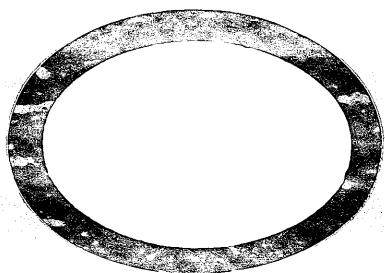
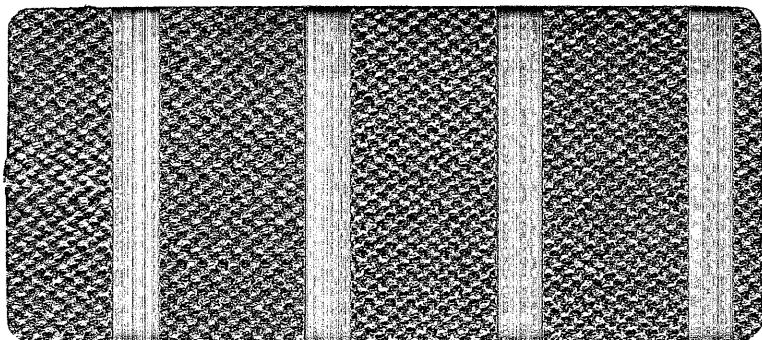


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**PETROLEUM DIVISION**

**WELL COMPLETION REPORT**

**EAST HALIBUT-1**

**VOLUME II 27 OCT 1987**

**GIPPSLAND BASIN  
VICTORIA**

**COMPILED BY : A.B. THOMSON**

**1987**

**ESSO AUSTRALIA LIMITED**

EAST HALIBUT - 1  
WELL COMPLETION REPORT  
VOLUME II  
(Interpretative Data)

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## GEOLOGICAL AND GEOPHYSICAL ANALYSIS

Following are the results and interpretation of the East Halibut-1 well which reached total depth on September 23, 1985.

<u>Top (KB 21m)</u>	<u>Actual (mRKB)</u>	<u>Predicted (mRKB)</u>
Top of Latrobe Group	2394.0	2373.0
Top Coarse Clastics (M-1.8.1 unit truncated)	2395.2	2374.0
Top M-1.8.2 unit	2414.4	
Top M-1.9.1 unit	2420.0	
Top Lower L. Balmei seismic marker	2526.5	

### Net Oil and Shows

The top of Coarse Clastics came in 21m low to predrill prediction. 4m of net oil sand and 24m of residual (swept) oil was intersected in the Halibut M-1.8.1 reservoir unit, directly below top of Coarse Clastics.

Up to C5 gas shows were recorded on the mudlog from 2494m to 2520m. Subsequent wireline logging revealed a shaly zone with no produceable hydrocarbons. An RFT set at 2463.5m to test the top of the M-2.0.1 sand recovered 18.5 litres of mud filtrate.

### Geophysical Analysis

The Top of Latrobe Group came in 21m low to prediction representing an error of 1%.

### Interpretation

East Halibut was drilled primarily to test the updip potential of the M-1.6.1 to M-1.9.1 units and the potential of lower sand units beneath the original field OWC. Remapping of the Top of Latrobe suggested the eastern flank of the field was higher than previously thought. East Halibut results indicate the Top of Latrobe is approximately halfway between our old mapping (pre-1985) and the 1985 predrill map.

The current OWC (@ 2399m KB) at East Halibut-1 suggests that more oil has been drained from the lower units than expected. Drainage has probably occurred up the North Halibut fault to other wells with completions in the M-1.6 and M-1.7 units.

APPENDIX 1

APPENDIX

PALYNOLOGICAL ANALYSIS OF EAST HALIBUT-1  
GIPPSLAND BASIN, SOUTHEASTERN AUSTRALIA

by

Neil G. Marshall

27 OCT 1987

PETROLEUM DIVISION

Esso Australia Ltd.  
Palaeontology Report

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*see correspondence  
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PALYNOLOGICAL DATA SHEET (SUMMARY)

TABLE 1 : SUMMARY OF INTERPRETATIVE DATA

TABLE 2 : SUMMARY OF BASIC PALYNOLOGICAL AND  
LITHOLOGICAL DATA

## INTRODUCTION

Nineteen sidewall core samples were examined for palynomorphs from East Halibut-1. Occurrences of spore-pollen and dinoflagellate species in each sample are recorded on the enclosed range chart. Tables 1 and 2 summarize interpretative and basic palynological data.

### SUMMARY TABLE

AGE	FORMATION	PALYNOLOGY ZONE	DINOFLAGELLATE ZONE
Oligocene	Lakes Entrance Formation	<u>P. tuberculatus</u> (2393.0 m)	-
----- log break at 2393.9 m -----			
Late Paleocene	Latrobe Group	Upper <u>L. balmei</u> (2504.0-2415.5 m)	<u>A. homomorphum</u> (2526.0-2415.5m)
Paleocene	Latrobe Group	Lower <u>L. balmei</u> (2711.5-2508.0 m)	
----- T.D. 2721.0 m -----			

NOTE: All depths quoted in this report are in metres K.B.



## GEOLOGICAL COMMENTS

1. Palynological analysis of the section of Latrobe Group (2721.0-2393.9 m) penetrated in East Halibut-1 indicates that it ranges from the Lower to Upper L. balmei Zone. The presence of these zones is consistent with the geophysical seismic markers and palynological correlations with surrounding wells, such as Halibut-1 and Teraglin-1. Although a section of Turrum Formation was intersected in Teraglin-1, there was no evidence for this unit in East Halibut-1. In the latter well, the coarse clastics of the Latrobe Group are overlain by sediments from the P. tuberculatus Zone, and these are correlated with the basal Lakes Entrance Formation.
2. The samples examined from the predominantly shale-sandstone sequence between the top of the Latrobe Group (2393.9 m) and approximately 2526 m frequently contain dinoflagellate assemblages of low diversity and yield that belong to the A. homomorphum Zone. It is suggested that these were deposited in a nearshore to restricted marine environment. The most diverse dinoflagellate assemblage was recorded at 2453.0 m (SWC 17) and it contains some typically marine taxa.
3. It was not considered worthwhile analysing samples from between 2690-2550 m because the interval is extremely sandy. Samples above and below this section belong to the Lower L. balmei Zone.

## BIOSTRATIGRAPHY

The spore-pollen zones have been identified using the criteria proposed by Stover & Partridge (1973). The dinoflagellate zones are modifications on the scheme of Partridge (1976). Discussions of the dinoflagellate assemblages and their zonal assignments are given with the descriptions of their associated spore-pollen assemblages.

Lower Lygistepollenites balmei Zone 2711.5-2508.0 m.

Samples from this interval are typical of the Lower L. balmei Zone in that they are frequently pyritized and poorly preserved, and can be characterized by the often frequent occurrence of the zonal species. The presence of Nothofagidites kaitangata, Tetracolporites textus, T. verrucosus, Gambierina rudata, Haloragacidites harrisii, Integricorpus antipodus, Polycolpites langstonii and Tricolpites waiparaensis, without taxa typical of the Upper L. balmei Zone, is also indicative of the Lower L. balmei Zone.

Dinoflagellates occur sporadically in many samples of the Lower L. balmei Zone and include Senegalinium dilwynense, Glaphrocysta rextintexta, and Apectodinium homomorphum. The first occurrence of A. homomorphum at 2526.0 m marks the base of the A. homomorphum Zone. The low diversity and yield assemblages of the A. homomorphum Zone within this interval (2526.0-2508.0 m) are believed to be indicative of nearshore-restricted marine environment.

Upper Lygistepollenites balmei Zone 2504.0-2415.5 m.

The base of the Upper L. balmei Zone is placed at the first occurrence of Proteacidites annularis at 2504.0 m. The first occurrences of Proteacidites incurvatus, P. latrobensis, and Triporopollenites ambiguus at 2453.0 m within

this interval are also useful markers of the Upper L. balmei Zone. Consistent with this subdivision is the frequent occurrence of Lygistepollenites balmei, and the presence of Haloragacidites harrisii, Cyathidites splendens, Polycolpites langstonii, Malvacipollis subtilis, and Proteacidites adenantoides.

The dinoflagellate Apectodinium homomorphum occurs in many samples between 2415.5-2504.0 m, and is used to mark the A. homomorphum Zone. All dinoflagellate assemblages are of low yield and diversity and are thought to be from a nearshore - restricted marine environment. Some of the taxa recorded are Paralecaniella indentata, Deflandrea dartmooria-medcalfii, Spinidinium sp., Senegalinium dilwynense, Palaeocystodinium sp., and Kenleyia sp., and variants of the Palaeoperidinium bassensis complex. The most diverse assemblage was recorded at 2453.0 m and it contains some typically marine taxa, such as Palaeocystodinium sp., Spinidinium sp., and Kenleyia sp.

P A L Y N O L O G Y   D A T A   S H E E T

B A S I N: Gippsland

ELEVATION: KB: 21.0m GL: -85.0m

WELL NAME: East Halibut-1

TOTAL DEPTH: 2721.0m

A G E	PALYNOLOGICAL ZONES	H I G H E S T   D A T A					L O W E S T   D A T A					
		Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	Preferred Depth	Rtg	Alternate Depth	Rtg	Two Way Time	
NEOGENE	<i>T. pleistocenicus</i>											
	<i>M. lipsis</i>											
	<i>C. bifurcatus</i>											
	<i>T. bellus</i>											
PALEOGENE	<i>P. tuberculatus</i>						2393.0	0				
	Upper <i>N. asperus</i>											
	Mid <i>N. asperus</i>											
	Lower <i>N. asperus</i>											
	<i>P. asperopolus</i>											
	Upper <i>M. diversus</i>											
	Mid <i>M. diversus</i>											
	Lower <i>M. diversus</i>											
	Upper <i>L. balmei</i>	2415.5	2				2504.0	1				
	Lower <i>L. balmei</i>	2508.0	2				2711.5	2				
	LATE CRETACEOUS	Upper <i>T. longus</i>										
		Lower <i>T. longus</i>										
<i>T. lilliei</i>												
<i>N. senectus</i>												
<i>T. apoxyexinus</i>												
<i>P. mawsonii</i>												
<i>A. distocarinatus</i>												
EARLY CRET.	<i>P. pannosus</i>											
	<i>C. paradoxa</i>											
	<i>C. striatus</i>											
	<i>C. hughesi</i>											
	<i>F. wonthaggiensis</i>											
	<i>C. australiensis</i>											

COMMENTS: Apectodinium homomorphum dinoflagellate Zone: 2526.0-2415.5m

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- CONFIDENCE RATING:
- 0: SWC or Core, Excellent Confidence, assemblage with zone species of spores, pollen and microplankton.
  - 1: SWC or Core, Good Confidence, assemblage with zone species of spores and pollen or microplankton.
  - 2: SWC or Core, Poor Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.
  - 3: Cuttings, Fair Confidence, assemblage with zone species of either spores and pollen or microplankton, or both.
  - 4: Cuttings, No Confidence, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If an entry is given a 3 or 4 confidence rating, an alternative depth with a better confidence rating should be entered, if possible. If a sample cannot be assigned to one particular zone, then no entry should be made, unless a range of zones is given where the highest possible limit will appear in one zone and the lowest possible limit in another.

DATA RECORDED BY: Neil G. Marshall DATE: 12/12/85

DATA REVISED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REFERENCES

PARTRIDGE, A.D., 1976. The Geological Expression of Eustacy in the Early Tertiary of the Gippsland Basin. APEA. J. 16, 73-79.

STOVER, L.E. & PARTRIDGE, A.D., 1973. Tertiary and Late Cretaceous spores and pollen from the Gippsland Basin, southeastern Australia. Proc. R. Soc. Victoria, 85, 237-286.

TABLE 1: SUMMARY OF INTERPRETATIVE PALYNOLOGICAL DATA

SAMPLE NO.	DEPTH (m)	SPORE-POLLEN ZONE	DINOFLAGELLATE ZONE	AGE	COMMENTS
SWC 30	2393.0	<u>P. tuberculatus</u> (0)	-	Oligocene	<u>C. annulatus</u> , <u>N. balcombiana</u> , <u>N. rhizoma</u>
SWC 26	2411.0	BARREN SAMPLE			
SWC 24	2415.5	Upper <u>L. balmei</u> (2)	<u>A. homomorphum</u> (0)	Late Paleocene	<u>L. balmei</u> , <u>P. langstonii</u> , <u>A. homomorphum</u>
SWC 23	2417.5	Upper <u>L. balmei</u> (2)	<u>A. homomorphum</u> (0)	Late Paleocene	<u>L. balmei</u> , <u>A. homomorphum</u>
SWC 22	2418.5	Upper <u>L. balmei</u> (1)	-	Late Paleocene	<u>L. balmei</u> , <u>A. homomorphum</u>
SWC 20	2422.0	BARREN SAMPLE			
SWC 19	2424.0	BARREN SAMPLE			
SWC 17	2453.0	Upper <u>L. balmei</u> (1)	-	Late Paleocene	<u>L. balmei</u> , <u>P. latrobensis</u>
SWC 15	2472.0	Upper <u>L. balmei</u> (0)	<u>A. homomorphum</u> (0)	Late Paleocene	<u>L. balmei</u> , <u>P. incurvatus</u> , <u>A. homomorphum</u> , <u>P. latrobensis</u> , <u>P. annularis</u> , <u>T. ambiguus</u> , <u>P. langstonii</u> , <u>P. adenanthoides</u> , <u>M. subtilis</u>
SWC 14	2475.0	<u>L. balmei</u>	-	Paleocene	<u>L. balmei</u>
SWC 13	2499.5	<u>L. balmei</u>	-	Paleocene	<u>L. balmei</u>
SWC 12	2504.0	Upper <u>L. balmei</u> (1)	<u>A. homomorphum</u>	Late Paleocene	<u>L. balmei</u> , <u>P. annularis</u> , <u>A. homomorphum</u> , <u>P. langstonii</u>
SWC 11	2508.0	Lower <u>L. balmei</u> (2)	-	Paleocene	<u>L. balmei</u> , <u>T. waiparaensis</u>
SWC 10	2512.0	Lower <u>L. balmei</u> (2)	-	Paleocene	<u>L. balmei</u> , <u>I. antipodus</u> , <u>P. langstonii</u>
SWC 9	2524.4	Lower <u>L. balmei</u> (2)	-	Paleocene	<u>L. balmei</u>
SWC 8	2526.0	Lower <u>L. balmei</u> (2)	<u>A. homomorphum</u> (0)	Paleocene	<u>L. balmei</u> , <u>A. homomorphum</u>
SWC 7	2530.0	BARREN SAMPLE			
SWC 2	2696.5	Lower <u>L. balmei</u> (2)	-	Paleocene	<u>L. balmei</u>
SWC 1	2711.5	Lower <u>L. balmei</u> (2)	-	Paleocene	<u>T. textus</u> , <u>T. verrucosus</u> , <u>T. waiparaensis</u>

TABLE 2: SUMMARY OF BASIC PALYNOLOGICAL DATA

SAMPLE NO.	DEPTH (m)	YIELD		DIVERSITY		PRESERVATION	LITHOLOGY	PYRIZATION
		SPORE-POLLEN	DINOS	SPORE-POLLEN	DINOS			
SWC 30	2393.0	V. low	Low	Low	Mod.	Good	Clyst.	
SWC 26	2411.0	BARREN SAMPLE					Sst.	
SWC 24	2415.5	Mod.	Low	Mod.	Low	Good	Slst.	
SWC 23	2417.5	Low	Low	Mod.	Low	Fair	Silty sst.	
SWC 22	2418.5	Low	-	Mod.	-	Poor.	Carb. sltst.	
SWC 20	2422.0	BARREN SAMPLE					Sst.	
SWC 19	2424.0	BARREN SAMPLE					Sst.	
SWC 17	2453.0	Low	Low	Mod.	Low	Fair-poor	Silty sst.	
SWC 15	2472.0	Mod.	Mod.	Mod.	Low	Good	Sst.	
SWC 14	2475.0	Low	Low	Low	Low	Poor	Sandy sltst.	
SWC 13	2499.5	Low	Low	Mod.	Low	Fair	Sst.	
SWC 12	2504.0	Mod.	Low	Mod.	Low	Poor	Carb. sh.	high
SWC 11	2508.0	V. low	V. low	Mod.	Low	Poor-fair	Silty sst.	
SWC 10	2512.0	Mod.	Low	Mod.	Low	Good	Carb. sh.	
SWC 9	2524.4	V. low	V. low	Low	Low	Poor	Slst.	
SWC 8	2526.0	Mod.	Low	Mod.	Low	Fair	Carb. sltst.	high
SWC 7	2530.0	BARREN SAMPLE					Sst.	
SWC 2	2696.5	Low	V. low	Low	Low	Poor	Sst.	high
SWC 1	2711.5	Mod.	-	Mod.	-	Good	Coal	

# APPENDIX 2



EAST HALIBUT 1

QUANTITATIVE LOG ANALYSIS

Interval : 2390 - 2705m MDKB

Analyst : L.J. Finlayson

Date : October, 1985

27 OCT 1987

PETROLEUM DIVISION

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EAST HALIBUT 1 - QUANTITATIVE LOG ANALYSIS

East Halibut 1 wireline logs have been analysed for effective porosity and water saturation over the interval 2390-2705m KB. Analysis was carried out using a reiterative technique which incorporates hydrocarbon correction to the porosity logs, density-neutron crossplot porosities, a Dual Water saturation relationship, and convergence on a preselected grain density window by shale volume adjustment.

Logs Used

LLD, LLS (DLTE), MSFL, Caliper, RHOB (LDTC), NPHI (CNTH), EPT, SLS, SDT.

The NPHI curve was corrected for borehole and environmental effects. The borehole corrected MSFL, the MSFC was read directly off tape. The MSFC was used with the LLD and LLS to derive Rt and invasion diameter logs.

Log Quality

Most logs appear to be of reasonable quality however both the SLS and the EPT have the occasional noise spikes.

Analysis Parameters

a*	0.62-1.00
m*	2.00-2.15
n	2
Apparent Shale Density (RHOB <sub>SH</sub> )	2.55 gm/cc
Apparent Neutron Porosity (NPHISH)	0.30
Formation Water Salinity	50,000 ppm NaCleq.
Rsh	10 ohm.m
Rmf @ 82° C	0.092 ohm.m
Grain density - lower limit	2.65 gm/cc
Grain density - upper limit	2.67 gm/cc
Mud Filtrate Density (RHOF)	1.01 gm/cc
Hydrocarbon Density (RH <sub>OH</sub> )	0.74 gm/cc
Bottom Hole Temperature	82°C

\* a = 0.62 and m = 2.15 except the interval 2448.75-2481.5m and 2492.0-2568m where a = 1.00 and m = 2.00.

Shale Volume

An initial estimate of VSH was taken from density-neutron separation.

$$VSH \text{ ND} = \frac{NPHI - \left( \frac{2.65 - RHOB}{1.65} \right)}{NPHISH - \left( \frac{2.65 - RHOB_{SH}}{1.65} \right)}$$

Total Porosities

Total porosity was initially calculated from a density-neutron logs using the following algorithms:

$$h = 2.71 - \text{RHOB} + \text{NPHI} (\text{RHOF} - 2.71) \quad - 2$$

if h is greater than 0, then

$$\text{apparent matrix density, RHOMa} = 2.71 - h/2 \quad - 3$$

if h is less than 0, then

$$\text{apparent matrix density, RHOMa} = 2.71 - 0.64h \quad - 4$$

$$\text{Total porosity: PHIT} = \frac{\text{RHOMa} - \text{RHOB}}{\text{RHOMa} - \text{RHOF}} \quad - 5$$

where RHOB = environ. corrected bulk density in gms/cc  
 NPHI = environ. corrected neutron porosity in limestone porosity units.  
 RHOF = fluid density (1.01 gms.cc)

Free Formation Water (Rw) and Bound Water (Rwb) Resistivities

Free water resistivity was derived by calculating total porosities and Rwa over the logged interval. Free formation water resistivity (Rw) was taken from the clean, water sand Rwa. Bound water resistivity (Rwb) is calculated from the input shale resistivity value, Rsh.

Water Saturations

Water saturations were determined from the Dual Water model which uses the following relationship:

$$\frac{1}{R_t} = S_{wT}^n * \left( \frac{\text{PHIT}^m}{a R_w} \right) + S_{wT}^{(n-1)} \left[ \frac{S_{wb} * \text{PHIT}^m}{a} \left( \frac{1}{R_{wb}} - \frac{1}{R_w} \right) \right] \quad - 6$$

or

$$\frac{1}{R_{xo}} = S_{xoT}^n * \left( \frac{\text{PHIT}^m}{a R_w} \right) + S_{xoT}^{(n-1)} \left[ \frac{S_{wb} * \text{PHIT}^m}{a} \left( \frac{1}{R_{wb}} - \frac{1}{R_{mf}} \right) \right] \quad - 7$$

where: SwT and SxoT are "total" water saturations

$$\text{and } S_{wb} \text{ (bound water saturation)} = \frac{\text{VSH} * \text{PHISH}}{\text{PHIT}} \quad - 8$$

where: PHISH = total porosity in shale derived from density-neutron crossplot.

with a = 1  
 m = 2  
 n = 2

Hydrocarbon correction to the porosity logs utilised the following algorithms:

$$\text{RHOB.HC} = \text{RHOB(raw)} + 1.07 \text{ PHIT} (1-\text{SxoT}) [(1.11-0.15\text{P})\text{RHOF} - 1.15\text{RHOH}] \quad - 9$$

$$\text{NPHI.HC} = \text{NPHI(raw)} + 1.3 \text{ PHIT} (1-\text{SxoT}) \frac{\text{RHOF}(1-\text{P})-1.5\text{RHOH} + 0.2}{\text{RHOF}(1-\text{P})} \quad -10$$

where P = mud filtrate salinity in parts per unit  
RHOF = mud filtrate density  
RHOH = hydrocarbon density  
RHOB.HC = hydrocarbon corrected bulk density  
NPHI.HC = hydrocarbon corrected neutron porosity

The calculated "grain density" was derived by removing the shale component from the rock using the following algorithms:

$$\text{RHOBSC} = \frac{\text{RHOB.HC} - \text{VSH} * \text{RHOBSh}}{1-\text{VSH}} \quad -11$$

$$\text{NPHISC} = \frac{\text{NPHI.HC} - \text{VSH} * \text{NPHISH}}{1-\text{VSH}} \quad -12$$

The shale corrected density and neutron values were then entered into the cross-plot algorithms (equations 2, 3 and 4) to derive grain density (RHOG).

If calculated RHOG fell inside the specified grain density window, then PHIE and Swe were calculated as follows:

$$\text{PHIE} = \text{PHIT} - \text{VSH} * \text{PHISH} \quad -13$$

$$\text{Swe} = 1 - \frac{\text{PHIT} (1-\text{SwT})}{\text{PHIE}} \quad -14$$

if VSH was greater than 60%, then Swe was set to 1 and PHIE set to zero.

If calculated RHOG fell outside the specified grain density window, the VSH was adjusted appropriately and the process repeated.

Coals were edited for an output of VSH = 0, PHIE = 0 and Swe = 1 over the following intervals: 2417.75-2420.0m, 2469.75-2471.5m and 2523.5-2525.0m KB.

#### Log Analysis Comments

1. A 3.5m net oil sand is interpreted over the interval 2395.5-2399.0m, with the OWC currently at 2399.0m KB (Figure 1).
2. A residual oil zone is interpreted over the interval 2399.25-2422.5m KB. The residual oil zone is confirmed by SWC shows over the interval 2401.0-2422.0m. A SWC at 2424.0m is sandstone and has no shows.
3. The Residual Oil Saturation (ROS) calculated from the Dual Laterolog is 75.6%. It is noted that the residual oil zone extends below the "Field" OWC of 2517m KB.
4. All other zones are interpreted as being water bearing.

5. The "Humble" analysis parameters ( $a = 0.62$ ,  $m = 2.15$ ) appeared suitable in the clean sands whereas the "Dual Water" analysis parameters ( $a = 1$ ,  $m = 2$ ) appeared suitable in shaly and "hot" sands.
6. The comparison between the Long Spaced Sonic (SLS) and the Digital Sonic (Figures 2 and 3) Tool (SDT) indicates that both provide essentially the same measurement.
7. Attached are an EPT Analysis, a summary of results, a listing and a Log Analysis depth plot.

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Attach:

EAST HALIBUT 1  
SUMMARY OF RESULTS

Depth Interval (m MDKB)	Gross Thickness (m)	* Net Thickness (m)	*Porosity Average	* Swe Average	Fluid Content
2395.50 - 2399.00	3.50	3.50	0.235 $\pm$ 0.010	0.126	Oil
2399.25 - 2422.50	23.25	20.25	0.229 $\pm$ 0.029	0.756	Residual Oil
2422.75 - 2458.75	36.00	36.00	0.199 $\pm$ 0.040	0.986	Water
2463.50 - 2469.50	6.00	6.00	0.184 $\pm$ 0.043	1.000	Water
2472.00 - 2501.75	29.75	29.25	0.197 $\pm$ 0.035	1.000	Water
2506.00 - 2509.75	3.75	3.00	0.153 $\pm$ 0.039	0.838	Water
2512.75 - 2515.75	4.00	4.00	0.179 $\pm$ 0.026	0.948	Water
2526.75 - 2698.50	171.75	171.50	0.202 $\pm$ 0.029	0.985	Water
2700.75 - 2703.75	4.00	4.00	0.149 $\pm$ 0.012	0.956	Water

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## EPT ANALYSIS

The EPT was analysed in the following manner:

$$\text{EPHI} = \frac{\text{Tp1} - \text{Tpma}}{\text{TpW} - \text{Tpma}}$$

$$\text{Tpma} = 6.2 \text{ ns/m}$$

$$\text{TpW} = 38.0 \text{ ns/m}$$

$$\text{ESX0} = \frac{\text{EPHI}}{\text{PHIT}}$$

where:

- EPHI = water filled porosity
- Tp1 = propagation time
- Tpma = apparent matrix propagation time from Tp1 vs PHIT crossplot (Figure 4)
- TpW = apparent water propagation time from TpW vs PHIT crossplot (Figure 4)
- ESX0 = invaded zone saturation from EPT
- PHIT = total porosity from density-neutron crossplot

### EPT Comments

1. The EPHI/PHIT depthplot confirms the residual oil zone over the interval 2399.25-2422.5m KB (Figure 5).
2. The ESX0 calculated in the residual oil zone of 84% is close to that calculated by the MSFL (89%). Both tools are very shallow reading and are thus measuring the flushed zone saturation, not necessarily the residual oil saturation (ROS).
3. The ROS calculated by the Dual Laterolog (76%) is lower than the SX0 calculated by either the EPT or MSFL. This implies that some oil not moved by production is still moveable by the drilling fluid. A true measurement of ROS is therefore more likely from the DLT which is relatively unaffected by drilling fluids rather than from the EPT or MSFL.

27381/59

PETROLEUM DIVISION

FROM W.C.R. Vol. II

27 OCT 1987

DEPTH	.GR	EAST HALIBUT#1 .RT	LOG ANALYSIS .MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2390.000	56.918	1.428	.855	2.451	.310	.000	1.000	.000	1.000
2390.250	57.603	1.548	.904	2.458	.280	.000	1.000	.000	1.000
2390.500	56.353	1.564	1.182	2.491	.253	.000	1.000	.000	1.000
2390.750	53.680	1.597	.958	2.510	.266	.000	1.000	.000	1.000
2391.000	55.645	1.520	.934	2.490	.281	.000	1.000	.000	1.000
2391.250	57.211	1.659	1.047	2.478	.261	.000	1.000	.000	1.000
2391.500	56.797	1.652	1.001	2.463	.268	.000	1.000	.000	1.000
2391.750	58.204	1.555	.995	2.465	.300	.000	1.000	.000	1.000
2392.000	57.175	1.545	.977	2.526	.303	.000	1.000	.000	1.000
2392.250	58.537	1.557	1.043	2.536	.293	.000	1.000	.000	1.000
2392.500	60.409	1.515	.950	2.514	.292	.000	1.000	.000	1.000
2392.750	57.280	1.440	.940	2.561	.289	.000	1.000	.000	1.000
2393.000	58.629	1.407	.968	2.608	.285	.000	1.000	.000	1.000
2393.250	61.444	1.612	1.252	2.602	.286	.000	1.000	.000	1.000
2393.500	59.997	1.679	.994	2.596	.268	.000	1.000	.000	1.000
2393.750	66.745	1.185	.970	2.747	.296	.000	1.000	.000	1.000
2394.000	70.822	1.044	.482	3.018	.317	.000	1.000	.000	1.000
2394.250	59.165	1.092	.802	3.075	.273	.000	1.000	.000	1.000
2394.500	46.540	1.699	.624	3.016	.239	.000	1.000	.000	1.000
2394.750	45.854	1.923	1.396	2.783	.215	.000	1.000	.000	1.000
2395.000	56.788	2.660	2.225	2.661	.212	.000	1.000	.000	1.000
2395.250	54.084	7.452	4.946	2.429	.211	.082	.771	.082	.494
2395.500	32.011	16.854	4.340	2.244	.183	.237	.556	.237	.231
2395.750	21.333	34.216	2.064	2.223	.183	.243	.477	.243	.157
2396.000	22.827	48.713	1.709	2.245	.182	.228	.451	.228	.125
2396.250	24.100	51.647	1.805	2.241	.179	.235	.446	.235	.133
2396.500	23.117	58.453	1.676	2.226	.187	.243	.429	.243	.121
2396.750	23.530	71.752	1.704	2.240	.183	.230	.417	.230	.100
2397.000	27.223	84.118	1.782	2.253	.187	.221	.408	.221	.080
2397.250	30.407	95.811	1.809	2.215	.187	.245	.388	.245	.094
2397.500	29.026	124.673	2.269	2.234	.185	.232	.375	.232	.072
2397.750	27.412	144.378	2.375	2.261	.189	.213	.377	.213	.044
2398.000	26.406	112.161	2.150	2.233	.193	.230	.382	.230	.063
2398.250	31.995	79.180	2.117	2.219	.213	.232	.402	.232	.053
2398.500	36.597	56.773	2.082	2.209	.218	.238	.421	.238	.070
2398.750	34.242	20.987	2.472	2.213	.212	.247	.510	.247	.168
2399.000	30.860	5.461	2.825	2.222	.203	.254	.675	.254	.375
2399.250	28.742	2.110	1.662	2.231	.197	.251	.822	.251	.612
2399.500	29.394	1.764	1.496	2.249	.182	.240	.870	.240	.705
2399.750	31.148	1.542	1.469	2.244	.180	.241	.891	.241	.750
2400.000	28.970	1.645	1.315	2.235	.189	.248	.870	.248	.706
2400.250	27.505	1.539	1.462	2.257	.190	.240	.893	.240	.754
2400.500	29.765	1.700	1.524	2.275	.181	.230	.892	.230	.752
2400.750	27.145	2.084	1.475	2.298	.165	.214	.883	.214	.732
2401.000	26.060	1.623	1.861	2.263	.172	.231	.899	.231	.766
2401.250	27.556	1.711	1.134	2.232	.184	.247	.864	.247	.694
2401.500	24.248	1.268	1.218	2.219	.197	.258	.901	.258	.770
2401.750	24.359	1.325	1.176	2.222	.201	.258	.892	.258	.752
2402.000	25.427	1.393	1.150	2.236	.200	.252	.892	.252	.751
2402.250	27.014	1.432	1.247	2.244	.210	.253	.886	.253	.738
2402.500	26.864	1.377	1.365	2.240	.197	.249	.898	.249	.765
2402.750	23.043	1.269	1.148	2.218	.198	.258	.900	.258	.768
2403.000	21.720	1.186	1.168	2.213	.208	.264	.900	.264	.769
2403.250	21.201	1.237	1.165	2.230	.191	.251	.913	.251	.797
2403.500	21.093	1.301	1.311	2.244	.183	.242	.918	.242	.807



DEPTH	EAST HALIBUT#1 LOG ANALYSIS								
	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2404.000	27.606	1.303	1.268	2.243	.189	.245	.913	.245	.795
2404.250	27.839	1.266	1.255	2.237	.201	.252	.906	.252	.782
2404.500	23.893	1.223	1.129	2.226	.212	.261	.902	.261	.773
2404.750	23.801	1.164	1.195	2.220	.219	.266	.901	.266	.771
2405.000	25.533	1.169	1.130	2.224	.196	.255	.916	.255	.804
2405.250	24.912	1.189	1.158	2.222	.196	.256	.912	.256	.794
2405.500	24.721	1.210	1.174	2.225	.197	.255	.910	.255	.790
2405.750	22.213	1.206	1.103	2.246	.194	.246	.925	.246	.824
2406.000	24.342	1.201	1.182	2.249	.199	.247	.925	.247	.822
2406.250	26.976	1.185	1.215	2.239	.194	.249	.924	.249	.821
2406.500	24.266	1.167	1.210	2.256	.191	.241	.940	.241	.856
2406.750	22.834	1.270	1.354	2.261	.197	.241	.923	.241	.819
2407.000	27.399	1.626	1.593	2.263	.175	.232	.897	.232	.761
2407.250	28.891	1.694	2.970	2.307	.170	.213	.919	.213	.810
2407.500	30.779	1.434	2.184	2.291	.190	.227	.924	.227	.821
2407.750	38.866	1.341	1.277	2.262	.202	.243	.911	.243	.791
2408.000	44.178	1.606	2.150	2.263	.217	.249	.872	.249	.710
2408.250	43.760	1.909	2.308	2.261	.221	.249	.840	.249	.647
2408.500	45.652	1.799	1.850	2.274	.215	.244	.861	.244	.687
2408.750	48.440	1.821	1.975	2.277	.211	.241	.862	.241	.691
2409.000	51.758	1.844	1.805	2.267	.206	.242	.858	.242	.682
2409.250	52.048	1.869	1.794	2.260	.222	.250	.843	.250	.652
2409.500	49.980	1.775	1.781	2.242	.221	.257	.841	.257	.649
2409.750	49.693	1.828	1.511	2.233	.201	.252	.843	.252	.653
2410.000	47.676	1.625	1.567	2.253	.176	.236	.890	.236	.747
2410.250	59.517	1.860	1.671	2.270	.179	.231	.875	.231	.715
2410.500	71.843	2.183	2.579	2.262	.219	.248	.820	.248	.608
2410.750	70.623	2.154	2.254	2.257	.218	.250	.819	.250	.608
2411.000	73.215	2.071	1.789	2.269	.210	.242	.837	.242	.640
2411.250	67.549	2.349	2.390	2.301	.208	.207	.841	.207	.642
2411.500	55.355	2.491	2.550	2.327	.185	.211	.855	.211	.676
2411.750	45.359	2.259	2.894	2.341	.157	.195	.901	.195	.771
2412.000	43.460	2.392	1.692	2.357	.147	.185	.911	.185	.791
2412.250	42.737	2.052	2.809	2.359	.166	.193	.923	.193	.819
2412.500	33.290	1.683	1.570	2.323	.170	.207	.931	.207	.836
2412.750	23.506	1.286	1.125	2.274	.172	.227	.946	.227	.870
2413.000	24.263	1.237	1.129	2.264	.187	.236	.936	.236	.847
2413.250	27.178	1.278	1.294	2.271	.186	.233	.935	.233	.846
2413.500	28.090	1.322	1.301	2.273	.186	.232	.931	.232	.835
2413.750	29.763	1.386	1.305	2.299	.176	.218	.947	.218	.872
2414.000	36.847	1.617	1.479	2.345	.157	.194	.966	.194	.916
2414.250	59.773	1.868	2.432	2.328	.207	.189	.901	.189	.769
2414.500	93.697	2.801	4.274	2.295	.268	.186	.775	.186	.504
2414.750	94.556	3.714	6.796	2.359	.216	.157	.789	.157	.531
2415.000	83.702	5.115	3.446	2.404	.187	.131	.786	.131	.525
2415.250	97.606	4.005	4.048	2.419	.195	.127	.839	.127	.628
2415.500	106.612	5.162	6.228	2.469	.202	.047	.903	.047	.772
2415.750	84.481	5.288	7.611	2.459	.195	.082	.838	.082	.625
2416.000	54.063	3.725	3.596	2.410	.158	.147	.877	.147	.716
2416.250	43.541	2.959	2.641	2.379	.133	.172	.902	.172	.773
2416.500	36.158	2.789	3.069	2.359	.140	.182	.892	.182	.752
2416.750	28.428	2.490	3.135	2.331	.155	.198	.880	.198	.726
2417.000	27.796	1.704	1.227	2.283	.174	.224	.901	.224	.770
2417.250	28.208	1.376	1.135	2.263	.185	.236	.916	.236	.804
2417.500	26.047	1.369	1.246	2.269	.184	.233	.922	.233	.817

## EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2418.000	31.681	1.237	1.123	2.142	.260	.000	1.000	.000	1.000
2418.250	53.807	1.958	9.083	1.750	.442	.000	1.000	.000	1.000
2418.500	78.106	6.502	98.375	1.689	.460	.000	1.000	.000	1.000
2418.750	100.714	6.217	23.950	2.084	.324	.000	1.000	.000	1.000
2419.000	71.725	1.722	5.502	2.360	.233	.000	1.000	.000	1.000
2419.250	41.915	1.049	1.506	2.344	.185	.000	1.000	.000	1.000
2419.500	65.880	1.146	1.089	2.394	.161	.000	1.000	.000	1.000
2419.750	77.905	2.461	9.381	2.499	.157	.000	1.000	.000	1.000
2420.000	56.649	3.881	3.908	2.444	.155	.000	1.000	.000	1.000
2420.250	39.535	2.558	2.914	2.352	.146	.187	.896	.187	.761
2420.500	31.103	1.892	2.365	2.317	.159	.205	.914	.205	.798
2420.750	32.071	1.468	1.507	2.283	.173	.223	.926	.223	.825
2421.000	36.382	1.387	1.434	2.264	.166	.227	.930	.227	.834
2421.250	36.353	1.516	1.602	2.249	.166	.233	.904	.233	.777
2421.500	37.968	1.468	1.577	2.238	.178	.243	.896	.243	.761
2421.750	39.206	1.367	1.426	2.264	.201	.242	.908	.242	.785
2422.000	32.329	1.342	1.675	2.298	.188	.224	.942	.224	.861
2422.250	27.818	1.270	1.733	2.291	.165	.217	.965	.217	.915
2422.500	30.882	1.142	1.229	2.268	.171	.228	.965	.228	.915
2422.750	30.881	1.056	1.147	2.266	.162	.225	.986	.225	.966
2423.000	28.528	1.042	1.172	2.268	.169	.227	.984	.227	.962
2423.250	31.267	1.026	1.024	2.247	.185	.242	.962	.242	.907
2423.500	31.986	1.006	1.014	2.239	.186	.245	.959	.245	.901
2423.750	27.968	1.031	1.102	2.254	.182	.238	.967	.238	.919
2424.000	25.339	1.062	1.123	2.279	.171	.224	.987	.224	.967
2424.250	25.015	1.098	1.254	2.291	.160	.215	.998	.215	.996
2424.500	25.764	1.111	1.120	2.278	.160	.220	.986	.220	.966
2424.750	24.677	1.074	1.202	2.273	.157	.220	.992	.220	.979
2425.000	24.081	1.070	1.184	2.277	.160	.220	.993	.220	.983
2425.250	22.736	1.056	1.217	2.281	.170	.223	.990	.223	.976
2425.500	23.802	1.042	1.293	2.276	.170	.225	.989	.225	.972
2425.750	27.629	1.044	1.155	2.264	.162	.226	.987	.226	.967
2426.000	25.140	1.085	1.341	2.284	.152	.214	1.000	.214	1.000
2426.250	21.759	1.112	1.375	2.297	.149	.208	1.000	.208	1.000
2426.500	22.395	1.076	1.256	2.288	.149	.212	1.000	.212	1.000
2426.750	23.737	.998	1.173	2.275	.162	.222	1.000	.222	1.000
2427.000	24.337	.969	1.103	2.273	.170	.226	1.000	.226	1.000
2427.250	24.015	.971	1.212	2.270	.163	.224	1.000	.224	1.000
2427.500	22.630	.934	1.133	2.247	.179	.239	.984	.239	.961
2427.750	22.706	.920	1.032	2.236	.181	.245	.978	.245	.945
2428.000	26.961	.910	1.044	2.238	.177	.242	.984	.242	.961
2428.250	32.581	.903	.964	2.225	.197	.255	.963	.255	.911
2428.500	30.230	.884	.948	2.236	.223	.262	.957	.262	.897
2428.750	25.951	.885	.915	2.237	.218	.259	.961	.259	.906
2429.000	24.528	.897	.911	2.239	.198	.250	.973	.250	.935
2429.250	24.635	.894	.841	2.248	.192	.245	.983	.245	.959
2429.500	24.753	.887	.856	2.245	.200	.249	.978	.249	.945
2429.750	24.575	.896	.800	2.249	.180	.239	.993	.239	.982
2430.000	25.080	.923	.888	2.265	.169	.228	1.000	.228	1.000
2430.250	23.211	.911	.942	2.269	.171	.228	1.000	.228	1.000
2430.500	23.354	.901	.886	2.266	.168	.228	1.000	.228	1.000
2430.750	22.636	.881	.890	2.267	.176	.230	1.000	.230	1.000
2431.000	21.086	.889	.862	2.272	.187	.233	1.000	.233	1.000
2431.250	19.542	.905	.848	2.265	.183	.234	.999	.234	.998
2431.500	21.681	.927	.834	2.248	.170	.235	.993	.235	.982
2431.750	25.355	.940	.934	2.274	.187	.235	.991	.232	.978

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2432.000	23.870	1.001	.918	2.307	.203	.212	1.000	.212	1.000
2432.250	25.494	1.061	1.058	2.291	.175	.221	.992	.221	.981
2432.500	27.869	1.107	1.256	2.279	.165	.222	.983	.222	.957
2432.750	33.286	1.122	1.240	2.264	.170	.229	.966	.229	.918
2433.000	39.089	1.090	1.097	2.266	.176	.231	.968	.231	.923
2433.250	43.505	1.095	1.174	2.278	.171	.224	.980	.224	.951
2433.500	46.428	1.136	1.046	2.275	.173	.227	.968	.227	.922
2433.750	47.345	1.200	1.194	2.284	.181	.226	.958	.226	.898
2434.000	44.135	1.249	1.364	2.284	.179	.226	.952	.226	.884
2434.250	44.647	1.232	1.207	2.275	.185	.232	.944	.232	.865
2434.500	45.175	1.182	1.176	2.263	.196	.240	.937	.240	.850
2434.750	44.315	1.152	1.136	2.262	.185	.236	.949	.236	.877
2435.000	51.644	1.222	1.132	2.288	.183	.226	.956	.226	.894
2435.250	55.059	1.301	1.506	2.311	.184	.218	.958	.218	.899
2435.500	48.812	1.345	1.588	2.322	.178	.211	.965	.211	.915
2435.750	46.824	1.366	1.626	2.314	.165	.209	.966	.209	.918
2436.000	47.335	1.369	1.307	2.307	.167	.212	.959	.212	.902
2436.250	41.888	1.500	2.168	2.351	.148	.188	.992	.188	.981
2436.500	30.473	1.411	1.944	2.341	.131	.184	1.000	.184	1.000
2436.750	23.276	1.118	1.762	2.306	.145	.203	1.000	.203	1.000
2437.000	21.937	.936	1.057	2.291	.168	.218	1.000	.218	1.000
2437.250	21.022	.907	.928	2.277	.173	.226	1.000	.226	1.000
2437.500	20.445	.904	.979	2.277	.171	.225	1.000	.225	1.000
2437.750	19.475	.906	1.018	2.271	.178	.230	1.000	.230	1.000
2438.000	18.931	.910	.947	2.269	.169	.227	1.000	.227	1.000
2438.250	17.862	.934	.950	2.283	.151	.214	1.000	.214	1.000
2438.500	18.399	.945	.964	2.300	.156	.210	1.000	.210	1.000
2438.750	18.853	.939	.970	2.283	.168	.221	1.000	.221	1.000
2439.000	18.905	.921	1.172	2.258	.164	.229	1.000	.229	1.000
2439.250	19.209	.919	1.155	2.294	.151	.210	1.000	.210	1.000
2439.500	20.337	1.023	1.294	2.357	.144	.184	1.000	.184	1.000
2439.750	21.166	1.232	1.669	2.411	.151	.144	1.000	.144	1.000
2440.000	18.945	1.181	1.342	2.351	.168	.197	1.000	.197	1.000
2440.250	19.145	1.000	.941	2.274	.183	.231	.985	.231	.963
2440.500	20.320	.894	.942	2.254	.195	.243	.985	.243	.963
2440.750	19.063	.905	.895	2.260	.196	.242	.985	.242	.963
2441.000	19.328	.883	.987	2.265	.185	.235	1.000	.235	1.000
2441.250	19.679	.913	.886	2.267	.180	.233	1.000	.233	1.000
2441.500	18.499	.985	1.015	2.282	.169	.222	1.000	.222	1.000
2441.750	19.808	1.043	1.251	2.295	.165	.216	1.000	.216	1.000
2442.000	21.063	1.054	1.138	2.296	.175	.220	.996	.220	.989
2442.250	21.012	1.016	1.106	2.292	.178	.222	.998	.222	.995
2442.500	21.032	1.096	1.000	2.313	.163	.208	1.000	.208	1.000
2442.750	18.960	1.222	1.470	2.341	.155	.195	1.000	.195	1.000
2443.000	18.370	1.251	1.421	2.347	.149	.190	1.000	.190	1.000
2443.250	18.355	1.234	1.466	2.352	.147	.187	1.000	.187	1.000
2443.500	17.422	1.261	1.343	2.349	.159	.193	1.000	.193	1.000
2443.750	21.367	1.218	1.478	2.323	.168	.207	.993	.207	.982
2444.000	23.383	1.075	1.204	2.304	.178	.218	.995	.218	.988
2444.250	21.011	.993	1.043	2.296	.174	.219	1.000	.219	1.000
2444.500	22.267	.987	1.115	2.279	.167	.223	1.000	.223	1.000
2444.750	21.249	1.004	1.146	2.282	.173	.224	.997	.224	.993
2445.000	19.061	.999	1.199	2.291	.167	.218	1.000	.218	1.000
2445.250	20.147	.993	1.164	2.283	.165	.220	1.000	.220	1.000
2445.500	20.220	.975	1.047	2.286	.173	.222	1.000	.222	1.000

EAST HALIBUT#1 LOG ANALYSIS									
DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2446.000	22.391	.957	1.073	2.277	.172	.225	1.000	.225	1.000
2446.250	21.896	.966	1.098	2.292	.169	.219	1.000	.219	1.000
2446.500	19.603	1.014	1.109	2.306	.156	.208	1.000	.208	1.000
2446.750	21.547	1.081	1.257	2.316	.152	.202	1.000	.202	1.000
2447.000	20.246	1.094	1.285	2.316	.157	.205	1.000	.205	1.000
2447.250	18.966	1.065	1.154	2.303	.160	.210	1.000	.210	1.000
2447.500	21.041	1.030	1.188	2.311	.152	.204	1.000	.204	1.000
2447.750	22.485	.999	1.158	2.316	.153	.203	1.000	.203	1.000
2448.000	26.154	.989	1.125	2.326	.150	.198	1.000	.198	1.000
2448.250	46.283	1.222	1.590	2.385	.131	.169	1.000	.169	1.000
2448.500	68.403	1.847	3.939	2.429	.138	.134	1.000	.134	1.000
2448.750	76.668	2.937	3.655	2.423	.161	.133	.983	.133	.959
2449.000	73.577	2.660	3.361	2.405	.163	.149	.975	.149	.939
2449.250	68.500	2.288	2.896	2.382	.162	.165	.980	.165	.950
2449.500	68.448	2.107	2.494	2.377	.171	.164	.990	.164	.976
2449.750	68.494	2.011	2.336	2.368	.168	.173	.988	.173	.971
2450.000	73.686	1.975	2.242	2.357	.179	.178	.976	.178	.942
2450.250	78.591	1.834	2.158	2.346	.191	.181	.977	.181	.944
2450.500	77.937	1.704	1.889	2.339	.190	.188	.985	.188	.963
2450.750	75.565	1.854	2.080	2.360	.190	.169	.994	.169	.985
2451.000	79.862	2.059	2.711	2.380	.186	.159	.993	.159	.983
2451.250	87.896	2.334	2.476	2.387	.187	.152	.975	.152	.938
2451.500	91.393	2.334	2.874	2.395	.195	.142	.984	.142	.959
2451.750	85.938	2.055	2.154	2.371	.199	.160	.979	.160	.949
2452.000	90.675	1.920	2.061	2.352	.179	.183	.976	.183	.941
2452.250	99.202	1.897	2.388	2.357	.183	.176	.985	.176	.962
2452.500	122.783	1.942	1.759	2.346	.201	.181	.961	.181	.904
2452.750	135.850	1.767	2.072	2.351	.211	.172	.985	.172	.963
2453.000	106.374	1.927	2.030	2.373	.190	.162	.998	.162	.996
2453.250	76.220	2.041	2.577	2.394	.187	.146	1.000	.146	1.000
2453.500	69.652	2.474	2.729	2.405	.176	.141	.990	.141	.976
2453.750	71.701	2.618	3.872	2.423	.166	.131	1.000	.131	1.000
2454.000	68.710	2.639	2.696	2.411	.170	.139	.986	.139	.966
2454.250	68.818	2.491	2.957	2.406	.169	.144	.992	.144	.980
2454.500	69.310	2.591	3.447	2.407	.157	.150	.985	.150	.962
2454.750	64.930	2.686	3.180	2.391	.146	.173	.955	.173	.891
2455.000	65.223	2.760	3.569	2.405	.152	.149	.975	.149	.938
2455.250	69.588	2.897	3.469	2.420	.157	.138	.981	.138	.952
2455.500	79.171	3.032	3.491	2.428	.157	.130	.985	.130	.964
2455.750	81.409	3.100	3.765	2.436	.156	.124	.994	.124	.986
2456.000	74.706	3.126	3.822	2.437	.143	.130	.995	.130	.988
2456.250	77.462	3.178	3.650	2.429	.139	.133	.984	.133	.962
2456.500	84.726	3.402	3.845	2.428	.149	.135	.961	.135	.904
2456.750	86.632	3.647	4.231	2.451	.157	.111	.982	.111	.955
2457.000	89.365	3.807	4.421	2.462	.161	.105	.982	.105	.956
2457.250	84.750	3.718	4.413	2.446	.158	.114	.969	.114	.923
2457.500	78.348	3.748	3.992	2.445	.151	.119	.967	.119	.918
2457.750	80.218	3.776	4.276	2.451	.150	.113	.976	.113	.942
2458.000	82.967	3.832	4.161	2.448	.154	.115	.965	.115	.914
2458.250	87.203	3.796	4.334	2.448	.159	.112	.966	.112	.918
2458.500	88.267	3.870	4.577	2.446	.163	.112	.956	.112	.893
2458.750	94.244	4.074	4.364	2.457	.162	.109	.956	.109	.891
2459.000	103.091	4.512	5.313	2.479	.162	.091	.974	.091	.936
2459.250	104.184	4.919	5.827	2.481	.168	.087	.953	.087	.885
2459.500	99.992	4.891	5.855	2.477	.167	.090	.947	.090	.870
2459.750	99.450	4.894	5.810	2.477	.164	.078	.984	.078	.961

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2460.000	101.103	4.903	6.026	2.507	.163	.065	1.000	.065	1.000
2460.250	102.023	5.252	6.028	2.500	.160	.074	.988	.074	.970
2460.500	98.108	5.606	7.023	2.508	.154	.070	.992	.070	.981
2460.750	103.336	4.930	6.596	2.487	.178	.069	.967	.069	.919
2461.000	102.295	3.483	5.055	2.433	.209	.097	.942	.097	.859
2461.250	96.170	2.597	2.944	2.390	.204	.141	.950	.141	.877
2461.500	97.770	2.566	2.693	2.399	.188	.141	.969	.141	.924
2461.750	105.326	3.089	3.947	2.454	.182	.103	1.000	.103	1.000
2462.000	111.450	3.957	5.196	2.506	.197	.000	1.000	.000	1.000
2462.250	111.627	4.930	5.797	2.532	.187	.000	1.000	.000	1.000
2462.500	116.131	5.552	6.634	2.546	.174	.000	1.000	.000	1.000
2462.750	111.362	6.652	8.307	2.563	.176	.000	1.000	.000	1.000
2463.000	93.447	6.233	8.582	2.551	.173	.000	1.000	.000	1.000
2463.250	66.294	4.313	4.297	2.485	.154	.089	1.000	.089	1.000
2463.500	50.954	3.492	3.394	2.453	.137	.118	1.000	.118	1.000
2463.750	52.649	3.444	4.031	2.455	.144	.113	1.000	.113	1.000
2464.000	61.649	3.303	4.097	2.418	.151	.143	.951	.143	.881
2464.250	73.331	2.989	3.309	2.393	.171	.155	.933	.155	.839
2464.500	84.110	2.791	3.019	2.384	.184	.156	.933	.156	.838
2464.750	82.633	2.639	3.132	2.381	.193	.155	.937	.155	.849
2465.000	76.089	2.469	2.723	2.389	.185	.151	.965	.151	.914
2465.250	66.132	2.525	2.763	2.408	.167	.144	.991	.144	.977
2465.500	60.896	2.525	3.414	2.412	.178	.134	.996	.134	.989
2465.750	61.668	2.429	2.281	2.405	.173	.143	.995	.143	.987
2466.000	48.221	2.241	3.409	2.417	.141	.144	1.000	.144	1.000
2466.250	30.128	1.605	1.985	2.405	.133	.162	1.000	.162	1.000
2466.500	28.352	1.178	1.508	2.322	.188	.215	1.000	.215	1.000
2466.750	31.275	1.245	.782	2.258	.227	.255	.953	.255	.886
2467.000	30.616	.992	.832	2.245	.221	.257	.994	.257	.985
2467.250	29.298	1.019	.893	2.264	.213	.247	1.000	.247	1.000
2467.500	31.200	1.035	.877	2.298	.210	.216	1.000	.216	1.000
2467.750	33.393	1.062	.910	2.303	.227	.200	1.000	.200	1.000
2468.000	31.285	1.114	.998	2.317	.203	.201	1.000	.201	1.000
2468.250	26.325	1.122	1.007	2.298	.163	.214	1.000	.214	1.000
2468.500	23.615	1.099	.929	2.302	.173	.216	1.000	.216	1.000
2468.750	23.821	1.060	.934	2.302	.178	.219	1.000	.219	1.000
2469.000	23.306	1.055	.917	2.289	.163	.217	1.000	.217	1.000
2469.250	23.931	1.244	.798	2.295	.157	.212	1.000	.212	1.000
2469.500	25.630	1.111	1.078	2.305	.163	.211	1.000	.211	1.000
2469.750	30.730	1.487	1.044	2.339	.140	.000	1.000	.000	1.000
2470.000	45.783	2.220	3.746	2.450	.102	.000	1.000	.000	1.000
2470.250	59.240	4.098	10.276	2.523	.104	.000	1.000	.000	1.000
2470.500	55.510	4.560	5.049	2.428	.154	.000	1.000	.000	1.000
2470.750	73.997	3.639	3.448	2.248	.249	.000	1.000	.000	1.000
2471.000	114.214	4.614	11.573	2.261	.321	.000	1.000	.000	1.000
2471.250	124.463	6.996	12.187	2.457	.320	.000	1.000	.000	1.000
2471.500	126.832	10.312	13.242	2.509	.293	.000	1.000	.000	1.000
2471.750	132.521	7.331	15.387	2.503	.257	.000	1.000	.000	1.000
2472.000	108.281	3.643	9.994	2.442	.182	.114	.947	.114	.870
2472.250	78.367	2.478	2.803	2.401	.130	.162	.994	.162	.985
2472.500	74.696	2.243	2.874	2.389	.149	.175	.984	.175	.960
2472.750	63.883	2.696	2.712	2.411	.160	.145	.981	.145	.954
2473.000	42.233	2.446	5.525	2.434	.146	.131	1.000	.131	1.000
2473.250	29.695	1.761	1.919	2.358	.144	.184	1.000	.184	1.000
2473.500	27.419	1.286	1.466	2.334	.137	.189	1.000	.189	1.000

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2474.000	61.679	2.153	3.211	2.441	.167	.115	1.000	.115	1.000
2474.250	54.371	1.928	1.645	2.384	.209	.144	1.000	.144	1.000
2474.500	35.981	1.112	1.031	2.278	.195	.234	1.000	.234	1.000
2474.750	38.125	1.105	1.003	2.274	.179	.229	1.000	.229	1.000
2475.000	43.255	1.398	1.200	2.293	.168	.217	.992	.217	.979
2475.250	42.283	1.394	1.574	2.292	.168	.218	.991	.218	.977
2475.500	38.840	1.293	1.304	2.289	.170	.220	1.000	.220	1.000
2475.750	37.168	1.265	1.272	2.293	.183	.224	1.000	.224	1.000
2476.000	40.557	1.221	1.141	2.300	.173	.217	1.000	.217	1.000
2476.250	48.380	1.679	1.687	2.344	.154	.193	1.000	.193	1.000
2476.500	52.841	1.733	1.912	2.367	.148	.182	1.000	.182	1.000
2476.750	52.296	1.430	1.905	2.311	.164	.209	1.000	.209	1.000
2477.000	50.087	1.272	1.128	2.295	.175	.220	1.000	.220	1.000
2477.250	47.878	1.312	1.281	2.327	.149	.197	1.000	.197	1.000
2477.500	40.816	1.339	1.191	2.327	.137	.192	1.000	.192	1.000
2477.750	32.605	1.247	1.159	2.320	.155	.202	1.000	.202	1.000
2478.000	31.254	1.297	1.373	2.324	.159	.203	1.000	.203	1.000
2478.250	30.355	1.269	1.364	2.321	.153	.201	1.000	.201	1.000
2478.500	29.000	1.237	1.092	2.319	.153	.202	1.000	.202	1.000
2478.750	26.822	1.228	1.311	2.332	.148	.195	1.000	.195	1.000
2479.000	27.309	1.223	1.240	2.315	.157	.205	1.000	.205	1.000
2479.250	33.290	1.097	1.216	2.284	.195	.232	1.000	.232	1.000
2479.500	36.498	1.025	.998	2.264	.220	.250	.998	.250	.995
2479.750	32.868	.991	.940	2.260	.204	.245	1.000	.245	1.000
2480.000	32.108	.989	.921	2.256	.202	.246	1.000	.246	1.000
2480.250	32.520	.989	1.025	2.257	.205	.246	1.000	.246	1.000
2480.500	30.638	.991	1.041	2.259	.198	.243	1.000	.243	1.000
2480.750	32.970	.964	.922	2.242	.219	.258	.997	.258	.993
2481.000	37.258	.984	.885	2.244	.225	.260	.991	.260	.977
2481.250	39.854	1.003	.948	2.249	.220	.255	.994	.255	.984
2481.500	36.467	.956	.815	2.246	.221	.257	1.000	.257	1.000
2481.750	34.863	.992	.918	2.269	.195	.238	.971	.238	.929
2482.000	34.137	1.065	1.157	2.286	.172	.222	.987	.222	.969
2482.250	32.510	1.193	1.163	2.312	.168	.211	.986	.211	.965
2482.500	32.008	1.354	1.337	2.351	.144	.186	1.000	.186	1.000
2482.750	29.875	1.342	1.759	2.353	.138	.183	1.000	.183	1.000
2483.000	25.189	1.180	1.136	2.319	.155	.203	1.000	.203	1.000
2483.250	22.510	1.136	1.233	2.315	.159	.206	1.000	.206	1.000
2483.500	23.647	1.190	1.236	2.320	.162	.205	.998	.205	.995
2483.750	23.812	1.178	1.092	2.306	.156	.208	.994	.208	.985
2484.000	23.215	1.075	1.001	2.294	.160	.214	1.000	.214	1.000
2484.250	23.550	1.024	.970	2.299	.155	.210	1.000	.210	1.000
2484.500	23.814	1.071	1.056	2.306	.149	.205	1.000	.205	1.000
2484.750	23.399	1.138	1.072	2.311	.148	.203	1.000	.203	1.000
2485.000	22.738	1.113	1.104	2.309	.140	.200	1.000	.200	1.000
2485.250	24.093	1.057	.985	2.286	.153	.214	1.000	.214	1.000
2485.500	22.798	1.002	.934	2.274	.175	.228	.987	.228	.969
2485.750	20.547	.972	.898	2.282	.177	.226	.998	.226	.995
2486.000	19.776	.962	.918	2.291	.168	.218	1.000	.218	1.000
2486.250	18.588	.988	.978	2.301	.158	.211	1.000	.211	1.000
2486.500	21.834	1.023	1.097	2.297	.167	.216	1.000	.216	1.000
2486.750	23.198	1.039	.977	2.287	.166	.219	.997	.219	.994
2487.000	20.395	1.040	1.038	2.280	.147	.214	1.000	.214	1.000
2487.250	24.168	1.019	.984	2.264	.148	.220	.999	.220	.999
2487.500	26.011	.972	.936	2.265	.164	.227	.996	.227	.990
2487.750	25.170	.994	.944	2.277	.177	.230	.990	.230	.975

EAST HALIBUT#1 LOG ANALYSIS									
DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2488.000	20.092	1.027	1.062	2.289	.153	.213	1.000	.213	1.000
2488.250	20.676	1.074	1.209	2.304	.131	.198	1.000	.198	1.000
2488.500	20.879	1.023	1.052	2.285	.143	.210	1.000	.210	1.000
2488.750	20.398	1.031	.982	2.291	.137	.205	1.000	.205	1.000
2489.000	22.725	1.092	1.130	2.330	.120	.183	1.000	.183	1.000
2489.250	25.849	1.210	1.309	2.338	.119	.180	1.000	.180	1.000
2489.500	26.982	1.186	1.511	2.328	.130	.189	1.000	.189	1.000
2489.750	34.044	1.150	1.199	2.283	.160	.218	.979	.218	.948
2490.000	35.680	1.084	1.043	2.266	.186	.235	.959	.235	.900
2490.250	29.224	1.119	1.159	2.295	.173	.219	.983	.219	.957
2490.500	23.826	1.169	1.262	2.315	.143	.199	1.000	.199	1.000
2490.750	22.168	1.227	1.212	2.342	.130	.183	1.000	.183	1.000
2491.000	25.878	1.322	1.410	2.358	.117	.172	1.000	.172	1.000
2491.250	35.532	1.356	1.582	2.347	.132	.183	1.000	.183	1.000
2491.500	45.445	1.358	1.419	2.336	.158	.198	.988	.198	.969
2491.750	48.389	1.403	1.436	2.331	.168	.204	.969	.204	.924
2492.000	53.511	1.509	1.675	2.322	.162	.204	1.000	.204	1.000
2492.250	54.985	1.591	1.802	2.319	.175	.211	.977	.211	.944
2492.500	55.836	1.603	1.670	2.322	.172	.209	.980	.209	.951
2492.750	53.016	1.549	1.711	2.318	.179	.213	.978	.213	.947
2493.000	52.200	1.439	1.659	2.301	.186	.222	.977	.222	.943
2493.250	47.127	1.238	1.335	2.282	.185	.229	.994	.229	.986
2493.500	46.607	1.147	1.229	2.284	.212	.239	.993	.239	.982
2493.750	57.021	1.194	1.198	2.320	.219	.195	1.000	.195	1.000
2494.000	68.811	1.800	3.527	2.386	.188	.152	1.000	.152	1.000
2494.250	67.987	2.579	3.802	2.419	.156	.139	1.000	.139	1.000
2494.500	60.340	2.443	2.571	2.410	.155	.142	1.000	.142	1.000
2494.750	51.060	1.953	2.333	2.377	.165	.167	1.000	.167	1.000
2495.000	43.302	1.625	1.440	2.326	.169	.206	.982	.206	.956
2495.250	45.167	1.266	1.364	2.293	.187	.225	.996	.225	.990
2495.500	51.068	1.187	1.512	2.307	.205	.209	1.000	.209	1.000
2495.750	65.502	1.204	1.437	2.323	.202	.197	1.000	.197	1.000
2496.000	92.642	1.834	2.402	2.413	.185	.131	1.000	.131	1.000
2496.250	107.899	4.786	12.135	2.530	.202	.000	1.000	.000	1.000
2496.500	98.741	6.988	7.719	2.516	.199	.000	1.000	.000	1.000
2496.750	70.453	3.433	2.934	2.424	.186	.126	.930	.126	.831
2497.000	62.439	2.189	1.986	2.361	.196	.170	.951	.170	.882
2497.250	71.620	1.929	2.147	2.365	.191	.169	.984	.169	.960
2497.500	87.326	2.484	2.492	2.398	.193	.140	.972	.140	.931
2497.750	101.568	3.881	4.474	2.462	.195	.076	.971	.076	.928
2498.000	100.269	4.330	6.820	2.472	.192	.063	.968	.063	.920
2498.250	92.949	3.313	3.774	2.444	.191	.108	.969	.108	.925
2498.500	88.427	2.768	3.424	2.404	.185	.138	.957	.138	.895
2498.750	80.819	2.565	2.859	2.375	.187	.163	.937	.163	.848
2499.000	74.615	2.399	2.326	2.371	.192	.164	.944	.164	.865
2499.250	66.055	2.051	2.403	2.344	.195	.181	.948	.181	.875
2499.500	57.968	1.835	1.638	2.323	.189	.216	.941	.216	.859
2499.750	69.885	2.160	2.064	2.371	.180	.164	.974	.164	.936
2500.000	91.717	3.055	5.094	2.435	.179	.121	.977	.121	.942
2500.250	106.282	4.689	4.741	2.467	.199	.057	.947	.057	.872
2500.500	91.561	4.258	8.505	2.461	.223	.011	.990	.011	.976
2500.750	65.828	2.942	1.749	2.353	.228	.162	.868	.162	.694
2501.000	74.172	2.376	3.129	2.321	.218	.194	.888	.194	.739
2501.250	83.504	2.690	2.974	2.378	.203	.152	.924	.152	.817
2501.500	88.304	2.896	2.228	2.397	.185	.144	.938	.144	.851

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2502.000	119.671	3.706	4.742	2.460	.193	.084	.976	.084	.941
2502.250	124.932	3.636	3.350	2.444	.192	.107	.946	.107	.867
2502.500	125.884	4.300	5.204	2.469	.196	.058	.966	.058	.918
2502.750	109.352	4.718	9.101	2.463	.200	.062	.937	.062	.849
2503.000	82.552	4.363	3.626	2.417	.188	.125	.873	.125	.703
2503.250	80.527	3.745	3.479	2.426	.198	.119	.908	.119	.780
2503.500	104.042	4.746	5.518	2.497	.208	.000	1.000	.000	1.000
2503.750	134.491	7.615	13.286	2.556	.223	.000	1.000	.000	1.000
2504.000	141.488	10.643	13.657	2.567	.263	.000	1.000	.000	1.000
2504.250	129.832	10.244	10.413	2.556	.249	.000	1.000	.000	1.000
2504.500	114.856	8.278	7.796	2.503	.205	.000	1.000	.000	1.000
2504.750	97.742	5.553	6.225	2.466	.205	.043	.933	.043	.840
2505.000	86.415	4.790	2.312	2.483	.232	.000	1.000	.000	1.000
2505.250	93.809	5.010	7.813	2.527	.233	.000	1.000	.000	1.000
2505.500	83.891	5.575	5.575	2.515	.211	.000	1.000	.000	1.000
2505.750	78.316	4.663	4.767	2.463	.187	.093	.919	.093	.805
2506.000	80.171	3.771	3.650	2.437	.174	.115	.940	.115	.855
2506.250	77.264	3.211	3.337	2.427	.182	.120	.958	.120	.898
2506.500	82.983	3.272	3.059	2.448	.172	.113	.985	.113	.963
2506.750	85.494	3.595	4.275	2.455	.186	.100	.972	.100	.931
2507.000	88.447	4.772	4.106	2.355	.274	.031	.943	.031	.872
2507.250	82.592	5.647	13.126	2.311	.256	.171	.710	.171	.380
2507.500	57.455	3.716	9.577	2.340	.200	.174	.832	.174	.623
2507.750	43.852	1.889	1.559	2.308	.201	.211	.925	.211	.823
2508.000	47.902	1.432	1.281	2.294	.209	.220	.965	.220	.915
2508.250	75.028	1.563	1.269	2.319	.214	.193	.975	.193	.938
2508.500	115.878	2.121	2.894	2.378	.214	.147	.974	.147	.937
2508.750	129.404	3.120	2.950	2.437	.236	.014	.995	.014	.987
2509.000	105.476	3.020	4.414	2.414	.230	.074	.955	.074	.892
2509.250	76.389	2.643	1.990	2.364	.195	.168	.915	.168	.798
2509.500	71.115	2.534	2.271	2.389	.172	.158	.959	.158	.899
2509.750	80.887	3.736	3.936	2.461	.172	.102	.976	.102	.941
2510.000	100.019	5.012	5.417	2.512	.199	.000	1.000	.000	1.000
2510.250	105.182	5.115	5.427	2.502	.212	.000	1.000	.000	1.000
2510.500	104.947	5.950	4.767	2.508	.225	.000	1.000	.000	1.000
2510.750	115.023	6.872	7.438	2.540	.211	.000	1.000	.000	1.000
2511.000	115.535	8.582	9.019	2.547	.228	.000	1.000	.000	1.000
2511.250	115.206	9.689	12.527	2.545	.245	.000	1.000	.000	1.000
2511.500	123.367	8.411	10.373	2.546	.273	.000	1.000	.000	1.000
2511.750	126.106	7.964	9.913	2.523	.298	.000	1.000	.000	1.000
2512.000	127.460	8.173	11.435	2.510	.303	.000	1.000	.000	1.000
2512.250	103.297	8.237	8.332	2.501	.236	.000	1.000	.000	1.000
2512.500	64.094	6.779	6.557	2.443	.168	.107	.828	.107	.604
2512.750	44.133	2.740	2.603	2.361	.160	.190	.914	.190	.798
2513.000	46.457	2.250	1.815	2.358	.138	.181	.968	.181	.922
2513.250	47.246	2.335	3.718	2.374	.128	.171	.982	.171	.957
2513.500	43.721	1.940	2.269	2.334	.153	.197	.965	.197	.915
2513.750	42.329	1.682	1.388	2.317	.164	.207	.972	.207	.932
2514.000	41.549	1.590	2.013	2.373	.149	.181	1.000	.181	1.000
2514.250	38.567	2.076	3.268	2.434	.131	.133	1.000	.133	1.000
2514.500	36.788	2.583	2.018	2.399	.119	.158	.993	.158	.983
2514.750	37.328	1.884	2.577	2.354	.144	.185	.994	.185	.984
2515.000	37.714	1.610	1.318	2.311	.172	.213	.970	.213	.926
2515.250	42.851	1.602	1.304	2.301	.166	.214	.968	.214	.923
2515.500	58.204	2.530	1.271	2.363	.179	.172	.930	.172	.832
2515.750	67.557	3.417	3.830	2.424	.185	.177	.934	.177	.833



EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2516.000	73.266	4.246	3.869	2.444	.173	.115	.915	.115	.798
2516.250	75.684	4.103	3.886	2.468	.179	.093	.965	.093	.913
2516.500	75.054	4.086	4.299	2.469	.174	.094	.970	.094	.925
2516.750	80.263	4.211	4.159	2.476	.185	.073	.978	.073	.946
2517.000	87.275	4.677	4.282	2.486	.184	.057	.979	.057	.947
2517.250	87.419	5.601	4.909	2.496	.173	.064	.955	.064	.888
2517.500	83.069	6.211	7.691	2.492	.188	.039	.945	.039	.866
2517.750	92.944	7.120	7.358	2.494	.183	.045	.916	.045	.799
2518.000	111.166	8.410	8.951	2.532	.197	.000	1.000	.000	1.000
2518.250	135.665	9.280	11.549	2.539	.253	.000	1.000	.000	1.000
2518.500	135.258	6.987	12.546	2.509	.219	.000	1.000	.000	1.000
2518.750	129.247	6.719	5.524	2.525	.180	.014	.999	.014	.998
2519.000	142.434	7.470	8.020	2.563	.218	.000	1.000	.000	1.000
2519.250	134.455	8.520	11.041	2.556	.219	.000	1.000	.000	1.000
2519.500	115.097	7.775	7.842	2.544	.199	.000	1.000	.000	1.000
2519.750	119.810	5.356	5.973	2.511	.197	.000	1.000	.000	1.000
2520.000	118.590	3.988	5.808	2.456	.185	.099	.947	.099	.870
2520.250	96.787	3.887	3.116	2.453	.160	.108	.965	.108	.914
2520.500	82.320	4.613	6.164	2.485	.152	.090	.981	.090	.952
2520.750	88.406	4.199	4.489	2.533	.169	.019	1.000	.019	1.000
2521.000	100.659	3.724	5.668	2.576	.209	.000	1.000	.000	1.000
2521.250	101.790	4.077	8.045	2.593	.204	.000	1.000	.000	1.000
2521.500	99.969	6.111	7.405	2.595	.196	.000	1.000	.000	1.000
2521.750	88.958	5.160	5.517	2.540	.175	.000	1.000	.000	1.000
2522.000	86.059	5.353	5.869	2.547	.169	.000	1.000	.000	1.000
2522.250	91.277	5.932	8.573	2.563	.168	.000	1.000	.000	1.000
2522.500	86.120	7.035	7.959	2.534	.152	.043	1.000	.043	1.000
2522.750	80.014	6.683	7.948	2.539	.151	.037	1.000	.037	1.000
2523.000	78.115	6.343	6.597	2.538	.164	.020	1.000	.020	1.000
2523.250	89.666	5.785	6.795	2.537	.185	.000	1.000	.000	1.000
2523.500	111.975	5.836	6.401	2.561	.208	.000	1.000	.000	1.000
2523.750	127.417	6.705	6.804	2.567	.245	.000	1.000	.000	1.000
2524.000	123.990	6.630	9.178	2.433	.295	.000	1.000	.000	1.000
2524.250	108.986	5.485	4.997	2.232	.276	.000	1.000	.000	1.000
2524.500	99.861	4.585	3.325	2.263	.208	.000	1.000	.000	1.000
2524.750	105.172	4.842	5.283	2.446	.203	.000	1.000	.000	1.000
2525.000	94.332	3.973	6.279	2.480	.209	.000	1.000	.000	1.000
2525.250	64.600	2.490	3.258	2.425	.188	.125	1.000	.125	1.000
2525.500	64.222	2.834	1.998	2.429	.159	.129	.997	.129	.992
2525.750	84.966	4.589	4.965	2.487	.205	.014	.996	.014	.991
2526.000	98.435	7.761	13.110	2.368	.269	.020	.948	.020	.885
2526.250	96.825	7.346	11.627	2.331	.307	.000	1.000	.000	1.000
2526.500	83.238	2.318	6.998	2.382	.270	.000	.996	.000	.989
2526.750	47.452	1.300	2.893	2.309	.212	.204	1.000	.204	1.000
2527.000	23.476	.926	1.042	2.251	.200	.246	1.000	.246	1.000
2527.250	22.609	.851	.967	2.234	.204	.255	1.000	.255	1.000
2527.500	22.383	.879	.871	2.229	.199	.255	1.000	.255	1.000
2527.750	20.654	.900	.957	2.223	.189	.253	1.000	.253	1.000
2528.000	20.986	.980	.951	2.234	.194	.251	1.000	.251	1.000
2528.250	23.738	1.072	1.054	2.264	.187	.237	1.000	.237	1.000
2528.500	22.104	1.127	1.511	2.265	.187	.236	.999	.236	.997
2528.750	22.494	1.121	1.180	2.255	.188	.240	.993	.240	.984
2529.000	23.448	1.168	1.216	2.266	.175	.230	1.000	.230	1.000
2529.250	22.038	1.214	1.338	2.283	.169	.222	1.000	.222	1.000
2529.500	26.194	1.243	1.399	2.277	.169	.224	1.000	.224	1.000
2529.750	22.277	1.222	1.222	2.270	.150	.219	.000	.219	.999

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2530.000	29.242	1.324	1.401	2.277	.148	.215	1.000	.215	1.000
2530.250	29.488	1.283	1.349	2.274	.169	.225	.992	.225	.979
2530.500	30.432	1.256	1.259	2.279	.176	.226	.994	.226	.985
2530.750	30.335	1.257	1.297	2.291	.164	.217	1.000	.217	1.000
2531.000	28.945	1.283	1.424	2.289	.165	.218	1.000	.218	1.000
2531.250	28.164	1.289	1.401	2.284	.170	.222	.996	.222	.991
2531.500	26.448	1.271	1.397	2.283	.176	.225	.994	.225	.985
2531.750	26.318	1.221	1.309	2.279	.180	.228	.996	.228	.991
2532.000	29.176	1.182	1.276	2.280	.162	.220	1.000	.220	1.000
2532.250	27.211	1.158	1.260	2.276	.153	.217	1.000	.217	1.000
2532.500	26.192	1.145	1.220	2.270	.158	.222	1.000	.222	1.000
2532.750	27.946	1.140	1.165	2.268	.172	.229	1.000	.229	1.000
2533.000	29.560	1.135	1.171	2.266	.173	.230	1.000	.230	1.000
2533.250	30.944	1.124	1.182	2.257	.172	.233	1.000	.233	1.000
2533.500	32.078	1.109	1.266	2.266	.167	.228	1.000	.228	1.000
2533.750	29.077	1.123	1.267	2.265	.165	.227	1.000	.227	1.000
2534.000	26.735	1.133	1.291	2.263	.180	.234	1.000	.234	1.000
2534.250	28.556	1.131	1.217	2.267	.175	.230	1.000	.230	1.000
2534.500	28.061	1.109	1.213	2.265	.171	.229	1.000	.229	1.000
2534.750	26.793	1.077	1.178	2.257	.179	.236	1.000	.236	1.000
2535.000	28.590	1.067	1.128	2.249	.181	.240	1.000	.240	1.000
2535.250	27.984	1.101	1.164	2.255	.171	.233	1.000	.233	1.000
2535.500	27.413	1.162	1.121	2.269	.176	.230	1.000	.230	1.000
2535.750	26.747	1.169	1.208	2.272	.178	.229	1.000	.229	1.000
2536.000	28.176	1.169	1.240	2.272	.171	.227	1.000	.227	1.000
2536.250	30.515	1.149	1.185	2.279	.170	.224	1.000	.224	1.000
2536.500	29.553	1.158	1.195	2.276	.170	.225	1.000	.225	1.000
2536.750	28.365	1.163	1.174	2.275	.166	.224	1.000	.224	1.000
2537.000	31.230	1.183	1.282	2.268	.163	.225	1.000	.225	1.000
2537.250	35.157	1.174	1.253	2.271	.159	.222	1.000	.222	1.000
2537.500	41.751	1.149	1.219	2.273	.161	.222	1.000	.222	1.000
2537.750	48.684	1.120	1.260	2.264	.172	.230	1.000	.230	1.000
2538.000	45.512	1.123	1.265	2.263	.172	.230	1.000	.230	1.000
2538.250	42.529	1.130	1.217	2.273	.174	.227	1.000	.227	1.000
2538.500	40.243	1.136	1.218	2.270	.175	.229	1.000	.229	1.000
2538.750	45.824	1.133	1.218	2.260	.176	.233	1.000	.233	1.000
2539.000	53.267	1.149	1.207	2.259	.195	.242	.985	.242	.963
2539.250	52.018	1.169	1.226	2.270	.195	.238	.988	.238	.970
2539.500	47.830	1.176	1.299	2.276	.191	.234	.994	.234	.985
2539.750	46.466	1.166	1.260	2.271	.186	.233	.996	.233	.990
2540.000	47.046	1.164	1.213	2.266	.179	.233	.998	.233	.994
2540.250	48.303	1.146	1.113	2.262	.190	.238	.991	.238	.979
2540.500	45.464	1.104	1.104	2.252	.194	.244	.989	.244	.974
2540.750	45.037	1.093	1.065	2.252	.182	.239	.999	.239	.998
2541.000	48.380	1.088	1.042	2.252	.172	.235	1.000	.235	1.000
2541.250	47.970	1.099	1.111	2.251	.166	.233	1.000	.233	1.000
2541.500	51.994	1.103	1.113	2.252	.175	.236	1.000	.236	1.000
2541.750	54.953	1.102	1.126	2.249	.191	.244	.989	.244	.974
2542.000	50.173	1.094	1.000	2.249	.191	.244	.991	.244	.977
2542.250	49.033	1.093	1.071	2.254	.200	.245	.989	.245	.972
2542.500	50.294	1.103	1.076	2.256	.201	.245	.988	.245	.969
2542.750	55.289	1.106	1.030	2.271	.204	.240	.994	.240	.986
2543.000	61.521	1.146	1.221	2.277	.211	.241	.986	.241	.965
2543.250	57.676	1.148	1.211	2.270	.203	.241	.986	.241	.966
2543.500	55.499	1.145	1.080	2.258	.197	.243	.984	.243	.959
2543.750	55.035	1.145	1.115	2.264	.199	.248	.974	.248	.941

## EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2544.000	64.772	1.157	.972	2.271	.206	.241	.984	.241	.960
2544.250	65.141	1.120	1.030	2.301	.205	.216	1.000	.216	1.000
2544.500	66.089	1.123	.939	2.271	.209	.243	.987	.243	.967
2544.750	71.602	1.125	1.070	2.272	.205	.241	.990	.241	.976
2545.000	76.922	1.149	1.090	2.273	.209	.242	.984	.242	.961
2545.250	82.010	1.150	1.096	2.276	.224	.227	.989	.227	.974
2545.500	93.195	1.145	1.084	2.277	.217	.231	.991	.231	.978
2545.750	99.410	1.128	1.098	2.268	.218	.248	.979	.248	.948
2546.000	96.957	1.113	1.116	2.262	.224	.252	.974	.252	.937
2546.250	101.584	1.135	1.143	2.274	.213	.243	.984	.243	.961
2546.500	97.028	1.173	1.182	2.273	.215	.245	.976	.245	.940
2546.750	80.609	1.240	1.278	2.277	.194	.234	.982	.234	.955
2547.000	69.117	1.293	1.377	2.297	.185	.223	.992	.223	.981
2547.250	63.528	1.327	1.406	2.311	.205	.206	.998	.206	.994
2547.500	61.234	1.342	1.326	2.313	.202	.206	.997	.206	.992
2547.750	60.945	1.337	1.353	2.287	.182	.226	.982	.226	.955
2548.000	60.865	1.308	1.329	2.280	.175	.226	.986	.226	.965
2548.250	60.851	1.297	1.286	2.279	.189	.232	.977	.232	.943
2548.500	60.894	1.299	1.320	2.279	.182	.229	.982	.229	.956
2548.750	49.849	1.255	1.159	2.275	.185	.231	.984	.231	.961
2549.000	42.701	1.130	1.114	2.263	.191	.239	.993	.239	.983
2549.250	41.720	1.042	.976	2.257	.196	.243	1.000	.243	1.000
2549.500	43.062	1.075	.983	2.268	.204	.242	.997	.242	.993
2549.750	43.369	1.198	1.253	2.297	.198	.229	.998	.229	.996
2550.000	44.671	1.325	1.414	2.301	.206	.215	.986	.215	.964
2550.250	50.554	1.515	1.093	2.286	.212	.225	.944	.225	.864
2550.500	51.123	1.210	1.307	2.285	.202	.235	.986	.235	.964
2550.750	50.105	1.301	1.155	2.290	.191	.229	.982	.229	.955
2551.000	48.849	1.343	1.440	2.307	.184	.219	.992	.219	.980
2551.250	50.328	1.396	1.548	2.314	.196	.209	.989	.209	.974
2551.500	58.983	1.381	1.379	2.319	.203	.200	.998	.200	.995
2551.750	57.022	1.446	1.773	2.331	.176	.207	1.000	.207	1.000
2552.000	54.382	1.604	1.942	2.328	.171	.206	.981	.206	.953
2552.250	58.565	1.704	1.312	2.302	.186	.222	.941	.222	.860
2552.500	59.939	1.328	1.447	2.288	.202	.234	.969	.234	.924
2552.750	55.586	1.220	1.229	2.270	.220	.236	.970	.236	.927
2553.000	50.630	1.291	1.028	2.269	.228	.231	.958	.231	.899
2553.250	57.524	1.340	1.309	2.313	.207	.203	.997	.203	.993
2553.500	59.086	1.527	1.883	2.324	.188	.215	.975	.215	.939
2553.750	56.935	1.554	1.454	2.315	.184	.216	.969	.216	.923
2554.000	58.814	1.445	1.594	2.309	.192	.222	.973	.222	.935
2554.250	63.665	1.464	1.447	2.306	.196	.225	.966	.225	.916
2554.500	69.070	1.598	1.465	2.322	.183	.214	.968	.214	.922
2554.750	67.548	1.729	1.769	2.336	.174	.205	.969	.205	.925
2555.000	66.920	1.907	2.148	2.345	.166	.198	.963	.198	.911
2555.250	70.791	1.867	2.059	2.356	.179	.178	.982	.178	.954
2555.500	67.316	1.642	1.549	2.335	.180	.208	.974	.208	.936
2555.750	63.648	1.732	1.352	2.317	.172	.211	.958	.211	.898
2556.000	68.255	1.789	1.991	2.345	.163	.197	.978	.197	.945
2556.250	68.607	1.840	2.124	2.343	.166	.199	.968	.199	.922
2556.500	61.254	1.686	1.579	2.318	.177	.212	.960	.212	.902
2556.750	70.001	1.627	2.174	2.330	.180	.209	.972	.209	.931
2557.000	73.198	1.650	1.629	2.327	.184	.212	.964	.212	.913
2557.250	70.210	1.626	1.726	2.317	.177	.213	.966	.213	.917
2557.500	69.097	1.660	1.715	2.322	.179	.212	.964	.212	.912

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2558.000	62.893	1.651	1.882	2.318	.165	.207	.973	.207	.934
2558.250	66.051	1.675	1.781	2.313	.158	.206	.972	.206	.932
2558.500	69.706	1.827	2.286	2.320	.154	.202	.964	.202	.912
2558.750	68.734	1.875	2.239	2.319	.161	.205	.953	.205	.886
2559.000	60.994	1.732	1.883	2.316	.167	.209	.961	.209	.906
2559.250	57.545	1.608	1.650	2.320	.171	.209	.975	.209	.939
2559.500	59.835	1.512	1.768	2.317	.174	.212	.982	.212	.956
2559.750	61.153	1.430	1.587	2.313	.185	.217	.983	.217	.957
2560.000	56.532	1.443	1.475	2.312	.197	.209	.981	.209	.953
2560.250	54.926	1.484	1.713	2.312	.191	.220	.970	.220	.926
2560.500	57.171	1.423	1.529	2.303	.190	.223	.973	.223	.933
2560.750	58.630	1.329	1.265	2.301	.187	.223	.987	.223	.969
2561.000	59.861	1.445	1.629	2.327	.168	.205	1.000	.205	1.000
2561.250	58.099	1.619	1.642	2.338	.160	.198	.996	.198	.989
2561.500	56.872	1.724	1.989	2.345	.159	.195	.988	.195	.971
2561.750	65.197	1.906	1.959	2.354	.155	.190	.979	.190	.948
2562.000	74.075	2.171	2.850	2.363	.152	.186	.963	.186	.910
2562.250	72.104	2.418	2.978	2.377	.157	.183	.948	.183	.875
2562.500	72.662	2.405	2.989	2.387	.160	.161	.970	.161	.926
2562.750	71.362	2.335	2.810	2.372	.161	.186	.948	.186	.875
2563.000	72.050	2.343	2.578	2.368	.159	.187	.945	.187	.868
2563.250	76.744	2.438	3.005	2.377	.164	.167	.954	.167	.890
2563.500	75.979	2.534	3.007	2.376	.163	.170	.944	.170	.866
2563.750	72.449	2.580	3.147	2.374	.153	.182	.937	.182	.850
2564.000	74.519	2.597	3.018	2.378	.147	.178	.944	.178	.866
2564.250	77.127	2.584	3.044	2.372	.152	.183	.935	.183	.846
2564.500	78.716	2.725	3.288	2.388	.163	.158	.945	.158	.868
2564.750	85.399	2.922	3.567	2.396	.163	.150	.943	.150	.862
2565.000	88.916	3.078	3.535	2.393	.159	.156	.928	.156	.828
2565.250	91.168	3.199	3.773	2.408	.155	.144	.941	.144	.858
2565.500	90.206	3.267	3.965	2.406	.157	.144	.935	.144	.843
2565.750	88.415	3.177	3.715	2.389	.159	.159	.917	.159	.804
2566.000	88.452	3.007	3.412	2.380	.160	.167	.917	.167	.804
2566.250	85.717	2.967	3.623	2.396	.154	.156	.940	.156	.857
2566.500	83.597	3.024	3.594	2.400	.147	.156	.944	.156	.865
2566.750	82.101	3.295	3.691	2.410	.131	.160	.939	.160	.855
2567.000	85.094	3.685	4.419	2.434	.134	.132	.956	.132	.892
2567.250	90.274	4.009	4.529	2.446	.151	.117	.947	.117	.872
2567.500	68.409	3.034	4.499	2.436	.135	.129	1.000	.129	1.000
2567.750	47.197	1.974	1.889	2.374	.139	.176	1.000	.176	1.000
2568.000	43.271	1.500	1.242	2.351	.142	.185	1.000	.185	1.000
2568.250	45.772	1.372	1.789	2.367	.132	.175	1.000	.175	1.000
2568.500	50.393	1.453	1.666	2.348	.175	.201	.964	.201	.912
2568.750	46.497	1.589	1.292	2.347	.161	.195	.958	.195	.898
2569.000	38.066	1.573	1.769	2.363	.117	.170	1.000	.170	1.000
2569.250	32.636	1.642	2.002	2.370	.123	.170	1.000	.170	1.000
2569.500	28.349	1.524	1.521	2.380	.128	.169	1.000	.169	1.000
2569.750	25.446	1.392	1.679	2.381	.130	.169	1.000	.169	1.000
2570.000	23.478	1.308	1.379	2.362	.136	.179	1.000	.179	1.000
2570.250	22.904	1.233	1.497	2.345	.141	.187	1.000	.187	1.000
2570.500	24.610	1.185	1.389	2.336	.146	.193	1.000	.193	1.000
2570.750	24.185	1.155	1.267	2.328	.138	.192	1.000	.192	1.000
2571.000	22.958	1.088	1.231	2.306	.138	.200	1.000	.200	1.000
2571.250	21.398	1.025	1.099	2.294	.149	.209	1.000	.209	1.000
2571.500	23.893	1.091	1.055	2.309	.144	.202	1.000	.202	1.000
2571.750	24.807	1.100	1.000	2.311	.105	.100	1.000	.100	1.000

EAST HALIBUT#1 LOG ANALYSIS									
DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2572.000	22.663	1.054	1.004	2.296	.152	.209	1.000	.209	1.000
2572.250	22.127	.957	1.046	2.275	.167	.224	.999	.224	.998
2572.500	24.119	.926	.976	2.264	.170	.229	.996	.229	.989
2572.750	25.063	.931	1.026	2.278	.173	.225	1.000	.225	1.000
2573.000	22.483	.956	1.042	2.286	.168	.221	1.000	.221	1.000
2573.250	21.144	.986	1.075	2.290	.172	.221	1.000	.221	.999
2573.500	23.717	.989	1.084	2.278	.182	.229	.984	.229	.960
2573.750	23.578	.946	1.030	2.272	.174	.228	.994	.228	.985
2574.000	22.257	.950	1.065	2.285	.167	.220	1.000	.220	1.000
2574.250	25.328	1.048	1.107	2.309	.173	.214	1.000	.214	1.000
2574.500	32.851	1.224	1.371	2.309	.174	.214	.969	.214	.925
2574.750	41.150	1.255	1.352	2.266	.196	.240	.920	.240	.811
2575.000	47.115	1.127	1.238	2.255	.198	.244	.932	.244	.838
2575.250	50.554	1.096	1.024	2.269	.184	.233	.955	.233	.892
2575.500	46.161	1.336	1.284	2.284	.156	.216	.949	.216	.878
2575.750	55.688	1.598	1.734	2.336	.125	.183	.983	.183	.957
2576.000	75.299	2.152	2.453	2.373	.141	.177	.940	.177	.856
2576.250	84.378	2.158	2.316	2.379	.155	.181	.930	.181	.835
2576.500	86.953	2.051	2.395	2.376	.159	.171	.942	.171	.861
2576.750	96.126	1.885	2.010	2.371	.180	.164	.948	.164	.873
2577.000	112.636	1.837	2.086	2.383	.179	.160	.963	.160	.911
2577.250	120.092	1.993	2.039	2.382	.169	.160	.952	.160	.884
2577.500	122.551	2.438	2.564	2.406	.141	.165	.944	.165	.866
2577.750	129.529	2.645	3.322	2.428	.131	.139	.972	.139	.932
2578.000	124.755	2.559	2.680	2.408	.141	.152	.946	.152	.871
2578.250	122.460	2.573	2.706	2.414	.125	.156	.957	.156	.897
2578.500	117.292	2.972	3.372	2.425	.118	.149	.949	.149	.877
2578.750	112.772	3.193	3.768	2.426	.134	.139	.930	.139	.832
2579.000	110.327	2.914	3.858	2.418	.159	.139	.922	.139	.815
2579.250	99.228	2.502	3.316	2.413	.165	.140	.946	.140	.869
2579.500	93.499	2.238	2.750	2.415	.163	.139	.972	.139	.932
2579.750	87.625	2.295	2.881	2.403	.163	.150	.950	.150	.878
2580.000	90.661	2.438	2.483	2.412	.149	.144	.959	.144	.901
2580.250	100.113	2.422	3.811	2.402	.149	.153	.945	.153	.868
2580.500	94.599	2.225	2.463	2.387	.156	.162	.941	.162	.858
2580.750	78.081	2.192	2.621	2.398	.158	.152	.958	.152	.897
2581.000	61.209	2.158	2.687	2.389	.137	.170	.956	.170	.893
2581.250	61.934	2.071	2.295	2.383	.132	.170	.965	.170	.914
2581.500	69.963	2.114	2.352	2.406	.138	.164	.974	.164	.936
2581.750	71.483	2.382	2.493	2.439	.126	.131	1.000	.131	1.000
2582.000	65.230	3.140	4.818	2.456	.103	.132	.988	.132	.971
2582.250	42.611	3.247	5.165	2.437	.081	.128	.995	.128	.987
2582.500	28.570	2.714	3.850	2.422	.085	.135	1.000	.135	1.000
2582.750	28.310	2.193	2.934	2.410	.088	.141	1.000	.141	1.000
2583.000	31.144	1.889	1.865	2.380	.098	.156	1.000	.156	1.000
2583.250	29.898	1.728	2.024	2.378	.096	.156	1.000	.156	1.000
2583.500	36.307	1.801	1.957	2.384	.080	.147	1.000	.147	1.000
2583.750	40.057	1.831	2.501	2.363	.096	.161	1.000	.161	1.000
2584.000	40.838	1.885	2.068	2.370	.105	.162	1.000	.162	1.000
2584.250	40.217	1.806	1.842	2.393	.106	.155	1.000	.155	1.000
2584.500	40.373	1.702	1.934	2.382	.119	.164	1.000	.164	1.000
2584.750	40.595	1.482	1.860	2.364	.126	.174	1.000	.174	1.000
2585.000	40.466	1.404	1.466	2.352	.129	.180	1.000	.180	1.000
2585.250	39.255	1.296	1.664	2.344	.134	.185	1.000	.185	1.000
2585.500	36.588	1.249	1.240	2.327	.154	.199	.996	.199	.989
2585.750	32.242	1.127	1.127	2.314	.177	.209	.994	.209	.989

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2586.000	35.730	1.095	1.157	2.308	.162	.210	.999	.210	.998
2586.250	30.970	1.058	1.381	2.297	.151	.209	1.000	.209	1.000
2586.500	34.093	.995	1.198	2.284	.163	.219	1.000	.219	1.000
2586.750	35.757	1.001	.971	2.283	.163	.219	.999	.219	.997
2587.000	39.049	1.002	1.191	2.280	.152	.216	1.000	.216	1.000
2587.250	43.947	.987	1.000	2.265	.163	.226	.988	.226	.971
2587.500	38.870	1.047	1.153	2.285	.149	.213	1.000	.213	1.000
2587.750	31.725	1.148	1.355	2.330	.134	.190	1.000	.190	1.000
2588.000	31.319	1.048	1.197	2.308	.150	.204	1.000	.204	1.000
2588.250	30.986	.932	1.107	2.270	.162	.224	1.000	.224	1.000
2588.500	32.264	.923	1.076	2.258	.180	.236	.983	.236	.959
2588.750	30.678	1.001	1.127	2.272	.181	.231	.976	.231	.941
2589.000	28.479	1.043	1.159	2.297	.158	.212	1.000	.212	1.000
2589.250	28.254	1.013	1.155	2.294	.162	.215	1.000	.215	1.000
2589.500	30.445	.915	1.012	2.273	.191	.235	.987	.235	.968
2589.750	32.847	.870	.960	2.264	.191	.238	.991	.238	.977
2590.000	30.749	.903	.961	2.267	.171	.229	1.000	.229	1.000
2590.250	31.339	.955	1.069	2.286	.164	.219	1.000	.219	1.000
2590.500	33.594	.993	1.266	2.301	.163	.213	1.000	.213	1.000
2590.750	28.047	.981	1.037	2.299	.150	.208	1.000	.208	1.000
2591.000	25.281	.943	1.019	2.292	.154	.213	1.000	.213	1.000
2591.250	26.144	.947	1.039	2.289	.156	.214	1.000	.214	1.000
2591.500	26.086	.955	1.070	2.296	.150	.209	1.000	.209	1.000
2591.750	26.256	.924	1.124	2.289	.149	.211	1.000	.211	1.000
2592.000	29.045	.906	1.027	2.276	.160	.221	1.000	.221	1.000
2592.250	27.453	.885	1.050	2.276	.180	.229	1.000	.229	1.000
2592.500	24.807	.928	1.056	2.274	.182	.230	.992	.230	.981
2592.750	28.293	.981	.994	2.276	.155	.219	1.000	.219	1.000
2593.000	29.578	1.022	1.223	2.299	.145	.206	1.000	.206	1.000
2593.250	26.196	1.000	1.287	2.304	.144	.204	1.000	.204	1.000
2593.500	26.257	1.060	1.083	2.306	.139	.201	1.000	.201	1.000
2593.750	28.544	1.185	1.384	2.329	.125	.186	1.000	.186	1.000
2594.000	29.236	1.298	1.718	2.338	.116	.179	1.000	.179	1.000
2594.250	30.052	1.129	1.542	2.341	.118	.179	1.000	.179	1.000
2594.500	33.236	1.040	1.300	2.314	.145	.200	1.000	.200	1.000
2594.750	32.693	1.094	1.213	2.327	.148	.197	1.000	.197	1.000
2595.000	28.100	1.275	2.500	2.371	.126	.171	1.000	.171	1.000
2595.250	25.931	1.277	1.555	2.363	.115	.169	1.000	.169	1.000
2595.500	23.003	1.209	1.524	2.349	.115	.174	1.000	.174	1.000
2595.750	22.127	1.069	1.409	2.316	.135	.195	1.000	.195	1.000
2596.000	21.869	1.065	1.183	2.301	.153	.209	1.000	.209	1.000
2596.250	21.337	1.074	1.117	2.318	.153	.202	1.000	.202	1.000
2596.500	20.951	1.097	1.071	2.327	.135	.191	1.000	.191	1.000
2596.750	22.055	1.008	1.716	2.333	.137	.190	1.000	.190	1.000
2597.000	25.845	.969	1.339	2.305	.157	.209	1.000	.209	1.000
2597.250	26.007	.926	1.088	2.287	.162	.218	1.000	.218	1.000
2597.500	23.930	.955	1.113	2.289	.157	.215	1.000	.215	1.000
2597.750	23.860	.960	1.178	2.295	.143	.207	1.000	.207	1.000
2598.000	25.558	.983	1.130	2.296	.142	.206	1.000	.206	1.000
2598.250	28.749	1.009	1.127	2.304	.149	.206	1.000	.206	1.000
2598.500	26.669	1.032	1.198	2.314	.140	.198	1.000	.198	1.000
2598.750	23.961	1.008	1.206	2.312	.141	.199	1.000	.199	1.000
2599.000	25.295	.971	1.142	2.305	.151	.206	1.000	.206	1.000
2599.250	26.468	.998	1.163	2.318	.147	.200	1.000	.200	1.000
2599.500	28.654	1.061	1.247	2.335	.119	.182	1.000	.182	1.000

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC	
2600.000	27.760		.973	1.377	2.305	.143	.203	1.000	.203	1.000
2600.250	29.538		.893	1.137	2.273	.158	.221	1.000	.221	1.000
2600.500	30.313		.850	1.017	2.269	.160	.223	1.000	.223	1.000
2600.750	28.185		.849	1.008	2.266	.168	.228	1.000	.228	1.000
2601.000	29.046		.871	.997	2.262	.174	.232	1.000	.232	1.000
2601.250	30.148		.861	1.032	2.255	.175	.235	.999	.235	.996
2601.500	30.255		.859	.986	2.247	.185	.242	.986	.242	.965
2601.750	33.398		.862	1.036	2.250	.180	.239	.991	.239	.977
2602.000	29.677		.858	1.007	2.250	.178	.238	.993	.238	.984
2602.250	26.475		.850	.962	2.248	.176	.238	.995	.238	.988
2602.500	29.334		.849	.975	2.244	.168	.236	.998	.236	.996
2602.750	28.463		.852	.929	2.243	.160	.233	1.000	.233	1.000
2603.000	25.970		.843	.851	2.250	.174	.237	.999	.237	.999
2603.250	27.794		.829	.833	2.255	.198	.244	.989	.244	.973
2603.500	30.157		.845	.877	2.256	.185	.239	.995	.239	.987
2603.750	29.021		.889	.985	2.265	.165	.227	1.000	.227	1.000
2604.000	28.542		.907	1.089	2.285	.165	.220	1.000	.220	1.000
2604.250	30.140		.907	1.045	2.276	.171	.226	1.000	.226	1.000
2604.500	31.014		.900	1.097	2.263	.174	.232	.996	.232	.989
2604.750	29.222		.903	1.119	2.264	.167	.228	1.000	.228	1.000
2605.000	30.223		.916	1.139	2.266	.158	.224	1.000	.224	1.000
2605.250	28.223		.977	1.095	2.284	.151	.214	1.000	.214	1.000
2605.500	24.976	1.029	1.029	1.300	2.312	.144	.201	1.000	.201	1.000
2605.750	23.123	1.075	1.075	1.339	2.327	.135	.192	1.000	.192	1.000
2606.000	23.632		.994	1.172	2.319	.144	.198	1.000	.198	1.000
2606.250	24.870		.913	1.146	2.299	.167	.215	1.000	.215	1.000
2606.500	25.992		.892	1.154	2.289	.168	.219	1.000	.219	1.000
2606.750	26.352		.928	1.132	2.294	.156	.213	1.000	.213	1.000
2607.000	27.629		.973	1.183	2.307	.153	.206	1.000	.206	1.000
2607.250	30.278	1.014	1.014	1.158	2.324	.142	.196	1.000	.196	1.000
2607.500	29.885	1.038	1.038	1.329	2.323	.135	.192	1.000	.192	1.000
2607.750	28.758	1.021	1.021	1.205	2.314	.135	.196	1.000	.196	1.000
2608.000	26.840		.990	1.256	2.306	.131	.197	1.000	.197	1.000
2608.250	26.102	1.078	1.078	1.215	2.318	.124	.190	1.000	.190	1.000
2608.500	27.746	1.115	1.115	1.430	2.330	.119	.183	1.000	.183	1.000
2608.750	27.638	1.072	1.072	1.319	2.329	.135	.191	1.000	.191	1.000
2609.000	25.862	1.021	1.021	1.340	2.319	.129	.191	1.000	.191	1.000
2609.250	25.905	1.051	1.051	1.357	2.319	.121	.188	1.000	.188	1.000
2609.500	27.657	1.104	1.104	1.444	2.333	.132	.188	1.000	.188	1.000
2609.750	26.912	1.078	1.078	1.561	2.328	.143	.195	1.000	.195	1.000
2610.000	25.835		.995	1.238	2.303	.153	.208	1.000	.208	1.000
2610.250	26.434		.986	1.193	2.303	.142	.203	1.000	.203	1.000
2610.500	25.668	1.032	1.032	1.215	2.309	.138	.199	1.000	.199	1.000
2610.750	23.651	1.108	1.108	1.200	2.323	.138	.194	1.000	.194	1.000
2611.000	21.675	1.200	1.200	1.434	2.340	.125	.182	1.000	.182	1.000
2611.250	24.204	1.157	1.157	1.414	2.332	.131	.188	1.000	.188	1.000
2611.500	30.168	1.094	1.094	1.253	2.318	.141	.197	1.000	.197	1.000
2611.750	29.476	1.052	1.052	1.315	2.321	.139	.195	1.000	.195	1.000
2612.000	27.494	1.108	1.108	1.502	2.322	.138	.194	1.000	.194	1.000
2612.250	27.414	1.110	1.110	1.367	2.316	.142	.198	1.000	.198	1.000
2612.500	28.722	1.013	1.013	1.300	2.301	.145	.205	1.000	.205	1.000
2612.750	29.059		.957	1.244	2.275	.160	.221	1.000	.221	1.000
2613.000	26.950		.910	1.127	2.268	.167	.227	1.000	.227	1.000
2613.250	27.372		.904	1.129	2.275	.175	.228	1.000	.228	1.000
2613.500	27.193		.917	1.219	2.285	.177	.225	1.000	.225	1.000

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2614.000	26.389	.969	1.266	2.295	.153	.211	1.000	.211	1.000
2614.250	27.592	.932	1.175	2.288	.170	.221	1.000	.221	1.000
2614.500	28.504	.894	1.043	2.275	.172	.226	1.000	.226	1.000
2614.750	27.882	.890	1.080	2.273	.172	.227	1.000	.227	1.000
2615.000	27.541	.921	1.127	2.274	.162	.222	1.000	.222	1.000
2615.250	29.860	.895	1.119	2.265	.168	.228	1.000	.228	1.000
2615.500	32.231	.861	.875	2.252	.177	.237	.994	.237	.984
2615.750	30.064	.851	.880	2.249	.173	.236	.997	.236	.993
2616.000	31.055	.887	.975	2.254	.183	.238	.985	.238	.964
2616.250	31.958	.936	1.078	2.271	.188	.234	.982	.234	.955
2616.500	32.997	.943	1.142	2.276	.175	.227	.994	.227	.986
2616.750	35.456	.946	1.159	2.274	.170	.226	.996	.226	.989
2617.000	30.732	.913	1.076	2.270	.164	.225	1.000	.225	1.000
2617.250	27.896	.891	1.044	2.248	.162	.232	.996	.232	.989
2617.500	31.860	.872	1.017	2.251	.161	.231	1.000	.231	1.000
2617.750	33.024	.888	1.098	2.268	.161	.224	1.000	.224	1.000
2618.000	31.003	.894	1.146	2.270	.179	.231	.997	.231	.992
2618.250	28.104	.889	1.063	2.263	.186	.237	.987	.237	.969
2618.500	30.302	.891	1.137	2.256	.187	.240	.982	.240	.956
2618.750	36.744	.896	1.105	2.262	.199	.243	.976	.243	.941
2619.000	35.462	.919	1.169	2.276	.184	.231	.991	.231	.979
2619.250	29.301	.966	1.265	2.300	.161	.213	1.000	.213	1.000
2619.500	26.661	1.041	1.319	2.313	.154	.205	1.000	.205	1.000
2619.750	25.463	1.106	1.407	2.313	.142	.200	1.000	.200	1.000
2620.000	25.264	1.217	1.553	2.317	.127	.192	1.000	.192	1.000
2620.250	24.685	1.274	1.615	2.331	.126	.186	1.000	.186	1.000
2620.500	24.985	1.273	1.711	2.336	.126	.184	1.000	.184	1.000
2620.750	22.232	1.324	1.647	2.339	.122	.181	1.000	.181	1.000
2621.000	19.811	1.372	1.732	2.352	.125	.178	1.000	.178	1.000
2621.250	21.814	1.404	1.758	2.353	.125	.177	1.000	.177	1.000
2621.500	21.484	1.436	1.678	2.357	.112	.171	1.000	.171	1.000
2621.750	23.584	1.455	1.989	2.369	.111	.166	1.000	.166	1.000
2622.000	26.333	1.451	1.747	2.366	.111	.167	1.000	.167	1.000
2622.250	27.041	1.573	1.823	2.368	.093	.158	1.000	.158	1.000
2622.500	29.903	2.033	2.523	2.387	.099	.154	1.000	.154	1.000
2622.750	41.617	2.372	4.804	2.357	.128	.177	.919	.177	.809
2623.000	40.798	1.896	3.196	2.329	.140	.193	.927	.193	.828
2623.250	35.796	1.333	1.500	2.309	.148	.204	.972	.204	.931
2623.500	34.100	1.079	1.372	2.296	.160	.214	.992	.214	.981
2623.750	33.635	1.011	1.128	2.288	.162	.217	.999	.217	.997
2624.000	32.084	1.033	1.176	2.290	.158	.215	.999	.215	.998
2624.250	30.214	1.090	1.302	2.299	.165	.214	.989	.214	.973
2624.500	30.372	1.110	1.418	2.299	.157	.211	.992	.211	.979
2624.750	29.912	1.118	1.177	2.303	.132	.199	1.000	.199	1.000
2625.000	28.361	1.256	1.494	2.336	.124	.183	1.000	.183	1.000
2625.250	29.826	1.477	1.843	2.368	.110	.166	1.000	.166	1.000
2625.500	29.241	1.503	2.029	2.376	.112	.164	1.000	.164	1.000
2625.750	28.644	1.397	1.798	2.362	.129	.176	1.000	.176	1.000
2626.000	30.041	1.449	1.626	2.373	.126	.171	1.000	.171	1.000
2626.250	27.366	1.523	2.044	2.377	.111	.163	1.000	.163	1.000
2626.500	24.884	1.441	1.779	2.364	.122	.172	1.000	.172	1.000
2626.750	26.295	1.279	1.469	2.352	.162	.194	1.000	.194	1.000
2627.000	26.528	1.197	1.463	2.333	.169	.204	.992	.204	.981
2627.250	26.484	1.193	1.413	2.324	.167	.206	.988	.206	.971
2627.500	29.403	1.220	1.446	2.327	.174	.208	.980	.208	.950



## EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXD	.PHIE	.SWEC
2628.000	22.535	1.038	1.227	2.313	.174	.213	1.000	.213	1.000
2628.250	24.842	1.086	1.321	2.291	.167	.218	.982	.218	.956
2628.500	26.568	1.229	1.619	2.304	.146	.205	.984	.205	.962
2628.750	28.006	1.341	1.957	2.342	.138	.187	1.000	.187	1.000
2629.000	27.602	1.452	1.970	2.345	.137	.186	.993	.186	.983
2629.250	28.319	1.426	1.915	2.348	.143	.188	.993	.188	.982
2629.500	25.323	1.331	1.846	2.339	.154	.196	.988	.196	.971
2629.750	22.109	1.288	1.713	2.323	.162	.205	.976	.205	.941
2630.000	23.141	1.328	1.779	2.338	.161	.199	.982	.199	.956
2630.250	23.518	1.424	2.066	2.367	.149	.183	1.000	.183	1.000
2630.500	24.320	1.426	2.070	2.354	.160	.193	.981	.193	.954
2630.750	24.570	1.364	1.888	2.338	.180	.207	.960	.207	.904
2631.000	26.610	1.284	1.832	2.327	.177	.209	.967	.209	.919
2631.250	29.620	1.377	1.631	2.340	.159	.197	.978	.197	.947
2631.500	29.144	1.457	2.580	2.369	.145	.181	1.000	.181	1.000
2631.750	25.848	1.503	2.184	2.368	.150	.183	.992	.183	.979
2632.000	24.697	1.715	2.912	2.386	.131	.169	1.000	.169	1.000
2632.250	33.469	2.101	3.472	2.414	.081	.136	1.000	.136	1.000
2632.500	47.109	2.237	4.576	2.407	.086	.141	1.000	.141	1.000
2632.750	58.697	2.072	2.620	2.363	.126	.174	.950	.174	.880
2633.000	56.043	2.206	2.067	2.371	.121	.169	.951	.169	.881
2633.250	40.217	2.602	3.530	2.415	.081	.136	1.000	.136	1.000
2633.500	40.758	2.029	3.102	2.394	.091	.148	1.000	.148	1.000
2633.750	54.304	1.526	1.758	2.331	.146	.195	.964	.195	.912
2634.000	60.085	1.410	1.627	2.328	.170	.206	.956	.206	.894
2634.250	52.273	1.343	1.957	2.325	.167	.206	.965	.206	.916
2634.500	38.989	1.069	1.056	2.285	.162	.218	.985	.218	.964
2634.750	33.394	.910	.955	2.264	.182	.235	.986	.235	.965
2635.000	30.336	.884	.957	2.248	.200	.248	.969	.248	.924
2635.250	30.061	.898	1.006	2.265	.187	.236	.986	.236	.965
2635.500	30.212	.915	1.035	2.271	.175	.229	.996	.229	.989
2635.750	33.171	.915	1.110	2.262	.183	.236	.983	.236	.958
2636.000	33.202	.904	1.010	2.263	.188	.238	.982	.238	.955
2636.250	34.630	.900	1.030	2.259	.182	.236	.985	.236	.963
2636.500	37.878	.941	1.076	2.267	.169	.228	.992	.228	.980
2636.750	37.136	1.004	1.363	2.268	.161	.224	.986	.224	.965
2637.000	37.813	1.090	1.076	2.283	.153	.215	.987	.215	.967
2637.250	33.557	1.226	1.500	2.341	.124	.181	1.000	.181	1.000
2637.500	30.622	1.562	2.162	2.374	.089	.154	1.000	.154	1.000
2637.750	32.368	1.742	2.735	2.372	.080	.151	1.000	.151	1.000
2638.000	31.864	1.610	2.004	2.380	.104	.158	1.000	.158	1.000
2638.250	34.199	1.368	2.050	2.365	.120	.171	1.000	.171	1.000
2638.500	36.918	1.094	1.228	2.315	.141	.198	1.000	.198	1.000
2638.750	34.952	.989	1.183	2.302	.164	.213	1.000	.213	1.000
2639.000	33.026	.994	1.166	2.302	.153	.208	1.000	.208	1.000
2639.250	32.429	1.065	1.412	2.303	.131	.198	1.000	.198	1.000
2639.500	31.527	1.137	1.381	2.317	.134	.195	1.000	.195	1.000
2639.750	32.010	1.116	1.492	2.313	.140	.199	1.000	.199	1.000
2640.000	30.800	1.071	1.237	2.295	.139	.205	1.000	.205	1.000
2640.250	29.969	1.019	1.128	2.294	.149	.209	1.000	.209	1.000
2640.500	28.711	1.027	1.162	2.288	.152	.213	1.000	.213	1.000
2640.750	28.688	1.054	1.179	2.280	.146	.213	.998	.213	.994
2641.000	28.728	1.095	1.214	2.291	.141	.207	1.000	.207	1.000
2641.250	30.082	1.083	1.309	2.306	.140	.201	1.000	.201	1.000
2641.500	30.781	1.051	1.132	2.284	.143	.211	1.000	.211	1.000

EAST HALIBUT#1 LOG ANALYSIS									
DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2642.000	29.868	1.093	1.233	2.304	.137	.201	1.000	.201	1.000
2642.250	30.561	1.069	1.154	2.283	.146	.212	.996	.212	.990
2642.500	29.209	1.044	1.107	2.287	.162	.217	.991	.217	.977
2642.750	30.428	1.088	1.351	2.302	.155	.209	.999	.209	.999
2643.000	31.602	1.137	1.249	2.296	.143	.206	.997	.206	.992
2643.250	32.735	1.124	1.241	2.284	.139	.209	.993	.209	.983
2643.500	34.646	1.064	1.134	2.269	.159	.223	.977	.223	.943
2643.750	36.546	1.000	1.068	2.260	.172	.232	.972	.232	.931
2644.000	33.061	.992	1.094	2.257	.159	.228	.982	.228	.955
2644.250	29.853	1.055	1.331	2.278	.151	.216	.991	.216	.978
2644.500	31.024	1.091	1.341	2.282	.162	.219	.978	.219	.946
2644.750	35.939	1.040	1.184	2.277	.176	.227	.973	.227	.934
2645.000	33.921	1.040	1.260	2.292	.164	.217	.993	.217	.982
2645.250	29.261	1.105	1.309	2.299	.158	.211	.991	.211	.979
2645.500	29.389	1.135	1.481	2.306	.152	.206	.997	.206	.992
2645.750	32.519	1.154	1.265	2.304	.156	.209	.988	.209	.971
2646.000	33.674	1.133	1.338	2.297	.159	.213	.984	.213	.960
2646.250	34.099	1.110	1.327	2.292	.155	.213	.988	.213	.970
2646.500	35.185	1.167	1.427	2.299	.147	.207	.990	.207	.974
2646.750	35.193	1.293	1.597	2.324	.135	.192	1.000	.192	1.000
2647.000	37.272	1.392	1.886	2.342	.123	.181	1.000	.181	1.000
2647.250	36.955	1.390	1.634	2.324	.129	.190	.991	.190	.978
2647.500	35.852	1.311	1.732	2.307	.142	.202	.977	.202	.944
2647.750	40.775	1.240	1.602	2.307	.156	.208	.976	.208	.941
2648.000	45.923	1.355	1.687	2.327	.143	.195	.986	.195	.966
2648.250	48.695	1.817	4.188	2.368	.125	.172	.980	.172	.952
2648.500	47.446	2.286	2.940	2.379	.132	.171	.938	.171	.853
2648.750	46.641	2.259	2.897	2.387	.135	.170	.944	.170	.865
2649.000	39.286	2.249	3.243	2.393	.121	.162	.965	.162	.914
2649.250	29.774	1.823	2.919	2.371	.122	.170	.986	.170	.966
2649.500	27.035	1.428	1.497	2.342	.145	.190	.986	.190	.964
2649.750	29.007	1.269	1.434	2.334	.151	.196	.997	.196	.992
2650.000	27.978	1.212	1.606	2.315	.148	.202	.993	.202	.983
2650.250	25.084	1.188	1.199	2.301	.139	.203	.995	.203	.988
2650.500	23.136	1.193	1.422	2.318	.118	.187	1.000	.187	1.000
2650.750	27.349	1.264	1.527	2.326	.118	.184	1.000	.184	1.000
2651.000	35.135	1.164	1.225	2.310	.147	.202	.999	.202	.998
2651.250	38.603	1.161	1.173	2.310	.148	.203	.998	.203	.996
2651.500	46.430	1.491	2.137	2.340	.132	.185	.988	.185	.971
2651.750	52.842	1.950	2.951	2.357	.132	.179	.950	.179	.879
2652.000	48.730	1.877	2.319	2.347	.132	.183	.948	.183	.876
2652.250	44.726	1.848	2.159	2.347	.142	.187	.943	.187	.863
2652.500	45.683	1.899	2.770	2.359	.137	.180	.952	.180	.884
2652.750	49.167	1.888	2.322	2.354	.138	.183	.947	.183	.873
2653.000	51.667	1.735	2.214	2.348	.153	.192	.944	.192	.866
2653.250	50.230	1.722	1.971	2.346	.145	.189	.952	.189	.884
2653.500	46.500	1.679	2.005	2.334	.136	.189	.956	.189	.893
2653.750	42.722	1.726	2.037	2.327	.135	.191	.946	.191	.870
2654.000	43.984	1.794	2.212	2.344	.135	.185	.952	.185	.884
2654.250	50.286	1.910	2.238	2.349	.131	.182	.948	.182	.875
2654.500	49.955	1.988	2.158	2.340	.129	.184	.935	.184	.846
2654.750	47.481	2.122	2.550	2.361	.122	.173	.947	.173	.873
2655.000	51.167	2.313	2.744	2.376	.121	.167	.945	.167	.868
2655.250	53.265	2.355	2.951	2.375	.119	.167	.943	.167	.863
2655.500	51.190	2.374	2.693	2.373	.120	.168	.938	.168	.853
2655.750	50.000	2.377	2.707	2.377	.120	.170	.938	.170	.848

EAST HALIBUT#1 LOG ANALYSIS									
DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2656.000	50.582	2.337	2.795	2.364	.121	.172	.932	.172	.839
2656.250	43.754	1.864	2.459	2.345	.130	.183	.951	.183	.881
2656.500	32.245	1.571	1.330	2.340	.133	.186	.977	.186	.942
2656.750	31.307	1.516	1.872	2.365	.100	.162	1.000	.162	1.000
2657.000	33.962	1.977	3.026	2.403	.086	.142	1.000	.142	1.000
2657.250	30.061	2.040	2.335	2.378	.099	.157	.996	.157	.990
2657.500	27.674	1.413	1.830	2.333	.124	.184	1.000	.184	1.000
2657.750	29.442	1.195	1.424	2.308	.139	.200	.998	.200	.996
2658.000	32.135	1.096	1.337	2.286	.171	.222	.972	.222	.931
2658.250	35.500	1.005	1.128	2.268	.179	.232	.970	.232	.927
2658.500	33.233	.982	1.046	2.270	.176	.230	.978	.230	.946
2658.750	38.041	.974	1.031	2.259	.189	.240	.963	.240	.910
2659.000	41.765	1.022	.993	2.246	.180	.241	.952	.241	.884
2659.250	40.330	1.042	1.206	2.260	.164	.229	.969	.229	.924
2659.500	36.605	1.018	.917	2.255	.156	.227	.977	.227	.943
2659.750	34.496	.949	.922	2.249	.177	.238	.970	.238	.927
2660.000	37.594	.954	.943	2.261	.188	.238	.969	.238	.925
2660.250	34.597	.944	1.037	2.251	.184	.240	.967	.240	.920
2660.500	34.632	.922	.938	2.234	.196	.252	.953	.252	.887
2660.750	35.936	.923	.953	2.231	.192	.252	.953	.252	.886
2661.000	34.086	.948	1.009	2.241	.194	.248	.954	.248	.888
2661.250	34.529	.990	1.031	2.265	.186	.236	.966	.236	.917
2661.500	33.754	.998	1.127	2.280	.181	.228	.978	.228	.946
2661.750	35.172	1.001	1.088	2.270	.191	.236	.963	.236	.911
2662.000	36.280	1.027	1.121	2.290	.179	.224	.981	.224	.954
2662.250	33.990	1.221	1.258	2.366	.126	.174	1.000	.174	1.000
2662.500	29.651	1.992	3.325	2.405	.077	.138	1.000	.138	1.000
2662.750	27.134	2.249	2.378	2.401	.083	.142	1.000	.142	1.000
2663.000	27.450	1.957	2.486	2.385	.090	.151	1.000	.151	1.000
2663.250	27.790	1.820	2.396	2.380	.085	.150	1.000	.150	1.000
2663.500	29.746	1.837	2.100	2.381	.090	.152	1.000	.152	1.000
2663.750	29.340	1.866	2.573	2.368	.086	.155	1.000	.155	1.000
2664.000	29.762	1.879	2.408	2.370	.079	.151	1.000	.151	1.000
2664.250	32.728	1.832	2.275	2.362	.092	.160	1.000	.160	1.000
2664.500	41.927	1.699	2.247	2.326	.127	.188	.955	.188	.892
2664.750	43.072	1.568	1.586	2.311	.139	.199	.949	.199	.877
2665.000	32.970	1.426	1.577	2.332	.126	.186	.995	.186	.988
2665.250	30.387	1.423	1.559	2.334	.130	.187	.993	.187	.983
2665.500	25.232	1.304	1.772	2.327	.139	.193	.997	.193	.991
2665.750	18.563	1.198	1.487	2.325	.136	.192	1.000	.192	1.000
2666.000	19.572	1.219	1.538	2.341	.127	.183	1.000	.183	1.000
2666.250	21.508	1.311	1.709	2.356	.113	.171	1.000	.171	1.000
2666.500	20.984	1.418	1.864	2.364	.104	.165	1.000	.165	1.000
2666.750	20.328	1.492	2.024	2.364	.105	.165	1.000	.165	1.000
2667.000	19.217	1.474	1.860	2.363	.106	.166	1.000	.166	1.000
2667.250	17.850	1.459	1.780	2.365	.107	.165	1.000	.165	1.000
2667.500	18.969	1.481	1.776	2.371	.103	.161	1.000	.161	1.000
2667.750	19.844	1.489	1.802	2.367	.096	.160	1.000	.160	1.000
2668.000	20.796	1.499	1.738	2.353	.098	.166	1.000	.166	1.000
2668.250	23.188	1.562	1.776	2.359	.087	.158	1.000	.158	1.000
2668.500	22.861	1.646	1.998	2.372	.077	.149	1.000	.149	1.000
2668.750	21.067	1.678	1.890	2.371	.081	.151	1.000	.151	1.000
2669.000	21.953	1.605	2.165	2.364	.084	.156	1.000	.156	1.000
2669.250	25.709	1.669	1.683	2.380	.086	.150	1.000	.150	1.000
2669.500	36.714	1.849	2.802	2.395	.106	.155	1.000	.155	1.000

EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2670.000	34.929	1.787	1.931	2.373	.100	.160	1.000	.160	1.000
2670.250	31.051	1.609	2.136	2.358	.113	.170	1.000	.170	1.000
2670.500	28.537	1.408	1.376	2.323	.140	.195	.977	.195	.942
2670.750	31.857	1.246	1.594	2.317	.139	.197	.997	.197	.993
2671.000	32.321	1.262	1.597	2.316	.141	.198	.992	.198	.981
2671.250	28.848	1.264	1.368	2.307	.145	.203	.981	.203	.952
2671.500	29.570	1.241	1.445	2.315	.141	.198	.994	.198	.985
2671.750	27.074	1.248	1.499	2.324	.136	.193	1.000	.193	1.000
2672.000	26.350	1.347	1.513	2.334	.129	.186	1.000	.186	1.000
2672.250	27.975	1.534	1.983	2.372	.119	.168	1.000	.168	1.000
2672.500	28.788	1.575	2.242	2.377	.123	.168	1.000	.168	1.000
2672.750	29.773	1.409	1.779	2.341	.131	.185	.999	.185	.999
2673.000	30.232	1.289	1.433	2.327	.125	.187	1.000	.187	1.000
2673.250	29.772	1.402	1.681	2.340	.114	.177	1.000	.177	1.000
2673.500	29.463	1.448	1.823	2.346	.119	.177	1.000	.177	1.000
2673.750	31.188	1.305	1.585	2.343	.131	.184	1.000	.184	1.000
2674.000	30.208	1.238	1.501	2.342	.147	.191	1.000	.191	1.000
2674.250	27.648	1.192	1.479	2.335	.144	.192	1.000	.192	1.000
2674.500	28.291	1.180	1.339	2.331	.129	.188	1.000	.188	1.000
2674.750	30.691	1.209	1.508	2.333	.129	.186	1.000	.186	1.000
2675.000	32.945	1.284	1.502	2.332	.126	.186	1.000	.186	1.000
2675.250	34.021	1.304	1.729	2.326	.119	.185	1.000	.185	1.000
2675.500	34.326	1.404	1.649	2.340	.110	.176	1.000	.176	1.000
2675.750	33.905	1.511	2.274	2.355	.099	.165	1.000	.165	1.000
2676.000	32.794	1.558	1.993	2.352	.102	.168	1.000	.168	1.000
2676.250	35.370	1.441	1.793	2.338	.111	.177	1.000	.177	1.000
2676.500	36.369	1.402	1.774	2.342	.109	.175	1.000	.175	1.000
2676.750	31.455	1.212	2.083	2.306	.135	.199	.996	.199	.991
2677.000	31.307	1.133	1.069	2.305	.143	.203	1.000	.203	1.000
2677.250	30.883	1.393	1.813	2.353	.102	.168	1.000	.168	1.000
2677.500	33.516	1.589	2.000	2.359	.094	.162	1.000	.162	1.000
2677.750	37.983	1.746	1.871	2.365	.086	.156	1.000	.156	1.000
2678.000	43.229	1.621	3.541	2.352	.085	.160	1.000	.160	1.000
2678.250	46.280	1.401	1.422	2.298	.142	.205	.956	.205	.894
2678.500	42.346	1.085	1.227	2.275	.172	.226	.965	.226	.914
2678.750	42.065	1.094	1.363	2.282	.169	.223	.970	.223	.926
2679.000	44.309	1.180	1.460	2.294	.152	.211	.978	.211	.945
2679.250	41.590	1.191	1.501	2.307	.132	.198	1.000	.198	1.000
2679.500	35.838	1.164	1.502	2.307	.136	.199	1.000	.199	1.000
2679.750	39.730	1.162	1.467	2.306	.154	.207	.988	.207	.969
2680.000	41.033	1.178	1.490	2.312	.157	.207	.987	.207	.967
2680.250	38.841	1.192	1.499	2.305	.152	.207	.984	.207	.961
2680.500	39.815	1.177	1.407	2.299	.155	.210	.979	.210	.949
2680.750	42.629	1.187	1.484	2.305	.151	.207	.985	.207	.964
2681.000	49.366	1.300	1.379	2.318	.127	.191	1.000	.191	1.000
2681.250	49.800	1.358	1.838	2.323	.127	.189	.996	.189	.989
2681.500	44.474	1.301	1.446	2.315	.147	.201	.979	.201	.949
2681.750	41.343	1.282	1.554	2.316	.136	.196	.993	.196	.982
2682.000	39.567	1.336	2.097	2.317	.136	.195	.985	.195	.964
2682.250	38.618	1.262	1.386	2.302	.155	.209	.968	.209	.923
2682.500	42.583	1.059	1.341	2.280	.166	.222	.977	.222	.944
2682.750	43.554	1.028	1.199	2.270	.169	.227	.974	.227	.936
2683.000	44.038	1.042	1.377	2.273	.167	.225	.975	.225	.939
2683.250	45.300	1.123	1.323	2.281	.165	.221	.967	.221	.919
2683.500	47.399	1.150	1.505	2.292	.163	.216	.973	.216	.933
2683.750	47.488	1.171	1.741	2.307	.177	.220	.948	.220	.922

## EAST HALIBUT#1 LOG ANALYSIS

DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2684.000	42.639	1.096	1.358	2.292	.176	.222	.971	.222	.928
2684.250	41.667	1.154	1.437	2.295	.163	.215	.973	.215	.934
2684.500	44.321	1.149	1.547	2.292	.154	.213	.979	.213	.949
2684.750	42.588	1.077	1.299	2.273	.158	.221	.975	.221	.940
2685.000	45.798	1.033	1.144	2.275	.168	.225	.977	.225	.943
2685.250	52.469	1.104	1.428	2.296	.167	.216	.980	.216	.950
2685.500	51.642	1.139	1.476	2.299	.160	.212	.982	.212	.955
2685.750	45.721	1.138	1.337	2.294	.166	.216	.974	.216	.935
2686.000	43.305	1.099	1.414	2.268	.176	.231	.954	.231	.888
2686.250	43.776	1.062	1.152	2.252	.174	.236	.951	.236	.883
2686.500	44.237	1.057	1.110	2.256	.162	.230	.963	.230	.910
2686.750	44.182	1.063	1.086	2.244	.171	.238	.947	.238	.874
2687.000	42.978	1.103	1.047	2.283	.176	.225	.963	.225	.910
2687.250	38.195	1.098	1.089	2.305	.189	.223	.969	.223	.923
2687.500	38.570	1.082	.970	2.266	.218	.249	.926	.249	.826
2687.750	39.820	1.041	1.167	2.256	.213	.250	.931	.250	.836
2688.000	40.324	1.051	1.087	2.260	.209	.248	.934	.248	.843
2688.250	40.257	1.031	1.120	2.262	.209	.247	.939	.247	.853
2688.500	42.185	1.050	1.168	2.264	.197	.241	.945	.241	.868
2688.750	42.711	1.135	1.238	2.281	.184	.229	.950	.229	.880
2689.000	39.864	1.154	1.349	2.278	.185	.231	.944	.231	.866
2689.250	39.314	1.162	1.125	2.270	.184	.234	.938	.234	.852
2689.500	42.418	1.132	1.349	2.279	.195	.235	.941	.235	.859
2689.750	45.730	1.137	1.244	2.285	.190	.230	.948	.230	.875
2690.000	43.873	1.110	1.143	2.273	.179	.230	.953	.230	.886
2690.250	43.983	1.117	1.167	2.273	.169	.226	.959	.226	.901
2690.500	47.369	1.131	1.260	2.273	.175	.228	.952	.228	.885
2690.750	44.445	1.102	1.146	2.264	.184	.236	.945	.236	.867
2691.000	43.672	1.057	1.120	2.259	.172	.232	.958	.232	.898
2691.250	45.099	1.052	1.132	2.243	.170	.238	.950	.238	.879
2691.500	47.740	1.050	1.128	2.258	.171	.232	.959	.232	.901
2691.750	46.649	1.094	1.326	2.271	.170	.227	.961	.227	.905
2692.000	44.089	1.057	1.148	2.265	.172	.230	.962	.230	.907
2692.250	47.151	1.016	1.010	2.266	.173	.230	.969	.230	.925
2692.500	48.711	1.039	1.197	2.269	.169	.228	.970	.228	.927
2692.750	46.407	1.076	1.111	2.275	.169	.225	.968	.225	.921
2693.000	41.540	1.014	1.157	2.274	.186	.233	.965	.233	.915
2693.250	36.219	.972	1.122	2.261	.184	.237	.966	.237	.917
2693.500	38.901	.967	1.151	2.263	.173	.232	.977	.232	.942
2693.750	42.725	1.140	1.380	2.303	.162	.212	.982	.212	.955
2694.000	45.682	1.383	1.806	2.317	.155	.204	.960	.204	.903
2694.250	47.430	1.369	1.951	2.301	.170	.216	.938	.216	.852
2694.500	46.740	1.282	1.281	2.286	.168	.221	.942	.221	.862
2694.750	55.413	1.359	1.568	2.305	.143	.203	.965	.203	.915
2695.000	59.684	1.630	2.210	2.336	.142	.191	.955	.191	.892
2695.250	59.432	1.819	2.198	2.338	.145	.192	.933	.192	.841
2695.500	62.849	1.853	2.943	2.344	.161	.196	.920	.196	.812
2695.750	59.230	1.893	2.719	2.355	.170	.196	.916	.196	.804
2696.000	61.295	1.796	2.273	2.363	.161	.189	.940	.189	.858
2696.250	74.993	1.944	2.332	2.384	.159	.164	.956	.164	.894
2696.500	87.841	2.459	4.086	2.425	.153	.135	.965	.135	.913
2696.750	94.644	3.465	5.065	2.458	.156	.105	.940	.105	.855
2697.000	89.304	3.875	4.782	2.465	.155	.100	.926	.100	.820
2697.250	78.166	3.637	5.385	2.438	.164	.119	.892	.119	.745
2697.500	73.916	2.732	3.304	2.380	.176	.164	.880	.164	.722
					.148	.144	.907	.144	.781

EAST HALIBUT#1 LOG ANALYSIS									
DEPTH	.GR	.RT	.MSFC	.RHOB	.NPHI	.PHIE	.SXO	.PHIE	.SWEC
2698.000	74.369	2.186	3.205	2.392	.167	.152	.941	.152	.859
2698.250	67.940	2.243	2.823	2.385	.181	.157	.917	.157	.803
2698.500	67.439	1.995	2.662	2.381	.189	.156	.933	.156	.839
2698.750	73.059	1.952	2.339	2.436	.212	.081	1.000	.081	1.000
2699.000	69.050	2.507	3.992	2.562	.221	.000	1.000	.000	1.000
2699.250	61.163	5.420	12.248	2.591	.216	.000	1.000	.000	1.000
2699.500	56.719	8.987	12.867	2.581	.209	.000	1.000	.000	1.000
2699.750	56.719	9.844	12.568	2.583	.195	.000	1.000	.000	1.000
2700.000	56.719	10.072	12.265	2.563	.180	.000	1.000	.000	1.000
2700.250	56.719	8.100	12.655	2.532	.159	.033	1.000	.033	1.000
2700.500	56.719	4.812	7.631	2.492	.133	.086	.905	.033	.771
2700.750	56.719	2.914	3.776	2.414	.127	.157	.945	.086	.866
2701.000	56.719	2.203	2.616	2.403	.124	.157	.925	.157	.823
2701.250	56.719	2.145	2.731	2.430	.124	.160	.971	.160	.930
2701.500	56.719	2.450	3.576	2.417	.096	.138	1.000	.138	1.000
2701.750	56.719	2.482	3.620	2.418	.089	.139	1.000	.139	1.000
2702.000	56.719	2.216	2.805	2.402	.101	.144	.991	.144	.978
2702.250	56.719	2.015	2.442	2.381	.099	.149	1.000	.149	1.000
2702.500	56.719	2.010	2.162	2.379	.103	.158	.994	.158	.984
2702.750	56.719	2.090	2.509	2.380	.113	.163	.980	.163	.950
2703.000	56.719	2.217	2.686	2.396	.118	.165	.967	.165	.919
2703.250	56.719	2.398	2.905	2.402	.108	.155	.983	.155	.958
2703.500	56.719	3.119	5.604	2.408	.088	.144	1.000	.144	1.000
2703.750	56.719	4.546	6.411	2.458	.082	.139	.963	.139	.909
2704.000	56.719	5.789	7.021	2.507	.086	.124	.938	.124	.852
2704.250	56.719	6.310	8.434	2.516	.098	.089	.960	.089	.902
2704.500	56.719	6.805	7.497	2.522	.117	.073	.948	.073	.872
2704.750	56.719	7.063	10.250	2.545	.131	.067	.919	.067	.803
2705.000	56.719	7.978	11.554	2.567	.131	.049	.986	.049	.965
					.133	.025	1.000	.025	1.000

# APPENDIX 3

EAST HALIBUT-1 RFT SURVEYS

SEPTEMBER 24, 1985

27 OCT 1987

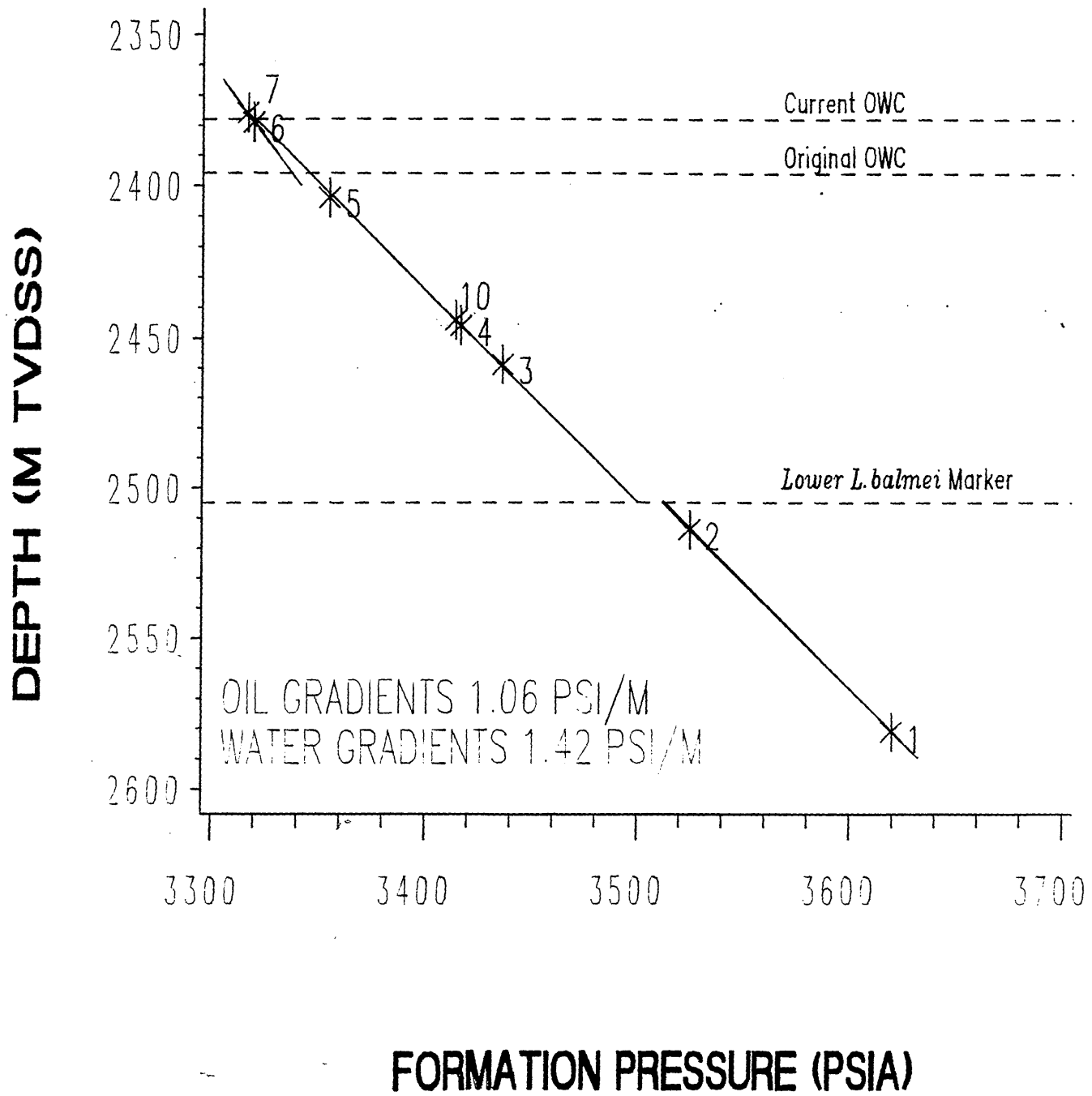
PETROLEUM DIVISION

K.J. Fagg  
September, 1985



# FIG. 1: EAST HALIBUT RFT SURVEY

24-9-85



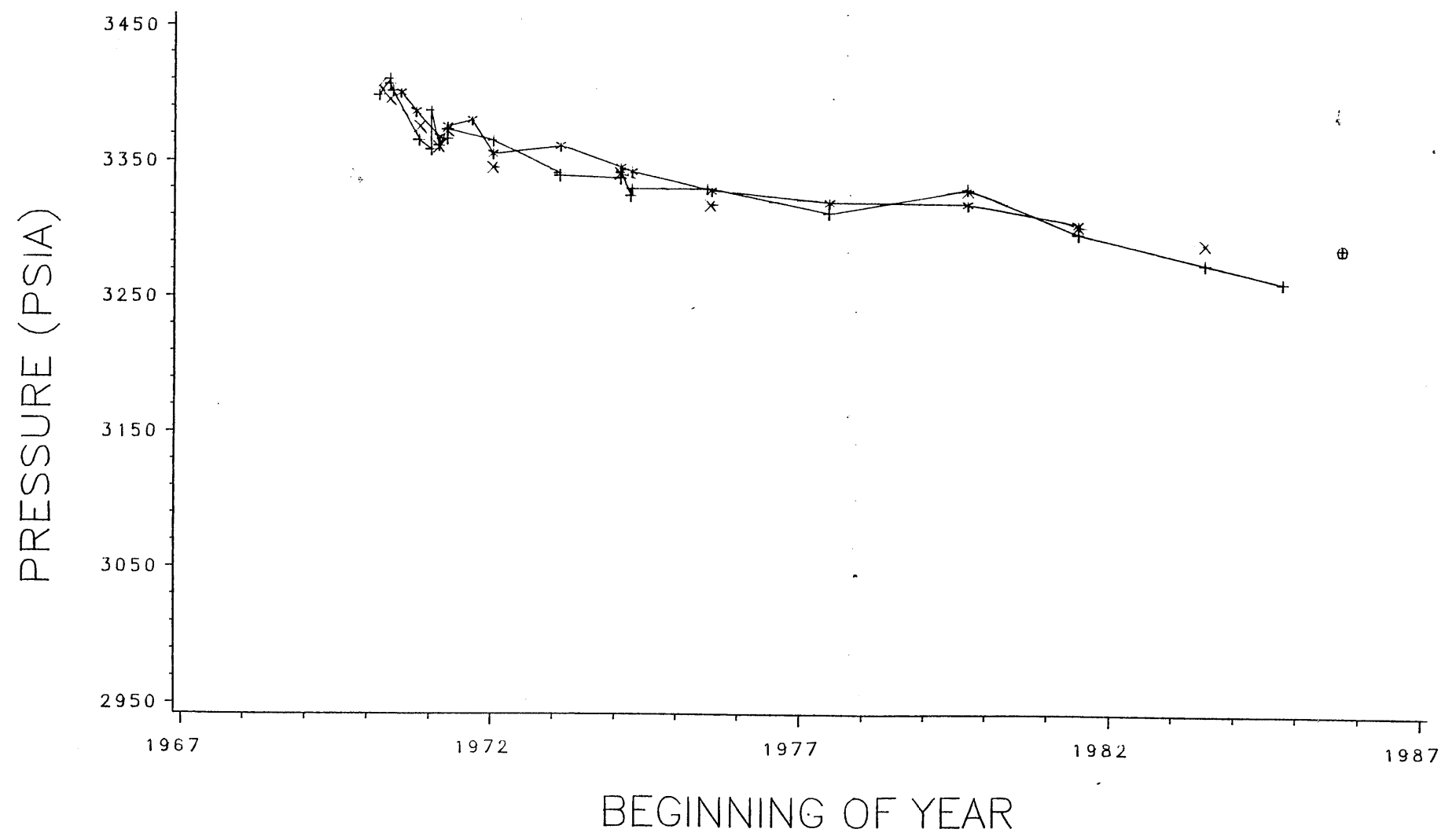
Note: Pressure differential across *lower L. balmei* marker is 9psi.

RAHM 25SEP85

# INDIVIDUAL HYDRAULIC SYSTEM PRESSURE TESTS

(PRESSURES DATUMED TO 2347M SS)

GROUP=BOTTOM



ZONE    +--+ M-1.5.1    x x x M-1.6.1    \*-\*-\* M-1.7.1    ⊕ ⊕ ⊕ M-1.8.1

## EAST HALIBUT-1 RFT SURVEYS

### SUMMARY

RFT surveys were run in the East Halibut-1 well on September 24, 1985. As a result of the surveys, the following conclusions have been drawn:

1. An oil gradient exists in the zone interpreted from the logs as being oil-bearing, approximately 2374 to 2378m TVD SS.
2. Two water pressure systems exist in the tested section. The upper system extends from the current OWC (2378m TVD SS) to approximately the lower L. balmei marker. The lower system extends from below the marker. There is a pressure difference of approximately 9 psi between the two systems, with the lower system being at a higher pressure (Figure 1) indicating an extensive sealing unit.
3. There was no evidence for any oil sands being intersected below the known Halibut units.
4. The pressure in the intersected oil zone is on trend with the pressure history of the other lower Halibut units, the M-1.6.1 and M-1.7.1 units (Figure 2).

PROGRAM

Seven pretests were run over the interval 2397 - 2602m MDKB using a long-nosed probe. All pretests were valid.

A run was made using the Martineau probe to sample at approximately 2465m MDKB. The section was tight and it was only on the third seat that a partial sample could be taken.

INTERPRETATION

1. Pretests

The data from the 7 pretests is listed in Table 1 and displayed in Figure 1.

In the oil zone, the measured pressure gradient is approximately 0.9 psi/m which compares well with an expected gradient of 1.06 psi/m. The pressure measured in the oil zone when adjusted to the Halibut datum depth (2347m TVD SS) is 3286 psia. This pressure is on trend with the pressure history of the other lower Halibut units, M-1.6.1 and M-1.7.1 (Figure 2). This pressure trend and the OWC movement observed in this well and earlier TDT surveys, as well as the results of pulse tests, all point to effective communication between this block of the M-1.8.1 and the other lower Halibut units via the North Halibut fault.

Two water pressure systems were clearly identified. The lower zone extends above the second pretest seat and most probably to the lower L. balmei marker, which is interpreted to be an impermeable barrier. The upper zone extends below the third pretest seat, to the lower L. balmei marker.

2. Samples

The data and results of the sampling run are listed in Tables 2 to 5. The one sample recovered at 2444.2m TVD SS provided only filtrate. There were not indications of gas or hydrocarbon. Although there is a resistivity anomaly at this depth which is interpreted to be the top of the M-2.0.1 unit, when the well was circulated bottoms up within 1 metre of the sample depth, there were no indications of hydrocarbons. The sample depth was within the upper water system and the pressure measured closely matched the pretest results (Figure 1). The results of the RFT program therefore support the conclusion that there are no hydrocarbon bearing sands beneath the known Halibut units.

EAST HALIBUT-1

REPEAT FORMATION TESTS

RFT No. SEAT No.	DATE OF TEST	DEPTH MKB	NAME OF FORMATION	TYPE OF TEST	RESULTS OF TEST & RECOVERIES
1/1	24.09.85	2602	Latrobe	Pretest	FP 3620.1 psia = 8.2 ppg HP 4135.0 psia = 9.2 ppg
1/2	24.09.85	2535	Latrobe	Pretest	FP 3524.7 psia = 8.2 ppg HP 4021.7 psia = 9.2 ppg
1/3	24.09.85	2480	Latrobe	Pretest	FP 3436.4 psia = 8.1 ppg HP 3931.4 psia = 9.2 ppg
1/4	24.09.85	2467	Latrobe	Pretest	FP 3416.7 psia = 8.1 ppg HP 3911.4 psia = 9.2 ppg
1/5	24.09.85	2425	Latrobe	Pretest	FP 3354.9 psia = 8.1 ppg HP 3846.0 psia = 9.2 ppg
1/6	24.09.85	2400	Latrobe	Pretest	FP 3319.3 psia = 8.1 ppg HP 3807.4 psia = 9.2 ppg
1/7	24.09.85	2397	Latrobe	Pretest	FP 3316.4 psia = 8.1 ppg HP 3806.1 psia = 9.3 ppg
2/8	24.09.85	2464.5	Latrobe	Segregated Sample	FP 3416:3 psia = 8.1 ppg HP 3911:6 psia = 9.3 ppg
				<u>Recoveries:</u>	
				Tight	22.7 litre chamber
				Opened	- No sample.
2/9	24.09.85	2464.0	Latrobe	Segregated Sample	FP 3416: 3 psia = 8.1 ppg HP 3911: 3 psia = 9.3 ppg
				<u>Recoveries:</u>	
				Tight:	22.7 litre chamber
				Opened	- no sample.
2/10	24.09.85	2465.2	Latrobe	Segregated Sample	FP 3416.3 psia = 8.1 ppg HP 3909.0 psia = 9.3 ppg
				<u>Recoveries:</u>	
					<u>22.7 litre lower chamber</u>
					18.5 lt mud/filtrate.
					<u>10.4 litre upper chamber</u>
					Tight not opened.

TABLE 1

RFT PRESSURE DATA

WELL: East Halibut -1

PAGE 1 OF    

DATE: 2.4/9/85

GEOLOGIST-ENGINEER: S. Watts - K. Fagg

RFT NO. RUN-SEAT	DEPTH		INITIAL HYDROSTATIC HP/ <del>RFT</del> GAUGE		TIME SET	MINIMUM FLOWING PRESSURE psi <sub>s</sub> (PRETEST)	FORMATION PRESSURE HP/ <del>RFT</del> GAUGE		TEMP °C	TIME RETRACT	FINAL HYDROSTATIC HP/ <del>RFT</del> GAUGE		COMMENTS (INCLUDE PROBE TYPES)	
	RFT TYPE	m MDKB	m TVD ss KB= 2.1	psia <del>psig</del>			PPg	psia <del>psig</del>			PPg	psia <del>psig</del>		PPg
1/1	L	2602	2581	4135	0355	3608	3620.1	8.2	90.4	0408	4131	9.3	Valid Pretest	
1/2	L	2535	2514	4021.7	0423	3444	3524.7	8.2	90.6	0437	4021.3	9.2	Valid Pretest	
1/3	L	2480	2459	3931.4	0450	3429	3436.4	8.1	89.0	0500	3933.5	9.2	Valid Pretest	
1/4	L	2467	2446	3911.4	0510	3410	3416.7	8.1	88.5	0529	3913.2	9.2	Valid Pretest	
1/5	L	2425	2404	3846.0	0541	-	3354.9	8.1	87.7	0557	3848.1	9.2	Valid Pretest	
1/6	L	2400	2379	3807.4	0602	3305	3319.3	8.1	86.3	0618	3810.3	9.3	Valid Pretest	
1/7	L	2397	2376	3806.1	0632	3302	3316.4	8.1	85.5	0645	3807.0	9.3	Valid Pretest	
		Note:	RFT strain gauge inoperative Pretests done with						HP gauge					

PT=PRETEST  
SPT=SAMPLE

RFT 2.85

1107.OP.344

L=LONG NOSE PROBE  
M=MARTINEAU PROBE





TABLE 3

RFT SAMPLE TEST REPORT

WELL : East..Halibut...J..

OBSERVER : S. Watts / J. K. Fagg DATE : ..... 24/9/82..... RUN NO.:... 4.....

	CHAMBER 1 ( lit.)	CHAMBER 2 ( lit.)
SEAT NO.		
DEPTH	215 <del>2464.5</del>	
<b>A. RECORDING TIMES</b>		
Tool Set	9 45	
Pretest Open	9 45	
Time Open	9 51	
Chamber Open	9 51	
Chamber Full		
Fill Time		
Start Build up	pressure not building	
Finish Build up	up fast enough	
Build Up time		
Seal Chamber	9 59	
Tool Retract	10 03	
Total Time		hrs.
<b>B. SAMPLE PRESSURES</b>		
IHP	3914.6 psig	psig
ISIP	3416.3 psig	
Initial Flowing Press.	28 psig	
Final Flowing Press.	21 psig	
Sampling Press. Range	21-28 psig	
FSIP	3417.7 psig	
FHP	3912.6 psig	
Form.Press.(Horner)		
<b>C. TEMPERATURE</b>		
Depth Tool Reached	m	m
Max.Rec.Temp.	°C	°C
Time Circ. Stopped	hrs.	hrs.
Time since Circ.	hrs.	hrs.
Form.Temp.(Horner)	°C	°C
<b>D. SAMPLE RECOVERY</b>		
Surface Pressure	psig	psig
Amt Gas	lit.	lit.
Amt oil	lit.	lit.
Amt Water	lit.	lit.
Amt Others	lit.	lit.
<b>E. SAMPLE PROPERTIES</b>		
Gas Composition		
C1	ppm	ppm
C2	ppm	ppm
C3	ppm	ppm
iC4/nC4	ppm	ppm
C5	ppm	ppm
C6+	ppm	ppm
CO2/H2S	ppm	ppm
Oil Properties	°API @ °C	°API @ °C
Colour		
Fluorescence		
GOR		
Water Properties		
Resistivity	@ °C	@ °C
NaCl Equivalent	ppm	ppm
Cl-titrated	ppm	ppm
NO3	ppm	ppm
Est. Water Type		
Mud Properties		
Resistivity	@ °C	@ °C
NaCl Equivalent	ppm	ppm
Cl- titrated	ppm	ppm
Calibration		
Calibration Press.	psig	psig
Calibration Temp.	°C	°C
Hewlett Packard No.		
Mud Weight		
Calc. Hydrostatic		
RFT Chokesize		
REMARKS	Tight, very poor build-up.	

TABLE 4

## RFT SAMPLE TEST REPORT

WELL : East... Hobbit... 7..

OBSERVER : S. Watts.. K. Fagg

DATE : .... 24/1/91 2.5.....

RUN NO.: ... 2.....

	CHAMBER 1 (22.7 lit.)	CHAMBER 2 (10 lit.)
SEAT NO.	2/9	
DEPTH	2464.0	
<b>A. RECORDING TIMES</b>		
Tool Set	10 05	
Pretest Open	10 05	
Time Open	10 11	
Chamber Open	10 11	reopened @ 10 21
Chamber Full	-	
Fill Time	-	
Start Build up	-	
Finish Build up	-	
Build Up time	-	
Seal Chamber	10 17	10 35
Tool Retract		10 39
Total Time	0.5 hrs.	hrs.
<b>B. SAMPLE PRESSURES</b>		
IHP	3411.3	psig
ISIP	3416.3	psig
Initial Flowing Press.	21	psig 11
Final Flowing Press.	22	psig 23
Sampling Press. Range	21 - 22	psig 11-23
FSIP		
FHP	3909.5	psig
Form. Press. (Horner)		
<b>C. TEMPERATURE</b>		
Depth Tool Reached		m
Max. Rec. Temp.		°C
Time Circ. Stopped		hrs.
Time since Circ.		hrs.
Form. Temp. (Horner)		°C
<b>D. SAMPLE RECOVERY</b>		
Surface Pressure		psig
Amt Gas		lit.
Amt oil		lit.
Amt Water		lit.
Amt Others		lit.
<b>E. SAMPLE PROPERTIES</b>		
Gas Composition		
C1		ppm
C2		ppm
C3		ppm
IC4/nC4		ppm
C5		ppm
C6+		ppm
CO2/H2S		ppm
Oil Properties	°API @	°C
Colour		
Fluorescence		
GOR		
Water Properties		
Resistivity	@	°C
NaCl Equivalent		ppm
Cl-titrated		ppm
NO3		ppm
Est. Water Type		
Mud Properties		
Resistivity	@	°C
NaCl Equivalent		ppm
Cl-titrated		ppm
Calibration		
Calibration Press.		psig
Calibration Temp.		°C
Hewlett Packard No.		
Mud Weight		
Calc. Hydrostatic		
RFT Chokesize		
REMARKS	Tight, very poor build-up	

1107/OP/199

TABLE 5

RFT SAMPLE TEST REPORT

WELL : East...Hubert...2

OBSERVER : S. Watts...K. Fagg

DATE : ...24/7/85...

RUN NO. : ...R...

	CHAMBER 1 (22.7 lit.)	CHAMBER 2 (10 lit.)
SEAT NO.	2/10	
DEPTH	2465.2	Not Opened.
<b>A. RECORDING TIMES</b>		
Tool Set		
Pretest Open	10.57	
Time Open	10.57	
Chamber Open	11.00	
Chamber Full	-	
Fill Time	-	
Start Build up	-	
Finish Build up	-	
Build Up time	-	
Seal Chamber	12.06	
Tool Retract	12.11	
Total Time	12.14 hrs.	hrs.
<b>B. SAMPLE PRESSURES</b>		
IHP	3904.0 psig	psig
ISIP	3414.3 psig	
Initial Flowing Press.	17 psig	
Final Flowing Press.	2.15 psig	
Sampling Press. Range	17 - 2.00 psig	
FSIP	3415.3 psig	
FHP	3905.9 psig	
Form. Press. (Horner)		
<b>C. TEMPERATURE</b>		
Depth Tool Reached	m	m
Max. Rec. Temp.	°C	°C
Time Circ. Stopped	1200 23/9/85 hrs.	hrs.
Time since Circ.	hrs.	hrs.
Form. Temp. (Horner)	°C	°C
<b>D. SAMPLE RECOVERY</b>		
Surface Pressure	< 100 psig	psig
Amt Gas	0 lit.	lit.
Amt oil	0 lit.	lit.
Amt Water	18.5 lit.	lit.
Amt Others	lit.	lit.
<b>E. SAMPLE PROPERTIES</b>		
Gas Composition		
C1	- ppm	ppm
C2	- ppm	ppm
C3	- ppm	ppm
1C4/nC4	- ppm	ppm
C5	- ppm	ppm
C6+	- ppm	ppm
CO2/H2S	- ppm	ppm
Oil Properties	- °API @ °C	°API @ °C
Colour	-	
Fluorescence	-	
GOR	-	
Water Properties		
Resistivity	0.275 @ 23 °C	@ °C
NaCl Equivalent	25050 ppm	ppm
Cl- titrated	17000 ppm	ppm
NO3 Tr	2250 dpm ppm	ppm
Est. Water Type	F. ltrcal.	
Mud Properties		
Resistivity	.265 @ °C 24 °C	@ °C
NaCl Equivalent	29000 ppm	ppm
Cl- titrated	17500 ppm	ppm
Calibration Tr	3350 dpm	
Calibration Press.	psig	psig
Calibration Temp.	°C	°C
Hewlett Packard No.	741 4022 (strawberry)	
Mud Weight	9.2	
Calc. Hydrostatic	4.2	
RFT Chokesize	6 gall 30000	2 3/4 gall 30000
REMARKS		

# APPENDIX 4

GEOCHEMICAL REPORT

EAST HALIBUT-1 WELL, GIPPSLAND BASIN

VICTORIA

by

T.R. BOSTWICK

27 OCT 1987

PETROLEUM DIVISION

Sample Handling and Analysis by:

- D.M. Hill
- D.M. Ford
- J. McCardle
- H. Schiller
- M.A. Sparke
- A.C. Cook

)  
)  
) ESSO Australia Ltd  
)  
)  
) University of Wollongong

Esso Australia Ltd.  
Geochemical Report.

2261L/1

May, 1986

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## East Halibut-1

### INTRODUCTION

Canned cuttings and sidewall cores from the East Halibut-1 well, Gippsland Basin have been analysed to determine the source characteristics of the drilled section. The canned cuttings were collected at 15 metre intervals from 385 mKB to 2725 mKB (T.D.). Alternate 15-metre samples were analysed for C<sub>1-4</sub> headspace cuttings gas, and selected sidewall cores were analysed for total organic carbon (TOC), Rock-Eval pyrolysis yields, kerogen isolation and elemental analysis, and vitrinite reflectance.

The results of the analyses are recorded in Tables 1 through 5 and Figures 1 through 5.

### DISCUSSION OF RESULTS AND INTERPRETATIONS

#### Richness

Carbonaceous siltstones and shales from the Latrobe section yielded fair to good TOC yields (Table 2, Figure 2). Pyrolysis S<sub>2</sub> yields indicate that excellent potential occurs in the coal at 2711.5 mKB, and the coal laminated siltstone at 2418.5 mKB; and fair potential in the carbonaceous shale at 2512 mKB. S<sub>2</sub> yields indicative of poor source potential were encountered in the other sidewall cores analyzed.

#### Organic Matter Types

Hydrogen indices (Table 3b) when plotted against TMAX in Figure 3 reveal that the organic matter in the section is essentially land-derived, Type III, gas-prone kerogen. The Latrobe Group samples at 2512 mKB and 2711.5 mKB with the "best" hydrogen indices (HI) may have some waxy oil/condensate potential.

The results of elemental analysis on isolated kerogens are recorded in Table 4a. The resulting oxygen: carbon (O/C), nitrogen/carbon (N/C) and hydrogen carbon (H/C) atomic ratios are listed in Table 4b. (The atomic O/C ratio is approximate since the value was calculated by difference and the sulphur content which may be up to a few percent was not determined). The atomic O/C versus atomic H/C plot (Figure 4) confirms that the section is dominated by terrestrial, Type III organic matter. Traditionally Type III kerogen is considered gas-prone, however some waxy oil/condensate potential may be possible in the more hydrogen-rich (H/C greater than 0.85) portions of the section.

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## Maturity

The section is immature to T.D. at 2725 mKB. This is indicated by the  $R_V^{\max}$  versus depth plot (Figure 5), the TMAX measurements (Table 3a), and the atomic O/C ratios (Table 4b).

## CONCLUSIONS

1. The section encountered by the East Halibut-1 well is immature to T.D. at 2725 mKB.
2. Portions of Latrobe Group sediments in the East Halibut-1 well have fair-good potential to source gas and waxy oil/condensate when mature.

2261L:4



TABLE 1.

C1-C4 HYDROCARBON ANALYSES  
REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND  
WELL - EAST HALIBUT 1

GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)

GAS COMPOSITION (PERCENT)

SAMPLE NO.	DEPTH	GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)					GAS COMPOSITION (PERCENT)											
		METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	M	E	P	IB	NR	F	P	IR	NR
77883 F	400.00	167	6	2	1	1	10	177	5.65	94.	3.	1.	1.	1.	60.	20.	10.	10.
77883 A	280.00	0	0	0	0	0	0	0	0.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
77883 C	340.00	5	2	2	1	1	6	11	54.55	45.	18.	18.	9.	9.	33.	33.	17.	17.
77883 G	460.00	1190	25	16	13	33	57	1247	4.57	95.	3.	1.	0.	0.	44.	28.	23.	5.
77883 I	520.00	821	18	12	11	44	44	865	5.09	95.	3.	1.	0.	0.	41.	27.	25.	7.
77883 K	580.00	1164	38	11	11	70	70	1234	5.67	95.	3.	1.	0.	0.	41.	21.	1.	9.
77883 O	700.00	1003	149	18	6	6	175	1178	5.67	95.	3.	1.	0.	0.	55.	21.	3.	3.
77883 S	760.00	1148	85	22	6	6	119	1267	5.39	95.	3.	1.	0.	0.	85.	21.	3.	1.
77883 SS	820.00	1790	71	65	21	8	165	1955	8.44	92.	4.	3.	0.	0.	71.	21.	5.	3.
77883 H	880.00	71	4	3	0	0	9	80	11.25	89.	5.	4.	0.	0.	43.	33.	13.	5.
77883 W	940.00	1667	106	81	26	26	225	1892	8.89	88.	6.	4.	1.	1.	44.	33.	22.	5.
77883 Y	1000.00	1175	187	105	27	19	338	1513	11.34	88.	7.	4.	1.	1.	47.	31.	13.	6.
77884 A	1060.00	921	47	69	23	23	151	1072	10.09	86.	6.	6.	1.	1.	55.	31.	15.	8.
77884 I	1120.00	1081	68	123	43	43	256	1337	10.15	86.	6.	6.	1.	1.	31.	46.	17.	9.
77884 F	1180.00	1107	61	55	24	24	155	1262	10.28	88.	5.	4.	2.	2.	22.	48.	15.	8.
77884 G	1240.00	870	30	14	8	8	39	927	8.15	90.	5.	4.	1.	1.	22.	35.	15.	10.
77884 T	1300.00	807	19	10	6	6	44	846	4.61	95.	1.	1.	0.	0.	53.	26.	15.	10.
77884 K	1360.00	663	63	10	3	3	78	741	10.53	89.	5.	3.	0.	0.	49.	26.	17.	10.
77884 M	1420.00	429	51	13	7	7	76	505	15.05	85.	10.	3.	0.	0.	81.	13.	4.	3.
77884 D	1480.00	731	99	13	5	5	120	851	10.10	86.	12.	2.	0.	0.	67.	17.	9.	7.
77884 S	1540.00	1943	37	20	14	3	79	2022	3.91	96.	2.	2.	0.	0.	82.	11.	4.	2.
77884 U	1600.00	1640	37	31	17	10	95	1735	5.48	95.	2.	2.	1.	1.	47.	25.	13.	10.
77884 W	1660.00	1763	24	26	18	10	78	1841	4.24	96.	1.	1.	1.	1.	39.	33.	23.	13.
77884 Y	1720.00	1399	121	164	74	44	43	1802	2.36	78.	7.	7.	9.	2.	30.	41.	18.	11.
77884 A	1780.00	1218	71	115	57	39	39	1500	3.91	81.	5.	5.	4.	4.	30.	41.	18.	11.
77884 C	1840.00	1825	88	130	65	47	47	2157	5.39	85.	4.	4.	3.	3.	25.	33.	20.	14.
77884 E	1900.00	889	45	70	45	38	209	1098	10.03	81.	4.	4.	4.	4.	22.	25.	22.	13.
77884 G	1960.00	1041	38	76	49	31	194	1235	5.71	84.	3.	6.	3.	3.	22.	25.	22.	16.
77884 I	2020.00	997	18	36	35	24	113	1110	10.18	90.	2.	3.	3.	3.	22.	25.	22.	16.
77884 K	2080.00	934	35	53	42	19	149	1083	3.76	86.	3.	3.	4.	2.	16.	33.	23.	13.
77884 M	2140.00	1854	20	35	38	16	109	1963	5.55	94.	1.	2.	1.	1.	18.	32.	35.	15.
77884 O	2200.00	1269	8	17	28	12	65	1334	4.87	95.	1.	1.	1.	1.	12.	32.	43.	13.
77884 S	2260.00	3339	12	19	25	6	32	401	1.82	98.	0.	0.	0.	0.	19.	31.	40.	10.
77884 U	2320.00	224	22	39	64	13	38	362	3.12	82.	0.	1.	1.	1.	16.	31.	46.	9.
77884 W	2380.00	258	56	60	97	26	99	477	5.91	84.	8.	13.	7.	5.	16.	28.	44.	12.
77884 Y	2440.00	358	51	88	111	73	20	638	4.89	86.	9.	14.	14.	4.	16.	40.	44.	12.
77884 A	2500.00	3388	873	115	80	73	20	375	5.08	45.	9.	20.	14.	13.	20.	36.	25.	23.
77884 C	2560.00	752	225	316	138	158	837	1589	5.67	47.	15.	20.	10.	6.	37.	37.	12.	14.
77884 E	2620.00	1099	229	143	37	40	49	1548	2.01	71.	15.	9.	3.	3.	27.	37.	16.	19.
77884 G	2680.00	4644	347	244	118	71	780	5424	4.38	86.	6.	4.	2.	1.	44.	32.	19.	9.
77884 I	2740.00	6409	792	424	107	104	1427	7836	8.21	82.	10.	5.	3.	3.	51.	22.	9.	9.
77884 K	2800.00	360	108	94	39	27	268	628	5.68	57.	17.	15.	4.	4.	56.	40.	17.	7.
77884 M	2860.00	145	29	37	22	19	107	232	4.46	58.	12.	15.	8.	8.	40.	35.	15.	10.
77884 O	2920.00	206	52	43	16	11	122	328	3.70	63.	16.	13.	5.	3.	27.	35.	21.	18.
77884 S	2980.00	116	23	21	10	5	59	175	3.71	66.	13.	12.	3.	3.	43.	35.	13.	9.
77884 U	3040.00	151	27	23	5	6	61	212	2.77	71.	13.	11.	2.	3.	39.	36.	17.	8.

16/12/85

TABLE 1 (cont)

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C1-C4 HYDROCARBON ANALYSES

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND  
WELL - EAST HALIBUT 1

GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)

GAS COMPOSITION (PERCENT)

SAMPLE NO.	DEPTH	GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)					GAS COMPOSITION (PERCENT)											
		METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE NC4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	TOTAL GAS				WET GAS				
									M	E	P	IB	NR	F	P	IB	NR	
77886 S	2725.00	5494	800	264	39	41	1144	6638	17.23	83.	12.	4.	1.	1.	70.	23.	3.	4.

## TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND  
WELL - EAST BAITHELI 1

SAMPLE No.	DEPTH	AGE	FACIATION	AL	TOC%	AN	TOC	AI	CO 32	DESCRIPTION
77849 L	2393.00	OLIGOCENE	LAKES FACIATION	1	2.60		0.00	1	33.03	M-GY GLYST, CALC
77849 B	2415.50	LATE PALEOGENE	LATROBE GROUP	1	1.76		0.00	1	7.44	M-DE GY SLTST, SL CARB
77849 U	2418.50	LATE PALEOGENE	LATROBE GROUP	1	30.38		0.00	1	5.81	DLK SLTST, CARB, COAL LAM
77849 P	2453.00	LATE PALEOGENE	LATROBE GROUP	1	0.46		0.00	1	6.41	M-DE GY SST, SLTST LAM
77849 J	2475.00	LATE PALEOGENE	LATROBE GROUP	1	0.30		0.00	1	4.23	M-DE GY SLTST, V SDY LAM
77849 K	2504.00	PALEOGENE	LATROBE GROUP	1	2.60		0.00	1	2.68	DK RDY SH, CARB
77849 I	2512.00	PALEOGENE	LATROBE GROUP	1	3.56		0.00	1	4.34	DK GY-BLK SH, CARB
77849 G	2526.00	PALEOGENE	LATROBE GROUP	1	1.05		0.00	1	5.88	DE GY SLTST, CARB
77849 S	2696.50	PALEOGENE	LATROBE GROUP	1	0.89		0.00	1	6.75	LT-M GY SST, SLTST LAM
77849 A	2711.50	PALEOGENE	LATROBE GROUP	1	65.23		0.00		0.00	COAL

ROCK EVAL ANALYSES

BASIN - GIPPSLAND  
WELL - EAST GAITHER 1

REPORT A - SULPHUR & PYROLYZABLE CARBON

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	DMAX	S1	S2	S3	PI	S2/S3	PI	COMMENTS
77849 C	2393.0	SUC	OLIGOCENE	314.	.01	.02	.06	.40	.37	.00	
77849 L	2415.5	SUC	LATE PALEOGENE	425.	.31	.88	.94	.26	23.75	.10	
77849 H	2418.5	SUC	LATE PALEOGENE	428.	6.57	25.90	1.99	.25	13.05	2.70	
77849 D	2453.0	SUC	LATE PALEOGENE	401.	.02	.11	.07	.05	1.50	.02	
77849 K	2504.0	SUC	PALEOGENE	426.	.18	1.86	.41	.09	6.03	.17	
77849 J	2512.0	SUC	PALEOGENE	427.	.32	5.16	.44	.06	11.76	.46	
77849 I	2526.0	SUC	PALEOGENE	426.	.28	1.65	.11	.15	14.08	.16	
77849 G	2696.5	SUC	PALEOGENE	418.	.24	.62	.17	.25	3.67	.07	
77849 A	2711.5	SUC	PALEOGENE	437.	5.10	112.11	19.45	.03	10.76	9.45	

PI=PIPERIDINITY INDEX    CP=PYROLYZABLE CARBON    TC=TOTAL CARBON    BI=BIOMERGEN INDEX    CI=CYCLOINDEX

## ROCK EVAL ANALYSIS

REPORT 3 - TOTAL CARBON, H<sub>2</sub>O INDICESBASIN - GIPPSLAND  
WELL - EAST HARTSHILL 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	FORMATION	TC	HI	OI	HI/OI	COEFF. TO
77849 C	2393.0	SUC	LARGO ENTRANCE	2.69	1.	2.	2.69	33
77849 H	2415.5	SUC	CATPORE GROUP	1.70	50.	2.	23.75	
77849 H	2418.5	SUC	CATPORE GROUP	30.35	80.	7.	13.05	
77849 D	2453.0	SUC	CATPORE GROUP	4.46	24.	16.	1.50	
77849 K	2504.0	SUC	CATPORE GROUP	2.63	70.	12.	6.03	
77849 T	2512.0	SUC	CATPORE GROUP	3.86	134.	11.	11.76	
77849 G	2526.0	SUC	CATPORE GROUP	1.85	89.	6.	14.58	
77849 R	2696.5	SUC	CATPORE GROUP	1.89	69.	12.	3.67	
77849 A	2711.5	SUC	CATPORE GROUP	65.25	172.	16.	10.75	

PI=PRODUCTIVITY INDEX    PC=PYROLYZABLE CARBON    TC=TOTAL CARBON    HI=HYDROGEN INDEX    OI=OXYGEN INDEX

## KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND  
WELL - EAST HALLIBUT 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	ELEMENTAL % (ASH FREE)					COMMENTS	
			N%	C%	H%	S%	O%		ASH%
77849 W	2415.50	SWC	.67	72.16	5.00	.00	22.17	10.41	HIGH ASH
77849 V	2417.50	SWC	1.62	68.28	5.43	.00	24.66	17.49	V HIGH ASH
77849 U	2418.50	SWC	.50	73.60	5.34	.00	20.56	3.99	
77849 N	2422.00	SWC	1.61	71.50	5.17	.00	21.73	6.70	
77849 K	2504.00	SWC	.49	51.54	3.57	.00	44.40	10.34	HIGH ASH
77849 J	2512.00	SWC	.90	70.47	5.06	.00	23.59	16.37	HIGH ASH
77849 H	2524.50	SWC	1.00	74.13	4.60	.00	20.27	6.07	
77849 G	2526.00	SWC	.74	72.26	5.08	.00	21.97	10.42	HIGH ASH
77849 F	2530.00	SWC	.77	59.35	4.33	.00	32.54	9.34	
77849 B	2676.50	SWC	.72	74.46	5.04	.00	19.79	6.51	

TABLE 4b.

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## AEROBIC ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND  
WELL - EAST HALLIBUT 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	FORMATION	A.T.O. RATIOS			COMMENTS
					H/C	O/C	N/C	
77849 W	2415.50	SML	LATE PALEOCENE	LATROBE GROUP	0.63	0.23	0.01	HIGH ASH
77849 V	2417.50	SML	LATE PALEOCENE	LATROBE GROUP	0.95	0.27	0.02	V. HIGH ASH
77849 D	2418.50	SML	LATE PALEOCENE	LATROBE GROUP	0.67	0.21	0.01	
77849 S	2472.00	SML	LATE PALEOCENE	LATROBE GROUP	0.67	0.23	0.02	
77849 K	2504.00	SML	PALEOCENE	LATROBE GROUP	0.53	0.65	0.01	HIGH ASH
77849 I	2518.00	SML	PALEOCENE	LATROBE GROUP	0.66	0.25	0.01	HIGH ASH
77849 H	2524.50	SML	PALEOCENE	LATROBE GROUP	0.74	0.21	0.01	
77849 G	2526.00	SML	PALEOCENE	LATROBE GROUP	0.64	0.23	0.01	HIGH ASH
77849 F	2530.00	SML	PALEOCENE	LATROBE GROUP	0.58	0.45	0.01	
77849 J	2600.50	SML	PALEOCENE	LATROBE GROUP	0.61	0.20	0.01	

TABLE 5.

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## VITRINITE REFLECTANCE REPORT

BASIN - GIPPSLAND  
WELL - EAST GAITHER 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AL	RAY RV	FLUORESCENCE	COUNTS	MINERAL TYPE
77850 C	2397.00	OLIGOCENE	LAKES ENTRANCE	5	0.48	YEL-BLUE GR	2	I>F>V, DM RARE
77849 D	2418.50	LATE PALEOCENE	LATROBE GROUP	5	0.56	YEL-BLUE GR	26	V>>E>I, DM MAJOR
77849 K	2504.00	PALEOCENE	LATROBE GROUP	5	0.56	YEL-BLUE GR	26	F>I>V DM ABUNDANT
77849 A	2711.50	PALEOCENE	LATROBE GROUP	5	0.55	GR/YEL GR	27	CLASTIC>VITRITIC>>DIAGENIC



FIGURE 1a  
CUTTINGS GAS LOG  
EAST HALIBUT 1  
GIPPSLAND BASIN

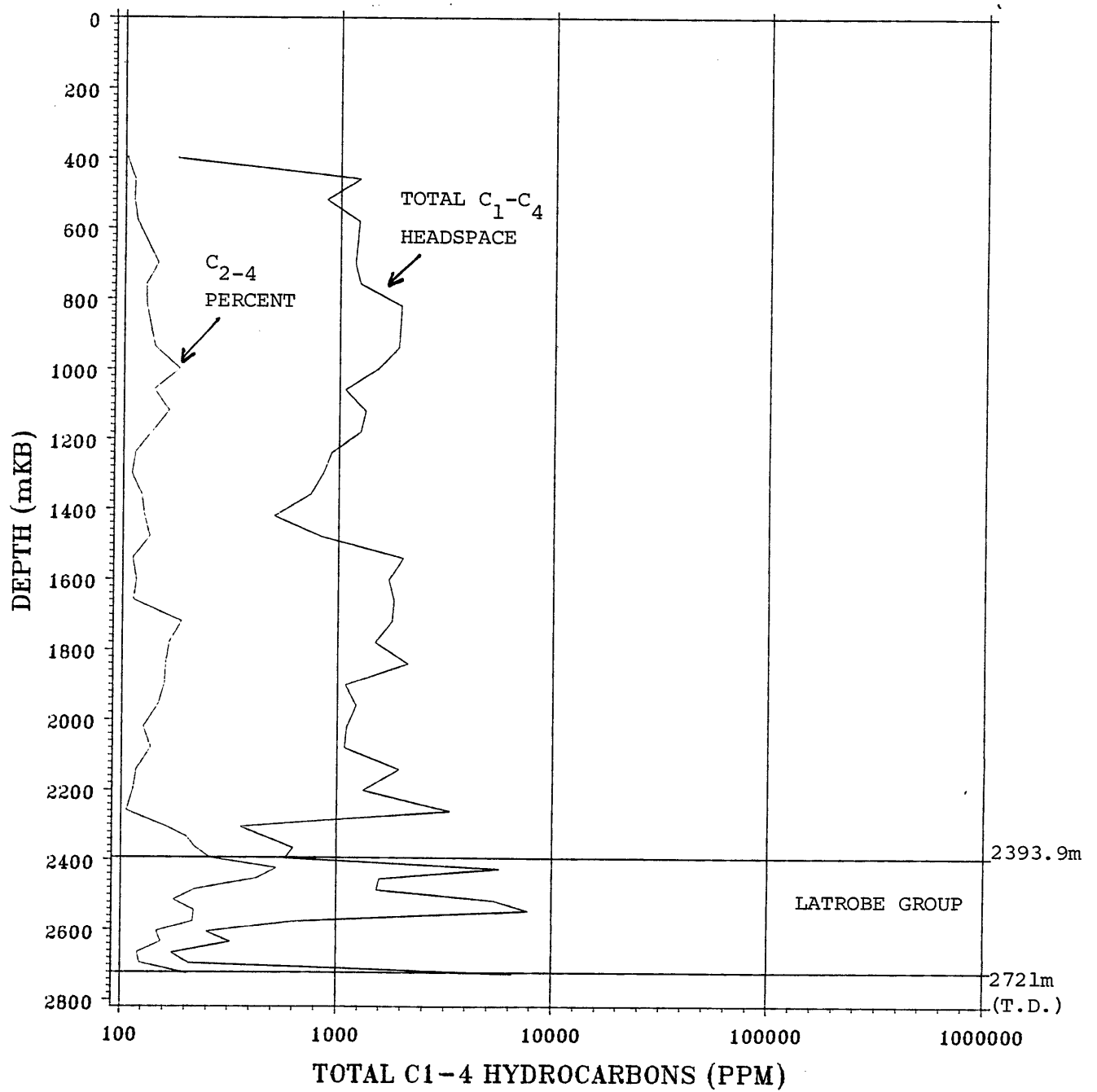


FIGURE 1b  
*C1-CUTTINGS GAS LOG*  
EAST HALIBUT 1  
GIPPSLAND BASIN

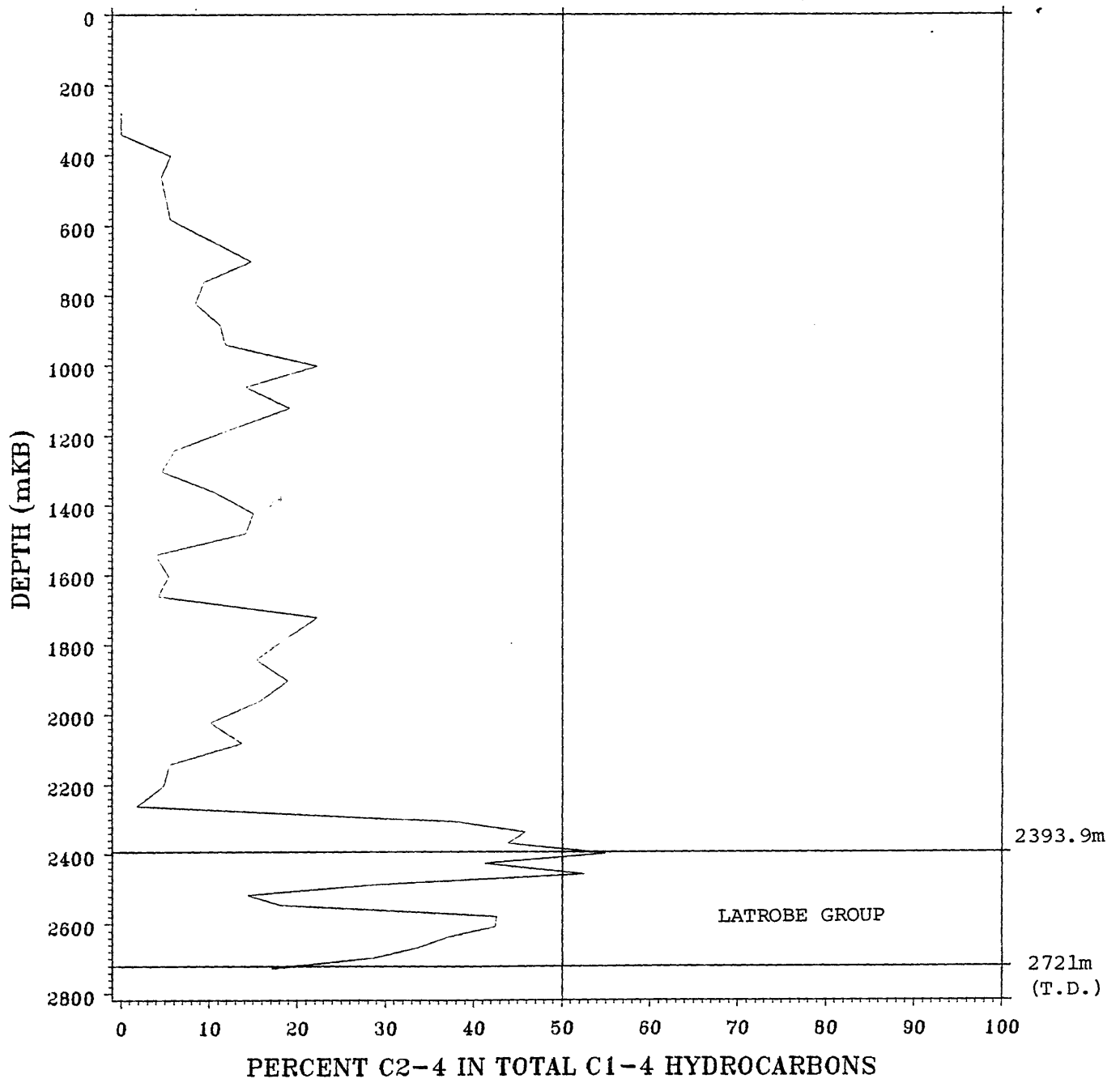


FIGURE 2

TOTAL ORGANIC CARBON  
EAST HALIBUT  
OFF PLANE EASTON

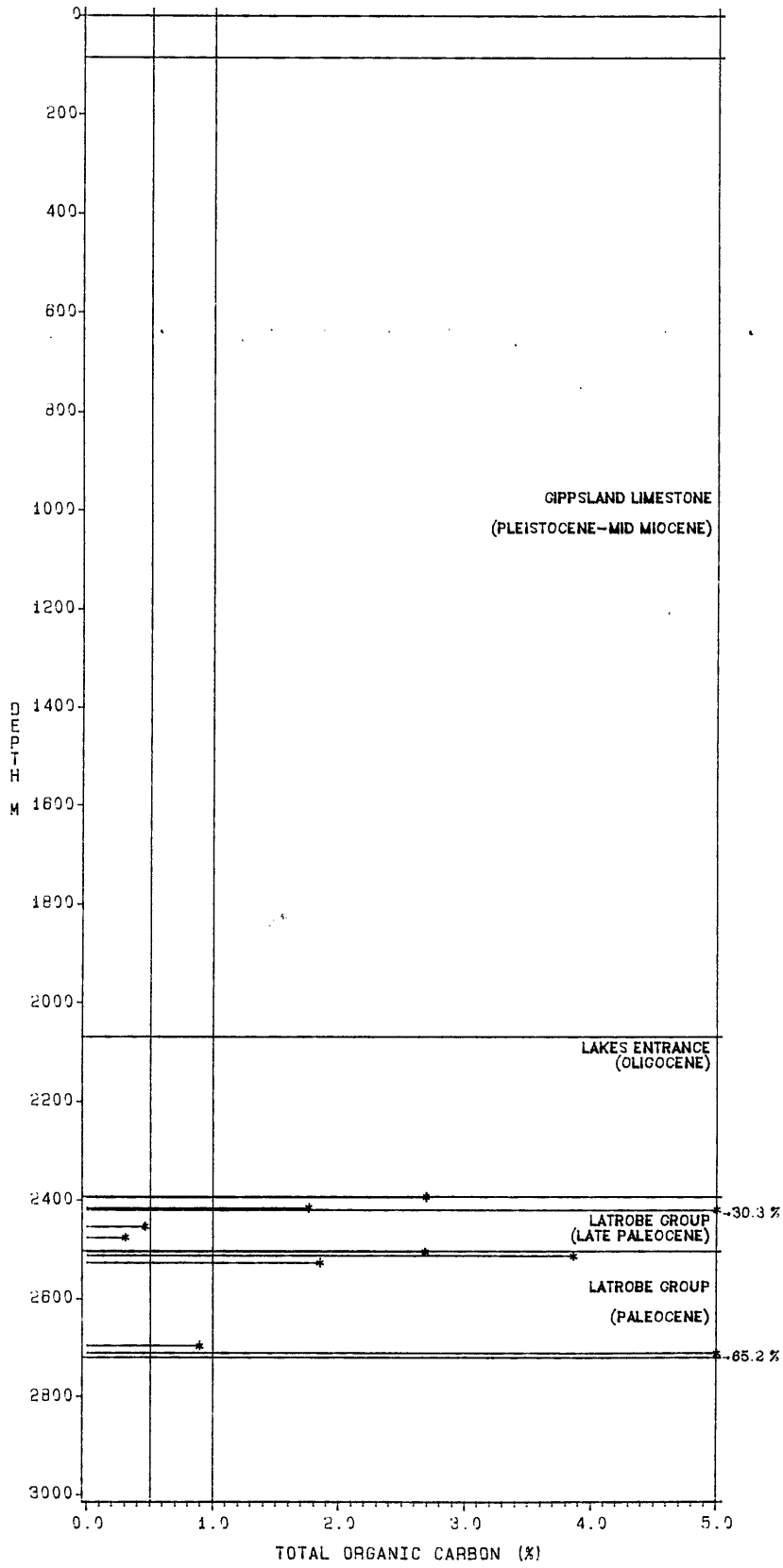


FIGURE 3  
 ROCKEVAL MATURATION PLOT  
 EAST HALIBUT 1  
 APPALACHIAN BASIN

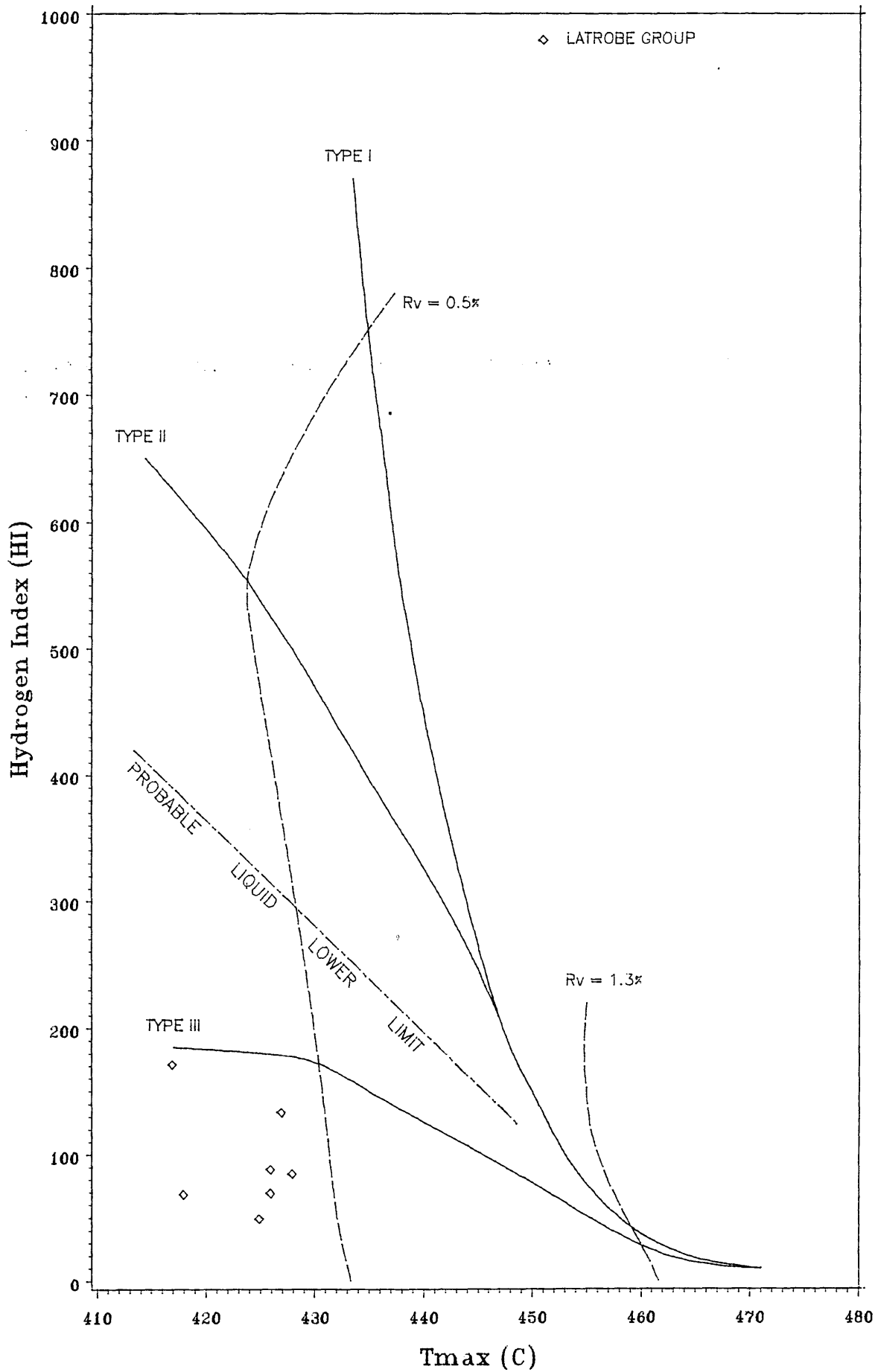


FIGURE 4  
*KEROGEN TYPE*  
EAST HALIBUT  
GIPFELAND BASIN

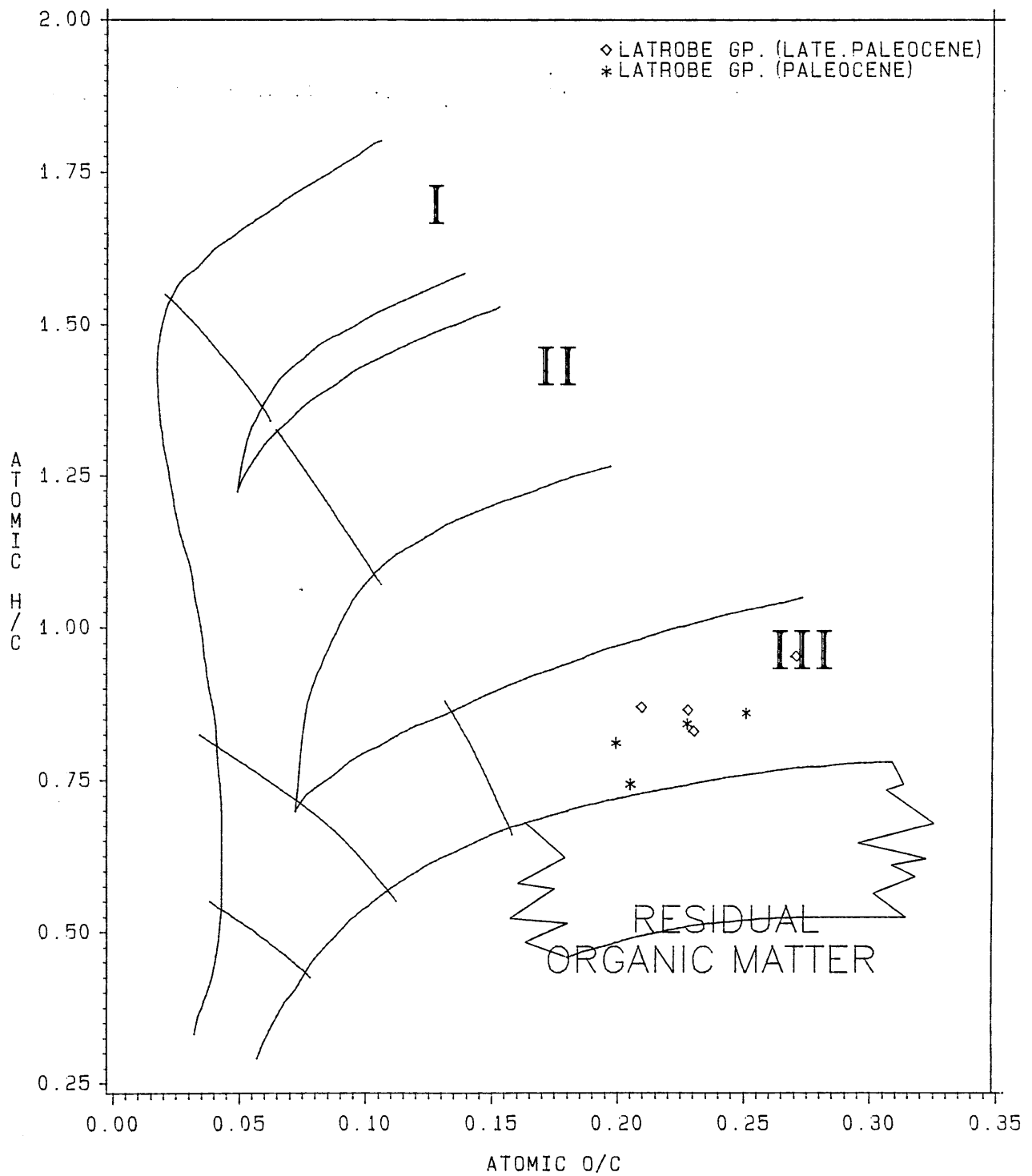
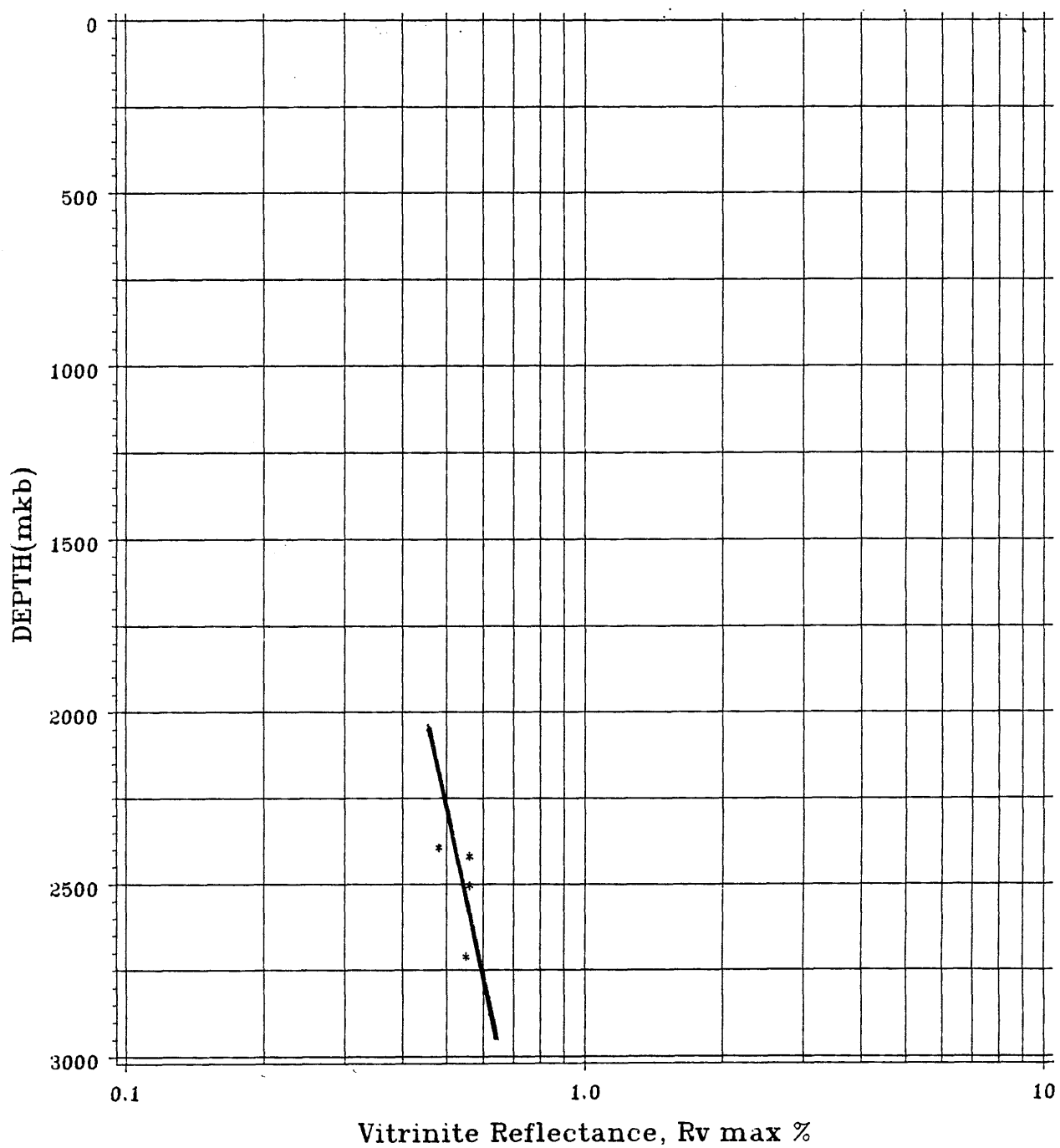


FIGURE 5  
VITRINITE REFLECTANCE VS. DEPTH  
EAST HALIBUT 1  
OFF CANADIAN EASTERN SHORE



Appendix 1

Detailed Vitrinite Reflectance and Exinite  
Flourescence Data - Report by A.C. Cook

2261L:6

## EAST HALIBUT NO. 1

KK No.	Esso No.	Depth m	$\bar{R}_V$ max %	Range $R_V$ max %	N	Description Including Exinite Fluorescence
x3940	77850 C	2393.0 SWC 30	0.48	0.46-0.50	2	Rare phytoplankton, yellow, rare resinite, dull orange. (Massive pyrite>siltstone>carbonate.
			-	1.14-1.64	5	Dom rare, I>E>V. All macerals rare. Resinite has a reflectance of 0.22%. Major carbonate. Strong mineral matter fluorescence. Dominant pyrite.)
x3941	77849 U	2418.5 SWC 22	0.56	0.48-0.65	28	Common sporinite, yellow to dull orange, common cutinite, yellow and dull yellow to dull orange, sparse resinite, dull greenish yellow to dull orange and bright yellow. (Coal>claystone. Coal dominant, coal probably UEV facies, V>>E>I. Vitrite>clarite. Dom major, V>E>>I. Vitrinite and exinite abundant, inertinite rare. Vitrinite has brown fluorescence. Abundant pyrite.)
x3942	77849 K	2504.0 SWC 12	0.56	0.43-0.69	28	Common sporinite and liptodetrinite, yellow, yellow orange to dull orange, sparse cutinite, yellow orange to orange, sparse resinite, yellow orange. (Sandy siltstone. Dom abundant, E>I>V. All macerals common. Some vitrinite fluorescence, dull orange to brown. Pyrite abundant.)
x3943	77849 A	2711.5 SWC 1	0.55	0.50-0.60	27	Abundant resinite, yellow, yellow orange to orange, abundant suberinite, yellow orange to orange, abundant sporinite and liptodetrinite, yellow to yellow orange, common fluorinite, greenish yellow. (Coal. Clarite>vitrite>>duroclarite. Vitrinite fluorescence, brown. Weak oil cut observed in vitrinite. Rover Eastern View facies. Numerous faults are present in the coals. Pyrite abundant.)
			0.28	0.20-0.37	3	



ENCLOSURE 1

ENCLOSURE 1

PE902375

This is an enclosure indicator page.  
The enclosure PE902375 is enclosed within the  
container PE902374 at this location in this  
document.

The enclosure PE902375 has the following characteristics:

ITEM\_BARCODE = PE902375  
CONTAINER\_BARCODE = PE902374  
NAME = Structure Map - top of coarse clastics  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = SEISMIC  
SUBTYPE = HRZN\_CONTR\_MAP  
DESCRIPTION = Structure Map - top of coarse clastics  
REMARKS =  
DATE\_CREATED = 31/03/1987  
DATE\_RECEIVED = 27/10/1987  
W\_NO = W916  
WELL\_NAME = East Halibut-1  
CONTRACTOR = ESSO  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

ENCLOSURE 2

PE902376

This is an enclosure indicator page.  
The enclosure PE902376 is enclosed within the  
container PE902374 at this location in this  
document.

The enclosure PE902376 has the following characteristics:

ITEM\_BARCODE = PE902376  
CONTAINER\_BARCODE = PE902374  
NAME = Structural Cross Section  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = WELL  
SUBTYPE = CROSS\_SECTION  
DESCRIPTION = Structural Cross Section  
REMARKS =  
DATE\_CREATED = 30/06/1987  
DATE\_RECEIVED = 27/10/1987  
W\_NO = W916  
WELL\_NAME = East Halibut-1  
CONTRACTOR = ESSO  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

ENCLOSURE 3

ENCLOSURE 3

PE601139

This is an enclosure indicator page.  
The enclosure PE601139 is enclosed within the  
container PE902374 at this location in this  
document.

The enclosure PE601139 has the following characteristics:

ITEM\_BARCODE = PE601139  
CONTAINER\_BARCODE = PE902374  
NAME = Well Completion Log  
BASIN = GIPPSLAND  
PERMIT =  
TYPE = WELL  
SUBTYPE = COMPLETION\_LOG  
DESCRIPTION = Well Completion Log  
REMARKS =  
DATE\_CREATED = 23/09/1985  
DATE\_RECEIVED = 27/10/1987  
W\_NO = W916  
WELL\_NAME = East Halibut-1  
CONTRACTOR = ESSO  
CLIENT\_OP\_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)