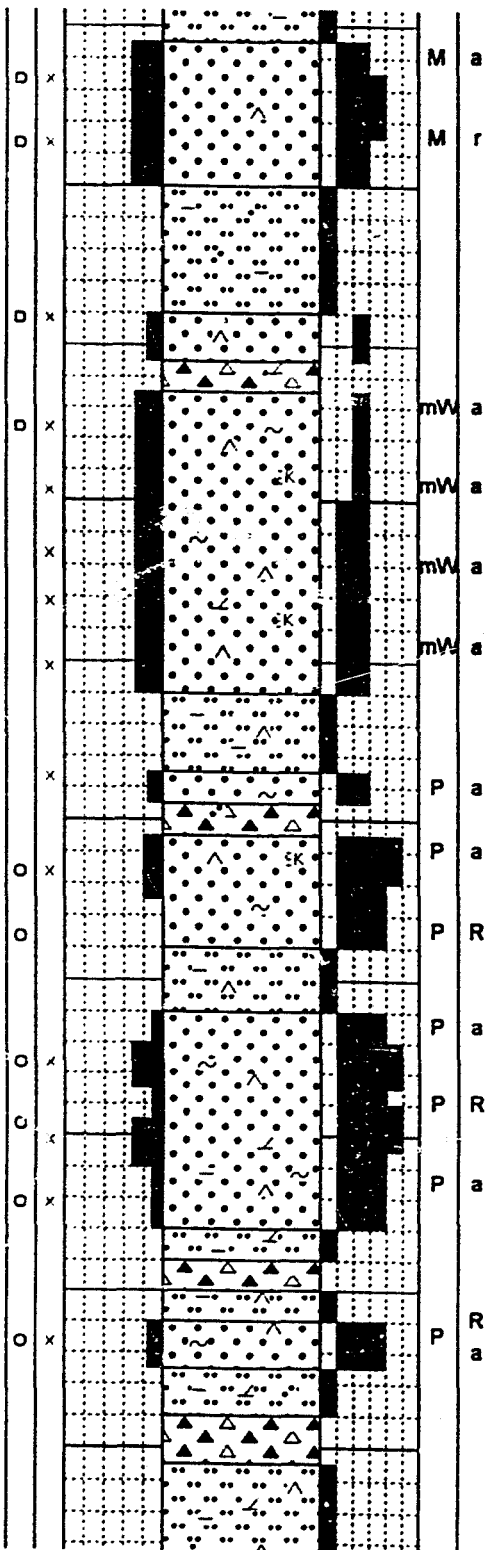
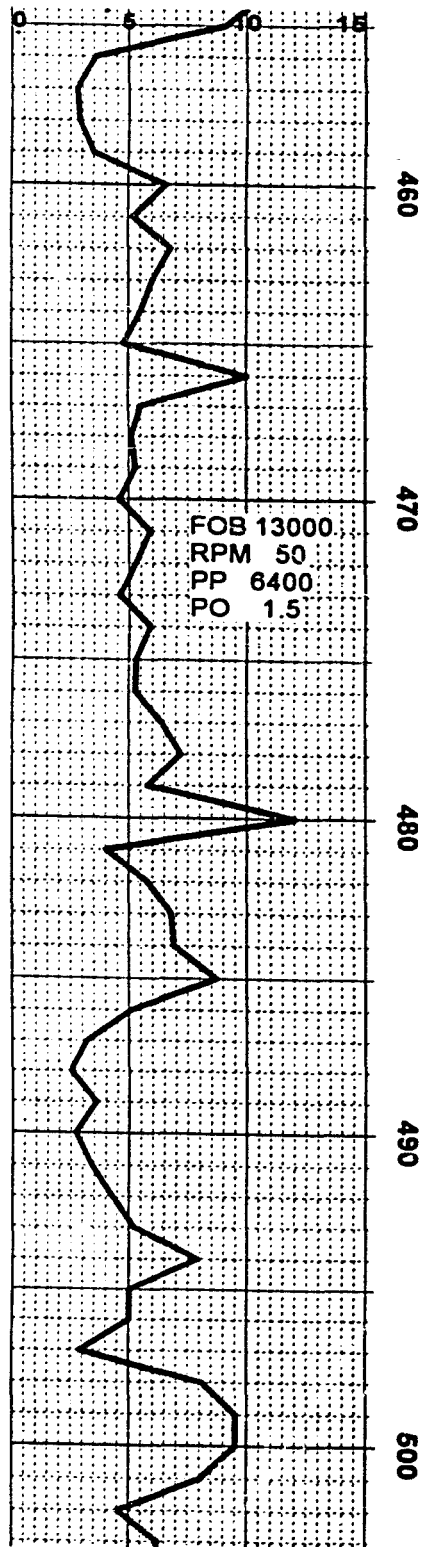
SS: lt to m gy, qtzs, f gred, sbang, w srt,
sly sils, fri ip, fr por, no shows, intbd Sltst
aa, m gy to gy bm, sdy grdg to vf gred Ss
ip, dolic ip, arg, tt, mainly no shows,
patchy dull ong cut flor ip

SS: lt gy, qtzs, vf gred, sbang, w srt, sils
ip, tr glau, pyric mtr ip, fri ip, str p to fr
por, no flor, tr pyrbit

SS: lt gy to lt to m gy bm, mainly qtzs, vf
to f gred, sbang, w srt, sils, sly dolic ip,
glau, sly arg ip, fri ip, str p por, no
shows, tr pyrbit, tr Cht, lt gy, yel tan ip,
sly & sdy, foss, tr Crins, tt, no shows

SS: m bm to gy bm, qtzs, vf to f gred,
sbang, w srt, sils, fri ip, glau, pyric ip, p to
fr por, v fnt ong cut flor, scat pyrbit, tr Dol
strs, lt to m gy, micd, sly arg, tt, no
shows, tr Cht, lt tan bm, sdy

SS: aa, m bm to gy bm, vf to f gred, sils,
arg, tr glau, mainly tt / ti p por, fnt ong cut
flor, scat pyrbit



SS: m gy to bm gy, qtzs, vf to f gred, tr m gred, sbang to sbrdd, fr srtg, sils, arg, fri / abnt loose disaggregated grs, indicated fr por, no shows, tr pyrbt, intbd Sltst, m gy, qtzs, v arg, micas, tt, no shows

SLTST: m gy, qtzs, arg to v arg, micmica, sdy, tt, no shows, scat Ss aa, vf to f gred, sils, rare tr carb incl, str p por, no shows, tr SS, tt brn, qtzs, vf to f gred, highly sild grd to Cht, tt

SS: lt to m gy, qtzs, f gred, sbang, w srt, sils, sily kaoc / tr kac grs, tr glau, fri / scat loose disaggregated grs, p to fr por, no shows, tr pyrbt, tr Ss, m gy bm, qtzs, vf to f gred, sbang, fr srtg, v sils grd to sdy Cht, sily dolc, tt, no shows, hd

SS: m gy to m bm gy, qtzs, vf to f gred, sbang, fr srtg, sils ip, sily dolc ip, sily, sily kaoc, arg ip / tr Sh brks, mainly tt / str p por, no shows

SLTST: m gy to gy bm, qtzs, sdy grd to vf gred Ss ip, sily dolc, sils, arg, micmica, tt, no shows, mnr Cht, m gy bm, sdy tex

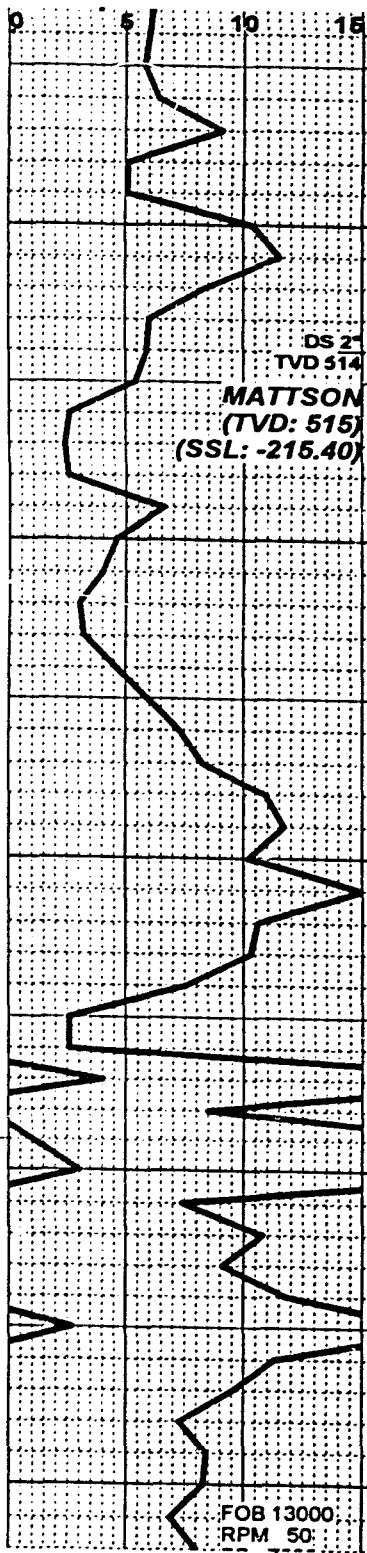
SS: m bm to gy bm, qtzs, glau, vf to m gred, tr c grs, sbang to rdd, p srtg, sils, sily kaoc / mnr kao grs, arg, str p por, dead oil stng, fr yel omg cut flor, mnr Sltst aa

SS: m bm aa, vf to m gred / mnr c grs, sbang to rdd, p srtg, sils, glau, p to fr por, dead oil stng / fr omg cut flor

SS: aa, vf to f gred / scat m to c grs, sbang to rdd, p srtg, sils, sily dolc, arg ip, glau, mainly p por, str fr por, patchy dead oil stng, fr omg cut flor, mnr Cht, tt to m gy, tan bm ip, sdy, pyric

SLTST: m gy, qtzs, dolc, sils, sdy, arg, micas, tt, no shows, mnr Ss aa, tr Cht

SLTST: aa, dolc, sils, arg, tt no shows, mnr Sh, dk bm gy, micmica, sily & sdy ip



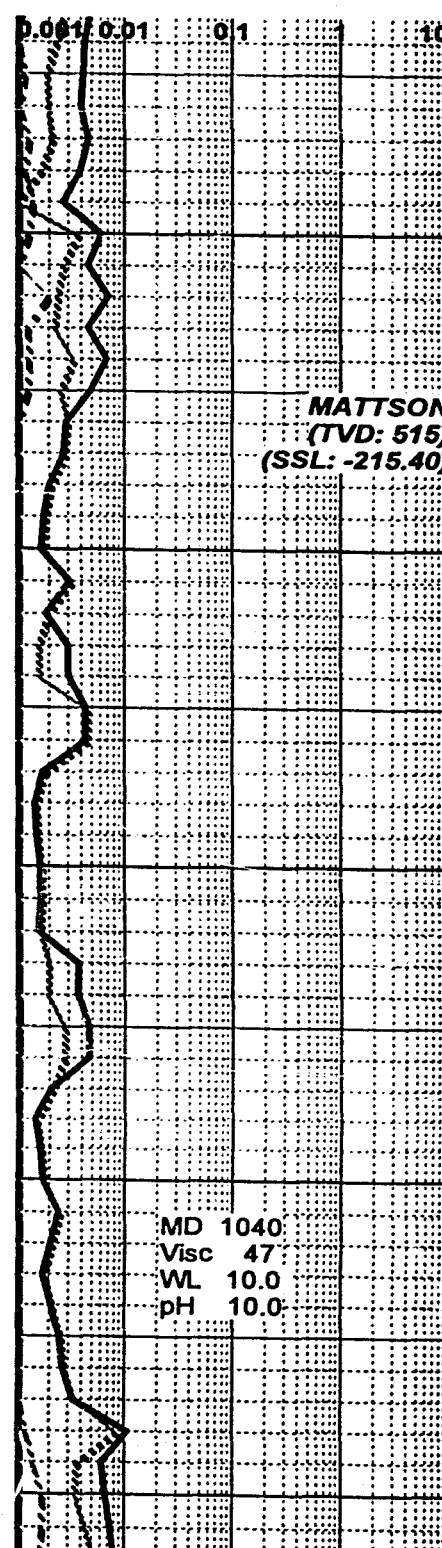
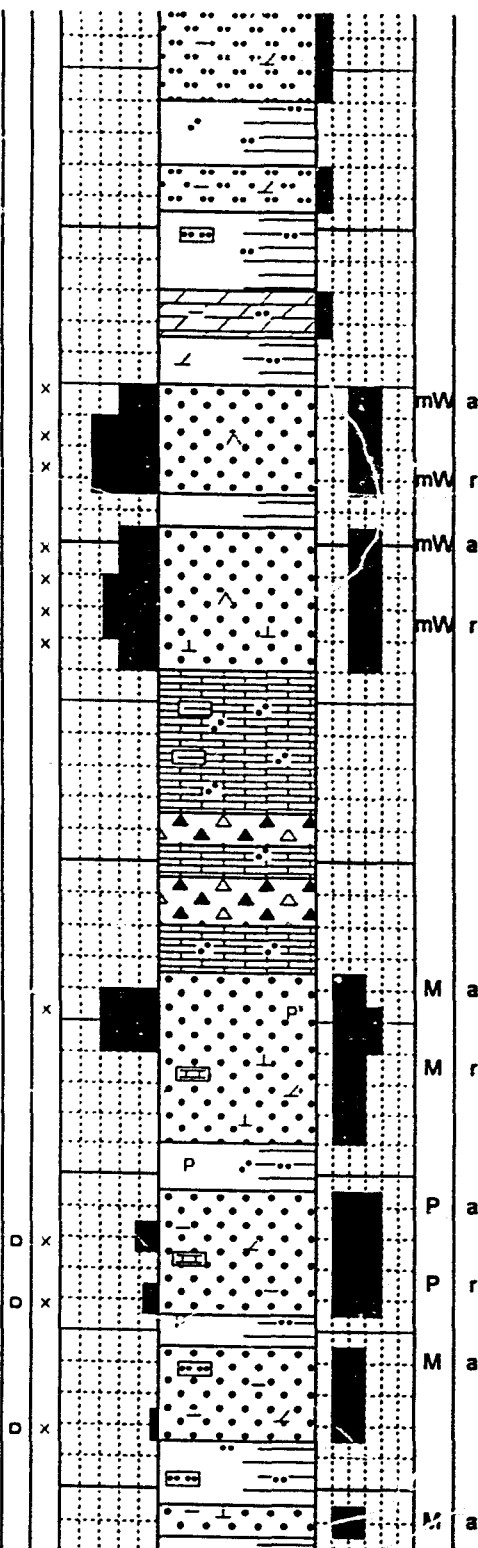
610

620

630

640

650



SH: dk gy to dk bm gy aa, micmica, slty to v slty ip, sdy ip, scat Stlst, m to dk gy bm, qtzs, dolc, arg to v arg, tt, no shows, tr Ss, lt gy, chn, qtzs, vf to f gred, sbang, fr srtg, sils, tr p por, no shows

SH: m to dk gy bm, slty to v slty grdg to arg Stlst, dolc, scat Dol, dk gy bm, micd, arg, slty & sdy, tt, no shows, mnr pyr, tr Ss aa

MATTSONSS: v lt gy, qtzs, f to m gred, sbang to (TVD: 515)sbrdd, fr srtg, slty sils, chn, fri / scat loose (SSL: -215.40)disaggregated grs, g por, no shows

SS: v lt gy aa, chn, qtzs, f to m gred, calcs ip, fr to g por, no shows, scat Sh, m gy to gn gy, waxy, micmica, mnr Ls, lt to m gy bm, crpxl, sdy, slty, shaly strs, tt, no shows

LS: m gy to m bm gy, crpxl, sdy to v sdy grdg to calcs SS ip, slty arg, slty, tt, no shows, tr pyr, tr Cht

SS: lt to m gy to bm gy, qtzs, f to m gred, sbrdd, fr srtg, v calcs, slty arg, tt, no shows, intbd LS aa, tr Sh, m gy to gn gy, calcs, sdy

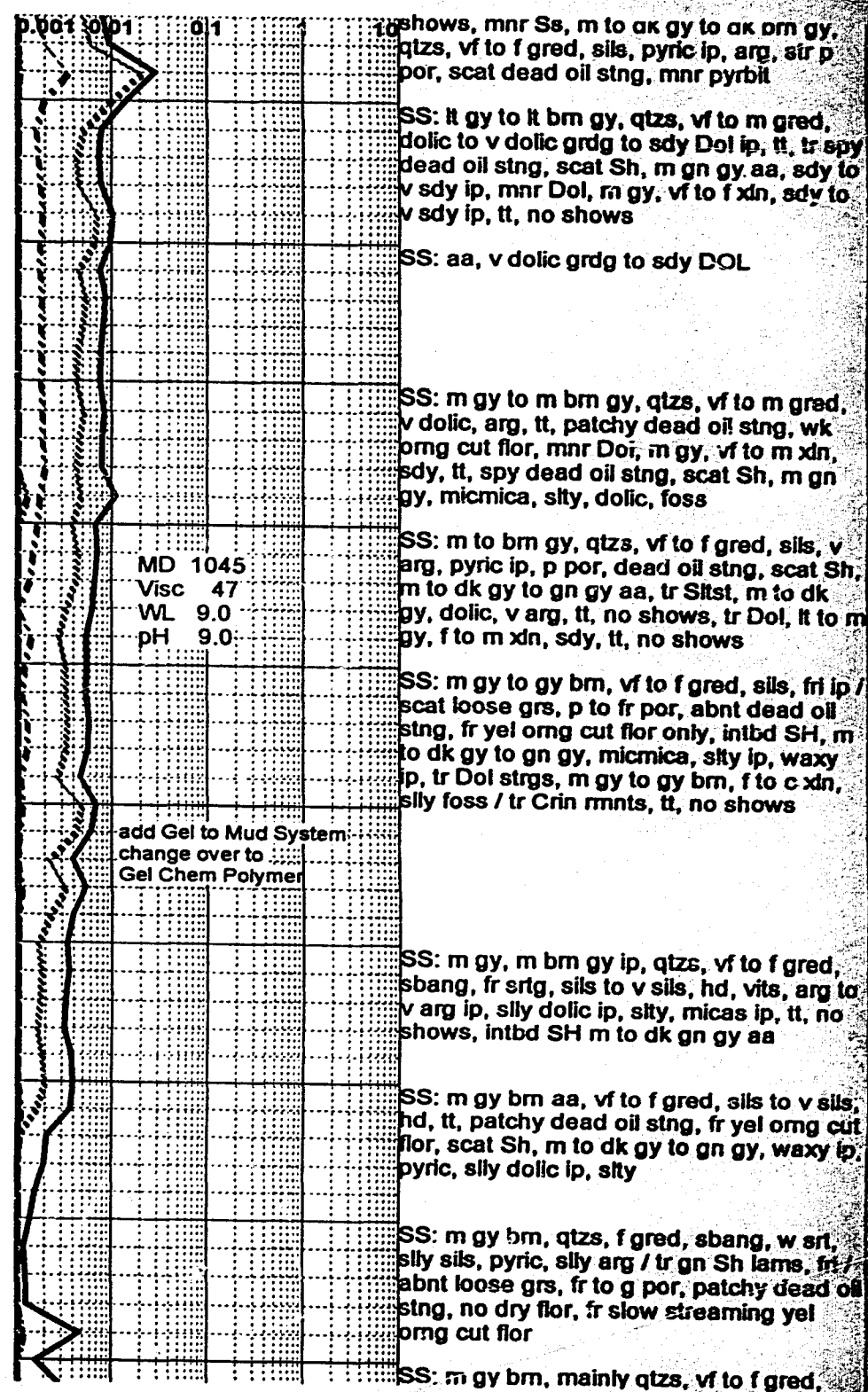
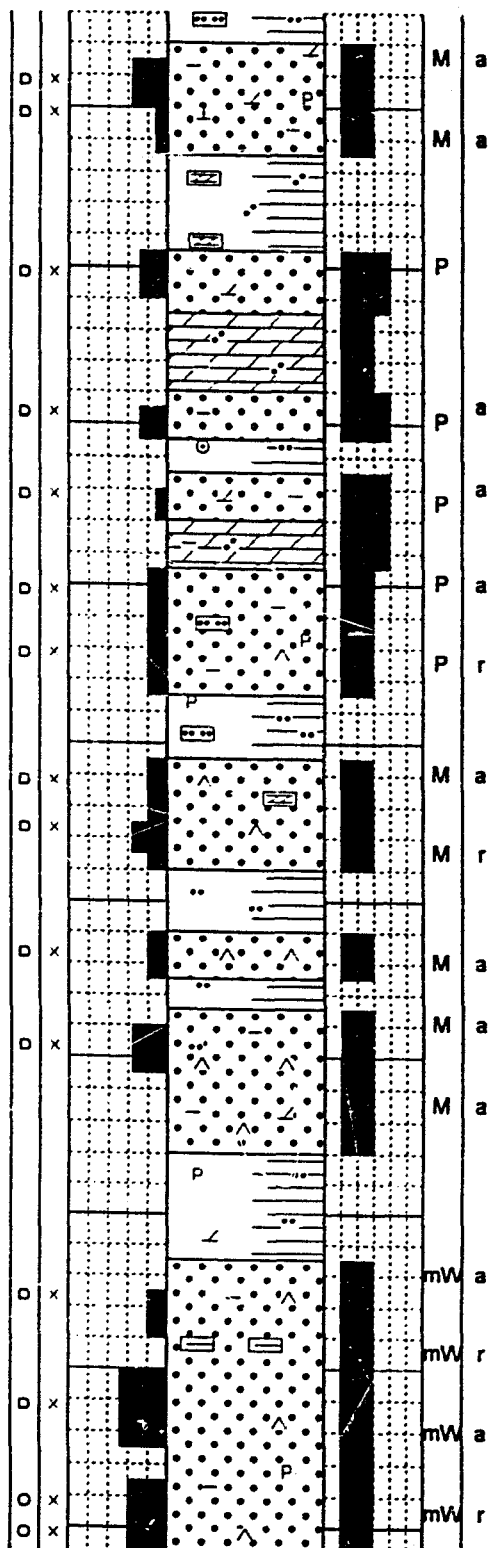
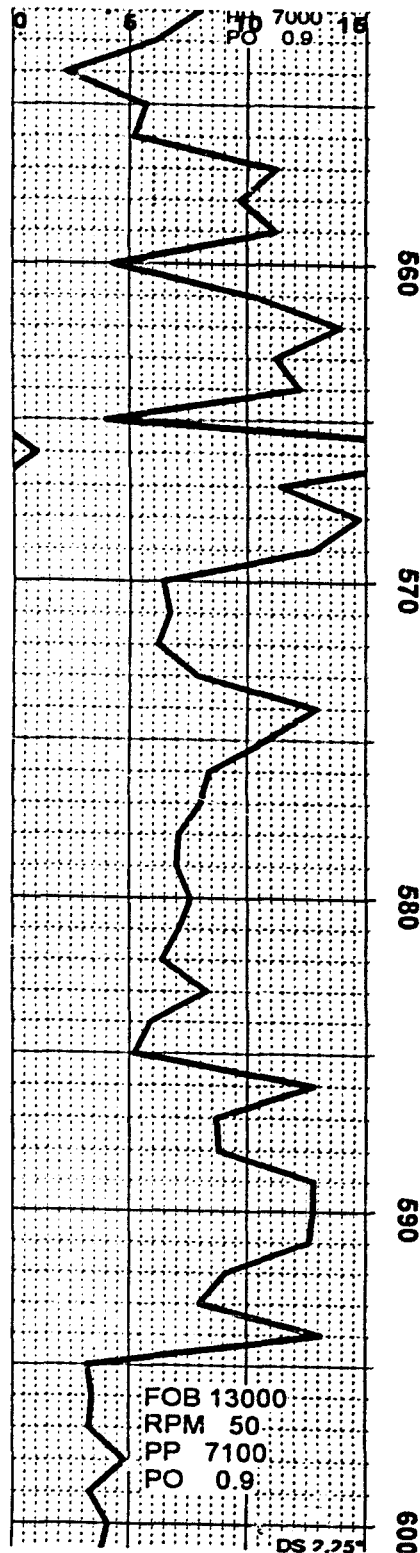
SS: v lt gy to lt gy, qtzs, vf to f gred, tr m grs, sbang to sbrdd, fr srtg, calcs, dolc ip, tt, no shows, tr pyr, mnr sdy LS aa

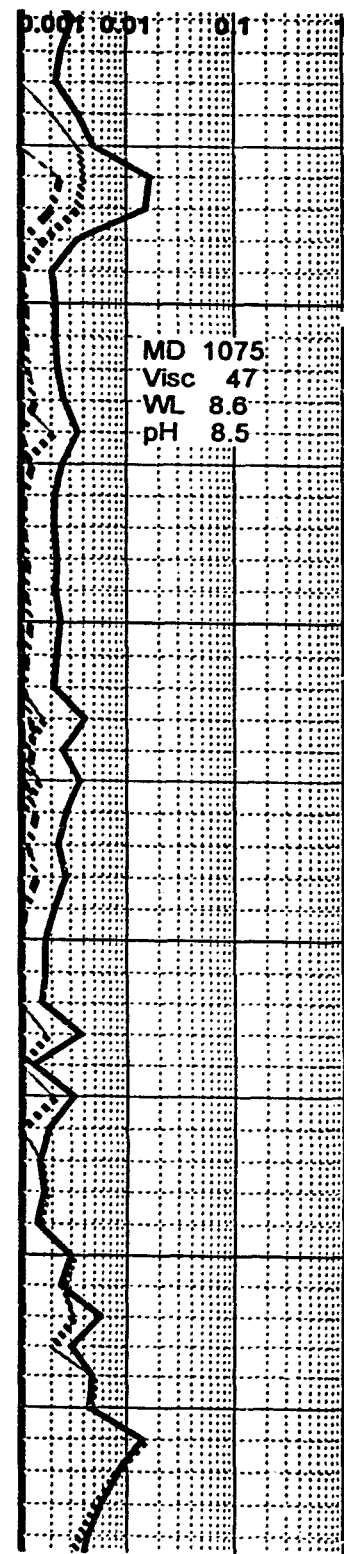
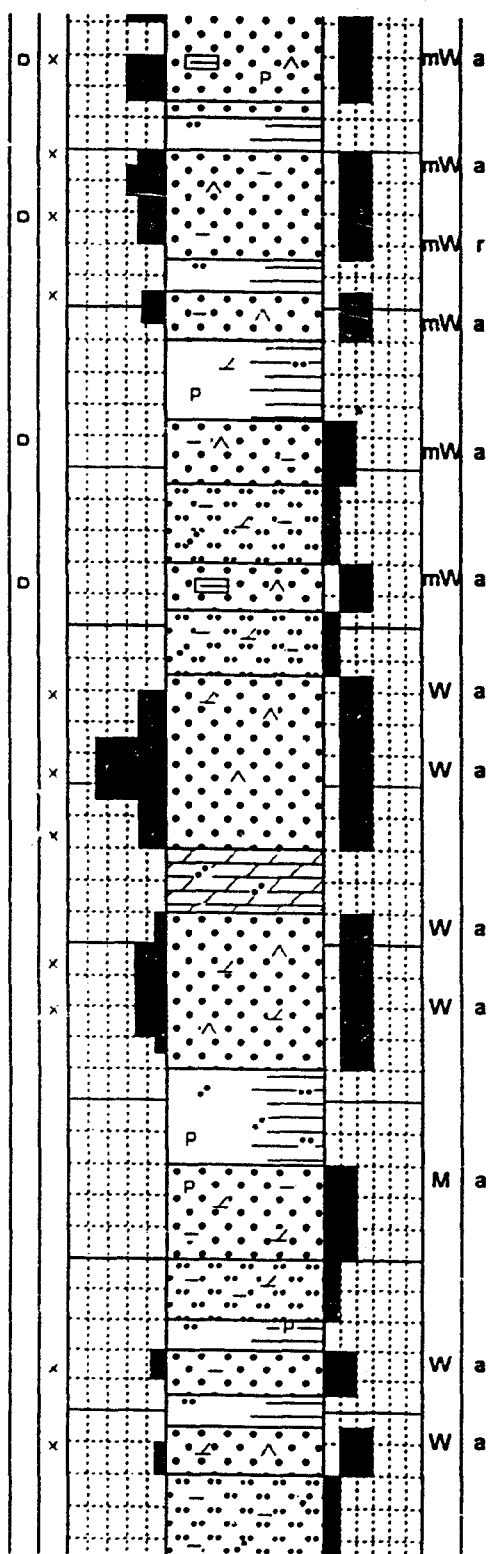
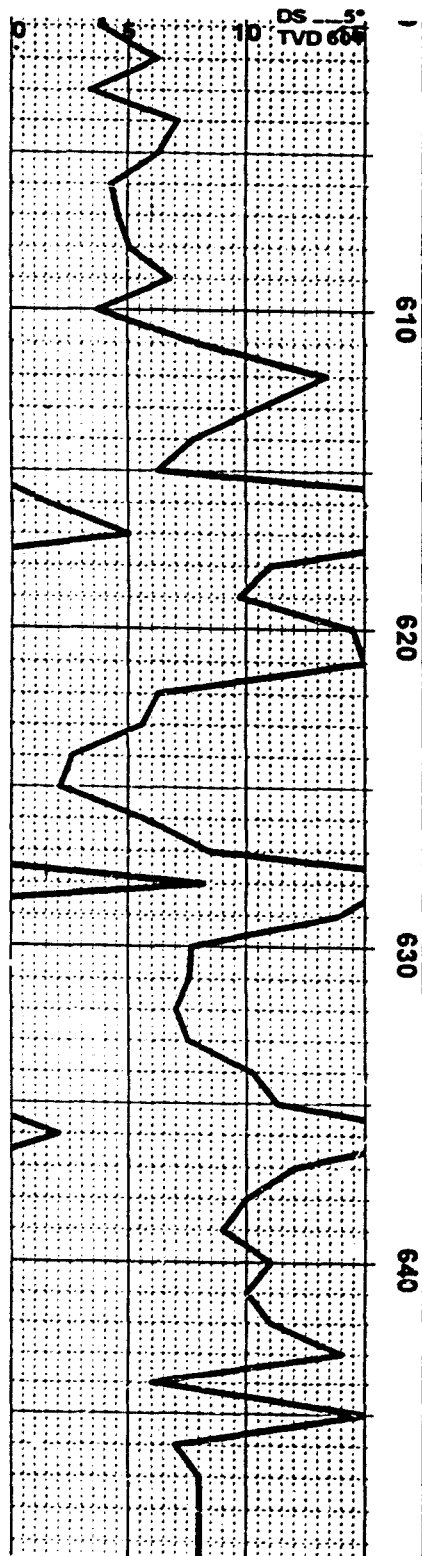
SS: m gy to gy bm, mainly qtzs, vf to m gred, dolc, slty arg ip, mainly tt / tr p por, patchy dead oil stng, fr yel omg cut flor, scat Sh, m gn gy, slty & sdy ip, waxy ip, slty dolc, tr pyr, mnr sdy LS aa

SS: m gy, qtzs, vf to f gred, sbang, fr srtg, calcs to dolc, arg, sils ip, mainly tt, decr dead oil stng, scat gn gy Sh aa, slty to v slty, tr dk gy Sh, slty to v slty grdg to arg Stlst, tr pyr

SH: dk gy to dk bm gy, slty, sdy grdg to v arg Ss, scat Stlst, m gy, v arg, sdy, tt, no shows, mnr S- m to -g- to -m g-

Aug 31, 1989





sbang to sbrdd, modly w srt, sils, sily arg, fri / scat loose grs, fr por, v fnt cut flor only, tr pyr

SS: m gy to gy brn aa, vf to f gred, sbang to sbrdd, modly w srt, sils, sily arg, p to fr por, patchy dead oil sting, fr yel omg cut flor, intbd SH, m to dk gy to gn gy, micmica, fis ip, sily ip, pyric

SH: dk gy to v dk gy, sily dolc, sily ip, scat SS, dk gy, slt to vf gred, sily sils, v arg grdg to sdy Sh, tt, no shows

SS mg m mainl t f to fgre

SS: m brn gy, vf to f gred, sils, arg / mnr gn Sh lams, mainly tt, patchy dead oil sting, wk omg cut flor, intbd Sltst, lt gn gy to m gy, v arg, sily dolc, sdy, micmica, tt, no shows, tr pyr

SS: v lt gy, cln, qtzs, vf to lower case f gred, sbang, w srt, sily sils, v fri, fr to g por, no shows, scat SS, lt gy, qtzs vf to f gred, sbang to sbrdd, w srt, v dolc, tt, no shows

SS: lt gy, qtzs, vf to f gred, sbang, w srt, v dolc grdg to sdy DOL, hd, tt, no shows, intbd SS, v lt gy, qtzs, vf gred, sbang, w srt, sily sils, fri, fr to g por, no shows, tr gn Sh strs

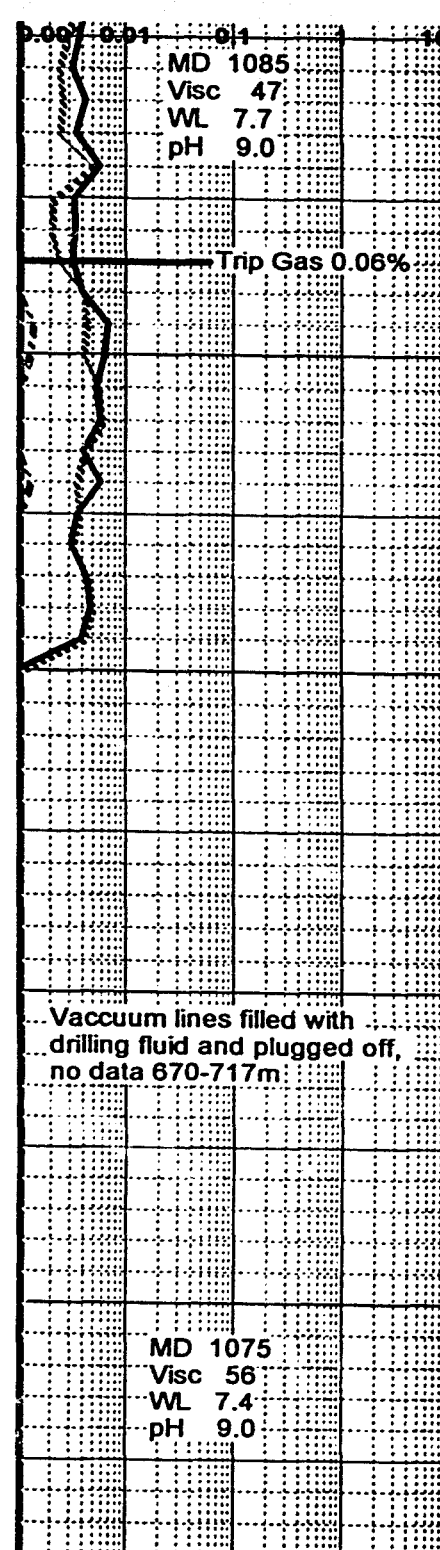
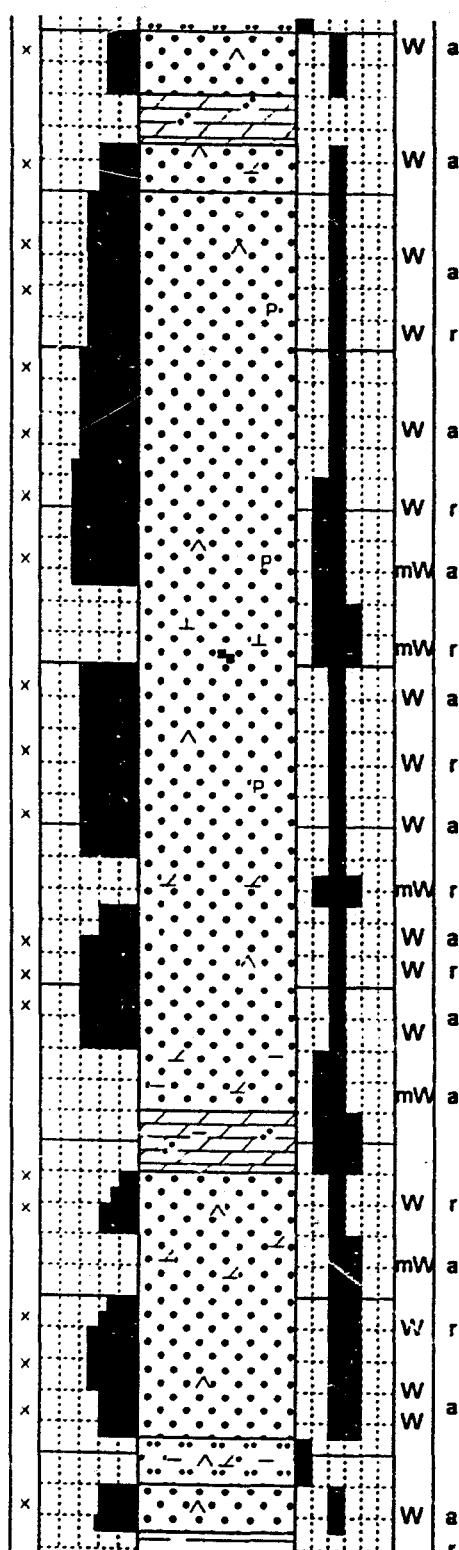
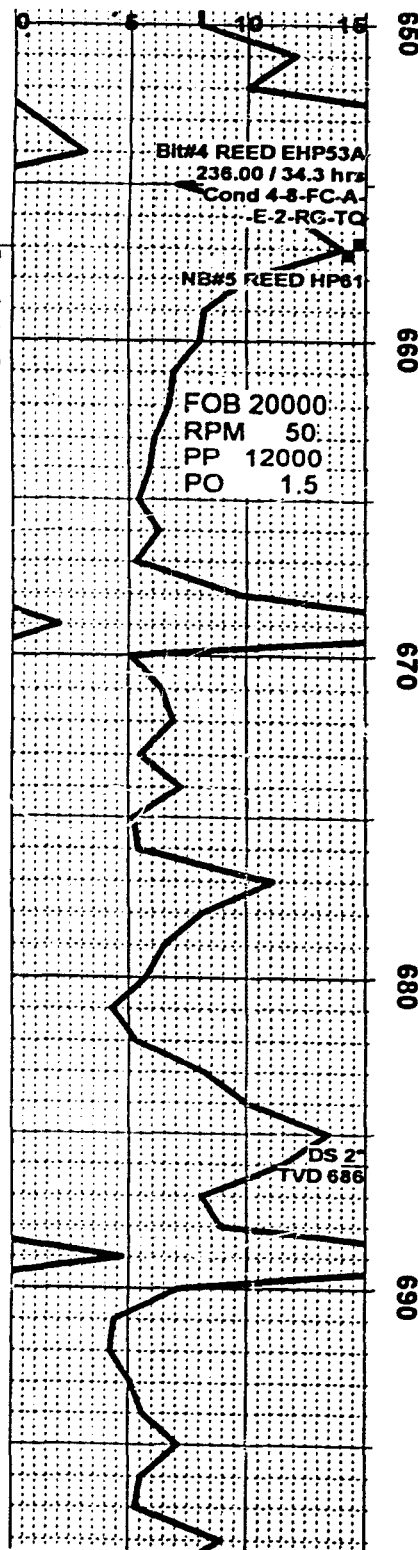
SS: v lt gy, qtzs, cln, vf to f gred, sily sils, dolc ip, fri, fr por, no shows, intbd SS, m gy, slt to vf gred, dolc, sily sils, arg, tt, no shows, scat Sh, m to dk gn gy, micmica, waxy, sily ip

SS: m gy, qtzs, slt to vf gred, sbang, fr srtg, dolc, arg to v arg, micmica, tr pyric mt, tt, no shows, scat SH, m to dk gy to gn gy, waxy, pyric, sily ip, sdy to v sdy ip

SLTST: lt gn gy to lt to m gy, qtzs, sils, dolc ip, arg to v arg, pyric, sdy grdg to vf gred Ss ip, micmica, tt, no shows, scat Sh, m to dk gy to gn gy, micmica, sily ip, tr pyr

SLTST: aa, mainly m gn gy, v arg, micmica, sdy, tt, no shows, scat Sh, m to dk gn gy, sily & sdy ip, scat SS, lt gy to v lt gy, qtzs, cln, vf to f gred, sily sils, dolc ip, fr p por, no shows

Sep 1, 1999



SS: lt gy, qtzs, f gred, sbang to sbrdd, w srt, ctn, sily sils, fri, fr to g por, no shows, intbd SS, lt gy, qtzs, f to m gred, sbang to sbrdd, fr srtg, dolc to v dolc grdg to sdy Dol ip, pyric, tt, no shows

SS: lt gy, qtzs, f gred, sbang to sbrdd, w srt, sily sils, v fri / abnt loose disaggregated grs, indicated g por, no shows, tr pyr, poor sample

SS: aa, sample is all disaggregated f qtz grs, indicated g por, no shows

SS: lt gy to v lt gy, qtzs, vf to f gred, sbang to sbrdd, fr srtg, sils, sily calcs ip, fri, fr to g por, no shows, scat SS, lt gy, qtzs, vf to m gred, calcs to v calcs, tr carb lams, tt, no shows, tr pyr

SS: lt gy, qtzs, mainly f gred, some vf gred, mnr m grs, sbang to sbrdd, w srt, sily sils, pyric ip, abnt loose disaggregated grs, g por, no shows

SS: lt gy aa, f gred, sils, v fri, g por, no shows, scat SS, lt to m gy, qtzs, vf to m gred, sbang, fr srtg, v dolc, tt, no shows

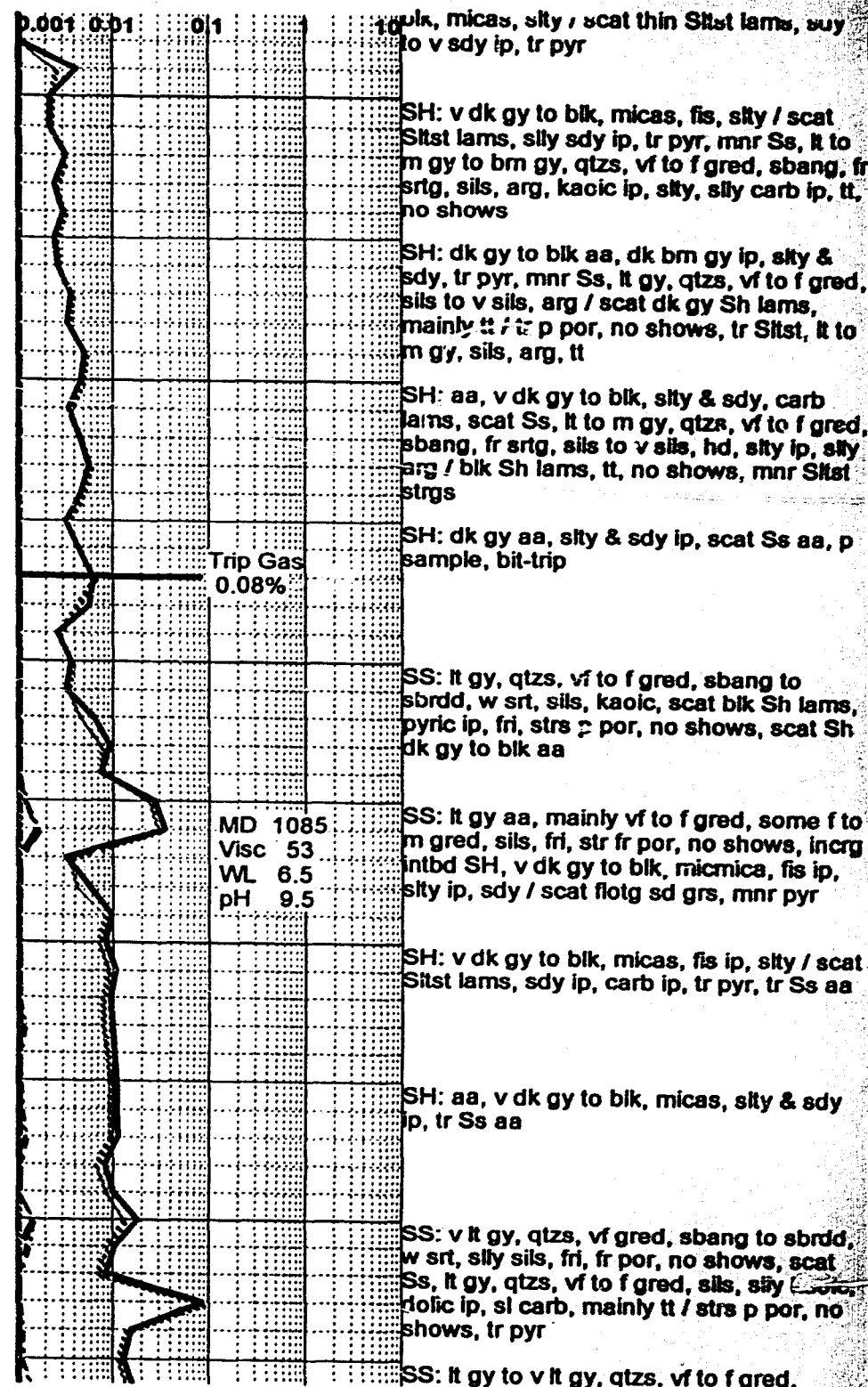
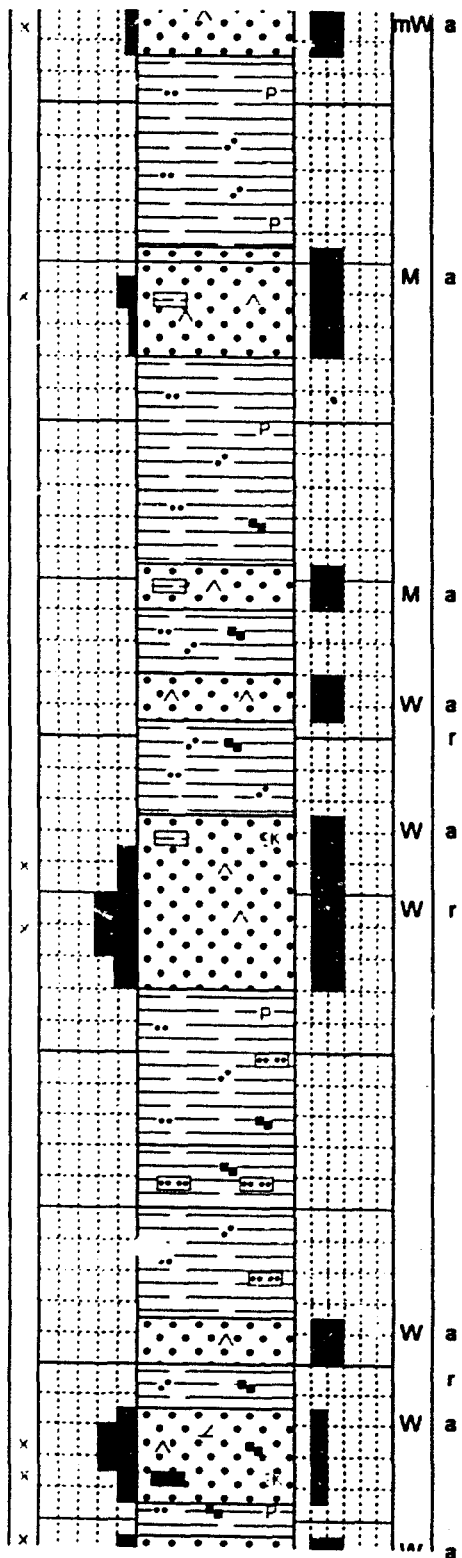
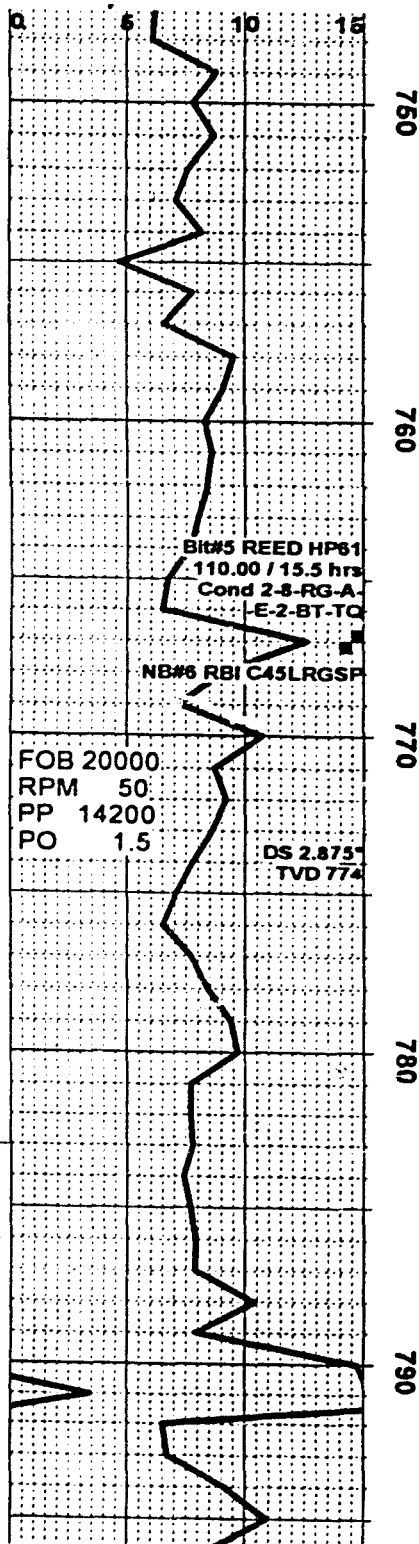
Vacuum lines filled with drilling fluid and plugged off, no data 670-717m

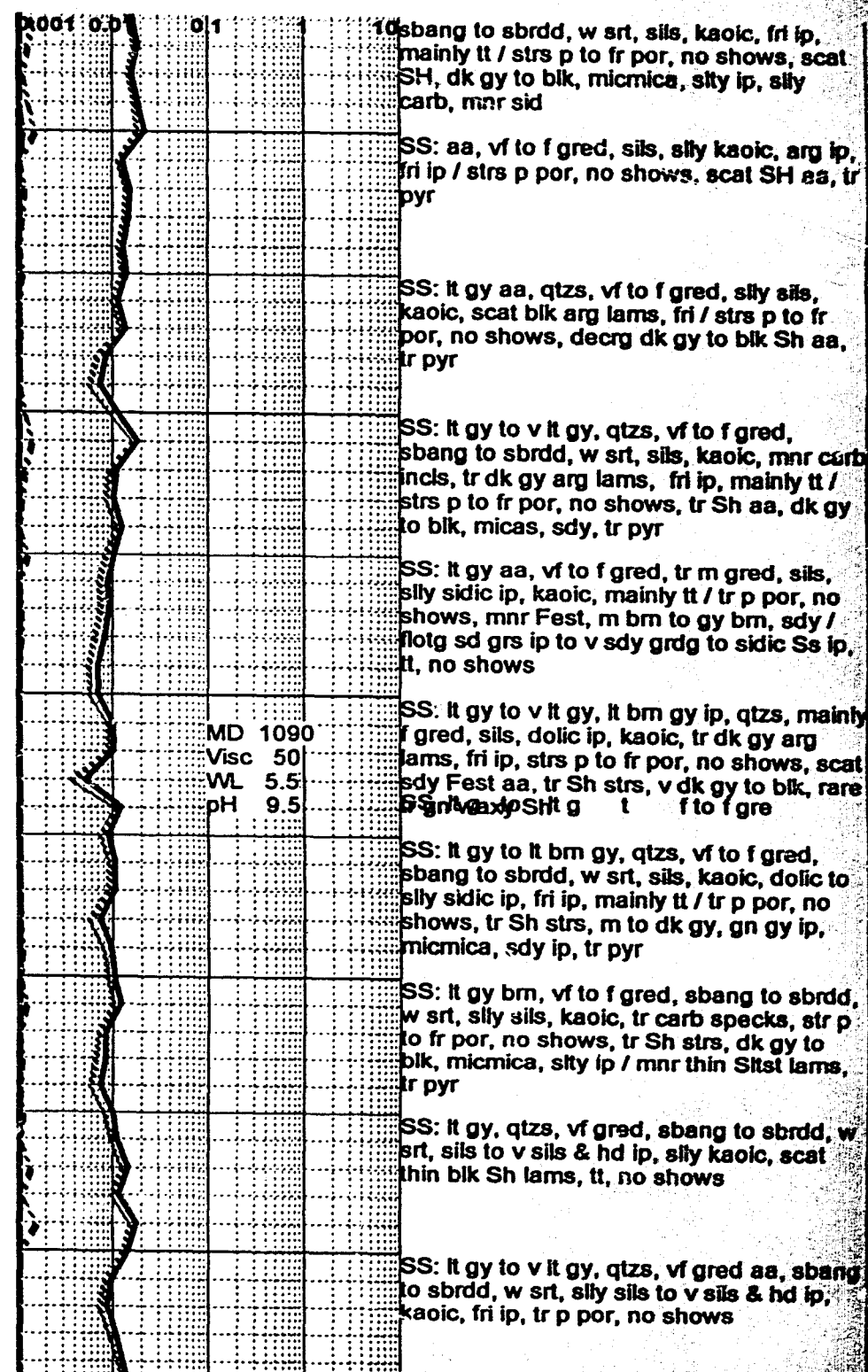
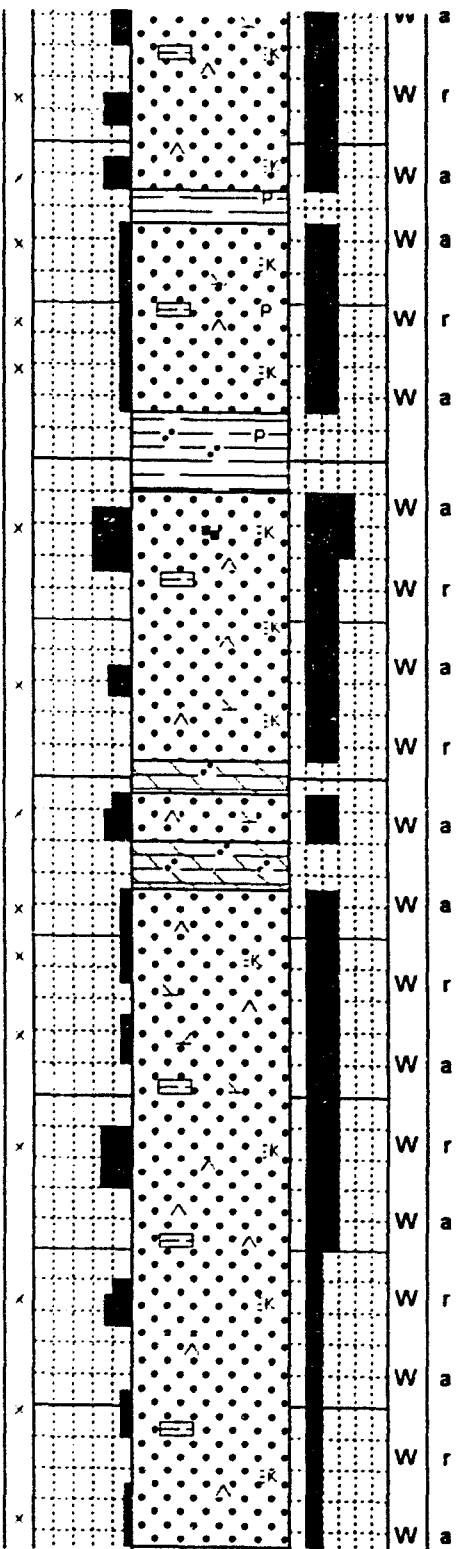
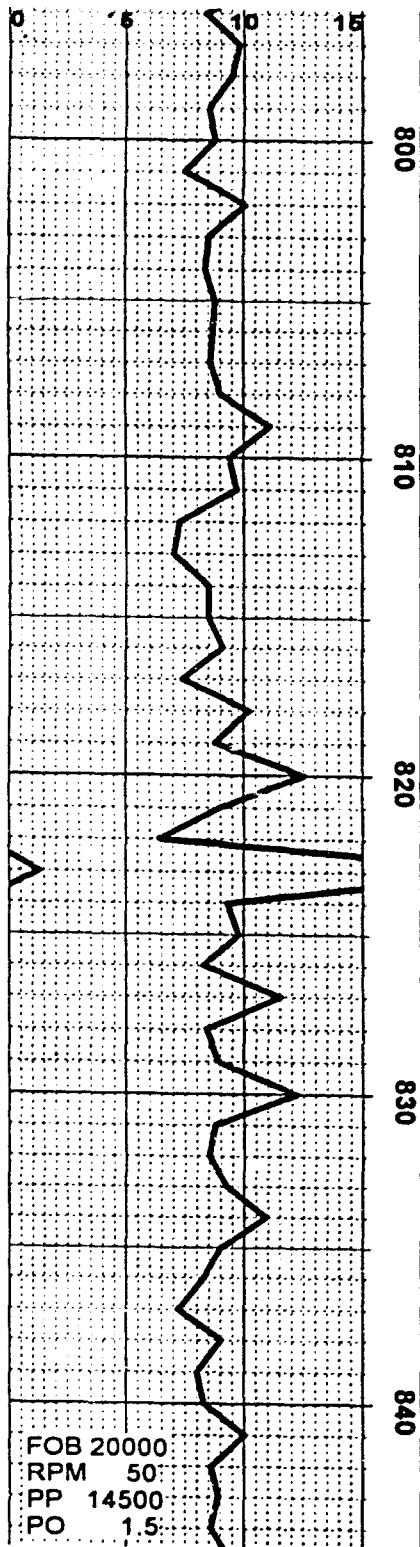
SS: m gy, vf to f gred, sbang, fr srtg, v dolc, arg to v arg, pyric, tt, no shows, scat Dol, lt to m gy, vf to m xdn, sdy to v sdy ip, sily arg, tt, no shows, scat SS, lt gy aa, f gred, v fri / g por, no shows

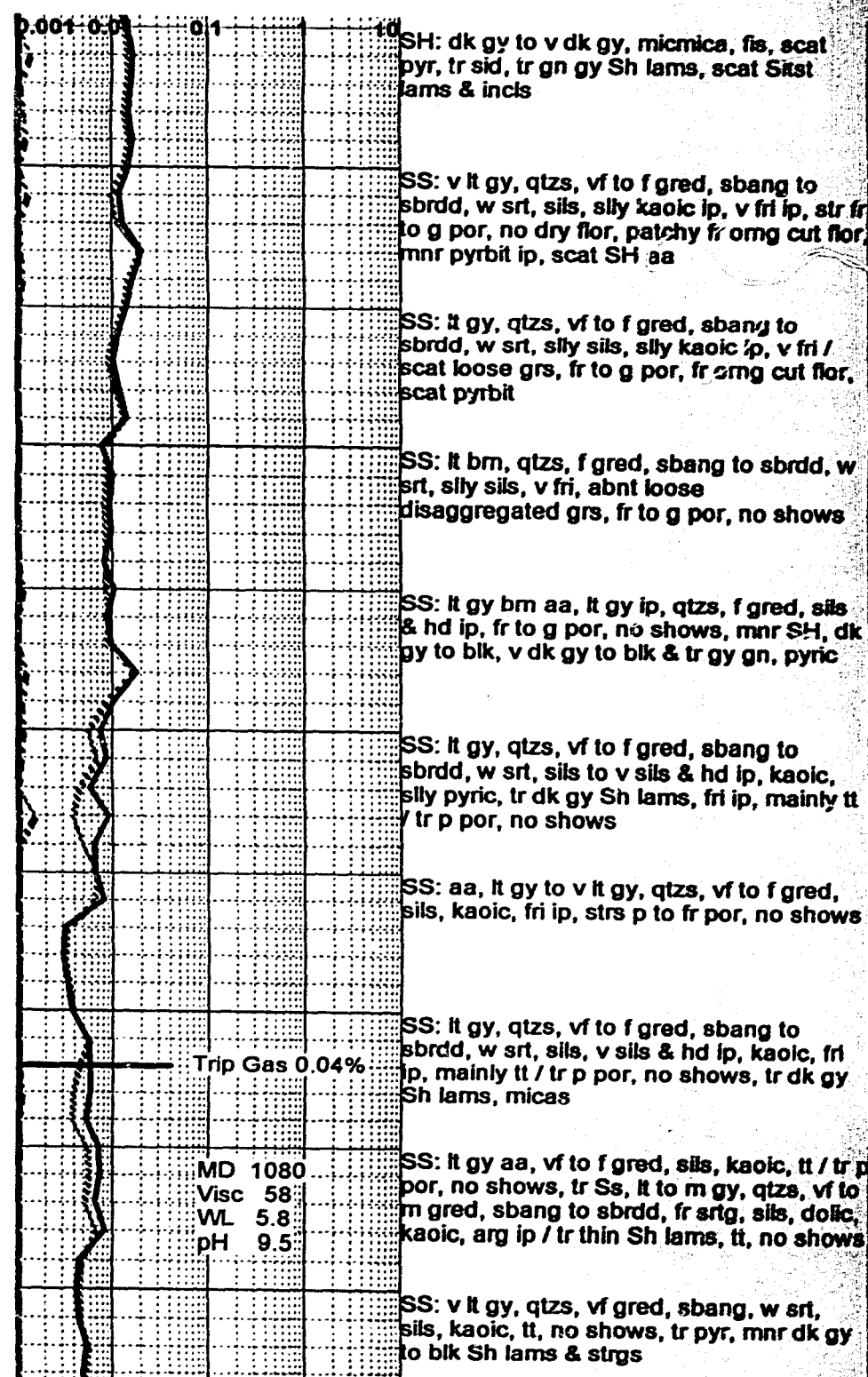
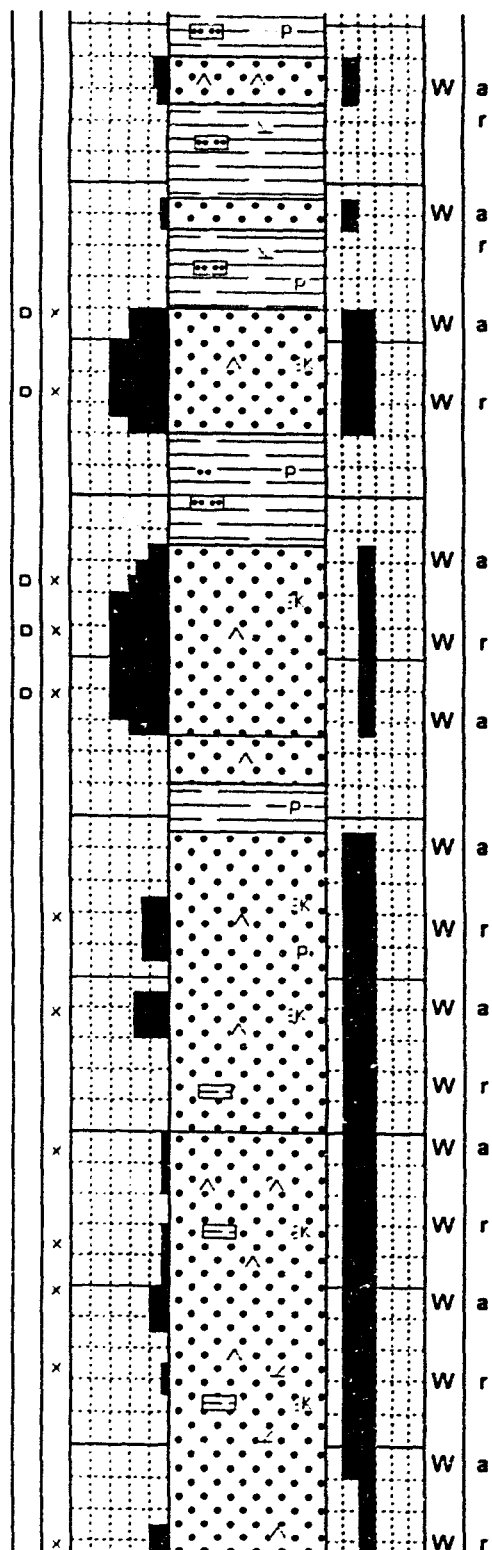
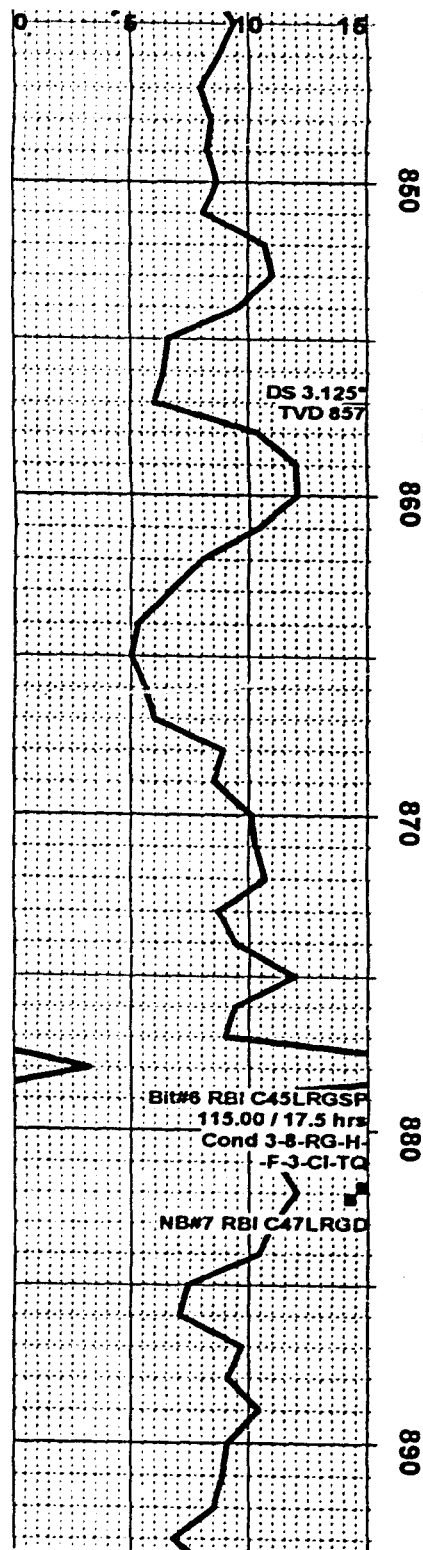
SS: v lt gy, qtzs, f gred, sbang to sbrdd, w srt, sily sils, v fri, abnt disaggregated grs, g por, no shows, mnr SS, lt gy, qtzs, f to m gred, v dolc, pyric ip, tt, no shows, tr Sh strs, dk gy, micmica, sdy

SS: lt gy, qtzs, f to m gred, sils, fri, scat loose grs, fr to g por, no shows, mnr SS, lt to m gy, gn gy, qtzs, sils, dolc, arg varved, tt, no shows, tr Sh, v dk gy to blk, micmica, sily

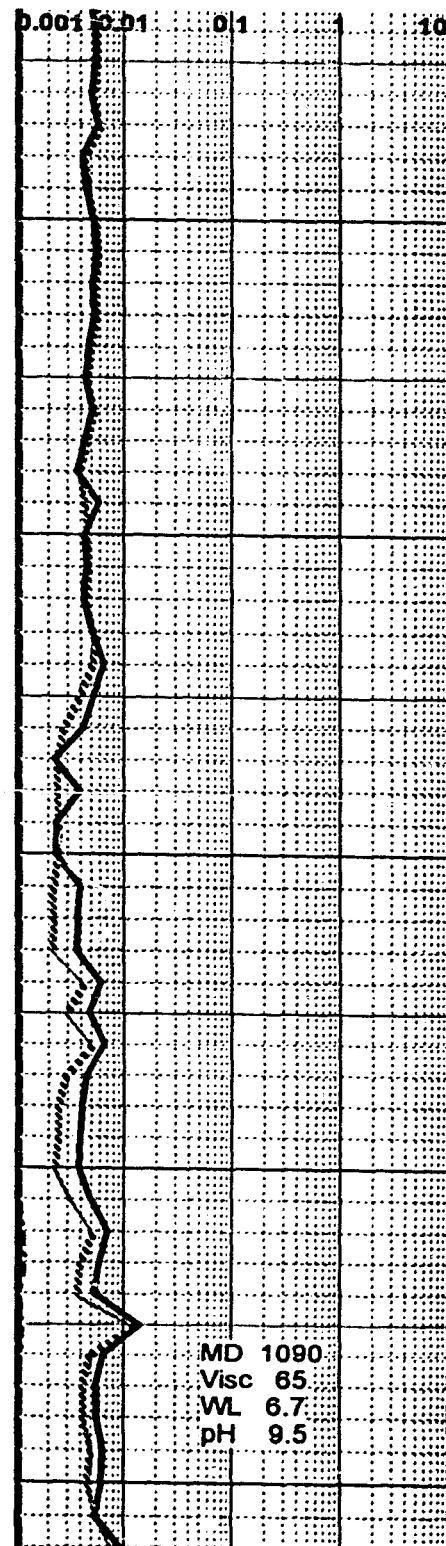
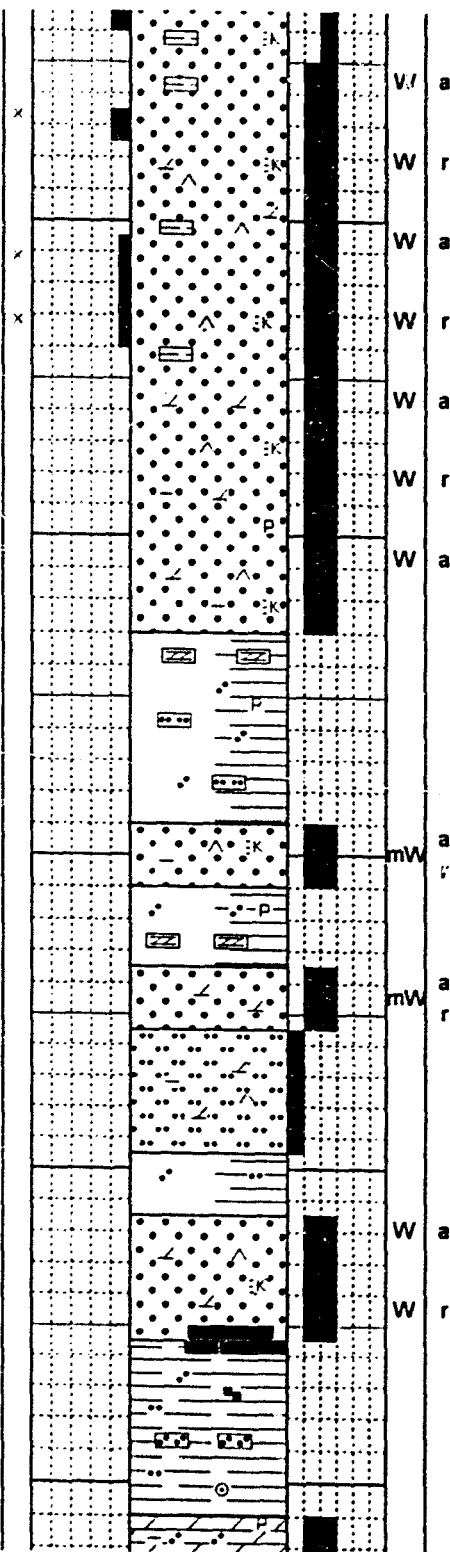
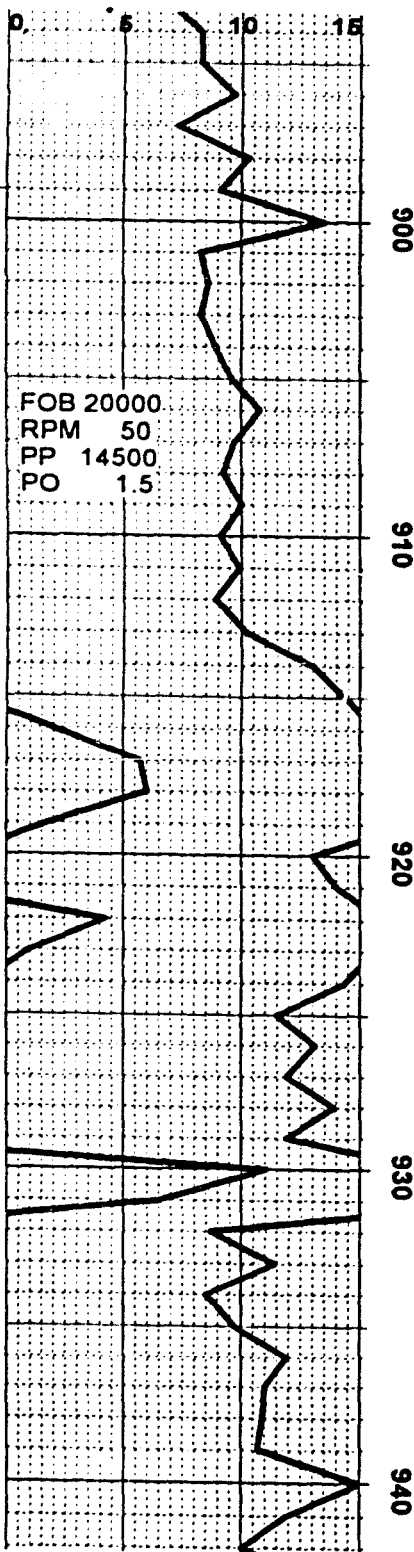
SS: lt gy, qtzs, f gred, sbang to sbrdd, w srt, sily sils, pyric / scat loose pyr, fri / abnt loose grs, fr to g por, no shows, intbd SH, v dk gy to blk, sily, miccas







Sep 3, 1999



SS: v lt gy, qtzs, vf to f gred, sbang to sbrdd, w srt, sils, kaolic, fri ip / tr p por, no shows, tr dk gy Sh lams, tr Ss, m gy, vf to f gred, sils, dolic, arg to v arg, silty, tt, no shows

SS: lt gy to v lt gy, qtzs, vf to f gred, sbang to sbrdd, w srt, sils, v sils & hd ip, vit, kaolic, mnr dk gy to blk Sh lams, tr p por, no shows, mnr m gy arg SS aa

SS: aa, lt gy to v lt gy, vf to f gred, sils, kaolic, tt, no shows

SS: m gy, qtzs, vf to f gred, sbang to sbrdd, fr srtg, v dolic, v arg, pyric, tt, no shows, scat SH, m to dk gy to gn gy, v sdy, pyric, mnr Dol, m bm gy, micd to vf xdn, sdy, arg / scat m gn gy arg lams, foss, tr Crins, tt, no shows

SH: m to dk gy gn, sdy to v sdy, waxy ip, v dk gy to blk ip, fis, micas, silty ip / tr sils Siltst lams, scat SS, lt to m gy, qtzs, vf to f gred, sbang to sbrdd, sils, kaolic, arg / scat dk gy Sh lams ip, tt, no shows

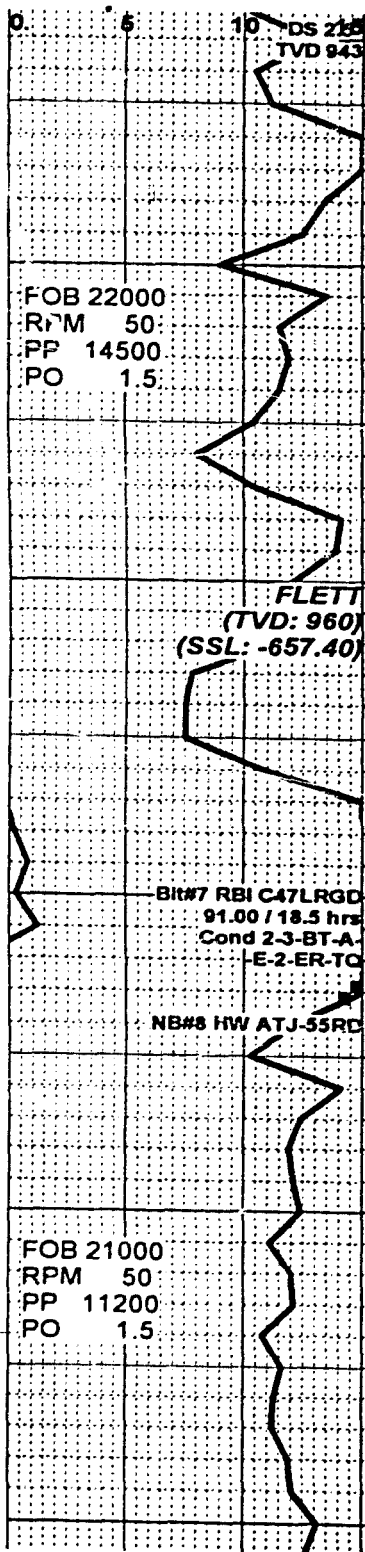
SH: m to dk gn gy, micmica, sdy to v sdy ip, intbd SS aa, m gy, vf to f gred, v dolic, v arg, tt, no shows, tr Dol, m gy aa, v sdy grdg to dolic Ss, tt, no shows, tr pyr

SS: lt gy, qtzs, vf to f gred, sbang to sbrdd, w srt, sils, kaolic, tt, no shows, scat Siltst, m gy to m gn gy, qtzs, sils, dolic, v arg, hd, tt, no shows, scat SH, m to dk gn gy, micmica, sdy

SS: lt to gy, qtzs, vf to f gred, sbang to sbrdd, w srt, sils, dolic ip, kaolic, tt, no shows, tr Siltst, m gy to m gn gy aa, v arg, hd, tt, no shows, scat SH, m to dk gn gy, micmica, sdy, carb / thin carb & coaly lams, tr sid, tr pvr

SH: dk gy to v dk gy to blk, m gy gn ip, micmica, sdy / scat flotg sdy grs, silty ip, carb lams, scat Dol, m bm, vf to f xdn, sdy, arg, v pyric, tt, no shows, scat Ss aa

SH: dk gy to blk, gy gn ip aa, sdy, scat DOL aa, m bm to gy bm, vf to f xdn, sdy, foss tr Crins, etc tt no show



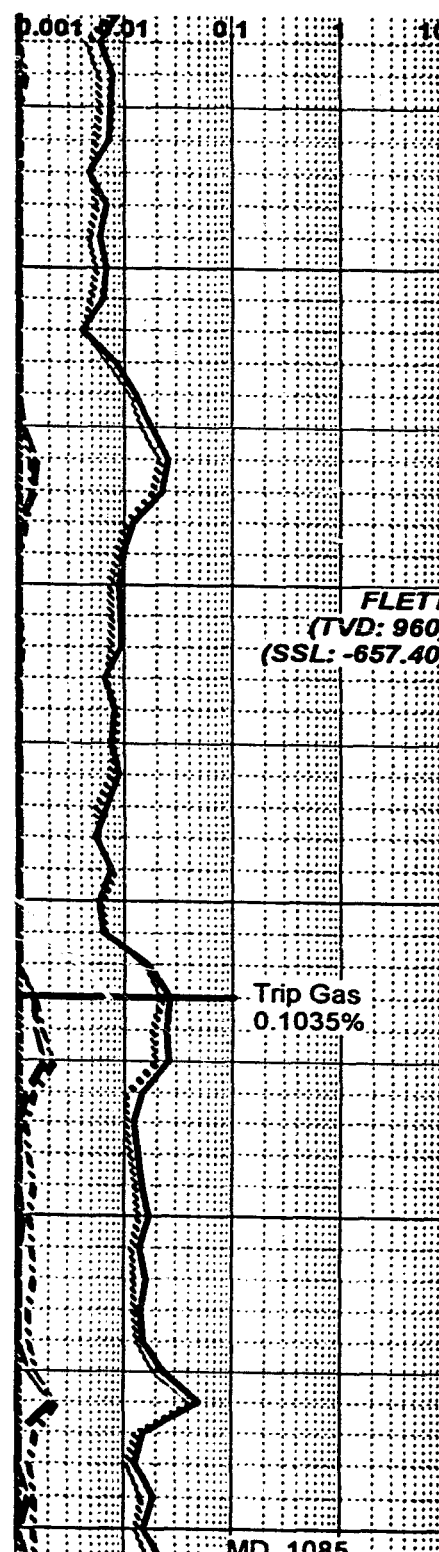
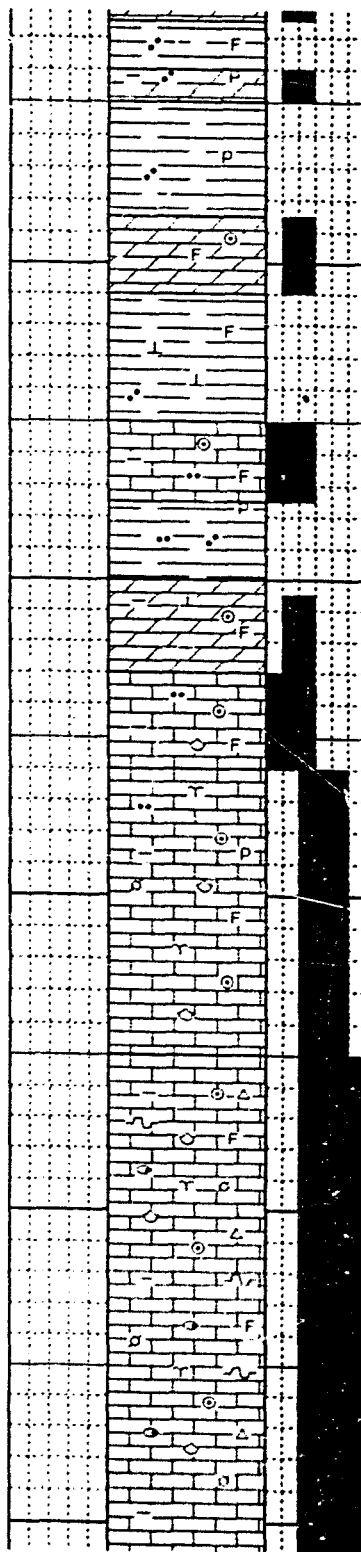
950

960

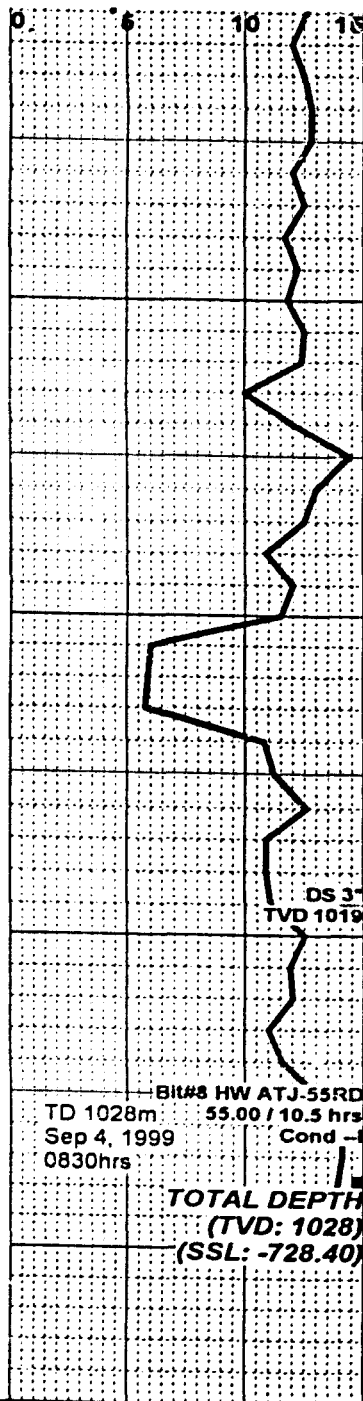
970

980

990



MD 1085



1000

1010

1020

1030

TD 1028m
Sep 4, 1999
0830hrs

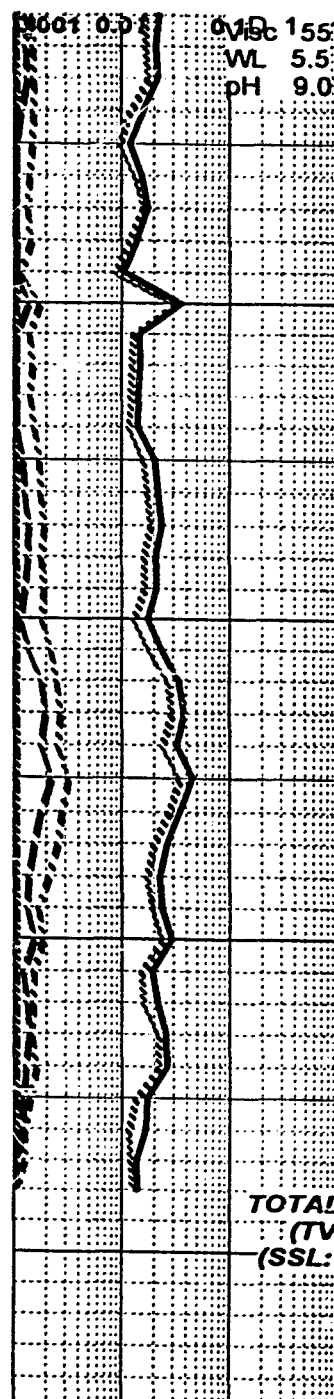
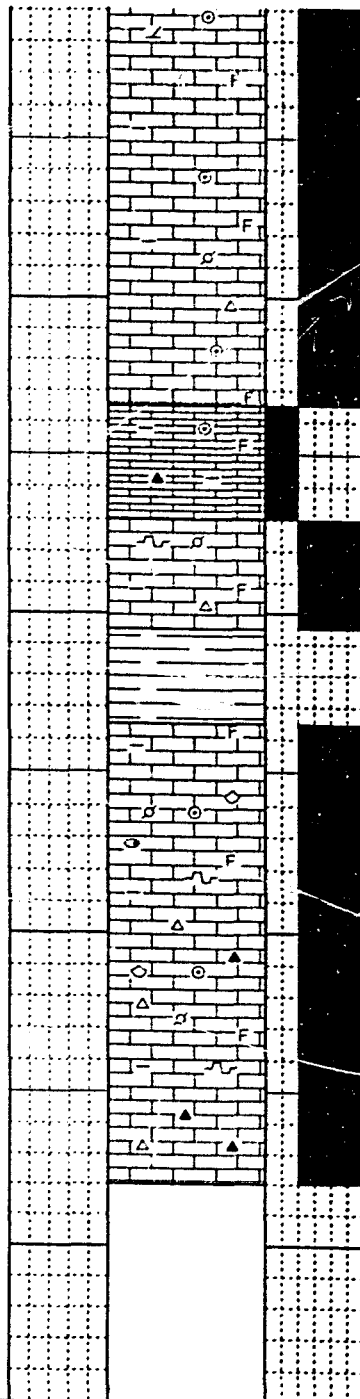
Bit#8 HW ATJ-55RD

55.00 / 10.5 hrs

Cond -1

TOTAL DEPTH
(TVD: 1028)
(SSL: -728.40)

28



WD 1551
WL 5.5
pH 9.0

Pkst, sily arg, v foss, tt, no shows, scat
LS, dk gy bm, micd, dolc, foss, tt, no
shows, scat Cht, lt to m gy, trsl ip

LS: lt gy to lt bm gy, f to v c grad Pkst, sily
arg ip, v foss, Crins, tr pels, tt, no shows,
tr styls, scat Cht frags

LS: lt gy to lt bm gy aa, Pkst, tt, no shows,
scat LS, dk gy bm, micd to vf xln, Wkest,
v arg, sily dolc ip, foss, Crins, tt, no
shows, tr Cht

LS: lt gy to lt bm gy, f to v c grad Pkst,
chky ip, sily arg ip, v foss, Crins, Bracs, tr
pels, tt, no shows, tr styls, scat LS, dk gy
bm, micd to vf xln, Wkest, v arg grd to
Mrlst ip, foss, Crins, tt, no shows, tr Cht

LS: lt gy to lt to m bm gy, f to v c grad
Pkst, chky ip, sily arg ip, v foss, Crins, tr
pels, tt, no shows, tr styls, abnt Sh, dk gy,
micmica, fis, sloughing?

LS: lt gy to lt bm gy, f to v c grad Pkst,
chky ip, sily arg ip, v foss, abnt Crins,
Bracs, tr Osts, tr pels, tt, no shows, tr
styls, scat Cht frags, lt to dk gy

LS: aa, lt gy to lt to m bm gy, dk gy bm ip,
f to v c grad fragl Pkst, sily arg ip, v foss,
Crins, Bracs, tr pels, tt, no shows, tr styls,
tr pyr, incrg Cht, lt to dk gy, m to dk gy bm
ip, trsl ip, hd

TOTAL DEPTH
(TVD: 1028)
(SSL: -728.40)

**DST
REPORTS
(#1, #2)**



N.E.B. COPY
CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 1

Baker Oil Tools

Formation: Mattson
Interval - from: 594.00 **to:** 606.00 meters

Test Date: 1999-09-05
Test Type : Inflate Straddle

Recorder# R85 at 596.00 meters

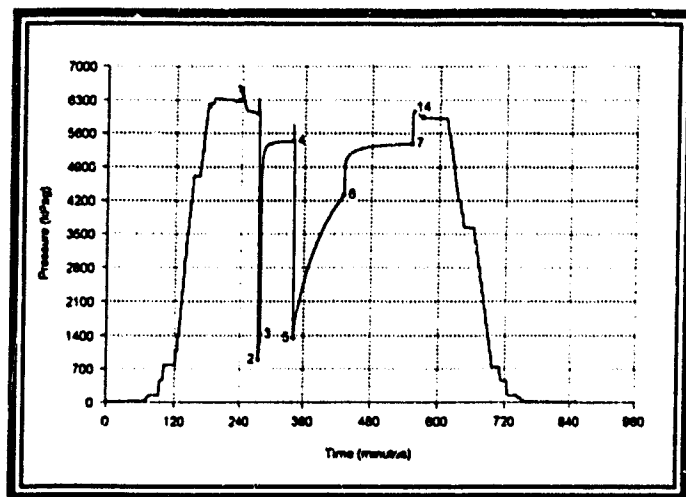
Blow Description:

PREFLOW: Weak air blow increasing to good (bottom of pail but not strong) in 2.5 minutes then steady throughout. No gas to surface.

FINAL FLOW: Bottom of pail in 3 minutes. Steady for 70 minutes then slowly decreasing for the remainder of the flow. No gas to surface.

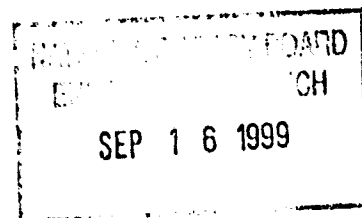
Remarks:

Mechanically successful test. Results suggest high permeability within the interval tested.



Max Btm Hole Temperature @ FSI: 30.7 C

	Pressure (kPag)	Time (min)	Extrapolated Pressure (kPag)
1 Initial Hydrostatic	6278		
2 Start of 1st Flow	891		
3 End of 1st Flow	1415	4.0	
4 End of 1st Shut-in	5435	59.0	5461.2
5 Start of 2nd Flow	1339		
6 End of 2nd Flow	4305	90.0	
7 End of 2nd Shut-in	5381	119.5	5457.5
14 Final Hydrostatic	5930		



Liquid Recovery 400.00 meters

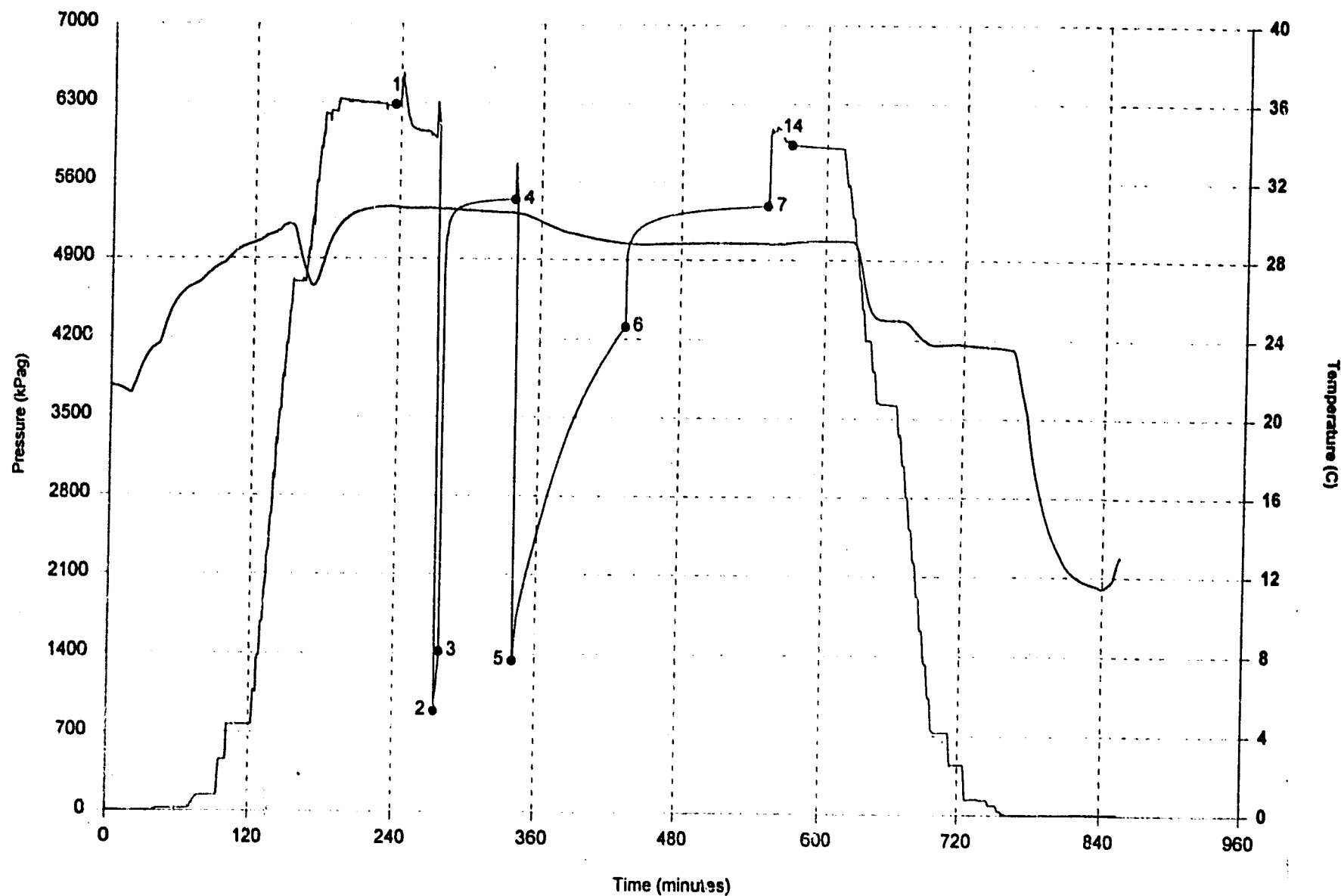
Salinity : 1 500 g/m3

Recovery Description

100.00 m MUDDY FRESH WATER
300.00 m FRESH WATER

CHEVRON ET AL MCKAY LAKES O-80
 00/ 60.200 / 123.150 /0
 DST #: 1
 Recorder: R85

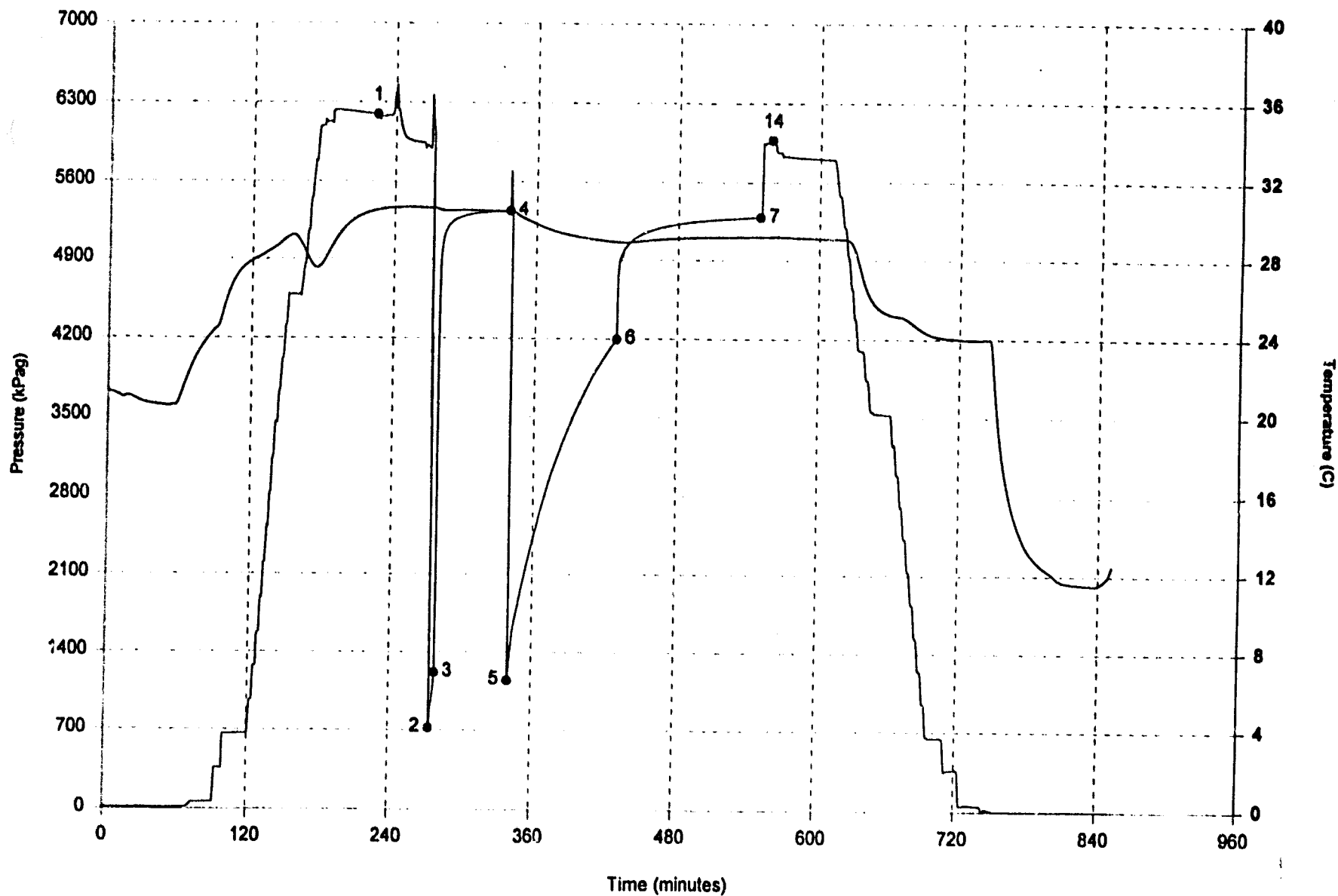
Pressure (kPag) at Critical Points:
 1: 6278 4: 5435 7: 5381
 2: 891 5: 1339 14: 5930
 3: 1415 6: 4305



CHEVRON ET AL MCKAY LAKES O-80
 00/ 60.200 / 123.150 /0
 DST #: 1
 Recorder: N37

Pressure (kPag) at Critical Points:
 1: 6191 4: 5340 7: 5288
 2: 720 5: 1148 14: 5973
 3: 1216 6: 4195

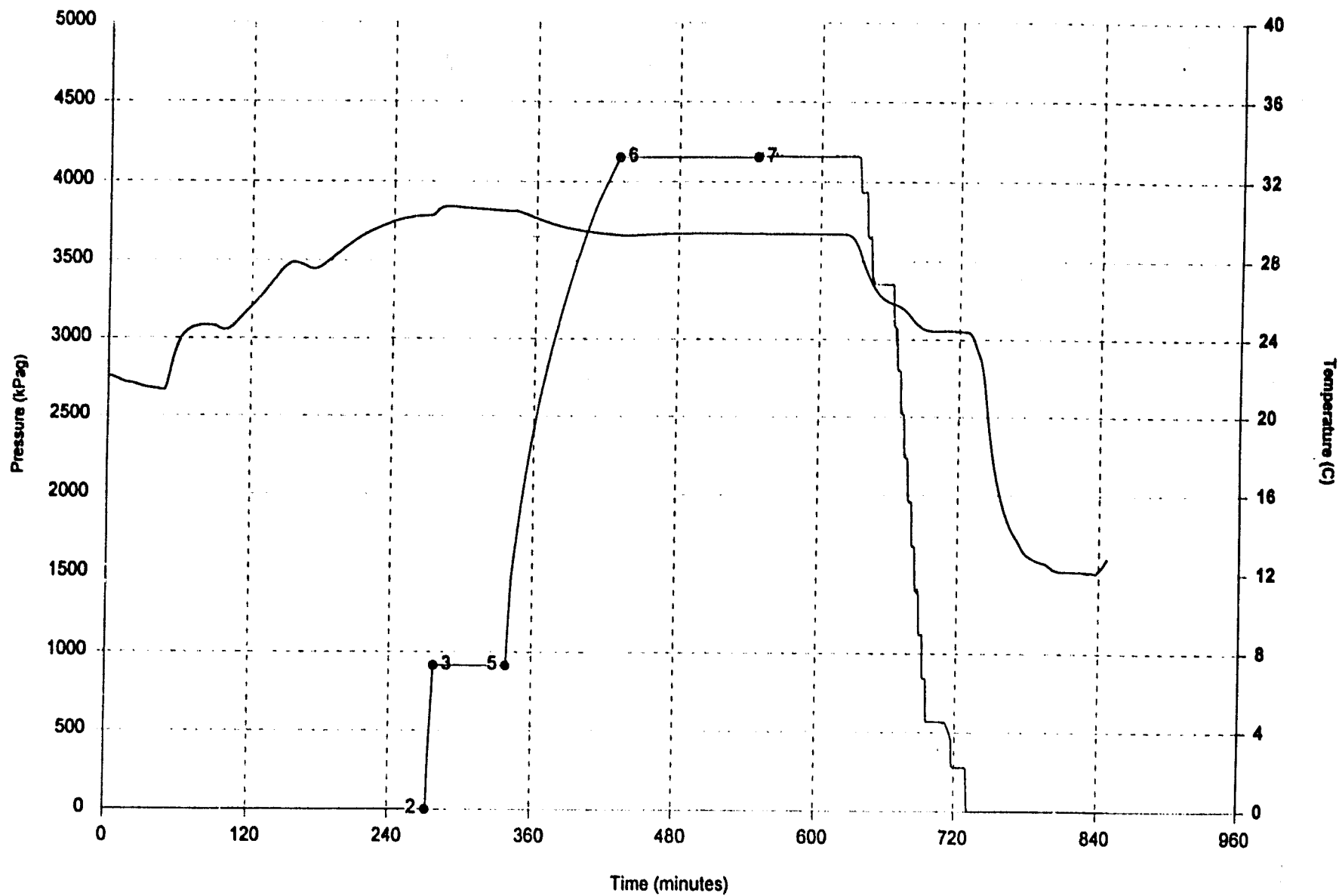
Above interval



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST #: 1
Recorder: N63

Pressure (kPag) at Critical Points:
2: 0 6: 4151
3: 913 7: 4152
5: 914

Recovery recorder



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 1

General Information:

Operator: Chevron Canada Resources Limited
500 - 5th Avenue S.W.
Calgary Alberta T2P 0L7

Tester: Prysunka S

Ticket#: 807427

Reverse Circulated? N

KB Elevation: 299.60 meters

Ground Elevat'n: 292.32 meters

Total Depth: 1,028.00 meters

Mud Data:

Weight: 1080 kg/m3
Type: Gel Chemical
Viscosity: 56 s/l
Water Loss: 5.5 cc/s
Filter Cake: 1.5 mm

Hole Data:

Drilled Hole Size: 222 mm
Calipered Hole Size: 230 mm
Hole Condition at Test Time: Good
Conditioned prior to this test? Y

Recorder Summary:

Recorder#	Type	Position	Capacity	Units	Depth	Comments
N63	ZI	Fluid Recovery	41400	kPag	580.00	Recovery recorder
N37	ZI	Inside	41400	kPag	585.00	Above interval
9487	K-3	Outside	20700	kPag	596.00	
R85	ZI	Outside	68900	kPag	596.00	
19531	K-3	Below Straddle	22400	kPag	609.00	Below interval

Distributions:

Reports Sent To: Eric Furlan

Fluid Samples - no of: 8 Sent To: AGAT

Bottom Hole Sampler#	Sent To
111	AGAT

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 / 0
DST# 1

Tool Sequence:

<i>Diagram</i>	<i>Description</i>	<i>Length</i>
	Pump Out Sub	0.33 m
	Cross Over Sub	0.30 m
	Pump Out Sub	0.33 m
	Recorder Carrier	1.38 m
	Hydraulic Tool	1.50 m
	Bottom Hole Sampler	1.03 m
	Recorder Carrier	1.38 m
	Hydraulic Jars	2.22 m
	Safety Joint	0.65 m
	Inflate Pump	2.38 m
	Screen	1.16 m
	Top Inflate Packer	1.78 m
	Packer Stick Down	0.82 m
	Port Sub	0.42 m
	Recorder Carrier	2.36 m
	Spacing	7.98 m
	Packer Stick Up	0.42 m
	Bottom Inflate Packer	1.90 m
	Recorder Carrier	0.00 m
	Perforations	0.30 m
	Belly Spring	2.00 m

Tool String Length: 30.64 m
Drill Collar I.D.: 60 mm 28.68 m
Drill Pipe O.D.: 127 mm 553.21 m

Collar Pipe Total: 581.89 m

Stick Up: 2.33 m
Tool Above: 14.44 m
Interval Tested: 12.00 m

Bottom Hole Choke Size: 25.40 mm

CHEVRON ET AL MCKAY LAKES O-80

00/ 60.200 / 123.150 /0

DST# 1

Recorder#N63

Build-up and Flow Curve Increments

Flow# 1

Shut-in# 1

Chart Label	Time (min)	Pressure (kPag)	Chart Label	Time (min)	Delta P (kPag)	Pressure (kPag)	Abscissa (T+dT)/dT	Used for Extrap
2	0.0	891		0.0		1415		
	0.5	1011		1.5	3649	5064	3.6667	
	1.0	1070		2.0	3769	5184	2.3333	
	1.5	1062		4.5	3832	5247	1.8889	
	2.0	1141		6.0	3869	5284	1.6667	
	2.5	1222		7.5	3894	5309	1.5333	
	3.0	1276		9.0	3913	5328	1.4444	
	3.5	1334		10.5	3927	5342	1.3810	
3	4.0	1415		12.0	3938	5354	1.3333	
				13.5	3948	5363	1.2963	
				15.0	3956	5371	1.2667	
				16.5	3962	5378	1.2424	
				18.0	3967	5382	1.2222	
				19.5	3972	5387	1.2051	
				21.0	3977	5392	1.1905	
				22.5	3981	5396	1.1778	
				24.0	3984	5400	1.1667	*
				25.5	3988	5403	1.1569	*
				27.0	3991	5406	1.1481	*
				28.5	3993	5409	1.1404	*
				30.0	3996	5411	1.1333	*
				31.5	3998	5413	1.1270	*
				33.0	4000	5415	1.1212	*
				34.5	4002	5417	1.1159	*
				36.0	4004	5419	1.1111	*
				37.5	4005	5421	1.1067	*
				39.0	4007	5422	1.1026	*
				40.5	4008	5424	1.0988	*
				42.0	4010	5425	1.0952	*
				43.5	4011	5426	1.0920	*
				45.0	4012	5427	1.0889	*
				46.5	4013	5428	1.0860	*
				48.0	4014	5429	1.0833	*
				49.5	4015	5430	1.0808	*
				51.0	4016	5431	1.0784	*
				52.5	4017	5432	1.0762	*
				54.0	4017	5433	1.0741	*
				55.5	4018	5433	1.0721	*
				57.0	4019	5434	1.0702	*
				58.5	4020	5435	1.0684	*
4				59.0	4020	5435	1.0678	*

Note: Increment listing is filtered to include critical data only. Complete time/pressure data is available in electronic or printed format.

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 / 0
DST# 1
Recorder# N63

Build-up and Flow Curve Increments

Flow# 2

Shut-in# 2

Chart Label	Time (min)	Pressure (kPag)	Chart Label	Time (min)	Delta P (kPag)	Pressure (kPag)	Abscissa (T+dT)/dT	Used for Extrap
5	0.0	1339		0.0		4305		
	2.0	1597		2.5	733	5038	38.6000	
	4.0	1770		5.0	793	5098	19.8000	
	6.0	1879		7.5	832	5137	13.5333	
	8.0	1982		10.0	860	5165	10.4000	
	10.0	2086		12.5	882	5187	8.5200	
	12.0	2182		15.0	901	5205	7.2667	
	14.0	2276		17.5	916	5221	6.3714	
	16.0	2366		20.0	929	5234	5.7000	
	18.0	2457		22.5	940	5245	5.1778	
	20.0	2543		25.0	950	5255	4.7600	
	22.0	2623		27.5	959	5264	4.4182	
	24.0	2711		30.0	967	5272	4.1333	
	26.0	2794		32.5	975	5280	3.8923	
	28.0	2866		35.0	981	5286	3.6857	
	30.0	2938		37.5	988	5293	3.5067	
	32.0	3007		40.0	993	5298	3.3500	
	34.0	3075		42.5	999	5304	3.2118	
	36.0	3139		45.0	1004	5309	3.0889	
	38.0	3203		47.5	1008	5313	2.9789	*
	40.0	3264		50.0	1013	5317	2.8800	*
	42.0	3326		52.5	1017	5321	2.7905	*
	44.0	3385		55.0	1020	5325	2.7091	*
	46.0	3435		57.5	1024	5329	2.6348	*
	48.0	3488		60.0	1027	5332	2.5667	*
	50.0	3539		62.5	1031	5335	2.5040	*
	52.0	3591		65.0	1034	5339	2.4462	*
	54.0	3642		67.5	1037	5341	2.3926	*
	56.0	3688		70.0	1039	5344	2.3429	*
	58.0	3734		72.5	1042	5347	2.2966	*
	60.0	3778		75.0	1045	5349	2.2533	*
	62.0	3821		77.5	1047	5352	2.2129	*
	64.0	3864		80.0	1049	5354	2.1750	*
	66.0	3905		82.5	1051	5356	2.1394	*
	68.0	3946		85.0	1054	5358	2.1059	*
	70.0	3984		87.5	1056	5361	2.0743	*
	72.0	4019		90.0	1058	5362	2.0444	*
	74.0	4054		92.5	1059	5364	2.0162	*
	76.0	4087		95.0	1061	5366	1.9895	*
	78.0	4122		97.5	1063	5368	1.9641	*
	80.0	4154		100.0	1065	5370	1.9400	*
	82.0	4184		102.5	1066	5371	1.9171	*
	84.0	4218		105.0	1068	5373	1.8952	*
	86.0	4249		107.5	1069	5374	1.8744	*
	88.0	4279		110.0	1071	5376	1.8545	*

Note: Increment listing is filtered to include critical data only. Complete time/pressure data is available in electronic or printed format.

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 1
Recorder# R85

Build-up and Flow Curve Increments

Flow# 2

<i>Chart Label</i>	<i>Time (min)</i>	<i>Pressure (kPag)</i>
6	90.0	4305

Shut-in# 2

<i>Chart Label</i>	<i>Time (min)</i>	<i>Delta P (kPag)</i>	<i>Pressure (kPag)</i>	<i>Abscissa (T+dT)/dT</i>	<i>Used for Extrap</i>
7	112.5	1072	5377	1.8356	*
	115.0	1073	5378	1.8174	*
	117.5	1075	5380	1.8000	*
	119.5	1076	5381	1.7866	*

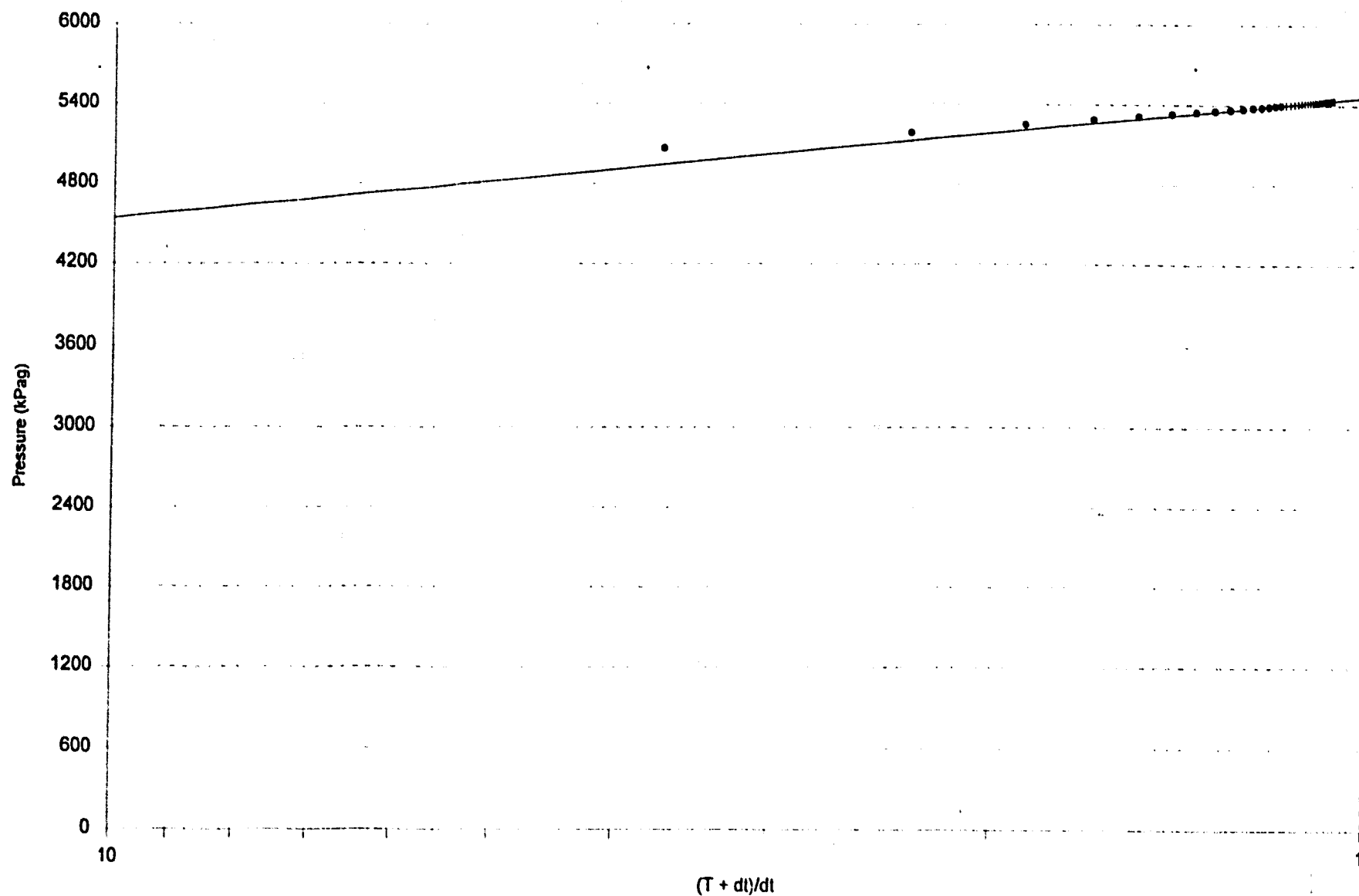
Horner Extrapolation:

<i>Shut-in#</i>	<i>Extrapolated Pressure (kPag)</i>	<i>Extrapolated Slope ((kPag/cycle)</i>
1	5461.2	920.35385
2	5457.5	305.64319

Note: Increment listing is filtered to include critical data only. Complete time/pressure data is available in electronic or printed format.

CHEVRON ET AL MCKAY LAKES O-80
 00/ 60.200 / 123.150 / 0
 DST #: 1
 Recorder: R85

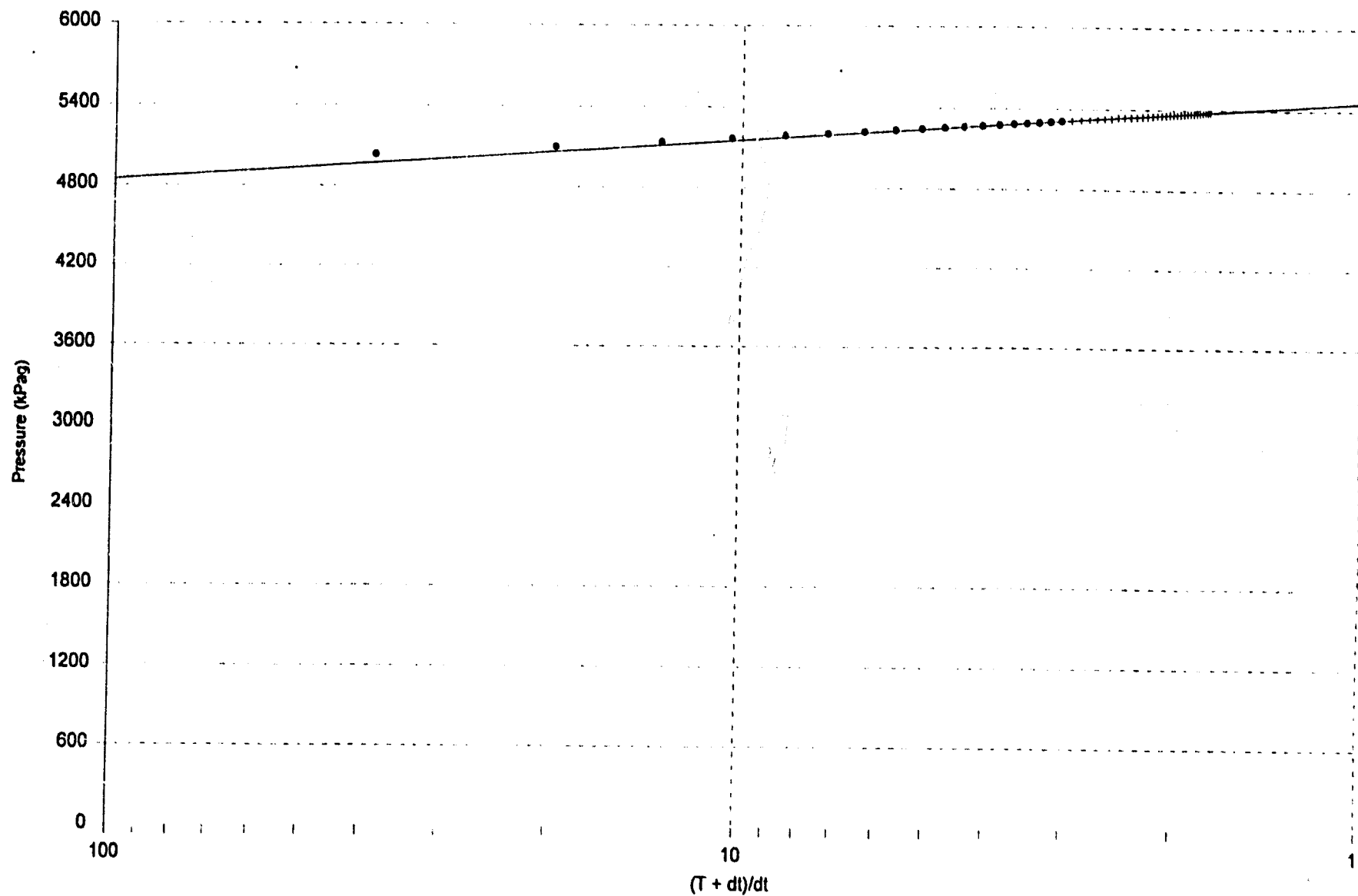
Shut-in #1
 Slope = 920.35 kPag/cycle
 Extrapolated Pressure = 5461.19 kPag



CHEVRON ET AL. MCKAY LAKES O-80
00/ 60.200 / 123.150 / 0
DST #: 1
Recorder: R85

Shut-in #2
Slope = 305.64 kPag/cycle
Extrapolated Pressure = 5457.49 kPag

BAKER OIL TOOLS / LYNES DRILL STEM TESTING

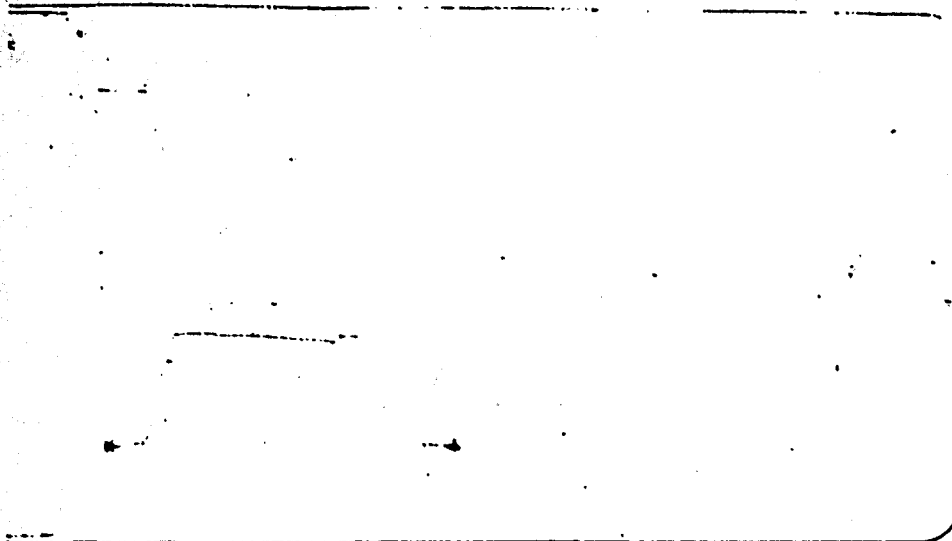


CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 1

Recorder# 19531

Depth: 609.00 m
 Location: Below Straddle

Recorder Type: K-3
 Capacity: 22,400 kPag
 Comments: Below interval

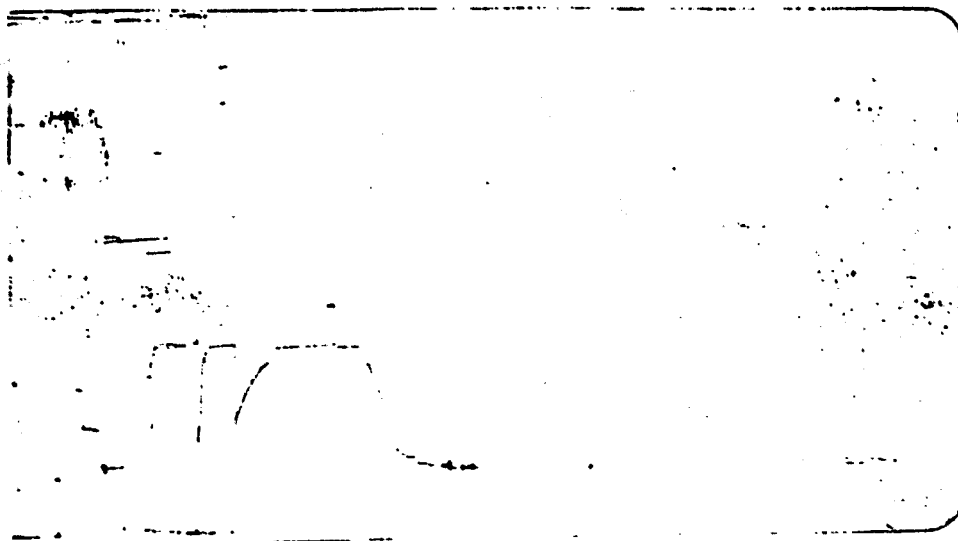


		Pressure (kPag)	Time (min)
1	Initial Hydrostatic	6423	
14	Final Hydrostatic	6109	

Recorder# 9487

Depth: 596.00 m
 Location: Outside

Recorder Type: K-3
 Capacity: 20,700 kPag



		Pressure (kPag)	Time (min)
1	Initial Hydrostatic	6316	
2	Start of 1st Flow	714	
3	End of 1st Flow	1327	4.0
4	End of 1st Shut-in	5427	59.0
5	Start of 2nd Flow	1215	
6	End of 2nd Flow	4242	90.0
7	End of 2nd Shut-in	5379	119.5
14	Final Hydrostatic	6114	

CHEVRON ET AL MCKAY LAKES O-80

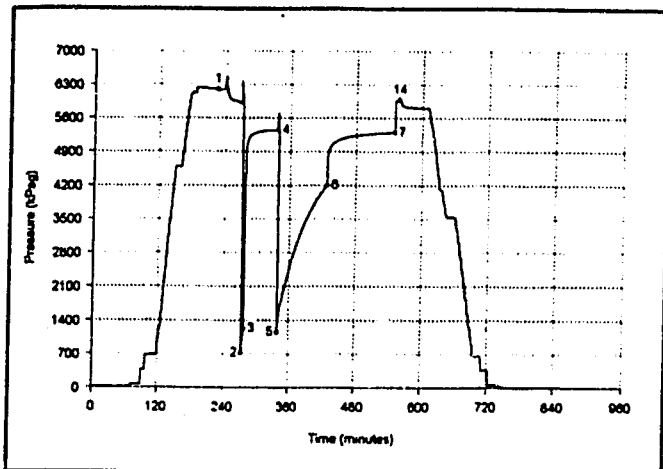
00/ 60.200 / 123.150 / 0

DST# 1

Recorder# N37

Depth: 585.00 m
 Temperature: 30.6 C
 Location: Inside

Recorder Type: ZI
 Capacity: 41,400 kPag
 Comments: Above interval

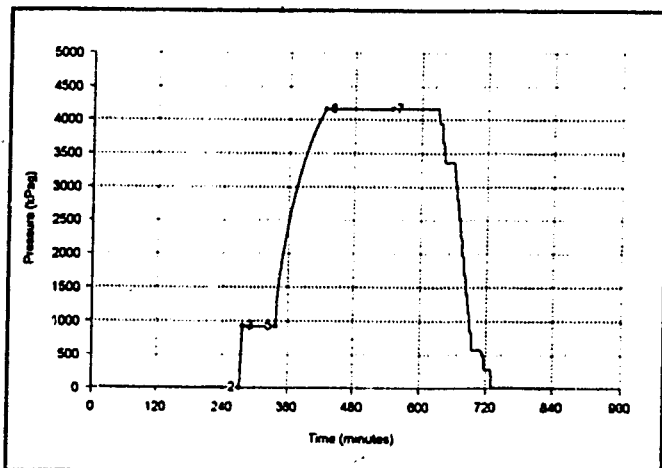


	Pressure (kPag)	Time (min)
1 Initial Hydrostatic	6191	
2 Start of 1st Flow	720	
3 End of 1st Flow	1216	4.0
4 End of 1st Shut-in	5340	59.0
5 Start of 2nd Flow	1148	
6 End of 2nd Flow	4195	90.0
7 End of 2nd Shut-in	5288	119.5
14 Final Hydrostatic	5973	

Recorder# N63

Depth: 580.00 m
 Temperature: 30.8 C
 Location: Fluid Recovery

Recorder Type: ZI
 Capacity: 41,400 kPag
 Comments: Recovery recorder



	Pressure (kPag)	Time (min)
2 Start of 1st Flow	0	
3 End of 1st Flow	913	4.0
5 Start of 2nd Flow	914	
6 End of 2nd Flow	4151	90.0
7 End of 2nd Shut-in	4152	119.5

CHEVRON ET AL MCKAY LAKES O-80

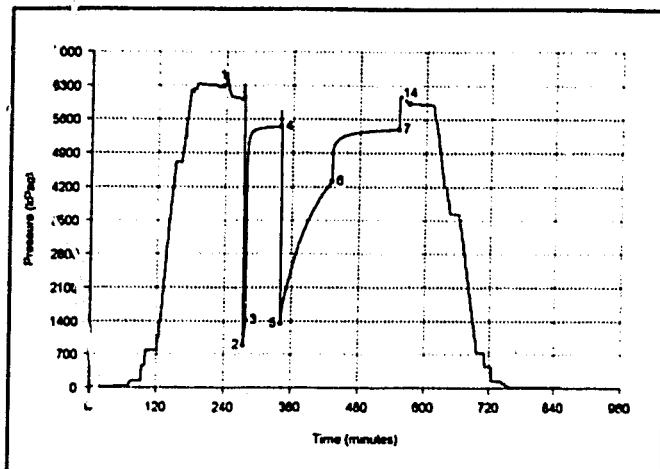
00/ 60.200 / 123.150 / 0

DST# 1

Recorder# R85

Depth: 596.00 m
 Temperature: 30.7 C
 Location: Outside

Recorder Type: ZI
 Capacity: 68,900 kPag



	Pressure (kPag)	Time (min)
1 Initial Hydrostatic	6278	
2 Start of 1st Flow	891	
3 End of 1st Flow	1415	4.0
4 End of 1st Shut-in	5435	59.0
5 Start of 2nd Flow	1339	
6 End of 2nd Flow	4305	90.0
7 End of 2nd Shut-in	5381	119.5
14 Final Hydrostatic	5930	

N.E.B. COPY



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 / 0
DST# 2

Baker Oil Tools

Formation: Fantasque
Interval - from: 485.00 to: 492.00 meters

Test Date: 1999-09-06
Test Type: Inflate Straddle

Recorder# R85 at 487.00 meters

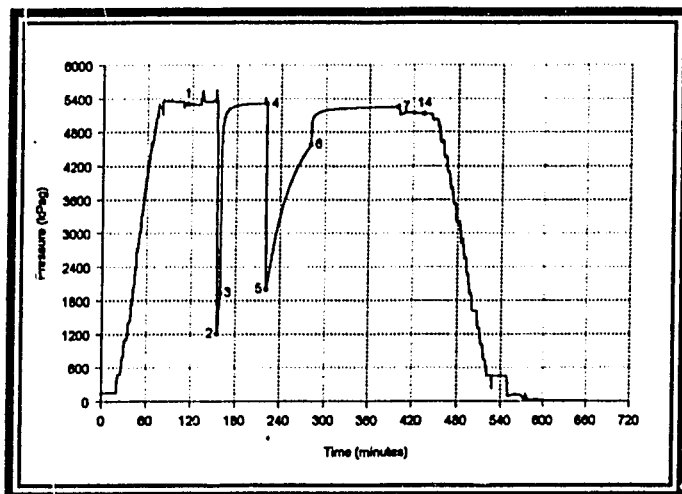
Blow Description:

PREFLOW: Weak air blow increasing to good in 1.5 minutes then slowly decreasing after 4 minutes. No gas to surface.

FINAL FLOW: Weak air blow increasing to good in 1.5 minutes then steady throughout. No gas or fluid to surface.

Remarks:

Mechanically successful test. Results suggest high permeability within the interval tested.



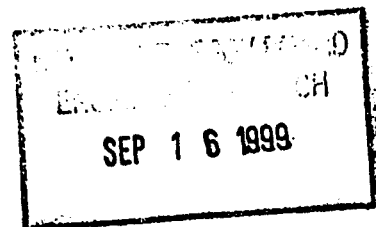
Max Btm Hole Temperature @ FSI: 28.6 C

		Pressure (kPag)	Time (min)	Extrapolated Pressure (kPag)
1	Initial Hydrostatic	5291		
2	Start of 1st Flow	1200		
3	End of 1st Flow	1932	4.5	
4	End of 1st Shut-in	5305	61.5	5328.4
5	Start of 2nd Flow	2000		
6	End of 2nd Flow	4573	58.0	
7	End of 2nd Shut-in	5242	120.0	5270.5
14	Final Hydrostatic	5121		

Liquid Recovery 450.00 meters

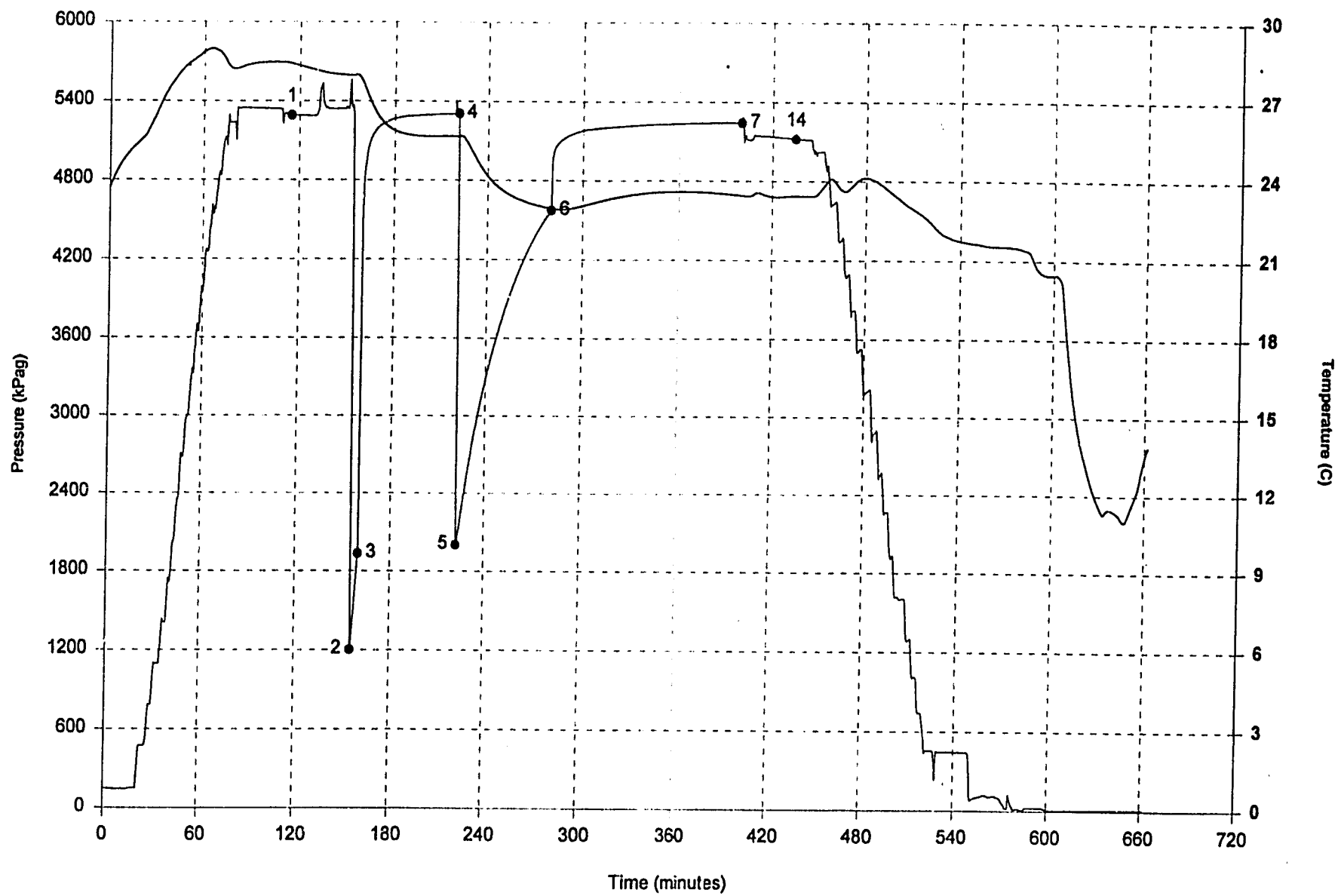
Salinity : 1 500 g/m3

Recovery	Description
100.00 m	MUDDY FRESH WATER
350.00 m	SOUR SMELLING WATER



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 / 0
DST #: 2
Recorder: R85

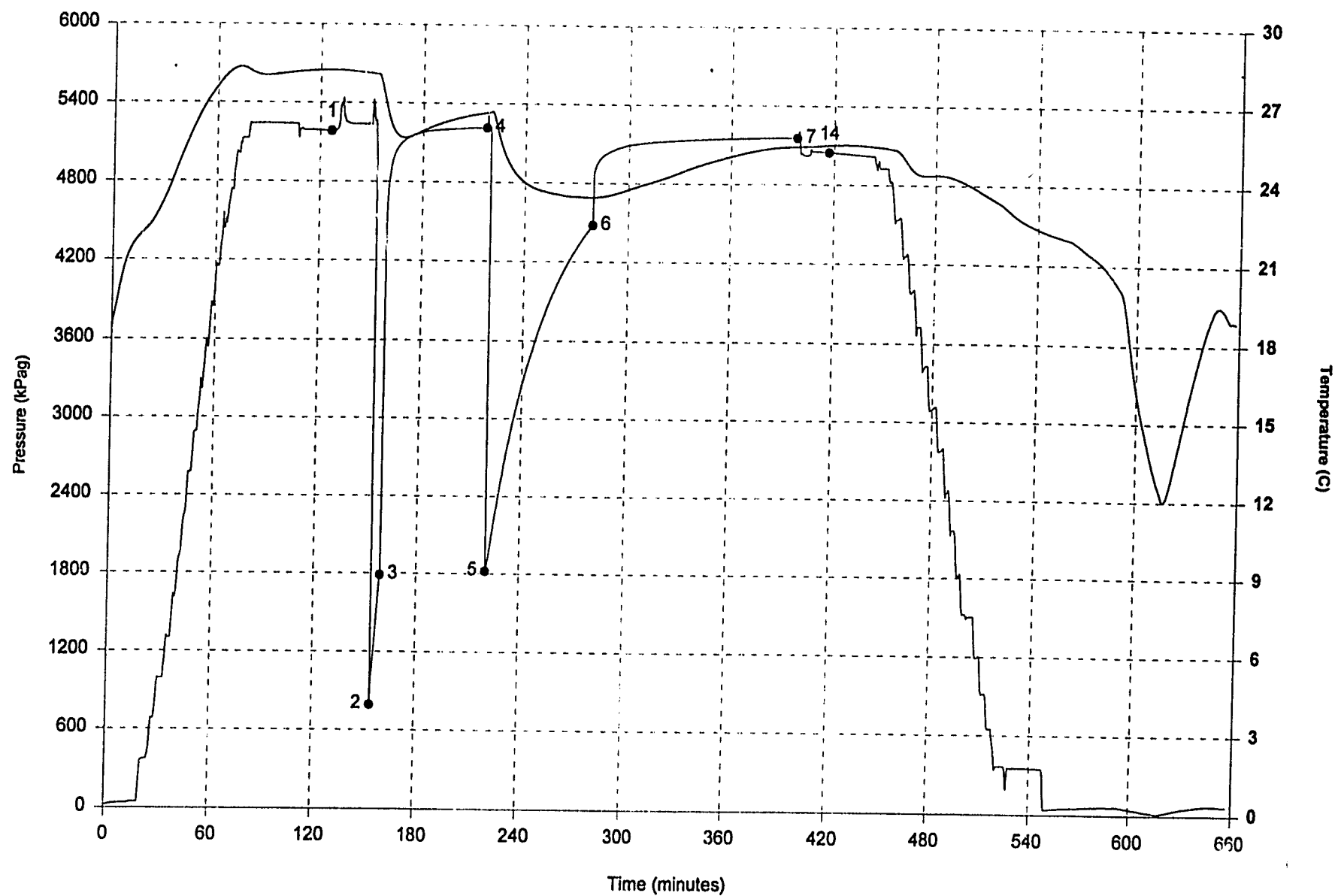
Pressure (kPag) at Critical Points:
1: 5291 4: 5305 7: 5242
2: 1200 5: 2000 14: 5121
3: 1932 6: 4573



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST #: 2
Recorder: N37

Pressure (kPag) at Critical Points:
1: 5183 4: 5213 7: 5152
2: 790 5: 1817 14: 5044
3: 1786 6: 4477

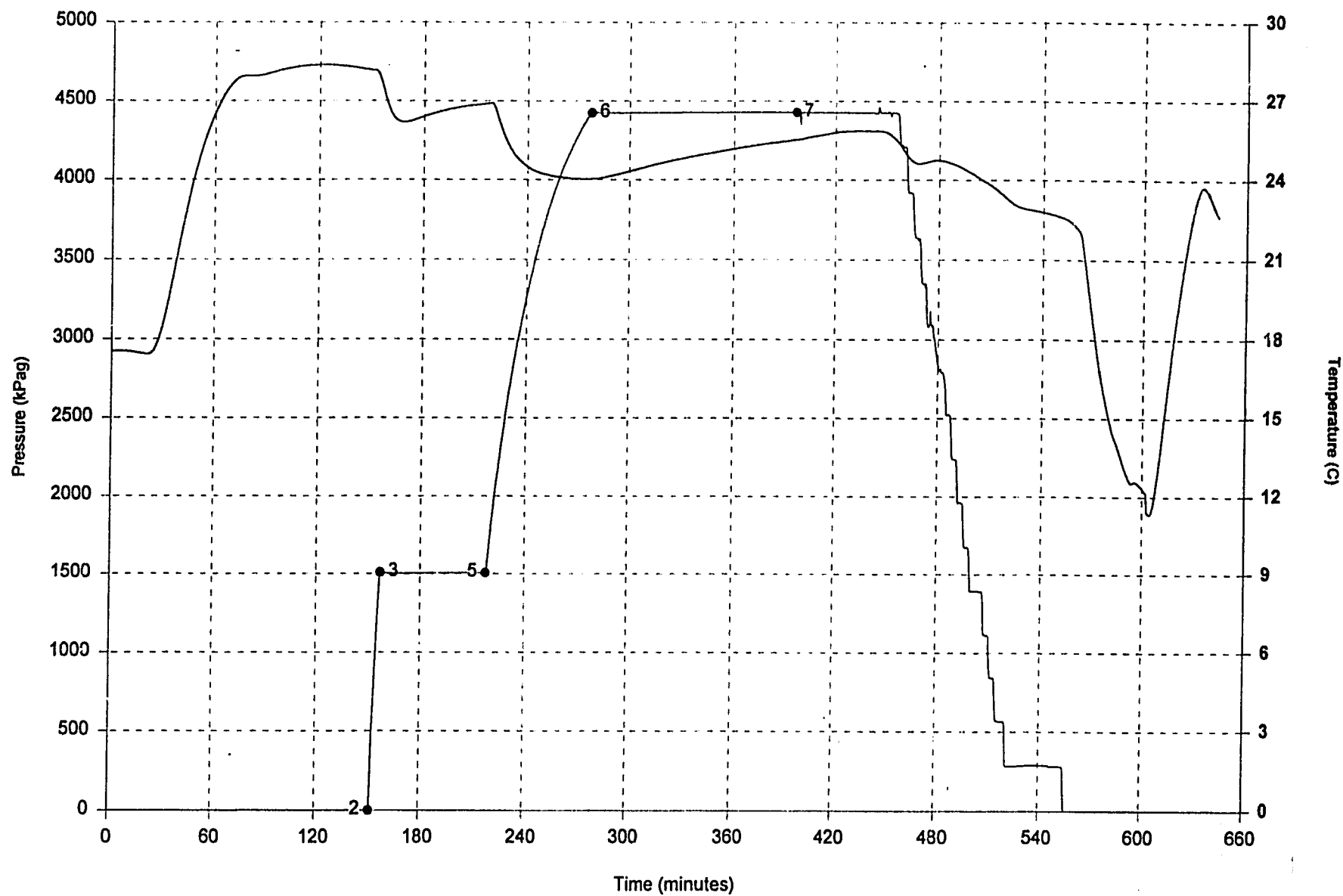
Above interval



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 / 0
DST #: 2
Recorder: N63

Pressure (kPag) at Critical Points:
2: 0 6: 4421
3: 1508 7: 4426
5: 1506

Recovery recorder



CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 2

General Information:

Operator: Chevron Canada Resources Limited
500 - 5th Avenue S.W.
Calgary Alberta T2P 0L7

Tester: Prysunka S

Ticket#: 807428

Reverse Circulated? N

KB Elevation: 299.60 meters

Ground Elevat'n: 292.32 meters

Total Depth: 1,028.00 meters

Mud Data:

Weight: 1080 kg/m3

Type: Gel Chemical

Viscosity: 56 s/l

Water Loss: 5.5 cc/s

Filter Cake: 1.5 mm

Hole Data:

Drilled Hole Size: 222 mm

Calipered Hole Size: 230 mm

Hole Condition at Test Time: Good

Conditioned prior to this test? Y

Recorder Summary:

Recorder#	Type	Position	Capacity	Units	Depth	Comments
N63	ZI	Fluid Recovery	41400	kPag	471.00	Recovery recorder
N37	ZI	Inside	41400	kPag	476.00	Above interval
9487	K-3	Outside	20700	kPag	487.00	
R85	ZI	Outside	68900	kPag	487.00	
19531	K-3	Below Straddle	22400	kPag	494.00	Below interval

Distributions:

Reports Sent To: Eric Furlan

Fluid Samples - no of: 6 Sent To: AGAT

Bottom Hole Sampler#	Sent To
222	AGAT

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 2

Tool Sequence:

<i>Diagram</i>	<i>Description</i>	<i>Length</i>
	Pump Out Sub	0.33 m
	Cross Over Sub	0.30 m
	Pump Out Sub	0.33 m
	Recorder Carrier	1.38 m
	Hydraulic Tool	1.50 m
	Bottom Hole Sampler	1.03 m
	Recorder Carrier	1.38 m
	Hydraulic Jars	2.22 m
	Safety Joint	0.65 m
	Inflate Pump	2.38 m
	Screen	1.16 m
	Top Inflate Packer	1.78 m
	Packer Stick Down	0.82 m
	Port Sub	0.42 m
	Recorder Carrier	2.36 m
	Spacing	2.98 m
	Packer Stick Up	0.42 m
	Bottom Inflate Packer	1.90 m
	Recorder Carrier	0.00 m
	Perforations	0.30 m
	Belly Spring	2.00 m

Tool String Length:	25.64 m
Drill Collar I.D.: 60 mm	28.68 m
Drill Pipe O.D.: 127 mm	445.22 m
Collar Pipe Total:	473.90 m
Stick Up:	3.34 m
Tool Above:	14.44 m
Interval Tested:	7.00 m
Bottom Hole Choke Size:	25.40 mm

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 2
Recorder#N63

Build-up and Flow Curve Increments

Flow# 1

Shut-in# 1

Chart Label	Time (min)	Pressure (kPag)	Chart Label	Time (min)	Delta P (kPag)	Pressure (kPag)	Abscissa (T+dT)/dT	Used for Extrap
2	0.0	1200		0.0		1932		
	0.5	1257		2.0	2977	4908	3.2500	
	1.0	1335		4.0	3130	5061	2.1250	
	1.5	1426		6.0	3200	5132	1.7500	
	2.0	1519		8.0	3242	5173	1.5625	
	2.5	1617		10.0	3269	5201	1.4500	
	3.0	1697		12.0	3289	5221	1.3750	
	3.5	1790		14.0	3304	5235	1.3214	*
	4.0	1883		16.0	3315	5247	1.2813	*
3	4.5	1932		18.0	3324	5256	1.2500	*
				20.0	3332	5263	1.2250	*
				22.0	3338	5269	1.2045	*
				24.0	3343	5275	1.1875	*
				26.0	3348	5279	1.1731	*
				28.0	3351	5283	1.1607	*
				30.0	3353	5284	1.1500	*
				32.0	3355	5287	1.1406	*
				34.0	3357	5289	1.1324	*
				36.0	3359	5291	1.1250	*
				38.0	3361	5293	1.1184	*
				40.0	3363	5294	1.1125	*
				42.0	3363	5295	1.1071	*
				44.0	3365	5296	1.1023	*
				46.0	3366	5297	1.0978	*
				48.0	3367	5299	1.0938	*
				50.0	3369	5300	1.0900	*
				52.0	3370	5302	1.0865	*
				54.0	3370	5302	1.0833	*
				56.0	3370	5302	1.0804	*
				58.0	3371	5303	1.0776	*
				60.0	3374	5306	1.0750	*
			4	61.5	3373	5305	1.0732	*

Flow# 2

Shut-in# 2

Chart Label	Time (min)	Pressure (kPag)	Chart Label	Time (min)	Delta P (kPag)	Pressure (kPag)	Abscissa (T+dT)/dT	Used for Extrap
5	0.0	2000		0.0		4573		
	1.5	2104		2.5	480	5054	26.0000	
	3.0	2244		5.0	520	5094	13.5000	
	4.5	2372		7.5	545	5118	9.3333	
	6.0	2492		10.0	563	5136	7.2500	
				12.5	577	5150	6.0000	

Note: Increment listing is filtered to include critical data only. Complete time/pressure data is available in electronic or printed format.

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 2
Recorder# R85

Build-up and Flow Curve Increments

Flow# 2

Shut-in# 2

Chart Label	Time (min)	Pressure (kPag)	Chart Label	Time (min)	Delta P (kPag)	Pressure (kPag)	Abscissa (T+dT)/dT	Used for Extrapolation
				15.0	588	5162	5.1667	
	7.5	2614		17.5	598	5171	4.5714	
	9.0	2729		20.0	606	5180	4.1250	
	10.5	2846		22.5	612	5186	3.7778	
	12.0	2942		25.0	616	5189	3.5000	
	13.5	3044		27.5	619	5193	3.2727	
	15.0	3136		30.0	623	5196	3.0833	
	16.5	3219		32.5	626	5200	2.9231	
	18.0	3305		35.0	629	5203	2.7857	*
	19.5	3388		37.5	632	5205	2.6667	*
	21.0	3464		40.0	634	5207	2.5625	*
	22.5	3537		42.5	636	5210	2.4706	*
	24.0	3601		45.0	638	5212	2.3889	*
	25.5	3670		47.5	640	5214	2.3158	*
	27.0	3734		50.0	642	5216	2.2500	*
	28.5	3796		52.5	644	5218	2.1905	*
	30.0	3855		55.0	646	5219	2.1364	*
	31.5	3907		57.5	648	5221	2.0870	*
	33.0	3962		60.0	649	5222	2.0417	*
	34.5	4013		62.5	650	5224	2.0000	*
	36.0	4060		65.0	652	5225	1.9615	*
	37.5	4107		67.5	653	5226	1.9259	*
	39.0	4150		70.0	654	5228	1.8929	*
	40.5	4192		72.5	655	5229	1.8621	*
	42.0	4232		75.0	656	5230	1.8333	*
	43.5	4271		77.5	658	5231	1.8065	*
	45.0	4309		80.0	658	5232	1.7813	*
	46.5	4344		82.5	659	5233	1.7576	*
	48.0	4379		85.0	660	5234	1.7353	*
	49.5	4411		87.5	661	5235	1.7143	*
	51.0	4442		90.0	662	5235	1.6944	*
	52.5	4474		92.5	662	5236	1.6757	*
	54.0	4502		95.0	663	5237	1.6579	*
	55.5	4529		97.5	664	5238	1.6410	*
	57.0	4555		100.0	665	5238	1.6250	*
6	58.0	4573		102.5	665	5239	1.6098	*
				105.0	666	5239	1.5952	*
				107.5	667	5240	1.5814	*
				110.0	667	5240	1.5682	*
				112.5	667	5241	1.5556	*
				115.0	668	5241	1.5435	*
				117.5	668	5242	1.5319	*
			7	120.0	668	5242	1.5208	*

Note: Increment listing is filtered to include critical data only. Complete time/pressure data is available in electronic or printed format.

CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 2
Recorder#R85

Build-up and Flow Curve Increments

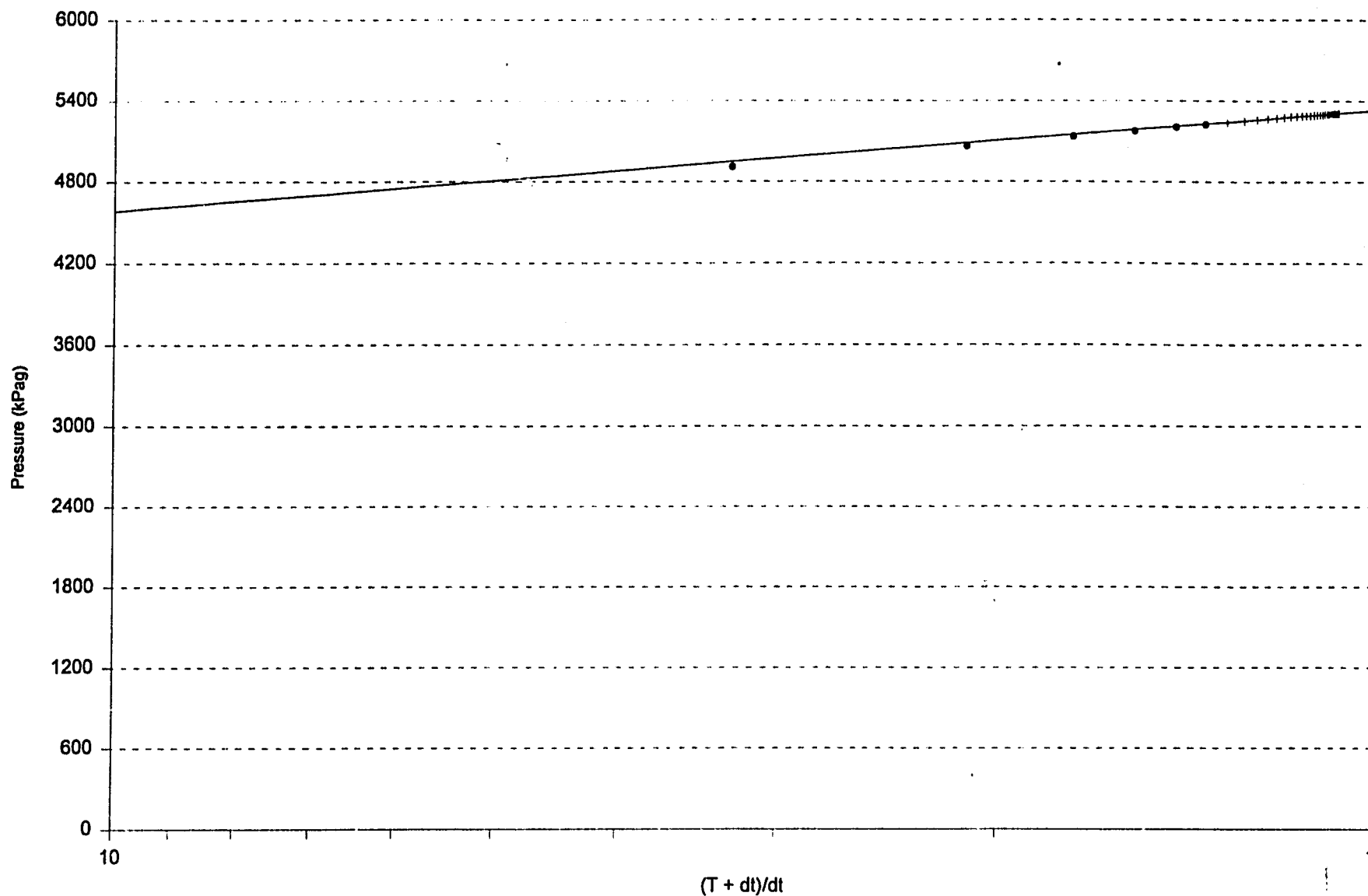
Horner Extrapolation:

<i>Shut-in#</i>	<i>Extrapolated Pressure (kPag)</i>	<i>Extrapolated Slope ((kPag/cycle)</i>
1	5328.4	745.72346
2	5270.5	154.61898

Note: Increment listing is filtered to include critical data only. Complete time/pressure data is available in electronic or printed format.

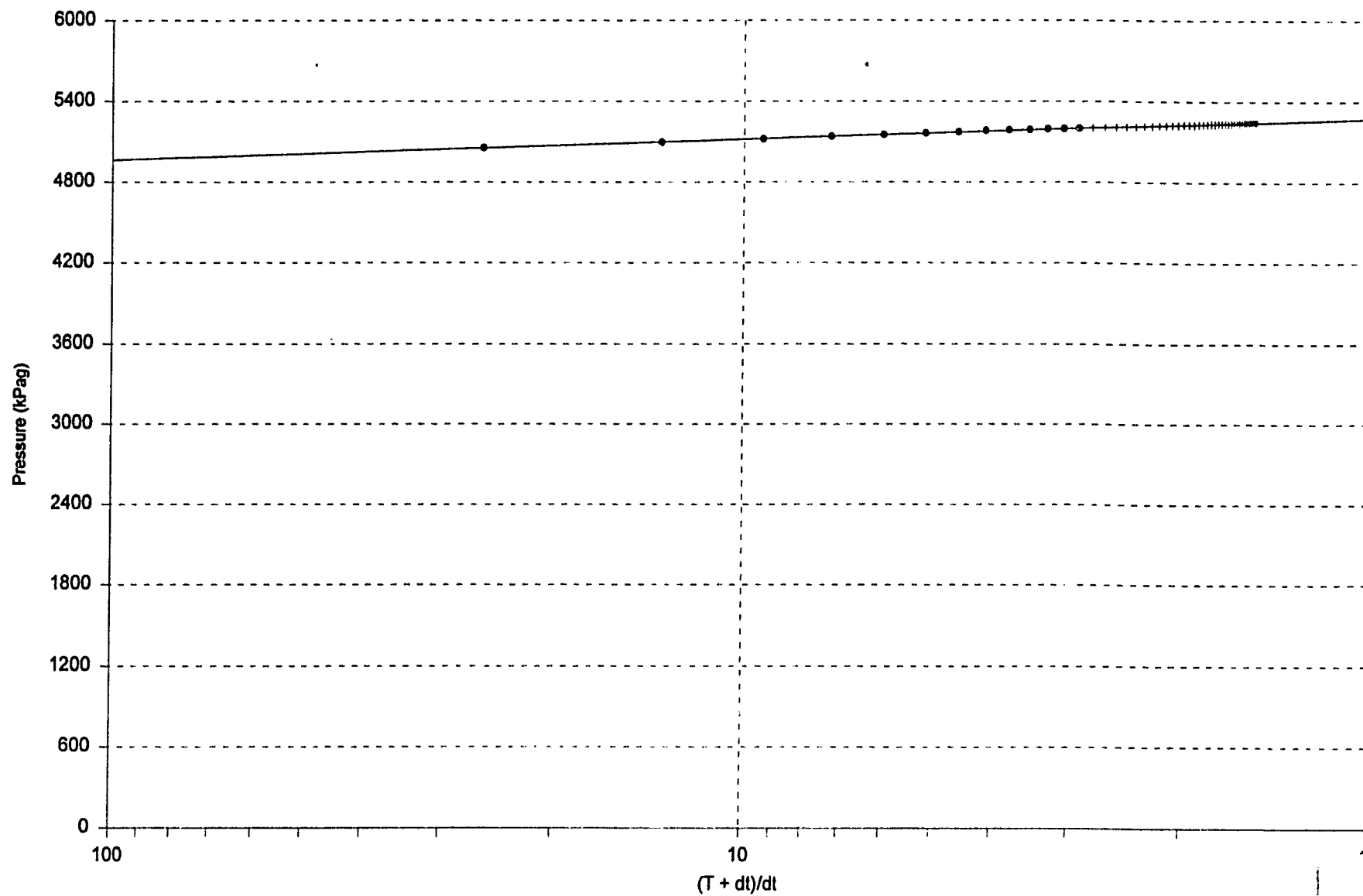
CHEVRON ET AL MCKAY LAKES O-80
00/60.200 / 123.150 / 0
DST #: 2
Recorder: R85

Shut-in #1
Slope = 745.72 kPag/cycle
Extrapolated Pressure = 5328.43 kPag



CHEVRON ET AL MCKAY LAKES O-80
00/60.200 / 123.150 / 0
DST #: 2
Recorder: R85

Shut-in #2
Slope = 154.62 kPag/cycle
Extrapolated Pressure = 5270.53 kPag

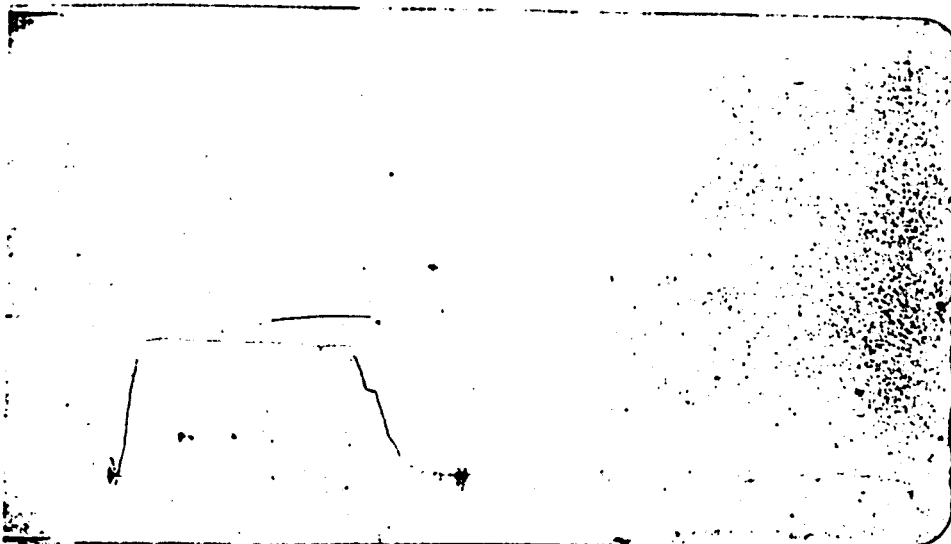


CHEVRON ET AL MCKAY LAKES O-80
00/ 60.200 / 123.150 /0
DST# 2

Recorder# 19531

Depth: 494.00 m
 Location: Below Straddle

Recorder Type: K-3
 Capacity: 22,400 kPag
 Comments: Below interal

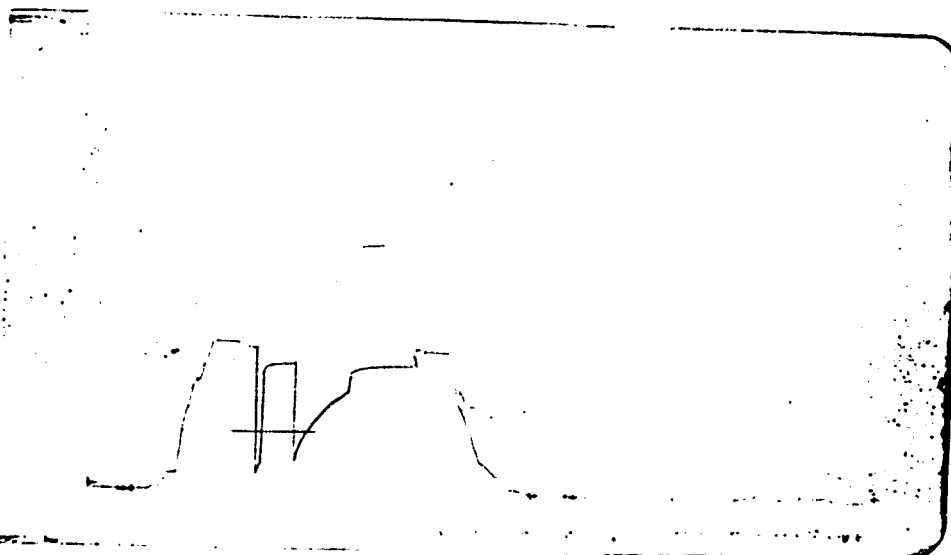


		Pressure (kPag)	Time (min)
1	Initial Hydrostatic	5376	
14	Final Hydrostatic	5265	

Recorder# 9487

Depth: 487.00 m
 Location: Outside

Recorder Type: K-3
 Capacity: 20,700 kPag



		Pressure (kPag)	Time (min)
1	Initial Hydrostatic	5204	
2	Start of 1st Flow	1094	
3	End of 1st Flow	1771	4.5
4	End of 1st Shut-in	5245	61.5
5	Start of 2nd Flow	1935	
6	End of 2nd Flow	4454	58.0
7	End of 2nd Shut-in	5172	120.0
14	Final Hydrostatic	5116	

CHEVRON ET AL MCKAY LAKES O-80

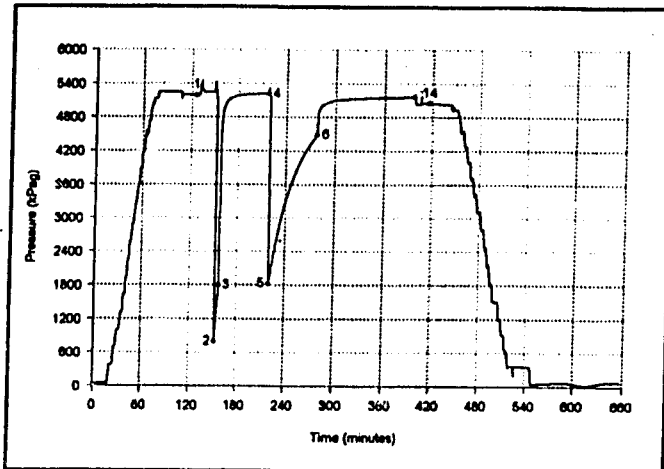
00/ 60.200 / 123.150 /0

DST# 2

Recorder# N37

Depth: 476.00 m
 Temperature: 28.2 C
 Location: Inside

Recorder Type: ZI
 Capacity: 41,400 kPag
 Comments: Above interval

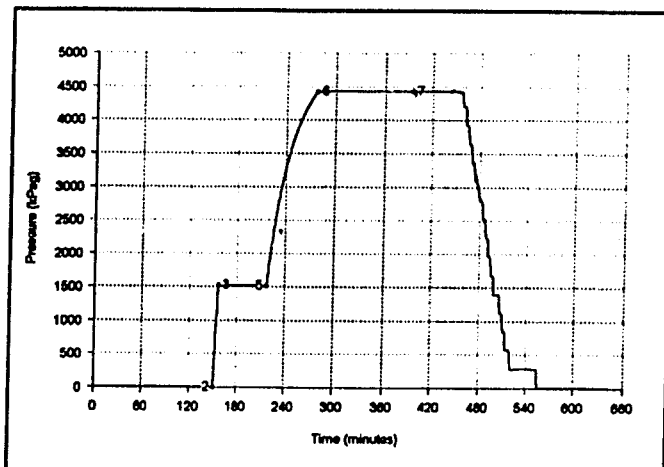


		Pressure (kPag)	Time (min)
1	Initial Hydrostatic	5183	
2	Start of 1st Flow	790	
3	End of 1st Flow	1786	4.5
4	End of 1st Shut-in	5213	61.5
5	Start of 2nd Flow	1817	
6	End of 2nd Flow	4477	58.0
7	End of 2nd Shut-in	5152	120.0
14	Final Hydrostatic	5044	

Recorder# N63

Depth: 471.00 m
 Temperature: 28.2 C
 Location: Fluid Recovery

Recorder Type: ZI
 Capacity: 41,400 kPag
 Comments: Recovery recorder



		Pressure (kPag)	Time (min)
2	Start of 1st Flow	0	
3	End of 1st Flow	1508	4.5
5	Start of 2nd Flow	1506	
6	End of 2nd Flow	4421	58.0
7	End of 2nd Shut-in	4426	120.0

CHEVRON ET AL MCKAY LAKES O-80

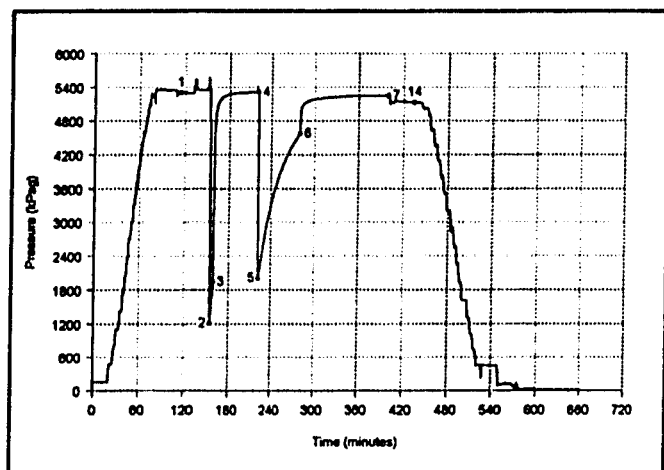
00/ 60.200 / 123.150 /0

DST# 2

Recorder# R85

Depth: 487.00 m
 Temperature: 28.6 C
 Location: Outside

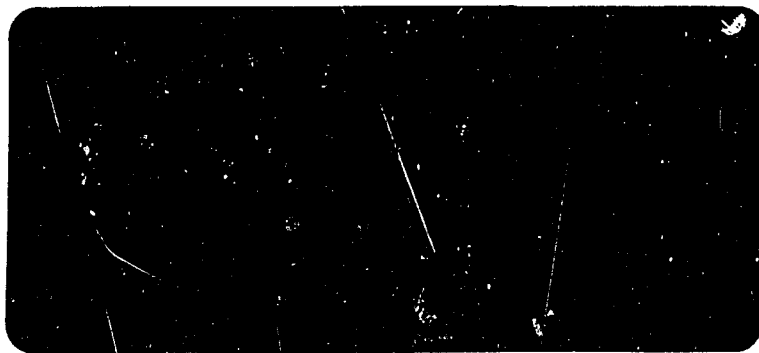
Recorder Type: ZI
 Capacity: 68,900 kPag



		Pressure (kPag)	Time (min)
1	Initial Hydrostatic	5291	
2	Start of 1st Flow	1200	
3	End of 1st Flow	1932	4.5
4	End of 1st Shut-in	5305	61.5
5	Start of 2nd Flow	2000	
6	End of 2nd Flow	4573	58.0
7	End of 2nd Shut-in	5242	120.0
14	Final Hydrostatic	5121	

**SUB-
SURFACE
PRESSURE
REPORT**

Sub-Surface Pressure Report



**7449 - 49 Avenue Crescent
Red Deer, Alberta T4P 1X6**

Chevron Canada Resources

Injectivity Test

Chevron et al McKay Lakes

0-80

Sep 10, 99 to Sep 17, 99

Service Company Contact Info		
Report Writer	Vio Tandara, 1-403-347-2524	
Operator	Lee Tool, Div. of Schlumberger	
	Job ID	Test Date
Dale Sallstrom/Jason Plested, 1-780-778-2361	0-80ext	Sep 10, 99 to Sep 17, 99

Gauge: Lee Memory Recorder Model 3000s (Quartz)
Manufacturer: Lee Tool, Division of Schlumberger Canada Limited

Injectivity Test

Chevron Canada Resources

Alberta, Canada

Sep 10, 99 to Sep 17, 99

Chevron et al McKay Lakes

0-80

Undefined, Mattson

Client	Chevron Canada Resources	Province	Alberta	Country	Canada
Well Name	Chevron et al McKay Lakes	Deviated Well	No	Well Status	Injection Well
Well No.	0-80	KB Elevation	299.60 m	CF Elevation	292.32 m
Field	Undefined	Pool	Mattson	Pool Datum	

Test Type				Atmospheric	
Injectivity Test				101.30 KPa A	
Test Start (mm/dd/yy)		Test Finish		Casing ID	
09/10/99 11:20 PM		09/17/99 08:47 AM		Tubing ID 88.90 mm	
On Bottom		Off Bottom		C. Pres. Before	
09/11/99 12:08 AM		09/17/99 08:27 AM		T. Pres. Before 0.00 KPa G	
Shut In		ETO		C. Pres. After	
09/13/99 05:20 AM		09/10/99 11:20 PM		T. Pres. After 1800.00 KPa G	
Meas. Depth [mCF]		TVD [mCF]		Est. Pressure [KPa G]	
				Est. Gradient [KPa/m]	
				Est. Temperature [DegC]	
Well Datum:				Grad. Threshold	
Landed Depth		486.70		Grad. Recorder	
Avg. MPP Depth					
Operator				Service Company	
Dale Sallstrom/Jason Plested, 1-780-778-2361				Lee Tool, Div. of Schlumberger	
Remarks					
9449q-16e bottom recorder & 9448q-16e top recorder					

Depth Reference	Offset [m]	Elevation [mMSL]
Casing Flange (CF)		292.32
Kelly Bushing (KB)	CF + 7.28	299.60

Model	LMR-3000S	Serial	9448Q-16E	Latest Calibration	08/20/99
Max. Rated Press.	110213.11 KPa G	Max. Rated Temp.	174.98 DegC		

	Tool String MD, [mCF]	Sample R/T [mm dd, yy 24 hr.]	Pressure [KPa G]	
Sample 1	486.70	Sep 17, 99 02:00:00	6744.25	
Sample 2		08:00:00	6632.67	
Difference:		06:00:00	-111.58	Build Up Rate -18.60 KPa/Hr.

Model	LMR-3000S	Serial	9449Q-16E	Latest Calibration	07/08/99
Max. Rated Press.	110213.59 KPa G	Max. Rated Temp.	174.99 DegC		

	Tool String MD, [mCF]	Sample R/T [mm dd, yy 24 hr.]	Pressure [KPa G]	
Sample 1	486.70	Sep 17, 99 02:00:00	6750.52	
Sample 2		08:00:00	6637.74	
Difference:		06:00:00	-112.79	Build Up Rate -18.80 KPa/Hr.

Tool Summary

Chevron Canada Resources
Alberta, Canada

Sep 10, 99 to Sep 17, 99

Chevron et al McKay Lakes

0-80

Undefined, Undefined

Tool	LMR-3000S	Serial	9448Q-16E	Latest Calibration	08/20/99	Battery Serial	
Landed Depth	485.20 mCF	Depth Offset	-1.50 m	Min. Battery	0.19 V		

Program Sample Gradation - 2 Test

Intervals					Expected Samples			Actual Samples				
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [KPa]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	10:00	1			600	0.2%	0.0022	600		0.2%	0.0022	10:00
HB	30	10			259200	74.2%	5.4747	55166		15.8%	1.1652	6 9:14:20
Totals:	30 10:00				259800	74.3%	5.4769	55766		16.0%	1.1674	6 9:24:20

Bottom Recorder

Tool	LMR-3000S	Serial	9449Q-16E	Latest Calibration	07/08/99	Battery Serial	
Landed Depth	486.70 mCF	Depth Offset	0.00 m	Min. Battery	18.15 V		

Program Sample Gradation - 2 Test

Intervals					Expected Samples			Actual Samples				
Mode	Interval [d hh:mm:ss]	Rate [hh:mm:ss]	Delta [KPa]	Periodic [hh:mm:ss]	Regular Samples	Percent Storage	Energy [Ahr]	Regular Samples	Delta Samples	Percent Storage	Energy [Ahr]	Duration [d hh:mm:ss]
HB	10:00	1			600	0.2%	0.0022	600		0.2%	0.0022	10:00
HB	30	10			259200	74.2%	5.4747	55193		15.8%	1.1658	6 9:18:50
Totals:	30 10:00				259800	74.3%	5.4769	55793		16.0%	1.1679	6 9:28:50

Calibration Summary

Chevron Canada Resources
Alberta, Canada

Sep 10, 99 to Sep 17, 99

Chevron et al McKay Lakes

0-80

Undefined, Undefined

Tool	Serial	Latest Calibration	Battery Serial
LMR-3000S	9448Q-16E	08/20/99	
Landed Depth	Depth Offset	Min. Battery	
485.20 mCF	-1.50 m	0.19 V	

Equation

FP = Pres Freq (Hz)

FT = Temp Freq (Hz)

XP = 2.118900e+004 + (1.000000e-002) FP

XT = 4.968100e+004 + (1.000000e-002) FT

P₀ = 2.001289e+001 + (-2.071854e+000) XT + (-2.145578e-002) XT² + (-1.069956e-006) XT³ + (-1.452078e-008) XT⁴

P₁ = 3.982822e+001 + (-1.998781e-002) XT + (3.657472e-005) XT² + (4.187025e-008) XT³ + (1.958874e-010) XT⁴

P₂ = -1.690837e-003 + (9.103862e-006) XT + (-8.119845e-008) XT² + (-3.565870e-010) XT³ + (-8.729953e-013) XT⁴

P₃ = 5.035916e-007 + (-1.079024e-009) XT + (1.100585e-010) XT² + (6.330990e-013) XT³ + (1.345406e-015) XT⁴

Pressure (psiA) = P₀ + P₁ XP + P₂ XP² + P₃ XP³

T₀ = 2.523059e+001

T₁ = -7.491531e-001

T₂ = -8.876494e-004

T₃ = -6.804062e-007

Temperature (degC) = T₀ + T₁ XT + T₂ XT² + T₃ XT³

Equation Recorder

Tool	Serial	Latest Calibration	Battery Serial
LMR-3000S	9449Q-16E	07/08/99	
Landed Depth	Depth Offset	Min. Battery	
486.70 mCF	0.00 m	18.15 V	

FP = Pres Freq (Hz)

FT = Temp Freq (Hz)

XP = 2.454700e+004 + (1.000000e-002) FP

XT = 4.733900e+004 + (1.000000e-002) FT

P₀ = 1.991601e+001 + (-4.433533e-001) XT + (-1.911054e-002) XT² + (2.327491e-006) XT³ + (-1.265850e-008) XT⁴

P₁ = 4.062504e+001 + (-2.039614e-002) XT + (2.248850e-005) XT² + (-4.432937e-008) XT³ + (3.117402e-011) XT⁴

P₂ = -1.790257e-003 + (9.952224e-006) XT + (-1.154146e-008) XT² + (1.753607e-010) XT³ + (2.136603e-013) XT⁴

P₃ = 2.222311e-007 + (-6.674224e-009) XT + (-3.671691e-011) XT² + (-4.148719e-013) XT³ + (-7.631723e-016) XT⁴

Pressure (psiA) = P₀ + P₁ XP + P₂ XP² + P₃ XP³

T₀ = 2.598896e+001

T₁ = -7.139323e-001

T₂ = -7.844230e-004

T₃ = -5.473650e-007

Temperature (degC) = T₀ + T₁ XT + T₂ XT² + T₃ XT³

Recorded Data

Chevron Canada Resources
Alberta, Canada

Sep 10, 99 to Sep 17, 99

Chevron et al McKay Lakes

0-80

Undefined, Undefined

9449Q-16E		9449Q-16E	9448Q-16E	9449Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E	
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC)	Comments
Sep 10, 99	23:20:00	0:00:00:00	-28.2242		11.8469		
	23:25:00	0:00:05:00	-22.0993	14.8371	11.9232	10.5168	9449q-16e bottom recorder
	23:26:00	0:00:06:00	-19.6494	14.8553	11.9530	10.4893	9448q-16e top recorder
	23:46:00	0:00:26:00	-18.1700	13.2475	9.8333	8.8486	
Sep 11, 99	00:06:00	0:00:46:00	4995.1170	4680.2973	314.8197	17.9376	19.1707
	00:08:00	0:00:48:00	5169.2721	5161.4305	7.8416	19.0187	20.2511 on bottom
	00:28:00	0:01:08:00	5183.3923	5173.1307	10.2616	21.9789	22.0514
	00:48:00	0:01:28:00	5190.7605	5180.5127	10.2478	22.2299	22.1403
	01:08:00	0:01:48:00	5195.4068	5185.1419	10.2649	22.2552	22.1498
	01:28:00	0:02:08:00	5198.5796	5188.2628	10.3168	22.2588	22.1498
	01:48:00	0:02:28:00	5201.2207	5190.9158	10.3048	22.2570	22.1517
	02:08:00	0:02:48:00	5200.4449	5190.3077	10.1371	22.2534	22.1441
	02:28:00	0:03:08:00	5201.8481	5191.6282	10.2199	22.2498	22.1403
	02:48:00	0:03:28:00	5203.3124	5192.9535	10.3589	22.2480	22.1403
	03:08:00	0:03:48:00	5205.5002	5195.1766	10.3236	22.2444	22.1403
	03:28:00	0:04:08:00	5194.7357	5183.8142	10.9215	22.2715	22.1819
	03:48:00	0:04:28:00	5205.2650	5194.8918	10.3732	22.2516	22.1517
	04:08:00	0:04:48:00	5207.2260	5196.8415	10.3845	22.2426	22.1384
	04:28:00	0:05:08:00	5209.8667	5199.5179	10.3488	22.2318	22.1252
	04:48:00	0:05:28:00	5211.2699	5200.8762	10.3937	22.2281	22.1176
	05:08:00	0:05:48:00	5212.1326	5201.6334	10.4991	22.2227	22.1082
	05:20:00	0:06:00:00	5212.6641	5202.2747	10.3894	22.2191	22.1082 shut in well
	05:40:00	0:06:20:00	5213.3700	5202.9135	10.4565	22.2155	22.1063
	06:00:00	0:06:40:00	5213.9451	5203.4668	10.4783	22.2119	22.1044
	06:20:00	0:07:00:00	5214.4941	5203.9272	10.5669	22.2101	22.0968
	06:40:00	0:07:20:00	5214.7902	5204.3498	10.4404	22.2047	22.0930
	07:00:00	0:07:40:00	5215.2170	5204.7674	10.4496	22.1993	22.0855
	07:20:00	0:08:00:00	5215.7745	5205.2779	10.4966	22.1938	22.0836
	07:40:00	0:08:20:00	5216.1316	5205.7004	10.4312	22.1902	22.0798
	08:00:00	0:08:40:00	5216.4016	5205.8614	10.5402	22.1866	22.0722 started pumping
	08:20:00	0:09:00:00	10631.5537	10405.0402	226.5135	21.7620	21.4322
	08:40:00	0:09:20:00	12779.0004	12697.4802	81.5203	17.7767	17.3599
	09:00:00	0:09:40:00	12819.3743	12775.2435	44.1308	16.8806	16.7162
	09:20:00	0:10:00:00	13077.9102	13039.6179	38.2923	16.5043	16.3545
	09:40:00	0:10:20:00	13218.5629	13192.5786	25.9843	16.1974	16.0578
	10:00:00	0:10:40:00	13172.2478	13134.1712	38.0766	15.9730	15.8457
	10:20:00	0:11:00:00	13225.4903	13196.9391	28.5512	15.6104	15.4598
	10:40:00	0:11:20:00	13227.1849	13199.4286	27.7563	15.2399	15.0947
	11:00:00	0:11:40:00	13106.1921	13081.8660	24.3262	14.9669	14.8317
	11:20:00	0:12:00:00	12826.4675	12796.9048	29.5627	14.7565	14.6247
	11:40:00	0:12:20:00	12810.8073	12776.9217	33.8855	14.5958	14.4698
	12:00:00	0:12:40:00	12808.5591	12773.4667	35.0923	14.4739	14.3516
	12:20:00	0:13:00:00	12890.7023	12856.6795	34.0229	14.3593	14.2334
	12:40:00	0:13:20:00	12935.5836	12905.0144	30.5692	14.2280	14.1055
	13:00:00	0:13:40:00	12951.4345	12919.1225	32.3121	14.1300	14.0105
	13:20:00	0:14:00:00	12940.9419	12908.3154	32.6265	14.0578	13.9407
	13:40:00	0:14:20:00	12931.1338	12897.7691	33.3647	14.0042	13.8883
	14:00:00	0:14:40:00	12930.2895	12897.4794	32.8102	13.9653	13.8514
	14:20:00	0:15:00:00	12945.9618	12913.7382	32.2236	13.9005	13.7855

9449Q-16E	9449Q-16E	9448Q-16E	9449Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E	
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC)
						Comments
14:40:00	0:15:20:00	12933.7109	12899.7291	33.9817	13.8505	13.7350
15:00:00	0:15:40:00	12921.8988	12888.3224	33.5764	13.8079	13.6942
15:20:00	0:16:00:00	12904.6725	12871.8463	32.8262	13.7672	13.6515
15:40:00	0:16:20:00	12891.0330	12859.4752	31.5578	13.7357	13.6243
16:00:00	0:16:40:00	12870.3528	12840.2930	30.0598	13.7116	13.5991
16:20:00	0:17:00:00	12859.4315	12825.6125	33.8190	13.7079	13.5991
16:40:00	0:17:20:00	12866.1265	12830.4123	35.7142	13.7005	13.5913
17:00:00	0:17:40:00	12850.0961	12816.7156	33.3805	13.6894	13.5797
17:20:00	0:18:00:00	12780.0770	12752.5456	27.5315	13.6839	13.5739
17:40:00	0:18:20:00	12719.1897	12687.3762	31.8135	13.6764	13.5700
18:00:00	0:18:40:00	12699.7688	12666.6140	33.1548	13.6690	13.5603
18:20:00	0:19:00:00	12698.6473	12666.3653	32.2820	13.6598	13.5525
18:40:00	0:19:20:00	12716.4239	12683.3347	33.0892	13.6412	13.5273
19:00:00	0:19:40:00	12705.9730	12673.5449	32.4280	13.5949	13.4826
19:20:00	0:20:00:00	12691.5756	12658.1262	33.4494	13.5597	13.4476
19:40:00	0:20:20:00	12692.0946	12658.6824	33.4122	13.5245	13.4107
20:00:00	0:20:40:00	12693.5208	12660.4881	33.0327	13.4893	13.3757
20:20:00	0:21:00:00	12702.3520	12670.8804	31.4715	13.4337	13.3135
20:40:00	0:21:20:00	12702.3215	12670.2049	32.1167	13.3595	13.2397
21:00:00	0:21:40:00	12699.5793	12665.5861	33.9932	13.3095	13.1950
21:20:00	0:22:00:00	12696.3683	12663.5743	32.7940	13.2668	13.1522
21:40:00	0:22:20:00	12688.0981	12653.5605	34.5376	13.2334	13.1191
22:00:00	0:22:40:00	12677.5702	12644.4087	33.1615	13.2112	13.0997
22:20:00	0:23:00:00	12668.7714	12636.1275	32.6439	13.1889	13.0783
22:40:00	0:23:20:00	12658.6950	12624.1078	34.5872	13.1444	13.0277
23:00:00	0:23:40:00	12640.1894	12608.6479	31.5415	13.0999	12.9849
23:20:00	1:00:00:00	12627.0085	12595.4541	31.5544	13.0627	12.9480
23:40:00	1:00:20:00	12612.7382	12579.8203	32.9178	13.0275	12.9130
Sep 12, 99 00:00:00	1:00:40:00	12598.8821	12566.6188	32.2634	13.0052	12.8915
00:20:00	1:01:00:00	12582.8389	12550.9332	31.9057	12.9885	12.8760
00:40:00	1:01:20:00	12599.2823	12566.9558	32.3265	12.9291	12.8059
01:00:00	1:01:40:00	12589.3674	12557.6245	31.7429	12.8307	12.7086
01:20:00	1:02:00:00	12577.3502	12544.6764	32.6738	12.7564	12.6346
01:40:00	1:02:20:00	12568.6944	12535.3476	33.3468	12.6932	12.5742
02:00:00	1:02:40:00	12547.7752	12515.1143	32.6609	12.6468	12.5294
02:20:00	1:03:00:00	12534.9714	12503.7011	31.2703	12.6022	12.4846
02:40:00	1:03:20:00	12525.4610	12492.5395	32.9214	12.5650	12.4476
03:00:00	1:03:40:00	12502.8901	12470.8459	32.0441	12.5111	12.3930
03:20:00	1:04:00:00	12480.0096	12448.6182	31.3914	12.4684	12.3521
03:40:00	1:04:20:00	12462.2543	12425.5849	36.6693	12.4293	12.3112
04:00:00	1:04:40:00	12443.8090	12408.7814	35.0276	12.3996	12.2819
04:20:00	1:05:00:00	12427.2122	12393.3152	33.8970	12.3624	12.2468
04:40:00	1:05:20:00	12432.3813	12399.0307	33.3506	12.3178	12.1981
05:00:00	1:05:40:00	12412.4954	12379.2468	33.2487	12.2527	12.1318
05:20:00	1:06:00:00	12397.8220	12363.7408	34.0812	12.2006	12.0810
05:40:00	1:06:20:00	12381.6216	12348.2530	33.3687	12.1615	12.0440
06:00:00	1:06:40:00	12370.7371	12337.1302	33.6069	12.1317	12.0147
06:20:00	1:07:00:00	12372.8990	12338.8742	34.0248	12.1020	11.9835
06:40:00	1:07:20:00	12387.0036	12353.4287	33.5749	12.0182	11.8937
07:00:00	1:07:40:00	12383.7928	12350.1942	33.5986	11.9419	11.8176
07:20:00	1:08:00:00	12377.7463	12343.1191	34.6272	11.8916	11.7707
07:40:00	1:08:20:00	12369.5426	12334.3263	35.2163	11.8506	11.7297
08:00:00	1:08:40:00	12352.9944	12320.0651	32.9293	11.8115	11.6926
08:20:00	1:09:00:00	12354.1821	12318.9645	35.2176	11.7761	11.6575
08:40:00	1:09:20:00	12362.1389	12328.2053	33.9336	11.7128	11.5871
09:00:00	1:09:40:00	12356.0877	12324.6848	31.4029	11.6215	11.4934
09:20:00	1:10:00:00	12347.5852	12314.7216	32.8635	11.5581	11.4347
09:40:00	1:10:20:00	12341.2144	12307.1531	34.0612	11.5115	11.3898

9449Q-16E	9449Q-16E	9448Q-16E	9449Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E	
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC)
10:00:00	1:10:40:00	12334.7968	12300.7081	34.0886	11.4761	11.3546
10:20:00	1:11:00:00	12331.8537	12297.5054	34.3483	11.4462	11.3253
10:40:00	1:11:20:00	12338.5883	12304.0236	34.5647	11.3940	11.2666
11:00:00	1:11:40:00	12323.6514	12290.4500	33.2015	11.3082	11.1844
11:20:00	1:12:00:00	12312.5046	12277.1581	35.3465	11.2672	11.1434
11:40:00	1:12:20:00	12304.6652	12269.0603	35.6050	11.2411	11.1199
12:00:00	1:12:40:00	12298.1755	12263.6142	34.5613	11.2336	11.1140
12:20:00	1:13:00:00	12292.7652	12261.0710	31.6942	11.2261	11.1101
12:40:00	1:13:20:00	12313.1374	12277.6819	35.4555	11.2280	11.1140
13:00:00	1:13:40:00	12303.0039	12271.0094	31.9945	11.2355	11.1199
13:20:00	1:14:00:00	12300.3379	12265.8526	34.6853	11.2541	11.1375
13:40:00	1:14:20:00	12287.4383	12256.1645	31.2738	11.2728	11.1571
14:00:00	1:14:40:00	12280.3651	12245.3218	35.0433	11.3026	11.1884
14:20:00	1:15:00:00	12278.6810	12242.4029	36.2781	11.3343	11.2236
14:40:00	1:15:20:00	12288.6642	12256.6730	31.9912	11.4164	11.3116
15:00:00	1:15:40:00	12284.3378	12248.9854	35.3524	11.4705	11.3604
15:20:00	1:16:00:00	12276.6250	12242.8425	33.7825	11.5078	11.3956
15:40:00	1:16:20:00	12271.6398	12238.3516	33.2883	11.5432	11.4308
16:00:00	1:16:40:00	12269.0212	12233.9446	35.0766	11.5805	11.4699
16:20:00	1:17:00:00	12276.8140	12242.5694	34.2446	11.6271	11.5188
16:40:00	1:17:20:00	12281.0545	12247.5887	33.4658	11.7165	11.6184
17:00:00	1:17:40:00	12274.0371	12241.1387	32.8984	11.8115	11.7082
17:20:00	1:18:00:00	12259.8881	12229.1774	30.7107	11.8767	11.7707
17:40:00	1:18:20:00	12256.3579	12225.0589	31.2990	11.9232	11.8137
18:00:00	1:18:40:00	12245.3018	12217.2073	28.0945	11.9717	11.8644
18:20:00	1:19:00:00	12247.2138	12215.3090	31.9048	12.0275	11.9210
18:40:00	1:19:20:00	12259.9685	12227.5299	32.4386	12.1410	12.0459
19:00:00	1:19:40:00	12254.8469	12223.4777	31.3692	12.2322	12.1279
19:20:00	1:20:00:00	12248.2232	12216.7629	31.4603	12.2824	12.1747
19:40:00	1:20:20:00	12241.5106	12210.4341	31.0765	12.3140	12.2059
20:00:00	1:20:40:00	12241.6415	12209.4282	32.2133	12.3419	12.2312
20:20:00	1:21:00:00	12239.0409	12207.1090	31.9319	12.3624	12.2527
20:40:00	1:21:20:00	12245.0218	12210.7213	34.3005	12.3959	12.2858
21:00:00	1:21:40:00	12250.0344	12218.1428	31.8916	12.4424	12.3345
21:20:00	1:22:00:00	12246.5167	12214.0433	32.4734	12.4647	12.3521
21:40:00	1:22:20:00	12245.2805	12215.6054	29.6751	12.4795	12.3877
22:00:00	1:22:40:00	12243.0332	12209.2190	33.8141	12.4888	12.3774
22:20:00	1:23:00:00	12236.9398	12206.1623	30.7775	12.4981	12.3852
22:40:00	1:23:20:00	12243.9577	12210.8084	33.1494	12.4944	12.3794
23:00:00	1:23:40:00	12235.6879	12203.2335	32.4544	12.4609	12.3443
23:20:00	2:00:00:00	12223.9434	12193.4466	30.4968	12.4405	12.3248
23:40:00	2:00:20:00	12218.2570	12187.7068	30.5502	12.4275	12.3112
Sep 13, 99 00:00:00	2:00:40:00	12204.3173	12174.5870	29.7303	12.4145	12.3014
00:20:00	2:01:00:00	12193.3677	12164.3490	29.0187	12.4089	12.2956
00:40:00	2:01:20:00	12189.7899	12159.4946	30.2953	12.4070	12.2936
01:00:00	2:01:40:00	12192.7717	12161.5775	31.1942	12.3977	12.2819
01:20:00	2:02:00:00	12181.6932	12151.2591	30.4342	12.3364	12.2156
01:40:00	2:02:20:00	12189.0901	12156.9343	32.1557	12.2973	12.1786
02:00:00	2:02:40:00	12182.9280	12152.7865	30.1415	12.2750	12.1591
02:20:00	2:03:00:00	12182.8324	12151.7543	31.0781	12.2582	12.1415
02:40:00	2:03:20:00	12176.4370	12144.4263	32.0107	12.2396	12.1220
03:00:00	2:03:40:00	12192.0676	12160.6953	31.3722	12.2136	12.0967
03:20:00	2:04:00:00	12194.0073	12164.0639	29.9434	12.1578	12.0381
03:40:00	2:04:20:00	12197.1141	12166.8945	30.2196	12.1206	12.0011
04:00:00	2:04:40:00	12192.2289	12159.9277	32.3012	12.0926	11.9757
04:20:00	2:05:00:00	12192.2349	12163.3671	28.8678	12.0722	11.9562
04:40:00	2:05:20:00	12193.2357	12160.7625	32.4732	12.0610	11.9464
05:00:00	2:05:40:00	12189.8298	12159.5578	30.2720	12.0498	11.9328

9449Q-16E	9449Q-16E	9448Q-16E	9449Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E	
Real Time (mm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC) Comments
05:20:00	2:06:00:00	12201.0077	12170.6692	30.3386	12.0331	11.9171 stopped pumping
05:40:00	2:06:20:00	11274.1413	11251.4643	22.6769	12.0759	11.9737
06:00:00	2:06:40:00	11133.4671	11110.0538	23.4134	12.4628	12.5411
06:20:00	2:07:00:00	11024.3073	11001.3131	22.9942	12.9922	13.0530
06:40:00	2:07:20:00	10929.8744	10907.5621	22.3123	13.5041	13.4981
07:00:00	2:07:40:00	10848.4241	10828.5100	21.9141	13.9782	13.8883
07:20:00	2:08:00:00	10776.3440	10756.1072	20.2368	14.3981	14.2412
07:40:00	2:08:20:00	10711.8807	10691.8044	20.0763	14.7805	14.5627
08:00:00	2:08:40:00	10653.0430	10633.3634	19.6796	15.1238	14.8472
08:20:00	2:09:00:00	10597.9792	10578.7288	19.2504	15.4243	15.1160
08:40:00	2:09:20:00	10545.5577	10526.7784	18.7793	15.7098	15.3710
09:00:00	2:09:40:00	10495.1951	10476.9523	18.2428	15.9785	15.6104
09:20:00	2:10:00:00	10446.2490	10428.4263	17.8227	16.2194	15.8091
09:40:00	2:10:20:00	10398.5157	10381.0633	17.4524	16.4381	16.0250
10:00:00	2:10:40:00	10351.4547	10334.4385	17.0162	16.6438	16.2081
10:20:00	2:11:00:00	10305.2298	10288.7504	16.4794	16.8384	16.4180
10:40:00	2:11:20:00	10259.8948	10243.5734	16.3214	17.0054	16.5566
11:00:00	2:11:40:00	10215.5995	10199.5239	16.0756	17.1851	16.7124
11:20:00	2:12:00:00	10171.6684	10156.0553	15.6131	17.3390	16.8451
11:40:00	2:12:20:00	10128.4808	10113.1569	15.3238	17.4746	17.0008
12:00:00	2:12:40:00	10085.9309	10071.0488	14.8821	17.6046	17.1506
12:20:00	2:13:00:00	10044.1959	10029.4552	14.7407	17.7437	17.2601
12:40:00	2:13:20:00	10003.1099	9988.7005	14.4094	17.8663	17.3695
13:00:00	2:13:40:00	9962.5643	9948.3721	14.1921	17.9559	17.5000
13:20:00	2:14:00:00	9922.5329	9908.6605	13.8724	18.0693	17.6036
13:40:00	2:14:20:00	9883.5102	9870.0061	13.5040	18.1753	17.7340
14:00:00	2:14:40:00	9841.9910	9831.6555	13.3355	18.2631	17.8145
14:20:00	2:15:00:00	9807.0443	9794.0760	12.9683	18.3489	17.9237
14:40:00	2:15:20:00	9769.4724	9756.9161	12.5562	18.4403	18.0406
15:00:00	2:15:40:00	9732.7732	9720.4955	12.2778	18.5023	18.1345
15:20:00	2:16:00:00	9696.6601	9684.9143	11.7458	18.5754	18.2417
15:40:00	2:16:20:00	9660.3409	9649.6476	10.6933	18.6557	18.2761
16:00:00	2:16:40:00	9624.6838	9615.1435	9.5403	18.7159	18.3527
16:20:00	2:17:00:00	9587.4133	9581.2063	6.2070	18.7944	18.4254
16:40:00	2:17:20:00	9552.7726	9547.8208	4.9518	18.8381	18.5421
17:00:00	2:17:40:00	9525.8788	9514.9023	10.9765	18.9111	18.6166
17:20:00	2:18:00:00	9494.4364	9482.7507	11.6857	18.9512	18.6702
17:40:00	2:18:20:00	9463.3974	9451.0346	12.3628	18.9986	18.7409
18:00:00	2:18:40:00	9432.3775	9419.5878	12.7897	19.0570	18.7925
18:20:00	2:19:00:00	9401.7368	9388.9916	12.7453	19.1116	18.8823
18:40:00	2:19:20:00	9371.4397	9358.8137	12.6259	19.1663	18.9110
19:00:00	2:19:40:00	9341.5087	9328.9108	12.5978	19.2100	18.9511
19:20:00	2:20:00:00	9312.1965	9299.6766	12.5198	19.2611	18.9893
19:40:00	2:20:20:00	9283.1900	9270.8863	12.3037	19.3030	19.0389
20:00:00	2:20:40:00	9254.7455	9242.5602	12.1853	19.3449	19.0962
20:20:00	2:21:00:00	9226.6586	9214.5829	12.0757	19.3940	19.1478
20:40:00	2:21:20:00	9198.9408	9186.8634	12.0774	19.4323	19.1764
21:00:00	2:21:40:00	9171.6668	9159.8766	11.7903	19.4905	19.2470
21:20:00	2:22:00:00	9144.9301	9133.1178	11.8123	19.5342	19.2890
21:40:00	2:22:20:00	9118.4283	9106.6760	11.7522	19.5633	19.2699
22:00:00	2:22:40:00	9092.5067	9080.9697	11.5370	19.6034	19.3672
22:20:00	2:23:00:00	9066.9082	9055.4037	11.5045	19.6289	19.3939
22:40:00	2:23:20:00	9041.6967	9030.2423	11.4545	19.6671	19.4416
23:00:00	2:23:40:00	9016.7978	9005.4110	11.3867	19.7126	19.4626
23:20:00	3:00:00:00	8992.2998	8981.0067	11.2931	19.7362	19.5007
23:40:00	3:00:20:00	8967.9552	8956.7175	11.2377	19.7617	19.5198
Sep 14, 99 00:00:00	3:00:40:00	8944.2370	8933.2106	11.0264	19.7853	19.6018
00:20:00	3:01:00:00	8920.8123	8909.6524	11.1599	19.8181	19.6056

9449Q-16E	9449Q-16E	9448Q-16E	9448Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E		
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC)	Comments
00:40:00	3:01:20:00	8897.7365	8886.7900	10.9964	19.8581	19.6208	
01:00:00	3:01:40:00	8875.0581	8864.0632	10.9949	19.8944	19.6551	
01:20:00	3:02:00:00	8852.6186	8841.7439	10.8747	19.9199	19.6685	
01:40:00	3:02:20:00	8830.5886	8819.6465	10.9421	19.9435	19.6837	
02:00:00	3:02:40:00	8808.7332	8798.0336	10.6997	19.9872	19.7199	
02:20:00	3:03:00:00	8787.1029	8776.4128	10.6902	20.0017	19.7637	
02:40:00	3:03:20:00	8765.9666	8755.3356	10.6310	20.0308	19.7790	
03:00:00	3:03:40:00	8744.9275	8734.2901	10.6374	20.0508	19.8190	
03:20:00	3:04:00:00	8724.1997	8713.7117	10.4880	20.0780	19.8590	
03:40:00	3:04:20:00	8703.7353	8693.3089	10.4264	20.1089	19.8914	
04:00:00	3:04:40:00	8683.4271	8672.9205	10.5066	20.1453	19.8723	
04:20:00	3:05:00:00	8663.4235	8652.9908	10.4327	20.1616	19.8876	
04:40:00	3:05:20:00	8643.7411	8633.5164	10.2247	20.1961	19.9276	
05:00:00	3:05:40:00	8624.3844	8614.0779	10.3065	20.2088	19.9295	
05:20:00	3:06:00:00	8605.0139	8594.8044	10.2095	20.2306	19.9580	
05:40:00	3:06:20:00	8585.8397	8575.7761	10.0637	20.2543	19.9752	
06:00:00	3:06:40:00	8566.9424	8556.8766	10.0658	20.2724	20.0209	
06:20:00	3:07:00:00	8548.2648	8538.2390	10.0258	20.2942	20.0494	
06:40:00	3:07:20:00	8529.7543	8519.7449	10.0094	20.3087	20.0342	
07:00:00	3:07:40:00	8511.4926	8501.5582	9.9345	20.3360	20.0684	
07:20:00	3:08:00:00	8493.4619	8483.7118	9.7501	20.3541	20.0837	
07:40:00	3:08:20:00	8475.8967	8466.0249	9.8718	20.3850	20.1351	
08:00:00	3:08:40:00	8458.4020	8448.4271	9.9749	20.4250	20.1103	
08:20:00	3:09:00:00	8441.1535	8431.3369	9.8167	20.4159	20.1427	
08:40:00	3:09:20:00	8424.0433	8414.2132	9.8301	20.4177	20.1579	
09:00:00	3:09:40:00	8407.2424	8397.4551	9.7874	20.4268	20.1788	
09:20:00	3:10:00:00	8390.4739	8380.6590	9.8148	20.4522	20.1617	
09:40:00	3:10:20:00	8373.9835	8364.3483	9.6352	20.4721	20.2074	
10:00:00	3:10:40:00	8357.7717	8348.0184	9.7534	20.4867	20.2093	
10:20:00	3:11:00:00	8341.7997	8332.1925	9.6073	20.5030	20.2492	
10:40:00	3:11:20:00	8325.9740	8316.2986	9.6754	20.5103	20.2435	
11:00:00	3:11:40:00	8310.2475	8300.5953	9.6522	20.5393	20.2625	
11:20:00	3:12:00:00	8294.6899	8285.1521	9.5378	20.5611	20.2625	
11:40:00	3:12:20:00	8279.3394	8269.7997	9.5396	20.5647	20.2740	
12:00:00	3:12:40:00	8264.2534	8254.7242	9.5292	20.5756	20.3006	
12:20:00	3:13:00:00	8249.1426	8239.6110	9.5317	20.5810	20.3082	
12:40:00	3:13:20:00	8234.2145	8224.7137	9.5008	20.6046	20.3063	
13:00:00	3:13:40:00	8219.3432	8210.0488	9.2943	20.6119	20.3500	
13:20:00	3:14:00:00	8204.8245	8195.4239	9.4006	20.6300	20.3729	
13:40:00	3:14:20:00	8190.3519	8180.9225	9.4294	20.6554	20.4052	
14:00:00	3:14:40:00	8176.0509	8166.7302	9.3207	20.6772	20.4090	
14:20:00	3:15:00:00	8161.9776	8152.6619	9.3157	20.6718	20.4223	
14:40:00	3:15:20:00	8147.9143	8138.6517	9.2626	20.6917	20.4185	
15:00:00	3:15:40:00	8133.9136	8124.6563	9.2573	20.7062	20.4394	
15:20:00	3:16:00:00	8120.1089	8110.8943	9.2146	20.7225	20.4337	
15:40:00	3:16:20:00	8106.4577	8097.3795	9.0782	20.7443	20.4470	
16:00:00	3:16:40:00	8092.9809	8083.8415	9.1394	20.7697	20.4546	
16:20:00	3:17:00:00	8079.4980	8070.2331	9.2649	20.7769	20.4660	
16:40:00	3:17:20:00	8066.1847	8057.0814	9.1033	20.7697	20.4850	
17:00:00	3:17:40:00	8053.0729	8043.9467	9.1262	20.7824	20.4869	
17:20:00	3:18:00:00	8040.0699	8031.0276	9.0422	20.7969	20.5002	
17:40:00	3:18:20:00	8027.1757	8018.1509	9.0247	20.8132	20.5135	
18:00:00	3:18:40:00	8014.5395	8005.6003	8.9392	20.8187	20.5231	
18:20:00	3:19:00:00	8001.9269	7992.8787	9.0482	20.8332	20.5326	
18:40:00	3:19:20:00	7989.3596	7980.5000	8.8596	20.8585	20.5535	
19:00:00	3:19:40:00	7977.0900	7968.0379	9.0521	20.8513	20.5421	
19:20:00	3:20:00:00	7964.8654	7955.7749	9.0905	20.8513	20.5820	
19:40:00	3:20:20:00	7952.6015	7943.7055	8.8959	20.8767	20.5839	

9449Q-16E	9449Q-16E	9448Q-16E	9449Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E	
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC) Comments
20:00:00	3:20:40:00	7940.4652	7931.6238	8.8414	20.8876	20.6048
20:20:00	3:21:00:00	7928.6086	7919.5614	9.0471	20.8785	20.6086
20:40:00	3:21:20:00	7916.7750	7907.8258	8.9492	20.8785	20.6086
21:00:00	3:21:40:00	7905.0070	7896.1560	8.8510	20.8803	20.6371
21:20:00	3:22:00:00	7893.3934	7884.4771	8.9163	20.9021	20.6409
21:40:00	3:22:20:00	7881.6919	7872.8481	8.8438	20.9202	20.6466
22:00:00	3:22:40:00	7870.6194	7861.7378	8.8816	20.9220	20.6428
22:20:00	3:23:00:00	7859.7422	7850.9837	8.7585	20.9184	20.6656
22:40:00	3:23:20:00	7848.4968	7839.6956	8.8012	20.9383	20.6713
23:00:00	3:23:40:00	7837.2065	7828.4852	8.7213	20.9401	20.6979
23:20:00	4:00:00:00	7826.2205	7817.3466	8.8738	20.9383	20.6751
23:40:00	4:00:20:00	7815.3660	7806.5339	8.8320	20.9655	20.7055
Sep 15, 99 00:00:00	4:00:40:00	7804.5541	7795.7793	8.7748	20.9818	20.6941
00:20:00	4:01:00:00	7793.8288	7785.1026	8.7262	21.0054	20.6922
00:40:00	4:01:20:00	7783.2774	7774.5588	8.7186	20.9999	20.7264
01:00:00	4:01:40:00	7772.7914	7763.9951	8.7963	20.9891	20.7321
01:20:00	4:02:00:00	7762.4572	7753.7588	8.6984	21.0054	20.7340
01:40:00	4:02:20:00	7752.0784	7743.2386	8.8398	21.0362	20.7283
02:00:00	4:02:40:00	7741.7009	7733.1164	8.5845	21.0307	20.7264
02:20:00	4:03:00:00	7731.4543	7722.8279	8.6264	21.0217	20.7492
02:40:00	4:03:20:00	7721.4022	7712.7042	8.6980	21.0325	20.7587
03:00:00	4:03:40:00	7711.4153	7702.7784	8.6369	21.0416	20.7758
03:20:00	4:04:00:00	7701.4929	7692.9461	8.5469	21.0561	20.7833
03:40:00	4:04:20:00	7691.6585	7682.8781	8.7803	21.0597	20.7492
04:00:00	4:04:40:00	7681.8450	7673.2830	8.5620	21.0688	20.7871
04:20:00	4:05:00:00	7672.0103	7663.4116	8.5987	21.0724	20.7720
04:40:00	4:05:20:00	7662.3748	7653.7633	8.6114	21.0489	20.7833
05:00:00	4:05:40:00	7652.7323	7644.1261	8.6062	21.0797	20.8099
05:20:00	4:06:00:00	7643.1359	7634.5875	8.5484	21.0887	20.8042
05:40:00	4:06:20:00	7633.6478	7625.1562	8.4916	21.0996	20.8289
06:00:00	4:06:40:00	7624.2673	7615.8056	8.4616	21.1159	20.8403
06:20:00	4:07:00:00	7614.9520	7606.4042	8.5478	21.1304	20.8251
06:40:00	4:07:20:00	7605.7692	7597.1736	8.5956	21.1340	20.8099
07:00:00	4:07:40:00	7596.4970	7587.9311	8.5659	21.1485	20.8156
07:20:00	4:08:00:00	7587.4469	7578.9821	8.4647	21.1413	20.8688
07:40:00	4:08:20:00	7578.3073	7569.7747	8.5327	21.1449	20.8479
08:00:00	4:08:40:00	7569.2326	7560.9226	8.3100	21.1503	20.8802
08:20:00	4:09:00:00	7560.4223	7551.8105	8.6118	21.1413	20.8498
08:40:00	4:09:20:00	7551.4540	7542.8136	8.6404	21.1557	20.8650
09:00:00	4:09:40:00	7542.4660	7533.7939	8.6691	21.1612	20.8498
09:20:00	4:10:00:00	7533.8909	7525.3838	8.5071	21.1684	20.8859
09:40:00	4:10:20:00	7525.3329	7516.8760	8.4568	21.1920	20.8821
10:00:00	4:10:40:00	7516.6947	7508.3218	8.3728	21.1902	20.8897
10:20:00	4:11:00:00	7508.1233	7499.6989	8.4244	21.1829	20.8897
10:40:00	4:11:20:00	7499.5053	7491.1664	8.3389	21.1865	20.9163
11:00:00	4:11:40:00	7490.9138	7482.5731	8.3407	21.1739	20.9125
11:20:00	4:12:00:00	7482.4296	7473.8751	8.5545	21.1666	20.9030
11:40:00	4:12:20:00	7473.8282	7465.4292	8.3990	21.1865	20.9049
12:00:00	4:12:40:00	7465.3817	7456.9000	8.4817	21.1974	20.9201
12:20:00	4:13:00:00	7457.0172	7448.5756	8.4415	21.2228	20.9201
12:40:00	4:13:20:00	7448.7256	7440.2640	8.4617	21.2246	20.9239
13:00:00	4:13:40:00	7440.4723	7432.1629	8.3095	21.2409	20.9523
13:20:00	4:14:00:00	7432.3574	7424.0944	8.2630	21.2354	20.9523
13:40:00	4:14:20:00	7424.1711	7415.6828	8.4883	21.2463	20.9390
14:00:00	4:14:40:00	7416.0323	7407.6221	8.4101	21.2463	20.9542
14:20:00	4:15:00:00	7408.0451	7399.7696	8.2754	21.2481	20.9808
14:40:00	4:15:20:00	7400.0354	7391.4836	8.5517	21.2517	20.9409
15:00:00	4:15:40:00	7392.0887	7383.7415	8.3472	21.2608	20.9751

9449Q-16E	9449Q-16E	9448Q-16E	9449Q-16E s 9448Q-16E	9449Q-16E	9448Q-16E	
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC)
	15:20:00	4:16:00:00	7384.1448	7375.7997	8.3451	21.2626
	15:40:00	4:16:20:00	7376.3765	7368.0861	8.2904	21.2608
	16:00:00	4:16:40:00	7368.5360	7360.2130	8.3231	21.2753
	16:20:00	4:17:00:00	7360.8112	7352.5959	8.2154	21.2735
	16:40:00	4:17:20:00	7353.0880	7344.8079	8.2801	21.2680
	17:00:00	4:17:40:00	7345.5534	7337.0365	8.5169	21.2789
	17:20:00	4:18:00:00	7337.8979	7329.5845	8.3134	21.2680
	17:40:00	4:18:20:00	7330.2970	7321.8025	8.4946	21.2807
	18:00:00	4:18:40:00	7322.7237	7314.1842	8.5394	21.2807
	18:20:00	4:19:00:00	7315.1852	7306.9209	8.2643	21.2988
	18:40:00	4:19:20:00	7307.7632	7299.4070	8.3562	21.3006
	19:00:00	4:19:40:00	7300.3707	7292.0940	8.2767	21.2861
	19:20:00	4:20:00:00	7292.9815	7284.5006	8.4809	21.3097
	19:40:00	4:20:20:00	7285.6446	7277.1816	8.4630	21.3151
	20:00:00	4:20:40:00	7278.4210	7270.1488	8.2722	21.3115
	20:20:00	4:21:00:00	7271.1857	7262.8665	8.3192	21.2879
	20:40:00	4:21:20:00	7263.9719	7255.6445	8.3274	21.3079
	21:00:00	4:21:40:00	7256.7805	7248.4350	8.3454	21.3260
	21:20:00	4:22:00:00	7249.6231	7241.2015	8.4216	21.3205
	21:40:00	4:22:20:00	7242.6340	7234.2474	8.3866	21.3260
	22:00:00	4:22:40:00	7235.5390	7227.1727	8.3663	21.3260
	22:20:00	4:23:00:00	7228.4212	7220.1406	8.2806	21.3278
	22:40:00	4:23:20:00	7221.5478	7213.3264	8.2214	21.3205
	23:00:00	4:23:40:00	7214.7493	7206.3529	8.3965	21.3350
	23:20:00	5:00:00:00	7207.5879	7199.2960	8.2919	21.3368
	23:40:00	5:00:20:00	7200.9446	7192.5972	8.3474	21.3459
Sep 16, 99	00:00:00	5:00:40:00	7194.3717	7186.0291	8.3426	21.3459
	00:20:00	5:01:00:00	7187.7304	7179.3433	8.3870	21.3513
	00:40:00	5:01:20:00	7181.0019	7172.6943	8.3075	21.3567
	01:00:00	5:01:40:00	7174.2069	7165.8083	8.3986	21.3640
	01:20:00	5:02:00:00	7167.2923	7158.7941	8.4982	21.3531
	01:40:00	5:02:20:00	7160.6964	7152.3878	8.3086	21.3549
	02:00:00	5:02:40:00	7153.8740	7145.6901	8.1839	21.3712
	02:20:00	5:03:00:00	7147.2825	7139.0075	8.2750	21.3658
	02:40:00	5:03:20:00	7140.6202	7132.5196	8.1005	21.3694
	03:00:00	5:03:40:00	7133.9829	7125.9615	8.0214	21.3676
	03:20:00	5:04:00:00	7127.2816	7119.2113	8.0702	21.3640
	03:40:00	5:04:20:00	7120.8962	7112.9367	7.9595	21.3767
	04:00:00	5:04:40:00	7114.4901	7106.4886	8.0015	21.3875
	04:20:00	5:05:00:00	7108.0245	7100.0779	7.9466	21.3893
	04:40:00	5:05:20:00	7101.6616	7093.3822	8.2794	21.4002
	05:00:00	5:05:40:00	7095.2395	7087.0085	8.2309	21.4020
	05:20:00	5:06:00:00	7088.9840	7081.0084	7.9755	21.4147
	05:40:00	5:06:20:00	7082.3540	7074.7403	7.6137	21.4020
	06:00:00	5:06:40:00	7075.9753	7068.3723	7.6030	21.4038
	06:20:00	5:07:00:00	7068.2136	7062.1209	6.0927	21.3911
06:40:00	5:07:20:00	7062.9771	7055.9578	7.0194	21.4092	
07:00:00	5:07:40:00	7057.1796	7049.7777	7.4019	21.4201	
07:20:00	5:08:00:00	7050.2169	7043.6887	6.5282	21.4165	
07:40:00	5:08:20:00	7043.9456	7037.3177	6.6279	21.4201	
08:00:00	5:08:40:00	7037.9327	7031.3967	6.5361	21.4273	
08:20:00	5:09:00:00	7031.0340	7025.4494	5.5846	21.4255	
08:40:00	5:09:20:00	7024.3299	7019.4148	4.9151	21.4255	
09:00:00	5:09:40:00	7016.4503	7013.4850	2.9653	21.4255	
09:20:00	5:10:00:00	7012.2602	7007.2023	5.0579	21.4400	
09:40:00	5:10:20:00	7004.8594	7001.3748	3.4846	21.4400	
10:00:00	5:10:40:00	6995.8969	6995.8258	0.0710	21.4328	
10:20:00	5:11:00:00	6989.8836	6989.8049	0.0787	21.4400	

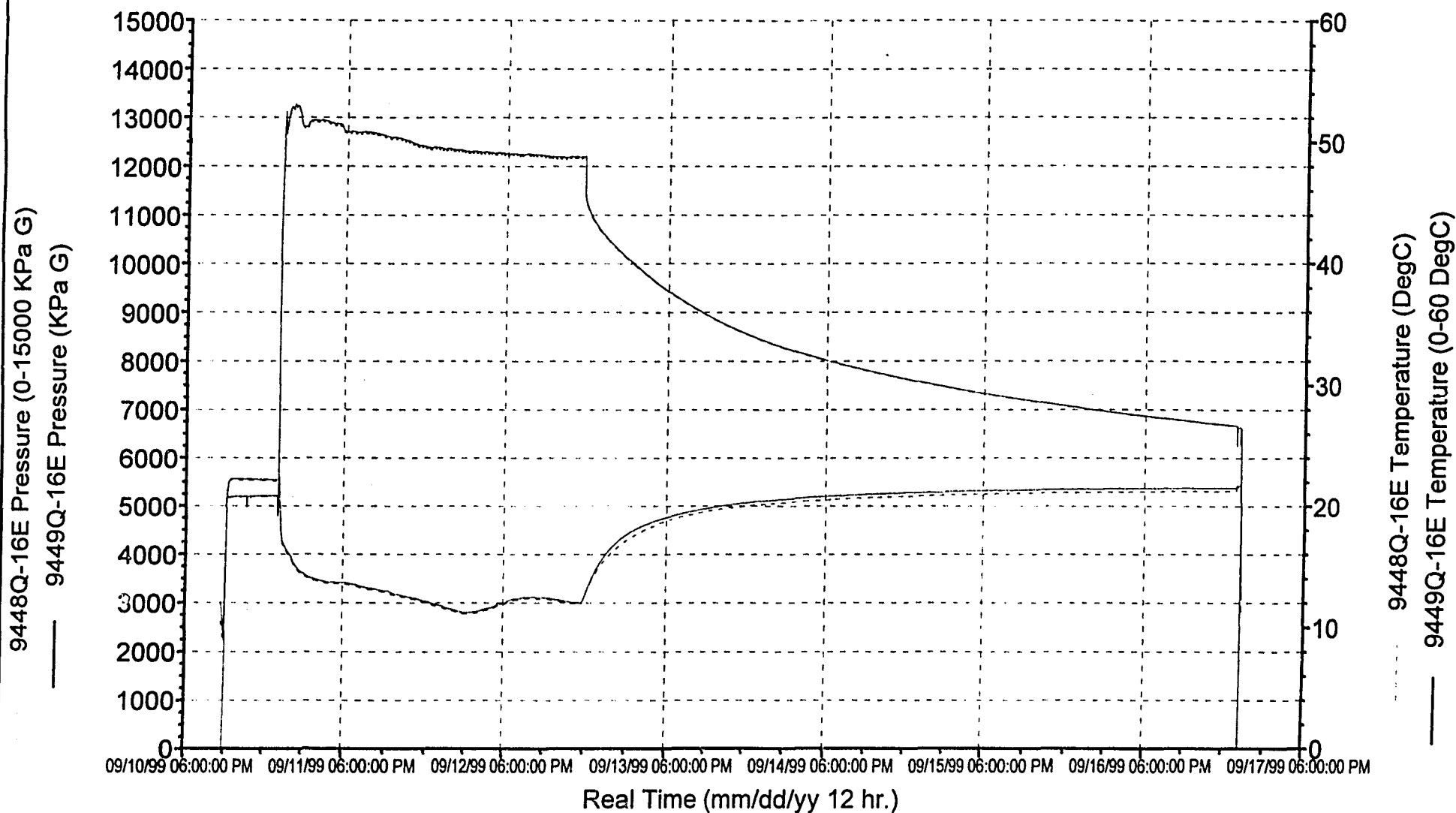
9449Q-16E	9449Q-16E	9448Q-16E	9448Q-16E	9449Q-16E	9448Q-16E		
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS	Pressure (KPa G)	Pressure (KPa G)	Press. Diff. (KPa)	Temperature (DegC)	Temperatura (DegC)	
						Comments	
10:40:00	5:11:20:00	6903.6841	6984.0216	-0.3375	21.4346	21.1838	
11:00:00	5:11:40:00	6978.4860	6977.9988	0.4872	21.4291	21.1687	
11:20:00	5:12:00:00	6973.9872	6972.5790	1.4082	21.4201	21.1990	
11:40:00	5:12:20:00	6968.4555	6966.7397	1.7158	21.4237	21.2028	
12:00:00	5:12:40:00	6961.0552	6961.0326	0.0225	21.4509	21.1933	
12:20:00	5:13:00:00	6955.2592	6955.0748	0.1844	21.4581	21.1857	
12:40:00	5:13:20:00	6949.8376	6949.6199	0.2177	21.4599	21.1895	
13:00:00	5:13:40:00	6945.1851	6943.8370	1.3482	21.4527	21.1687	
13:20:00	5:14:00:00	6940.0247	6938.4840	1.5407	21.4545	21.1781	
13:40:00	5:14:20:00	6934.8208	6932.9669	1.8539	21.4563	21.2047	
14:00:00	5:14:40:00	6929.8809	6927.3496	2.5314	21.4545	21.1819	
14:20:00	5:15:00:00	6923.4896	6921.8036	1.6859	21.4708	21.1838	
14:40:00	5:15:20:00	6919.1217	6916.2412	2.8804	21.4617	21.1800	
15:00:00	5:15:40:00	6913.7202	6910.6646	3.0556	21.4653	21.2009	
15:20:00	5:16:00:00	6908.7804	6905.1876	3.5928	21.4635	21.1971	
15:40:00	5:16:20:00	6903.6198	6899.9395	3.6803	21.4653	21.1838	
16:00:00	5:16:40:00	6898.2182	6894.4913	3.7269	21.4690	21.2199	
16:20:00	5:17:00:00	6893.2116	6889.0143	4.1972	21.4690	21.2161	
16:40:00	5:17:20:00	6887.6296	6883.8573	3.7723	21.4798	21.2047	
17:00:00	5:17:40:00	6882.8903	6878.1987	4.6916	21.4726	21.1971	
17:20:00	5:18:00:00	6877.6394	6873.1920	4.4474	21.4780	21.2085	
17:40:00	5:18:20:00	6872.4585	6867.9344	4.5241	21.4780	21.2218	
18:00:00	5:18:40:00	6867.8063	6862.7883	5.0181	21.4708	21.2142	
18:20:00	5:19:00:00	6862.3983	6857.4817	4.9166	21.4816	21.1952	
18:40:00	5:19:20:00	6857.4117	6852.5713	4.8404	21.4834	21.2256	
19:00:00	5:19:40:00	6852.5588	6847.2705	5.2884	21.4816	21.2237	
19:20:00	5:20:00:00	6847.1506	6842.1616	4.9890	21.4525	21.1990	
19:40:00	5:20:20:00	6842.2139	6837.0960	5.1179	21.4871	21.2350	
20:00:00	5:20:40:00	6837.0933	6831.7845	5.3089	21.4925	21.2294	
20:20:00	5:21:00:00	6831.9928	6826.3769	5.6160	21.4997	21.2047	
20:40:00	5:21:20:00	6826.8923	6821.6951	5.1972	21.5070	21.2407	
21:00:00	5:21:40:00	6822.1766	6816.7461	5.4305	21.4979	21.2578	
21:20:00	5:22:00:00	6817.3640	6811.5634	5.8006	21.4997	21.2218	
21:40:00	5:22:20:00	6812.4976	6806.5453	5.9522	21.4889	21.2294	
22:00:00	5:22:40:00	6807.6414	6801.7883	5.8532	21.4907	21.2540	
22:20:00	5:23:00:00	6802.8354	6796.8770	5.9584	21.4852	21.2540	
22:40:00	5:23:20:00	6797.8855	6791.9066	5.9789	21.4943	21.2635	
23:00:00	5:23:40:00	6793.1833	6786.9912	6.1921	21.4943	21.2313	
23:20:00	6:00:00:00	6788.3639	6782.4631	5.9008	21.5033	21.2616	
23:40:00	6:00:20:00	6783.6181	6777.3599	6.2582	21.5033	21.2540	
Sep 17, 99 00:00:00	6:00:40:00	6778.7114	6772.6899	6.0215	21.5124	21.2331	
00:20:00	6:01:00:00	6773.9588	6767.7786	6.1801	21.5196	21.2331	
00:40:00	6:01:20:00	6769.1729	6763.1228	6.0500	21.5160	21.2483	
01:00:00	6:01:40:00	6764.6116	6758.5199	6.0917	21.5052	21.2673	
01:20:00	6:02:00:00	6759.9833	6753.7220	6.2612	21.4961	21.2464	
01:40:00	6:02:20:00	6755.2506	6748.8576	6.3930	21.5052	21.2635	
02:00:00	6:02:40:00	6750.5214	6744.2503	6.2710	21.5106	21.2654	
02:20:00	6:03:00:00	6745.7590	6739.5110	6.2481	21.5052	21.2502	
02:40:00	6:03:20:00	6741.0933	6734.7045	6.3888	21.5124	21.2730	
03:00:00	6:03:40:00	6736.4580	6730.0662	6.3919	21.5106	21.2635	
03:20:00	6:04:00:00	6731.7922	6725.3852	6.4070	21.5178	21.2540	
03:40:00	6:04:20:00	6727.1711	6720.7816	6.3895	21.5015	21.2730	
04:00:00	6:04:40:00	6722.4510	6716.0786	6.3724	21.5196	21.2711	
04:20:00	6:05:00:00	6717.8921	6711.2541	6.6380	21.5287	21.2559	
04:40:00	6:05:20:00	6713.1824	6706.7373	6.4451	21.5359	21.2597	
05:00:00	6:05:40:00	6708.6651	6702.3162	6.3488	21.5251	21.2673	
05:20:00	6:06:00:00	6704.1369	6697.6815	6.4553	21.5251	21.2749	
05:40:00	6:06:20:00	6699.5814	6693.0741	6.5073	21.5305	21.2768	

9448Q-16E	9449Q-16E	9448Q-16E	9449Q-16E	9449Q-16E	9448Q-16E	
Real Time (mmm dd,yy 24 hr)	Elapsed Time DD:HH:MM:SS)	Pressure (KPa G)	Pressure (KPa G)	s 9448Q-16E Press. Diff. (KPa)	Temperature (DegC)	Temperature (DegC)
06:00:00	6:06:40:00	6685.0767	6688.4053	6.6715	21.5287	21.2559
06:20:00	6:07:00:00	6690.4776	6684.0505	6.4272	21.5341	21.2881
06:40:00	6:07:20:00	6686.0401	6679.5660	6.4741	21.5305	21.2881
07:00:00	6:07:40:00	6681.5465	6675.0765	6.4701	21.5178	21.2862
07:20:00	6:08:00:00	6677.1688	6670.4588	6.7101	21.5196	21.2844
07:40:00	6:08:20:00	6672.4826	6665.8533	6.6293	21.5251	21.2711
08:00:00	6:08:40:00	6637.7357	6632.6732	5.0625	21.7240	21.6047
08:20:00	6:09:00:00	6600.3943	6634.3290	-33.9347	21.6860	21.5156
08:27:00	6:09:07:00	6610.0949	6604.3575	5.7375	21.7692	21.6596 off bottom
08:47:00	6:09:27:00	-25.6774	1.7852	-27.4627	12.4014	10.9340

Pressure & Temperature vs. Real Time

Company: Lee Tool, Div. of Schlumberger
Client: Chevron Canada Resources
Remarks: 9449q-16e bottom recorder & 9448q-16e top recorder

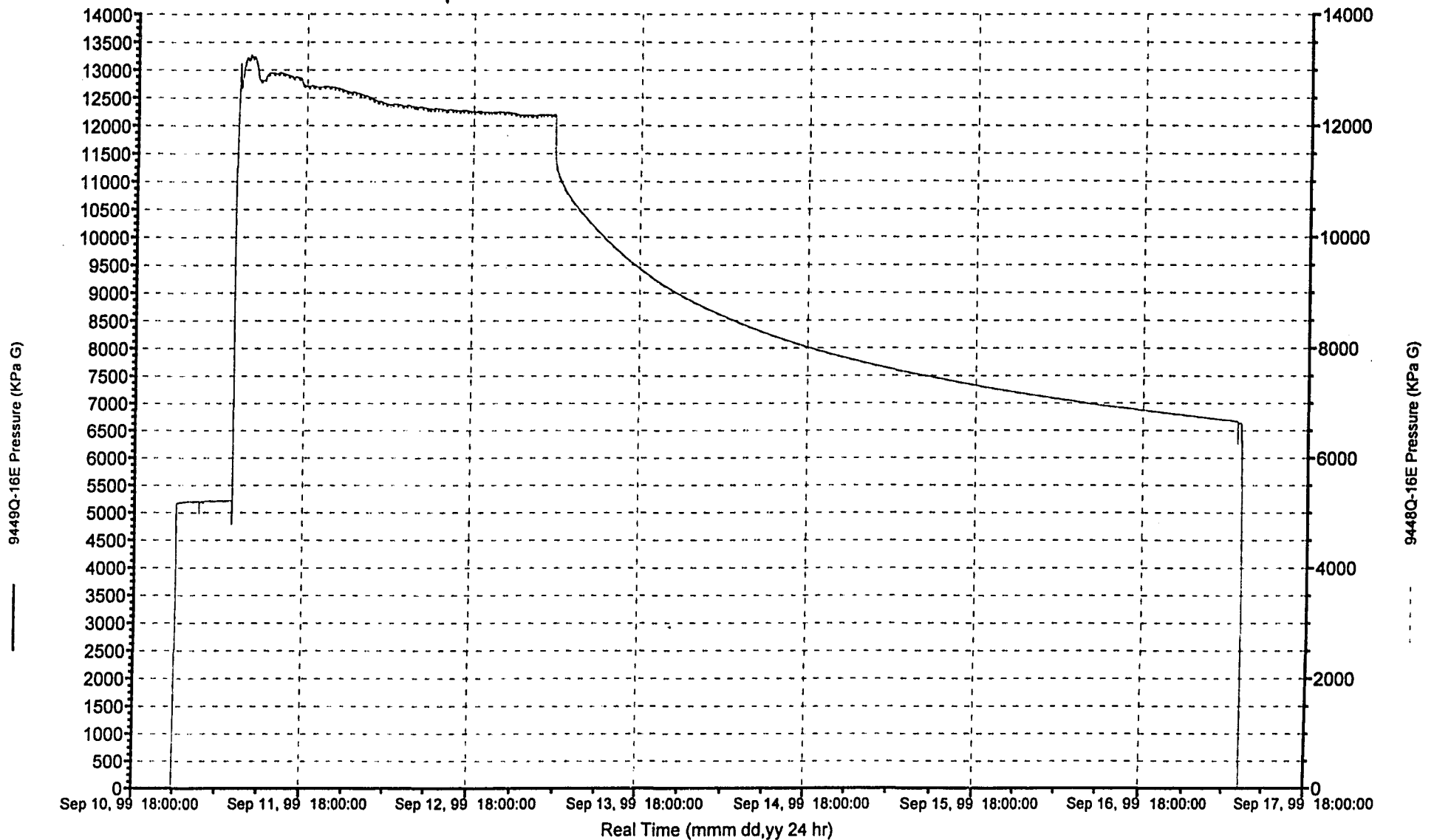
Field: Undefined
Well Name: Chevron et al McKay Lakes
Well Number: 0-80



Pressure vs. Real Time

Company: Lee Tool, Div. of Schlumberger
Client: Chevron Canada Resources
Remarks: 9449q-16e bottom recorder & 9448q-16e top recorder

Field: Undefined
Well Name: Chevron et al McKay Lakes
Well Number: 0-80



**TENTATIVE
WELLSITE
PLAN**

OVERSIZED

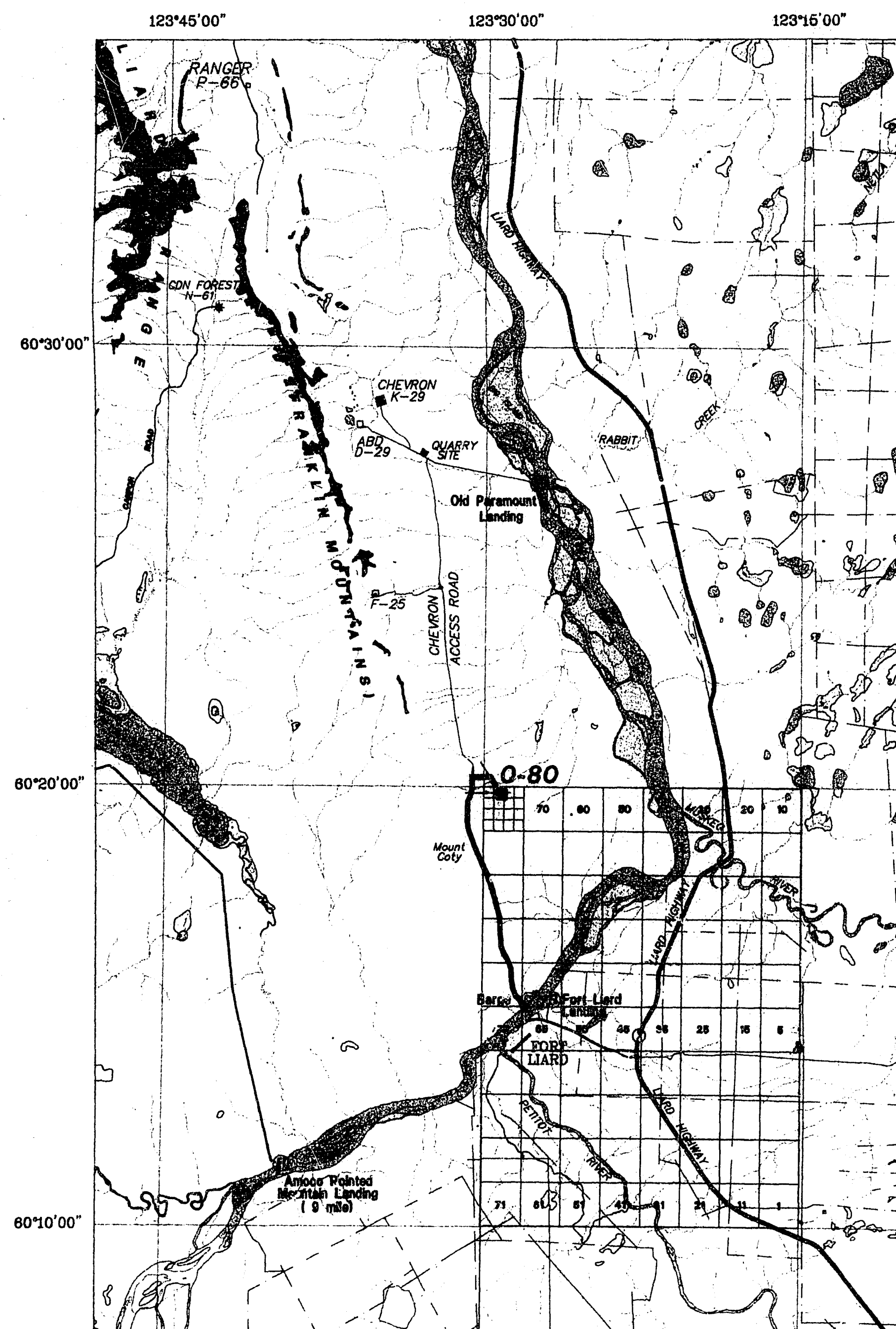
DOCUMENT

FILMED

ON

35mm

Station	NAD83				NAD27			
	UTM Zone: 10, CM: 123W Northing	Easting	Geographic Latitude	Longitude	UTM Zone: 10, CM: 123W Northing	Easting	Geographic Latitude	Longitude
Surface 0-80	6,688,329.13	473,173.72	60° 19' 50.161" N	123° 29' 8.779" W	6,688,110.34	473,256.18	60° 19' 40.955" N	123° 29' 3.462" W
CFL021	6,688,389.59	473,275.37	60° 19' 52.139" N	123° 29' 2.312" W	6,688,176.81	473,355.81	60° 19' 51.933" N	123° 28' 56.997" W
CFL022	6,688,386.06	472,564.11	60° 19' 51.854" N	123° 29' 48.679" W	6,688,173.26	472,644.39	60° 19' 51.648" N	123° 29' 43.372" W
LN-FTL51_SP-1009	6,688,602.02	472,962.24	60° 19' 58.931" N	123° 29' 22.828" W	6,688,389.23	473,042.47	60° 19' 58.724" N	123° 29' 17.526" W
LN-FTL51_SP-1021	6,688,354.01	473,121.96	60° 19' 50.953" N	123° 29' 12.296" W	6,688,141.23	473,202.39	60° 19' 50.747" N	123° 29' 6.981" W
LN-FTL13_SP-1213	6,688,356.29	473,215.04	60° 19' 52.115" N	123° 29' 8.245" W	6,688,176.51	473,295.47	60° 19' 51.909" N	123° 29' 0.930" W
LN-FTL13_SP-1229	6,688,388.39	473,033.50	60° 19' 52.043" N	123° 29' 18.079" W	6,688,175.60	473,113.89	60° 19' 51.837" N	123° 29' 12.767" W
LN-FTL13_SP-1245	6,688,386.87	472,726.79	60° 19' 51.920" N	123° 29' 38.074" W	6,688,174.07	472,807.10	60° 19' 51.713" N	123° 29' 32.765" W



LOCATION DETAIL

SCALE : 1 : 200 000

TENTATIVE
WELLSITE PLAN
OF
CHEVRON et al LIARD 0-80
IN UNIT 0, SECTION 80
GRID AREA 60°20', 123°15'
NORTHWEST TERRITORIES **RON**

CHALLENGER
SURVEYS & SERVICES LTD.
EDMONTON - CALGARY

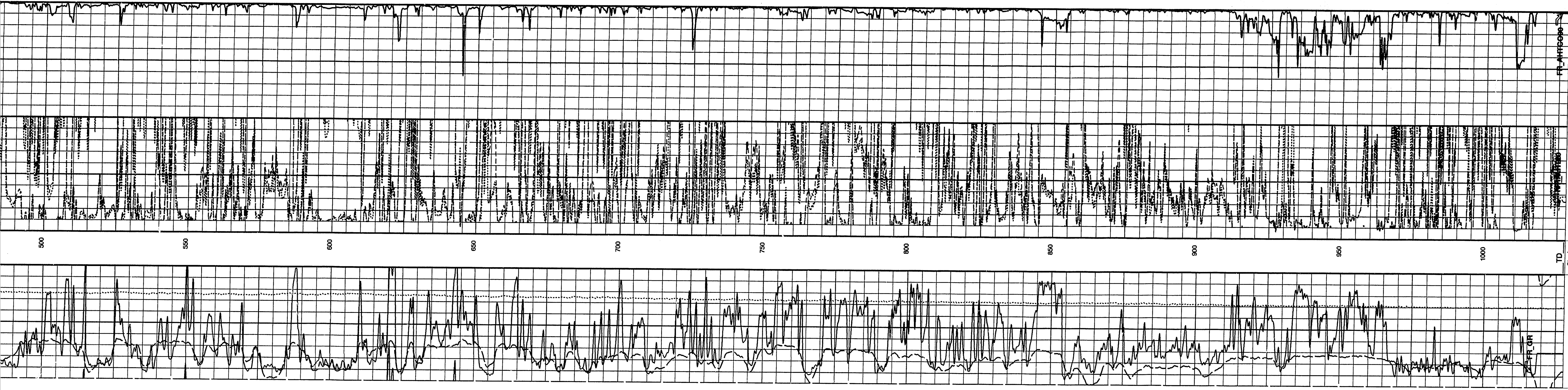
SCALE:
AS SHOWN

DRAWN : *B.S.S./R.R.*

DATE :
JUNE 14/99

CALC NO. :	11298
ACAD NO. :	11298W01

**RESISTIVITY/
CONDUCTIVITY**



0	Gamma Ray (GR) (GAP)	150	Stuck Stretch (STT)	0 (M) 20	AIT-H 20 Inch Investigation (AHT20) (OHIM)	50
-120	SP +/- 15 mV (SP) (MV)	30	Cable Drag From STA to STT	0	AIT-H 90 Inch Investigation (AHT90) (OHIM)	50
	Tension (TENS) 25000 (N)	0	Tool/Tool Drag From STA to STT	1000	AIT-H 90 Inch Investigation Conductivity (AHTC90)	0 (MM/M)

PIP SUMMARY

Time Mark Every 60 S

DLIS Name	Description	Parameters	Value
ABRHM	AIT-H Bhole Correction Mode	2_ComputeStandoff	
ABRHM	AIT-H Basic Logs Mode	1_Two	
AKHDE	AIT-H Casing Detection Option	Standard_Processing	
AKHDE	AIT-H Casing Detection Flag	Yes	
AKHDE	AIT-H Tool Centering Flag (in Borehole)	Eccentered	
AKHSD	AIT-H Casing Shoe Estimated Depth	-50000	M
AKHSD	AIT-H Mud Reactivity Factor		
AKHSD	AIT-H Tool Standoff	1	MM
AKHSD	Bathymetric Temperature (used in calculations)	33.1	MM
BS	Bit Size	40	DEGC
BS	Drilling Fluid Density	222.000	MM
DFD	Depth Offset Repeat Analysis	1080.00	K/M3
DFD	Form Factor Exponent	0.0	M
DFD	Form Factor Numerator	2	
DFD	Form Factor Denominator	1	
DFD	Geothermal Gradient	HCAL	
DFD	Average Angular Deviation of Borehole from Normal	0	DEGC
DFD	Generalized Mud Reactivity Selection	0.018227	DC/M
DFD	Generalized Temperature Selection	AITH_RESIST	
DFD	STL1 Speed Correction Mode	HSTS_HITEM	
DFD	STL1 Speed Correction Factor	TSDO_SPEED_CORRECTION	
DFD	Trigger for MAXIS First Reading Label	NO	
DFD	Mud Sample Temperature	TDL	DEGC
DFD	Surface Hole Temperature	24.00	DEGC
DFD	SP Next Value	20	MV
DFD	75% Stick Threshold	1.524	M
DFD	Total Depth - Driller	1028	M
DFD	Total Depth		

TEL		Vertical Scale: 1:800		Graphics File Created: 04-Sep-1999 17:12	
Depth - Unlifer					
Total Depth					
M					
1025.00					
M					
1025.00					

Output DLIS Files			
DEFAULT	HILTD .014	FN:13 PRODUCER	04-Sep-1999 17:12
CUST	HILTD .014	FN:14 CUSTOMER	04-Sep-1999 17:12

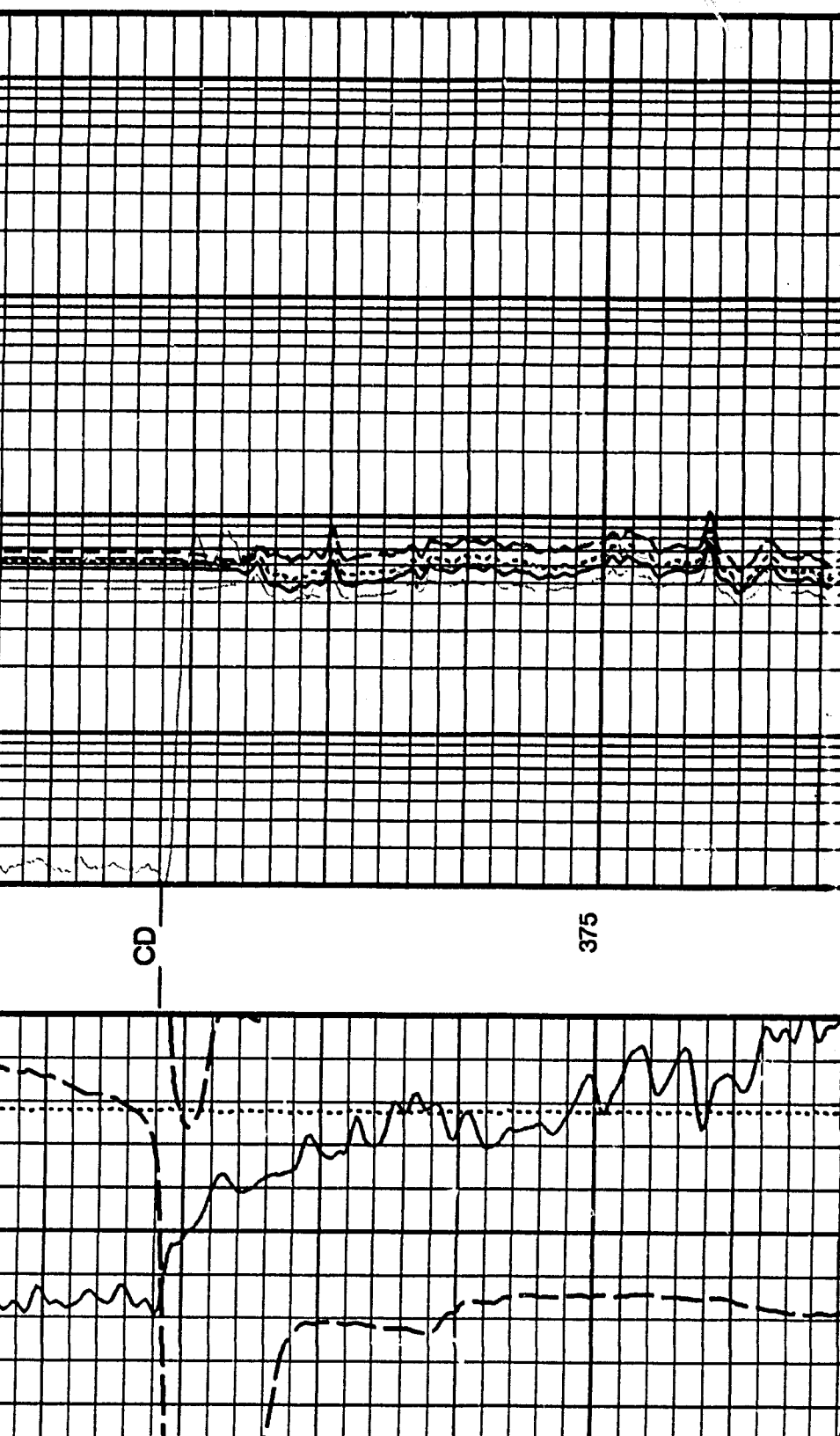
Output DLIS Files			
DEFAULT	HILTD .014	FN:13 PRODUCER	04-Sep-1999 17:12
CUST	HILTD .014	FN:14 CUSTOMER	04-Sep-1999 17:12

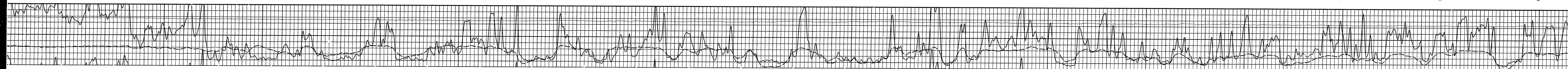
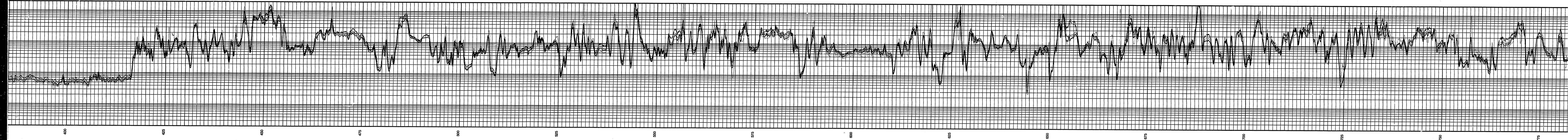
0001	04-SEP-1995 17:12	04-SEP-1995 17:12	04-SEP-1995 17:12
HLTB-FTB	OP9-KP1	OP9-KP1	
MCD-G	9C0-413	9C0-413	
DTC-H	9C0-413	9C0-413	
OP System Version: 9C0-413 MCM			
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
TDL	1028.00 M	1028.00 M	890.8 1728:40
04-SEP-1995 17:12			

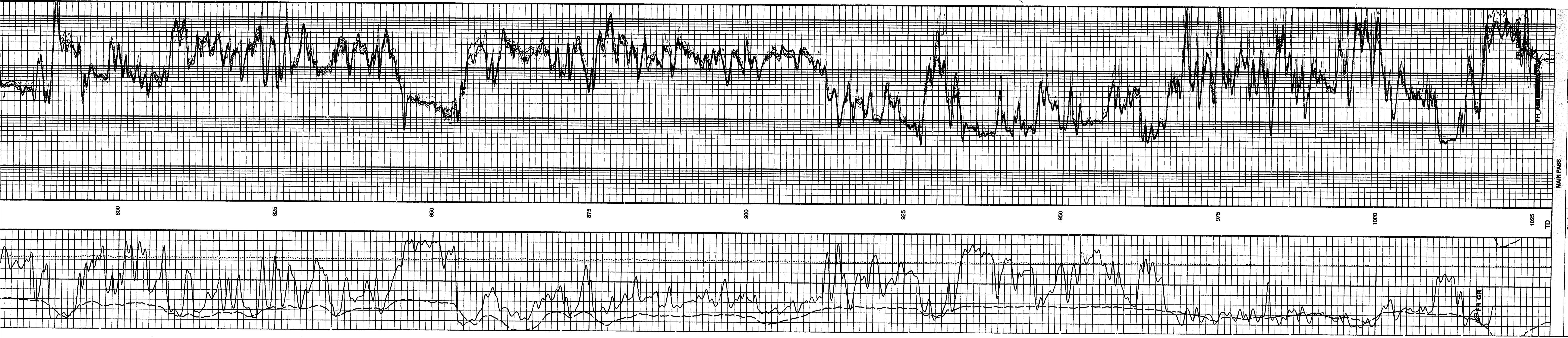
Time Mark Every 60 S	PIP SUMMARY
0.2	<u>AT-H 90 Inch Investigation (AHT90)</u> (OHMM)
0.2	<u>AT-H 60 Inch Investigation (AHT60)</u> (OHMM)
0.2	<u>Std. Res. Invaded Zone Resistivity (RQIZ)</u> (OHMM)

SP $\pm$ 15 mV (SP) 120 (MW)	Tension (TENS) 25000 (N)	Tool/Tot Drug From DST to STT	0.2	AIT-H 30 Inch Investigation (AITH30) (OHMM)	2000
SP $\pm$ 15 mV (SP) 120 (MW)	Tension (TENS) 25000 (N)	Tool/Tot Drug From DST to STT	0.2	AIT-H 20 Inch Investigation (AITH20) (OHMM)	2000

Gambiza Ray (GR) (GAR)		Struck Stretch (STTT)	0.2	AIT-H 10 Inch Investigation (AHT10) (CHIM)
150		0	(M) 20	2000
MAIN PASS				







0	Gamma Ray (GR) (GAP)	150	Stuck Stretch (ST)	0.2	AT-H 10 Inch Investigation (AHT10) (CHMM)	2000
-120	SP +/- 15 mV (SP) (MV)	30	Cable Drag From STIA to STT	0.2	AT-H 20 Inch Investigation (AHT20) (CHMM)	2000
	Tension (TENS) 25000 (N)	0	Tool/Tool Drag From D31 to STIA	0.2	AT-H 30 Inch Investigation (AHT30) (CHMM)	2000
				0.2	Std. Res. Invaded Zone Resistivity (RXOZ) (CHMM)	2000
				0.2	AT-H 60 Inch Investigation (AHT60) (CHMM)	2000
				0.2	AT-H 90 Inch Investigation (AHT90) (CHMM)	2000

PIP SUMMARY

Time Mark Every 60 S

AIT-H : newer Product Processing Summary. Data taken with tool # 194 (AHTNO)
 ...Acquired data from HIL7/HAIT
 ***** Borehole Correction *****
 Effective Tool Standoff computed. Borehole diameter and mud res. taken as input (see GCSE and GCSE parameters)

Tool is run in ECCENTERED mode with a tool stand-off of 38.10 MM. Bit Size is 222.00 MM.

***** Input Selections to AIT Answer Product processing *****

Caliper (GCSE): HCAI. Mud Resistivity (GRS): AHMF. Temperature (GTSE): HTEM. Porosity (FPHI): DP4HZ

***** Other parameters used by AIT-HYSAT Answer Product processing *****

```
***** AIT-H/SAT Answer Product processing control parameters *****
(AHAPL): 2; BoleCort_BasicLogs
(AHBHM): 2; ComputaStandoff (AHBLM): 1; Two
(AHBPO): Standard_Processing
```

DLIS Name	Description	Parameters	Value
-----------	-------------	------------	-------

	Value
AHBHM	2_ComputeStandard
AHBLM	1_Two
AHCLD	Standard_Processing
AHCND	Yes
AHCNE	Eccentered
AHCSE	
ATH-Block Correction Mode	
ATH Basic Loge Mode	
ATH Basic Loge Processing Option	
ATH Casing Detection Enable	
ATH Tool Casing Flag (in Borehole)	

Parameter	Value
Casing Shoe Estimated Depth	M
AT-H Fluid Pressure Factor	1
AT-H Fluid Gradient	38.1
Bottom Hole Temperature (used in calculations)	MM
BN Size	DEGC
Drilling Fluid Density	40
Depth Offset Repeat Annular	MM
Depth Offset Repeat Annular	1000.00
Depth Offset Repeat Annular	K/H3

[illegible]

	HSTS	HSTS_HITEM	TSCD_SPEED_CORRECTION
HSCM	Standard Temperature Selection		
HSTL	HL Speed Correction Mode		
LBRF	HL Speed Correction Non		
MPOF	STI Unit HLT		
SHT	Trigger for MAXIS First Finding Label	NO	
SHT	MCFL Processing Operation Mode	TDL	
SHT	Mud Sample Temperature	ON	
SHT	Surface Hole Temperature	24.00	DEGC

SPW	SP Next Value	0	REG
TRT	STI Stuck Threshold	0	MV
TD	Total Depth	1.524	M
TDD	Total Depth - Driller	1028	M
TDL	Total Depth - Logger	1028.00	M
Format: ATHT, 2LOG		Vertical Scale: 1:240	Granville Ella Crested, Oct-Dec-1990, 12:40

OP System Version: 9C0-413
MCM

HILTB-F1B	OP-8-KP1	DSST-B	OP-9-KP1
MCD-G	9C0-413	DTA-A	OP-9-KP2

DTC-H	9CQ-413	9CQ-413	Speed Corrected - Depth Matched LOG
-------	---------	---------	-------------------------------------

Output DLIS Files			
DEFAULT	HILTD .014	FN:13 PRODUCER	04-Sep-1999 17:12
CUST	HILTD .014	FN:14 CUSTOMER	04-Sep-1999 17:12

Input DLIS Files		
DEFAULT	HILTD.013	FN:12 PRODUCER 04-Sep-1999 16:53
		100' 1.1' M 929.0 M

Output DLIS Files			
DEFAULT	HILTD .014	FN:13 PRODUCER	04-Sep-1999 17:12
CUST	HILTD .014	FN:14 CUSTOMER	04-Sep-1999 17:12

HILTB-FTB	OP9-KP1
MCD-G	DSST-B
DTC-H	DTA-A
	OP9-KP1
	9C0-413
	9C0-413

Time Mark Every 60 S	PIP SUMMARY	
	0.2	RXOZ REP Curve (RXOZ REP) (CHIMM)

TENS. REP. CURVE (TENS. REP.)	
AHT90 REP. CURVE (AHT90 REP.)	
0.2	2000
Std. Res. Inverted Zone Resistivity (RHOZ) (Ohm-ft)	2000

0.2	25000 (N)	0	0.2	25000 (N)	0	2000
Tension (TENS)			AHT30 REP			2000
			(CHINA)			

SP REP 4.75 mV (SP REP)	120	30
GR REP Curve (GR REP)		150
		(GAPI)
0.2		
AI-T-H 90 Inch Investigation (AI-T90)		
		(OHMM)
0.2		
AI-T20 REP Curve (AI-T20 REP)		
		(OHMM)
0.2		
2000		

SP $\pm$ 15 mV (SP)	120	30
Gamma Ray (GR)		
(GAP)	150	
AIT-H 30 Inch Investigation (AHT30)		
(CHIM)	0.2	2000
AIT-H 20 Inch Investigation (AHT20)		
(CHIM)	0.2	

[illegible]

**LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT**

SONIC

DIPOLE SHEAR
SONIC IMAGER

A Mark of Schlumberger

Using the following logs:
AIT-HRMS-HGNS-DSI-
MCD
CMR

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON ET AL MCKAY LAKES O-80
FIELD: UNDEFINED
TERRITORY: NORTH WEST TERRITORIES
COUNTRY: 4-SEP-1999 Date Processed: 8-SEP-1999
Date Logged: 60 DEG 20 MIN N
Well Location: 123 DEG 29 MIN W
Elevations: KB: 299.6 M DF: 299.3 M GL: 292.32
API Number: EI.380 Job Number: 1251782

FOLD HERE The well name, location and borehole reference data were furnished by the customer.

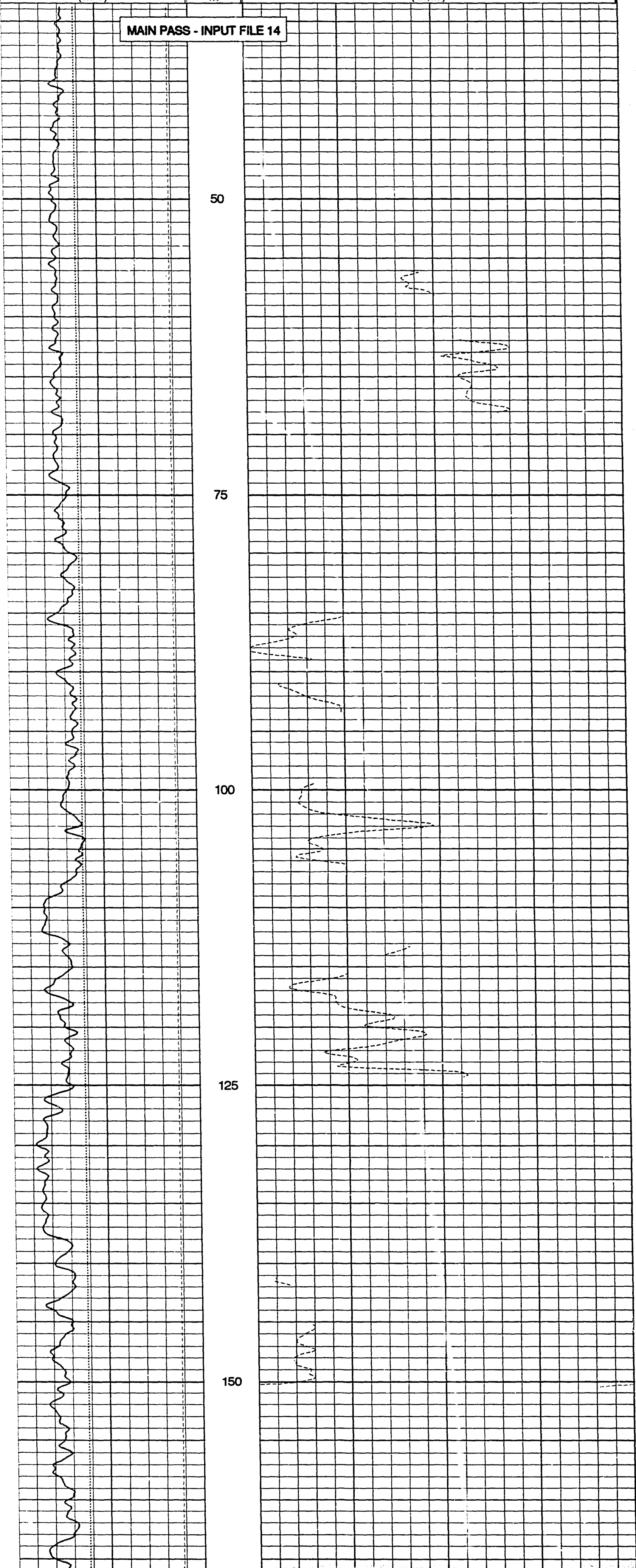
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set out in our current Price Schedule.

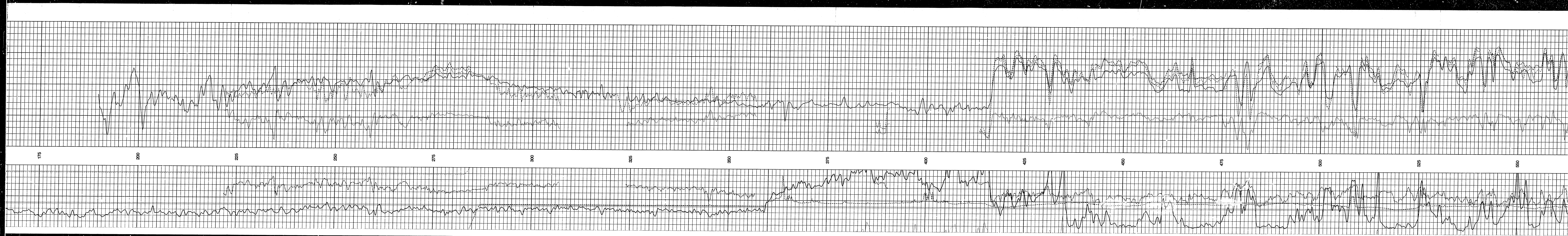
Field Recording:	Location: GRANDE PRAIRIE	Software Version: 9C0-413	Engineer: KEN CLASPER
Office Recording:	ICS Center: CALGARY	Baseline:	Log Analyst: STEPHANSON
Mud and Borehole Measurements:			
Rm @ Measured Temperature: 3.66ohm.m @ 24degC	BHT: 40degC	Bitsize: 222mm	
Rmf @ Measured Temperature: 5.09ohm.m @ 21degC	Type Fluid in Hole:	GEL POLY	
Rmc @ Measured Temperature: 2.35ohm.m @ 18degC	Mud Density: 1080kg/m3		

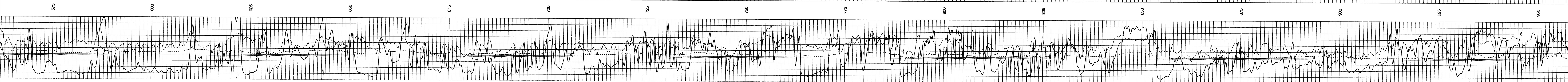
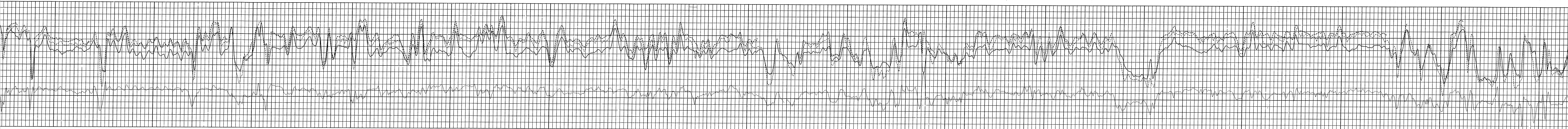
Remarks:
ALL PRESENTATIONS AND INTERVALS AS PER CLIENT REQUEST
PR AND VPVS CALCULATED USING P&S COMPRESSIONAL AND UPPER DIPOLE SHEAR
120 DEGREE OFFSET BOWSPRINGS ON HGNS
TWO 38MM STANDOFFS ON DSI

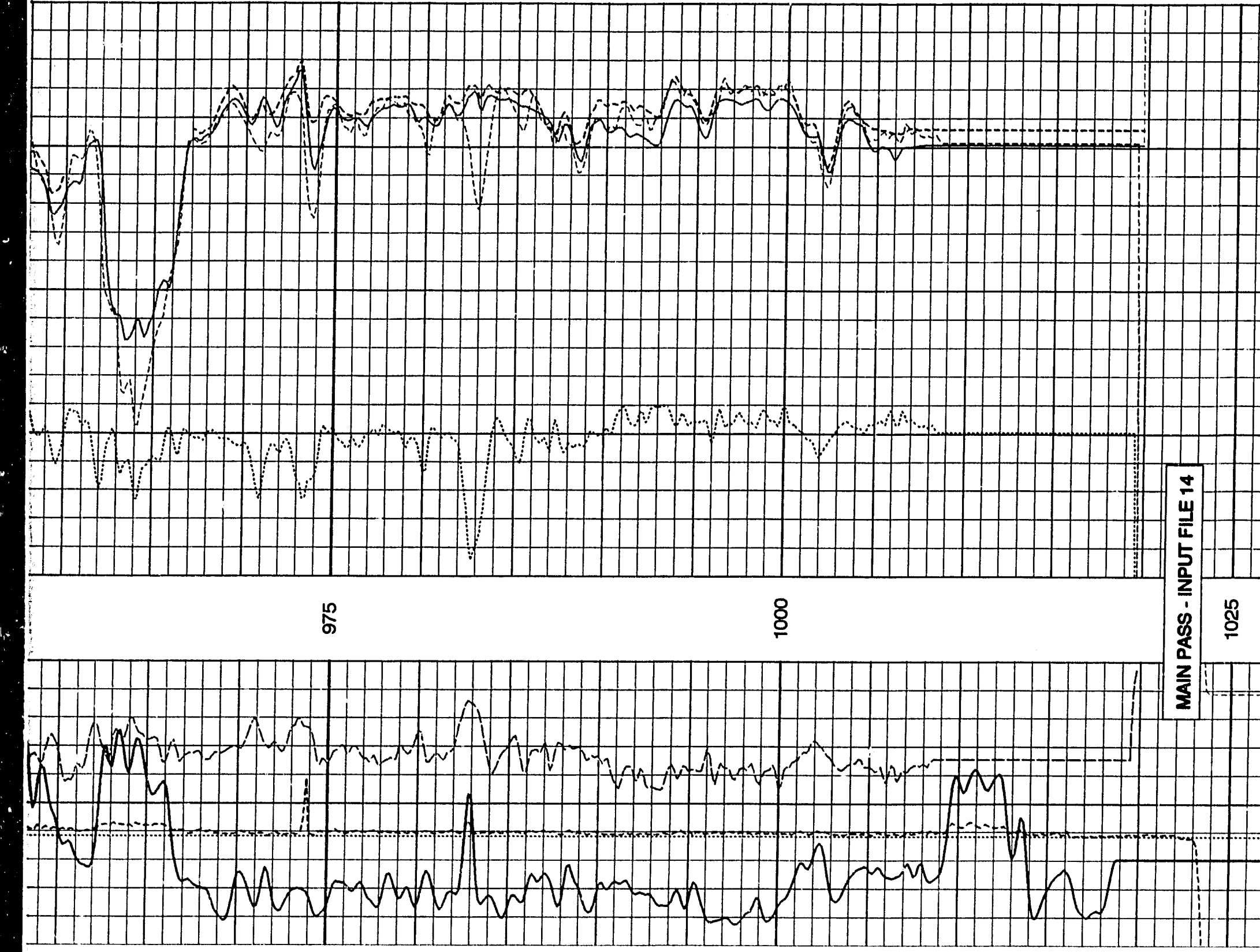
PR	0.5	VP/VS	1
()		()	
BS	375	DT Dipole Shear (DT2)	200
(mm)		(us/m)	
GR	150	DT P&S Compressional (DT4P)	100
(gAPI)		(us/m)	
HCAL	375	DT P&S Shear (DT4S)	200
(mm)		(us/m)	

MAIN PASS - INPUT FILE 14

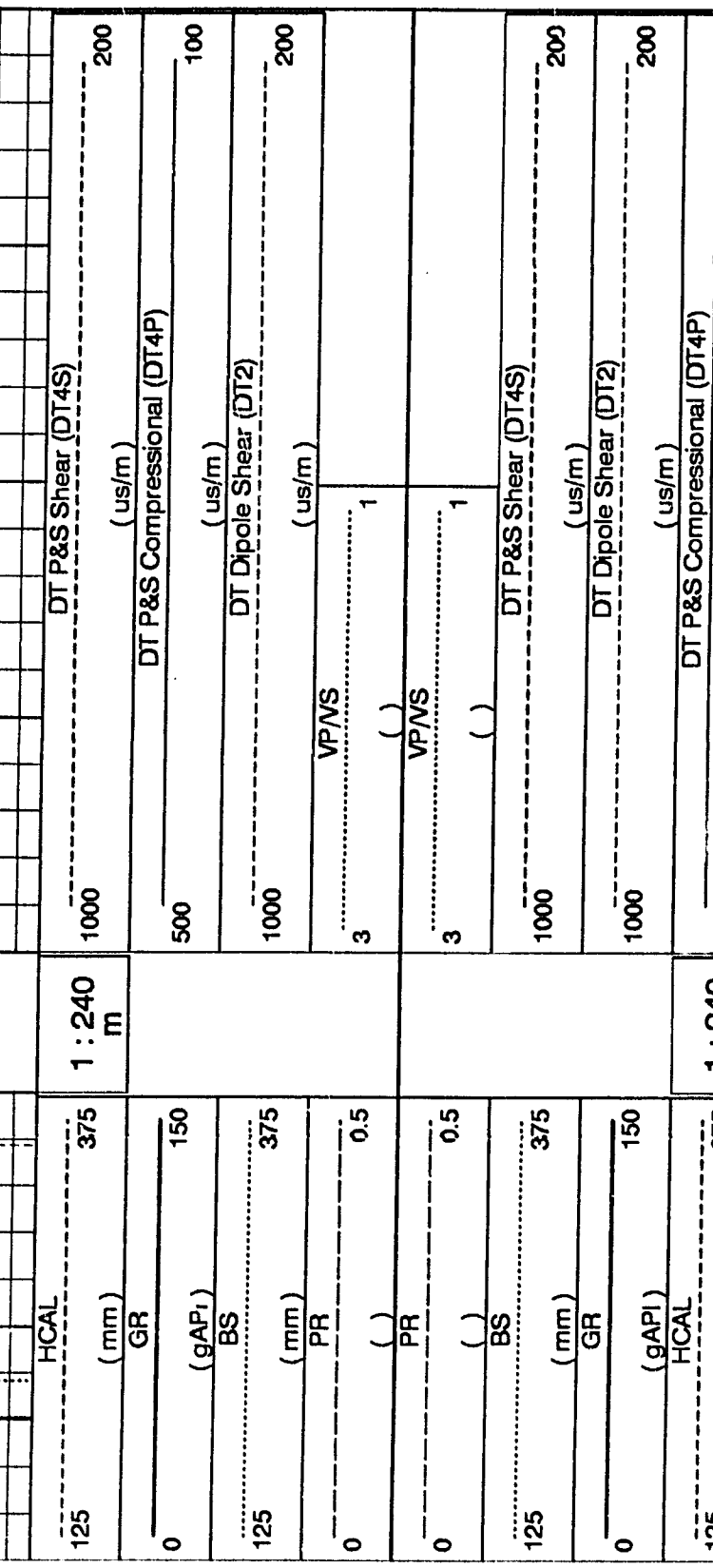




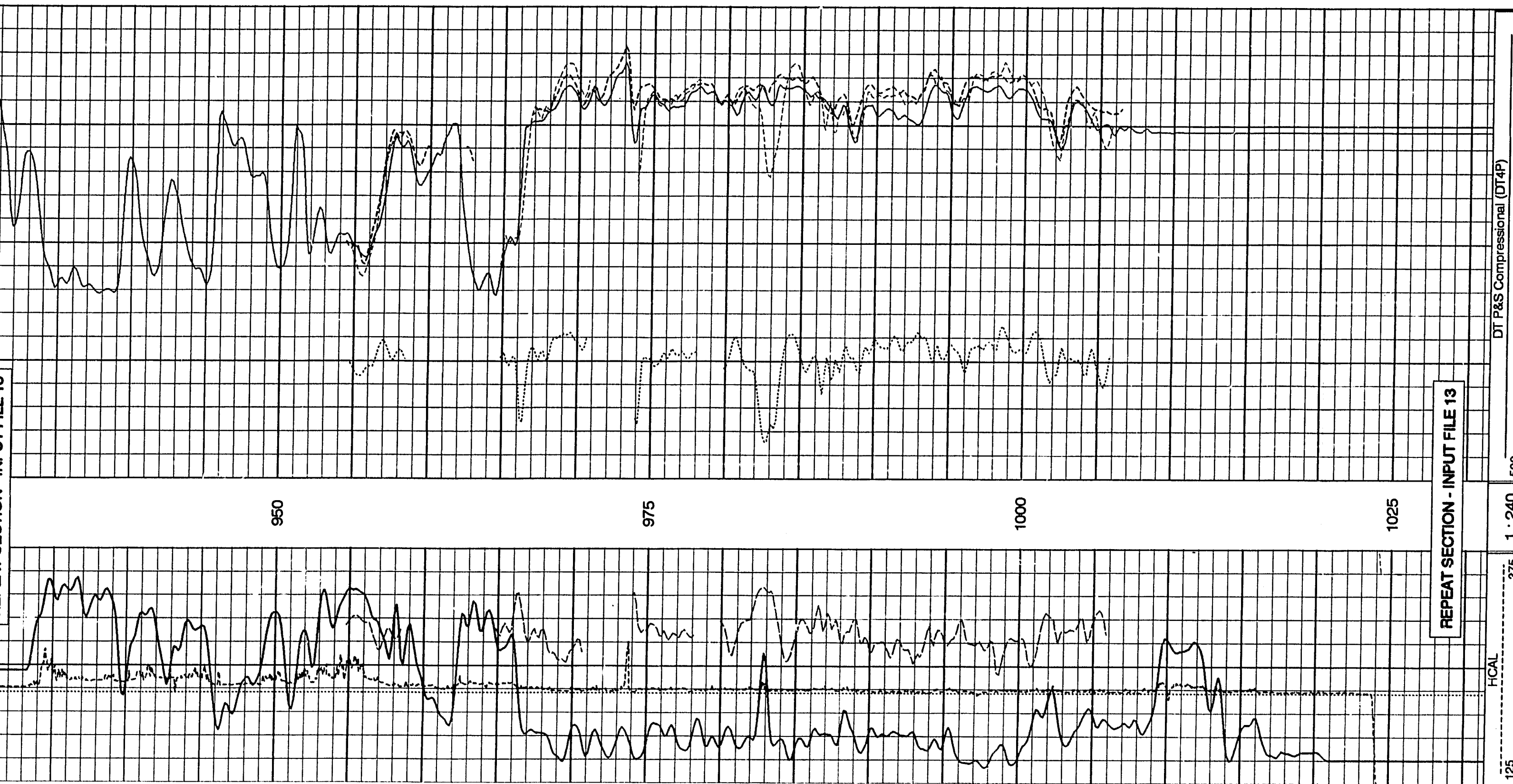




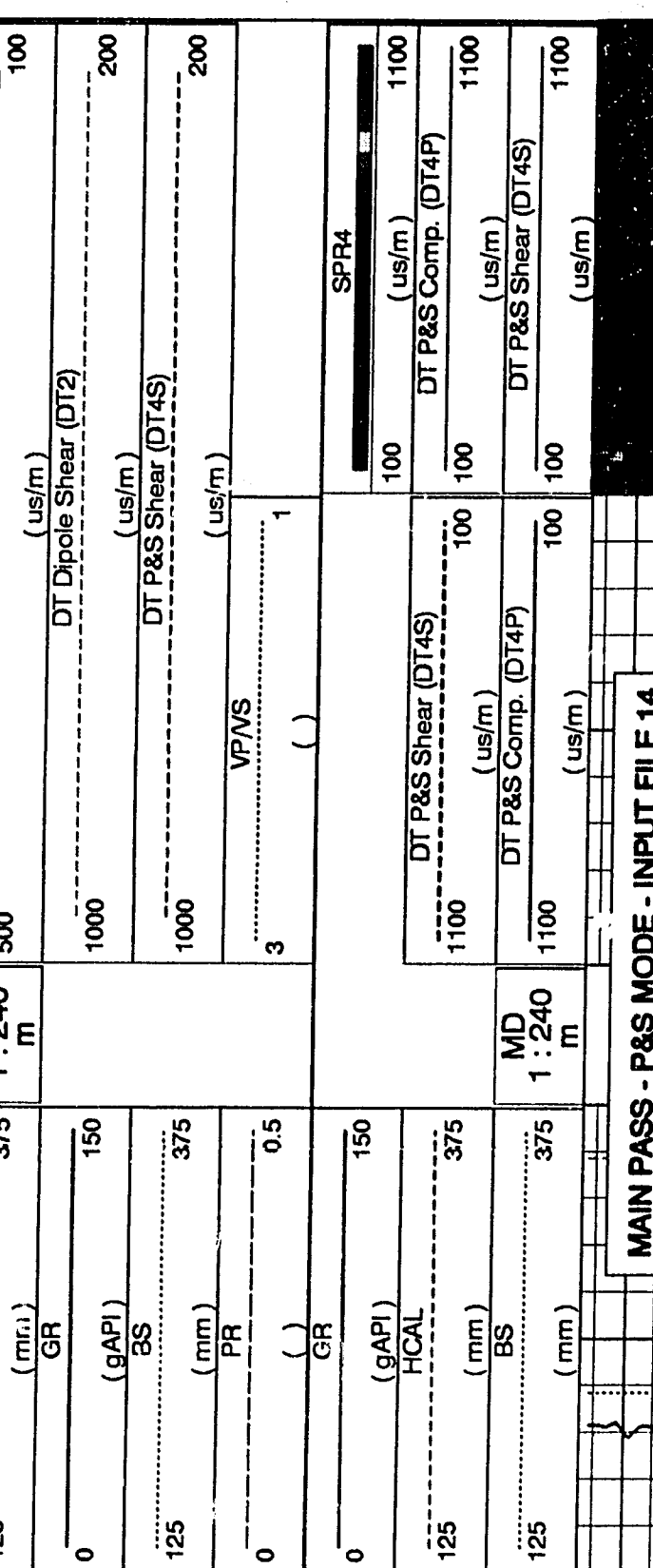
MAIN PASS - INPUT FILE 14



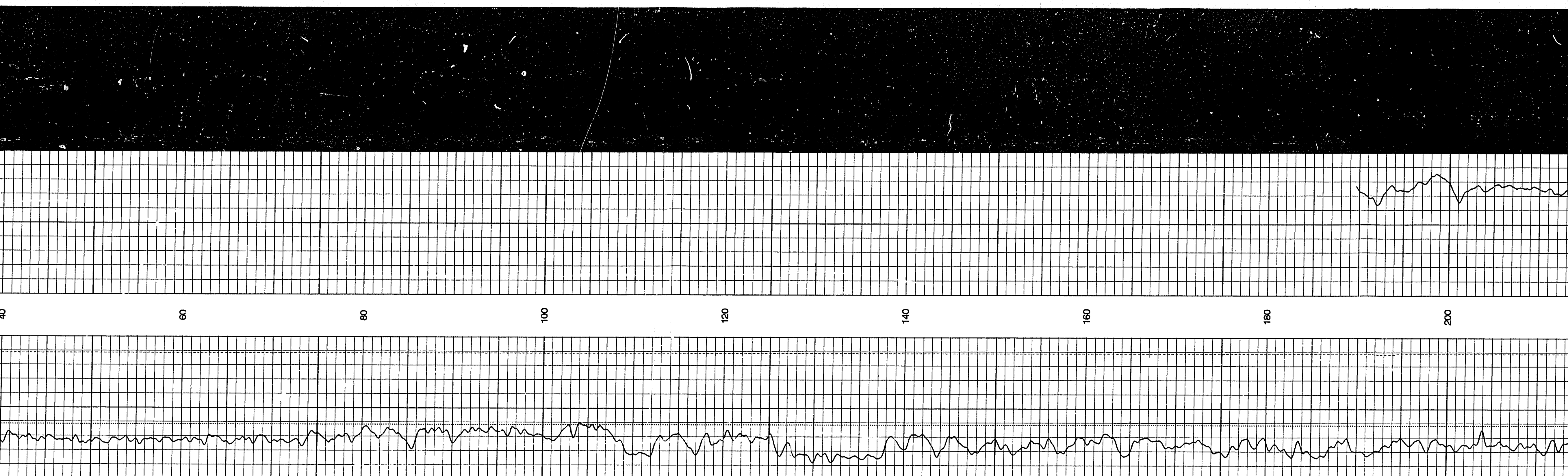
REPEAT SECTION - INPUT FILE 13

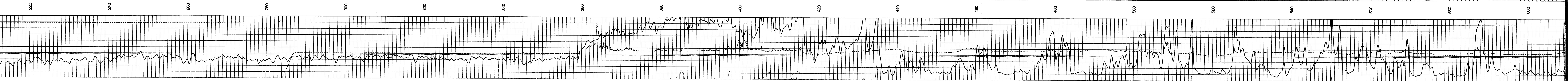
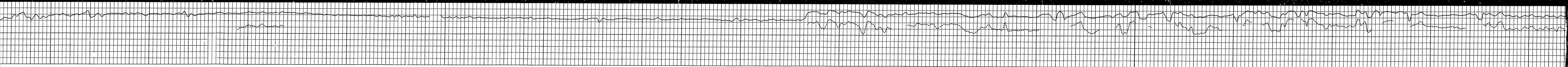


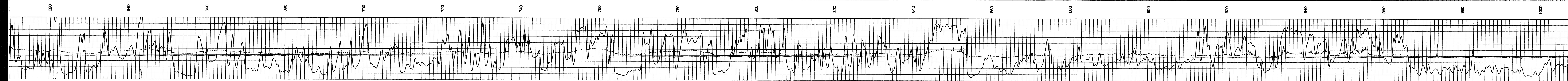
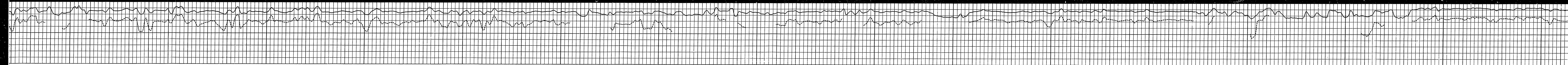
REPEAT SECTION - INPUT FILE 13

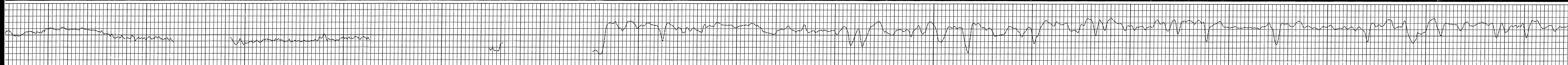
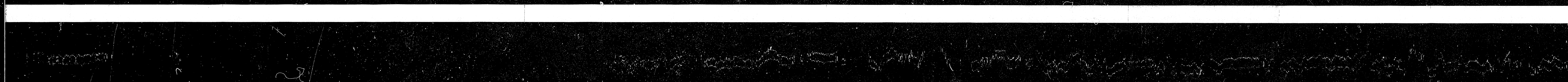


MAIN PASS - P&S MODE - INPUT FILE 14

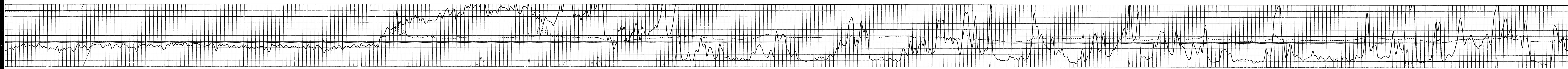


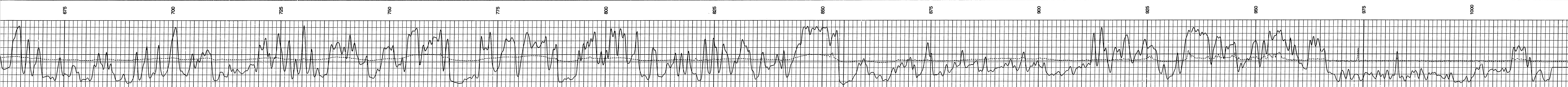
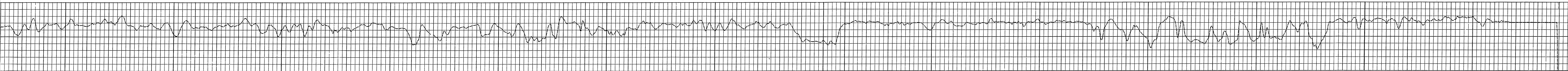






275 300 325 350 375 400 425 450 475 500 525 550 575 600 625 650





MAIN PASS - UPPER DIPOLE MODE - INPUT FILE 14

MD	1:240	DT Dipole Shear	100	DT Dipole Shear	100
m		(us/m)		(us/m)	

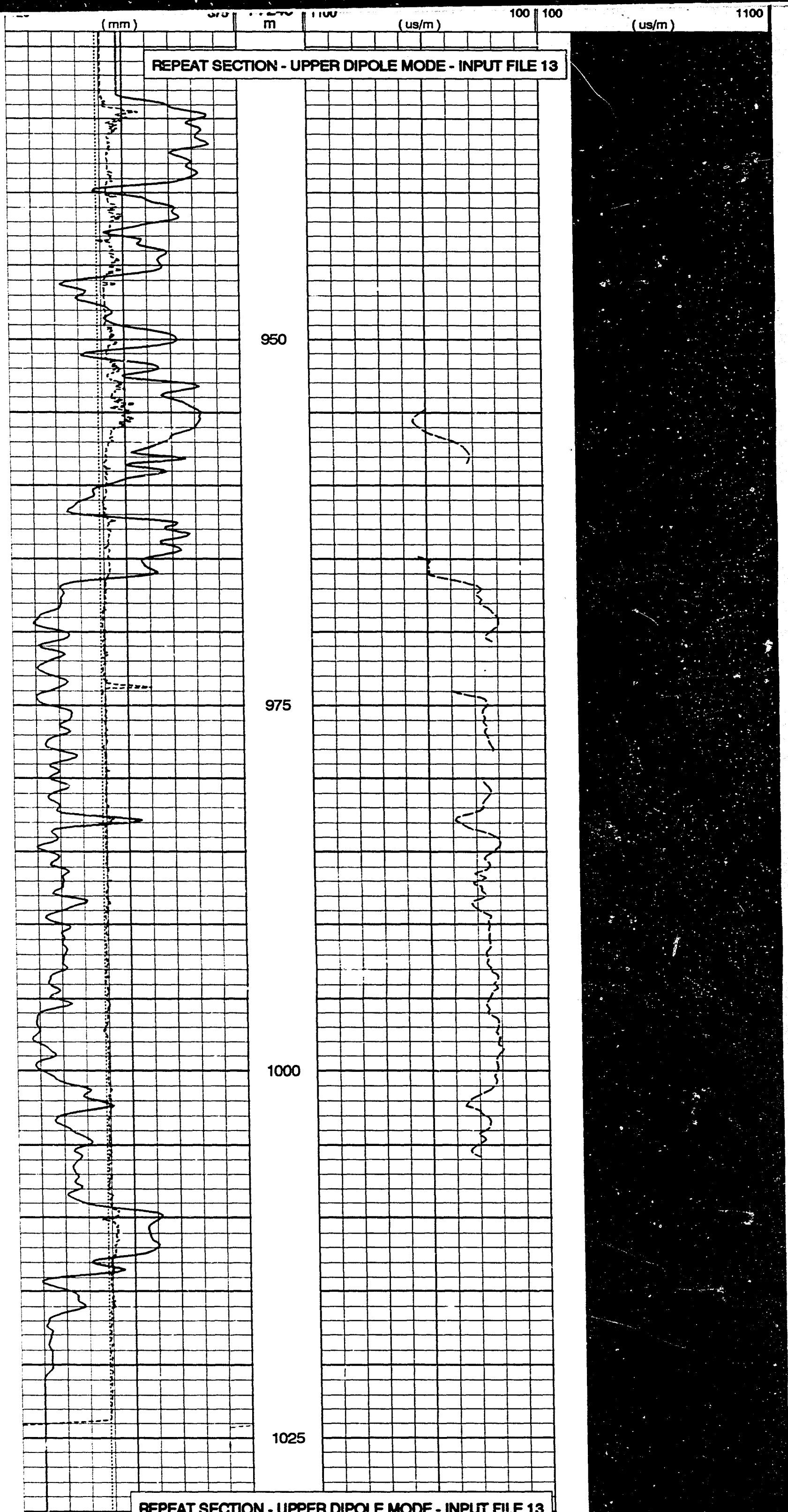
HCAI	125	BS	125	GR	0
(mm)		(mm)		(mm)	

HCAI	375	BS	375	GR	150
(mm)		(mm)		(mm)	

HCAI	375	BS	375	GR	150
(mm)		(mm)		(mm)	

SPR2	100	DT Dipole Shear	100	SPR2	100
(us/m)		(us/m)		(us/m)	

SPR2	100	DT Dipole Shear	100	SPR2	100
(us/m)		(us/m)		(us/m)	



125	BS	375
	(mm)	
125	HCAL	375
	(mm)	
0	GR	150
	(gAPI)	

MD	DT Dipole Shear
1 : 240	1100
m	(us/m)

DT Dipole Shear	DT Dipole Shear
100	1100
(us/m)	(us/m)
SPR2	SPR2
100	1100
(us/m)	(us/m)

Company: CHEVRON CANADA RESOURCES
Well: CHEVRON ET AL MCKAY LAKES O-80
FIELD: UNDEFINED
TERRITORY: NORTH WEST TERRITORIES

Schlumberger

Date Logged: 4-SEP-1999
Well Location: 60 DEG 20 MIN N
123 DEG 29 MIN W

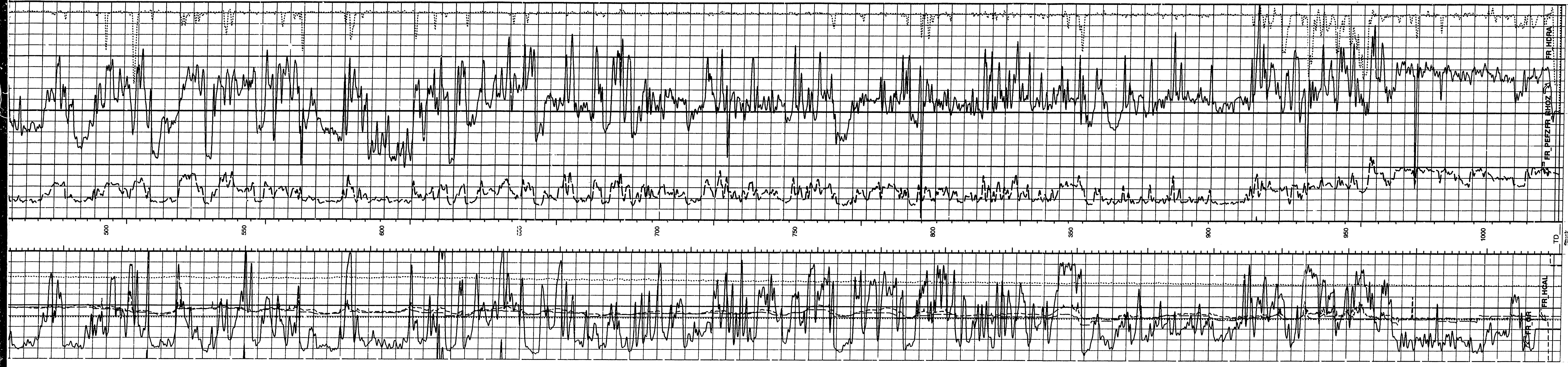
Date Processed: 8-SEP-1999

Elevations: KB: 299.6m DF: 299.3m GL: 292.32m
API Number: EL380 Job Number: 1251782

ENERGY BOARD
SEP 10 1999

**LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT**

DENSITY



Gamma Ray (GR)	150	From DTG to STIA
Caliper (CAL)	375	From DTG to STIA
Hole Diameter (HD)	375	From DTG to STIA
Density (DEN)	0	From DTG to STIA

Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

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Density Correction (HDRA)	10.46	From DTG to STIA

Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

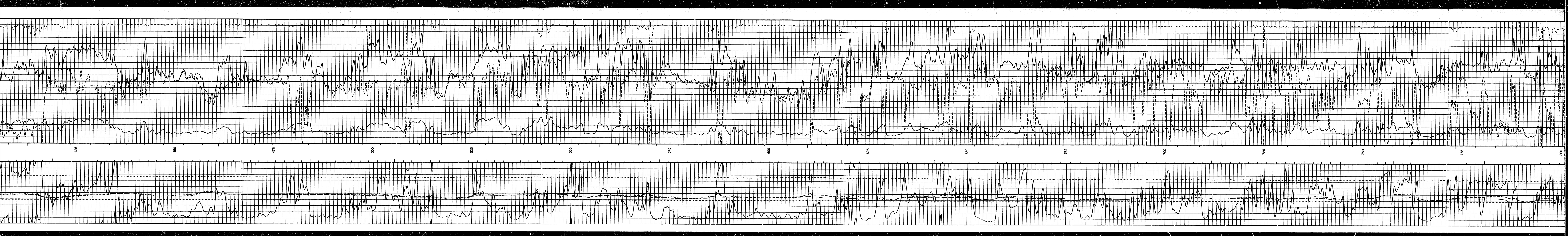
Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

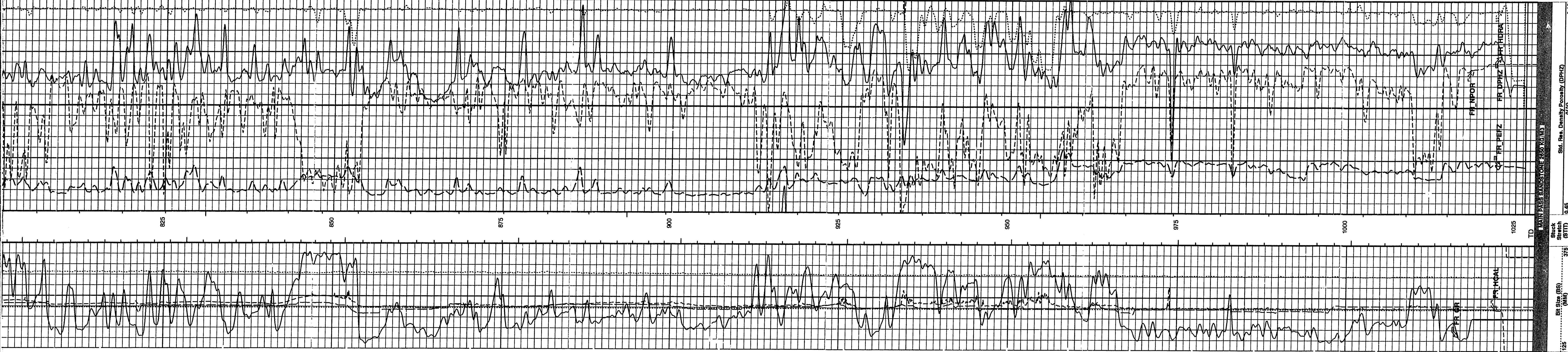
Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA

Skid. Res. Formation Pn (PEEZ)	10.46	From DTG to STIA
Density Correction (HDRA)	10.46	From DTG to STIA





	0	(M)	20		
Gamma Ray (GR) (GAP)				Cable Drag From STA	
					Alpha Processed Neutron Porosity (NPNP)
					(W/V)
					-6.7
					-0.11

Caliber (HCAL) (MM)	Wco/Vol Drag From DST	Std. Res. Formation P _o (PEEZ) (—)	Density Correction (H-DRA) (K/M3)
125	375	0	10 450
			-50

Hole Diameter (ID) (MM)	Tension (TENS)
125	
375	

PIP SUMMARY	
+	Integrated Hole Volume Minor PIP Every 0.1 M3
+	Integrated Hole Volume Major PIP Every 1 M3

Time Mark Every 60 S	Parameters
Integrated Cement Volume Minor Pip Every 0.1 M3 Integrated Cement Volume Major Pip Every 1 M3	

DLIS Name	Description	Value
AHAPL	AIT-H Answer Product Level (Depth Log/View only)	2, ErrorCorr_BasicLogs
AHHBM	AIT-H Whole Correction Code	2, ComputeStandoff
AHHBV	AIT-H Whole Correction Code	2, ComputeStandoff
AHHBV	AIT-H Whole Correction Code	2, ComputeStandoff

AHLM		0
AHLN	_Two	0
AHLP	Standard_Processing	Y
AHPD	Basic_Logs_Version_Number	0
AHCE	Basic_Logs_Code	Y
AHCN	Basic_Logs_Processing_Option	N
AHCD	Casing_Detection_Enable	Y
AHCC	Tool_Centering_Flag_(in_Borehole)	Y
AHCEC	Casing_Shoe_Estimated_Depth	Encountered
AHCEC		-50000
AHCEC		M

Feature	0x00_Log_000
ATH+ Desired Tool Mode	
ATH+ Enable Bhole Correction	
ATH+ Enable Basic Logs	Yes
ATH+ Enable Radial Profiling	Yes
ATH+ Enable Radial Parameterization	Yes
ATH+ Enable Solid Error Temperature Corr	Yes
ATH+ Enable Solid Velocity Temperature Corr	Yes
ATH+ Backscatter	

[illegible][illegible][illegible][illegible]

	NO
C/DTS C-D/Tilt-T Shale	US/M
COLL Label Blowness Lower Limit - Monopole P&S Compressional	328.084
COUL Current Blowness Upper Limit - Monopole P&S Compressional	131.234
CSZJ Curling Ceiling Size	US/M
CSZH Compressive Strength of Cement	290-551
CSTH Ceiling Weight	244-567
CWEI Ceiling Weight	KPA/A
	53.57

	Source	Unit
Digitizing Delay 1	0	US
Digitizing Delay 2	0	US
Digitizing Delay 3	0	US
Digitizing Delay 4	0	US
Digitizing Delay 5	0	US
Digitizing Delay 6	0	US
Digitizing Delay 7	0	US
Driller Field CT ₁	0	US
DPD		

DHC	Density Hole Condition	1085.00	K/M3
DLCS	Density Hole Condition	BS	
DLCS	Density Hole Condition	USE	
DLHS	Label Hole Diameter Source for SCBS Channel	AUTO	
DORL	Depth Offset Repeat Analysis		
DPWM	Density Porosity Processing Mode	HRS	M
DSHL	Label Blowness Lower Limit - Diolc Shear	2/5.00E	100%

Label	Slowness	Upper Limit	Dipole Shear
DSHU			
DSH1	10	US	2542.85
DSH2	10	US	10
DSH3	40	US	40
DSH4	40	US	40
DSH5	40	US	40
DSH6	10	US	10
DSH7	10	US	10
DSH8	10	US	10
DSH9	10	US	10

DTCS	40	US
DTF	PS COMP	
DTM	620.079	US/M
DTSS	163.727	US/M
DWC1	UPPER_DIPOLE	
DWC2	112	
DWC3	112	

DWC3	Digitizer Word Count 3	512
DWC4	Digitizer Word Count 4	512
DWC5	Digitizer Word Count 5	512
DWC6	Digitizer Word Count 6	512
DWCX	Digitizer Word Count X	512
FCF	Full Compensation Factor	512
FD	Fluid Density	1
FE	Fluid Density	1000
FEK	FEK constant	K/M3

FQM5	First Motion Gate Minimum S	131	US/M
FLG	Label Fill Gap Control - Nitroprole PAS	COMP_SHEAR	US
FRG5	First Motion Minimum Gate S	900	US/M
FNLL	Slowness Lower Limit - FMD	131.234	US/M
FNRC	Restart Control - FMD	CONTINUE	
FNTR	First Motion Threshold S		

FMUL	Slowness Upper Limit - FMD	US/M	590.55
FMUM	Form Factor Numerator		1
FMFM	Form Factor Porosity Source	DPHZ	NONE
FRAL	Processing Mode - FMD	PPM	-50000
FRAL	Formation Salinity	NO	NO
FRCO	Formation Salinity Correction Option		
GCSE	Gamma Ray Correction		

	Average Char Yield	Standard Deviation of Borehole from Normal	HGAL	DEG
GDV1	Gain Delta-1	0	2825	US/M
GDV2	Gain Delta-2	2825	US/M	US/M
GDV3	Gain Delta-3	2825	US/M	US/M
GDV4	Gain Delta-4	3225	US/M	US/M
GDV5	Gain Delta-5	3225	US/M	US/M

	Gain Delta-T-X	Geothermal Gradient
GDTX	2025	
GRND	2025	
GINT1	0.018227	US/M
GINT2	15360	US/M
GINT3	15360	US
GINT4	15360	US
GINT5	2560	US

GINX		US	1600
GAIN HARVEST		US	15360
GOBO	Good Harvest X	MV	2
GRMAX	Good Harvest		150
GRNIN	HILT Gamma Ray Min	GAPI	20
GRSE	HILT Gamma Ray Max	GAPI	ATH RESIST
GTBE	Generalized Mud Resistance Selection		
	Generalized Temperature Selection		

NAME	UNIT	VALUE
ACCELEROMETER PRESENCE	BOOLEAN	TRUE
ACCELEROMETER_FQ	Hz	50
ACCELEROMETER_REFERENCE_TEMPERATURE	°C	25
HILT_DENSITY_COAL_DETECTION	BOOLEAN	TRUE
HILT_DENSITY_SALT_DETECTION	BOOLEAN	TRUE
HILT_AUTO_WRITE_TELEMETRY	BOOLEAN	TRUE
HILT_GAS_DOWNHOLE_DENSITY	kg/m3	0
HILT_GAS_DENSITY	kg/m3	2100
HILT_GAS_OPTION	BOOLEAN	TRUE
HILT_HEAVY	BOOLEAN	TRUE
HILT_H2O	BOOLEAN	TRUE
HILT_H2O2	BOOLEAN	TRUE
HILT_H2O3	BOOLEAN	TRUE
HILT_H2O4	BOOLEAN	TRUE
HILT_H2O5	BOOLEAN	TRUE
HILT_H2O6	BOOLEAN	TRUE
HILT_H2O7	BOOLEAN	TRUE
HILT_H2O8	BOOLEAN	TRUE
HILT_H2O9	BOOLEAN	TRUE
HILT_H2O10	BOOLEAN	TRUE
HILT_H2O11	BOOLEAN	TRUE
HILT_H2O12	BOOLEAN	TRUE
HILT_H2O13	BOOLEAN	TRUE
HILT_H2O14	BOOLEAN	TRUE
HILT_H2O15	BOOLEAN	TRUE
HILT_H2O16	BOOLEAN	TRUE
HILT_H2O17	BOOLEAN	TRUE
HILT_H2O18	BOOLEAN	TRUE
HILT_H2O19	BOOLEAN	TRUE
HILT_H2O20	BOOLEAN	TRUE
HILT_H2O21	BOOLEAN	TRUE
HILT_H2O22	BOOLEAN	TRUE
HILT_H2O23	BOOLEAN	TRUE
HILT_H2O24	BOOLEAN	TRUE
HILT_H2O25	BOOLEAN	TRUE
HILT_H2O26	BOOLEAN	TRUE
HILT_H2O27	BOOLEAN	TRUE
HILT_H2O28	BOOLEAN	TRUE
HILT_H2O29	BOOLEAN	TRUE
HILT_H2O30	BOOLEAN	TRUE
HILT_H2O31	BOOLEAN	TRUE
HILT_H2O32	BOOLEAN	TRUE
HILT_H2O33	BOOLEAN	TRUE
HILT_H2O34	BOOLEAN	TRUE
HILT_H2O35	BOOLEAN	TRUE
HILT_H2O36	BOOLEAN	TRUE
HILT_H2O37	BOOLEAN	TRUE
HILT_H2O38	BOOLEAN	TRUE
HILT_H2O39	BOOLEAN	TRUE
HILT_H2O40	BOOLEAN	TRUE
HILT_H2O41	BOOLEAN	TRUE
HILT_H2O42	BOOLEAN	TRUE
HILT_H2O43	BOOLEAN	TRUE
HILT_H2O44	BOOLEAN	TRUE
HILT_H2O45	BOOLEAN	TRUE
HILT_H2O46	BOOLEAN	TRUE
HILT_H2O47	BOOLEAN	TRUE
HILT_H2O48	BOOLEAN	TRUE
HILT_H2O49	BOOLEAN	TRUE
HILT_H2O50	BOOLEAN	TRUE
HILT_H2O51	BOOLEAN	TRUE
HILT_H2O52	BOOLEAN	TRUE
HILT_H2O53	BOOLEAN	TRUE
HILT_H2O54	BOOLEAN	TRUE
HILT_H2O55	BOOLEAN	TRUE
HILT_H2O56	BOOLEAN	TRUE
HILT_H2O57	BOOLEAN	TRUE
HILT_H2O58	BOOLEAN	TRUE
HILT_H2O59	BOOLEAN	TRUE
HILT_H2O60	BOOLEAN	TRUE
HILT_H2O61	BOOLEAN	TRUE
HILT_H2O62	BOOLEAN	TRUE
HILT_H2O63	BOOLEAN	TRUE
HILT_H2O64	BOOLEAN	TRUE
HILT_H2O65	BOOLEAN	TRUE
HILT_H2O66	BOOLEAN	TRUE
HILT_H2O67	BOOLEAN	TRUE
HILT_H2O68	BOOLEAN	TRUE
HILT_H2O69	BOOLEAN	TRUE
HILT_H2O70	BOOLEAN	TRUE
HILT_H2O71	BOOLEAN	TRUE
HILT_H2O72	BOOLEAN	TRUE
HILT_H2O73	BOOLEAN	TRUE
HILT_H2O74	BOOLEAN	TRUE
HILT_H2O75	BOOLEAN	TRUE
HILT_H2O76	BOOLEAN	TRUE
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HILT_H2O79	BOOLEAN	TRUE
HILT_H2O80	BOOLEAN	TRUE
HILT_H2O81	BOOLEAN	TRUE
HILT_H2O82	BOOLEAN	TRUE
HILT_H2O83	BOOLEAN	TRUE
HILT_H2O84	BOOLEAN	TRUE
HILT_H2O85	BOOLEAN	TRUE
HILT_H2O86	BOOLEAN	TRUE
HILT_H2O87	BOOLEAN	TRUE
HILT_H2O88	BOOLEAN	TRUE
HILT_H2O89	BOOLEAN	TRUE
HILT_H2O90	BOOLEAN	TRUE
HILT_H2O91	BOOLEAN	TRUE
HILT_H2O92	BOOLEAN	TRUE
HILT_H2O93	BOOLEAN	TRUE
HILT_H2O94	BOOLEAN	TRUE
HILT_H2O95	BOOLEAN	TRUE
HILT_H2O96	BOOLEAN	TRUE
HILT_H2O97	BOOLEAN	TRUE
HILT_H2O98	BOOLEAN	TRUE
HILT_H2O99	BOOLEAN	TRUE
HILT_H2O100	BOOLEAN	TRUE
HILT_H2O101	BOOLEAN	TRUE
HILT_H2O102	BOOLEAN	TRUE
HILT_H2O103	BOOLEAN	TRUE
HILT_H2O104	BOOLEAN	TRUE
HILT_H2O105	BOOLEAN	TRUE
HILT_H2O106	BOOLEAN	TRUE
HILT_H2O107	BOOLEAN	TRUE
HILT_H2O108	BOOLEAN	TRUE
HILT_H2O109	BOOLEAN	TRUE

[illegible]

HBSIS		HILT Shale Indicator Satiation	YES
HSTI		HSTI Uses HILT Acceleration	NR
HVNCUT		HVT Water Saturation from AITH cutoff	%
HWS		Integrated Hole Volume Caliper Selection	50
ITTS		Integrated Transit Time Source	HCA/LHD
LBRF		Trigger for MAXIS First Reading Label	DTC
LEC			TDL

Label	Formidrin	Charger	Monopole	PAS
Lower Dipole	Transmitter	Geometry		
Spikes	Averaging	Interval	- PHD	
Rock	Material	Type		
Mud	Cake	Correction	Option	
Minimum	Concentrated	Interval		
Mid	Correction			
MM				DYNAMIC
MM				3962
MM				1067
				SANDSTONE
				NO
				3.048
				M
LTIX				
MAIS				
MATR				
MCCO				
MCI				
MCOF				

MCS	Mean Casing Slowness	USM
MDEN	Matrix Density	187-008
MD35	MD35	USM3
MHC0	Multihot Delta-T Scatter - FMD	250-000
MHC1	MCFL B0 Contrast Correction Coefficient	250-000
MHC2	MCFL B1 Contrast Correction Coefficient	2.2e-005
MHC3	MCFL B2 Contrast Correction Coefficient	3.2e-005
MHC4	MCFL High Contrast Correction Switch	NO
MPQE		

MCP-L Processing Operation Mode	ON	0
Minimum Sonic Amplitude		
Weld Sample Temperature		24.00
Maximum Sample Weight		MM
Mod Weight Counting Option		4724
HILT Nuclear Mod Type		NO
HRDD Processing Mode		NOBARITE
NPRM		
NNIT		
MTXG		
MRA		
MST		
MSB		
MY		

	HRDD	MM
NSAR	25.4	1
NR81		1
NR82		1
NR83		1
NR84		1
NR85		1
NR86		1
HRDD Depth Sampling Rate		
Number Waveforms Stacked 1		
Number Waveforms Stacked 2		
Number Waveforms Stacked 3		
Number Waveforms Stacked 4		
Number Waveforms Stacked 5		

[illegible]

RSIMX	Refractive Index	1.4
RTCO	Refractive Index	2.12
RW	Refractive Index	YES
RTG	Refractive Index	1.0000
RTG	Refractive Index	7488
RTG	Refractive Index	MM

Output DLIS Files			
DEFAULT	HILTD .014	FN13 PRODUCER	04-Sep-1999 17:12
CUST	HILTD .014	FN14 CUSTOMER	04-Sep-1999 17:12

Vastpar OLIS Files			
DEFAULT	HILTD .014	FN13 PRODUCER	04-Sep-1998 17:12
CUST	HILTD .014	FN14 CUSTOMER	04-Sep-1998 17:12

OP System Version: 9C0-413
MCM

P Time Mark Every 60 S

Integrated Hole Volume Major Pip Every 1 M3
— Integrated Cement Volume Minor Pip Every 0.1 M3
— Integrated Cement Volume Major Pip Every 1 M3

TENS REP Curve
(TENS REP)
.....
25000 AN.....

HCAL REP CURVE (HCAL REP)	375	PEZF REP CURVE (PEZF REP)	10 450	HDRA REP CURVE (HDRA REP)	-50
(MM)		(---)		(K/M3)	
GR REP CURVE (GR REP)	150	Std. Res. Formation P _e (PEZF)	10 450	Density Correction (HDRA)	-50
(GAP)		(---)		(K/M3)	

Gamma Ray (G/H)		Std. Res. Density Porosity (DPHZ)	DPHZ REP COR (DPHZ REP)
0	150		
125	375	0.45	-0.15
(MM)			
		0.45	-0.15

1025

TD

REPEAT ANALYSIS SAMPLES 2453 KGM3

Pin Diameter (In.)	Alpha Processed Neutrons Perosity (NPOR)
125 (MM)	0.45 (V/V)
375	-0.15
BS REP Curve (BS REP)	
125 (MM)	0.45 (V/V)
375	-0.15
GR REP Curve (GR REP)	
125 (MM)	0.45 (V/V)
375	-0.15

(mm)	J/s
	Tenslon (TENS)
	25000 (N)
	0
	TENS. REP CURVE
	(TENS. REP)

DLIS Name	Description	Parameters	Value
BHFL	Borehole Fluid Type		

DHC	Density Hydrogen Density	K/M3	1080.00
DORL	Depth Offset Repeat Analyte	ES	
FD	Fluid Density	M	0.0
FSAL	Formation Salinity	K/M3	1000
FSCO	Formation Salinity Correction Option	PPM	-50000
GCSE	Generalized Cutpoint Selection	NO	
GDEV	Average Angular Deviation of Borehole from Normal	HCAL	
GRD	Geothermal Gradient	DEG	0

MYCO	Sample Temperature	24.00	DEGC
NAT	Mud Weight Correction Option	NO	
NCMT	HLLT Nuclear Mud Type	NOBARITE	
NFRM	HRDD Depth Sampling Rate	StdRes	
NSAR	HRDD Depth Sampling Rate	25.4	MM
PTCO	Pressure	NO	OHMM
RNFS	Pressure	5.0900	
RNFS	Realistiy of Mud Filtrate Sample	SOCHN	
SAT	Standoff Data Source		
SHAT	S-face Hole Temperature		

Input DLIS Files	
HLTB-FTB	OP9-KP1
MCD-G	9C0-413
DTG-H	9C0-413
MCM	
	DSST-B
	DTA-A
	OP9-KP1
	9C0-413

Calibration and Check Summary

Thru Cal Magnitude - 3	0	0.7039	N/A	N/A	V
Thru Cal Magnitude - 4	4	1.322	N/A	N/A	V
Thru Cal Magnitude - 5	5	1.910	N/A	N/A	V
Thru Cal Magnitude - 6	6	1.907	N/A	N/A	V
Thru Cal Magnitude - 7	7	1.370	N/A	N/A	V
Phase - 0	0	53.37	N/A	N/A	DEG
Phase - 1	1	48.27	N/A	N/A	DEG
Phase - 2	2	48.41	N/A	N/A	DEG

	991.1	990.8	N/A	N/A	N/A
Master: 25JUL-1989 9:35					
ATI-H SPA Plus	990.5				mV
ATI-H SPA Zero	0	-0.2178	-0.2105	N/A	mV
ATI-H Temperature Plus	0.9150	0.9179	0.9175	N/A	V
ATI-H Temperature Zero	0	-0.0002168	-0.0002124	N/A	V

[illegible][illegible]

MICRO

Output DLIS Files
FN:13 PRODUCER 04-Sep-1999 17:12
FN:14 CUSTOMER 04-Sep-1999 17:12

DLIS Name
HILTB-FTB
MCD-G
DTC-H

OP System Version: 9C0-413
MCM
DSST-B
DTA-A
OPA-KP1
9C0-413

Changed Parameter Summary
New Value
1028.00 M
1028.00 M
890.0 17:28:40

PIP SUMMARY
Integrated Hole Volume Minor Pip Every 0.1 M3
Integrated Hole Volume Major Pip Every 1 M3
Integrated Cement Volume Minor Pip Every 0.1 M3
Integrated Cement Volume Major Pip Every 1 M3

Time Mark Every 60 S
Tension (TENS)
25000 (N)
0

Std. Res.
Density
Standoff
(RSDZ)
25 (MM)
0

Std. Res.
Density
Standoff
(RSDZ)
25 (MM)
0

Peak Separation
From HMIN to HMINO
(OHMM)
0

Computed Micro Normal (HMINO)
(OHMM)
0

Computed Micro Inverse (HMIN)
(OHMM)
0

AIT-H Mud Full Cal (AHMF)
(OHMM)
0

CD
375

375

425

450

475

500

525

550

575

600

625

650

675

700

725

750

775

800

825

850

875

900

925

950

975

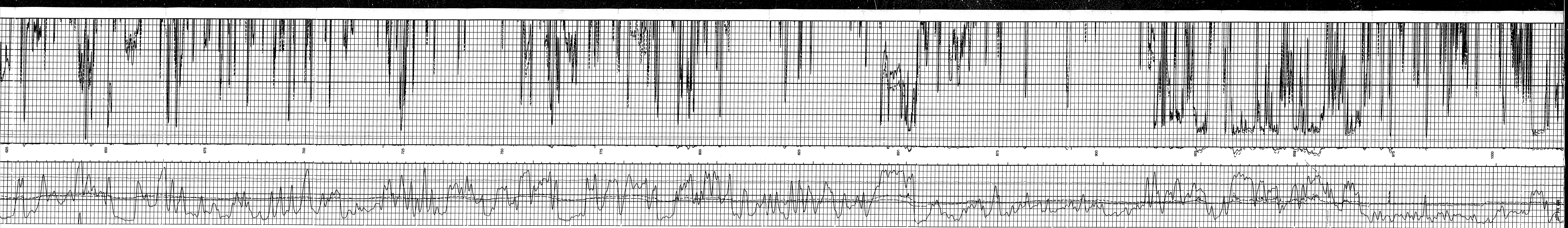
1000

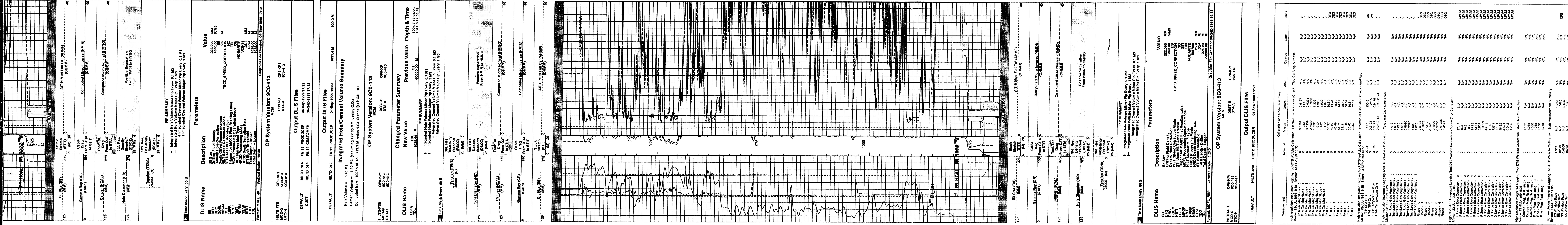
1025

1050

1075

1100





High resolution Integrated Logging Tool-DTS Master Calibration								
Mud Gain Correction								
Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	1.088				1.088			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
1	1.088				1.088			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
2	1.088				1.088			
		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.400 (Maximum)
Master: 22-JUL-1999 9:35								

High resolution Integrated Logging Tool-DTS Master Calibration							
Inversion results							
Phase	Rho Aluminium K/M3		Value	Phase	Rho Magnesium K/M3		Value
Master			2573	Master			2649
2573 (Minimum)	2598 (Nominal)	2608 (Maximum)		1878 (Minimum)	1888 (Nominal)	1896 (Maximum)	
Phase	Pe Aluminium		Value	Phase	Pe Magnesium		Value
Master			2.573	Master			2.649
2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)		2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)	
Master: 27-AUG-1999 17:18							

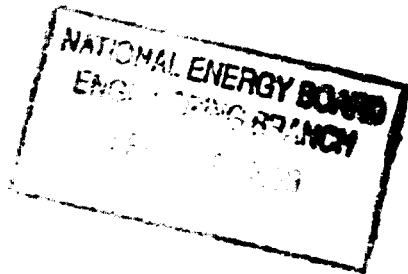
High resolution Integrated Logging Tool-DTS Master Calibration											
Deviation Summary											
Phase	BS Average Deviation %		Value	Phase	SS Average Deviation %		Value	Phase	LS Average Deviation %		Value
Master			0.1494	Master			0.4778	Master			0.8049
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)		-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)
Phase	BS Max Deviation %		Value	Phase	SS Max Deviation %		Value	Phase	LS Max Deviation %		Value
Master			0.4616	Master			1.259	Master			1.956
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)		-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)
Master: 27-AUG-1999 17:18											

High resolution Integrated Logging Tool-DTS Master Calibration											
Tank Measurement											
Phase	Thermal Near Corr. (Tank) CPS		Value	Phase	Thermal Far Corr. (Tank) CPS		Value	Phase	CNTC-CFTC (Tank)		Value
Master			5482	Master			2405	Master			2.267
	5000 (Minimum)	6031 (Nominal)	7200 (Maximum)		2075 (Minimum)	2793 (Nominal)	3125 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 29-JUL-1999 10:12											

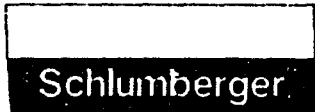
Mechanical Caliper - G / Equipment Identification			
Primary Equipment:			
Mechanical Caliper Device - G	MCD - G	1520	
Auxiliary Equipment:			

Mechanical Caliper - G Wellbore Calibration							
Electronics Calibration							
Phase	MCDG Counts Plus		Value	Phase	MCDG Counts Zero		Value
Before			378.8	Before			103.8
	320.5 (Minimum)	377.0 (Nominal)	433.5 (Maximum)		87.55 (Minimum)	103.0 (Nominal)	118.4 (Maximum)
Before: 4-SEP-1999 16:32							

Mechanical Caliper - G Wellsite Calibration							
Caliper Calibration							
Phase	Diameter Large Ring MM		Value	Phase	Diameter Small Ring MM		Value
Before			302.5	Before			199.5
	253.1 (Minimum)	304.8 (Nominal)	350.5 (Maximum)		172.7 (Minimum)	203.2 (Nominal)	233.7 (Maximum)
Before: 4-SEP-1999 16:32							



COMPANY	CHEVRON CANADA RESOURCES	BOTTOM LOG INTERVAL	1022.3 m
WELL	CHEVRON ET AL MCKAY LAKES O-80	SCHLUMBERGER DEPTH	1026 m
FIELD	UNDEFINED	DEPTH DRILLER	1026 m
TERRITORY	NORTH WEST TERRITORIES	KELLY BUSHING	299.5 m
		DRILL FLOOR	299.3 m
		GROUND LEVEL	292.32 m



PLATFORM EXPRESS
MICROLOG

MISCELLANEOUS

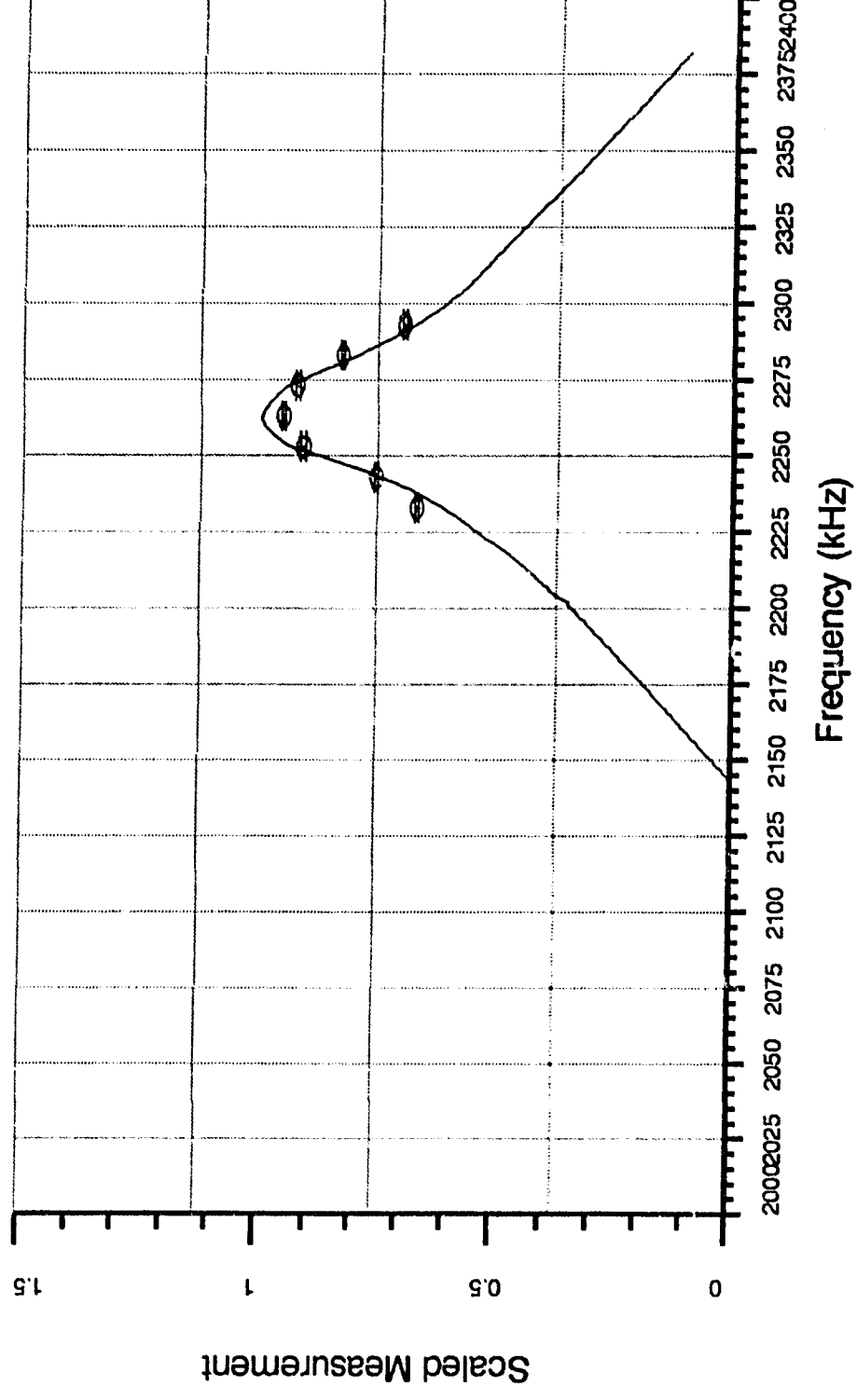
18.66

CMRT LARMOR FREQ SEARCH REPORT - Sun Sep 05 05:06:35 1999

Larmor Frequency Search Results

Larmor Frequency (kHz): 2262
Temperature(degC): 27.1
Depth(m): 437.0

TUNING AFTER LOGGING



Frequency (kHz)

2000 2025 2050 2075 2100 2125 2150 2175 2200 2225 2250 2275 2300 2325 2350 2375 2400

Input Parameter Summary

Central Frequency Selection: Manual
Central Frequency(kHz): 2263

Measured Data

Frequency(kHz)	Amplitude	RMS	Noise	Standard Deviation
2233	117.00	1.41		1.4188
2243	132.00	1.41		1.4152
2253	160.00	1.41		1.4107
2263	167.00	1.41		1.4080
2273	162.00	1.41		1.4118
2283	145.00	1.41		1.4185
2293	122.00	1.41		1.4168

Measurement Time(sec): 31
Frequency Standard Deviation(kHz): 0.3
Delta Temperature(degC): 0.1

Larmor Frequency Summary

Temperature(degC): 27.1
Larmor Frequency Estimates(kHz): 2262
new estimate: 2263
operating freq. prior to LFST (at LFST temp.): 2257
uncorrected estimate from temperature: 2257

Tune Word Offset: -8
Sonde Number: 79
Cartridge Number: 79

CMRT TUNE WORD SEARCH REPORT - Sun Sep 05 05:05:08 1999

Tune Word Search Results

Tune Word: 58
Tune Word Offset: -8
Maximum Amplitude: 2346.0
Temperature(degC): 27.2
Depth(m): 437.0

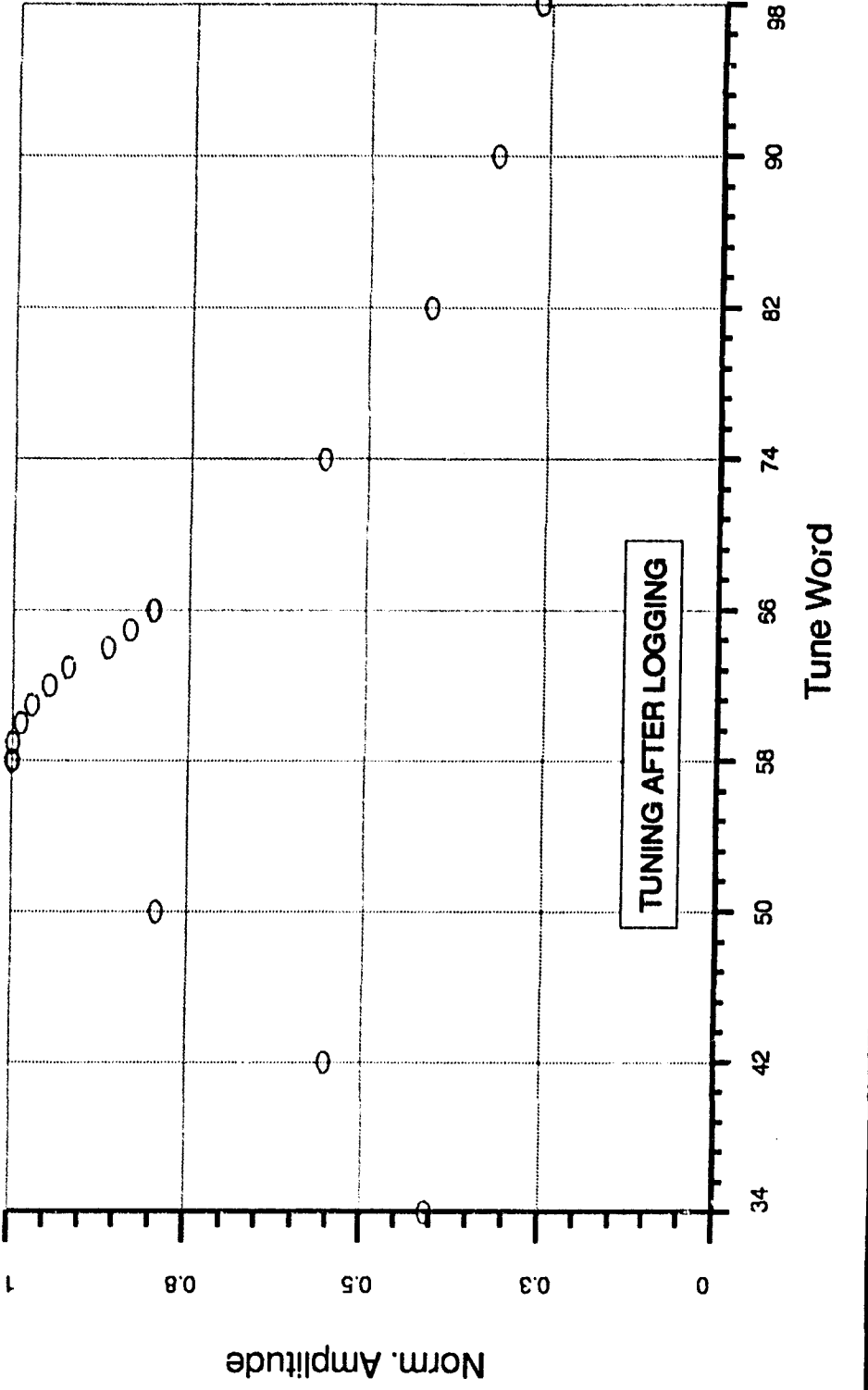
Input Parameter Summary

Search Mode: Manual
Search Frequency(kHz): 2255

Auxiliary Data

Test Loop Amplitude During Master Calibration: 2372.1
Larmor Frequency Estimates
Current Estimate(kHz): 2263
Uncorrected Estimate from Temperature(kHz): 2257

Sonde Number: 79
Cartridge Number: 79



TUNING AFTER LOGGING

Tune Word

34 42 50 58 66 74 82 90 98

Output DLIS Files

DEFAULT HILTD .022 FN:23 PRODUCER 04-Sep-1999 22:11 915.3 M 408.3 M

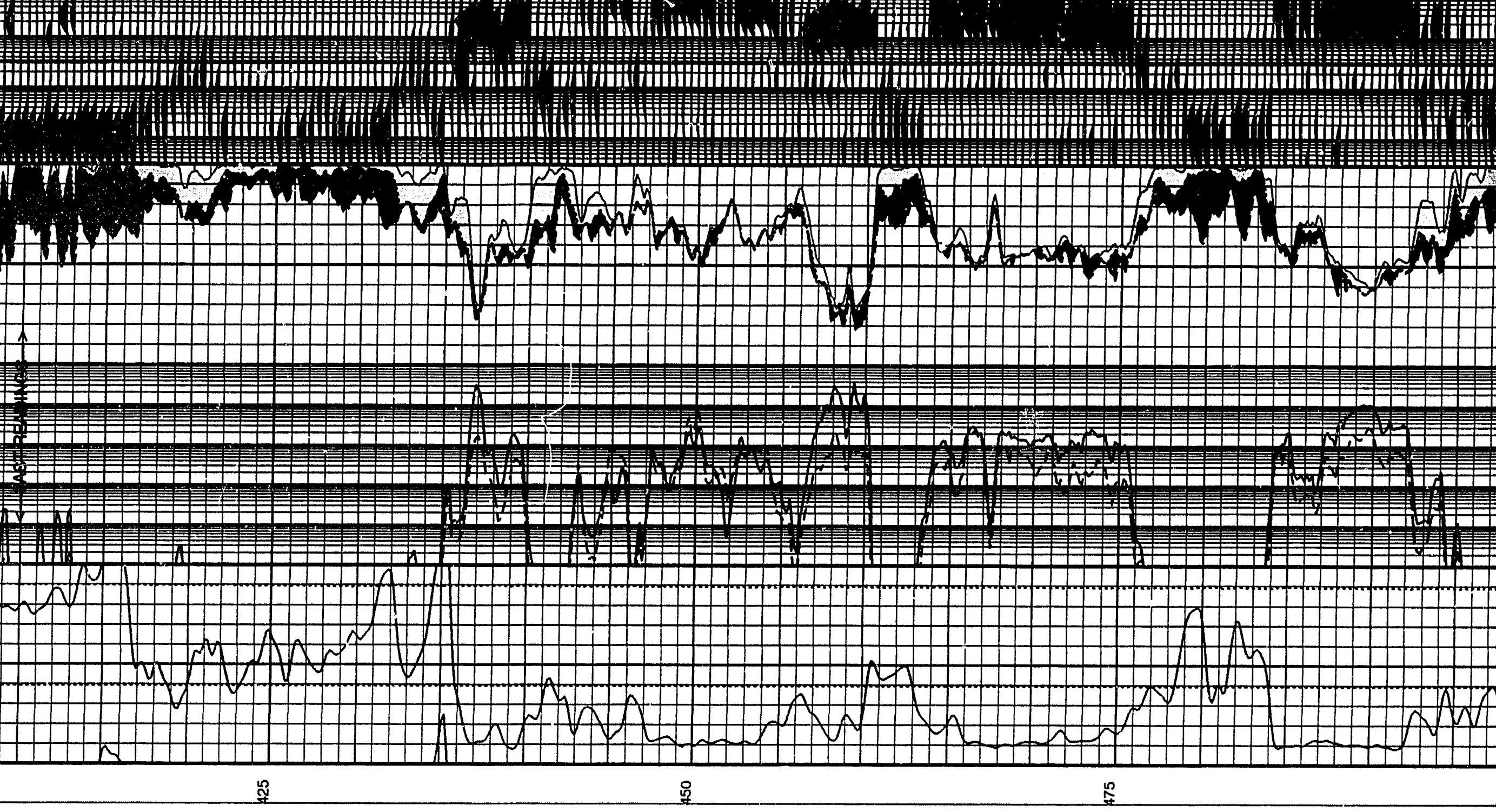
CMR DEPTH LOG REPORT

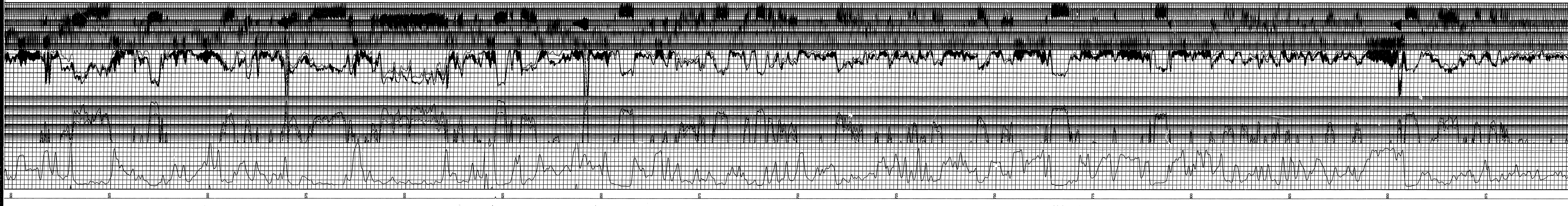
PARAMETER SUMMARY

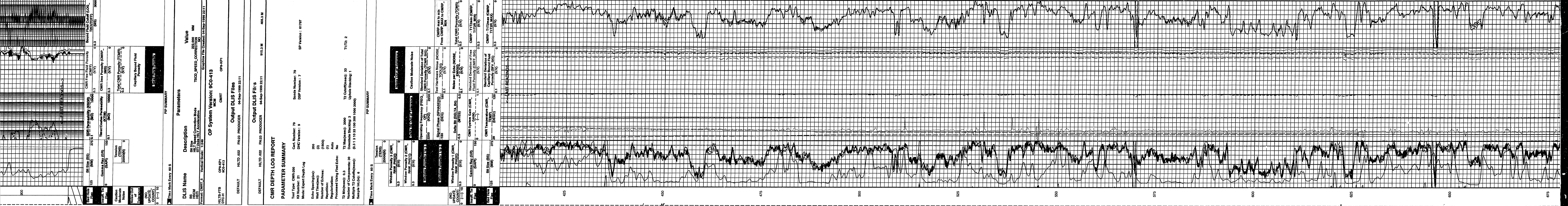
Tool Type: CMR-200
Kit Number: 21
Mode: Expert Depth Log
Cart. Number: 79
DHC Version: 9
Sonde Number: 79
DSP Version: 7
SP Version: 61797

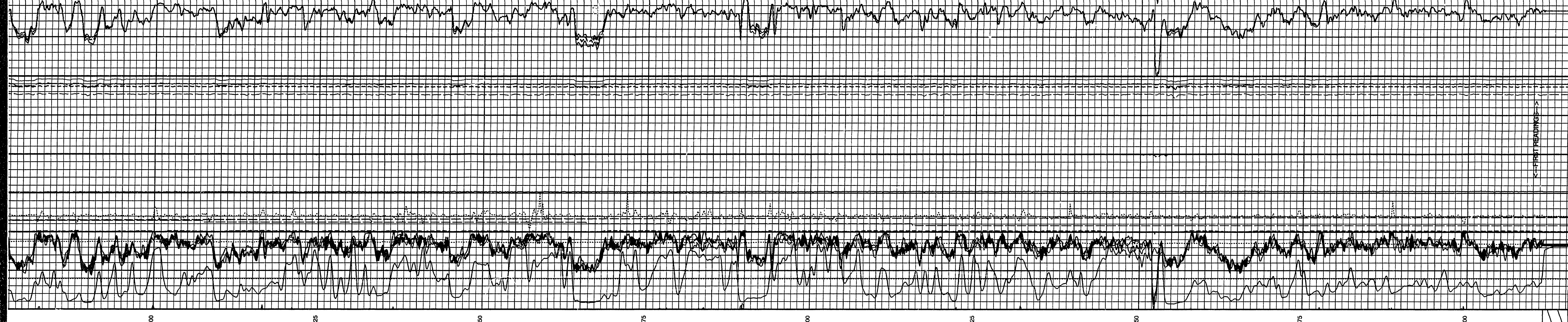
Echo Spacing(us): 200
Wait Time(sec): (3)
Number of Echoes: (1800)
Repetition: (1)
Regularization: Auto
Processed Using First Echo: No
T2 Min(msec): 0.3
T2 Max(msec): 3000
Number of Components: 30
Multiple T2 Cutoffs(msec): (0.3 1 3 10 33 100 300 1000 3000)
Sample Int.(in): 6
T2 Cutoff(msec): 33
Uphole Stacking: 1
T1/T2: 2

Time Mark Every 60 S				PIP SUMMARY			
(NO UPDATE COUNT)	(--)	10					
Noise Out of Tolerance				Small Pore Porosity			
Caution Moderate Noise				Capillary Bound Fluid Porosity			
Tension (TENS) 25000(N)				Total CMR Porosity (TCMR) 0.3 (V/V)			
Gamma Ray (GR) 150 (GAPI)				CMR 3ms Porosity (CMRP) 0.3 (V/V)			
T2 Min(msec): 0.3				CMR Free Fluid Porosity (CMFF) 0.3 (V/V)			
T2 Max(msec): 3000				Bound Fluid Cutoff (LOG_12CUTOFF) 0.3 (MS)			
Number of Components: 30							
Multiple T2 Cutoffs(msec): (0.3 1 3 10 33 100 300 1000 3000)							
Sample Int.(in): 6							









Bit Size (BS) (MM)	375	20	CMR Temperature (CMR) (DEGC)	120	0.1	Standard Deviation of Capillary Bound Fluid Porosity (BFV SIG) (V/V)	0.3	CMRP - T1T2max (CMRP - T1T2R MAX) (V/V)	0
Gamma Ray (GR) (GAPI)	150	0	CMR System Gain (CMR) (GAIN)	1	0.1	Standard Deviation of Free Fluid Porosity (CMFF SIG) (V/V)	0.3	CMRP - T1T2min (CMRP - T1T2R MIN) (V/V)	0
Window Porosity 1 (CMR - RAW PH1[0]) (V/V)	0.3	0	Delta B0 DELTA B0 (MTES)	0.5	0.1	Noise per Echo (NOISE - ENW[0]) (V/V)	0.3	Total CMR Porosity (TCMR) (V/V)	0
Window Porosity 2 (CMR - RAW PH1[1]) (V/V)	0.3	0	Signal Phase (SPHASE[0]) (DEG)	180	0.1	Tool Hardware Noise (NOISE - TOOL[0]) (V/V)	0	CMRP max to min From CMRP_MAX to CMRP - MIN	
Window Porosity 3 (CMR - RAW PH1[2]) (V/V)	0.3	0	Operating Frequency (FREQ - OP) (KHz)	2200	0.1	Standard Deviation of Total CMR Porosity (TCMR SIG) (V/V)	0		
			Delta B0 Out of Tolerance			Caution Moderate Noise			
			Caution Out of Tolerance			Noise Out of Tolerance			
			Tension (TENS) (25000N)	0					

Parameters		Value
DLIS Name	BS HSCM HST1	223.000 MM
Description	HLT Speed Correction Mode ST1 Uses HLT Acceleration	TSCD_SPEED_CORRECTION NO
OP System Version: 9C0-413		Graphics File Created: 04-Sep-1999 22:11
OPK-KP1 9C0-413		
CMRT		OPK-KP1

Output DLIS Files	04-Sep-1999 20:39
HLTD-022 FN:23 PRODUCER	04-Sep-1999 20:39
HLTD-021 FN:22 PRODUCER	04-Sep-1999 20:39

CMR DEPTH LOG REPORT

Tool Type: CMR-200	Card Number: 79	Sonde Number: 79	SP Version: 61797
Kit Number: 21	DHC Version: 9	DSP Version: 7	
Mode: Expert Depth Log			
Echo Spacing (us): 200			
Walk Time (sec): (4)			
Number of Echoes: (1800)			
Repetition: (1)			
Regularization: Auto			
Processed Using First Echo: No			
T2 Min (msec): 0.3	T2 Max (msec): 3000	T2 Cutoff (msec): 100	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	
Multiple T2 Cutoffs (msec): (0.3 1 3 10 30 100 300 1000 3000)			
Sample Int (in): 6			

PARAMETER SUMMARY

Tool Type: CMR-200	Card Number: 79	Sonde Number: 79	SP Version: 61797
Kit Number: 21	DHC Version: 9	DSP Version: 7	
Mode: Expert Depth Log			
Echo Spacing (us): 200			
Walk Time (sec): (4)			
Number of Echoes: (1800)			
Repetition: (1)			
Regularization: Auto			
Processed Using First Echo: No			
T2 Min (msec): 0.3	T2 Max (msec): 3000	T2 Cutoff (msec): 100	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	
Multiple T2 Cutoffs (msec): (0.3 1 3 10 30 100 300 1000 3000)			
Sample Int (in): 6			

Output DLIS Files

HLTD-022 FN:23 PRODUCER	04-Sep-1999 20:39
HLTD-021 FN:22 PRODUCER	04-Sep-1999 20:39

CMR DEPTH LOG REPORT

Tool Type: CMR-200	Card Number: 79	Sonde Number: 79	SP Version: 61797
Kit Number: 21	DHC Version: 9	DSP Version: 7	
Mode: Expert Depth Log			
Echo Spacing (us): 200			
Walk Time (sec): (4)			
Number of Echoes: (1800)			
Repetition: (1)			
Regularization: Auto			
Processed Using First Echo: No			
T2 Min (msec): 0.3	T2 Max (msec): 3000	T2 Cutoff (msec): 100	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	
Multiple T2 Cutoffs (msec): (0.3 1 3 10 30 100 300 1000 3000)			
Sample Int (in): 6			

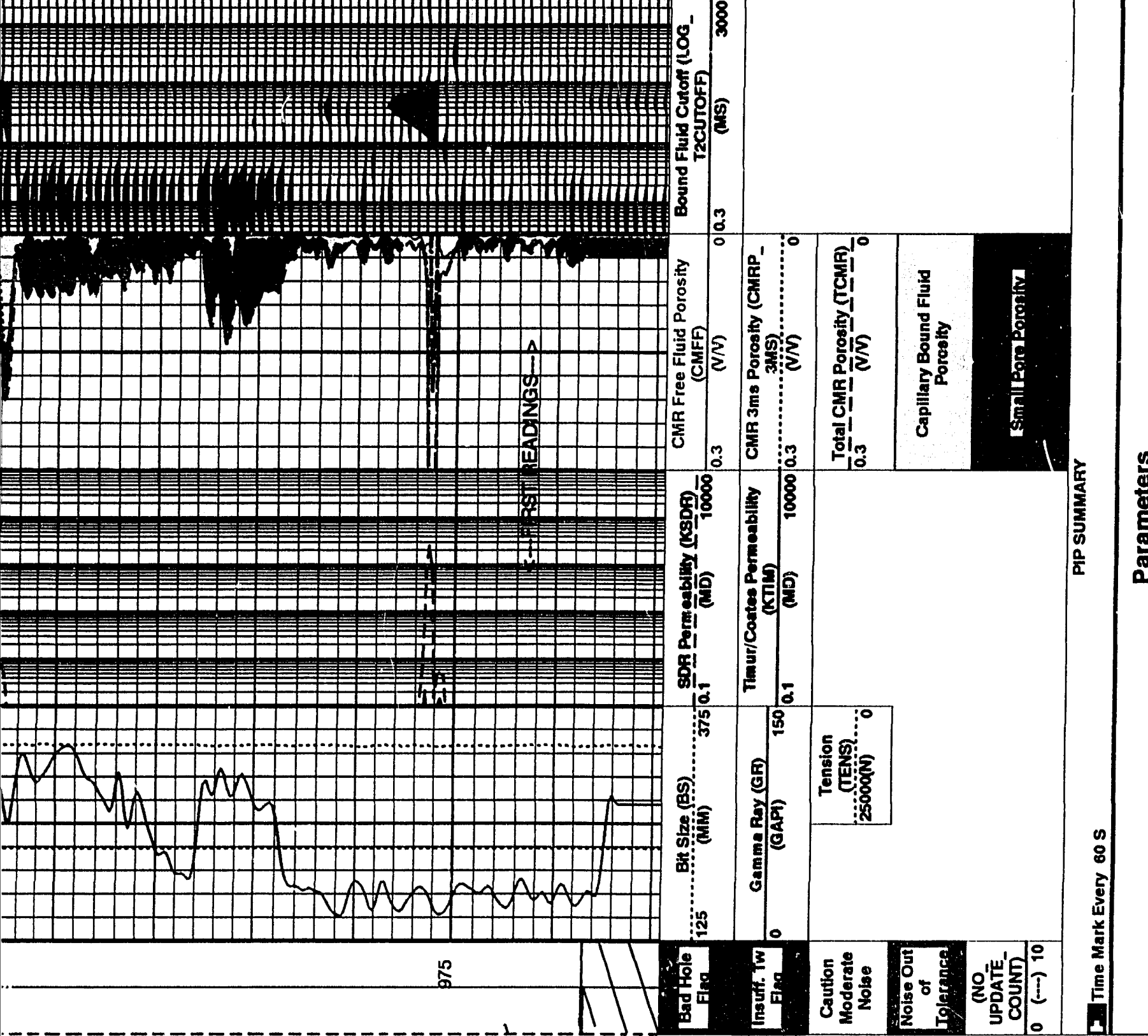
PARAMETER SUMMARY

Tool Type: CMR-200	Card Number: 79	Sonde Number: 79	SP Version: 61797
Kit Number: 21	DHC Version: 9	DSP Version: 7	
Mode: Expert Depth Log			
Echo Spacing (us): 200			
Walk Time (sec): (4)			
Number of Echoes: (1800)			
Repetition: (1)			
Regularization: Auto			
Processed Using First Echo: No			
T2 Min (msec): 0.3	T2 Max (msec): 3000	T2 Cutoff (msec): 100	T1/T2: 2
Number of Components: 30	Downhole Stacking: 3	Uphole Stacking: 1	
Multiple T2 Cutoffs (msec): (0.3 1 3 10 30 100 300 1000 3000)			
Sample Int (in): 6			

Output DLIS Files

HLTD-022 FN:23 PRODUCER	04-Sep-1999 20:39
HLTD-021 FN:22 PRODUCER	04-Sep-1999 20:39

CMR DEPTH LOG REPORT



Bit Size (BS) (mm)	375 0.1	SDR Permeability (KSDP) (MD)	10000	CMR Free Fluid Porosity (CMFF)	0.3 (V/V)	Bound Fluid Cutoff (LOG) TSCUTOFF	3000 (MS)
Gamma Ray (GR) (GAPI)	150	Time/Costs Permeability (KTM)	10000	CMR 3ms Porosity (CMRP) (V/V)	0.3 (V/V)		
Insuff. Tr Flag	0	Tension (TENS) 25000(N)	0	CMR 3ms Porosity (CMRP) (V/V)	0.3 (V/V)		
Caution Moderate Noise				Total CMR Porosity (TCMR) (V/V)	0.3 (V/V)		
Noise Out of Tolerance				Capillary Bound Fluid Porosity			
(NO UPDATE COUNT)	0						
0	(---) 10						

Parameters		Value
DLIS Name	BS	222.000 MM
HSCM	HST	TSCD_SPEED_CORRECTION NO
HST	HST	STI Uses HIL Acceleration
Graphics File Created: 04-Sep-1999 20:39		

OP System Version: 9C0-413		CMRT	OP9-KP1
HILTB-FTB		CMRT	OP9-KP1
DTC-H			

Output DLIS Files	
DEFAULT	HILTD .021 FN22 PRODUCER 04-Sep-1999 20:39

Output DLIS Files	
DEFAULT	HILTD .021 FN22 PRODUCER 04-Sep-1999 20:39 985.4 M 899.9 M

CMR DEPTH LOG REPORT

PARAMETER SUMMARY

Tool Type: CMR-200 Cart. Number: 79 Sonde Number: 79
Kit Number: 21 DHC Version: 9 DSP Version: 7 SP Version: 61787
Mode: Expert Depth Log

Echo Spacing (m): 200
Wait Time (sec): (4)
Number of Echoes: (1800)
Repetition: (1)
Regularization: Auto
Processed Using First Echo: No

T2 Min (msec): 0.3 T2 Max (msec): 3000 T2 Cutoff (msec): 100 T1/T2: 2
Number of Components: 30 Downhole Stacking: 3 Uphole Stacking: 1
Multiple T2 Cutoffs (msec): (0.3 1 3 10 33 100 300 1000 3000)
Sample Int. (n): 6

PIP SUMMARY

Time Mark Every 60 S	Tension (TENS) 25000(N)	0
Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

(NO UPDATE COUNT)	0	
0	(---) 10	

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

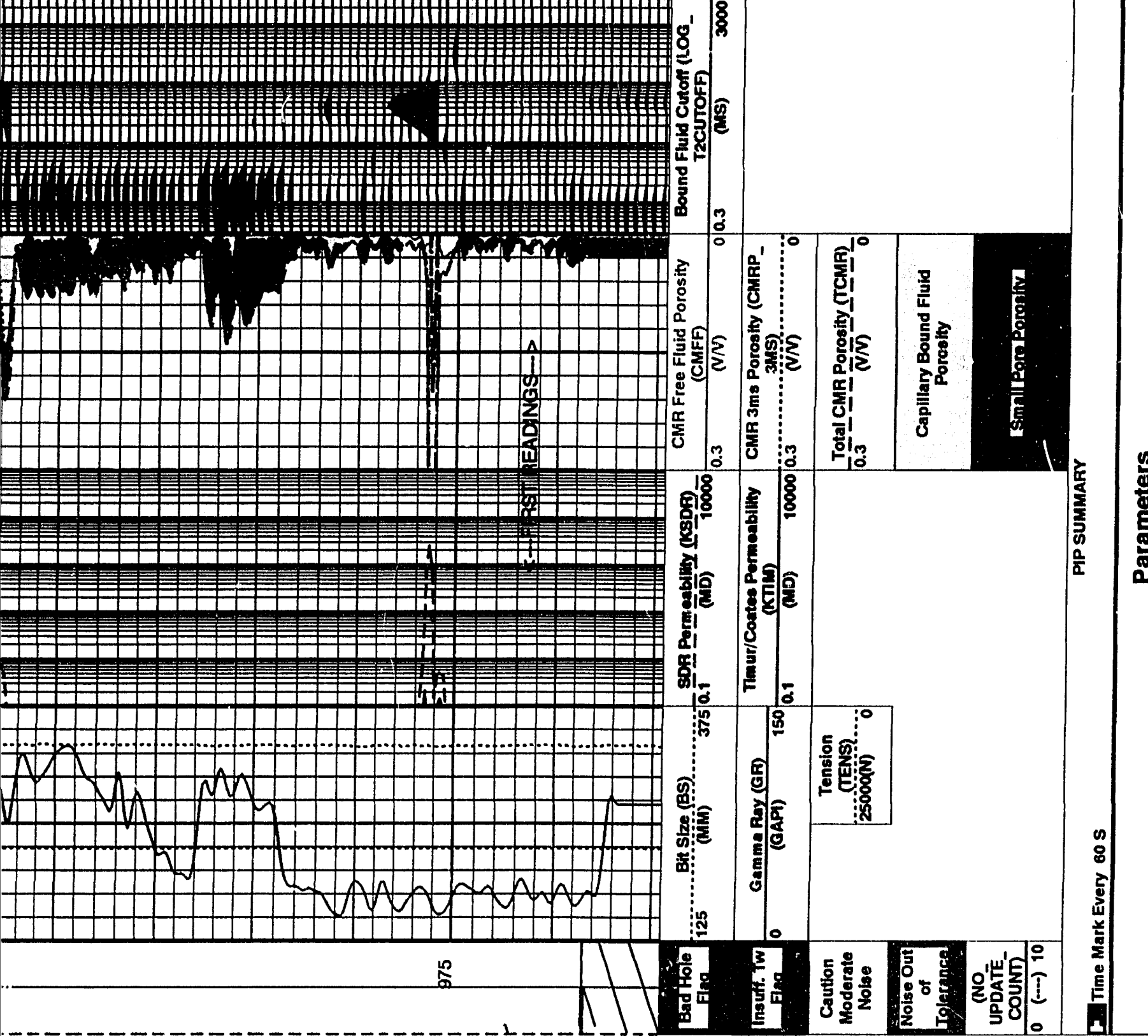
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	



Bit Size (BS) (mm)	375 0.1	SDR Permeability (KSDP) (MD)	10000	CMR Free Fluid Porosity (CMFF)	0.3 (V/V)	Bound Fluid Cutoff (LOG) TSCUTOFF	3000 (MS)
Gamma Ray (GR) (GAPI)	150	Time/Costs Permeability (KTM)	10000	CMR 3ms Porosity (CMRP) (V/V)	0.3 (V/V)		
Insuff. Tr Flag	0	Tension (TENS) 25000(N)	0	CMR 3ms Porosity (CMRP) (V/V)	0.3 (V/V)		
Caution Moderate Noise				Total CMR Porosity (TCMR) (V/V)	0.3 (V/V)		
Noise Out of Tolerance				Capillary Bound Fluid Porosity			
(NO UPDATE COUNT)	0						
0	(---) 10						

Parameters		Value
DLIS Name	BS	222.000 MM
HSCM	HST	TSCD_SPEED_CORRECTION NO
HST	HST	STI Uses HIL Acceleration
Graphics File Created: 04-Sep-1999 20:39		

OP System Version: 9C0-413		CMRT	OP9-KP1
HILTB-FTB		CMRT	OP9-KP1
DTC-H			

Output DLIS Files	
DEFAULT	HILTD .021 FN22 PRODUCER 04-Sep-1999 20:39

Output DLIS Files	
DEFAULT	HILTD .021 FN22 PRODUCER 04-Sep-1999 20:39 985.4 M 899.9 M

CMR DEPTH LOG REPORT

PARAMETER SUMMARY

Tool Type: CMR-200 Cart. Number: 79 Sonde Number: 79
Kit Number: 21 DHC Version: 9 DSP Version: 7 SP Version: 61787
Mode: Expert Depth Log

Echo Spacing (m): 200
Wait Time (sec): (4)
Number of Echoes: (1800)
Repetition: (1)
Regularization: Auto
Processed Using First Echo: No

T2 Min (msec): 0.3 T2 Max (msec): 3000 T2 Cutoff (msec): 100 T1/T2: 2
Number of Components: 30 Downhole Stacking: 3 Uphole Stacking: 1
Multiple T2 Cutoffs (msec): (0.3 1 3 10 33 100 300 1000 3000)
Sample Int. (n): 6

PIP SUMMARY

Time Mark Every 60 S	Tension (TENS) 25000(N)	0
Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

(NO UPDATE COUNT)	0	
0	(---) 10	

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

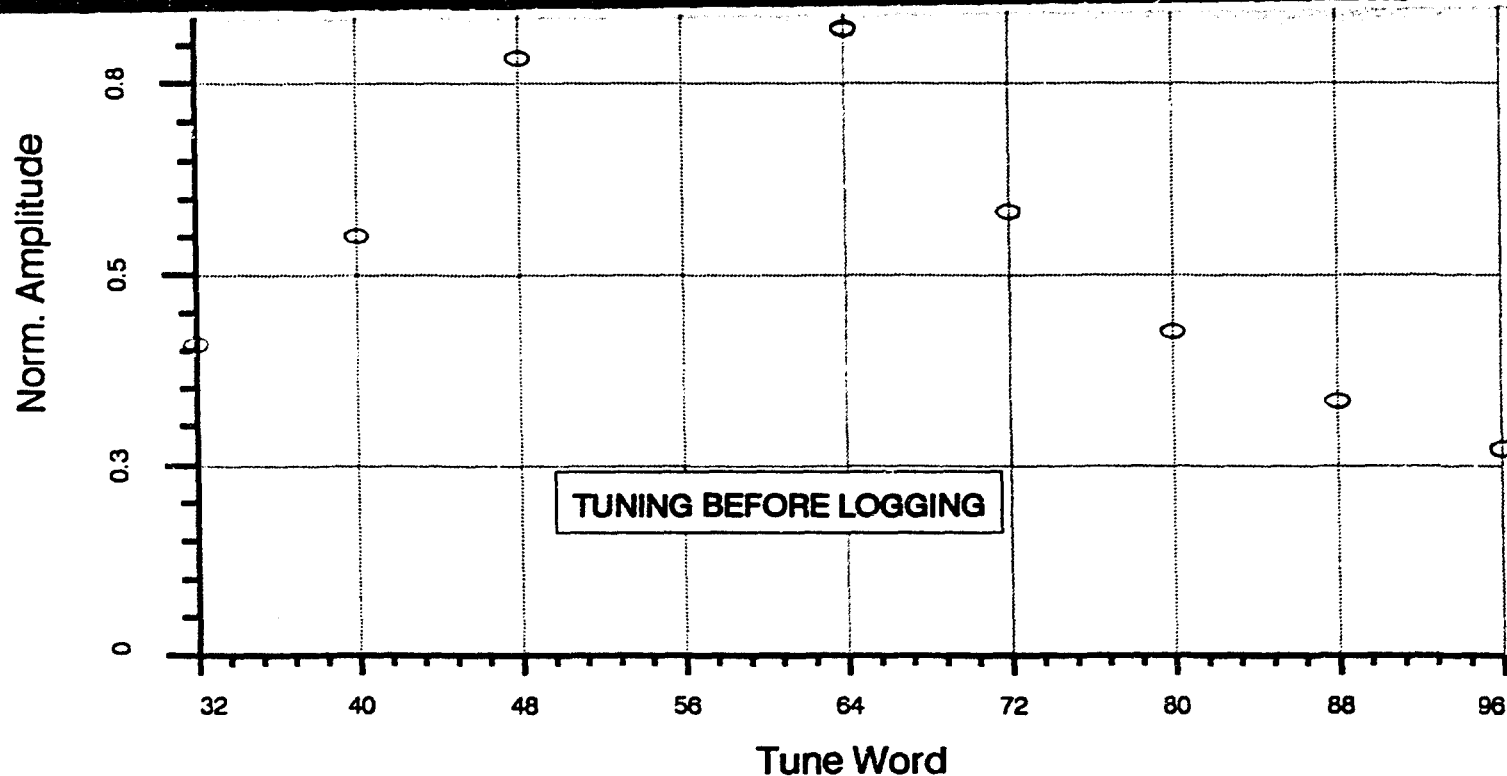
Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)
Tool Hardware Noise (NOISE) TOOL(0)	0.1 (V/V)	0
CMR max to min From CMRP MAX to CMRP MIN		
Total CMR Porosity (TCMR) (V/V)		0

Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Bad Hole Flag	0	
Insuff. Tr Flag	0	
Caution Moderate Noise		
Noise Out of Tolerance		
(NO UPDATE COUNT)	0	
0	(---) 10	

Window Porosity 1 (CMR) RAW PH(1)	0.3 (V/V)	0
Window Porosity 2 (CMR) RAW PH(2)	0.3 (V/V)	0
Window Porosity 3 (CMR) RAW PH(3)	0.3 (V/V)	0
Operating Frequency (FREQ) OP	2200 (KHz)	2250 0.1 (V/V)
Signal Phase (SPHASE(0)) (DEG)	-180	180 0.1 (V/V)



Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Detector Calibration							
Before: 4-SEP-1999 12:01							
Gamma Ray Background	30.00	N/A	28.63	N/A	N/A	N/A	GAPI
Gamma Ray (Jig - Bkg)	174.6	N/A	174.6	N/A	N/A	15.88	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Zero Measurement							
Master: 29-JUL-1999 11:12 Before: 4-SEP-1999 12:03							
CNTC Background	25.07	25.07	26.11	N/A	N/A	3.761	CPS
CFTC Background	28.94	28.94	30.23	N/A	N/A	4.341	CPS
High resolution Integrated Logging Tool-DTS Wellsite Calibration - Accelerometer Calibration							
Before: 4-SEP-1999 17:33							
Z-Axis Acceleration	9.810	N/A	9.811	N/A	N/A	N/A	M/S2

The HGNS Neutron Master Calibration was done with the following parameters :

NCT-B Water Temperature 19.4 DEGC.
Thermal Housing Size 85.852 MM.

High resolution Integrated Logging Tool-DTS / Equipment Identification:

Primary Equipment:

HILT Gamma-Ray Neutron Sonde-DTS
Gamma-Ray
Neutron with Alpha Source
Z-Axis Accelerometer
Neutron Logging Source
Neutron Source Radioactive
HGNS IP Dummy Cartridge
Compensated Neutron Box

HGNS - B 992
HGR -
HCNT -
HACC -
NLS - KL
NSR - F 2014
DUMM - A
CNB - AB

Auxiliary Equipment:

HGNS Housing
Neutron Calibration Tank
Gamma Source Radioactive

HGNS - 994
NCT - B
GSR - U/Y 91395

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		28.63	Before		174.6	Before		165.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	158.8 (Minimum)	174.6 (Nominal)	190.5 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 4-SEP-1999 12:01

High resolution Integrated Logging Tool-DTS Wellsite Calibration

Zero Measurement

Phase	CNTC Background CPS	Value	Phase	CFTC Background CPS	Value
Master		25.07	Master		28.94
Before		26.11	Before		30.23
5.000 (Minimum)	25.07 (Nominal)	40.00 (Maximum)	5.000 (Minimum)	28.94 (Nominal)	40.00 (Maximum)

Master: 29-JUL-1999 11:12

Before: 4-SEP-1999 12:03

High resolution Integrated Logging Tool-DTS
Wellsite Calibration

Accelerometer Calibration

Phase	Z-Axis Acceleration M/S2	Value
Before		9.811
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 4-SEP-1999 17:33

Combinable Magnetic Resonance Tool / Equipment Identification

Primary Equipment:

CMRT Sonde - AA
CMRT Cartridge - AA

CMRS - 79
CMRC - AA 79

Auxiliary Equipment:

NATIONAL ENERGY BOARD
ENGINEERING BRANCH
SEP - 8 1999

COMPANY: CHEVRON CANADA RESOURCES

WELL: CHEVRON ET AL MCKAY LAKES O-80

FIELD: UNDEFINED

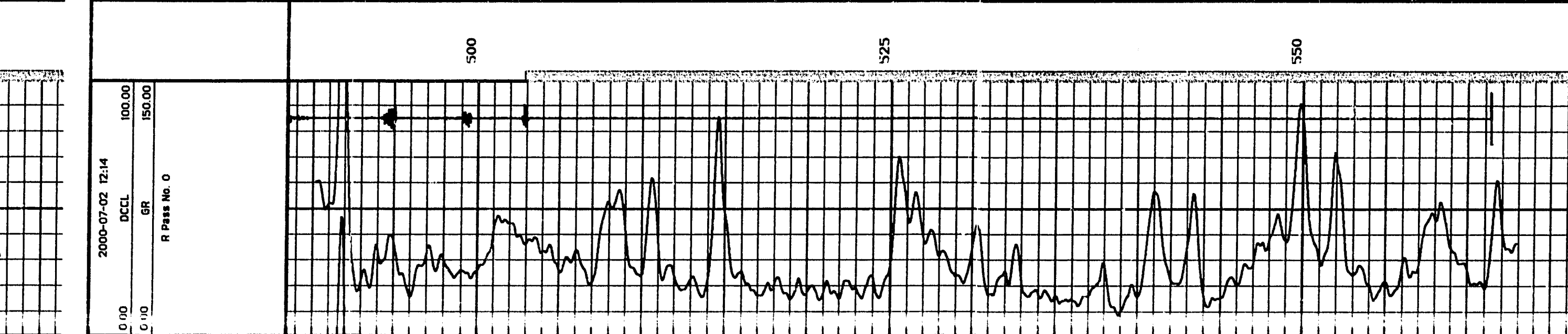
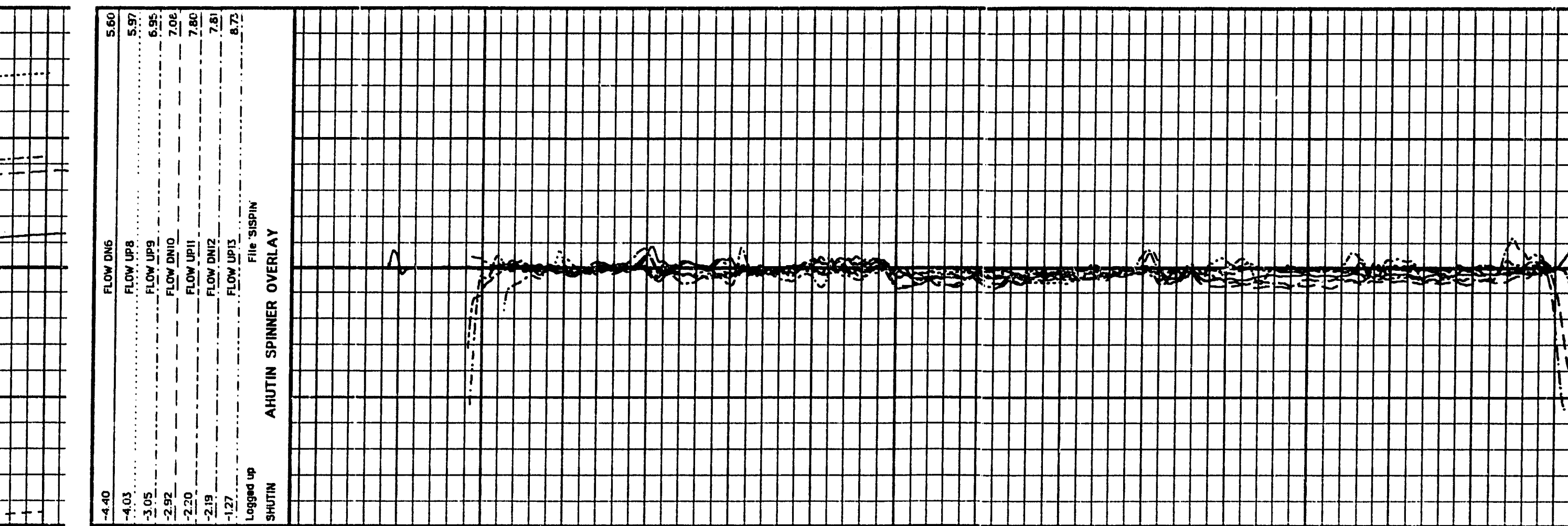
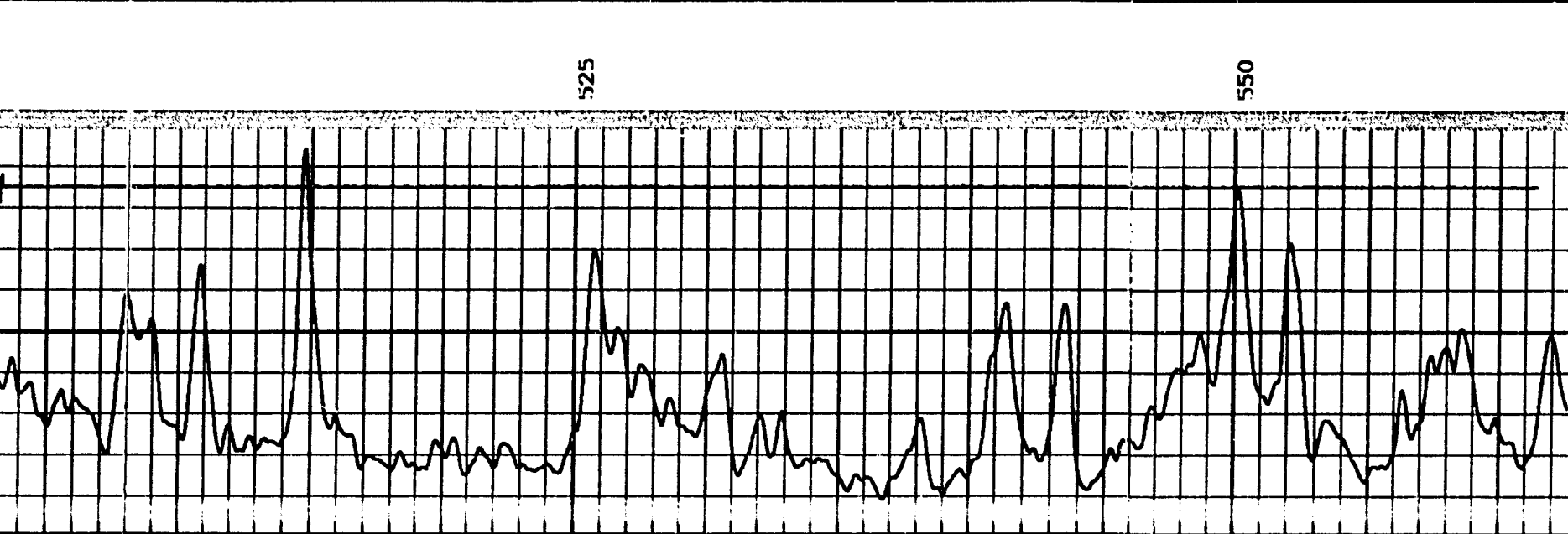
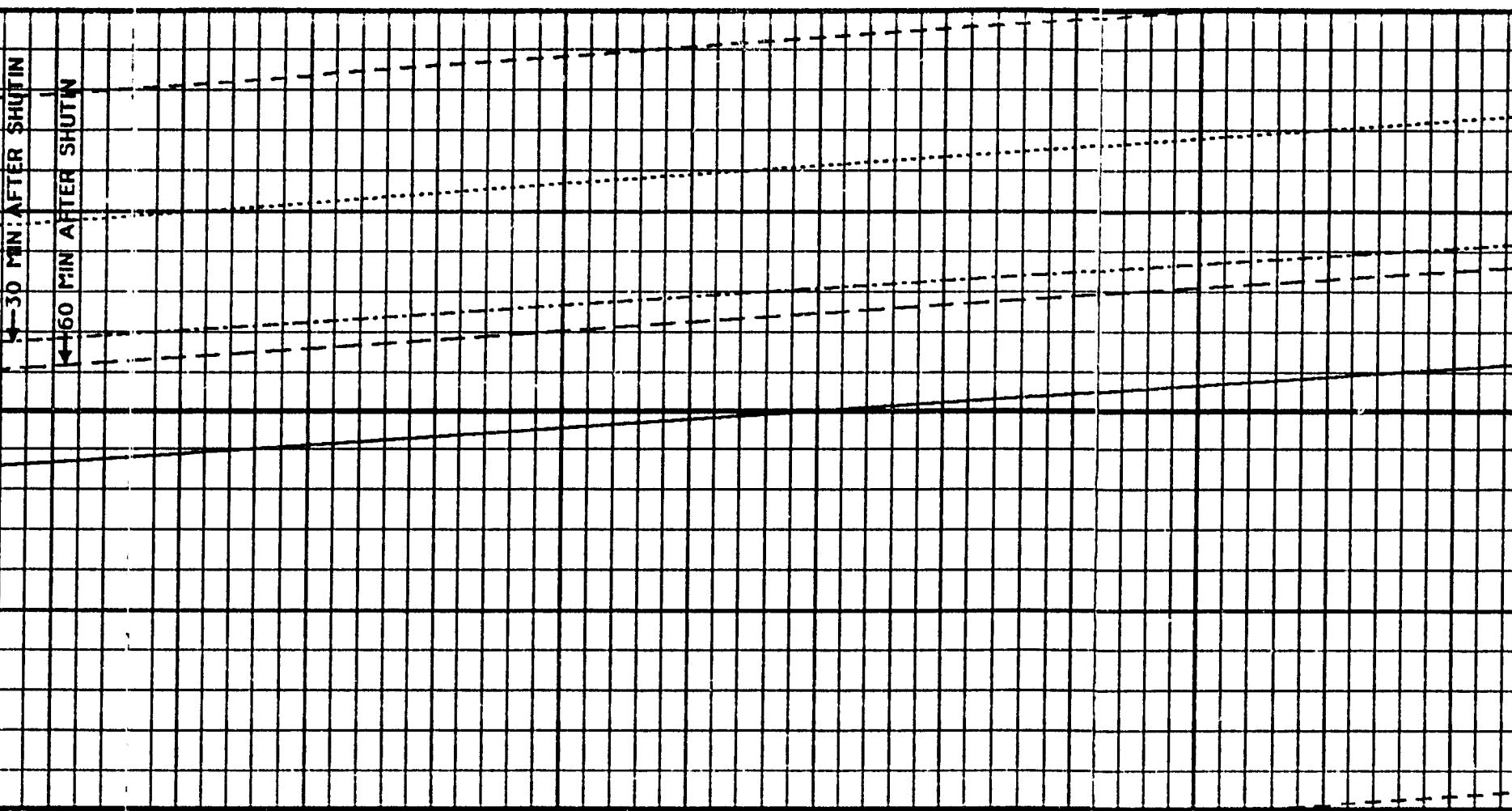
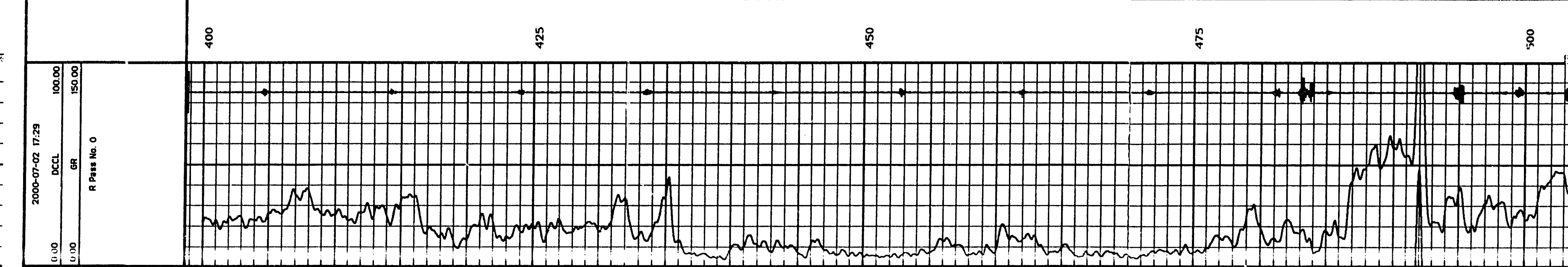
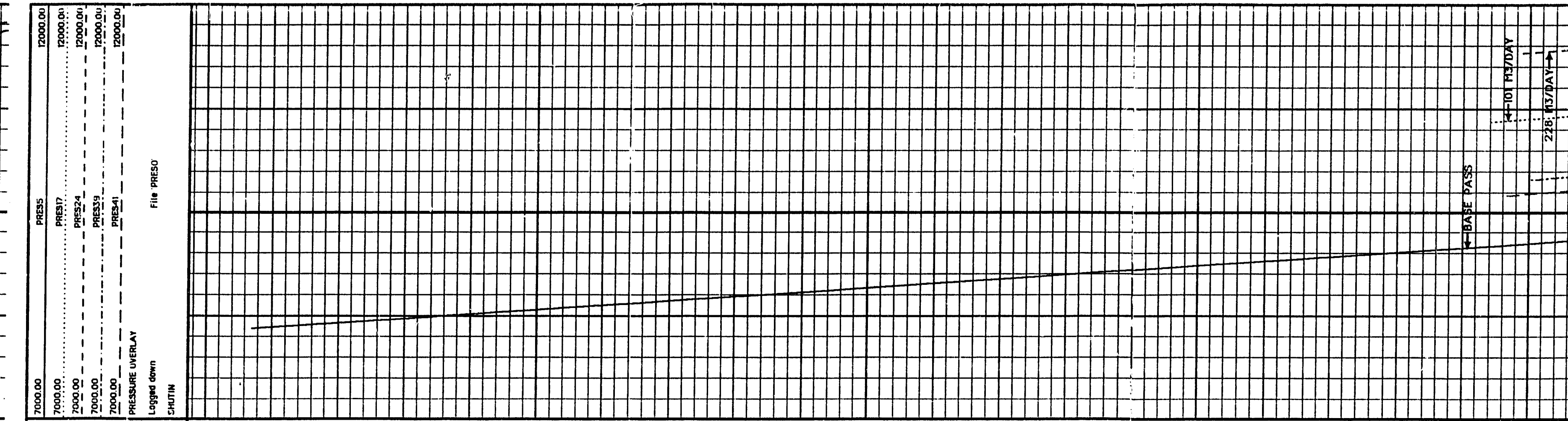
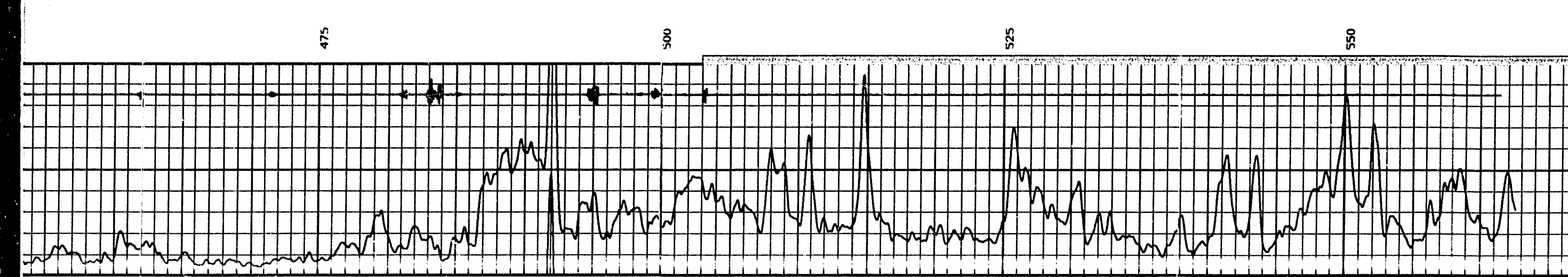
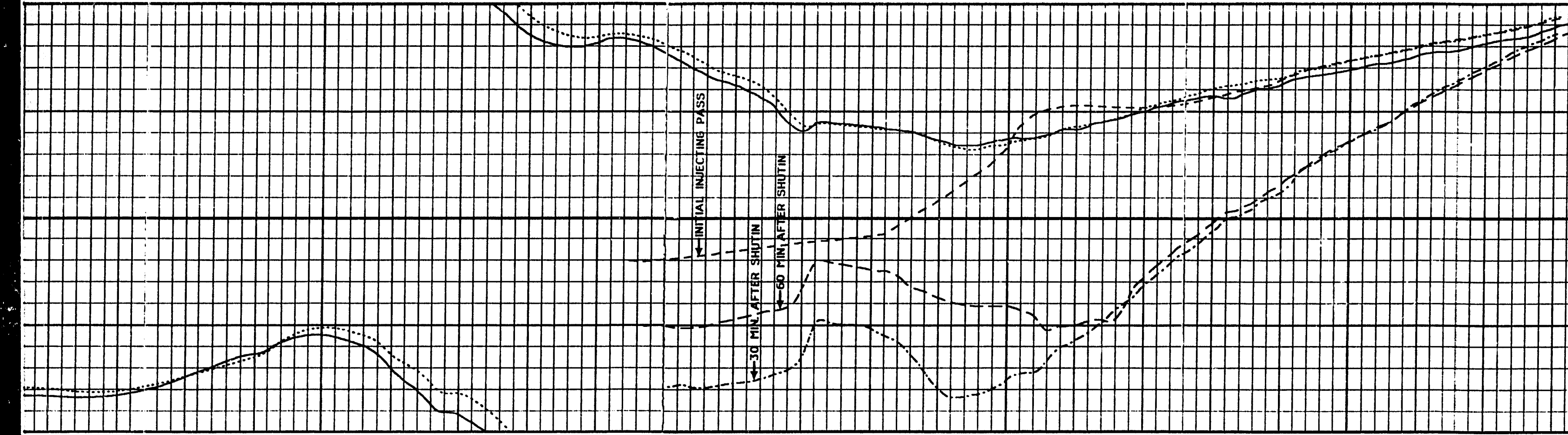
TERRITORY: NORTH WEST TERRITORIES

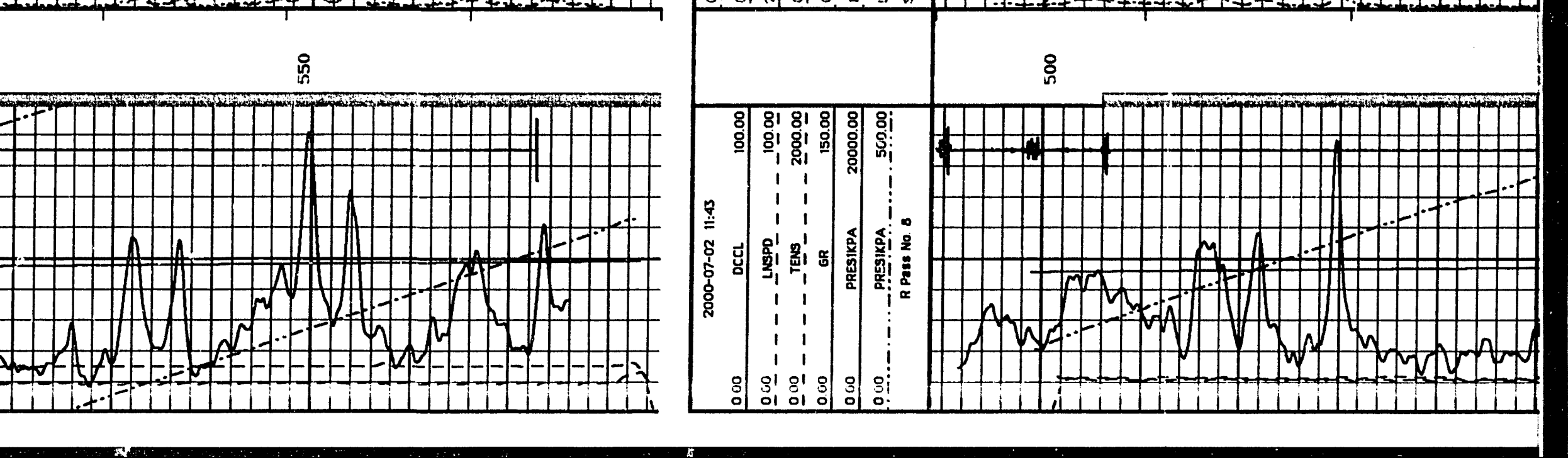
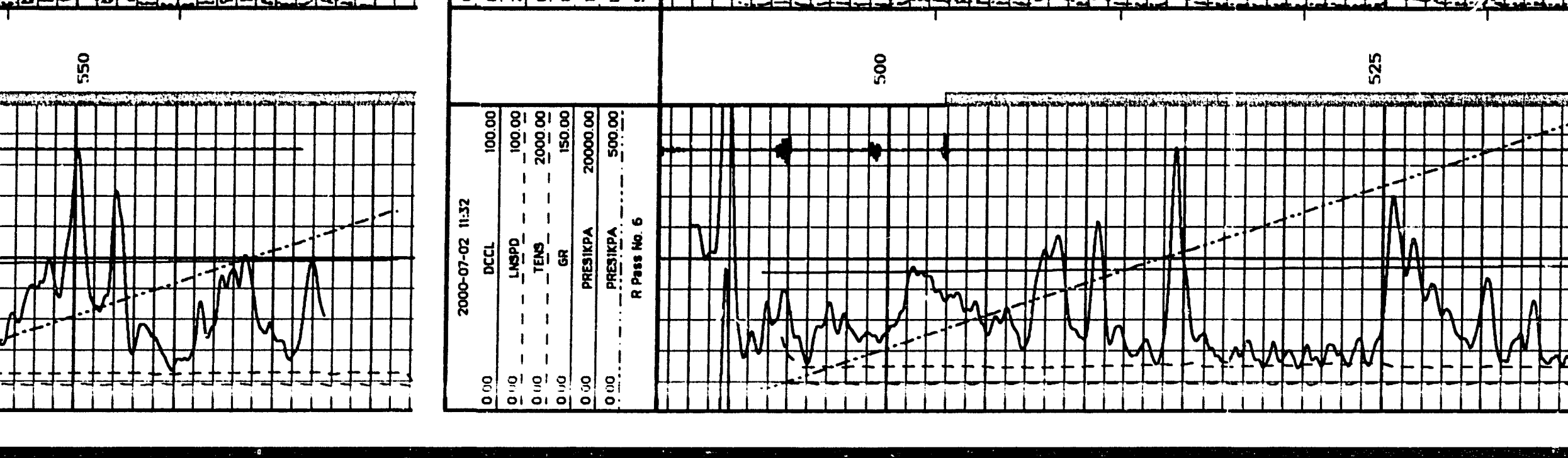
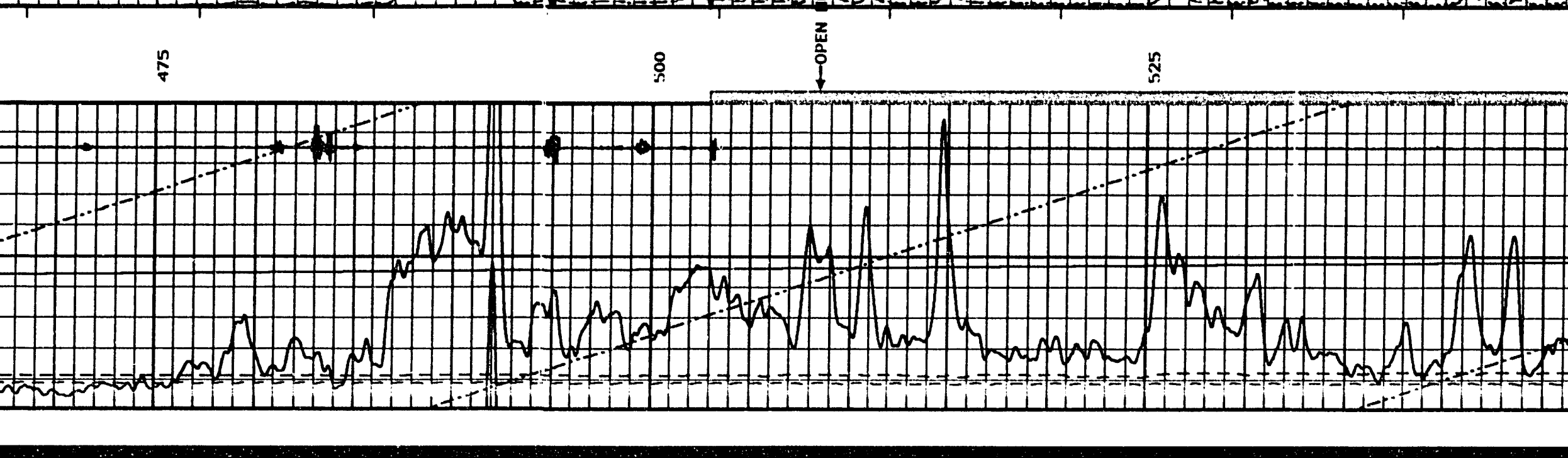
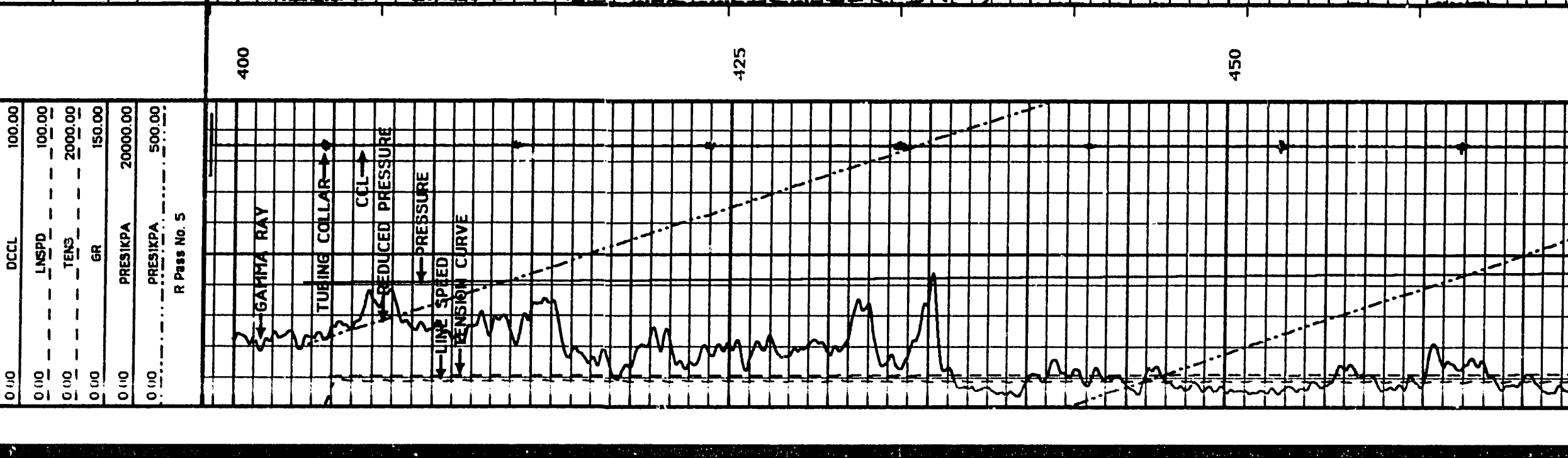
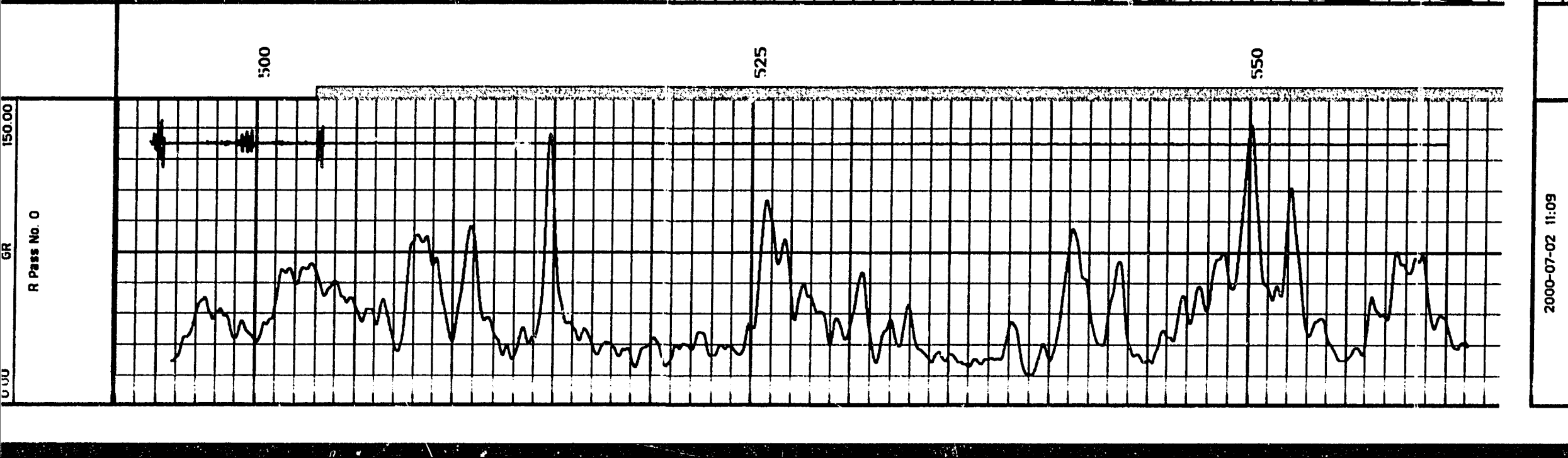
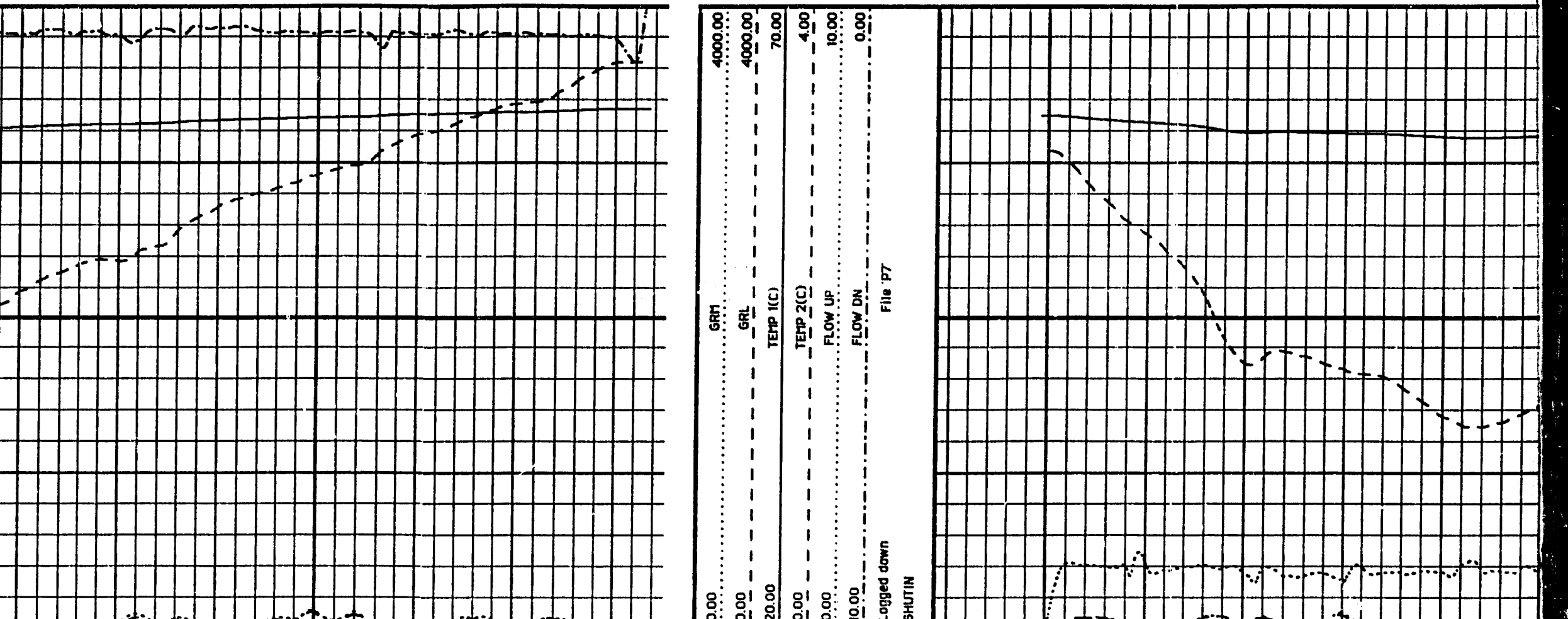
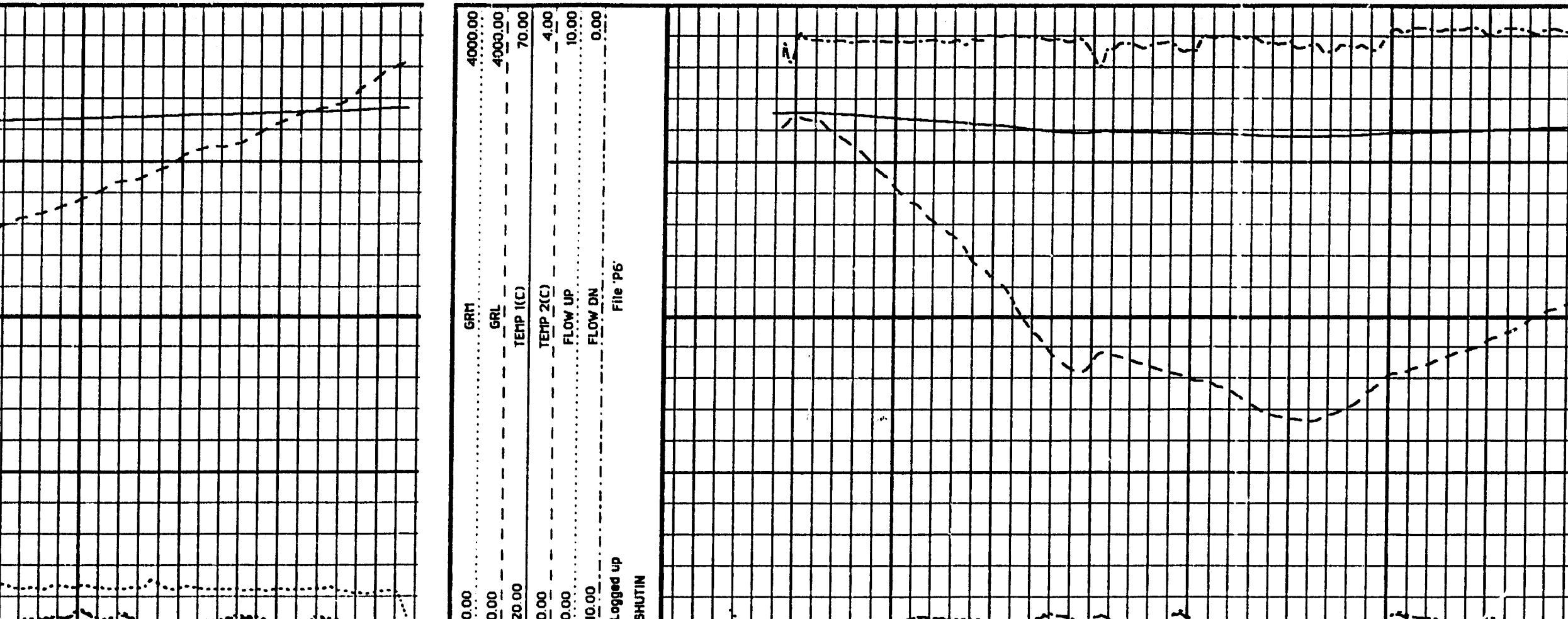
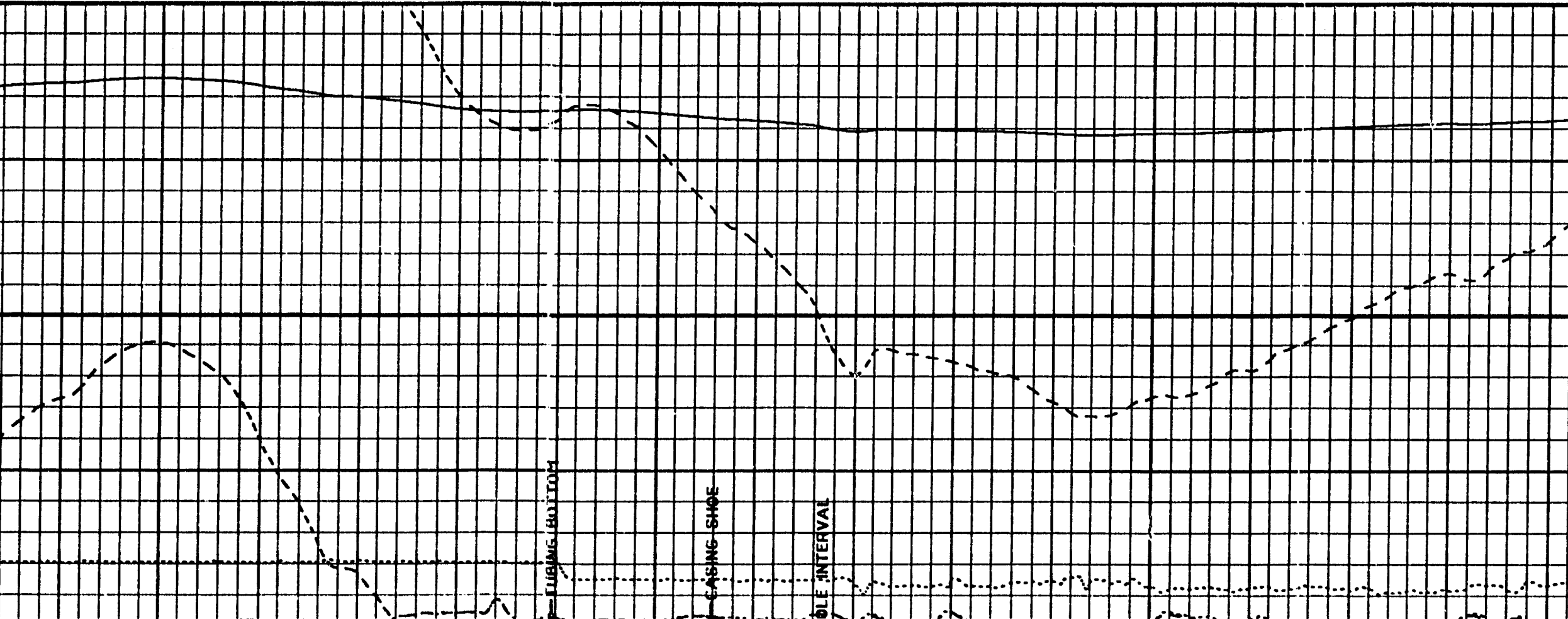
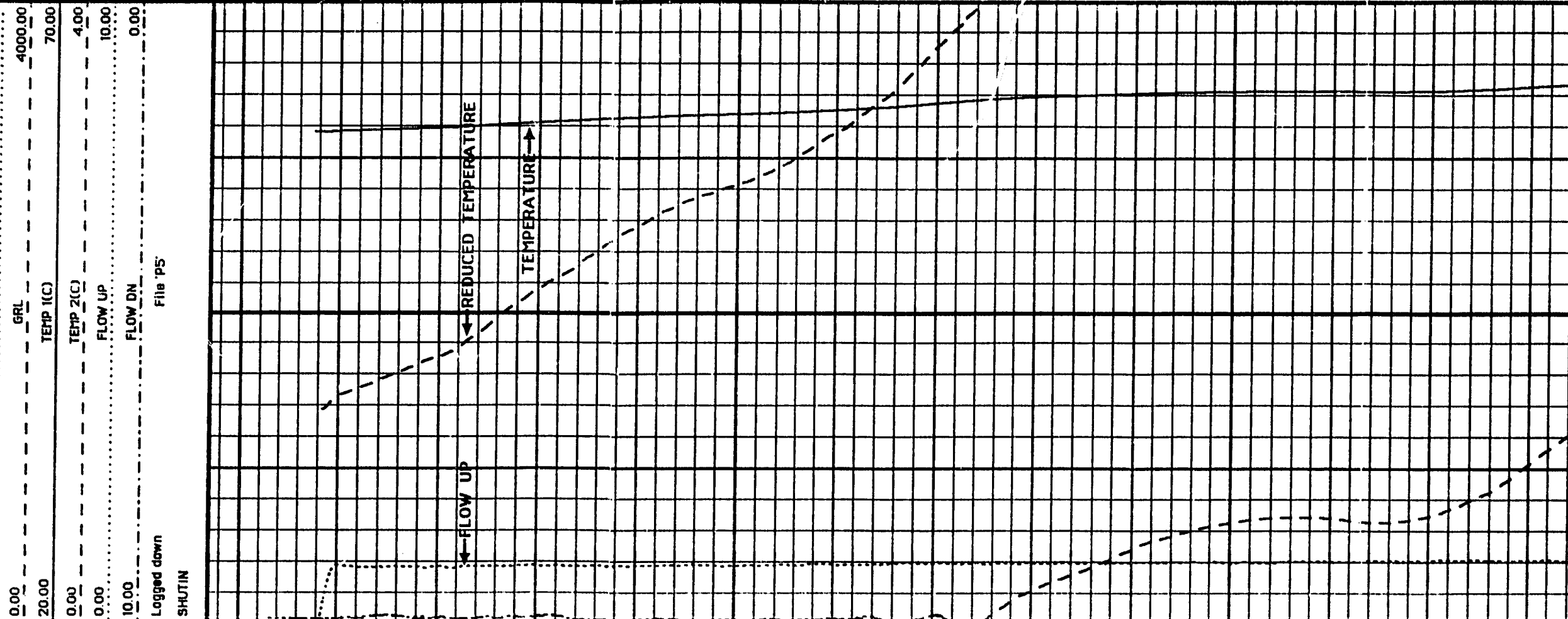
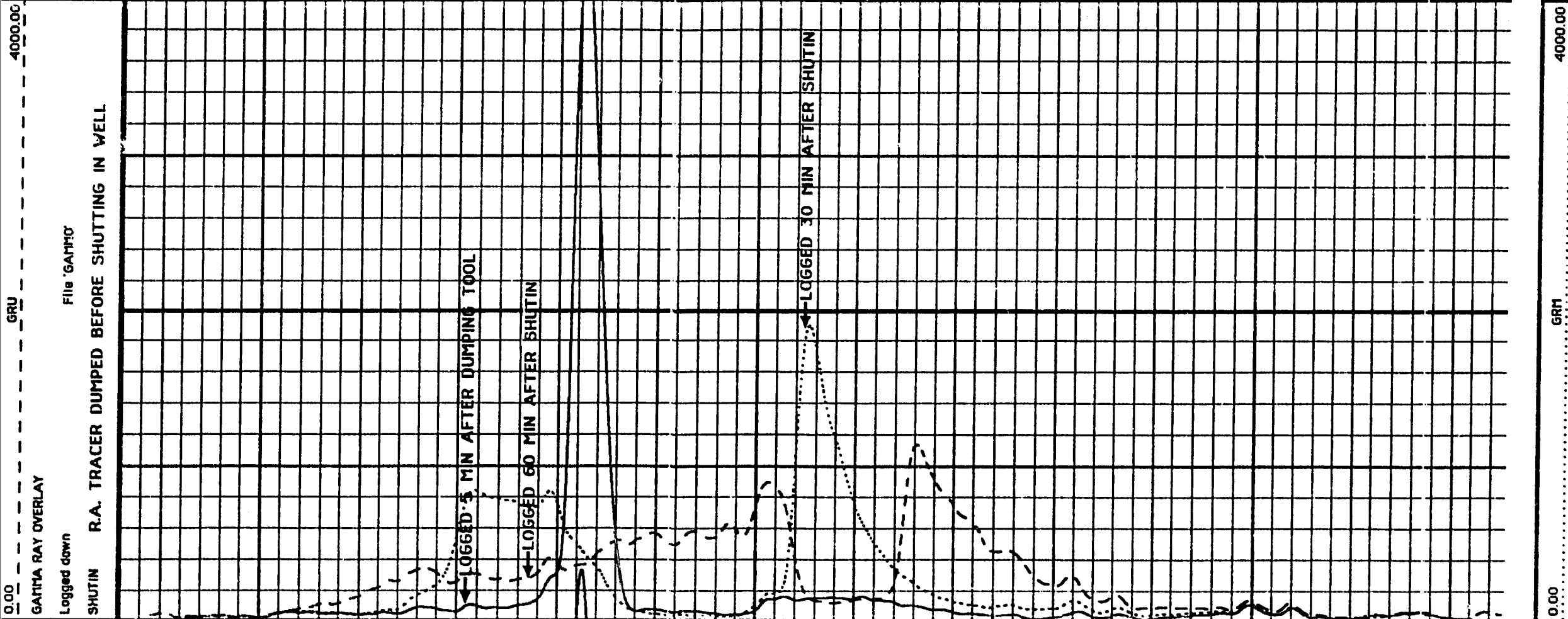
BOTTOM LOG INTERVAL	870 m
SCHLUMBERGER DEPTH	1028 m
DEPTH DRILLER	1028 m
KELLY BUSHING	299.6 m
DRILL FLOOR	299.3 m
GROUND LEVEL	292.32 m

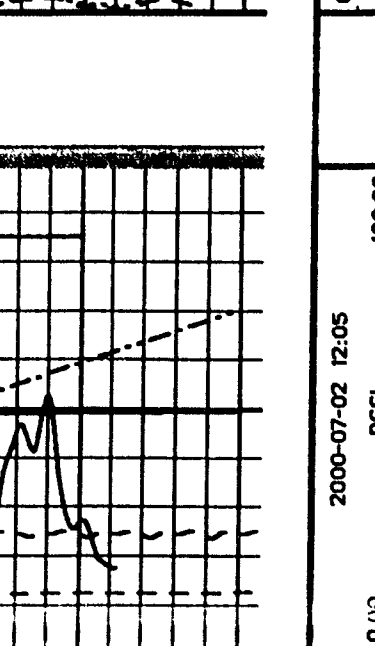
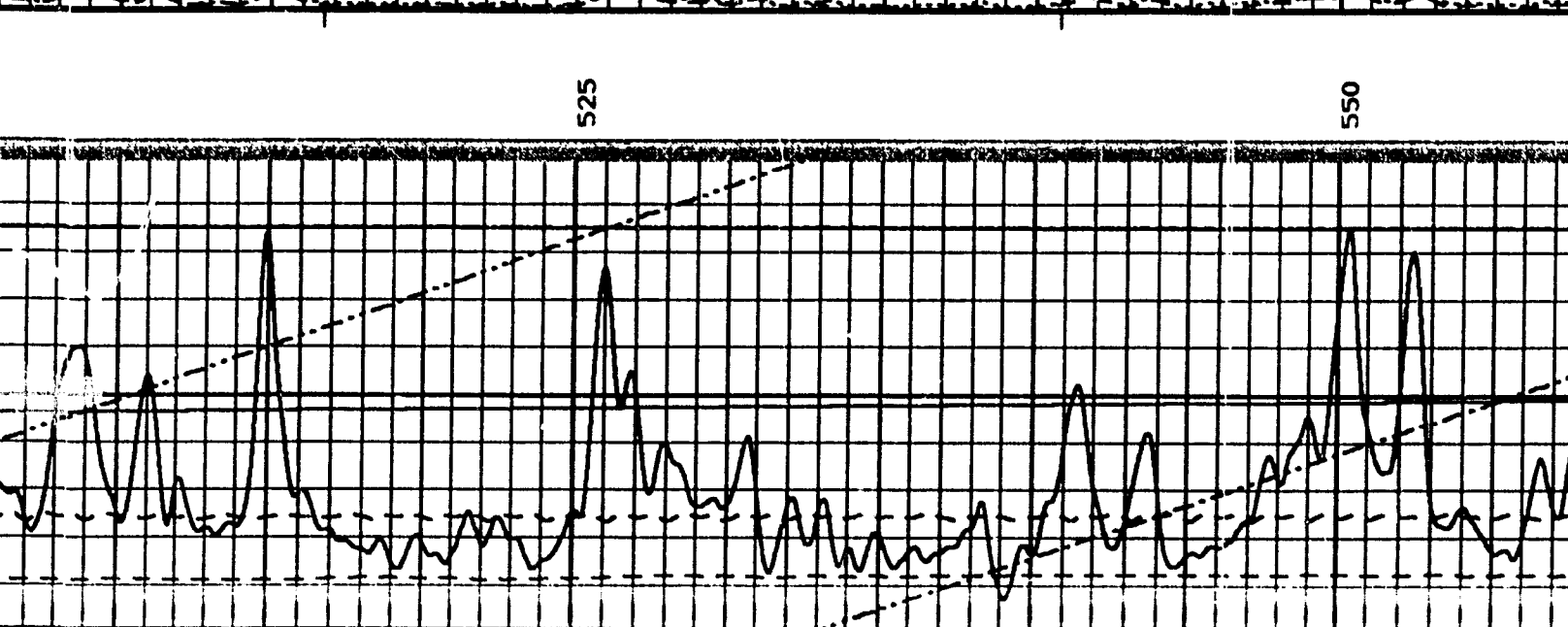
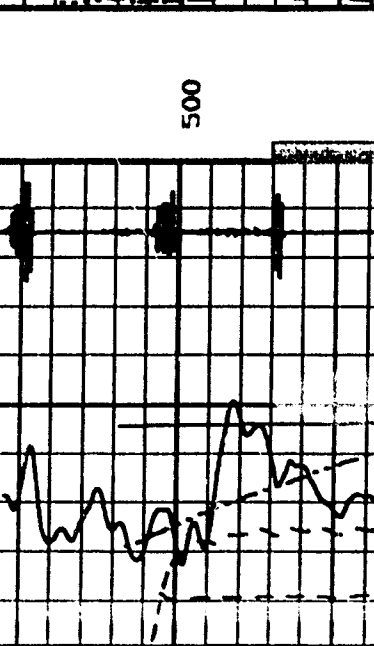
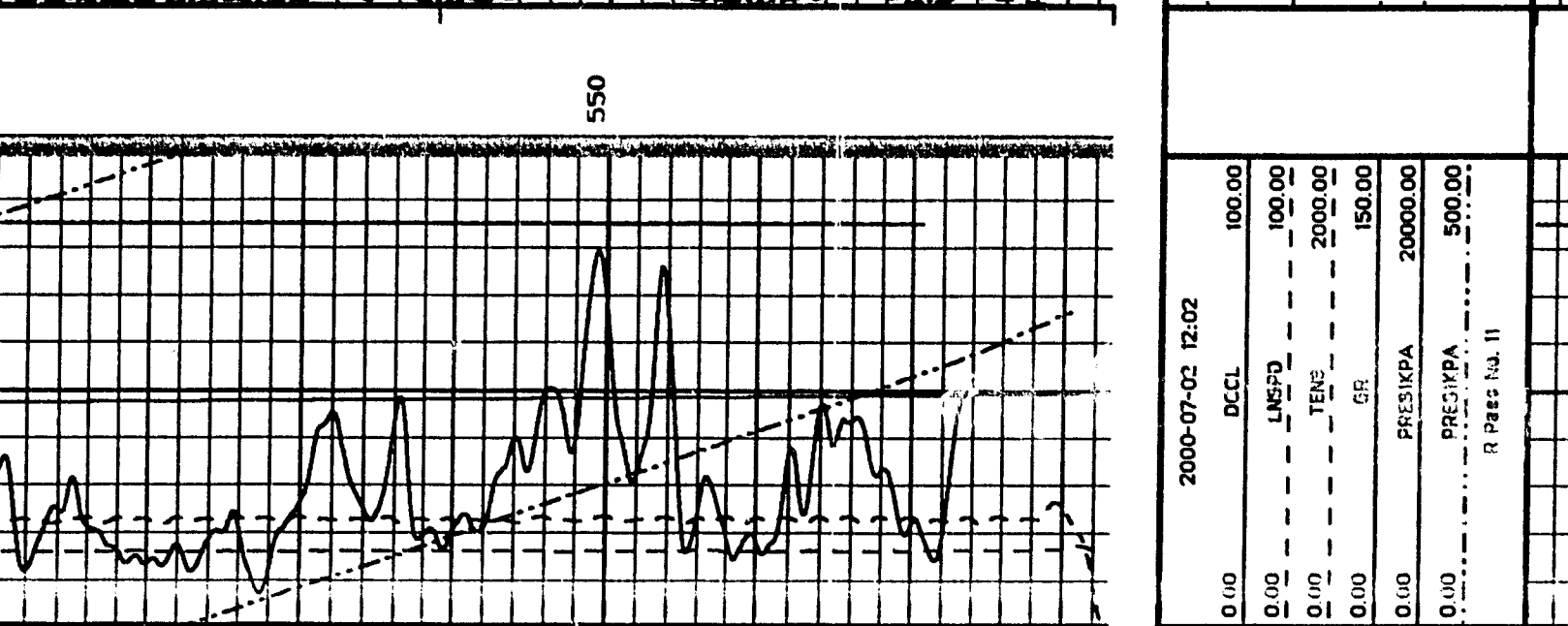
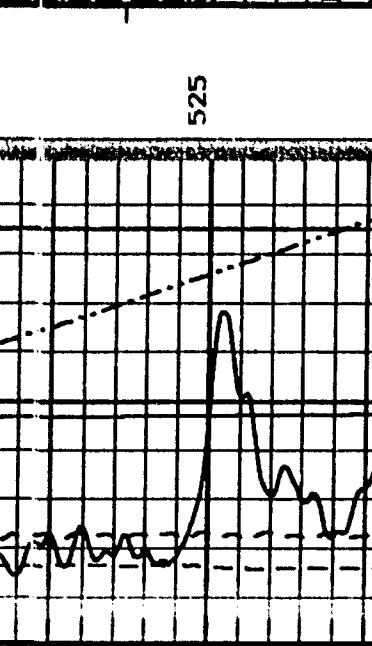
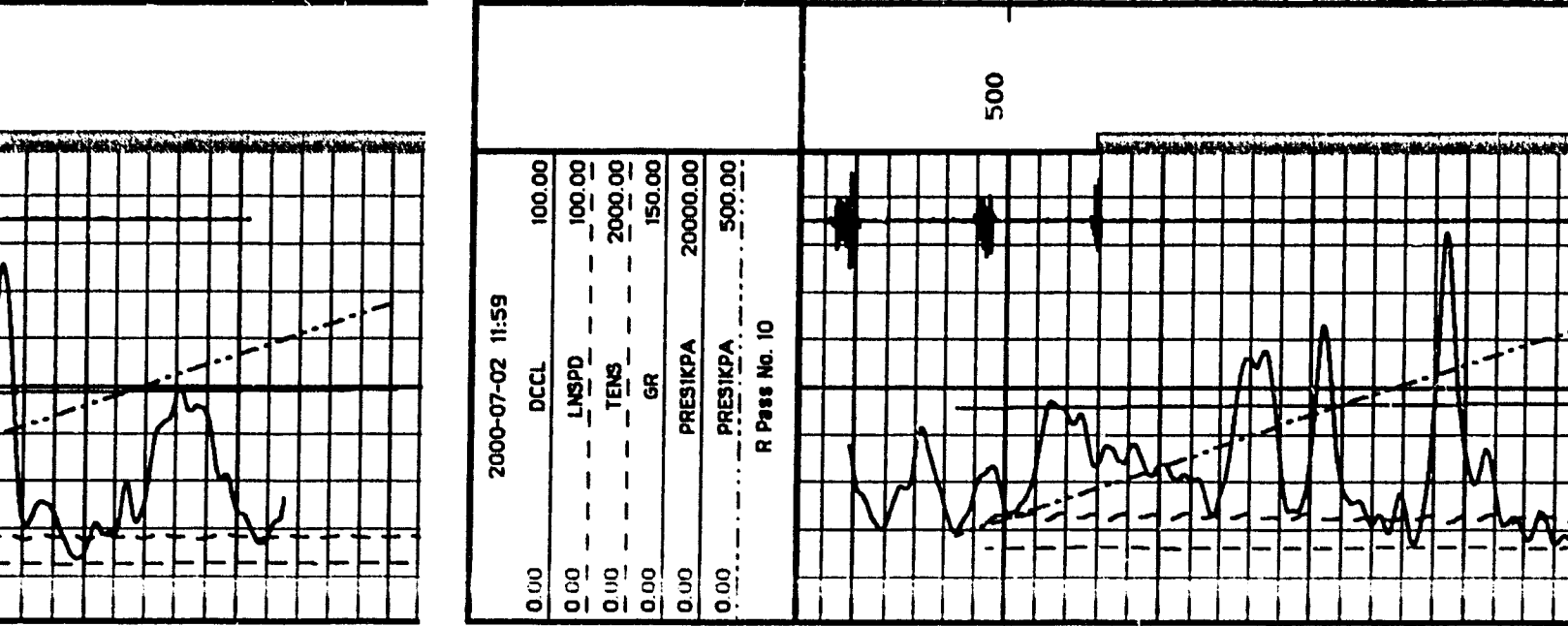
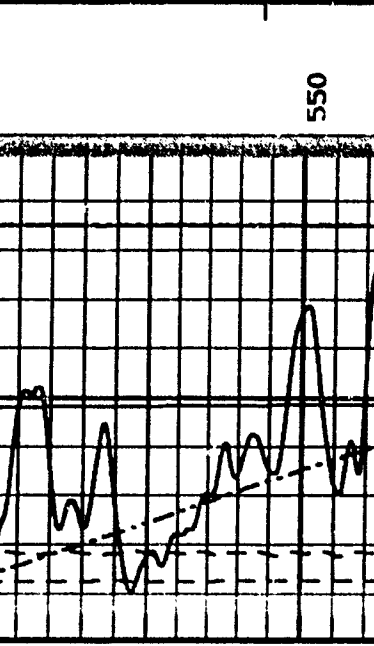
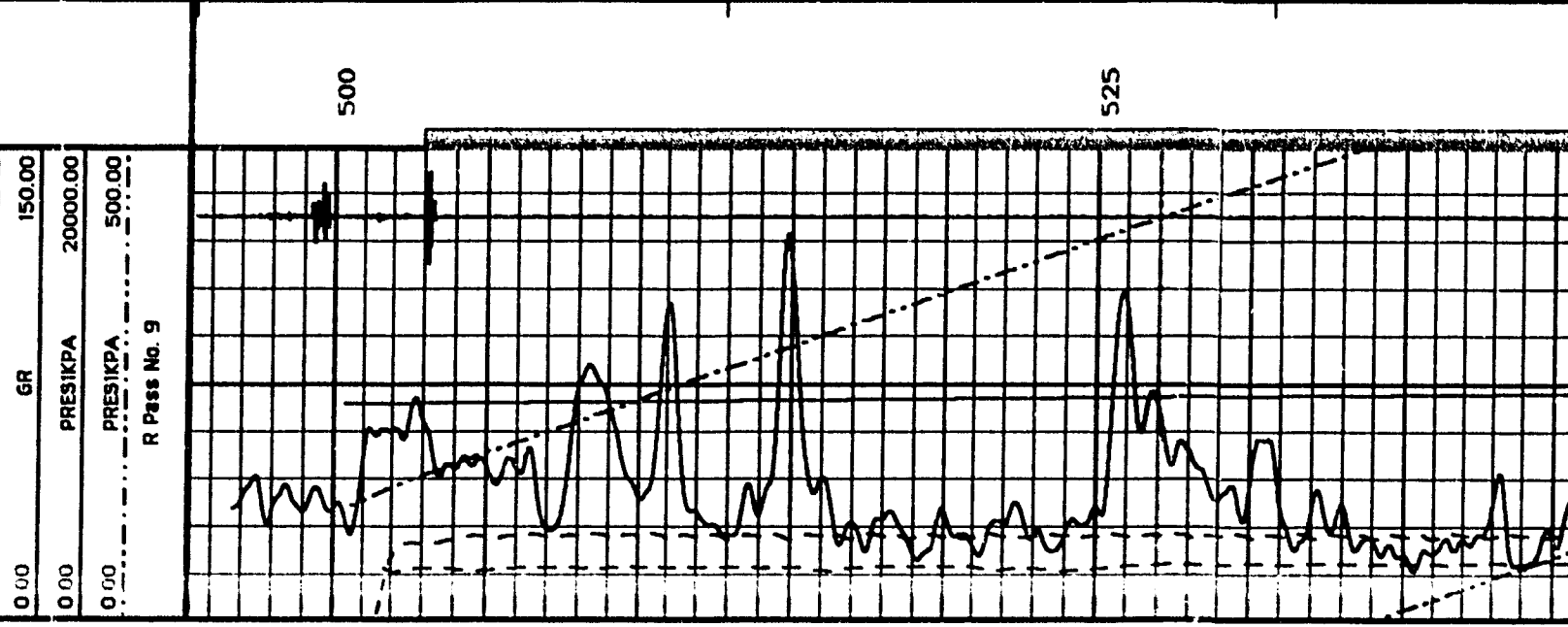
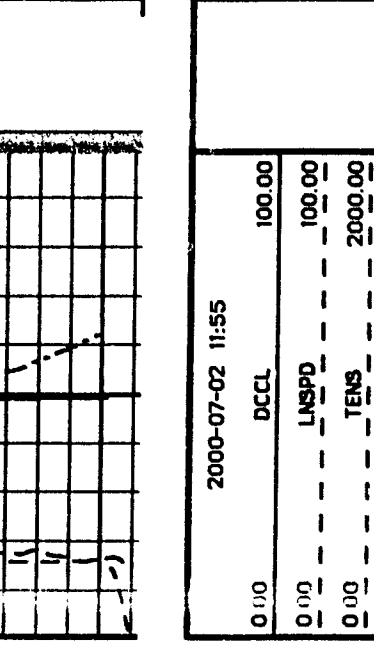
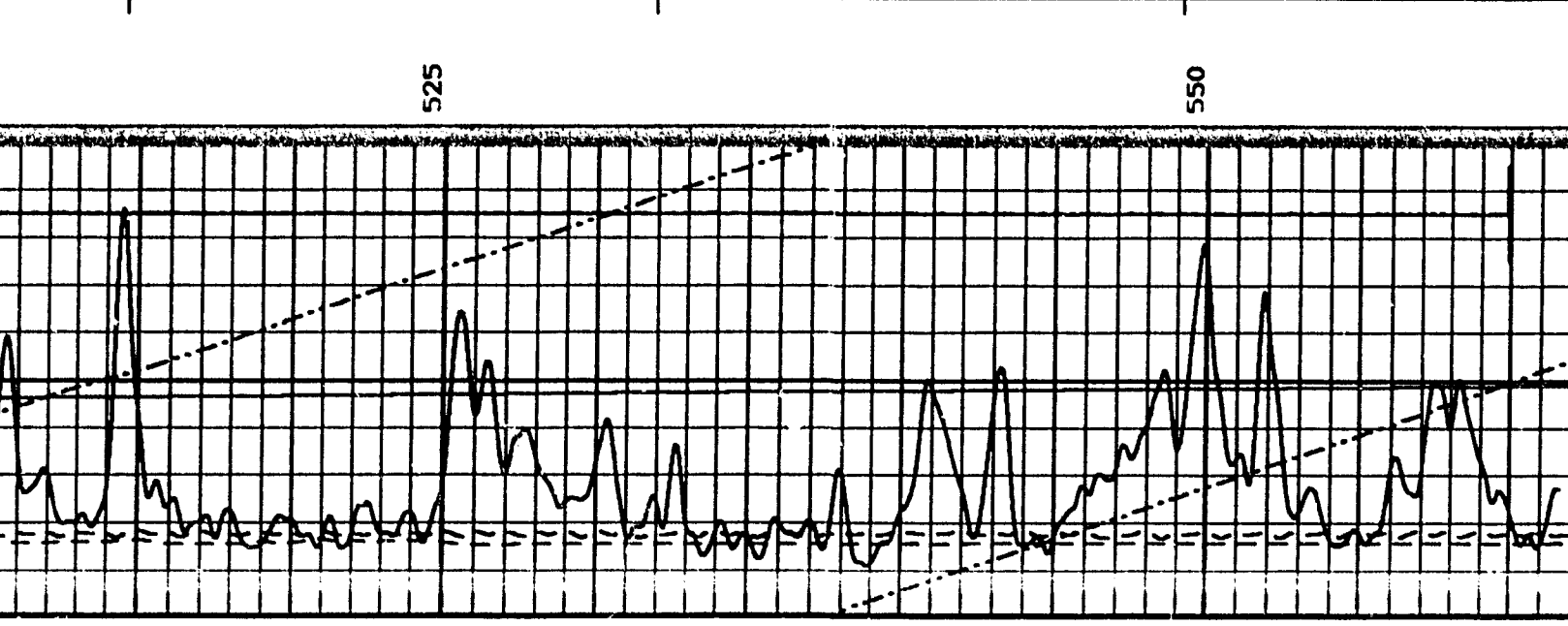
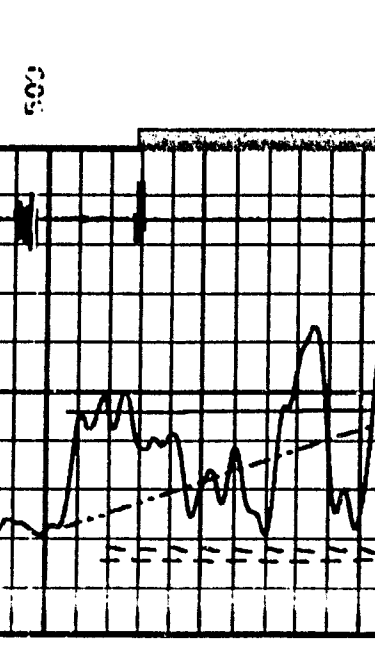
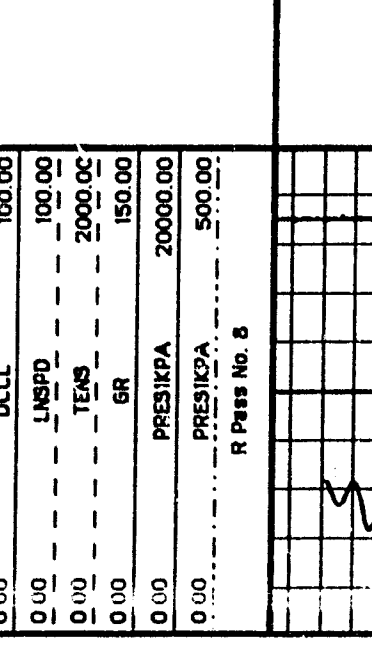
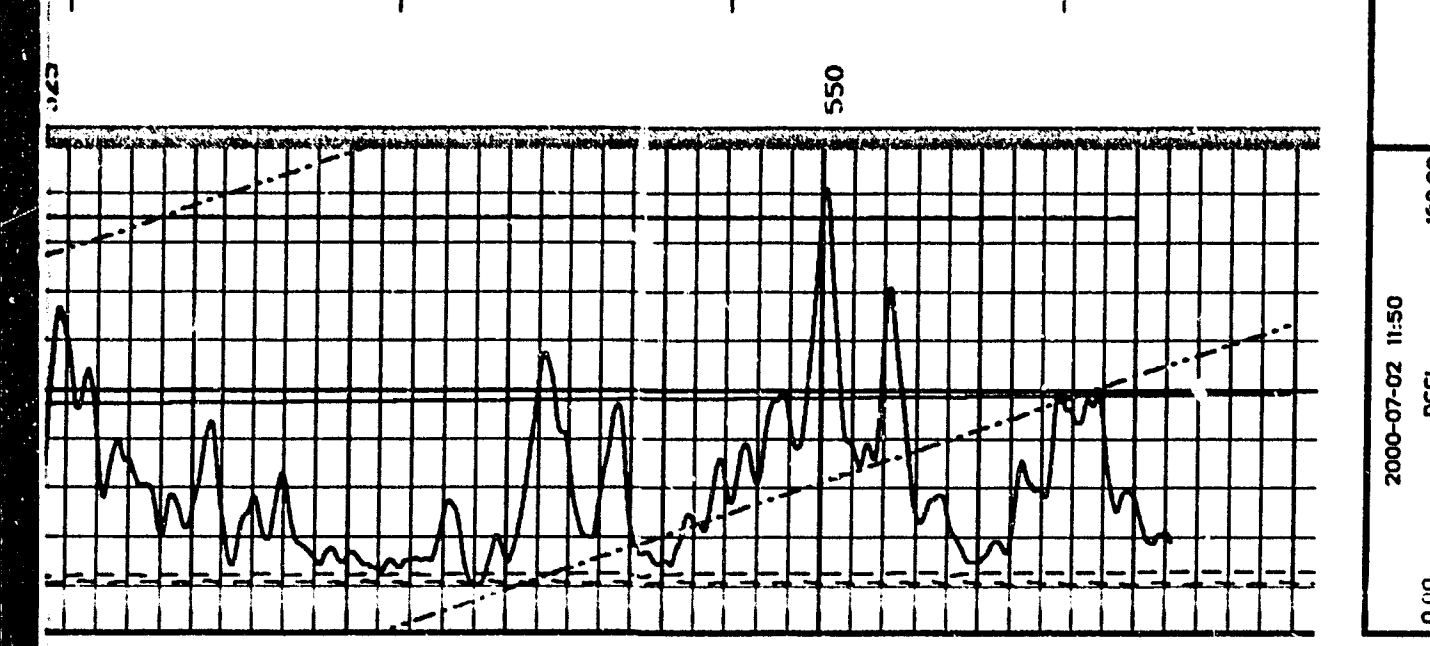
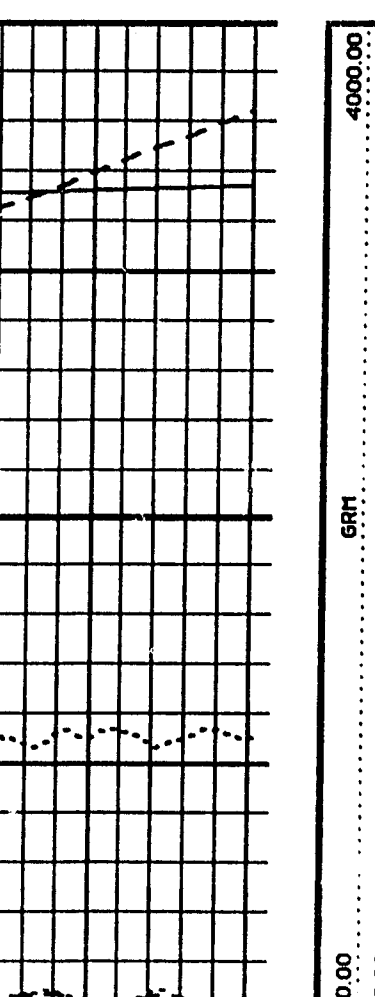
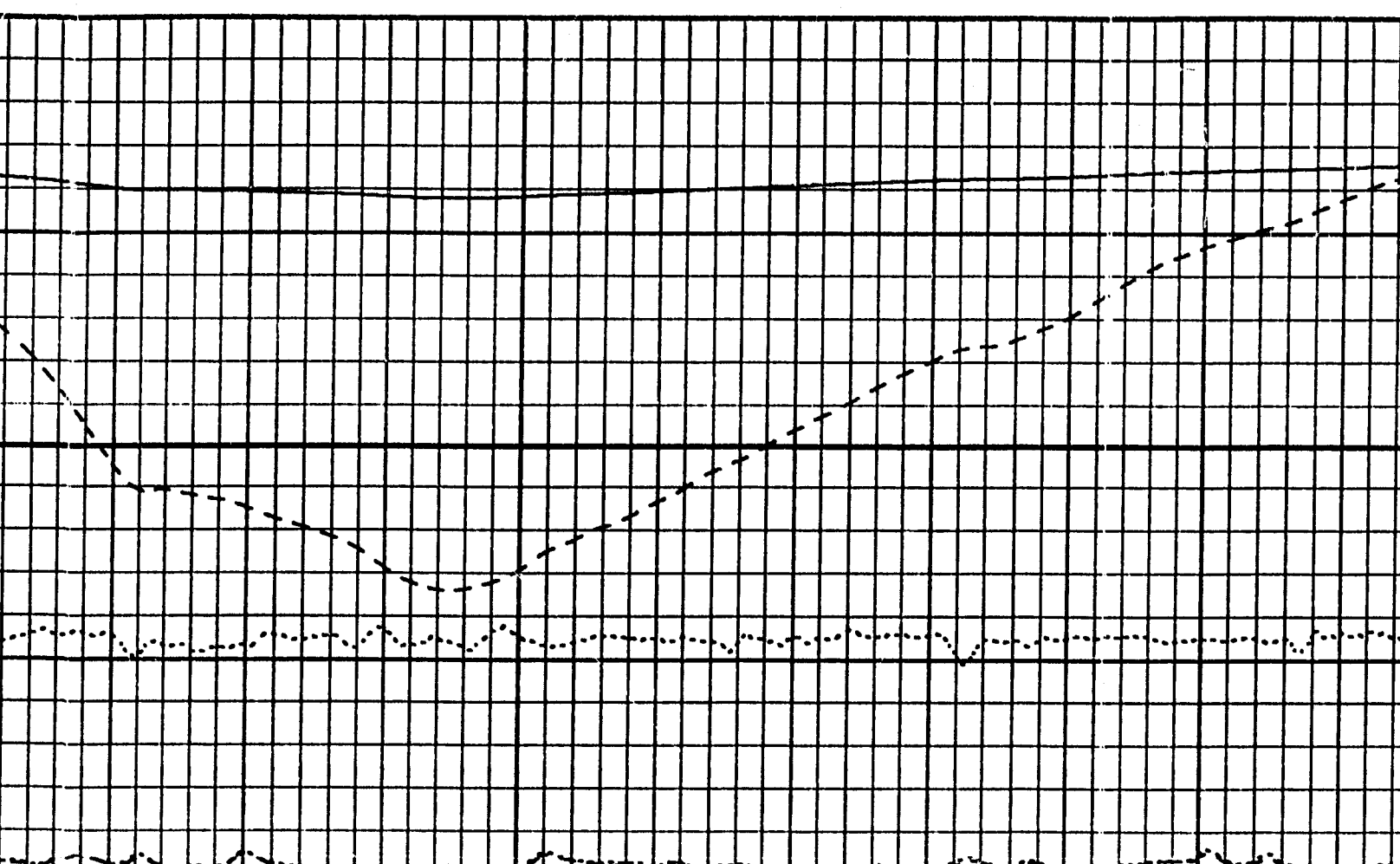
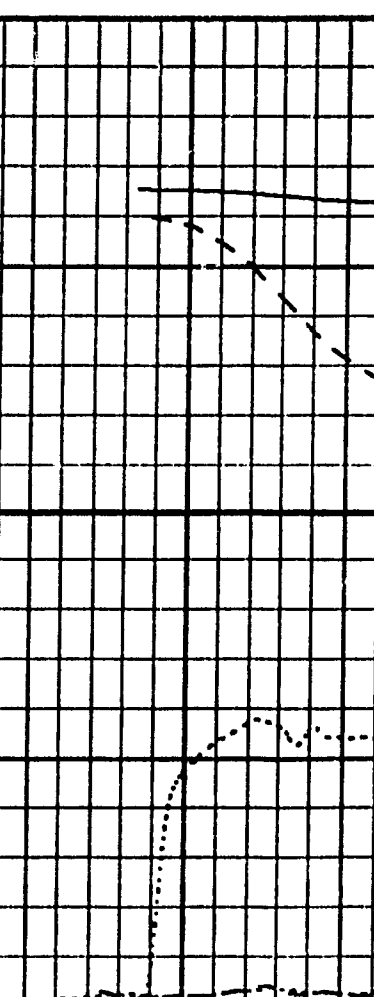
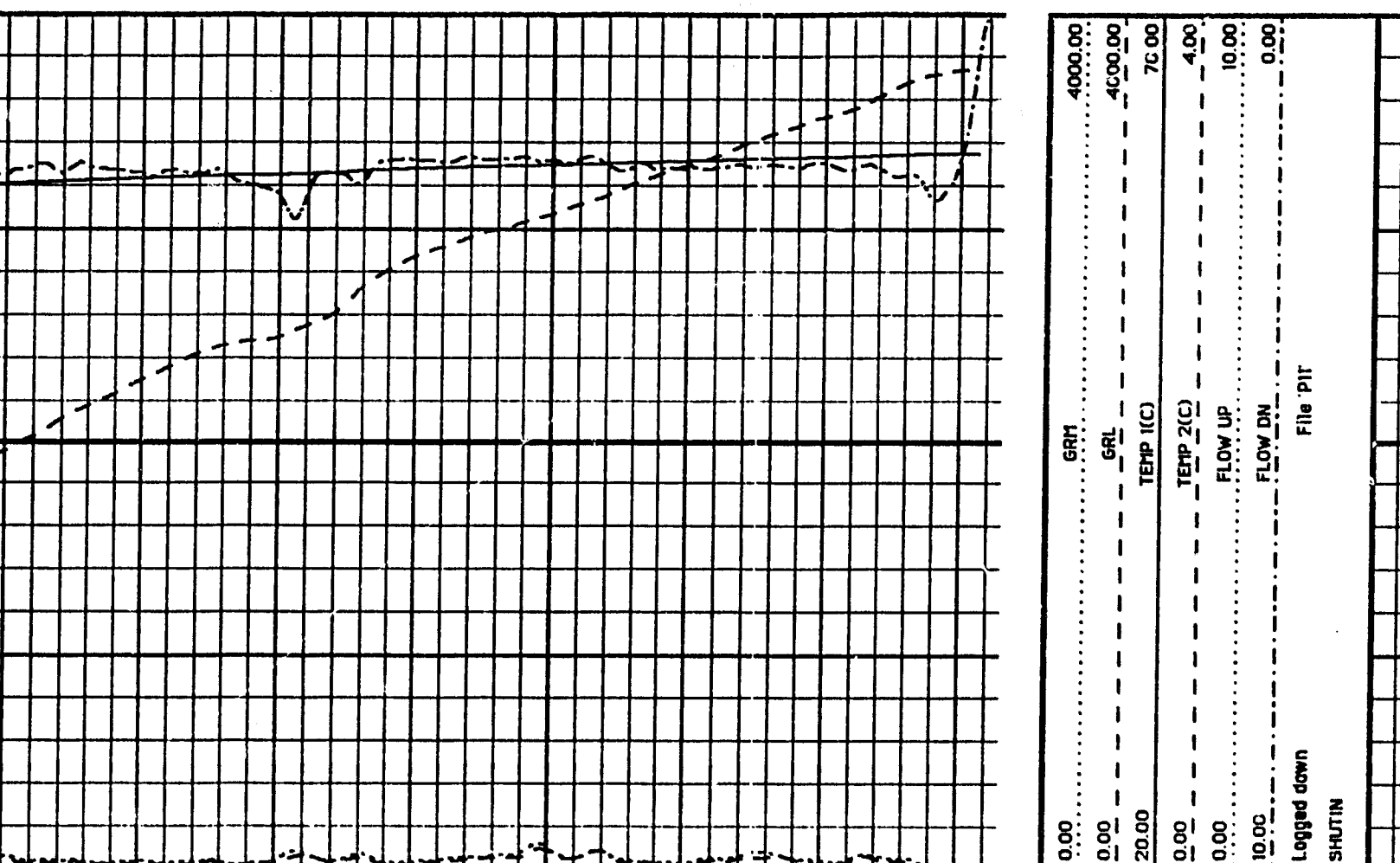
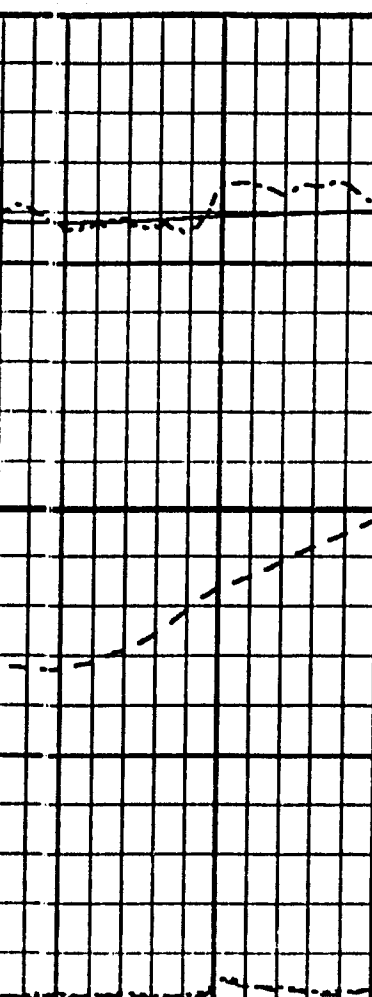
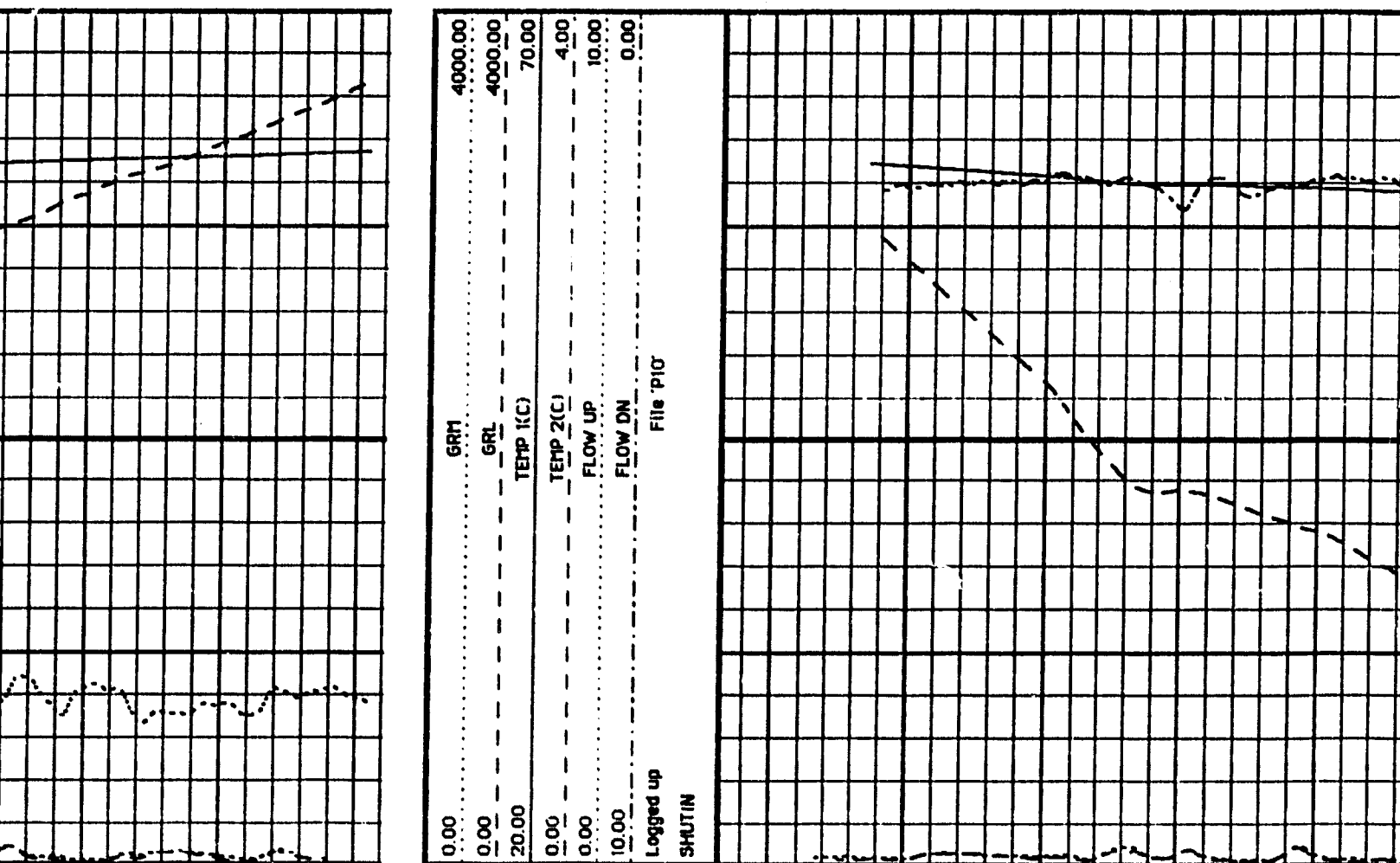
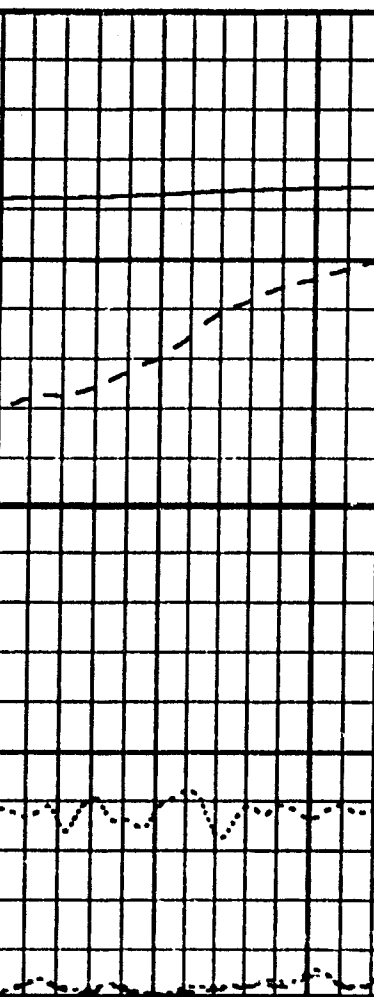
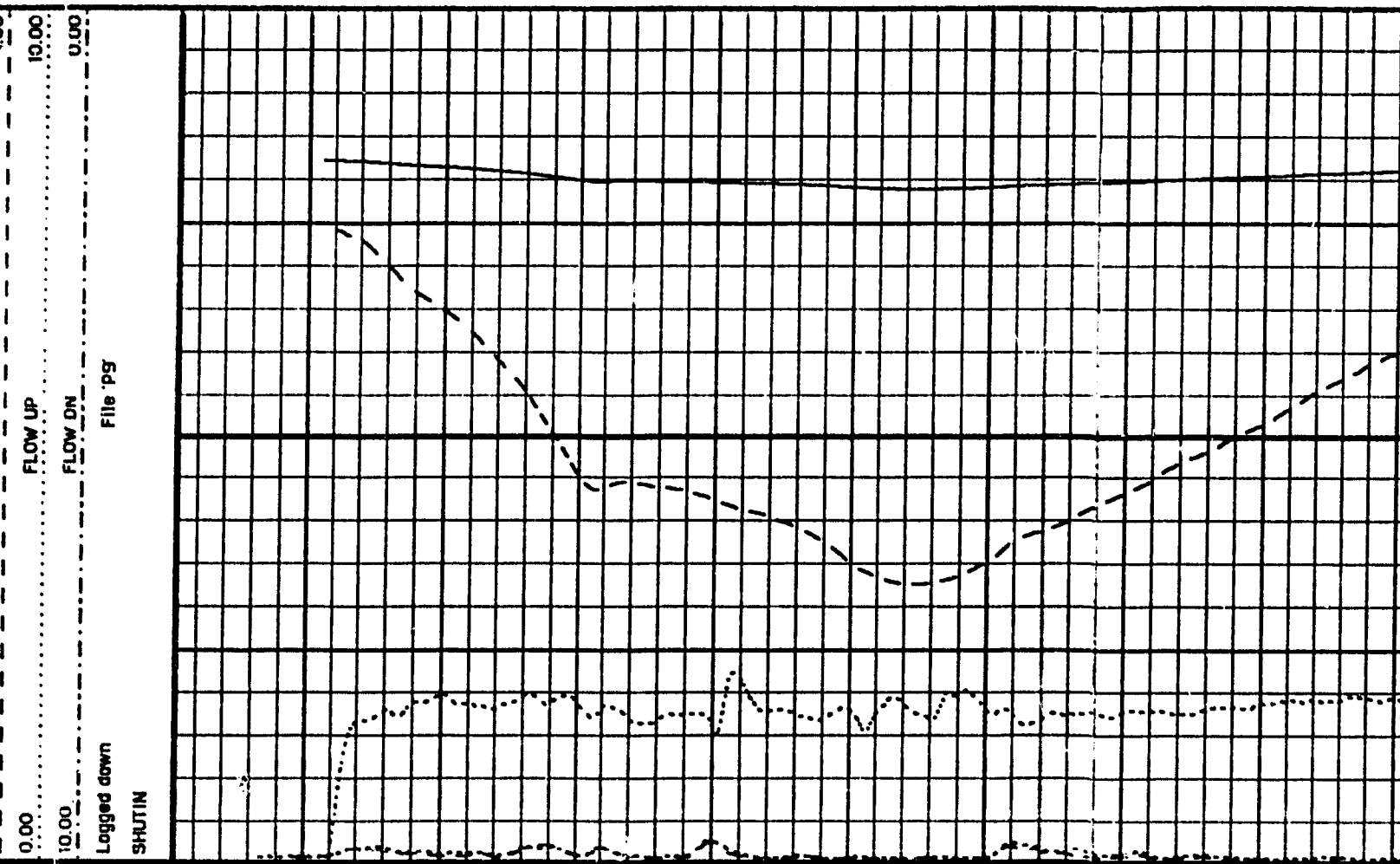
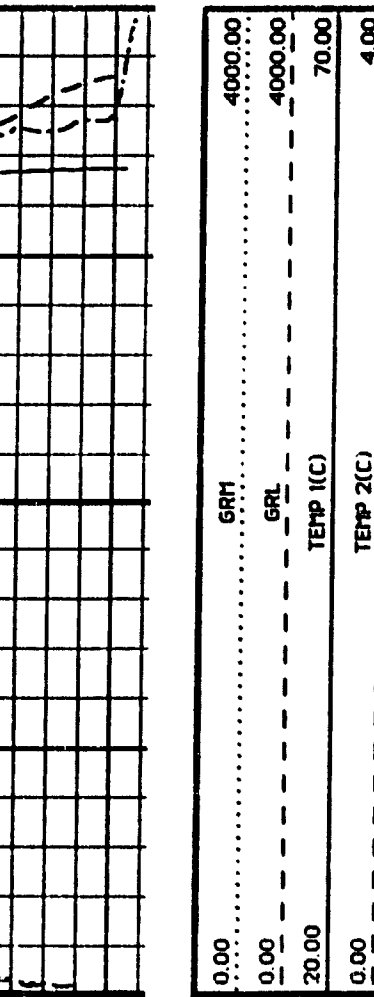
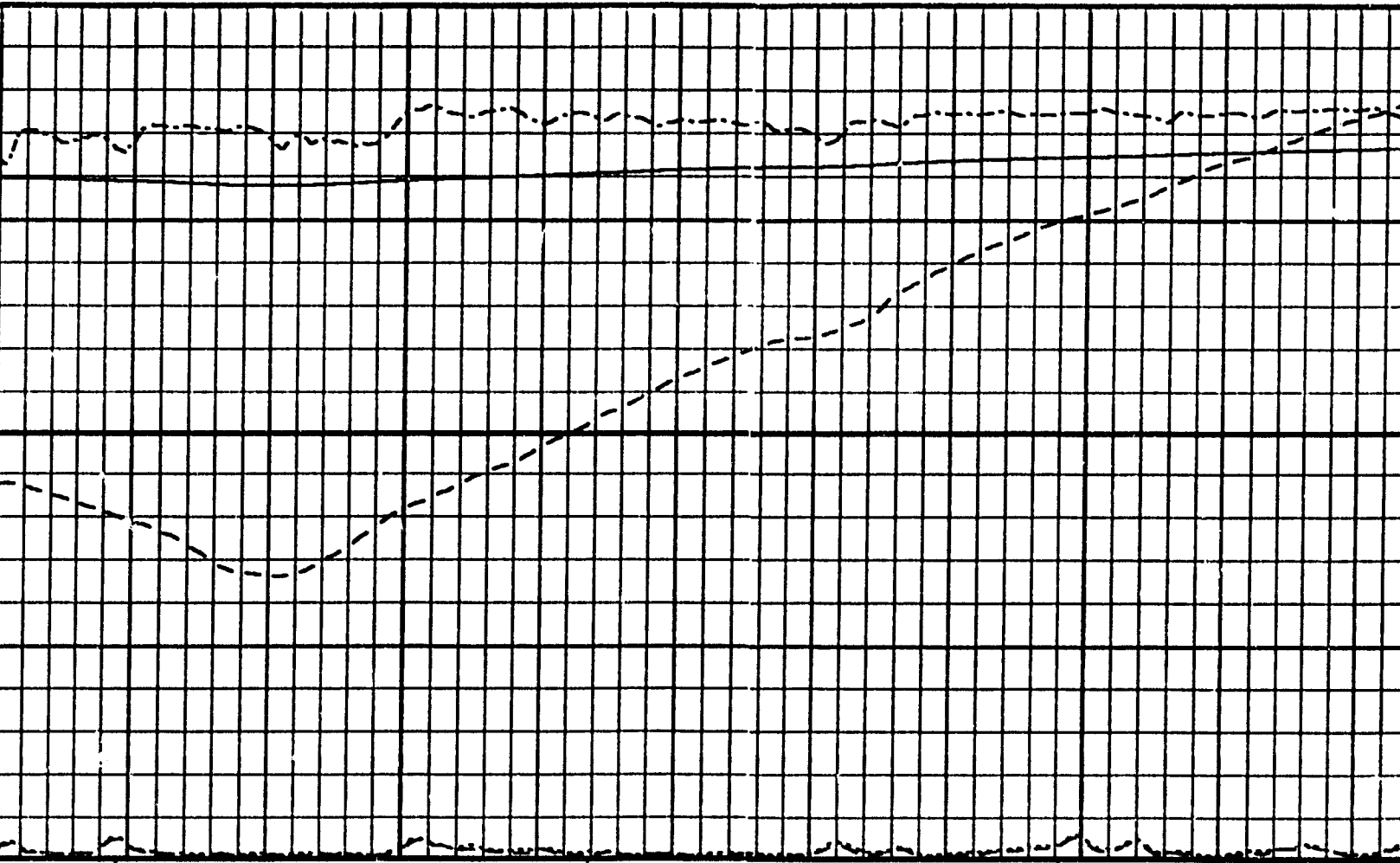
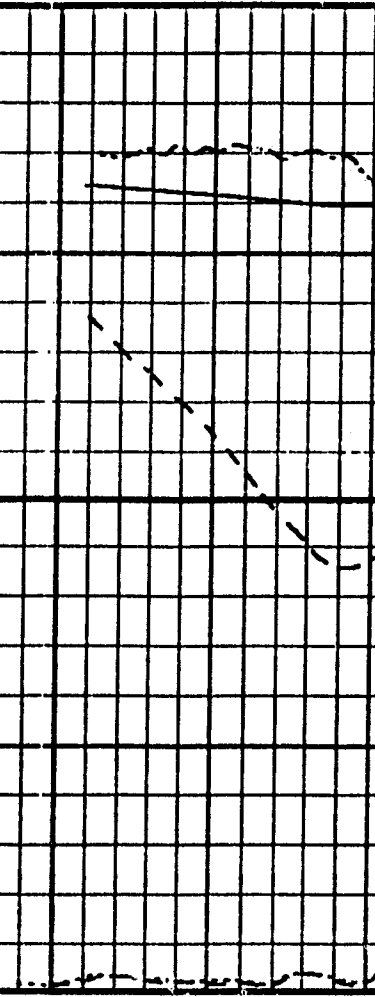
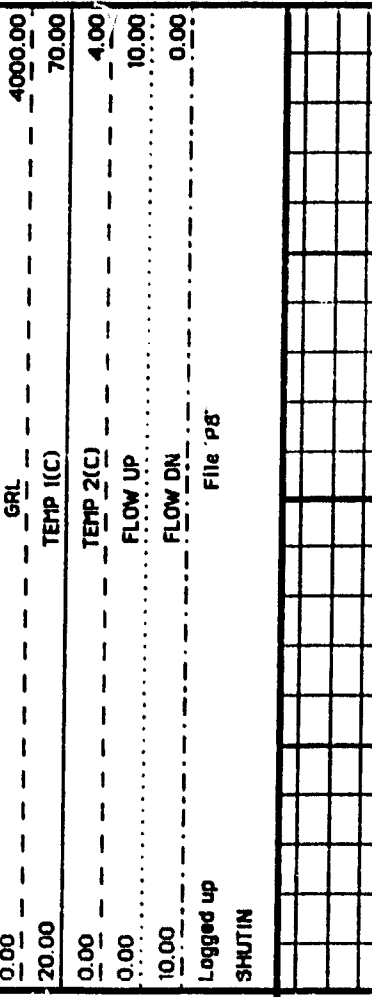
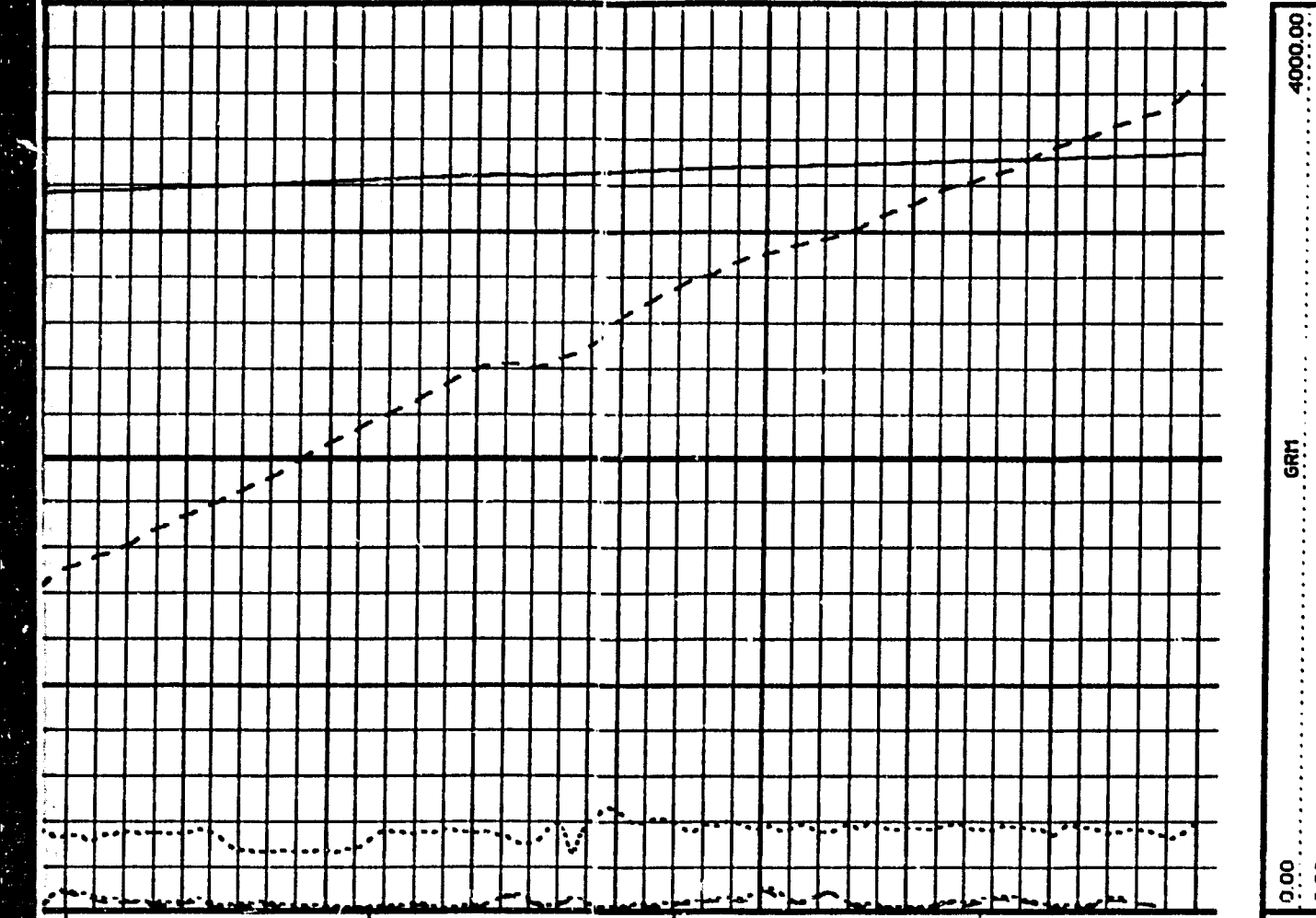
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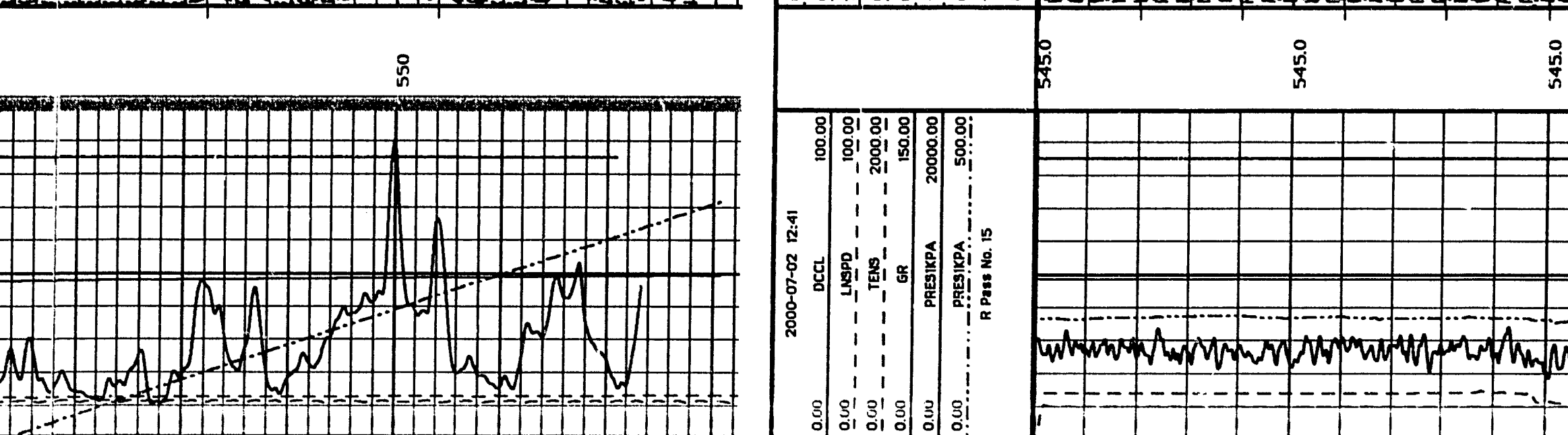
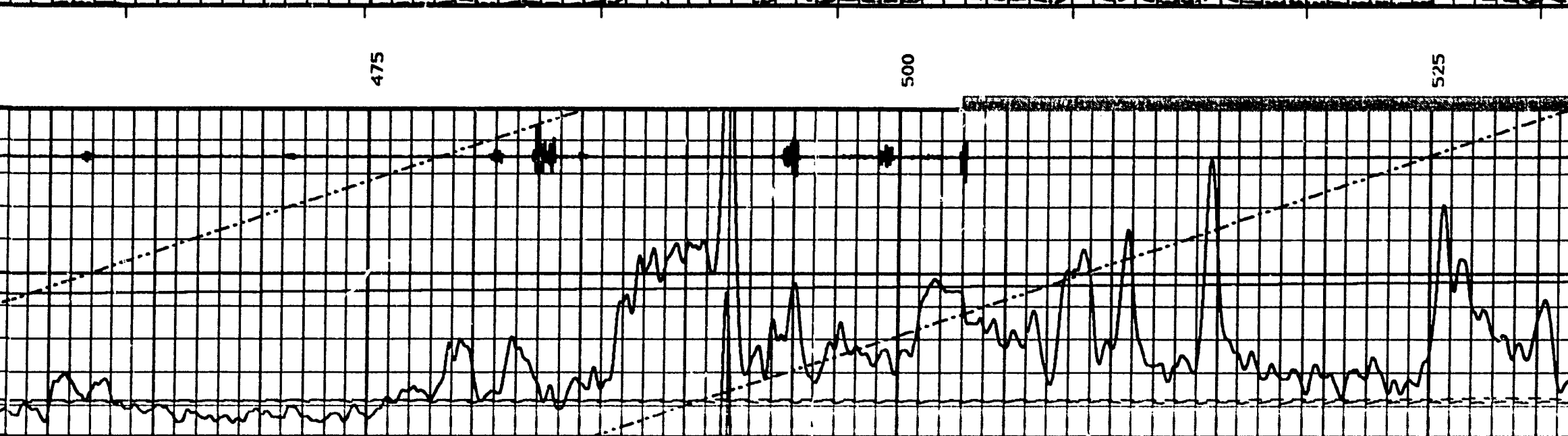
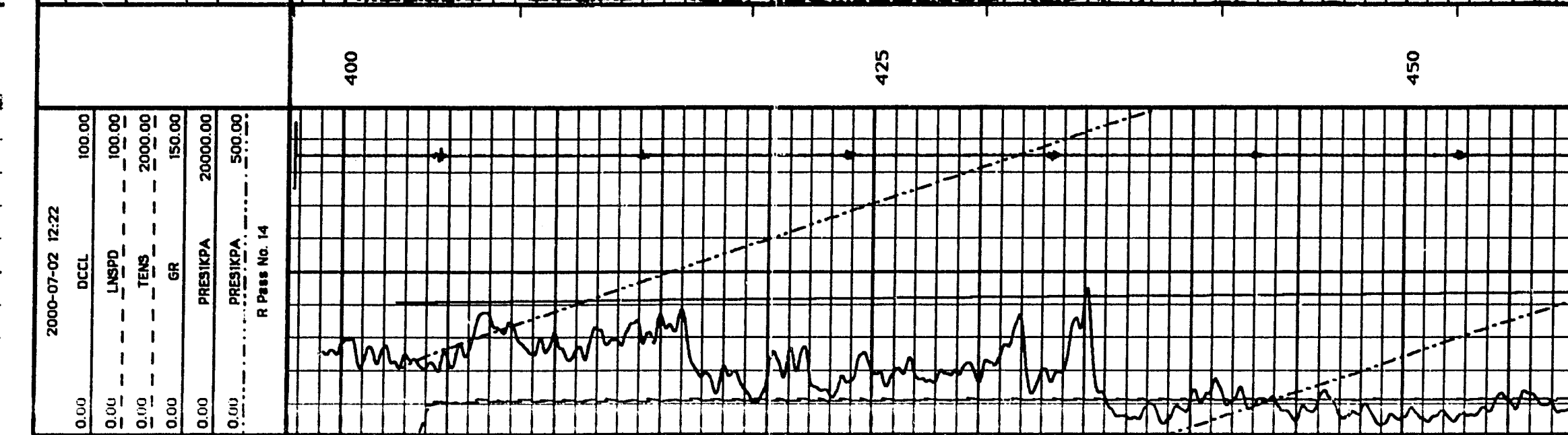
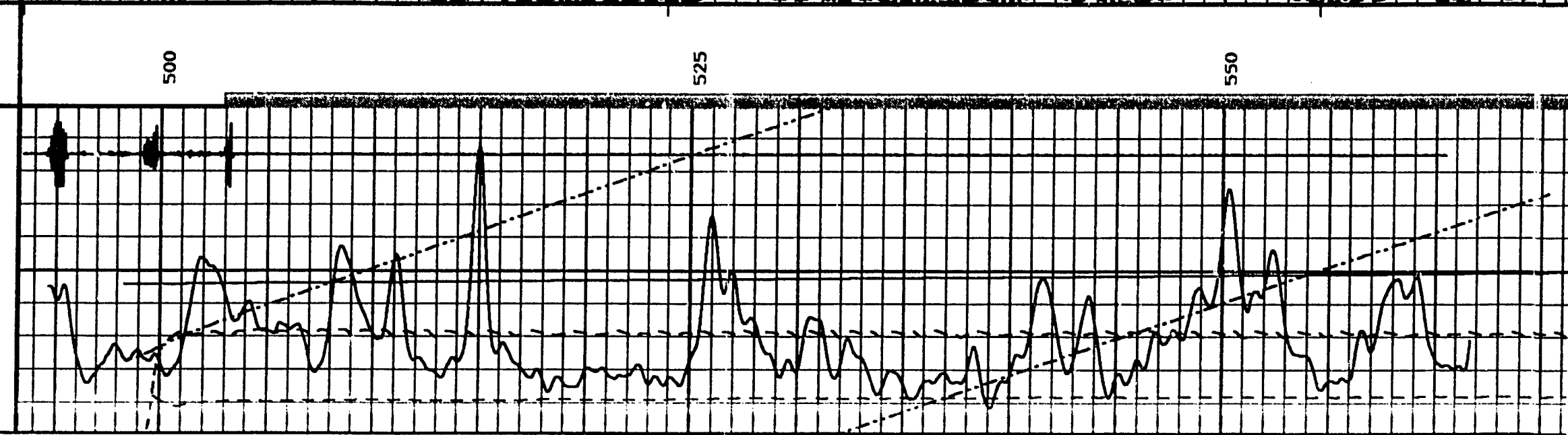
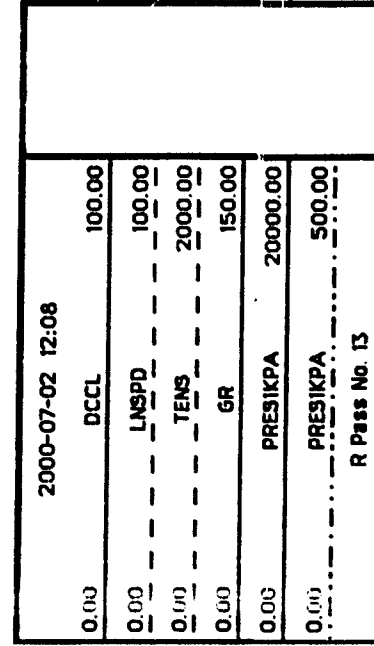
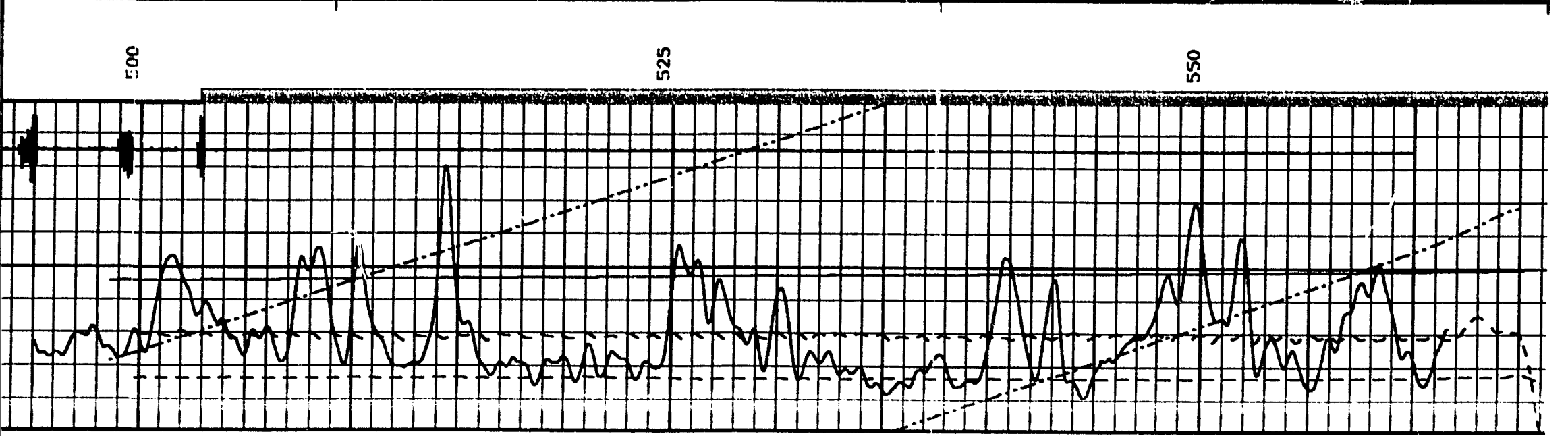
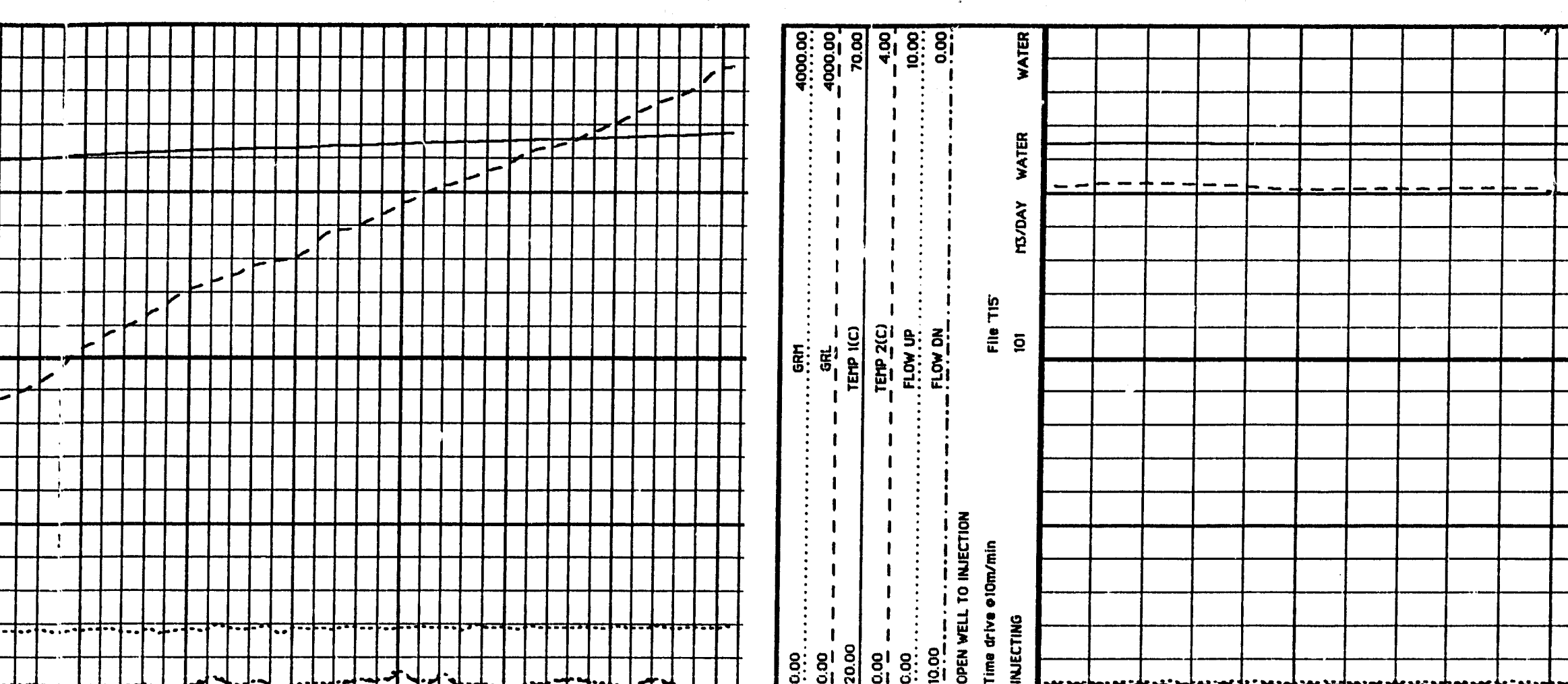
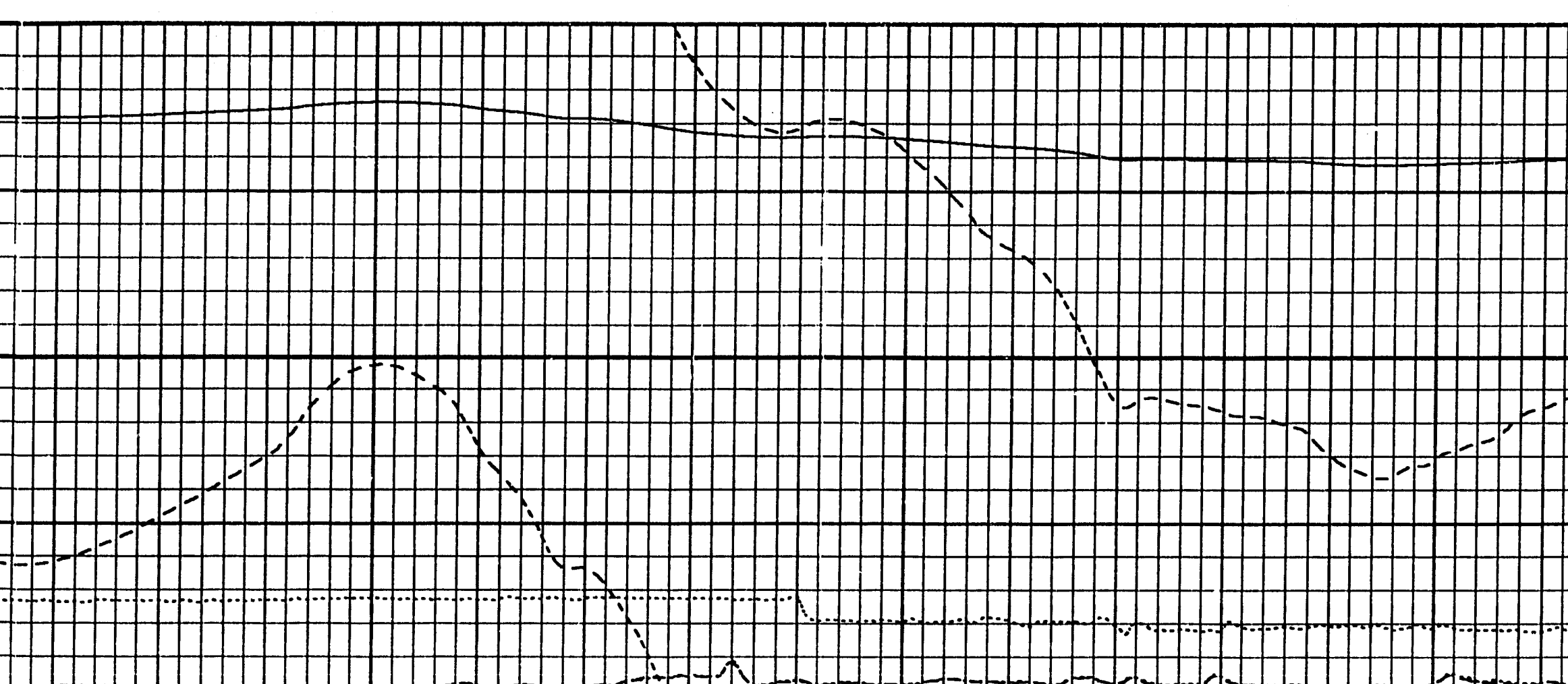
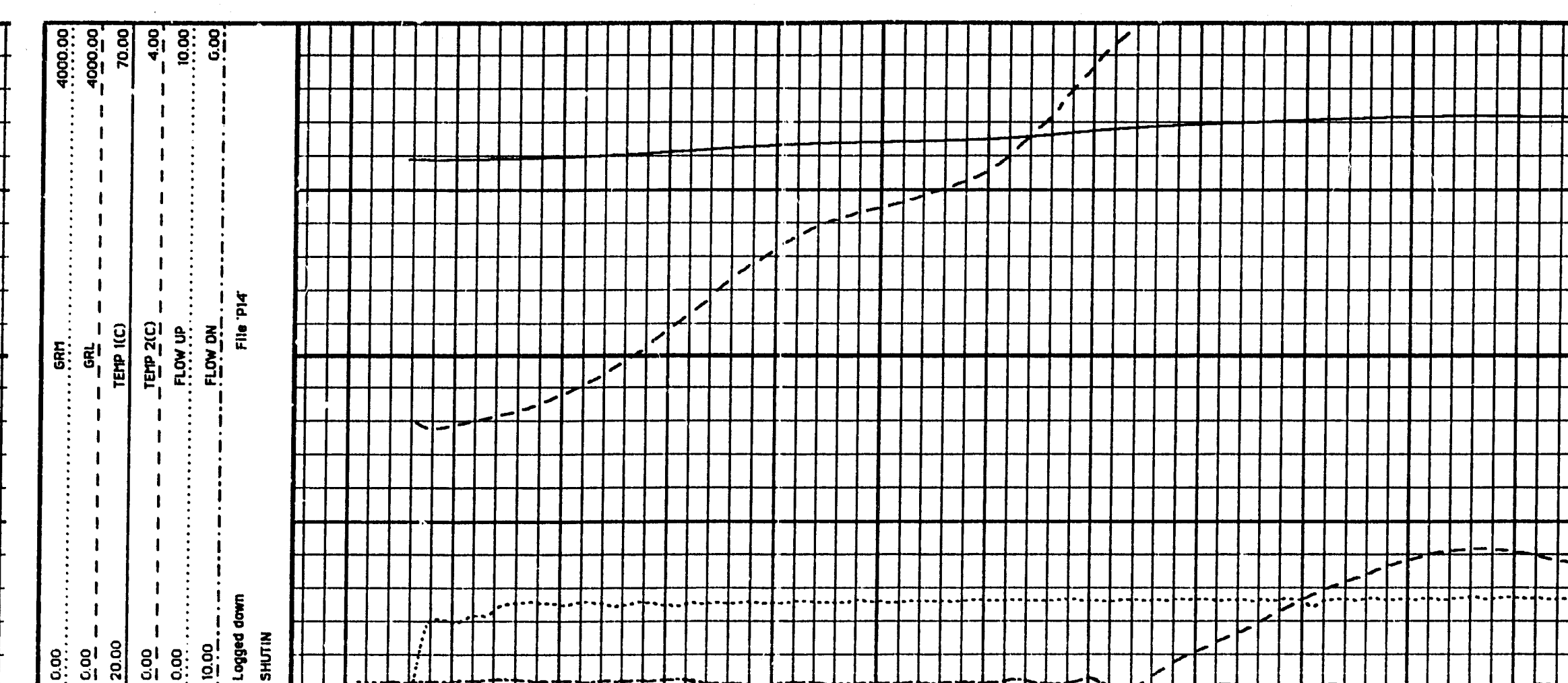
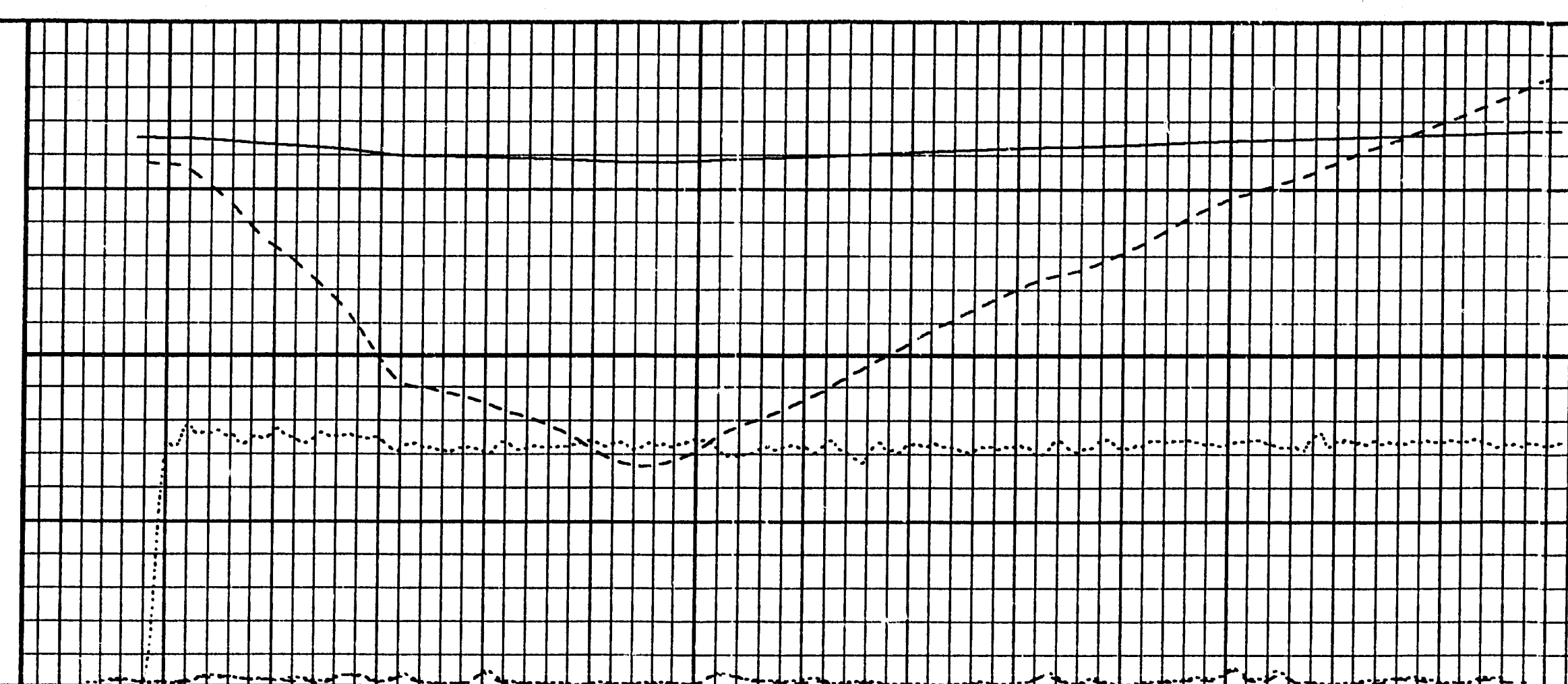
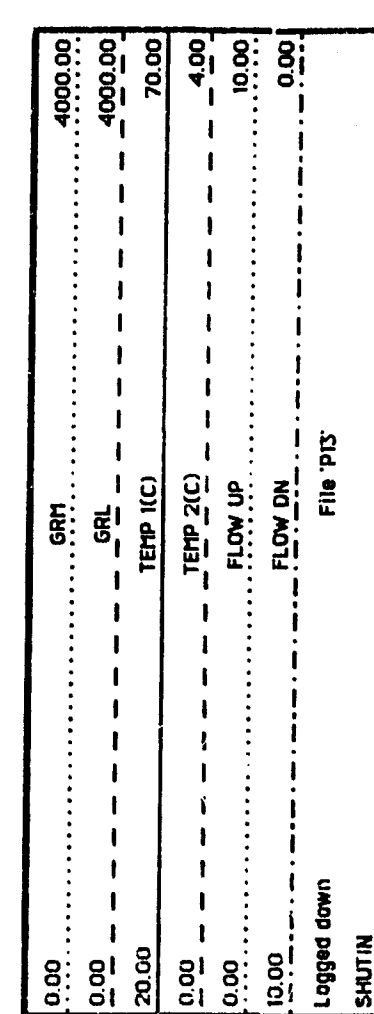
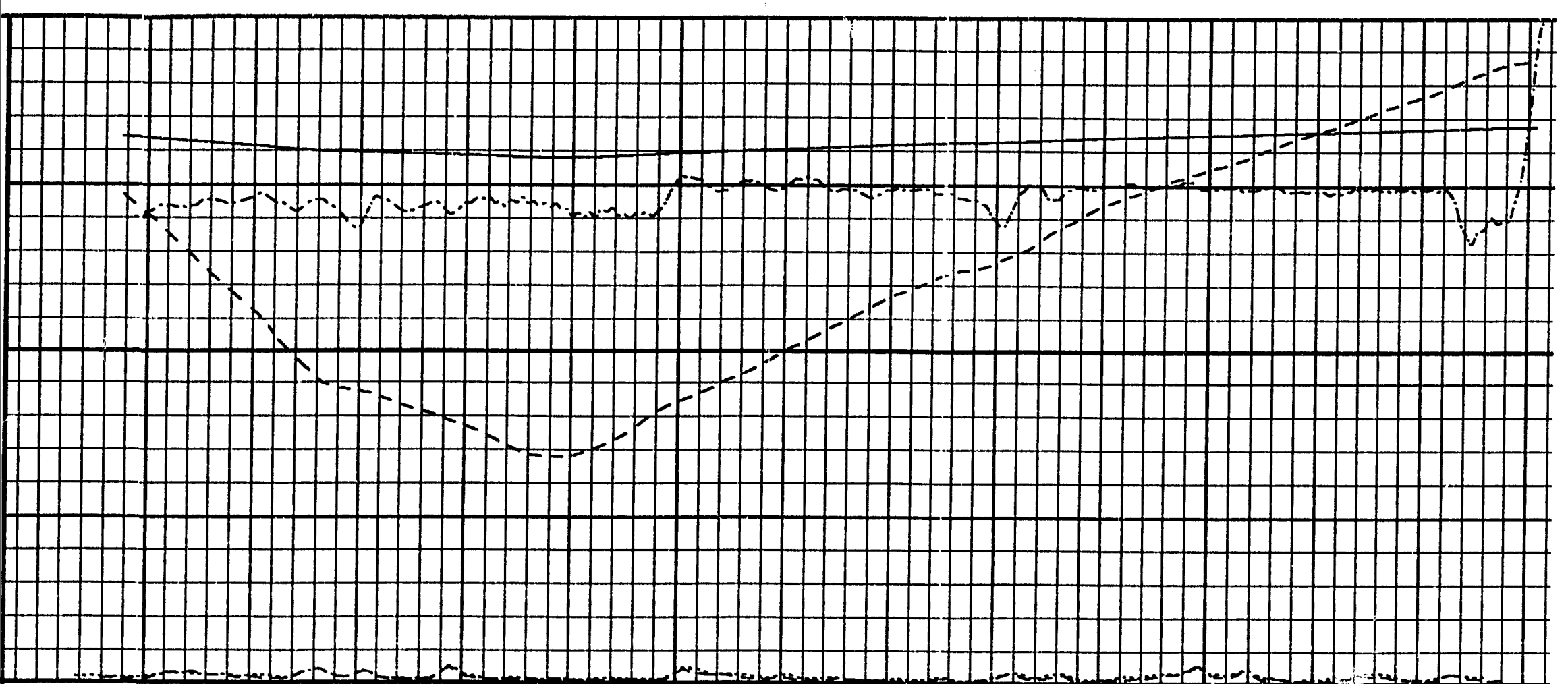
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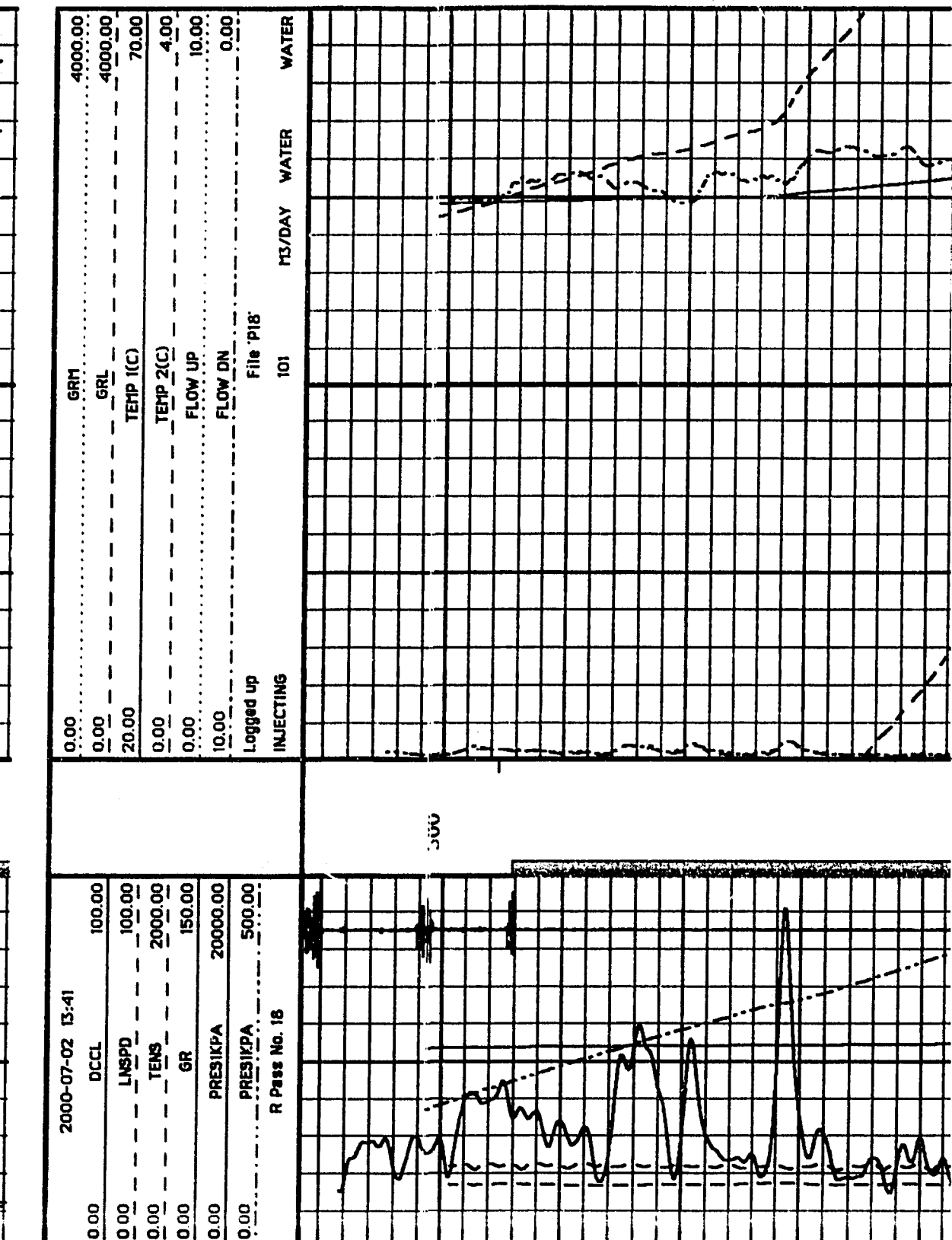
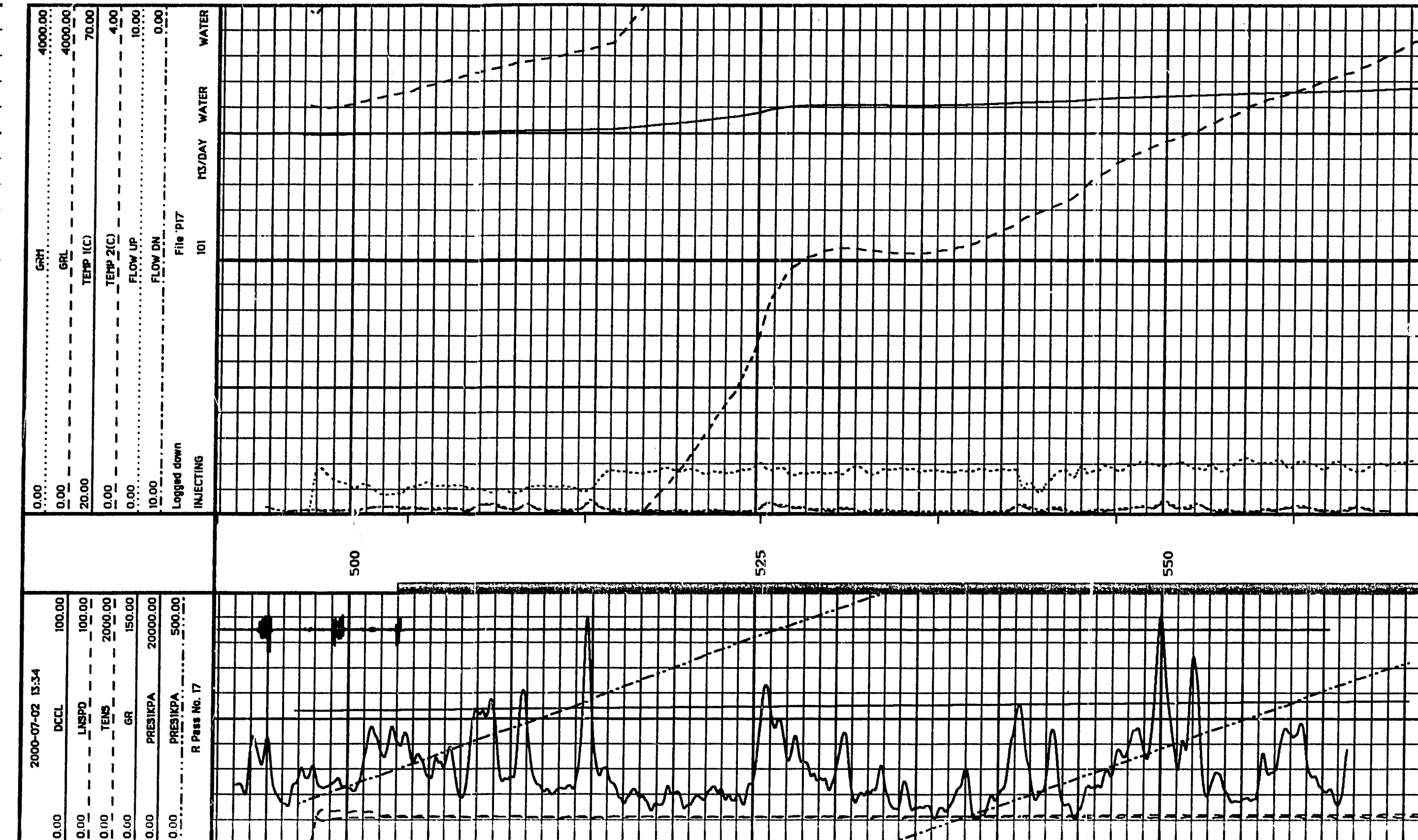
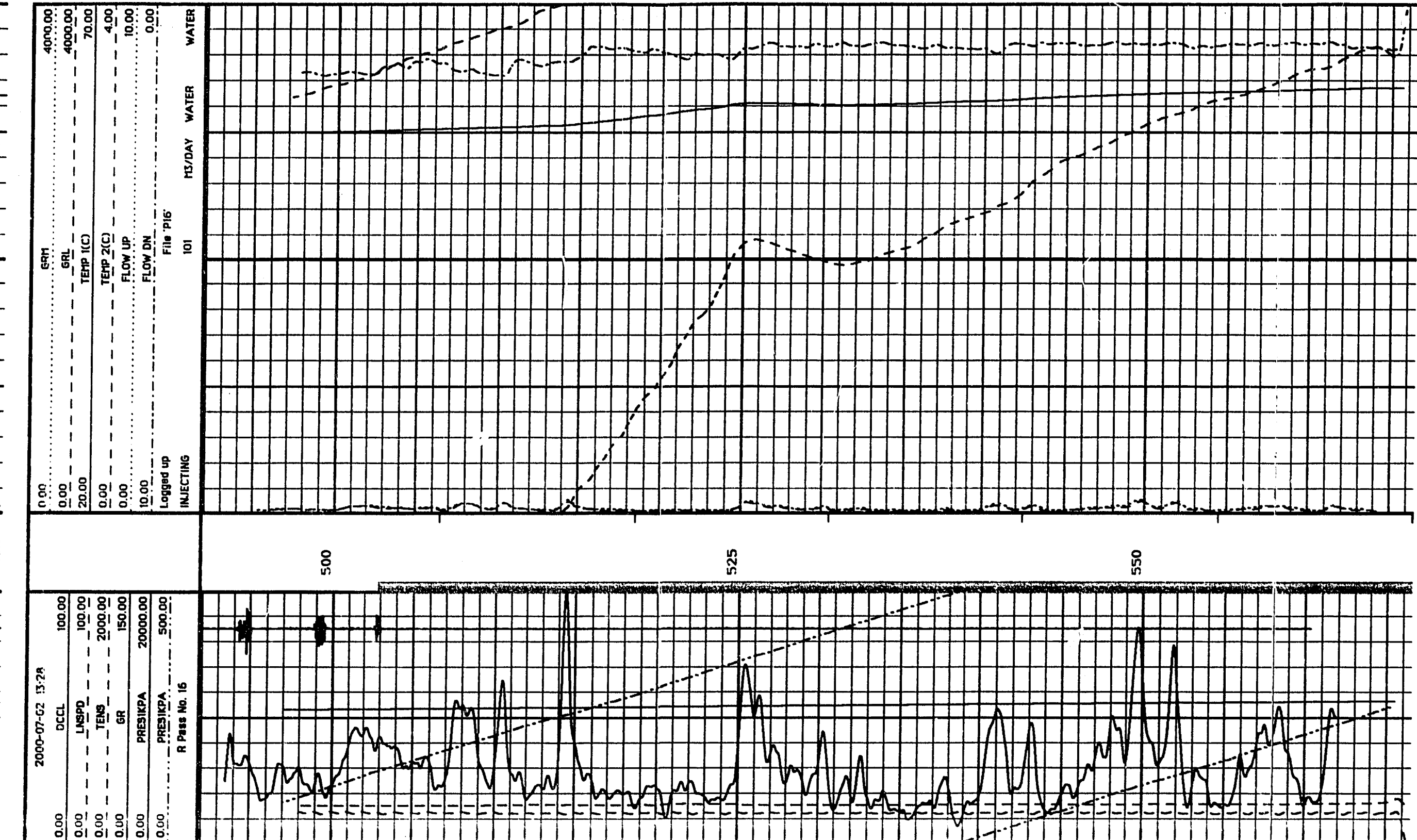
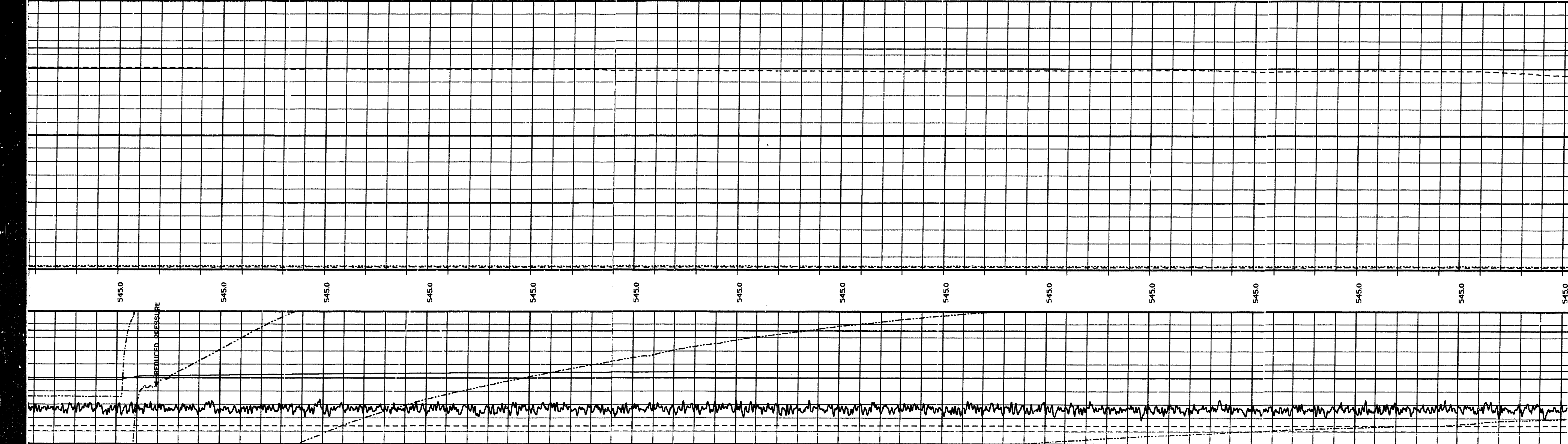
**LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT**

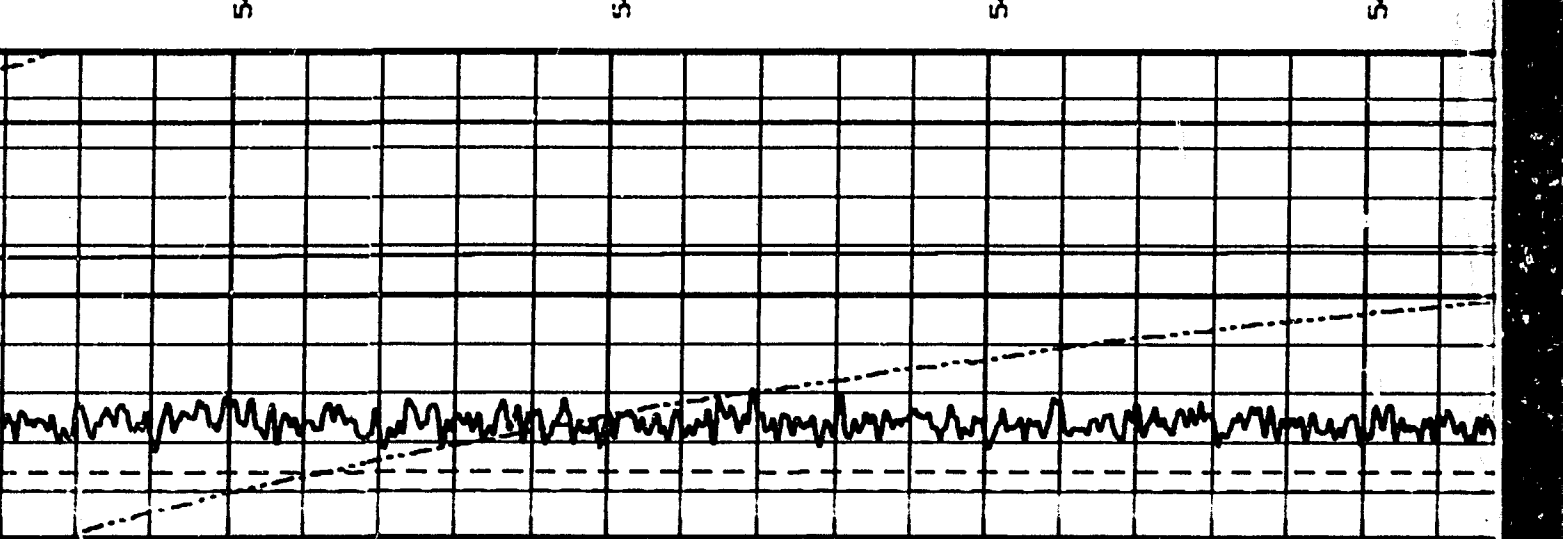
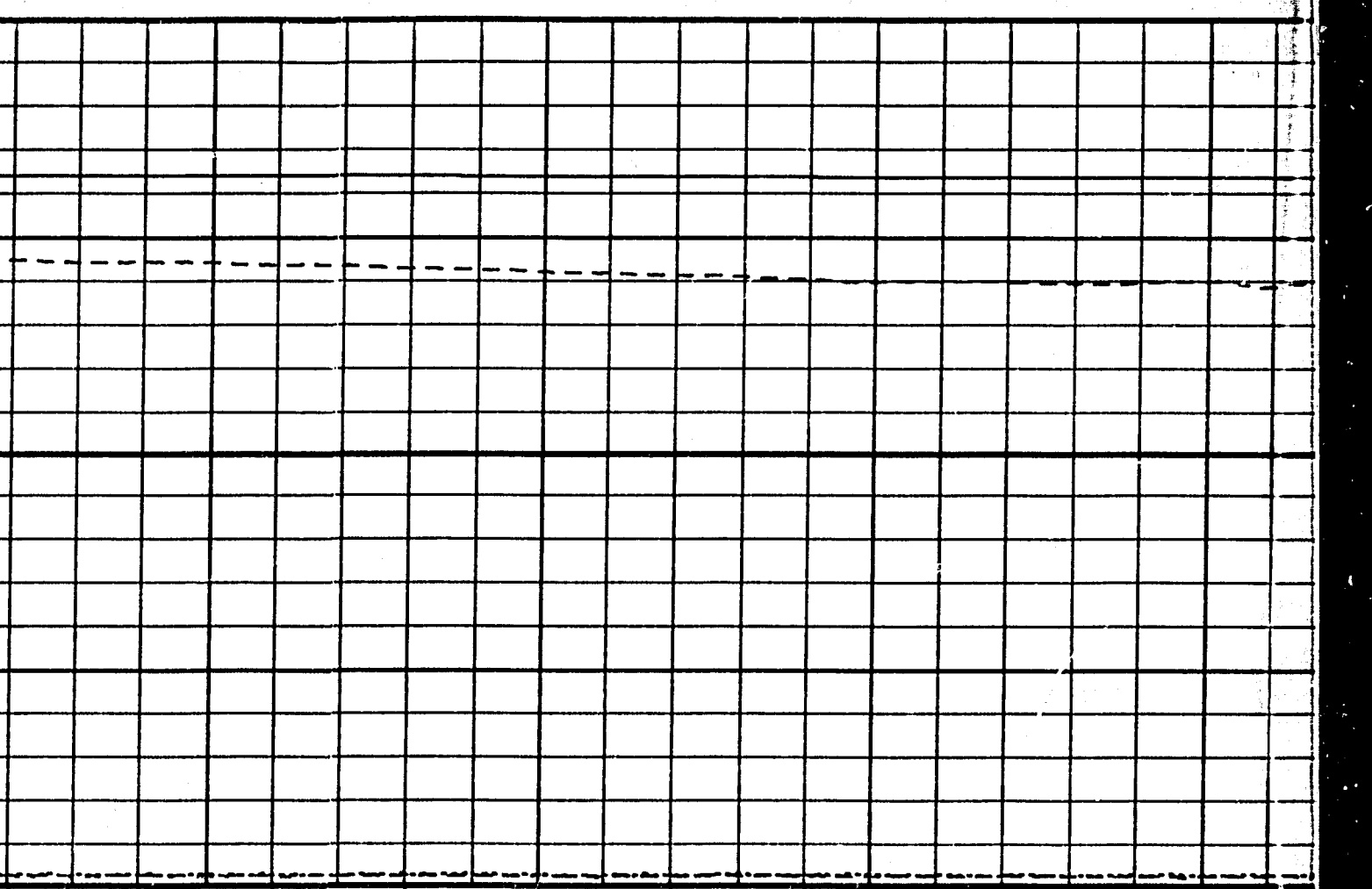
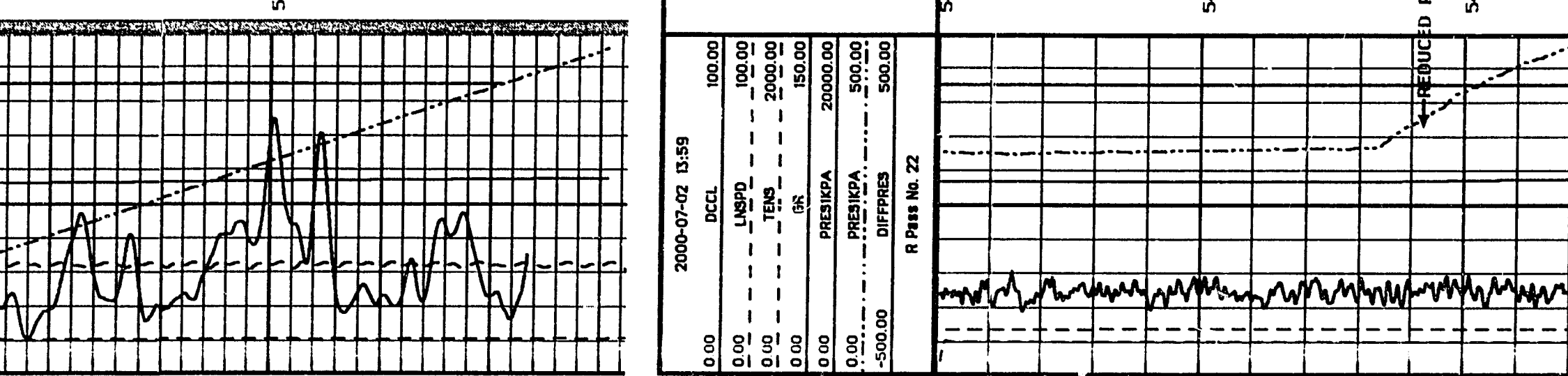
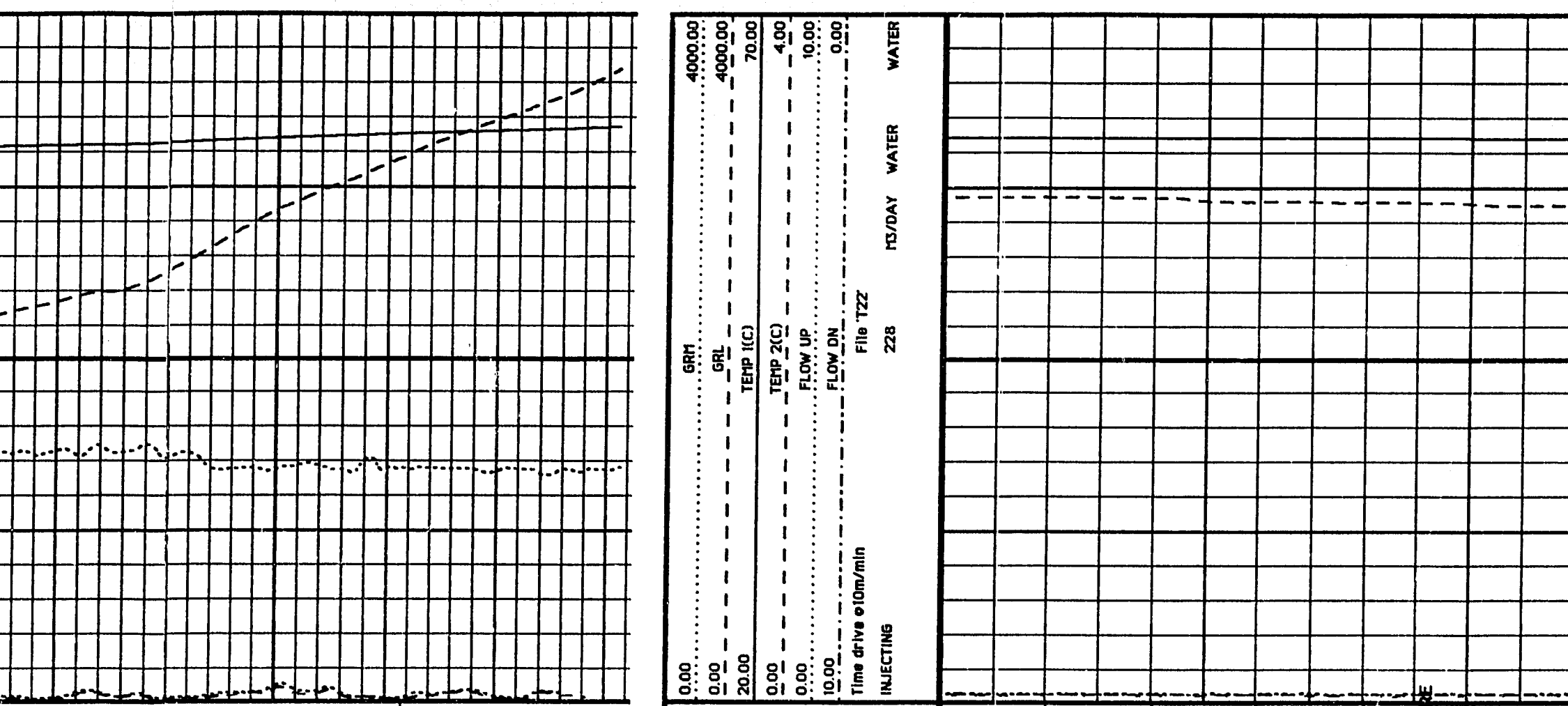
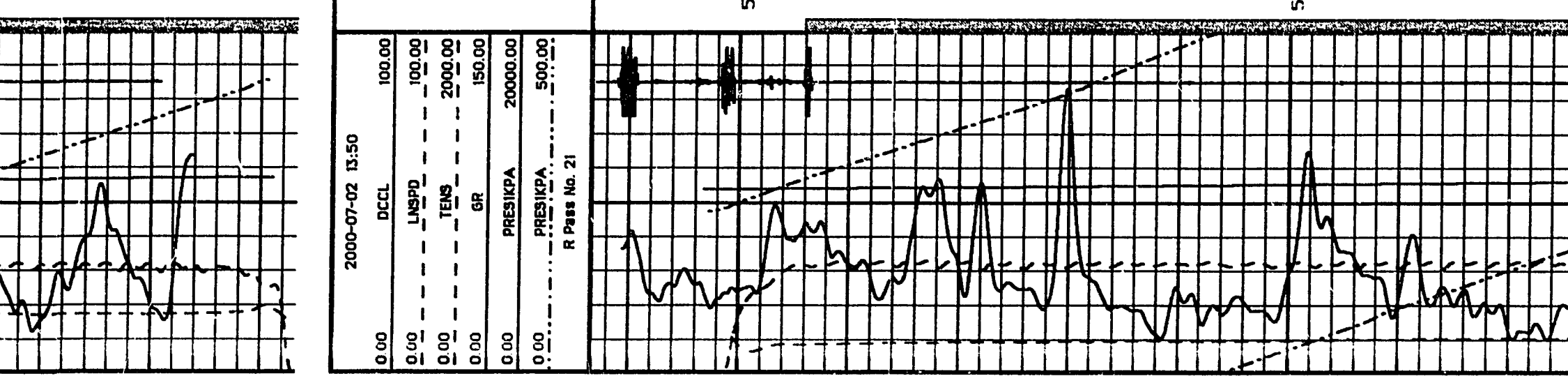
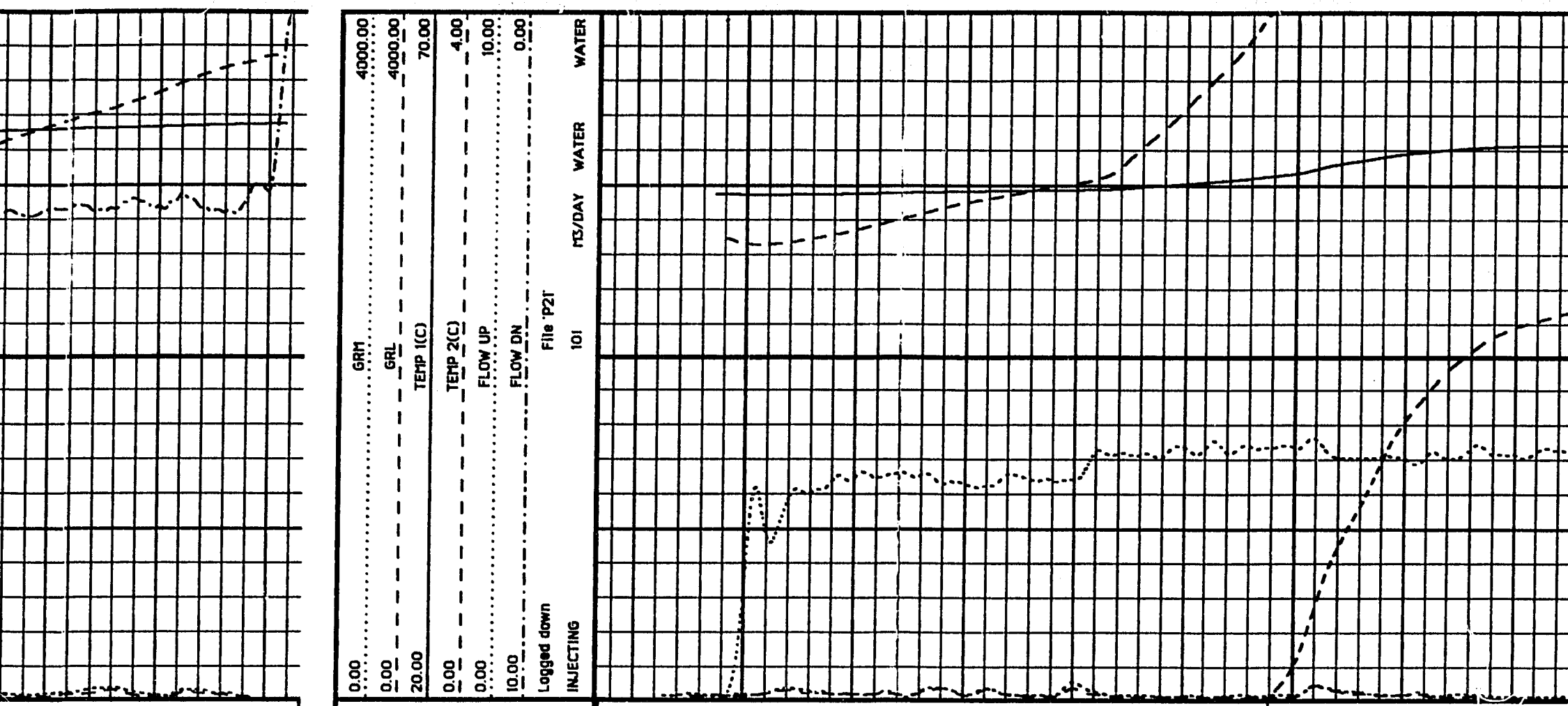
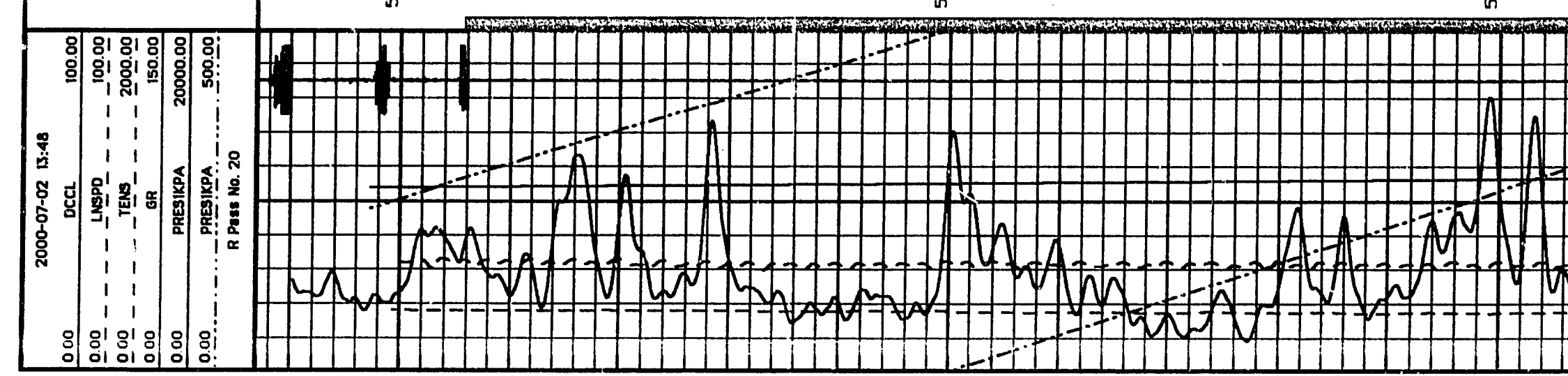
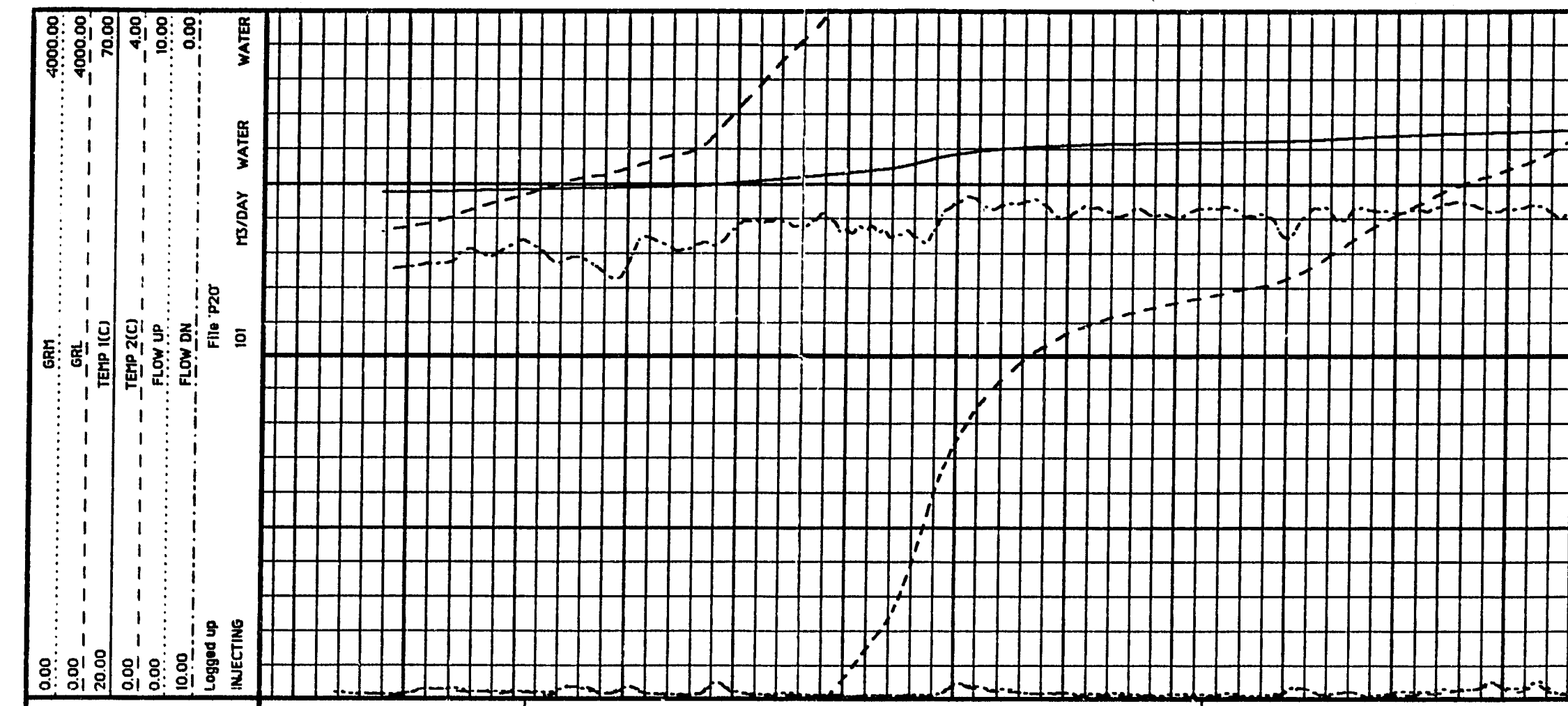
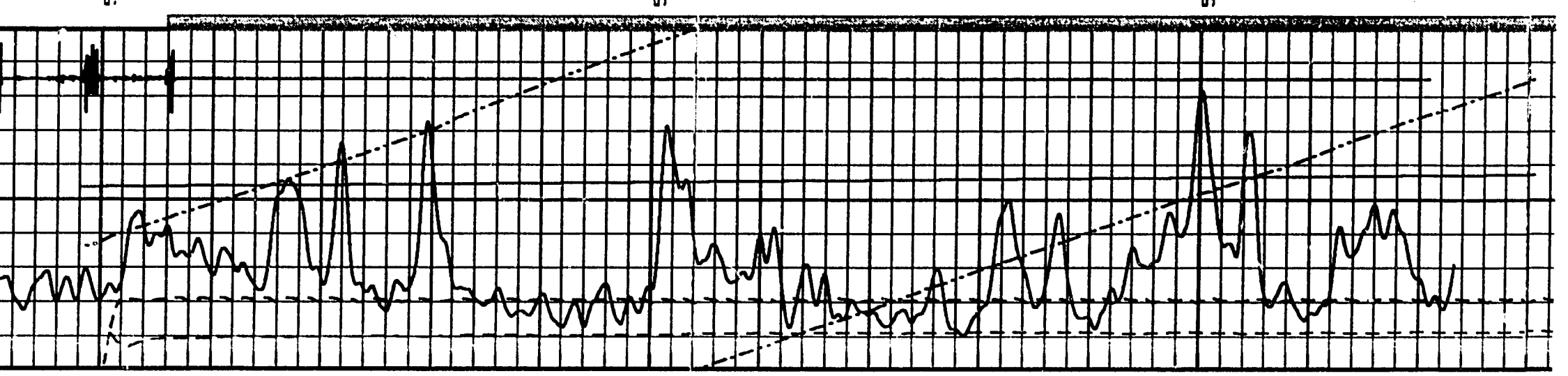
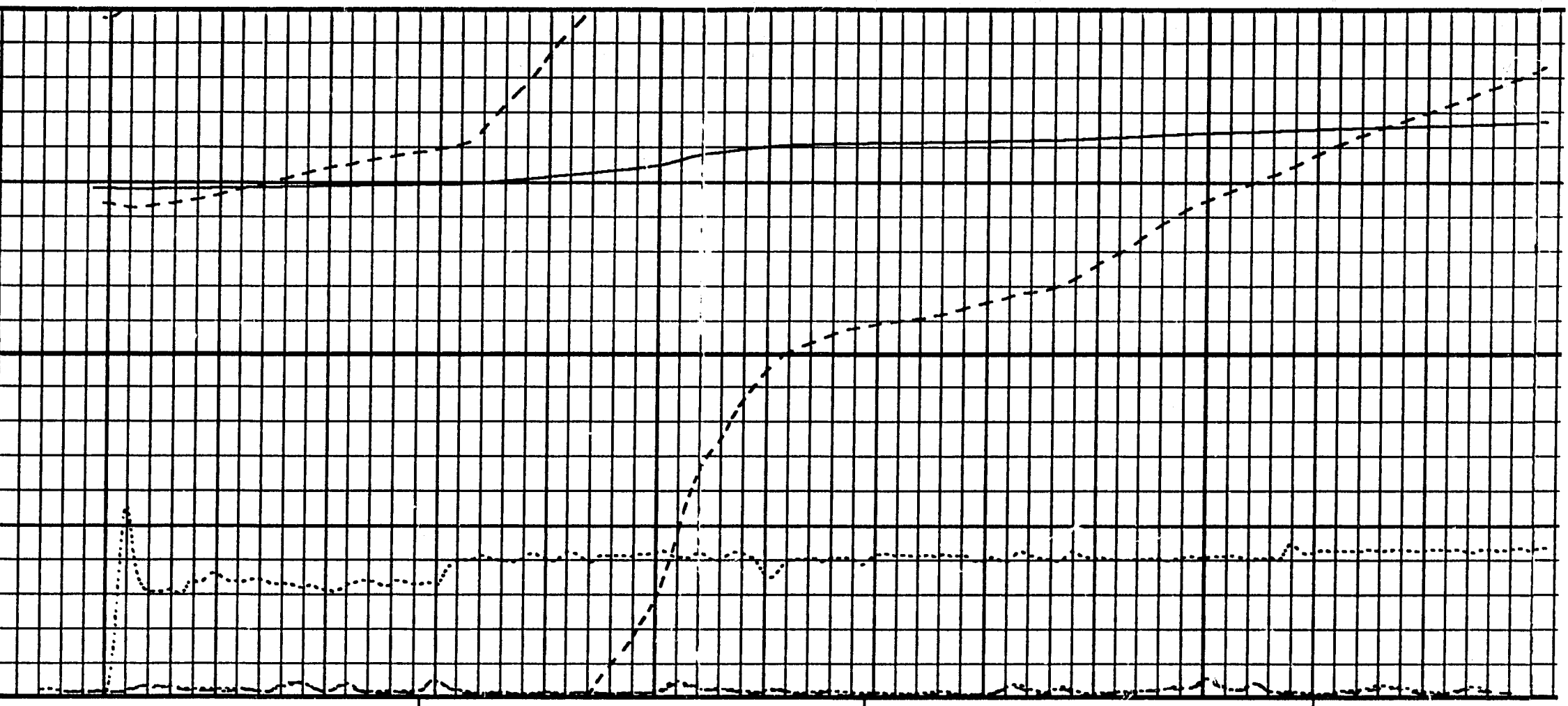
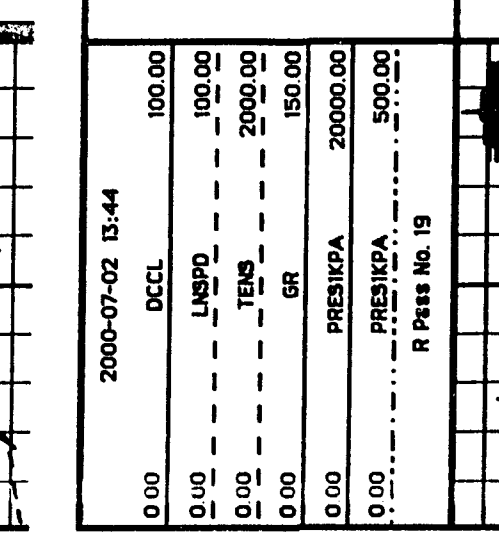
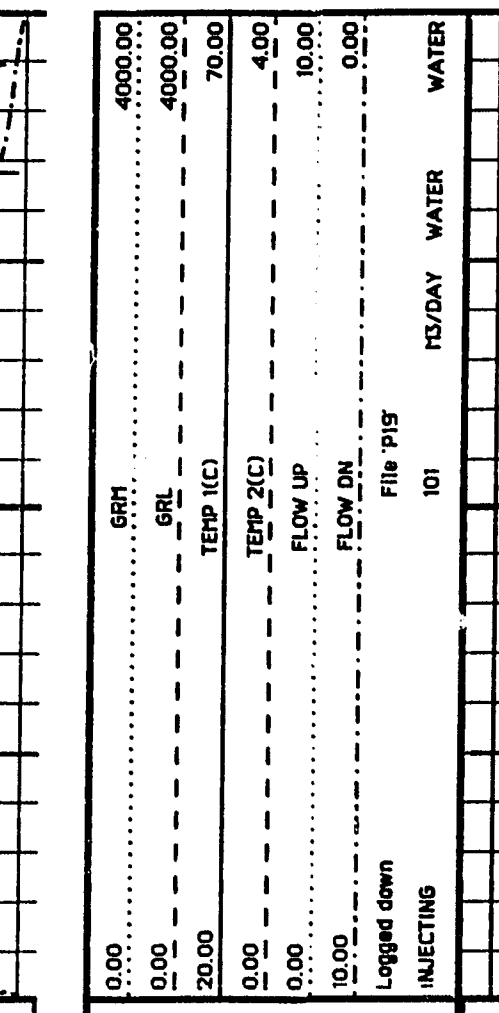
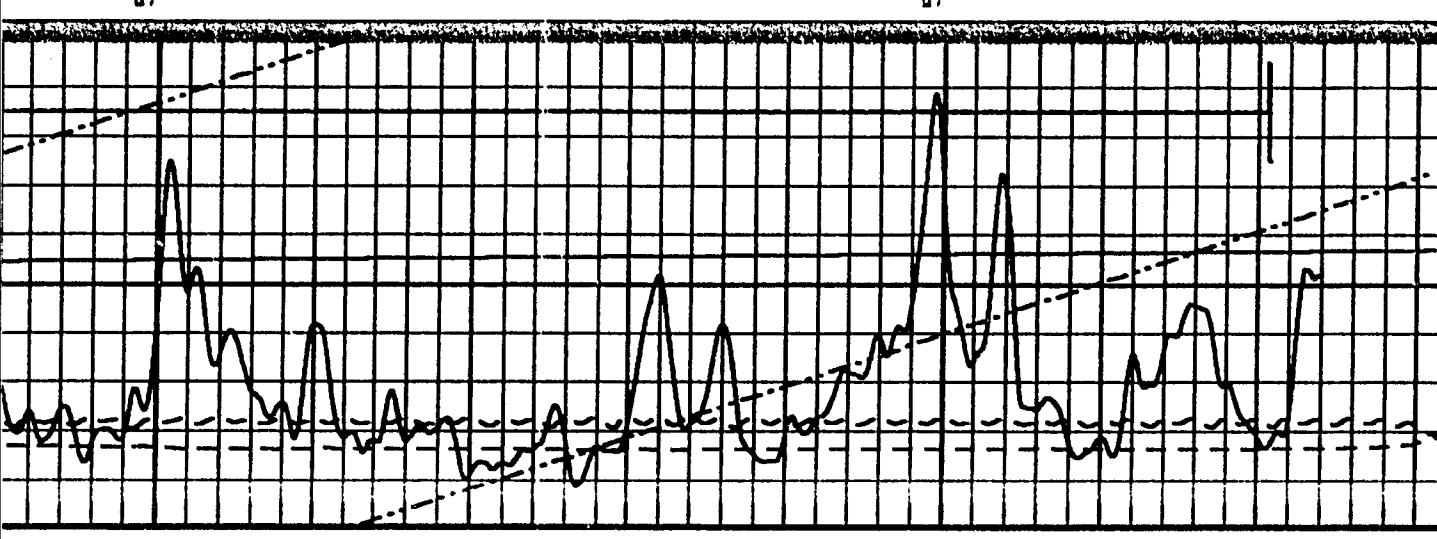
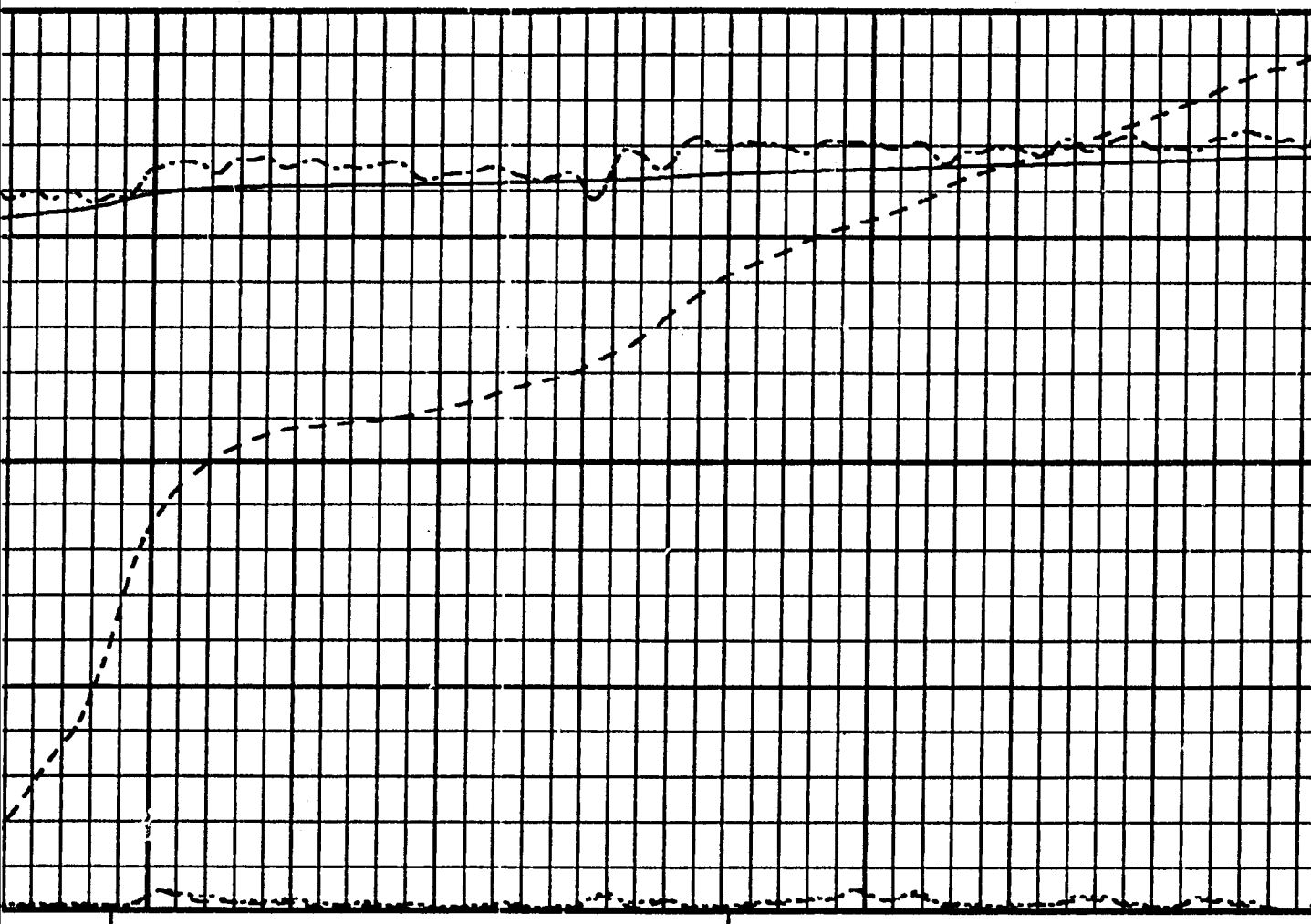


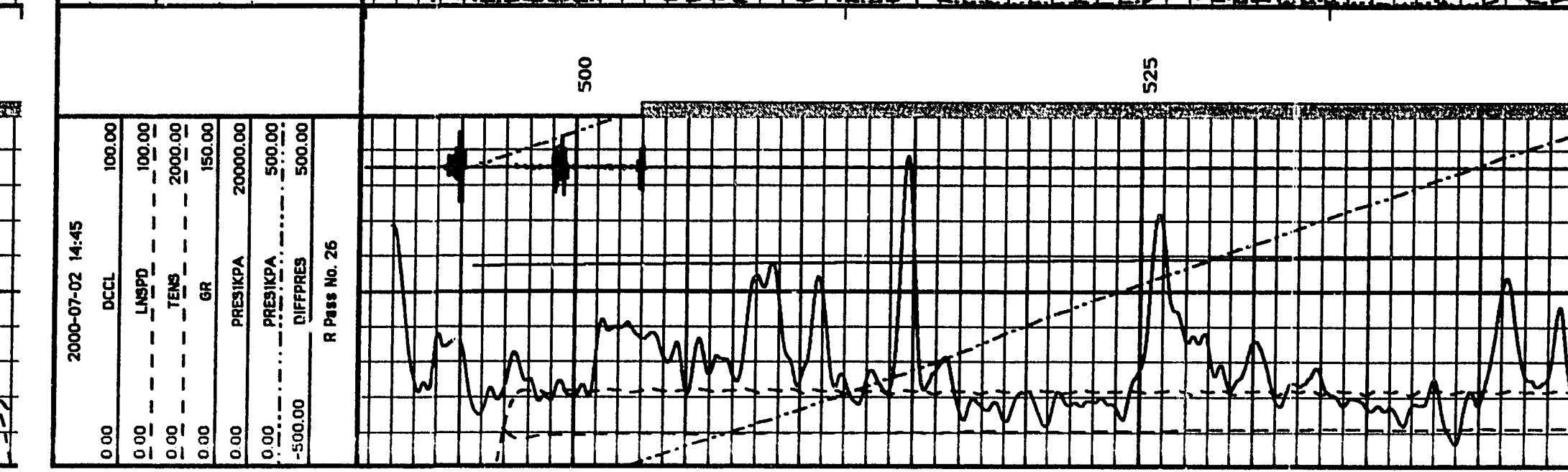
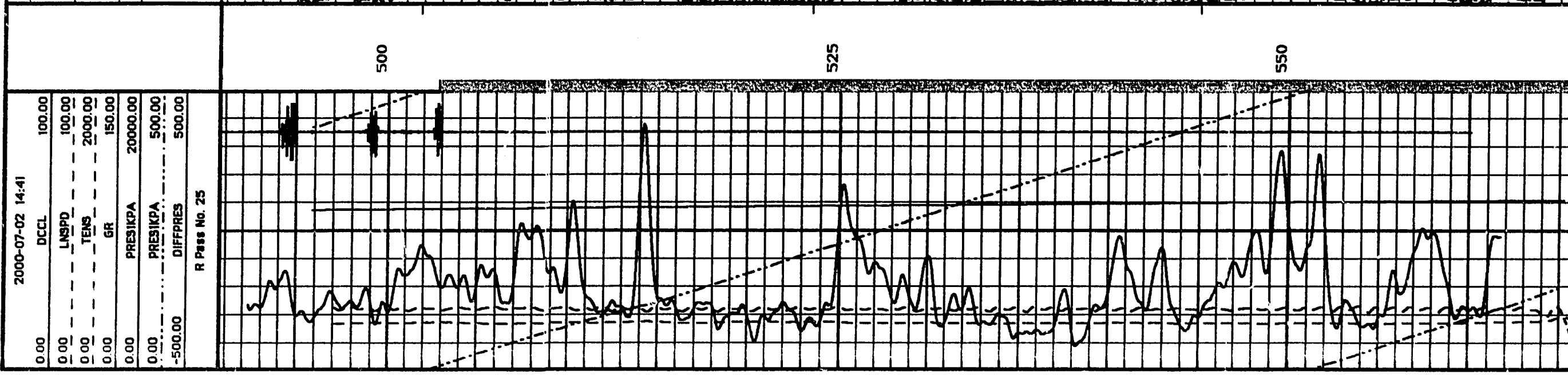
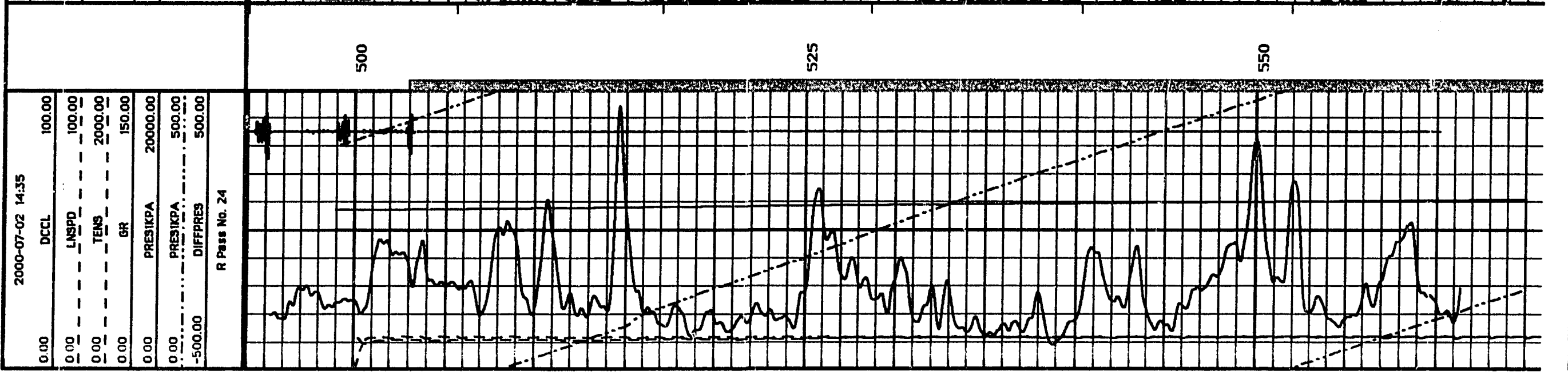
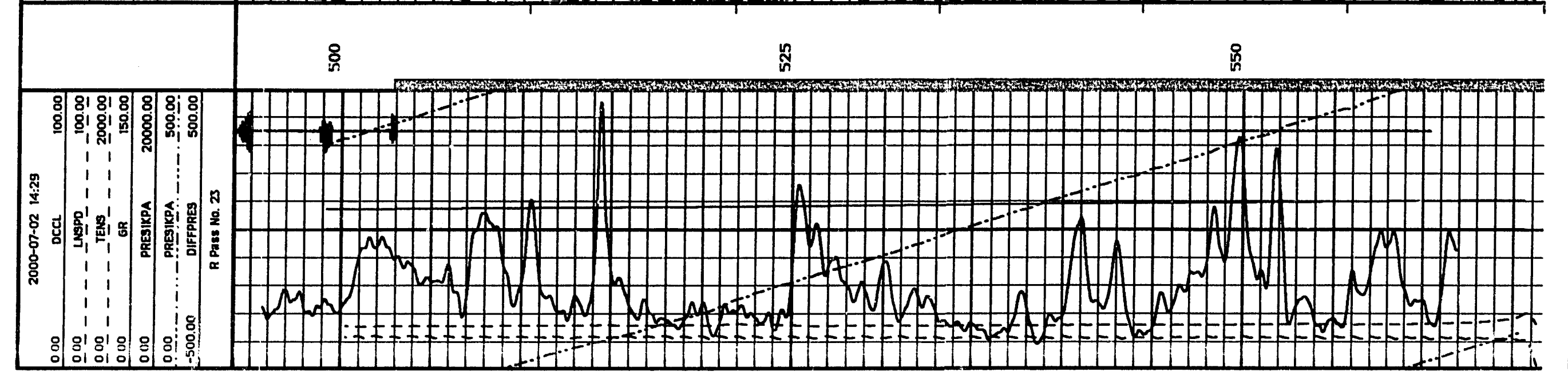
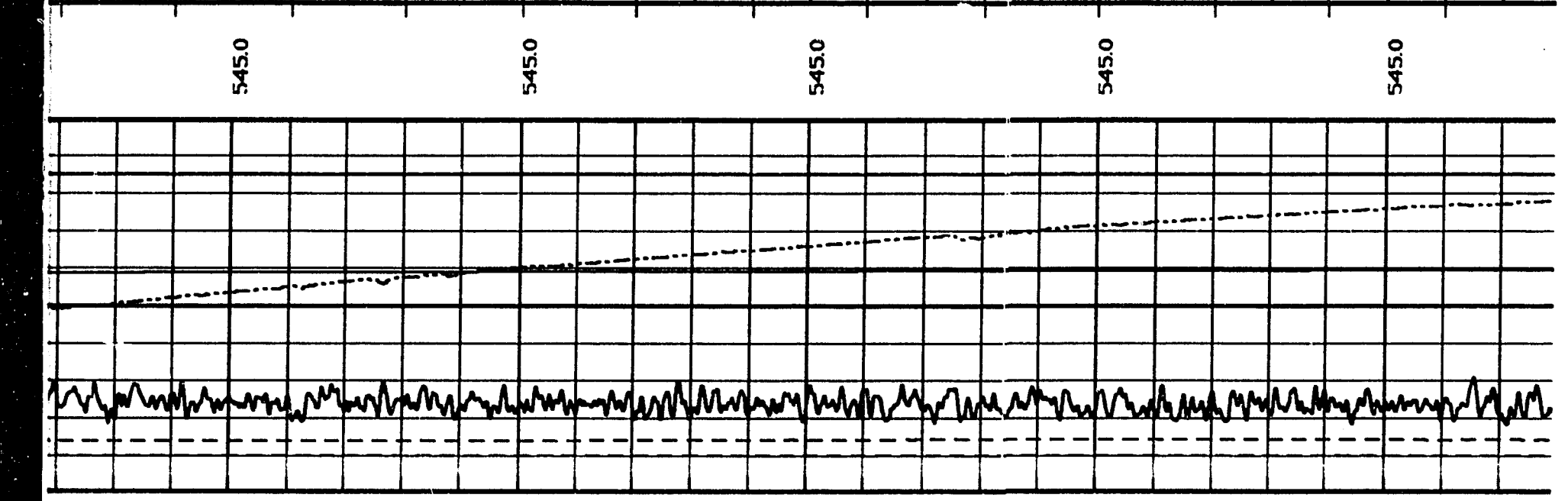
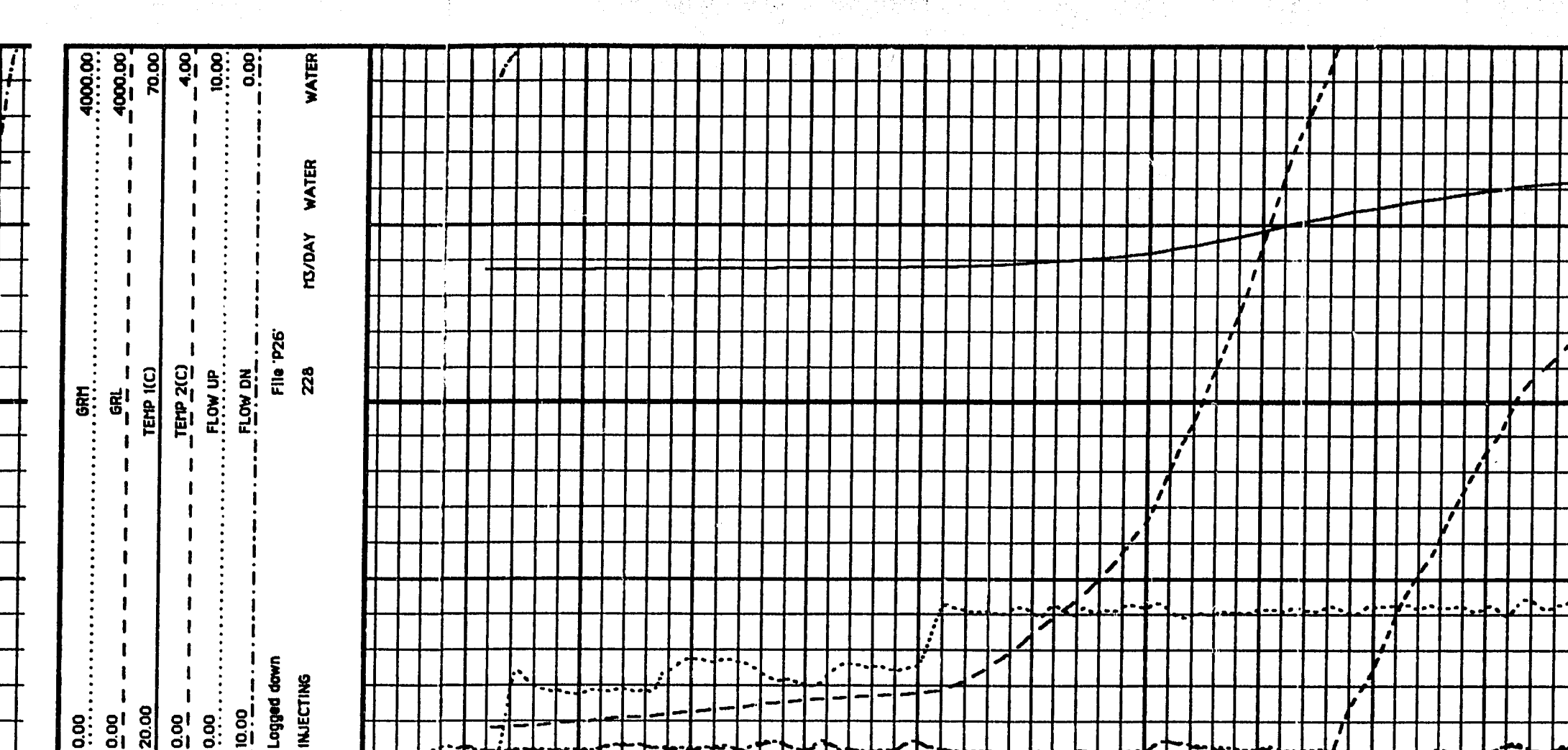
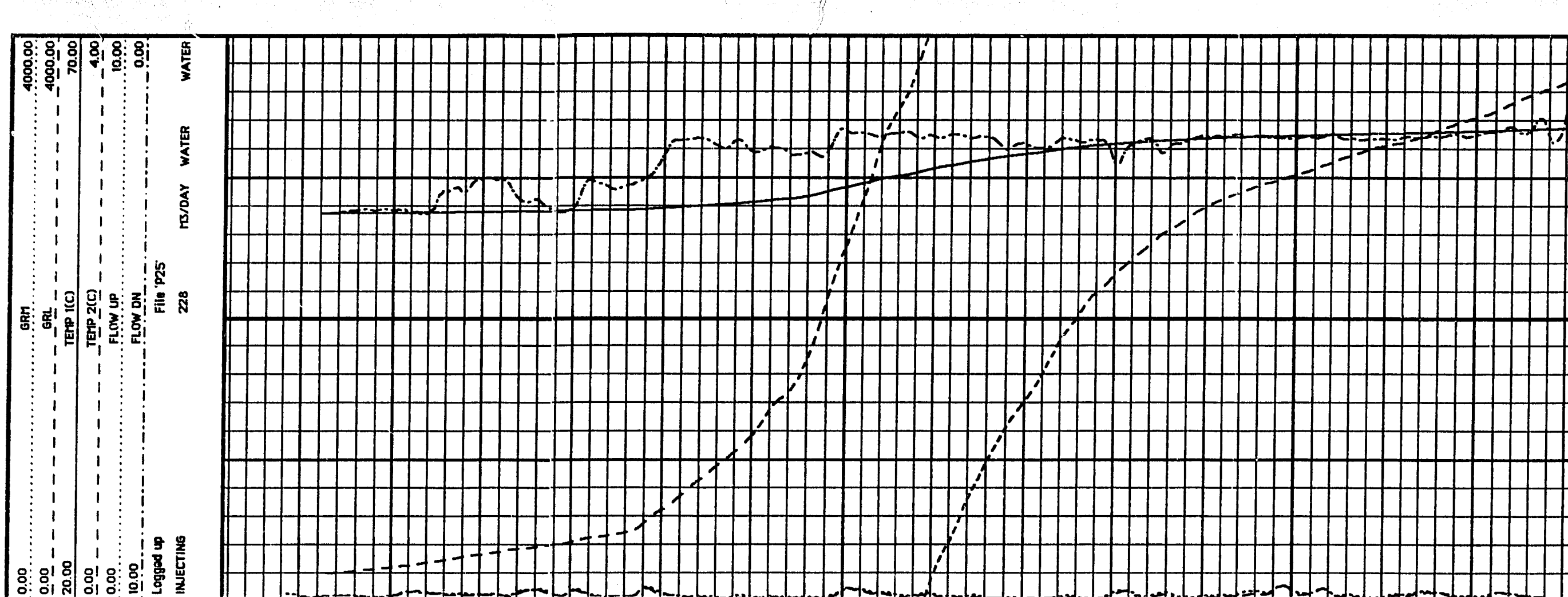
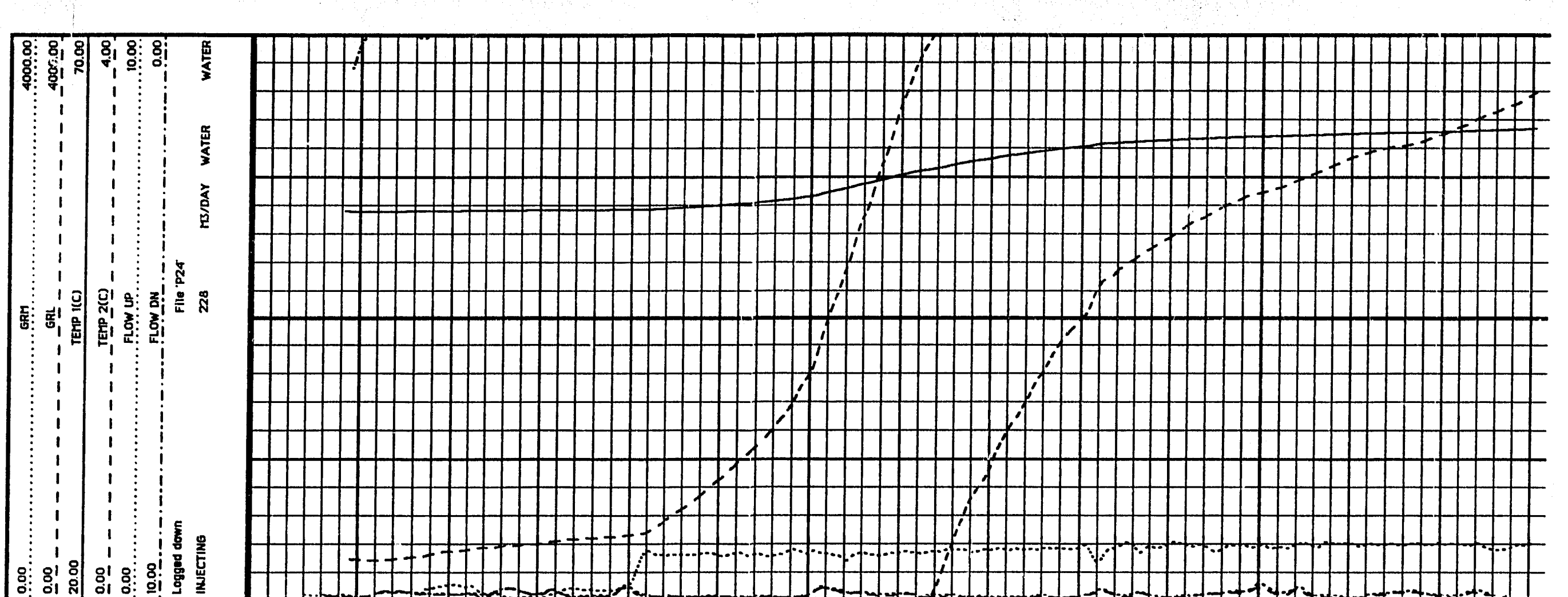
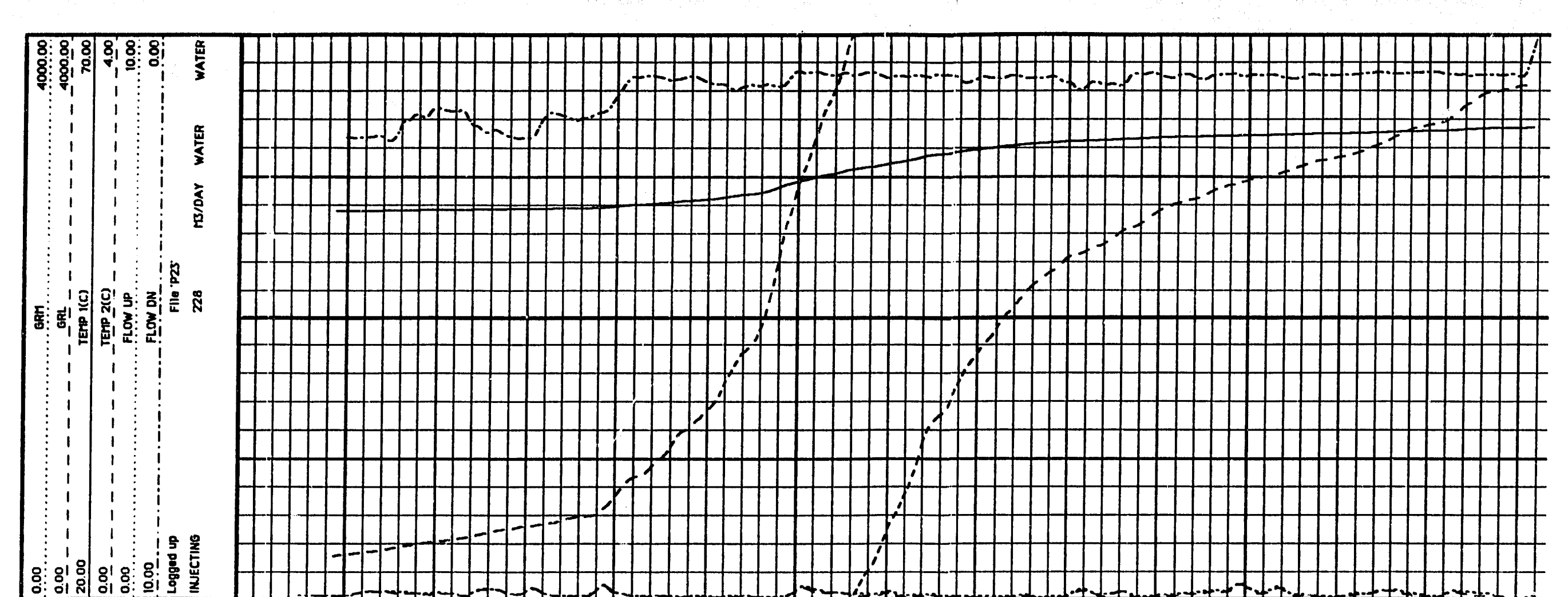
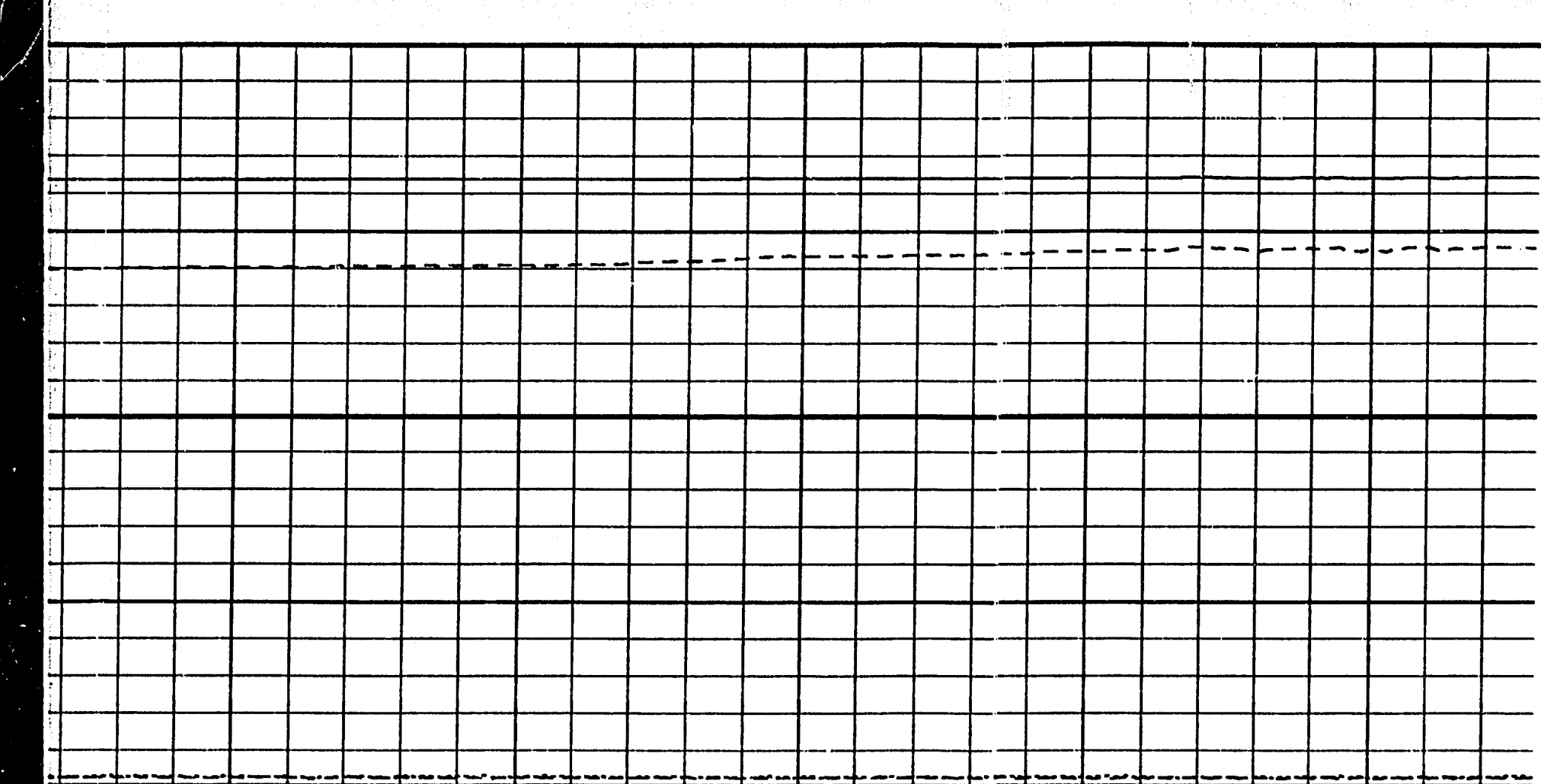


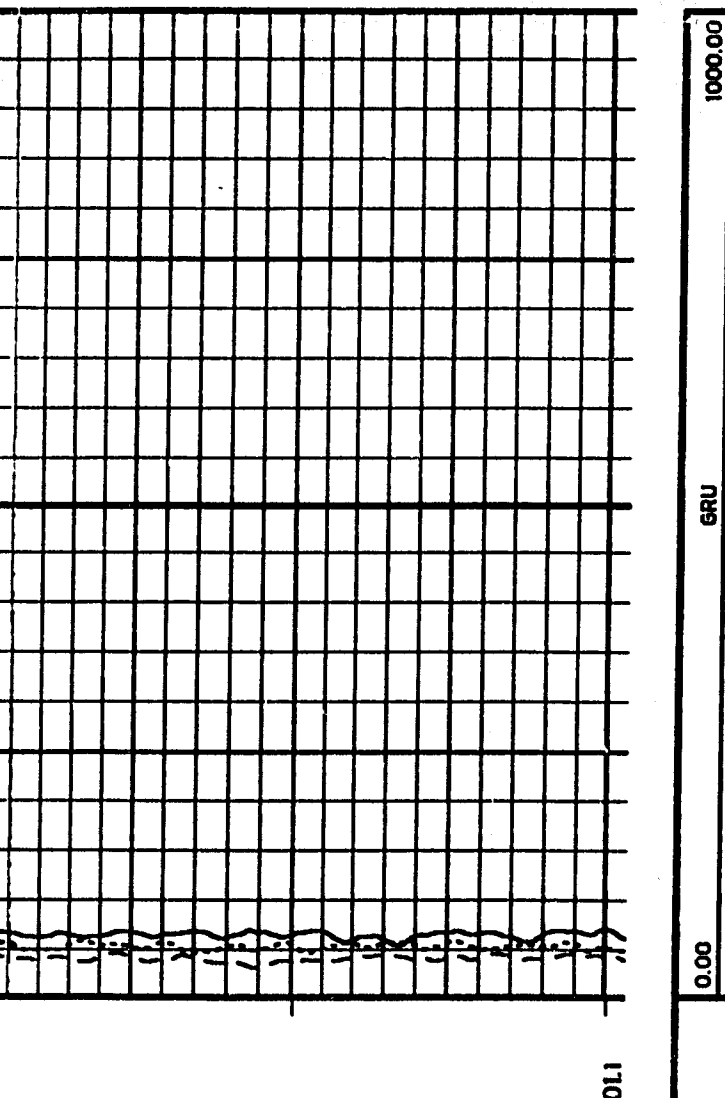
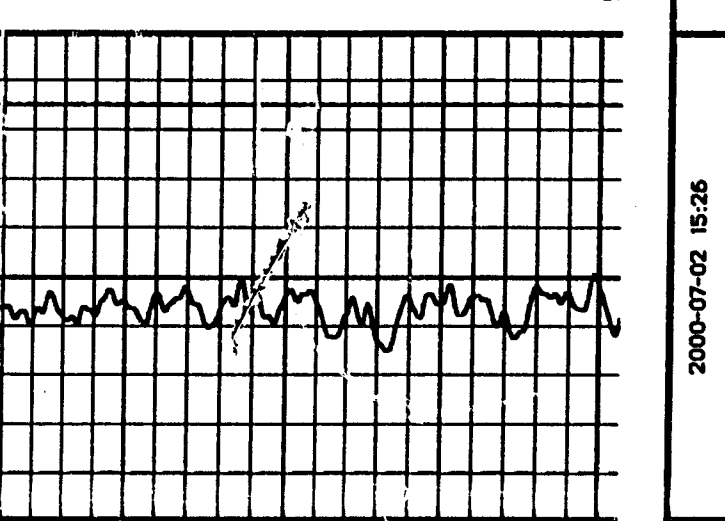
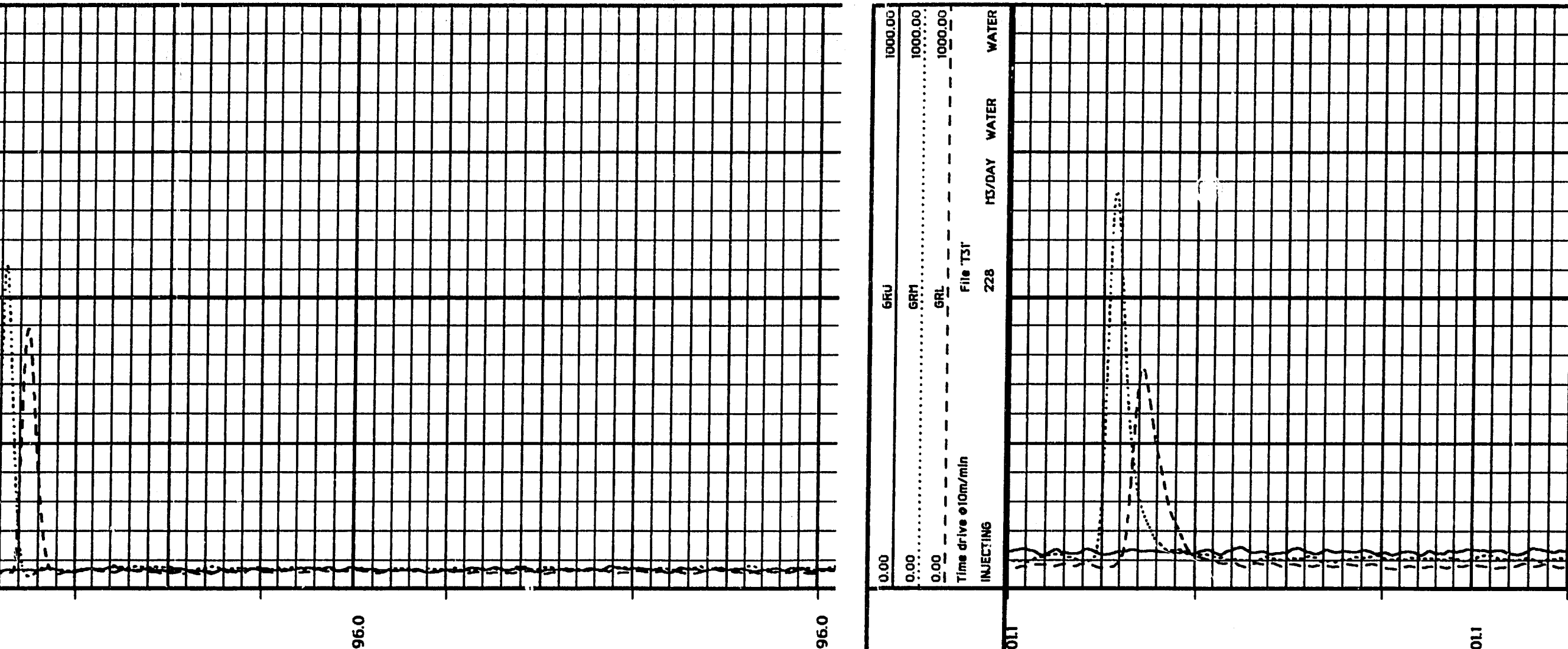
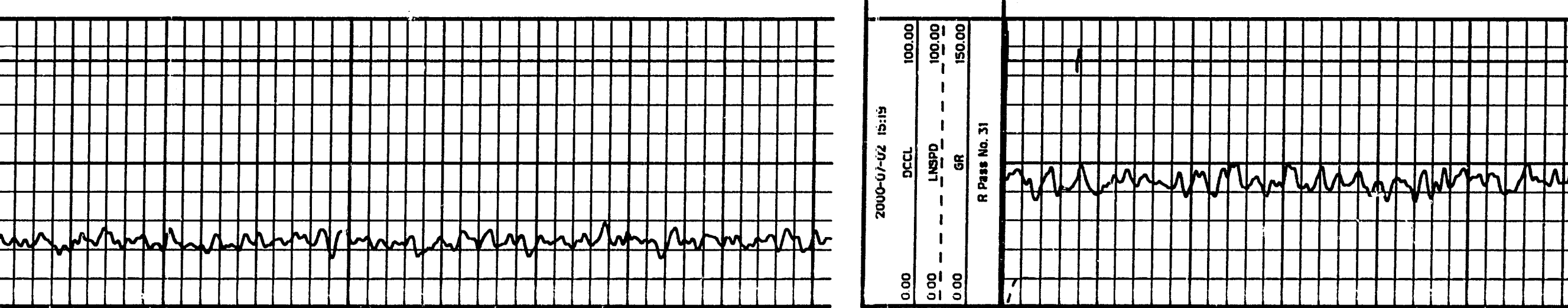
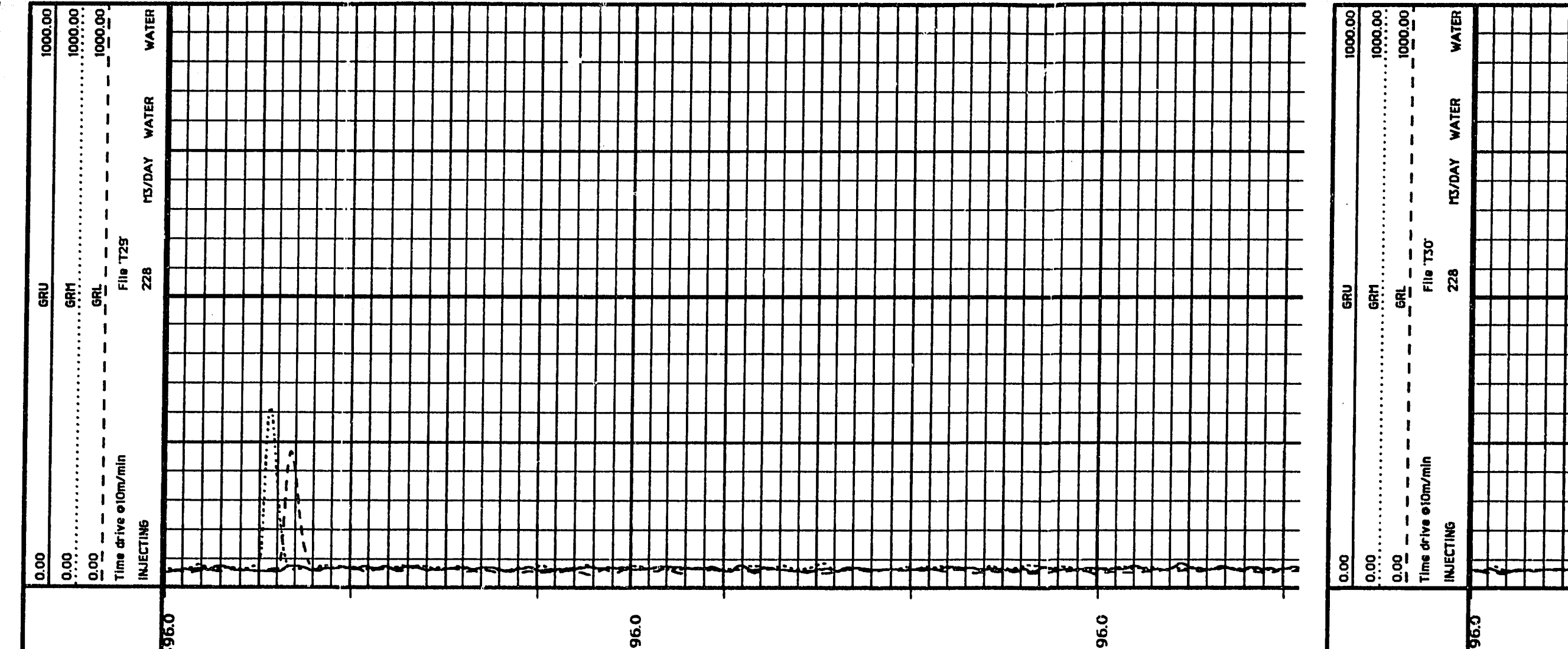
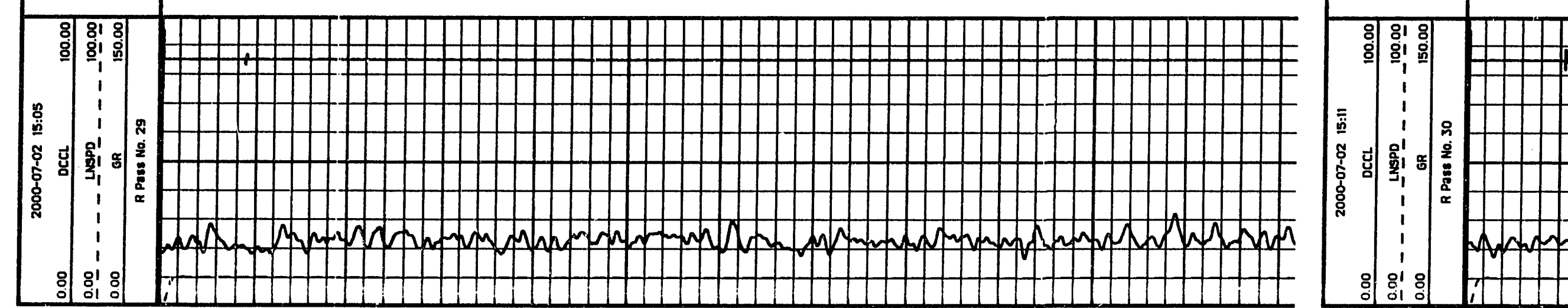
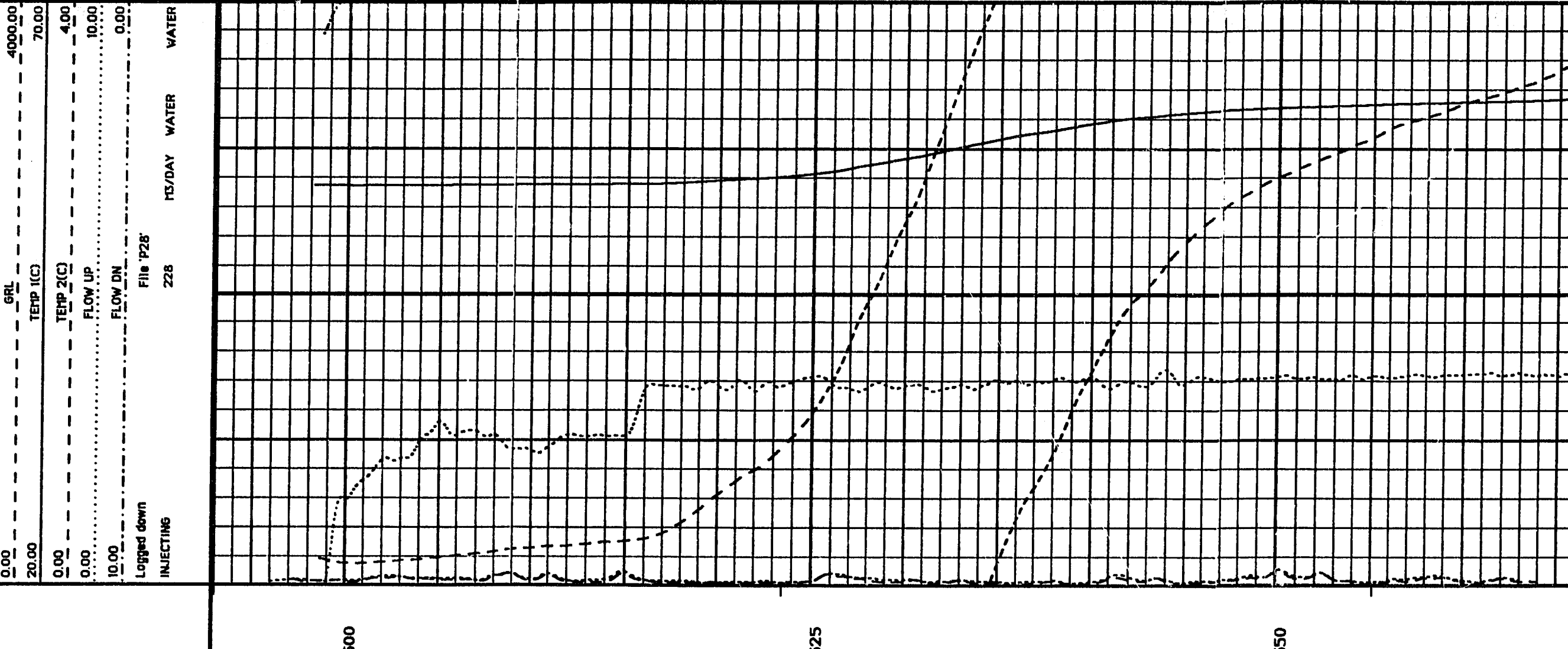
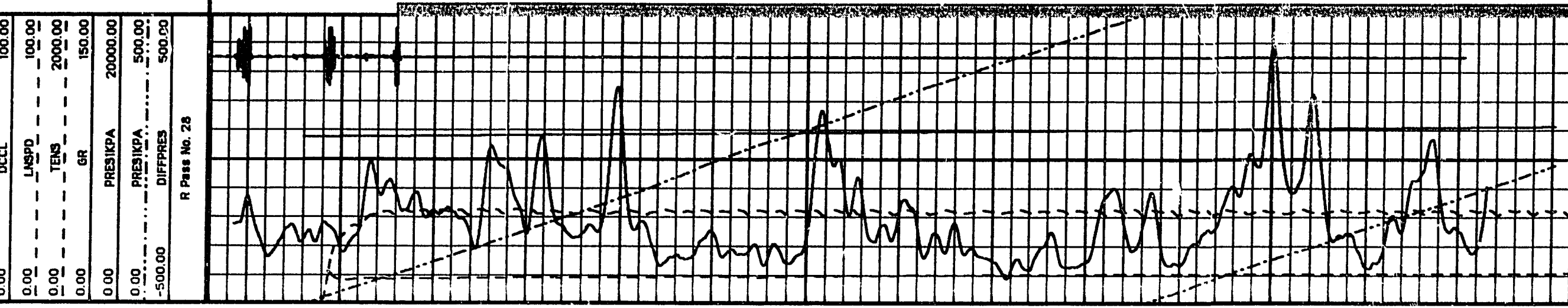
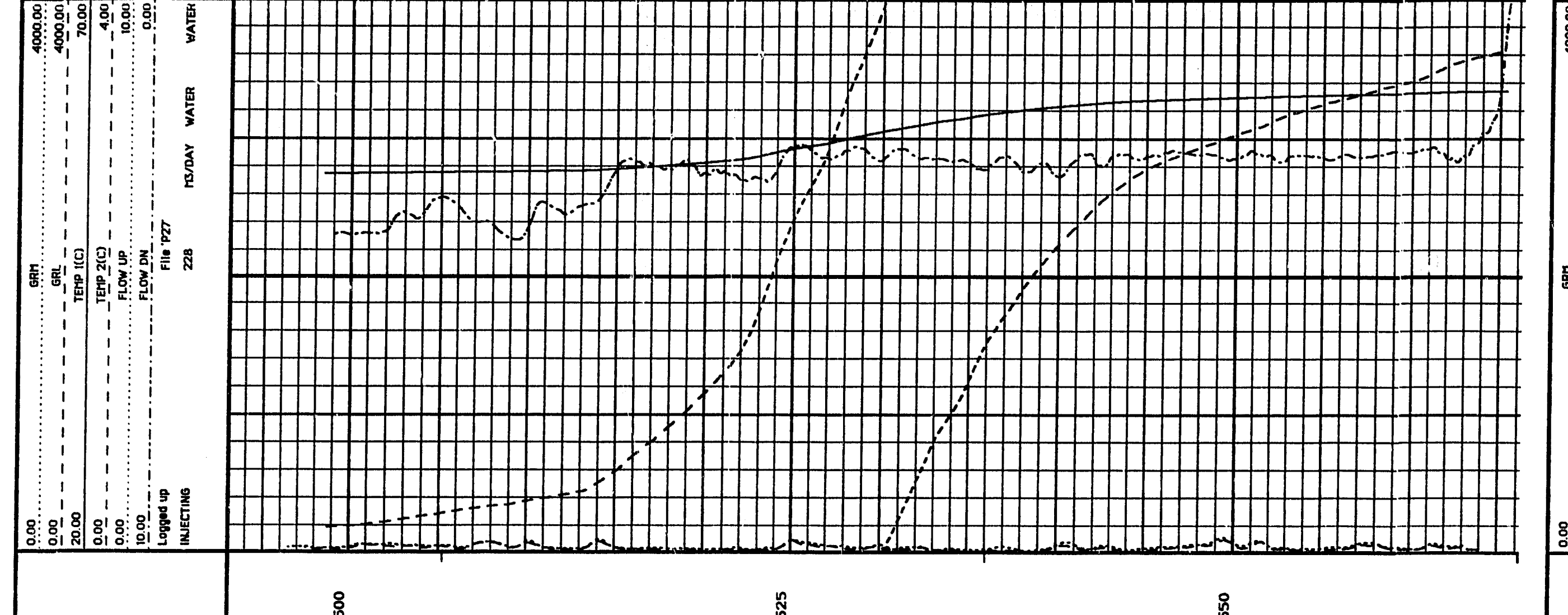
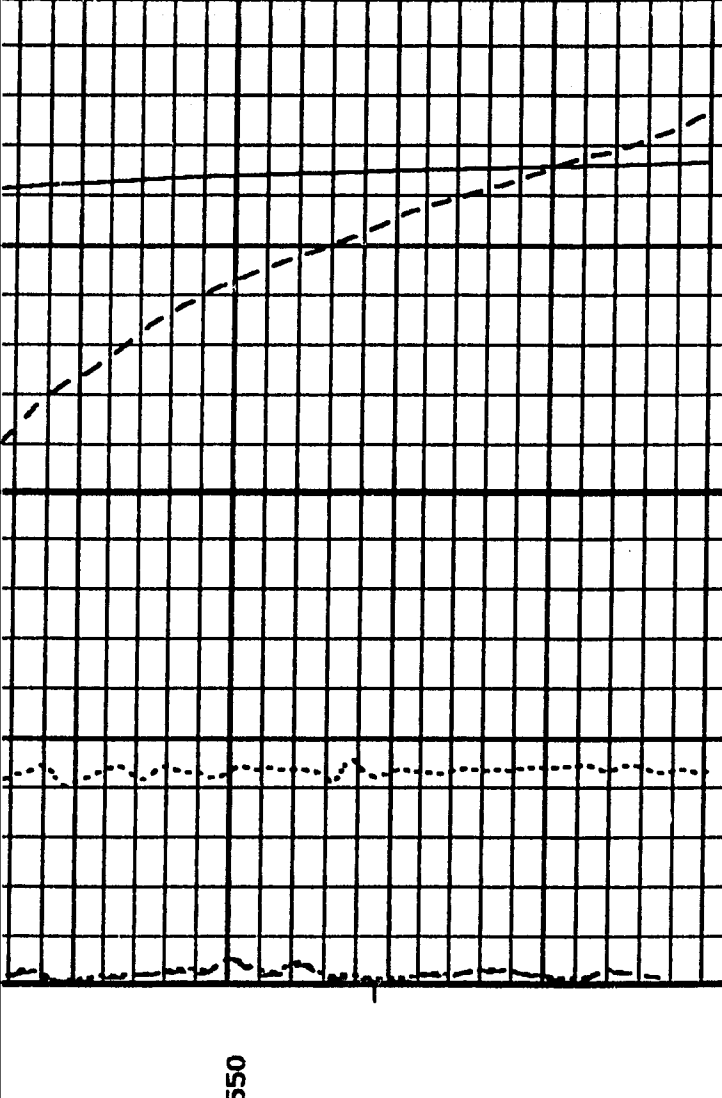
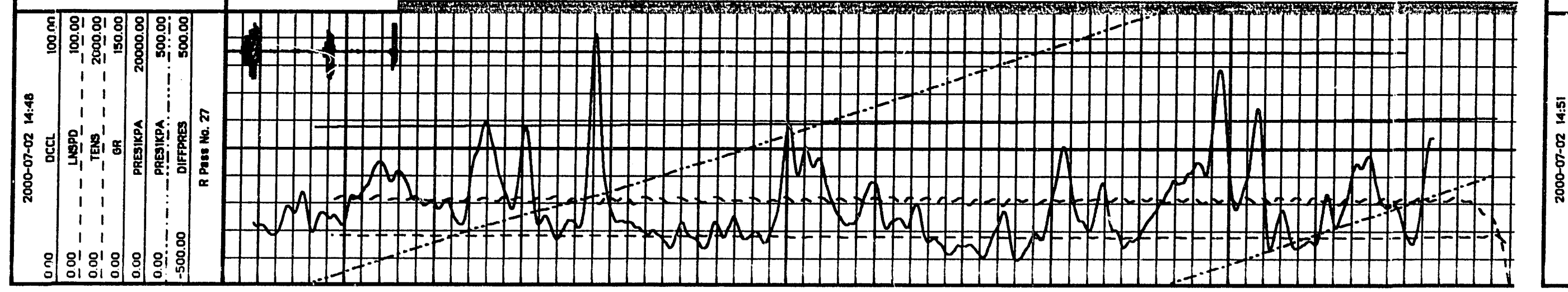
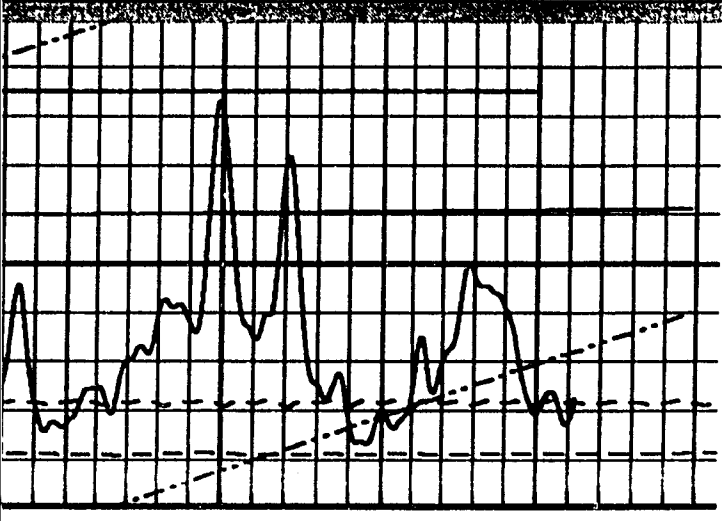


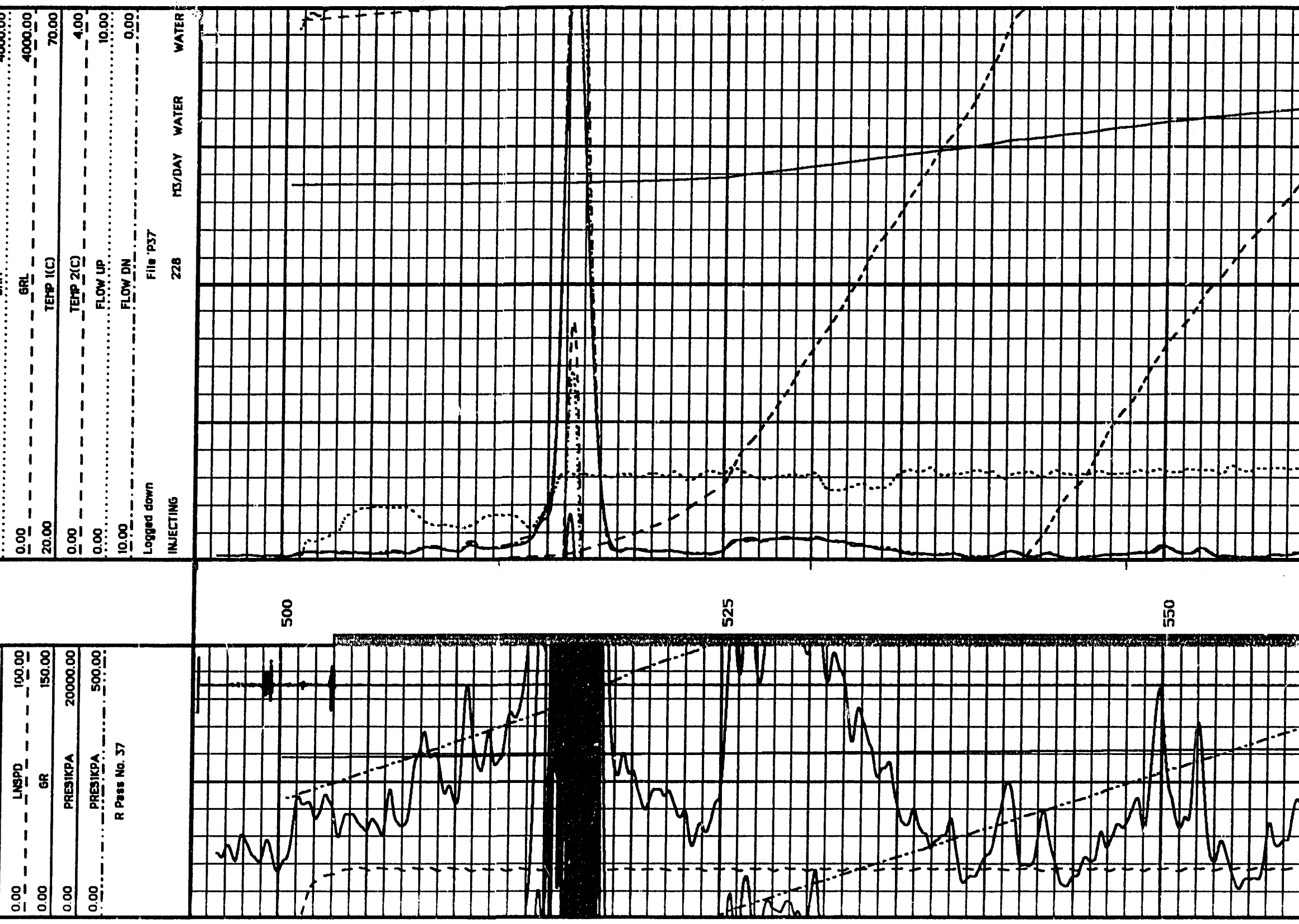
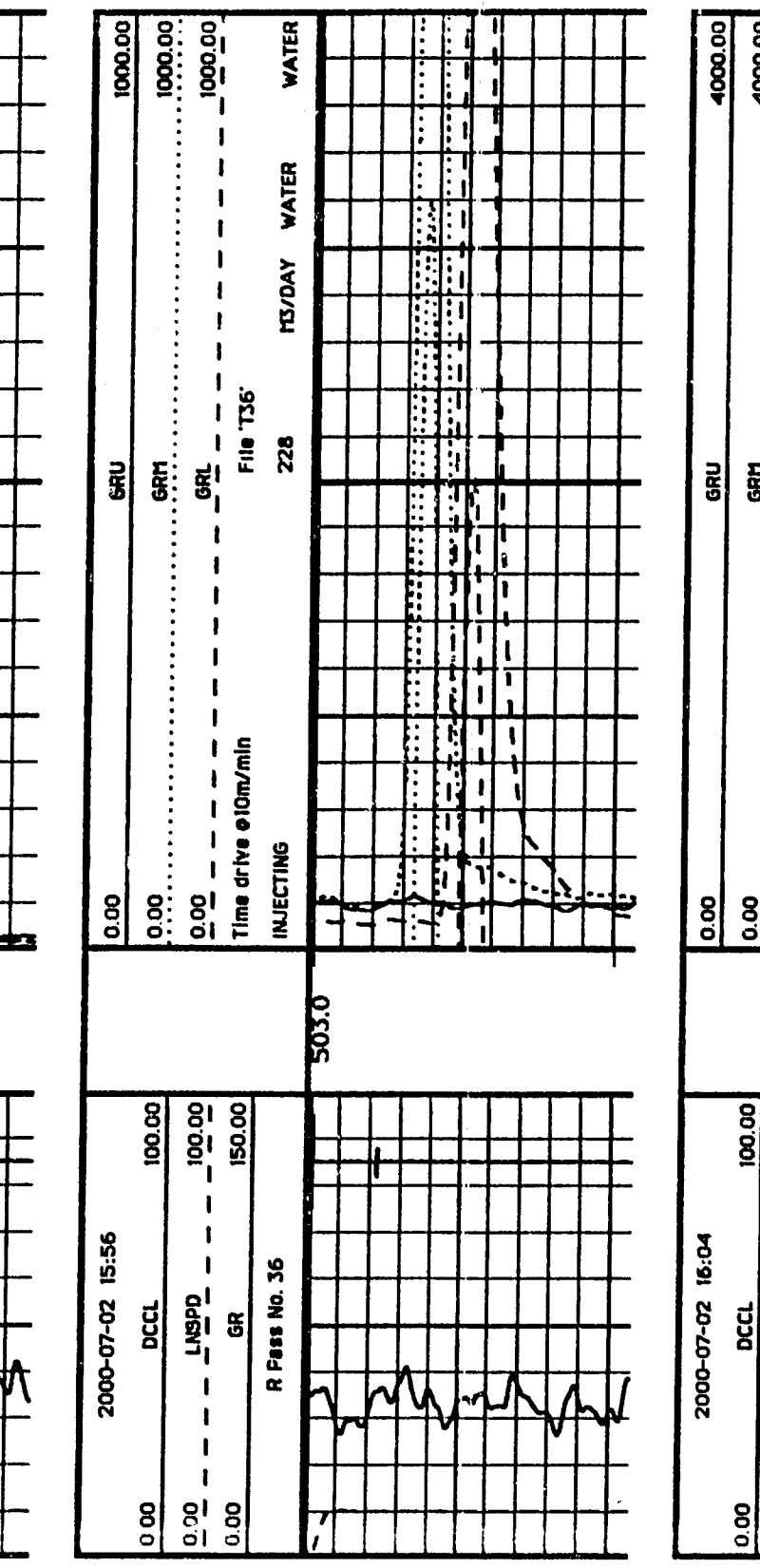
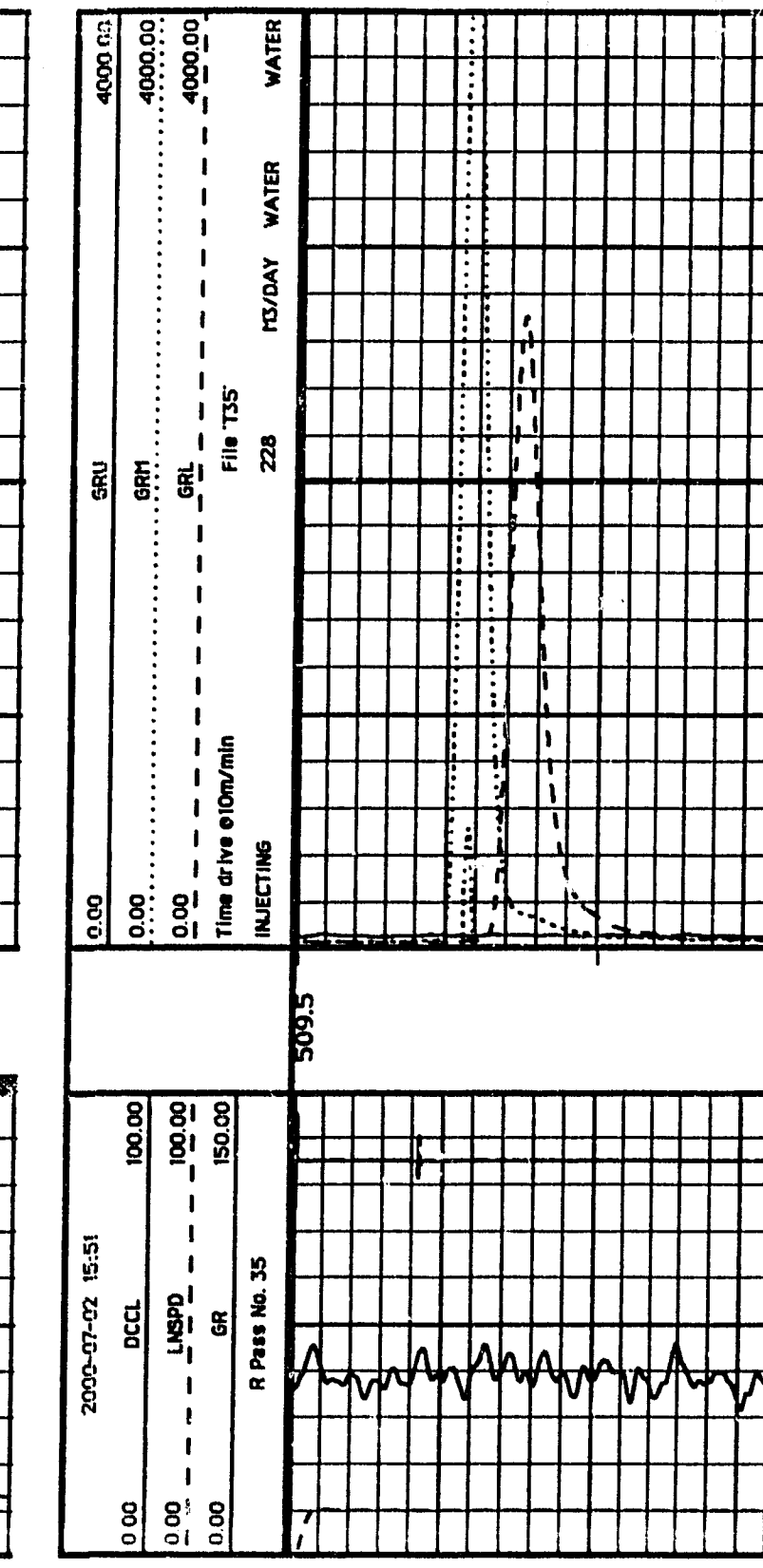
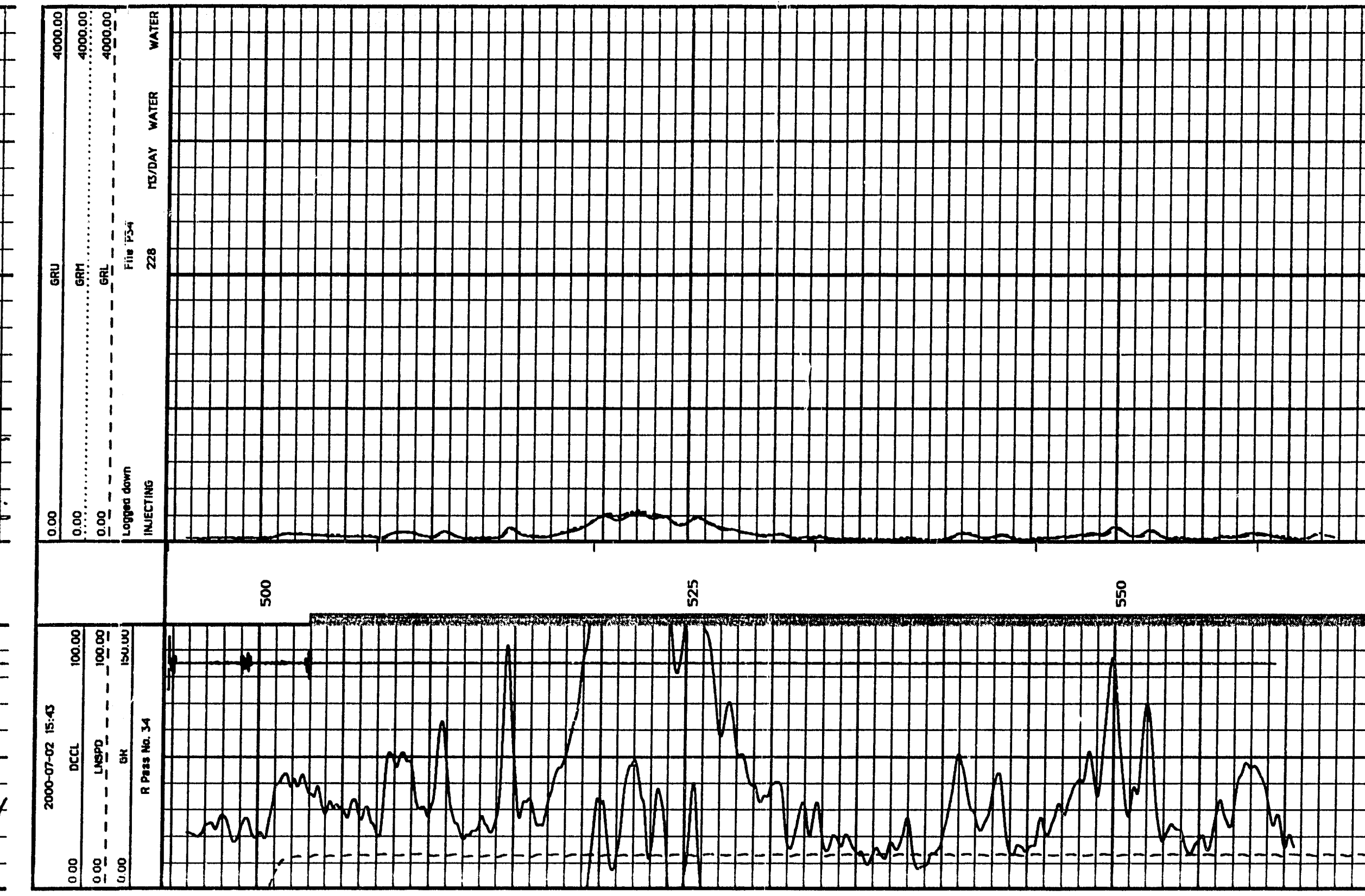
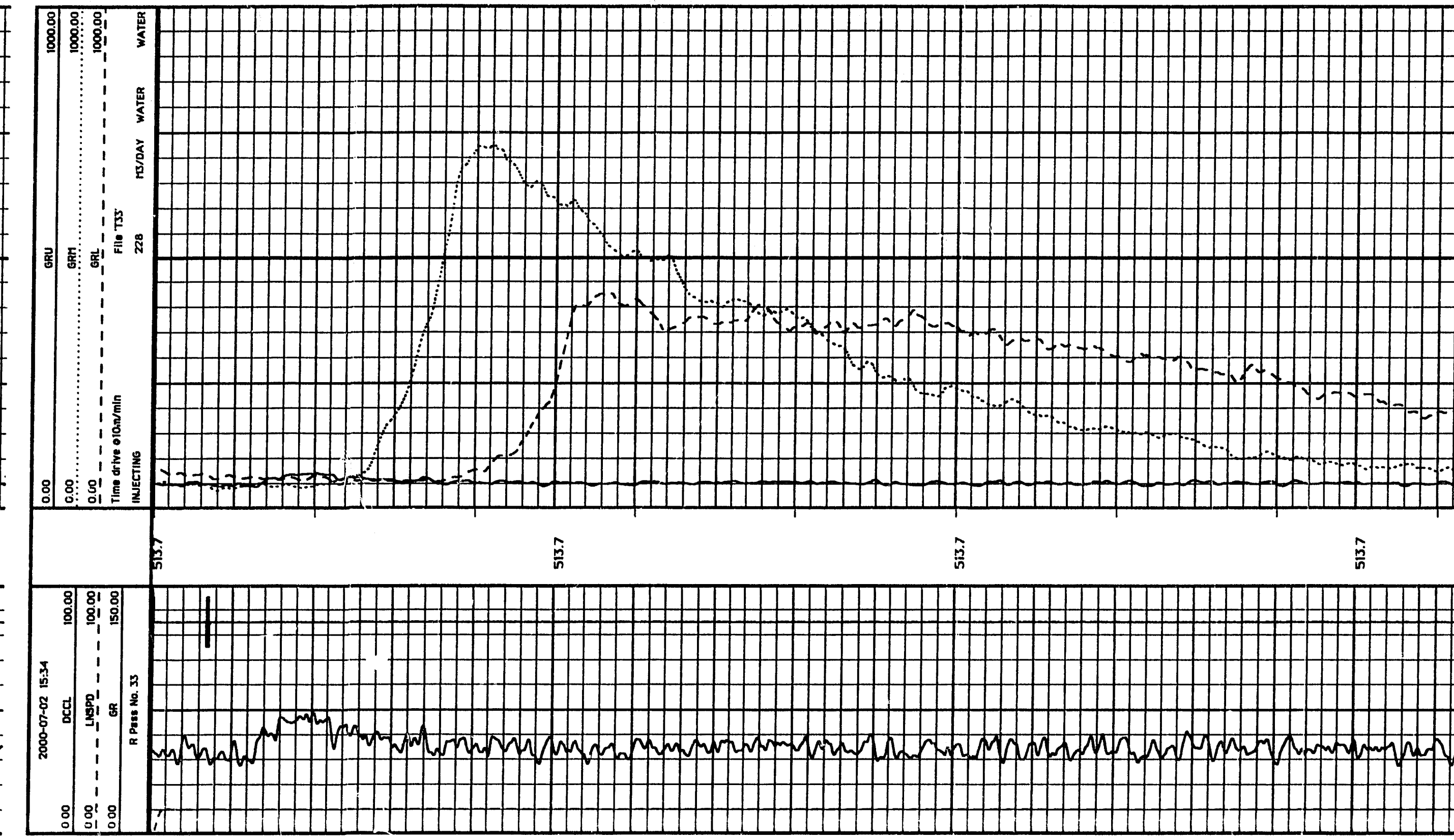
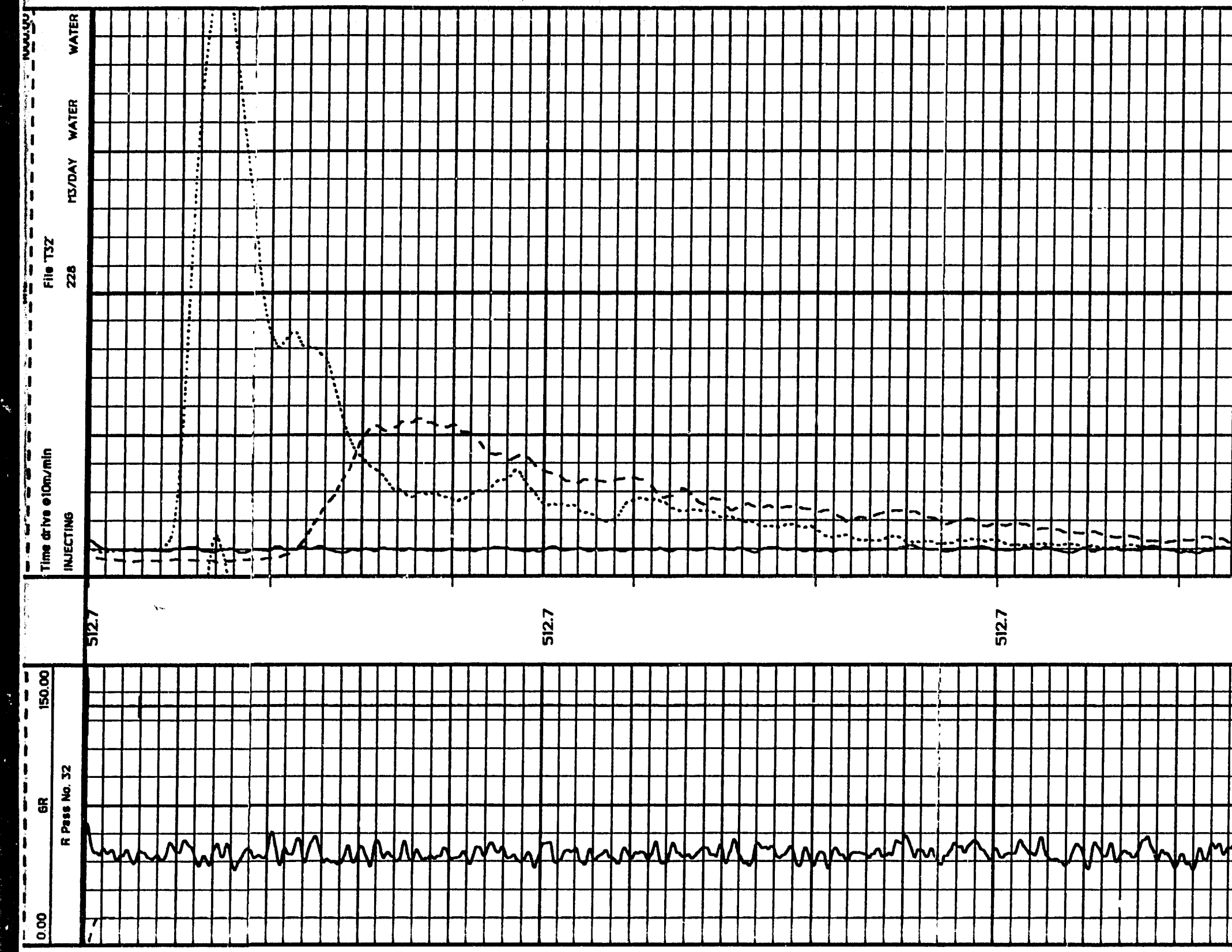


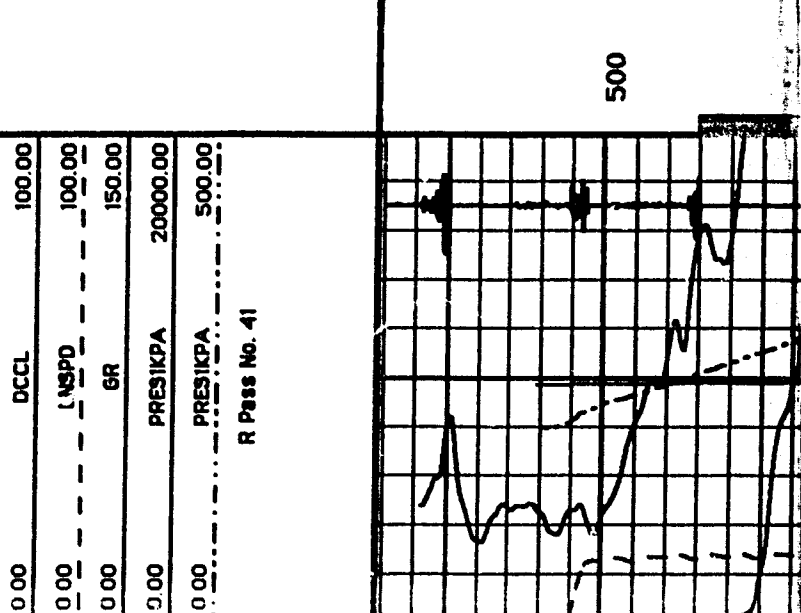
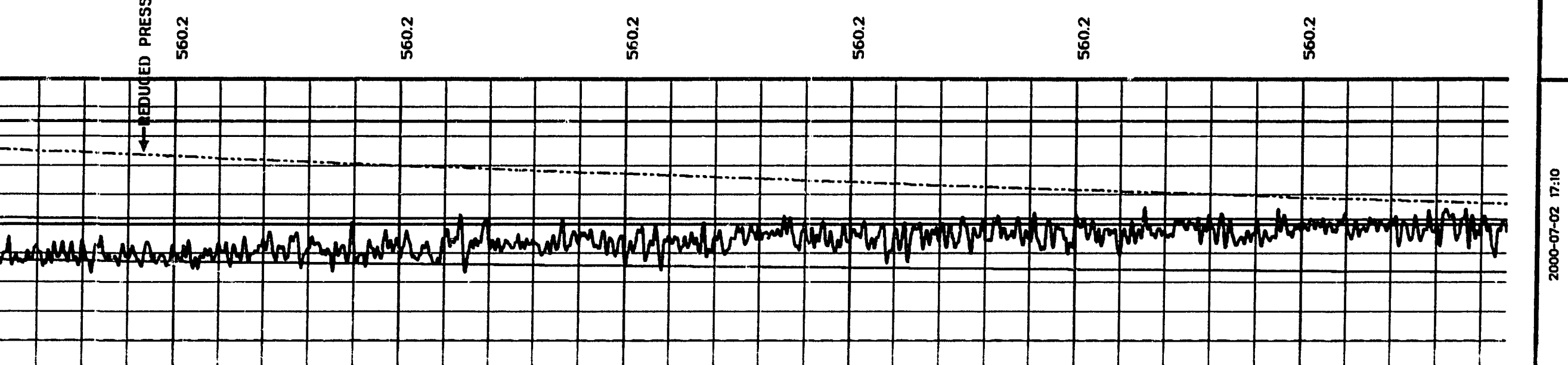
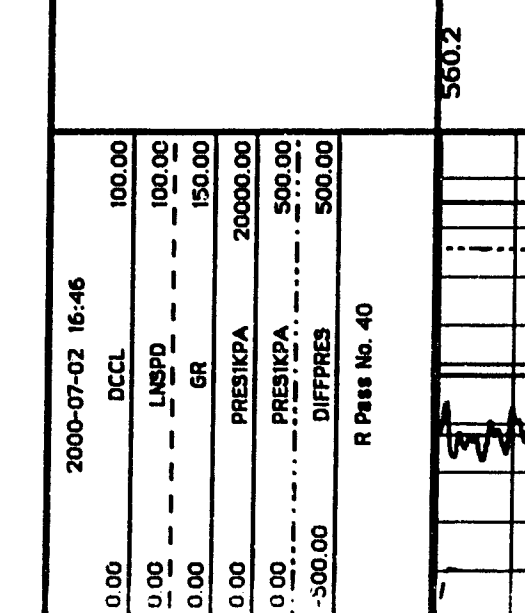
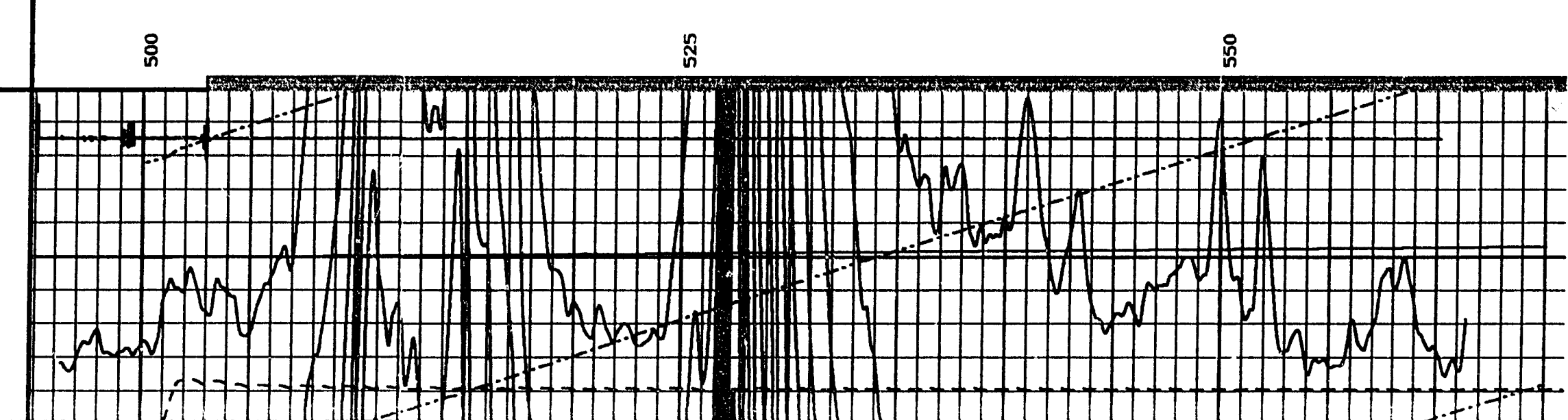
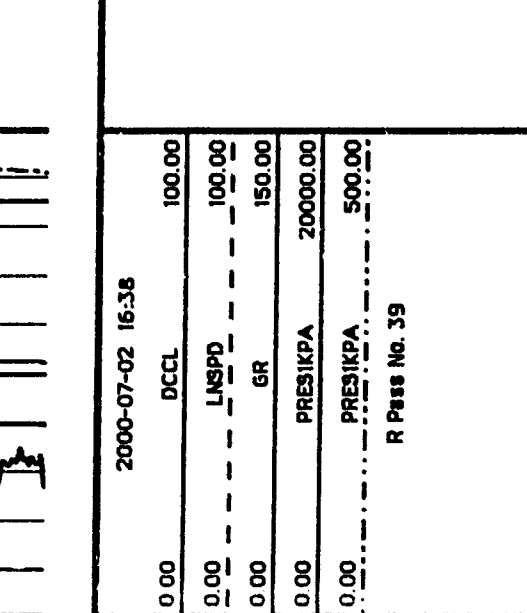
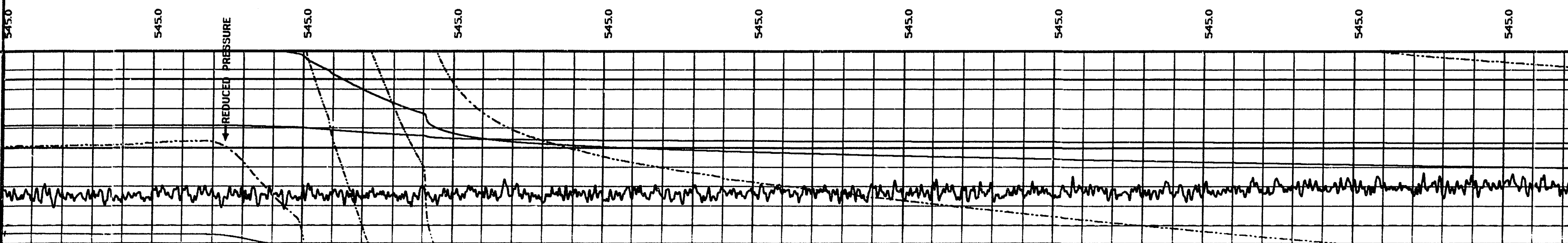
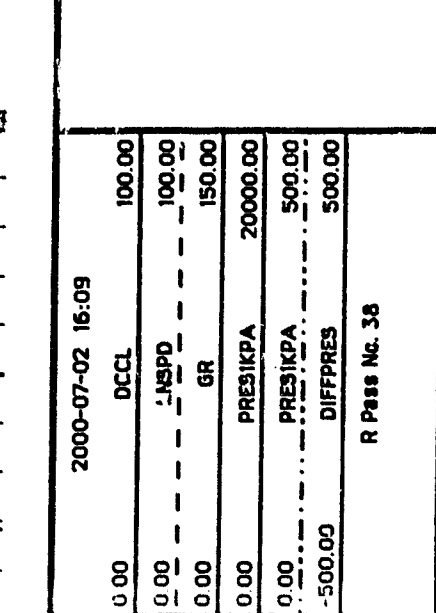
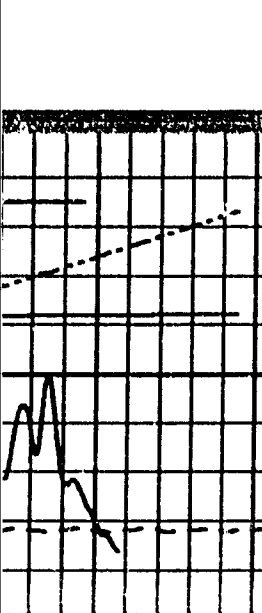
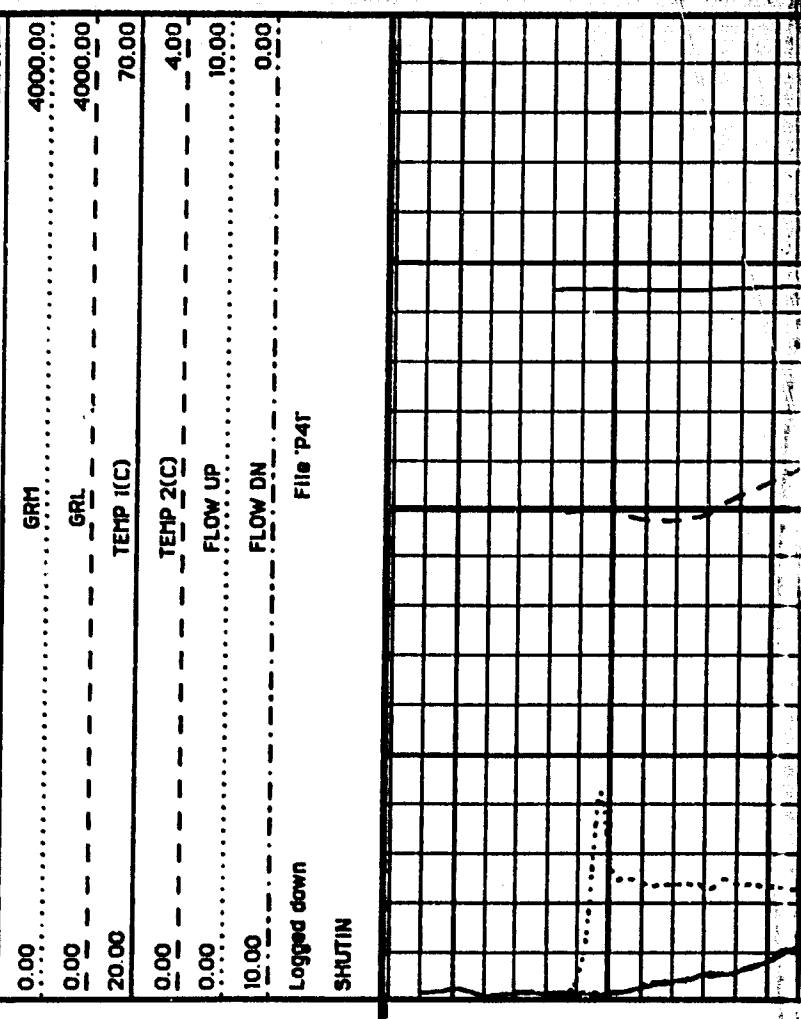
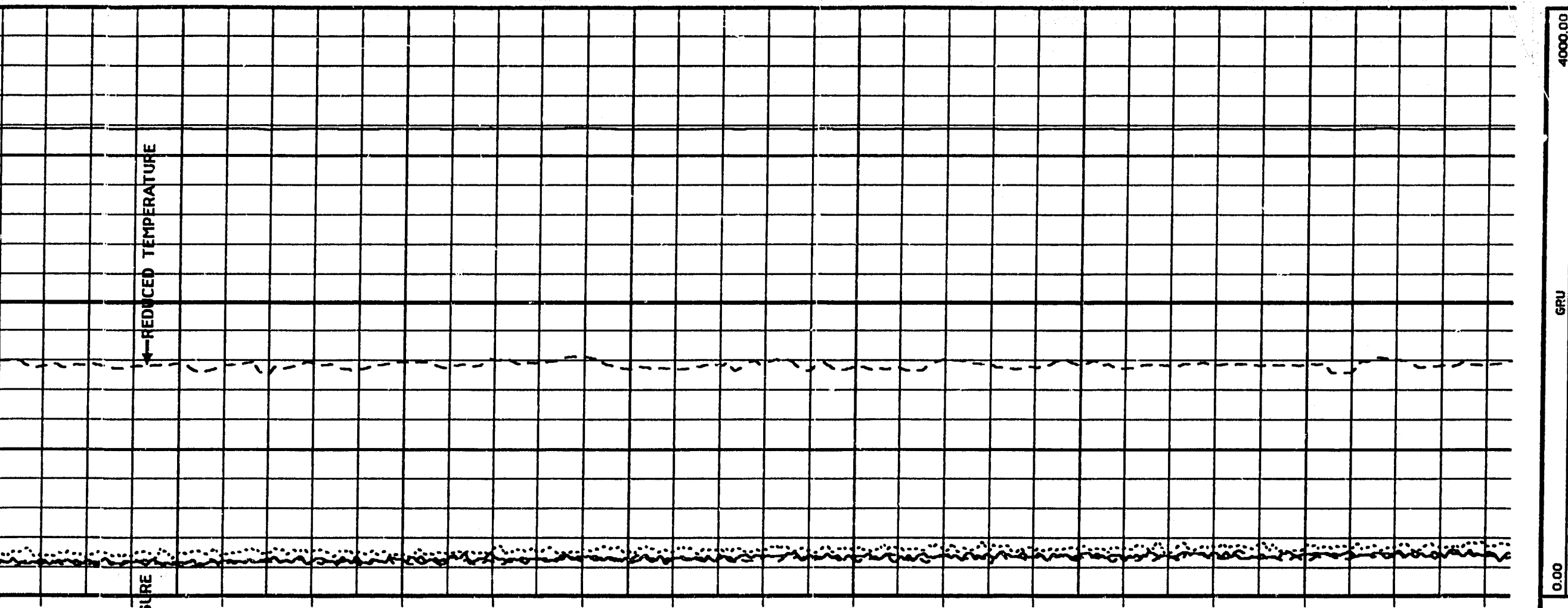
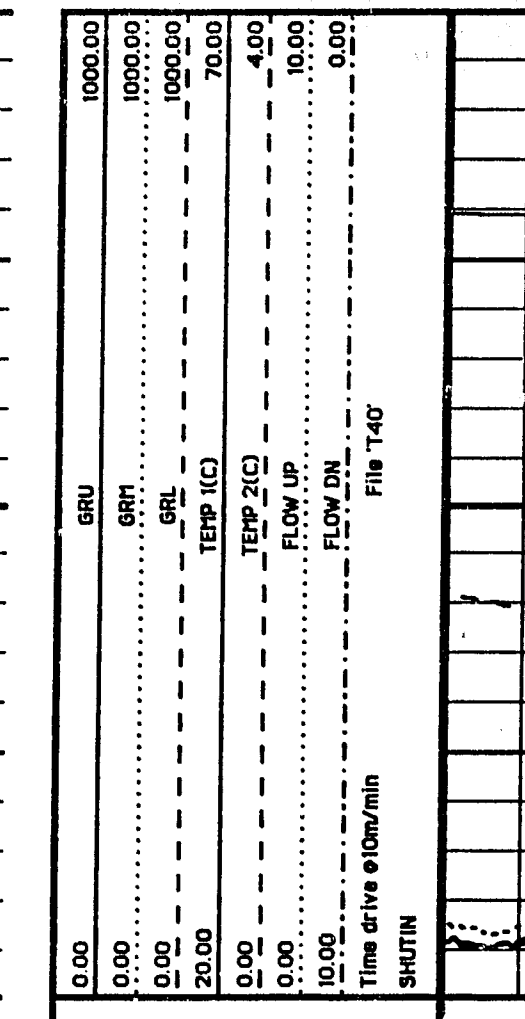
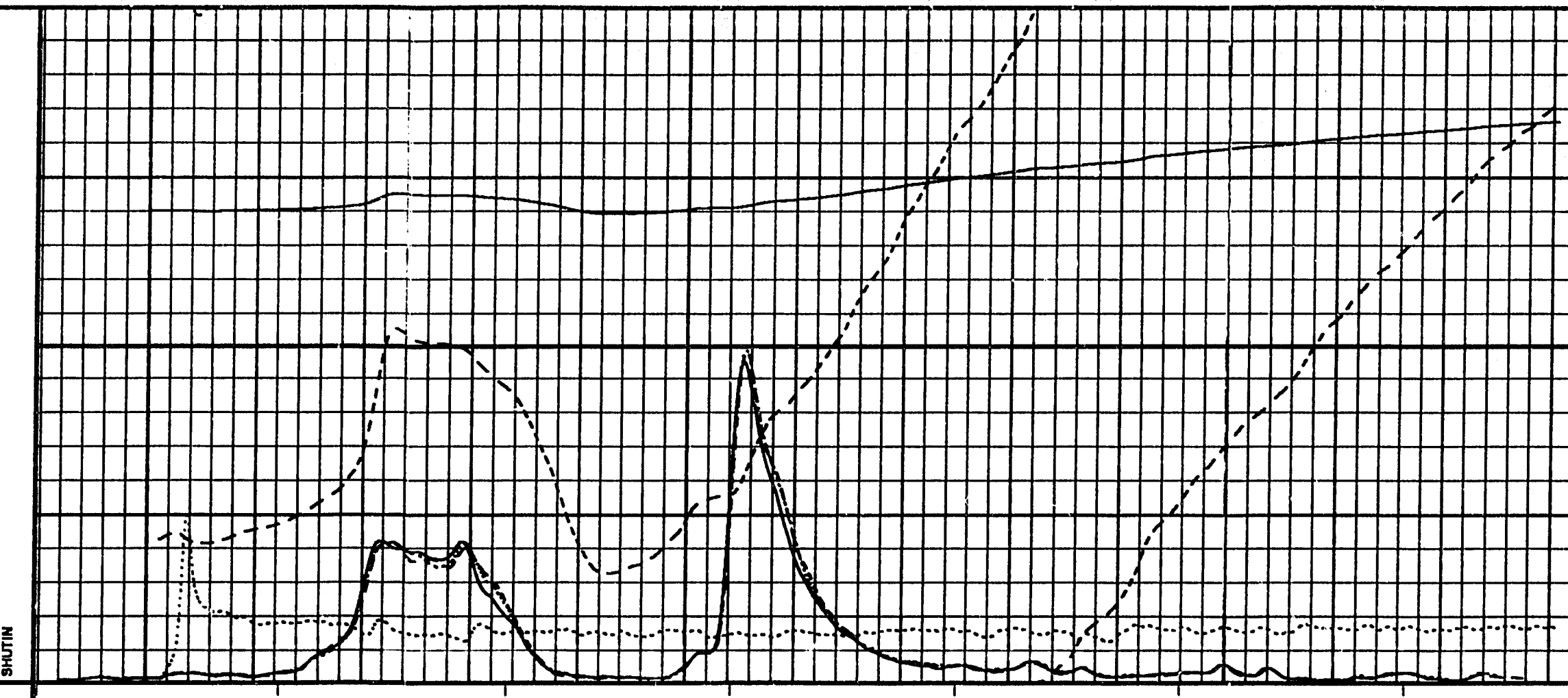
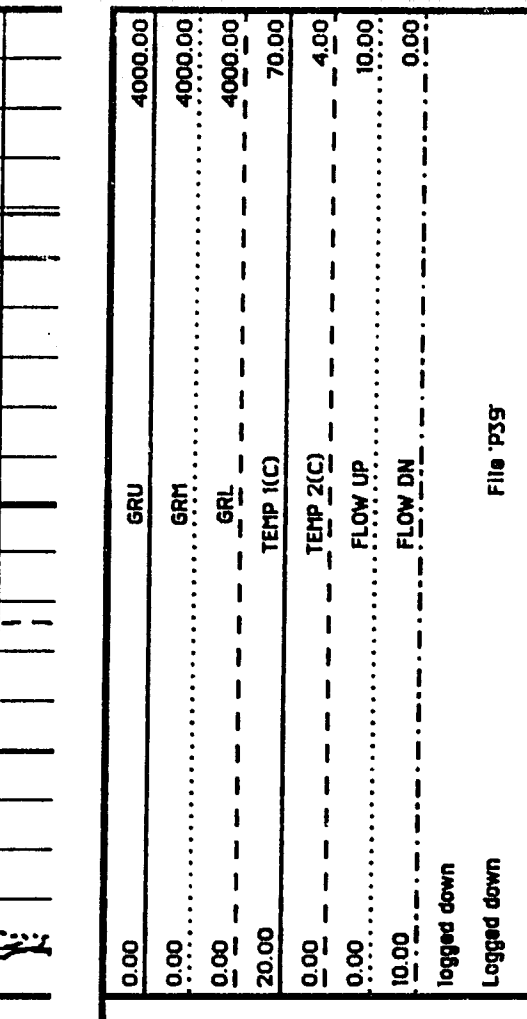
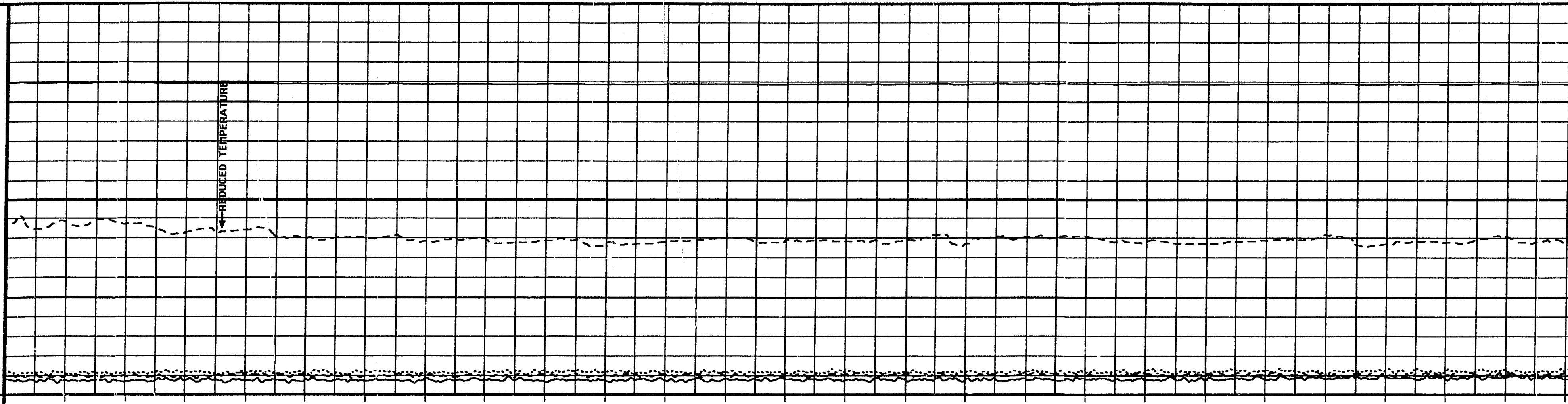
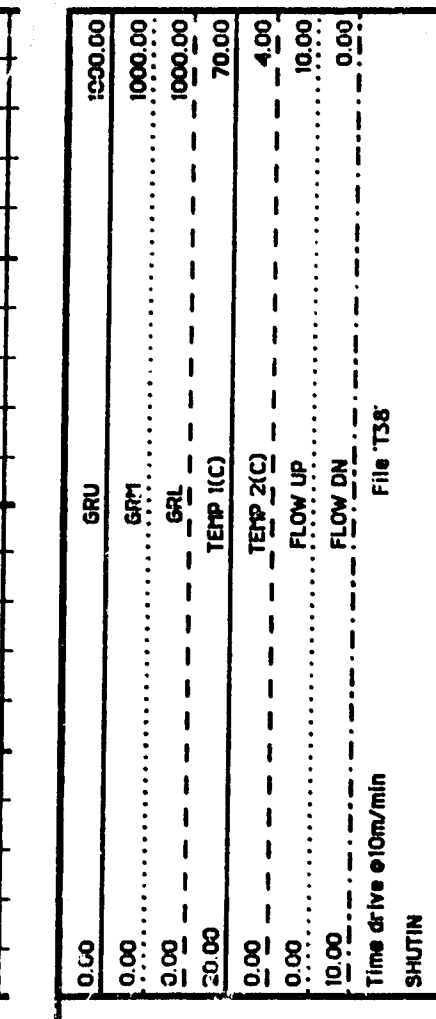
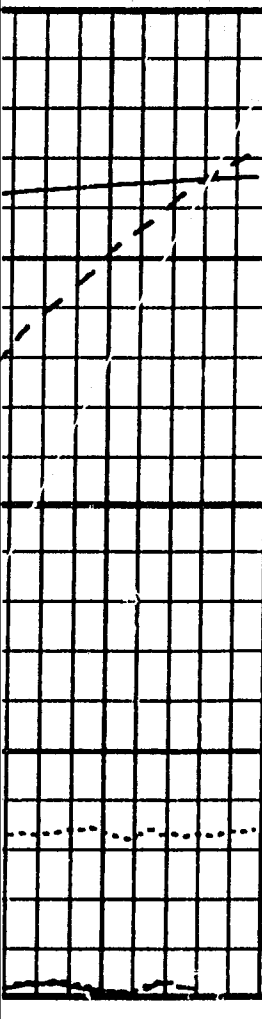


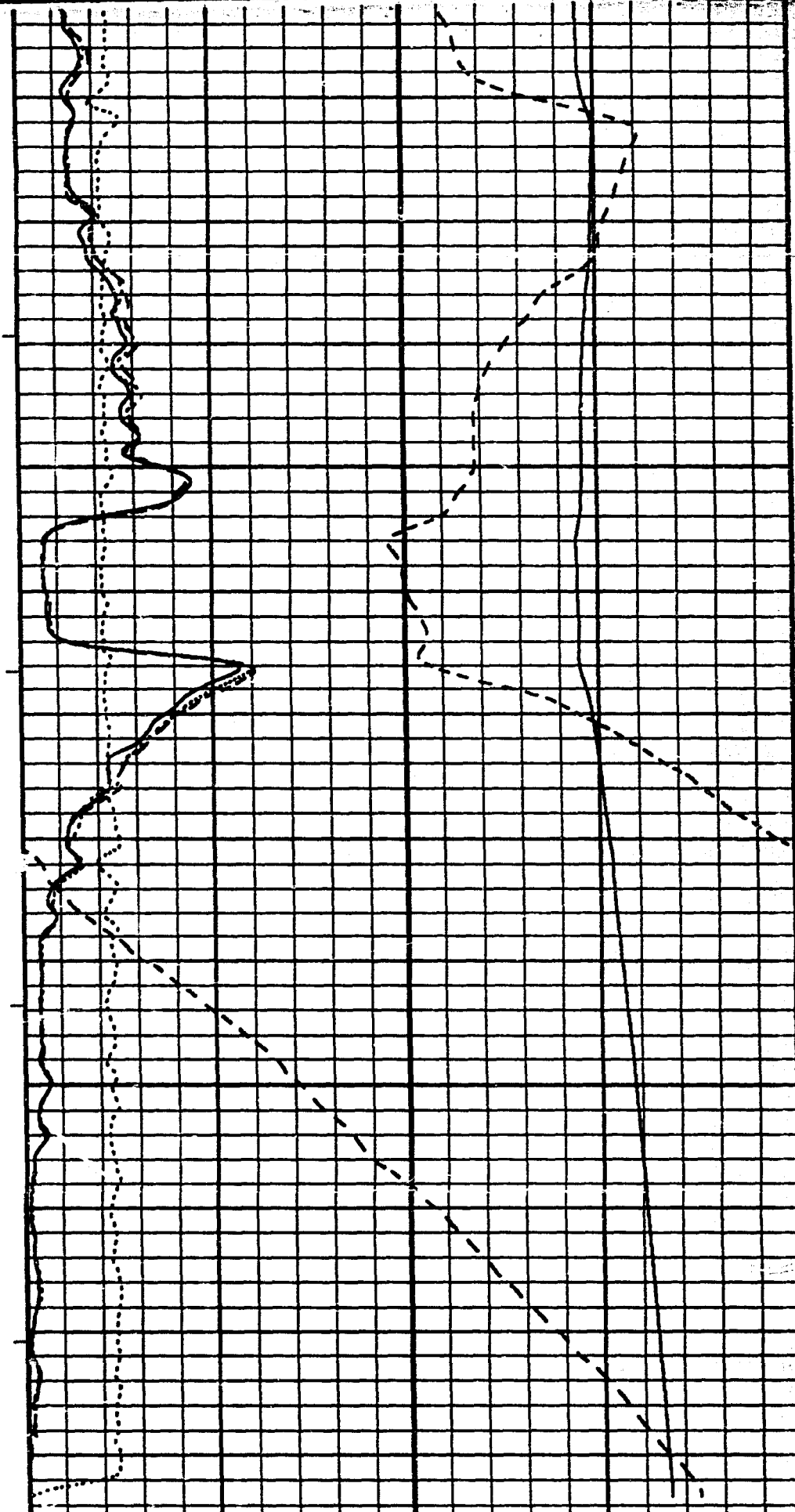
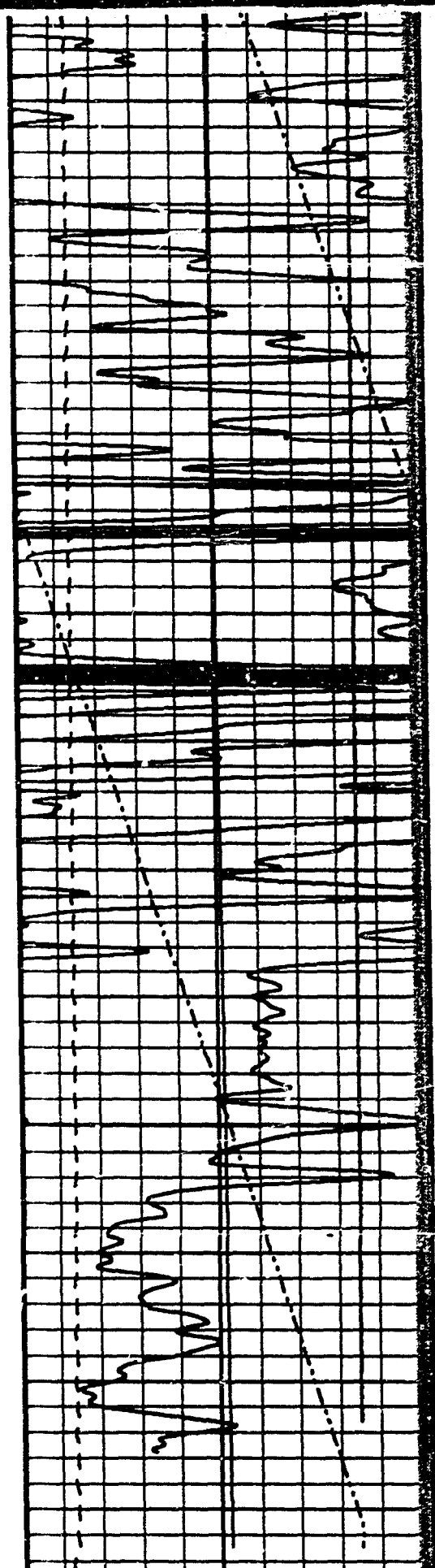








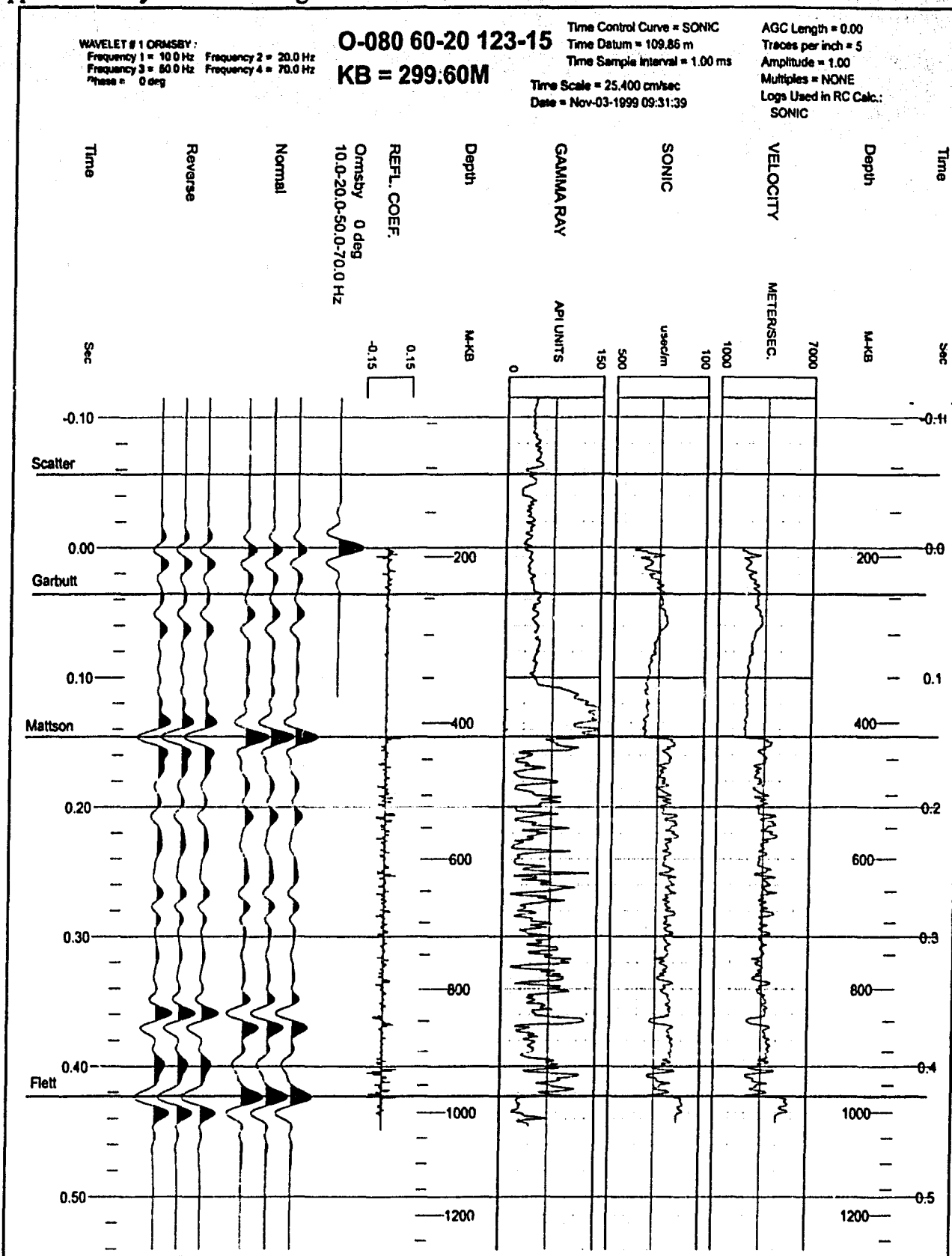




COMPANY-	CHEVRON CANADA RESOURCES LTD.	FR	400.0
WELL-	CHEVRON ET AL FORT LIARD 0-80	LR	567.0
FIELD-	FORT LIARD	Elev: KB	299.58
PROVINCE-	ALBERTA	GL	299.32

SYNTHETIC SEISMOGRAM

Appendix 1 – Synthetic Seismogram



SECRET
SECRET

August 24, 2004