EXCO

ET AL

TUNAGO

2N-37

9211-E9-2-1

D.A. # 1212

E.A. # 214

Canada Oil and Gas Lands Administration — Administration du pétrole et du gaz des terres du Canada

Nova Scotia	☐	West Coast	☐	Exploratory	☒
Newfoundland	☐	Northern	☒	Development	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Delineation	☐
				Service	☐

AUTHORITY TO DRILL A WELL

APPLICATION

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

Well Name in Full: Exco et al Tunago 2N-37

Operator: Exco Energy Ltd.

Drilling Program No.: N/A

Contractor: Tri- Can Contracting Ltd.

Permit or Lease No.: N/A

Drilling Rig: Mr. Ben

Estimated Well Cost: Approximately $ 5,000,000

Location-Unit: N Section: 37 Grid Area: 66-10-126-15

Coordinates: Lat. 66° 06' 49.92" N Long. 126° 21' 59.80" W

Area: Rond Lake - N.E. of Norman Wells Field/Pool: N/A

Elevation: KB: 236.56 (Estimate) (ASL) Ground 232.06 m (ASL)

Approx. Spud Date: February 4, 1985 Estimated Days on Location: Forty (40)

Anticipated Total Depth: 2750 m (maximum) Target Horizon(s): Mount Cap/Mount Kindle

EVALUATION PROGRAM

Ten-metre sample intervals: N/A

Five-metre sample intervals: From under conductor casing to total depth

Canned sample intervals: 10 m samples from under conductor casing to total depth

Conventional cores at: Not anticipated

Logs and Tests: As specified in drilling program

CASING AND CEMENTING PROGRAM

O.D.	Weight	Grade	Setting Depth Below Seafloor	Cementing Program (Volumes)
508 mm	141 kg/m	K-55	50 m (bedrock)	Permafrost + 100% excess
339 mm	81.1 kg/m	K-55	110 m (approx)	Permafrost + 100% excess
244 mm	64.7 kg/m	L-80	872 m (approx)	Permafrost cement 0-300 m (30% exce Class "G" + 3% $CaCl_2$ 300-872 m
114 mm	14.14 kg/m	ERW J-379	T.D.	Class "G" + 2% $CaCl_2$ + 0.75% CFR-2 (30% exces

B.O.P. Equipment: one (1) NL Shaffer 8" x 3000
one (1) NL Shaffer 8" x 3000
one (1) NL Shaffer 8" x 3000

Other Information:

Refer to accompanying drilling program

Signed: [signature] Title: Special Projects Engineer

Date: February 1, 1985 Company: Winterhawk Petroleum Consulting Services Ltd. as agent of Exco Energy Ltd.

APPROVAL

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

Signed: [signature]
Engineering Branch

Date: 4 Feb 85

File: ~~[illegible]~~
42-1-69-2-1

Department of Energy, Mines and Resources — Ministère de l'Énergie, des Mines et des Ressources

Department of Indian Affairs and Northern Development — Ministère des Affaires indiennes et du Nord canadien

Canada

D.A. # 1212

E.A. # 214

Canada Oil and Gas Lands Administration | Administration du pétrole et du gaz des terres du Canada

				Well Status	
Nova Scotia	☐	West Coast	☐	Suspended	☐
Newfoundland	☐	Northern	☒	Completed	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Abandoned	☒

WELL TERMINATION RECORD

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

WELL DATA

Well Name: Exco et al Tunago N-37 Area: Rond Lake N.E. of Norman Wells, N.W.T.

Grid Area: 66-10-126-15 Field/Pool: N/A

Permit or Lease No.: N/A Final Coordinates: Lat 66° 06' 49.92" N Long 126° 21' 59.80" W

Drilling Unit: Mr. Don Elevations: RTKB 236.56 &F/GL 232.06

Spud Date: 85 01 12 Rig Released: 85 01 31 Total Depth: 319 m

CASING AND CEMENTING

O.D.	Weight	Grade	Depth Set	Cement and Additives
339 mm	81.1 kg/m	K-55	37 m	Initially cemented with 6.6 T permafrost - no returns- recemented down the annulus with 6.8 T; fill annulus with gravel and sand, cement with 6.8 T, again with 9.0 T cement and finally to surface with 6.1 T permafrost.

PLUGGING PROGRAM

Approval of the following program was obtained by (person) Gary Laviolette from (person) John Hamilton of the Canada Oil and Gas Lands Administration by means of verbal confirmation on January 30 19 85

Type of Plug	Interval	Felt	Cement and Additives
Cement	0 - 25 m	No	Ran wiper plug to the 25 m depth (inside 339 mm casing) and drop 0.4 T cement on top, cement to be run to surface.

Lost Circulation/Overpressure Zones: Basically from surface to the 319 m mark

Equipment left on Seafloor (Describe): N/A

Provision for Re-entry (Describe and attach sketch): N/A

Cores: Type: None Intervals: N/A

Other Downhole Completion/Suspension Equipment: None

CERTIFICATION

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

Signed: [signature] P. Eng.

Name: Gary Laviolette

Title: Winterhawk Petroleum Consulting Services Ltd. Agents of Exco Energy Ltd. Special Projects Engineer

Date: 86 02 01

Acknowledged by: [signature] Engineering Branch

Date: 13 Feb 85

File: 9211-FB-1-6

Department of Energy, Mines and Resources | Ministère de l'Énergie, des Mines et des Ressources

Department of Indian Affairs and Northern Development | Ministère des Affaires indiennes et du Nord canadien

Canada

9211-E9-2-1

FINAL DRILLING SUMMARIES FOR EXCO ET AL TUNAGO 2N-37 & N-37

66°06' 49.92"N 126°21' 59.80"W

PREPARED FOR:

Exco Energy Ltd.

PREPARED BY:

Winterhawk Petroleum Consulting Services Ltd.
102, 1040 - 7th Avenue S.W., Calgary, Alberta T2P 3G9 Telephone 237-8370

ACTION SLIP

WELL HISTORY REPORTS

Project No: 9211-E9-2-1

The following action has been taken:

Tuango 2N-37

Receipt acknowledged ✓

Well Card made ✓

Reports for review list edited .....

Reports labelled .....

Confidential sections removed: -10

(micro) Paleontological .....

Palynological .....

OR Source Rock Analyses .....

Geochemical analyses .....

Other .....

Land Management Memo .....

REVIEW AND APPROVAL made by:

ENGINEERING BRANCH 85 2820

RESOURCE MANAGEMENT W. J. WARD 85 08 21

ENVIRONMENTAL PROT. .....

MAKE COMMENTS ON ATTACHED SHEET

PROJECT NUMBER 9211-E9-2-1

COMPANY EXCO ENERGY

REPORT TITLE well history: Exco et al Tunago 2N-37

COMMENTS:

ENGINEERING BRANCH

See M. Thomas Memo 85-06-10

ENVIRONMENTAL PROTECTION BRANCH

RESOURCE EVALUATION BRANCH

PREFACE

The text of this report includes detailed summaries of both the Exco et al Tunago N-37 and 2N-37 wells. Outlined under tabulation heading number one (1) is the Tunago N-37 well history, a report which summarizes the initial attempt to drill a well at this location. After a lengthy fishing operation a decision was made to plug back the hole, skid the rig and redrill the well as Exco et al Tunago 2N-37. Tabulation two (2) identifies the beginning of the 2N-37 well report.

EXCO ET AL TUNAGO
N-37
66°06' 49.92"N 126°21' 59.80"W
FINAL DRILLING SUMMARY

Exco Energy Ltd.

April, 1985

TABLE OF CONTENTS

SECTION I

SUMMARY - GENERAL DATA

EXCO ET AL TUNAGO N-37

INTRODUCTION

Pursuant to a Pooling and Farmout Agreement dated March 3, 1983, Dome Petroleum Limited, Columbia was Development of Canada Ltd., MT Partnership, Campbell Red Lake Mines Limited and Signa Mines (Quebec) Limited pooled their interest in the subject lands and farmed out to Exco Energy Ltd. With reference to the enclosed index maps, the property consists of 467,784 hectares of land which is divided into three blocks, situated north east of Norman Wells, North West Territories.

According to the terms of the Rond Lake Exploration Agreement (No. 214), Exco was committed during the 1985 winter season to drill one (1) exploratory well, and to shoot an additional one hundred and sixty kilometres (160 Km) of seismic line on the south east block of the Rond Lake property.

In anticipation of a project start-up in early December, 1984, additional supplies and services for the project were barged in mid September, 1984, to Norman Wells, N.W.T. The drilling rig, along with the majority of the auxiliary equipment and supplies, were racked at the Lac Belot Storage area; a site selected at the completion of the 1984 winter drilling activity. The approximate location of the racksite was latitude - 66°50'N, longitude - 126°30'W.

Following the completion of the access road in late December, 1984, the transportation of the rig components and supplies began. In total, approximately two (2) weeks were required to move all materials to the Tunago N-37 well location from both the base station at Norman Wells and the racksite. After several additional days were spent rigging up the well was spudded January 12, 1985.

From the onset of drilling activity considerable difficulty was encountered in drilling and setting 339mm conductor. From this point onward sloughing hole and gravel sections continued to impede progress while drilling 311mm surface hole with Air-Durafoam. At approximately the 319 metre mark the drilling string became stuck in the hole. After a lengthy fishing operation a decision was made to plug back the hole, skid the rig and re-drill the well.

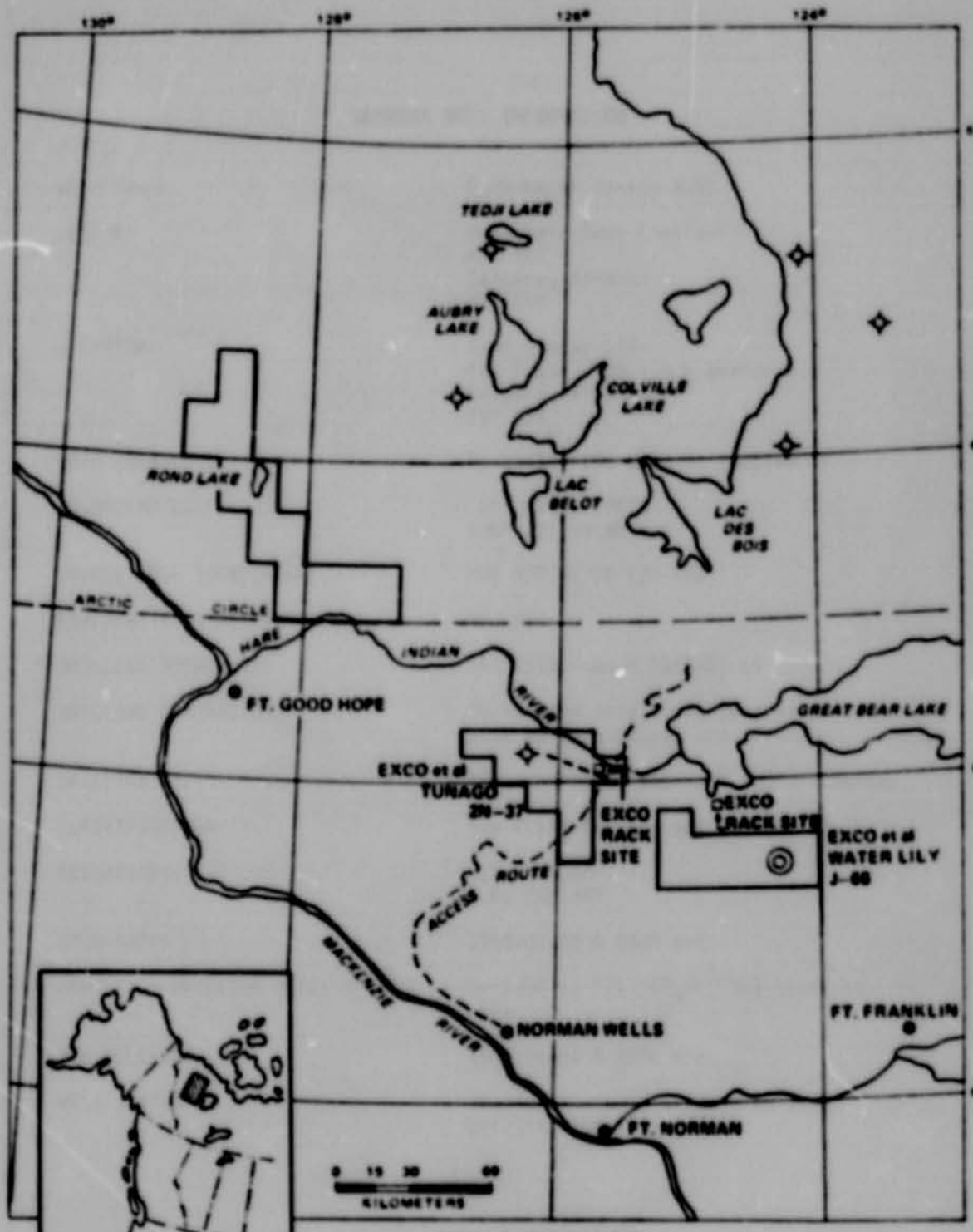
(Details of the fishing operation are enclosed in the body of the "WELL SUMMARY".)

Accordingly, application was made to the Canada Oil & Gas Lands Administration (COGLA) to re-drill the well as

Exco et al Tunago 2N-37.

Exco hereby gives notice that the enclosed report is to be considered the FINAL DRILLING SUMMARY for the drilling of the Exco et al Tunago N-37 well.

EXCO ENERGY LTD.
INDEX MAP SHOWING 1984 – 1985 ROND LAKE PROJECT



EXCO ENERGY LTD.

1984 – 1985 ROND LAKE PROJECT

GENERAL WELL INFORMATION

WELL NAME:	Exco et al Tunago N-37
LESSOR:	Dome Petroleum Limited Box 200 Calgary, Alberta T2P 2H8
OPERATOR:	Exco Energy Ltd. 6th Floor, 700 - 4th Avenue S.W. Calgary, Alberta T2P 3J4
GRID AREA:	66-10-126-15; Unit N; Section 37
CO-ORDINATES:	66° 06' 49.92"N 126° 21' 59.80"W
UNIQUE WELL IDENTIFIER:	300 N37 66 10 126 150
EXPLORATION AGREEMENT:	No. 214
DRILLING AUTHORITY:	No. 1212 issued 1985-01-09
DRILLING CONTRACTOR:	In receivership - rig contracted from bank by Exco Energy Ltd.
DRILLING RIG:	"Mr. Ren" with National 370 drawworks
CLASSIFICATION:	New Field Exploratory (Northern)
ELEVATIONS:	G.L. 232.06m K.B. 236.46m
SPUD DATE:	1985-01-12 @ 0900 hrs.
COMPLETED DRILLING DATE:	Drilled to 319.00m, string stuck in hole
RIG RELEASE:	1985-01-31 @ 2400 hrs.
WELL STATUS:	Abandoned - well skidded to 2N-37 drilling location

WELL SUMMARY

DATE 85-01-31

Well Exco et al Tunago N-37 Location

Elevations KB 236.48 m GL 232.06 m CF 232.76 m

History Spud Date 85-01-12(0900 hrs) R.R. Date 85-01-31(2400 hrs) TD 319.00 m

Status Abandoned - Rig Skidded Producing Zone(s) N/A

A. DRILLING DETAILS

Hole Size 444mm Depth 40 m Logs N/A

Hole Size 311mm Depth 319 m Logs N/A

Hole Size Depth Logs

Hole Size Depth Logs

Casing Size 339mm Grade K-55 Depth 37.11 m Cement Vol 4.9 m^3

Casing Size Grade Depth Cement Vol

Casing Size Grade Depth Cement Vol

Casing Size Grade Depth Cement Vol

DST No Int None Zone

DST No Int Zone

DST No Int Zone

DST No Int Zone

DST No Int Zone

Core No Int None Zone Rec

Core No Int Zone Rec

Core No Int Zone Rec

Plug No 1 Int Surface - 25 m Cement Vol 2.97 m^3 Permafrost Felt No

Plug No Int Cement Vol Felt

Plug No Int Cement Vol Felt

Plug No Int Cement Vol Felt

B. COMPLETION DETAILS

COMPLETION DATE

Perforations Int N/A Zone Type

Int Zone Type

Int Zone Type

Stimulations Formation N/A

Tubing Details N/A

Anchor/Packer Details N/A

Pumping Equipment N/A

Remarks Due to downhole problems, the well was abandoned and the rig was skidded to the ZN-37 wellsite.

See specific forms for more detail

ENGINEER J. Maloney

DOWNHOLE PROBLEMS ENCOUNTERED

SUMMARY

Comment

In review, it is evident that the drilling problems experienced on the Tunago N-37 location were unique to this locality; in that similar downhole conditions had not been encountered on any of the previous winter projects conducted further north. Moreover, the potential seriousness of the downhole problems had not been anticipated by either the exploratory geologists or the seismic consultants. Classified as a rank exploratory well, there was simply no information available on the expected subsurface conditions.

Added to this fact was the inherent difficulty and cost involved in drilling and setting 508 mm conventional conductor casing with the drilling rig.

Furthermore, the well was to be drilled in an area of extensive lost circulation. From an engineering viewpoint, the only proven solution for drilling this interval was with the use of a Durafoam-Air drilling system. However, this technique was unreliable in terms of providing constant returns while drilling sloughing sections.

Finally, from an operations standpoint, no one had reason to believe that the sloughing sections were as troublesome as first reported. The general feeling was that these sections would prove less troublesome as the operation proceeded.

Operations

The 431.8 mm conductor hole was drilled to the 40 metre depth, but by the time the bit had drilled 27 metres, a large cavity had developed of approximately 2 metres in diameter. It wasn't until this point that air volumes were significantly reduced to prevent further erosion. In place of high air volumes, foamer was added with the air to enable less air volume to have equivalent carrying capacity. In total, of the 40 metres drilled to set conductor casing, the first 27 metres consisted of gravel beds. Needless to say, these unconsolidated gravel sections proved troublesome in running conductor casing. Specifically, after the casing was run to bottom the annulus sloughed in and the string had to be cemented in place by cementing down the annulus. Since the porous gravel would not hold the cement in place, alternate layers of gravel and cement were set to stabilize the conductor. Finally, a cribbing was constructed and cemented in place at the top of the conductor. At this point it was difficult to assess whether or not there was sufficient cement in place around the float shoe and shoe joint.

After nippling up, 311 mm surface hole was drilled with Durafoam-Air to the 108 metre depth before sloughing sections were encountered. Although drilling continued beyond this point, on each subsequent trip tight hole and sloughing conditions were noted at approximately the 100 metre mark.

Finally, while tripping for a bit of the 319 metre depth, the hole had to be reamed from the 90 metre to the 226 metre depth. Due partly to sloughing hole conditions and Durafoam-Air returns that were not always continuous, the string became stuck at the 226 metre depth. To this date, no other information is available as to exactly how the string became planted.

From this point on all further attempts to work the string failed, even though partial air returns had been established. Following numerous attempts to work the pipe free, a decision was made to back-off the string immediatey above the free point and to run back in with washover pipe. However, after backing off, the hole sloughed in, thus preventing any attempt to run in and wash over the fish. After more than a week of futile attempts to ream past the 110 metre depth it was decided to plug back, and skid the rig.

In summary, Winterhawk is of the opinion that, geologically, t ere existed either a gravel section or a highly fractured dolomite-limestone at the 100 metre mark. Since this section was not initially cased off, prior to proceeding with 311 mm surface hole, it continually delayed operations and directly accounted for the fishing operation and resultant abandoning of the well.

On the offset, Tunago 2N-37 well, measures were instituted to ensure that this same section was cased off. Much of the success of the second well location, 2N-37, is attributed to the lessons learnt on the Tunago N-37 location.

SYNOPSIS

DATE	DRILLING DAY	PARTICULARS	EXPLANATION
85-01-13	2	Drill Conductor Casing	Establish air volumes so as not to erode the hole further - hole 2m in diameter
85-01-14	3	Cement Conductor Casing	While cementing - sloughing material plugged annulus. Re-cement down annulus - no returns to surface
85-01-15	4	Cement Conductor Casing	Fill annulus by staging in alternate layers of gravel and cement, allowing sufficient time for cement to set before the next layer of gravel is added
85-01-16	5	Cement Conductor Casing	Complete cribbing and cement annulus to surface
85-01-17	6	Pressure Test	Pressure test diverter, drill out cement
85-01-18	7	Circulate and Clean Hole	At 108m depth due to sloughing section
85-01-19	8	Work Tight Hole	At 108m, and from 76m to 108m
85-01-20	9	Drilling	Drill from 154m to 228m
85-01-21	10	Drilling	Drill from 228m to 289m
85-01-22	11	Hole Sloughing	At 90m - 117m while trying to run in hole after trip
85-01-23	12	Stuck In Hole	Ream from 108m - 226m. Work tight hole - stuck at 226 metres
85-01-24	13	Circulate & Work Pipe	Wait on fishing tools. Circulate and ream in the interval
85-01-25	14	Circulate & Work Pipe	Run gel system with lost circulation material. No returns
85-01-26	15	Circulate - Fishing	Back off drill collars - wait on set of break out tongs
85-01-27	16	RIH - Circulate and Begin to Ream Downhole	Drill out under shoe with stiff foam air. Pipe became stuck while reaming to bottom. Run freepoint and back off at 176 m. Pick up drill collars and run back in the hole. Proceed to ream from 76 m - 110 m over 36 hours.

SYNOPSIS

DATE	DRILLING DAY	PARTICULARS	EXPLANATION
85-01-28	17	Ream	Hole continaully sloughing in. Ream from 65 m to 90 m. Presently running 2% Durafoam with 0.5 lbs/bbl of polymer. Bit pulled out of hole with well rounded shanks and one (1) bearing seal showing. Continue to ream from 90 m to 95 m. Foam is cleaning the hole well.
85-01-29	18	Ream	Note: water being produced from 60 m depth at rate of 5-6 bbls/min or $1m^3$/min. This water production has been constant throughout the reaming operation. Polymer concentration increased from 0.5 to 0.667 lbs/bbl. Trip for bit - bit held with broken buttons, evidence of a very abrasive formation. Increase air volumes and attempt to ream ahead. Mix 300 bbls of 150 viscosity mud, using gel and Kelzan (20:1). Drill ahead blind.
85-01-30	19	Ream	Reaming at 110 m the last 24 hours with no progress. Trip for bit and run back to bottom. After changing nozzles switch over to Durafoam Air Drilling. Hole pulling tight and packing off. Shut off pump, pulled Kelly and one (1) single. Pull out of hole. Decision made to abandon the well, plug back and skid the rig.
85-01-31	20	Abandon	Wait on orders, pull out of hole and abandon the well.

Geological
Summary

SECTION II
GEOLOGICAL SUMMARY

GEOLOGICAL REPORT

for

EXCO ET AL TUNAGO N-37

McLEOD GEOLOGICAL ENTERPRISES LTD.

MALCOLM E. McLEOD, B.Sc., P.Geol.

EXCO ET AL TUNAGO N-37

SAMPLE DESCRIPTION

95 - 100	DOLOMITE, grey-white, fine to medium crystalline, poor vug porosity, part drusy, with scattered grey, massive chert.
100 - 105	DOLOMITE, as above, with few clear quartz crystal viens, scattered chert, white grey, massive, trace anhydrite.
105 - 115	DOLOMITE, as above, scattered drusy vug porosity, translucent chert, common, few quartz crystals, trace anhydrite.
115 - 125	DOLOMITE, grey-white, fine to medium crystalline, scattered drusy vug porosity, with white to grey, translucent chert, few quartz crystals, trace selenite.
125 - 130	DOLOMITE, as above, cherty, trace white, tripolitic chert, few large quartz crystals.
130 - 135	DOLOMITE, as above, somewhat finer crystalline, scattered chert and quartz, trace chert nodule with quartz crystal coating.
135 - 140	DOLOMITE, as above, trace pinkish-red dolomite, traces porosity. trace grey-white fossiliferous chert.
140 - 145	Poor sample - mainly large fragments - partially cavings.
145 - 150	DOLOMITE, grey, finely crystalline, hard, trace imbedded pyrite, cherty, traces drusy vug porosity.
150 - 155	DOLOMITE, as above.
155 - 160	DOLOMITE, grey, fine to medium crystalline, traces drusy vug porosity, chert and large quartz crystals common.
160 - 165	SANDSTONE, grey-brown, loose, fine grained well rounded, medium sorted, quartz trace pink feldspar, scattered black grains.
165 - 170	SANDSTONE, as above, part subrounded few large grains to small pebbles.
170 - 175	SANDSTONE, as above.
175 - 180	SANDSTONE, as above with Dolomite, grey, medium crystalline, traces porosity.

EXCO ET AL TUNAGO N-37

SAMPLE DESCRIPTION - Continued

180 - 185	DOLOMITE, grey, medium, part coarse, crystalline, traces chert with sand as above.
185 - 190	DOLOMITE, with increasing sand, grains few, red, quartz and feldspar grains.
190 - 195	SAND and DOLOMITE, as above
195 - 200	Missed samples - nothing to catch.
205 - 210	DOLOMITE, grey as above, with chert, white grey, massive, traces quartz crystal clusters, trace drusy vug lining.
210 - 215	SANDSTONE, as above.
215 - 220	SANDSTONE
225 - 230	DOLOMITE, grey, medium crystalline, scattered chert, trace anhydrite(?), with loose sand as above.
230 - 235	DOLOMITE, as above, few drusy vugs, trace quartz, crystal clusters, scattered chert.
235 - 240	No sample
240 - 245	SANDSTONE, loose, grey, red, rounded, poor sorting, medium to small pebble, few granite pebbles, traces Dolomite as above.
245 - 250	DOLOMITE, grey, medium crystalline scattered chert, (with traces orange-red mud ?)
250 - 255	DOLOMITE, as above, increasing chert, (with orange brown mud ?)
255 - 260	DOLOMITE, as above.
260 - 265	DOLOMITE, as above.
265 - 270	DOLOMITE, as above, scattered drusy vug porosity, trace tripolitic chert.
270 - 275	DOLOMITE, grey, medium, part coarse, crystalline, cherty, traces tripolitic chert, traces porosity.
275 - 280	DOLOMITE, as above, cherty.
280 - 285	DOLOMITE, cherty as above, trace pink Dolomite.

EXCO ET AL TUMAGO N-37

SAMPLE DESCRIPTION - Continued

285 - 290	DOLOMITE, as above, trace imbedded black nodules, part with orange mud, trace quartz crystals.
290 - 300	DOLOMITE, as above, traces porosity.
300 - 305	SANDSTONE, loose, rounded, medium to pebble size, varicolored, granite, quartz feldspar, with minor Dolomite.
	(Assumed cavings)
305 - 310	SANDSTONE, as above.
310 - 315	SANDSTONE, as above.

SECTION III
ENGINEERING SUMMARY

CASING SUMMARY

Enclosed is a Casing Summary for the running and setting of 339 mm Conductor Casing. No other casing strings were run on the subject well.

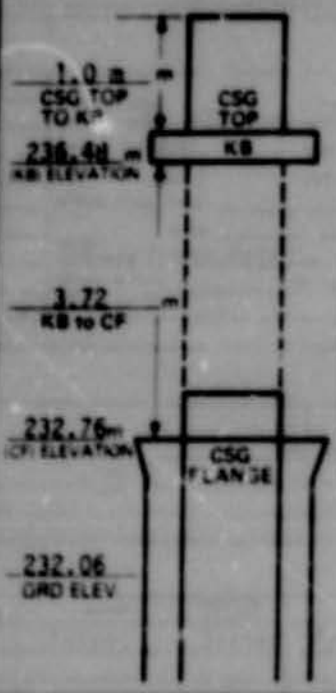
PAGE

CASING SUMMARY

WELL Exco et al Tunago N-37 LOCATION DATE 85-01-12

Conductor Casing SIZE 339mm KB 4.42 m KB to CF -

New/Used Inspected By J. Maloney Drifted To - API diam



NO.	DESCRIPTION	MEASURED LENGTH	KB DEPTH
1	Shoe	.57	36.54
1	Shoe Jt. 340mm	12.10	24.44
1	Float Collar	.48	23.96
1	339mm Joint	12.40	11.56
1	339mm Joint	12.56	+ 1.00
	Scratchers		
	Centralizers		

	Total String	38.11
minus	KB to Csg Top (STICK UP)	1.00
	Landed Depth KB	37.11
	Hole Depth KB	40.00
	Distance Csg Landed Off Bottom	2.89

Cut off Jt Length 4.19 m

Cementing Company Howco Well Servicing Ltd.

Wash Type Fresh Water - One pipe volume Volume 3.4 m^3

Cement Type Lead Slurry 6.6 Permafrost Volume 4.9 m^3

Cellophane: 5 sx Volume

Cement Type Tail Slurry Volume

Additives Volume

Cement Type Above Surge Collar Note: In total 32.6 t of cement Volume

Additives was run down the annulus to stabalize the conductor. Volume

Displacement Rate Max - Avg - (m3/min)

Calculated Cement Top(s) 10 - 12 m KB 4.42 m KB

Returns Mud None m3 Cement None m3

String Wt. in a mud wt. of Air kg/m3 = 14,000 daN

Wt. set on Slips daN

Remarks Ran 6.6 Tonne Permafrost Cement 4.9 m^3 slurry. Hole bridged off and unable to displace. No returns. Total Pipe Volume = 3.45 m^3. Ran 2" pipe down annulus 12.2 m. Ran 6.1 Tonne Permafrost Cement 4.5 m^3 slurry. Hole around casing 2 m X 10 m deep

Engineer J. Maloney

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE No. 43 112

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 (YEAR) 01 (MONTH) 15 (DAY)

OWNER, OPERATOR OR HIS AGENT STATES THAT WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL No. AND LEASE
Ranger Distributors Limited (Exco)	Tunago	Exco et al Tunago N-37

CALLED OUT (DATE/TIME)	ON LOCATION (DATE/TIME)	JOB STARTED (DATE/TIME)	JOB COMPLETED (DATE/TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-01-15 03:00	85-01-16 01:30	N.W.T.					

TYPE OF JOB ✓: SURFACE; INTERMEDIATE; PRODUCTION; LINER; SQUEEZE; PLUG; PUMP; PRESSURE TEST; OTHER ✓

WELL OR HOLE DATA

HOLE DATA: HOLE SIZE 432 mm; TOTAL DEPTH 40 m; TYPE FLUID Air; VISC; DENSITY

CASING, TUBING OR LINER DATA: NEW ☑ USED ☐; SIZE 340 mm; kg/m 81.1; GRADE; DEPTH 37 m

SIZE mm; kg/m; GRADE; DEPTH m

PERFORATIONS: FROM m TO m; FROM m TO m; FROM m TO m; FROM m TO m

READY MIXED FLUID: TYPE Fresh Water; VOL. 4.0 m³; DISPLACING FLUID: TYPE Fresh Water; VOL. 2.98 m³

TEST DATA: TEMP; MIXING WATER %; SLURRY %; DISPLACING FLUID %; RETURNS %

PRODUCTS

EQUIPMENT	QUAN
BASKETS	
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	X
FLOAT SHOE	X
GUIDE SHOE	
INSERT FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER: TYPE; SIZE mm; DEPTH SET m; TAIL PIPE m

TOP PLUG TYPE; BOTTOM PLUG TYPE

CEMENT HEAD: CONTINUOUS ☐ KNOCK OFF ☐ SWAGE ☑; OTHER

CEMENT DATA

TONNE	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
32.6	G	Inland	Sacked	Permafrost		1880	0.74

HALLIBURTON OPERATOR: B. Bjornson CUSTOMER REP.

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED m³ STAGE	VOLUME PUMPED m³ TOTAL	VOLUME PUMPED m³ IN FORMATION	PRESSURE MPa TUBING	PRESSURE MPa CASING	REMARKS
1	03:00 03:05	0.80					3.0	Pump fresh water preflush.
2	03:05 03:20	0.33					4.5	Mix slurry.
1A								Cement outside casing 85-01-15
								04:30 hours.
1B								Cement outside casing 85-01-15
								20:00 hours.
1C								Cement outside casing 85-01-16
								01:00 hours.

BIT RECORD

BIT RECORD

WELL NAME: Exco et al Tunago N-37 LOCATION: Norman Wells N.W.T.

Contractor: Tri-Can Contracting Co. Ltd Rig No: Mr. Ben Rig Field: Norman Wells

Spud Date: 1985-01-12 0900 hours T.D. Date: 319 m 85-01-22 Rig Release Date: 85-01-31 (Well Terminated)

BIT NO	SIZE mm	MAKE & TYPE	DEPTH OUT	METRES DRLD	ROT HOURS	TOTAL HOURS	WEIGHT ON BIT - daN	BIT RPM	JETS mm 1	JETS mm 2	JETS mm 3	PUMP PRESS kPa or MPa	PUMP OUT PUT m³/min	DULL COND T	DULL COND B	DULL COND G
1A	413.8	Security MAN 942615	40	40	19	19	4 - 8	160	O P	E N	A I R			3	2	1
1B	311	HM XDV 77633	-	10	8.5	27.5	Mouse hole, rate hole + Pilot Conductor hole - 10 m							3	2	1
2B	311	HM J33 99169	319	282	72.75	100.25	10 - 15	80	O P	E N	A I R			3	5	1
3B	311	Security MBYF 160610	Ream from 90 meters to 117 meters & pulled. Hole Sloughing											2	2	1
4B	311	HM JD7 96037	Clean to 230 m - Stuck in hole (Air Drilling)											-	-	-
5B	311	JD7 88545	90	-	13	Clean out hole and ream								-	-	-
6B	311	HZ7SG 281483	111	-	13.75	Clean out hole and ream to 111 m.								-	-	-
7B	311	JD7 88542	110	-	14.25	Try to get to top of fish										
8B	311	Sec. H77SG	100	-	23.25	Try to get to top of fish										

REMARKS: Fish stuck at 230 m, while trying to ream to bottom. Progress was made each time, but lost ground on bit trips.

MUD REPORT

For details as to the Durafoam-Air properties maintained while drilling, refer to the enclosed "Daily Drilling Reports" found in Section V.

MUD ADDITIVES

Well: Exco et al Tunago N-37

Drilling Day	Gel 40 kg.	Caustic 22 kg	RMZP-7 5 gal.	Kwikseal	Cellophane	Kelzan	Durafoam 55 gal-drum	Duraplex 50# sx.	Walnut Shells	Sta-flo		
1							1					
2							1	2				
3												
4												
5												
6							1	1				
7							2	1				
8							2	4				
9							6	2				
10			2				2	5				
11			2				2	5				
12			2				2	5				
13							2	9				
14	179			45	20	2			85			
15	70			17								
16	60			40			1					
17							3	9				
18	65	1				3	1	12				
19	225					13		2		2		
20												
Totals	599	1	6	102	20	18	26	59	85	2		

EVALUATION

- DRILL STEM TESTS
- LOGGING
- MUD LOGGING
- CORING

Due to the fact that the well was abandoned at the 319 metre mark, prior to setting surface casing, no evaluation program was carried out on the well.

ABANDONMENT

The well was plugged back and the rig was skidded to the Exco et al 2N-37 well location.

PAGE _____

ABANDONMENT REPORT

DATE 85-01-31

Well Esso et al Tunago N-37 Location _____

A. WELL DATA

KB Elevation 236.68 m KB to CF 3.72 m PTD 319.00 m

Hole Size	Hole Depth	Casing Size	Casing Depth	Cement Top(s)	Perfs
311	319.00 m	339mm	37.4 m	Surface	N/A

B. ABANDONMENT DATA

Fluid in Hole Air and Mud Abandonment Company Esso Energy Ltd.

Cementing Company Mixed by the crew Gov't Official confirmed w/J. Hamilton-COGLA

Plug	Interval	Formation	Cem Vol	Cem Type	Cem Wt.	Plug Down	Felt Plug Time	Felt Plug Depth
1	0 - 25 m	Surface csg.	2.2 T	Permafrost + 3% $CaCl_2$	1800 kg/m³	2130	hrs Cement	to Surf.

Method of Finding Plugs Visual

Surface Casing Cut 1.31 m down from GL Surface Plug 0 - 25 m Plate Welded Yes

C. SALVAGE DATA

Casing Salvaged Pushed wiper plug to 25 m K.B. with drill collars. Mixed 4 sx Permafrost cement with $CaCl_2$ water. Wait 6 hours. Top with 4 more sx Permafrost cement Mixed with $CaCl_2$ water. Let set to hold column of cement. No fluid below to hold hydrostatic.

D. REMARKS

Final T.D. was 319.0 m. Abandoned hole with collars in hole from 176 m to 230 m. Hole sluffed from 90 m to 176. Set plug from 25 m to surface 2.2 Tonne.

ENGINEER Niel Nichols

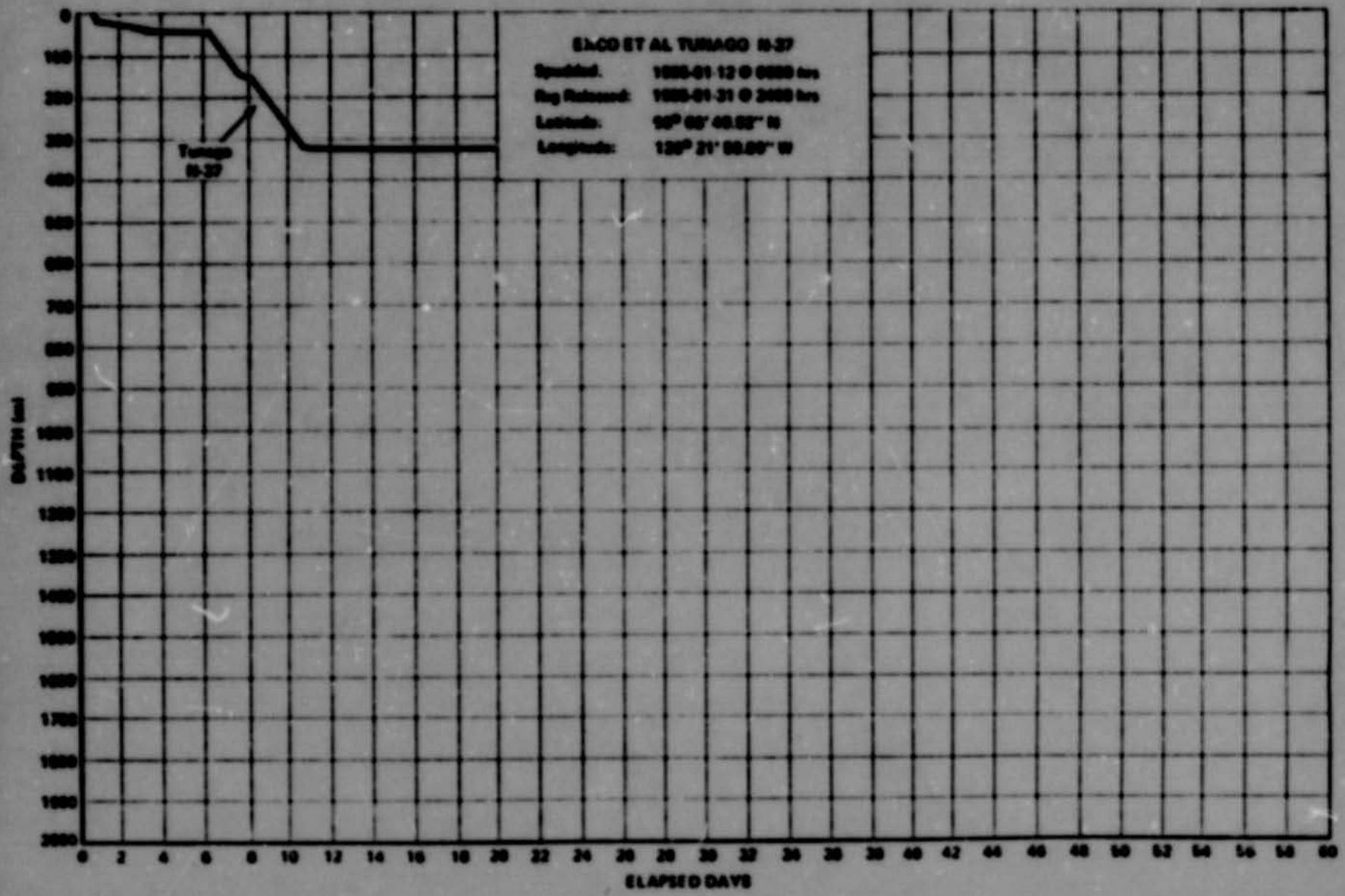
SECTION IV

LOGGING SUMMARY

No logs were run on this well as the hole was abandoned at the 319 metre depth.

SECTION V

DRILLING CURVE


ELACO ET AL TURAGO R-37
Spudded: 1985-01-12 @ 0000 hrs
Rig Released: 1985-01-31 @ 2000 hrs
Latitude: 50° 00' 00.00" N
Longitude: 125° 21' 00.00" W
Turago R-37
DEPTH (m)
ELAPSED DAYS

Daily Drilling
Reports

SECTION VI

DAILY DRILLING REPORTS

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 12 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 1 DEPTH 20 m METRES LAST 24 HRS 20 m ROTATING HRS 8.50

ACTIVITY AT REPORT TIME Drill 431mm hole

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1A	431.8	M4N	942615	4000	110/150	20	20	20	8.5	8.5	2.35	DRILL		

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
				Air 1,000 cfm 130 psi								
				1 1/2 gallons soap/per 10 gallons fluid								

DEVIATION SURVEYS

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

____ ____

____ ____

____ ____

____ ____

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN
Bit				
Bit sub				
9' DC-1				
X/O				
X/O				
X/O				

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	8.50	8.50
2 TRIPS	4.00	4.00
3 RIG SERVICE	.50	.50
4 DEVIATION SURVEY		
5 REAM & COND HOLE		
6 MIX & COND MUD	.50	.50
7 CIRCULATING		
8 RIG REPAIR		
9 RUN CASING & CEMENT		
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		
16 DRILLING OUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21 Drill mousehole & rathole	10.50	10.50
TOTALS	24.00	24.00

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 12 2400
Year - Month - Day - Time

Spudded at 0900 hours January 12, 1985. Notified COGLA in Yellowknife.

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	01	13	2400

WELL NAME: Exco et al Tunago N-37 LOCATION:

DAY: 2 DEPTH: 34 m METRES LAST 24 HRS: 14 m ROTATING HRS: 1500

ACTIVITY AT REPORT TIME: Trip to run 13 3/8" casing KB-GL = 4.42 = 40 m setting depth

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ W/L ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/hr	NOZZLES 1	2	3
1A	421.8	Sec MAN	942615	6-8	110/min	14	14	34	6.50	15.00	2.27			
1B	311	XDV	77633	6-8	110/min	34	14	14	8.50	8.50	1.60	3	3	3

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
				Air 500 cfm at 90 psi								
				16 gal soap/minute			5 gallons soap conc. per 10 bbls mix					

DEVIATION SURVEYS

1/2 ° at 25 m ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN
Bit				
Bit sub				
1 9" D.C.				
X/O				
X/O				
2 - 6" D.C.s				
Kelly				

COSTS

DAILY N/A

CUM

SUPERVISOR: John Maloney

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	15.00	23.50
2 TRIPS	3.00	7.00
3 RIG SERVICE	.25	.75
4 DEVIATION SURVEY		
5 REAM & COND HOLE	3.25	3.25
6 MIX & COND MUD		.50
7 CIRCULATING air & mix dura-gum	2.50	2.50
8 RIG REPAIR		
9 RUN CASING & CEMENT		
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		
16 DRILLING OUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		10.50
TOTALS	24.00	48.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 13 2400

Year · Month · Day · Time

Gravel beds from surface to 27 m

Sloughing in hole - large cavity under rig stopped when increased spm and decreased CFM from 1000 to 500 cfm.

0000 - 0430 Drill ahead
0430 - 0445 Rig Service
0445 - 0615 Lay down D.C.
0615 - 0800 Wait on air returns and clean hole
0800 - 1000 Clean up hole
1000 - 1045 Handle tools
1045 - 1130 Drill 311mm pilot hole
1130 - 1145 Air drill
1145 - 1200 Drill 311mm pilot hole
1200 - 1715 Drill 311mm hole
1715 - 1745 Circulate
1745 - 1915 Drill 311mm pilot hole
1915 - 1930 Air Driller Pump
1930 - 2015 Drill 311mm pilot hole
2015 - 2030 POOH
2030 - 2045 Survey - 1/2°
2045 - 2115 RIH w/431.8mm bit
2115 - 2200 Ream 4 m fill
2200 - 2400 Drill 431.8mm hole

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 14 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 3 DEPTH 40 METRES LAST 24 HRS 6 ROTATING HRS 4.00

ACTIVITY AT REPORT TIME Cement 13-3/8" casing and wait on cement

DRILLING MUD PROPERTIES AT SHAKER/SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	DULL COND B	DULL COND G
1A	431.8	Sec M4N	942615	8	60	40	6	40	4.00	19.00	2.10	3	2	I

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
				500 cfm. 16 gallons soap/minute								
				5 gallons conc. 10 gallons mix								

DEVIATION SURVEYS

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Durafoam 15 gals.

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub				
1 - 9" DC				
X/O				
X/O				
X/O				
2 - 6-1/4 DC's				
Kelly				

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	4.00	27.50
2 TRIPS	4.25	11.25
3 RIG SERVICE	.25	1.00
4 DEVIATION SURVEY		
5 REAM & COND HOLE		3.1[illegible]
6 MIX & COND MUD		.50
7 CIRCULATING	3.75	6.25
8 RIG REPAIR		
9 RUN CASING & CEMENT	11.75	11.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		
16 DRILLING OUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		
21		10.50
TOTALS	24.00	72.00

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 0 14 2400
Year Month Day Time

Ran 6.6 T cement on conductor casing, 4.9 m^3 slurry of permafrost cement. Float shoe plugged off. Re-cemented down the annulus consisting of 6.1 T permafrost or 4.5 m^3 slurry. No returns to surface. Presently going to fill the annulus and cement top 20 m^3. Install a new cribbing and cement top 10-15 m^3 in place.

0000 - 0400 Drill 431.8mm hole
0400 - 0415 Clean hole
0415 - 0445 POOH - wait 15 mins.
0445 - 0500 RIH
0500 - 0530 Circulate and condition hole
0530 - 0600 POOH, wait 15 mins and RIH
0600 - 0630 Circulate and condition hole
0630 - 0700 POOH to run 13-3/8" casing
0700 - 0800 Rig up to run casing
0800 - 1030 Run casing
1030 - 1130 Rig up, circulate head to run casing
1130 - 1200 Circulate casing
1200 - 1430 Circulate casing
1430 - 1600 POOH, rig Kelly hose
1600 - 1830 Circulate and condition hole to run casing.
1830 - 1915 POOH to run 13-3/8" casing
1915 - 2400 Run 13-3/8" casing - circulate casing down to 37 m and break circulation.

WANT LIST

WEATHER -30°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Winterhawk

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 15 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 4 DEPTH 37 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME 0800: Nipple up BOP's

DRILLING MUD PROPERTIES AT SHAKER/SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL % SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	ROT hrs TODAY	CUM ROT hrs	m/HR	BIT COND T	B	G

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		27.50
2 TRIPS		11.25
3 RIG SERVICE		1.00
4 DEVIATION SURVEY		
5 REAM & COND HOLE		3.25
6 MIX & COND MUD	2.75	3.25
7 CIRCULATING		6.25
8 RIG REPAIR		
9 RUN CASING & CEMENT	3.00	14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP	1.00	1.00
16 DRILLING OUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		
21 Plugs & cellar crib	17.25	27.75
TOTALS	24.00	96.00

COSTS

DAILY N/A

CUM

SUPERVISOR John Moloney

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 15 2400
Year Month Day Time

0245 hours - broke circulation and circulated casing. Ran 3 joints 339.7 mm 81.1 kg/m K-55 ST&C casing. Landed at 37 m. Cemented with 6.6 T permafrost cement, 4.9 m^3 slurry (165 sx) - no returns. Float plugged off after mixing 165 sx. Ran 2" pipe outside annulus and cemented with 150 sx. Filled cavity with gravel and sand and ran 2 cement plugs. One at 10 m - 150 sx, one at 5 m - 200 sx. Ran 2" pipe down annulus to 15 m and ran 6.1 T permafrost (4.5 m^3 slurry - 150 sx). Installed new cribbing in cellar and cemented.

WANT LIST

WEATHER -35°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR. PERIOD ENDING

85 01 16 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 5 DEPTH 37 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME Test hydril and grant at 1500 kPa

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

AT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		27.50
2 TRIPS		11.25
3 RIG SERVICE		1.00
4 DEVIATION SURVEY		
5 REAM & COND HOLE		3.25
6 MIX & COND MUD		3.25
7 CIRCULATING		6.25
8 RIG REPAIR		
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP	15.00	16.00
16 DRILLING OUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21 Cement Cribbing	9.00	36.75
TOTALS	24.00	120.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 16 2400
Year Month Day Time

Cemented cribbing with 75 sx permafrost.

Drilling out and drilling ahead today.
Install cribbing, cement cribbing and around cribbing weld on casing bowl and nipple up spool, Hydril. Cement around cribbing. Mixed cement by hand. Cement from crib to matting.

WANT LIST

WEATHER -40°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Westbank

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 17 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 6 DEPTH 37 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME 0800: Drill 311 mm hole at 45 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SET ½J	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
2B	311	HWJ33	89/69	6	60/80	DRILL OUT FLOAT COLLAR AND SHOE								

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR John Moloney

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		27.50
2 TRIPS	.50	11.75
3 RIG SERVICE	.25	1.25
4 DEVIATION SURVEY		
5 REAM & COND HOLE		3.25
6 MIX & COND MUD		3.25
7 CIRCULATING		6.25
8 RIG REPAIR	1.00	1.00
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP	8.50	24.50
16 DRILLING OUT	7.50	7.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21 Thaw out stand pipe	6.25	43.00
blow hole TOTALS	24.00	144.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 17 2400
Year Month Day Time

Low 1500 kPa, OK. Drilling out float and shoe.
Nipple up, drill mouse hole (cement) fix kelly spinner, blow mouse hole with air.
Rig Service, low pressure test - 1500 kPa, nipple up air head etc. Thaw out stand-pipe, cut mouse hole, pull out hose, repair flange and change out valve on blowey line. Blow hole dry. Drill out cement. Pull out of hole.

WANT LIST

WEATHER -40°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 18 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 7 DEPTH 108 METRES LAST 24 HRS 71 ROTATING HRS 14.00

ACTIVITY AT REPORT TIME Cleaning up sloughing hole

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
28	311	J-33	89169	8-12	60/80	IN	71	71	14	14	5.07	I	N	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
				600 cfm 16 gallons soap/minute								
				8 gallons conc/10 barrels (duraplex)								

DEVIATION SURVEYS

1/2 ° at 49 ____ ° at ____

3/4 ° at 80 ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Durafoam 2 sx

Duraplex 3 sx

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit			.30	
Bit Sub			.82	
Shock Sub 9"		228	3.36	
2 - 9" D.C.'s		228	18.85	
Jars		228	5.81	
X/O			.79	
2 - 7" D.C.'s		190	18.87	
X/O			.77	
X/O			.43	
5 - 6-1/4" DC's			46.32	
			96.32	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	14.00	41.50
2 TRIPS	4.75	16.50
3 RIG SERVICE	.25	1.50
4 DEVIATION SURVEY	.50	.50
5 REAM & COND HOLE		3.25
6 MIX & COND MUD		3.25
7 CIRCULATING	2.75	9.00
8 RIG REPAIR		1.00
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT	1.75	9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		43.00
TOTALS	24.00	168.00

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 18 2400
Year Month Day Time

0000 - 0115	Lay down 3 drill collars, pick up 9" drill collars, choke up bit and run in hole
0115 - 0300	Drill out cement
0300 - 0945	Drill 311 mm hole
0945 - 1315	Pull out of hole, pick up bottom hole assembly and run in hole
1315 - 1345	Dry out hole with air
1345 - 1445	Drill 311 mm hole
1445 - 1500	Survey
1500 - 2015	Drill 311 mm hole
2015 - 2100	Circulate to survey
2100 - 2115	Survey
2115 - 2130	Rig service
2130 - 2200	Drill 311 mm hole
2200 - 2230	Circulate and clean up hole
2230 - 2300	Drill 311 mm hole
2300 - 2400	Circulate and clean hole

WANT LIST

WEATHER -35°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	01	19	2400

WELL NAME: Exco et al Tunago N-37 LOCATION:

DAY: 8 DEPTH: 154 METRES LAST 24 HRS: 46 ROTATING HRS: 11.25

ACTIVITY AT REPORT TIME: Drilling 311 mm hole at 181 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
2B	311	J-33	89169	12	70	IN	46	117	11.25	25.25	4.63	DRILL		

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
Air - 600 dfm, 200 psi 10 gallons soap/minutes												
8 gallons conc/10 barrels												

DEVIATION SURVEYS

1 ° at	117	° at	
1-1/8 ° at	145	° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Durafoam	2 bbls
Duraplex	4 sx

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN
Same				

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	11.25	52.75
2	TRIPS	2.00	18.50
3	RIG SERVICE	.25	1.75
4	DEVIATION SURVEY	.50	1.00
5	REAM & COND HOLE	8.25	11.50
6	MIX & COND MUD	1.75	5.00
7	CIRCULATING		9.00
8	RIG REPAIR		1.00
9	RUN CASING & CEMENT		14.75
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		
15	NIPPLE UP & TEST BOP		24.50
16	DRILLING OUT		9.25
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		
21			43.00
	TOTALS	24.00	192.00

COSTS

DAILY N/A

CUM

SUPERVISOR: John Maloney

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 19 2400
Year Month Day Time

0000 - 0145	Circulate and clean tight slowghing hole at 108 m
0145 - 0330	Change over air and foam system in hole
0330 - 0530	Trip out, install float, run in hole
0530 - 1015	Pick up kelly, clean to bottom from 76 m to 108 m
1015 - 1200	Drill 311 mm hole from 108 m to 117 m
1200 - 1345	Hole tight, work pipe
1345 - 1630	Drill 311 mm hole
1630 - 1645	Rig service, check hydril
1645 - 1700	Survey
1700 - 2345	Drill 311 mm hole
2345 - 2400	Survey

WANT LIST

WEATHER -20°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85	01	20	2400
Year	Month	Day	Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 9 DEPTH 228 METRES LAST 24 HRS 74 ROTATING HRS 20.25

ACTIVITY AT REPORT TIME Drilling at 251 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	BIT COND T	B	G
2B	311	J-33	89169	12/15	80		74	191	20.25	45.5	4.20			

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
2B				Air 625 ft³/minute								
				Soap 45 L/minute			32/10 bbls concentrate					

DEVIATION SURVEYS

3/4	at 180		at
3/4	at 210		at
	at		at
	at		at

MUD & CHEMICALS ADDED

Duraplex	6 sx
Foam	2 bbls

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub				
Shock Sub				
2 D.C.'s		228		
Jar		190		
2 D.C.'s		159		
3 X/O				
14 D.C.				
5 HW D.P.				
Kelly				

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	20.25	73.00
2	TRIPS		18.50
3	RIG SERVICE	.75	2.50
4	DEVIATION SURVEY	.50	1.50
5	REAM & COND HOLE		11.50
6	MIX & COND MUD		5.00
7	CIRCULATING		9.00
8	RIG REPAIR	2.50	3.50
9	RUN CASING & CEMENT		14.75
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		
15	NIPPLE UP & TEST BOP		24.50
16	DRILLING OUT		9.25
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		
21			43.00
	TOTALS	24.00	216.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 20 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0800	Drill
0800 - 0815	Rig service
0815 - 1100	Drill
1100 - 1115	Survey
1115 - 1300	Drill
1300 - 1400	Replace pack off unit on Grant head
1400 - 1430	Drill
1430 - 1600	Center hydril and work on Grant head
1600 - 1815	Drill
1815 - 1815	Drill
1815 - 1830	Rig service, check engine kills and hydril
1830 - 2115	Drill
2115 - 2130	Survey
2130 - 2400	Drill

WANT LIST

WEATHER -20°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 21 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 10 DEPTH 289 METRES LAST 24 HRS 61 ROTATING HRS 21.5

ACTIVITY AT REPORT TIME Trip for bit at 319 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
2B	311	J33	89169	15	80	0	61	252	21.5	67	3.7	-	-	-

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
2B				750 ft^3/minute								
				36 L injection/minute			36 L soap/30 barrels					

DEVIATION SURVEYS

1/2 ° at 245 ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Durafoam 2 bbls

Duraplex 5 sx

RMZ87 2 pails

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub				
Shock Sub				
2 D.C.'s	228			
Jar	190			
2 D.C.'s	159			
3 X/O's				
14 D.C.'s				
6 HW D.P.				
1 Std. D.P.				
2 Singles D.P.				
Kelly				

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	21.50	94.50
2 TRIPS		18.50
3 RIG SERVICE	.50	3.00
4 DEVIATION SURVEY	.25	1.75
5 REAM & COND HOLE		11.50
6 MIX & COND MUD		5.00
7 CIRCULATING	1.75	10.75
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		43.00
TOTALS	24.00	240.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 21 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0615	Drill
0615 - 0730	Circulate and condition hole, clean out water
0730 - 0930	Drill
0930 - 1000	Circulate and condition hole
1000 - 1015	Survey
1015 - 1815	Drill
1815 - 1830	Rig service
1830 - 2400	Drill

WANT LIST

WEATHER -15°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	01	22	2400

WELL NAME: Exco et al Tunago N-37 LOCATION:

DAY: 11 DEPTH: 319 METRES LAST 24 HRS: 30 ROTATING HRS: 5.75

ACTIVITY AT REPORT TIME: Clean out to bottom

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND I	B	G
2B	311	J33	89169	15	80	319	30	282	5.75	72.75	3.88	3	5	I

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
				600 cfm at 125 psi								
				36 L Durafoam and 32 L duraplex per 10 barrels								

DEVIATION SURVEYS

3/4 ° at 282 ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Durafoam 2 bbls

Duraplex 5 sx

RMZP7 10 gals (corrosion inhibitor)

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub			.82	
1 Shock Sub			3.36	
2 D.C.'s - 229			18.85	
1 Jar			5.81	
2 - 190 D.C.'s			18.87	
X/O			1.99	
X/O				
X/O				
14 D.C.'s - 159			129.14	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	5.75	100.25
2 TRIPS	5.50	24.00
3 RIG SERVICE	.75	3.75
4 DEVIATION SURVEY	.25	2.00
5 REAM & COND HOLE	11.75	23.25
6 MIX & COND MUD		5.00
7 CIRCULATING		10.75
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		43.00
TOTALS	24.00	264.00

COSTS

DAILY N/A

CUM

SUPERVISOR: John Maloney

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 22 2400
Year Month Day Time

0000 - 0115	Drill 311 mm hole
0115 - 0130	Survey
0130 - 0145	Rig service
0145 - 0615	Drill 311 mm hole
0615 - 0800	Pull out of hole
0800 - 0815	Rig service
0815 - 1200	Pull out of hole, trip out, break 9" D.C.'s and trip in hole
1200 - 1600	Clean out from 90 m
1600 - 1615	Rig service
1615 - 2400	Clean out, ream from 90 m to 117 m

Hole sloughing badly from 90 m to 117 m. POOH at 2400 hours.

Samples show dolomite

Bit #3B - M89TF - shanks - deep scars also on bit sub, shock and 9" D.C.'s

WANT LIST

WEATHER -21°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 23 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 12 DEPTH 319 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME Stuck at 230 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
3B	311	M89TF	160610	Clean Out		90	117					2	2	1
4B	311	JD7	96037	Clean Out		108 - 230 m								

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
				700 - 1400 ft³/minute								
				125 - 300 psi			36 L soap/minute			32 L soap conc/10 barrels		

DEVIATION SURVEYS

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Foam	2 bbls	
Duraplex	5 sx	
RMZP7	10 gallons	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub				
Shock Sub				
2 D.C.'s	228			
Jar				
2 D.C.'s	190			
3 X/O's				
14 D.C.'s	159			
5 HW D.P.				
Kelly				

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS	1.75	25.25
3 RIG SERVICE	.75	4.50
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE	6.50	29.75
6 MIX & COND MUD	7.75	12.75
7 CIRCULATING	7.75	18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		43.00
TOTALS	24.00	288.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 23 2400
Year Month Day Time

0000 - 0015	Rig service and check engine kills
0015 - 0130	Hoist for bit and run in hole with JD7 bit
0130 - 0800	Ream 108 - 226 m
0800 - 0815	Rig service
0815 - 1600	Break circulation and work tight hole, move down 4 m.
1600 - 1615	Rig service
1615 - 2400	Circulate and work tight hole

Pipe will rotate, unable to pull up. Estimate at 230 m now, currently, hole drilled to 319 m, maintaining some circulation now, coming through steady but a flat flow. 120 - 130000 daN, stuck above jars.

At neutral string weight, able to turn pipe, picking up is tight and unable to back ream.

WANT LIST

WEATHER -16°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 24 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 13 DEPTH 319 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME Pump pill and mix mud, pump 2 - 300 barrels pills, no returns

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	BOTH CONDS T	B	G
48	311	JD7	96037	Stuck in hole										

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 9 sx

Durafoam 2 bbls

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT kN
Same				

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS		25.25
3 RIG SERVICE	.75	5.25
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE		29.75
6 MIX & COND MUD		12.75
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		
21 Circ, work pipe	23.75	66.25
TOTALS	24.00	312.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 24 2400
Year Month Day Time

Circulate and work pipe, wait on fishing hand and mudman to arrive, along with fishing tools.

0000 - 0015 Rig Service
0015 - 0800 Circulate and work pipe
0800 - 0815 Rig Service
0815 - 1600 Circulate and work pipe
1600 - 1615 Rig Service
1615 - 2400 Circulate and work pipe

WANT LIST

WEATHER -11°C ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Winterhawk

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 25 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 14 DEPTH 319 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Trip out and try to break 6-1/4" collars

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	WELL COND T	B	G
4B	311	JD7	96037	Clean out to 230 m - stuck in hole										

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Gel	179 sx	Kelzan	2 sx
Walnut Shells	85 sx		
Cellophane	20 sx		
Kwikseal	45 sx		

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub				
SS				
2 228 DC's				
1 228 Jar				
X/O				
2 190 DC's				
Left in hole (haven't confirmed yet)				

COSTS

DAILY N/A

CUM

SUPERVISOR John Maloney/Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS		25.25
3 RIG SERVICE	.50	5.75
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE		29.75
6 MIX & COND MUD		12.75
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING	23.50	23.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		66.25
TOTALS	24.00	336.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 25 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0800	Work pipe, mix 600 barrels mud with LCM, pump, no returns
0800 - 0815	Rig service
0815 - 2000	Mix 300 barrels mud and LCM, wait on fishing tools
2000 - 2300	Run free point tool with Dresser wireline and Howco services, free at 176 m
2300 - 2400	Fill annulus with mud and lost circulation rig up to back off
85 01 26	
0000 - 0800	Back off and pull out of hole

WANT LIST

WEATHER -15°C Snowing ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 26 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 15 DEPTH 319 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME Finish breaking drill collar, prepare to run in and clean out

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1060 VIS 80 WL GELS % SOLIDS PV YP pH 10

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
48	311	JD7	96037			Stuck in hole								

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Gel	70 sx	
Kwikseal	17 sx	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit				
Bit Sub			.82	
1 SS			3.36	
2 - 228		228	18.85	
1 Jar		228	5.81	
1 DC		190	9.50	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS		25.25
3 RIG SERVICE		5.75
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE		29.75
6 MIX & COND MUD		12.75
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING	8.00	31.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Tongs & Wash Pipe	16.00	16.00
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		
TOTALS	24.00	360.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 26 2400
Year Month Day Time

Mix and pump downhole LCM down annulus; free point and shoot off at 176 m. Back off fish and pull up free pipe. Break tong jaws and pins trying to break collars. Wait onlarger set of tongs, wash pipe, subs, etc.

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 27 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 16 DEPTH 319 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME Tried to clean out, reaming at 92 m, top of fish at 176 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Air

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND 1	2	3
5B	311	HWJD7	88545	2/5	60	Reaming	for	5.00	hours					

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Gel	60 sx	
Kwikseal	40 sx	
Durafoam	1 bbl	

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN
Bit		311	.30	
Bit Sub		159	1.07	
3 DC's		159	28.44	
1 Jar		159	4.35	
2 DC's		159	18.46	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS		25.25
3 RIG SERVICE	.50	6.25
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE	5.00	34.75
6 MIX & COND MUD	1.75	14.50
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		31.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Tongs	2.75	18.75
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		
21 Change out drilling string	14.00	80.25
TOTALS	24.00	384.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 01 27 2400
Year Month Day Time

Wait on tongs. Rig up tongs and break drill collar. Re-torque same. Change out saver sub. Run in hole with collars. Lay down collars and heavy weight drill pipe and jars. Pick up kelly and break circulation at 30 m. No returns. Pick up drill collars. Mix mud and pump away. Blow kelly and clean mud tanks. Rig up to circulate with air. Clean to 65 m.

1st bridge 65 m
2nd bridge 78 m
3rd bridge 89.5 m
4th bridge 91 - 92 m

Ream, pull up and ream it all over again.

WANT LIST

WEATHER -34°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 28 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 17 DEPTH 319 METRES LAST 24 HRS 0 ROTATING HRS 0

ACTIVITY AT REPORT TIME Reaming at 110 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Air drilling viscosity 46 sec/L

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	BUS COND T	B	G
5B	311	JD7	88545	2/5	50/70	90	Reaming		8	13		4	2	1
6B	311	H77SG	281483	2/5	50/70	IN	Reaming		13.75	13.75		DR	LL	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
5B	O P E N			Drilling with air - 1000 cfm								
				Injection rate 15-20 gal/min Duraflow 21bbl/bbl Duraplex								

DEVIATION SURVEYS Air pressure 100-140 psi
Water returns 4-5 bbl/min

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 9 sx

Duraflow 3 bbls

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		311	.30	
Bit Sub			1.07	
3 D.C.'s		159	26.44	
1 Jar		159	4.35	
6 D.C.'s		159	56.03	

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS	1.50	26.75
3 RIG SERVICE	.75	7.00
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE	21.75	56.50
6 MIX & COND MUD		14.50
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		31.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		18.75
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		
21		80.25
TOTALS	24.00	408.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 28 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0815	Ream from 65 m to 90 m
0815 - 0830	Rig service
0830 - 1000	Trip for bit
1000 - 1200	Ream back to 90 m
1200 - 1600	Ream from 90 m to 95 m
1600 - 1615	Rig service
1615 - 2400	Ream from 95 - 98 m

90 - 93 m - rough rotating - similar to drilling boulders - hard bridge at 91 m. Pull up past 91 m - go back down and sit on bridge - turn Kelly torque and grab to 93 m. Roll around on boulder - break through - go to 95 m, same activity to 98 m. Possibly - glacial drift - gravel section following in on top of fill causing the same effect as if drilling through boulders etc. Fill consisting of drill cuttings, chert and dolomite.

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 29 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 18 DEPTH 319 METRES LAST 24 HRS 0 ROTATING HRS Ream 19.5

ACTIVITY AT REPORT TIME Ream at 113 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1010 VIS 150 WL GELS % SOLIDS PV YP pH 8.5

% OIL % SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
B6	311	H77SG	281483	2/3	70	110	Reaming		9.75	13.75		7	1	1
B7	311	JD7	88542	2/3	70		Reaming		9.75	9.75				

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
	OPEN				Air							100-150
												DST

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Duraplex	12 sx	Durafoam	1 bbl
Gel	65 sx		
Kelzan	3 sx		
Caustic	1 sk		

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		311	.30	
Bit Sub		159	1.07	
3 D.C.'s		159	28.44	
Jar		159	4.35	
6 D.C.'s		159	65.03	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS	2.25	29.00
3 RIG SERVICE	.75	7.75
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE	19.50	76.00
6 MIX & COND MUD		14.50
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		31.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Orders	1.50	20.25
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		
21		80.25
TOTALS	24.00	432.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 29 2400
Year Month Day Time

0000 - 0015 Rig service
0015 - 0800 Ream 89 - 110 m
0800 - 0815 Rig service
0815 - 1015 Ream 110 - 111 m
1015 - 1115 Trip out
1115 - 1245 Wait on orders
1245 - 1400 Trip in
1400 - 1615 Ream 92 - 101 m
1615 - 2400 Ream 101 - 110 m
Mix batch of drilling mud. Mix tanks full of mud.
Air 600 cfm 100 - 150 psi 1.5 orifice
Injection 10 - 15 gallons/minute
1.5% duraflow
Premix 2 lb/gallon duraplex - viscosity 45
Water returns 3 barrels/minute

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Waterford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 30 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 19 DEPTH 319 METRES LAST 24 HRS ROTATING HRS Ream 14

ACTIVITY AT REPORT TIME Prepare to skid rig

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1030 VIS 140 WL GELS % SOLIDS PV YP pH 8

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND 7	8	9
7B	311	JD7	88542	2/5	60/70	110	Reaming		4.5	14.25		5	1	1
8B	311	H77SG	281483	2/3	60	100	Reaming		9.5	23.25		3	1	1

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Gel	225 sx	
Kelzan	13 sx	
Staflo	2 bbl	
Duraplex	2 sx	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		311	.30	
Bit Sub		159	1.07	
3 D.C.'s		159	28.44	
Jar		159	4.35	
7 D.C.'s		159	65.30	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS	8.00	37.00
3 RIG SERVICE	.50	8.25
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE	14.00	90.00
6 MIX & COND MUD		14.50
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		31.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Orders	1.50	21.75
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		
21		80.25
TOTALS	24.00	456.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 01 30 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0445	Ream
0445 - 0545	Blow line, repair hopper
0545 - 0630	Unplug mud hopper
0630 - 0745	Run in hole
0745 - 0945	Ream
0945 - 1145	Trip for jets
1145 - 1200	Rig service
1200 - 1230	Repair air controls on pump motors
1230 - 1345	Run in hole and repair grant head
1345 - 2115	Ream
2115 - 2230	Trip out of hole
2230 - 2400	Wait on orders

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Winterhalt

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 01 31 2400
Year Month Day Time

WELL NAME Exco et al Tunago N-37 LOCATION

DAY 20 DEPTH METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Tear out rig, build location

DRILLING MUD PROPERTIES AT SHAKER/SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCl PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL GRADING T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		100.25
2 TRIPS		37.00
3 RIG SERVICE	.50	8.75
4 DEVIATION SURVEY		2.00
5 REAM & COND HOLE		90.00
6 MIX & COND MUD		14.50
7 CIRCULATING		18.50
8 RIG REPAIR		3.50
9 RUN CASING & CEMENT		14.75
10 FISHING		31.50
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Orders	8.00	29.75
15 NIPPLE UP & TEST BOP		24.50
16 DRILLING OUT		9.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS	3.00	3.00
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT	12.50	12.50
21		80.25
TOTALS	24.00	480.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 01 31 2400
Year · Month · Day · Time

0000 - 0800	Wait on orders
0800 - 0815	Rig service
0815 - 1115	Lay down drill collars, push 339 mm wiper plug to 25 m
1115 - 2400	Tear out

Abandonment: Pushed 339 mm wiper plug to 25 m; top with 4 sx permafrost cement + 3% $CaCl_2$; let set for 5 hours; mix up another 4 sx plug permafrost + 3% $CaCl_2$; wait 4 hours to be cemented to surface when Howco sets conductor pipe on offset well, i.e. 2%-37

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

EXCO ET AL TURNAGO
2N-37
66°06' 49.92"N 126°21' 59.80"W
FINAL DRILLING SUMMARY

(rig skidded on same wellsite from N-37 to 2N-37 location)

Exco Energy Ltd.

April, 1985

TABLE OF CONTENTS

SECTION I

SUMMARY - GENERAL DATA

EXCO ET AL TUNAGO 2N-37

INTRODUCTION

After the abandonment of the Tunago N-37 well, permission was obtained from the Canada Oil and Gas Lands Administration (COGLA) to skid the rig on the same well location and to re-drill the well as 2N-37. In preparation for re-drilling the hole the lease had to be prepared in that the construction crews required several days to level one section of the lease and to fill in and extend the outer lease boundaries. Skidding the rig and auxiliary equipment was accomplished in short order as several cats were made available for this sequence of operations. Rigging up was nearly complete by the end of the move, with the 2N-37 well spudded February 4, 1985; less than four (4) days from the rig release date on the N-37 location.

Following consultation with all concerned parties, it had been decided that an additional string of conductor casing would be run and set. Specifically, in place of the single string of 339 mm conductor, 508 mm conductor pipe would be run to case off the upper, unconsolidated sand and gravel which was subject to massive erosion.

With the 508 mm conductor pipe cemented in place at the 24 metre depth, 444 mm hole was drilled to the 133 metre mark. Again, this section proved troublesome both in drilling and in setting casing. More specifically, because the hole was constantly sloughing the 339 mm casing was cemented in place at 120 metres, nearly 12 metres off bottom.

With the troublesome section now cased off, 311 mm surface hole proceeded with little difficulty to the 630 metre depth where 244 mm casing was run and set. Main hole drilling in 215.9 mm hole required several additional days to reach total depth of 1626 metres. Evaluation consisted of logging and testing the Mount Clark formation. Since there was no indication of any hydrocarbons of commercial quantity, a decision was made to abandon the well.

Exco hereby gives notice that the enclosed report is to be considered the FINAL DRILLING SUMMARY for the drilling of the Exco et al Tunago 2N-37 well.

GENERAL WELL INFORMATION

WELL NAME:	Exco et al Tunago 2N-37
LESSOR:	Dome Petroleum Limited Box 200 Calgary, Alberta T2P 2H8
OPERATOR:	Exco Energy Ltd. 6th Floor, 700 - 4th Avenue S.W. Calgary, Albert T2P 3J4
GRID AREA:	66-10-126-15; Unit N; Section 37
CO-ORDINATES:	66° 06' 49.92"N 126° 21' 59.80"W
UNIQUE WELL IDENTIFIER:	30 2N37 66 10 126 150
EXPLORATION AGREEMENT:	No. 214
DRILLING AUTHORITY:	No. 1212 issued 1985-02-04
DRILLING CONTRACTOR:	In receivership - rig contracted from hank by Exco Energy Ltd.
DRILLING RIG:	"Mr. Ben" with National 370 drawworks
CLASSIFICATION:	New Field Exploratory (Northern)
ELEVATIONS:	G.L. 232.10m K.B. 236.10m
SPUD DATE:	1985-02-04 @ 1045 hrs.
COMPLETED DRILLING DATE:	Drilled to T.D. at 1626 @ 1985-03-05 2400 hours
RIG RELEASE:	1985-03-15 @ 1200 hrs.
WELL STATUS:	Dry and abandoned

WELL SUMMARY

DATE 1985-03-16

Well: Exco et al Tunago 2N-37 Location:

Elevations: KB 236.10 m GL 232.10 m CF N/A

History: Spud Date 85-02-04;1045 hrs. R.R. Date 85-03-16;1200 hrs. TD 1626 m

Status: Dry & Abandoned Producing Zone(s): N/A

A. DRILLING DETAILS

Hole Size	609mm	Depth	24.00 m	Logs	N/A		
Hole Size	444mm	Depth	133.00 m	Logs	N/A		
Hole Size	311mm	Depth	630.00 m	Logs	N/A		
Hole Size	216mm	Depth	1626.00 m	Logs	AC-GR-CAL/CN-CDL-GR-YCAL/DIL-GR-CAL CBL-CCL-GR/Dir. Survey		
Casing Size		Grade		Depth		Cement Vol	
Casing Size	508mm	Grade	K-55	Depth	23.69 m	Cement Vol	4.4 m^3 Permafrost + 2% $CaCl_2$
Casing Size	339mm	Grade	K-55	Depth	122.00 m	Cement Vol	
Casing Size	244mm	Grade	K-55	Depth	630.00 m	Cement Vol	Refer to cementing summary for details.

DST No	1	Int 1285.60 m - 1299.60 m	Zone	Mount Clark - MISRUN	
DST No	2	Int 1283.48 m - 1297.48 m	Zone	Mount Clark - MISRUN	
DST No	3	Int 1241.50 m - 1296.50 m	Zone	Mount Clark	
DST No		Int	Zone		
DST No		Int	Zone		
Core No		Int	Zone		Rec
Core No		Int	Zone		Rec
Core No		Int	Zone		Rec

Plug No	1	Int 1626 m - 1525 m	Cement Vol	5.2 m^3	Class "G"	Felt	No
Plug No	2	Int 1350 m - 1250 m	Cement Vol	6.9 m^3	Class "G" + 2% $CaCl_2$	Felt	Yes @ 1238 m
Plug No	3	Int 660 m - 600 m	Cement Vol	7.8 m^3	Class "G" + 2%	Felt	Yes, not present
Plug No	4	Int 600 m - 244mm casing packer	Cement Vol	Cup w/1.8 m^3	Permafrost	Felt	No
	5	30 m - 0 m		1.11 m^3	Permafrost		No

B. COMPLETION DETAILS

COMPLETION DATE

Perforations	Int	N/A	Zone		Type
	Int		Zone		Type
	Int		Zone		Type

Stimulations: Formation N/A

Tubing Details N/A

Anchor Packer Details N/A

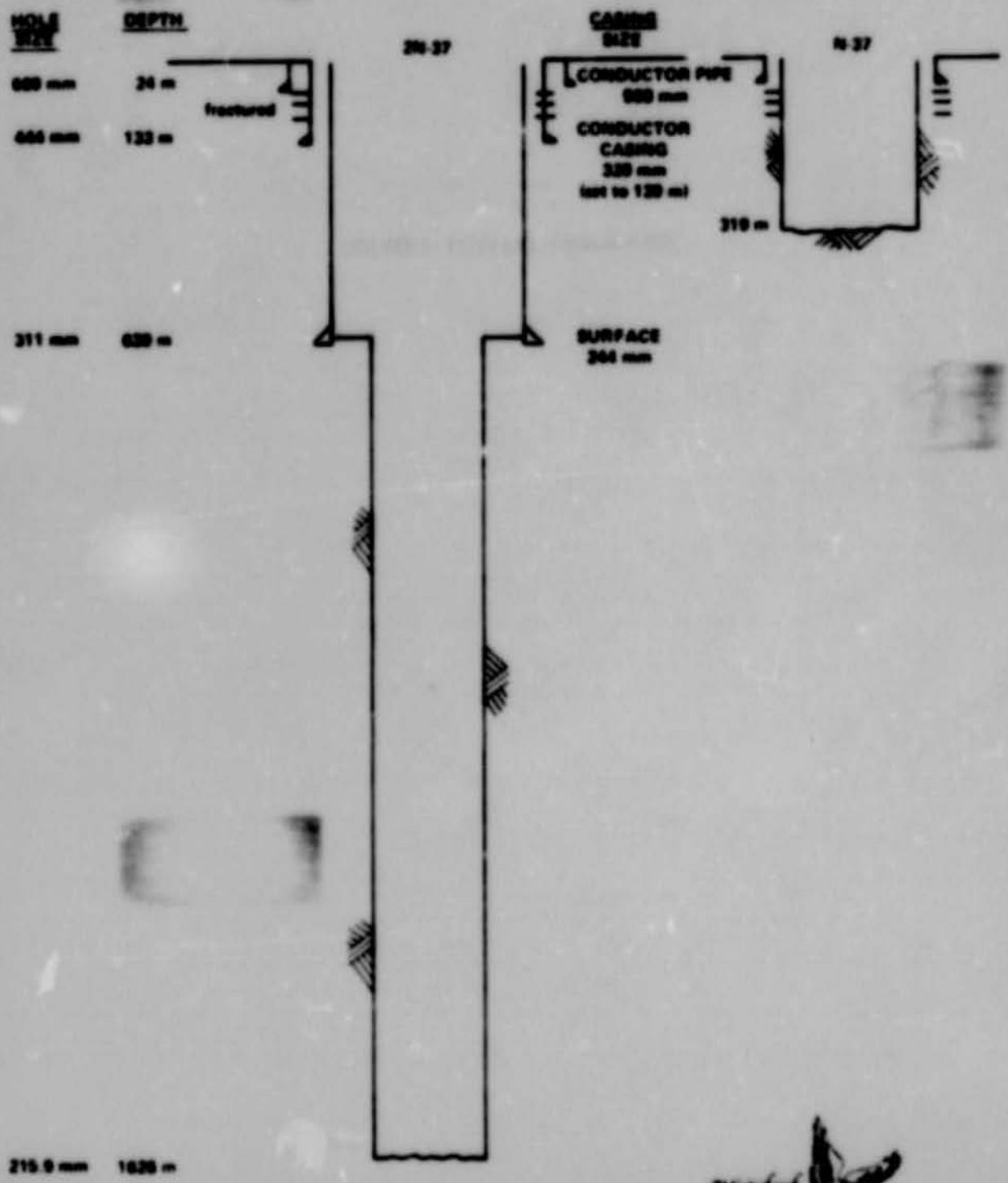
Pumping Equipment N/A

Remarks

See specific forms for more detail

ENGINEER Mel Nichols

EXCO ENERGY LTD.
HOLE CONFIGURATION AND CASING SETTING DEPTH
FOR TUNAGO N-37 & 2N-37



DOWNHOLE PROBLEMS ENCOUNTERED

SUMMARY

Comment

The experience gained from drilling the Tunago N-37 well location was put to good use in drilling the 2N-37 location. This was particularly true of the decision to run and set 508 mm conductor pipe before attempting to run and set 339 mm conductor casing.

Although the 508 mm conductor pipe was only set to 24 metres, it was an important string in that it prevented further erosion uphole or a washout of such magnitude that the stability of the drilling rig would be threatened.

After the setting of 508 mm conductor 339 mm conductor casing was to be run to a point below the sloughing section. Based on the offset N-37 well, it was determined that this troublesome section would be cased off at approximately the 100-120 metre depth. In actual fact, the drilling of this section was much more difficult than originally anticipated; the hole continually sloughed in at this point and made drilling somewhat precarious. For example, after tripping for a bit at the 122 metre depth sloughing conditions made it near impossible to ream back to bottom. Following repeated attempts at drilling through this section, it was decided to run in open ended and cement the loose fill material in place. However, due to the porosity of the section, very little, if any, of the cement remained in place. In total, several plugs were attempted without success.

Finally, at the 133 metre depth it was decided to run and cement 339 mm conductor casing. Since the hole had filled in, the casing could not be run any deeper than approximately the 108 metre depth. With the use of rig tongs the casing was literally reamed down to the 120 metre mark. At this point the casing became crimped, and impossible to ream any further. Consequently, the casing was cemented in place at this depth. As expected, no cement returns were observed to surface even with the addition of C-322 Fluid Less additive and Celloflake. A remedial cement job was run by cementing down the annulus. Once completed, the rig nippled up a 346 mm 21 000 kPa Annular Preventer, conducted a pressure test and then drilled out the floats and proceeded to drill ahead in 311 mm surface hole.

While drilling surface hole with Air and Durafoam the hole conditions were very stable. Aside from dealing with the water influx to the wellbore, there was little fill noted, or related drilling problems encountered while drilling this interval. At the 630 metre depth 244 mm surface casing was run. A combination external casing packer and stage tool were run in an attempt to obtain a competent cement bond on the top hole section. A bond log ran over this section indicated that only the bottom 100 metres of surface hole had retained cement sufficient to ensure a good bond. As for the section above the external casing packer, very little had been accomplished by running the tool since virtually no cement remained in place. Subsequently, cement was run down the annulus to stabilize the top of the 339 mm casing.

After nippling up a 229 mm 21 000 kPa Blowout Preventer and perfomming both a pressure test and formation leak-off test, 215.9 mm main hole drilling commenced. From 630 metres to total depth at 1626 metres very few problems were observed. Once total depth was reached a salt saturated mud system was run. With initial mud weight gradient of 12 kPa/m , compared to a leak-off test gradient of only 10 kPa/m it was not surprising that lost circulation was first noted. Additions of lost circulation material helped heal the problem in short order.

Afterwards, several clean out trips were required to enable the first log to reach bottom. Following the completion of the logging program, three (3) tests were run across the Mount Clark formation, with two (2) of the three (3) tests being misruns. In both cases the packers failed to properly seat.

Later, based on an analysis of the logs run to date and the drill stem test results, the Calgary office of Exco Energy Ltd. ordered the abandonment of the Tunago 2N-37 well. Plugs were run across the porous zones and inside the surface casing to prevent any possible migration of downhole gases.

At this time the rig and auxiliary equipment were moved off location to the racksite.

SECTION II

GEOLOGICAL SUMMARY

GEOLOGICAL REPORT

for

EXCO ET AL TUNAGO 2N-37

McLEOD GEOLOGICAL ENTERPRISES LTD.

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EXCO ET AL TUNAGO 2N-37

GEOLOGICAL FORMATIONS K.B. 236.48 m.

	DEPTH	ELEVATION
Mount Kindle	20.	216.48
Franklin Mountain	104.	132.48
Saline River	615.6	-379.12
Mount Cap	1010.4	-773.92
Mount Clark	1276.	-1039.52
Pre Cambrian	1292.6	-1056.12
T.D.	1626.	-1389.52

EXCO ET AL TUNAGO 2N-37

SAMPLE DESCRIPTION

0 - 12	**SANDSTONE, loose, rounded to subrounded varicolored, poorly sorted, quartz, various granite, carbonate grains.**
12 - 15	**Clay, grey-brown, imbedded sand and pebbles.**
15 - 20	**Gravel, boulders and pebbles etc. in sand and clay matrix.**
20 - 24	DOLOMITE, light brown, cream, finely crystalline, tight, hard.
24 - 30	DOLOMITE, light grey-brown, finely crystalline, hard, with stringers red mudstone/shale, soft, silty to sandy.
30 - 35	DOLOMITE, light grey-brown, finely crystalline, poor inter-crystalline to small vug porosity, no shows.
35 - 40	DOLOMITE, as above.
40 - 45	DOLOMITE, as above, trace red. Dolomite, trace iron stain.
45 - 50	DOLOMITE, grey, grey-brown, finely crystalline, trace red Dolomite, traces micro vug porosity.
50 - 55	DOLOMITE, as above, part slightly coarser, medium crystalline, traces small to micro vug porosity, part drusy.
55 - 60	DOLOMITE, light brown, grey-brown, fine to medium crystalline, traces micro vug porosity.
60 - 65	DOLOMITE, light brown, as above, traces inter-crystalline porosity.
65 - 70	DOLOMITE, as above, with 20% white, chert or quartz, trace clear quartz crystal viens, with trace orange-red mudstone.
70 - 75	DOLOMITE, light brown, traces red, medium to coarse crystalline, mainly loose crystals, traces drusy vug linings, scattered clear quartz crystals.
75 - 80	DOLOMITE, light brown, grey, part red, medium to coarse crystalline, scattered chert fragments, traces drusy vug porosity.

SAMPLE DESCRIPTION - Continued

80 - 85	DOLOMITE, as above, trace tripolitic chert, with red mudstone, stringer.
85 - 90	Chert, grey, white, massive, part secondary often fossil Dolomite, part with vugs lined with quartz crystals, with streaks orange to reddish silicified mudstone (?), trace blackish nodules (?), scattered leached vugs and viens.
90 - 95	Chert, as above.
95 - 100	Chert, as above, with Dolomite, grey fine crystalline, traces drusy vug porosity.
100 - 105	DOLOMITE, grey, fine to medium crystalline with varicolored chert, massive, traces siliceous mudstone, trace quartz.
105 - 110	DOLOMITE, grey, white, pink, fine to medium crystalline, trace red mudstone stringer with chert, white, grey, massive traces clear quartz crystals.
110 - 115	DOLOMITE, brown, grey, fine to part medium crystalline, traces white and grey chert, few red and/or orange-red Dolomite grains.
115 - 120	DOLOMITE, light brown, grey, fine to medium crystalline, trace drusy vug porosity, scattered white, part translucent, chert, rare clear quartz crystal.
120 - 125	Chert, grey, white, yellow, massive, part translucent, with Dolomite, grey, brown, red, yellow, fine to medium crystalline, trace fossil shadows, part appears pelletoidal (?), traces drusy vug porosity.
125 - 133	DOLOMITE, as above,with 30% chert as above.
133 - 135	DOLOMITE, white, trace red and yellow stain, finely crystalline, traces quartz veining and vug linings.
135 - 140	DOLOMITE, as above, traces siliceous residue.
140 - 145	DOLOMITE, light grey, white, very finely crystalline, traces pink, trace orange yellow stain (oxidation).
145 - 150	DOLOMITE, as above, increases in pink Dolomite, minor Dolomite rhombs imbedded in anhydrite matrix, trace stringer yellow shale, soft.

SAMPLE DESCRIPTION - Continued

150 - 155	DOLOMITE, as above, with medium crystalline Dolomite in siliceous to tripolitic chert.
155 - 160	DOLOMITE, light grey-brown, very finely crystalline, hard.
160 - 165	DOLOMITE, grey, finely crystalline, slightly sucrosic texture, rare trace green shale, trace white chert.
165 - 170	DOLOMITE, light grey, finely crystalline, trace red mottling, trace waxy green shale inclusions, trace white, very fine sucrosic Dolomite, trace white opalescent chert.
170 - 175	DOLOMITE, as above, scattered rosy-red Dolomite, trace anhydrite (?), trace chert, rare yellow stain.
175 - 180	DOLOMITE, grey, buff, minor red, finely to very finely crystalline, trace chert, trace pale green shale, few well rounded quartz grains (.05 mm.) scattered yellow oxidized stain.
180 - 185	DOLOMITE, light grey-brown, white-grey very finely crystalline, hard.
185 - 190	DOLOMITE, as above, trace green shale, trace yellow shale, with imbedded quartz grains.
190 - 195	DOLOMITE, as above, trace red shale, with light brown Dolomite rhombs in anhydritic(?) matrix, scattered rounded quartz grains (?), rare micro vug porosity, trace grey-black imbedded mineral.
195 - 200	Sand, loose, well rounded, polished grains, vari-colored up to 2-3 mm., trace pebbles (cavings ?), with Dolomite, grey, finely crystalline.
200 - 210	DOLOMITE, light grey, finely crystalline, trace drusy vug porosity, rare trace chert.
210 - 215	DOLOMITE, grey, trace red, medium crystalline, trace green shale partings, traces anhydrite.
215 - 220	DOLOMITE, as above, part light grey-brown, trace pink, part anhydrite matrix, trace pyrite.
220 - 225	DOLOMITE, grey, very finely crystalline, with minor medium crystalline, red to grey Dolomite.

SAMPLE DESCRIPTION - Continued

225 - 230	DOLOMITE, as above, trace pyrite, trace red medium crystalline Dolomite.
230 - 235	DOLOMITE, light grey, very fine crystalline, streaks medium crystalline with stringer red Dolomite, medium crystalline with stringer waxy pale green, pyrite shale.
235 - 240	DOLOMITE, grey, white, light brown, very fine to finely crystalline, trace pyrite, trace oolitic chert.
240 - 245	DOLOMITE, light grey to grey-brown, finely crystalline, part medium, trace pyrite.
245 - 250	DOLOMITE, light buff, part pink, traces yellow, fine to medium crystalline, scattered pyrite, trace pale green shale.
250 - 255	DOLOMITE, grey-brown, minor red, trace pyrite, as above.
255 - 260	DOLOMITE, as above.
260 - 265	DOLOMITE, light grey, very finely crystalline.
265 - 270	DOLOMITE, grey, part light brown, very fine to finely crystalline, trace yellow shale.
270 - 275	DOLOMITE, as above, traces pyrite.
275 - 280	DOLOMITE, as above.
280 - 285	DOLOMITE, grey, light brown, as above.
285 - 290	DOLOMITE, as above, trace green shale, inbedded pyrite.
290 - 305	DOLOMITE, as above, silty residue.
305 - 315	DOLOMITE, grey, white, fine to part medium crystalline, slightly silty residue, trace buff Dolomite, rare pyrite inclusion.
315 - 320	DOLOMITE, as above, trace pyrite, with minor brown, finely crystalline Dolomite.
320 - 325	DOLOMITE, medium grey-brown, finely crystalline, slightly argillaceous residue, trace shaly Dolomite.
325 - 330	DOLOMITE, light grey to white, finely crystalline, traces pink and light brown, part slightly medium crystalline.

SAMPLE DESCRIPTION - Continued

330 - 335	DOLOMITE, light grey-white as above.
335 - 340	DOLOMITE, as above, coarser, becoming fine to medium crystalline, traces grey to green shale.
340 - 345	DOLOMITE, as above, with pink, light brown, medium crystalline Dolomite, traces shale, argillaceous residue.
345 - 350	DOLOMITE, light grey-brown, grey, fine to very finely crystalline, argillaceous partings, trace pink Dolomite.
350 - 355	DOLOMITE, light grey, very finely crystalline, with minor pink and light brown, medium crystalline Dolomite.
355 - 360	DOLOMITE, as above.
360 - 365	DOLOMITE, light pinkish white, medium crystalline, rare drusy vug, traces green shale partings, part siliceous residue.
365 - 370	DOLOMITE, light grey-white, very finely crystalline, scattered pyrite, rare pale green shale inclusion, trace veining.
370 - 375	DOLOMITE, as above with stringer brown-yellow shale.
375 - 380	DOLOMITE, as above, pyrite common, trace quartz crystals.
380 - 385	DOLOMITE, as above.
385 - 390	DOLOMITE, as above, diseminated pyrite.
390 - 395	DOLOMITE, as above, with pale waxy green shale, disseminated pyrite, trace pink Dolomite.
395 - 400	DOLOMITE, light grey-white, very finely crystalline, traces pyrite, rare trace pale green shale.
400 - 420	DOLOMITE, as above, part light buff rare shale partings.
420 - 425	DOLOMITE, medium grey-brown, very finely crystalline, slightly argillaceous residue, trace dark brown shale.
425 - 430	DOLOMITE, light brown, grey, very finely crystalline, trace green shale.
430 - 440	DOLOMITE, as above, part grey, traces diseminated pyrite, traces green shale.

SAMPLE DESCRIPTION - Continued

440 - 445	DOLOMITE, as above with green shale partings and inclusions.
445 - 450	DOLOMITE, as above slight pink cast.
450 - 455	DOLOMITE, as above, streak brown sucrosic Dolomite, trace shale.
455 - 460	DOLOMITE, as above
460 - 465	DOLOMITE, light grey-white, finely crystalline traces pyrite, somewhat friable.
465 - 470	DOLOMITE, grey, light brown, very finely crystalline, traces pyrite, harder than above.
470 - 475	DOLOMITE, as above, trace shale.
475 - 485	DOLOMITE, light grey-brown, very finely crystalline, argillaceous in part, trace pyrite, trace chert.
485 - 490	DOLOMITE, medium grey-brown, microcrystalline, argillaceous to shaly.
490 - 495	DOLOMITE, grey-brown to light brown, micro to very finely crystalline, argillaceous.
495 - 500	DOLOMITE, as above, rare STYLOLITE, trace green shale.
500 - 505	DOLOMITE, medium grey-brown as above, part argillaceous, trace shaley Dolomite.
505 - 510	DOLOMITE, grey-brown, microcrystalline, argillaceous to part shaly.
510 - 515	DOLOMITE, grey-brown, microcrystalline, argillaceous, part sub-lithographic trace veining, scattered Dolomitic, grey-brown shale.
515 - 520	DOLOMITE, grey-brown as above with shale, green Dolomitic.
520 - 525	DOLOMITE, as above, minor shale.
525 - 530	DOLOMITE, grey-brown, microcrystalline, slightly argillaceous, with shale, grey, green.
530 - 535	DOLOMITE, as above, part grey, microcrystalline, argillaceous.

EXCO ET AL TUNAGO 2N-37

SAMPLE DESCRIPTION - Continued

535 - 540	DOLOMITE, light brown, microcrystalline to cryptocrystalline, part argillaceous.
540 - 545	DOLOMITE, as above, with grey to grey-green Dolomitic shale.
545 - 555	DOLOMITE, with shale, as above.
555 - 570	DOLOMITE, medium brown, microcrystalline, minor shale.
580 - 585	DOLOMITE, as above, with shale, green-grey, slightly blocky.
585 - 595	DOLOMITE, as above with shale.
595 - 600	Shale, grey-green, Dolomitic with Dolomite, as above.
600 - 605	DOLOMITE and shale, as above, trace gypsum stringer in light brown cryptocrystalline Dolomite.
605 - 610	DOLOMITE, as above, with green shale, trace gypsum.
610 - 615	DOLOMITE, light brown, cryptocrystalli , tight with shale green, grey, Dolomitic.
615 - 620	Shale, red, green, slightly Dolomitic, interbedded, slightly fissile, slightly micro-micaceous with Dolomite, light brown cryptocrystalline.
620 - 625	Shale, as above, trace gypsum, minor Dolomite stringers, light brown cryptocrystalline.
625 - 630	Shale, as above.
630 - 635	Very poor sample.
635 - 640	Shale, green, grey, with Dolomite, grey-brown, microcrystalline.
640 - 645	Shale, green, red, slightly micro-micaceous with anhydrite, white crystalline.
645 - 650	Shales, with anhydrite, as above.
650 - 655	Shale, red, part green, part mudstone with anhydrite, clear, white crystalline.

SAMPLE DESCRIPTION - Continued

655 - 670	Shale, as above, with anhydrite stringer, part Dolomitic with Dolomite red, microcrystalline, argillaceous.
670 - 675	Shale, green, minor red, with anhydrite lens and stringers, trace red microcrystalline Dolomite. Possible salt casts.
675 - 680	Shale, green, traces red, as above, traces anhydrite with stringer brown, earthy Dolomite.
680 - 685	Shale, as above, with anhydrite stringer and lens, clear, reddish, finely crystalline.
685 - 690	Shales, red and green as above, with anhydrite as above.
690 - 695	Salt, white, clear, massive with shale as above.
695 - 700	Salt, with red soft shales, minor green shale.
700 - 705	Shale, green, trace red, soft in part, with salt, clear, pink, massive.
705 - 710	Shale and salt as above.
710 - 715	Shale and salt as above. (Note: Poor samples, drilling with air and foam, poor returns.)
715 - 720	Salt, with green shale to mudstone.
720 - 725	No sample - no recovery.
725 - 730	Shale-mudstone, green, red, soft with salt.
730 - 735	Mudstone and salt, as above.
735 - 745	Shale-mudstone, green, red, soft minor salt, minor light grey-brown Dolomitic shale, part with thin salt laminae, part anhydrite.
745 - 750	Shale-mudstone, as above, with salt interbeds and lens.
750 - 755	Shale, as above with shale, brown-red subfissile.
755 - 760	Shale, red, minor green, soft slightly anhydrite, with salt lens.

SAMPLE DESCRIPTION - Continued

760 - 775	Shale-mudstone, green, red, interbedded soft, minor grey, brown, few anhydrite laminae.
775 - 780	Shale-mudstone, as above, trace salt or anhydrite laminae.
780 - 785	Shale-mudstone as above, with traces anhydrite and salt, (Drill times indicated salt).
785 - 790	Shale-mudstone as above, traces salt and anhydrite.
790 - 795	Shale-mudstone as above, mainly green, trace light brown Dolomitic shale.
795 - 800	Anhydrite, clear crystalline, with imbedded salt, with green to red mudstone.
800 - 805	Salt, clear, white, with anhydrite, grey-white, microcrystalline, part dolomitic, trace brown shale.
805 - 810	Shale-mudstone, red and green, inter-laminated, minor light brown, with trace (?) salt, clear red, massive.
810 - 815	Salt, clear, red, brown, with anhydrite, grey micro-crystalline and Shale-mudstone as above.
815 - 825	Salt, as above, traces anhydrite, brown Dolomitic with Shale-mudstones as above, part with salt veining.
825 - 830	Anhydrite, grey-brown, cryptocrystalline, Dolomitic with interbedded salt and shales as above.
830 - 835	Salt, clear red, massive, with red and green shales, very slightly Dolomitic, traces anhydrite.
835 - 840	Salt, as above, minor anhydrite, with Shale-mudstone, as above.
840 - 850	No sample.
850 - 860	Shale-mudstone, green, red, soft, very slightly Dolomitic, with anhydrite, grey-brown cryptocrystalline.
860 - 870	Anhydrite, grey-brown, cryptocrystalline, slightly Dolomitic, traces red and green shales.
870 - 885	Shale-mudstone, red and green, soft very slightly Dolomitic with minor anhydrite, traces salt, trace brown shale.

SAMPLE DESCRIPTION - Continued

885 - 890	Shales, as above, with shale, olive green.
890 - 895	Salt, clear, orange-red, massive with shale-mudstone, green, red, to scattered anhydrite, grey-brown crypto to microcrystalline.
895 - 905	Shale, red, pale to olive green, soft with thin salt laminae, trace light brown, Dolomitic anhydrite, cryptocrystalline.
905 - 910	Salt, clear red, massive, and shale, as above.
910 - 915	Shale-mudstone, as above, traces light grey shale, minor grey-brown anhydrite, possible salt (?).
915 - 920	Shale-mudstone, as above, trace anhydrite, possible salt lens.
920 - 930	Shale-mudstone, red, part mottled green, very slightly Dolomitic, with thin salt stringer, traces anhydrite.
930 - 940	Shale, green, red, somewhat indurated, trace anhydrite, scattered salt cast, possible salt laminae.
940 - 950	Salt, clear, massive, minor shale-mudstone.
950 - 960	Salt, etc as above.
960 - 970	Shale-mudstone, green, grey, minor red, with interbeds of microcrystalline, Dolomite and salt.
970 - 980	Salt, clear, massive, with shale, green, grey, slightly mudstone, very slightly Dolomitic, slightly indurated.
980 - 990	Shale, grey, green, slightly fissile, slightly Dolomitic, with thin stringers of brown anhydrite, microcrystalline, Dolomitic.
990 - 1000	Shale, green, grey, as above, trace brownish red, with anhydrite, and salt, clear, massive.
1000 - 1010	Shale, green, red, as above, with salt, clear massive, trace anhydrite.
1010 - 1020	Shale, medium green, moderately indurated, slightly Dolomitic with stringers anhydrite, brown, microcrystalline.
1020 - 1030	Shale, as above, part green-grey, scattered anhydrite.

SAMPLE DESCRIPTION - Continued

1030 - 1040	Shale and anhydrite, as above.
1040 - 1050	Shale, green, grey-green slightly Dolomitic, moderately indurated with anhydrite interbeds, dark brown, micro-crystalline.
1050 - 1055	Shale and anhydrite as above, trace brown translucent chert.
1055 - 1060	Shale, dark green, slightly fissile, scattered anhydrite stringers, trace chert.
1060 - 1065	Shales, as above, trace brown, with brown anhydrite, trace dark brown chert.
1065 - 1070	Shales, as above.
1070 - 1075	Anhydrite, light to dark brown, very fine to finely crystalline, Dolomitic, with minor shale as above.
1075 - 1080	Shale, grey-green, very slightly Dolomitic, with anhydrite as above and chert, dark brown, translucent, trace drusy crystals.
1080 - 1085	Shale, dark green, slightly splintery with minor chert and anhydrite.
1085 - 1090	Shale, as above, slightly micro-micaceous.
1090 - 1095	Shale, as above, trace black carbonaceous (?) fragment trace chert.
1095 - 1100	Shale, as above with anhydrite, dark brown, micro-crystalline, traces chert.
1100 - 1105	Shale, as above, trace anhydrite.
1105 - 1110	Shale, green, as above, traces black fossil (?) possibly carbonaceous (?).
1110 - 1115	Shale, as above, rare fossil.
1115 - 1130	Shale, as above, slightly fissile
1130 - 1135	Shale, medium green, slightly fissile part splintery, slightly micro-micaceous.
1135 - 1140	Shale, as above, trace grey-brown, Dolomitic shale, rare trace pyrite, possibly shell replacement.

SAMPLE DESCRIPTION - Continued

1140 - 1145	Shale, as above, trace Brachiopod.
1145 - 1150	Shale, as above.
1150 - 1155	Shale, as above, trace fossil, part appears chitinous.
1155 - 1160	Shale, as above, trace Trilobite, few Brachiopods.
1160 - 1175	Shale, green subfissile, trace pyrite.
1175 - 1185	Shale, green, slightly fissile, slightly spintery, slightly micro-micaceous.
1185 - 1190	Shale, as above, part dark grey-black, trace pyrite.
1190 - 1195	Anhydrite, dark brown, microcrystalline, Dolomitic, traces brown translucent chert, with shale as above.
1195 - 1200	Anhydrite, medium brown calcareous very finely crystalline, Dolomitic, scattered brown translucent chert, with shale, as above.
1200 - 1205	Shale, dark green, black, fissile, scattered Trilobites, trace bitumen with imbedded Dolomite rhombs.
1205 - 1210	Shales, dark green, grey black, slightly fissile, few Trilobites, with minor Dolomite, dark brown, very finely crystalline.
1210 - 1215	Shale, dark green, grey green, micro-micaceous, sub-fissile, scattered fossils, trace brown, crypto-crystalline limestone, argillaceous.
1215 - 1230	Shale, as above, micro-micaceous, fissile, traces fossils, trace anhydrite.
1230 - 1235	Shale, as above.
1235 - 1240	DOLOMITE, dark brown, fine cyrstalline, white veining, traces pyrite, slightly bituminous, with shale, as above.
1240 - 1250	Shale, green, fissile, trace fossils with Dolomite as above.
1250 - 1255	Siltstone, grey-brown, Dolomitic, traces glauconite, with shales, as above.
1255 - 1260	Shale, green, with interbeds of siltstone and Dolomite as above, trace fossils.

SAMPLE DESCRIPTION - Continued

1260 - 1265	Siltstone, grey-brown, Dolomitic, glauconite, with shale interbeds and traces brown Dolomite, fine crystalline.
1265 - 1270	Siltstone, as above, with green shale, as above.
1270 - 1275	DOLOMITE, dark brown, part with white veining, finely crystalline, with shale, as above.
1275 - 1280	Sandstone, grey, green, medium grained, rounded, medium sorting, slightly Dolomitic, siliceous, glauconitic, tight, no shows, with shale, as above.
1280 - 1285	Sandstone, white, grey, as above, trace bitumen enfilled porosity, few floating coarse grains in siltstone to sandstone, minor shale.
1285 - 1290	Siltstone, grey-brown, imbedded coarse, rounded quartz with bituminous partings and Sandstone, grey-white, fine grained, Dolomitic, siliceous, rounded medium, well sorted, tight minor shale trace intergranular porosity, pyrobitumen.
1290 - 1295	Siltstone to sandstone, as above with Dolomite, light brown, cryptocrystalline, trace red stain.
1295 - 1300	DOLOMITE, light brown, microcrystalline, argillaceous with green Dolomitic shale interbands, trace red Dolomite veining and inclusions.
1300 - 1305	DOLOMITE, as above, becoming shaley with green Dolomitic shale, green.
1305 - 1315	DOLOMITE, brown cryptocrystalline, argillaceous to shaley, with red veining and inclusions, part grading to Dolomitic shale, trace pyrobitumen.
1315 - 1320	Shale, grey, grey-brown, very Dolomitic, with green Dolomitic shale.
1320 - 1325	Shale, light grey-brown, very Dolomitic with green Dolomitic shale.
1325 - 1330	Shale, grey, very Dolomitic, part appears to be shaley Dolomite, with green Dolomitic shale.
1330 - 1335	Shale, as above.
1335 - 1345	Shale, grey, very Dolomitic, appears to be Dolomite, white veining, with green Dolomitic shale.

SAMPLE DESCRIPTION - Continued

1345 - 1355	Shale, as above, part black trace bituminous (?) partings.
1355 - 1365	Shale, green, grey, blocky, trace Dolomite veining, trace black shale, trace black very Dolomitic siltstone, argillaceous (bituminous), disseminated pyrite.
1365 - 1370	Shale, green, grey, fissile, trace siltstone, trace black flaky shale, part with Dolomite veining.
1370 - 1380	Shale, as above, trace silt, black shale, rare Dolomite vein.
1380 - 1395	Shale, green, grey, slightly fissile, trace black, flaky shale, scattered white Dolomite veining.
1395 - 1405	Shale, dark grey-green, slightly blocky, few Dolomite veins, trace black shale.
1405 - 1410	Shale, as above, increase in black shale.
1410 - 1420	Shale, as above.
1420 - 1425	Shale, black, blocky, with white Dolomite veins, with shale, grey-green as above.
1425 - 1430	Shale, as above, trace siltstone black.
1430 - 1435	Shale, dark grey to black, part bituminous (?).
1435 - 1440	Shale, black, part green, black is bituminous, part flaky, with white Dolomite veining.
1440 - 1445	Shale, as above, increase in green-grey.
1445 - 1450	Missed sample.
1450 - 1455	Shale, black, blocky, interbeds of siltstone, trace coarse Dolomite crystal veining.
1455 - 1460	Shale, green, blocky, with black shale, as above.
1460 - 1465	Shale, black, blocky with Siltstone, black, bituminous, very slightly Dolomitic.
1465 - 1475	Shale, dark grey, black, blocky, slightly micromicaceous, minor silt.
1475 - 1480	Shale, black, as above, silty, blocky.

SAMPLE DESCRIPTION - Continued

1480 - 1485	Shale, as above, silt laminae, trace black, flaky shale, possible slickensided (?).
1485 - 1500	Shale, as above, trace Dolomite veins, minor green shale, few siltstone laminae.
1500 - 1510	Shale, black, blocky, few Dolomite crystal viens, trace slickensides, trace silt, minor grey shale.
1510 - 1515	Shale, as above, trace diseminated pyrite.
1515 - 1520	Shale, as above, laminated with grey shale, Dolomite veins.
1520 - 1525	Shale, black, slightly micro-micaceous, blocky, pyrite common, Dolomite veining common, slickensided in part.
1525 - 1530	Shale, as above.
1530 - 1545	Shale, black, silty, blocky pyrite, trace Dolomite veins, minor green shale.
1545 - 1555	Shale, as above, siltstone stringer, trace pyrite, Dolomite veining.
1555 - 1560	Shale, as above, trace slickensided, Dolomite veining.
1560 - 1575	Shale, as above, becoming quite hard, silty.
1575 - 1585	Shale, black, blocky, brittle, silty, trace calcite veining.
1585 - 1600	Shale, very dark grey to black brittle, hard, silty, rare slickensides.
1600 - 1610	Shale, as above.
1610 - 1615	Shale, as above, with shale, green, hard, blocky.
1615 - 1620	Shale, as above, increase in green shale.
1620 - 1625	Shale, green, hard blocky, trace Dolomite veining.

SECTION III

ENGINEERING SUMMARY

CASING AND CEMENTING SUMMARY

Enclosed are casing and cementing summaries for conductor pipe, conductor casing and surface casing.

500 mm CONDUCTOR PIPE

Whitehead

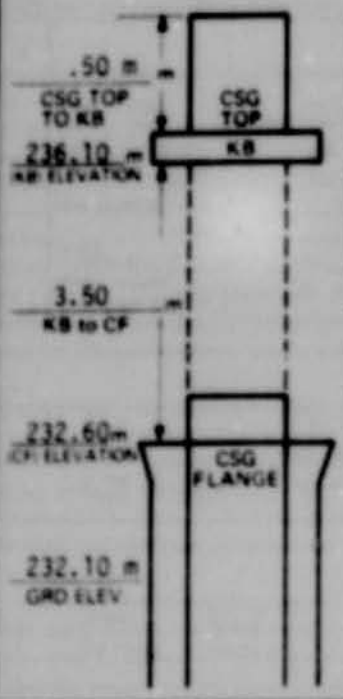
PAGE

CASING SUMMARY

WELL Esso et al Tunago 2N-37 LOCATION DATE 85-02-06

Conductor SIZE 508mm KB 236.10 m KB to CF 3.90 m

New/Used Inspected By Mel Nichols Drifted To N/A API diam.



NO	DESCRIPTION	MEASURED LENGTH	KB DEPTH
1		12.76	10.93
2		11.43	+ 0.50
	Scratchers Nil		
	Centralizers Nil		

	Total String	24.19	
minus	KB to Csg Top (STICK UP)	.50	Cut-off Jt. Length
	Landed Depth KB	23.69	
	Hole Depth KB	24.50	4.80
	Distance Csg Landed Off Bottom	.81	

Cementing Company Halliburton Well Services Ltd.

Wash Type Nil Volume -

Cement Type Lead Slurry Permafrost Volume 4.44 m^3 (6 t =

Additives 2% Volume 155 sx)

Cement Type Tail Slurry Volume

Additives Volume

Cement Type Above Stage Collar Volume

Additives Volume

Displacement Rate Max 2 MPa Avg 1.12 (m3/min)

Calculated Cement Top(s) Surface KB 4.90 m KB

Returns Mud Foam m3 Cement 1.8 m3

String Wt. in a mud wt. of Foam kg/m3 = daN

Wt. set on Slips N/A daN

Remarks Good foam returns throughout - while mixing and displacing weld and tab joint.

Engineer Mel Nichols

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE No. 43 113

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 (YEAR) 02 (MONTH) 06 (DAY)

OWNER, OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL No. AND LEASE
Ranger Distributors Limited (Exco)	Tunago	Exco et al Tunago 2N-37

CALLED OUT (DATE / TIME)	ON LOCATION (DATE / TIME)	JOB STARTED (DATE / TIME)	JOB COMPLETED (DATE / TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-02-06	85-02-06	N.W.T.					

TYPE OF JOB	✓
SURFACE	
INTERMEDIATE	
PRODUCTION	
LINER	
SQUEEZE	
PLUG	
PUMP	
PRESSURE TEST	
OTHER	✓

WELL OR HOLE DATA

HOLE DATA — HOLE SIZE: 609 mm; TOTAL DEPTH: 25 m; TYPE MUD: Air; VISC; DENSITY

CASING, TUBING OR LINER DATA — NEW ☒ USED ☐: SIZE 508 mm, kg/m 158.5, GRADE K-55, DEPTH 25 m; SIZE mm, kg/m, GRADE, DEPTH m

PERFORATIONS FROM m TO m; FROM m TO m

PLUG FROM m TO m; FROM m TO m

WASH FLUID TYPE: Nil; VOL m³; DISPLACING FLUID TYPE: H_2O; VOL: 3.5 m³

TEMP DATA — MIXING WATER %; SLURRY %; DISPLACING FLUID %; RETURNS %

PRODUCTS

EQUIPMENT	QUAN
BASKETS	
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	
FLOAT SHOE	
GUIDE SHOE	
INSERT FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER

TYPE; SIZE mm; DEPTH SET m; TAIL PIPE m

TOP PLUG TYPE; BOTTOM PLUG TYPE

CEMENT HEAD

CONTINUOUS ☐ KNOCK OFF ☐ SWAGE ☒

OTHER

CEMENT DATA

TONS	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
6.0	G	Inland	Sacked	Permafrost	2% $CaCl_2$	1880	0.74

HALLIBURTON OPERATOR: K. Town

CUSTOMER REP

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED IN m³ — STAGE	TOTAL	IN FORMATION	PRESSURE MPa — TUBING	CASING	REMARKS
1	11:34 11:42	0.55					2.0	Mix and pump 6.0 t P.F.C.
2	11:42 11:45	1.12					2.0	Displace.

440 mm CONDUCTOR HOLE

Cement Plugs were run at 104 metres and 118 metres prior to running 339 mm Conductor Casing.

Note: The above noted plugs were run in an attempt to prevent the hole from sloughing in any further. When the interval cemented was drilled out it was evident that very little cement remained in place.

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE No. 43 115

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 02 11 (YEAR MONTH DAY)

OWNER OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL No. AND LEASE
Ranger Distributors Limited (Exco)	Tunago	Exco et al Tunago 2N-37

CALLED OUT DATE TIME	ON LOCATION DATE TIME	JOB STARTED DATE TIME	JOB COMPLETED DATE TIME	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-02-11 07:00	85-02-11 08:00	N.W.T.					

TYPE OF JOB	✓
SURFACE	
INTERMEDIATE	
PRODUCTION	
LINER	
SQUEEZE	
PLUG	✓
PUMP	
PRESSURE TEST	
OTHER	

WELL OR HOLE DATA

HOLE DATA: HOLE SIZE 444.5 mm; TOTAL DEPTH 104 m; TYPE MUD Air/Foam; VISC ____; DENSITY ____

CASING TUBING OR LINER DATA: NEW ☐ USED ☐; SIZE ____ mm; kg/m ____; GRADE ____; DEPTH ____ m

SIZE ____ mm; kg/m ____; GRADE ____; DEPTH ____ m

PERFORATIONS: FROM ____ m TO ____ m; FROM ____ m TO ____ m

FROM ____ m TO ____ m; FROM ____ m TO ____ m

WASH FLUID TYPE H2O VOL 3.0 m³; DISPLACING FLUID TYPE H2O VOL 0.37 m³

TEMP DATA: MIXING WATER ____ °C; SLURRY ____ °C; DISPLACING FLUID ____ °C; RETURNS ____ °C

PRODUCTS	
EQUIPMENT	QUAN
BASKETS	
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	
FLOAT SHOE	
GUIDE SHOE	
INSERT FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER

TYPE ____ SIZE ____ mm

DEPTH SET ____ m; TAIL PIPE ____ m

TOP PLUG TYPE ____

BOTTOM PLUG TYPE ____

CEMENT HEAD

CONTINUOUS ☐ KNOCK OFF ☐ SINGLE ☑

OTHER ____

CEMENT DATA

TONNE	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
22.0	G	Inland	Sacked	Oilwell	3% CaCl2	1895	0.76

HALLIBURTON OPERATOR: K. Town

CUSTOMER REP: ____

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED IN m³ STAGE	TOTAL	IN FORMATION	PRESSURE MPa TUBING	CASING	REMARKS
1								Pump fresh water preflush.
2								Mix and pump slurry.
3								Displace.

HALLIBURTON

Ranger Distributors Limited (Exco)
Exco et al Tunago ZN-37
Ticket No.: 43 115

PLUG BACK JOB DATA

PLUG NO.	DEPTH TOP	DEPTH BOTTOM	TONNE	DISPLACEMENT (m^3)	TIME (min)
1	50	104	22.0	0.37	1

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE NO. 43 116

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 02 13 (YEAR MONTH DAY)

OWNER OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL NO. AND LEASE
Ranger Distributors Limited (Exco)	Tunago	Exco et al Tunago 2N-37

CALLED OUT (DATE TIME)	ON LOCATION (DATE TIME)	JOB STARTED (DATE TIME)	JOB COMPLETED (DATE TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-02-13 06:00	85-02-13 06:45	N.W.T.					

TYPE OF JOB ✓: SURFACE; INTERMEDIATE; PRODUCTION; LINER; SQUEEZE; PLUG ✓; PUMP; PRESSURE TEST; OTHER

WELL OR HOLE DATA

HOLE DATA — HOLE SIZE 444.5 mm; TOTAL DEPTH 118 m; TYPE MUD Air/Foam; DENSITY

CASING TUBING OR LINER DATA — NEW ☐ USED ☐: SIZE mm, kg/m, GRADE, DEPTH m

PERFORATIONS FROM m TO m; FROM m TO m

WASH FLUID TYPE H2O VOL 3.2 m³; DISPLACING FLUID TYPE H2O VOL 0.87 m³

TEMP DATA — BRAND, WATER %, SLURRY %; DISPLACING FLUID %, RETURNS %

PRODUCTS

EQUIPMENT	QUAN
BASKETS	
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	
FLOAT SHOE	
GUIDE SHOE	
INSERT FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER: TYPE, SIZE mm; DEPTH SET m; TAIL PIPE m

TOP PLUG TYPE; BOTTOM PLUG TYPE

CEMENT HEAD: CONTINUOUS ☐ KNOCK OFF ☐ SWAGE ☐; OTHER Nubbin

CEMENT DATA

TONNE	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
12.0	G	Inland	Sacked	Oilwell	3% CaCl2	1895	0.76

HALLIBURTON OPERATOR: K. Town CUSTOMER REP:

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED IN m³ STAGE	TOTAL	IN FORMATION	PRESSURE MPa TUBING	CASING	REMARKS
1								Pump fresh water preflush.
2								Mix and pump slurry.
3								Displace.

HALLIBURTON

Ranger Distributors Limited (Exco)
Exco et al Tunago 2N-37
TICKET NO.: 43 116

PLUG BACK JOB DATA

PLUG NO.	DEPTH TOP	DEPTH BOTTOM	TONNE	DISPLACEMENT (m^3)	TIME (min)
1	96.0	118	12.0	0.87	1

339 mm CONDUCTOR CASING

Weatherford

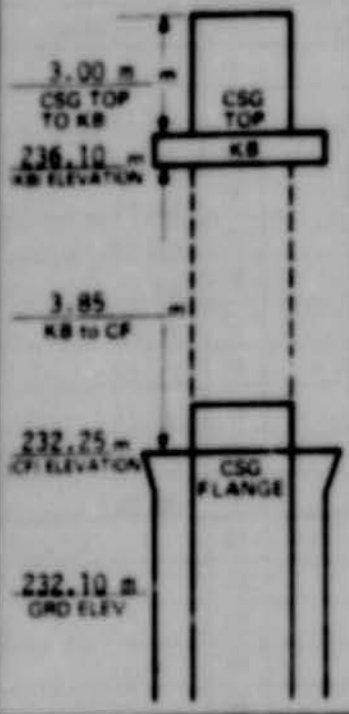
PAGE

CASING SUMMARY

WELL Exco et al Tunago 2N-37 LOCATION DATE 85-02-15

SURF/INT/PROD/LINER SIZE 339mm KB 236.10 m KB to CF 4.00 m

New/Used Inspected By Niel Nichols Drifted To N/A API diam



NO	DESCRIPTION	MEASURED LENGTH	KB DEPTH
1	Float Shoe	0.62	119.88
1	339mm Casing - 81.1 kg/m	9.59	110.29
1	Float Collar	0.62	109.67
10	339mm Casing - 81.1 kg/m	112.67	+ 3.00
	Scratchers Nil		
1	Centralizers Cement Basket 4 m		

	Total String	123.50	
minus	KB to Csg Top (STICK UP)	3.00	Cut off Jt. Length
	Landed Depth KB	120.50	
	Hole Depth KB	133.00 m	6.90
	Distance Csg Landed Off Bottom	13.50 m	

Cementing Company Halliburton Well Services Ltd.

Wash Type Fresh Water Volume 3.2 m^3

Cement Type Lead Slurry Oilwell "G" Volume 6.84 m^3 (9.0 t)

Additives 3% $CaCl_2$ + 0.75% C-322 (Fluid + 6 sx Volume

Cement Type Tail Slurry Celloflake Loss Additive) Volume

Additives Volume

Cement Type Above Stage Collar Volume

Additives Volume

Displacement Rate Max 1.2 m^3/min. Avg 0.97 m^3/min. (m3/min)

Calculated Cement Top(s) KB KB

Returns Mud Nil m3 Cement Nil m3

String Wt. in a mud wt. of Air kg/m3 - 21 000 daN

Wt. set on Slips N/A daN

Remarks Sloughing Dolomite - circulate and tong to depth of 120.50 m. After becoming stuck at this point, cement in place. Displace with 8.75 m^3 water. Plug down 1985-02-15 at 1945 hours.

Engineer Mel Nichols

Weatherford

PIPE TALLY SHEET

PAGE ____ OF ____

WELL Exco et al Tunago 2N-37 LOCATION

SIZE 339mm WT 81.1 kg/m GRADE K-55 COUPLING ST&C THRD 8 RD

DATE

JOINT	LENGTH	JOINT	LENGTH	JOINT	LENGTH	JOINT	LENGTH	JOINT	LENGTH
1	9.59	11	11.30	21		31		41	
2	11.41	12		22		32		42	
3	11.27	13		23		33		43	
4	11.48	14		24		34		44	
5	11.69	15		25		35		45	
6	11.22	16		26		36		46	
7	10.21	17		27		37		47	
8	11.23	18		28		38		48	
9	11.06	19		29		39		49	
10	11.79	20		30		40		50	
A	110.96	B	11.30	C		D		E	
51		61		71		81		91	
52		62		72		82		92	
53		63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F		G		H		I		J	

		SUB TOTAL
A	110.96	
B	11.30	122.26
C		
D		
E		
F		
G		
H		
I		
J		
	122.26	

Show 0.62 m
Float Collar 0.62 m
Other

	JOINTS	LENGTH
PAGE TOTAL	11	122.26 m
BROUGHT FWD	-	-
GRAND TOTAL	11	122.26 m

JOINTS ON LOCATION

Remarks

ENGINEER Mel Nichols

NOTE Use a new page for each casing type. Number joints in order of running. Indicate joints not run by * and do not include in total length.

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE No. 43 114

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 (YEAR) 02 (MONTH) 15 (DAY)

OWNER, OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL No. AND LEASE
Ranger Distributors Limited (Exco)	Tunago	Exco et al Tunago 2N-37

CALLED OUT (DATE / TIME)	ON LOCATION (DATE / TIME)	JOB STARTED (DATE / TIME)	JOB COMPLETED (DATE / TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-02-13 17:45	85-02-13 19:45	N.W.T.					

TYPE OF JOB ✓: SURFACE; INTERMEDIATE; PRODUCTION; LINER; SQUEEZE; PLUG; PUMP; PRESSURE TEST; OTHER ✓

WELL OR HOLE DATA

HOLE DATA: HOLE SIZE 444.5 mm; TOTAL DEPTH 133 m; TYPE MUD Air/Foam; WEIGHT; DENSITY

CASING, TUBING OR LINER DATA: NEW ☐ USED ☐; SIZE 340 mm; kg/m 90.8; GRADE K-55; DEPTH 120.5 m; SIZE mm; kg/m; GRADE; DEPTH m

PERFORATIONS: FROM m TO m; FROM m TO m; FROM m TO m; FROM m TO m

WASH FLUID TYPE Fresh Water VOL 3.2 m³; DISPLACING FLUID TYPE Fresh Water VOL 8.75 m³

TEMP DATA: MIXING WATER %; SLURRY %; DISPLACING FLUID %; RETURNS %

PRODUCTS

EQUIPMENT	QUAN
BASKETS	1
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	
FLOAT SHOE	1
GUIDE SHOE	1
INSERT FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER: TYPE; SIZE mm; DEPTH m; TAIL PIPE m; SET

TOP PLUG TYPE; BOTTOM PLUG TYPE

CEMENT HEAD: CONTINUOUS ☐ KNOCK OFF ☐ SWAGE ☒; OTHER

CEMENT DATA

TONNE	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
9.0	G	Inland	Sacked	Oilwell	3% CaCl2 0.75% C-322	1895	0.76

HALLIBURTON OPERATOR: K. Town CUSTOMER REP:

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED m³ STAGE	VOLUME PUMPED m³ TOTAL	VOLUME PUMPED m³ IN FORMATION	PRESSURE MPa TUBING	PRESSURE MPa CASING	REMARKS
1								Prehydrate Calcium Chloride and
								C-322.
2	18:47 18:50	1.07					2.0	Pump fresh water preflush.
3	18:50 19:25	0.20					2.0	Mix and pump slurry.
	19:25 19:36							Drop plug.
4	19:36 19:45	0.97					2.5	Displace.

204 mm SURFACE CASING

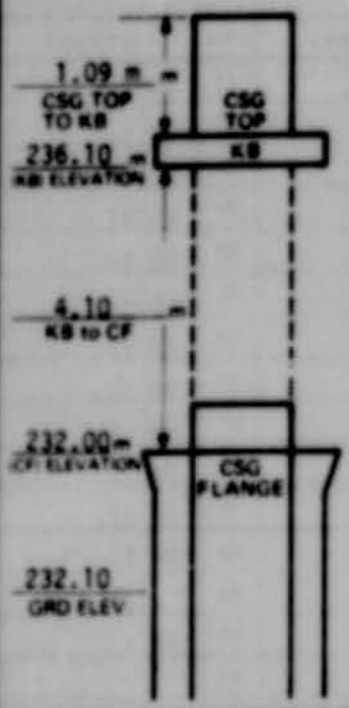
PAGE _____

CASING SUMMARY

WELL Exco et al Tunago 2N-37 LOCATION _____ DATE 85-02-25

SURF/INT/PROD/LINER SIZE 244mm KB 236.10 m KB to CF 4.00 m

New/Used Inspected By Mel Nichols Drifted To N/A API diam



NO	DESCRIPTION	MEASURED LENGTH	KB DEPTH
1	244mm Float Shoe	0.52	629.48
1	244mm Shoe Joint - 64.7 kg/m	11.73	617.75
1	244mm Float Collar	0.44	617.31
23	244mm jts - 64.7 kg/m	270.92	346.39
1	Lynes Inflate Packer - 244mm	2.69	343.70
1	Howco Stage Tool	1.00	342.70
29	244mm jts - 64.7 kg/m	343.79	+ 1.09
	Cement Baskets at 117 & 343 m		
3	Centralizers on jts #2, 24 & 42		

	Total String	631.09	
minus	KB to Csg Top (STICK UP)	1.09	Cut off Jt Length
	Landed Depth KB	630.00	
	Hole Depth KB	630.00	5.19
	Distance Csg Landed Off Bottom	0.00	

Cementing Company Halliburton Well Services Ltd.

Wash Type Water - Plug down 1985-02-24 0500 hours Volume 1.6 m^3

Cement Type Lead Slurry Oilwell Class "G" 19.3 tonne Volume 14.7 m^3

Additives 0.75% C-322 Fluid Loss Additive Volume

Cement Type Tail Slurry N/A Volume

Additives N/A Volume

Cement Type Above Stage Collar Oilwell Class "G" 10.3 tonne Volume 7.8 m^3

Additives 0.75% C-322 Fluid Loss Reducer Volume

Displacement Rate Max _____ Avg _____ (m3/min)

Calculated Cement Top(s) _____ KB _____ KB

Returns Drill with air m3 Cement _____ m3

String Wt. in a mud wt. of _____ kg/m3 = _____ daN

Wt. set on Slips _____ daN

Remarks Top cement from surface. 4.8 tonne Permafrost to Surface.
Top cement from surface between 339.7mm casing and 508mm conductor casing with 6 t Permafrost.

Engineer Dave Campbell

PIPE TALLY SHEET

PAGE ____ OF ____

WELL Exco et al Tunago 2N-37 LOCATION

SIZE 244.4mm WT 64.7 kg/m GRADE L80 COUPLING LT&C THRD 8RD

DATE 85-02-24

JOINT	LENGTH	JOINT	LENGTH	JOINT	LENGTH	JOINT	LENGTH	JOINT	LENGTH
1	11.73	11	11.25	21	11.51	31	11.19	41	12.67
2	11.54	12	11.83	22	11.82	32	11.98	42	12.03
3	11.09	13	11.82	23	11.84	33	11.17	43	11.82
4	11.73	14	11.75	24	11.76	34	12.03	44	11.80
5	13.08	15	11.79	25	11.11	35	11.19	45	12.03
6	12.02	16	11.84	26	11.43	36	12.32	46	12.41
7	12.53	17	11.72	27	11.98	37	13.36	47	11.75
8	11.85	18	11.71	28	11.73	38	12.70	48	11.92
9	11.86	19	11.33	29	11.76	39	11.78	49	11.82
10	11.95	20	11.30	30	11.40	40	11.93	50	11.47
A	119.38	B	116.34	C	116.34	D	119.65	E	119.52
51	11.70	61		71		81		91	
52	11.88	62		72		82		92	
53	11.63	63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F	35.21	G		H		I		J	

		SUB TOTAL
A	119.38	
B	116.34	232.72
C	116.34	352.06
D	119.65	471.71
E	119.52	591.23
F	35.21	626.44
G		
H		
I		
J		
TOTAL	626.44	

Shoe	.52 m
Float Collar	.44 m
Pack Off Other	2.69 m
Stage Collar	1.00 m

	JOINTS	LENGTH
PAGE TOTAL	53	626.44 m
BROUGHT FWD		4.65 m
GRAND TOTAL		631.09 m

JOINTS ON LOCATION Stick up 1.09 m

Remarks:

ENGINEER Dave Campbell

NOTE: Use a new page for each casing type. Number joints in order of running. Indicate joints not run by * and do not include in total length.

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE No. 43 118

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 02 24 (YEAR MONTH DAY)

OWNER, OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUPPLIES THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL No. AND LEASE
Ranger Distributors Limited (Esco)	Tunago	Esco et al Tunago 2A-37

CALLED OUT (DATE TIME)	ON LOCATION (DATE TIME)	JOB STARTED (DATE TIME)	JOB COMPLETED (DATE TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-02-24 05:30	85-02-24 07:00	N.W.T.					

TYPE OF JOB ✓: Surface; Intermediate ✓; Production; Liner; Squeeze; Plug; Pump; Pressure Test; Other

WELL OR HOLE DATA

HOLE DATA: HOLE SIZE ____ mm; TOTAL DEPTH 631 m; TYPE MUD Foam; VISC ____; DENSITY ____

CASING, TUBING OR LINER DATA: NEW ☑ USED ☐; SIZE 244.5 mm; kg/m 64.2; GRADE ____; DEPTH 631 m; SIZE ____ mm; kg/m ____; GRADE ____; DEPTH ____ m

PERFORATIONS: FROM ____ m TO ____ m; FROM ____ m TO ____ m; FROM ____ m TO ____ m; FROM ____ m TO ____ m

WASH: FLUID TYPE H2O; VOL 1.5 m³

DISPLACING: FLUID TYPE H2O; VOL 24.0/13.3 m³

TEMP DATA: MIXING WATER ____ °C; SLURRY ____ °C; DISPLACING FLUID ____ °C; RETURNS ____ °C

PRODUCTS

EQUIPMENT	QUAN
BASKETS	
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	
FLOAT SHOE	
GUIDE SHOE	
INSERT FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER: TYPE Lynnes; SIZE ____ mm; DEPTH SET 340 m; TAIL PIPE ____ m

TOP PLUG TYPE DV Plug; BOTTOM PLUG TYPE DV Plug

CEMENT HEAD: CONTINUOUS ☐ KNOCK OFF ☐ SWAGE ☑; OTHER ____

CEMENT DATA

TYPE	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
19.8	G	Inland	Sacked	"G"	0.55 FDP-322	1895	0.76
10.4			Sacked	Permafrost		1680	0.74

HALLIBURTON OPERATOR: J. Beddow CUSTOMER REP: ____

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED m³ STAGE	VOLUME PUMPED m³ TOTAL	VOLUME PUMPED m³ TO FORMATION	PRESSURE MPa TUBING	PRESSURE MPa CASING	REMARKS
								STAGE #1
1								Pump wash.
2								Pump 14.5 t slurry.
3								Drop plug.
4								Displace.
5								Inflate Lynnes TCP.
6								Drop DV.

HALLIBURTON

TREATING LOG

INVOICE No 43 118

CHART POSITION	TIME	RATE	VOLUME PUMPED IN			PRESSURE MPa		REMARKS
			STAGE	TOTAL	IN FORMATION	TUBING	CASING	
								STAGE #2
1								Pump wash.
2								Pump 10.4 t Permafrost.
3								Pump "G".
4								Drop plug.
5								Displace.

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE No. 63 119

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 02 24 (YEAR MONTH DAY)

OWNER OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL No. AND DATE
Ranger Distributors Limited (Esco)	Tunago	Esco et al Tunago 2N-37

CALLED OUT (DATE TIME)	ON LOCATION (DATE TIME)	JOB STARTED (DATE TIME)	JOB COMPLETED (DATE TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		10:30	16:30	N.W.T.					

TYPE OF JOB ✓

SURFACE / INTERMEDIATE / PRODUCTION / LINER / SQUEEZE / PLUG ✓ / PUMP / PRESSURE TEST / OTHER

WELL OR HOLE DATA

HOLE DATA: HOLE SIZE ____ mm; TOTAL DEPTH ____ m; TYPE MUD ____; VISC ____; DENSITY ____

CASING, TUBING OR LINER DATA: CASING ☐; LINER ☐; SIZE ____ mm; kg/m ____; GRADE ____; DEPTH ____ m

PERFORATIONS: FROM ____ m TO ____ m; FROM ____ m TO ____ m

WASH: FLUID TYPE ____; VOL ____ m³; DISPLACING FLUID TYPE ____; VOL ____ m³

TEST DATA: TEMP ____; BRINE ____ %; WATER ____ %; SLURRY ____ %; DISPLACING FLUID ____ %; RETURNS ____ %

PRODUCTS

EQUIPMENT	QUAN
BASKETS	
CENTRALIZERS	
CLAMPS	
FLOAT COLLAR	
FLOAT SHOE	
GUIDE SHOE	
HOOKUP FLOAT	
SCRATCHERS	
OTHER	

EQUIPMENT

PACKER: TYPE ____; SIZE ____ mm; DEPTH ____ m; TAIL PIPE ____ m; SET ____

TOP PLUG TYPE ____; BOTTOM PLUG TYPE ____

CEMENT HEAD: CONTINUOUS ☐ KNOCK OFF ☐ BRAKE ☐; OTHER ____

CEMENT DATA

TONS	50 LB. SACKS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/TONNE
11	G	Inland	Bulk	Permafrost		1860	0.74

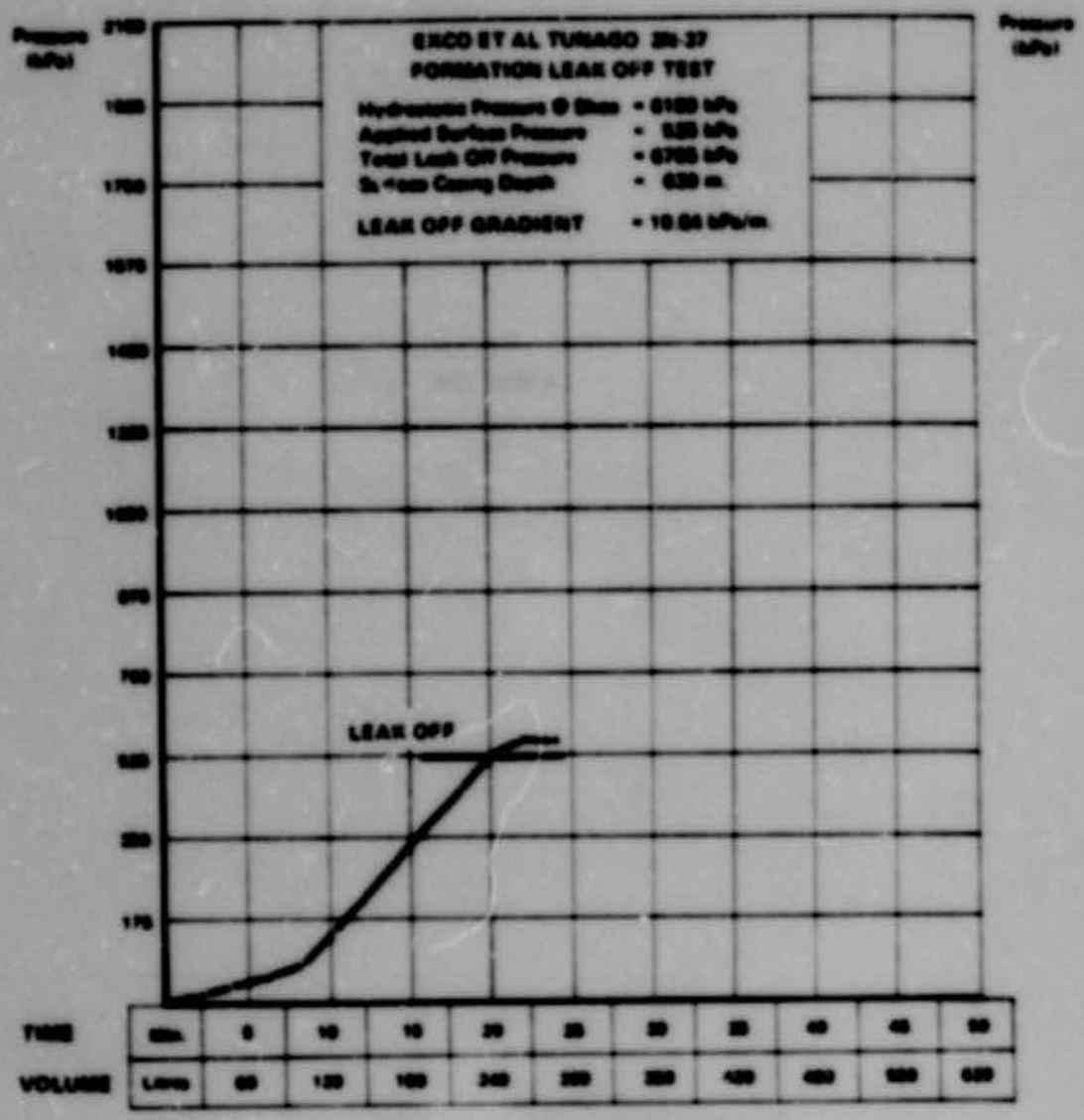
HALLIBURTON OPERATOR: J. Beddow CUSTOMER REP: ____

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED m³ STAGE	VOLUME PUMPED m³ TOTAL	VOLUME PUMPED m³ IN FORMATION	PRESSURE MPa TUBING	PRESSURE MPa CASING	REMARKS
								Pump down annulus to regain
								cement returns.

FORMATION LEAKOFF TEST

Performed at Surface Casing Depth 630 m



TIME - SURFACE TO BIT (MINUTES)

PRESSURE - CIRCULATING PRESSURE (kPa)

END REPORT

Exco et al Tumago 2N-37

Drilling Day	Durafoam 50 lbs.	Durafoam (bbl)	Gel	Product RMPZ7 5 gallon	Caustic	Salt	Staflo	Defoamer	Kelzan	Kwikseal	Lime
1	5	1									
2	4	1									
3											
4	1										
5	4	1									
6	5	1									
7	7	1									
8		1									
9	4										
10	2										
11	2										
12	2	2	76								
13	2										
14	6	1		1							
15	5	1		1							
16	5	2		2							
17	6	1	45	1							
18	2	1		2							
19	5	1		1							
20	2			1							
21											
22											
23	1										
24	3			1							
25	5	1		2							
26	6			2							
27	5			1							
28	9		70	2	2						
29	6			2							
30	4	2		2							
31			25		3	545	14	3			
32			140		4				8	90	3
33					2		2		1		
34					2				2		
35											
36											
37											
38											
39											
40											
41											
Totals	108	18	356	21	13	545	16	3	11	90	3

AIR DRILLING REPORT

Date 1985	Hole Size (mm)	Interval Drilled (m)	Air Volume (m^3/m)	Injection Rate (l/min)	Surfactant Addition	Surface Air Pressure kPa	Remarks
February 4	311	14-21	11-7	32	1%	700	Rig up cellar to Channel foam to sump.
February 5	311/444	21-24	7-11	32-40	1%	700-1300	
February 6	609	0-24	11	38	1%	500	Drill 444 mm hole; ream out to 609 mm to set conductor.
February 7	444	24-43	12-11	36	0.75-1%	1100- 700	Drill out shoe and drill ahead.
February 8	444	43-87	11-10	37	0.75-1%	850- 900	At 87 m blouey line showing signs of restriction. Begin picking up water.
February 9	444	87-106	12-13	45-54	1.4%	900-1050	Try to regain circulation; isolate ice plug and clean hole - hole sloughing at 89 m depth. Hole making water.
February 10	444	106-122	13	54	1.7%	1170-1200	Formation change; Hole water increasing in volume. Hole pulling tight-pulled 58000 daN at 1.2 m.
February 11	444	ream cement	14-15	54	1.7%	1250- 960	Run in open ended to set cement plug at 122 m, to cement off sloughing section. Hole gradually making more and more water.
February 12	444	ream	14-16	36-68	2.3%	1250 (high of 2400)	No Duraplex being added. Thaw restriction in Kelly and line pipe. Run in hole and clean to bottom.

Date 1985	Hole Size (mm)	Interval Drilled (m)	Air Volume (m^3/m)	Injection Rate (l/min)	Surfactant Addition	Surface Air Pressure kPa	Remarks
February 13	444	clean to 118m to run cement plug	16	45	2.3%	1100-1200	Run in hole and tag cement. Break circulation and clean hole.
February 14	444	122-133	33	22	2.3%	1300	Drill ahead with 444 mm bit to conductor casing point.
February 17	311	133-181	25-19	50	1.0-1.9%	1200	Drill out float and drill ahead. On each connection 1m to 2m of fill is noted.
February 19	311	289-381	21-28	36	1.8%	2000-3120	Drilling ahead with few problems noted.
February 20	311	381-470	28	36	1.8%	3200	Drilling ahead - no problems noted.
February 21	311	470-497	28	23	1.8%	3200	Drilling ahead - no problems noted
February 22	311	497-588	33	23	2.3%	3700	Drilling ahead - more water noted as there is a 500 kPa pressure increase.
February 23	311	588-630	33	23	2.3%	3700	Dummy trip and circulate to run casing.
February 26	215	630-638	19	25	1.1%	1000	Drill out stage tool - pressure test with injection pump.
February 27	215	638-764	17-20	35-40	1.1%	1000	Hole cleaning well; no fill on connections; survey at 6° deviation

Date 1985	Hole Size (mm)	Interval Drilled (m)	Air Volume (m^3/m)	Injection Rate (l/min)	Surfactant Addition	Surface Air Pressure kPa	Remarks
February 28	215	764-874	22-27	40-54	1.6%	1400	Increase air volumes to handle penetration increase.
March 1	215	874-1081	27	54	1.6%	1400-1240	Hole cleaning well with no fill on connections.
March 2	215	1081-1224	27	54	1.6%	1250	Drill ahead.
March 3	215	1224-1341	28	54	1.6%	1300	Penetration slower-pressure build up.
March 4	215	1341-1410	28	54	1.6%	1250	On return trip at 1344 m tag fill at 1326 m.
March 5	215	1410-1626	28	54	1.6%	1200	Drill to logging point at 1626 m.

BIT RECORD

BIT RECORD

WELL NAME Exco et al Tunago 2N-37 LOCATION

Contractor Irican Contracting Company Rig No Mr. Ben Field Wild Cat

Spud Date 85-02-04 1045 hours T D Date Rig Release Date 85-03-16 1200 hours

BIT NO	SIZE mm	MAKE & TYPE	DEPTH OUT	METRES DRLD	ROT HOURS	TOTAL HOURS	WEIGHT ON BIT daN	BIT RPM	JETS mm 1	2	3	PUMP PRESS kPa or MPa	PUMP OUT PUT m3/min	DULL COND T	B	G
1A	311.0	HW XDV 77633	24.5	24.5	15.75	15.75	2	60/70	0	P E	N	Foam & Air		5	1	1
2A	444.5	HW ER727	24.5	24.5	4.25	20	2	60/70	0	P E	N	Foam & Air		2	1	1
1 HO	609.0	Sec. 8255	24.0	24.0	10.25	30.25	1	50/70	0	P E	N	Foam & Air		G	0 0	D
1B	444.5	SBE256 Smith 2JS	122	98	51.00	51.00	3/15	60/100	0	P E	N	Foam & Air		2	3	1
2B	444.5	OSCIG HW ER727	REAM	22	5.75	REAM	3/5	60	0	P E	N	Foam & Air		1	1	1
3B	216	Smith SVH CR7157	REAM	20	6	REAM	2	50/60	0	P E	N	Foam & Air		2	2	1
4B	444.5	OSCIG ER727	133	11	10	61.00	2/6		0	P E	N	Foam & Air		6	3	1/8
5B	311	F2 EC0929	486	353	80.5	141.50	14	80/85	0	P E	N	Foam	1000 CFM	7	8	1/4
6B	311	F2 EC0928	630	144	35.5	177.00	15	60/65	0	P E	N	Foam	1000 CFM	8	4	1
1	216	JD7 58408	778	148	28	28.00	2	110	0	P E	N	Foam	1000 CFM	3	1	1
2	216	JD4 94498	1174	396	45.75	73.75	2/15	150	0	P E	N	Foam	1000 CFM	6	3	1
3	216	JD4 84762	1356	182	29.5	103.25	12	120	1.5"	Orifice		Foam	1000 CFM 150 PSI-SP	8	8	1/8
4	216	ES9912 Smith F2	1626	216	27.5	130.75	10	65	1.5"	Orifice		Foam	1000 CFM	2	2	1
5 RR	216	Smith SVH CR7157	Clean Out Bit				5/10 - 6/8		0	P E	N	3500		3	3	1
6 RR	216	Smith SVH CR7157	Clean Out Bit				5/10 - 6/8									

REMARKS

ADA080017

PAGE _____

ABANDONMENT REPORT

DATE _____

Well Exco et al Tunago 2N-37 Location _____

A. WELL DATA

KB Elevation 236.10 m KB to CF 4.00 m FTD 1626.00 m

Hole Size	Hole Depth	Casing Size	Casing Depth	Cement Top(s)	Perfs
609mm	24.00 m	508mm	23.69 m	Surface	N/A
444mm	133.00 m	339mm	120.50 m	Surface	
311mm	630.00 m	244mm	630.00 m	Surface - recement down annulus	

B. ABANDONMENT DATA

Fluid in Hole Salt Saturated Mud Abandonment Company Exco Energy Ltd.

Cementing Company Halliburton Well Services Gov't Official John Hamilton - COGLA, Yellowknife

Plug	Interval	Formation	Cem Vol	Cem Type	Cem Wt	Plug Down	Felt Plug Time	Felt Plug Depth
1	1525-1626 m	Precambrian	5.2	"G"+2%$CaCl_2$	1895	2105	-	No
2	1250-1350 m	Mount Clark	6.9	"G"+2%$CaCl_2$	1895	2209	0300	1238 m
3	600- 660 m	At Surf. Csg.	3.9	"G"+2%$CaCl_2$	1895	0400	1100	No evidence of plug
4	600- 660 m	At Surf. Csg.	3.9	"G"	1880	1430	2200	No evidence of plug
5	600- 550 m	Cat Bridge Plug @ 600 m	1.8	Permafrost	1880	0030	-	Cement set on top of bridge plug.
6	0 - 35 m	Inside Casing	1.1	Permafrost	1880	0230	0400	Visual Check

Method of Feeling Plugs Run in with drill pipe - open ended.

Surface Casing Cut 231.06 m Surface Plug To Surface Plate Welded 231.06 m
1 m below ground level

C. SALVAGE DATA

Casing Salvaged Nil

D. REMARKS

Ran 244mm Ezi-drill plug at 600 m depth and set cement on top. Attempts to run cement from the 600 m to the 660 m depth failed as the cement was lost to the formation.

ENGINEER Mel Nichols

HALLIBURTON

CEMENTING AND/OR SPECIAL TOOLS SERVICE REPORT

ATTACH TO INVOICE NO. 43 120

HALLIBURTON DISTRICT: Frontier

JOB DATE: 1985 (YEAR) 01 (MONTH) 13 (DAY)

OWNER OPERATOR OR HIS AGENT STATES THE WELL IS IN GOOD CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA

CUSTOMER	FIELD OR AREA	WELL NO. AND LEASE
Ranger Distributors Limited (Exco)	Tunago	Exco et al Tunago 2N-37

CALLED OUT (DATE / TIME)	ON LOCATION (DATE / TIME)	JOB STARTED (DATE / TIME)	JOB COMPLETED (DATE / TIME)	PROVINCE	LSD	SEC	TWP	RANGE	MERIDIAN
		85-03-13	85-03-16	N.W.T.					

TYPE OF JOB ✓: SURFACE; INTERMEDIATE; PRODUCTION; LINER; SQUEEZE; PLUG ✓; PUMP; PRESSURE TEST; OTHER

WELL OR HOLE DATA

HOLE DATA: HOLE SIZE 215.7 mm; TOTAL DEPTH 1626 m; TYPE MUD Gel; VISC 55; DENSITY 1050

CASING, TUBING OR LINER DATA: NEW ☐ USED ☐; SIZE ___ mm; kg/m ___; GRADE ___; DEPTH ___ m; SIZE ___ mm; kg/m ___; GRADE ___; DEPTH ___ m

PERFORATIONS: FROM ___ m TO ___ m; FROM ___ m TO ___ m; FROM ___ m TO ___ m; FROM ___ m TO ___ m

WASH: FLUID TYPE H2O; VOL 1.0 m³; DISPLACING FLUID TYPE Mud; VOL ___ m³

TEMP DATA: MIXING WATER ___ °C; SLURRY ___ °C; DISPLACING FLUID ___ °C; RETURNS ___ °C

PRODUCTS: EQUIPMENT; PLAN; GASKETS; CENTRALIZERS; CLAMPS; FLOAT COLLAR; FLOAT SHOE; GUIDE SHOE; INSERT FLOAT; SCRATCHERS; OTHER

EQUIPMENT

PACKER: TYPE EZ-SV; SIZE 215 mm; DEPTH SET ___ m; TAIL PIPE ___ m

TOP PLUG TYPE ___; BOTTOM PLUG TYPE ___

CEMENT HEAD: CONTINUOUS ☐ KNOCK OFF ☐ SWAGE ☐; OTHER 114.3 mm X H Nubbin

CEMENT DATA

TONNE	API CLASS	BRAND	BULK OR SACKED	CEMENT BLEND	ADDITIVES TYPE AND PERCENT	kg/m³	m³/tonne
	G	Inland	Sacked	Oilwell Neat	2% CaCl2 in mix water	1895	0.76
	G	Inland	Sacked	Permafrost Blend		1880	0.74

HALLIBURTON OPERATOR: K. Town CUSTOMER REP: ___

TREATING LOG

CHART POSITION	TIME	RATE m³/min	VOLUME PUMPED m³ STAGE	TOTAL	IN FORMATION	PRESSURE MPa TUBING	CASING	REMARKS
1								Pump water spacer ahead.
2								Mix and pump slurry.
3								Pump water spacer behind.
4								Displace with mud.

HALLIBURTON

Ranger Distributors Limited (Exco)
Exco et al Tunago 2N-37
TICKET No.: 43 120

PLUG BACK JOB DATA

PLUG NO.	DEPTH TOP	DEPTH BOTTOM	TONNE	DISPLACEMENT (m^3)	TIME (min)
1	1525	1626	6.80	12.03	15
2	1250	1350	9.0	10.00	1[illegible]
3	600	660	5.13	4.90	6
4	600	660	5.13	4.90	6
5	550	600	2.50	4.44	5
6	0	30	1.50	0.20	1

DRILL STEM TESTS

Waterford

PAGE

FIELD DRILL STEM TEST REPORT

A. WELL DATA

DATE March 11, 1985

Well: Exco et al Tunago 2N-37 Location:

DST No: 1 Interval: 1285.60 - 1299.60 m Formation: Mount Clark

Last Casing: Size 244.5mm Depth 630.0 m Open Hole: Size 216mm Depth 1626 m

Hole Troubles: Lost Circulation (healed) Caliper at Packer(s): 260mm

Mud: Wt 1150 kg/m^3 Vis 55 W.L. 11.4 % Oil Nil ppm Cl 109000

B. TEST STRING DATA

Testing Company: Lynes United Services Ltd. Type of Test: Inflate Straddle

Type and Number of Packers: Inflate - two (2) Size: 194mm

DP Size: 114mm Wt: 24.7 kg/m Length: 1190.83 m

DC Size: 159mm Wt: 139 kg/m I.D. 50.8mm Length: 84.93 m

Tail Pipe Size: Nil Wt: - Length: - Perfs: - m

T.D. String: - Recorder Depth: 1277.13 m Water Cushion: Nil BH Choke: 25.4mm

Packer Depth(s): 1283 m - 1297 m Weight on Packer(s): Inflate

Other Equipment: Samplers, Pump Out Sub, Jars, Manifold

C. TEST RESULTS

Times: PF ____ ISI ____ Flow ____ SI ____ Flow ____ FSI ____

Pressures: PF ____ IH ____ ISI ____ IF ____

TEMP ____ °C FH ____ FSI ____ FF ____

Flow Descriptions:

Preflow: Misrun - see remarks below

Valve Open Flow:

Recoveries:

D. SAMPLE DETAILS

N/A

Sent to: Via: Date Sent:

E. REMARKS

Misrun. Found an error in strap on DST #1. Corrected depths of packers, were 1285.60 m to 1299.60 m. Tape was missing .05 m on each stand .05 x 45 stands = 2.25 m

Note: Data reported on this form are field readings taken at the time of test, and are subject to correction.

ENGINEER: Mel Nichols

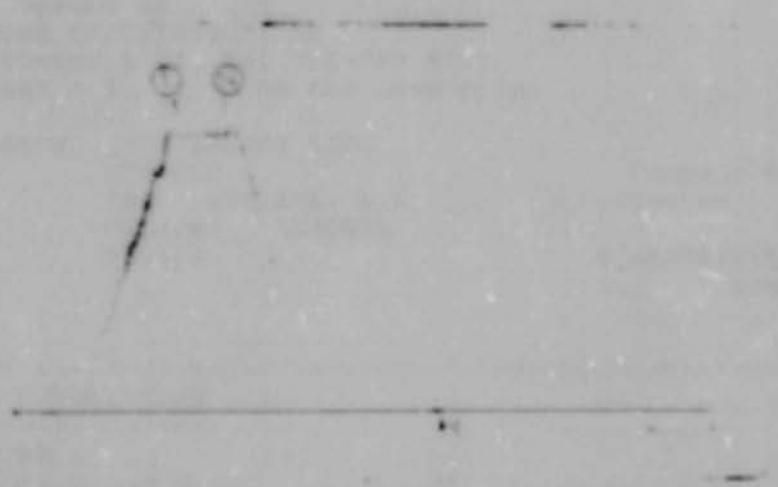
REF#:C-70-999-68600-66 TEST DATE: 85/03/11

EXCO ET AL TUNAGO 2N-37
400/ 66.649 / 126.215 /00
DST#01
1283.00m to 1297.00m
MOUNT CLARK

DEPTH: 1284.73m

RECORDER # 021356

	PRESSURE kPa
1) Initial Hydro	: 15445.
14) Final Hydro.	: 15445.



RECOVERY DATA

NO GAS TO SURFACE. NO FLUID RECOVERY DUE TO MISRUN.

REMARKS AND TEST SUMMARY

Misrun - unable to maintain a packer seat. Recorder #8728 - malfunctioned: no readings.

TABLE OF CONTENTS

LYNES UNITED SERVICES LTD
DST#01 REPORT

Well name : EXCO ET AL TUNAGO 2N-37
Location : 400/ 66.649 / 126.215 /00
Interval : 1283.00m to 1297.00m
Test Date : 85/03/11
Test Type : INFLATE STRADDLE
Formation : MOUNT CLARK

K.B.Elevation : 236.56m
Grd.Elevation : 232.06m
TD @ test Date: 1629.00m
Ticket Number : 68600
Unit Number : M-2

Started in hole at : 1126 hrs
Tool opened at :
Reverse circulated?: NO
Contractor & Rig No: TRI-CAN #707
Lynes#1 : 1 of 1 on the same trip.

Operator: EXCO ENERGY LTD.
6TH FLR.
700 - 4TH AVE. S.W.
CALGARY ALBERTA
T2P3J4

Company Rep : NICHOLS M
Testers : LUNGAL A

5 REPORTS(S) TO: MERLE MCCLAIN
Company:

BLOW DESCRIPTION

Misrun.

TOTAL LIQUID RECOVERY : .00m For DST# 1 through DST# 1

.00m

GAS MEASUREMENTS

No Gas Measurements

DST#01
EXCO ET AL TUNAGO 2N-37
1283.00m to 1297.00m

TOOL SEQUENCE

SUB	LENGTH (m)
PUMP OUT SUB	.42
DOUBLE PIN SUB	.29
INSIDE RECORDER	1.38
HYDRAULIC TOOL	1.50
BTM. HOLE SAMPLER	1.03
BTM. HOLE SAMPLER	1.03
HYDRAULIC JARS	2.19
INSIDE RECORDER	1.38
SAFETY JOINT	.65
INFLATE PUMP	2.28
SCREEN	1.16
TOP INFLATE PACKER	1.78
PACKER STICK DOWN	.82
PORTED COMB. SUB	.31
RECORDER CARRIER	2.06
SPACING	.29
CROSS OVER SUB	.31
DRILL COLLARS	9.40
CROSS OVER SUB	.31
PACKER STICK UP	.50
BTM.INFLATE PACKER	1.90
PERFORATIONS	.61
BELLY SPRING	2.00

*****RECORDER SUMMARY*****

1) NUMBER : 004636
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 18300.00kPa
DEPTH : 1284.73m

2) NUMBER : 008728 — ABOVE HYDRAULIC TOOL RECORDER. NO READINGS.
TYPE : K-3
LOCATION: INSIDE
RANGE: 20700.00kPa
DEPTH : 1270.00m

3) NUMBER : 012358 — TEMPERATURE RECORDER. NO READING.
TYPE : K-3T
LOCATION: OUTSIDE
RANGE : 1C to 130C
DEPTH : 1284.73m

4) NUMBER : 013832 — ABOVE INTERVAL RECORDER.
TYPE : K-3
LOCATION: INSIDE
RANGE: 19300.00kPa
DEPTH : 1277.13m

5) NUMBER : 021356
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 23300.00kPa
DEPTH : 1284.73m

******** TOOL TOTAL	33.60
DRILL COLLARS	
ID= 53.0mm:	84.93
ID= :	
DRILL PIPE	
OD=114.3mm:	1190.83
OD= :	
COLLAR-PIPE TOTAL	1275.76

STICK UP ABOVE TABLE : 7.85
TOOL ABOVE INTERVAL : 15.09
TOTAL INTERVAL : 14.00
BOTTOM CHOKE SIZE: 25.40 mm

MUD AND HOLE DATA

Calipered Hole Size @ Test Depth: — Water Loss : 11.4cc/s
Hole Condition at Test Time : GOOD — Filter Cake: 1.5 mm
Hole Conditioned Prior to Test? : YES
Mud Weight : 1150.0 kg/m3 — Main Hole Size: 216.00mm
Mud Type : SALT BASED
Viscosity : 55.0s/l — Temperature @1284.73m =

DST#01
EXCO ET AL TUNAGO 2N-37
1283.00m to 1297.00m

PRESSURE RECORDER NUMBER : 004636

DEPTH : 1284.73m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 18300.00 kPa

	PRESSURE kPa
1) Initial Hydro :	15317.
14) Final Hydro. :	15317.

PRESSURE RECORDER NUMBER : 008728

DEPTH : 1270.00m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 20700.00 kPa

	PRESSURE kPa
1) Initial Hydro :	
14) Final Hydro. :	

Above Hydraulic Tool

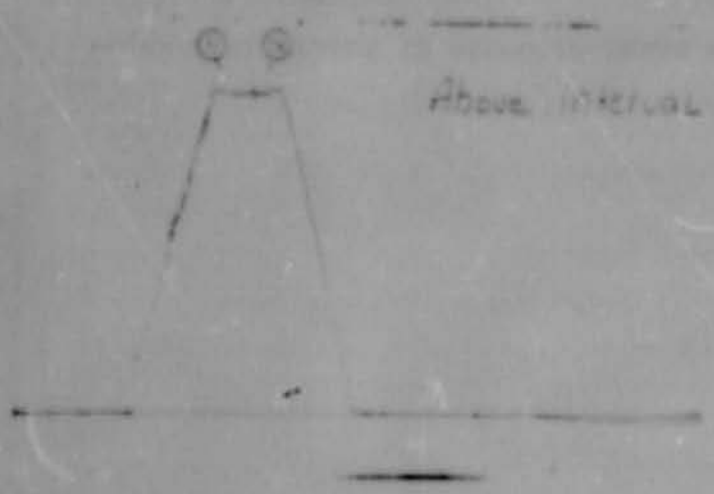
ABOVE HYDRAULIC
TOOL RECORDER.
NO READINGS.

DST#01
EXCO ET AL TUNAGO 2N-37
1283.00m to 1297.00m

PRESSURE RECORDER NUMBER : 013832

DEPTH : 1277.13m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 19300.00 kPa

	PRESSURE kPa
1)Initial Hydro	:15298.
14)Final Hydro.	:15298.

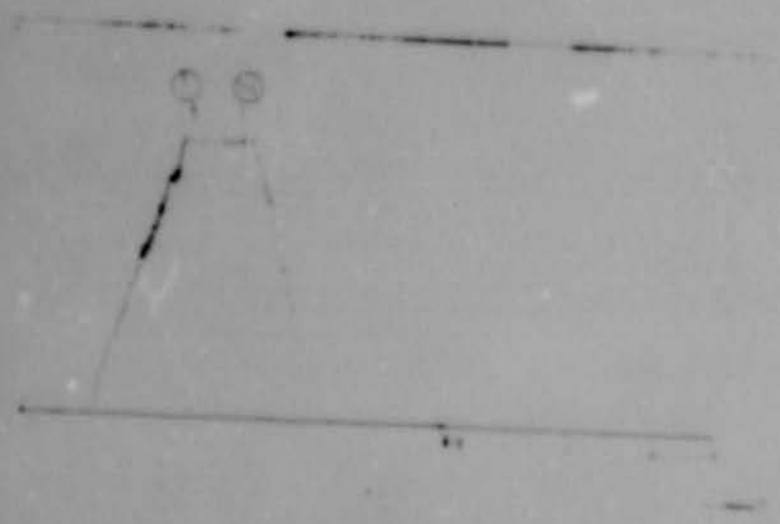


ABOVE INTERVAL
RECORDER.

PRESSURE RECORDER NUMBER : 021356

DEPTH : 1284.73m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 23300.00 kPa

	PRESSURE kPa
1)Initial Hydro	:15445.
14)Final Hydro.	:15445.



DST#01
EXCO ET AL TUNAGO 2N-37
1283.00m to 1297.00m

TEMPERATURE RECORDER NUMBER : 012358

DEPTH : 1284.73m LOCATION : OUTSIDE
TYPE : K-3T RANGE : 130.00C

TEMPERATURE
RECORDER.
NO READING.

***** TEMPERATURE AT RECORDER DEPTH =

PAGE

A WELL DATA

FIELD DRILL STEM TEST REPORT

DATE March 11, 1985

Well: Esso et al Tunago 2A-37 Location

DST No 2 Interval 1283.48 m - 1297.48 m Formation Mount Clark

Last Casing Size 244 mm Depth 630.0 m Open Hole Size 216mm Depth 1626 m

Hole Troubles Slight Lost Circulation (healed) Caliper at Packer(s) 260mm - Jagged

Mud Wt 1150 Vis 54 W.L. 11 % Oil Nil ppm Cl 109000

B TEST STRING DATA

Testing Company Lynes United Services Ltd. Type of Test Inflate Straddle

Type and Number of Packers Straddle Inflate - two (2) Size 194mm

DP Size 114mm Wt 24.7 kg/m Length 1188.23 m

DC Size 159mm Wt 139 kg/m I.D. 50.8mm Length 84.76 m

Tail Pipe Size N/A Wt Length Perfs m

T.D. String - Recorder Depth 1277.61 m Water Cushion N/A BH Choke 25.4mm

Packer Depth(s) 1283.48 m - 1297.48 m Weight on Packer(s) 10,000 to open

Other Equipment Samplers, Pump Out Sub, Jars, Manifold

C TEST RESULTS

Times PF (S) 15808 Flow SI Flow FSI

Pressures PF IH (S) IF

TEMP °C FH 15801 FSI FF

Flow Descriptions

Preflow Misrun

Valve Open Flow

Recoveries

D SAMPLE DETAILS

N/A

Sent to Via Date Sent

E REMARKS

Failed to obtain packer seat. Hoisted and found top of packer had blown.

Note: Data reported on this form are field readings taken at the time of test, and are subject to correction

ENGINEER Mel Nichols

REF#:C-70-999-68600-66 TEST DATE: 85/03/11

EXCO ET AL TUNAGO 2N-37
400/ 66.649 / 126.215 /00
DST#02
1283.48m to 1297.48m
MOUNT CLARK

DEPTH: 1285.21m

RECORDER # 021356

	PRESSURE kPa
1)Initial Hydro	: 15494.
14)Final Hydro.	: 15494.

RECOVERY DATA

NO GAS TO SURFACE. NO FLUID RECOVERY DUE TO MISRUN.

REMARKS AND TEST SUMMARY

Misrun - unable to maintain a packer seat. Ruptured the top element.

TABLE OF CONTENTS

LYNES UNITED SERVICES LTD
DST#02 REPORT

Well name : EXCO ET AL TUNAGO 2A-37
Location : 400/ 66.649 / 126.215 /00
Interval : 1281.48m to 1297.48m
Test Date : 85/03/11
Test Type : INFLATE STRADDLE
Formation : MOUNT CLARK

K.B.Elevation : 236.56m
Grd.Elevation : 232.06m
TD @ test Date: 1629.00m
Ticket Number : 66052
Unit Number : M-2

Started in hole at : 2044 hrs
Tool opened at :
Reverse circulated?: NO
Contractor & Rig No: T.I-CAN #707
Lynes#2 : 1 of 1 on the same trip.

Operator: EXCO ENERGY LTD.
6TH FLR.
700 - 4TH AVE. S.W.
CALGARY ALBERTA
T2P3J4

Company Rep : NICHOLS M
Testers : LUNGAL A

5 REPORTS(S) TO:
Company:

BLOW DESCRIPTION

Misrun.

TOTAL LIQUID RECOVERY : .00m

For DST# 2 through DST# 2

.00m

GAS MEASUREMENTS

No Gas Measurements

DST#02
EXCO ET AL TUNAGO 2N-37
1283.48m to 1297.48m

TOOL SEQUENCE

SUB	LENGTH (m)
PUMP OUT SUB	.42
DOUBLE PIN SUB	.29
INSIDE RECORDER	1.38
HYDRAULIC TOOL	1.50
BTM. HOLE SAMPLER	1.03
BTM. HOLE SAMPLER	1.03
HYDRAULIC JARS	2.19
INSIDE RECORDER	1.38
SAFETY JOINT	.65
INFLATE PUMP	2.28
SCREEN	1.16
TOP INFLATE PACKER	1.78
PACKER STICK DOWN	.82
PORTED COMB. SUB	.31
RECORDER CARRIER	2.06
SPACING	.29
CROSS OVER SUB	.31
DRILL COLLARS	9.40
CROSS OVER SUB	.31
PACKER STICK UP	.50
BTM.INFLATE PACKER	1.90
PERFORATIONS	.61
BELLY SPRING	2.00

******** TOOL TOTAL 33.60

DRILL COLLARS
ID= 53.0mm: 84.76
ID= :

DRILL PIPE
OD=114.3mm: 1188.23
OD= :

COLLAR-PIPE TOTAL 1272.99

STICK UP ABOVE TABLE : 4.60
TOOL ABOVE INTERVAL : 15.09
TOTAL INTERVAL : 14.00
BOTTOM CHOKE SIZE: 25.40 mm

RECORDER SUMMARY

1) NUMBER : 004636
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 18300.00kPa
DEPTH : 1285.21m

2) NUMBER : 008728 — ABOVE HYDRAULIC TOOL RECORDER. NO READINGS.
TYPE : K-3
LOCATION: INSIDE
RANGE: 20700.00kPa
DEPTH : 1270.48m

3) NUMBER : 012358 — TEMPERATURE RECORDER. NO READING.
TYPE : K-3T
LOCATION: OUTSIDE
RANGE : 1C to 130C
DEPTH : 1285.21m

4) NUMBER : 013832 — ABOVE INTERVAL RECORDER.
TYPE : K-3
LOCATION: INSIDE
RANGE: 19300.00kPa
DEPTH : 1277.61m

5) NUMBER : 021356
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 23300.00kPa
DEPTH : 1285.21m

MUD AND HOLE DATA

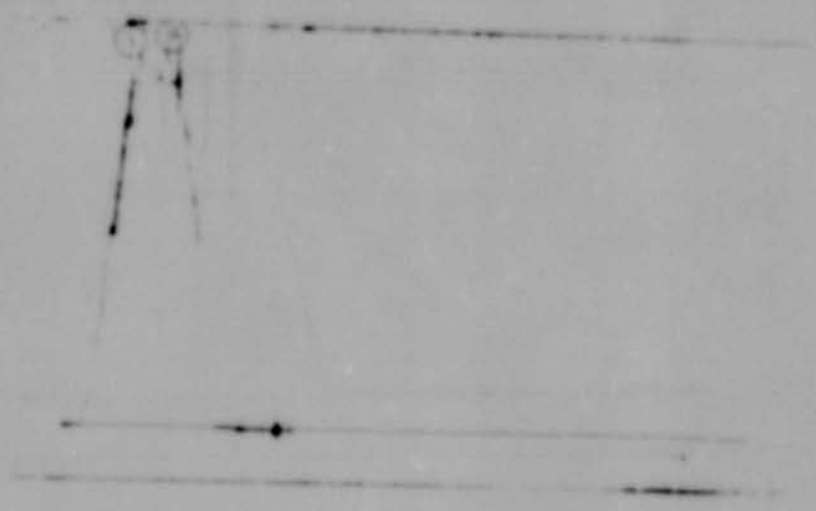
Calipered Hole Size @ Test Depth: 260.00mm — Water Loss : 11.4cc/s
Hole Condition at Test Time : GOOD — Filter Cake: 1.5 mm
Hole Conditioned Prior to Test? : NO
Mud Weight : 1150.0 kg/m3 — Main Hole Size: 216.00mm
Mud Type : SALT BASED
Viscosity : 55.0s/l — Temperature @1285.21m =

DST#02
EXCO ET AL TUNAGO 2N-37
1283.48m to 1297.48m

PRESSURE RECORDER NUMBER : 004636

DEPTH : 1285.21m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 18300.00 kPa

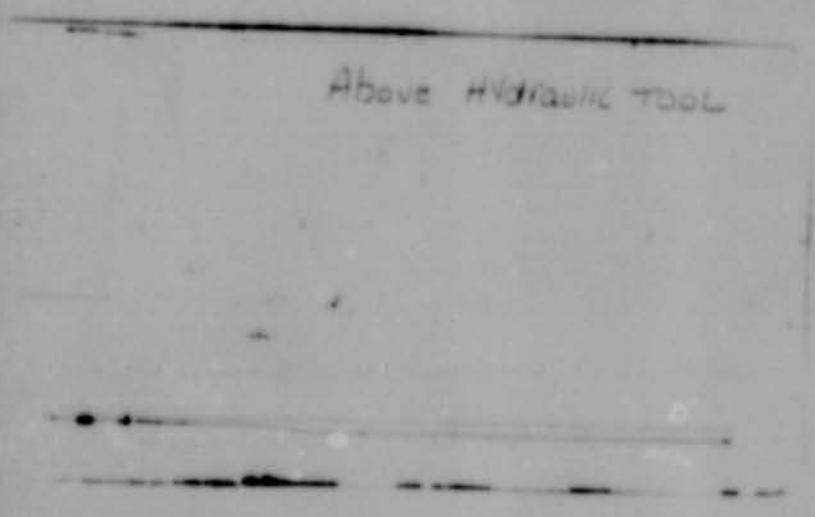
	PRESSURE kPa
1) Initial Hydro	:15394.
14) Final Hydro.	:15394.



PRESSURE RECORDER NUMBER : 008728

DEPTH : 1270.48m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 20700.00 kPa

	PRESSURE kPa
1) Initial Hydro	:
14) Final Hydro.	:



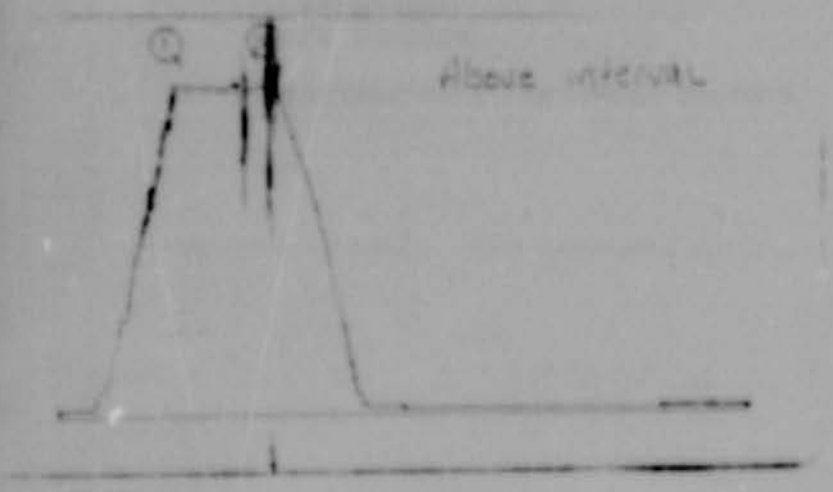
ABOVE HYDRAULIC
TOOL RECORDER.
NO READINGS.

DST#02
EXCO ET AL TUNAGO 2N-37
1283.48m to 1297.48m

PRESSURE RECORDER NUMBER : 013832

DEPTH : 1277.61m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 19300.00 kPa

	PRESSURE kPa
1) Initial Hydro	:15363.
14) Final Hydro.	:15363.

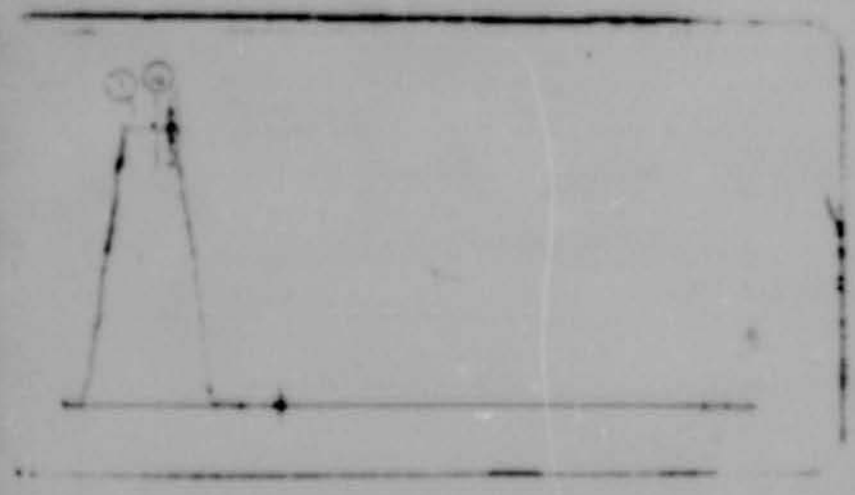


ABOVE INTERVAL RECORDER.

PRESSURE RECORDER NUMBER : 021356

DEPTH : 1285.21m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 23300.00 kPa

	PRESSURE kPa
1) Initial Hydro	:15494.
14) Final Hydro.	:15494.



DST#02
EXCO ET AL TUNAGO 2N-37
1283.48m to 1297.48m

TEMPERATURE RECORDER NUMBER : 012358

DEPTH : 1285.21m LOCATION : OUTSIDE
TYPE : K-3T RANGE : 130.00C

TEMPERATURE
RECORDER.
NO READING.

***** TEMPERATURE AT RECORDER DEPTH =

Temperature

Interhead

PAGE

A WELL DATA

FIELD DRILL STEM TEST REPORT

DATE March 11, 1985

Well: Exco et al Tunago 2N-37 Location

DST No 3 Interval 1241.5 m - 1296.5 m Formation Mount Clark

Last Casing Size 244mm Depth 630.2 m Open Hole Size 216mm Depth 1626 m

Hole Troubles Slight Lost Circulation @ 630 m Caliper at Packer(s) Top-225mm, Bottom-214mm

Mud Wt 1120 kg/m³ VS 54 W.L. 11 % Oil Nil ppm Cl 109000

B TEST STRING DATA

Testing Company Lynes United Services Ltd. Type of Test Inflate Straddle

Type and Number of Packers Inflate - two (2) Size 194mm

DP Size 114mm Wt 24.7 kg/m Length 1133.79 m

DC Size 159mm Wt 139 kg/m I.D. 50.8mm Length 93.83 m

Tail Pipe Size N/A Wt N/A Length N/A Ports N/A m

T.D. String N/A Recorder Depth 1243.23 m Water Cushion Nil BH Choke 25.4mm

Packer Depth(s) Top-1241.5 m Bottom-1296.5m Weight on Packer(s) 20,000 to open

Other Equipment Samplers, Pump Out Sub, Jars, Manifold

C TEST RESULTS

Times PF 15 (C) 60 Flow 60 SI - Flow - FSI 120

Pressures PF 575 kPa (H) 14729 kPa (S) 2414 kPa (F) 690 kPa

TEMP 18 °C FH 14449 kPa FSI 1724 kPa FH 690 kPa

Flow Descriptions

Preflow Very weak air blow throughout. N.G.T.S.

Valve Open Flow Very weak air blow, dead in 20 mins. N.G.T.S.

Recoveries 9 m drilling mud

D SAMPLE DETAILS

Btm. H Sampler #196, #242 - Sent to Chemex (4 samples in total)

Sent to via Lynes United Services Date Sent

E REMARKS

Good DST.

Note: Data reported on this form are field readings taken at the time of test, and are subject to correction.

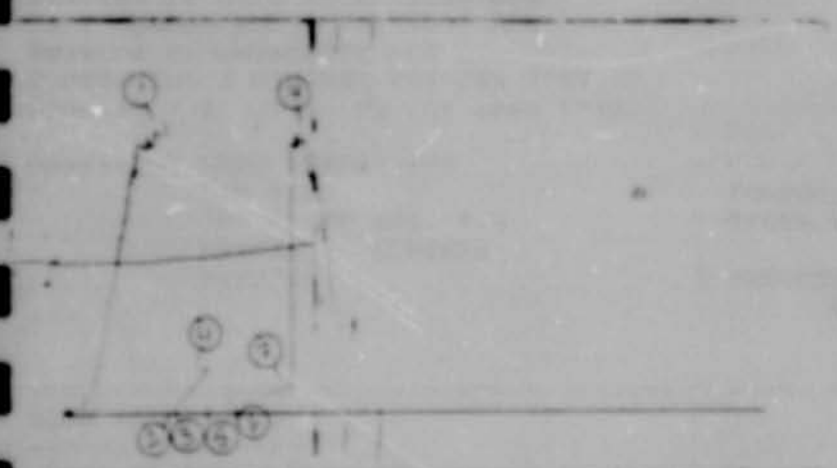
ENGINEER Mel Nichols

REF#:C-70-999-68600-66 TEST DATE: 85/03/12

EXCO ET AL TUNAGO 2N-37
400/ 66.649 / 126.215 /00
DST#03
1241.50m to 1296.50m
MOUNT CLARK

DEPTH: 1243.23m

RECORDER # 021356



	PRESSURE kPa
1) Initial Hydro :	14835.
2) 1st Flow Start:	409.
3) 1st Flow End :	457.
4) END 1st Shutin:	2219.
5) 2nd Flow Start:	505.
6) 2nd Flow End :	552.
7) END 2nd Shutin:	1571.
14) Final Hydro. :	14835.

TEST TIMES(MIN)	
1stFLOW :	15.
SHUTIN:	60.
2ndFLOW :	60.
SHUTIN:	120.

RECOVERY DATA

NO GAS TO SURFACE. TOTAL FLUID RECOVERY CONSISTS OF 9.00 METERS OF DRILLING MUD.

REMARKS AND TEST SUMMARY

Test results indicate a mechanically successful test. Bottom hole pressures and the shape of the shut-in curves suggest VIRTUALLY NO PERMEABILITY within the interval tested.

TABLE OF CONTENTS

LYNES UNITED SERVICES LTD
DST#03 REPORT

Well name : EXCO ET AL TUNAGO 2N-37
Location : 400/ 66.649 / 126.215 /00
Interval : 1241.50m to 1296.50m
Test Date : 85/03/12
Test Type : INFLATE STRADDLE
Formation : MOUNT CLARK

K.B.Elevation : 236.56m
Grd.Elevation : 232.06m
TD @ test Date: 1629.00m
Ticket Number : 66053
Unit Number : M-2

Started in hole at : 2030 hrs
Tool opened at : 0008 hrs
Reverse circulated?: YES
Contractor & Rig No: TRI-CAN #707
Lynes#3 : 1 of 1 on the same trip.

Operator: EXCO ENERGY LTD.
6TH FLR.
700 - 4TH AVE. S.W.
CALGARY ALBERTA
T2P3J4

Company Rep : NICHOLS M
Testers : LUNGAL A

5 REPORTS(S) TO:
Company:

BLOW DESCRIPTION

Very weak air blow throughout preflow. No gas to surface.
Very weak air blow decreasing to nil after 20 minutes on final flow. No gas to surface.

TOTAL LIQUID RECOVERY : 9.00m

For DST# 3 through DST# 3

4 Fluid Samples
Sent to: GEOTECH

Sample Salinity :109000.0g/m3

Btm. Hole Sampler #: 196,242
Sent to: GEOTECH

9.00m DRILLING MUD.

GAS MEASUREMENTS

No Gas Measurements

DST#03
EXCO ET AL TUNAGO 2N-37
1241.50m to 1296.50m

TOOL SEQUENCE

SUB	LENGTH (m)
PUMP OUT SUB	.42
DOUBLE PIN SUB	.29
INSIDE RECORDER	1.38
HYDRAULIC TOOL	1.50
BTM. HOLE SAMPLER	1.03
BTM. HOLE SAMPLER	1.03
HYDRAULIC JARS	2.19
INSIDE RECORDER	1.38
SAFETY JOINT	.65
INFLATE PUMP	2.28
SCREEN	1.16
TOP INFLATE PACKER	1.78
PACKER STICK DOWN	.82
PORTED COMB. SUB	.31
RECORDER CARRIER	2.06
SPACING	4.17
CROSS OVER SUB	.31
DRILL COLLARS	46.52
CROSS OVER SUB	.31
PACKER STICK UP	.50
BTM.INFLATE PACKER	1.90
PERFORATIONS	.61
BELLY SPRING	2.00

*****RECORDER SUMMARY*****

1) NUMBER : 004636 — ABOVE HYDRAULIC TOOL RECORDER.
   TYPE : K-3
   LOCATION: INSIDE
   RANGE: 18300.00kPa
   DEPTH : 1228.50m

2) NUMBER : 006548
   TYPE : K-3
   LOCATION: OUTSIDE
   RANGE: 26200.00kPa
   DEPTH : 1243.23m

3) NUMBER : 012358 — TEMPERATURE RECORDER.
   TYPE : K-3T
   LOCATION: OUTSIDE
   RANGE : 1C to 130C
   DEPTH : 1243.23m

4) NUMBER : 013832 — ABOVE INTERVAL RECORDER.
   TYPE : K-3
   LOCATION: INSIDE
   RANGE: 19300.00kPa
   DEPTH : 1235.63m

5) NUMBER : 021356
   TYPE : K-3
   LOCATION: OUTSIDE
   RANGE: 23300.00kPa
   DEPTH : 1243.23m

******** TOOL TOTAL	74.60
DRILL COLLARS	
ID= 53.0mm:	93.83
ID= :	
DRILL PIPE	
OD=114.3mm:	1133.79
OD= :	
COLLAR-PIPE TOTAL	1227.62

STICK UP ABOVE TABLE : 1.21
TOOL ABOVE INTERVAL : 15.09
TOTAL INTERVAL : 55.00
BOTTOM CHOKE SIZE: 25.40 mm

MUD AND HOLE DATA

Calipered Hole Size @ Test Depth:
Hole Condition at Test Time : GOOD
Hole Conditioned Prior to Test? : YES
Mud Weight : 1120.0 kg/m3
Mud Type : SALT BASED
Viscosity : 54.0s/l

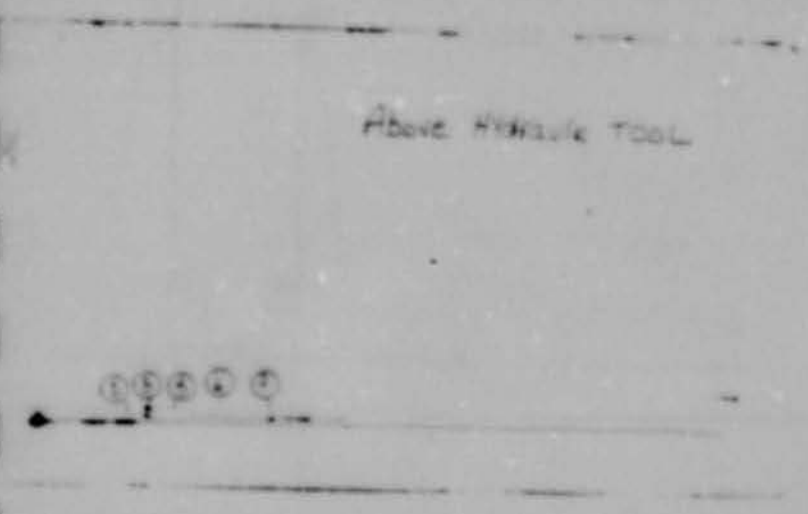
Water Loss : 11.4cc/s
Filter Cake: 1.5 mm
Main Hole Size: 216.00mm
Temperature @1243.23m = 14.0C

DST#03
EXCO ET AL TUNAGO 2N-37
1241.50m to 1296.50m

PRESSURE RECORDER NUMBER : 004636

DEPTH : 1228.50m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 18300.00 kPa

	PRESSURE kPa
1) Initial Hydro :	
2) 1st Flow Start:	23.
3) 1st Flow End :	152.
4) END 1st Shutin:	
5) 2nd Flow Start:	152.
6) 2nd Flow End :	296.
7) END 2nd Shutin:	296.
14) Final Hydro. :	



ABOVE HYDRAULIC
TOOL RECORDER.

TEST TIMES(MIN)	
1st FLOW :	15.
SHUTIN:	60.
2nd FLOW :	60.
SHUTIN:	120.

PRESSURE RECORDER NUMBER : 006548

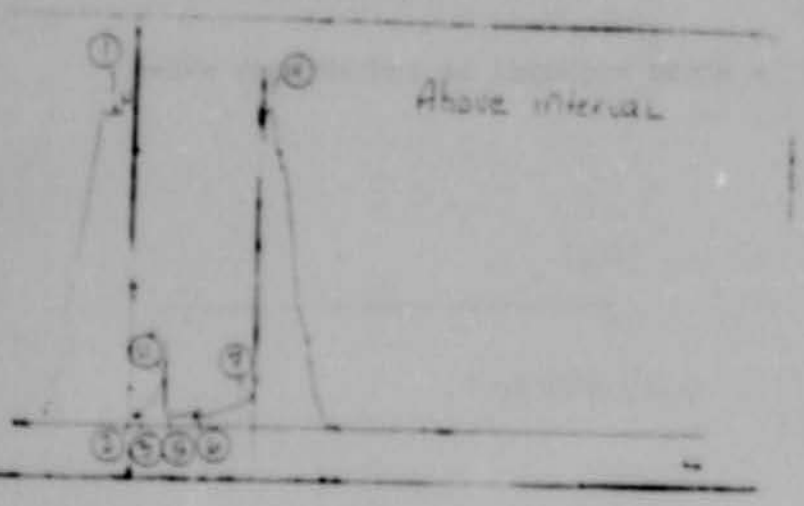
DEPTH : 1243.23m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 26200.00 kPa

	PRESSURE kPa
1) Initial Hydro :	14711.
2) 1st Flow Start:	586.
3) 1st Flow End :	586.
4) END 1st Shutin:	2138.
5) 2nd Flow Start:	701.
6) 2nd Flow End :	713.
7) END 2nd Shutin:	1506.
14) Final Hydro. :	14444.

DST#03
EXCO ET AL TUNAGO 2N-37
1241.50m to 1296.50m

PRESSURE RECORDER NUMBER : 013832

DEPTH : 1235.63m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 19300.00 kPa



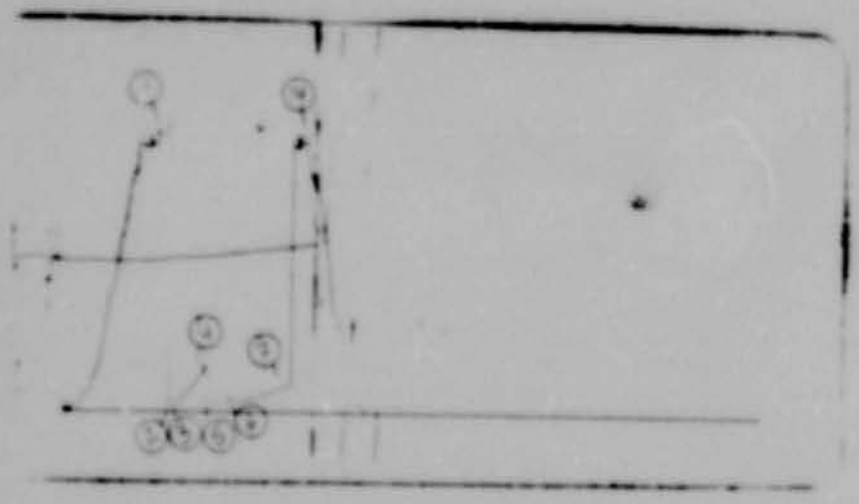
	PRESSURE kPa
1) Initial Hydro :	14698.
2) 1st Flow Start:	508.
3) 1st Flow End :	508.
4) END 1st Shutin:	2096.
5) 2nd Flow Start:	606.
6) 2nd Flow End :	524.
7) END 2nd Shutin:	1433.
14) Final Hydro. :	14698.

ABOVE INTERVAL RECORDER.

TEST TIMES(MIN)	
1st FLOW :	15.
SHUTIN:	60.
2nd FLOW :	60.
SHUTIN:	120.

PRESSURE RECORDER NUMBER : 021356

DEPTH : 1243.23m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 23300.00 kPa



	PRESSURE kPa
1) Initial Hydro :	14835.
2) 1st Flow Start:	409.
3) 1st Flow End :	457.
4) END 1st Shutin:	2219.
5) 2nd Flow Start:	505.
6) 2nd Flow End :	552.
7) END 2nd Shutin:	1571.
14) Final Hydro. :	14835.

DST#03
EXCO ET AL TUNAGO 2N-37
1241.50m to 1296.50m

TEMPERATURE RECORDER NUMBER : 012358

DEPTH : 1243.23m LOCATION : OUTSIDE
TYPE : K-3T RANGE : 130.00C

TEMPERATURE
RECORDER.

***** TEMPERATURE AT RECORDER DEPTH = 14.0 C

Temperature

3

WATER ANALYSIS

FOR DST #3

MT. CLARKE 1201.5 m - 1296.3 m

tti GEOTECHnical resources ltd.

4500 - 5th STREET N.E. CALGARY ALBERTA T2E 7C3

(403) 230-4128

GEOTECH

FILE NUMBER: 85AS5194

LABORATORY NUMBER: 5194-W1

WATER ANALYSIS

OPERATOR'S NAME: EXCO ENERGY LTD.

SAMPLE LOCATION:

WELL NAME: EXCO ET AL TURAGO 66-10-126-15W

ELEVATIONS KB: 236.56 GRD: 232.06

FIELD OR AREA:

POOL OR ZONE: MT. CLARKE

NAME OF SAMPLER:

COMPANY: LYNES

TEST RECOVERY: 900m

TEST TYPE: DST NO: 3

MULTIPLE RECOVERY:

TEST INTERVAL FROM: 1241.5 TO: 1296.3

PERFORATIONS FROM: TO:

SAMPLING POINT: DST CHAMBER 262

AMT AND TYPE OF CUSHION:

MUD RESISTIVITY (Ω·m):

PUMPING: FLOWING: GAS LIFT: SWAB:

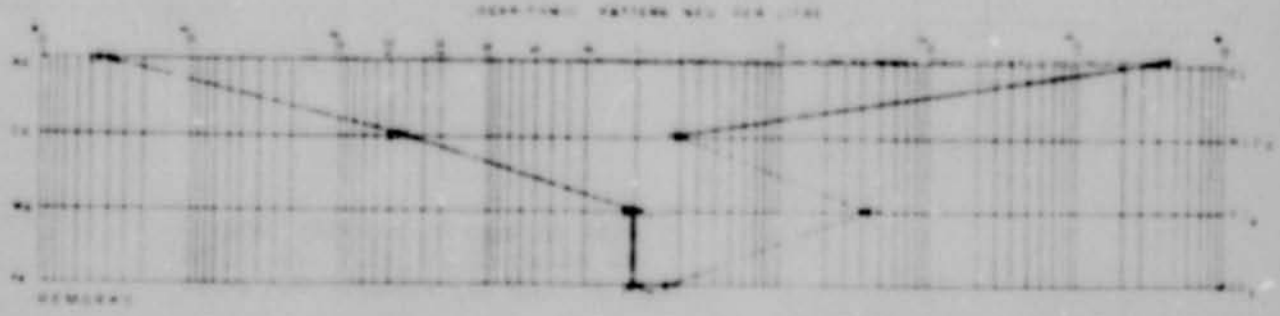
WATER: m³/d OIL: m³/d GAS: 10³ m³/d

	SEPARATOR	HEATER	RESERVOIR	SAMPLER	RECEIVER
GAUGE PRESSURE kPa					
TEMPERATURE (°C)					

DATE SAMPLED Y-M-D	DATE RECEIVED Y-M-D	DATE ANALYZED Y-M-D	ANALYST
85-03-14	85-03-19	85-03-26	KM/HD

SUMMARY DATA

TOTAL HARDNESS AS $CaCO_3$	2046	g/m³
TOTAL ALKALINITY	185	g/m³
SALINITY	27.04	%
SATURATION INDEX	*	
STABILITY INDEX	*	
CORROSION TENDENCY	1149.78	



* No Temperature Data

WATER ANALYSIS

DETAILED REPORT

GEOTECH Petroleum

OPERATOR'S NAME	EXCO ENERGY LTD.
WELL NAME	EXCO ET AL TUNAGO
LOCATION	66-10-126-15W
SAMPLING POINT	DST CHAMBER 242

FILE NUMBER	85AS5194
LABORATORY NUMBER	5194-W1

CATIONS

ION	g/m³	MASS FRACTION	MEQ/L
Na	95200	0.38	4140
K	485	0.00	12
Ca	813	0.00	40
Mg	< 0.01		
Fe	0.079	0.00	0.001
Sr	14.4	0.00	0.3
Ba	0.060	0.00	0.003
Mn			
Al			
Si			
B			
U			
Zn			

ANIONS

ION	g/m³	MASS FRACTION	MEQ/L
Cl	149800	0.61	4222
Br			
I	37.0	0.00	0.3
F			
HCO_3	122	0.00	2
CO_3	50.8	0.00	1.7
OH	0.000	0.00	0.000
SO_4	1950	0.01	40
H_2S			
PO_4			

TOTAL SOLIDS (g/m³)

EVAPORATED AT 105°C	EVAPORATED AT 180°C
AT IGNITION	CALCULATED
	248472

SPECIFIC GRAVITY	REFRACTIVE INDEX (n)
	1.381
DENSITY AT	RESISTIVITY (Ω·m)
9.55	0.048
REDOX POTENTIAL (E_h)	DISSOLVED O_2

TOTAL METALS

METAL	g/m³
Fe	
Mn	

REMARKS

OPENING PRESSURE ON SAMPLER 242 WAS 0 kPa. TOTAL FLUID VOLUME WAS 650ml MUD. CHAMBER 196 RECEIVED EMPTY.

HYDROCARBON ANALYSIS

HYDROCARBON ANALYSIS

on:

FORWARD RESOURCES et al TUNACO 2N-37

66° 6' 49.92" N
126° 21' 69.8" W

Prepared for Forward Resources Ltd.

Prepared by GeoChem Laboratories Ltd.

CONFIDENTIAL

March 1985

SUMMARY OF ORGANIC CARBON ANALYSES

GEOCHEM SAMPLE NUMBER	WELL DEPTH (METERS)	PERCENT ORGANIC CARBON
C876A-001	300	0.05
C876A-002	330	0.08
C876A-003	370	0.03
C876A-004	400	0.04
C876A-005	430	0.06, 0.05R
C876A-006	460	0.04
C876A-007	490	0.11
C876A-008	520	0.09
C876A-009	550	0.0[illegible]
C876A-010	580	0.11
C876A-011	610	0.13
C876A-012	640	0.08
C876A-013	670	0.07
C876A-014	700	0.08, 0.08R
C876A-019	790	0.07
C876A-020	820	0.09
C876A-021	850	0.07
C876A-022	880	0.10
C876A-024	910	0.09
C876A-025	940	0.07
C876A-026	970	0.13
C876A-027	1000	0.09
C876A-028	1030	0.13
C876A-029	1060	0.33
C876A-030	1090	0.29, 0.29R
C876A-031	1120	0.16
C876A-032	1150	0.18
C876A-033	1180	0.49
C876A-034	1210	1.14
C876A-035	1240	0.47

SUMMARY OF ORGANIC CARBON ANALYSES

GEOCHEM SAMPLE NUMBER	WELL DEPTH (METERS)	PERCENT ORGANIC CARBON
C876A-036	1270	0.33
C876A-037	1300	0.18
C876A-038	1330	0.19
C876A-039	1360	0.22
C876A-040	1390	0.20
C876A-041	1410	0.26
C876A-043	1460	1.09
C876A-044	1480	0.90
C876A-045	1510	0.72
C876A-046	1540	1.45
C876A-047	1570	0.55, 0.54R
C876A-048	1600	1.02
C876A-049	1626	0.22

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)	Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-001 - A	300	100% DOLOMITE: creamy grey in colour, microcrystalline and cryptocrystalline, calcareous, poor porosity, brittle, trace pyrite and limestone	0.05
C876A-002 - A	330	100% DOLOMITE: creamy grey (some pink), microcrystalline and cryptocrystalline, calcareous, poor porosity, brittle, trace pyrite and limestone	0.08
C876A-003 - A	370	100% DOLOMITE: creamy to grey, microcrystalline and cryptocrystalline, calcareous, moderate to poor visible porosity, brittle, trace pyrite	0.03
C876A-004 - A	400	100% DOLOMITE: creamy colour, some grey, microcrystalline and cryptocrystalline, calcareous, poor visible porosity, trace rust staining	0.04
C876A-005 - A	430	100% DOLOMITE: brittle, creamy to grey and brown in colour, calcareous, microcrystalline and cryptocrystalline, poor visible porosity, trace pyrite inclusions and rust stains, trace fine black stained dolomite?	0.06, 0.05 R
C876A-006 - A	460	100% DOLOMITE: cream with some grey, calcareous, predominantly cryptocrystalline, poor visible porosity, trace glauconite and pyrite, brittle	0.04
C876A-007 - A	490	100% DOLOMITE: grey to brown with some cream, brittle, calcareous, predominantly cryptocrystalline, poor visible porosity, trace pyrite included.	0.11

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-008	520			0.09
- A		100%	DOLOMITE: grey brown in colour, calcareous cryptocrystalline, brittle, poor visible porosity, trace pyrite included	
C876A-009	550			0.09
- A		100%	DOLOMITE: grey in colour, cryptocrystalline, calcareous, poor visible porosity, brittle, trace rust stain	
C876A-010	580			0.11
- A		100%	DOLOMITE: grey in colour, cryptocrystalline, calcareous, poor visible porosity, brittle, trace rust stain	
C876A-011	610			0.13
- A		80%	DOLOMITE: grey brown in colour, crypto to microcrystalline, poor visible porosity, brittle to hard	
- B		20%	SHALE - DOLOMITE (Calcareous): greenish-grey in colour, waxy texture, blocky, firm hardness	
C876A-012	640			0.08
- A		50%	DOLOMITE: grey-brown in colour, crypto to microcrystalline, low visible porosity, brittle to hard	
- B		50%	SHALE: 30% reddish brown, smooth-earth texture, blocky, firm hardness	
- C			20% green, waxy texture, blocky, slightly calcareous	
- D			Trace gypsum-anhydrite	
C876A-013	670			0.07
- A		50%	DOLOMITE: grey (predominant) reddish brown, greenish microcrystalline, poor porosity, firm hardness	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-013 (Con't)		50%	SHALE: 30% red-brown, earthy texture, blocky, firm 20% green, waxy texture, blocky, slightly calcareous Trace anhydrite	
C876A-014	700			0.08, 0.08 R
- A		80%	SHALE: 40% reddish brown, earthy texture, calcareous in part, blocky, firm hardness, some inter-bedded anhydrite 40% green, waxy to earthy texture, calcareous, blocky, firm hardness	
		5%	DOLOMITE: grey-cream coloured, trace reddish, indurated hardness	
		15%	ANHYDRITE (gypsum) pink with some white, pearly lustre, moderately indurated	
C876A-019	790			0.07
- A		100%	MARL: green, red and white, earthy. Trace dolomite, anhydrite. This sample contains very little indurated sediment	
C876A-020	820			0.09
- A		90%	CALCAREOUS SHALE: cream, earthy texture, soft to firm, blocky	
		10%	MARL: green and red brown, soft and friable, trace anhydrite	
C876A-021	850			0.07
- A		75%	CALCAREOUS SHALE: cream coloured, earth texture, thinly bedded, hard, blocky	
- B		20%	ANHYDRITE: white - pink pearly lustre, moderately indurated, massive	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-021 (Con't)		2%	DOLOMITE: grey in colour	
		3%	MARL: predominantly green, some red	
C876A-022	880			0.10
- A		20%	MARL: green, some red - brown, soft friable	
- B		55%	CALCAREOUS SHALE: white - cream, hard, blocky, earthy texture, thinly bedded	
- C		20%	ANHYDRITE: pearly white - pink, well indurated, massive	
- D		5%	DOLOMITE: grey in colour, trace grey shale	
C876A-024	910			0.09
- A		20%	ANHYDRITE: pearly white - pink, massive, trace fibrous crystals	
- B		30%	CALCAREOUS SHALE: white, thinly bedded, hard, blocky	
- C		30%	DOLOMITE: grey in colour, micro-crystalline	
- D		20%	SHALE: green, red, grey calcareous in part (red), earthy texture, fissile, moderately indurated	
C876A-025	940			0.07
- A		50%	CALCAREOUS SHALE: white, earthy texture, blocky, hard	
- B		25%	MARL: green - red very soft, friable, small amount is slightly indurated and fissile	
- C		15%	DOLOMITE: cream to grey in colour, small amount of vuggy dolomite	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-025 (Con't)				
- D		10%	ANHYDRITE: pearly white massive, moderately indurated	
C876A-026	970			0.13
- A		50%	DOLOMITE CALCITIC: brown - cream coloured, earthy texture, argillaceous, vuggy, indurated hardness	
- B		30%	MARL: green, red in colour, soft - friable, some is slightly indurated and fissile	
- C		20%	ANHYDRITE: pearly white, moderately indurated, massive	
C876A-027	1000			0.09
- A		50%	MARL: green, red - brown in colour, soft - friable	
- B		45%	DOLOMITE-Calcitic: cream, to brown in colour, slightly vuggy, moderately indurated	
- C		5%	ANHYDRITE: pearly white, massive, moderately indurated	
C876A-028	1030			0.13
- A		100%	CALCAREOUS SHALE: greenish - grey in colour, blocky, slightly carbonaceous, brittle	
- B			Trace anhydrite, marl	
C876A-029	1050			0.33
- A		60%	SHALE: green and grey in colour, calcareous, carbonaceous, blocky, firm hardness	
- B		40%	DOLOMITE: Reddish brown in colour, cryptocrystalline, low visible porosity, hard to brittle	
- C			Trace anhydrite, chert	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-030	1090			0.29, 0.29R
- A		70%	SHALE: greenish grey, earthy texture, blocky, firm hardness, trace green, waxy, calcareous, block shale	
- B		30%	DOLOMITE: reddish brown in colour, cryptocrystalline, sucrosic, hard	
- C		1%	BROWN CHERT: trace creamy calcareous shale and anhydrite	
C876A-031	1120			0.16
- A		100%	SHALE: green (greyish) calcareous, carbonaceous in part, blocky, earthy, texture, firm hardness, trace pyrite inclusions	
C876A-032	1150			0.18
- A		100%	SHALE: greyish green calcareous carbonaceous, blocky, smooth - earth texture, firm hardness	
- B			Trace dolomite	
C876A-033	1180			0.49
- A		100%	SHALE: 70% grey - brown, calcareous, carbonaceous, thinly bonded, earthy texture, blocky, hard	
			30% green, pyrite inclusions, waxy texture, fissile, hard	
C876A-034	1210			1.14
- A		100%	SHALE: 70% grey brown, calcareous, carbonaceous, earthy texture, hard, blocky	
			30% green, pyrite included, carbonaceous in part, fissile, brittle, blocky in part	
- B			Trace limestone, dolomite and anhydrite crystals	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-035	1240			0.47
- A		75%	SHALE: 50% green, smooth texture, calcareous, brittle, blocky, fissile	
			25% grey - brown, calcareous, carbonaceous, blocky, brittle	
- B		25%	DOLOMITE - Calcitic: microcrystaline, reddish brown, very hard, moderate visible porosity	
C876A-036	1270	60%	SHALE: 30% green, slightly calcareous in part, waxy texture, moderately indurated, fissile	0.33
			10% grey - brown, calcareous, carbonaceous, blocky, hard	
		40%	SILTSTONE: grey in colour, dolomite cement, poorly cemented, silt sized quartz grains	
C876A-037	1300			0.18
- A		70%	SHALE: green and brown - grey, calcareous, carbonaceous, blocky, moderately indurated	
- B		30%	DOLOMITE - Calcitic: creamy coloured, cryptocrystalline, hard	
- C			Trace siltstone, anhydrite	
C876A-038	1330			0.19
- A		60%	SHALE: greenish grey, waxy to earthy texture, firm hardness, carbonaceous	
- B		40%	DOLOMITE: grey, cryptocrystalline, very hard, sucrosic	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)		Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-039	1360			0.22
- A		60%	SHALE: green - grey, calcareous in part, waxy - earthy texture, firm hardness, carbonaceous, trace black - grey, carbonaceous, thinly bonded, hard, shale	
- B		40%	DOLOMITE: grey, cryptocrystalline, very hard, sucrosic	
C876A-040	1390			0.20
- A		80%	SHALE: 50% green, calcareous (in part), carbonaceous, waxy texture, fissile - blocky, firm	
			30% grey - black, calcareous, carbonaceous, thinly bonded, fissile - blocky, brittle to friable	
- B		20%	DOLOMITE: grey microcrystalline, cryptocrystalline	
C876A-041	1410			0.26
- A		100%	SHALE: 40% grey, siliceous, slightly calcareous, very hard, brittle	
			30% green, carbonaceous, calcareous inclusions, friable - firm, blocky	
			30% black - grey, slightly calcareous, thinly banded in part, brittle, non fissile, siliceous	
- B			Trace Dolomite and Calcite	
C876A-043	1460			1.09
		100%	SHALE: 50% black - grey, non fissile, brittle, siliceous, grey shales, slightly calcareous	
			40% green, waxy, carbonaceous, calcareous inclusions, firm, blocky	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)	Gross Lithological Description	Total Organic Carbon (% of Rock)
C876A-043 (Cont't)			
- B		Trace Marl, Dolomite	
C876A-044	1480		0.90
		100% SHALE: 50% black, siliceous, non-fissile, trace pyrite, brittle	
		50% greyish green, calcareous included, carbonaceous, firm, waxy texture, blocky, trace pyrite included	
C876A-045	1510		0.72
- A		100% SHALE: 90% grey - black, thinly banded, siliceous, brittle, non-fissile, trace pyrite	
		10% green, carbonaceous, banded, in part, firm blocky - non-fissile	
C876A-046	1540		1.45
- A		100% SHALE: 50% black, highly siliceous, thinly banded including some quartz veins, brittle, non-fissile	
C876A-047	1570		0.55, 0.54R
- A		100% SHALE: 95% black, siliceous, brittle, thinly banded, non-fissile, trace quartz veins and inclusions, trace pyrite	
		5% green, slightly calcareous, carbonaceous, blocky - fissile, waxy texture, firm hardness	
C876A-048	1600		1.02
- A		100% SHALE: 80% black (some grey), siliceous, thinly banded, brittle, non-fissile	
		20% green, slightly calcareous, carbonaceous, blocky, firm hardness	

ORGANIC CARBON ANALYSES AND GROSS LITHOLOGICAL DESCRIPTION

GeoChem Sample Number	Well Interval (meters)	Gross Lithological Description	Total Organic Carbon (% of Rock)
CB76A-049 - A	1626	100% SHALE: 90% green, carbonaceous, waxy texture, blocky, firm hardness 10% black, siliceous, brittle, non-fissile, quartz veinlets	0.22

RESULTS OF ROCK-EVAL PYROLYSIS

FORWARD - Tunsto N-37

Geochem Sample	Interval (meters)	Tmax (C)	S1 (mg/g)	S2 (mg/g)	S1+S2 (ppm)	S3 (mg/g)	IR	T.O.C. (wt %)	HI	OI
CB76A-029	1060	0	.13	.15	280	.42	.46	.33	45	127
CB76A-030	1090	0	.07	.09	160	.35	.44	.29	31	120
CB76A-031	1120	0	.05	.04	90	.27	.56	.16	25	168
CB76A-032	1150	0	.07	.01	80	.27	.88	.18	5	150
CB76A-033	1180	343	.16	.37	530	.27	.30	.49	75	55
CB76A-034	1210	424	.87	3.00	3870	.21	.22	1.14	263	18
CB76A-035	1240	350	.15	.25	400	.39	.37	.47	53	82
CB76A-036	1270	351	.19	.40	590	.13	.32	.33	121	39
CB76A-037	1300	0	.11	.04	150	.17	.73	.18	22	94
CB76A-038	1330	0	.07	.03	100	.14	.70	.19	15	73
CB76A-039	1360	0	.13	.01	140	.16	.93	.22	4	72
CB76A-040	1390	0	.10	.02	120	.12	.83	.20	10	60
CB76A-041	1410	0	.16	.06	220	.13	.73	.26	23	50
CB76A-043	1460	342	.43	.25	680	.12	.63	1.09	22	11
CB76A-044	1480	0	.17	.03	200	.15	.85	.90	3	16
CB76A-045	1510	0	.20	.04	240	.09	.83	.72	5	12
CB76A-046	1540	0	.13	.00	130	.08	1.00	1.45	0	5
CB76A-047	1570	0	.19	.00	190	.09	1.00	.55	0	16
CB76A-048	1600	0	.17	.02	190	.09	.89	1.02	1	8
CB76A-049	1626	0	.06	.00	60	.08	1.00	.22	0	36

Tmax = Temperature index, degrees C.
S1 = Free hydrocarbons (mg HC/g of rock)
S2 = Residual hydrocarbon potential (mg HC/g of rock)
S3 = CO2 produced from kerogen pyrolysis (mg CO2/g of rock)

IR = Transformation ratio (S1/S1+S2)
T.O.C. = Total organic carbon, wt %
HI = Hydrogen index (mg HC/g organic carbon)
OI = Oxygen index (mg CO2/g organic carbon)
0 = No Tmax

VISUAL KEROGEN DATA

Forward Res. Tunago N-37

TRUNE GEOCHEM JOB C876A

GEOCHEM SAMPLE	INTERVAL (meters)	TYPE OF ORGANIC MATTER (%) ALGAL	AMORPHOUS	HERBACEOUS	WOODY	C-I	R	PRESERVATION	PARTICLE SIZE	T.A.I.		AMOUNT OF KEROGEN
046	1540					100		P	F-M	3.7	C	Very small
048	1600					100		P	F	3.7	C	Very small

NOTE: No structure to altered organic particles. Much surface contamination including algal and frugal reproductive bodies.

THICK WALLED ALGAL CYSTS | DEGRADED | OTHER | FINE | COARSE | SPORE POLLEN | CUTICLE | DEGRADED | STRUCTURED | UNSTRUCTURED | DEGRADED COALY-BENTHISITE (FUSAIN, VITRAIN) | POLYMERS/RESINS&OIL

G-GOOD F-FAIR P-POOR Po-POLYMERS O-OIL RW-REWORKED ‡2=YELLOW ‡3=BROWN ‡4=BLACK

Fi-FINE M-MEDIUM C-COARSE R-RESIN Tr-TRACE Ca-CAVED

Logging
Summary

SECTION IV

LOGGING SUMMARY

LOGGING SUMMARY

MARCH 8, 1985

MUD LOG - refer to pocket enclosure

LITHOLOGY - refer to pocket enclosure

DIRECTIONAL SURVEY - refer to pocket enclosure

CN-CDL-GR-VCAL

Top logged Interval	15.0 m
Bottom logged Interval	1617.0 m

AC-GR-CAL

Top logged Interval	600.0 m
Bottom logged Interval	1620.3 m

DIL-GR-CAL

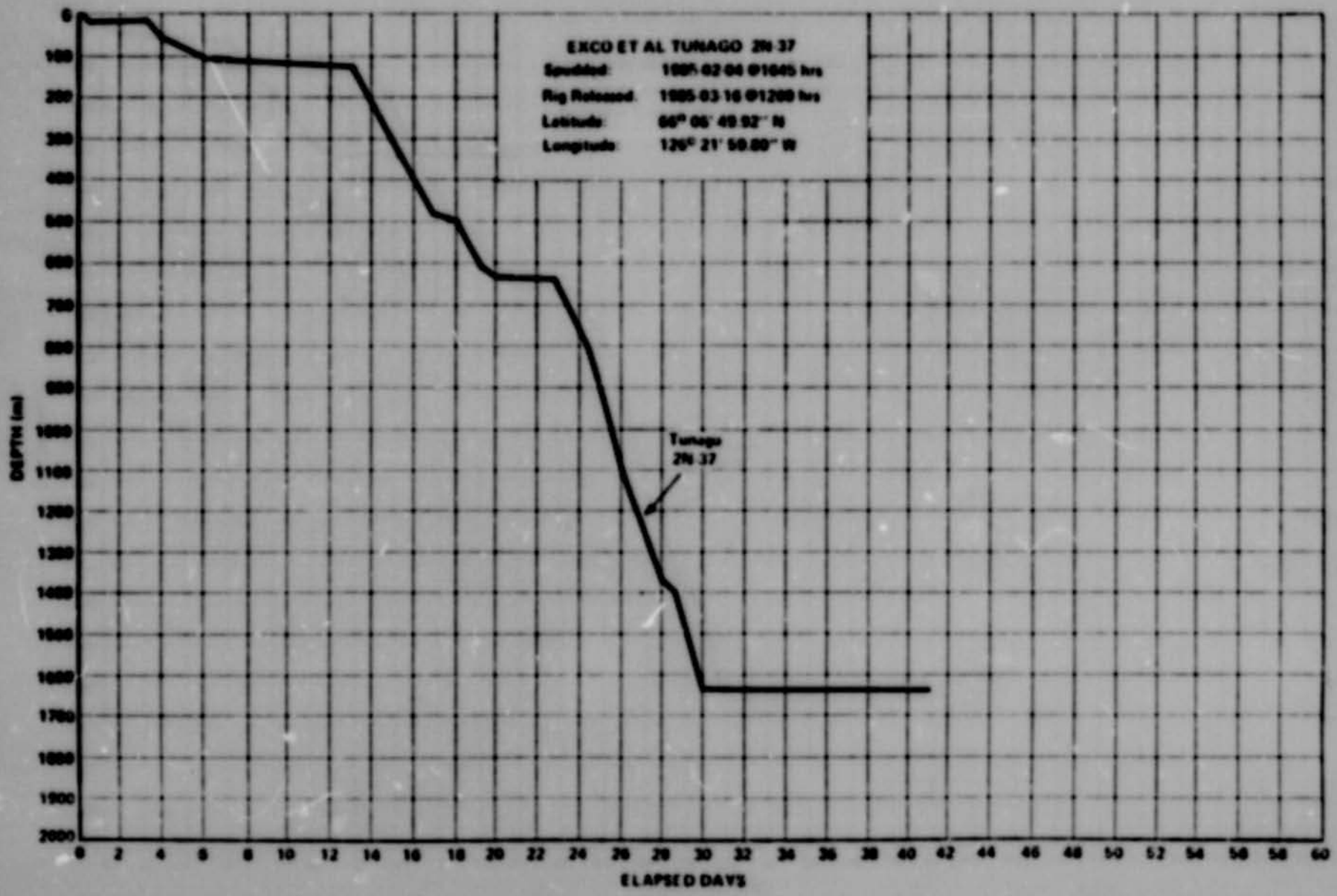
Top logged Interval	600.0 m
Bottom logged Interval	1615.0 m

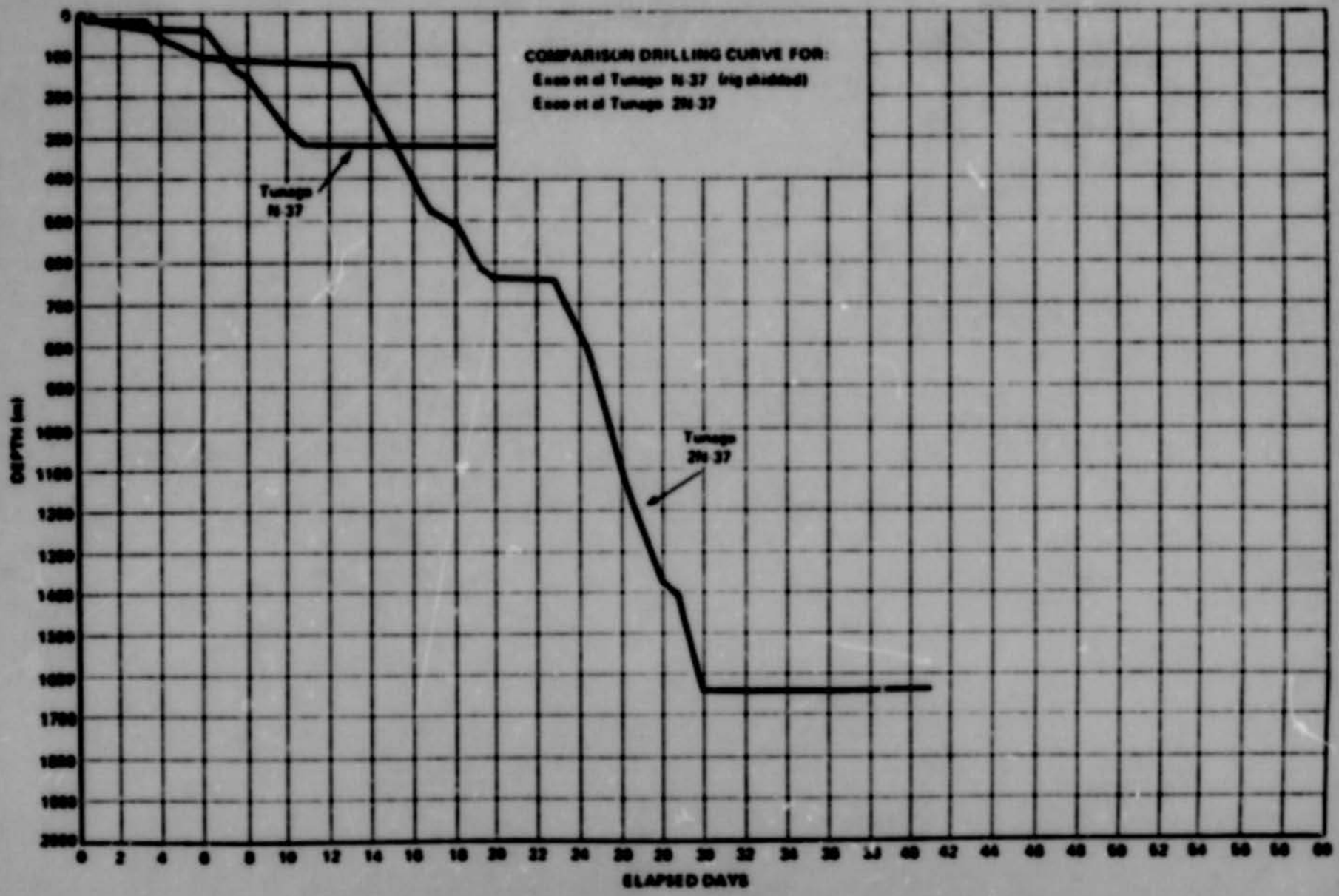
CBL-CCL-GR

Top logged Interval	11.0 m
Bottom logged Interval	632.0 m

SECTION V

DRILLING CURVE


EXCO ET AL TUNAGO 2N-37
Spudded: 1985-02-04 @1045 hrs
Rig Released: 1985-03-16 @1200 hrs
Latitude: 66° 05' 49.92" N
Longitude: 126° 21' 50.80" W
Tunago 2N-37
DEPTH (m)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60
ELAPSED DAYS


COMPARISUN DRILLING CURVE FOR:
Exxon et al Tunago N-37 (rig shidded)
Exxon et al Tunago 2N-37
Tunago N-37
Tunago 2N-37
DEPTH (m)
ELAPSED DAYS

Daily Drilling
Reports

SECTION VI

DAILY DRILLING REPORTS

Weatherford

PAGE

CHRONOLOGICAL HISTORY

WELL Exco et al Tunago 2N-37 LOCATION

ENGINEER Mel Nichols

DATE	WORK DESCRIPTION
	RIG UPDATE:
85 02 03	Finished drilling rathole (pure sand). Spotted matting, sub and pump. Rigged up with trucks. Derrick up by 1600 hours. Rigged up rig. To go with mud, need to rig up a suction.
	Time Analysis: Rig Up 8.00
	Rig Move 16.00
	Total 24.00

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 04 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 1 DEPTH 22 METRES LAST 24 HRS 22 ROTATING HRS 12.50

ACTIVITY AT REPORT TIME Reaming at 21.6 m with 431 mm bit Pilot Hole

Air/Foam Vis 55 sec/L DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1A	311	XDV	77633	1-15	60/70	IN	22	22	12.5	12.5	1.8	DR	LL	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	H.H.P	SURF PRESS kPa
1A				Drill with air 13 m								
				Drill with foam 9 m								

DEVIATION SURVEYS

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 5 sx

Durafoam 1 bbl

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		311	.30	
Bit Sub		159	1.07	
1 D.C.		159	9.16	
Kelly				

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	12.50	12.50
2 TRIPS		
3 RIG SERVICE	.25	.25
4 DEVIATION SURVEY		
5 REAM & COND HOLE		
6 MIX & COND MUD		
7 CIRCULATING		
8 RIG REPAIR		
9 RUN CASING & CEMENT		
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		
15 NIPPLE UP & TEST BOP		
16 DRILLING CUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT	6.25	6.25
21 Mousehole/rathole	5.00	5.00
TOTALS	24.00	24.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 04 2400
Year Month Day Time

Spud at 1045 hours 85-02-04.

Finish rigging up, drill mousehole and rathole. Strap and caliper collars. Start 311 mm pilot hole. Drill 12 m with air. Build foam runway in sub. Drill with foam 12 m to 22 m. Foam, used cold water. 11 m^3/minute - 6 m^3/minute at pressure of 600 kPa to 700 kPa. L/min - 32 injection rate.

Geology:

0 - 12 m	Fine sand, drill with air
12 - 15 m	Clay imbedded with stone and pebbles
15 - 20 m	Gravel, boulders and pebbles, sandstone clay, hard rough digging
20 - 24 m	Dolomite, brown green in color with fine crystal lime
	Hole is in gauge 3 m below our cribbing

Set pipe at 24 m after running the hole opener.

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 05 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 2 DEPTH 24.50 METRES LAST 24 HRS 2.50 ROTATING HRS 3.25

ACTIVITY AT REPORT TIME Circulate 508 mm casing

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCl ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1A	311	XDV	77633	2	60/70	24.5	2.5	24.5	3.25	15.75	1.5	5	1	1
2A	444	OSC1GJ	FR727	1/2	60/70	REAM	24.5	24.5	4.25	4.25	5.76	2	1	1

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
1A	O P E N											

DEVIATION SURVEYS

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 4 sx

Duraflow 1 bbl

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		311	.30	
Hole Opener		609.5	1.45	
X/O		159	1.07	
D.C.		159	9.16	

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	3.25	15.75
2	TRIPS	2.50	2.50
3	RIG SERVICE	.75	1.00
4	DEVIATION SURVEY		
5	REAM & COND HOLE	12.50	12.50
6	MIX & COND MUD		
7	CIRCULATING		
8	RIG REPAIR		
9	RUN CASING & CEMENT		
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		
15	NIPPLE UP & TEST BOP		
16	DRILLING OUT		
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		
19	PLUG & ABANDON		
20	RIG UP - TEAR OUT		6.25
21	Rig up sub floor	5.00	10.00
	TOTALS	24.00	48.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 05 2400
Year · Month · Day · Time

Rig Service
Drill to 24.5 m
Ream pilot hole
Rig service, trip out
Pick up hole opener and run in, ream 609 mm hole

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 06 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 3 DEPTH 24.5 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Rig up blowey line, finish nippling up

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	D
Hole Opener	609	SEC	8255	1	50/70	24	24	24	10.25	10.25	2.34	G	0	0

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	H.H.P.	SURF PRESS kPa
	OPEN			38 L/minute injection rate 1% Durafoam orifice - 490 kPa								
									surface - no reading			

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

No Additives

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT kN
Bit		311	.30	
Bit Sub		159	1.07	
Hole Opener		609	1.45	
1 DC		159	9.16	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		15.75
2 TRIPS	1.00	3.50
3 RIG SERVICE	.75	1.75
4 DEVIATION SURVEY		
5 REAM & COND HOLE	2.00	14.50
6 MIX & COND MUD		
7 CIRCULATING	2.50	2.50
8 RIG REPAIR		
9 RUN CASING & CEMENT	6.00	6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON cement	8.00	8.00
15 NIPPLE UP & TEST BOP	3.75	3.75
16 DRILLING OUT		
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		10.00
TOTALS	24.00	72.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 06 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0215	Ream 609 m hole
0215 - 0315	Lay down 1 DC and hole opener
0315 - 0630	Lift out table, rig to run casing
0630 - 0800	Run casing
0800 - 0815	Rig service
0815 - 1045	Rig up and circulate casing
1045 - 1200	Rig to and cement
1200 - 2000	Wait on cement
2000 - 2345	Cut casing, weld on flange, put in rotary table
2345 - 2400	Rig service

Ran 2 joints, 508 mm conductors, 158.5 kg/m, K-55, algoma, landed at 23.69 m. Cemented with 6 T (155 sx) permafrost cement + 2% $CaCl_2$ with 1.8 m^3 of good returns. Plug down 85-02-06 1145 hours.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 07 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 4 DEPTH 52 METRES LAST 24 HRS 28 ROTATING HRS 8

ACTIVITY AT REPORT TIME Drilling at 58 m

Foam drill

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1B	444.5	2JS Sm'th	SBE256	9	70/75	DRILL	28	28	8	8	3.5	1	N	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
1B	O P E N											

DEVIATION SURVEYS

1 °at 28 ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 1 sk

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN
Bit		444.5	.41	
Bit Sub		229	1.07	
X/O		229	.35	
2 - 9" DC's		229	19.02	
2 - 6-1/4 DC's		159	18.46	
1 X/O		159	.64	

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	8.00	23.75
2 TRIPS		3.50
3 RIG SERVICE	.50	2.25
4 DEVIATION SURVEY	.50	.50
5 REAM & COND HOLE		14.50
6 MIX & COND MUD		
7 CIRCULATING		2.50
8 RIG REPAIR		
9 RUN CASING & CEMENT		6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		8.00
15 NIPPLE UP & TEST BOP	12.50	16.25
16 DRILLING OUT	2.50	2.50
17 LOSS CIR		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		10.00
TOTALS	24.00	96.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 07 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0130	Weld on casing flange
0130 - 0300	Nipple up grant head, install table
0300 - 0800	Pick up drilling assembly
0800 - 1130	Rig up and string blowey line
1130 - 1200	Re-drill mousehole
1200 - 1215	Rig service
1215 - 1300	Weld on turnbuckles, rig up floor
1300 - 1530	Drill out 4 m of cement
1530 - 2330	Drill 444.5 mm hole
2330 - 2400	Circulate, survey at 28 m - 2 m of fill after survey

Geology:

Dolomite and rough drilling, porosity in spots, very small quantity of water is being produced

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 08 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 5 DEPTH 87 METRES LAST 24 HRS 35 ROTATING HRS 19

ACTIVITY AT REPORT TIME Drilling with foam at 87 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1B	444.5	2JS	SBE256	12	55/70	IN	35	63	19	27	2.33	I	N	

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
1B	O P E N			Air valves between 350 - 1300 m^3								
				Injection rate 13 gallons/minute								

DEVIATION SURVEYS

3/4 ° at 60 m ° at
° at ° at
° at ° at
° at ° at

MUD & CHEMICALS ADDED

Duraplex 4 sx
Durafoam 1 bbl

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN
Bit		444.5	.41	
Bit Sub		229	1.07	
2 D.C.'s		229	19.02	
X/O		229	.64	
X/O		177.8	.31	
6 D.C.'s		159	56.00	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	19.00	42.75
2 TRIPS	1.00	4.50
3 RIG SERVICE	.75	3.00
4 DEVIATION SURVEY		.50
5 REAM & COND HOLE		14.50
6 MIX & COND MUD		
7 CIRCULATING	2.50	5.00
8 RIG REPAIR	.75	.75
9 RUN CASING & CEMENT		6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		8.00
15 NIPPLE UP & TEST BOP		16.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		10.00
TOTALS	24.00	120.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 08 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0945	Drill
0945 - 1000	Rig service
1000 - 1600	Drill
1600 - 1615	Rig service
1615 - 1945	Drill
1945 - 2030	Trip to casing
2030 - 2115	Repair main drive chain
2115 - 2130	Rig service
2130 - 2400	Break circulation, try and locate air restriction

Geology:

52 - 87 m	Dolomite, light brown, porous, crystalline stringers of red mudstone to shale, scattered chert or quartz, dolomite

Water encountered, gradually picking up more water

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 09 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 6 DEPTH 106 METRES LAST 24 HRS 19 ROTATING HRS 10.50

ACTIVITY AT REPORT TIME Drilling at 113.5 m

DRILLING MUD PROPERTIES AT SHAKER/SUCTION PIT

Foam

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	DULL COND B	DULL COND O
1B	444.5	2JS	SBE256	8	60		19	82	10.5	37.5	2.19	I	N	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
1B	O P E N											

DEVIATION SURVEYS

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Duraplex 5 sx

Durafoam 1 sk

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN
Bit			.30	
Bit Sub		229	1.07	
2 D.C.'s		229	19.02	
X/O		229	.35	
X/O			.64	
8 D.C.'s		159	74.52	

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	10.50	53.25
2 TRIPS		4.50
3 RIG SERVICE	.50	3.50
4 DEVIATION SURVEY		.50
5 REAM & COND HOLE	4.00	18.50
6 MIX & COND MUD		
7 CIRCULATING	7.75	12.75
8 RIG REPAIR	1.25	2.00
9 RUN CASING & CEMENT		6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		8.00
15 NIPPLE UP & TEST BOP		16.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		10.00
TOTALS	24.00	144.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 09 2400
Year Month Day Time

0000 - 0500	Try to get circulation back, lost at 87 m, pulled 1 stand and 1 single, regain at 40 m, broke circulation, water coming in from several points
0500 - 0515	Rig service
0515 - 0630	Thaw out kelly standpipe, kelly hose
0630 - 0800	Break circulation, work pipe
0800 - 0815	Rig service
0815 - 0930	Try to regain circulation, unable to get good foam returns
0930 - 1015	Drill 444 mm hole
1015 - 1415	Ream from 84 m - 89 m (brittle formation)
1415 - 2400	Drill ahead, 1/2 m at a time, work pipe

Geology:

86 - 104 m	Chert in red silicious mudstone, turning to mudstone
104- 111 m	Fractured dolomite, porous, etc.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 10 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 7 DEPTH 122 METRES LAST 24 HRS 16 ROTATING HRS 13.50

ACTIVITY AT REPORT TIME Plug back

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1B	444.5	235	SBE256	3/15	60/100	122	16	98	13.5	51	1.9	2	3	1

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
1B	OPEN											

DEVIATION SURVEYS

None - tight hole

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 7 sx

Duraflow 1 sk

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		444.5	.30	
Bit Sub		229	1.07	
2 D.C.'s		229	19.02	
1 X/O		229	.35	
1 X/O		177	.64	
8 D.C.'s		159	74.52	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	13.50	66.75
2 TRIPS	5.00	9.50
3 RIG SERVICE	.50	4.00
4 DEVIATION SURVEY		.50
5 REAM & COND HOLE	5.00	23.50
6 MIX & COND MUD		
7 CIRCULATING		12.75
8 RIG REPAIR		2.00
9 RUN CASING & CEMENT		6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		8.00
15 NIPPLE UP & TEST BOP		16.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		10.00
TOTALS	24.00	168.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 10 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0800	Drill
0800 - 0815	Rig service
0815 - 1400	Drill
1400 - 1500	Circulate and condition hole
1500 - 1730	Hoist 1 stand, ream back to bottom
1730 - 1900	Circulate and condition hole
1900 - 1945	Dummy trip
1945 - 2215	Circulate and ream to 104 m
2215 - 2400	Trip out, tear out rotating head

Air Pressure 1170 - 1240 kPa

Hole Sloughing 86 - 104 m

Chert, interbedded, silicious, mudstone

WANT LIST

WEATHER -35°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 11 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 8 DEPTH 122 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Clean to 118 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	NULL COND T	B	G
2B	444.5	OSC1G	ER727WRB	3/5	60	IN Reaming 22 m to			2.75	hours				

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
2B	OPEN											

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

Durafoam 1 sk

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit		444	.30	
Bit Sub		229	1.07	
2 D.C.'s		229	19.02	
1 X/O		229	.35	
1 X/O		177	.64	
8 D.C.'s		159	74.52	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	2.75	69.50
2 TRIPS	2.00	11.50
3 RIG SERVICE	.50	4.50
4 DEVIATION SURVEY		.50
5 REAM & COND HOLE		23.50
6 MIX & COND MUD		
7 CIRCULATING		12.75
8 RIG REPAIR		2.00
9 RUN CASING & CEMENT		6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON cement	18.75	26.75
15 NIPPLE UP & TEST BOP		16.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		10.00
TOTALS	24.00	192.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 11 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0115	Pick up 11 singles, run in hole open ended
0115 - 0400	Rig up cementers
0400 - 0600	Work on skid unit
0600 - 0615	Run in to cement
0615 - 0700	Rig to cement
0700 - 0830	Run plug
0830 - 1700	Wait on cement
1700 - 1800	Run in hole, tag plug at 95.9 m
1800 - 2100	Wait on cement
2100 - 2115	Rig service
2115 - 2400	Drill out cement 95.9 m - 103 m, hard cement

Hole making water, returns 7 bbls/minute returns

Cement summary: Prehydrate 216.6 kg of $CaCl_2$ in 12.72 m^3 H_2O; mixed and pumped with 22 T (550 sxs) of oilwell cement; density of 1895 kg/m; cement from 106 m to estimated 50 m; slurry 16.7 m^3, displace with 8.7 m^3 H_2O; plug in place at 85-02-11 0815 hours.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 (Year) 02 (Month) 12 (Day) 2400 (Time)

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 9 DEPTH 122 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Waiting on cement

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	NOZ COND T	B	G
2B	444	OSC1G	ER727 WAR	3-5	60	95	Ream	out	22 m	in 3 hours		1	1	1
3B	215.9	SVH	CR7157	1	50/60	Ream	21	21	6	6		2	2	1

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

95 °at 1/2 °at

°at °at

°at °at

°at °at

MUD & CHEMICALS ADDED

Duraplex 4 sx

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN
Bit	215		.20	
Bit Sub	159		.97	
1 DC	159		9.51	
DP to surface				

COSTS

DAILY N/A

CUM

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		69.50
2 TRIPS	4.00	15.50
3 RIG SERVICE	.25	4.75
4 DEVIATION SURVEY	.25	.75
5 REAM & COND HOLE	13.50	37.00
6 MIX & COND MUD		
7 CIRCULATING		12.75
8 RIG REPAIR		2.00
9 RUN CASING & CEMENT		6.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		26.75
15 NIPPLE UP & TEST BOP		16.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21 Thaw out Lines	6.00	16.00
TOTALS	24.00	216.00

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 12 2400
Year Month Day Time

0000 - 0530	Ream rubble, clean and ream to 118 m, try to make connection, lay down a single, clean and ream, last hole back to 104 m, try and make a connection, froze up air lines
0530 - 0630	Thaw out air lines, circulate lines, hold tight while thawing out lines
0630 - 1130	Break circulation, clean to 98 m, frozen lines on connection at check valve, thaw out air drilling lines to rig floor
1130 - 1200	Blow kelly and hoist bit
1200 - 1530	Hoist bit, tear out rotary head, break off bit, head up grant rotating head again, make up 215.9 mm bit in hole
1530 - 1545	Survey
1545 - 1600	Rig service
1600 - 2200	Ream with 215.9 mm bit from 95 m to 117 m
2200 - 2400	Thaw out standpipe, kelly hose

WANT LIST

WEATHER -50°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 13 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 10 DEPTH 122 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Trip out of hole at 133 m

Foam Drilter

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
4B	444.5	OSC1G	ER727 WAE	2-15	50/100	Ream foam 96	- 118	m in 5 hours					IN	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
4B	O P E N					Air						

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Duraplex	2 sx

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Bit			.30	
Bit Sub			1.07	
X/O			.36	
X/O			.64	
8 DC's			74.52	

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		69.50
2 TRIPS	1.00	16.50
3 RIG SERVICE		4.75
4 DEVIATION SURVEY		.75
5 REAM & COND HOLE	9.75	46.75
6 MIX & COND MUD		
7 CIRCULATING		12.75
8 RIG REPAIR		2.00
9 RUN CASING & CEMENT	1.50	7.50
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Cement	11.00	37.75
15 NIPPLE UP & TEST BOP		16.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21 Thaw out Kelly	.75	16.75
TOTALS	24.00	240.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 13 2400
Year Month Day Time

0000 - 0045	Thaw out kelly
0045 - 0530	Clean to bottom 96 - 116 m
0530 - 0700	Rig to and cement 116 m - 95 m
0700 - 0800	Pull out plug
0800 - 1900	Wait on cement, run in with bit
1900 - 2200	Ream from 96 m to 108 m
2200 - 2400	Ream from 108 m to 118 m

Top plug at 96 m, displace water from hole and build up foam, estimated water discharge of 7 bbls/minute, ream from 104 m to 109 m. Pull bag up and go down without rotating to 106 m (3 m fill), made connection, drilled to 118 m, increase air volume significantly

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 14 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 11 DEPTH 133 METRES LAST 24 HRS 11 ROTATING HRS 3.50

ACTIVITY AT REPORT TIME Ream with casing at 118 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
4B	444.5	OSC1J	ER727 JAB	2/10	60	133	11	11	3.50	10.00	2.86	6	3	⅛
									Including reaming					

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Duraplex 2 sx

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN
Same				

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	3.50	73.00
2	TRIPS	1.75	18.25
3	RIG SERVICE	.25	5.00
4	DEVIATION SURVEY		.75
5	REAM & COND HOLE	2.00	48.75
6	MIX & COND MUD		
7	CIRCULATING	.75	13.50
8	RIG REPAIR		2.00
9	RUN CASING & CEMENT	15.75	23.25
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		37.75
15	NIPPLE UP & TEST BOP		16.25
16	DRILLING OUT		2.50
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		
19	PLUG & ABANDON		
20	RIG UP - TEAR OUT		6.25
21			16.75
	TOTALS	24.00	264.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 14 2400
Year Month Day Time

0000 - 0030	Ream from 118 to 122 m
0030 - 0115	Drill 444 mm hole 122 - 127 m
0115 - 0245	Ream tight hole at 118 - 127 m
0245 - 0430	Drill from 127 - 132 m
0430 - 0530	Drill from 132 to 133 m
0530 - 0615	Circulate and work pipe at 133 m
0615 - 0800	Hoist to run casing
0800 - 0815	Rig service
0815 - 2400	Rig to and run casing

Tong and work casing from 96 m to 104 m

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 15 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 12 DEPTH 133 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Nipple up, stringing blouey line

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	DULL COND B	DULL COND G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	H H P	SURF PRESS kPa
				Drill with Durafoam and mud slugging occasionally								

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Gel	76 sx	
Caustic	2 sx	
Duraplex	2 sx	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Same				

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		73.00
2 TRIPS		18.25
3 RIG SERVICE		5.00
4 DEVIATION SURVEY		.75
5 REAM & COND HOLE	4.00	52.75
6 MIX & COND MUD		
7 CIRCULATING		13.50
8 RIG REPAIR		2.00
9 RUN CASING & CEMENT	15.75	39.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Cement	4.25	42.00
15 NIPPLE UP & TEST BOP	16.25	16.25
16 DRILLING OUT	2.50	2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		16.75
TOTALS	24.00	288.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 15 2400
Year Month Day Time

0000 - 0800	Circulate and tong casing 104 - 112 m, mix and pump 60 barrels of mud
0800 - 1200	Tong casing from 112 - 121.5 m, pumped on additional 60 barrels of mud
1200 - 1600	Circulate and condition hole, pressure up and lost 1 m, back to 120.5 m
1600 - 1730	Wait on cementers to repair low pressure pump
1730 - 1945	Rig to and cement casing
1945 - 2400	Wait on cement

Ran 11 joints of 339 mm, 81.1 kg/m, K-55, 8 RD, Rg 3, ST&C, landed at 120.5 m, cemented with 9 T oilwell class G + 3% $CaCl_2$ + .75% C-322 fluid loss additive + 6 sx of celloflake. Displaced with water, no plug used (foam sheath inside the 339 mm casing). 3 m^3 of water was pumped ahead. No returns whatsoever. Re-cemented down the annulus, at 6 m mark, placed sacks between conductor casing and 339 mm casing, mixed and placed 5 sx cement on top of bags, let set, mix additional 19 sx and place on sacks (plug), held, will re-cement to surface.

WANT LIST

WEATHER -40°C Overcast **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 16 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 13 DEPTH 133 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Drilling ahead at 143 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT AT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

Duraplex 2 sx

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		73.00
2 TRIPS		18.25
3 RIG SERVICE		5.00
4 DEVIATION SURVEY		.75
5 REAM & COND HOLE		52.75
6 MIX & COND MUD		
7 CIRCULATING		13.50
8 RIG REPAIR		2.00
9 RUN CASING & CEMENT		39.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		42.00
15 NIPPLE UP & TEST BOP	24.00	40.25
16 DRILLING OUT		2.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		16.75
TOTALS	24.00	312.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 16 2400
Year Month Day Time

0000 - 1200	Cut casing and weld on bowl, head up, check motor kills and fire extinguishers
1200 - 1700	Rig up blowey line, install HCR, kill line valves
1700 - 2030	Pick up 9" jar and shock sub, make up 12-1/2" bit, run in hole, blow kelly and stand pipe
2030 - 2130	Displace water from hole with air, clear out all valves and lines, manifold shock, blow with air
2130 - 2400	Pressure test hydril, bowl, valves, manifold and HCR 1500 kPa
85 02 17	Drill through float, ream rubble from 118 to 123 m, no sign of cement, drill from 123 to 133 m, no sign of cement under shoe, casing seems secure, drill ahead Producing approx. 3 barrels/minute in comparison to 7 barrels/minute prior to running and setting 13-3/8" casing

Geology:

133 - 143 m	Dolomite, very fine to finely crystalled

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Waterhouse

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 17 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 14 DEPTH 183 METRES LAST 24 HRS 50 ROTATING HRS 10.5

ACTIVITY AT REPORT TIME Drilling at 209 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
5B	311	F2	EC0929	10	70	IN	50	50	10.5	10.5	4.8			

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
5B	O	P	E N	Drilling with foam								

DEVIATION SURVEYS

1 °at 155 °at

3/4 °at 183 °at

°at °at

°at °at

MUD & CHEMICALS ADDED

Duraplex 6 sx

RMP27 1 pail

Duraplex 1 sk

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Same				

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	10.50	83.50
2 TRIPS	.75	19.00
3 RIG SERVICE	.50	5.50
4 DEVIATION SURVEY	.75	1.50
5 REAM & COND HOLE	4.00	56.75
6 MIX & COND MUD		
7 CIRCULATING		13.50
8 RIG REPAIR	4.00	6.00
9 RUN CASING & CEMENT		39.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		42.00
15 NIPPLE UP & TEST BOP	.75	41.00
16 DRILLING OUT	2.75	5.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		16.75
TOTALS	24.00	336.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 17 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0100	Blow and winterize manifold and lines
0100 - 0345	Drill out float
0345 - 0445	Drill out over hole to 133 m
0445 - 0615	Drill
0615 - 0645	Pull up to 119 m and let rubble fall
0645 - 0800	Ream to bottom
0800 - 0815	Rig service
0815 - 0930	Ream to 143 m
0930 - 1200	Drill to 152 m
1200 - 1300	Drill to 155 m
1300 - 1315	Survey
1315 - 1845	Drill to 183 m
1845 - 1915	Survey
1915 - 2000	Blow hole dry, leaking between 13-3/8" and 20" casing. huist into casing and blow hole dry again
2000 - 2400	weld cap top of 20" casing to 13-3/8" casing with 2" nipple and valve, change out kelly, poor cement on both bottom and top stages, vibration while drilling and bent kelly aided in problem, diesel gel plug between both casing and re-cement top plug.

WANT LIST

WEATHER ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	02	18	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 15 DEPTH: 283 METRES LAST 24 HRS: 100 ROTATING HRS: 18.25

ACTIVITY AT REPORT TIME: Drilling at 313 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL CONDN T	B	G
58	311	F2	EC0929	14	70	IN	100	150	18.25	28.75	5.22		IN	

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
58	O	P	E	N								

DEVIATION SURVEYS

1/2 ° at	212	° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Duraplex	5 sx	
RPMZ-2	1 pl	
Duraflow	1 sk	

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	18.25	101.75
2 TRIPS		19.00
3 RIG SERVICE	.25	5.75
4 DEVIATION SURVEY	.25	1.75
5 REAM & COND HOLE		56.75
6 MIX & COND MUD	2.00	2.00
7 CIRCULATING		13.50
8 RIG REPAIR	3.25	9.25
9 RUN CASING & CEMENT		39.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		42.00
15 NIPPLE UP & TEST BOP		41.00
16 DRILLING OUT		5.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.75
21		18.75
TOTALS	24.00	360.00

SUPERVISOR: Mel Nichols

OPERATIONS DETAILS **PERIOD ENDING** 85 02 18 2400
Year Month Day Time

0000 - 0145	Weld plate on conductor to conductor casing
0145 - 0345	Stage circulate back to bottom, no fill
0345 - 0800	Drill to 206 m
0800 - 0815	Rig service
0815 - 0830	Survey
0830 - 1730	Drill to 260 m
1730 - 1900	Repair draw works clutch
1900 - 2400	Drill to 283 m

Dolomite

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR. PERIOD ENDING

85 02 19 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 16 DEPTH 382 METRES LAST 24 HRS 99 ROTATING HRS 23.25

ACTIVITY AT REPORT TIME Drill at 410 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
58	311	F2	EC0929	13	70		99	249	23.25	52	4.9		IN	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
58	O	P	E	N								

DEVIATION SURVEYS

1/2 ° at	280	° at	
3/4 ° at	343	° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Duraplex	5 sx	
RMZP-7	2 pails	
Durafoam	2 bbls	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN
Same				

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	23.25	125.00
2	TRIPS		19.00
3	RIG SERVICE	.25	1.00
4	DEVIATION SURVEY	.50	2.25
5	REAM & COND HOLE		56.75
6	MIX & COND MUD		2.00
7	CIRCULATING		13.50
8	RIG REPAIR		9.25
9	RUN CASING & CEMENT		38.00
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		42.00
15	NIPPLE UP & TEST BOP		41.00
16	DRILLING OUT		5.25
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		
19	PLUG & ABANDON		
20	RIG UP - TEAR OUT		6.25
21			16.75
	TOTALS	24.00	[illegible]

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 19 2400
Year · Month · Day · Time

0000 - 0115	Drill
0115 - 0130	Rig service and survey
0130 - 0800	Drill
0800 - 0815	Rig service, check engine kills
0815 - 1700	Drill
1700 - 1715	Rig service and survey
1715 - 2400	Drill

WANT LIST

WEATHER -38°C ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 20 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 17 DEPTH 470 METRES LAST 24 HRS 88 ROTATING HRS 23

ACTIVITY AT REPORT TIME 480 m - work on compressors - drill ahead

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam drilling - pressure at 470 psi - air volumes

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	NULL COND T	B	G
5B	311	F2	EC0929	11-14	70/90	IN	88	337	23	75	4.48	DR	ILL	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	H.H.P	SURF PRESS kPa
5B	O	P	E N									

DEVIATION SURVEYS

1/2 °at 430 °at
°at °at
°at °at
°at °at

MUD & CHEMICALS ADDED

Duraplex	6 sx	Gel	45 sx
RMZP-7	1 pail	Diesel	20 bbls
Duraflow	1 pail		

BOTTOM ASSEMBLY

TOOL	ID mm	O.D mm	LENGTH m	WEIGHT daN
Same				

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	23.00	148.00
2 TRIPS		19.00
3 RIG SERVICE	.75	6.75
4 DEVIATION SURVEY	.25	2.50
5 REAM & COND HOLE		56.75
6 MIX & COND MUD		2.00
7 CIRCULATING		13.50
8 RIG REPAIR		9.25
9 RUN CASING & CEMENT		39.00
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		42.00
15 NIPPLE UP & TEST BOP		41.00
16 DRILLING OUT		5.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		16.75
TOTALS	24.00	408.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 20 2400
Year · Month · Day · Time

0000 - 0015	Rig service	
0015 - 0800	Drill	
0800 - 0815	Rig service	
0815 - 1200	Drill	No sloughing or fill on bottom at
1200 - 1215	Rig service	connection time
1215 - 1230	Survey	
1230 - 2400	Drill	

Geology:

382 - 470 m Dolomite

Ran diesel gel plug, results seem poor

991 m of casing is on location - Halliburton DV tool

- Packer - Lynnes United

WANT LIST

WEATHER -40°C No wind, clear **ROAD** Fair

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING
85 02 21 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 18 DEPTH 495 m METRES LAST 24 HRS 25 ROTATING HRS 9.75

ACTIVITY AT REPORT TIME Drilling at 528 m

Foam

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
5B	311	F2	EC0929	14	80/85	486	16	353	5.5	80.5	4.39	7	8	1/
6B	311	F2	EC0698	15	70		9	9	4.25	4.25	2.1			

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
5B	O P E N			480 psi			10 bbls/minute water					
6B				Orifice 1.25			CFM 1000					

DEVIATION SURVEYS

1/2	°at 467		°at
1/2	°at 473		°at
	°at		°at
	°at		°at

MUD & CHEMICALS ADDED

Duraplex	2
RMZP - 7	2 pails
Duraflow	1 BBL

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	9.75	157.75
2	TRIPS	4.75	23.75
3	RIG SERVICE	.5	7.25
4	DEVIATION SURVEY	.75	3.25
5	REAM & COND HOLE	3.75	60.50
6	MIX & COND MUD		2.00
7	CIRCULATING		13.50
8	RIG REPAIR		9.25
9	RUN CASING & CEMENT		39.00
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		42.00
15	NIPPLE UP & TEST BOP		41.00
16	DRILLING OUT		5.25
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		6.25
21	WOPR on air equipment	4.5	21.25
	TOTALS	24.00	432.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 21 2400
Year Month Day Time

0 - 0015	Rig service
0045	Survey
0330	Drill
0800	work on air drilling equipment
0815	Rig service
1100	Drill
1200	Survey, trip out
1415	Pulled out to change bit
1500	Picked up 3 - 159 mm drill collars
1600	Run in hole
1945	Ream under guage hole 445 - 486 m
2400	Drill

470 - 485 m

Fine crystaline dolomite, tight, light grey

485 - 495 m

Fine crystaline dolomite, tight, grey brown

WANT LIST

WEATHER -42° C ROAD

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 22 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 19 DEPTH 588 METRES LAST 24 HRS 93 ROTATING HRS 23.00

ACTIVITY AT REPORT TIME Drilling at 630 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Foam 560 psi 1000 cfm 1.25 in. orifice with 10 bbls/minute

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	B.T. WT	B.T. RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
68	311	F2	EC0698	15	65		93	102	23	27.25	3.74	1	N	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

1/2 ° at 543 ° at
° at ° at
° at ° at
° at ° at

MUD & CHEMICALS ADDED

Duraplex 5 sx
RMZ-7 1 pail
Durafoam 1 bbl

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	23.00	180.75
2 TRIPS		23.75
3 RIG SERVICE	.75	8.00
4 DEVIATION SURVEY	.25	3.50
5 REAM & COND HOLE		60.50
6 MIX & COND MUD		2.00
7 CIRCULATING		13.50
8 RIG REPAIR		9.25
9 RUN CASING & CEMENT		39.20
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		42.00
15 NIPPLE UP & TEST BOP		41.00
16 DRILLING OUT		5.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		21.25
TOTALS	24.00	456.00

COSTS

DAILY N/A

CUM

SUPERVISOR Dave Campbell

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 22 2400
Year · Month · Day · Time

0000 - 0015	Rig service
0015 - 0800	Drill 311 mm hole
0800 - 0815	Rig service
0815 - 1215	Drill
1215 - 1230	Survey
1230 - 1600	Drill
1600 - 1615	Rig service
1615 - 2400	Drill

Geology:

495 - 588 m Grey brown dolomite, drilling break at 515 m, appeared to pick up additional water. Drilling break also at 525 m. Small drilling breakup at 356 m.

WANT LIST

WEATHER -30°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	02	23	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 20 DEPTH: 630 METRES LAST 24 HRS: 42 ROTATING HRS: 8.25

ACTIVITY AT REPORT TIME: Waiting on cement, run cement down top of casing

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Air drilling 560 psi 1000 cfm vis. 45

WT ___ VIS ___ WL ___ GELS ___ % SOLIDS ___ PV ___ YP ___ pH ___

% OIL ___ %SAND ___ CAKE ___ PPMCL ___ PPMCa ___

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
68	311	F2	EC0698	15	65	630	42	144	8.25	35.5	4.06	8	4	I

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

3/4 °at 630 ___ °at ___

___ °at ___ ___ °at ___

___ °at ___ ___ °at ___

___ °at ___ ___ °at ___

MUD & CHEMICALS ADDED

Duraplex 2 sx

RMZP-7 1 pail

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR: Dave Campbell

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	8.25	189.00
2	TRIPS	5.00	28.75
3	RIG SERVICE	.50	8.50
4	DEVIATION SURVEY	.25	3.75
5	REAM & COND HOLE		60.50
6	MIX & COND MUD		2.00
7	CIRCULATING	3.75	17.25
8	RIG REPAIR		9.25
9	RUN CASING & CEMENT	5.25	44.25
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		42.00
15	NIPPLE UP & TEST BOP		41.00
16	DRILLING OUT		5.25
17	LOSS CIRC		
18	LAY DOWN DP & BOPS	1.00	1.00
19	PLUG & ABANDON		
20	RIG UP - TEAR OUT		6.25
21			21.25
	TOTALS	24.00	480.00

PLEASE TURN OVER
PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 23 2400
Year · Month · Day · Time

0000 - 0015	Rig service
0015 - 0830	Drill 311 mm hole
0830 - 1015	Circulate
1015 - 1030	Survey at 630 m
1030 - 1345	Dummy trip to 339 mm casing
1345 - 1400	Rig service
1400 - 1600	Circulate and condition
1600 - 1745	Hoist to run 244 mm casing
1745 - 1845	Lay down 229 mm assembly
1845 - 2400	Run 244 mm casing

WANT LIST

WEATHER -39°C Clear **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	02	24	2400

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 21 DEPTH 630 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Nipple up BOP's

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL % SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Dave Campbell

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		189.00
2 TRIPS		28.75
3 RIG SERVICE		8.50
4 DEVIATION SURVEY		3.75
5 REAM & COND HOLE		60.50
6 MIX & COND MUD		2.00
7 CIRCULATING		17.25
8 RIG REPAIR		9.25
9 RUN CASING & CEMENT	8.00	32.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON Cement	16.00	58.00
15 NIPPLE UP & TEST BOP		41.00
16 DRILLING OUT		5.25
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		1.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		21.25
TOTALS	24.00	504.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 24 2400
Year · Month · Day · Time

0000 - 0115	Run casing
0115 - 0700	Cement
0700 - 1300	Wait on cement
1300 - 1400	Top cement casing annulus
1400 - 2400	Wait on cement

Ran 53 joints 244.4 mm 64.7 kg/m L-80 LT&C 8RD new casing, landed at 630 m. David Lynch strap collar ran at 320.48 to 321.48 m. Lynes inflatable cementing packer set at 343.7 m to 346.39 m. Centralizers run on shoe joint, 3 m up from shoe. Top of float collar joint, top of joint #24 below packer, top of joint #43 inside 339 mm casing. Cement baskets run at 153.64 m, 117.32 m above and below main water bearing zone.

Cemented in 2 stages. Cement Stage #1 - 342 to 630 m, cemented with 14.3 T (358 sx) Class "G" + FDP-C322 fluid loss additive. Plug down at 0500 hours 85 02 24. Stage #2 - 342 m to surface, lead in cement 10.4 T (260 sx) permafrost cement, tail in 10.3 T (257 sx) Class "G" + FDP-C322. Plug down at 0700 hours 85 02 24. No returns to surface. Waited for cement to set up. Top cemented annulus with 4.8 T (120 sx) permafrost cement. Cement to surface. Top cemented 339 mm x 508 mm annulus with 6 T (150 sx) permafrost. Cement to surface. Set up for 10 hours.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 25 2400
Year Month Day Time

WELL NAME Ezco et al Tunago 2N-37 LOCATION

DAY 22 DEPTH 630 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Pressure test BOP'

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT AT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1	215.9	JD7	58408											

CIRCULATION RECORD

BIT NO	JETS – mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING		189.00
2	TRIPS	.50	29.25
3	RIG SERVICE	.25	8.75
4	DEVIATION SURVEY		3.75
5	REAM & COND HOLE		60.50
6	MIX & COND MUD		2.00
7	CIRCULATING		17.25
8	RIG REPAIR		9.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		58.00
15	NIPPLE UP & TEST BOP	10.25	51.25
16	DRILLING OUT		5.25
17	LOSS CIRC		
18	LAY DOWN DP & BOPS	4.00	5.00
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		6.25
21	Slip & Cut line,	9.00	30.25
	WO Bowl, MU BHA TOTALS	24.00	528.00

COSTS

DAILY N/A

CUM

SUPERVISOR Dave Campbell

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 84 02 25 2400
Year Month Day Time

0000 - 0400	Nipple down hydril and Grant head
0400 - 0800	Cut casing and weld on bowl
0800 - 1700	Nipple up BOP's
1700 - 1715	Rig service
1715 - 1800	Pressure test blind rams, 2000 and 10,500 kPa, 15 minutes, OK
1800 - 1830	Blow manifold with steam and fill with diesel fuel
1830 - 2230	Pick up and make up BHA
2230 - 2330	Slip and cut drilling line
2330 - 2400	Run in to stage collar with bit #1

WANT LIST

WEATHER -25°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85	02	26	2400
Year	Month	Day	Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 23 DEPTH 636 METRES LAST 24 HRS 6 ROTATING HRS 1

ACTIVITY AT REPORT TIME Drilling at 693 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

1000 dfm 1.25" orifice

WT VIS 36 WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot. hrs	m/HR	BIT COND T	B	G
1	216	J07	58408	12	75	IN	6	6	1	1	6		IN	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Duraplex 1 sk	

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	1.00	190.00
2 TRIPS	.50	29.75
3 RIG SERVICE	.25	9.00
4 DEVIATION SURVEY		3.75
5 REAM & COND HOLE		60.50
6 MIX & COND MUD		2.00
7 CIRCULATING	2.00	19.25
8 RIG REPAIR		9.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP	2.75	54.00
16 DRILLING OUT	6.25	11.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21 Thaw kelly, Teak off	11.25	41.50
TOTALS	24.00	552.00

COSTS

DAILY N/A

CUM

SUPERVISOR Dave Campbell

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 26 2400
Year - Month - Day - Time

0000 - 0015	Rig service
0015 - 0045	Circulate hole dry
0045 - 0145	Drill out stage collar
0145 - 0215	Circulate hole and blooey line dry
0215 - 0330	Fill hole and drill string with water
0330 - 0500	Pressure test hydril and pipe rams, 2000 and 10,500 kPa, 15 minutes. OK, conduct fire drill
0500 - 1345	Thaw kelly, kelly hole and stand pipe
1345 - 1415	Run in to drill out shoe
1415 - 1430	Circulate hole dry
1430 - 1945	Drill out float collar, cement and float shoe
1945 - 2045	Drill
2045 - 2315	Fill hole with H_2O and run leak off test
2315 - 2400	Circulate hole dry

WANT LIST

WEATHER -22°C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING
85 02 27 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 24 DEPTH 764 m METRES LAST 24 HRS 128 m ROTATING HRS 22.75

ACTIVITY AT REPORT TIME Drilling at 778 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS 37 WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1	216	JD7	58408	2	110	IN	128	134	22.75	23.75	5.6		IN	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
1	AIR											

DEVIATION SURVEYS

2 3/4 ° at	694	° at	
4 3/4 ° at	722	° at	
4 3/4 ° at	740	° at	
4 1/2 ° at	759	° at	

MUD & CHEMICALS ADDED

RMZP - 7	1 pail		
Duraplex	3		

BOTTOM ASSEMBLY

TOOL	ID mm	O D mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	22.75	212.75
2	TRIPS		29.75
3	RIG SERVICE	.50	9.50
4	DEVIATION SURVEY	.75	4.50
5	REAM & COND HOLE		60.50
6	MIX & COND MUD		2.00
7	CIRCULATING		19.25
8	RIG REPAIR		9.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		58.00
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		5.00
19	PLUG & ABANDON		
20	RIG UP - TEAR OUT		6.25
21			41.50
	TOTALS	24.00	576.00

COSTS

DAILY

CUM

SUPERVISOR Dave Campbell

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 02 28 2400
Year - Month - Day - Time

0 - 0800 Drill
- 0815 Survey
- 0930 Drill
- 0945 Rig service. Check engine kills.
- 1145 Drill
- 1200 Survey.
- 2215 Drill
- 2230 Rig service and survey
- 2330 Drill
- 2345 Survey
- 2400 Drill

WANT LIST

WEATHER -24° C **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Waterford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 02 28 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N37 LOCATION

DAY 25 DEPTH 872 METRES LAST 24 HRS 108 ROTATING HRS 17

ACTIVITY AT REPORT TIME Drill at 940 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS 37 WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
1	216	JD7	58408	2	110	778	14	148	4.25	28	5.3	3	1	I
2	216	JD4		2.5/3	150		94	94	12.75	12.75	7.4			

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

5	°at	778	4	°at	872
4 3/4	°at	794		°at	
4 1/2	°at	822		°at	
4 3/4	°at	853		°at	

MUD & CHEMICALS ADDED

Durafoam	1 bbl	
Duraplex	5 sx	
RMZP-7	2 pails	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	17.00	229.75
2	TRIPS	3.25	33.00
3	RIG SERVICE	.75	10.25
4	DEVIATION SURVEY	1.00	5.50
5	REAM & COND HOLE		60.50
6	MIX & COND MUD		2.00
7	CIRCULATING		19.25
8	RIG REPAIR	2.00	11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		58.00
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOST CIRC		
18	LAY DOWN DP & BOPS		5.00
19	PLUG & ABANDON		
20	RIG UP - TEAR OUT		6.25
21			41.50
	TOTALS	24.00	600.00

COSTS

DAILY

CUM

SUPERVISOR Dave Campbell

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 02 28 2400
Year Month Day Time

0000 - 0415	Drill
0415 - 0430	Rig service, check BOP, survey
0430 - 0745	Hoist bit #1, Run in with bit #2
0745 - 0945	Repair hydromatic
0945 - 1300	Drill
1300 - 1315	Survey
1315 - 1630	Drill
1630 - 1645	Rig service
1645 - 1800	Drill
1800 - 1815	Survey
1815 - 2045	Drill
2045 - 2100	Survey
2100 - 2330	Drill
2330 - 2345	Rig service
2345 - 2400	Survey

WANT LIST

WEATHER -35^0 ROAD Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	03	01	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 26 DEPTH: 1081 METRES LAST 24 HRS: 209 ROTATING HRS: 21.50

ACTIVITY AT REPORT TIME: Drill 216 mm hole at 1137 m

DRILLING MUD PROPERTIES AT SHAKER/SUCTION PIT

Air volume 1000 cfm through 1.5" Viscosity 37 Surface pressure 150 psi - 175

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/hR	DULL COND T	B	G
2	215.9	J04	96498	3	150	IN	209	303	21.5	34.25	8.85	R	U	N

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

3-3/4 ° at	901	3-1/2 ° at	1012
4 ° at	929	3-3/4 ° at	1041
3-3/4 ° at	955	3 ° at	1071
3-3/4 ° at	984	° at	

MUD & CHEMICALS ADDED

Duoplex	6 sx
RMZP-7	2 pails

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING	21.50	251.25
2	TRIPS		33.00
3	RIG SERVICE	.75	11.00
4	DEVIATION SURVEY	1.75	7.25
5	REAM & COND HOLE		60.50
6	MIX & COND MUD		2.00
7	CIRCULATING		19.25
8	RIG REPAIR		11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		
12	CORING		
13	FORMATION TESTING		
14	WAITING ON		58.00
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		
18	LAY DOWN DP & BOPS		5.00
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		6.25
21			41.50
	TOTALS	24.00	624.00

COSTS

DAILY N/A

CUM

SUPERVISOR: Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 01 2400
Year Month Day Time

0000 - 0015	Rig service
0015 - 0300	Drill
0300 - 0330	Survey at 901 m
0330 - 0615	Drill
0615 - 0630	Survey at 929 m
0630 - 0915	Drill
0915 - 0930	Survey
0930 - 0945	Rig service, check BOP's
0945 - 1215	Drill
1215 - 1230	Survey
1230 - 1545	Drill
1545 - 1600	Survey at 1012 m
1600 - 1815	Drill
1815 - 1830	Survey at 1041 m
1830 - 2230	Drill
2230 - 2245	Rig service and survey
2245 - 2400	Drill

Geology:

872 - 1010 m	Red and green soft shale, and mudstone with salt stringers throughout and few anhydrite stringers, top of Mt. Cap 1010.4 m

WANT LIST

1010 - 1081 m	Green shale with scattered hard anhydrite stringers and scattered dark brown chert

WEATHER -30°C Clear **ROAD** Fair

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 02 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 27 DEPTH 1222 METRES LAST 24 HRS 141 ROTATING HRS 16.25

ACTIVITY AT REPORT TIME Drill at 1279 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

Air volume 1000 cfm 37 Viscosity Surface pressure 150 psi

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
2	216	JD4	94498	3	150	1174	93	396	11.5	45.75	8.66	6	3	I
3	216	JD4	84762	7	150		48	48	4.75	4.75	10.1			

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

3-1/4	°at	1094	3	°at	1212
3	°at	1128		°at	
2-3/4	°at	1153		°at	
2-3/4	°at	1181		°at	

MUD & CHEMICALS ADDED

Duraplex	5 sx	
RMZP-7	1 pail	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	16.25	267.50
2 TRIPS	3.75	36.75
3 RIG SERVICE	.75	11.75
4 DEVIATION SURVEY	1.50	8.75
5 REAM & COND HOLE	1.00	61.50
6 MIX & COND MUD		2.00
7 CIRCULATING	.75	20.00
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP - TEAR OUT		6.25
21		41.50
TOTALS	24.00	648.00

COSTS

DAILY N/A

CUM

SUPERVISOR Jim Reilly

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 02 2400
Year Month Day Time

0000 - 0245	Drill
0245 - 0300	Rig service and survey
0300 - 0645	Drill
0645 - 0715	Survey
0715 - 0845	Drill
0845 - 0900	Rig service, check BOP's and engine kills
0900 - 1045	Drill
1045 - 1115	Survey at 1153 m
1115 - 1300	Drill
1300 - 1645	Hoist Bit #2, run in hole with Bit #3
1645 - 1730	Circulate hole
1730 - 1830	Ream 21 m to bottom
1830 - 1915	Drill
1915 - 1930	Survey
1930 - 2230	Drill
2230 - 2245	Rig service
2245 - 2300	Survey at 1212 m
2300 - 2400	Drill

Geology:

1081 - 1190 m	Dark green shale with minor chert and fossilled with anhydrite stringers, carbonaceous, black
1190 - 1200 m	Anhydrite with shale
1200 - 1227 m	Dark green shale with scattered fossils and brown dolomite

WANT LIST

WEATHER -22°C Clear **ROAD** Fair

IN DETAIL: MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Exco et al Tunago 2N-37 85 03 03 2400

Day 28

Geology:

1222 - 1240 m	Dolomite, dark brown, fine crystalline with shale
1240 - 1250 m	Shale
1250 - 1265 m	Sandstone, grey brown, dolomitic with green shale
1265 - 1270 m	Siltstone, grey brown, dolomitic with green shale
1270 - 1275 m	Dolomite, dark brown, finely crystalline with green shale
1275 - 1285 m	Sandstone, grey white, medium grained and rounded, siliceous, dolomitic, glogomitic with siltstone and shale interbedded
1285 - 1295 m	Siltstone, grey brown, interbedded with coarse sand, sandstone grey and white
1295 - 1300 m	Dolomite, light brown with traces of green shale interbedded
1300 - 1315 m	Dolomite, light brown
1315 - 1355 m	Shale, grey and very dolomitic with green shale traces, black dolomite

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 (Year) 03 (Month) 03 (Day) 2400 (Time)

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 28 DEPTH: 1345 METRES LAST 24 HRS: 123 ROTATING HRS: 20.75

ACTIVITY AT REPORT TIME: Tripping at 1356 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

1000 cfm Surface pressure 255 psi

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
3	215.9	JD4	84762	3-12	120		123	171	20.75	25.5	6.7			

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
3	OPEN											

DEVIATION SURVEYS

4 ° at	1241	3 ° at	1336
5 ° at	1260	° at	
4-1/4 ° at	1295	° at	
3-1/2 ° at	1314	° at	

MUD & CHEMICALS ADDED

Duraplex	9 sx	
RMZP-7	2 pails	
Gel	70 sx	
Caustic	2 sx	

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	20.75	288.25
2 TRIPS		36.75
3 RIG SERVICE	.75	12.50
4 DEVIATION SURVEY	2.50	11.25
5 REAM & COND HOLE		61.50
6 MIX & COND MUD		2.00
7 CIRCULATING		20.00
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		41.50
TOTALS	24.00	672.00

COSTS

DAILY N/A

CUM

SUPERVISOR: Mel Nichols

PLEASE TURN OVER

DAILY DRILLING REPORT

FOR 24 HR. PERIOD ENDING

Year	Month	Day	Time
85	03	04	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 29 DEPTH: 1410 METRES LAST 24 HRS: 65 ROTATING HRS: 10.25

ACTIVITY AT REPORT TIME: Drill 1467 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

cfm 1000 150 psi

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
3	216	JD4	84762	12	120	1356	11	182	4.00	29.50	8.64	8	8	I
4	216	F2	ES9912	8-10	70	IN	54	54	6.25	6.25		1	N	

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
4	OPEN JETS											

DEVIATION SURVEYS

Misrun° at 1354 ____ ° at ____

Misrun° at 1370 ____ ° at ____

5/8 ° at 1382 ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Duraplex 6 sx

RMZ-7 2 pails

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	10.25	298.50
2 TRIPS	6.75	43.50
3 RIG SERVICE	.25	12.75
4 DEVIATION SURVEY	1.50	12.75
5 REAM & COND HOLE	4.00	65.50
6 MIX & COND MUD		2.00
7 CIRCULATING	1.25	21.25
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		41.50
TOTALS	24.00	686.00

SUPERVISOR: Mel Nichols

PLEASE TURN OVER

Winterhawk

DAILY DRILLING REPORT

24 HR PERIOD ENDING

85 03 04 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 29 DEPTH 1410 METRES LAST 24 HRS 65 ROTATING HRS 10.25

ACTIVITY AT REPORT TIME Drill 1467 m

DRILLING MUD PROPERTIES AT SHAKER/SUCTION PIT

cfm 1000 150 psi

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	WT	RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
3	216	JD4	84762	1½	120	1356	11	182	4.00	24.50	8.64	8	8	I
4	216	F2	ES9912	8-10	70	IN	54	54	6.25	6.25		I	N	

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
4	OPEN JETS											

DEVIATION SURVEYS

Misrun° at 1354 ____ °at ____

Misrun° at 1370 ____ °at ____

S/B °at 1382 ____ °at ____

____ °at ____ ____ °at ____

MUD & CHEMICALS ADDED

Duraplex 6 sx

MC-7 2 pails

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	TODAY	CUM
	10.25	298.50
	4.75	43.50
	.25	12.75
	1.00	12.75
	1.00	65.50
6		2.00
7	.25	21.25
8		11.25
9		47.75
10		
11		
12		
13		
14		35.00
15		54.00
16		11.50
17		
18		4.00
19		
20		
21		
TOTALS		

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

OPERATIONS DETAILS **PERIOD ENDING** 85 03 03 2400
Year - Month - Day - Time

0000 - 0015	Rig service, check BOP's
0015 - 0245	Drill
0245 - 0315	Circulate and survey
0315 - 0600	Drill
0600 - 0615	Survey
0615 - 0800	Drill
0800 - 0815	Rig service, check BOP's and motor kills
0815 - 0915	Drill
0915 - 0930	Survey
0930 - 1200	Drill
1200 - 1300	Drill
1300 - 1330	Survey
1330 - 1615	Drill
1615 - 1630	Rig service
1630 - 1815	Drill
1815 - 1845	Survey
1845 - 2200	Drill
2200 - 2230	Survey
2230 - 2400	Drill

See attached page for Geology.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	03	04	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 29 DEPTH: 1410 METRES LAST 24 HRS: 65 ROTATING HRS: 10.25

ACTIVITY AT REPORT TIME: Drill 1467 m

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

cfm 1000 150 psi

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCL ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
3	216	JD4	84762	12	120	1356	11	182	4.00	29.50	8.64	8	8	I
4	216	F2	ES9912	8-10	70	IN	54	54	6.25	6.25		I	N	

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
4	OPEN JETS											

DEVIATION SURVEYS

Misrun° at 1354 ____ ° at ____

Misrun° at 1370 ____ ° at ____

5/8 ° at 1382 ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Duraplex 6 sx

RMZ-7 2 pails

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR: Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	C/M
1 DRILLING	10.25	238.50
2 TRIPS	6.75	43.50
3 RIG SERVICE	.25	12.75
4 DEVIATION SURVEY	1.50	12.75
5 REAM & COND HOLE	4.00	65.50
6 MIX & COND MUD		2.00
7 CIRCULATING	1.25	21.25
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		41.50
TOTALS	24.00	696.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 04 2400
Year Month Day Time

0000 - 0330	Drill
0330 - 0400	Survey
0400 - 0430	Drill
0430 - 0715	Trip for bit
0715 - 0730	Rig service
0730 - 1130	Run in with bit, pick up 5 DC's
1130 - 1300	Pick up kelly and ream 1326 m, blow hole, stabilize foam
1300 - 1530	Ream to bottom 1326 - 1356 m
1530 - 1730	Drill
1730 - 1800	Survey, rig service and check motor kills
1800 - 1915	Circulate and work pipe
1915 - 2015	Drill
2015 - 2045	Survey
2045 - 2400	Drill

Geology:

1355 - 1440 m	Green shale, slightly blocky with scattered black shale, flakey bituminous dolomite veins, rare silt stringers

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	03	05	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 30 DEPTH: 1626 METRES LAST 24 HRS: 216 ROTATING HRS: 21.25

ACTIVITY AT REPORT TIME: Circulate hole with foam, build volume in mud tanks

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT ____ VIS ____ WL ____ GELS ____ % SOLIDS ____ PV ____ YP ____ pH ____

% OIL ____ %SAND ____ CAKE ____ PPMCl ____ PPMCa ____

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	MUD COND T	MUD COND B	MUD COND G
4	216	F2	ES9912	10	65	1626	216	270	21.25	27.50	9.8	2	2	1

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
4	OPEN											

DEVIATION SURVEYS

Misrun° at 1348 ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

____ ° at ____ ____ ° at ____

MUD & CHEMICALS ADDED

Duraplex	4 sx	
RMZP-7	2 sx	
Duraflow	2 sx	

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING	21.25	319.75
2 TRIPS	.50	44.00
3 RIG SERVICE	.75	13.50
4 DEVIATION SURVEY	1.50	14.25
5 REAM & COND HOLE		65.50
6 MIX & COND MUD		2.00
7 CIRCULATING		21.25
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		41.50
TOTALS	24.00	720.00

COSTS

DAILY N/A

CUM

SUPERVISOR: Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 03 05 2400
Year Month Day Time

0000 - 0445	Drill
0445 - 0500	Rig service, check BOP's
0500 - 0530	Trip for string float
0530 - 0545	Survey
0545 - 0615	Break circulation
0615 - 0800	Drill
0800 - 0815	Rig service, check BOP's and motor kills
0815 - 1200	Drill
1200 - 1215	Survey
1215 - 1600	Drill
1600 - 1615	Rig service
1615 - 1715	Drill
1715 - 1745	Survey
1745 - 2400	Drill

Geology:

1420 - 1626 m	Black shale

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 06 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 31 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Mix mud and LCM

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1210 VIS 65 WL 9.4 GELS 1.9/6.2 % SOLIDS PV 31 YP 9.5 pH 10.5

% OIL Nil % SAND Nil CAKE 1.5 Tight PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	H H P	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Defoamer	3 pails	Gel	25 sx
Caustic	3 sx		
Salt	545 sx		
Staflo	14 sx		

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		319.75
2 TRIPS	6.00	50.00
3 RIG SERVICE	.25	13.75
4 DEVIATION SURVEY		14.25
5 REAM & COND HOLE	2.50	68.00
6 MIX & COND MUD	6.75	8.75
7 CIRCULATING		21.25
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING	3.50	3.50
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC	3.00	3.00
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21 Displace Hole	2.00	43.50
TOTALS	24.00	744.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 03 06 2400
Year Month Day Time

0000 - 0015	Rig service and check BOP's
0015 - 0030	Circulate and work pipe
0030 - 0230	Dummy trip 15 stands
0230 - 0330	Break circulation, ream 25 m to bottom
0330 - 0500	Ream 25 m fill to bottom, 1601 - 1626 m
0500 - 1130	Circulate, work pipe, run survey at 1614 m, mix salt mud
1130 - 1330	Displace hole with mud
1330 - 1730	Trip out to log
1730 - 2000	Rig up loggers, log with Dresser
2000 - 2100	Rig out loggers
2100 - 2400	Mix mud

Pump away 350 barrels mud up to 258 m. Pulled out of hole and tried to log while mixing more mud. Ran in hole with logging tool. Tagged mud at 790 m. Kept going in, bridged off at 978 m. Tried to go through with tool, no success. Pulled out of hole. Checked for mud on the way out. Top of mud at 820 m. Dropped 30 m in 15 minutes. Begin to mix additional mud. Pumped 350 barrels of LCM material and mud (Kwikseal and celloflake) by pumping at 630 m, gained circulation, still losing very gradually.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 07 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 32 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Rig up loggers

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1140 VIS 57 WL 10 GELS 2.8/6.7 SOLIDS PV 21 YP 10.1 pH 10

% OIL Nil % SAND Trace CAKE 1.5 PPMCL 98,000 PPMCa 260

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT AT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
SRR	215.9	SVH	CR7157	6/8	50/80	1624	Ream	5.25						

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
SRR	O	P	E	N 197	100	152	1.07	39	63			3,500

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Gel	140 sx	Lime	3 sx
Caustic	4 sx		
Kelzan	8 sx		
Kwikseal	90 sx		

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		319.75
2 TRIPS	6.50	56.50
3 RIG SERVICE		13.75
4 DEVIATION SURVEY		14.25
5 REAM & COND HOLE	5.25	73.25
6 MIX & COND MUD	10.00	18.75
7 CIRCULATING	2.25	23.50
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		3.50
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		3.00
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		43.50
TOTALS	24.00	768.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 03 07 2400
Year Month Day Time

0000 - 0130	Mix mud
0130 - 0230	Run in to 160 m
0230 - 0330	Pump mud to fill annulus
0330 - 0500	Mix mud
0500 - 0615	Hoist to pick up BHA
0615 - 0730	Run back in to 630 m
0730 - 1330	Mix mud and circulate
1330 - 1430	Run in 12 stands
1430 - 1600	Ream from 980 to 1020 m
1600 - 1615	Run in 7 stands
1615 - 1645	Circulate bottoms up
1645 - 1700	Run in 7 stands
1700 - 1745	Circulate bottoms up
1745 - 1815	Run in 7 stands
1815 - 2200	Ream 14 m fill 1612 - 1626 m, full
	Circulation the entire time
2200 - 2300	Circulate and work pipe
2300 - 2400	Dummy trip to 950 m

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	03	08	2400

WELL NAME: Exco et al Tunago 2N-37 LOCATION:

DAY: 33 DEPTH: 1626 METRES LAST 24 HRS: ROTATING HRS:

ACTIVITY AT REPORT TIME: Circulate and run clean out trip

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1155 VIS 61 WL 11 GELS 2.4/6.2 % SOLIDS .003 PV 21 YP 13.4 pH 9.5

% OIL % SAND Trace CAKE 1.5 PPMCL 102,000 PPMCa 260

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

Caustic	2 sx	
Staflo	2 sx	
Kelzan	1 sk	

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		319.75
2 TRIPS	4.00	60.50
3 RIG SERVICE		13.75
4 DEVIATION SURVEY		14.25
5 REAM & COND HOLE	1.00	74.25
6 TJX & COND MUD		18.75
7 CIRCULATING	2.00	25.50
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING	17.00	20.50
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		3.00
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		43.50
TOTALS	24.00	792.00

COSTS

DAILY N/A

CUM

SUPERVISOR: Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 03 08 2400
Year Month Day Time

0000 - 0130	Dummy trip
0130 - 0230	Break circulation, ream 7 m fill
0230 - 0430	Circulate and condition hole
0430 - 0700	Hoist to log, chain out
0700 - 0800	Rig to log with Dresser
0800 - 2400	Logging

Ran in Tandem. Dual Laterolog, Acoustic-Gamma Ray-Caliper from 1626 - 1630 m Neutron-Density-Gamma Ray with Caliper from 1626 - 1630 m.

Ran in with the velocity tool, bridged off at 1193 m. Tried to break through, failed. Picked up a larger velocity tool. Tried again and failed again. Pulled out of hole to clean out. Ran in hole, hit bridge, reamed 1185 - 1200 m/1332 - 1353 m/1370 - 1410 m/1603 - 1626 m

Directional survey is yet to be run.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

Year	Month	Day	Time
85	03	09	2400

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 34 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Wait on orders

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1100 VIS 61 WL 11 GELS 2.4/6.2 % SOLIDS .0013 PV 21 YP 13.4 pH 9.5

% OIL % SAND Trace CAKE 1.5 PPMCL 102,000 PPMCa 260

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

°	at	°	at
°	at	°	at
°	at	°	at
°	at	°	at

MUD & CHEMICALS ADDED

Caustic	2 sx		
Kelzan	2 sx		

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		319.75
2 TRIPS	6.25	66.75
3 RIG SERVICE		13.75
4 DEVIATION SURVEY		14.25
5 REAM & COND HOLE	3.00	77.25
6 MIX & COND MUD		18.75
7 CIRCULATING	2.00	27.50
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING	12.75	33.25
12 CORING		
13 FORMATION TESTING		
14 WAITING ON		58.00
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		3.00
18 LAY DOWN DP & BOPE		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		43.50
TOTALS	24.00	816.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 03 09 2400
Year Month Day Time

0000 - 0045	Rig out loggers
0045 - 0245	Run in with bit, strap in
0245 - 0400	Ream 1185 - 1200 m
0400 - 0415	Run in hole
0415 - 0445	Ream from 1332 - 1353 m
0445 - 0500	Run in hole
0500 - 0530	Ream bridge 1370 - 1410 m
1530 - 0545	Run in hole to 1603 m
0545 - 0630	Ream 22 m
0630 - 0830	Circulate hole and work pipe
0830 - 1100	Hoist to log
1100 - 2400	Logging, ran downhole velocity log 1621 m to surface, pull out of hole and run directional log, relog bottom section, ran bond log 643 - 645 m

100 m good cement on bottom section from 630 - 530 m approximately

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Weatherford

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 10 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 35 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Pull out of hole to test

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1160 VIS 53 WL 11 GELS 2.9/6.2 % SOLIDS .02 PV 26 YP 10.5 pH 8.5

% OIL % SAND .0025 CAKE 1.5 PPMCL 109,000 PPMCa 3000

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
5RR	215.9	SVH	CR7157	7-10	70	Clean out, ream 16 m to bottom								

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
5RR	0	P E N		197	100	152	1.07	39	63			3,500

DEVIATION SURVEYS

° at ° at
° at ° at
° at ° at
° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING		319.75
2	TRIPS	2.25	69.00
3	RIG SERVICE		13.75
4	DEVIATION SURVEY		14.25
5	REAM & COND HOLE	1.25	78.50
6	MIX & COND MUD		18.75
7	CIRCULATING		27.50
8	RIG REPAIR		11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING	1.25	34.50
12	CORING		
13	FORMATION TESTING		
14	WAITING ON Orders	19.25	77.25
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		3.00
18	LAY DOWN DP & BOPS		5.00
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		6.25
21			43.50
	TOTALS	24.00	840.00

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 10 2400
Year Month Day Time

0000 - 0115	Finish logging, lay down tools
0115 - 0330	Run in hole, trip in
0330 - 0445	Break circulation, ream 16 m to bottom
0445 - 1600	Wait on orders
1600 - 2400	Wait on test tools

WANT LIST

WEATHER -12°C Light snow **ROAD** Fair, poor in spots

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 11 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 36 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Circulate and condition hole, wait for packers, test interval

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT 1243 - 1298 m

WT 1150 VIS 53 WL 11 GELS 2.9/6.2 % SOLIDS .02 PV 26 YP 10.5 pH 8.5

% OIL % SAND .0025 CAKE 1.5 PPMCL 109,000 PPMCa 300

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
5RR	215.9	SVH	CR7157			Ream to bottom								

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa
5RR	OPEN			197	100	152.4	1.07	39	63			3,500

DEVIATION SURVEYS

° at ° at
° at ° at
° at ° at
° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING		319.75
2	TRIPS	7.00	76.00
3	RIG SERVICE	.25	14.00
4	DEVIATION SURVEY		14.25
5	REAM & COND HOLE		78.50
6	MIX & COND MUD		18.75
7	CIRCULATING		27.50
8	RIG REPAIR		11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		34.50
12	CORING		
13	FORMATION TESTING	11.50	11.50
14	WAITING ON Test Tools	5.25	82.50
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		3.00
18	LAY DOWN DP & BOPS		5.00
19	PLUG & ABANDON		
20	RIG UP TEAR OUT		6.25
21			43.50
	TOTALS	24.00	864.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 11 2400
Year Month Day Time

0000 - 0515	Circulate, wait on test tools, hold BOP drill, function test hydril, pipe rams and engine kills
0515 - 0800	Pull out of hole to make up DST #1, chain out
0800 - 0815	Rig service, function test blind rams
0815 - 1115	Pick up test tools, make up tool
1115 - 1345	Run in hole with DST #1, strap in
1345 - 1500	Try to seat packers, interval 1285.6 - 1289.2 m, packers failed to seat
1500 - 1730	Hoist DST #1, chain out
1730 - 2045	Recover recorders, change out top packer and service tool
2045 - 2230	Run in hole with DST #2, strap in interval 1283 - 1297.4 m
2230 - 2400	Head up and try to inflate packers, pull out of hole as could not obtain packer seat

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHAT, WHERE, WHEN, HOW)

Westbank

DAILY DRILLING REPORT

FOR 24 HR. PERIOD ENDING

Year	Month	Day	Time
85	03	12	2400

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 37 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Recover recorders and service tool

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT 1120 VIS 54 WL 11 GELS % SOLIDS PV YP pH 8.5

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH Out m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G
5RR	215.9	SVH	CR7157	7	60	1626	Reamed to bottom 7 m							

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	H.H.P	SURF PRESS kPa
5RR	O	P	E	N	197	100	152.4	1.07	39	63		3,500

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		319.75
2 TRIPS	8.75	84.75
3 RIG SERVICE	.75	14.75
4 DEVIATION SURVEY		14.25
5 REAM & COND HOLE	1.25	79.75
6 MIX & COND MUD		18.75
7 CIRCULATING	5.75	33.25
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		34.50
12 CORING		
13 FORMATION TESTING	7.50	19.00
14 WAITING ON		82.50
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		3.00
18 LAY DOWN DP & BOPS		5.00
19 PLUG & ABANDON		
20 RIG UP TEAR OUT		6.25
21		43.50
TOTALS	24.00	888.00

SUPERVISOR Mel Nichols

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 12 2400
Year Month Day Time

0000 - 0145	Lost packer seat, hoist DST #2
0145 - 0430	Recover recorders, service and lay down tool
0430 - 0445	Rig service, function test blind rams
0445 - 0645	Run in hole with bit
0645 - 0800	Ream fill to 1626 m
0800 - 1400	Circulate and condition while waiting on test tools
1400 - 1630	Trip out
1630 - 1645	Flow check
1645 - 1715	Finish tripping out
1715 - 1730	Rig service, check BOP's
1730 - 1930	Make up DST #3 1241.5 - 1296.5 m Ft. Clark
1930 - 2300	Run in hole with DST #3
2300 - 2330	Head up DST tools
2330 - 2400	Inflate packers on DST #3
DST #3	PF 15 ISI 60 VO 60 FSI 120
	PF - 575 kPa - very weak air blow throughout, no gas to surface
	ISI - 2414 kPa
	VO - Very weak air blow, dead in 20 minutes, no gas to surface
	IF - 690 kPa
	FF - 690 kPa
	FSI - 1724 kPa
	Recovery 9 m of drilling mud, good test.

WANT LIST

WEATHER -14°C Light snow **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Waterbank

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 13 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 38 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Waiting on cement - abandoning the well

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPM Cl PPM Ca

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	NOZZLE POSITN 1	2	3

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	H H P	SURF PRESS kPa

DEVIATION SURVEYS

° at		° at	
° at		° at	
° at		° at	
° at		° at	

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING		319.75
2	TRIPS	5.50	90.25
3	RIG SERVICE	1.25	16.00
4	DEVIATION SURVEY		14.25
5	REAM & COND HOLE		79.75
6	MIX & COND MUD		18.75
7	CIRCULATING	.50	33.75
8	RIG REPAIR		11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		34.50
12	CORING		
13	FORMATION TESTING	7.00	26.00
14	WAITING ON Orders	4.25	86.75
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		3.00
18	LAY DOWN DP & BOPS	2.00	7.00
19	PLUG & ABANDON	3.50	3.50
20	RIG UP TEAR OUT		6.25
21			43.50
	TOTALS	24.00	912.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 13 2400
Year Month Day Time

0000 - 0500	Test with Lynnes United
0500 - 0715	Pull out of hole with DST #3
0715 - 0745	Recover recorders
0745 - 0800	Rig service
0800 - 0915	Wait on orders
0915 - 1100	Lay down DST #3
1100 - 1200	Slip and cut line, set brakes
1200 - 1300	Lay down drill collars
1300 - 1600	Wait on orders
1600 - 1700	Lay down drill collars
1700 - 2000	Run in hole open ended
2000 - 2030	Circulate hole
2030 - 2100	Pump plug #1, 1626 - 1525 m
2100 - 2130	Pull up to 1350 m
2130 - 2200	Run plug #2, 1350 - 1250 m
2200 - 2400	Pull 10 stands and wait on cement

Plug #1 1525 - 1625 m (100 m) ran 5.2 m^3 class "G" cement, plug down 2105 85 03 13, did not feel for top

Plug #2 1350 - 1250 m (100 m) ran 6.9 m^3 (9.0 T) Class "G" + 2% $CaCl_2$, plug down 2209 85 03 13, tag plug at 1238 m 0300 85 03 14, set 7000 daN's on plug, cement volumes calculated (Caliper + 30%)

WANT LIST

Plug #3 660 - 600 m (60 m) ran 3.9 m^3 (5.1 T) class "G" + 2% $CaCl_2$, plug down 0400 hours 85 03 14 (Caliper + 30% excess)

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Winterhawk

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 (Year) 03 (Month) 14 (Day) 2400 (Time)

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 39 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Wait on setting packer, tear out rig

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m³/min	ANN VEL DP	DC	JET VEL	H.H.P	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING		319.75
2	TRIPS		90.25
3	RIG SERVICE		16.00
4	DEVIATION SURVEY		14.25
5	REAM & COND HOLE		79.75
6	MIX & COND MUD		18.75
7	CIRCULATING		33.75
8	RIG REPAIR		11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		34.50
12	CORING		
13	FORMATION TESTING		26.00
14	WAITING ON Packer	2.00	58.75
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		3.00
18	LAY DOWN DP & BOPS		7.00
19	PLUG & ABANDON	22.00	25.50
20	RIG UP - TEAR OUT		6.25
21			43.50
	TOTALS	24.00	936.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 14 2400
Year · Month · Day · Time

0000 - 0300	Wait on cement and run in to plug #2, tag plug at 1238 m
0300 - 0330	Pull out of hole to 660 m
0330 - 0400	Rig to and run plug #3 660 - 600 m
0400 - 1100	Pull out of hole, wait on cement and lay down pipe
1100 - 1215	Run in hole and feel for plug, pick up more drill pipe, run in hole to 700 m
1215 - 1230	Pull out of hole to 660 m
1230 - 1400	Displace with fresh water
1400 - 1430	Run plug #4 660 - 600 m, 5 T Class "G" + 3% $CaCl_2$
1430 - 2130	Wait on cement
2130 - 2200	Run in hole to feel plug, no indication plug present
2200 - 2400	Line up and wait on casing packer

WANT LIST

WEATHER -22°C Clear **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

Winterbank

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 15 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 40 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS - mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	OD mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

	OPERATION	TODAY	CUM
1	DRILLING		319.75
2	TRIPS	2.00	92.25
3	RIG SERVICE		16.00
4	DEVIATION SURVEY		14.25
5	REAM & COND HOLE		79.75
6	MIX & COND MUD		18.75
7	CIRCULATING		33.75
8	RIG REPAIR		11.25
9	RUN CASING & CEMENT		52.25
10	FISHING		
11	LOGGING		34.50
12	CORING		
13	FORMATION TESTING		26.00
14	WAITING ON Packer	20.00	108.75
15	NIPPLE UP & TEST BOP		54.00
16	DRILLING OUT		11.50
17	LOSS CIRC		3.00
18	LAY DOWN DP & BOPS		7.00
19	PLUG & ABANDON	2.00	27.50
20	RIG UP - TEAR OUT		6.25
21			43.50
	TOTALS	24.00	960.00

PLEASE TURN OVER

OPERATIONS DETAILS PERIOD ENDING 85 03 15 2400
Year Month Day Time

0000 - 2000	Wait on casing packer, tear out some of the rig
2000 - 2130	Make up casing packer and setting tool, run in hole
2130 - 2300	Set and break loose from packer at 600 m
2300 - 2330	Trip out of hole to remove setting tool
2330 - 2400	Run in hole to run plug #5
	600 - 500 m

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

DAILY DRILLING REPORT

FOR 24 HR PERIOD ENDING

85 03 16 2400
Year Month Day Time

WELL NAME Exco et al Tunago 2N-37 LOCATION

DAY 41 DEPTH 1626 METRES LAST 24 HRS ROTATING HRS

ACTIVITY AT REPORT TIME Finish tear out with truck

DRILLING MUD PROPERTIES AT SHAKER SUCTION PIT

WT VIS WL GELS % SOLIDS PV YP pH

% OIL %SAND CAKE PPMCL PPMCa

BIT RECORD

BIT NO	SIZE mm	MAKE & TYPE	SER NO	BIT WT	BIT RPM	DEPTH OUT m	m DRLD TODAY	CUM m DRLD	Rot hrs TODAY	CUM Rot hrs	m/HR	DULL COND T	B	G

CIRCULATION RECORD

BIT NO	JETS mm 1	2	3	PUMP STROKE	SPM	LINER	m^3/min	ANN VEL DP	DC	JET VEL	HHP	SURF PRESS kPa

DEVIATION SURVEYS

° at ° at

° at ° at

° at ° at

° at ° at

MUD & CHEMICALS ADDED

BOTTOM ASSEMBLY

TOOL	ID mm	O.D. mm	LENGTH m	WEIGHT daN

COSTS

DAILY N/A

CUM

SUPERVISOR Mel Nichols

TIME ANALYSIS

OPERATION	TODAY	CUM
1 DRILLING		319.75
2 TRIPS		92.25
3 RIG SERVICE		16.00
4 DEVIATION SURVEY		14.25
5 REAM & COND HOLE		79.75
6 MIX & COND MUD		16.75
7 CIRCULATING		33.75
8 RIG REPAIR		11.25
9 RUN CASING & CEMENT		52.25
10 FISHING		
11 LOGGING		34.50
12 CORING		
13 FORMATION TESTING		26.00
14 WAITING ON		108.75
15 NIPPLE UP & TEST BOP		54.00
16 DRILLING OUT		11.50
17 LOSS CIRC		3.00
18 LAY DOWN DP & BOPS	11.00	18.00
19 PLUG & ABANDON	1.00	29.50
20 RIG UP - TEAR OUT	12.00	18.25
21		43.50
TOTALS	24.00	984.00

PLEASE TURN OVER

OPERATIONS DETAILS **PERIOD ENDING** 85 03 16 2400
Year · Month · Day · Time

0000 - 0330	Rig to and run Plug #5 600 m - 550 m, 1.8 m^3 (2.5 T) permafrost cement
0000 - 0200	Pull out of hole, lay down drill pipe
0200 - 0230	Run Plug #5 0 - 30 m, 1.11 m^3 (1.5 T) permafrost, plug down at 0230 85 03 16
0230 - 1200	Tear out and lay down rotating head and BOP's, clean mud tanks and cellar, cut casing and weld on cap
	Rig Release at 1200 hours 85 03 16.

WANT LIST

WEATHER **ROAD**

IN DETAIL MOVEMENT OF PURCHASE & RENTAL ITEMS (WHERE, WHEN, HOW)

PAGE

CHRONOLOGICAL HISTORY

WELL Exco et al Tunago 2A-37 LOCATION

ENGINEER Mel Nichols

DATE	WORK DESCRIPTION
85 03 18	Approval for two rack sites has been granted. Weather -15°C in the evening, 0 to -9°C in the day. Presently completing the inventory at each work site. First rack site is 20 miles west of the Water Lily well location. Second rack site is at the Tunago rack site, near the Losia Lake (rig camp, Quinn camp, 2 cats, drawworks, air drilling equipment, 1 fuel storage tank with fuel, loader). First rack site is not large enough, nor is there access to water for the rig watchers.

DAYHAB WELL LOGGING LTD.
CALGARY

COMPANY EXCO ENERGY LTD.
WELL EXCO et al TUHAGO
Location 29-37
Prov. or Territory NORTHWEST TERRITORIES
Depth Logged From: 631 m To: 1626 m
Date Logged From: FEB 28/86 To: MAR 5/86
Logging Technicians D. WHITE G. TIPHONS
Drilling Fluid AIR & DOOPOOH
Ground Elevation 232.05 m
K.B. 236.05 m

1 OF

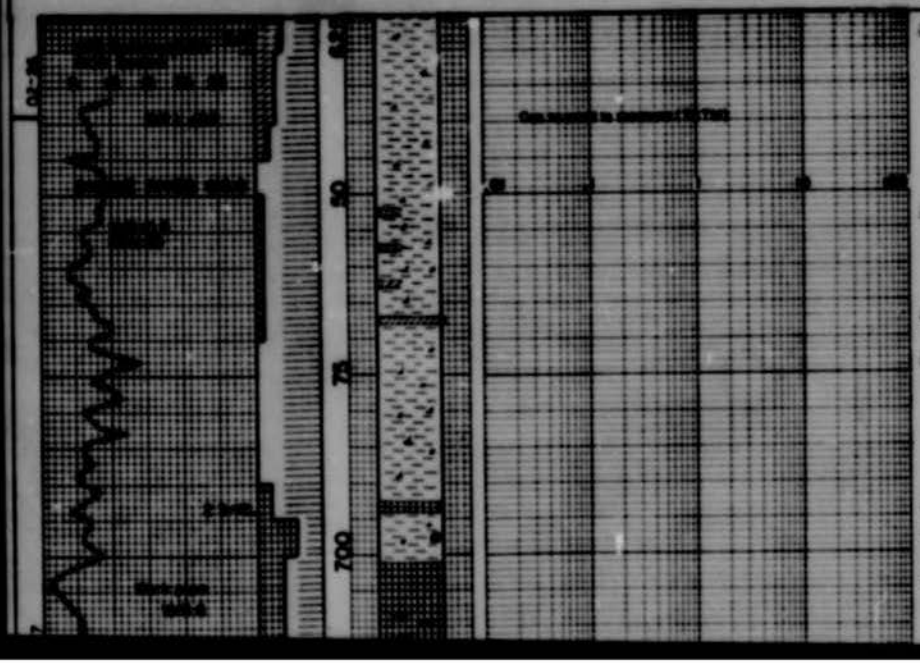
DRILLING LEGEND
RB ROTARY BIT
RRB ROTARY BIT
DB DIAMOND BIT
TB TUNGSTEN BIT
CB CORE BIT
DCB DIAMOND CORE BIT
DS DEVIATION SURVEY
WOB WEIGHT ON BIT (KN)
RPM ROTATION (RPM/RPM)
LC LOST CIRCULATION
RB RETURNED
TG TRIP GAS
PP PUMP PRESSURE

CHARACTERISTICS LEGEND
SHOW
STAIN
FLUORESCENCE
CUT
OIL
GAS
MUD LOGS

MUD DATA
V VISCOSITY
W WEIGHT IN kg/l
WL FILTRATE IN CC
FC FILTER CAKE
CL CHLORIDE CONT. IN ppm
Rm MUD RESISTIVITY IN Ω
Rmf MUD FILTRATE RESISTIVITY IN Ω

LEGEND
CONGLOMERATE
SAND
SILTSTONE
SHALE
LIMESTONE
DOLOMITE
ANHYDRITE
GYPSUM
COAL
CHERT
SALT
BENTONITE
SILICEOUS
MINEROID
VOLCANIC
METAMORPHIC

DATE
Drilling Rate min./m
% Lithology
Depth
Porosity
Interpreted Lithology
CRYSTALL. GRAIN OF LIME MUD
FOSSIL
HYDROCARBON GAS in mud (%)
Chromatograph
C1
C2
C3
C4
C5
Total
MUD GAS
CUTTINGS
0
100
GEOLOGICAL COMMENTS
SCALE 1:000



Sh: mot red & gn blky dol

Sh: mot red & gn blky dol anhy / anhy strgs

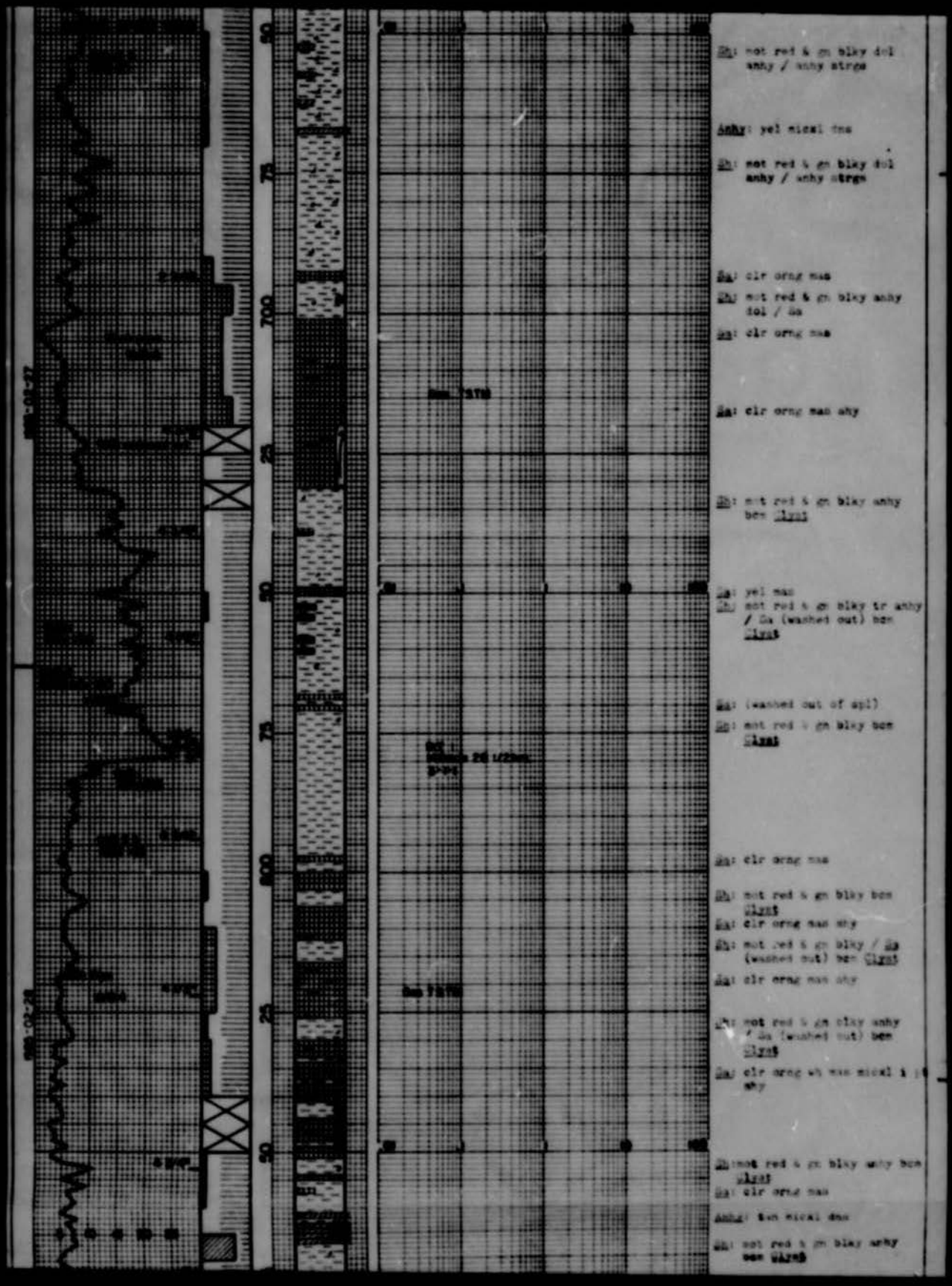
Anhy: yel micxl fbs

Sh: mot red & gn blky dol anhy / anhy strgs

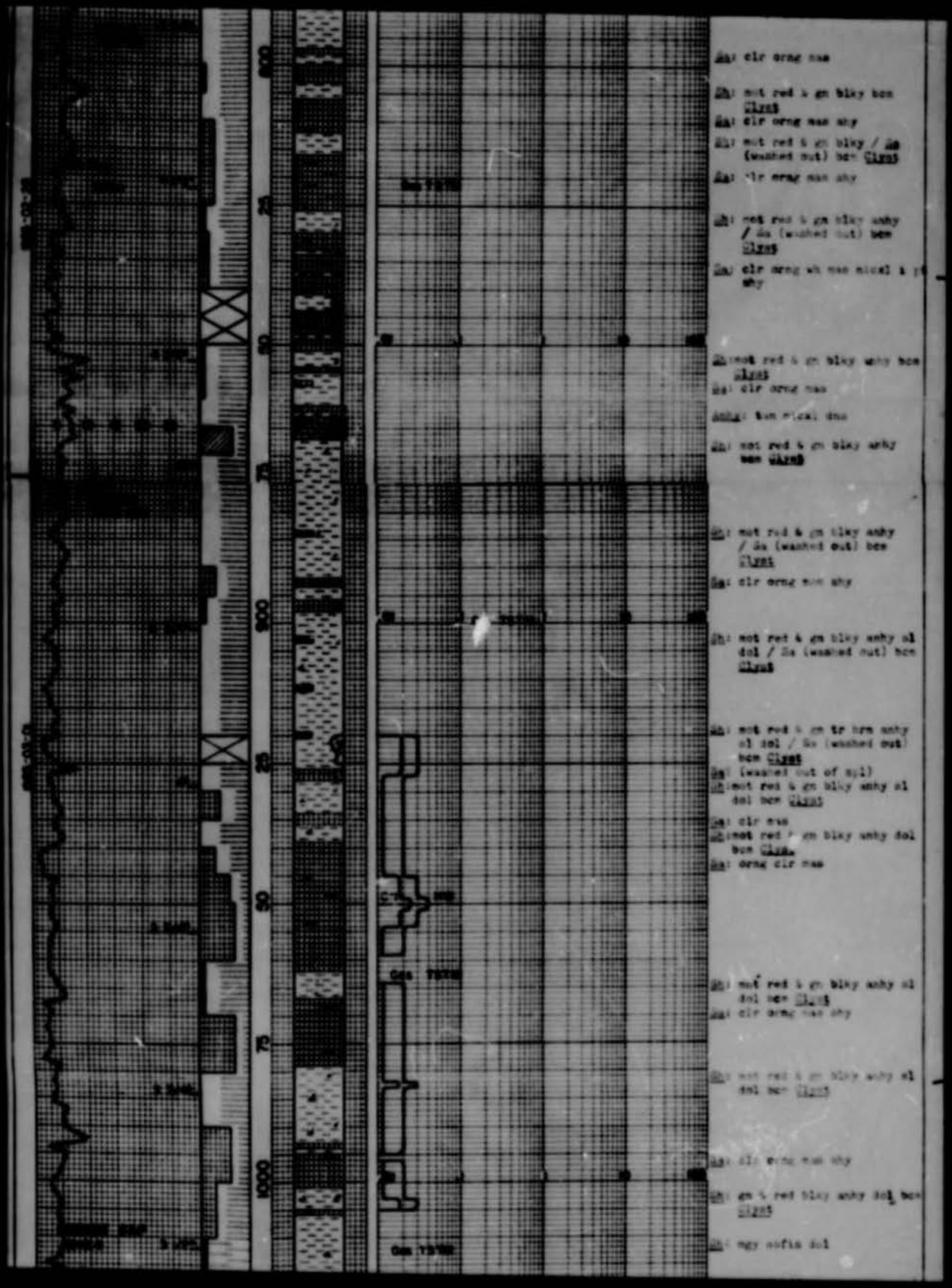
Ss: clr crnz mss

Sh: mot red & gn blky anhy dol / ss

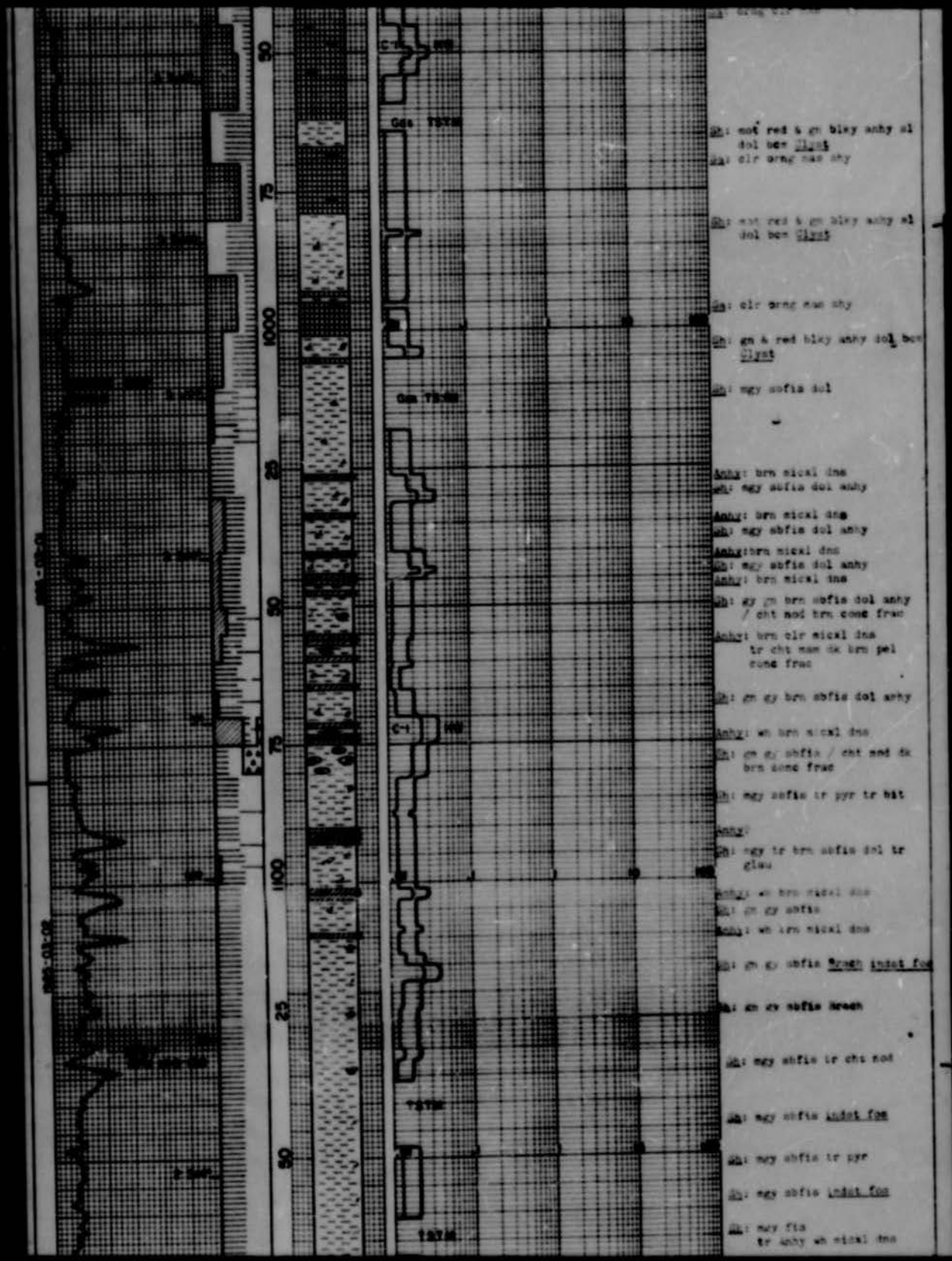
Ss: clr crnz mss


50
75
700
25
50
75
800
25
50
Sh: mot red & gn blky dol anhy / anhy strgs
Anhy: yel micxl tns
Sh: mot red & gn blky dol anhy / anhy strgs
Sa: clr orng mas
Sh: mot red & gn blky anhy dol / Sa
Sa: clr orng mas
Sa: clr orng mas anhy
Sh: mot red & gn blky anhy ben Glyns
Sa: yel mas
Sh: mot red & gn blky tr anhy / Sa (washed out) ben Glyns
Sa: (washed out of spl)
Sh: mot red & gn blky ben Glyns
Sa: clr orng mas
Sh: mot red & gn blky ben Glyns
Sa: clr orng mas anhy
Sh: mot red & gn blky / Sa (washed out) ben Glyns
Sa: clr orng mas anhy
Sh: mot red & gn blky anhy / Sa (washed out) ben Glyns
Sa: clr orng wh mas micxl & p anhy
Sh: mot red & gn blky anhy ben Glyns
Sa: clr orng mas
Anhy: tan micxl dns
Sh: mot red & gn blky anhy ben Glyns

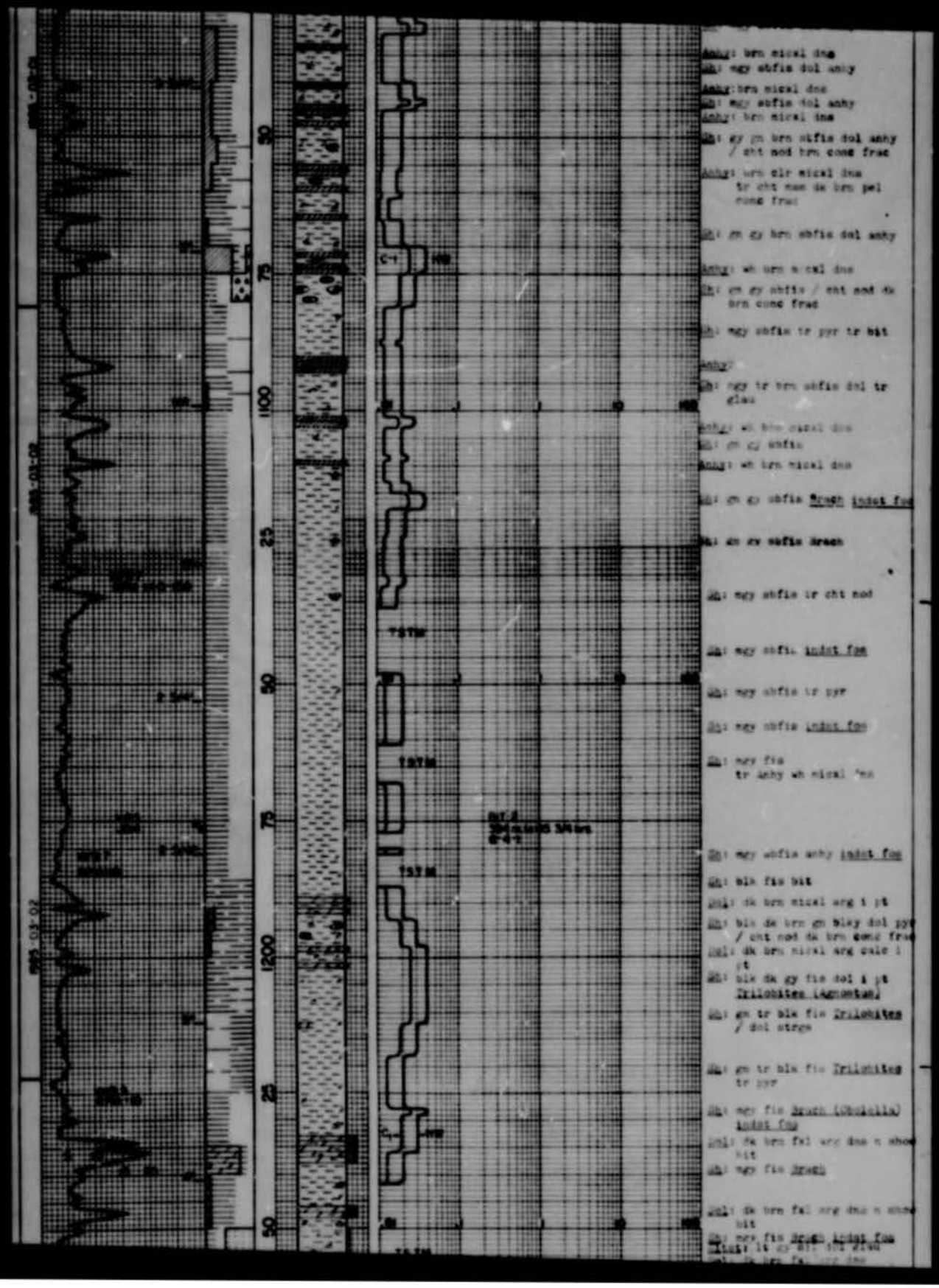
2 OF


Sa: clr orng mas
Sh: mot red & gn blky bon Glyst
Sa: clr orng mas shy
Sh: mot red & gn blky / Sa (washed out) bon Glyst
Sa: clr orng mas shy
Sh: mot red & gn blky anhy / Sa (washed out) bon Glyst
Sa: clr orng wh mas nicel & yl shy
Sh: mot red & gn blky anhy bon Glyst
Sa: clr orng mas
Anhy: tan nicel dns
Sh: mot red & gn blky anhy bon Glyst
Sh: mot red & gn blky anhy / Sa (washed out) bon Glyst
Sa: clr orng mas shy
Sh: mot red & gn blky anhy sl dol / Sa (washed out) bon Glyst
Sh: mot red & gn tr brn anhy sl dol / Sa (washed out) bon Glyst
Sa: (washed out of spl)
Sh: mot red & gn blky anhy sl dol bon Glyst
Sa: clr mas
Sh: mot red & gn blky anhy dol bon Glyst
Sa: orng clr mas
Sh: mot red & gn blky anhy sl dol bon Glyst
Sa: clr orng mas shy
Sh: mot red & gn blky anhy sl dol bon Glyst
Sa: clr orng mas shy
Sh: gn & red blky anhy dol bon Glyst
Sh: gry sofis dol

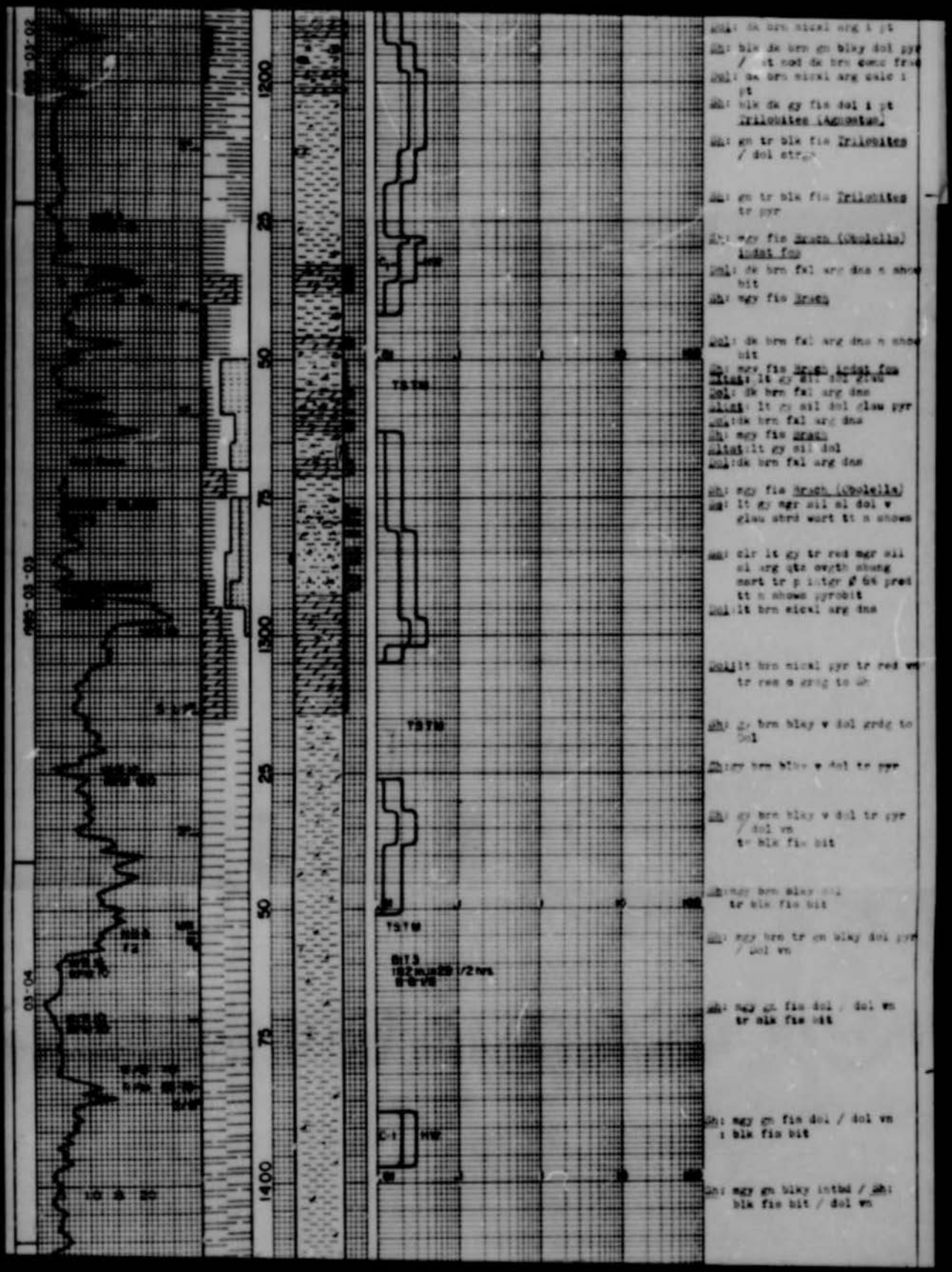
3 of


50
75
1000
25
50
75
1100
25
50
C-1
HW
Gas TSTM
Gas TSTM
TSTM
TSTM
Sh: mot red & gn blky anhy sl dol ben Glyst
Ss: clr orng mas shy
Sh: mot red & gn blky anhy sl dol ben Glyst
Ss: clr orng mas shy
Sh: gn & red blky anhy dol ben Glyst
Sh: mgy sofis dol
Anhy: brn micxl dns
Sh: mgy sofis dol anhy
Anhy: brn micxl dns
Sh: mgy sbfis dol anhy
Anhy: brn micxl dns
Sh: mgy sbfis dol anhy
Anhy: brn micxl dns
Sh: gy gn brn sbfis dol anhy / cht mod brn cone frac
Anhy: brn clr micxl dns tr cht mam dk brn pel cone frac
Sh: gn gy brn sbfis dol anhy
Anhy: wh brn micxl dns
Sh: gn gy sbfis / cht mod dk brn cone frac
Sh: mgy sofis tr pyr tr bit
Anhy:
Sh: mgy tr brn sofis dol tr glau
Anhy: wh brn micxl dns
Sh: gn gy sbfis
Anhy: wh brn micxl dns
Sh: gn gy sbfis Brach indet fos
Sh: gn gy sbfis Brach
Sh: mgy sbfis tr cht mod
Sh: mgy sbfis indet fos
Sh: mgy sbfis tr pyr
Sh: mgy sbfis indet fos
Sh: mgy fis tr anhy wh micxl dns

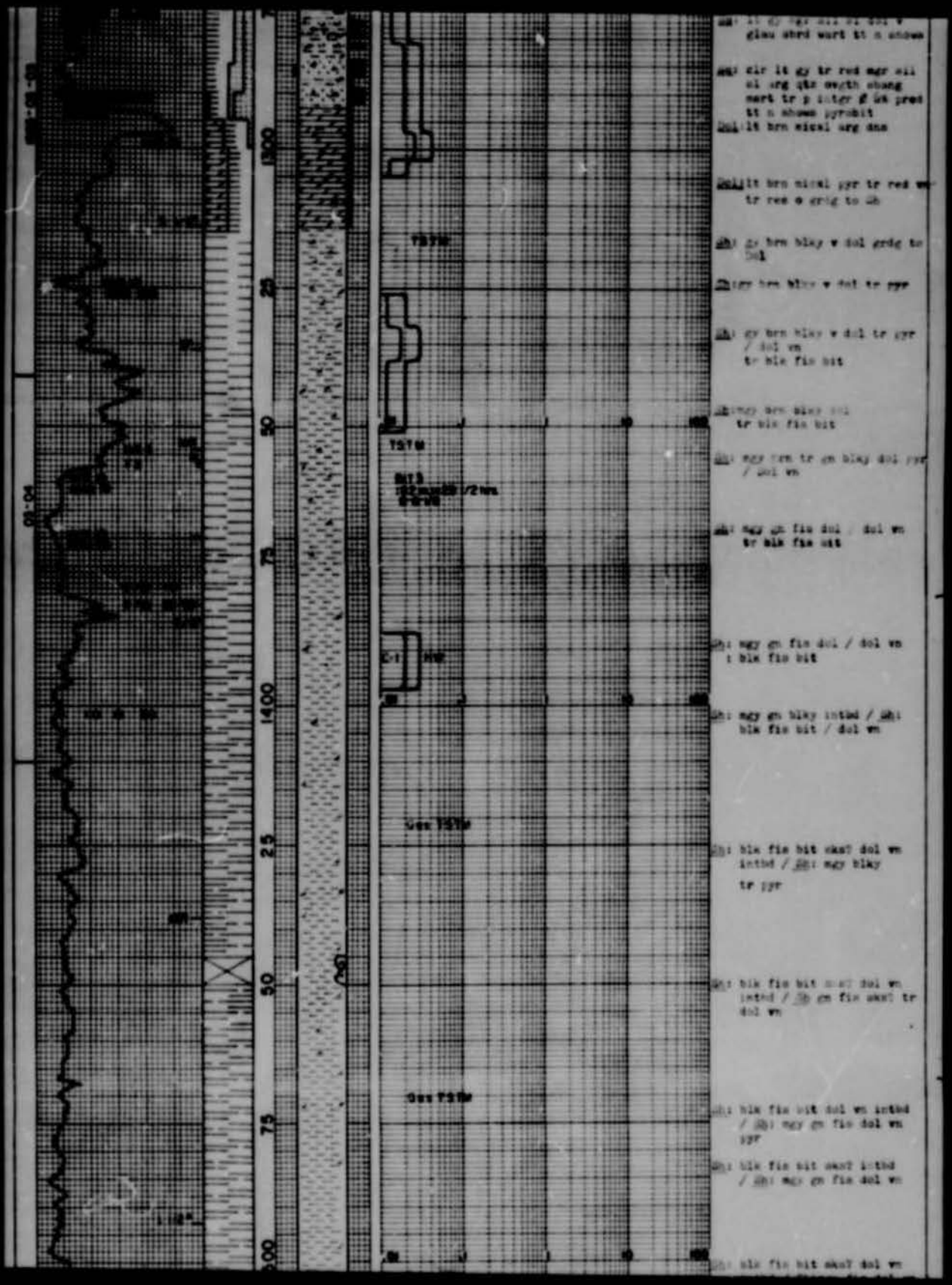
4 OF


Anhy: brn micxl dns
Sh: mgy sbfis dol anhy
Anhy: brn micxl dns
Sh: mgy sbfis dol anhy
Anhy: brn micxl dns
Sh: gy gn brn sbfis dol anhy / cht nod brn conc frag
Anhy: brn clr micxl dns tr cht mas dk brn pel conc frag
Sh: gn gy brn sbfis dol anhy
Anhy: wh brn micxl dns
Sh: gn gy sbfis / cht nod dk brn conc frag
Sh: mgy sbfis tr pyr tr bit
Anhy:
Sh: mgy tr brn sbfis dol tr glau
Anhy: wh blu micxl dns
Sh: gn gy sbfis
Anhy: wh brn micxl dns
Sh: gn gy sbfis Bryozoan indet fos
Sh: gn gy sbfis Bryozoan
Sh: mgy sbfis tr cht nod
Sh: mgy sbfis indet fos
Sh: mgy sbfis tr pyr
Sh: mgy sbfis indet fos
Sh: mgy fis tr anhy wh micxl dns
Sh: mgy sbfis anhy indet fos
Sh: blk fis bit
Dol: dk brn micxl arg 1 pt
Sh: blk dk brn gn blky dol pyr / cht nod dk brn conc frag
Dol: dk brn micxl arg calc 1 pt
Sh: blk dk gy fis dol 1 pt Trilobites (Agnostus)
Sh: gn tr blk fis Trilobites / dol strgr
Sh: gn tr blk fis Trilobites tr pyr
Sh: mgy fis Bryozoan (Rhombella) indet fos
Dol: dk brn fxl arg dns n show bit
Sh: mgy fis Bryozoan
Dol: dk brn fxl arg dns n show bit
Sh: mgy fis Bryozoan indet fos
90
75
1100
25
50
75
1200
25
50

5 OF


1200
25
50
75
1300
25
50
75
1400
TS TM
TS TM
TS TM
BIT 3
HW
ssh: dk brn sicxl arg i pt
sh: blk dk brn gn blky dol pyr / slt nod dk brn amor frag
dol: dk brn sicxl arg calc i pt
sh: blk dk gy fis dol i pt Trilobites (Agnostus)
sh: gn tr blk fis Trilobites / dol strgr
sh: gn tr blk fis Trilobites tr pyr
sh: mgy fis Brach (Obolella) indet foss
dol: dk brn fxl arg dns n show bit
sh: mgy fis Brach
dol: dk brn fxl arg dns n show bit
sh: mgy fis Brach indet foss
sltst: lt gy sil sdy grad
dol: dk brn fxl arg dns
sltst: lt gy sil dol glau pyr
dol: dk brn fxl arg dns
sh: mgy fis Brach
sltst: lt gy sil dol
dol: dk brn fxl arg dns
sh: mgy fis Brach (Obolella)
ss: lt gy mgr sil sl dol v glau strd wart tt n shows
ss: clr lt gy tr red mgr sil sl arg qtz owth shung wart tr p intgr g fx pred tt n shows pyrobit
dol: lt brn sicxl arg dns
dol: lt brn sicxl pyr tr red vn tr red o grdg to sh
sh: gy brn blky v dol grdg to Dol
sh: gy brn blky v dol tr pyr
sh: gy brn blky v dol tr pyr / dol vn tr blk fis bit
sh: mgy brn blky sil tr blk fis bit
sh: mgy brn tr gn blky dol pyr / dol vn
sh: mgy gn fis dol / dol vn tr blk fis bit
sh: mgy gn fis dol / dol vn i blk fis bit
sh: mgy gn blky intbd / sh: blk fis bit / dol vn

6 OF


glau shrd wart tt n shows
lt brn micxl arg dns
tr rcs o grdg to sh
gy brn blky v dol tr pyr
/ dol vn
tr blk fin bit
tr blk fin bit
/ dol vn
tr blk fin bit
/ dol vn
tr blk fin bit
/ dol vn
blk fin bit / dol vn
tr pyr
dol vn
/ sh gn fin sksf tr
dol vn
/ sh: mgy gn fin dol vn
pyr
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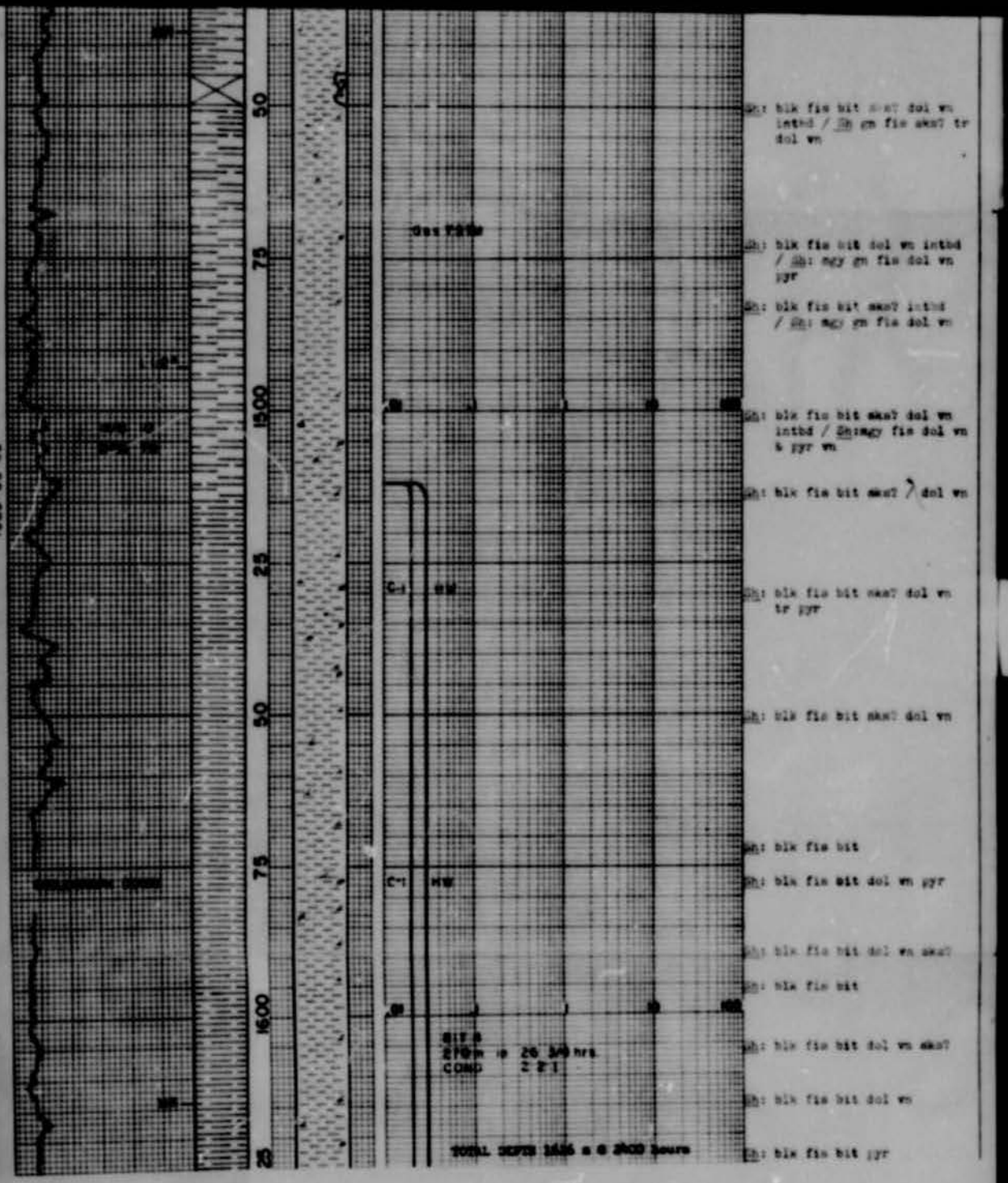
08-04

7 OF


1983-03-05
50
75
15:00
25
50
75
16:00
25
Gas Kick
C-1
HW
C-1
HW
Sh: blk fis bit sm? dol vn intbd / Sh gn fis sm? tr dol vn
Sh: blk fis bit dol vn intbd / Sh: agy gn fis dol vn pyr
Sh: blk fis bit sm? intbd / Sh: agy gn fis dol vn
Sh: blk fis bit sm? dol vn intbd / Sh:agy fis dol vn & pyr vn
Sh: blk fis bit sm? > dol vn
Sh: blk fis bit sm? dol vn tr pyr
Sh: blk fis bit sm? dol vn
Sh: blk fis bit
Sh: blk fis bit dol vn pyr
Sh: blk fis bit dol vn sm?
Sh: blk fis bit
Sh: blk fis bit dol vn sm?
Sh: blk fis bit dol vn
Sh: blk fis bit pyr

8 of 8

WELL NAME : EXCO et al TUNAGO 2K-37 WELL LOCATION : [illegible]

ELEVATIONS : GROUND 232.06 m K.B. 236

SPUD DATE : Feb 4, 1985 TOTAL DEPTH :

CONTRACTOR : TRICAN 707 CASING : [illegible]

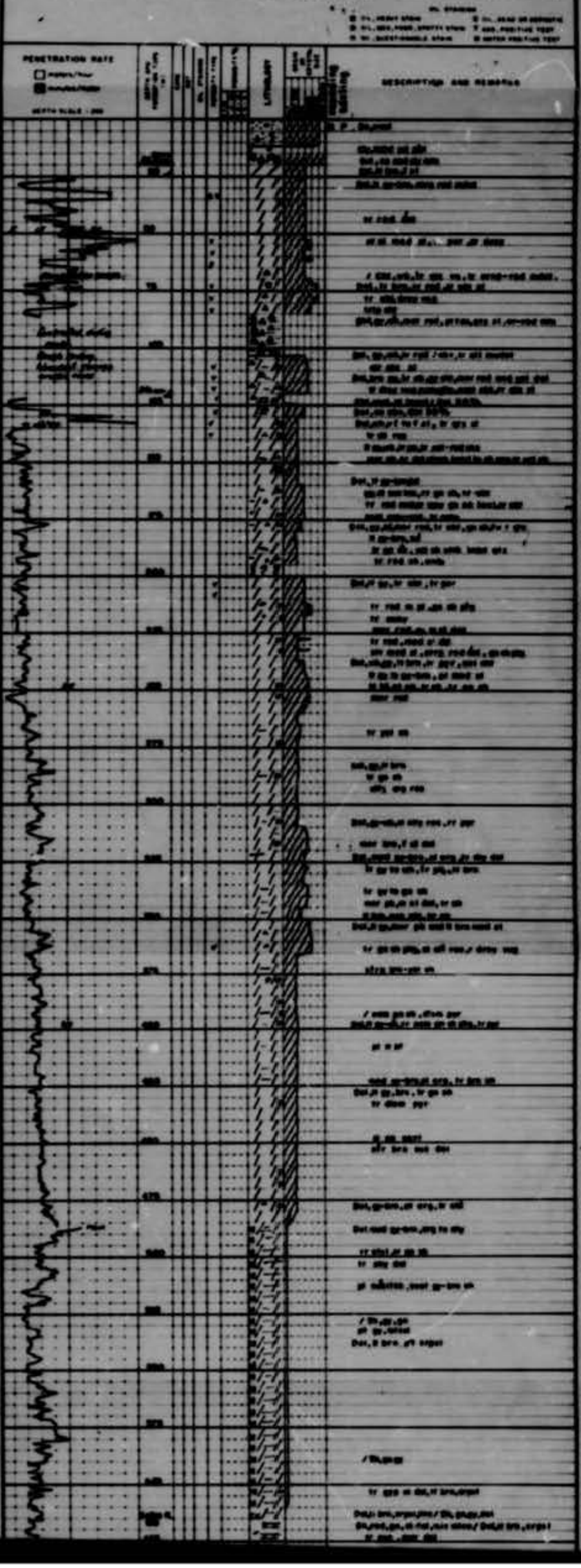
CORES :

DRILL STEM TESTS :

OPEN HOLE LOGS : Drilled with air and foam

COMMENTS :

GEOLOGIST : M.McLEOD



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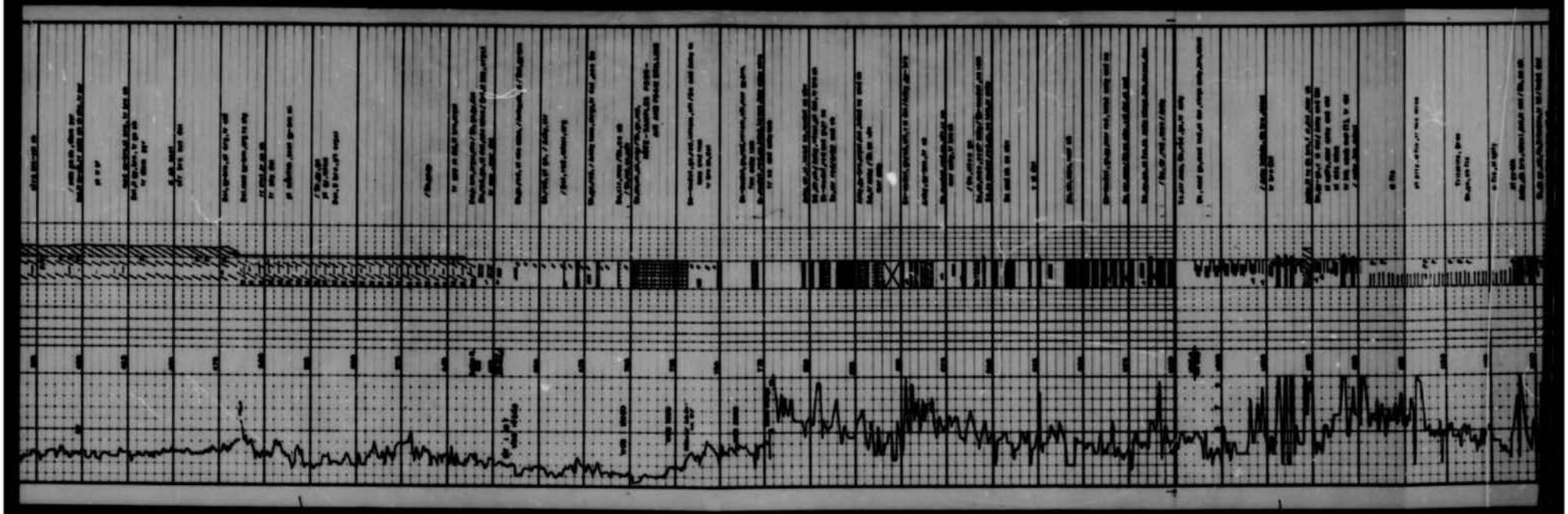

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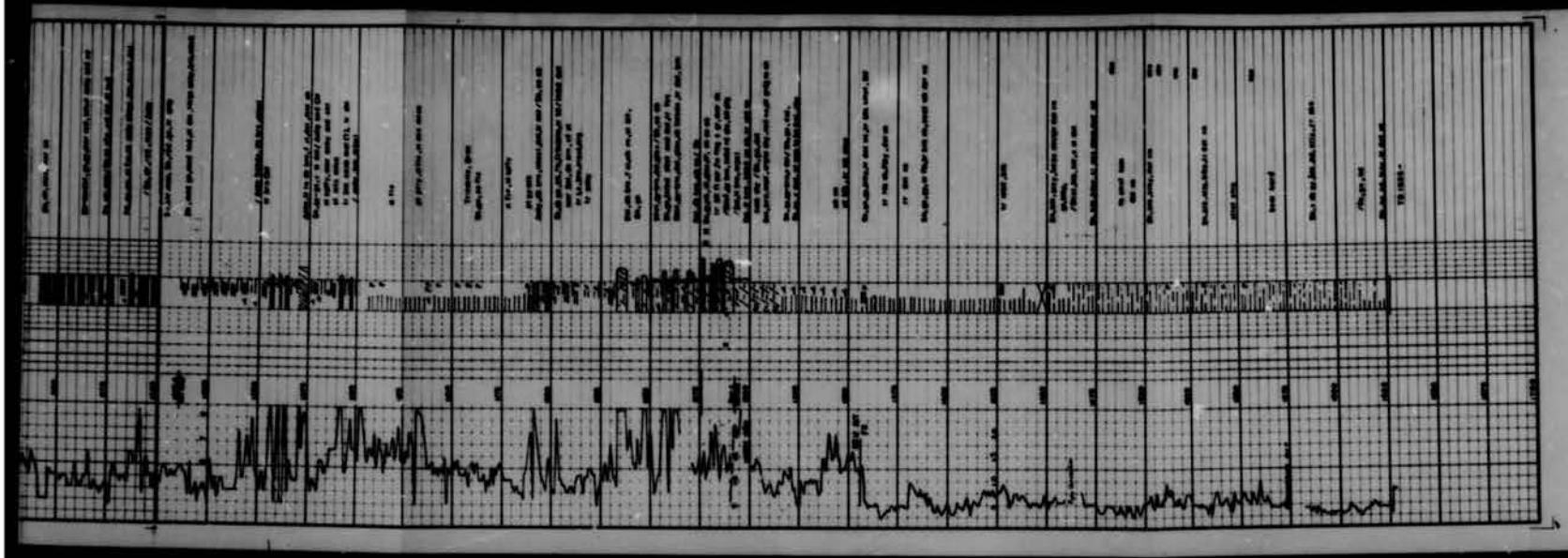

Company EXCO ENERGY LTD.
Well EXCO ET AL TUNACO 2N-37
Field MILDORT
Province N.W.T.

Location:

FOLD HERE

REMARKS RUN (1)

EQUIPMENT DATA

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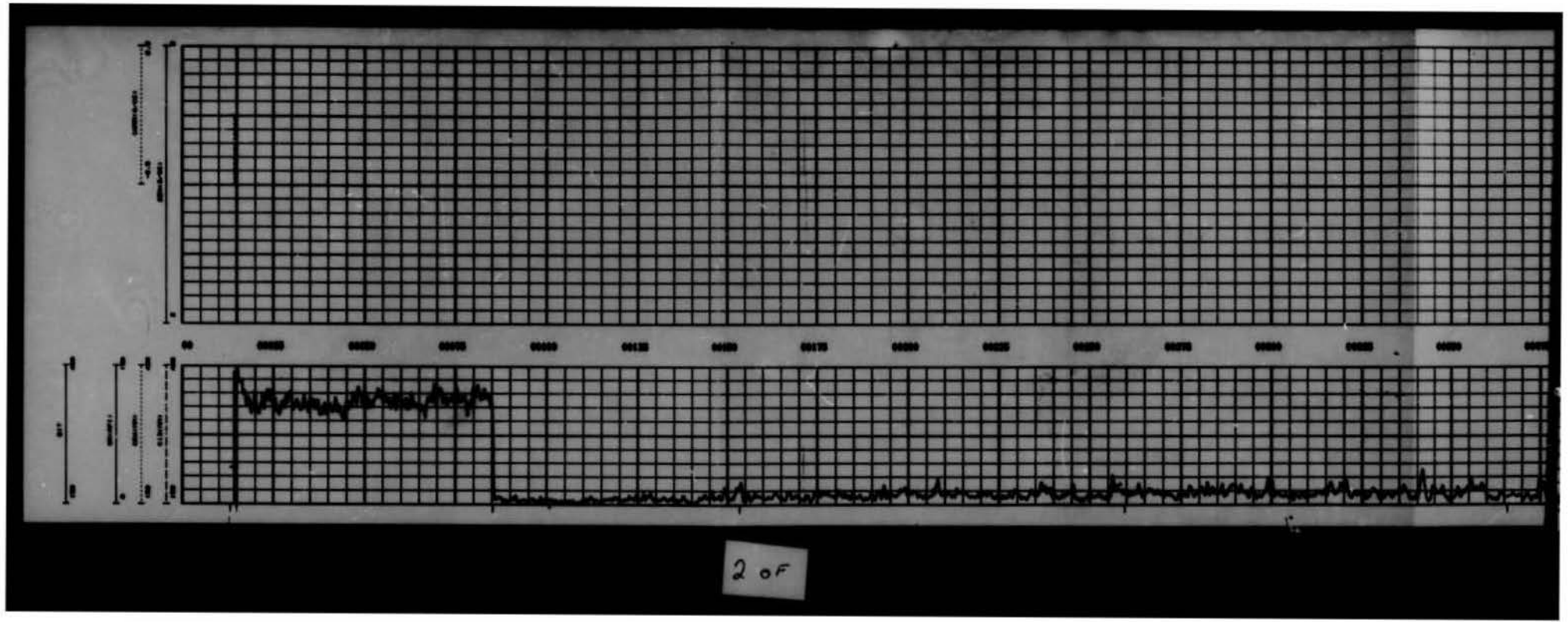

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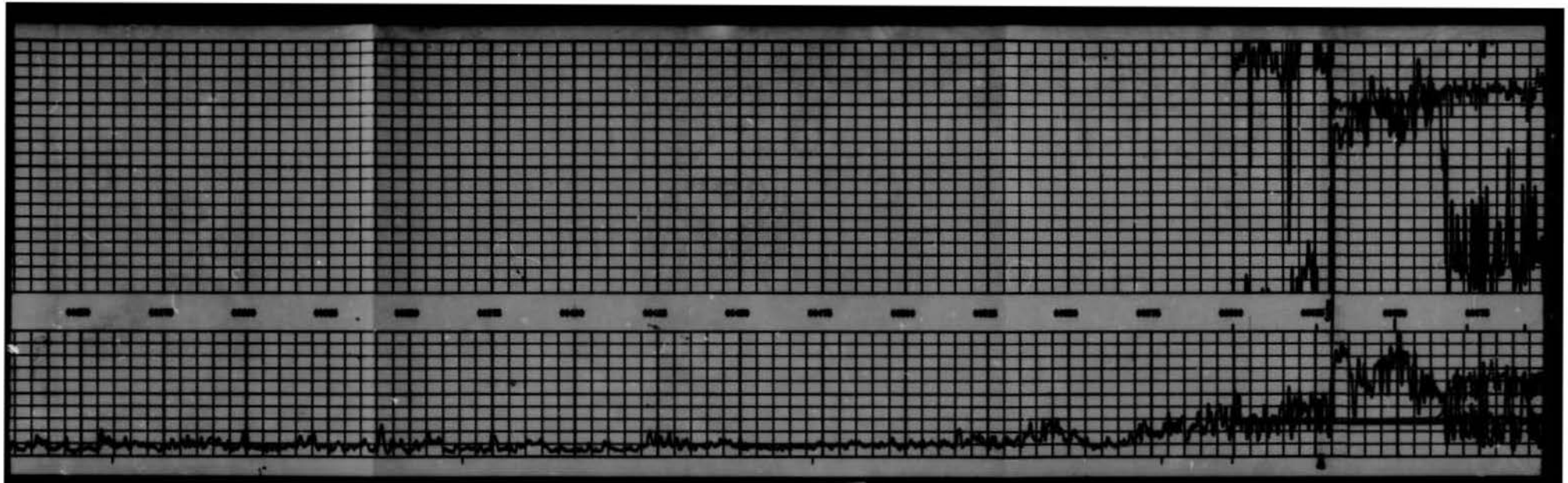

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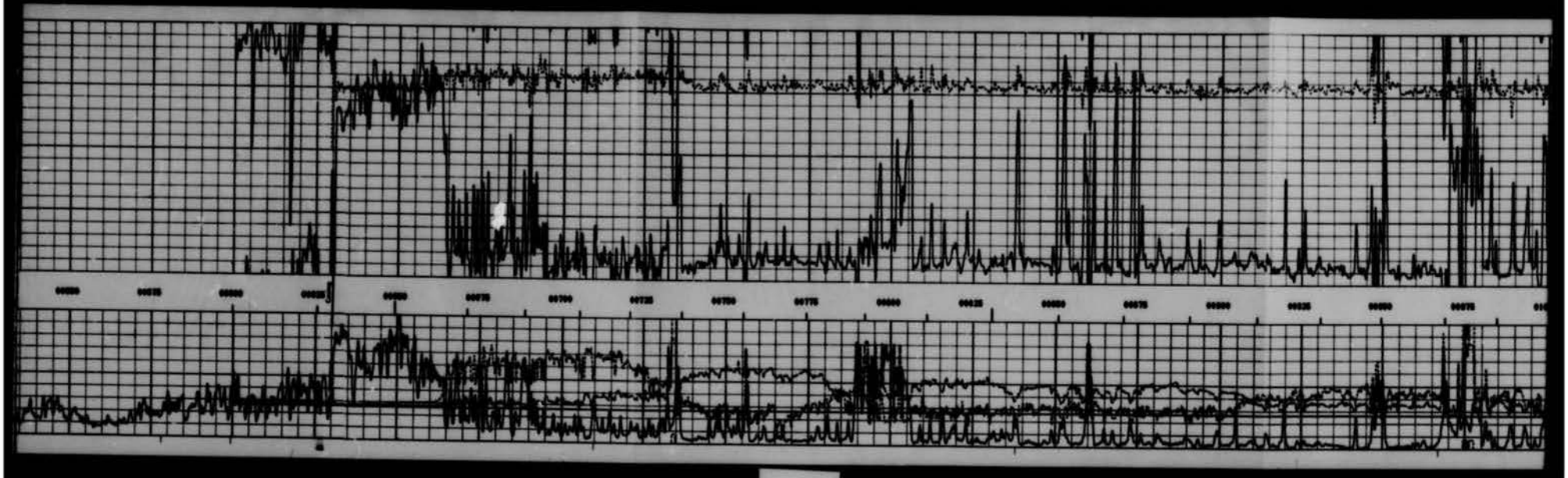

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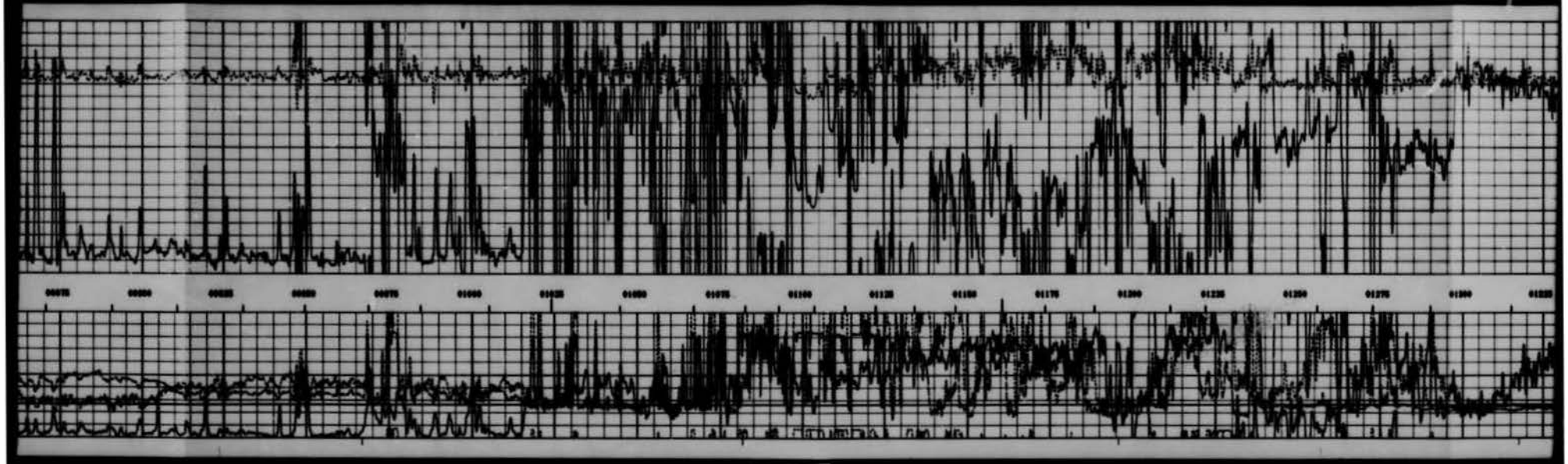

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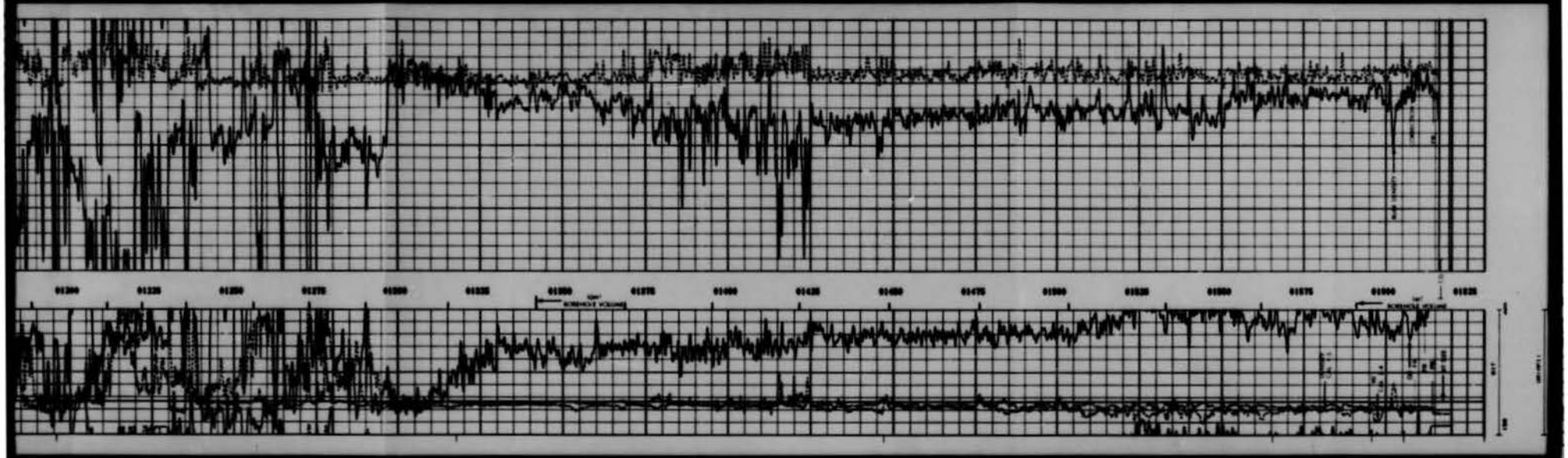

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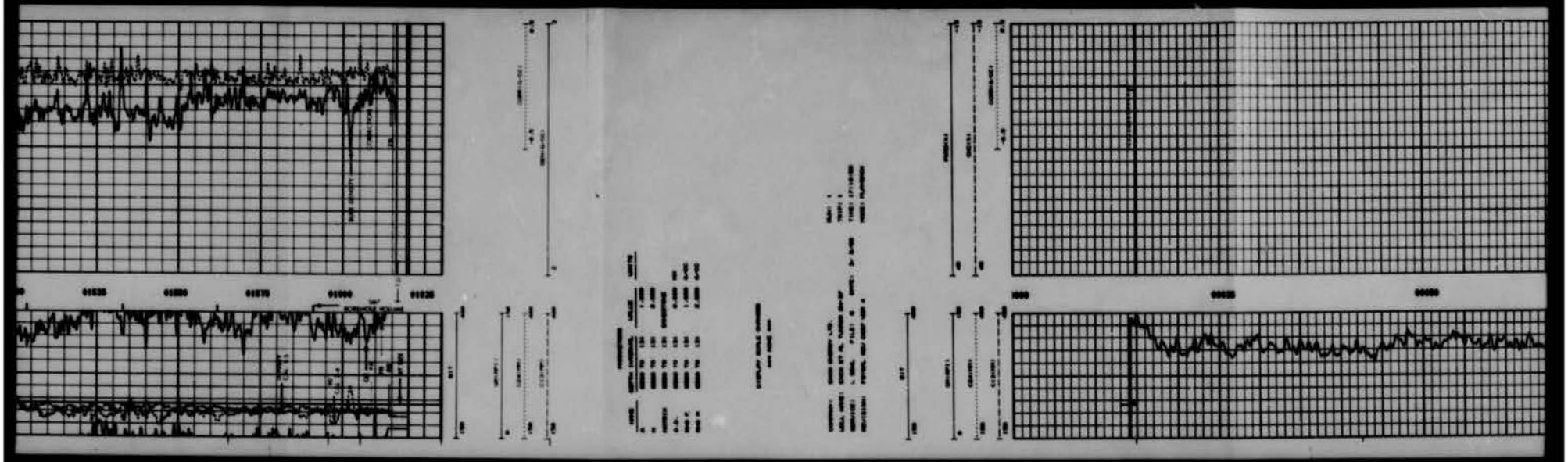

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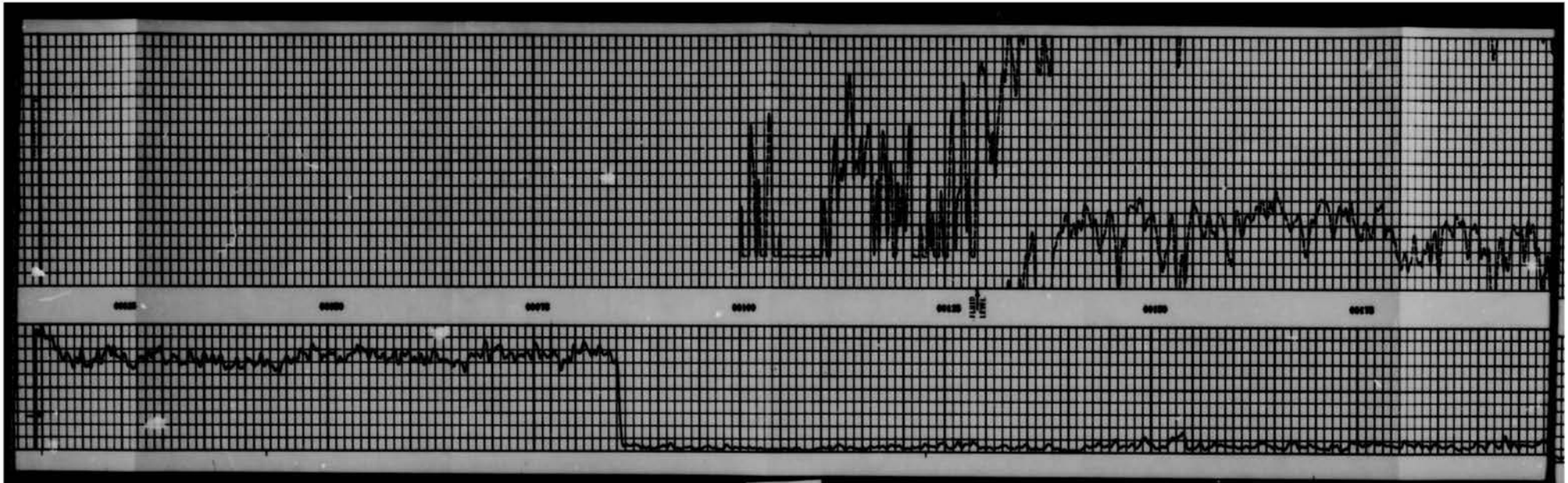

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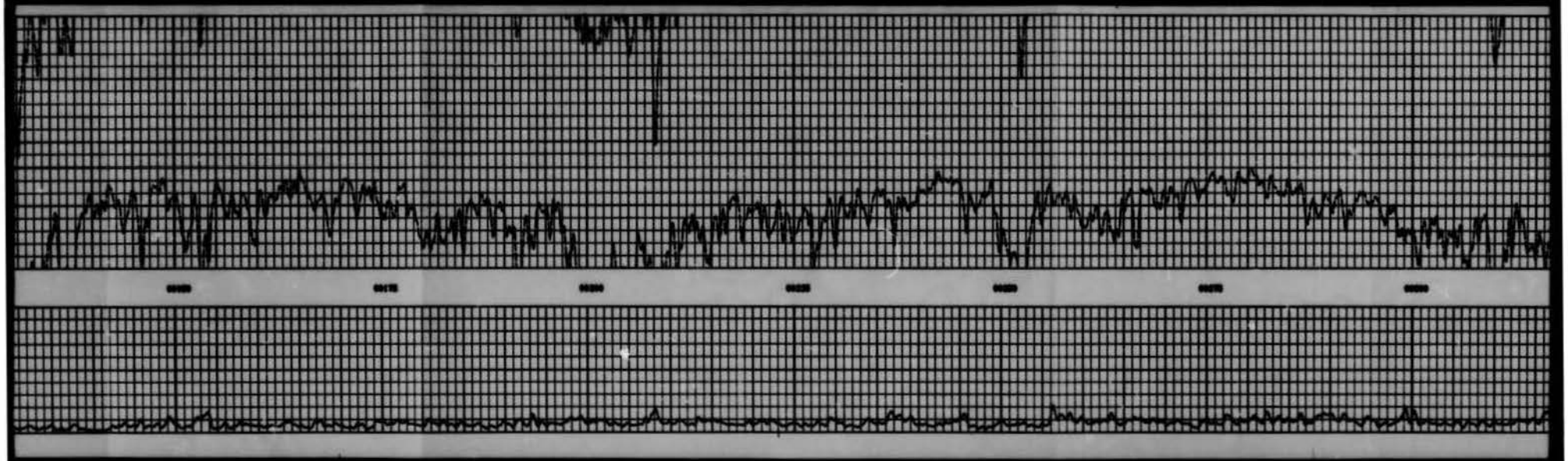

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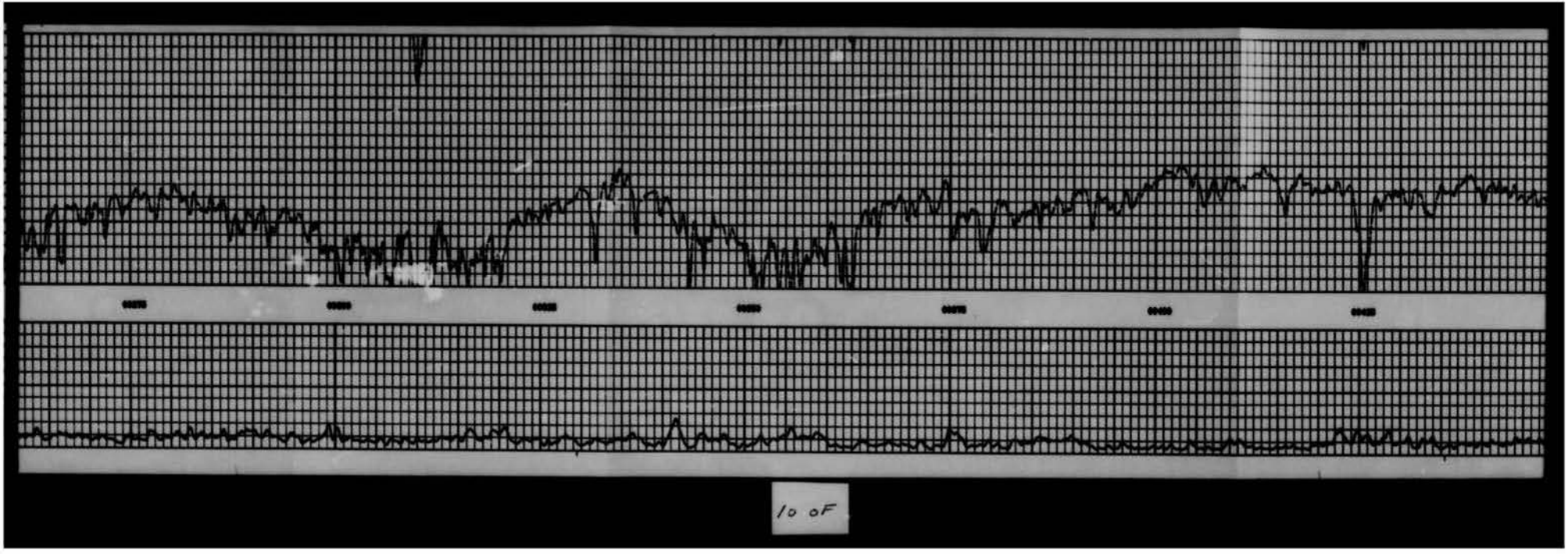
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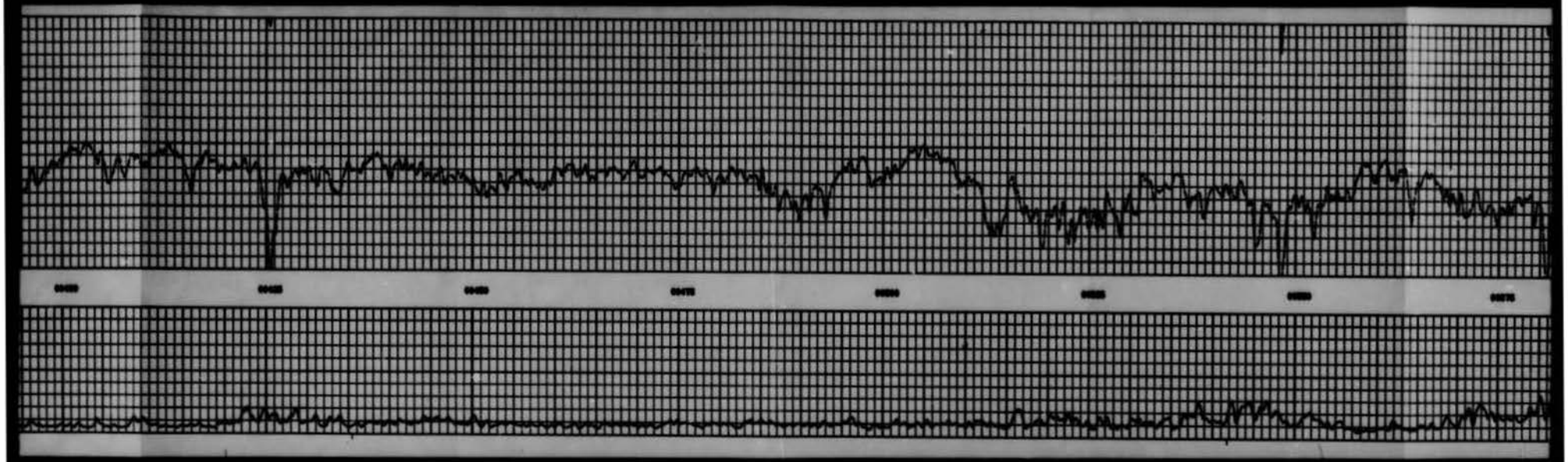

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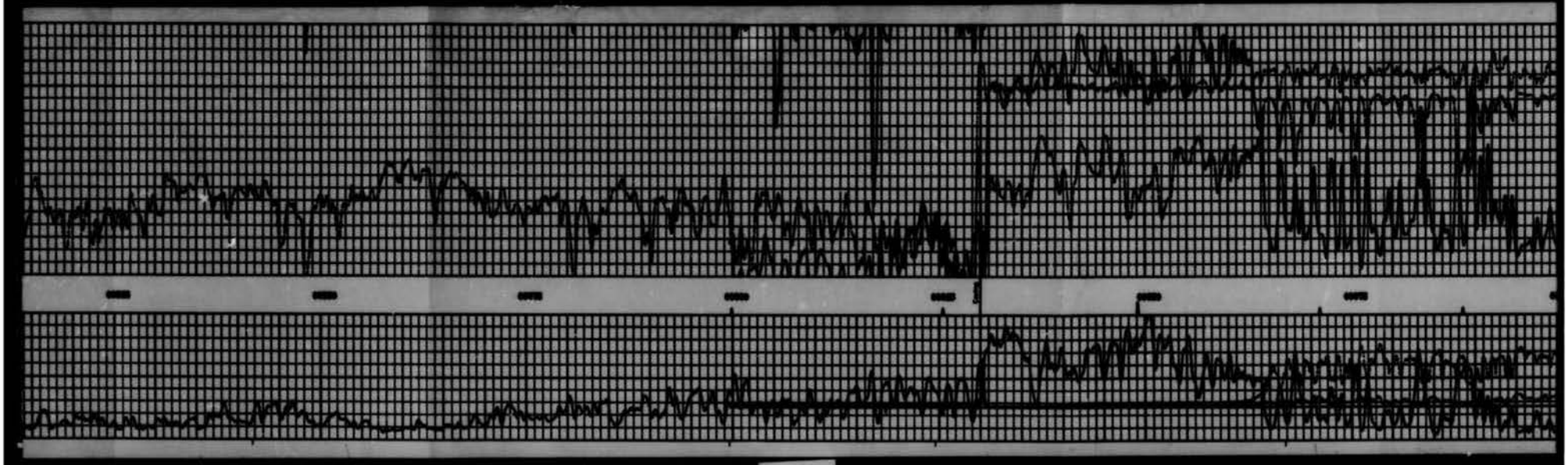

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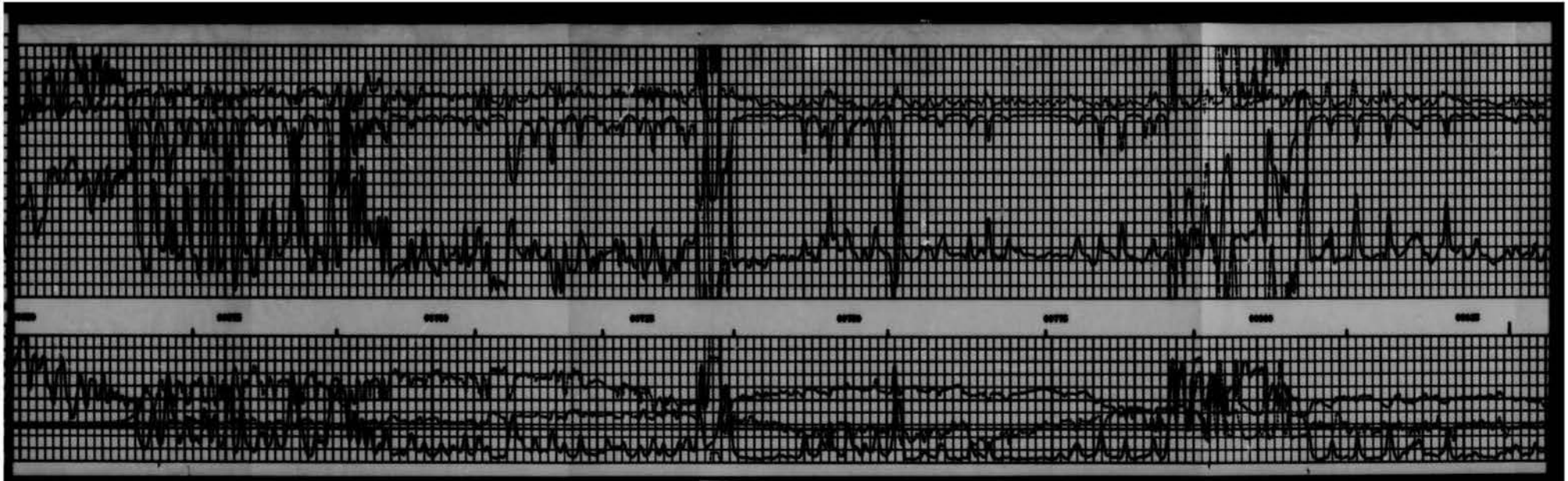

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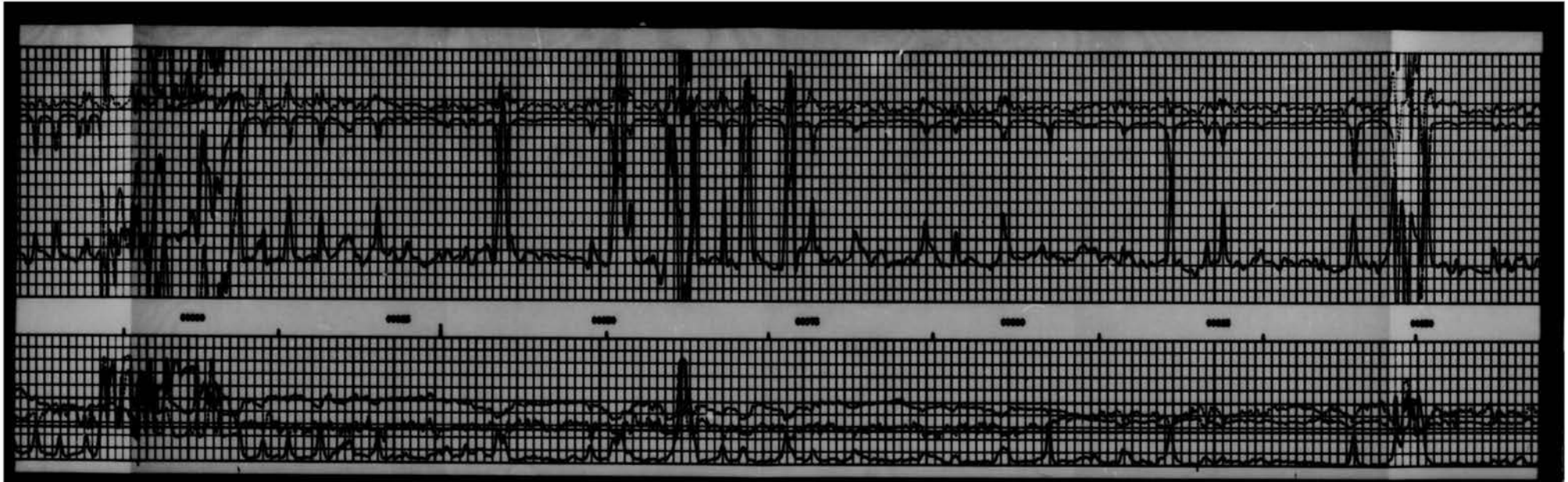

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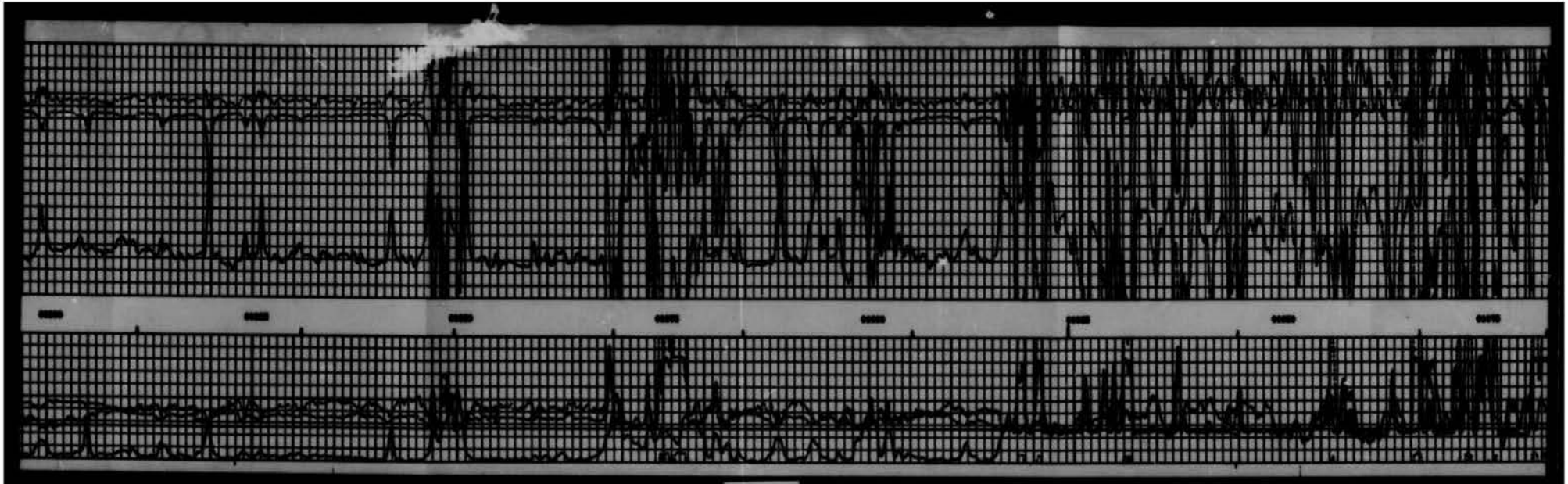

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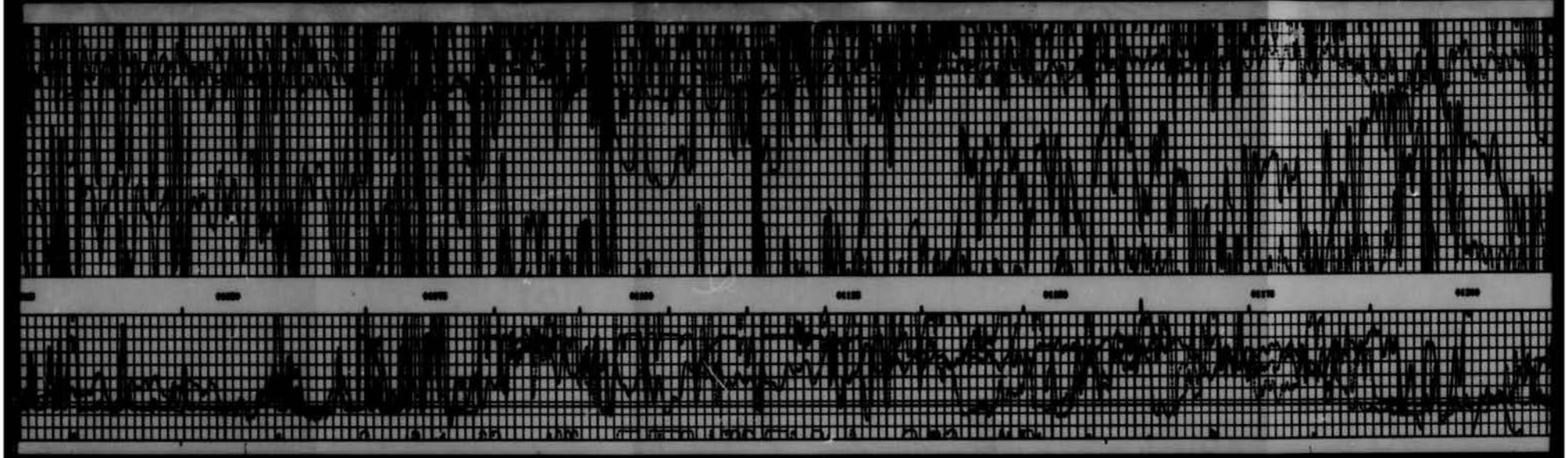

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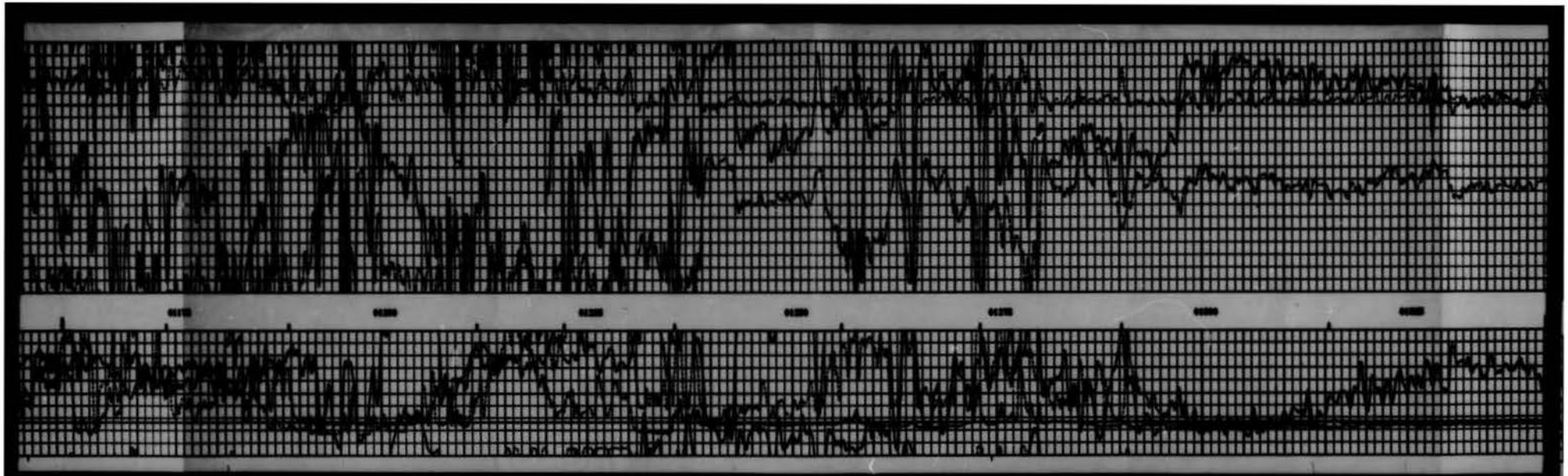

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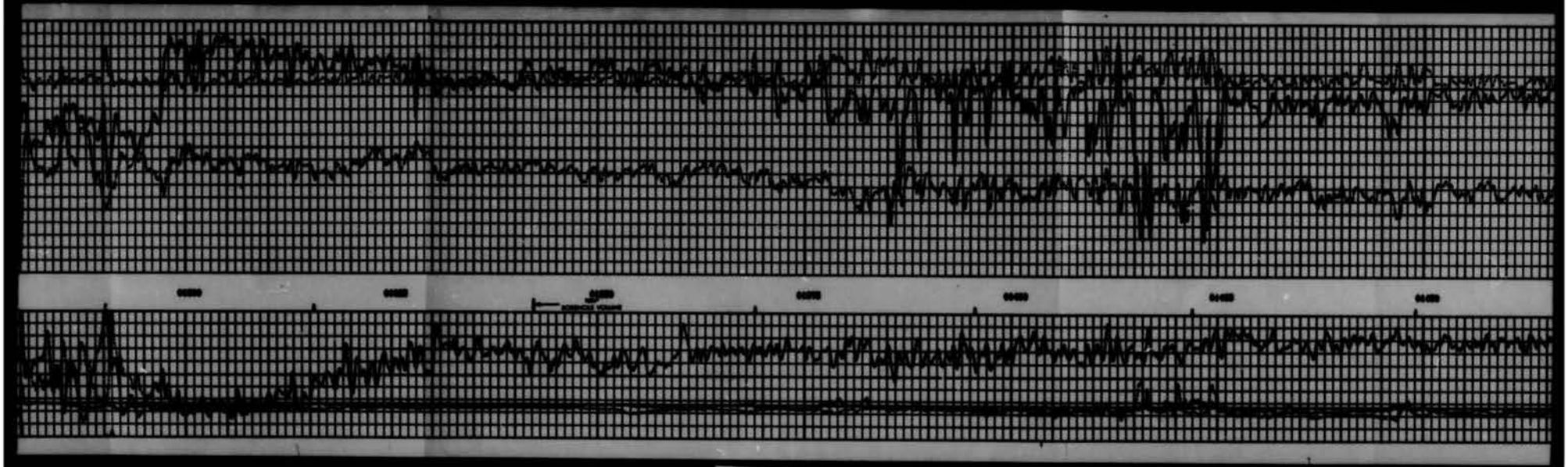

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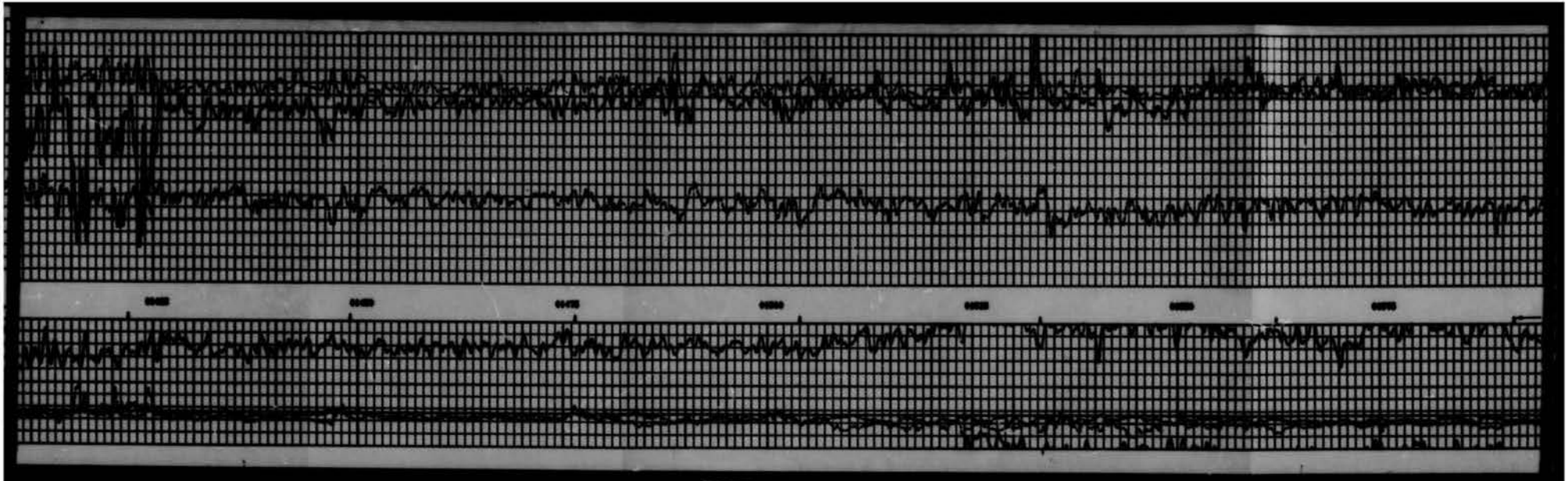

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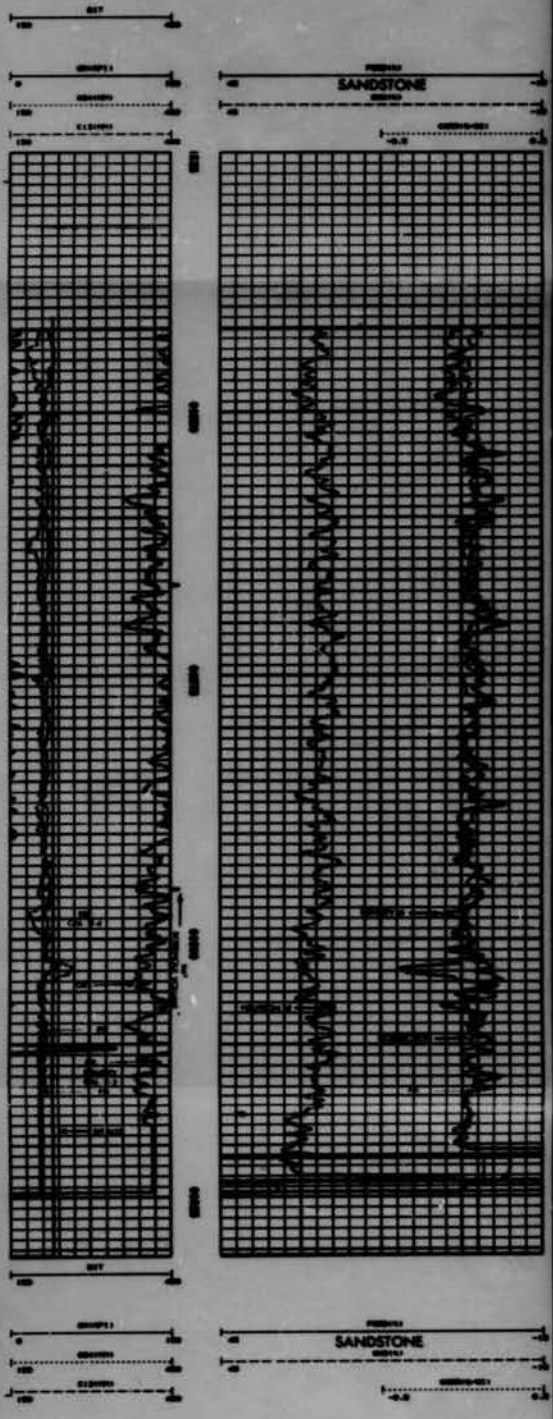
SANDSTONE

SANDSTONE

REPEAT SECTION



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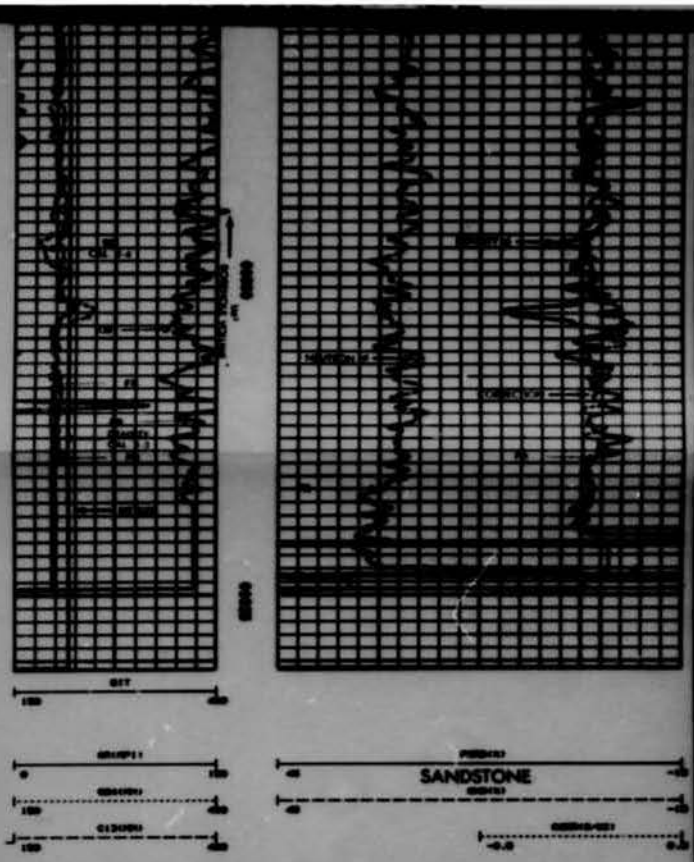

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Dresser Atlas

DUAL LATEROLOG
GAMMA RAY

File No. 9019-L

Company EXCO ENERGY LTD.
Well EXCO ET AL TUNAGO 2N-37
Field WILDCAT
Province N.W.T.

Location:
[illegible]

Other Services
FC-GR-CAL
CN-CDL-GR-YCAL
DIR. SURVEY
CBL-CCL-GR

[illegible]	[illegible]	
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[illegible]		
[illegible]	[illegible]	
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[illegible]	[illegible]	
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[illegible]	[illegible]	
[illegible]	[illegible]	
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[illegible]	10.0	10.0
[illegible]	FLOWLINE	
[illegible]	[illegible]	@ 18 C
[illegible]	[illegible]	@ 18 C
[illegible]	[illegible]	@ 18 C
[illegible]	MEASURED	CALCULATED
[illegible]	[illegible]	[illegible]
[illegible]	7.0 HRS.	
[illegible]	[illegible]	
[illegible]	[illegible]	EDMONTON
[illegible]	[illegible]	
[illegible]	D. CAMPBELL	

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REMARKS RUN (1)

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EQUIPMENT DATA

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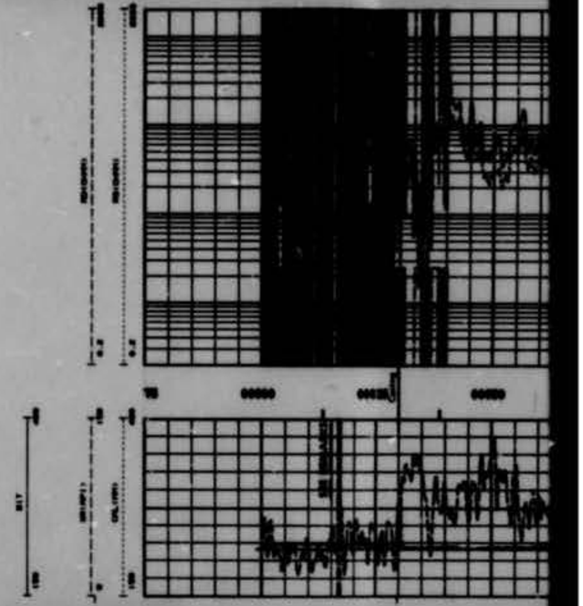

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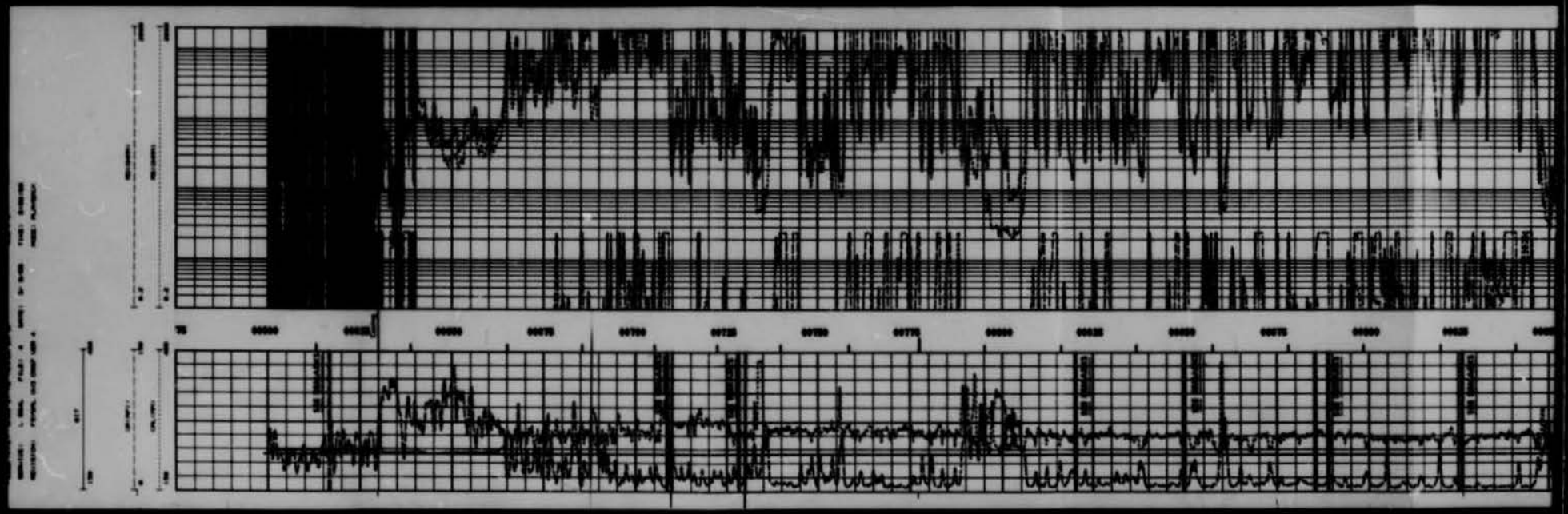

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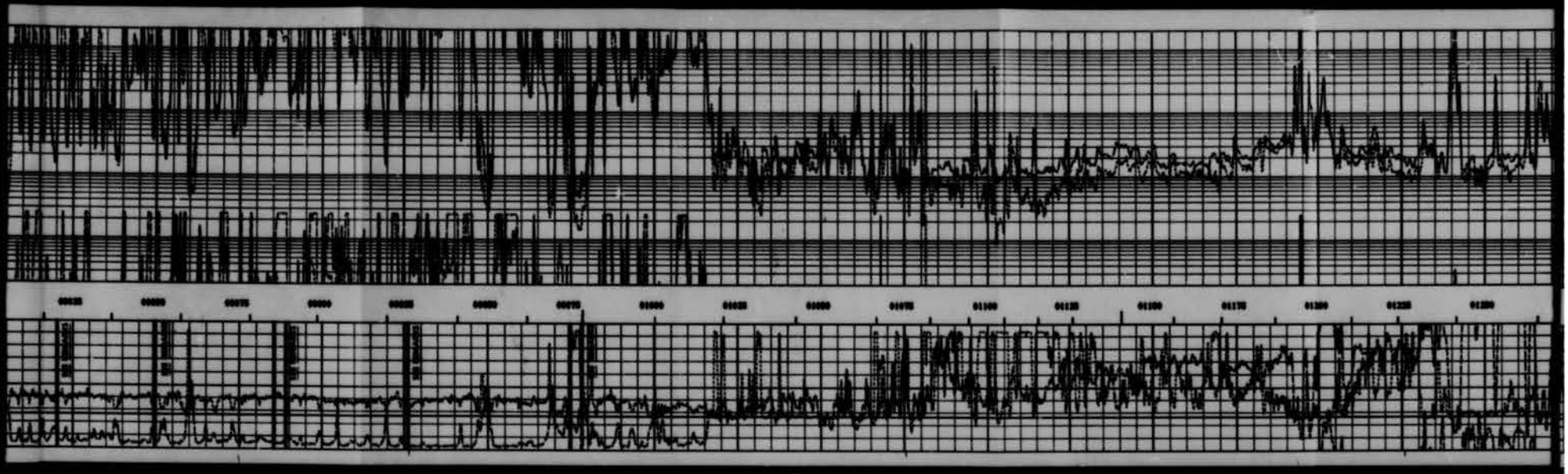

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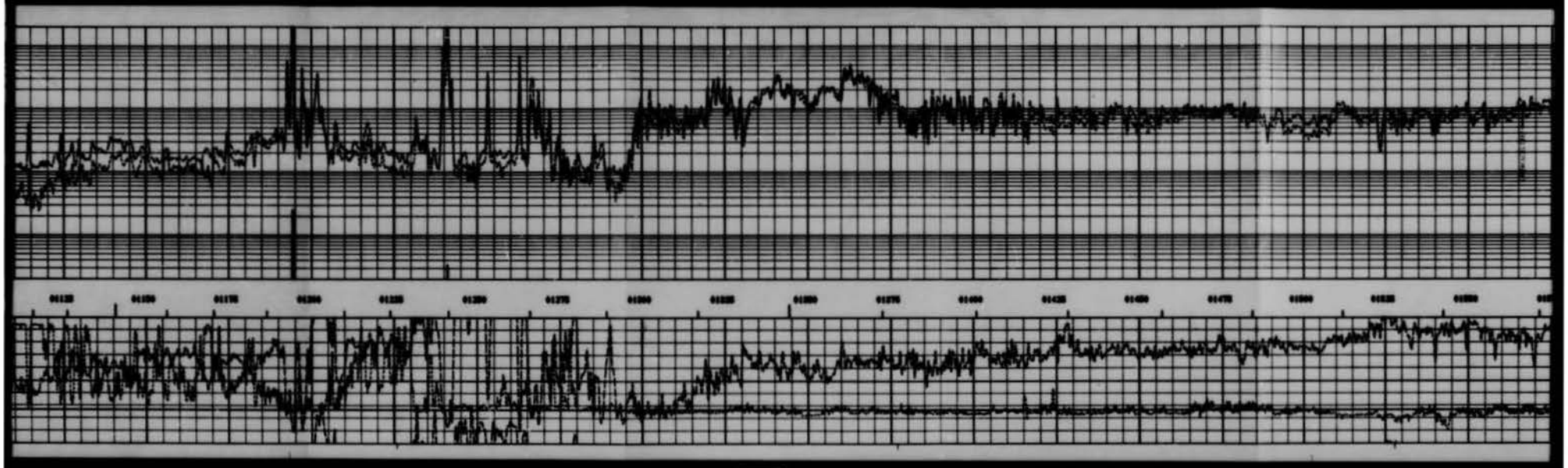

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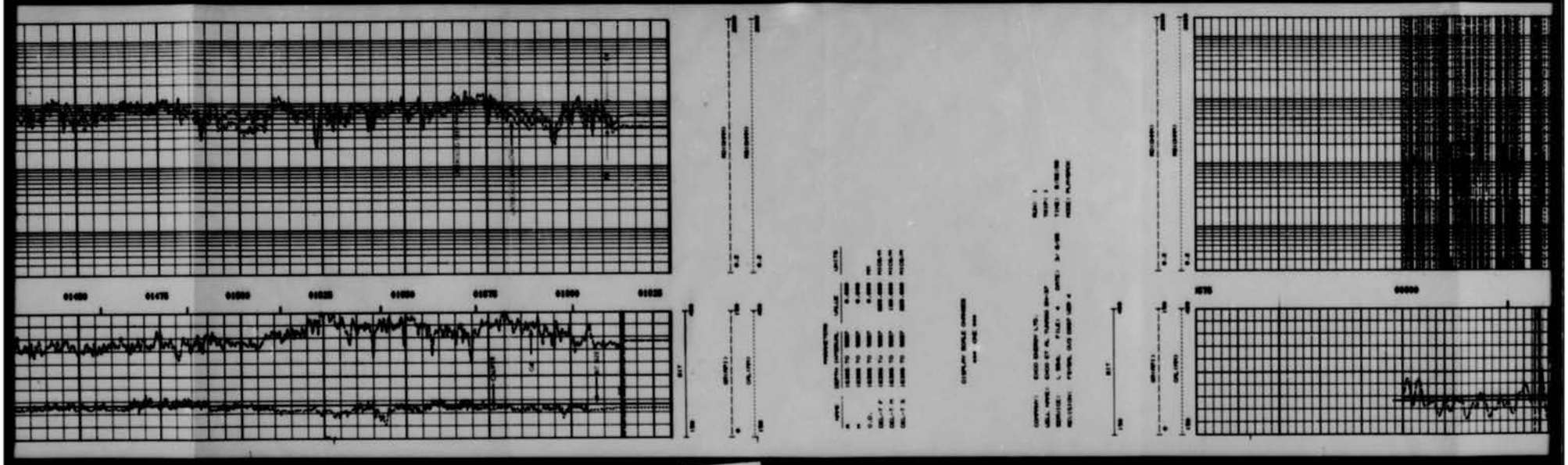

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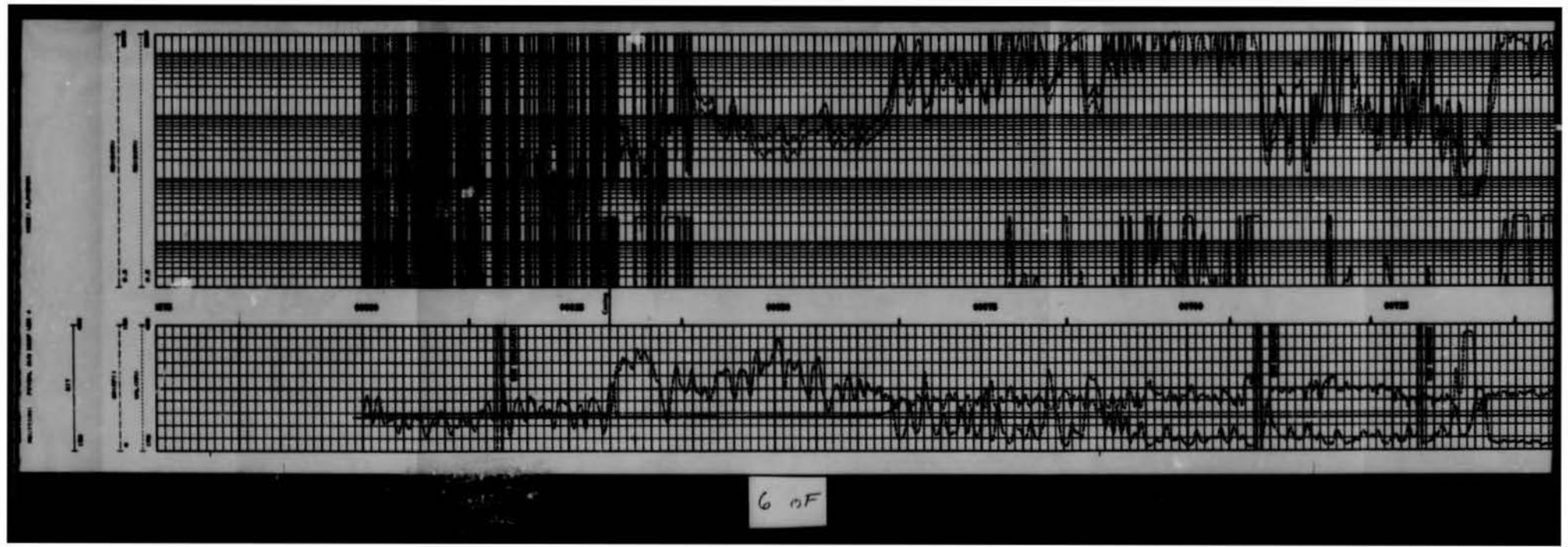

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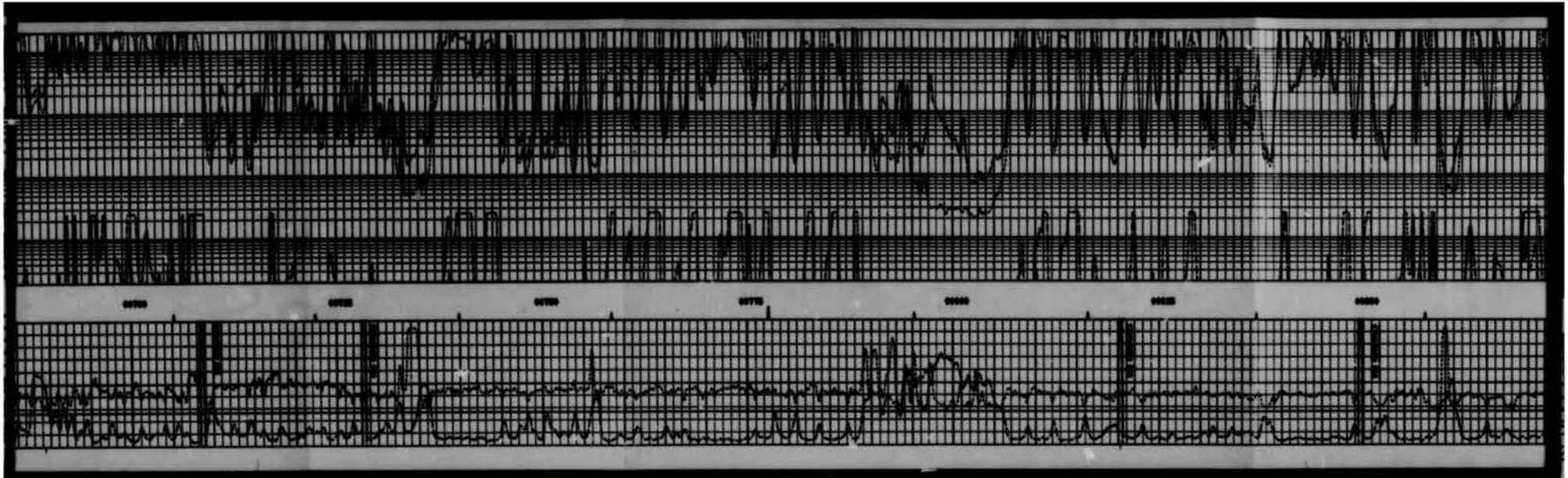

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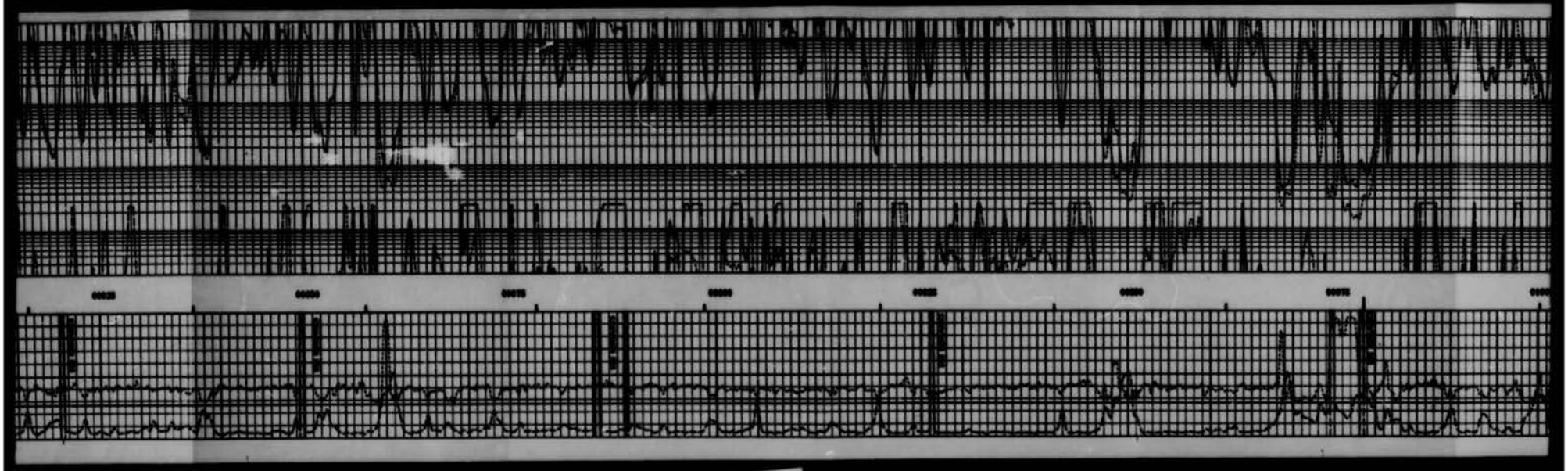

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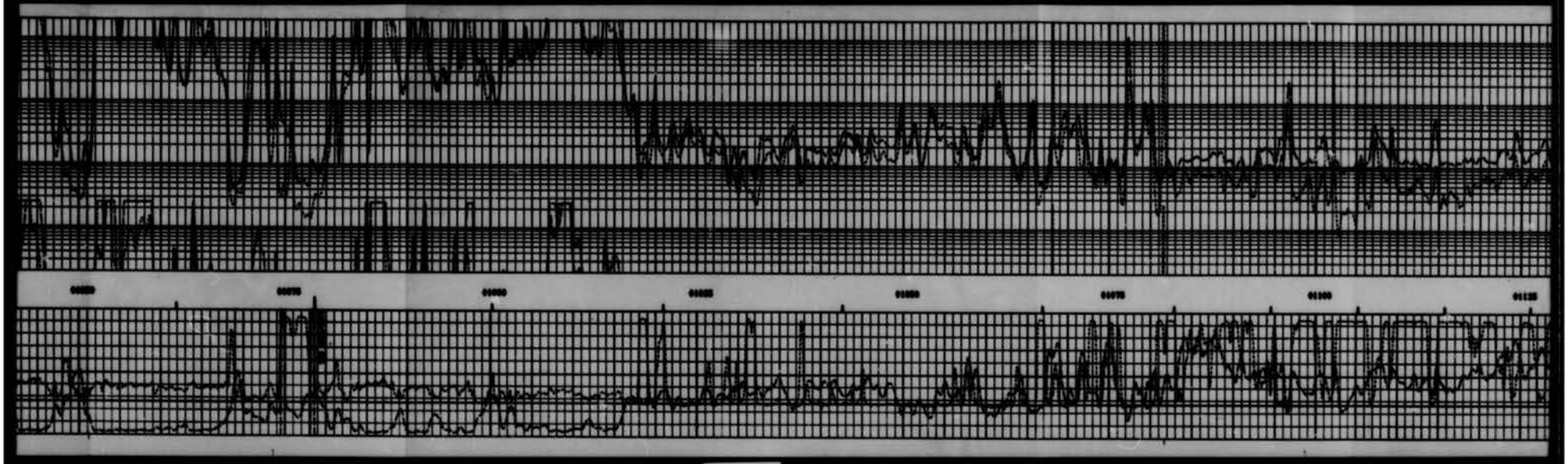

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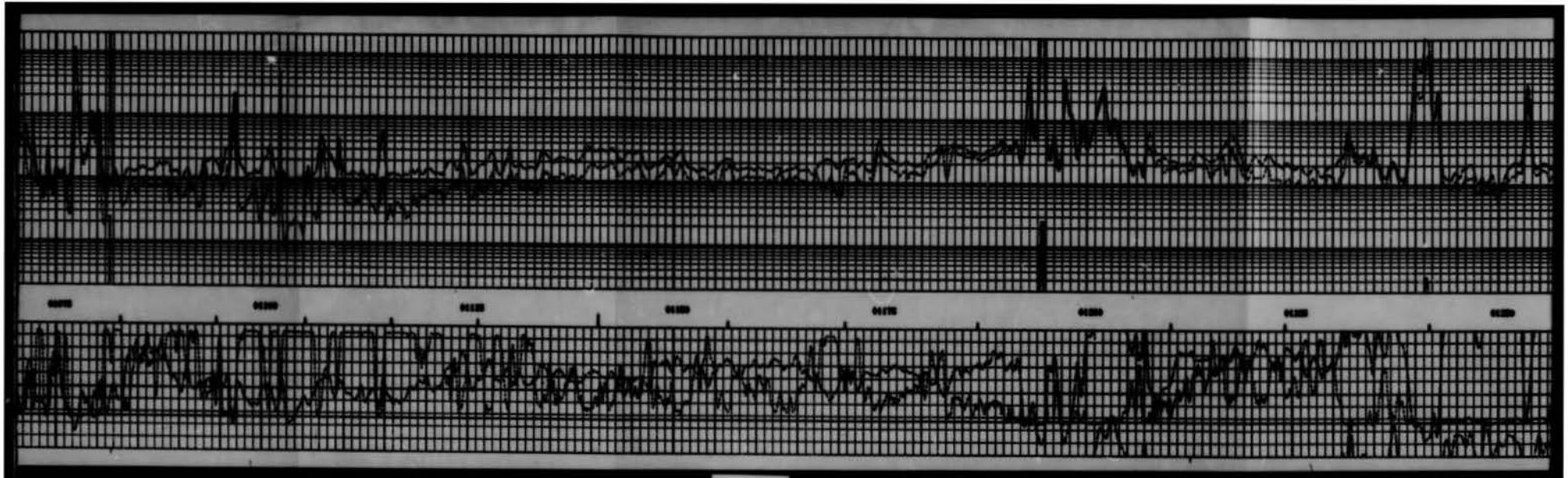

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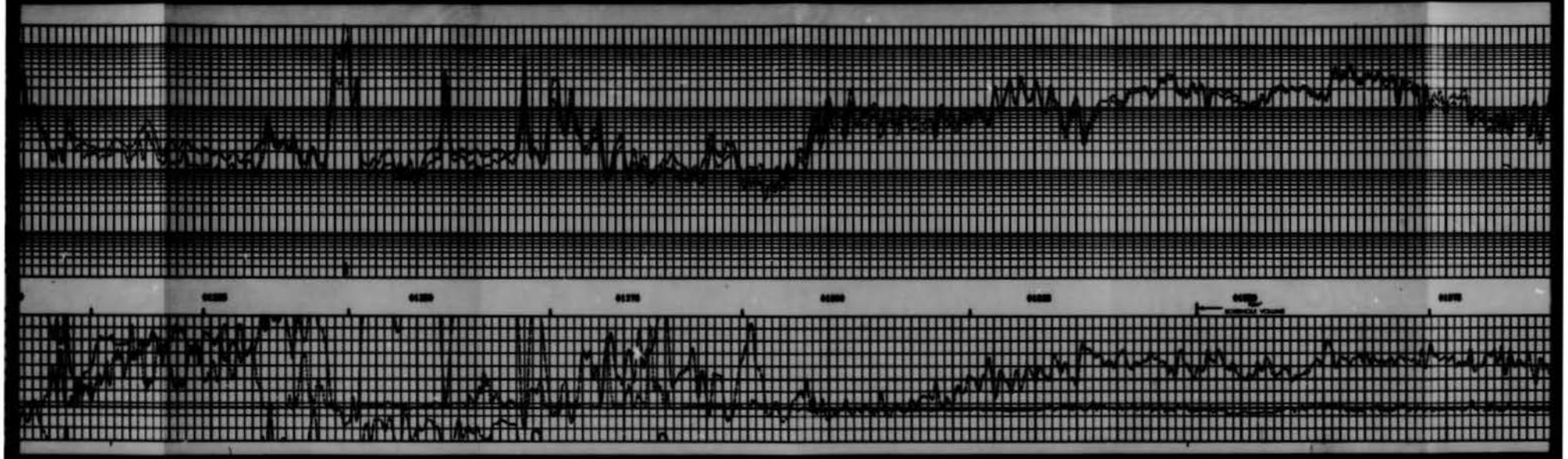

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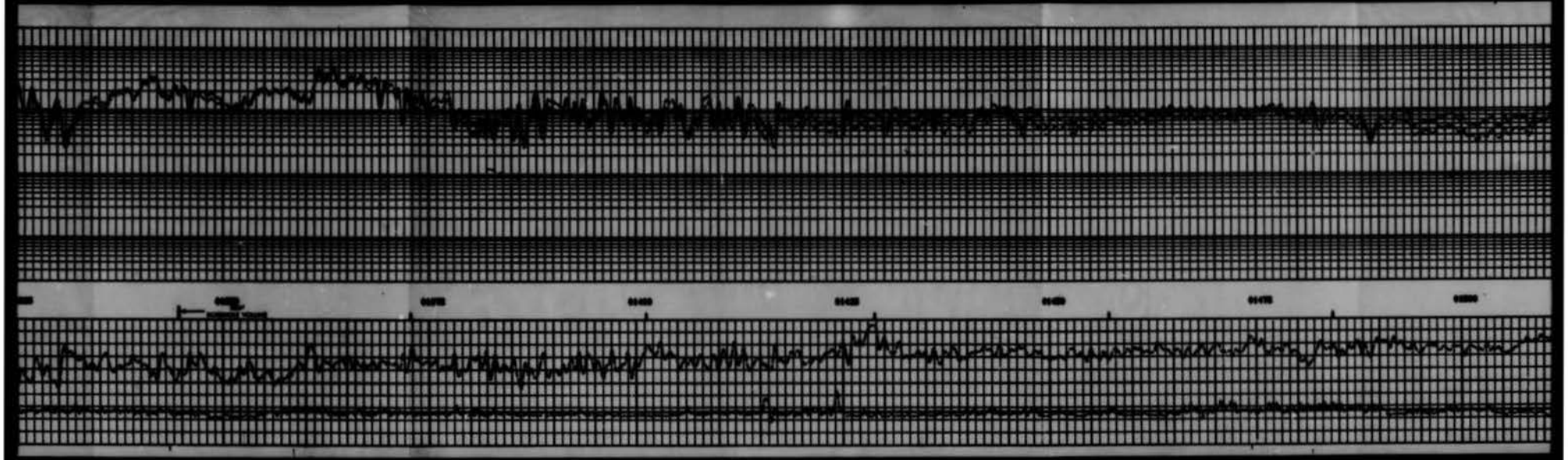

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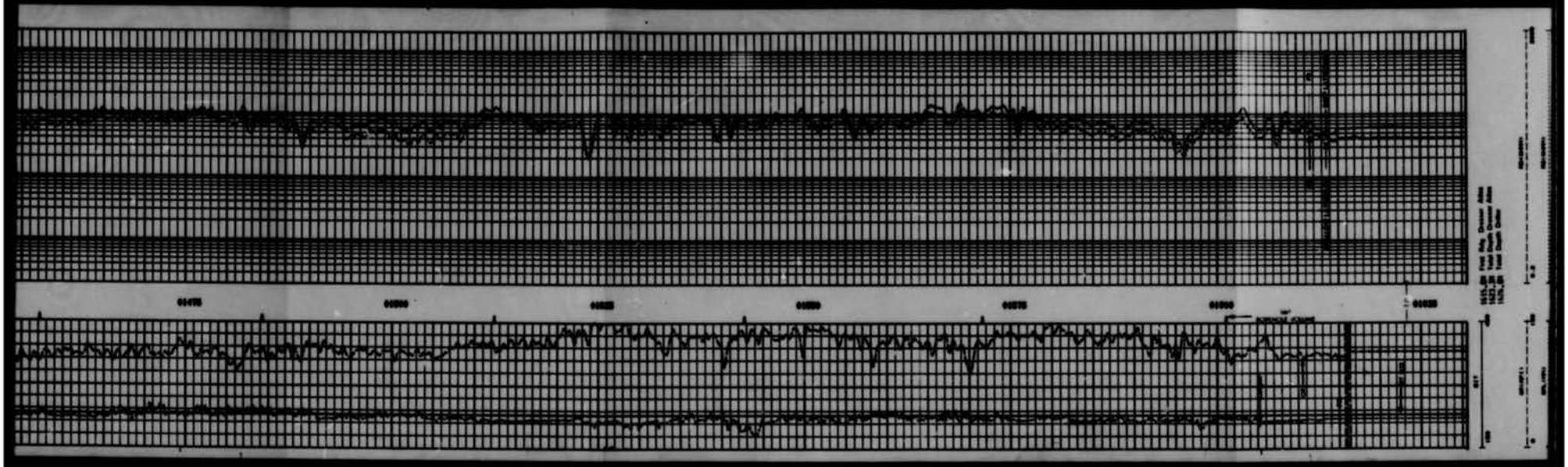

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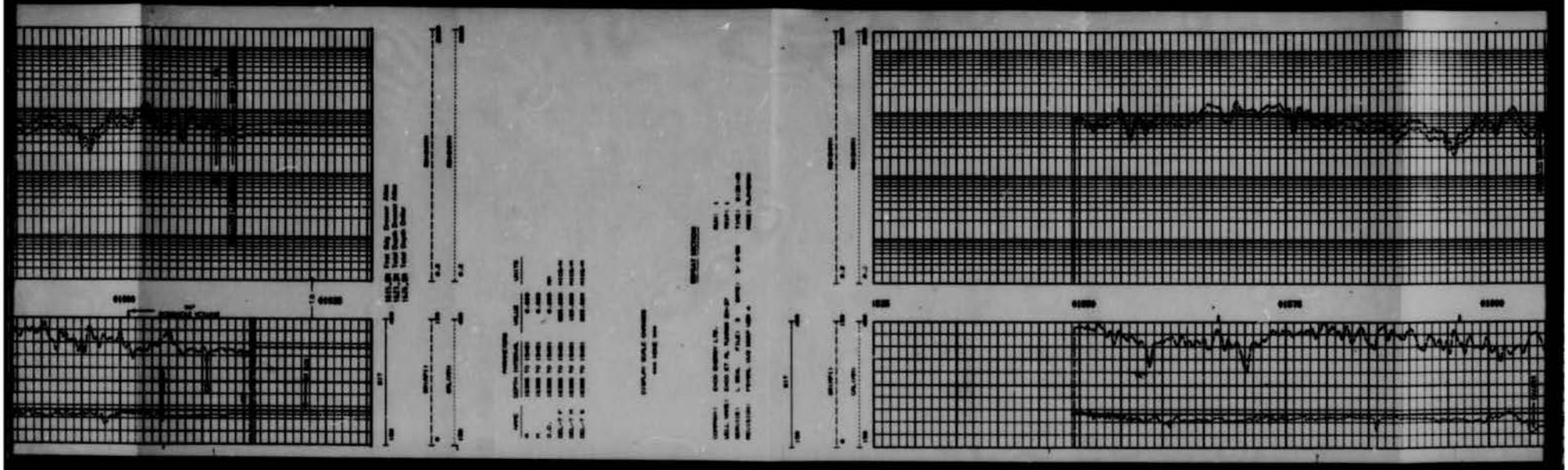

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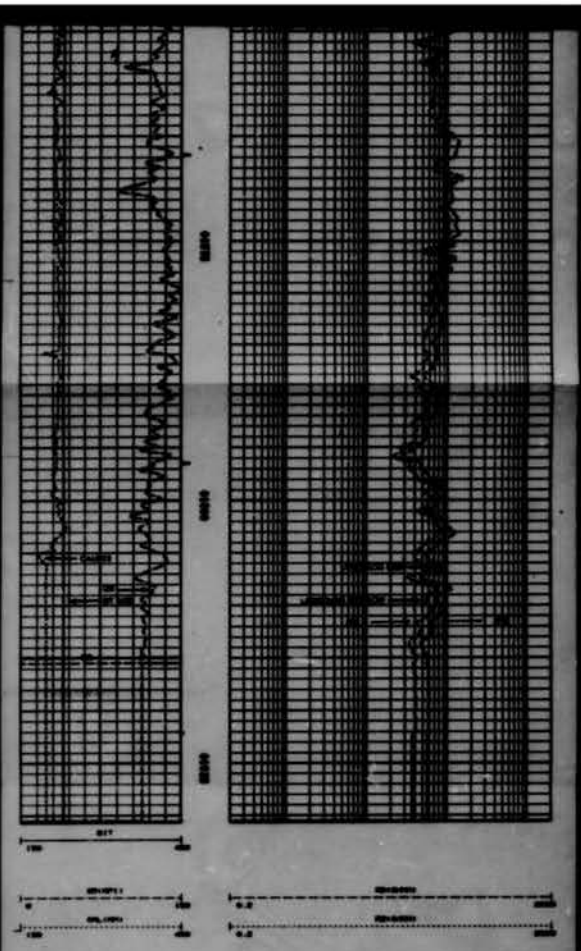

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[illegible]
                      PRIMARY VERIFICATION
        [illegible]   BEFORE LOG VERIFICATION   TIME [illegible]
[illegible]
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[illegible]
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[illegible]
        [illegible]        AFTER LOG VERIFICATION    TIME [illegible]
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BHC ACOUSTILOG®
GAMMA RAY

FILE NO. 1829-E

Company: EXCO ENERGY LTD.
Well: EXCO ET AL TUNACO 2N-37
Field: WILDCAT
Province: N.W.T.

Location:
LAT: [redacted] LONG: [redacted]
Sec. ___ Twp. ___ Rge. ___

OTHER SERVICES
DLL-MSFL-GR
CDL-CNL-GR-CAL
DIP-SURVEY
DBL-COL-GR

EQUIPMENT DATA: [redacted] ELEV. [redacted]
LEVEL REFERENCE FROM [redacted] P. HOME P.O.
DRILLING MEASURED FROM [redacted]

ELEVATIONS
KB 2Th-1 ft
DF
GL 2Th-1.5

RUN NUMBER	[redacted]		
DATE	1		
DEPTH DRILLER	1180.0 m		
DEPTH LOGGER	1180.0 m		
BTM. LOG INTERVAL	1180.0 m		
TOP LOG INTERVAL	100.0 m		
CASING - DRILLER	244.00 @ 100.0 m	0	0
CASING - LOGGER	100.0 m		
BIT SIZE	311 mm		
TYPE FLUID IN HOLE	SALT MUD		
DENSITY AND VISCOSITY	1140	kg	
FLUID PUMP LOSS	10.0	10.0	
SOURCE OF SAMPLE	FLOWLINE		
RM @ MEAS. TEMP.	0.000 @ 10 C	0	
RMF @ MEAS. TEMP.	0.000 @ 10 C	0	
RMC @ MEAS. TEMP.	0.000 @ 10 C	0	
SOURCE OF RMF / RMC	CALCULATED	0	
RM @ BHT	0.000 @ 30 C	0	
TIME SINCE CIRCULATION	3.0 HRS.		
MAX. REC. TEMP. DEG. C	30 C	30 C	
EQUIP. NO. / LOC.	10 [redacted]	[redacted]	
RECORDED BY	A. [redacted]		
WITNESSED BY	D. [redacted]		

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REMARKS RUN (1)

LOG TIMED OUT AND RUN IN COMBINATION WITH THE SECTION
DIPLOG, DLL-MSFL, CDL-CNL-GR, DIP-SURVEY, DBL-COL-GR.
DIPLOG RUN ON 20-JAN-1986 AT 1100 HRS.
DIP SPIDER DOWN TO PROVIDE ACCURATE DEPTH
TRACKING. NOT TO SCALE.
TOTAL TIME LOGGED: 6 HOURS.

EQUIPMENT DATA

RUN NUMBER	TOOL	SERIAL NO.	POSITION
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		[redacted]	[redacted]
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		[redacted]	[redacted]
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		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]
		[redacted]	[redacted]

[redacted]

[redacted]	VALUE	UNITS
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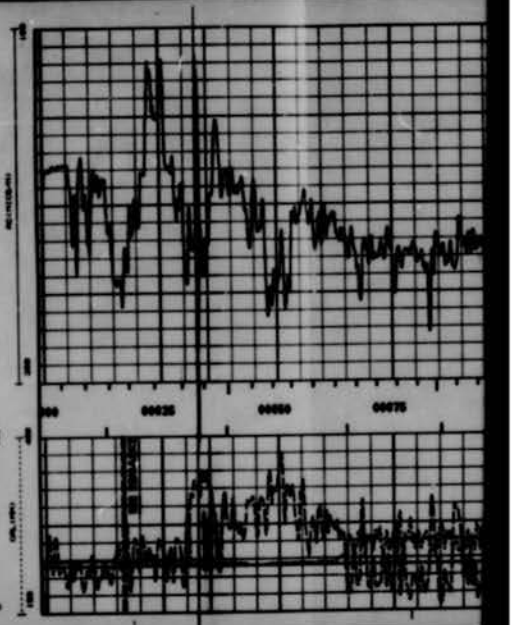

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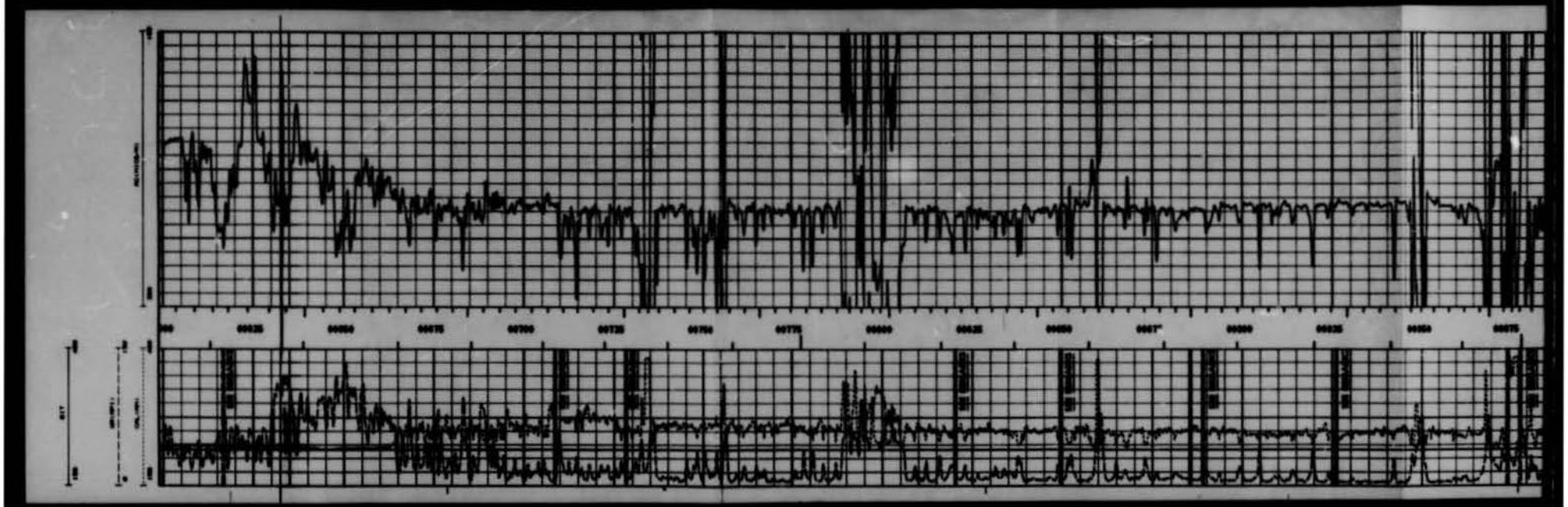

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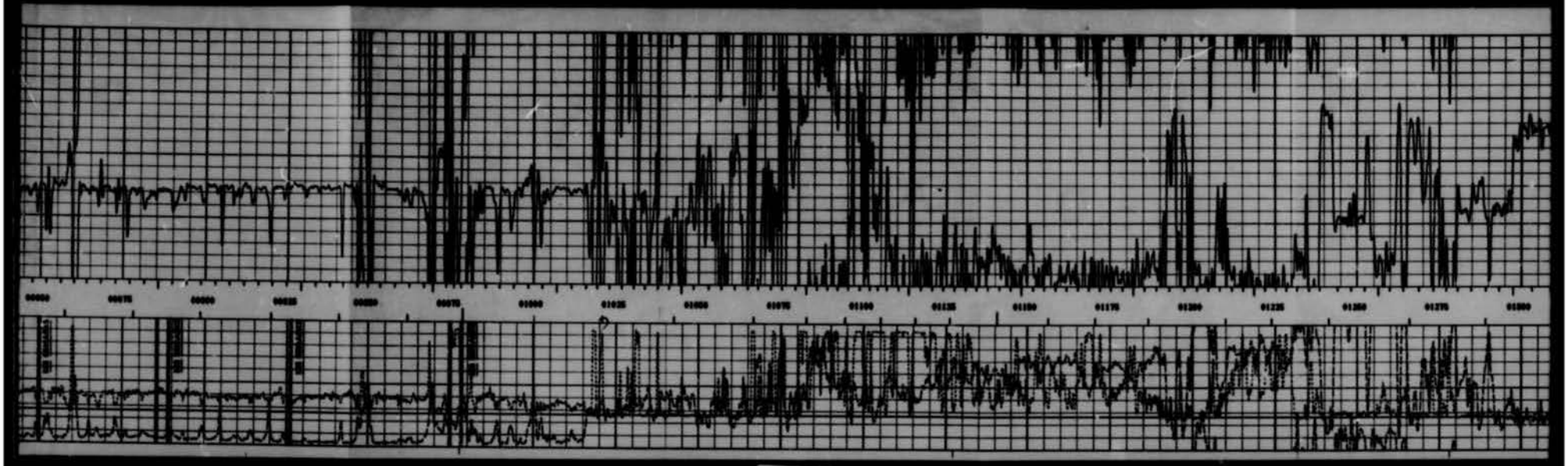

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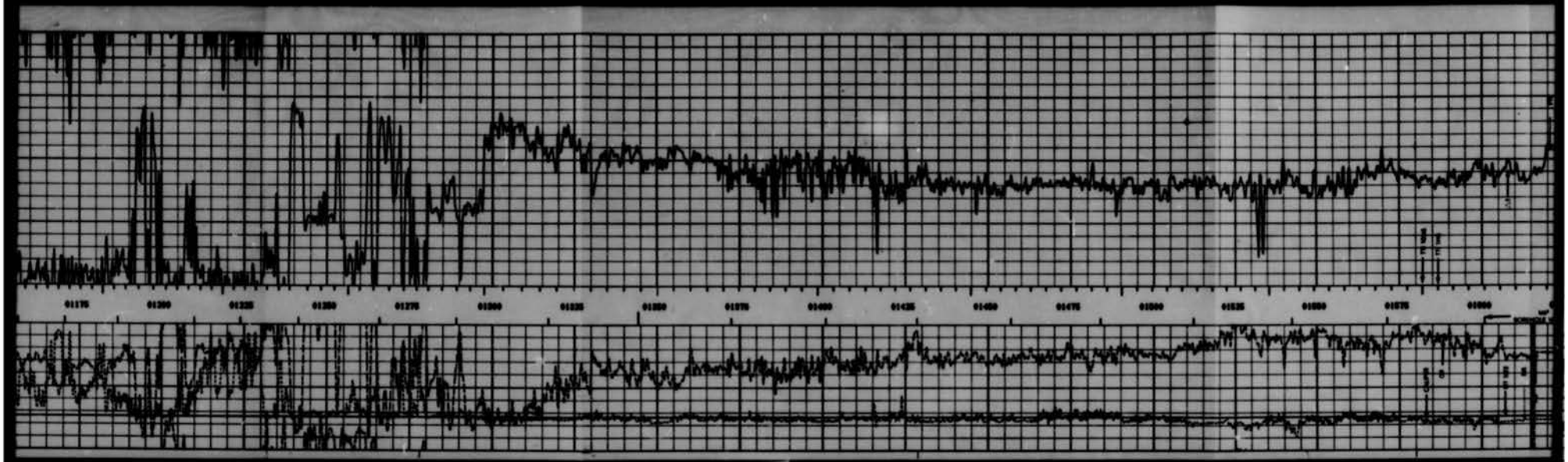

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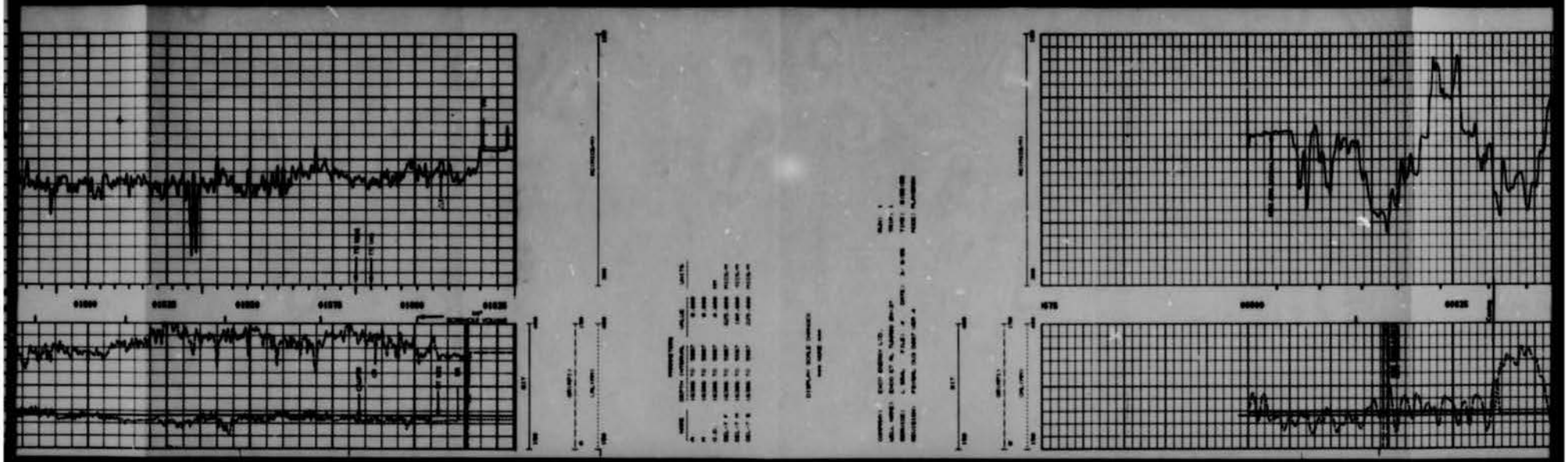

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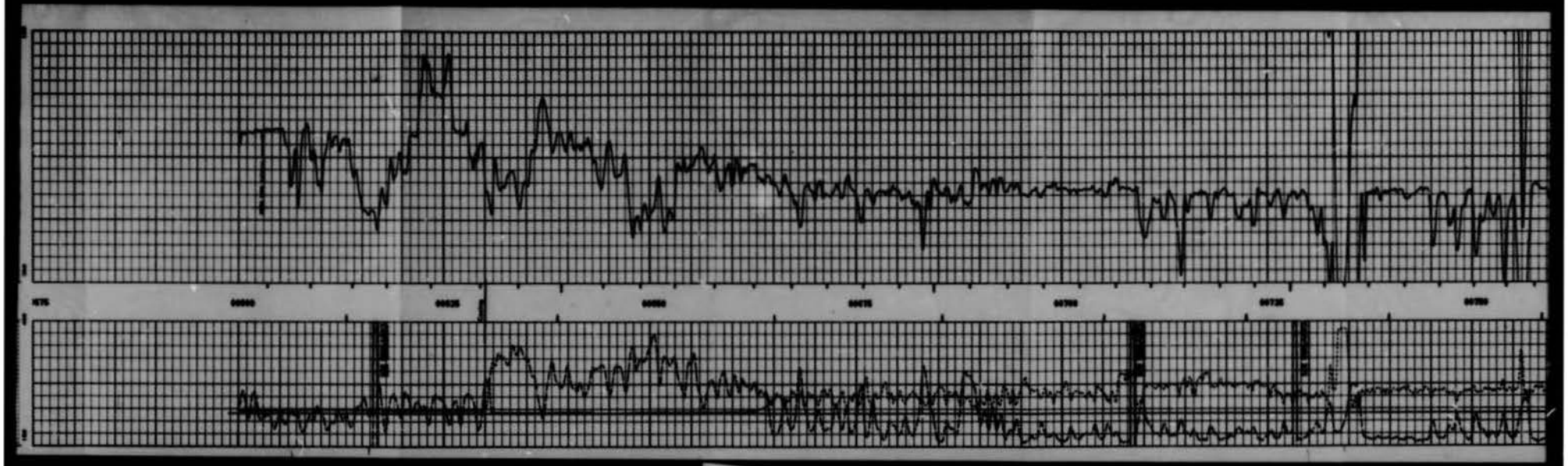

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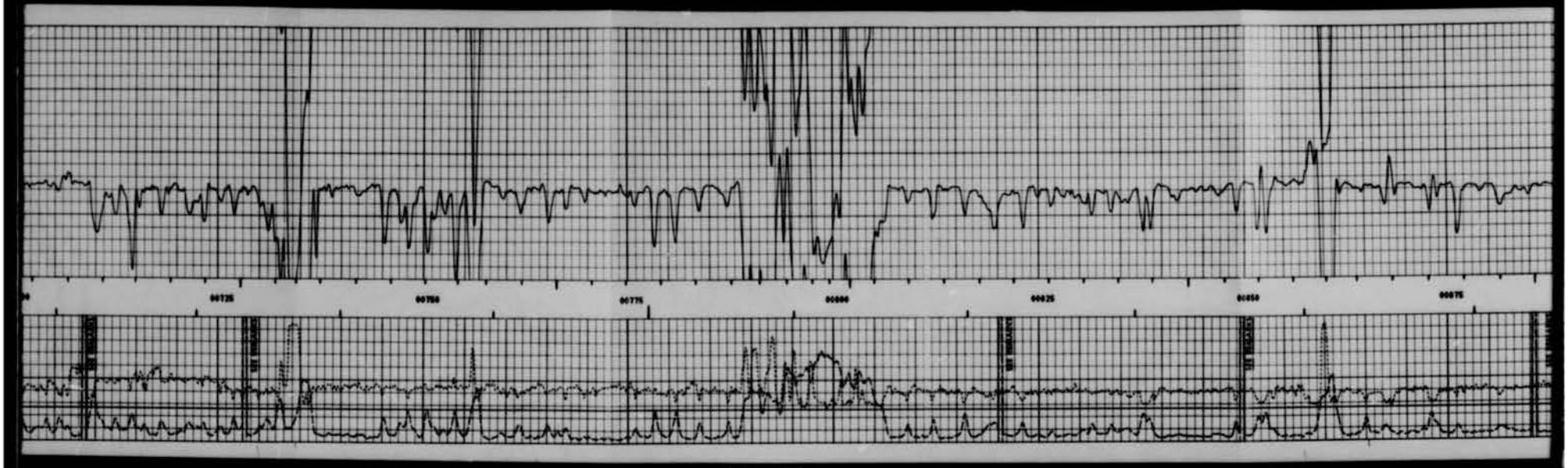

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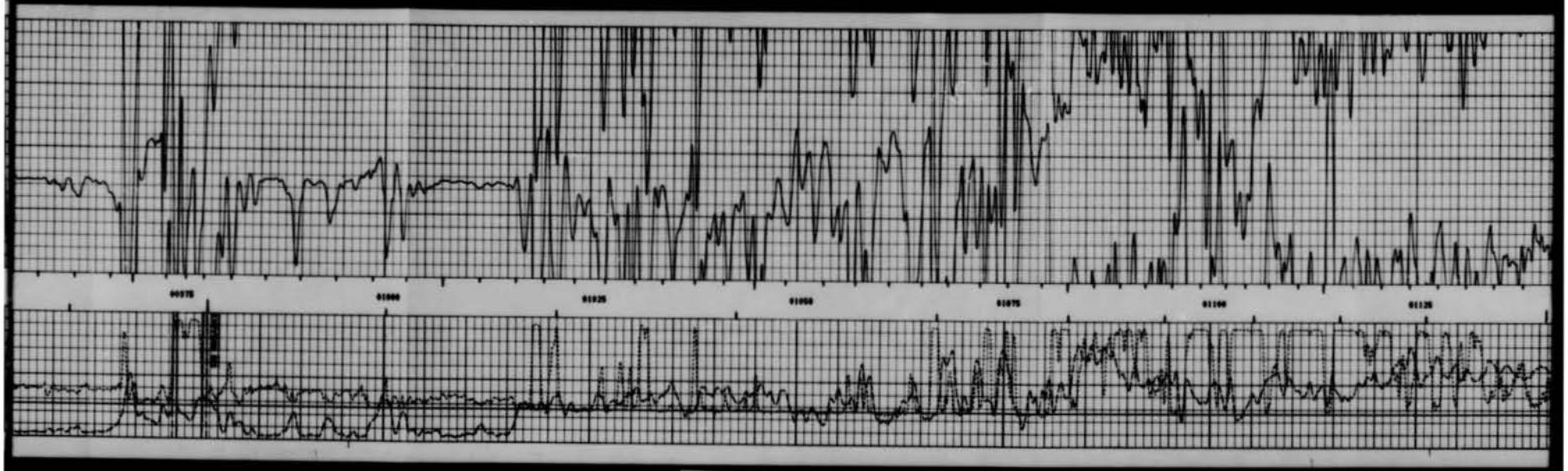

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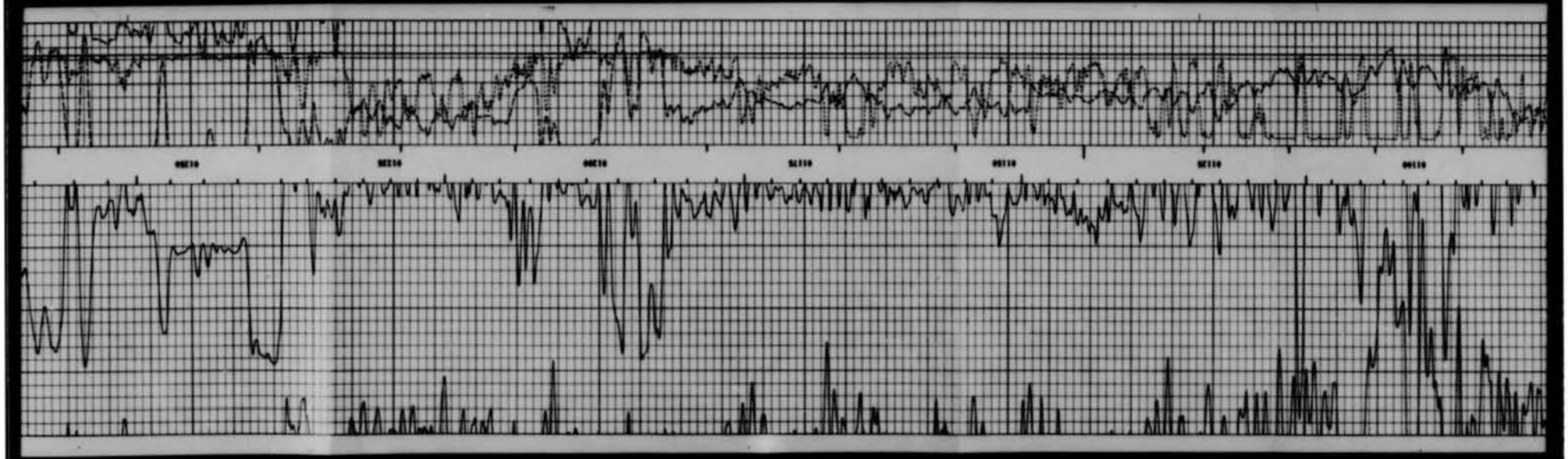

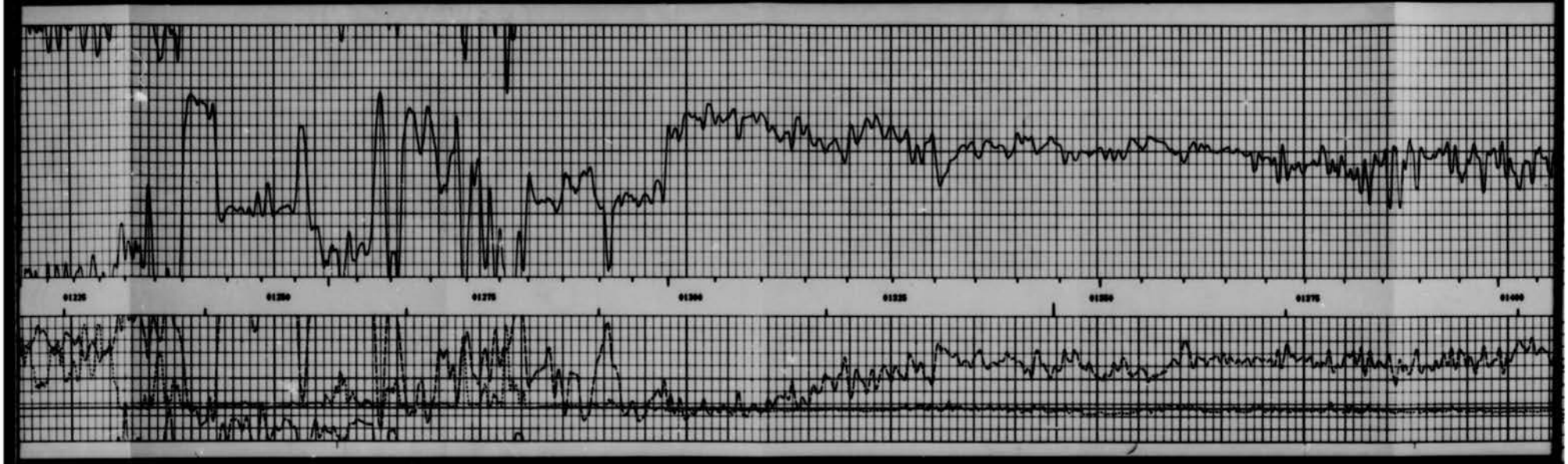

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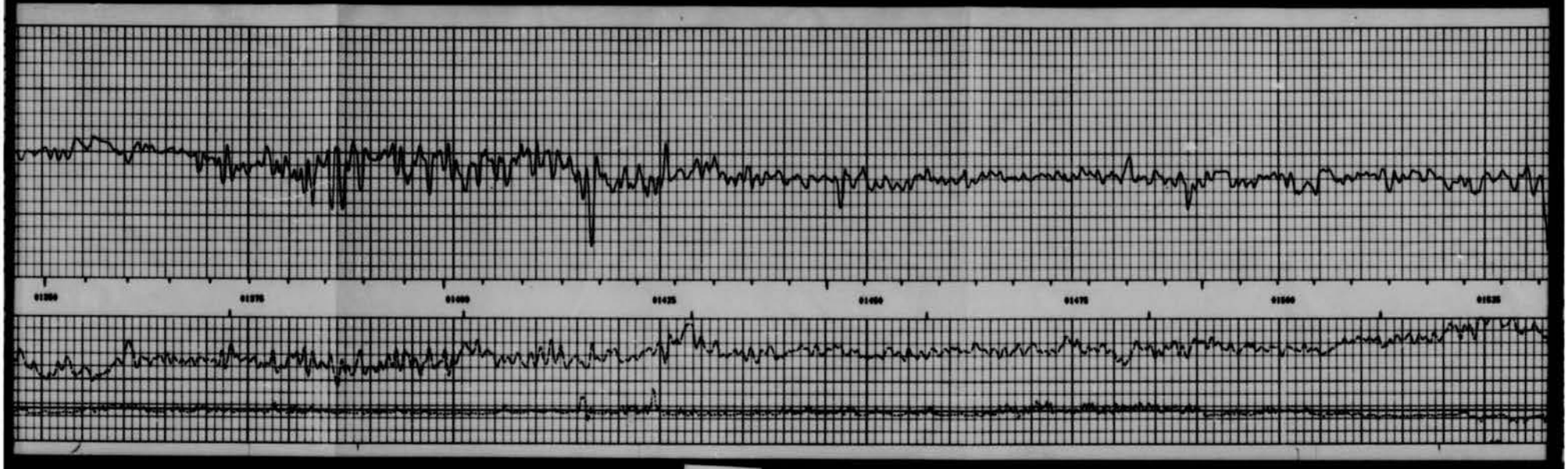

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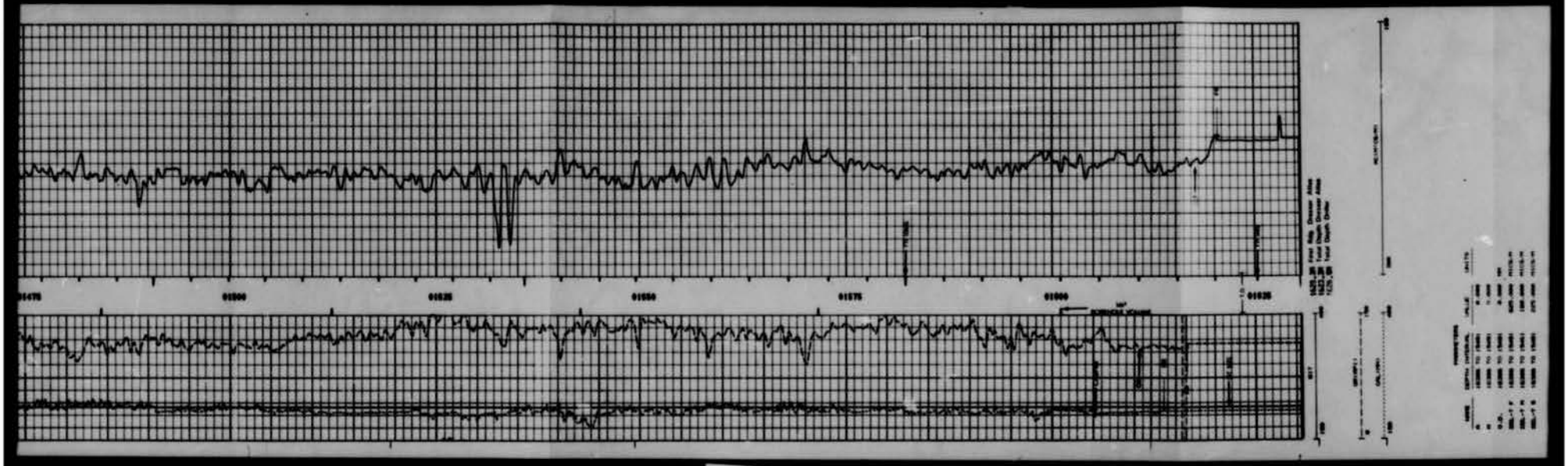

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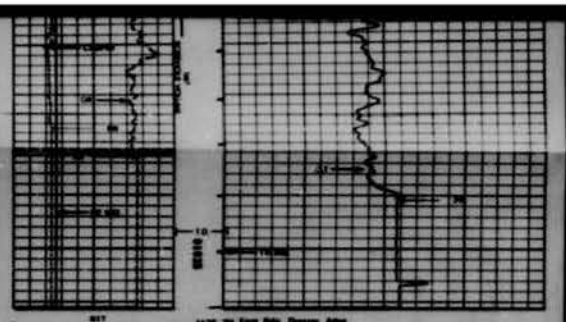


NAME	DEPTH INTERVAL	VALUE	UNITS
A	[illegible] TO [illegible]	[illegible]	
M	[illegible] TO [illegible]	[illegible]	
O.D.	[illegible] TO [illegible]	[illegible]	IN
DELT-P	[illegible] TO [illegible]	[illegible]	MICS/M
DELT-M	[illegible] TO [illegible]	[illegible]	MICS/M
DELT-S	[illegible] TO [illegible]	[illegible]	MICS/M

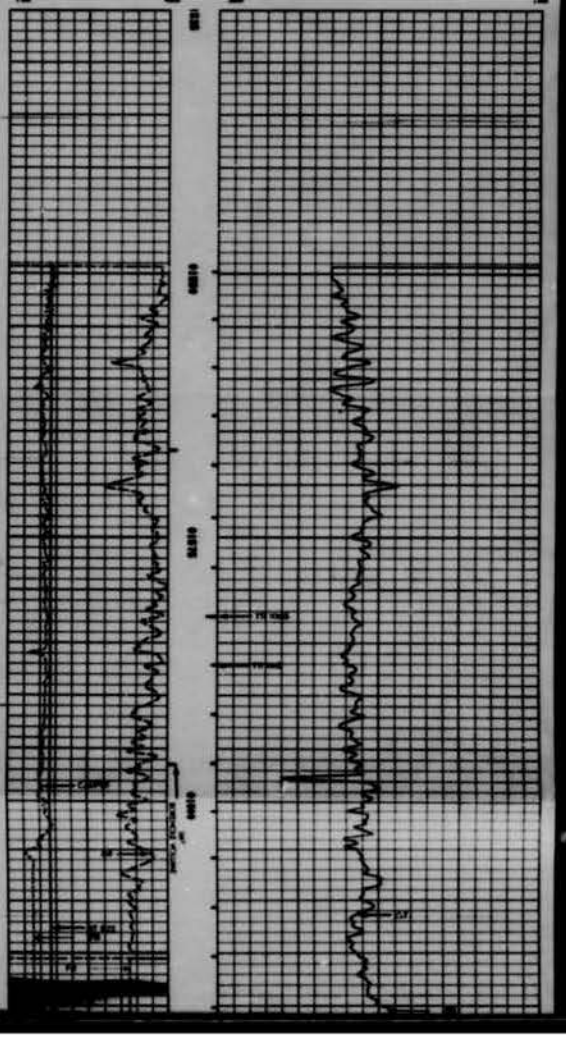
DISPLAY SCALE CHANGES

[illegible]

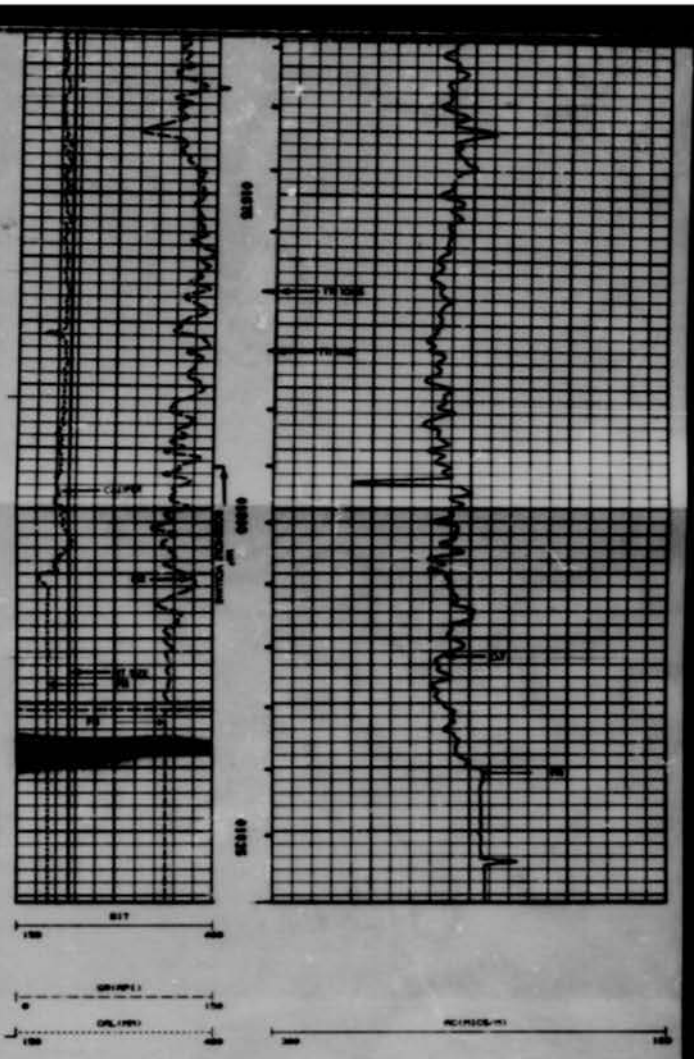
REPEAT SECTION

COMPANY: ENCO ENERGY LTD.
WELL NAME: ENCO ET AL TUMBO [illegible]
SERVICE: L. WIND. FILE: 3 DATE: [illegible]
REVISION: FINAL OUS DRIP VER A

RUN: 1
TRIP: 1
TYPE: [illegible]
MODE: PLAYBACK



14 of



15 of 15

LOG HERE OR SHEET NO. [illegible] UNIT NO. [illegible]
CALIBRATION ENTERED ON [illegible] AT [illegible] CONDUCTIVITY TYPE

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	DATE [illegible]		CALIBRATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
			PRIMARY VERIFICATION				
	DATE [illegible]		BEFORE LOG VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
	DATE [illegible]		AFTER LOG VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			

LOG HERE OR SHEET NO. [illegible] UNIT NO. [illegible]
CALIBRATION ENTERED ON [illegible] AT [illegible]

CURVE	COUNTS/SEC LOW	COUNTS/SEC HIGH	SCALING FACTORS REG.	SCALING FACTORS MULT.	ENGINEERING VALUES LOW	ENGINEERING VALUES HIGH	UNITS
	DATE [illegible]		CALIBRATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	API
	DATE [illegible]		PRIMARY VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	API
	DATE [illegible]		BEFORE LOG VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	API
	DATE [illegible]		AFTER LOG VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	API

LOG HERE OR SHEET NO. [illegible] UNIT NO. [illegible]
CALIBRATION ENTERED ON [illegible] AT [illegible]

CURVE	MILLIVOLTS LOW	MILLIVOLTS HIGH	SCALING FACTORS REG.	SCALING FACTORS MULT.	ENGINEERING VALUES LOW	ENGINEERING VALUES HIGH	UNITS
	DATE [illegible]		CALIBRATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MV
	DATE [illegible]		PRIMARY VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MV
	DATE [illegible]		BEFORE LOG VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MV
	DATE [illegible]		AFTER LOG VERIFICATION		TIME [illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	MV

Directional Survey

FILE NO. 4106

COMPANY ESSO ENERGY LTD.

WELL ESSO ET AL TUNAGO 2N-37

FIELD WILDCAT

PROVINCE NWT

LOCATION:
LAT: 68 DEG 06' 49.92" NORTH
LONG: 134 DEG 21' 59.80" WEST

MAG. DEC. [illegible] EAST

Other Services

Permanent Datum GROUND LEVEL Elev. 232.1

Log Measured from KELLY BUSHING 4.0 m Above Permanent Datum

Drilling Measured from KELLY BUSHING

Elevation: KB [illegible] DF GL 232.1

[illegible]	9 MARCH 87			
[illegible]	ONE			
[illegible]				
[illegible]	1676.0			
[illegible]	1671.0			
[illegible]	1671.0			
[illegible]	14.0			
[illegible]	244mm @ 630M	@	@	@
[illegible]	630.0			
[illegible]	216mm			
[illegible]	SALT MUD			
[illegible]	1140 | 56			
[illegible]	10.0 | 10.5 cm³	cm³	cm³	cm³
[illegible]	TANK[illegible]			
[illegible]	.045 @ 18 °C	@ °C	@ °C	@ °C
[illegible]	.030 @ 18 °C	@ °C	@ °C	@ °C
[illegible]	.090 @ 18 °C	@ °C	@ °C	@ °C
[illegible]	MEAS. | CALC.			
[illegible]	.034 @ 80 °C	@ °C	@ °C	@ °C
[illegible]	11 HOURS			
[illegible]	80 °C	°C	°C	°C
[illegible]	8920 | INUV.			
[illegible]	N. NIELSEN			
[illegible]	D. CAMPBELL			

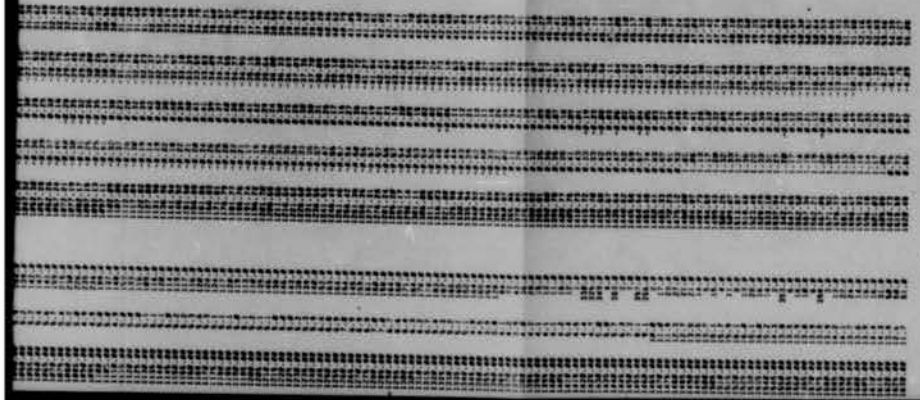
ESSO ENERGY LTD.
ESSO ET AL TUNAGO 2N-37

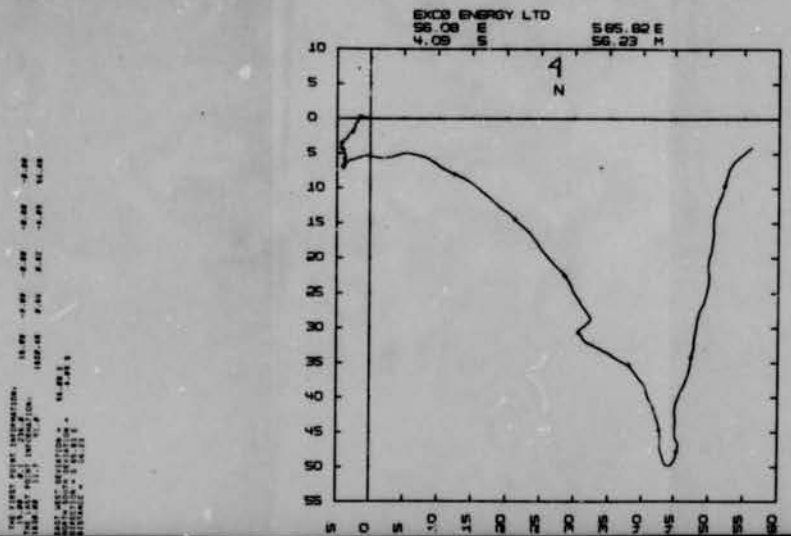
PAGE 1

DEPTH	DRIFT ANGLE	DRIFT AZIMUTH	T.V.D.	STATION COORDINATES N-S	STATION COORDINATES E-W	TOTAL COORDINATES N-S	TOTAL COORDINATES E-W
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

1 OF

2 of

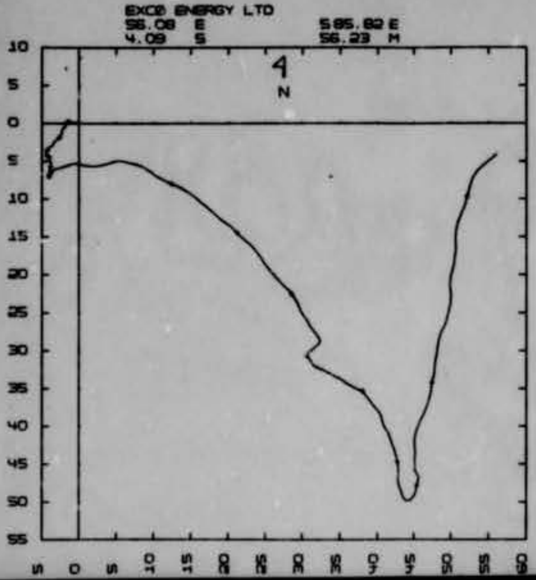



EXCO ENERGY LTD
56.08 E
4.09 S
565.82 E
56.23 M
4
N
Company
Well
Drillers T.D.
Log F.R.

3 of

THE FIRST POINT INFORMATION: [illegible]
THE LAST POINT INFORMATION: [illegible]

EAST-WEST DEVIATION = [illegible]
NORTH-SOUTH DEVIATION = [illegible]
DIRECTION = S 85.82 E
DISTANCE = 56.23



Company [illegible]
Well [illegible]
Field [illegible]
Province [illegible]
Drillers T.D. [illegible]
Log F.R.
Log T.D. [illegible]
Elevations:
K.B. [illegible] D.F. G.L. [illegible]

4 of 4

Dresser Atlas

ACOUSTIC CEMENT BOND LOG
VDL/SIGNATURE/GAMMA RAY

FILE NO.

Company EXCO ENERGY LTD.
Well EXCO ET AL TUNAGO 2N-37
Field WILDCAT
Province N.W.T.

Location:
LAT: 66 DEGREES 06' 49.90" NORTH
LONG: 126 DEGREES 21' 09.80" WEST

OTHER SERVICES
RC-DR-CAL
CN-CDL-DR-FCDL
DLL-DR-CAL
DIR. SURVEY

EQUIPMENT DATUM GROUND LEVEL ELEV. 339.1
LOGGING MEASURED FROM K.B. 4.8 M. ABOVE P.D.
DRILLING MEASURED FROM ROTARY BUSHING

ELEVATIONS
KB 339.1 M
DF
GL 334.3 M

DATE	MARCH 5,1988
RUN	1
SERVICE ORDER	
DEPTH-DRILLER	1185.0 M
DEPTH-LOGGER	NOT TAGGED
BOTTOM LOGGED INTERVAL	450.0 M
TOP LOGGED INTERVAL	11.0 M
TYPE FLUID IN HOLE	SALT MUD
SALINITY PPM CL.	SATURATED
DENSITY LB/GAL.	11.0
LEVEL	FULL
MAX. REC. TEMP. DEG. C	------
EQUIP. REC TIME	4.0 HRS.
BLDG. NO. / LOC.	10 EMOB / EDMONTON
RECORDED BY	R.WINGER
WITNESSED BY	D.CAMPBELL

CASING RECORD

SIZE	WGT	FROM	TO
508.0M	106.5	SURFACE	23.1 M
323.9M	88.1	SURFACE	128.0 M
244.5M	48.3	SURFACE	438.0 M
	40.5		

DRILL RECORD

RUN NO.	BIT	FROM	TO
1	311.0MM	438.0 M	T.D.

FOLD HERE

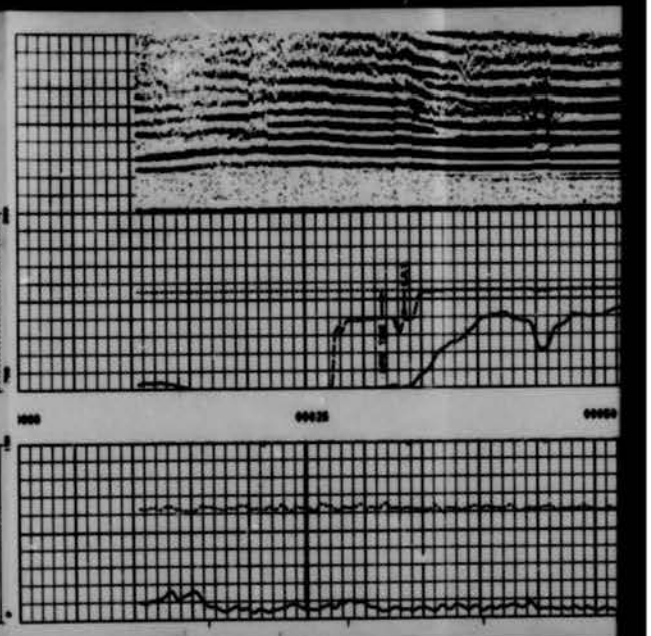
IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CLIENTS THE BENEFIT OF THEIR BEST JUDGEMENT, BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGE OR EXPENSE WHATSOEVER INCURRED OR SUSTAINED BY THE CLIENT OR ANY PARTY IN CONNECTION WITH ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS RUN (1)

LOG TIMED
LOG MPH DUE TO TOOL BEING CENTRALIZED & THE SIZE OF CASING.
DELAYED CURVES:CCL-2,SP,LA-4,2M.

EQUIPMENT DATA

	TOOL	SERIAL NO.	SERIES NO.	POSITION
RECEIVER	DR. CDL	1	1	
TRANSMITTER		1	1	



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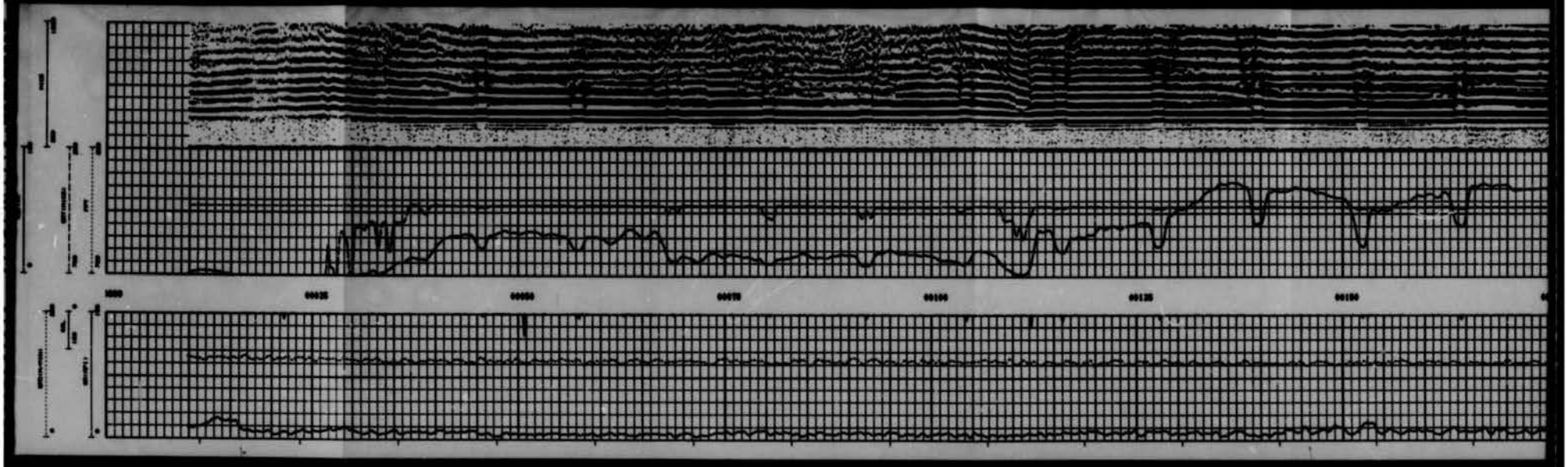
2 OF



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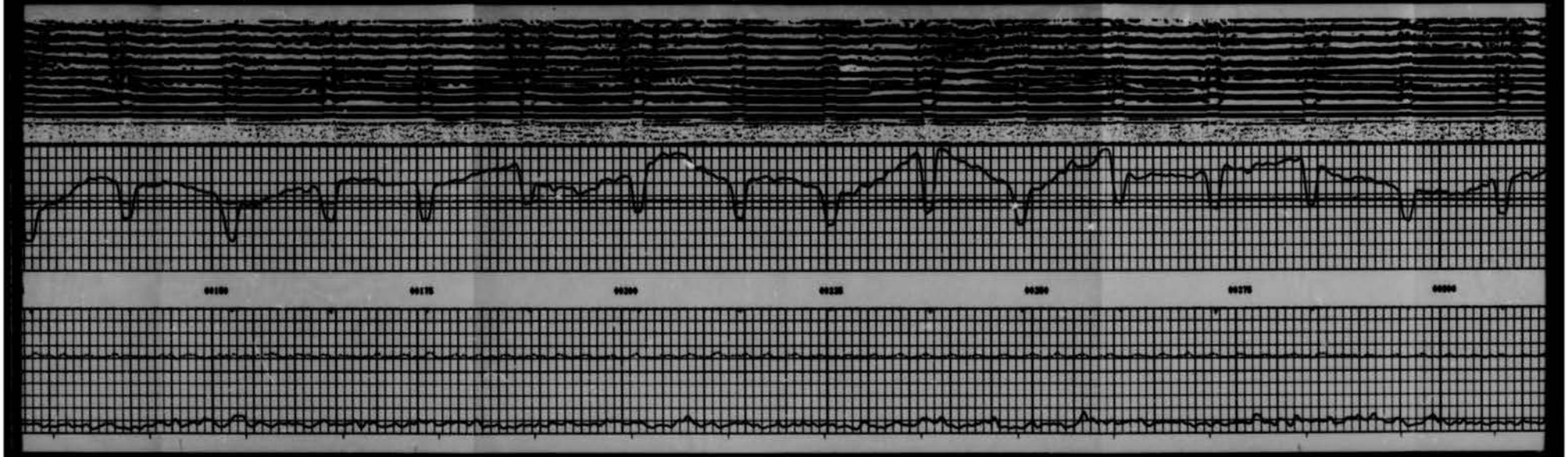

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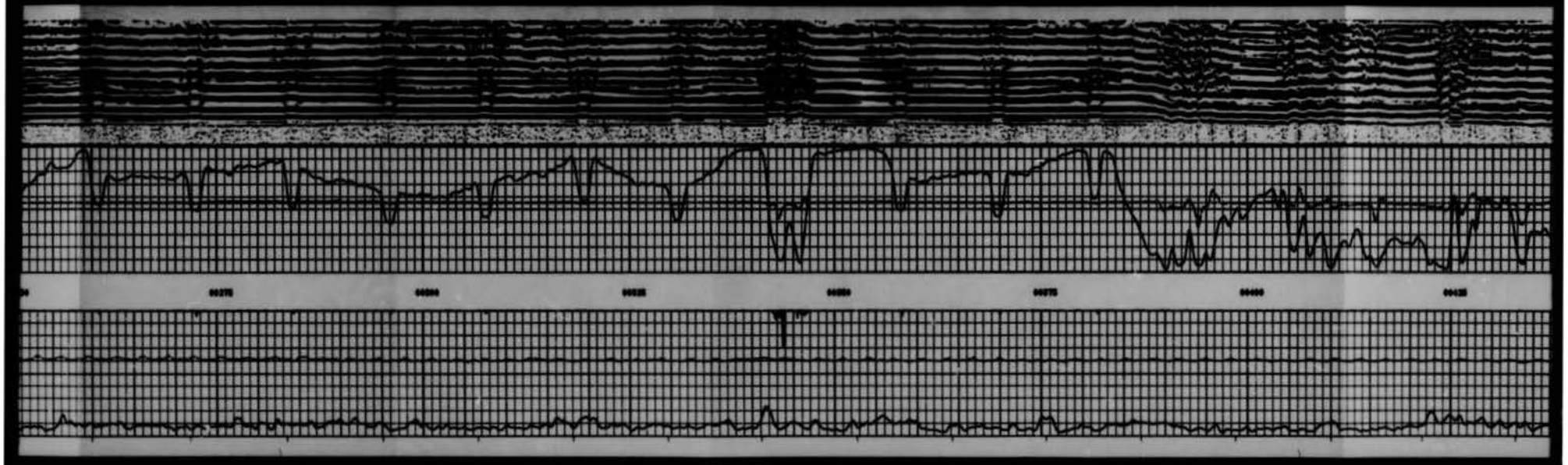

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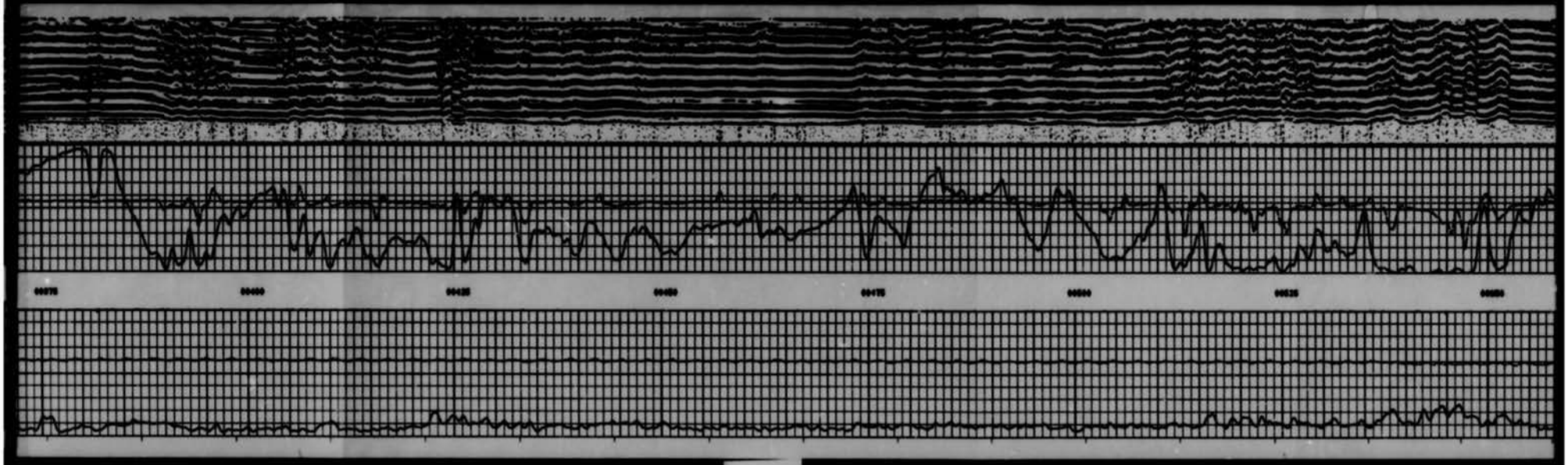

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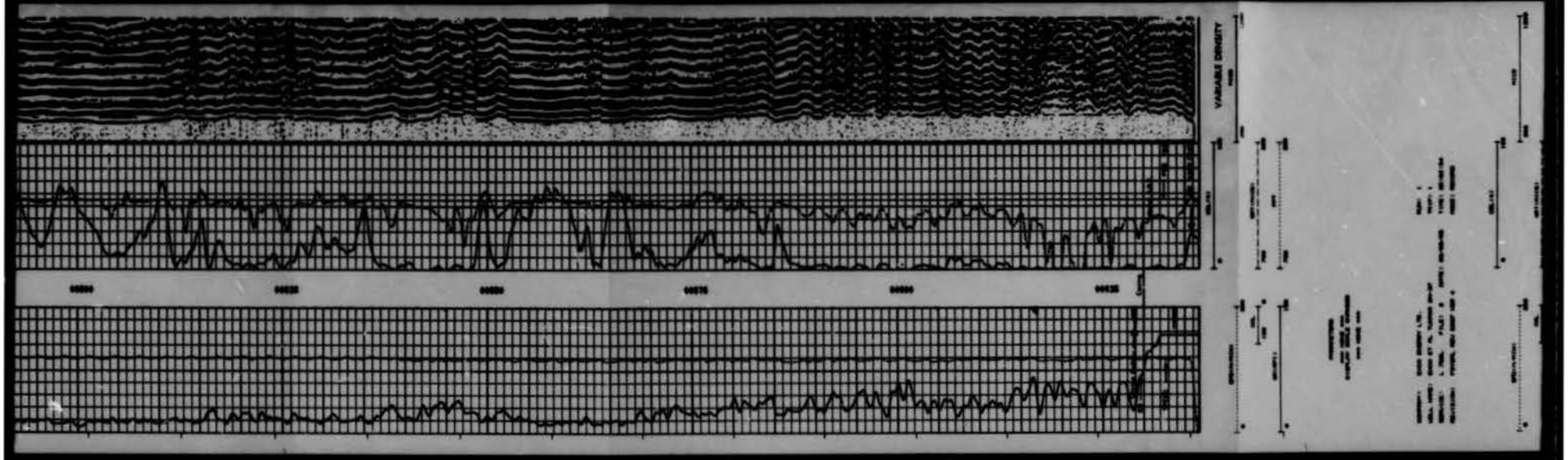

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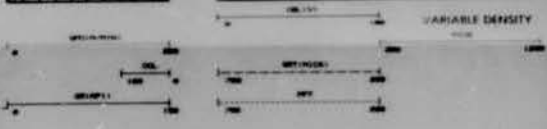
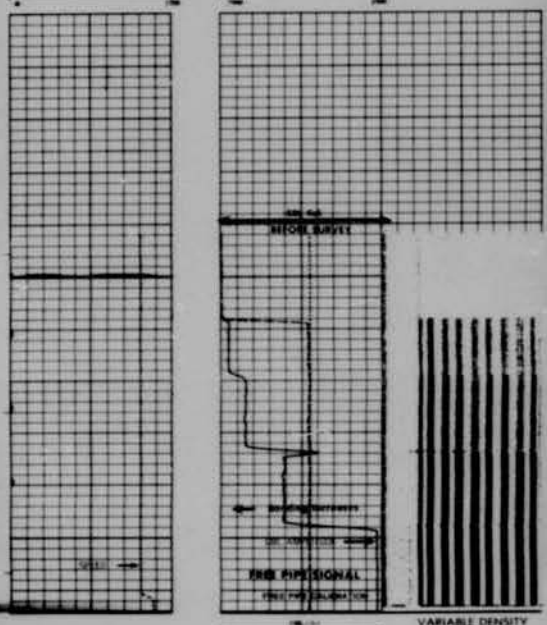
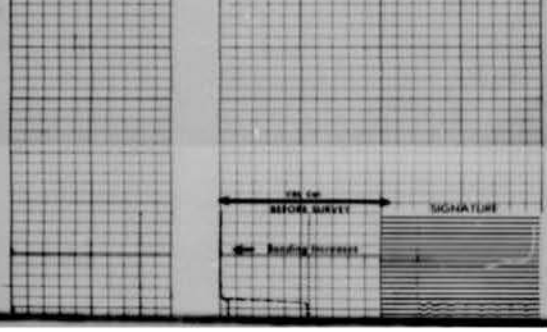
Casing
VARIABLE DENSITY

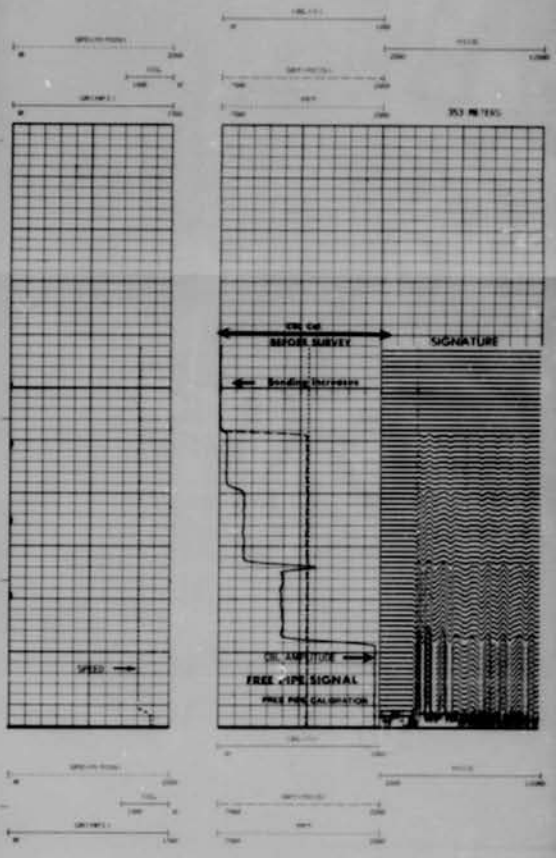



BEFORE SURVEY
FREE PIPE SIGNAL
VARIABLE DENSITY


BEFORE SURVEY
SIGNATURE

8 of

PARAMETERS
*** NONE ***
DISPLAY SCALE CHANGES
*** NONE ***



PARAMETERS
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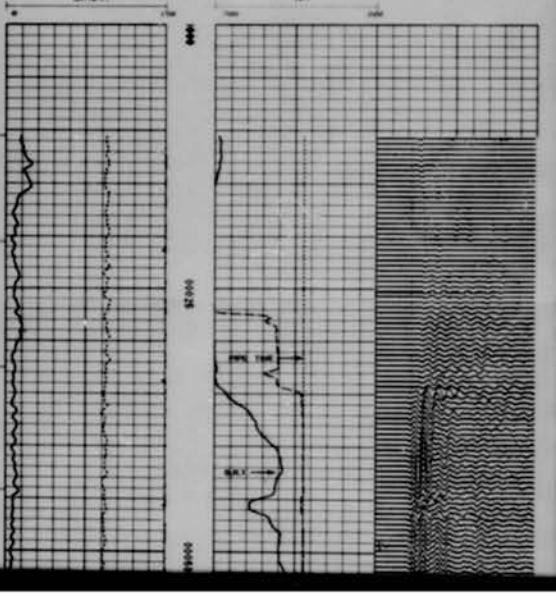
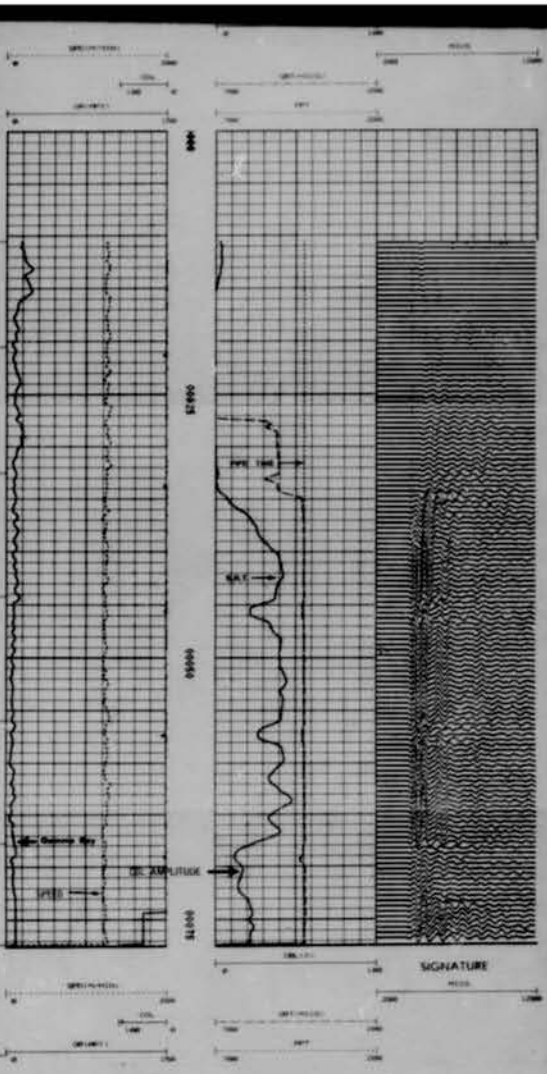
DISPLAY SCALE CHANGES
*** NONE ***

REPEAT SECTION



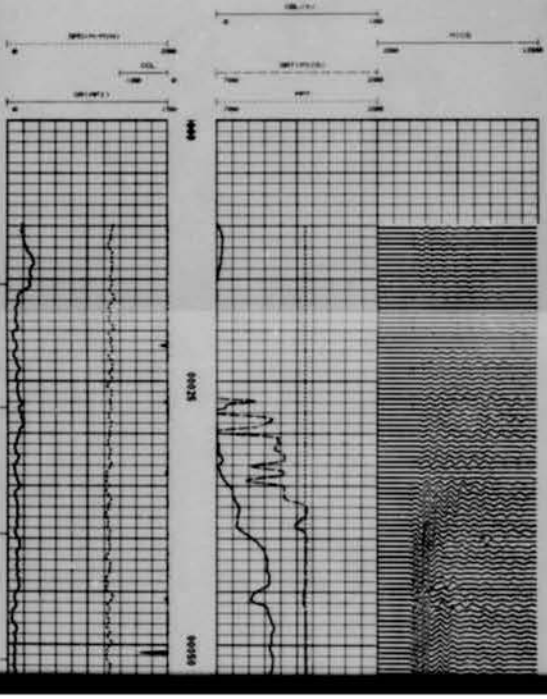


10 OF

PARAMETERS
*** NONE ***
DISPLAY SCALE CHANGES
*** NONE ***

COMPANY: [illegible]
WELL NAME: [illegible]
SERVICE: [illegible] FIELD: [illegible] DATE: [illegible]
REVISION: [illegible]

RUN: 1
TRIP: 1
TIME: [illegible]
MODE: RECORD



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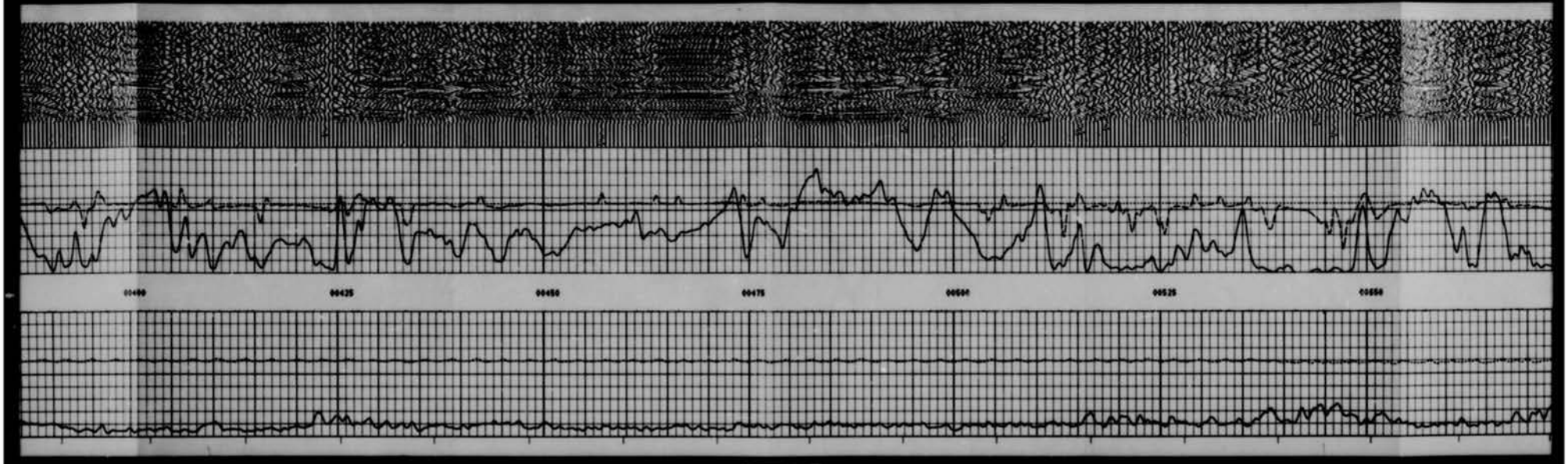
13 OF



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CALIBRATION-VERIFICATION SUMMARIES
DATE 03-14-95 TIME 08:37:33
RUN 1 TRIP 1

LOG-WARE GR ASSET NO. 40370 UNIT NO. HL 8404
CALIBRATION ENTERED ON 03-08-95 AT 20:38:15

CURVE	COUNTS/SEC LOW	COUNTS/SEC HIGH	SCALING FACTOR ADD	SCALING FACTOR MULT	ENGINEERING VALUES LOW	ENGINEERING VALUES HIGH	UNITS
	DATE 03-04-95		CALIBRATION			TIME 10:29:47	
GR	70.3	263.7	0.000	0.3844	0.000	200.000	API
	DATE 03-04-95		PRIMARY VERIFICATION			TIME 10:29:10	
GR	57.5	264.8	0.000	0.3844	19.415	200.341	API
	DATE 03-09-95		BEFORE LOG VERIFICATION			TIME 21:14:58	
GR	26.1	213.9	0.000	0.3844	19.417	200.241	API
	DATE 03-10-95		AFTER LOG VERIFICATION			TIME 08:32:15	
GR	17.7	200.5	0.000	0.0461	11.426	134.731	API

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Canada Oil and Gas Lands Administration — Administration du pétrole du gaz des terres du Canada

A. #1212

				Well Status	
Nova Scotia	☐	West Coast	☐	Suspended	☐
Newfoundland	☐	Northern	☒	Completed	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Abandoned	☒

WELL TERMINATION RECORD

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

WELL DATA

Well Name: Exco et al Tunago 2N-37 Area: Rond Lake-N.E. of Norman Wells, N.W.T.

Grid Area: 66-10-126-15 Field/Pool: N/A

Exploration Agreement: #214 Final Coordinates Lat: 66°06' 49.92"N Long: 126°21' 59.80"W

Rig: "Mr. Ben" Elevations AT KB: 236.10 m GL: 232.10 m (ASL)

Spud Date: 1985-02-04 1045 hrs Rig Released: 1985-03-16 1200 hrs Total Depth: 1626 m KB

CASING AND CEMENTING

O.D.	Weight	Grade	Depth Set	Cement and Additives
508mm	Heavy wall	K-55	23.69 m	6.0 t Permafrost + 2% $CaCl_2$
339mm	81.1 kg/m	K-55	122.00 m	9.0 t Class "G" + 3% $CaCl_2$ + 0.75% C-322
244mm	64.7 kg/m	L-80	630.00 m	1st stage: 14.3t Class "G" 2nd stage: 10.4t Perm. + 10.3t "G" Top cemented: 4.8t Permafrost

PLUGGING PROGRAM

Approval of the following program was obtained by (person) Gary Laviolette from (person) John Hamilton of the Canada Oil and Gas Lands Administration by means of verbal approval on March 11th 1985 Confirmed abandonment program by telecopier the same day.

Type of Plug	Interval	Felt	Cement and Additives
Cement	1525 m - 1626 m	No	5.2 t "G" + 2% $CaCl_2$
Cement	1250 m - 1350 m	at 1238 m	6.9 t "G" + 2% $CaCl_2$
Cement	600 m - 660 m	no evidence of plug	3.9 t "G" + 2% $CaCl_2$
Cement	600 m - 660 m	no evidence of plug	3.9 t "G"
Bridge Plug & Cement	600 m - 550 m	set cement on top of bridge plug	1.8 t Permafrost
Cement	0 - 35 m	visual check	1.1 t Permafrost

Lost Circulation/Overpressured Zone: Noted immediately below 244mm casing - mud weight exceeded leak-off test gradient of 10.63 kg/m.

Equipment left in Hole (Specify):

Prominent Porosity/Oil/Gas/Water Zones:

Cores Type: none Intervals: N/A

Other Downhole Completion/Suspension Equipment: N/A

CERTIFICATION

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

Signed: [signature] P. Eng. Title: Special Projects Engineer

Name: Gary Laviolette Date: April 30, 1985

Submitted by:
WINTERHAWK PETROLEUM CONSULTING SERVICES LTD.
as agent of Exco Energy Ltd.

Acknowledged by: [signature]
Engineering Branch

Date:

File: 9211-~~E9-1-6~~ E9-2-1

Department of Energy, Mines and Resources — Ministère de l'Énergie, des Mines et des Ressources

Department of Indian Affairs and Northern Development — Ministère des Affaires indiennes et du Nord canadien

Canada