FINAL WELL REPORT

for the Onshore Well

NHOC/PanCanadian Port au Port No. 1

These data are considered privileged and any disclosure shall be governed by s 53 of the Petroleum Regulations and/or s 154 of the Petroleum Drilling Regulations.

VOLUME 1

FINAL WELL REPORT

and

Appendix I

Drilling & Engineering Data

RELEASE DATE

AUG 1 1997

Petroleum Resource Development Division Decument of Mines and Huergy

NEWFOUNDLAND HUNT OIL COMPANY INC.

JULY 1996

FINAL WELL REPORT

for the Onshore Well

Hunt/PanCanadian PORT AU PORT No. 1

prepared by

Mr. Michael Fladmark Staff Engineer

NEWFOUNDLAND HUNT OIL COMPANY INC.

prepared for

Government of Newfoundland and Labrador Department of Natural Resources Energy Branch

July 1996

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ACRONYMS

Note: The following presents most, but not all, the abbreviations encountered in the text of this report

ADW Authority To Drill A Well BOP blow out preventer COND condensate d day DPA Drilling Program Approval GR Gamma Ray

h hour

IADC International Association of Drilling Contractors kg kilogram km kilometer

LCM lost circulation material

m meter
min minute
mm millimeter
mW mega Watt

NAD North America Datum

NHOC..... Newfoundland Hunt Oil Company Inc.

OD..... outside diameter PAP..... Port au Port

PCP PanCanadian Petroleum Limited

RKB..... rig kelly bushing

RWP replaceable wear pad

SPF..... shots per foot UTM Universal

WTR Well Termination Record

XO cross-over

CONVERSION FACTORS

English units	to	SI Units	multiply by
bbl		m ³	0.1589873
		m	
ho		W	745.6999
in		mm	25.4
lh		ka	0.4535924
mi		km	4.0234
ppg		kg/m³	119.8264
		year - month - day xx hr xx min	•

FINAL WELL REPORT

NHOC/PanCanadian Port au Port No. 1

1.00 GENERAL OVERVIEW

NEWFOUNDLAND HUNT OIL COMPANY INC.

JULY 1996

1.00 GENERAL OVERVIEW

The SI metric system of units as adopted by the Society of Petroleum Engineers, June 1992, is used in the text of this report. The report summarizes the drilling program for the well per Regulations Guidelines. Newfoundland and Labrador Petroleum Drilling Regulations. 1982. The attachments and appendices may contain data that are in the English system of units and can be converted using the conversion table located on page 6.

1.01 Introduction

The Hunt/PanCanadian Port au Port No. 1 (NHOC/PCP PAP No. 1) was an exploratory well spudded on 94-09-17 and drilled to a total depth of 4699 m on 95-06-06. The well was drilled on Newfoundland Hunt Oil Company Inc.'s (NHOC) Exploration Permit 93-102 located on the Port Au Port Peninsula near Garden Hill about 4 km northeast of Cape St. George. NHOC's partner in the well was PanCanadian Petroleum Limited.

The Noble Drilling (Canada) Ltd.'s land drilling rig OW842E was contracted to drill the well. This is a land based oil well type 840E 1.0 mW SCR rig with a maximum hook load of 408 233 kg and capable of drilling to a depth of 4801 m.

The primary targets were the Tableland and St. Georges group formations encountered from 3701 to 3904 m. The secondary targets included the Long Point Group encountered from 2812 to 3445 m; the Tablehead Mainland sand stones encountered from 3445 to 3482 m; and unknown facies of Ordovician/Silurian/Devonian age encountered from 7825 to 9226 m.

The hole was air-mist drilled from the surface to a depth of 1135 m with the services of Canadian Air Drillers. The hole was then displaced with a water based mud system provided by Macgobar International (MI). The mud program was modified to a water based gel/polymer mud from 2541 m to total depth. Dowell/Schlumberger provided the cementing services for the well. Schlumberger Wireline Services was contracted to provide open hole wireline logging and perforating services. Standard Safety provided safety services on site. DATALOG Technology Inc. provided mud logging services; and Roland Strickland, Stride Consulting, was the wellsite geologist.

Pressure tests were conducted during seven periods with equipment provided and data analyzed by Z.I. Probes, Inc. Production tests were conducted from five intervals between 3949 to 3458 m using Guiberson AVA test equipment. Core Labs conducted fluid analyses of the samples collected during these production tests.

The well was temporarily abandoned on 95-08-01 after 318 days from spud.

1.02 Well Location

Attachment 1-1 presents the well location map for this well on the Port au Port Peninsula of northwestern Newfoundland.

1.03 General Information

The original well name was the Port au Port No. 1. The name was revised to the Hunt/PanCanadian Port au Port No. 1 by request of NHOC and PanCanadian.

The Exploration Permit number is 93-102.

Drilling Program Approval (DPA) number 94-106-1 was approved on 94-08-04. The DPA was revised 95-08-08 to reflect the new well name and was subsequently approved 95-08-18. Attachment 1-2 presents the revised DPA No. 94-106-01-R.

Authority To Drill A Well (ADW) program number 94-106-01-01 was approved on 94-08-04. The ADW was revised 95-08-08 to reflect the new well name and was approved 95-08-18. The revised ADW No. 94-106-01-01-R1 is presented as Attachment 1-3.

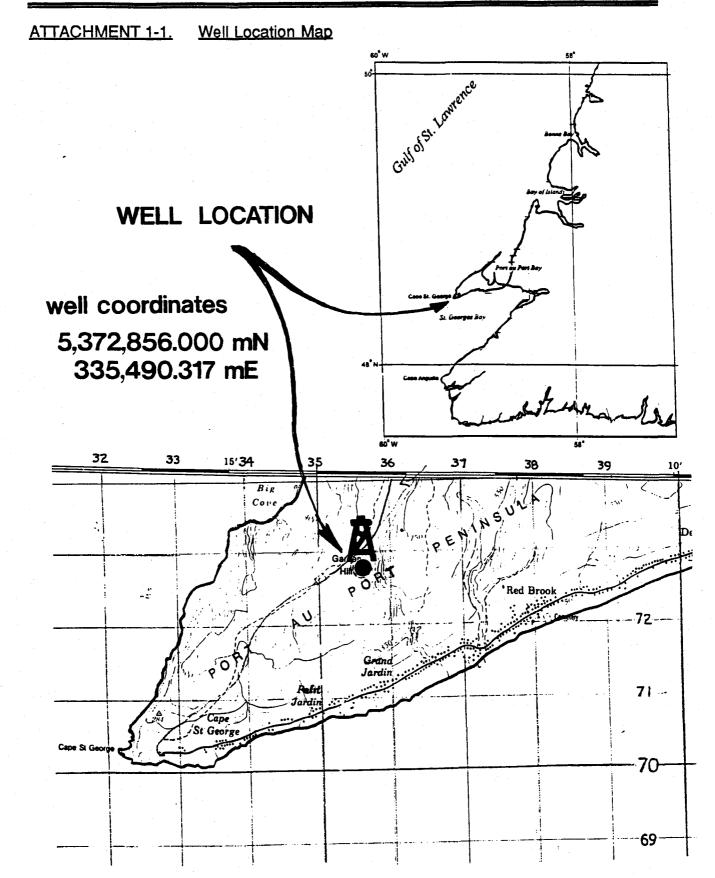
The well is located on the Port Au Port Peninsula near Garden Hill about 4 km northeast of Cape St. George. The UTM coordinates for the well are:

Northing 5,372,856.003 m Easting 335,490.317 m

The drill site and well location survey was conducted by Yates & Woods Ltd., Newfoundland Surveyors, using conventional land surveying equipment. The Department of Energy, Mines and Geodetic Survey of Canada computer program was used to convert the conventional survey points into UTM coordinates using the NAD (1927) spheroid for the Central Meridian 57° west longitude.

1.04 <u>Difficulties & Delays</u>

There were twenty-four significant problems encountered during the drilling of this well which resulted in a total of 59.920 lost days. A summary of these problems is presented in Attachment 1-4.



ATTACHMENT 1-2. Drilling Program Approval



GOVER: INT OF NEWFOUNDLAND AND LABRADOR

Department of Natural Resources

DRILLING PROGRAM APPROVAL

	APPLICATION
Pursuant	to sections 8 and 9 of the Petroleum and Natural Gas Act'.
Overseas	Newfoundland Hunt Oil Company Inc, as Operator on behalf of Hunt Oil Company and Hunt Operating Company Inc holding a subsisting licence, permit or lease issued pursuant to the diland and Labrador Petroleum Regulations ² , namely; Permit 93-107
peteph si	oplies for Approval to conduct a drilling program using the drilling rig <u>Noble 0W842E</u> and at and procedures described in the detailed program dated <u>July 19, 1994.</u>
The unde	ersigned Operator's Representative hereby declares that, to the best of the Operator's knowledge, the ion contained herein and in the attached detailed program is true, accurate and complete.
Signed:	Operator's Representative asy
	APPROVAL
Pursuant hereby a	to sections 8 and 9 of the Petroleum and Natural Gas Act ¹ , the Operator named in the Application is uthorized to conduct the proposed drilling program subject to the following conditions: This Drilling Program Approval shall, unless otherwise extended or terminated, expire upon the 4th
	day of August 1997;
2.	This Authorization shall be prominently displayed at the well site at all times during which operations are being conducted;
3.	Evidence of financial responsibility, as required pursuant to Section 14 of the Newfoundland and Labrador Petroleum Drilling Regulations, 1982, shall be provided by the Operator to the Minister of Natural Resources;
4.	The Operator shall use the equipment and procedures described in the detailed program dated
5.	The Operator shall comply with such other conditions as are appended to this Approval; and
6.	Notwithstanding condition #4, the Operator shall comply with all the requirements of the Newfoundland and Labrador Petroleum Drilling Regulations, 1982 unless a deviation from same is approved in writing by the Director.
Signed:	Director Director Effective Date: 1975 05 18

Drilling Program Approval No. ___

ATTACHMENT 1-3. Authority to Drill A Well



GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

AUTHORITY TO

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			Program applic		93-102	
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ield/Pool:	Wildca	<u>. </u>			Long: Lat:	Northing: 5,372,856.003 Easting: 335,490.317
rilling Ri	g: 1400hp S	CR				
tig Type:	Oil well typ	e 840E			ELEVATION	DEPTH
Orilling Co	ntractor: N	oble Drilling			RT/KB/RF: 8.23 m G.L.: 212.39	T.D. 4600m: TVD: 4600m
-		ESTIMATE:	<u> </u>		TARGET	HORIZONS
Spud Date: Days on L	8/1/94 ocation: 130	days	Well Cost: \$8,000,000		Tablehead and St. George Group 3701-3940	
· · · · · · · · · · · · · · · · · · ·	<u>-</u>		<u> </u>			
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			CASING	AND CEM	ENTING PROGRAM	· · · · · · · · · · · · · · · · · · ·
O.D. (mm)	Weight (Kg/m)	Grade	Setting Depth (m)		Cementing Pr	vgram
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339.7	101.29	1-55	500	Class G w	/2% CaCl. 25% over caliper te + Class G + Fluid loss add	ising/100m shoup pay ± 25%
	47.66	L-80 T-95	2000 4600		- 35% Silica Sand-100m above	
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ATTACHMENT 1-4.		Difficulties & Delays (1 of 2)
1.	<u>Date</u> 94-09-24:	Description of Delay or Difficulty lost 240 h (10 d). Displaced cement for surface casing and blew cement head when pressured up.
2.	94-10-14:	DateDescription of Delay or Difficulty lost 7.5 h (0.312 d) because packed bottom hole assembly would not go in hole.
3.	94-10-19:	Ran light on bit weight from 1294 to 1780 m which probably lost 32% of penetration rate. No lost time was attributed to this action.
4.	94-11-04:	lost 21.5 h (0.896 d) when drill string twisted off in box of 181 mm drill collars.
5.	94-11-05:	lost 4.9 h when an extra GR-Sonic log was run to determine depth.
6.	94-11-09:	lost 104.5 h (4.354 d) when a roller was lost off of reamer.
7.	94-11-10:	lost 15.5 h (0.646 d) due to high winds.
8.	94-11-16:	lost 20.0 h (0.833 d) when drill pipe twisted off in jars.
9.	94-11-18:	lost 12.0 h (0.500 d) to trip for cracked cross-over (XO) sub in drill string.
10.	94-11-26:	lost 10.5 h (0.438 d) to run a magnet to recover pieces lost from replaceable wear pad (RWP) stabilizer.
11.	94-11-29:	lost 11.5 h (0.479 d) to trip for washout in 165 mm drill collar.
12.	94-12-03:	lost 78.0 h (3.250 d) after losing RWP pad in hole.
13.	94-12-09:	lost 14.0 h (0.583 d) due to high winds preventing a trip.
14.	94-12-12:	lost 12.5 h (0.521 d) due to high winds preventing a trip.
15.	94-12-22:	unable to airdrill due to disturbed zone just below casing. No lost time for this event.

ATTACHMENT 1-4.		Difficulties & Delays (2 of 2)
	<u>Date</u>	Description of Delay or Difficulty
16.	95-01-20:	lost 158.0 h (6.583 d) due to drilling break from 3457 to 3459 m. Mud weight increase due to high gas cut resulted in lost circulation. Penetration rate reduced from 31 m/d previous 30 days to 13 m/d during next 50 days due to lost circulation problems.
17.	95-01-28:	lost 144.0 h (6.000 d) for unscheduled logging run.
18.	95-02-03:	lost 48.0 h (2.000 d) to conduct a Diaseal M squeeze to 1426 kg/m ³ equivalent mud density.
19.	95-02-07:	lost 60.0 h (2.500 d) to spot lost circulation material (LCM) pill.
20.	95-02-12:	lost 120.0 h (5.000 d) due to lost circulation above 3759 m.
21.	95-02-13:	lost 19.5 h (0.813 d) due to high winds not allowing trip.
22.	95-02-22:	lost 96.0 h (4.000 d) due to lost circulation during drilling break from 3914 to 3917 m.
23.	95-02-28:	lost 120.0 h (5.000 d) to run third unscheduled log after drilling with losses at 4023 m.
24.	95-03-08:	lost 120.0 h (5.000 d) when hole broke down after attempting to unplug bit.

FINAL WELL REPORT

NHOC/PanCanadian Port au Port No. 1

2.00 DRILLING OPERATIONS

NEWFOUNDLAND HUNT OIL COMPANY INC.

JULY 1996

2.00 DRILLING OPERATIONS

A summary of the daily drilling operations is presented in Appendix I.

2.01 Elevation

Elevations presented are from "above mean sea level" for the following well markers:

natural ground level:

212.4 m

· casing head:

212.4 m

rig's rotary kelly bushing (RKB): 220.6 m

2.02 Total Depth

The following depths are measured from the RKB:

total drilled depth:

4698.8 m

total logged depth:

4694.8 m

plugged back depth:

3502.2 m

Spud Date 2.03

The well was spudded on 94-09-18 at 02 h 30 min.

Date Drilling Completed 2.04

The total depth was reached on 95-06-07 at 01 h 00 min.

Rig Release Date 2.05

The drilling rig was released on 95-08-01 at 24 h 00 min.

2.06 Well Status

The well was temporarily abandoned. The 73 mm production tubing was left in the hole with a FG plug set in the F nipple of the Guiberson Uni 6 packer at a depth of 3384 m; tubing displaced with 1.89 m³ of diesel to a depth of 2616.5 m; and with a bridge plug set in the tubing hanger at a depth of 0 m.

The details of the temporary abandonment are presented in Attachment 2-1 which is a copy of the Well Termination Record (WTR) dated 96-02-23 and Attachment 2-2 which is the well schematic "Configuration for Temporary Abandonment" which was the attachment to the WTR.

2.07 Hole Sizes & Depths

The following depths are measured from the RKB and hole sizes are OD of the drill bit.

hole section surface hole	hole size (mm) 444	<u>depth (m)</u> 495
• intermediate hole	311	2510
• section 4	216	4252
• section 5	165	4635
• section 6	156	4699

2.08 Bit Records

Attachment 2-3 presents the NHOC Bit Record for the well. Datalog's "Drilling/Engineering Report" and "Bottom Hole Assembly Report" are included as supplementary information in Appendix I.

The 444 mm hole was drilled 495 m with two (2) bits using air mist.

The 311 mm hole was drilled 2015 m with twenty-two (22) bits, one of which was rerun after drilling junk and cement. In addition, a total of seven (7) mills were run in two different sections of the hole. One (1) 216 mm and two (2) 171 mm bits were also run to drill a pilot hole in cement over junk inside casing.

The 216 mm hole was drilled 1711.8 m with twenty (20) bits, one of which was rerun after a change from air mist to a gel/polymer mud system, and one was run solely for conditioning the hole.

The 165 mm hole was drilled 382.8 m with twenty-four (24) bits, one rerun with a downhole motor, and three to drill out cement and a retainer. In addition one (1) mill was run on junk.

The 156 mm hole was drilled 64 m with five (5) bits.

2.09 <u>Casing & Cementing Record</u>

The following is a summary of the casing runs and cementing programs for this well. This information is also presented in the WTR (Attachment 2-1), the Well Schematic (Attachment 2-2), and in the Daily Drilling Report (Appendix I):

2.09 (continued)

Conductor:

Two (2) joints of 508 mm 12.65 kg/m X-56 PE B&W line pipe were driven to a depth of 25.6 m. Ready mix cement was circulated to surface.

Surface Casing:

Thirty-seven (37) joints of 339.7 mm 9.4 kg/m J-55 ST&C casing were run to a depth of 491.3 m. A Weatherford float collar inserted at 481.3 m, one (1) joint above Weatherford float shoe. Three (3) centralizers were installed: one each installed at 481.6 m, 468.2 m, and 454.5 m. No scratchers were installed. The casing washed to bottom and picked up about 0.3 m to circulate cement, circulated one hour with no returns to surface.

The initial cement job used 1296 sacks of OWG cement with 1% CaCl₂ in mixing water with a slurry volume and weight of 42.1 m³ at 1893 kg/m³ respectively. The initial interval cemented was from 495 m to a calculated top at 295 m. Due to a mechanical failure of the cement pumping equipment, this cement job was stopped. The initial cement job was both milled (due to junk in hole) and drilled out.

The remedial cement job for the surface casing used 600 sacks of Class "G" cement through the annulus between surface and conductor casing from top of initial cement job at 295 m to surface.

During drilling out of cement and milling for junk, a hole in the surface casing at 495 m was indicated by recovered pieces of casing metal in a junk basket. The remedial cement job consisted of 150 sacks of Class "G" cement with 1% CaCl. The top of cement was tagged at 443 m and drilled 1 m into formation below the shoe.

Intermediate Casing:

One hundred eighty-nine (189) joints of 244.5 mm 6.5 kg/m L-80 LT&C casing were run to a set depth of 2508.5 m. A Weatherford float collar was inserted at 2481.9 m, two (2) joints above Weatherford float shoe. Fifteen (15) centralizers were installed from 2502.4 to 2133.6 m covering 368.8 m. with one (1) centralizer was installed at the middle of the shoe joint, one (1) was installed at collar of shoe joint, twelve (12) were installed every other joint, and one (1) was installed 18.3 m below test. No scratchers were installed. Top of cement was confirmed by log at 2360 m.

The lead cement consisted of 1645 sacks of Class G cement blended with 12% gel, 0.03% D-65, and 0.4% D-81. The slurry volume was 42.1 m³ at 1893 kg/m³

Tail cement consisted of 180 sacks of Class G blended with 12% gel, 0.03%

2.09

D-65, 0.6% D-81 and 0.25% D-160. The slurry volume was 95.5 m³ at 1522 kg/m³. Tagged top of cement at 8134 ft and then drilled 2.5 m into formation. (continued)

Liner:

One hundred forty-eight (148) joints of 193.7 mm 5.4 kg/m T-95 HYDRIL SLX liner was run to a depth of 4195.3 m and hung off at 2359.5 m. The liner was cemented through the shoe with 468 sacks of HI-LITE 1300 with 0.3% D-59, 0.4% D-65, 0.1% D-136, 0.3% D-800 and 0.2% D-46 additives at 1330 kg/m³ with partial cement returns to surface.

A cement bond log was run and determined the top of cement at 3730 m. A perforating control log was then run to confirm top of liner at 2360 m. A tubing gun was run and the liner was perforated 3576 m with 4 SPF. An Elder retainer was run and set at 3560 m. Drill pipe with a stinger was then run into the hole and stung into the retainer to pump cement.

The lead cement was 750 sacks of class "G" with 8% gel 0.2% D-13 at 1582 kg/m³. The tail cement was 150 sacks of class "G" with 0.7% D-160 0.45% D-13 0.74 g/s D-13 at 1582 kg/m³ pumped at 0.4 m³/min at 600 psi with full returns.

A cement bond log was run to 3556 mt. An injection rate into the top of the liner was established at 0.2 m3/min with 19 995 kPa. The top of liner was cemented with 100 sacks of class "G" cement with 0.35% D-160 and 0.23% D-13 at 1893 kg/m³ with a max pump pressure of 20 684 kPa at 0.2 m³/min. Top of cement was tagged at 2345 m and drilled to 2358 m where the liner lap was tested to 19 995 kPa for 0.5 hour. Cement was then tagged at 3548 m and drilled to 3560 m to drill through the retainer, then drilled cement from 3561 to 3577 m. Perforations behind cement were then tested to 13 790 kPa for 0.5 hour. Then drilled cement to landing collar at 4167 m, pressure tested landing collar to 13 790 kPa for 0.5 hours. Cement was drilled to 4186 m.

The formation was then perforated in four separate zones and stimulated for production tests from 3951 to 3459 m. These zones were subsequently cement squeezed, drilled out and pressure tested for integrity. The shoe at 4199 ft was drilled out and pressure tested to 1450 kg/m³ equivalent mud weight for 0.5 hour. After drilling a 165 mm/ 155 mm hole to a depth of 4699 m a cement plug was set in the liner from 4069 to 4142 m consisting of 50 sacks of G cement w/0.55% D-13 additives. A gauge ring was run to 3516 m followed with a bridge plug set to the PBTD from 3505 m.

Production Tubing:

One hundred five (105) joints of 73 mm 1.1 kg/m L-80 BTS tubing were run to a depth of 1012.5 m and above two hundred forty-seven (247) joints of 73 mm 0.9 kg/m L-80 BTS tubing were run to a depth of 3384.2 m and set in a

Guiberson UNI-6 with type XL on-off tool with an "F" profile. 102 m³ of m packer fluid with 28% HCL were displaced with 10 m³ of packer fluid. The packer was set at 3384 m and tubing hung on packer with 9072 kg.

2.10 Sidetracked Hole

Not applicable. There were no sidetracks during the drilling of this well.

2.11 Drilling Fluid

The Drilling Fluids Hydraulics and Fluids Recaps prepared by MI Drilling Fluids are located in Appendix I. The recap summarizes the products used and the mud properties maintained daily for each section of the well drilled with a mud system.

A product summary for each well section is presented as Attachment 2-4. M-I Bar (barite) was used for weight control. M-I GeI and XCD were used as viscosifiers. Fluid loss was controlled with Drispac. Products used for Lost Control Material (LCM) included Diaseal M, FLAKE, Kwik Seal M, LoLoss, Magco Mica, PLUG Med and Sawdust. PH and Contamination control products included Acetic Acid, Caustic Soda, Lime, Soda Ash and Sodium BiCarbonate. Thinners included LIG and SPERSENE CF. Specialty products used included Alcomer 120 L, BABCBAN II, CONQOR 404, Defoam-X, OSIL and POLY PLUS.

The conductor and surface hole were drilled with an air mist system to a depth of 469 m. The 311 mm hole was mudded up to assist in the milling of cemented and parted surface casing. On completion of milling, the well was air drilled to a depth of 1139 m when the hole was displaced to mud to maintain hole stability and drilled to 2510 m. The intermediate casing was then run and cemented.

The 216 mm hole was initially air drilled from the casing seat, but hole instability required the hole to be displaced to mud. The remainder of the well was drilled with a water based gel/polymer mud system.

Lost circulation occurred during drilling of the Aguathuna pay zone from 3459 to 3476 m. A total of 358 m³ of mud were lost before control was obtained using LCM and reduced mud weight. A major lost circulation zone was also encountered during the drilling of the Watts Bight formation from 3916 to 3951 m. A total of 867 m³ of mud was lost in this zone. LCM and reduced mud weight were also used to control the fluid loss.

2.12 Fluid Disposal

The production tubing was displaced with 1.89 m³ of diesel fluid, a FG plug

was run and set in F nipple at 3385.4 m. The tubing was pressure tested to 10 342 kPa for 1 hour. Tubing was then bled to zero pressure and a oneway BP valve was installed and well capped.

A total of 418 m³ of reserve pit mud was pumped down the annulus between the tubing and intermediate casing.

2.13 Fishing Operations

The following is a summary of the fishing operations per IADC coding conducted during the drilling of this well.

- Ran in hole with magnet to 495 m and recovered allen 94-09-29 head screw and pieces of metal. 01 hr 30 min.
- Twisted off second 181 mm drill collar from the top while air 94-11-04 drilling the 311 mm hole. Top of fish of 84.2 m in length was located at a depth of 1617 m. The fish was engaged with fishing tools and recovered to the drill floor. 3 hr 00 min.
- Lost roller pin and block of 3-point reamer. Ran in hole 94-11-09 twice with magnet to 1842 m. Then ran in hole with mills (five trips) and milled junk in hole. 40 hr 30 min.
- Drilling at 1919 m when drill pipe torqued and lost 11 340 94-11-16 kg and 6895 kPa. Down jar parted at body and left 1.5 m of body and remainder of bottom hole assembly in hole. Up jar cracked in same place. Ran 298 mm overshot with 229 mm grapple. Recovered fish to drill floor. 1 hr 00 min.
- 94-11-26 Lost two pieces from RWB in hole after survey at 7053 m. Ran in hole with magnet and junk basket and recovered junk to the drill floor. 1 hr 00 min.

2.14 Well Kicks

There were no significant kicks during the drilling of this well. There were several incidents during drilling from 11421 to 12333 ft when small volumes gas cut mud flowed for short periods of time (less than 9 m³ total). These were all controlled using a combination of lost circulation materials and increasing mud weight.

2.15 Formation Leak-Off Tests

The following pressure tests were conducted below the referenced casing seats before drilling ahead:

- 1. <u>94-10-07:</u> Performed 30 min leakoff test to 2413 kPa after drilling formation from 496 to 497 m. Previously drilling cement from 482 to 496 m inside surface casing.
- 2. 94-12-20: Performed 30 min leakoff test to 15 969 kPa with 1522 kg/m3 mud after drilling formation from 2510 to 2513 m. This was an equivalent mud weight of 1090 kg/m3. Previously drilling cement from 2479 to 2510 m inside intermediate casing.
- 3. 94-03-30: Tested the liner landing collar to 13 790 kPa for 0.5 hours.
- 4. 94-05-06: Tested the shoe to 1450 kg/m³ equivalent mud weight at 4255 m.

There were several cement squeeze jobs related to closing off perforations after formation flow tests. All squeeze jobs were pressure tested to ensure wellbore integrity.

2.16 Time Distribution

Attachment 2-5 presents the time distribution by hours and percent for each phase of the well per IADC Daily Drilling Reports. This information was prepared by Roland Strickland, Wellsite Geologist and summarized below:

- 444 mm Phase: 0 to 495 m:
 - A total of 408 hours with 36% for drilling, 21% for tripping, 11% reaming, and 32% (in descending order) for nipple up BOP, other, circulate & condition mud, wait on cement, test BOP, deviation survey, lubricate rig, wireline logging, run casing & cement, fishing, and cut & slip drill line.
- 311 mm Phase: 495 to 2510 m.:
 A total of 1728 hours with 59% for drilling, 29% for tripping, and 12% (in descending order) for circulate & condition mud, fishing, other, test BOP, lubricate rig, wireline logging, run casing & cement, repair rig, deviation survey, reaming, nipple up BOP, cut & slip drill line, and wait on cement.

216 mm Phase: 2510 to 4252 m.:

A total of 1364.5 hours with 39% for drilling, 25% for tripping, and 41% (in descending order) for wireline logging, coring, circulate & condition mud, nipple up BOP, run casing & cement, reaming, test BOP, repair rig, other. deviation survey, cut & slip drill line, lubricate rig, and wait on cement.

165 mm Phase: 4252 to 4699 m:

A total of 792 hours with 47% for drilling, 41% for tripping, and 12% (in descending order) for reaming, wireline logging, lubricate rig, circulate & condition mud, wait on cement, other, test BOP, deviation survey, drill stem test, rig repair, run casing & cement, squeeze cement, and cut & slip drill line.

2.17 **Deviation Plot**

Four deviation surveys were conducted by Schlumberger. The final survey was logged on 95-06-07 and determined the bottom hole location was 74.63 m north and 2.06 m west of the tie-in location at the surface casing seat. The hole was vertically deviated 0.2° with an azimuth of 190° at the tiein point and the surface coordinates were assumed to be the same. The exact radius of curvature method was used to calculate the bottom hole location.

The bottom hole coordinates are:

Northing 5,372,930.63 m Easting 335,488.25 m

Attachment 2-6 presents a plan view and four vertical views (south - north, southwest - northeast, west - east, and northwest - southeast) showing the location of the well bore with respect to the tie-in point and wellhead. A copy of the final survey log is located in Appendix IV.

2.18 Abandonment/Suspension Plugs

Attachment 2-1, the Well Termination Record (WTR) provides the details for plugs set in the temporary abandonment of the well. These were as follows:

- · A cement plug of 50 sacks of Class 'G' cement with 55% D-13 additive was set from 4142 to 4211 m (69 m) and tagged with drillpipe to confirm top.
- A bridge plug was set at 3505 m and tested to 1700 psi.

- Tubing was left in the hole with a packer set at 3384 m. A FWG plug was set in the F nipple at 3385 m and tested to 1500 psi. Pressure was bled off and tested for negative flow.
- A bridge plug was set in the tubing hanger at the surface (0 m).

2.19 Well Schematic

The wellbore schematic, "Configuration for Temporary Abandonment", was submitted as part of the WTR and is Attachment 2-2.

2.20 Fluid Samples

Four drill stem production tests were conducted. The fluid samples collected are summarized in Attachment 2-7 and in the following table:

		NU	MBER OF S	AMPLES	
DST 1	ZONE Watts Bight Member	OIL -	COND -	GAS -	WATER 2
2	Aquathuna Member	- -		-	2
3	Table Point - Spring Inlet Member	-	12	6	5
4	Table Point - Upper Interval	16	-	2	7

A total of 1491 m³ of oil were produced from the above tests.

2.21 Composite Well Record

Not applicable. A composite well record was not required.

ATTACHMENT 2-1: Well Termination Record



WELL TERMINATION RECORD

WELL DATA				
Well Name: Port au Port #1 (NHOC PCP)	CO-ORDINATES			
Operator: Newfoundland Hunt Oil Co.		UTM		
Drilling Rig: 0W842	Long: Lat:	Northing:5,372,856.00 Ranting:335,490.317		
RigType: Oil Well 842	ELEVATION	DEFTE		
Drilling Contractor: Noble	RT/KE/RF: 8.23M	TD: 4698.8M TVD: 4698.8M		
	POR N	ONR USE ONLY		
Send Date: 9-19-94 TD Date: 6-7-95 Big Rainnes Date: 8-1-95 Web Termination Date: 8-1-95	Per the purpose of interpretated of Laborator Politicisms Drilling Management on him: Aug /s	erises 160 of the Notriconstand and pussions (1903), the styrotoma date is - 1995		

CASING AND CEMENTING PROGRAM SETTING DEPTH (m) (Kr/m) a.o. CEMENTING DETAILS GRADE Ready mix circulated 158.63 24.38 508 X52 101.29 495 13005X G + 1% CaC/-339.7 J55 16455X 1:12 G; 1805X 1:0 G L-80 2508.5 244.5 70.01 4196 4005X_G 7-95

Approval of the following program was obtained by (pursus)

From (person)

FAX (709) 729-2325

August 10, 1995

Type of Play	Interval	Felt/Pressure Tested	Coment and Additives
Cement	4142-4211.		50SX G w/.55% D-13
Bridge Plug	3505	1700 PS1	
FWG Tubing Pluc	3385	1500 PSI	
Back Pressure	Tree		
			<u> </u>

Described:

3467-4122

Described:

Guiberson Uni 6 9 3384, 73 MM 9.67 Kg/m L80 RT6 6 3384-1012, 73mm 11.74 Kg/m

L-80.BTS-6.1012-0. R. nipple. 8. 3399. F. nipple 9 3389, Flught F. hipple 1 3385.

Back Pressure valve in tree.

(Described Amediand) Displaced tubing with diesel and ran a FWG plug and set in

F. nipple. at 3385m. Tested Rlug to 1500 PS1 ok. Bled off pressure and did

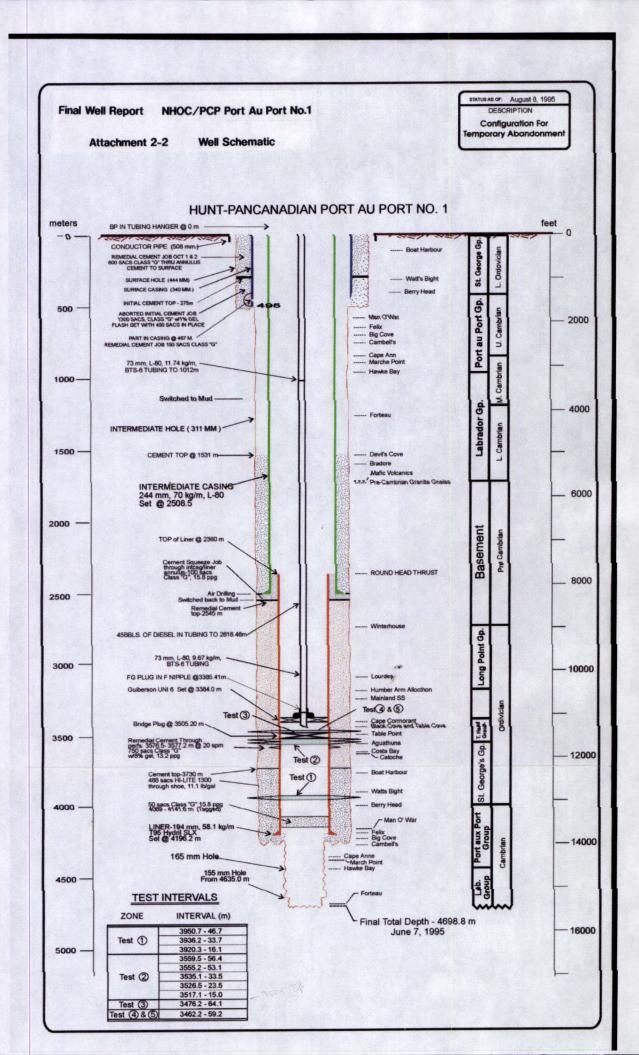
negative flow rest OK, installed a RP valve in the tubing hange. Chained

the master valves closed. Fenced off the wellhead and the entrance to the

location.

DECLARATION

location.	DECLARATION	
Sirred Selection in Comments of the Comments and	mentations of personal invested of operations of	identalism at the ab
Operator's Itapresentative Name C.R. Weaver	February 23. 1996	
2 / A	CKNOWLEDGEMENT	•



ATTACHMENT 2-3: Bit Record (1 of 3)

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ATTACHMENT 2-3: Bit Record (2 of 3)

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ATTACHMENT 2-3: Bit Record (3 of 3)

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ATTACHMENT 2-4: Mud Recap (1 of 4)

M-I DRILLING FLUIDS PRODUCT SUMMARY

Operator: HUNT OIL CO.

Contractor: NOBLE OW-842

Description: EAST COAST CANADA

Well Name: PORT AU PORT #1 Field/Area: NEWFOUNDLAND

Location:

UMMARY OF PRODUCT USAGE FOR INTERVAL FROM 09/29/94 - 06/13/95, 1539 - 15416 ft

WATER-BASE PROD	SIZE	AMOUNT
Acetic Acid	10	45
Alcomer 120 L	5G CAN	5
BACBAN II	5G CAN	23
CONQOR 404	55G DRM	. 4
Caustic Soda	50# SK	349
Caustic Soda	55# SK	102
Defoam-X	5G CAN	28
Diaseal M	40# SK	1530
Drispac	50# SK	239
Engineer Charge	10	268
FLAKE	25# SK	75
Kwik Seal M	40# SK	1408
LIG	50# SK	413
Lime	50# SK	28
LoLoss	50KG SK	1620
M-I BAR	80# SK	22654
M-I GEL	80# SK	3456
Magco Mica	50# SK	205
Misc. Charges	5G CAN	21
OSIL		247.5
PLUG Med	50# SK	608
POLY PLUS	50# SK	387
SPERSENE CF	50# SK	185
Sawdust	25# SK	375
Soda Ash	80# SK	230
Sodium Bicarb	50# SK	93
Sodium Bicarb	100# SK	30
XCD	55# SK	392

M-I Drilling Fluids LI DRILLING FLUIDS DATA MANAGEMENT SY

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ATTACHMENT 2-4: Mud Recap (2 of 4)

M-I DRILLING FLUIDS PRODUCT SUMMARY

Operator: HUNT OIL CO.

Contractor: NOBLE OW-842

Description: EAST COAST CANADA

Well Name: PORT AU PORT #1

Field/Area: NEWFOUNDLAND

Location:

SUMMARY OF PRODUCT USAGE FOR INTERVAL FROM 09/29/94 - 10/06/94, 1539 - 1624 ft

WATER-BASE PROD	SIZE	AMOUNT
Defoam-X	5G CAN	1
Engineer Charge	16	5
Kwik Seal M	40# SK	30
M-I GEL	80# SK	267
Sawdust	25# SK	25
Soda Ash	80# SK	26

UMMARY OF PRODUCT USAGE FOR INTERVAL FROM 10/12/94 - 12/17/94, 3490 - 8230 ft

WATER-BASE PROD	SIZE	AMOUNT
Acetic Acid	10	6
Alcomer 120 L	5G CAN	5
Caustic Soda	50# SK	140
Drispac	50# SK	84
Engineer Charge	10	67
Kwik Seal M	40# SK	. 8
LIG	50# SK	58
M-I BAR	80# SK	1521
M-I GEL	80# SK	1331
POLY PLUS	50# SK	47
SPERSENE CF	50# SK	16
Sawdust	25# SK	70
Soda Ash	80# SK	69
Sodium Bicarb	50# SK	3
XCD	55# SK	8

M-I Drilling Fluids L.I DRILLING FLUIDS DATA MANAGEMENT SY

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ATTACHMENT 2-4: Mud Recap (3 of 4)

M-I DRILLING FLUIDS PRODUCT SUMMARY

Operator: HUNT OIL CO.

Contractor: NOBLE OW-842

Description: EAST COAST CANADA

Well Name: PORT AU PORT #1

Field/Area: NEWFOUNDLAND

Location:

UMMARY OF PRODUCT USAGE FOR INTERVAL FROM 12/22/94 - 03/30/95, 8351 - 13950 ft

WATER-BASE PROD	SIZE	THUOMA
BACBAN II	5G CAN	14
Caustic Soda	50# SK	200
Caustic Soda	55# SK	89
Defoam-X	5G CAN	23
Diaseal M	40# SK	1530
Drispac	50# SK	135
Engineer Charge	10	120
FLAKE	25# SK	75
Kwik Seal M	40# SK	1370
LIG	50# SK	9 8
Lime	50# SK	28
LoLoss	50KG SK	1620
M-I BAR	80# SK	15736
M-I GEL	80# SK	1578
Magco Mica	50# SK	205
PLUG Med	50# SK	608
POLY PLUS	50# SK	321
SPERSENE CF	50# SK	60
Sawdust	25# SK	280
Soda Ash	80# SK	48
Sodium Bicarb	50# SK	33
XCD	55# SK	232

M-I Drilling Fluids L.I DRILLING FLUIDS DATA MANAGEMENT SY

P0001

ATTACHMENT 2-4: Mud Recap (4 of 4)

M-I DRILLING FLUIDS PRODUCT SUMMARY

Operator: HUNT OIL CO.

Contractor: NOBLE OW-842

Description: EAST COAST CANADA

Well Name: PORT AU PORT #1

Field/Area: NEWFOUNDLAND

Location:

IMMARY OF PRODUCT USAGE FOR INTERVAL FROM 05/06/95 - 06/07/95, 14033 - 15416 ft

WATER-BASE PROD	SIZE	AMOUNT
BACBAN II	5G CAN	3
Caustic Soda	50# SK	2
Caustic Soda	55# SK	13
Drispac	50# SK	20
Engineer Charge	1@	33
LIG	50# SK	2
M-I BAR	80# SK	2289
M-I GEL	80# SK	93
POLY PLUS	50# SK	14
SPERSENE CF	50# SK	7
Soda Ash	80# SK	36
хср	55# SK	39

IMMARY OF PRODUCT USAGE FOR INTERVAL FROM 06/08/95 - 06/13/95, 15416 - 15416 ft

WATER-BASE PROD	SIZE	AMOUNT
BACBAN II	√5G CAN	3
CONQOR 404	55G DRM	. 4
Engineer Charge	10	6
OSIL		247.5
POLY PLUS	50# SK	4
XCD	55# SK	2

M-I Drilling Fluids L.I DRILLING FLUIDS DATA MANAGEMENT SY

P0001

ATTACHMENT 2-5: Time Distribution (1 of 2) 17 1/2" phase. (0 ft - 1624 ft)

From 00:00 hrs on September 18, 1994, up to 00:00 hours October 08,1994.

Code	Time	Percentage
1. Rig up and tear down 2. Drilling 3. Reaming 4. Coring 5. Circulate/condition mud 6. Tripping 7. Lubricate rig 8. Repair rig 9. Cut & slip drill line 10. Deviation survey 11. Wireline logging 12. Run casing and cement 13. Wait on cement 14. Nipple up BOP 15. Test BOP 16. Drill Stem Test 17. Plug back 18. Squeeze cement 19. Fishing 20. Directional Work 21. Others		
	408.00 hrs	100.00 %

12 1/4" phase (1624 - 8236 ft)

From 00:00 hrs on October 08, 1994, up to 04:00 hrs on December 14, 1994.

Code	Time	Percentage	
1. Rig up and tear down 2. Drilling 3. Reaming 4. Coring 5. Circulate/condition mud 6. Tripping 7. Lubricate rig 8. Repair rig 9. Cut & slip drill line 10. Deviation survey 11. Wireline logging 12. Run casing and cement 13. Wait on cement 14. Nipple up BOP 15. Test BOP 16. Drill Stem Test 17. Plug back 18. Squeeze cement 19. Fishing 20. Directional Work 21. Others		% 59.12 % 01.22 % % 02.89 % 20.78 % 01.81 % 01.40 % 00.49 % 01.30 % 01.75 % 01.45 % 00.20 % 01.16 % 01.97 % % % 02.45 % 02.01 %	
	1728.00 hrs	100.00 %	

ATTACHMENT 2-5: Time Distribution (2 of 2)

8 1/2 phase (8236 -13,950 ft)

From 00:04 hrs on December 14,1994, up to 24:00 hrs on March 28, 1995.

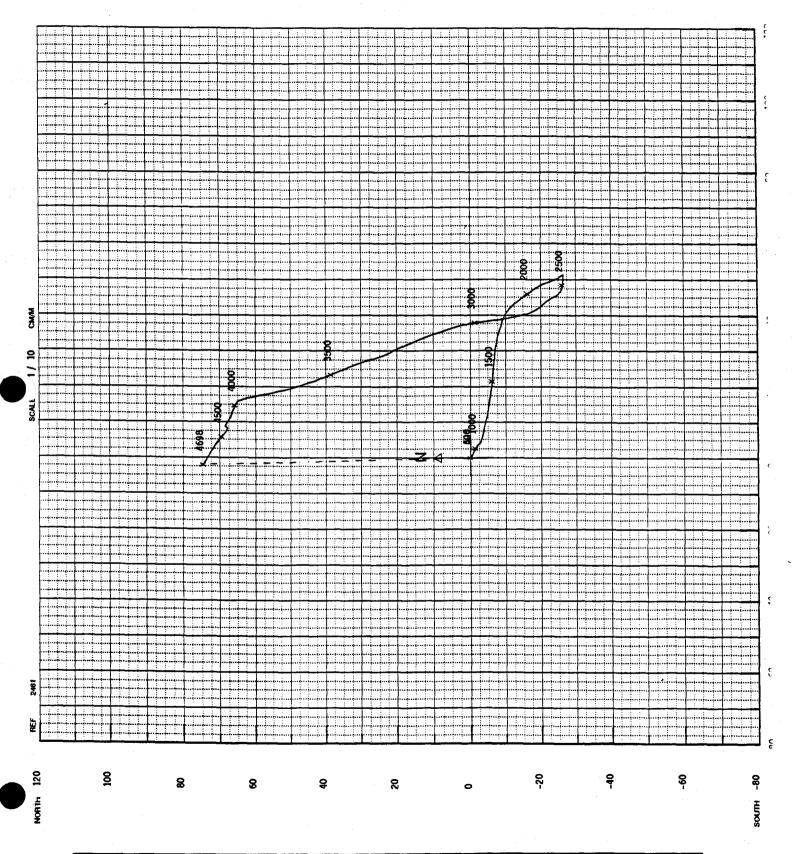
Code	<u>Time</u>	Percentage	
1. Rig up and tear down 2. Drilling 3. Reaming 4. Coring 5. Circulate/condition mud 6. Tripping 7. Lubricate rig 8. Repair rig 9. Cut & slip drill line 10. Deviation survey 11. Wireline logging 12. Run casing and cement 13. Wait on cement 14. Nipple up BOP 15. Test BOP 16. Drill Stem Test 17. Plug back 18. Squeeze cement 19. Fishing 20. Directional Work 21. Others	hrs 533.75 hrs 45.75 hrs 69.75 hrs 62.75 hrs 333.00 hrs 05.25 hrs 30.75 hrs 07.50 hrs 21.25 hrs 86.50 hrs 52.50 hrs 62.50 hrs 62.50 hrs 62.50 hrs hrs hrs hrs hrs hrs hrs hrs hrs		
	1364.50 hrs	100.00 %	

6 1/2 phase (13,950 ft - 15,418 ft)

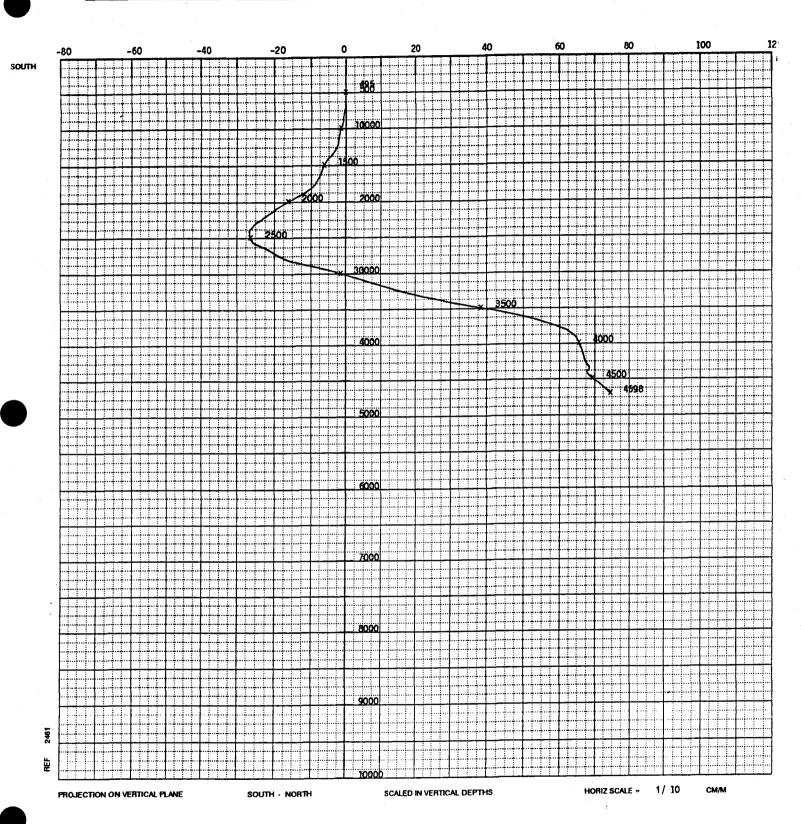
From 00:00 hrs on May 05, 1995 up to 24:00 hrs on June 06,1995.

Cod	e	Time		Percer	<u>itage</u>
6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	Rig up and tear down Drilling Reaming Coring Circulate/condition mud Tripping Lubricate rig Rig repair Cut & slip drill line Deviation survey Wireline logging Run casing and cement Wait on cement Nipple up BOP Test BOP Drill Stem Test Plug back Squeeze cement Fishing Directional Work Others	372.00 35.00 8.50 327.50 11.50 2.00 1.00 2.50 25.50 1.50 6.00 5.00 2.00 6.00	hrs	47.10 04.30 	***************************************
		792.00	hrs	100.00	ક

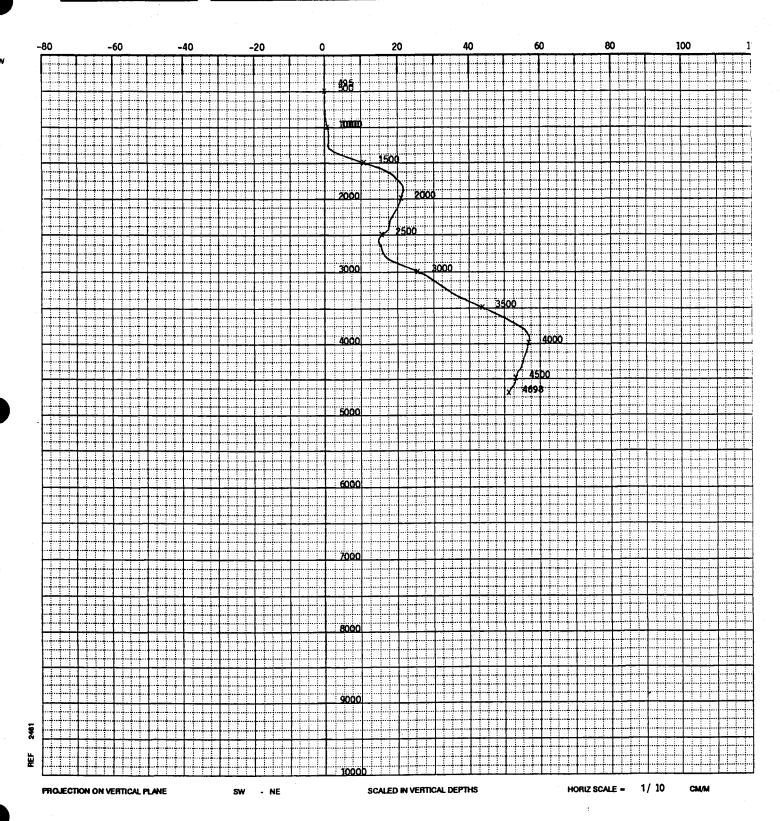
ATTACHMENT 2-6: Deviation Plot - Plan View (1 of 5)



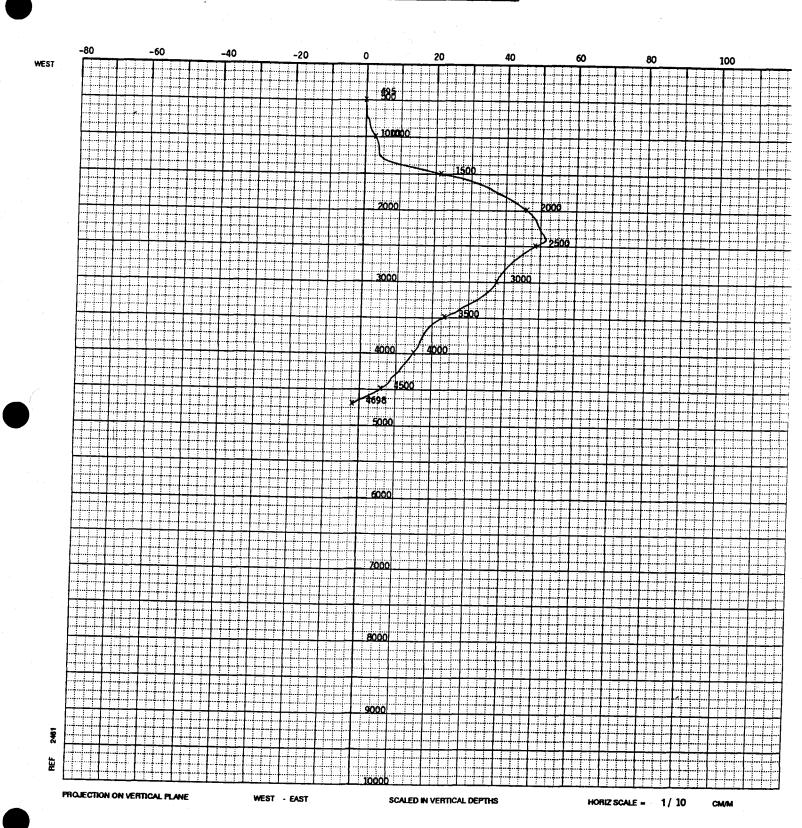
ATTACHMENT 2-6: Deviation Plot - Profile View (2 of 5)



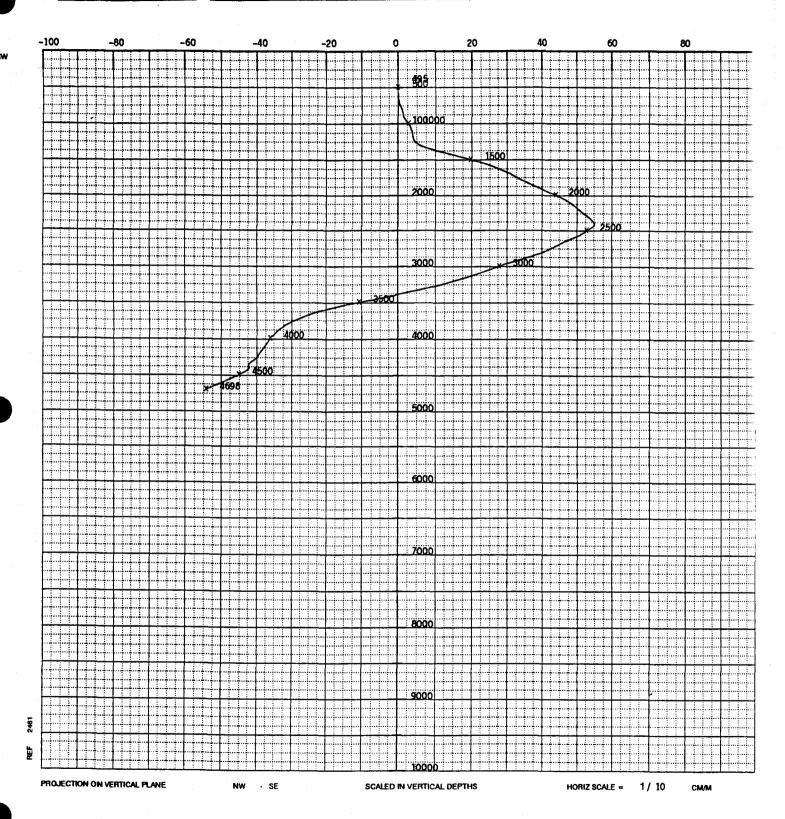
ATTACHMENT 2-6: Deviation Plot - Profile View (3 of 5)



ATTACHMENT 2-6: Deviation Plot - Profile View (4 of 5)



ATTACHMENT 2-6: Deviation Plot - Profile View (5 of 5)



ATTACHMENT 2-7: Fluid Samples (1 of 5)

DST #1: Watts Bight Member

95-04-14

Sample 1-1: Water collected from choke manifold at 0 psi in 1 L plastic

container. Sent to Core Lab.

Sample 1-2: Water collected from choke manifold at 0 psi in 1 L plastic

container. Sent to Core Lab.

DST #2: Aquathuna Member

95-04-14

Sample 2-1: Water collected from choke manifold at 0 psi in 1 L plastic

container. Sent to Core Lab.

Sample 2-2: Water collected from choke manifold at 0 psi in 1 L plastic

container. Sent to Core Lab.

DST #3: Table Point Zone - Springs Inlet Member

95-04-14

Sample 3-1: Gas collected at 10 h 00 min from separator m.r. at 70 psi,

10°C in 500 cm3 stainless steel container (V 390). Sent to

Core Lab.

Sample 3-2: Gas collected at 10 h 00 min from separator m.r. at 70 psi,

9°C in 500 cm3 stainless steel container (V 3688). Sent to

Core Lab.

Sample 3-3: Gas collected at 21 h 45 min from separator m.r. at 205 psi,

9°C in 500 cm³ stainless steel container (V 3255). Sent to

Core Lab.

Sample 3-4: Gas collected at 21 h 45 min from separator m.r. at 205 psi,

9°C in 500 cm3 stainless steel container (V 2998). Sent to

Core Lab.

Sample 3-5: Condensate collected at 21 h 45 min from separator s.g. at

205 psi, 9°C in 500 cm³ stainless steel container (V 2580).

Sent to Core Lab. Sample water contaminated.

ATTACHMENT 2-7: Fluid Samples (2 of 5)

- Sample 3-6: Condensate collected at 21 h 45 min from separator s.g. at 205 psi, 9°C in 500 cm³ stainless steel container (V 2940). Sent to Core Lab. Sample water contaminated.
- Sample 3-7: Condensate collected at 21 h 45 min from separator s.g. at 205 psi, 9°C in 500 cm³ stainless steel container (V 2036). Sent to Core Lab. Sample water contaminated.
- Sample 3-8: Condensate collected at 21 h 45 min from separator s.g. at 205 psi, 9°C in 500 cm³ stainless steel container (V 462). Sent to Core Lab. Sample water contaminated.
- Sample 3-9: Water collected at 21 h 45 min from choke manifold at 0 psi in 1 L plastic container. Sent to Core Lab.
- Sample 3-10: Water collected at 21 h 45 min from choke manifold at 0 psi in 1 L plastic container. Sent to Core Lab.
- Sample 3-11: Condensate collected at 21 h 45 min from choke manifold at 0 psi in 1 L plastic container. Sent to Core Lab.

95-04-15

- Sample 3-12: Gas collected at 12 h 40 min from separator m.r. at 200 psi, 9°C in 500 cm³ stainless steel container (V 5205). Sent to Core Lab.
- Sample 3-13: Gas collected at 12 h 40 min from separator m.r. at 200 psi, 9°C in 500 cm³ stainless steel container (V 071). Sent to Core Lab.
- Sample 3-14: Condensate collected at 12 h 40 min from separator s.g. at 200 psi, 9°C in 500 cm³ stainless steel container (20220). Sent to Core Lab. Sample water contaminated.
- Sample 3-15: Condensate collected at 12 h 40 min from separator s.g. at 200 psi, 9°C in 500 cm³ stainless steel container (12904). Sent to Core Lab. Sample water contaminated.

ATTACHMENT 2-7: Fluid Samples (3 of 5)

- Sample 3-16: Condensate collected at 12 h 40 min from separator s.g. at 200 psi, 9°C in 500 cm³ stainless steel container (19379). Sent to Core Lab. Sample water contaminated.
- Sample 3-17: Condensate collected at 12 h 40 min from separator s.g. at 200 psi, 9°C in 500 cm³ stainless steel container (12196). Sent to Core Lab. Sample water contaminated.
- Sample 3-18: Condensate collected at 12 h 40 min from separator at 0 psi in 1 L plastic container. Sent to Core Lab.
- Sample 3-19: Water collected at 12 h 40 min from choke manifold at 0 psi in 1 L plastic container. Sent to Core Lab.
- Sample 3-20: Water collected at 12 h 40 min from choke manifold at 0 psi in 1 L plastic container. Sent to Newfoundland Government.
- Sample 3-21: Condensate collected at 12 h 40 min from choke manifold at 0 psi in 1 L plastic container. Sent to Newfoundland Government.
- Sample 3-22: Water collected at 12 h 40 min from choke manifold at 0 psi in 1 L plastic container. Sent to Canadian Government.
- Sample 3-23: Condensate collected at 12 h 40 min from choke manifold at 0 psi in 1 L plastic container. Sent to Canadian Government.

DST #4 - April 20, 1995: Table Point Zone (Upper Interval)

- Sample 4-1: Water collected at 09 h 20 min from stock tank #1 at 0 psi 1 L plastic container. Sent to Core Lab.
- Sample 4-2: Water collected at 11 h 00 min from separator at 0 psi 1 L plastic container. Sent to Core Lab.
- Sample 4-3: Water collected at 11 h 00 min from separator at 0 psi 1 L plastic container. Sent to Core Lab.
- Sample 4-4: Water collected at 11 h 00 min from separator at 0 psi 1 L plastic container. Sent to Newfoundland Government.

ATTACHMENT 2-7: Fluid Samples (4 of 5)

- Sample 4-5: Water collected at 11 h 00 min from separator at 0 psi 1 L plastic container. Sent to Newfoundland Government.
- Sample 4-6: Water collected at 11 h 00 min from separator at 0 psi 1 L plastic container. Sent to Canadian Government.
- Sample 4-7: Water collected at 11 h 00 min from separator at 0 psi 1 L plastic container. Sent to Canadian Government.
- Sample 4-8: Oil collected at 11 h 00 min from choke manifold at 0 psi 1 L plastic container. Sent to Core Lab. Sample was heated.
- Sample 4-9: Oil collected at 11 h 00 min from choke manifold at 0 psi 1 L plastic container. Sent to Core Lab. Sample was heated.
- Sample 4-10: Oil collected at 11 h 00 min from choke manifold at 0 psi 1 L plastic container. Sent to Core Lab. Sample was heated.
- Sample 4-11: Oil collected at 1 11 h 00 min from choke manifold at 0 psi 1 L plastic container. Sent to Core Lab. Sample was heated.
- Sample 4-12: Gas collected at 11 h 45 min from separator m.r. at 204 psi, 7°C in 500 cm³ stainless steel container (2403). Sent to Core Lab. Sample was heated.
- Sample 4-13: Gas collected at 11 h 45 min from separator m.r. at 204 psi, 7°C in 500 cm³ stainless steel container (2 34). Sent to Core Lab. Sample was heated.
- Sample 4-14: Oil collected at 11 h 45 min from separator s.g. at 204 psi, 7°C in 500 cm³ stainless steel container (V 1868). Sent to Core Lab.
- Sample 4-15: Oil collected at 11 h 45 min from separator s.g. at 204 psi, 7°C in 500 cm³ stainless steel container (V 2577). Sent to Core Lab.
- Sample 4-16: Oil collected at 11 h 45 min from separator s.g. at 204 psi, 7°C in 500 cm³ stainless steel container (V 6879). Sent to Core Lab.

ATTACHMENT 2-7: Fluid Samples (5 of 5)

- Sample 4-17: Oil collected at 11 h 45 min from separator s.g. at 204 psi, 7°C in 500 cm³ stainless steel container (V 3340). Sent to Core Lab.
- Sample 4-18: Oil collected at 11 h 45 min from separator s.g. at 204 psi, 7°C in 500 cm³ stainless steel container (V 5728). Sent to Core Lab.
- Sample 4-19: Oil collected at 1 11 h 45 min from separator s.g. at 204 psi, 7°C in 500 cm³ stainless steel container (V 5941). Sent to Core Lab.
- Sample 4-20: Oil collected at 11 h 45 min from separator at 0 psi in zolitac act. container. Sent to Core Lab.
- Sample 4-21: Oil collected at 11 h 45 min from separator at 0 psi in zolitac act, container. Sent to Core Lab.
- Sample 4-22: Oil collected at 11 h 45 min from separator at 0 psi in zolitac act. container. Sent to Core Lab.
- Sample 4-23: Oil collected at 11 h 45 min from separator at 0 psi in zolitac act, container. Sent to Core Lab.
- Sample 4-24: Oil collected at 11 h 45 min from separator at 0 psi in zolitac act, container, Sent to Newfoundland Government.
- Sample 4-25: Oil collected at 11 h 45 min from separator at 0 psi in zolitac act. container. Sent to Canadian Government.

FINAL WELL REPORT

NHOC/PanCanadian Port au Port No. 1

3.00 GEOLOGY

NEWFOUNDLAND HUNT OIL COMPANY INC.

JULY 1996

3.00 GEOLOGY

3.01 <u>Drill Cuttings</u>

Drill cuttings were collected by Datalog as part of the mudlogging program which also included providing field gas chromatography, sample description, lithology, ROP & WOB, and PVT equipment.

Two (2) bags and two (2) vial samples were collected every 5 m starting at 35 m to TD at 4698.9 m.

One (1) plastic lined bag for paleontological samples was collected every five m from to TD. These samples were shipped to the attention of Dr. Henry Williams & Dr. Elliott Burden, Department of Earth Science, Alexander Murray Building, Memorial University, St. John's, Newfoundland A1B 3X5.

A one (1) L plastic container for source rock samples was collected every 10 m from 35 m to TD. These samples were shipped to the attention of Dr. Martin Fowler, Institute of Sedimentary and Petroleum Geology, The Geological Survey of Canada, 3303 - 33rd Street N.W., Calgary, Alberta T2L 2A7.

3.02 <u>Cores</u>

Not Applicable. There were no conventional cores or sidewall cores taken during the drilling of this well.

3.03 Lithology

Lithographic description of the well was provided by Roland Strickland, Wellsite Geologist, and is presented in Appendix II. Attachment 3-1 presents a summary of the formation tops encountered including dip angle direction.

3.04 Stratigraphic Column

The final stratigraphic column is presented in Attachment 3-2. Information is plotted against a vertical depth scale in feet and meters and includes the formation name with top elevation and special comments related to drilling and location of fault thrusts, drilling thickness and true thickness, dominant lithology of section, formation group, and age. The casing seats for each string of casing are also presented.

3.05 <u>Biostratigraphic Data</u>

Attachment 3-2 presents biostratigraphic data along the left side of the chart with the location of grapholites, palynomorphs and conodonts; and CAI/TAI value ranges with reference to lithostratigraphic picks in the well.

ATTACHMENT 3-1: Formation Log Tops (1 of 3)

LOG TOPS	T	<u> </u>	·	 		
103 1073	 					
FORMATION						
FORMATION	THICK-	THICK -		DIP ANGLE		
	NESS	NESS	TOP	DIRECTION		
	-					<u> </u>
	feet	motoro	meters feet			
	380 T.T.	meters 115 T.T.	ieet			-
CATOCHE(SPUD)	410 D.T.	125 D.T	 			
(0.00)	1100.11	120 0.1				
BOAT HARBOUR	532 T.T.	162T.T.	125			
	607 D.T.	185 D. T.	410			
WATTS BIGHT	253 T.T.	77 T.T.	310			
	311 D.T.	95 D.T.	1017			
DEDDY 1/2-2	1.00					
BERRY HEAD	476 T.T.	145 T.T.		35* NW		
	559 D.T.	170 D.T.	1329			
MAN O' WAR	194 T.T.	FO T T	E 7 P	264 1844		<u> </u>
MAIN O WANK	226 D.T.	59 T.T. 69 D.T.	1887	36* NW		
	220 D.1.	D.1.	1007	<u> </u>		
FELIX	158 T.T.	48 T.T.	644	36* NW		
	186 D.T.	57 D.T.	2113			
	1.00 0	J. J	2110			
BIG COVE	138 T.T.	42 T.T.	700	30° NW		
	162D.T.	49 D.T.	2297			
CAMPBELLS	276 T.T.	84 T.T.	750	132* NW		
	321 D.T.	98 D.T.	2461			
0405 4444			*			
CAPE ANN	108 T.T.	33 T.T.		135* NW		
	128 D.T.	39 D.T.	2782			
MARCHE POINT	203 T.T.	62 T.T.	007	122+ 5861		
MAKOTIL FORT	236 D.T.	72 D.T.	2910	133* NW		
	230 D.1.	120.1.	2910			
HAWKE BAY	768 T.T.	234 T.T.	959	40* NW		<u> </u>
	939 D.T.	286 D.T.	3146		<u> </u>	
				 	<u> </u>	†
FORTEAU	817 T.T.	249 T.T.	1245	40* NW		
	968 D.T.	295 D.T.	4085			
DEVIL'S COVE	39 T.T.	12 T.T.		44° NW		
(BASAL FORTEAU)	46 D.T.	14 D.T.	5053		<u> </u>	ļ <u> </u>
BRADORE	420 T T	124 77	4554	400 AB44		-
DIADORE	430 T.T. 511.5 D.T.	131 T.T.	1554 5099	40* NW	 	
	J11.5 D.1.	135 0.1.	2039			-
PRECAMBRIAN	1695 T.T.	442 T T	1710	44° NW		-
GNEISS(BASEMEN	T 2018 D.T	615 D.T.	5611		 	
						
ROUND HEAD			2325		 	
THRUST				16* NW		

ATTACHMENT 3-1: Formation Log Tops (2 of 3)

LOG TOP	2					
		 	 			
FORMATION	THICK-	THICK -	E-LOG	DIP ANGLE		
	NESS	NESS	TOP	DIRECTION		
	1,1300			DIRECTION		
			meters			
	feet	meters	feet			
MAITERNALISE						
WINTERHOUSE	1847 T.T.			42* NW - SE		
	2494 D.T.	760 D.T.	7628			
LOURDES	541 T.T.	165 T.T.	3082	4* - 8*		
	541 D.T.	165 D.T.	10,112	7 -0		
		100 0.11	10,112			
GOOSE TICKLE	499 T.T.	152 T.T.	3252	8*	······	
	499 D.T.	152 D.T.	10,670			
TABLE COVE	135 T.T.	41 T.T.		4* - 8*		
· · · · · · · · · · · · · · · · · · ·	135 D.T.	41 D.T.	11,169			
TABLE POINT	44 7 7	40.00		12 22		
TABLE POINT	44 T.T.	13.5 T.T.		4* - 8*		
	44 D.1.	13.5 D.T.	11,303			
SPRINGS INLET	43 T.T.	13 T.T.	3 450	4* - 8*		
T	43 D.T.	13 D.T.	11,347	7 - 0		+
			,			
AGUATHUNA	289 T.T.	88 T.T.	3472	4* - 8*		
	289 D.T.	88 D.T.	11,392			
COSTA BAY	100 7 7					
COSTA BAT	126 T.T. 126 D.T.	38.5 T.T.		4* - 8*		
	126 D.1.	38.5 D.T.	11,680			
CATOCHE	412 T.T.	126 T.T.	3598.5	A* . 6*		
	412 D.T.	126 D.T.	11,807	7 -0		
			77,007			-
CATOCHE	9.8 T.T.	3 T.T.	3643	4* - 8*		
POROSITY ZONE	9.8 D.T.	3 D.T.	11,953			T
BOAT HARBOUR		36 T.T.		4* - 8*		
	118 D.T.	36 D.T.	12,218			
BOAT HARBOUR	440 T.T.	134 T.T.	2760	6.		
DISCONFORMIT		134 D.T.	3760 12,337	10		
	. 140 D.1.	104 0.1.	12,337			
WATTS BIGHT	210 T.T.	64 T.T.	3894	4* - 8*		1
	210 D.T.	64 D.T.	12,776			†
						1
BERRY HEAD	525 T.T.	160 T.T.	3958	4* - 8*		
	525 D.T.	160 D.T.	12,986			
MANOUND	000 7 7					
MAN O' WAR	200 T.T.	61 T.T.		4* - 10*		
	200 D.T.	61 D.T.	13,511			

ATTACHMENT 3-1: Formation Log Tops (3 of 3)

LOG TOPS			·			
FORMATION	THICK-	THICK -	E - LOG	DIP ANGLE		
	NESS	NESS	TOP	DIRECTION		
			meters			
	feet	meters	feet			1
FELIX	146 T.T.	44.6 T.T.	4178.8	5* - 9*		T
	146 D.T.	44.6 D.T.	13,711			
BIG COVE	124 T.T.	37.9 T.T.	4223.4	4* - 8*		
	124 D.T.	37.9 D.T.	13,857			
CAMPBELLS	294' T.T.	89.7 T.T	4261.3	3* - 9*		
	294' D.T.	89.7 D.T.	13981			
CAPE ANN	95' T.T.	29 T.T.	4351	8° - 10°		
	95' D.T.	29 D.T.	14,276			
MARCH POINT	177° T.T.	54 T.T.	4380	6* - 9*		
	177' D.T.	54 D.T.	14,371			
HAWKE BAY	838' T.T.	255.5 T.T.	4434	9*		
	838' T.T.	255.5 D.T.				
FORTEAU	-		4689.5	10" - 14"		
			15,386			
TOTAL DEPTH			4697.5	<u> </u>		+
			15,413	3		
BOTTOM HOLE TE	MPERATUR	T RE = 65*C (1	49* F)			

GRAPTOLITES PALYNOMORPHS CONODONTS	PTH IN FEET	NT PCP PORT AU PORT # 1				
TAI 6 4 6 8 8 8 8 8 8 8		LOWER	-	LIMESTONE LT.GY-BR MXL,TR.FOS SL DOL	GRP.	NA
₩	1 I I	BOAT HARBOUR 410'	DRILLING THICKNESS 607' TRUE THICKNESS 532'	DOL-LS,LT-BR GY SUC TR POR	RGES	OVIC
CAI	1000 -	WATTS BIGHT 1017'	DT 311' TT 253'	DOL-LS BF to LT.BR SUC,TR.POR MXL,TR.XLN CALO	<u> </u>	ORD
₩		S.C. at 1624' BERRY HEAD	DT 559'	DOL BF to WH	ROUP	-
:AI .52		1328' MAN O' WAR 1,887'	TT 476' DT 226' TT 194'	MXL,TR.POR	T GR(
*		FELIX 2113' BIG COVE 2,299'	DT 186 TT 158 DT 162 TT 138	DOL,BF to LT.BR SUC to MXL, GR ARG		7
FAI *- 95 *- 3.4		CAMPBELLS 2,461' CAPE ANN 2,782'	DT 321' TT 276' DT 128' TT 108'	וסמ	RT AU	4
3.4 * *	3000 -	- MARCH POINT 2,910' HAWKE BAY	DT 236' TT 203' DT 939'	SHL-LS,DK-GY BLKY to SUB-FIS	P	M M
		3,146' significant influx	TT 768'	F to C GRAIN SUB-ANG to RD SIL CMT, MOD SR GOOD RESERVOIR POTENTIAL	2	Σ
X-	4000-	OF SALT WATER (3723')		,	ROUP	O
		FORTEAU 4,085'	DT 968 TT 817	01011011,012	OR G	
8 -				Shale: GY to BK BLKY to SUB-FIS MICA,CAL Ls:	RAD	
TAI	50 00 5	DEVIL'S COVE 5,053' BRADORE 5,099'	DT 46' TT 39	ARK SS 5' PK to BR-RED	-	
₩-		EXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	TT 430	TRNSL MED to FG MED to W,SRT SUB-ANG to RD TR GLAU	$+\!$	
	6000-	GRENVILLE BASEMENT	DRILLING THICKNES 2017.5' est TRUE THICKNES	S ORNG-RED-BR K-FLD,BIOT QTZ,SL CAL		AN
		5,610.5'	THICKNES 1695'	MAFIC GNEISS: DK GY,BIOT, HB, PLAG F to M GRAIN MAFIC DYKE:	-	
				DK.GN.FG,BLKY CHL,SCHISTIC	,	CAMB
	70 00 -					PRE
	-					
\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	8000	Intermediate TOP POPTION	is.			
¥		Casing at 8230. TOP PORTION OVERTURNED — 8373'		,	-	
* * *			1			
	_					
8	9000-	QUARTZITE /SHIST-GY TO WH, XL IND. QTZ-GY,FG,PLTY TO FOLIATED FAULTS AT 8.622', 8.711	DT		OUP	
₩ FAI 1.76 2.42 ₩ - ₩	9000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS	DT 2494' AVG.DIPS 4-6°	SHALY,TR.BITUMEN	GROUP	
TAI	10000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE	2494' AVG.DIPS 4-6°	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND	POINT	
TAI 1.76 2.42	10000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY	2494' AVG.DIPS	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS	LONG POINT	
TAI 1.76 2.42 CAI 1.4 CAI 1.5 TAI 1.5 CAI 1.5 TAI 1.	10000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 499' AVG.DIP	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN	LONG POINT	Z
TAI 1.76 2.42	10000	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670' TABLE COVE ? 11,169' ISSUED INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE SEISMIC BLUE REFLECTOR TABLE COVE ? 11,169' ISSUED INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SEISMIC BLUE REFLECTOR SEISMIC BLUE REFLECTOR	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 499' AVG.DIP 8° DT 134' PT 44' PT 44'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT	TABLE HEA GROUP	
TAI 1.76 2.42 CAI 4	10000	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR TABLE COVE ? 11,169' PAY ZONE 11,483' - 11,405'[87] (ICST 2249 BBLIS MUD) AGUATHUNA 11,330' COSTA BAY 11,680'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 499' AVG.DIP 8° DT 134' DT 290' DT 127'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT	TABLE HEA GROUP	
TAI 1.76 2.42 CAI 4	11000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR TABLE COVE ? 11,169' TABLE COVE ? 11,169' PAY ZONE 1,139-11,469'(FT) AGUATHUNA 11,390' COSTA BAY 11,680' CATOCHE 11,807'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT 134' DT 290' DT 127' DT 411'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT	S GROUP Sale LONG POINT	
TAI 1.76 2.42 CA.4 CA.5 CA.5 TAI 1.99 CA.5 T	11000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR TABLE COVE ? 11,169' PAY ZONE 11,483' - 11,405'[87] (ICST 2249 BBLIS MUD) AGUATHUNA 11,330' COSTA BAY 11,680'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT 134' DT 290' DT 127' DT 411'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT	S GROUP Sale LONG POINT	
TAI 1.76 2.42 CA.4 CA.5.5.0 CA.5.5.1 TAI 9.9.3 CA.5.5.5.8 CA.1.9.5 CA.5.5.5.8 CA.1.9.5.5.8 CA.1.9.5.5 CA.1.9.5 CA.	11000-	FAULTS AT 8,622', 8,711 9,229' 8,9,400' WINTERHOUSE INTERBEDDED CALAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670' TABLE COVE ? 11,169' SEISMIC BLUE REFLECTOR SEISMIC BLUE REFLECTOR WAY ZOUE TOAK OF A COUST TO SEED WITH THE SEED WITH	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 499' AVG.DIP 8° DT 134' DT 290' DT 127' DT 411' DT 411'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL-LS,LT-BR SUC,TR.POR GY, SL CAL DOL-LS, BF to LT BR SUC,TR.POR MXL TR.XLN CALC. DOL DOL DOL DOL DOL DOL DOL DO	GROUP Substantial CANG POINT	
TAI 5.5.58 A	11000-	FAULTS AT 8,622′, 8,711 9,229′ & 9,400′ WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122′ POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670′ TABLE COVE ? 11,169′ PAT ZUNE 11,481′ 1,49	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT44' DT 290' DT 127' DT 411' DT 439'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL-LS,LT-BR SUC.TR.POR GY, SL CAL DOL-LS, BF to LT BR SUC,TR.POR MXL TR.XLN CALC.	ORT STGEORGES GROUP SOUR SOUR SOUR SOUR SOUR SOUR SOUR SOUR	
TAI 1.76 2.42 CA.4 CA.5.5.0 CA.5.5.1 TAI 9.9.3 CA.5.5.5.8 CA.1.9.5 CA.5.5.5.8 CA.1.9.5.5.8 CA.1.9.5.5 CA.1.9.5 CA.	11000-	FAULTS AT 8,622, 8,711 9,229 & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670' TABLE COVE? 11,169' SEISMIC BLUE REFLECTOR SEISMIC BLUE REFLECTOR OCSTA BAY 11,680' CATOCHE 11,807' WATTS BIGHT 12,776' MAJOR LOST CIRCULATION ZONE BERRY HEAD 12,986' MAN O' WAR 13,511' FELIX 13,7711'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT 499' AVG.DIP 8° DT 134' PT 411' DT 290' DT 119' DT 439' DT 210' DT 210' DT 210' DT 146' DT 146'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL.PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL, TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL,TR.POR MXL TR.XLN CALC. DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC,TR.POR DOL, BF to LT.BR SUC,TR.POR TR.XLN CALC. DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC, TR.POR DOL, BF to LT.BR SUC, TR.POR DOL, BF to LT.BR SUC, TR.POR	T AU PORT ST.GEORGES GROUP SEE LONG POINT	
TAI 1.76	11000-	FAULTS AT 8,522, 8,711 9,229 & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670' TABLE COVE? 11,169' AGUATHUMA 11,390' AGUATHUMA 11,390' COSTA BAY 11,660' CATOCHE 11,807' WATER SIGHT 12,769 MACPLICATION MACPLICATION MACPLICATION BERRY HEAD 12,986' MAN O' WAR 13,511' FELIX 13,711' BIG COVE 13,857' CAMPBELLS 13,981'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT49' AVG.DIP 8° DT 127' DT 411' DT 439' DT 290' DT 290' DT 127' DT 411' DT 127' DT 411'	BLK, PLTY TO SUB- FISSILE SLST: GY, FG, CALC, SHALY, TR. BITUMEN SS: GY, MED TO FG, MED CALC, TR FOSS IND LMS: LT GY-BRN TO BUFF, MXL-SUC TR. FOSS SHALE: BRN-BLK, PLTY TO SUB-FISS, SPLTY, WXY, CARB, FIRM SHALE: DK BRN TO MOD HD. PLTY TO SUB FISSILE SS: SPEC. GY-GN VF-F, MED. SOR & WELL IND. LS SHALE LS TIGHT DOL: PALE WH, INTX SUC & VUGGY-PP POF LS CHKY, WHITE MXL, TIGHT LS, WH-BUFF, ARG SIL DOL, TIGHT DOL, BF to LT. BR SUC. TR. POR MXL TR. XLN CALC. DOL BF to WH MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR SUC. TR. POR TR. SUC. DOL, BF to LT. BR SUC. TR. POR TR. SUC. DOL, BF to LT. BR SUC. TR. POR TR. SUC. DOL, BF to LT. BR SUC. TR. POR TR. SUC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR MXL SUC, TR. POR DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL. BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR MXL SUC, TR. POR DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR OC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR OC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC. DOL, BF to LT. BR OC. DOL, BF to LT. BR MXL SUC, TR. POR TR. SUC.	AU PORT STGEORGES GROUP SUBER LONG POINT LONG POINT SUBER LONG POINT SUBER LONG POINT	
TAI 1.76 2.42 CA.4 CA.5.0 CA.5. TAI 1.99 CA.5. TAI	12000-	FAULTS AT 8,622, 8,711 9,229 & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670' TABLE COVE ? 11,169' PAY 2004 1743-14-14-14-17-19-19-19-19-19-19-19-19-19-19-19-19-19-	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' DT 499' AVG.DIP 8° DT 127' DT 119' DT 411' DT 290' DT 290' DT 270' DT 439' DT 295' DT 295' DT 95' DT 177'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL, BF to LT.BR SUC.TR.POR MXL TR.XLN CALC. DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC,TR.POR GY, SL CAL DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC,TR.POR TR.SUC,TR.POR DOL, BF to LT.BR SUC,TR.POR DOL, BF to LT.BR SUC,TR.POR MXL,TR.POR TR.SUC DOL, BF to LT.BR SUC,TR.POR MXL,TR.POR TR.SUC DOL, BF to LT.BR SUC,TR.POR DOL, BF to LT.BR SUC,TR.POR MXL TR.XLN CALC DOL BF to WH MXL SUC,TR.POR TR.SUC DOL, BF to LT.BR SUC,TR.POR MXL TR.XLN CALC DOL BF to WH MXL SUC,TR.POR TR.SUC DOL BF to LT.BR SUC,TR.POR MXL TR.XLN CALC DOL BF to WH MXL SUC,TR.POR MXL TR.XLN CALC DOL BF to WH MXL SUC,TR.POR TR.SUC DOL BF to LT.BR SUC,TR.POR MXL TR.SUC DOL BF to LT.BR SUC,TR.POR TR.SUC DOL BF to LT.BR SUC,TR.POR TR.SUC DOL BF to LT.BR SUC,TR.POR TR.SUC TR.POR TR.SUC TR.SUC TR.SUC TR.SUC TR.SUC TR.S	PORT AU PORT ST.GEORGES GROUP SAR SAROUP SAROUP	
TAI 62.42 C1.4 C1.5.0 V C1.5 TAI 9.5 CAI 1.9.5	12000-	FAULTS AT 8,622', 8,711 9,229' & 9,400' WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILTSTONE SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR GOOSE TICKLE 10,670' TABLE COVE? 11,169' MICACHILINA 11,390' AGUATHUNA 11,390' AGUATHUNA 11,390' COSTA BAY 11,680' CATOCHE 11,807' WATES BIGHT 12,776' WATES BIGHT 12,776' MALBOAT HARBOUR 12,237 WATES BIGHT 12,776' MALBOAT HARBOUR 12,337 CAMPBELLS 13,711' BIG COVE 13,857' CAMPBELLS 13,981' CAPE ANN 14,276' MARCH POINT 14,371'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT49' AVG.DIP 8° DT 127' DT 411' DT 439' DT 290' DT 290' DT 127' DT 439' DT 295' DT 295' DT 95' DT 177' DT 837'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LS TIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL, BF to LT.BR SUC.TR.POR MXL TR.XLN CALC. DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC,TR.POR GY, SL CAL DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC,TR.POR SHALE:GRN TO GY LS CHARLES CAL DOL BERNS TO GY LS CHARLES CAL	GROUP SEROUP SEE GROUP SEE LONG POINT SEE GROUP SEE	IAN SEDOVIC
TAI 62.42 C1.4 C1.5.0 V C1.5 TAI 9.5 CAI 1.9.5	12000-	FAULTS AT 8,822, 8,711 9,227 8,940 WINTERHOUSE INTERREDDED CALCAREOUS MICACOUS SILISTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY GOOSE TICKLE 10,670' TABLE COVE? 11,169' AGUATHUMA 11,390' CATOCHE 11,807' WINTE BIGHT 12,776' MALE GOAT HARBOUR 12,337 WINTER BIGHT 12,776' MARCH POINT 14,371' BIG COVE 13,857' CAMPBELLS 13,981' CAPE ANN 14,276' MARCH POINT 14,371' HAWKE BAY 14,548' FORTEAU	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' PT49' AVG.DIP 8° DT 127' DT 411' DT 439' DT 290' DT 290' DT 127' DT 439' DT 295' DT 295' DT 95' DT 177' DT 837'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC, TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LSTIGHT DOL:PALE WH, INTX SUC & VUGGY POROSITY. DOL,WH-BRN VUGGY-PP POF LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL-LS, BF to LT BR SUC.TR.POR MXL TR.XLN CALC. DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR MXL TR POR TR SUC. DOL, BF to LT.BR MXL TR POR TR SUC. DOL, BF to LT.BR MXL TR POR TR SUC. DOL, BF to LT.BR MXL TR POR TR SUC. DOL, BF to LT.BR MXL TR POR TR SUC. DOL, BF to LT.BR MXL TR POR TR SUC. DOL BF to LT.BR MXL TR POR TR SUC. DOL BF to LT.BR MXL TR POR TR SUC. DOL BF TO TAR MOD BROW BROW BROW BROW BROW BROW BROW BROW	RADOR GROUP SEGRGES GROUP SEE CROUP	RIAN SRDOVIC
TAI.7.42 CA.4. CA.5.0. CA.5	12000-	FAULTS AT 8,822', 8,711 9,229' & 9,400 WINTERHOUSE INTERBEDDED CALCAREOUS MICACCOUS SILTSTONE, SANDSTONE and SHALE LOURDES 10,122' POSSIBLE DISCONFORMITY SEISMIC GREEN REFLECTOR SEISMIC BLUE REFLECTOR GOOSE TICKLE 10,670' TABLE COVE? 11,169' PAY ZOBE, 1339, 14, 15,690' CATOCHE 11,807' WATTS BIGHT 12,376' WATTS BIGHT 12,776' WATTS BIGHT 13,771' BIG COVE 13,857' CAMPBELLS 13,981' CAPE ANN 14,275' MARCH POINT 14,371' HAWKE BAY 14,548' HAWKE BAY 14,548'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' DT 290' DT 127' DT 411' DT 439' DT 200' DT 210' DT 255' DT 295' DT 295' DT 377' DT 837'	BLK,PLTY TO SUB- FISSILE SLST:GY,FG,CALC, SHALY,TR.BITUMEN SS:GY,MED TO FG, MED CALC,TR FOSS IND LMS:LT GY-BRN TO BUFF,MXL-SUC TR.FOSS SHALE:BRN-BLK, PLTY TO SUB-FISS, SPLTY,WXY, CARB, FIRM SHALE:DK BRN TO TR GY,FIRM TO MOD HD. PLTY TO SUB FISSILE SS:SPEC.GY-GN VF-F,MED.SOR & WELL IND. LS SHALE LSTIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL,WH-BRN VUGGY-PP POR LS CHKY,WHITE MXL,TIGHT LS,WH-BUFF,ARG SIL DOL,TIGHT DOL, BF to LT.BR SUC.TR.POR MXL TR.XLN CALC. DOL BF to WH MXL SUC, TR.POR DOL, BF to LT.BR SUC,TR.POR DOL, BF to LT.BR SUC,TR.POR DOL, BF to LT.BR SUC, TR.POR TR SUC. DOL BLKY TO SUB-FIS WH TO TRNSL QTS.ARENITE F to C GRAIN SUB-ANG TO RD SIL CMT, MOD SRT MAX. Ø 6% MAX. Ø 6%	ADOR GROUP SEGRGES GROUP SEE CONG POINT ST.GEORGES GROUP	RIAN SRDOVIC
TAI 1.742	12000	FAULTS AT 8,822, 8,711 9,222 & 9,400 WINTERHOUSE INTERBEDDED CALCAREOUS MICACEOUS SILITSTONE SANDSTONE and SHALE LOURDES 10,422 POSSIBLE DISCONFORMITY SEISMIC CREEN BETTE STOR GOOSE TICKLE 10,670' TABLE COVE ? 11,169' GOOSE TICKLE 10,670' TABLE COVE ? 11,169' ACUATHUMA 11,390' ACUATHUMA 11,390' CATOCHE 11,800' MAL BOAT HARBOUR 12,218 WATTE BIGHT 12,796 MARCH POINT 22,986' PPOSLILINET 11,786' MAN O' WAR 13,511' FELIX 13,711' BIG COVE-13,857' CAMPBELLS 13,981' CAPE ANN 14,276' MARCH POINT 14,371' HAWKE BAY 14,548' CAPE ANN est. 15,900' MATCH POINT est.16,008' MAN H. POINT est.16,008' CAPE ANN est. 15,900' MATCH POINT est.16,008' MAN H. POINT est.16,008' CAPE ANN est. 15,900' MATCH POINT est.16,008'	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 134' AVG.DIPS 8° DT 127' DT 411' DT 127' DT 411' DT 146' DT 295' DT 295' TT 550' TT 550' TT 108' TT 203'	BLK, PLTY TO SUB- FISSILE SLST: GY, FG, CALC, SHALLY, TR. BITUMEN SS: GY, MED TO FG, MED CALC, TR FOSS IND LMS: LT GY-BRN TO BUFF, MXL-SUC TR. FOSS SHALE: BRN-BLK, PLTY TO SUB-FISS, SPLTY, WXY, CARB, FIRM SHALE: DK BRN TO TR GY, FIRM TO MOD HD. PLTY TO SUB FISSILE SS: SPEC. GY-GN VF-F, MED. SOR & WELL IND. LS SHALE LS TIGHT DOL. PALE WH, INTX SUC & VUGGY POROSITY. DOL, WH-BRN VUGGY-PP POR LS CHKY, WHITE MXL, TIGHT LS, WH-BUFF, ARG SIL DOL, TIGHT DOL, BF to LT.BR SUC. TR. POR GY, SL CAL DOL, BF to LT.BR MXL TR SUC. TR. POR DOL, BF to LT.BR MXL TR SUC. SHALE: GRN TO GY BLKY TO FIS, CAL DOL, BF TO LT.BR MXL TR SUC. SHALE: GRN TO GY BLKY TO SUB-FIS WH TO TRNSL QTS. ARENITE F TO C GRAIN SUB-ANG TO RD SIL CMT, MOD SRT MAX. 6% SS: GY-CR-BR, QTZ SUC, TO SUB-FIS MICA, CAL SHALE: GRN TO SUC. LS: CR-WH, MXL-FRI TR. GLAU, SIL CAL SHALE: GRN TO SUC. LS: CR-WH, MXL-FRI TR. GLAU, TR. POR BLKY TO SUB-FIS MICA, CAL LS: CR-WH, MXL-FRI TR. GLAU, TR. POR BLKY TO SUB-FIS MICA, CAL SHALE: GRN TO SUC.	BRADOR GROUP	RIAN SEDOVIC
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A	1000	FAULTS AT BLAZE, B.741 SAZE AS ASO WINTERFLOUSE INTERREDUED CAL CARPOUS MINER BLUE ROPE LECTOR SENSING BLUE ROPE LECTOR TABLE COVER 11,1587 COSTA BRY 11,687 CATCHE 11,887 MAN O' WAR 13,511' FELIX 13,711' BIG COVE-13,887' CAMPBELLS 13,981' CAPE ANN 41,471' HAWKE BAY 14,271' MARCH POINT 14,371' HAWKE BAY 15,380' CAPE ANN est. 15,900' MANUAL POINT est. 15,100' MANUAL POINT est. 15,000' MANUAL POINT EST. 15,00	2494' AVG.DIPS 4-6° DT 541' AVG.DIPS 4-8° DT 499' AVG.DIPS 8° DT 134' DT 290' DT 127' DT 439' DT 210' DT 210' DT 255' DT 95' DT 177' DT 837' TT 768' TT 768' TT 768' TT 768'	BLK, PLTY TO SUB- FISSILE SILESILE SISTICY, FG, CALC, SHALY, TR. BITUMEN SS: GY, MED TO FG, MED CALC, TR FOSS IND LMS: LT GY-BRN TO BUFF, MXL-SUC TR. FOSS SHALE: BRN-BLK, PLTY TO SUB-FISS, SPLTY, WXY, CARB, FIRM SHALE: DK BRN TO TR GY, FIRM TO MOD HD. PLTY TO SUB FISSILE SS: SPEC. GY-GN VF-F, MED. SOR & WELL IND. LS SHALE LS TIGHT DOL: PALE WH, INTX SUC & VUIGGY POROSITY. DOL, BF TO LTBR SUC, TR. POR DOL-LS, LT-BR SUC, TR. POR DOL-LS, BF TO LTBR SUC, TR. POR SHALE GRN 19 GYAL SLCAL SHALE GRN 19 GYAL SLCAL SLCAL	RADOR GROUP SEE LABRADOR GROUP SEE GROUP SEE GROUP SEE GROUP SEE CROUP SE CROUP SEE CROUP SE	BRIAN SAMBRIAN SORDOVIC

FINAL WELL REPORT

NHOC/PanCanadian Port au Port No. 1

4.00 WELL EVALUATION

NEWFOUNDLAND HUNT OIL COMPANY INC.

JULY 1996

4.00 WELL EVALUATION

4.01 <u>Downhole Loas</u>

Schlumberger Wireline Services provided all wireline logging services during the drilling of this well. The following logging runs were made:

• Run #1 Borehole Compensated Sonic Phasor Induction - SFL	120 27	
• Run #2 Borehole Compensated Sonic	30	94-11-04 - 1702 m
• Run #3 Borehole Compensated Sonic Phasor Induction - SFL	495 495	94-12-14 - 2508 m - 2508 m
• Run #4 Borehole Compensated Sonic Phasor Induction - SFL CNL - LDT MFSL FMS - Scanner	2509 2509 2509 3425 2509	- 3482 m - 3482 m - 3494 m
• Run #5 Borehole Compensated Sonic CNL - LDT Dual Laterlog	3250 3420 3425	- 3994 m
Run #6 Borehole Compensated Sonic Dual Laterlog	3440 3440	
 Run #7 Borehole Compensated Sonic Phasor Induction - SFL CNL - LDT 	4198 4198 4198	- 4671 m

Consolidated Logs Copies of the following consolidated logs are provided in Appendix III:

- Borehole Compensated Sonic: Runs 1-2-3-4-5-6-7;
- Compensated Neutron Lithology Density (CNL LDT): Runs 3-4-5-7;
- Dual Laterlog MSFL: Runs 5-6; and
- Phasor Induction SFL: Runs 1-3-4-7.

4.02 Other Logs

The following logs were run in addition to those listed in Section 4.02.

Directional	Surveys					
Run #3	94-12-15	1624	-	23	m	
Run #4	95-02-02	1624	-	23	m	
Run #6	95-03-24	1624	-	23	m	
Run #7	95-06-07	1624	-	23	m	
Dipmeter C	computed Result MSD Logs					
Run #3	94-12-14	494	- :	2509	m	
Run #4	95-02-02	2504	- ;	3500	m	
Run #6	95-03-18	3440		4244	m	
Run #7	95-06-08	4198	-	4703	m	

A copy of the Dipmeter Run #7 is included in Appendix III.

4.03 Synthetic Seismograms

A synthetic seismogram was prepared using Sonic data collected during logging Run #7. A copy of the synthetic seismograph in both 3-inch and 5-inch formats is presented in Appendix IV.

4.04 <u>Vertical Seismic Profiles</u>

Not Applicable. There were no vertical seismic profiles taken during the drilling of this well.

4.05 Velocity Surveys

Not Applicable. There were no velocity surveys taken during the drilling of this well.

4.06 Formation Stimulation

Four (4) potential oil producing zones were perforated and stimulated prior to production flow tests. A summary of the stimulation results is included in the Attachment 4-1.

The first zone evaluated was the St. Georges - Watts Bight Member. The formation was perforated at 3946.7 to 3950.7 m, 3932.2 to 3936.7 m, and 3916.1 to 3920.3 m were shot at 2 SPF (81 shots - 54 mm 14 g decentralized) with 0° phasing. The zone was acidized with 5.5 m³ of 28% HCl and jetted in with nitrogen at 0.4 m³/s through coil tubing for 11.5 hours.

The second zone evaluated was the St. Georges - Aguathuna Member. The formation was perforated at 3556.4 to 3559.5 m, 3553.1 to 3555.2 m, 3533.5 to 3535.1 m, 3523.5 to 3526.5 m and 3515.0 to 3517.1 m were shot at 2 SPF (83 shots - 54 mm 14 g decentralized) with 0° phasing. The zone was acidized with 5.6 m³ of 28% HCl and jetted in with nitrogen at 0.4 m³/s through coil tubing.

The third zone evaluated was the Table Point Dolomitized Zone - Springs Inlet Member. The zone was perforated at 3471.7 to 3476.2 m was shot at 2 SPF (54 mm 14 g decentralized) with 0° phasing. The zone was acidized with 5.9 m³ of 15% HCl. The well was flowed 9 hours to clean up, then shut in for bottom hole pressure tests, and was then followed by an extended flow test.

The fourth zone evaluated was the Table Point Zone - Upper Interval. One (1) set of perforations at 3459.2 to 3462.2 m was shot at 2 SPF (54 mm 14 g decentralized) with 0° phasing. The zone was initially acidized with 5.9 m³ of 15% HCl. The well was flowed to clean up, shut in for bottom hole pressure test, and then followed by a 50 hour flow test. The zone was then squeeze cemented for additional drilling. The zone was reperforated at the same depth and SPF. The well had been shut in for 55 days. The well test lasted 9.5 days.

4.07 <u>Formation Flow Tests</u>

The four (4) formations listed in Section 4.06 were flow tested for hydrocarbons.

Five (5) productions tests were conducted on the above zones and the test results are summarized in Attachment 4-1. Copies of the field data recorded during the flow tests and the lab results of samples collected are included in Appendix V.

The Watts Bight and Aguathuna Zones had good deliverablity but produced only water. The Springs Inlet Zone was hydrocarbon productive with moveable water and the test confirmed the oil-water transition zone was below 3473 m.

The Table Point Zone initial flow test of 50 hours confirmed a productive oil reservoir with good transmissibility characteristics consisting of an under saturated oil. Bottom hole pressure data indicated a possible limited reservoir or nearby boundary effects from complex geology. The extended test of 9.5 days after 55 days shut in produced 797 m³ of oil, 435 m³ of water and 4339 m³ gas. The well was depleting during the test and dropped below the bubble point of 4650 psia. The production was also choked off by

54

paraffin and salt buildup in the tubing.

In addition to the production tests, several flow (F) and buildup pressure (BU) tests were conducted. The following table summarizes the Pressure Test Reports by Z.I. Probes. Field data and final reports are located in Appendix V.

		Probe Depth		BU Press.	Max Temp.
Test	<u>Date</u>	(m RKB)	<u>Probe</u>	kPag	<u>°C</u>
1. F/BU	95-04-09	3354.8	M47	37 060.6	55.2
		3355.9	N12	37 075.7	55.6
2. F/BU	95-04-15	3382.8	M47	33 735.4	54.7
		3383.9	N12	33 737.8	55.2
3. F/BU	95-04-18	3381.9	N12	31 045.3	54.3
4. F/BU	95-04-22	3380.8	M47	32 449.6	50.7
		3381.9	N12	32 453.3	51.5
5. Core Lab	95-04-23	3382.0	M47	na	53.0
6. F/BU	95-06-14	3396.5	M47	28 876.7	55.3
		3398.3	N12	28 934.3	55.0
7. F/BU	95-07-09	3391.8	M47	27 466.0	54.1
•		3389.9	N12	27 545.4	53.9

ATTACHMENT 4-1: Production Test Summary (1 of 3)

TEST 1 - ST. GEORGES - WATTS BIGHT MEMBER

Objective

Determine reservoir productivity characteristics

3916

3950

Procedure -

Perforated 40' between 12,848' and 12,961'

- Acidized with 1,500 Gallons 28% HCL

- On 9 hour test flowed (with nitrogen assist) at rate of 2,500 BWPD with a

drawdown of about 360 psi

Pressure Buildup Data

Fluid Quality

9 hour Shut in

Kh = 960 md-ft

Salt water _____9.7 lb./qal.

P* = 6,390 psia at mpp

Negative Skin

Productivity Index = 6.9 BPD/psi

Conclusion - zone has excellent deliverability.

● TEST 2 - ST. GEORGES - AGUATHUNA MEMBER

Objective

Determine reservoir productivity characteristics

Procedure -

Perforated 40' between 11,532' and 11,678'

Acidized with 1,500 of 28% HCL

- On 8 hour test flowed (with nitrogen assist) at rate of 1,100 BWPD with draw

down of about 550 psi.

Pressure Buildup Data

Fluid Quality

13.7 hour Shut in

Kh = 649 md-ft.

Salt water 10.5 lb./gal

 $P^* = 5.738$ psia at mpp

Negative Skin

Productivity Index = 2.0 BPD/psi

Conclusion - zone has good deliverability.

ATTACHMENT 4-1: Production Test Summary (2 of 3)

TEST 3 - TABLE POINT DOLOMITIZED ZONE-SPRINGS INLET MEMBER

Objective

Determine fluid type and productivity; confirm oil-water transition zone

247600

indicated by logs before testing oil zone separately.

Procedure

Perforate 15' from 11,390 - 11,405'

- Acidize with 1,500 Gallons of 15% HCI

- Flowed a total of 1,824 bbls of fluid, 1,109 bbls of oil, 715 bbls water in 17.4 hrs. - Averaged 2,513 BPD total fluid, 1,528 BPD oil. Stable gas rate

2.6 MM/D, 1,700 GOR. Max drawdown 1,535 psi

Pressure Buildup Data

Fliud Quality

12 hour Shut in

Kh = 302 md-ft

3467.7 M

Salt water 10.2 lb./gai.

Estimated P*=5,299 psia @ 11,377

Crude oil 51 °API

Negative skin

Gas gravity 0.75

Productivity Idex = 1.6 BPD/psi

Conclusion -

Zone is hydrocarbon productive with movable water. Test confirms oil-water

transition zone below 11,395'

ATTACHMENT 4-1: Production Test Summary (3 of 3)

TEST 4 - TABLE POINT ZONE (UPPER INTERVAL)

Objective Determine fluid type and productivity

Procedure Perforate 10' from 11,349' - 11,359'

Acidize with 1.500 Gallons 15% HCI

On 50 hour test flowed 1,559 BO, 1,023 BW (243 BW over load), Stabilized 800 psi FTP on 22/64 ck, 1,032 BOPD, 336 BWPD 24.6% SW 1,780 Mcf/D with a drawdown of approximately 1,250 psi

1.725 CF/B GOR

Obtained surface and bottom hole fluid samples

Final 2 hour flow rate on 32/64: ck, 1.742 BOPD, 252 BWPD, BS&W 13%. 2,310 MCFPD, GOR 1,326 CF/B, FTP 600 psig.

Pressure Buildup Data

Fluid Quality

50 hour Shut in Dual porosity effect, possible depletion

ISIP = 5.328 psia at 11.377

Estimated P* = 5,000 psia @ 11,377'

Negative Skin

Kh = 211 md-ft

Sait Water 10.2 lb./gai. Crude Oil 51° API Gas Gravity 0.75

Productivity Index = 1.1 BPD/psi

Conclusion: Zone was connected with lower interval (Test 3) as evidenced by recovery of water volumes injected into test 3 interval. Oil appears to be an under-saturated oil. Reservoir has good transmissibility characteristics, however, BHP data suggests a possible limited reservoir or nearby boundary effects that may result from complex geology.

TEST 5 - TABLE POINT ZONE (UPPER INTERVAL)

Objective

Long term flow test to verify reservoir size and

producing problems.

Procedure

Reperforated 10' 11349 - 11359'

Measured pressure after 55 days shut in: 5250 psia @ 11377"

Flowed 91/2 days

Paraffin/salt choked well off

Produced 5012 BO, 2734 BW, 9194 MCF

Well Shut in 141/2 days

Pressure Buildup Data

345 hour Shut in

FSIP 4282 psia @ 11377'

Estimated P* = 4507 psia @ 11377'

Negative skin Kh = 31 md-ft

Conclusion:

Well is depleting, dropped below bubble point of 4650 psi. Kh reduced due to relative perm effects of higher gas saturations (note: using lower viscosity for oil

since receiving fluid data analysis from core labs.)

FINAL WELL REPORT

NHOC/PanCanadian Port au Port No. 1

5.00 OTHER

NEWFOUNDLAND HUNT OIL COMPANY INC.

JULY 1996

5.00 <u>OTHER</u>

5.01 <u>Mud Loggers Report</u>

A Mud Loggers Report was prepared daily on the rig by Datalog Technology Inc.. The final Mud Loggers Report was prepared by Roland Strickland and is located in Appendix II.

5.02 <u>Directional & Deviation Survey Reports</u>

A Deviation Survey Report was prepared by Roland Strickland based on surveys conducted during drilling and is presented as Attachment 5-1

5.03 Final Legal Survey Plan

The final legal survey of the well site is located in Attachment 5-2.

5.04 Core Photos

Not Applicable. No cores were taken during the drilling of this well.

5.05 Core Analysis With Digitized Data

Not Applicable. No cores were taken during the drilling of this well.

5.06 Fluid Analysis Reports

A report is included in Appendix V prepared by Martin Fowler presenting distillation, gas chromatography and gas chromatography-mass spectrometry analysis. The data indicated that the oil from the well is mature and unbiodegraded.

The PVT properties of the reservoir fluid from DST #4 were determined by Core Lab and is presented in Appendix V. Core Lab also provided a report, located in Appendix V, evaluating the solid and wax deposits recovered from the production tubing during the production tests.

5.07 Oil, Gas & Water Analysis Reports

Lab analysis reports of oil, gas and water samples are located in Appendix V. These reports were prepared by Core Lab.

5.08 Geochemical Report

The Geochemical Report providing TOC data for this well was prepared by Martin Fowler, Geological Survey of Canada (Calgary) and is located in Appendix IV.

5.09 Biostratigraphy Report

Biostratigraphic data and analysis was provided by Elliott T. Burden and S. Henry Williams, Registered Professional Geoscientists, in their final report "Biostratigraphy and Thermal Maturity of Strata in Hunt-PanCanadian Port Au Port Well #1" and is located in Appendix IV.

5.10 Petrological Report

Not Applicable. No cores collected for thin section work.

5.11 Palynological Report

Palynological data and analysis was included in the report referenced in Item 5.09 and located in Appendix IV.

5.12 Paleontological Report

Paleontological data and analysis was included in the report referenced in Item 5.09 and located in Appendix IV.

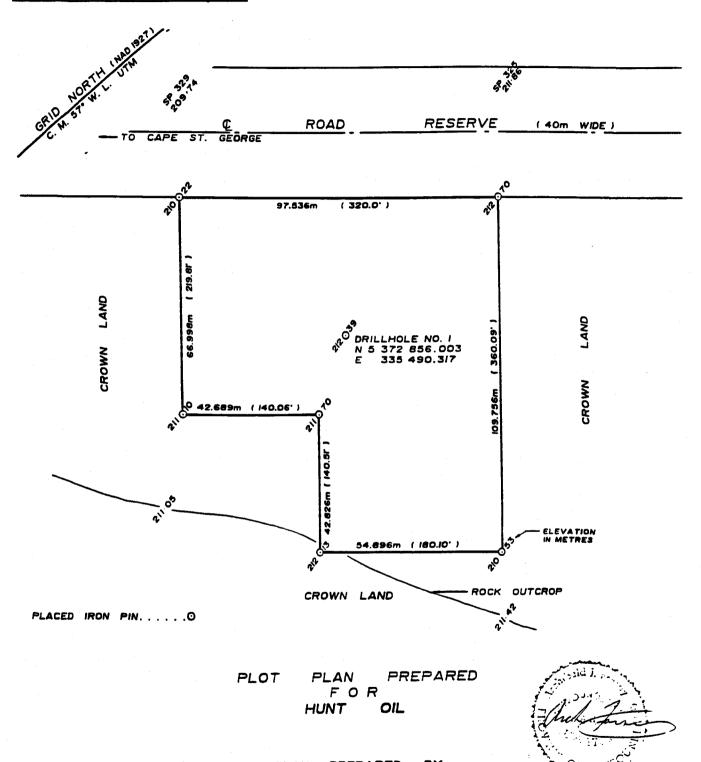
ATTACHMENT 5-1: Deviation Survey (1 of 2)

	<i>T_PCP_OIL_CO</i> AU PORT#1_W	ESTERN NEWFOUNDLAND				
DEVIATION SURVEY REPORT						
JEVI	ATION SURVET K	EPORI				
	DEPTH	DEPTH	ANGLE			
		FEET	DEGREES			
	METERS	FEE!	DEGREES			
	18	60	0.5			
•)	59	192	0.25			
3.	91	298	0.25			
	109	359	0.25			
<u>.</u> 5.	137	450	0.25			
<u></u> 3.	164	538	0.9			
7	202	663				
3.	230	755	0.9			
9.	259	850	0.			
10.	282	925	0.			
11.	326	1070	0.7			
12.	421	1381	0.2			
13.	487	1598	0.			
14.	536	1759	0.2			
15.	669	2195	0.2			
16.	816	2677	0.2			
17.	1192	3911	0.2			
18.	1240	4068				
19.	1286	4219	2.			
20.	1307	4288	2.			
21.	1343	4406				
22.	1361	4485				
23.	1390	4561	4			
24.	1418	4653	4.2			
25.	1436	4712	4.8			
26.	1474	4838	4.0			
27.	1494	4902	4.7			
28.	1522	5087	3.8			
29.	1551		3.0			
30.	1579	5181 5274				
31.	1608	5371	2.			
32.	1637 1666	5468	2.			
33. 34.	1702	5584				
		5679				
35.	1731					
36.	1769	5804				
37.	1816	5958				
38.	1822	5978				
39.	1863	6113	2			

ATTACHMENT 5-1: Deviation Survey (2 of 2)

PORT	AU PORT#1 WE	STERN NEWFOUNDLAND			
DEVIATION SURVEY REPORT					
			ANGLE		
	DEPTH	DEPTH	ANGLE		
	METERS	FEET	DEGREES		
40	1920	6300	2		
41.	1957	6421	2.5		
42.	2015	6611	1.75		
43.	2061	6762	2.25		
44.	2109	6920			
45.	2150	7054	2		
46.	2194	7199	0.88		
47.	2242	7356	1.75		
48.	2295	7530	1.75		
49.	2338	7671	1.23		
50.	2376	7798			
51.	2412	7914	0.5		
52.	2450	8038	2.13		
53.	2469	8101	2.5		
54.	2501	8206	2.75		
55 .	2728	8951	2.73		
<u>56.</u>	2772	9095	2.2		
57.	2836	9305	4.79		
58.	2877	9439	5.2		
59	2961	9715	3.2		
60.	2995	9827	7.		
61.	3033	9951			
62	3072	10079	4.2		
63.	3245	10647	5.7		
64.	3395	11139	6.		
65.	3481	11421	6.		
66.	3512	11523			
67.	3657	11999			
68.	3759	12333			
69.	3859	12661			
70.	4109	13482	1.7		
71.	4319	14171	1.7		
72.	4435	14551	1.4		
73.	4486	14719			
74.	4614 4650	15139	2.0		

ATTACHMENT 5-2: Survey Plat



PLAN PREPARED BY YATES & WOODS LTD. NEWFOUNDLAND LAND SURVEYOR'S JUNE 9, 1994 DWG. NO. 94070-1

SCALE | : 1000

- END OF REPORT -