

FINAL WELL REPORT
FOR
PARAMOUNT ET AL CAMERON B-08

PARAMOUNT RESOURCES LTD.

4000 First Canadian Centre
350 - 7th Avenue S.W.
CALGARY, Alberta
T2P 3W5

Michael Cholach, P.Geol.

TABLE OF CONTENTS

	<u>PAGE</u>
A. INTRODUCTION	1
1. Summary	1
2. Locality Map	1
B. GENERAL DATA	2
1. Well Name	2
2. Well location	2
3. Unique Identifier	2
4. Operator And Drilling Contractor	2
5. Drilling Unit	2
6. Position Keeping	2
7. Support Craft	2
8. Drilling Unit Performance	2
9. Difficulties And Delays	3
C. SUMMARY OF DRILLING OPERATIONS	3
1. Elevations	3
2. Total Depth	3
3. Date And Hour Spudded	3
4. Date Completed	3
5. Date of Rig Release	3
6. Well Status	3
7. Hole Sizes And Depth	3
8. Casing And Cementing Record	4
9. Sidetracked Hole	4
10. Drilling Fluid	4
11. Fishing Operations	5
12. Well Kicks	5
13. Formation Leak-Off Test	5
14. Time Distribution	5
15. Deviation Surveys	5
16. Abandonment Plugs	5
17. Composite Well Record	5
D. GEOLOGY	6
1. Drill Cuttings	9
2. Cores	9
3. Lithology	9
4. Stratigraphic Column	9
5. Biostratigraphic Column	9

E. WELL EVALUATION	10
1. Downhole Logs	10
2. Other Logs	10
3. Synthetic Seismograms	10
4. Formation Stimulation	11
5. Formation And Production Tests	13
F. ENVIRONMENTAL WELL REPORT	13
G. APPENDICES TO WELL HISTORY REPORT	14
1. Oil, Gas, And Water Analyses	14
2. Reservoir Engineering Data	14
3. Petrographic Record	14
4. Details Of Formation And Production Testing	14
5. Petrological Records	14
6. Paleontological Reports	14
7. Palynological Reports	14
8. Geochemical Reports	14
9. Age Determinations (K/Ar etc.)	14
10. Processed Combination Logs	14
11. Deviation Record	14
12. Gas Detector Log	14
13. Completion Data	14
14. Composite Well Record	14
15. Final Survey Plat	14
16. Mud Data - Logger's Report	14

LIST OF TABLES

1. Bit Record
2. Time Distribution
3. Downhole Log Summary
4. Deviation Record
5. Mud Data

LIST OF FIGURES

1. Location Map
2. Stratigraphic Column

A. INTRODUCTION

1. Summary

The Paramount et al Cameron B-08 well was drilled by Paramount Resources Ltd. during the first quarter of 1989 to explore for reserves of natural gas in the Slave Point, Sulphur Point, and Keg River Formations. The drilling contractor was Sierra Drilling Ltd. The rig was a Sierra 5000 top drive unit with a hydraulic pipe handling system. The rig also has slant hole capability for angles from 45 degrees to 90 degrees. Rig capacity is 110,000 daN.

The B-08 well was drilled to a total depth of 1560 m. Surface hole (311 mm) was drilled to 390 m, cased with 244.5 mm casing and cemented. The main hole (222 mm) was drilled to 1560 m. The hole was logged. Logs run were:

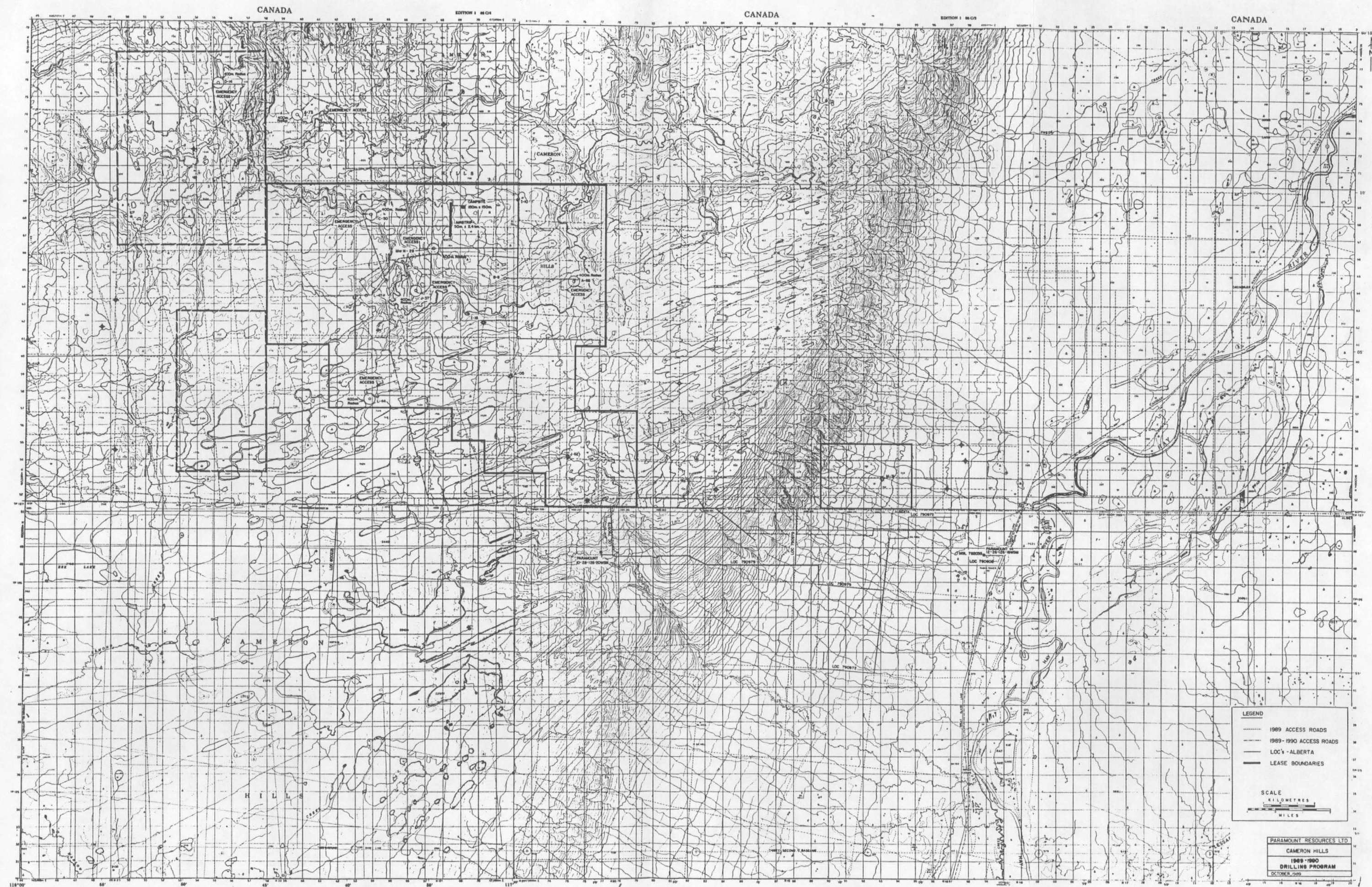
DIL-SFL-GR-SP-Ten
BHC-SONIC-GR-CAL
CNL-LDT-GR-C1-C2-Ten
MICROLOG-GR-Ten
CYBERLOOK

Three drill stem tests were run. Dst #1 in the Slave Point Formation was a misrun. DST #2 in the Keg River Formation was a misrun. DST #3 in the Sulphur Point Formation was successful with an average gas blow of 8500 m³/day.

The well was cased with 139.7 mm casing and cemented.

Further evaluation of the Keg River and Sulphur Point Formations was done with a service rig (Roll'n Well Servicing Ltd.). The Keg River was perforated and acidized. The maximum flow rate obtained was 152,437 m³/day. A bridge plug was set and cemented above the Keg River perforations. Similarly, the Sulphur Point Formation was perforated and acidized. The maximum flow rate was 59,524 m³/day. Profiles were set in the tubing and well was shut in.

2. Locality Map (See Figure 1, Following Page)



LEGEND

- 1989 ACCESS ROADS
- 1989-1990 ACCESS ROADS
- LOC'S - ALBERTA
- LEASE BOUNDARIES

SCALE

KILOMETRES

MILES

PARAMOUNT RESOURCES LTD.
CAMERON HILLS
1989-1990
DRILLING PROGRAM
OCTOBER 1989

B. GENERAL DATA

1. Well Name

Paramount et al Cameron B-08
Exploration Agreement No. E1 312
Grid Area: 60° 10' N, 117° 30' W

2. Well Location

Surveyed by conventional ground traverse methods to determine final position.

UTM Ref. Meridian: 117°

Coordinates: North 666 4518.87
East 47 1496.74

Lat. 60° 07' 06.80"
Long. 117° 30' 46.21"

3. Unique Well Identifier

300B086010117300

4. Operator And Drilling Contractor

Operator: Paramount Resources Ltd.
4000 First Canadian Centre
350 - 7th Avenue S.W.
Calgary, Alberta
T2P 3W5

Drilling Contractor: Sierra Drilling Ltd.
P.O. Box 177
Medicine Hat, Alberta
T1A 7E8

5. Drilling Unit (N/A)

6. Position Keeping (N/A)

7. Support Craft (N/A)

8. Drilling Unit Performance (N/A)

9. Difficulties And Delays (N/A)

C. SUMMARY OF OPERATIONS

1. Elevations

Rotary Table 789.90 m

Ground 786.21 m

2. Total Depth

Drilled 1560.00 m

Logged 1558.80 m

PBTD 1500.00 m

3. Date And Hour Spudded

Spudded 1989-01-19 at 06:15 hours.

4. Date Drilling Completed

1989-02-05

5. Date Of Rig Release

1990-02-09

6. Well Status

Shut in gas well.

7. Hole Sizes And Depth

Surface Hole 311 mm - 390 m

Main Hole 222 mm - 1560 m

See Table 1 for Bit Record. (Following Page).

TABLE 1

PARAMOUNT ET AL CAMERON B-08

BIT RECORD

<u>NO.</u>	<u>SIZE MM</u>	<u>MAKE</u>	<u>TYPE</u>	<u>DEPTH OUT</u>	<u>METRES DRILLED</u>	<u>HOURS</u>	<u>METRES PER HOUR</u>	<u>ACCUM HOURS</u>
1A	311	HW	X3A	203	203	8.25	24.60	8.25
2A	311	REED	HP11	390	187	7.25	25.80	15.50
1	222	HW	J-22	827	437	20.25	21.60	35.75
2	222	HW	J-11	1287	440	47.75	9.20	83.50
3	222	REED	HP51A	1501	234	56.50	4.10	140.00
4	222	REED	HP52A	1560	59	20.00	2.90	160.00

8. Casing And Cement Record

Surface Casing: Ran 31 joints, 244.5 mm, 53.6 kg/m, J-55, LT&C Casing. Landed at 391.72 mKB. Cemented with 31 tonnes Class 'G' cement + 3% CaCl_2 .

Production Casing: Ran 120 joints of 114 mm, 20.83 kg/m, J-55, ST&C Casing. Landed at 1559.95 mKB.

Casing cemented in two stages.

Stage #1: 1347.50 m - 1560.00 mKB, preflushed with 2.0 m³ water. Cemented with 6.5 tonnes 0.1.0 cement + 0.75% T-10 + 0.20% R-5. Dropped plug. Displaced cement with 3.2 m³ water + 16.6 m³ mud. As end of displacement approached (19.6 m³), pressure increased to 4000 kPa and then decreased to 1000 kPa, unable to bump plug. Continued to circulate hole for 74 minutes at 4000 kPa. Observed approximately 2.0 m³ of cement contaminated mud. Checked packer, found it was set (Note: Stage 1 recemented with service rig).

Stage #2: 1347.05 m to 390.00 mKB. Dropped dart to open D.V. tool. Circulated and conditioned mud. Preflushed with 2.0 m³ water. Cemented with 39.5 tonnes of 0.1.8 cement + 0.75% T-10. Dropped plug. Displaced cement with 17.1 m³ water. Bumped plug with 12,000 kPa, did not hold. Bumped plug with 13,500 kPa, bled pressure off to atmosphere, held O.K. Plug down at 11:50 hours on 1989-02-09.

The calculated cement rise behind 139.7 mm casing was 390 m.

Casing is held by a Crown C-22, 11" x 5 1/2' automatic casing hanger and a Crown "GOF" 11" x 5 1/2' secondary seal.

9. Sidetracked Hole (N/A)

10. Drilling Fluid

Surface Hole (0 - 390 m):

This section of the hole was drilled with a bentonite-lime slurry which had the following properties:

Weight	1150 kg/m ³
Viscosity	45 to 85
W.L.	6.5
pH	10

Main Hole (390 m - 1560 mKB):

The interval from 390 m to 1197 m was drilled with air and foam. While air drilling, a reserve mud supply of 1100 kg/m³ of mud was kept on hand. The mud had a viscosity of 40 - 45 and a p^H of 9.0 - 9.5.

The interval from 1197 m to 1560 m was drilled with a gel-chem mud with a density ranging from 1100 kg/m³ to about 1150 kg/m³. Viscosity was maintained around 50. Alkalinity was controlled with caustic soda at 10.5 to 11.0. Fluid loss was maintained at 9.0 or less with drispac.

11. Fishing Operations (N/A)

12. Well Kicks

None encountered.

13. Formation Leak-Off Test

A FLOT was run at 395₃m (surface casing landed at 392 mKB). The fluid density was 1000 kg/m³ having a gradient of 9.81 kg/m. The maximum pressure applied reached 4800 kPa with no formation breakdown giving a formation gradient of 22.06 kPa/m.

14. Time Distribution (See Table 2, Following Page)

15. Deviation Survey (N/A)

16. Abandonment Plugs (N/A)

17. Composite Well Record (In Pocket)

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 1 OF 11

[illegible]

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 2 OF 11

DATE	FROM	TO	DRILL	CIRC.	TRIPS	RIG	RIG	SLIP &	DEV.	WIRELINE	RUN	W.O.C.	NIPPLE	TEST	DRILL	REAM	OTHER	B.O.P.	DEPTH
				COND.		SERVICE	REPAIRS	CUT LINE	SURVEY	LOGS	CASING		UP	B.O.P.	STEM				24:00
				MUD							CEMENT		B.O.P.	B.O.P.	TEST			DRILL	HOURS
1989-01-20	00:00	03:15	3.25																
1989-01-20	03:15	03:45							0.50										
1989-01-20	03:45	04:00					0.25												
1989-01-20	04:00	04:30	0.50																
1989-01-20	04:30	04:45		0.25															
1989-01-20	04:45	06:15			1.50														
1989-01-20	06:15	06:30					0.25												
1989-01-20	06:30	07:30			1.00														
1989-01-20	07:30	08:00															0.50		
1989-01-20	08:00	08:15				0.25													
1989-01-20	08:15	08:45			0.50														
1989-01-20	08:45	10:00														1.25			
1989-01-20	10:00	11:30	1.50																
1989-01-20	11:30	11:45							0.25										
1989-01-20	11:45	12:00	0.25																
1989-01-20	12:00	14:45					2.75												
1989-01-20	14:45	15:00							0.25										
1989-01-20	15:00	15:30	0.50																
1989-01-20	15:30	16:00		0.50															
1989-01-20	16:00	16:45			0.75														
1989-01-20	16:45	17:15		0.50															
1989-01-20	17:15	19:45			2.50														
1989-01-20	19:45	20:15				0.50													
1989-01-20	20:15	22:30			2.25														
1989-01-20	22:30	24:00		1.50															

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 3 OF 11

DATE	FROM	TO	DRILL	CIRC.	TRIPS	RIG	RIG	SLIP &	DEV.	WIRELINE	RUN	W.O.C.	NIPPLE	TEST	DRILL	REAM	OTHER	B.O.P.	DEPTH
				COND.		SERVICE	REPAIRS	CUT LINE	SURVEY	LOGS	CASING		UP	B.O.P.	STEM				24:00
				MUD							CEMENT			B.O.P.	TEST			DRILL	HOURS
1989-01-21	00:00	01:15															1.25		
1989-01-21	01:15	01:45		0.50															
1989-01-21	01:45	03:45			2.00														
1989-01-21	03:45	05:00									1.25								
1989-01-21	05:00	10:30															5.50		
1989-01-21	10:30	17:30									9.00								
1989-01-21	17:30	24:00										4.50							390
1989-01-22	00:00	04:00										4.00							
1989-01-22	04:00	24:00											20.00						390
1989-01-23	00:00	08:00											8.00						
1989-01-23	08:00	11:00												3.00					
1989-01-23	11:00	16:00			4.00														
1989-01-23	16:00	17:00												2.00					
1989-01-23	17:00	21:00															4.00		
1989-01-23	21:00	21:30																0.50	
1989-01-23	21:30	22:00			0.50														
1989-01-23	22:00	22:15															0.25		
1989-01-23	22:15	22:30			0.25														
1989-01-23	22:30	24:00															1.50		390

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 4 OF 11

DATE	FROM	TO	DRILL	CIRC. COND. MUD	TRIPS	RIG SERVICE	RIG REPAIRS	SLIP & CUT LINE	DEV. SURVEY	WIRELINE LOGS	RUN CASING CEMENT	W.O.C.	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	REAM	OTHER	B.O.P. DRILL	DEPTH 24:00 HOURS
1989-01-24	00:00	06:30																6.50	
1989-01-24	06:30	08:00	1.50																
1989-01-24	08:00	08:15				0.25													
1989-01-24	08:15	10:00	1.75																
1989-01-24	10:00	10:15							0.25										
1989-01-24	10:15	12:00	1.75																
1989-01-24	12:00	13:00		1.00															
1989-01-24	13:00	19:00	6.00																
1989-01-24	19:00	19:15							0.25										
1989-01-24	19:15	19:30																0.25	
1989-01-24	19:30	20:00	0.50																
1989-01-24	20:00	24:00	4.00																760
1989-01-25	00:00	03:30	3.50																
1989-01-25	03:30	04:00		0.50															
1989-01-25	04:00	04:30			0.50														
1989-01-25	04:30	05:00														0.50			
1989-01-25	05:00	08:00					1.00												
1989-01-25	06:00	07:00														1.00			
1989-01-25	07:00	08:00	1.00																
1989-01-25	08:00	08:15				0.25													
1989-01-25	08:15	09:00	0.75																
1989-01-25	09:00	09:30		0.50															
1989-01-25	09:30	12:00			2.50														
1989-01-25	12:00	12:30																0.50	
1989-01-25	12:30	15:30			3.00														
1989-01-25	15:30	15:45					0.25												
1989-01-25	15:45	16:15																0.50	
1989-01-25	16:15	18:00			1.75														
1989-01-25	18:00	18:45		0.75															
1989-01-25	18:45	22:30																	
1989-01-25	22:30	24:00	1.50													3.75			

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 5 OF 11

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TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 6 OF 11

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PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 7 OF 11

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TABLE 2

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TIME DISTRIBUTION

SPUDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 8 OF 11

DATE	FROM	TO	DRILL	CIRC. COND. MUD	TRIPS	RIG SERVICE	RIG REPAIRS	SLIP & CUT LINE	DEV. SURVEY	WIRELINE LOGS	RUN CASING CEMENT	W.O.C.	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	REAM	OTHER	B.O.P. DRILL	DEPTH 24:00 HOURS
1989-01-30	00:00	02:00	2.00																
1989-01-30	02:00	05:00					3.00												
1989-01-30	05:00	08:00			3.00														
1989-01-30	08:00	14:30					6.50												
1989-01-30	14:30	16:30			2.00														
1989-01-30	16:30	24:00					7.50												1318
1989-01-31	00:00	02:00															2.00		
1989-01-31	02:00	03:00			1.00														
1989-01-31	03:00	04:00					1.00												
1989-01-31	04:00	08:00			4.00														
1989-01-31	08:00	08:15				0.25													
1989-01-31	08:15	09:30					1.25												
1989-01-31	09:30	10:00		0.50															
1989-01-31	10:00	12:00			2.00														
1989-01-31	12:00	13:30	1.50																
1989-01-31	13:30	14:00							0.50										
1989-01-31	14:00	20:45	6.75																
1989-01-31	20:45	21:00				0.25													
1989-01-31	21:00	22:45	1.75																
1989-01-31	22:45	23:15							0.50										1365
1989-01-31	23:15	24:00	0.75																
1989-02-01	00:00	00:30	0.50																
1989-02-01	00:30	01:30		1.00															
1989-02-01	01:30	07:00			5.50														
1989-02-01	07:00	12:00															5.00		
1989-02-01	12:00	16:30			4.50														
1989-02-01	16:30	17:00																0.50	
1989-02-01	17:00	18:30			1.50														
1989-02-01	18:30	24:00													5.50				1370

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 9 OF 11

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TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 10 OF 11

DATE	FROM	TO	DRILL	CIRC. COND. MUD	TRIPS	RIG SERVICE	RIG REPAIRS	SLIP & CUT LINE	DEV. SURVEY	WIRELINE LOGS	RUN CASING CEMENT	W.O.C.	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	REAM	OTHER	B.O.P. DRILL	DEPTH 24:00 HOURS
1989-02-04	00:00	07:00	7.00																
1989-02-04	07:00	07:30							0.50										
1989-02-04	07:30	08:00	0.50																
1989-02-04	08:00	08:30				0.50													
1989-02-04	08:30	12:00			3.50														
1989-02-04	12:00	17:30			5.50														
1989-02-04	17:30	21:15			3.75														
1989-02-04	21:15	21:45															0.50		
1989-02-04	21:45	24:00			2.25														1501
1989-02-05	00:00	01:00			1.00														
1989-02-05	01:00	08:00	7.00																
1989-02-05	08:00	08:30				0.50													
1989-02-05	08:30	10:45					2.25												
1989-02-05	10:45	20:00	9.25																
1989-02-05	20:00	20:15				0.25													
1989-02-05	20:15	24:00	3.75																1550
1989-02-06	00:00	01:00		1.00															
1989-02-06	01:00	02:30			1.50														
1989-02-06	02:30	04:30		2.00															
1989-02-06	04:30	10:15			5.75														
1989-02-06	10:15	24:00								13.75									1550
1989-02-07	00:00	03:00															3.00		
1989-02-07	03:00	04:00			1.00														
1989-02-07	04:00	05:00						1.00											
1989-02-07	05:00	08:45			3.75														
1989-02-07	08:45	20:00													11.25				
1989-02-07	20:00	23:30			3.50														
1989-02-07	23:30	24:00															0.50		1550

TABLE 2

PARAMOUNT ET AL CAMERON B-08

TIME DISTRIBUTION

SPUDDED WELL ON 1989-01-19 AT 06:15 HOURS

RIG RELEASED ON 1989-02-09 AT 22:00 HOURS

PAGE 11 OF 11

DATE	FROM	TO	DRILL	CIRC. COND. MUD	TRIPS	RIG SERVICE	RIG REPAIRS	SLIP & CUT LINE	DEV. SURVEY	WIRELINE LOGS	RUN CASING CEMENT	W.O.C.	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	REAM	OTHER	B.O.P. DRILL	DEPTH 24:00 HOURS
1989-02-08	00:00	00:30															0.50		
1989-02-08	00:30	00:45					0.25												
1989-02-08	00:45	02:00															1.25		
1989-02-08	02:00	02:30			0.50														
1989-02-08	02:30	06:00															3.50		
1989-02-08	06:00	06:15			0.25														
1989-02-08	06:15	06:45					0.50												
1989-02-08	06:45	11:00			4.25														
1989-02-08	11:00	13:15		2.25															
1989-02-08	13:15	18:15			5.00														
1989-02-08	18:15	19:00					0.75												
1989-02-08	19:00	19:30			0.50														
1989-02-08	19:30	24:00									4.50								1560
1989-02-09	00:00	07:00									7.00								
1989-02-09	07:00	07:30																0.50	
1989-02-09	07:30	12:00									4.50								
1989-02-09	12:00	18:00										6.00							
1989-02-09	18:00	22:00															4.00		1560
TOTALS			159.00	24.50	117.25	6.25	36.25	1.00	14.75	13.75	26.25	14.50	28.00	5.00	16.75	6.75	48.00	1.75	

D. GEOLOGY

Regional Geological Discussion:

The geological record in the Cameron Hills area can be divided into six lithostratigraphic intervals, each generally bounded by major transgressive or regressive events. These intervals are:

1. Lower Elk Point Group
2. Upper Elk Point Group
3. Beaverhill Lake Group
4. Woodbend Group
5. Winterburn Group
6. Wabamun Group

Lower Elk Point Group

This group includes the interval from the Basal Devonian sands to the base of the Keg River Formation. The evaporites of the Chinchaga Formation and silici-clastics of the basal Granite Wash were deposited within a shallow restricted epicontinental seaway. These deposits onlap the Pre-Devonian surface and range in thickness from zero over the prominent Tathlina and Peace River archs to nearly 300 metres within the interarch basins.

Upper Elk Point Group

A major transgression resulted in the deposition of organic rich open marine carbonates of the Lower Keg River Formation. This crinoid/brachiopod rich carbonate platform ranges in thickness from 15 to 50 metres.

Continued marine transgression and subsidence led to the formation of an extension Upper Keg River barrier reef complex (Shekelie-Presquile Barrier Complex) which enclosed the Elk Point basin on its northern and western sides. Southeast of this barrier, isolated pinnacle reefs, low energy reef mounds and shelf deposits of the Upper Keg River Formation were deposited. Generally the Upper Keg River is deposited conformably upon Lower Keg River Platform carbonates, but in areas of high Pre-Devonian topography, these rocks are deposited unconformably upon the Pre-Devonian surface (e.g. A-5 and I-10 wells).

Relatively open marine conditions existed through to the end of the Keg River time with normal salinity maintained by marine water entering the basin from both the northwest and northeast. During the early Givetian stage the Tathlina land mass elevated resulting in the restriction of the Elk Point basin with normal marine conditions restricted to the Shekelie Barrier Complex. Southeast of the Barrier Complex, the increasingly evaporitic conditions resulted in deposition of interbedded anhydrites and dolomites of the Muskeg Formation.

Toward the end of Upper Elk Point time subsidence of the barrier complex allowed normal marine conditions to return to the northern end of the Elk Point basin resulting in deposition of the regional extensive Sulphur Point dolomites and limestones. Detailed correlations of the Sulphur Point carbonates with adjacent anhydrite/dolomite cycles of the uppermost Muskeg Formation indicated a facies relationship exists between these two formations.

Upper Elk Point deposition was terminated by a pronounced regression, resulting in widespread deposition of shallow marine and continental shales and silty sandstone of the Watt Mountain Formation.

Beaverhill Lake Group

Beaverhill Lake Group sedimentation began with gradual marine transgression over a relatively flat surface of Watt Mountain clastics. The initial deposits comprised of the peritidal and shallow restricted shelf carbonates of the Fort Vermilion Formation. Continued transgression created more open marine conditions and the shallow shelf carbonates of the Slave Point were deposited.

Further marine transgression over the Slave Point surface resulted in deposition of a sequence of basin filling argillaceous limestones and calcareous shales of the Waterways Formation.

Woodbend Group

In northern Alberta the transition from the shallow marine Waterways Formation to the deeper water Woodbend Group is conformable. This transgressive pulse produced the most extensive Devonian marine incursion into the Alberta Basin and is represented by euxinic "deep" water organic rich shales of the Muskwa/Duverney Formation. These shales are overlain by thick accumulations of Upper Woodbend Group shales of the Fort Simpson Formation and carbonates of the Twin Falls (Grosmont) Formation.

Winterburn Group

The regressive sedimentation patterns developed during infilling of the Woodbend Basin continued with shallow water carbonate shelf deposits prograding out over basin filling clastics. In northern Alberta a regressive pulse allowed the argillaceous carbonates of the Basal Nisku Formation to give way to cleaner shallow water shelf carbonates of the Calmar Formation and Blueridge Member of the Graminia Formation. A second major regressive pulse occurred at the close of Winterburn time resulting in the deposition of terrigenous clastics of the Graminia Silt unit.

Wabamun Group

The Wabamun Group carbonate ramp sequence conformably overlies the Winterburn Group. These largely lime mud rich, burrowed pelletoidal limestones, grading locally to lime grainstones, were deposited in response to six major eustatic sea level rises and accentuated by local subsidence patterns.

Well Summary

Paramount et al Cameron B-08 was drilled primarily as a test of the Upper Devonian, Slave Point and the Middle Devonian, Keg River dolomite, with the reservoir of the Middle Devonian Sulphur Point existing as a secondary objective.

The hole was drilled with air from the surface casing show to above the Slave Point carbonates. The top of the Wabamun at 557 m was water saturated which necessitated converting to foam (soap detergent). Foam was used down to 1197 m, at which point conversion was made to a regular chem-gel mud system which was used to total depth, 1560 m. No cuttings were produced between 557 m and 1197 m, which covered the Wabamun, Twin Falls, and Hay River interval of the hole.

The Slave Point was encountered at 1347 m and was 37 m thick. The formation consisted of a limestone sequence which was tight over the upper few metres but below were developed several porous Algal stringers. The limestone was creamy light brown to medium brown, cryptocrystalline to finely granular, bioclastic with well developed porous Algal stringers. Fair to good intergranular porosity and fair fluorescence with a trace of Gilsonite. An attempt was made to drill stem test this porosity immediately after penetration but a misrun resulted due to severe plugging of the Tool. The Keg River was encountered at 1510 m and consisted of a cream to medium brown, micro to finely crystalline, anhydritic dolomite which was rarely fragmental. The interval was mainly tight but there were traces of poor scattered stringers of intercrystalline porosity that were associated with slight lemon-yellow fluorescence and a white milky cut. A drill stem test was attempted after log evaluations but resulted in a misrun due to a plugged tool.

The Sulphur Point was penetrated at 1412 m and was 10 m thick. The formation consisted of a light to finely crystalline, anhydritic dolomite. The interval was mainly tight but there were lenses which contained traces of poor pin-point and poor intercrystalline porosity which was associated with a yellow fluorescence and a weak milky white cut. The Sulphur Point was evaluated by drill stem test number three over the interval 1410 - 1420 m. On valve-open there was gas to surface immediately at 4248 m³/d and increased to 8887 m³/d in 30 minutes, stabilizing at 8500 m³/d with no water.

All other formations were essentially tight or were flushed as confirmed by samples and wireline logs. Porosities and hydrocarbon shows were checked with a fluoroscope and CCl₄.

Based on the above information and previous knowledge of the reservoirs in the general area, production casing was run to total depth (1560 mKB). The rig was released on February 9, 1989.

1. Drill Cuttings (See Following Pages For Sample Descriptions)

The hole was drilled with air, and air plus detergent from 390 m to 1197 m. No samples are available for the interval from 557 m to 1197 m. Samples were collected from 1197 m to total depth at 1560 m.

Sample Distribution = Washed Cuttings - 5 Metre Intervals

One Set Samples	-	C.O.G.L.A., Yellowknife
One Set Samples	-	I.S.P.G., Calgary
One Set Samples	-	Paramount, Calgary.

Sample Distribution = Unwashed Cuttings - 5 Metre Intervals

One Set Samples	-	I.S.P.G., Calgary.
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Sample Distribution = Unwashed Cuttings - 10 Metre Intervals

One Set Samples	-	I.S.P.G., Calgary.
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2. Cores (N/A)

3. Lithology (See Following Pages)

4. Stratigraphic Column (See Following Pages)

5. Biostratigraphic Column (N/A)

S A M P L E D E S C R I P T I O N

PARAMOUNT ET AL CAMERON B - 08

Samples Lagged 1 Min. per 30 Metres

K.B: 789.90m

- 395 - 425 SHALE - medium to dark greyish brown, silty texture, slightly micromicaceous, rarely carbonaceous, non-calcareous, sub-fissile to blocky, soft.
- 425 - 440 SHALE - medium to dark grey, very silty texture, slightly micromicaceous, carbonaceous throughout, non-calcareous, fissile to blocky, very soft.
- 440 - 460 SHALE - medium grey to light brown, rarely green, very silty texture, micromicaceous, slightly carbonaceous in part, non-calcareous, platy, medium hard to hard;
Trace SILTSTONE - stringers, translucent to light grey, quartzose, slightly carbonaceous, cemented with clayey matrix, blocky, hard, tight;
Trace SANDSTONE - translucent, quartzose, very fine grained, sub-angular, well sorted, cemented with limy matrix, platy, hard, tight.
- 460 - 490 SHALE - medium to dark grey, slightly silty to very silty texture, micromicaceous in part, slightly carbonaceous, non-calcareous, platy, soft to medium hard;
Minor SANDSTONE - stringers, transparent to translucent, quartzose, very fine to fine grained, sub-angular, medium sorted, well cemented with silty and calcareous matrix, blocky, hard, tight.
- 490 - 510 SHALE - medium to dark grey, silty texture, slightly micromicaceous, sub-fissile to blocky, non-calcareous, medium soft.
- 510 - 530 SHALE - medium to dark grey, very silty texture, micromicaceous, slightly bitumenous, non-calcareous, blocky to sub-fissile, medium soft to soft;
Minor SANDSTONE - stringers, transparent to translucent, quartzose, very fine to fine grained, sub-rounded, medium sorted, cemented with slightly calcareous matrix, carbonaceous in part, rarely

glauconitic, platy, medium hard, tight;
Trace BENTONITE - white to bluish grey, amorphous,
very soft.

- 530 - 545 SHALE - medium to dark greyish brown, very silty texture, slightly micromicaceous, rarely carbonaceous, non-calcareous, sub-fissile to platy, medium soft to soft.
- 545 - 555 SHALE - medium to dark grey, very silty texture, micromicaceous, slightly carbonaceous, non-calcareous, sub-fissile to blocky, appears to be bentonitic in part, soft to very soft;
Minor SANDSTONE - interbedded stringers, transparent to mainly translucent, quartzose, very fine grained, sub-angular to sub-rounded, well sorted, calcareous matrix, rarely glauconitic, platy, medium soft, tight.

AIR DRILLING ENCOUNTERED WATER AT TOP OF WABAMUN
SO FOAM WAS ADDED WHICH RESULTED IN NO CUTTINGS
FROM 555m - 1197m.

- 1197 - 1210 SHALE - light to mainly medium grey, silty texture, very micromicaceous, very slightly carbonaceous, slightly calcareous, rarely bentonitic in part, blocky to sub-fissile, medium soft;
Trace LIMESTONE - stringers, cream to very light brown, microcrystalline, argillaceous, blocky, medium hard, tight.
- 1210 - 1240 SHALE - 50%, medium to dark grey, smooth, slightly micromicaceous, non-calcareous, platy, medium soft;
SILTSTONE - 40%, very light to light grey, calcarenitic, micromicaceous, some biotite inclusions, slightly argillaceous, blocky to sub-fissile, soft and brittle;
LIMESTONE - 10%, stringers, white to cream, micro to very finely crystalline, slightly argillaceous, blocky, medium hard, tight;
Trace Crinoid fragments;
Rare PYRITE - nodules.
- 1240 - 1260 SHALE - 50%, medium to dark grey, smooth, micromicaceous, non-calcareous, slightly carbonaceous, platy, sub-fissile, medium soft;
SILTSTONE - 35%, very light to light grey, calcarenitic, micromicaceous, some skeletal inclusions, very calcareous, sub-angular, well sorted, platy, soft and brittle;
LIMESTONE - 15%, interbedded, cream, micro to very finely crystalline, argillaceous, Ostracod inclusions

throughout, blocky, medium hard, tight;
Trace PYRITE - nodules.

- 1260 - 1280 SHALE - 80%, medium to dark grey, smooth, slightly micromicaceous, non-calcareous, rarely carbonaceous, sub-fissile, platy, medium soft;
LIMESTONE - 10%, stringers, cream to creamy white, crypto to very finely crystalline, argillaceous, platy, medium hard;
SILTSTONE - 10%, very light to light grey, calcarenitic, very micromicaceous, sub-angular, well sorted, limy matrix, platy, tight;
Trace MARL - very light green, smooth, calcareous, soft;
Trace SHELLS - fragments.

- 1280 - 1300 SHALE - 70%, medium to mainly dark grey, smooth, micromicaceous, carbonaceous, flecks in part, non-calcareous, sub-fissile, platy, soft;
SILTSTONE - 25%, translucent to very light grey, quartzose, micromicaceous, rarely carbonaceous, sub-angular, well sorted, well cemented with calcareous matrix, platy, medium hard, tight;
Minor LIMESTONE - stringers, cream to light brown, crypto to microcrystalline, argillaceous, platy, medium hard, tight.

BEAVERHILL LAKE : 1300m

- 1300 - 1310 SILTSTONE - 50%, dark to very dark brown, quartzose, micaceous, sub-angular, well sorted, cemented with slightly calcareous matrix, platy, hard, tight;
SHALE - 40%, light to medium grey, smooth, slightly micromicaceous, non-calcareous, platy, medium soft;
LIMESTONE - 10%, creamy white, micro to very finely crystalline, argillaceous, blocky, medium hard, tight.
- 1310 - 1325 SHALE - 90%, medium to rarely dark grey, smooth, rarely micromicaceous, non-calcareous, sub-fissile, platy, medium soft;
SANDSTONE - 10%, translucent to very light grey, quartzose, very fine grained, sub-angular, well sorted, slightly micaceous, cemented with calcareous matrix, platy, hard, tight;
Trace LIMESTONE - as above.

MUSKWA : 1325m

- 1325 - 1340 SHALE - 85%, medium grey, smooth, slightly

micromicaceous, non-calcareous, sub-fissile, platy, medium soft;
LIMESTONE - 15%, stringers, cream to creamy white, micro to very finely crystalline, very argillaceous, platy to blocky, hard, tight.

- 1340 - 1348 SHALE - 80%, light to medium grey, smooth, slightly micromicaceous, non-calcareous, platy, medium soft;
LIMESTONE - 20%, interbedded stringers, cream to creamy white, micro to very finely crystalline, argillaceous, rare Ostrapod inclusions, platy, medium hard, tight.

SLAVE POINT : 1348m

- 1348 - 1359 LIMESTONE - cream to occasionally medium brown, lithographic to very finely crystalline, amorphous and chalky texture in part, argillaceous, bioclastic, trace poor yellow fluorescence, no cut, platy, medium hard, tight;
 Trace PYRITE - nodules;
 Trace Shell, Coral, Crinoid and Ostracod fragments.

- 1359 - 1375 LIMESTONE - creamy light brown to medium brown, cryptocrystalline to finely granular, argillaceous, bioclastic with well developed porous Algal stringers, fair to good intergranular porosity and fair permeability, poor to fair lemon-yellow fluorescence, no cut but some Gilsonite coating of cavities observed, reservoir stringers appear to have approximately 12% porosity, mainly tight and hard but porous stringers very brittle.

- 1375 - 1380 LIMESTONE - cream to medium brown, cryptocrystalline to finely granular, argillaceous, bioclastic and granular, trace scattered poor intergranular and vugular porosity, limited permeability, no fluorescence or cut, platy, hard.

FORT VERMILION : 1380m

- 1380 - 1395 LIMESTONE - 80%, creamy white to medium brown, microcrystalline to finely granular, argillaceous, bioclastic, trace intergranular and vuggy porosity, no permeability, no shows, platy, medium hard, mainly tight;
SHALE - 20%, light to medium grey and light green, smooth, slightly micromicaceous, slightly calcareous, platy, sub-fissile, medium soft;
 Trace Shell fragments.

WATT MOUNTAIN : 1395m

- 1395 - 1405 LIMESTONE - 80%, white to light and medium brown, cryptocrystalline to finely granular, argillaceous, bioclastic, stringers, poor to fair intergranular porosity, fair permeability, slight lemon-white fluorescence, no cut, platy, mainly tight;
LIMESTONE - 10%, white, microcrystalline, amorphous, chalky texture, platy, soft, tight;
SHALE - 10%, light to medium grey, smooth, very slightly calcareous, platy, medium soft;
 Trace green SHALE;
 Rare Shell fragments.

BISTCHO : 1405m

- 1405 - 1425 DOLOMITE - light to medium brown, very fine to finely crystalline, anhydritic, poor pin-point and poor intercrystalline porosity, yellow fluorescence throughout, weak milky white cut, fair show, platy, hard, mainly tight;
 Trace SHALE - stringers, light to medium grey, smooth, slightly calcareous, platy, medium soft.

MUSKEG : 1425m

- 1425 - 1430 ANHYDRITE - 75%, creamy-white and silvery grey, microcrystalline, microsucrosic in part, mainly chalky, soft;
DOLOMITE - 25%, light brown, micro to very finely crystalline, sucrosic texture, platy, tight, hard.
- 1430 - 1435 ANHYDRITE - 50%, translucent to white, microcrystalline, microsucrosic, blocky, soft;
DOLOMITE - 50%, interbedded, light brown, crypto to very finely crystalline, anhydritic, platy, hard, tight.
- 1435 - 1450 ANHYDRITE - translucent to white and very light grey, crypto to microcrystalline, microsucrosic texture common, rarely chalky and amorphous, blocky, medium soft, tight;
DOLOMITE - 10%, interbedded, light brown, micro to very finely crystalline, anhydritic, platy, hard, tight;
SHALE - cavings very bad.
- 1450 - 1460 ANHYDRITE - 75%, translucent to white, crypto to

- microcrystalline, microsugrosic in part, rarely chalky and amorphous, platy, hard, tight;
DOLOMITE - 25%, interbedded, creamy light brown to medium brown, very finely crystalline, anhydritic, trace scattered fair intercrystalline porosity, no shows, mainly tight, platy, hard.
- 1460 - 1480 ANHYDRITE - 50%, translucent to white, crypto to microcrystalline, platy, hard, tight;
DOLOMITE - 50%, interbedded, medium brown, very fine to finely crystalline, anhydritic, trace fair intercrystalline and poor pin-point porosity, no shows, platy, hard, mainly tight.
- 1480 - 1495 DOLOMITE - 75%, light to medium brown, crypto to finely crystalline, anhydritic, trace scattered poor intercrystalline porosity, no shows, mainly tight, platy, hard;
ANHYDRITE - 25%, translucent to white, crypto to microcrystalline, platy, hard, tight.
- 1495 - 1510 DOLOMITE - 80%, medium to dark brown, micro to very finely crystalline, occasionally fragmental, very anhydritic, trace poor intercrystalline porosity, no shows, mainly tight, platy, very hard;
ANHYDRITE - 10%, translucent to white, crypto to microcrystalline, platy, medium hard, tight;
SHALE - 10%, medium grey, smooth, dolomitic, platy, medium soft.

KEG RIVER : 1510m

- 1510 - 1520 DOLOMITE - 95%, cream to medium brown, micro to finely crystalline, very anhydritic, sugrosic texture common, rarely fragmental, trace poor scattered intercrystalline porosity, poor lemon fluorescence, slight cut, platy, hard, mainly tight;
SHALE - 5%, medium grey, smooth, micromicaceous, non-calcareous, platy, medium soft;
 Minor ANHYDRITE - translucent to white, micro to very finely crystalline, sugrosic texture, platy, medium hard, tight.
- 1520 - 1530 DOLOMITE - semi-translucent to mainly medium brown, finely crystalline, anhydritic, trace poor intercrystalline porosity, some gilsonite coating of cavities, poor lemon-yellow fluorescence, white milky cut, platy, hard, mainly tight.

PRE-DEVONIAN : 1530m

- 1530 - 1545 QUARTZITE - translucent to buff and light brwn, very fine to occasionally fine grained, siliceous, dolomitic, well sorted, platy, very hard, tight; Minor DOLOMITE - stringers, medium to dark brown, very fine to finely crystalline, slightly anhydritic, blocky, hard, tight. 2
- 1545 - 1560 QUARTZITE - translucent to buff through medium brown, micro to very fine grained, silty texture, siliceous, well sorted, platy, very hard, tight. 2

TOTAL DEPTH : 1560m

GAS REPORTS

Date	Depth	Total Units	C ₁ %	C ₂ %	C ₃ %	Comment
Jan 28	1200-1243	7-19	---	---	---	Background
Jan 29	1243-1267					Repairs
Jan 30	1267-1318	5	.048	tr	---	Background
Feb 01	1318-1340	25	.02	.005	---	Background
	1340-1355	1	.01	tr	---	Background
	1355-1370	3.1	.025	.006	---	Background
	Shows					
	1360-1362	9	.08	.016	---	Show
	1369-1370	20	.16	.029	tr	Show
Feb 03	1370-1375					Repairs
	1375-1405	2.5	.02	.005	---	Background
	Shows					
	1389-1391	12	.10	.02	.002	Show
	1403-1405	38	.34	.04	.001	Show
Feb 04	1405-1427	10	.09	.01	---	Background
	1427-1456	5	.042	.008	---	Background
	1456-1496	14	.10	.027	.005	Background
	Shows					
	1408-1409	20	.17	.03	.001	Show
	1412-1416	30	.26	.04	.002	Show

PARAMOUNT ET AL CAMERON B - 08

GAS REPORTS - continued

Date	Depth	Total Units	C ₁ %	C ₂ %	C ₃ %	Comment
Feb 04	1445-1447	20	.15	.034	.005	Show
	1457-1460	24	.18	.045	.008	Show
	1467-1469	50	.39	.081	.016	Show
	1481-1484	38	.29	.07	.015	Show
Feb 05	1496-1501	14	.09	.03	.006	Background
	1501-1510	2	.018	.002	---	Background
	Shows					
	1499-1500	21	.15	.04	.009	Show
Feb 06	1510-1560	2	.018	.001	---	Background
	Shows					
	1512-1516	12	.09	.023	.002	Show
	1516-1517	34	.30	.045	.001	Show
	1517-1518	22	.16	.043	.009	Show

Well Name: PARAMOUNT ET AL CAMERON B-08

Location: Lat. $60^{\circ}07'06.80''$ N; Long. $117^{\circ}30'46.21''$ W

ELECTRIC LOG TOPS

K.B. Elevation 789.90m

[illegible]

TABLE OF FORMATIONS

AGE	FORMATION		LITHOLOGY
LATE DEVONIAN	Wabamun		Limestone: crypto to micro crystalline
	Winterburn		Limestone: crypto - micro crystalline, argillaceous
	Woodbend Group	Twin Falls (Grosmont)	Limestone: crypto - micro
		Fort Simpson	shales
		Muskwa	organic rich shales
	Beaverhill Lake	Waterways	shales (basinal)
		Slave Point	Limestone
Ft. Vermilion		Limestone	
Watt Mountain		shales - bituminous	
MIDDLE DEVONIAN	Upper Elk Pt.	Sulphur Point	Limestone & Dolomite
		Muskeg	anhydrite & dolomite / Dolomite
		Lower Keg River	organic rich limestone & dolomite
	Lower Elk Point	Chinchaga	anhydrite
		Granite Wash	sands
EARLY DEVONIAN			Metamorphic Complex
PRE DEVONIAN			

E. WELL EVALUATION

1. Downhole Logs (In Pocket, At The End)

TABLE 3

DOWNHOLE LOG SUMMARY - Schlumberger

<u>DATE</u>	<u>RUN</u>	<u>TYPE</u>	<u>SCALE</u>	<u>INTERVAL (M)</u>
1989-02-06	1	DIL-SFL-SP	1-600 1-240	389.9 - 1557.8 389.9 - 1557.8
	1	BHC-SONIC-GR-CAL-Ten	1-600 1-240	389.8 - 1547.5 389.8 - 1547.5
	1	CNL-LDT-GR	1-600 1-240	389.8 - 1558.8 389.8 - 1558.8
	1	MICROLOG	1-240	389.8 - 1552.0
	1	VELOCITY MONITOR LOG		390.0 - 1557.0
	1	CYBERLOOK		1325.0 - 1552.0

2. Other Logs (N/A)

3. Synthetic Seismograms

Refer to the Well Seismic Report Log in the pocket following.

4. Formation Stimulation

- 1989-03-01: Computalog perforated the Keg River Formation from 1512 m - 1521.5 mKB with 13 shots per metre (101 mm, 32 grain), 90° phasing. Total of 120 shots were fired. Ran in hole with 73 mm tubing and UNI-V packer which was set at 1508.23 mKB. Swabbed well in.
- 1989-03-02: Well flowing at 42,517 m³/day.
- 1989-03-03: Rigged in Nowsco for 28% HCL-N₂ squeeze. Pumped 0.5 m³ 28% HCL acid ahead and then started nitrified acid squeeze at a rate of 0.32 m³ acid + 108 m³/m³ N₂ at 9000 kPa. Displaced tubing with N₂ at 12,000 kPa at 100 m³/m³. Overflushed tubing volume by 75% at 100 m³/m³ N₂ at 12,000 kPa. Total acid used was 3.0 m³ and total N₂ used was 7.94 m³. Bled off pressure and flowed back on 32/64 choke at 6450 kPa and a flow rate of 152,437 m³/day.
- 1989-03-04: Killed well. Rigged in Computalog, set a 139.7 mm. Baker bridge plug at 1500 mKB.
- 1989-03-07: Rigged in Computalog, perforated the Sulphur Point at the following intervals:
- 1403 m - 1406 m
1408 m - 1409 m
1412 m - 1421 m
- With a 101 EHSC 90°, 32 gram, 13 spm casing gun, for a total of 172 shots.
- Ran in hole with "R" nipple (2.25" x 0.33 m) with 73 mm collar on bottom; 1 joint, 73 mm, 9.67 kg/m tubing, 1.62 m, UNI-V packer, 1.05 m to centre "F" nipple on rubber, 2.10 m long; 1 joint 73 mm, 9.67 kg/m tubing, 9.62 m, "F" nipple, 2.31" I.D. x 0.35 m, 144 joints; 73 mm, 9.67 kg/m, tubing, 1392.97 m. Landed at 1403.97 mKB.
- Circulate Nowcor 200 inhibitor fluid. Set packer and pressure tested to 7000 kPa. Swabbed well in, flowed well at a gas rate of 113,775 m³/day.
- 1989-03-09: Rigged in Nowsco for 28% HCL- N₂ acid squeeze. Pumped 0.5 m³ acid ahead followed with nitrified acid squeeze at a rate of 0.32 m³ acid + 108 m³/m³ N₂ at 9000 kPa. Tubing volume overflushed by 75%. Flowed well back, recovered acid water. Flow-line started freezing off.
- 1989-03-12: Rigged in Nowsco. Ran in with endless tubing to PBTD at 1500 m. Pumped 18 m³ N₂ until N₂ at surface. Allowed well to flare through stack.
- 1989-03-23: Flowed well for 6 hours through 23/64" choke at 56,689 m³/day. Produced 0.2 m³ condensate.

- 1989-03-24: Flowed well for 7 hours at 59,524 m³/day. Produced 0.2 m³ condensate.
- 1989-03-25: Flowed well for 6 hours at 59,524 m³/day. Produced 0.2 m³ condensate.
- 1989-03-26: Flowed well for 5.75 hours, flow rate decreased to 39,960 m³/day due to well freezing off.
- 1989-04-01: Placed "R" and "F" profiles in tubing. Well shut in.

5. Formation And Production Test Results

DST #1: Slave Point Formation (1351 m - 1370 m)

Times: 10 / 60 / 30 / 150

P.F.: WAB

V.O.: FTAB, TSTM, NGTS

Recovered 60 m inhibited gas cut mud.

Test was a misrun.

DST #2: Keg River Formation (1512 m - 1522 m)

Times: 9 / 28 / 60 / 114

P.F.: WAB increasing to FAB in 5 minutes
and then steady.

V.O.: FAB after 10 minutes, then decreasing, NGTS.

Pressures: IHP 18,310
SPF 9,638
EPF 10,388
ISI 10,388
SVO 10,388
EVO 10,388
FSI 10,466
FHP 18,502

Test was a misrun due to a plugged tool.

DST #3: Sulphur Point Formation (1410 m - 1420 m)

Times: 13 / 28 / 58 / 121

P.F.: SAB, GTS in 7 minutes.

V.O.: Very strong gas flow throughout.

Recovery: 156 m drilling mud.

Pressures: IHP 17,267
SPF 1,233
EPF 1,043
ISI 9,733
SVO 1,043
EVO 1,491
FSI 9,672
FHP 17,129

Gas and water analyses on the following pages.



CALGARY

AGAT Laboratories

EDMONTON

GRANDE PRAIRIE

**GAS ANALYSIS**

CONTAINER IDENTIFICATION

AGAT 4059

LABORATORY NUMBER

GE9804A

OPERATOR NAME

PARAMOUNT RESOURCES LTD.

UNIQUE WELL IDENTIFIER

BS60070680

WELL NAME

PARAMOUNT et al CAMERON BS60070680

KB m ELEVATIONS

790.21

GRD m

786.20

FIELD OR AREA

CAMERON HILLS

POOL OR ZONE

SULPHUR POINT

NAME OF SAMPLER

COMPANY

B.O.T.

TEST TYPE

NO

TEST RECOVERY

DST

3

TEST INTERVAL OR PERFS

1410-1420

mKB

SAMPLING POINT

BHS

GAUGE PRESSURE kPa

TEMPERATURE °C

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

150

21

DATE SAMPLED (Y-M-D)

89-02-07

DATE RECEIVED (Y-M-D)

89-02-13

DATE REPORTED (Y-M-D)

89-02-14

ANALYST

BA

OTHER INFORMATION

FIELD H2S = 600ppm

COMP.	MOLE FRACTION		PETROLEUM LIQUID CONTENT mL • m ⁻³
	AIR FREE AS RECEIVED	AIR FREE ACID GAS FREE	
H ₂	0.0002	0.0002	
He	0.0008	0.0008	
N ₂	0.0283	0.0294	
CO ₂	0.0369	0.0000	
H ₂ S	0.0006	0.0000	
C ₁	0.9080	0.9434	
C ₂	0.0149	0.0155	
C ₃	0.0064	0.0066	23.6
IC ₄	0.0009	0.0010	4.1
NC ₄	0.0018	0.0018	7.5
IC ₅	0.0005	0.0006	2.6
NC ₅	0.0004	0.0004	2.0
C ₆	0.0003	0.0003	1.4
C ₇ +	0.0000	0.0000	0.0
C ₈			
C ₉			
C ₁₀ +			
TOTAL	1.0000	1.0000	41.2

GROSS HEATING VALUE MJm⁻³
15° C AND 101.325 kPa

MOISTURE AND ACID GAS FREE

MEASURED

CALCULATED

37.84

DETERMINED
DEW POINT

°C

VAPOUR PRESSURE
PENTANES PLUS

106.4 kPa

RELATIVE DENSITY

MOISTURE FREE AS SAMPLED

MEASURED

CALCULATED

0.621

MEASURED

CALCULATED

0.586

PSEUDO CRITICAL PROPERTIES (CALCULATED)

AS SAMPLED

pPc (abs)

4669 kPa

pTc

196.7 K

ACID GAS FREE

pPc (abs)

4563 kPa

pTc

192.4 K

RELATIVE MOLECULAR MASS

TOTAL GAS

18.0

C₇ +

0.0

H₂S g/m³

0.86

REMARKS:

DST #3

O.P. = 961kPa

RECOVERY - 200 ml water



CALGARY

EDMONTON

GRANDE PRAIRIE

AGAT Laboratories**GAS ANALYSIS**

CONTAINER IDENTIFICATION

CX 5492

LABORATORY NUMBER

GE98048

OPERATOR NAME

PARAMOUNT RESOURCES LTD.

UNIQUE WELL IDENTIFIER

BS60070680

WELL NAME

PARAMOUNT et al CAMERON BS60070680

KB m ELEVATIONS GRD m

790.21

786.20

FIELD OR AREA

CAMERON HILLS

POOL OR ZONE

SULPHUR POINT

NAME OF SAMPLER

COMPANY

B.O.T.

TEST TYPE

NO

DST

3

TEST RECOVERY

TEST INTERVAL OR PERFS

1410-1420

mKB

SAMPLING POINT

RISER

GAUGE PRESSURE kPa

TEMPERATURE °C

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

160

21

DATE SAMPLED (Y-M-D)

89-02-07

DATE RECEIVED (Y-M-D)

89-02-13

DATE REPORTED (Y-M-D)

89-02-14

ANALYST

BA

OTHER INFORMATION

FIELD H₂S = 600ppm

COMP.	MOLE FRACTION		PETROLEUM LIQUID CONTENT mL · m ⁻³
	AIR FREE AS RECEIVED	AIR FREE ACID GAS FREE	
H ₂	0.0000	0.0000	
He	0.0008	0.0008	
N ₂	0.0171	0.0181	
CO ₂	0.0555	0.0000	
H ₂ S	0.0006	0.0000	
C ₁	0.8979	0.9511	
C ₂	0.0157	0.0167	
C ₃	0.0070	0.0074	25.7
IC ₄	0.0011	0.0012	4.8
NC ₄	0.0021	0.0022	8.8
IC ₅	0.0006	0.0007	3.2
NC ₅	0.0006	0.0007	3.1
C ₆	0.0005	0.0006	2.9
C ₇ +	0.0005	0.0005	2.9
C ₈			
C ₉			
C ₁₀ +			
TOTAL	1.0000	1.0000	51.4

GROSS HEATING VALUE MJ·m⁻³
15° C AND 101.325 kPa

MOISTURE AND ACID GAS FREE

MEASURED

CALCULATED

38.56

DETERMINED DEW POINT

°C

VAPOUR PRESSURE PENTANES PLUS

80.2 kPa

RELATIVE DENSITY

MOISTURE FREE AS SAMPLED

MEASURED

CALCULATED

0.639

MOISTURE AND ACID GAS FREE

MEASURED

CALCULATED

0.587

PSEUDO CRITICAL PROPERTIES (CALCULATED)

AS SAMPLED

pPc (abs)

4733 kPa

pTc

200.2 K

ACID GAS FREE

pPc (abs)

4575 kPa

pTc

194.0 K

RELATIVE MOLECULAR MASS

TOTAL GAS

18.5

C₇ +

103.6

H₂S g/m³

0.86

REMARKS:

TEST LINE



WATER ANALYSIS

CONTAINER IDENTIFICATION

PB#1

LABORATORY NUMBER

WE9804A

OPERATOR NAME

PARAMOUNT RESOURCES LTD.

UNIQUE WELL IDENTIFIER

BS60070680

WELL NAME

PARAMOUNT et al CAMERON BS60070680

ELEVATIONS
KB m GRD m

790.21

786.20

FIELD OR AREA

CAMERON

POOL OR ZONE

KEG RIVER

NAME OF SAMPLER

COMPANY

B.O.T.

TEST TYPE

DST

NO

2,3

TEST RECOVERY

156m

SAMPLING POINT

TOP

AMT & TYPE OF CUSHION

MUD RESISTIVITY: Ω m

@ 25° C

TEST INTERVAL OR PERFS

1512-1522

1410-1420

mKB

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER m³/dOIL m³/dGAS 103 m³/d

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

GAUGE PRESSURE kPa

TEMPERATURE ° C

DATE SAMPLED (Y-M-D)

89-02-07

DATE RECEIVED (Y-M-D)

89-02-13

DATE REPORTED (Y-M-D)

89-02-16

ANALYST

B

OTHER INFORMATION

ION	mg/L	MASS FRACTION	mmol/L
Na	5740.0	0.163	250.0
K	105.0	0.003	2.7
Ca	38.1	0.001	1.0
Mg	1.3	TRC*	0.1
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	0.5	TRC*	TRC+

ION	mg/L	MASS FRACTION	mmol/L
Cl	3600.0	0.102	102.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO ₃	NIL	NIL	NIL
SO ₄	12000.0	0.340	125.0
CO ₃	9540.0	0.270	159.0
OH	4250.0	0.120	250.0
H ₂ S	N.D.	N.D.	N.D.

DISSOLVED

TOTAL SOLIDS

mg/L

EVAPORATED AT 110° C

EVAPORATED AT 180° C

AT IGNITION

CALCULATED

35300.0

RELATIVE DENSITY

1.005 @ 25° C

REFRACTIVE INDEX

N.A. @ 25° C

OBSERVED pH

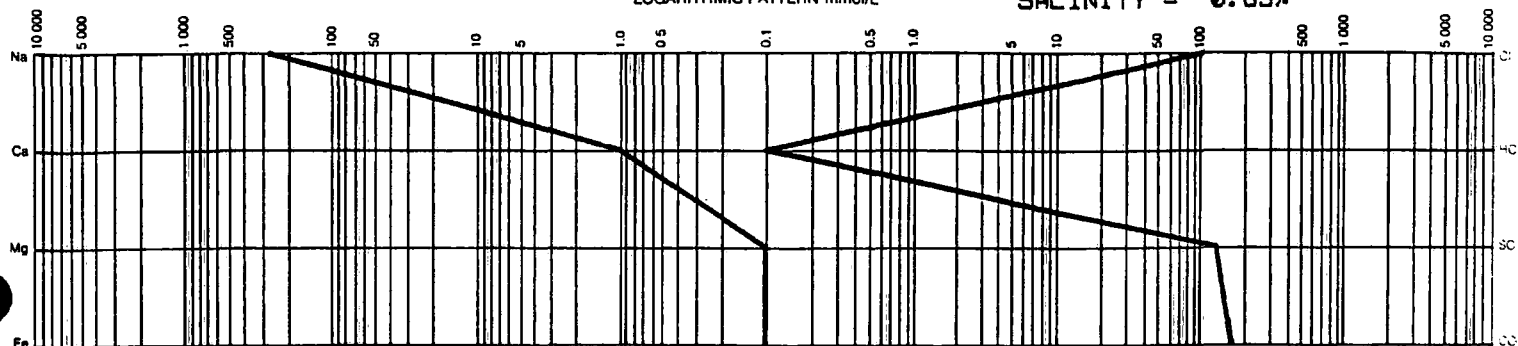
9.80 @ 25° C

RESISTIVITY/OHM •m

0.31 @ 25° C

LOGARITHMIC PATTERN mmol/L

SALINITY = 0.65%



TRC+ = LESS THAN 0.1 N.D. = NOT DETECTED NIL = 0.0 TRC* = LESS THAN 0.001 N.A. = NOT ANALYZED

THE IONIC BALANCE FOR THIS WATER EXCEEDS 10%, HOWEVER, THE ANALYSIS HAS BEEN CONFIRMED. THE IMBALANCE IS CAUSED BY AMMONIA PRESENT IN THE WATER SAMPLE.



CALGARY

EDMONTON

GRANDE PRAIRIE

WATER ANALYSIS

CONTAINER IDENTIFICATION

PB#5

LABORATORY NUMBER

WE98040

OPERATOR NAME

PARAMOUNT RESOURCES LTD.

UNIQUE WELL IDENTIFIER

BS60070680

WELL NAME

PARAMOUNT et al CAMERON BS60070680

KB m ELEVATIONS GRD m

790.21

786.20

FIELD OR AREA

CAMERON

POOL OR ZONE

SULPHUR POINT

NAME OF SAMPLER

COMPANY

B.O.I.

TEST TYPE

DST

NO

3

TEST RECOVERY

SAMPLING POINT

BHS

AMT & TYPE OF CUSHION

MUD RESISTIVITY/Ω m

@ 25° C

TEST INTERVAL OR PERFS

1410-1420

mKB

TYPE OF PRODUCTION

PUMPING

FLOWING

GAS LIFT

SWAB

PRODUCTION RATES

WATER

m³/d

OIL

m³/d

GAS

10³ m³/d

SEPARATOR

TREATER

RESERVOIR

SOURCE

SAMPLED

RECEIVED

GAUGE PRESSURE kPa

TEMPERATURE ° C

DATE SAMPLED (Y-M-D)

89-02-07

DATE RECEIVED (Y-M-D)

89-02-13

DATE REPORTED (Y-M-D)

89-02-16

ANALYST

B

OTHER INFORMATION

DISSOLVED

TOTAL SOLIDS

mg/L

EVAPORATED AT 110° C

EVAPORATED AT 180° C

AT IGNITION

CALCULATED

25000.0

RELATIVE DENSITY

1.017 @ 25° C

REFRACTIVE INDEX

N.A. @ 25° C

OBSERVED pH

8.37 @ 25° C

RESISTIVITY/ΩM-cm

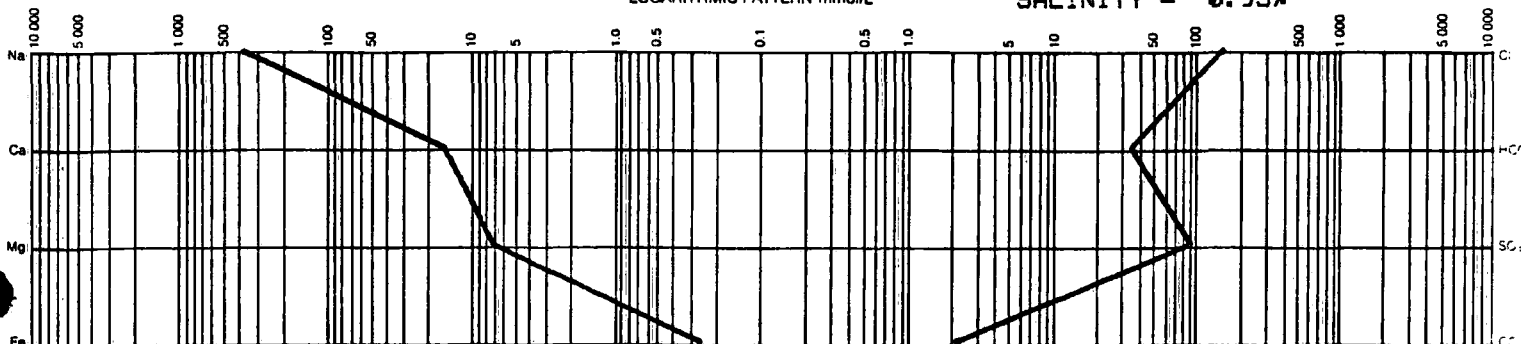
0.35 @ 25° C

ION	mg/L	MASS FRACTION	mmol/L
Na	8100.0	0.324	352.0
K	120.0	0.005	3.1
Ca	606.0	0.024	15.1
Mg	167.0	0.007	6.9
Ba	N.A.	N.A.	N.A.
Sr	N.A.	N.A.	N.A.
Fe	14.5	0.001	0.3

ION	mg/L	MASS FRACTION	mmol/L
Cl	5230.0	0.209	147.0
Br	N.A.	N.A.	N.A.
I	N.A.	N.A.	N.A.
HCO ₃	2090.0	0.084	34.1
SO ₄	8560.0	0.342	89.1
CO ₃	129.0	0.005	2.2
OH	NIL	NIL	NIL
H ₂ S	N.D.	N.D.	N.D.

THE "30 MINUTE" API MUD FIL-
TRATE LOSS IS 26.4 ml. THE
ABOVE RESULTS PERTAIN TO THE
WATER EXTRACTED FROM THE MUD
SALINITY = 0.93%

LOGARITHMIC PATTERN mmol/L



REMARKS:

TRC+= LESS THAN 0.1 N.D.= NOT DETECTED NIL= 0.0 TRC*= LESS THAN 0.001 N.A.= NOT ANALYZED

F. ENVIRONMENTAL REPORT (N/A)

G. APPENDICES TO WELL HISTORY REPORT

1. Oil, Gas, And Water Analyses (See Section E, 5.)
2. Reservoir Engineering Data (N/A)
3. Petrographic Record (N/A)
4. Details Of Formation And Production Testing (See Section E, 5.)
5. Petrological Reports (N/A)
6. Paleontological Reports (N/A)
7. Palynological Reports (N/A)
8. Geochemical Reports (N/A)
9. Age Determinations (K/Ar etc.) (N/A)
10. Processed Combination Of Well Logs (See Cyberlook In Pocket)
11. Deviation Record (See Table 4, See Following Pages)
12. Gas Detector Log Or Mud Log Records
See Section G, 16. Tabulation of total gas and chromatograph valves,
also refer to Composite Well Log (See Section G, 14. In Pocket).
13. Completion Data (N/A)
14. Composite Well Record (In Pocket)
15. Final Survey Plat (In Pocket)
16. Mud Data (See Following Pages)

SECTION G, 10.

PARAMOUNT ET AL CAMERON B-08

PROCESSED COMBINATION OF WELL LOGS

'CYBERLOOK'

SECTION G, 11.

TABLE 4

PARAMOUNT ET AL CAMERON B-08

DEVIATION RECORD

TABLE 4

PARAMOUNT ET AL CAMERON B-08

DEVIATION RECORD

DEPTH (M)	DEVIATION (DEGREES)
37	1/4
65	1/2
92	3/4
127	7/8
156	1/2
194	3/4
231	1
260	1
298	3/4
340	1
390	1
540	3/4
693	3/4
894	1
1049	1 1/4
1193	MISRUN
1212	4 1/4
1232	7
1250	6
1260	6 3/4
* 1193	6 3/4
* 1212	7
1270	6 1/8
1279	5 1/4
1299	4
1327	2 1/4
1365	2
1413	2 1/2
1500	3
1560	3

* RESURVEYED

SECTION G, 14.

PARAMOUNT ET AL CAMERON B-08

COMPOSITE WELL RECORD

SECTION G, 15.

PARAMOUNT ET AL CAMERON B-08

FINAL SURVEY PLAT

SECTION G, 16.

TABLE 5

PARAMOUNT ET AL CAMERON B-08

MUD DATA

TABLE 5

PARAMOUNT ET AL CAMERON B-08

MUD DATA

DATE	DEPTH	WT. (KG/M ³)	VIS.	W.L.	pH	COMMENTS
1989-01-19	55	1010	32			
1989-01-20	326	1230	38			
1989-01-21	390	1220	84			
1989-01-22	390					
1989-01-23	390					
1989-01-24	445	1080	46			
1989-01-25	806	1108	68			
1989-01-26	1010	1100	54			
1989-01-27	1197	1100	105			
1989-01-28	1246	1115	47	6.5	9.5	
1989-01-29	1270	1160	49	8.0	9.5	
1989-01-30	1318	1150	54	7.5	10.0	
1989-01-31	1318	1150	52	7.5	10.5	
1989-02-01	1370	1120	57	6.5	10.5	
1989-02-02	1370	1120	57	6.5	10.5	
1989-02-03	1417	1180	52	6.5	9.0	
1989-02-04	1500	1140	70	7.0	9.0	
1989-02-05	1515	1120	50	10.0	11.0	
1989-02-06	1560	1150	85	6.5	10.0	
1989-02-07	1560	1150	85	6.5	10.0	
1989-02-08	1560	1110	62			
1989-02-09	1560	1150	89			

PARAMOUNT ET AL CAMERON B-08

LOGS