

596
Candel DECKING et al Ft. Norman K-14

Drilling Authority No. 596
Date Issued 13-04-72

WELL NAME: CanDel DECKMO, et al. Ft. Norman, K-14
FIELD: K Area: 14
LOCATION: Unit K Section 14 Grid 65-00-125-15
Latitude 64-53-42 Longitude 125-18-08
U.W.L.R. 64.89500 -- 125.30222
U.W.I. 300K146500125150

Rig Release Date: 27-04-72
Status: D + A
Information Release Date: 27-04-74

CHANGE OF NAME:

DATE RECEIVED	INDEX
05-04-72	Application for a Drilling Authority.
07-09-72	Well Completion Data.
07-09-72	Well History Report.
	Application to Amend a Drilling Authority.
	Application to change a Well Name.
	Application to Abandon a Well or Suspend Drilling.
	Application to Alter Condition of a Well.
	Well History Supplement.
	Well Completion Data.
	Work-over Report No.
	Application to Commingle Production before Measurement.
	Data for Back Pressure Test on Natural Gas Wells - Monograph 7 Method.
	Data for Back Pressure Test on Natural Gas Wells - Vitter's Method.
	M.P.R. - Oil - Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	New Service Well Report.
	Monthly Water Flood Operations Report
	Monthly Water Receipts and Disposal of Fluids Report
	Logs. Large scale..... Small scale.....

REVISED

WELL COMPLETION DATA

RENSEIGNEMENTS SUR LES FORAGES

DEPARTMENT OF INDUSTRY, ENERGY & NORTHERN DEVELOPMENT
MINISTRE DES AFFAIRES INDUSTRIELLES ET DU NORD CANADIEN
OIL & GAS DIVISION
DIVISION DU PETROLE ET DES MINERAUX

Drilling Authority No. 596
N° de l'autorisation de forage
Date Issued April 13, 1972
Date de délivrance

To be submitted in duplicate within thirty days after the completion, rework, abandonment, recompletion or suspension of every well.
À présenter en double dans les trente jours suivant l'achèvement, le remaniement, l'abandon et la reconditionnement de chaque puits, ou après suspension.

Well Name & No. / Nom et n° du puits
Candel DECKING et al. Ft. Norman K-14
Permit No. / N° du permis 6188
License No. / N° de concession -

Operator / (Opérateur) - (Présentant)
Candel Oil Ltd.
Exploratory License No. / N° de licence de sondage 1534

LOCATION / EMPLACEMENT
Unit - Unité K Section 14 Grid - Étendue quadrillée 65-00-125-15
Latitude 64° 53' 42" Longitude 125° 18' 08"

Unique Well Identifier - Code d'ordinateur 300K146500125150
Universal Well Location Reference - Références universelles d'emplacement du puits
Lat. N 65.895° Long. W 125.30222°

Spudded / Début des travaux Apr. 16/72
Depth - Profondeur 12:01 R.M.
Suspended / Suspension des travaux -
Resumed Operations / Reprise des travaux -
Finished Drilling / Forage terminé Apr. 24/72 2810' A.
Deepened / Ap profondissement -
Complete (Casing/Drill) / Achèvement (Casing/Pétrole) -
Abandoned / Abandon Apr. 27/72
Rig Released / Fin des travaux Apr. 27/72 12:00 noon

Pool(s) / Gisement(s) -
Interval(s) Open to Production / Intervalle(s) de production -
Elevation Gr. / Altitude du sol 366 K.B. 379
Rig No. / N° de la tour de forage 9
Drilling Contractor / Entrepreneur en forage Jennings Internat. Drilling
Contractor's Business License No. / N° du permis de l'entrepreneur 770

CASING RECORD - TUBAGE

Casing Size (Inches) / Diamètre (en pouces)	Grade / Qualité	Weight / Poids	Amount / Longueur	Set at - / Fixation à	Sacks of Cement and Additives / Sacs de ciment et d'additifs
1. 16" Conductor Pipe	New Shop Fabricated				
2. 9-5/8"	K-55	36#		321' KB.	250 sx. + 2% CaCl ₂
3.					topped w/15 sx.
4.					
5.					
6.					

Geological Tops / Sommet des formations
Cretaceous / Near Surface
Basal Sand 2218' - 1839'
Sil/Ord. Ronning 2254 - 1875
T.D. Schlumberger 2798 - 2419
T.D. Driller 2810 - 2431

Core Record - Carottes
From - de To - à Rec. / Recup.
2800 2810 100%

Log Record - Diagrammes
Run / Série Type of Log / Genre de diagramme From - De To - À
Schlumberger:
1 Dual Induction Laterolog 2784' 321'
1 B.H.C. Sonic Log 2796' 321'
1 Formation Density Log 2790' 321'
1 Sidewall Neutron Porosity 2788' 321'

* Permittee
Western Decalta Petroleum
Petrol Oil & Gas
Petrorep

No. 1454
No. 1460
No. 1453

Corexcal
Kerr McGee of Canada
Northwest Ltd.

No. 1456
No. 1686

02-90-2 (7-71)

CEMENTING RECORD (Plug, Squeeze, etc.) CIMENTATION (Bouchon, sous pression, etc.)				PERFORATING RECORD (P. Jet, Jet) PERFORATION (à la lance, à jet)				SERVICING RECORD (Acidizing, Fishing, etc.) ENTRETIEN (acidification, forage, etc.)			
Date	From - de	To - à	Remarks - Remarques	Date	From - de	To - à	Remarks - Remarques	Date	From - de	To - à	Remarks - Remarques
Apr. 26	2811'	2710'	40 sx.								
Apr. 26	2300'	2200'	100 sx. + 3% CaCl ₂ .								
			P.D. 7:00 a.m. Felt @ 2170'								
Apr. 27	367'	267'	100 sx. + 3% CaCl ₂ .								
			P.D. 12:15 a.m. Felt @ 200'								
	Top		5 sx. plate welded on top, post & sign.								

DRILL STEM TESTS - ESSAIS AUX TIGES

No. - N°	Date	Formation	From - de	To - à	V.O. Minn. Vanne ouverte (minutes)	I.S.I. Minn. Première obturation (minutes)	F.S.I. Minn. Obturation définitive (minutes)	I.S.I. H.P. Pression de fond à la tige (p.s.i.)	F.S.I. H.P. Pression de fond à l'obturation définitive (p.s.i.)	I.F.B.H.P. Pression de fond au jaillissement (p.s.i.)	F.F.B.H.P. Pression de fond à l'écoulement définitif (p.s.i.)	L.H.P. Pression hydrostatique de début (p.s.i.)	F.H.P. Pression hydrostatique définitive (p.s.i.)	Remarks - Remarques
D1 D	Apr. 25	Sil/Ord. Ronning	2234	2400	20	-	60	-	905.0	153.6	255.6	1060.3	1060.3	Sec. 540' muddy fresh water.

ANALYSIS - ANALYSE

Lab. No. N° de laboratoire	Sample Échantillon	From - de	To - à	Source	Remarks - Remarques	PRESENT STATUS OF WELL ÉTAT ACTUEL DU PUIT		Company Société
933-2580	Muddy Water	2232	2400	DST. #1 - Sil/Ord. Ronning	Water Analysis	Oil Pétrole	Interval (Intervalle)	Candel Oil Ltd.
						Gas Gaz	Interval (Intervalle)	Signed by Signé par
						Dry Sec	Dry and Abandoned	Title Titre
						Susp. Travaux sus.		Date
								Forms to be prepared in duplicate and forwarded to the District Conservation Engineer. Préparer les formulaires remplies à l'ingénieur en conservation du district.

WELL COMPLETION DATA
RENSEIGNEMENTS SUR LES FORAGES

Drilling Authority No. 596
N° de l'autorisation de forage
Date issued April 12, 1972
Date de délivrance

To be submitted in duplicate within thirty days after the completion, rework, abandonment, recompletion or suspension of every well.
À présenter en double dans les trente jours suivant l'achèvement, le remaniement, l'abandon et le reconditionnement de chaque puits, ou après suspension.

Well Name & No. - Nom et n° du puits CanDel DECKMG et al Ft. Norman K-14		Permit No. - N° de permis 6188	Lease No. - N° de concession -
(Permitter, Licensee, Lessee) - (Défendeur de permis ou de licence, du concessionnaire)		Exploratory Licence No. - N° de licence de sondage	
* See Below			
(Operator) - (Exécutant) CanDel Oil Ltd.		Exploratory Licence No. - N° de licence de sondage 1938	

LOCATION - EMPLACEMENT				
Unit - Unité K	Section 14	Grid - Étendue quadrillée 65-00-125-15	Latitude 64° 53' 42"	Longitude 125° 18' 08"
Universal Well Identifier - Code d'ordinateur 300K146500125150			Universal Well Location Reference - Références universelles d'emplacement du puits Lat. N 65.895° Long. W 125.3022°	

	Date	Depth - Profondeur	Pool(s) Gisement(s)
Spudded Début des travaux	Apr. 16/72 12:01 a.m.		
Suspended Suspension des travaux	-		Interval(s) Open to Production Intervalle(s) de production
Resumed Operations Reprise des travaux	-		
Finished Drilling Forage terminé	Apr. 24/72		
Deepened Approfondissement	-		
Complete (Gas/Oil) Achèvement (Gaz/Pétrole)	-		
Abandoned Abandon	Apr. 27/72		
Rig Released Fin des travaux	Apr. 27/72 12:00 noon		
Elevation: Gr. 366 K.B. 379 Altitude du sol du carré d'entraînement			Rig No. 9 Drilling Contractor Jennings Internat. N° de la tour de drapeau Entrepreneur en forage Drilling
Contractor's Business Licence No. 770 N° du permis de l'entrepreneur			

CASING RECORD - TUBAGE

Casing Size (Inches) Diamètre (en pouces)	Grade Qualité	Weight Poids	Amount Longeur	Set at - Fixation à	Sacks of Cement and Additives Sacs de ciment et d'additifs
1. 16" Conductor Pipe	New Shop Fabricated		Cemented Full Length		
2. 9-5/8"	K-55	36#		321' KB.	250 sx. + 2% CaCl ₂
3.					topped w/15 sx.
4.					
5.					
6.					

Geological Tops Sommet des formations	Elevation - Profondeur		Core Record - Carottes					
	Depths Sous le niveau du sol	Sub-Sea Sous le niveau de la mer	From - de	To - à	Rec. Récupérées	From - de	To - à	Rec. Recup.
Cretaceous	Near Surface							
Basal Sand	2218'	- 1839'	2800	2810	100%			
Sil/Ord. Ronning	2254	- 1875						
T.D. Schlumberger	2798	- 2419						
T.D. Driller	2810	- 2431						

Log Record - Diagrammes

Run Série	Type of Log Genre de diagramme	From - De	To - À
	Schlumberger:		
1	Dual Induction Laterolog	2784'	321'
1	B.H.C. Sonic Log	2796'	321'
1	Formation Density Log	2790'	321'
1	Sidewall Neutron Porosity	2788'	321'

* Permittee

CEMENTING RECORD (Plug, Squeeze, etc.) CIMENTATION (Bouchon, sous pression, etc.)				PERFORATING RECORD (Bullet, Jet) PERFORATION (à balles, à jet)				SERVICING RECORD (Acidizing, Fracing, etc.) ENTRETIEN (acidification, fracturation, etc.)			
Date	From - de	To - à	Remarks - Remarques	Date	From - de	To - à	Remarks - Remarques	Date	From - de	To - à	Remarks - Remarques
Apr. 26	2811'	2710'	40 sx.								
Apr. 26	2300'	2200'	100 sx. + 3% CaCl ₂ . P.D. 7:00 a.m.								
Apr. 27	367'	267'	100 sx. + 3% CaCl ₂ . P.D. 12:15 a.m. Felt @ 200'								
	Top		5 sx. plate welded on top, post & sign.								

DRILL STEM TESTS — ESSAIS AUX TIGES

No. - N°	Date	Formation	From - de	To - à	V.O. Mins. Vanne ouverte (minutes)	I.S.I. Mins. Première obturation (minutes)	F.S.I. Mins. Obturation définitive (minutes)	I.S.I.B.H.P. Pression de fond à la 1 ^{re} obturation	F.S.I.B.H.P. Pression de fond à l'obturation définitive	I.F.B.H.P. Pression de fond au jaillissement	F.F.B.H.P. Pression de fond à l'écoulement définitif	L.H.P. Pression hydrostatique de début	F.H.P. Pression hydrostatique définitif	Remarks - Remarques
1	Apr. 25	Sil/Ord. Ronning	2234	2400	20	-	60	-	905.0	153.6	255.6	1060.3	1060.3	Rec. 540' muddy fresh water.

ANALYSIS — ANALYSE						PRESENT STATUS OF WELL ÉTAT ACTUEL DU PUITS				
Lab. No. N° de laboratoire	Sample Échantillon	From - de	To - à	Source	Remarks - Remarques	Oil Pétrole	Gas Gaz	Dry Sec	Susp. Travaux sus.	
933-2580	Muddy Water	2232	2400	DST. #1 - Sil/Ord. Ronning	Water Analysis			Dry and Abandoned		

Company
Société CanDel Oil Ltd.

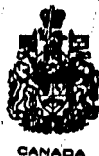
Signed by
Signé par P. H. Ferrell

Title
Titre Vice President, Production

Date May 30, 1972

Forms to be prepared in duplicate and forwarded to the District Conservation Engineer.

Présenter les formules remplies à l'ingénieur en conservation du district.



Drilling Authority No.

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION

Application to Amend a Drilling Authority

This application, in triplicate, must be submitted and approved before commencing operations. If the well location is changed, this application must be accompanied where required, with a plan of survey approved by the Surveyor General.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made to amend Drilling Authority No. 596, concerning

CanDel DECKMG etal Ft Norman K-14

(Name and Number of Well)

Surface Casing 8 5/8" 24# K-55 500'

changed to 9 5/8" 36# K-55 321'

Permission granted by telephone April 16th, 1972

Reasons for the amendments: The Jennings Rig #9 was equipped to handle only 9 5/8" at this time, the 8 5/8" figure was typed in error. Length of casing changed as 321' was all that was delivered to lease before roads were closed.

Dated at Calgary, Alberta, this 20th day of April, 1972

Signed by *K.B. Baranato*

Title Geologist

Company CanDel Oil Ltd.

(For Oil and Mineral Division use only)

APPROVED

This application has been examined and approved subject to the following conditions:

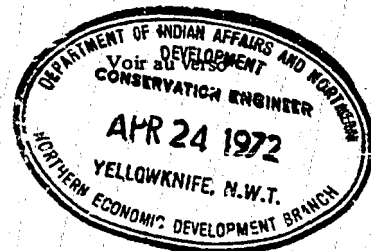
Do not drill well beyond 3,000'

Date *April 25*, 19 *72*

District Conservation Engineer

LAND 52-90-3 (7-71)

Forms to be submitted to the District Conservation Engineer,
Department of Indian Affairs and Northern Development.





CANADA

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION

Application for a Drilling Authority

This notice of intention to begin drilling operations, in triplicate, and where required a plan of survey approved by the Surveyor General showing the target area or the site of the well must be submitted and approved before commencing operations.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to drill:-

Name and number of well ... CanDel DECKMG et al Ft Norman K-14

Location: Unit ... K ... Section ... 14 ... Grid 65-00-125-15
Latitude 64° 53' 42" ... Longitude ... 125° 18' 08"
Unique Well Identifier ... 300K146500125150
Universal Well Location Reference Lat. N. 64.89500° ... Long. 125.30222° W

Elevation: Ground ... 366' ... K.B. ... 380 Est. ... feet above sea-level.
Well is expected to produce from ... Sil-Ord Ronning ... formation at a depth
of about ... 2600 ... feet. Expected total final depth ... 3000'
Area assigned to well ... Wildcat
(for District Conservation Engineer's use only)

Permit No. ... 6188 ... Lease No. ... Acreage ... 27,205
Permittee, licensee, or lessee ... See Attached
Explanatory Licence No. ... 1420
Surface owned by Crown or ... Crown
(If alienated submit name and address of owner and occupant.)

Petroleum and natural gas rights owned by ... Crown
We propose to use the following strings of casing, either cementing or landing them as indicated below:-

Casing Size O.D. (Inches)	Weight (Lb./Ft.)	Grade	New or Used	Estimated Depth	Sacks of Cement
1. 16"	Conductor	Shop - Fabricated			
2. 8 5/8"	24#	K-5 5	New	500'	Full Length
3. If other casing required	- Clearance will be obtained				
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment.
... Sil-Ord ... BOP Stack and Drilling Fluid

Well will be drilled with Rotary Rig No. ... 9 ... by Jennings International Drilling
(Drilling Contractor or company)

Responsible agent of applicant:-

At well ... D.R. Nelson ... Contractor's Business Licence No. ... 770
Address ... Mackenzie Mountain Lodge ... At registered office ... R.K. Terrell
... NORMAN WELLS, N.W.T. ... Address Calgary Place One, 330-5th Avenue S.W.
It is understood that if changes become necessary, notice of the change of plan will be submitted. CALGARY 1
Dated at ... Calgary ... this ... 29th ... day of ... March ... 1972.
Signed by ... Company CanDel Oil Ltd.
Title ... Exploration Manager ... Operator's Licence No. ... 1938

(For Oil and Mineral Division use only)

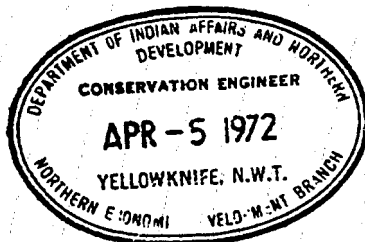
APPROVED

This application has been examined and approved subject to the following conditions:

Please see attached sheet for conditions.

Dated ... 13 ... 19 ... 72 ... District Conservation Engineer

Forms to be submitted to District Conservation Engineer,
Department of Indian Affairs and Northern Development.



Western Decalta Petroleum Ltd.	No. 1454
Corexcal Inc.	1456
The Petrol Oil & Gas Company, Limited	1460
Petrorep (Canada) Ltd.	1453
Kerr-McGee of Canada Northwest Ltd.	1486
Candel	1534

CONDITIONS OF APPROVAL FOR DRILLING AUTHORITY NO. 596
FOR Candel DECKMG et al Ft Norman K-14

1. Copies of this Drilling Authority shall be exhibited at the Drilling Rig in both the Doghouse and the Drilling Foreman's Office between spud and rig release dates.
2. The Company will submit to this office on Tuesday of each week, a Progress Report on the well. The Oil Conservation Engineer may request more frequent reports.
3. All waste materials shall be disposed of in a manner that will prevent pollution to adjacent areas.
4. We draw your attention to Sections 95 and 96 of the Canada Oil and Gas Land Regulations.
5. Any additional strings of casing must be approved by the District Conservation Engineer prior to running.
6. All shows (small or large) of oil and gas are to be reported immediately.
7. When a fatal accident occurs the District Conservation Engineer is to be notified immediately. Permission to proceed with drilling operation must be granted by the District Conservation Engineer after a fatality.

G.E. Blue
G.E. BLUE,
District Conservation Engineer.
P.O. Box 1500,
Yellowknife, N.W.T.

s. Phone: 873-4421
res. Phone: 873-3028

CANDEL OIL LTD.

20th FLOOR, ONE CALGARY PLACE

110 10th AVENUE S.W.

CALGARY 1, ALBERTA

March 29th, 1972

Department of Indian Affairs & Northern Development,
Oil & Minerals Division,
District Conservation Engineer,
P.O. Box 1500,
YELLOWKNIFE, N.W.T.

Attention: Mr. G. Blue

Dear Sir:

Re: CanDel DECKMG et al Ft Norman K-14

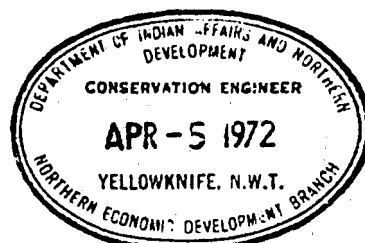
Please find enclosed the following material covering
the above captioned well:

- 1) Application for Drilling Authority, in triplicate
- 2) Three (3) copies of the shot-point map indicating the
location of the well
- 3) One (1) copy of an aerial photograph with the well
location plotted
- 4) Three (3) copies of the geological prognosis
- 5) Three (3) copies of a diagram of the blow-out preventer,
together with copies of the manifold diagram which is
presently in use on Jennings International Drilling,
Rig #9.
- 6) Three (3) copies of letters from the Permit holders,
wherein they have appointed CanDel Oil Ltd., as
operator of the subject Permit No. 6188.

We look forward to receipt of the approved drilling
authority at your earliest convenience.

Yours very truly,

CANDEL OIL LTD.



K.E. Basaraba
K.E. Basaraba,
Geologist.

KEB/alh
Enclosures

GEOLOGICAL PROGNOSIS

Well Name: CanDel DECKMG etal Ft Norman K-14

Location: K-14-65-00-125-15

Elevation: Ground 366' (SP 119 Line 1)

K.B. 380' Est.

Operator: CanDel Oil Ltd.

Contractor: Jennings International Drilling Rig #9

Markers:

<u>Formation</u>	<u>Drilling Depth</u>	<u>Sub-Sea Depth</u>
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Cretaceous	Near Surface	
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1st Cretaceous		
Sand	1630'	-1250

Sil Ord.	Ronning 2580'	-2200
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Total Depth	2800'	-2420
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Samples:

One bag of washed samples will be taken at 10 foot intervals from surface to total depth.

Testing:

All tests at discretion of wellsite geologist.

Coring:

If water free hydrocarbons are recovered on a test, a core should be cut and further tests run if warranted.

..... 2



Logging:

Depends on well results.	Induction Electrolog	2" T.D. to surface casing 5" T.D. to surface casing
	BHC Acoustilog w/Caliper	2" T.D. to surface casing 5" T.D. to surface casing
	Formation Density	2" T.D. to surface casing 5" T.D. to surface casing
	Sidewall Neutron Porosity	2" T.D. to surface casing 5" T.D. to surface casing

Measurements:

Pipe must be tallied on all trips out for coring,
testing, logging or as requested by the wellsite
geologist or engineer in charge.

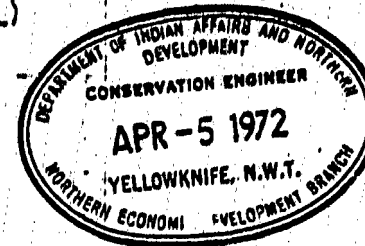
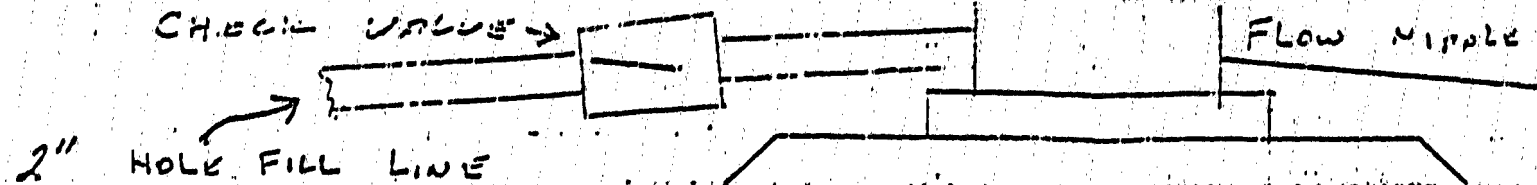
CanDel Oil Ltd.,
28th floor, Calgary Place One,
330 - 5th Avenue S.W.,
Calgary 1, Alberta.

Telephone: 265-3430

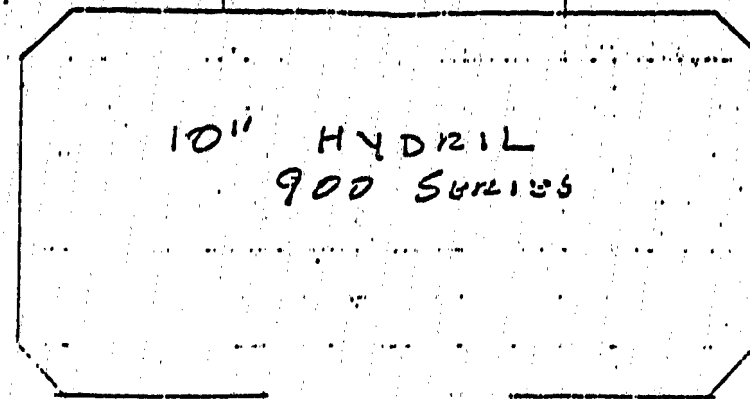
K. E. Basaraba
D. M. Ericson
R. K. Terrell

Home Phone
" "
" "

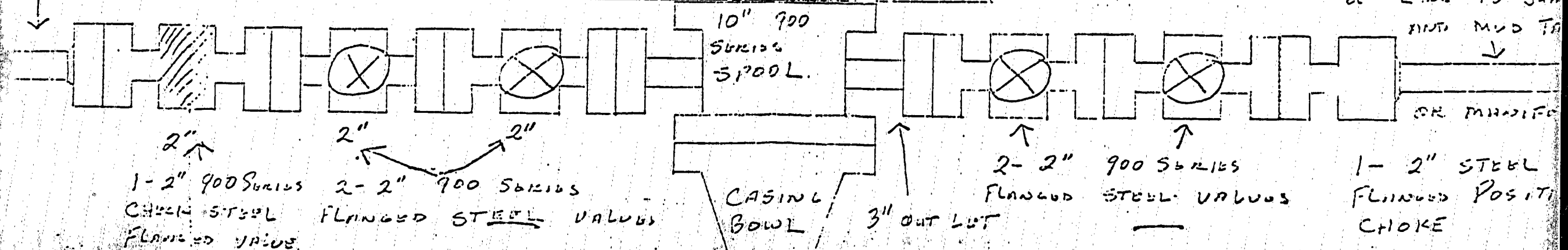
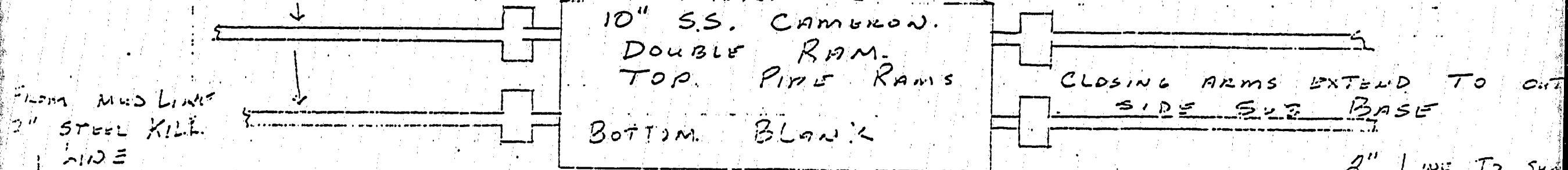
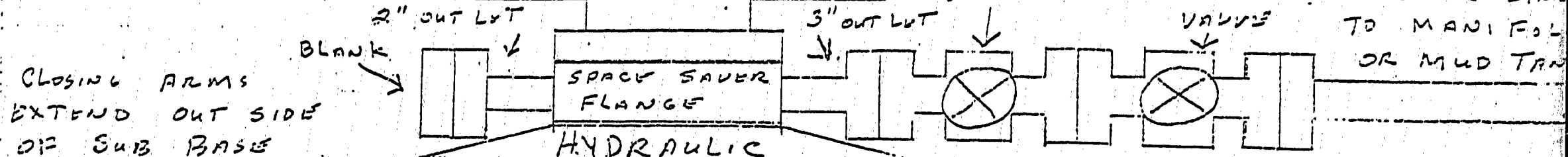
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252-3277
289-7652

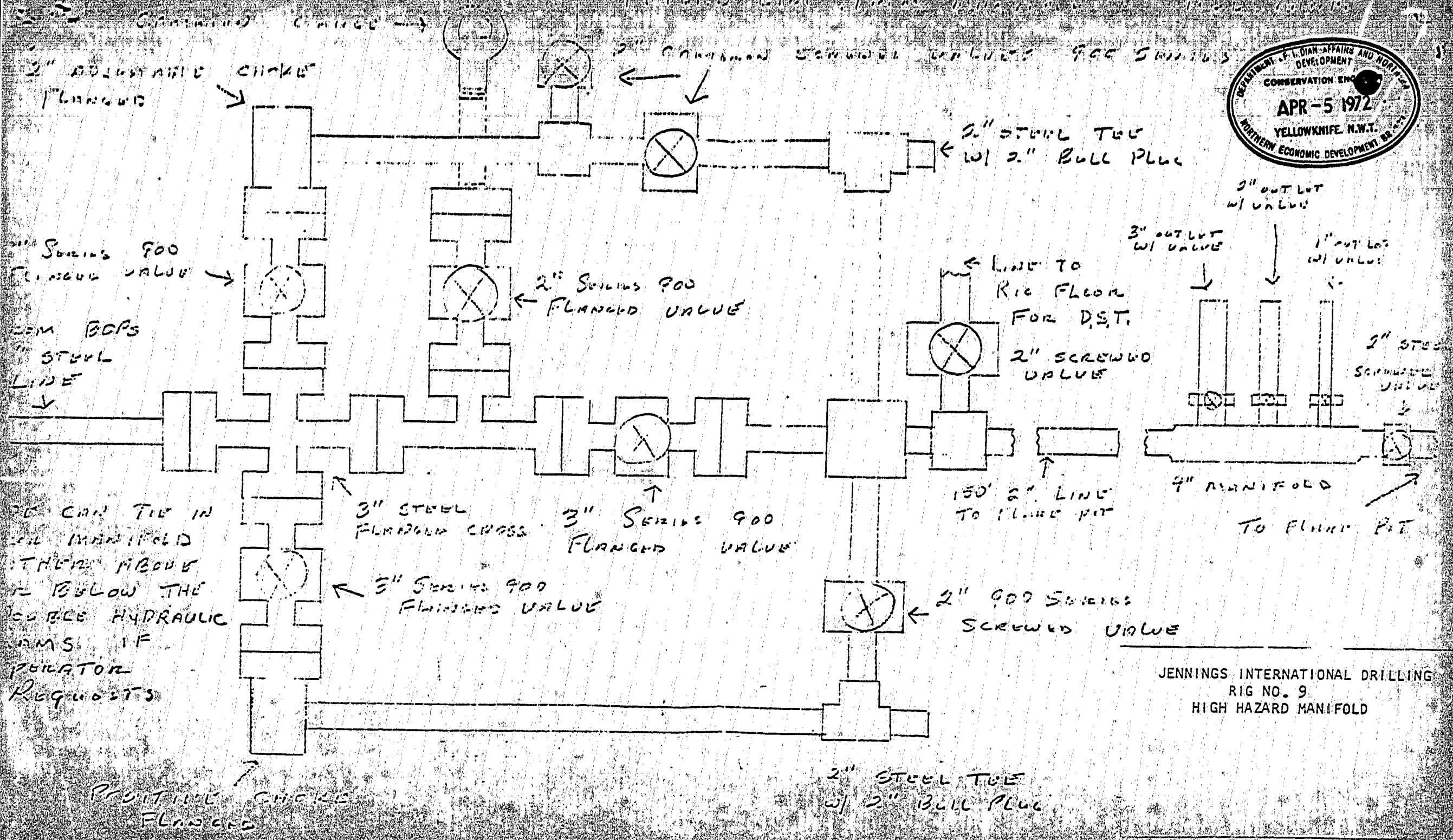


JENNINGS INTERNATIONAL DRILLING
RIG NO. 9
BOP DIAGRAM



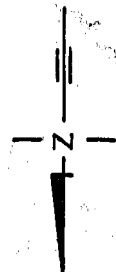
1- 3" 900 SERIES 1- 2" 900 SERIES
FLANGED STEEL VALVE FLANGED
STEEL VALVE





JENNINGS INTERNATIONAL DRILLING
RIG NO. 9
HIGH HAZARD MANIFOLD

LOCATION



A 21526-102

LOCATION

A 21526-102

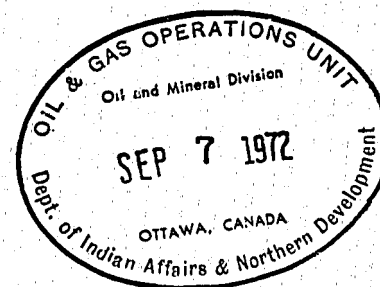
271-11-5-6

821-11-5-6

THIS IS A CONCISE REPORT OF THE
OPERATIONS CONDUCTED AT THE WELL

"CANDEL DECKMG et al FT. NORMAN K-14"

Data in this report was compiled for
CANDEL OIL LTD. by T. A. D. Haddow,
P. Geol. and W. R. Smith, P. Eng.,
Consultants at the well



K. E. Basaraba

K. E. Basaraba,
CANDEL OIL LTD.

July 6, 1972



WELL HISTORY REPORT

ON

CANDEL DECKMG et al FT. NORMAN K-14

IN

UNIT K SECTION 14 GRID 65-00-125-15

NORTHWEST TERRITORIES

CANADA

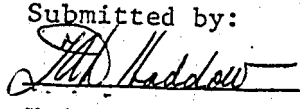
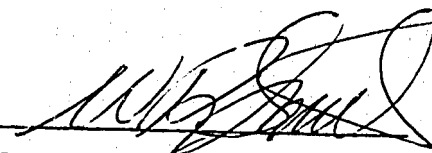
PREPARED FOR

CANDEL OIL LTD.

ON

JUNE 19, 1972

Submitted by:

T.A.D. Haddow, P.Geol. & W.R. Smith, P.Eng.

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GEOLOGICAL CONDITIONS AS FOUND IN THE WELL

CanDel DECKMG et al Ft. Norman K-14 was drilled primarily as a Paleozoic test for hydrocarbons on a seismic structure which was high enough to have the Ronning within 2580' of the surface.

The Cretaceous sands were not developed in the well except for a probable sand at 2218' immediately above the Paleozoic erosion surface. This sand was only represented in the samples by a sandy and silty streak in the interval 2140 - 2250'. The log indicated a more porous sand interbedded with shale. Drill Stem Test No. 1 covered the sand interval as well as the top of the Paleozoic with a recovery of fresh water.

The Paleozoic in this well was encountered at 2254' and appears to be strata indicative of the lower part of the Ronning Formation. The Ronning Formation had very little porosity and most of this occurs near the erosion surface.

SUMMARY OF WELL DATA

Well Name: CanDel DECKMG et al Ft. Norman K-14

Location: Unit K, Section 14, Grid 65-00-125-15
 Latitude 64° 53' 42" Longitude 125° 18' 08"
 Unique Well Identifier 300K146500125150
 Universal Well Location Reference: Lat. N. 65.895°
 Long. W. 125.30222

Operator: CanDel Oil Ltd.
 28th Floor, Calgary Place One
 330-5th Avenue S.W.
 Calgary 1, Alberta

Permit No. 6188

Permittees: Western Decalta Petroleum Ltd. No. 1454
 Corexcal No. 1456
 The Petrol Oil & Gas Company Limited No. 1460
 Petrorep (Canada) Ltd. No. 1453
 Kerr-McGee of Canada Northwest Ltd. No. 1486

Drilling Contractor: Jennings International Drilling
 Rig #9 GA 500 Emsco

Drilling Authority: 596 - issued April 13, 1972

Classification: Wildcat

Elevations: Grd. 366' (S.P. 119 Line 1) K.B. 379'

Spudded: 12:01 a.m. April 16, 1972

Drilling Completed: April 24, 1972

Total Depth: 2810' K.B. by driller

Well Status: Dry & Abandoned

Rig Released: 12:00 noon - April 27, 1972

Hole Sizes: 0 - 321 K.B. 13-3/4"
 321 - 2800 K.B. 8-3/4"
 2800 - 2810 K.B. 6-11/16"

Surface Casing: On April 17, 1972 ran 10 joints, 9-5/8", K-55,
 36# casing.
 Landed at 321' K.B. and cemented with 250 sacks
 cement plus 2% CaCl₂ and topped with 15 sacks
 cement.

Drill Stem Tests:

Ran Drill Stem Test #1 on April 25, 1972
Interval 2232 - 2400
Recovered 540' muddy fresh water.

Electrical Logs:

Ran on April 24, 1972
Dual Induction - Laterolog
Interval 2784 - 321 K.B.

Ran on April 24, 1972
Formation Density Log
Interval 2790 - 321 K.B.

Ran on April 24, 1972
Borehole Compensated Sonic Log
Interval 2796 - 321 K.B.

Ran on April 24, 1972
Sidewall Neutron Porosity Log
Interval 2789 - 321 K.B.

Cores:

On April 24, 1972 cut Diamond Core No. 1
Interval 2800 - 2810
Recovered 10'.

Geologists:

T.A.D. Haddow & W.R. Smith

Engineer:

D.W. Nelson

Toolpusher:

G. Ludviksen

FORMATION TOPS

<u>Marker</u>	<u>Depth by Prognosis</u>	<u>Elevation by Prognosis</u>	<u>Depth by Samples</u>	<u>Elevation by Samples</u>	<u>Depth by E-Log</u>	<u>Elevation by E-Log</u>
Cretaceous Near Surface						
1st Creta- ceous Sand	1630	- 1250				
Basal Sand					2218	- 1839
Sil-Ord Ronning	2580	- 2200	2254	- 1875	2254	- 1875
Total Depth	2800	- 2420	2810	- 2431	2798	- 2419

CORE INTERVALS

<u>Core No.</u>	<u>Interval</u>	<u>Formation</u>	<u>Recovery</u>
1	2800 - 2810	Ronning	10'

CORE DESCRIPTIONS

Porous	Non Porous	
2800.0 - 2810.0		Core No. 1 Recovered 10 ft.
		Times: 13, 16, 18, 17, 21, 21, 18, 21, 14, 19.
2800.0 - 2804.8	4.8	<u>Dolomite</u> - buff to light brown and orange, medium hard to very hard, microcrystalline, very slightly argillaceous, siliceous, very silty in part, trace of very poor porosity in widely scattered vugs. Pyrite.
2804.8 - 2810.1	5.3	<u>Dolomite</u> - dark brown to black, medium to very hard, microcrystalline to finely crystalline, siliceous, glauconitic in part, silty, slightly argillaceous in part. Interbeds of Dolomite - light grey, medium to very hard, microcrystalline, siliceous, silty. Trace shale partings - black, soft to medium hard. Pyrite.
2810.1 - 2810.4	0.3	<u>Dolomite</u> - light grey and buff to orange, medium hard to very hard, microcrystalline, siliceous, silty, disseminated pyrite. Trace of very poor porosity in very fine vugs, no fluorescence, fractured. Bedding horizontal.

SAMPLE DESCRIPTIONS

K.B. 379

<u>Interval</u>	<u>Lithology</u>
	Note - Samples are lagged from 1570' to T.D.
60 - 80'	<u>Claystone</u> - grey, some scattered thin silty and sandy streaks, trace of dark bituminous shale.
80 - 110'	<u>Claystone</u> - grey, trace of silty and sandy streaks.
110 - 120'	<u>Claystone</u> - grey, rare frosted rounded quartz grains.
120 - 180'	<u>Claystone</u> - grey.
180 - 200'	<u>Claystone</u> - grey, some scattered sandy streaks - calcareous in part, rare streaks of dark grey shale.
200 - 260'	<u>Claystone</u> - grey, rare streaks of dark grey shale.
260 - 300'	<u>Claystone</u> - grey, trace of floating quartz grains.
300 - 320'	<u>Claystone</u> - grey, some silty and sandy streaks, a few streaks of dark grey shale - bituminous in part.
320 - 360'	<u>Claystone and Gravel</u> - glacial drift, pebbles of granite, grey and black chert, quartzite, quartz and siliceous sandstone; matrix of grey claystone.
360 - 370'	<u>Sandstone</u> - grey, salt and pepper, fine to medium grained, limy, tight.
370 - 390'	<u>Claystone and Gravel</u> - glacial drift - as above.
390 - 440'	<u>Claystone</u> - grey silty and sandy streaks - bentonitic in part. <u>Gravel</u> - as above. <u>Sandstone</u> - grey, salt and pepper, fine to medium grained, limy tight.
440 - 450'	<u>Claystone and Gravel</u> - glacial drift - as above.
450 - 670'	<u>Claystone</u> - grey, lenses and interbeds of gravel. <u>Sandstone</u> - grey - salt & pepper, fine to medium grained, limy, tight, some reddish stain near the base.
670 - 760'	<u>Claystone</u> - grey with interbeds, and irregular lenses of sandstone, some carbonaceous material. <u>Sandstone</u> - salt and pepper, fine to medium grained, limy, tight.
760 - 820'	<u>Claystone</u> - grey, silty and sandy, irregular streaks and thin interbeds of sandstone - salt and pepper, very fine to medium grained, kaolinitic, calcareous, tight.

- 820 - 840' Claystone - grey with lenses and interbeds of sandstone as above, pebbles of granite, black chert, dolomite, quartzite and siliceous sandstone.
- 840 - 960' Claystone - grey with thin interbeds of sandstone - salt and pepper, fine to medium grained, argillaceous, kaolinitic, calcareous in part, tight, some thin beds of gravel - glacial drift.
- 960 - 1090' Claystone - grey, micromicaceous, silty and sandy streaks, some scattered carbonaceous material, slightly bentonitic, some streaks of kaolin.
- 1090 - 1210' Claystone - as above - somewhat more bentonitic, and kaolinitic.
- 1210 - 1260' Samples missing.
- 1260 - 1280' Claystone - grey, micromicaceous, silty and sandy streaks, scattered streaks of bentonite and kaolin.
- 1280 - 1290' Samples missing.
- 1290 - 1350' Claystone - grey, micromicaceous, silty and sandy streaks, scattered streaks of bentonite and kaolin.
- 1350 - 1390' Claystone and Shale - grey, micromicaceous, silty and sandy streaks, bentonitic and kaolinitic, some scattered carbonaceous material.
- 1390 - 1470' Shale - grey - some greenish grey, fissile to blocky, micromicaceous, silty and sandy streaks, streaks of kaolin and bentonite, scattered carbonaceous material.
- 1470 - 1600' Shale - as above, scattered varicolored chert pebbles, trace of scattered fish remains, pyritized crinoid stems.
- 1600 - 1860' Shale - grey - some streaks of greenish grey, fissile to blocky, micromicaceous, silty and sandy streaks, streaks of bentonite and kaolin, pyritic in part, scattered varicolored chert pebbles.
- 1860 - 1880' Shale - grey - some interbedded greenish grey - some thin dark grey streaks, silty and sandy streaks, some streaks of bentonite and kaolin, pyritic in part, scattered varicolored chert pebbles, some bands of brown ironstone.
- 1880 - 2000' Shale - grey and some greenish grey to greyish green, fissile to blocky, micromicaceous, streaks of bentonite and kaolin, silty and sandy streaks, pyritic in part (abundant pyrite 1920 - 1930') some scattered pyritized crinoid stems, scattered varicolored chert pebbles.

- 2000 - 2090' Shale - as above - abundant cavings.
- 2090 - 2140' Shale - black, micromicaceous, bituminous.
- 2140 - 2250' Shale - grey, fissile to blocky, micromicaceous, silty and sandy streaks, bentonitic.
- RONNING - 2254'
- 2250 - 2270' Dolomite - light buff to light brownish grey, microcrystalline to fine crystalline, silty, streaks of pyrite with floating quartz grains, some quartz crystals, some siliceous streaks, slight intercrystalline porosity - dense streaks.
- 2270 - 2290' Dolomite - buff to light brownish grey - creamy in part, very fine to fine crystalline, silty, some floating - frosted rounded quartz grains, siliceous streaks, scattered quartz crystals, streaks of milky chert, some scattered pyrite, streaky slight intercrystalline porosity - trace of scattered vuggy porosity, some partings of green shale.
- 2290 - 2320' Dolomite - very light brownish grey, microcrystalline to fine crystalline, silty, some sandy streaks, some streaks of milky chert, some quartz grains and crystals, slightly pyritic in part, slight streaky intercrystalline porosity, trace of pinpoint porosity, some partings of green shale.
- 2320 - 2350' Dolomite - brownish grey, microcrystalline to fine crystalline, silty, streaks of milky chert, some scattered quartz crystals, pyritic in part, dense.
- 2350 - 2370' Dolomite - light brownish grey - slightly greenish in part, microcrystalline to fine crystalline, silty, dense, some scattered pyrite, scattered quartz crystals and floating quartz grains, some streaks of milky chert.
- 2370 - 2390' Dolomite - light brownish grey, very fine to medium crystalline, silty, scattered quartz crystals, some cherty streaks, some scattered pyrite, dense, some partings of green shale.
- 2390 - 2410' Dolomite - light brownish grey to greyish brown, very fine to fine crystalline, silty, dense, scattered quartz crystals, and floating quartz grains, some scattered pyrite, some partings of green shale.
- 2410 - 2440' Dolomite - as above - some partings of bright green shale.
- 2440 - 2470' Dolomite - brownish grey, very fine to fine crystalline - some medium crystalline, silty, dense, some quartz crystals and floating quartz grains, some streaks of milky chert, some partings of green shale.
- 2470 - 2490' Dolomite - brownish grey, finely crystalline to microcrystalline, medium hard to very hard, siliceous in part, quartz crystals as inclusions, trace of pyrite, chert - milky as inclusions (trace) oolitic. Partings of shale - green medium hard, dolomitic.

- 2490 - 2510' Dolomite - buff to brown and pink, medium hard, micro-crystalline to finely crystalline, siliceous in very small part, silty in small part, sandy in small part (quartz - clear, round), quartz crystals, trace chert - milky (as inclusions), pyrite.
- 2510 - 2520' Dolomite - buff, light grey and pink to orange, medium hard, microcrystalline to finely crystalline, silty in part, sandy in part (clear to pink, rounded quartz grains). Trace shale - red to dark brown, medium hard. Trace sandstone - red and orange, very hard, quartzitic, dolomitic, quartzose.
- 2520 - 2530' Dolomite - buff, light grey and orange, medium hard to very hard, microcrystalline, siliceous in part, silty in small part, inclusions of milky to orange chert. Trace sandstone - light grey to orange, very hard, quartzose, fine grained, dolomitic and quartzitic. Shale and Clay - green, soft to medium hard, dolomitic infilling between dolomite crystals in small part.
- 2530 - 2570' Dolomite - buff to orange, medium to very hard, microcrystalline to finely crystalline, siliceous in part, trace of very poor intercrystalline porosity, no fluorescence, quartz crystals common. Shale - light grey and green, soft to medium hard.
- 2570 - 2580' Dolomite - buff, light grey and orange, medium hard, micro-crystalline to medium crystalline, very silty in part, quartz and quartz crystals - clear to orange, secondary dolomite crystals common.
- 2580 - 2600' Dolomite - buff, light grey to red, medium to very hard, micro-crystalline, siliceous in part, very silty in part.
- 2600 - 2610' Dolomite - buff to brown, medium hard, finely crystalline, mottled, trace of glauconite, oolitic in part, slightly argillaceous.
- 2610 - 2630' Dolomite - buff to brown and pink, medium hard, finely crystalline, slightly argillaceous, oolitic in part, trace of poor porosity in medium vugs, no fluorescence, glauconitic in part.
- 2630 - 2640' Dolomite - buff to brown and pink, medium to very hard, fine to microcrystalline, slightly argillaceous, silty in part, glauconitic (trace).
- 2640 - 2670' Dolomite - buff to brown and red, medium to very hard, fine to medium crystalline, siliceous in part, silty in part, trace of oolites, slightly argillaceous, trace of poor porosity in fine to medium vugs, no fluorescence, trace of glauconite.
- 2670 - 2710' Dolomite - buff, grey to red, medium to very hard, fine to medium crystalline, siliceous in part, very silty in part, slightly argillaceous.

- 2710 - 2720' Dolomite - grey brown to black, medium hard, medium crystalline, argillaceous, silty in part, shaly in part.
- 2720 - 2740' Dolomite - buff to brown and red, medium to very hard, microcrystalline to finely crystalline, silty in part, slightly argillaceous, sandy in part (quartz - clear, frosted, rounded, medium grained), siliceous in part.
- 2740 - 2750' Dolomite - buff to orange and red and light grey to grey, medium to very hard, microcrystalline, siliceous in part, silty in part, slightly argillaceous, trace glauconite.
- 2750 - 2770' Dolomite - light grey and buff to brown, medium to very hard, microcrystalline, siliceous in part, silty in part, secondary dolomite crystals common, slightly argillaceous, trace of poor porosity in fine to medium vugs, no fluorescence.
- 2770 - 2780' Dolomite - light grey to grey, buff to orange and pink and grey green, medium hard to very hard, microcrystalline, siliceous in part. Trace of sandstone (aggregate of quartz crystals) - clear, medium hard to friable, fine grained, well sorted, quartzose (angular grains), good intergranular porosity, no fluorescence.
- 2780 - 2800' Dolomite - light grey, buff to orange and pink and grey green, medium hard to very hard, microcrystalline, siliceous in part, silty in part. Trace chert - milky with brown oolites.

DRILL STEM TEST REPORT

Company CanDel Oil Ltd. Drill Stem Test No. 1
 Name of Well CanDel DECKMG et al Fort Norman K-14 Date Test Run April 25, 1972
 Testing Company BJ Services Operator W. Budvarson
 Type Packer Dual Straddle Size Packer(s) 4 at 7 1/2" Choke 1/2"
 Interval Tested: 2234 to 2400 Formation: Ronning

Test Data:

Initial shut in: Time Packer set 12:52 P.M. Time Tool Opened 1:22 P.M. (elapsed) 30 mins.
 Flow Period: Time Tool Opened 1:22 P.M. Time Tool Closed 2:22 P.M. (elapsed) 60 mins.
 Final shut in: Time Tool Closed 2:22 P.M. Time Tool Pulled 3:22 P.M. (elapsed) 60 mins.
 Pre Flow Time Tool Opened 12:40 p.m. Time Tool Closed 12:52 p.m. elapsed 12 mins.
 Tight Hole Test: Yes NoX..... Size of Chamber

Water Cushion: No Type of Hole: (Rathole) (Fullhole) (Cased)
 T.D. Driller: 2810 T.D. Tester: 2810 Was Test A Misrun: Partly
 Cause of Misrun: Tool appeared to be plugged until flow period was half gone

Flow Data:

Description of Initial Blow: Weak puff on preflow died immediately, weak air puff on valve open
 Did Blow die or Decrease: died immediately. Lost 6" of mud on preflow & 10' on valve open
 Gas Flow To Surface In NA mins. Initial Gas Flow MCF/Day
 Stabilized Gas Flow MCF/Day Measured by: (Test) (Impact) (Side Static)
 Time For Gas Flow to Stabilize mins. Gas Description: (Sweet) (Sour) (Dry) (Wet)
 Gas Sample Saved After mins. Fluid To Surface In mins.
 Fluid Description:
 Nature of Flow:
 Remarks:

Recovery:

Total fluid in (size) OD drill pipe: 540 feet barrels
 (describe fluid) Oil: feet barrels
..... muddy fresh Water: 540 feet barrels
..... Mud: feet barrels

Saved Samples At: 540 ft. 270 ft. 0 ft. above the test tool

Weight of mud before test 9.1 lbs./gal.: Chloride content ppm
 Weight of mud recovered 8.8 lbs./gal.: Chloride content ppm
 Weight of water recovered 8.8 lbs./gal.: Chloride content too small to measure ppm
 Oil Recovered: *API Color Smell

Pressure Data:

Initial Hydrostatic: (Office) 1060.3 (Field) 1500 Final: (Office) 1060.3 (Field) 1500
 Initial Shut In Pressure 950 Final: 905 900
 Initial Flow Pressure 153.6 250 Final: 255.6 300
 Well Bore Temp: 84 *F Bomb Capacity: Top 5500 Bottom 5600

Engineer W.R. Smith

CASING REPORT

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Well Candel DECKMC et al Ft. Norman K-14 Date April 17, 1972
 Type of Casing String: (surface) (intermediate) (production) (liner) (other)
 Drilling Contractor Jennings International Drilling

PIPE DATA

Make of Casing New
 Type: (seamless) (welded) Size 9-5/8" No. of Joints 10
 Weight 36# Grade K-55 Range Threads
 Couplings: (short) (long) Minimum I.D. Maximum O.D.

Casing Shoe: make type depth ft.
 Cementing Collar: make type depth ft.
 Centralizers: No. Make and Type
 Depths
 Scratchers: No. Make and Type
 Depths

Welding: (electric) (acetylene) No. of Collars? Casing Shoe?

Total amount casing run 321' ft. Kelly Bushing elevation 379 ft.
 Amount pipe above K.B. ft. K.B. to Rotary Table ft.
 Depth Casing Shoe landed ft. R.T. to Derrick Floor ft.
 Top of casing below K.B. ft. D.F. to Ground Level ft.
 Amount of casing in hole ft. Ground Level elevation ft.
 Length of Landing Joint ft. G.L. to (casing bowl) to (casing collar) ft.
 Length of Cut off Joint ft. Csg. Bowl Flange Elev. ft.
 Length of Shoe Joint overall ft. K.B. to top of casing ft.

CEMENTING DATA

Time Hole Open Before Casing Started in Hole hrs.
 Casing Started in Hole 6:00 P.M. Casing in M. (elapsed) hrs.
 Circulating: Started M. Finished M. (elapsed) hrs.
 Mixing Cement: Started M. Finished M. (elapsed) min.
 Displacing: Started M. Plug Down 7:00 P.M. (elapsed) 60 min.

Maximum Displacement Pressure 1,000 psi. Final Pressure psi.

Plug Displaced to ft. Displacement Fluid: (mud) (water) (other)

Method of Displacement B.J. Services

Method of Cementing

Amount Cement Used 250 Sacks. Average Cement Slurry Weight 14.8 lbs./gal.

Kind of Cement: (Canadian) (American) (bulk) (sack): Weight per sack 80# lbs.

Estimated Amount Cement Returns None sacks. Time Cement to Set 24 hrs.

Was Pipe Worked During Circulating? Yes Cementing? How Long

Additives to Cement 2% CaCl₂

Cementing Company B.J. Services Operator W. Budvarson

Casing Landed in hrs. Well Head Make

Remarks Topped with 15 sacks

Signed W.R. Smith

BIT RECORD

Well: CanDel DECKMG et al Ft. Norman K-14

Date Spudded: April 16, 1972 Date Finished Drilling April 24, 1972

Bit No.	Size	Make & Type	Serial	Depth In	Depth Out	Footage	Hrs.	Condition
1A	13-3/4	Hughes W OSC3J		0	321	321	8 1/4	
1	8-3/4	Hughes W XIG	31329	321	2009	1688	32 3/4	3-2-1
2	8-3/4	Hughes W XIG	31324	2009	2351	342	19 1/4	5-2-1
3	8-3/4	Hughes W XV	11374	2351	2542	191	23	5-2-1
4	8-3/4	Hughes W J-55	KW839	2542	2800	258	23 1/4	1-1-1
5	6-11/16	Wesdrill Diamond	15-70	2800	2810	10	3 1/4	--

DAILY MUD RECORD

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Date 1972	Depth	Weight	Viscosity	Water Loss	Filter Cake	Ph.	Remarks and Additives	
		# / Gal.	Seconds	15 min. C.C.	32nds			
April 16								
Tours 1								
2								
3	321							
April 17								
Tours 1	321						Running Casing	
2	321							
3	321							
April 18								
Tours 1								
2								
3	450							
April 19								
Tours 1	941						Drilling with water	
2	1600	8.4	28					
3	1851	8.4	28					
April 20								
Tours 1	2009	8.4	28				"	
2	2060	8.4	28					
3	2269	8.4	28					
April 21								
Tours 1	2343	8.4	28				1000# 50#	
2	2370	8.5	29					
3	2454	8.4	28					
April 22								
Tours 1	2510	8.4	28				11,700# 150#	
2	2542	8.5	29					
3	2590	9.0	38					
Apr. 23								
Tours 1	2680	9.1	50			9.5	500# 1000#	
2	2760	9.0	45					
3	2800	9.1	47			9.0		
April 24								
Tours 1	2808	9.1	46			9.0	900#	
2	2810	9.1	51			9.0		
3	2810							
April 25								
Tours 1	2810	9.2	65				1500#	
2	2810							
3	2810	9.0	55					

DAILY MUD RECORD

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Date 1972	Depth	Weight	Viscosity	Water Loss	Filter Cake	Ph.	Remarks and Additives	
		# / Gal.	Seconds	15 min. C.C.	32nds		Gel	Caustic
April 26								
Tours 1	2810							
2	2810							Plugging
3	2810							
April 27	2810							
	2810							Plugging
	2810							

DAILY PROGRESS REPORT

DATE 1972	DEPTH		F o o t i n g	Hours on Bottom	BIT NOS.	DEVIATION SURVEY		REMARKS
	From	To				Depth	R.D.G.	
April 16	0	321	321	8 1/4	1A	60 100 200 300	7/8 7/8 7/8 1/2	Drilled 321' with 8-3/4" rock bit and ran 4 surveys, spudded at 12:01 a.m., pulled out to run surface casing.
April 17	321	321	--	--	--	--	--	Waited on cementer, cemented surface casing, 10 joints 9 5/8", 321', K-55, 36#, landed at 321' K.B. Cemented with 250 sacks cement plus 2% CaCl ₂ . Plug down at 7:00 p.m. Waiting on cement.
April 18	321	450	129	3 1/2	1			Drilled 129' with 8 3/4" rock bit. Finished waiting on cement, cut casing, nipples up, pressure tested and drilled out.
April 19	450	1851	1401	21 3/4	1	909 569 1265 1538 1632 1776 1890	3/4 1/2 1 1/8 1 7/8 2 2 2	Drilled 1401' with 8 3/4" rock bit and ran 7 surveys.
April 20	1851	2259	308	16 1/2	1 & 2	1946 2009 2103 2197	2 3/4 2 7/8 2 1/4 2 3/4	Drilled 308' with 8 3/4" rock bit, ran 4 surveys and tripped for Bit #2.
April 21	2259	2454	195	19 1/2	2 & 3	2351	2 3/4	Drilled 195' with 8 3/4" rock bit, ran 1 survey and tripped for Bit #3, Reamed 100' to bottom.
April 22	2454	2590	136	18 3/4	3 & 4	2454 2542	2 7/8 2 7/8	Drilled 136' with 8 3/4" rock bit, ran 2 surveys and tripped for Bit #4. Reamed 75' to bottom.
April 23	2590	2800	210	18 1/4	4	2641 2800	2 7/8 2 7/8	Drilled 210' with 8 3/4" rock bit, ran 2 surveys and pulled out to pick up core barrel

DAILY PROGRESS REPORT

DATE 1972	DEPTH		Footage	Hours on Bottom	BIT NOS.	DEVIATION SURVEY		REMARKS
	From	To				Depth	R.D.G.	
April 24	2800	2810	10	3 1/4	1 Diamond			Cored 10' with 6 11/16" diamond bit, recovered core, rigged to log and started logging.
April 25	2810	2810						Ran into hole, pulled out, ran DST #1, pulled test, ran in and conditioned mud and hole. Tripped out.
April 26	2810	2810						Finished tripping out, laid down collars, ran in open ended and ran Plug #1 and Plug #2, Waited on cement. Felt Plug #2, ran Plug #3 and waited on cement.
April 27	2810	2810						Felt Plug #3, laid down pipe, started to tear out, ran Plug #4 (surface), welded on plate and started to tear out. Rig Released at 12:00 noon April 27, 1972

PLUGS

Ran Plug #1 on April 26, 1972
Interval 2811 - 2710
40 sacks of cement

Ran Plug #2 on April 26, 1972
Interval 2300 - 2200
100 sacks cement plus 3% CaCl_2
Felt at 2170' K.B.

Ran Plug #3 on April 27, 1972
Interval 367 - 267
100 sacks cement plus 3% CaCl_2
Felt at 200

Ran Plug #4 on April 27, 1972
At Surface
5 sacks cement and welded on steel plate
and erected post and sign.

Logs

Ran on April 24, 1972
Dual Induction-Laterolog

Interval 2791 - 321 K.B.

Scales 2" to 100'
5" to 100'

2784 - 321 K.B.
2784 - 321 K.B.

Ran on April 24, 1972

Sidewall Neutron Porosity Log

Interval 2789 - 321 K.B.

Scales 2" to 100'
5" to 100'

2789 - 321 K.B.
2789 - 321 K.B.

Ran on April 24, 1972

Borehole Compensated Sonic Log

Interval 2796 - 321 K.B.

Scales 2" to 100'
5" to 100'

2796 - 321 K.B.
2796 - Surface

Ran on April 24, 1972

Formation Density Log

Interval 2790 - 321 K.B.

Scales 2" to 100'
5" to 100'

2790 - 321 K.B.
2790 - 321 K.B.

WATER ANALYSIS
FOR
CANDEL OIL LTD.
CANDEL DECKMG ET AL FT NORMAN K-14
FORT NORMAN AREA
NORTHWEST TERRITORIES



CORE LABORATORIES - CANADA LTD.

Petroleum Reservoir Engineering
CALGARY - EDMONTON - REGINA



CORE LABORATORIES - CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS



File 933-2580 Page 1 of 1

Company CanDel Oil Ltd.

Well CanDel Deckmg et al Al Ft Norman K-14 K.B. Grd. 366'
64° 53'42.00 N.L.

Location 125° 18'08.00 W.L. Field Fort Norman Area Province N.W.T.

Formation Interval

Sampled from DST #1 (BJ Tool #22) by

Date sampled Date analysed May 17/72 Analyst LK

Recovery Tool Recovery: 3000 cc's Muddy Water.

 Mud type Water cushion

Resistivity 2.95 Ohm-meters @ 75 °F

Specific gravity 1.0033 @ 60°F

pH 8.3 H₂S Absent

Refractive Index 1.3326 @ 77°F

Total Solids:

Calculated 2,320 mg/liter

By evaporation @ 110°C - mg/liter

By evaporation @ 180°C - mg/liter

At ignition - mg/liter

MILLIGRAMS PER LITER

Na + K	Ca	Mg	Fe	Ba	Br	I	Cl	HCO ₃	SO ₄	CO ₃	OH
821	8	4	Trace	Abs.	-	-	846	195	446	Nil	Nil

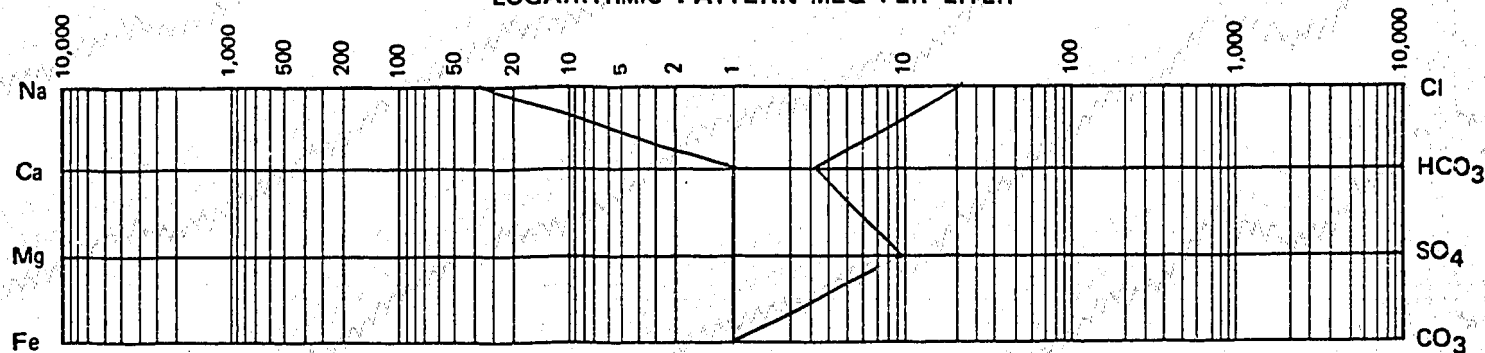
PER CENT CALCULATED SOLIDS

35.4	.3	.2	Trace	Abs.	-	-	36.5	8.4	19.2	.0	.0
------	----	----	-------	------	---	---	------	-----	------	----	----

MEQ PER LITER

35.7	.4	.3	Trace	Abs.	-	-	23.9	3.2	9.3	.0	.0
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LOGARITHMIC PATTERN MEQ PER LITER



1959. 821.0

DRILL STEM TEST REPORT

**BJ SERVICE DIVISION
BORG-WARNER (CANADA) LIMITED**

CANDEL DECKMG FT. NORMAN

K-14

TEST NO. 1



TESTING REPORT

DRILL-STEM TEST DATA

Well Name	CANDEL DECKMG FT. NORMAN K-14	Test No.	1
Well Number	K-14, 66-00N, 125-15W	Zone Tested	RONNING
Company	CANDEL OIL LTD.	Interval	2234.0 TO 2400.0
Comp. Rep.	BILL SMITH	Tester	BUDVARSON
		Date	APRIL 25, 1972

Type of Test **DUAL STRADDLE BY PASS** RFS Tool No. **22**Prewlow mins. ISI mins. Flow **20.0** mins. FSI **60.0** mins.

	INS REC. No. 2011 5500 RANGE 12 HR. CLOCK	OUT REC. No. 1875 5600 RANGE 12 HR. CLOCK	BTM REC. No. 3958 6500 RANGE 24 HR. CLOCK
DEPTH	2216.0	2247.0	2400.0
Initial Hydro Mud Press	1060.3	1076.6	1158.5
Initial Shut-In Press			
Initial Flow Press	153.6	232.4	
Final Flow Press	255.6	309.1	
Final Shut-In Press	905.0	914.6	
Final Hydro Mud Press	1060.3	1076.6	1158.5

Mud Drop	16	Fluid Loss		Mud Weight	9.2
Viscosity	65.0	Temperature °F	84.0	Net Pay Tested	25.0
Top Packer Depth	2234.0	Bottom Packer Depth	2400.0	Total Depth	2810.0
Drill Pipe Size	4.5 E.H.	Wt. 16.6	Drill Collar I.D. 2.875	Ft. Run	538.00
Surface Choke Size	CLOSED	Bottom Choke Size	0.75	Main Hole Size	8.750
Anchor Size	4.75 O.D.	Rat Hole Size		Feet of Rat Hole	
Cushion Amount	NIL	Type		Rubber Size	7.5

Fluid Recovery Total Feet	540.0
Recovered	540 Feet of MUDDY FRESH WATER
Recovered	Feet of
Recovered	Feet of
Recovered	Feet of
Recovered	Feet of

Gas Recovery	How Measured	Riser size:
mins.	Temp. °F Press Rdg. psi Orifice Size	= MCF/Day
mins.	Temp. °F Press Rdg. psi Orifice Size	= MCF/Day
mins.	Temp. °F Press Rdg. psi Orifice Size	= MCF/Day
mins.	Temp. °F Press Rdg. psi Orifice Size	= MCF/Day
mins.	Temp. °F Press Rdg. psi Orifice Size	= MCF/Day
mins.	Temp. °F Press Rdg. psi Orifice Size	= MCF/Day

Bleed Off Time for Drill Pipe

REMARKS: **VERY WEAK AIRBLOW ON PREFLOW, DEAD IN ONE MINUTE.
VERY WEAK AIRBLOW ON FLOW, DEAD IMMEDIATELY.**



TESTING REPORT

WEIGHT INDICATOR READING

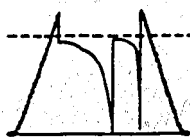
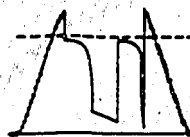
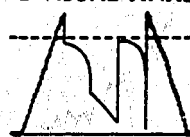
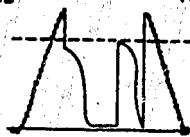
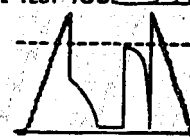
PRIOR TO SETTING PACKERS

AFTER PULL PACKERS LOOSE

	ID	OD	LENGTH	
45 LANDING SUB				
45 CHAMBER				
45 TOOL OR P.O. SUB			1.00	30 FT. ABOVE TOOL
CO SUB			1.00	
SHUT IN TOOL		4 3/4	5.20	
R.F.S. No. 22	2 1/4	4 3/4	3.35	
R.F.S. No.	2 1/4	4 3/4		
HYDRAULIC TOOL		4 3/4	7.15	
JARS JOHNSTON	1	4 3/4	7.80	31 FT. ABOVE TOOL
RECORDER No. 2011	2 1/4	4 3/4	5.00	DEPTH 2216
RECORDER No.	2 1/4	4 3/4		DEPTH
SAFETY JOINT	2 1/16	4 3/4	1.75	
BY PASS SUB	1 5/32	4 3/4	1.00	
PACKER	1 OR 3/4		6.00	
PACKER	1 OR 3/4		5.00	TOOL ABOVE INTERVAL 44.25
ANCHOR—SPECIFY	2 1/2		1.00	
PERFS			10.00	
BLANK OFF OR BY PASS SUB	1 5/32	4 3/4	1.00	
RECORDER No. 1875	2 1/4	4 3/4	1.00	DEPTH 2247
C.O. SUB			1.00	
DRILL COLLARS			149.00	
PACKER	1 OR 3/4		3.00	TOTAL INTERVAL 166.00
			3.00	
PACKER	1 OR 3/4		6.00	
ANCHOR—SPECIFY	2 1/2			
PERFS			15.00	
RECORDER No. 3958	2 1/4	4 3/4	5.00	DEPTH 2425
C.O. SUB			1.00	
DRILL PIPE			377.00	
BULLNOSE	2 1/4	4 3/4	3.00	TOTAL TAIL PIPE 410.00
				TOTAL TEST TOOL 94.25

TOTAL DEPTH 2810

DST CHARTS FOR COMPARATIVE VISUAL ANALYSIS

HIGH PERMEABILITY
STRONG DAMAGE EFFECTHIGH PERMEABILITY
NO DAMAGE EFFECTMEDIUM PERMEABILITY
STRONG DAMAGE EFFECTMEDIUM PERMEABILITY
NO DAMAGE EFFECTLOW PERMEABILITY
STRONG DAMAGE EFFECTLOW PERMEABILITY
NO DAMAGE EFFECT



WELL NAME CANDEL DECKMG FT. NORMAN K-14

DST. NO. 1

LOCATION K-14, 66-00N,125-15W REC. NO. 2011

DEPTH 2216.

MEASURED PRESSURES

	<u>POINT NUMBER</u>	<u>TIME MIN</u>	<u>PRESSURE PSIG</u>
RUN IN HOLE	1	0.0	0.0
	2	50.0	1060.3
INITIAL HYDRO PRESSURE	3	74.0	1060.3
TOOL PLUGGED	4	74.0	27.9
	5	79.0	23.7
	6	85.0	16.8
	7	114.0	16.8
	8	115.0	817.0
	9	116.0	46.1
	10	118.0	290.5
	11	119.0	43.3
	12	128.0	46.1
	13	129.0	537.7
	14	130.0	47.5
	15	140.0	50.3
	16	141.0	761.2
	17	143.0	65.6
	18	145.0	413.4
	19	146.0	75.4
UNPLUGGED TOOL	20	152.0	156.4
INITIAL FLOW PRESSURE	21	152.0	153.6
	22	157.0	195.5
	23	162.0	217.9
	24	167.0	236.0
FINAL FLOW PRESSURE	25	172.0	255.6
START SHUT-IN	26	172.0	255.6
	27	177.0	667.6
	28	182.0	734.6
	29	187.0	776.5
	30	192.0	807.3
	31	197.0	829.6
	32	202.0	849.2
	33	207.0	863.1
	34	212.0	874.3
	35	217.0	884.1
	36	222.0	891.1



WELL NAME CANDEL DECKING FT. NORMAN K-14

DST. NO. 1

LOCATION K-14, 66-00N, 125-15W REC. NO. 2011

DEPTH 2216.

MEASURED PRESSURES

	<u>POINT NUMBER</u>	<u>TIME MIN</u>	<u>PRESSURE PSIG</u>
	37	227.0	899.4
FINAL SHUT-IN PRESSURE	38	232.0	905.0
RUN OUT OF HOLE	39	232.0	905.0
FINAL HYDRO PRESSURE	40	233.0	1060.3
	41	241.0	1060.3
OUT OF HOLE	42	313.0	0.0



WELL NAME CANDEL DECKMG FT. NORMAN K-14

DST. NO. 1

LOCATION K-14, 66-00N,125-15W REC. NO. 2011

DEPTH 2216.

CALCULATIONS FOR LIQUID RECOVERY (SECOND SHUT-IN)

(A) EXTRAPOLATED RESERVOIR PRESSURE	976.0
NO. OF POINTS CONSIDERED IN BUILD-UP	12
NO. OF POINTS USED IN EXTRAPOLATION	8
ROOT MEAN SQUARE DEVIATION OF BEST-FIT LINE (PSI).....	0.61
EFFECTIVE PRODUCING TIME (MIN)	20.0
(B) IN SITU CAPACITY (KH - MD FT)	72.65
SLOPE OF BUILD-UP CURVE (PSI/CYCLE)	574.26
PRODUCING RATE (BBL/DAY)	313.11
FLUID VISCOSITY (CP)	0.820
FORMATION VOLUME FACTOR (RES BBL/ST BBL).....	1.000
(C) EFFECTIVE PERMEABILITY (MD)	2.91
FORMATION THICKNESS	25.00
(D) PRODUCTIVITY INDEX (BBL/DAY/PSI)	0.43
FLOWING PRESSURE (PSIG)	255.6
(E) APPROXIMATE DRAINAGE RADIUS (FT)	37.3
TOTAL FLOWING TIME (MIN)	20.0
(F) ESTIMATED DAMAGE RATIO	0.33
RESERVOIR POROSITY (PERCENT)	12.00
TOTAL COMPRESSIBILITY (VOL/VOL/PSI X 10-6)	7.40
WELL-BORE RADIUS (IN)	4.375
CALCULATED SKIN FACTOR	-2.90



WELL NAME CANDEL DECKMG FT. NORMAN K-14

DST. NO. 1

LOCATION K-14, 66-00N,125-15W REC. NO. 2011

DEPTH 2216.

DATA FOR BUILD-UP PLOT (SECOND SHUT-IN)

POINT NUMBER	TIME MIN	PRESSURE PSIG	PRESSURE CALC FROM BEST FIT LINE	PRESSURE DIFFERENCE CALC - OBSERVED	T+DELTA(T)/ DELTA(T)
-----------------	-------------	------------------	---	--	-------------------------

PORTION OF BUILD-UP CURVE NOT USED IN EXTRAPOLATION

27	5.0	667.6			5.00
28	10.0	734.6			3.00
29	15.0	776.5			2.33
30	20.0	807.3			2.00

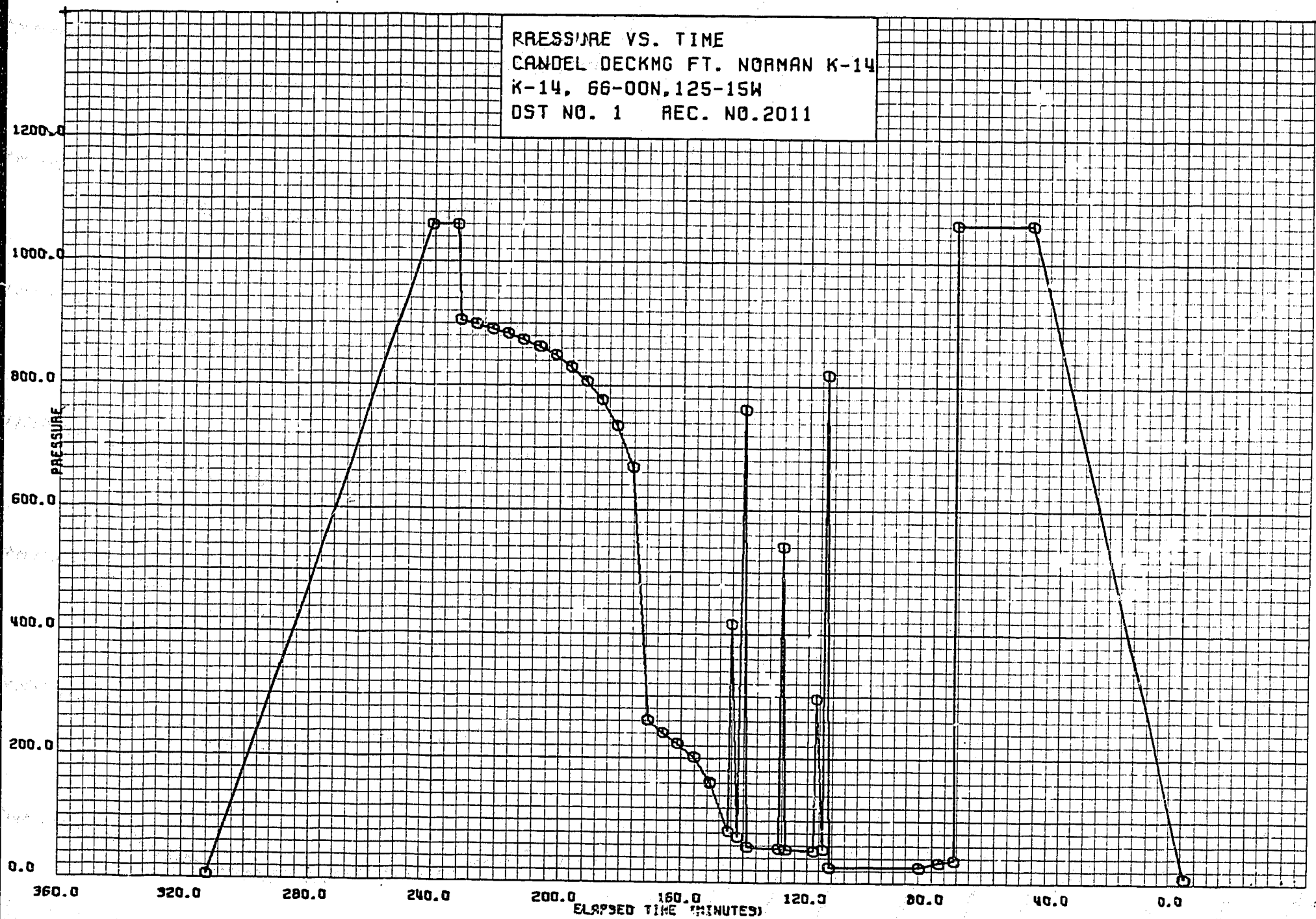
POINTS USED IN EXTRAPOLATION

31	25.0	829.6	829.5	-0.2	1.80
32	30.0	849.2	848.6	-0.5	1.67
33	35.0	863.1	863.3	0.2	1.57
34	40.0	874.3	874.9	0.6	1.50
35	45.0	884.1	884.3	0.3	1.44
36	50.0	891.1	892.1	1.1	1.40
37	55.0	899.4	898.7	-0.7	1.36
38	60.0	905.0	904.3	-0.7	1.33

ASSUMPTIONS AND LIMITATIONS

THE ENCLOSED DST INTERPRETATION CALCULATIONS REQUIRE SEVERAL NECESSARY ASSUMPTIONS TO PROVIDE A QUICK ESTIMATE OF MANY OF THE FACTORS INVOLVED. AS A RESULT THE INFORMATION GAINED SHOULD BE USED TO FORM AN OPINION OR ESTIMATE ONLY, UNTIL THE ASSUMPTIONS OF RESERVOIR AND FLUID PROPERTIES CAN BE WHOLLY OR PARTIALLY CLARIFIED BY MORE COMPLETE ANALYSIS AND TESTING.

PRESSURE VS. TIME
CANDEL DECKMG FT. NORMAN K-14
K-14, 66-00N, 125-15W
DST NO. 1 REC. NO. 2011



1000.0

HORNER PRES. EXTRAPOLATION
CANDEL DECKMG FT. NORMAN K-14
K-14, 66-00N, 125-15W
DST NO. 1 $P_m = 976.0$

950.0

900.0

BOTTOM - HOLE PRESSURE (psig)

850.0

800.0

750.0

700.0

650.0

10

 $(T + \Delta t) / \Delta t$

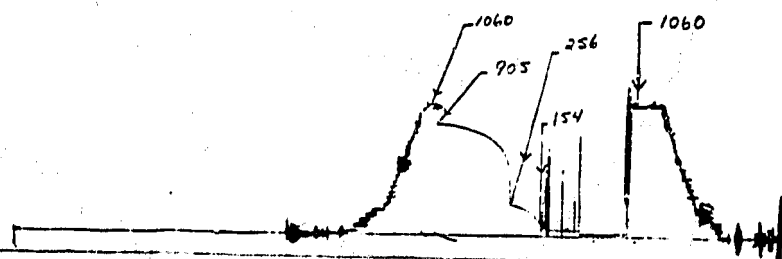
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BOTTOM - HOLE PRESSURE (psig)



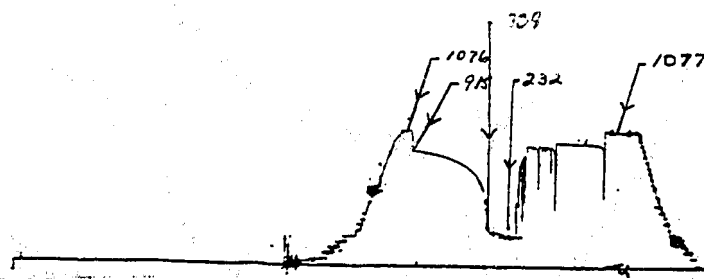
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CANDEL DECKMG FT. NORMAN K-14
INTERVAL 2234 - 2400
DST NO. 1 REC. NO. 2011



DST RECORDER CHARTS

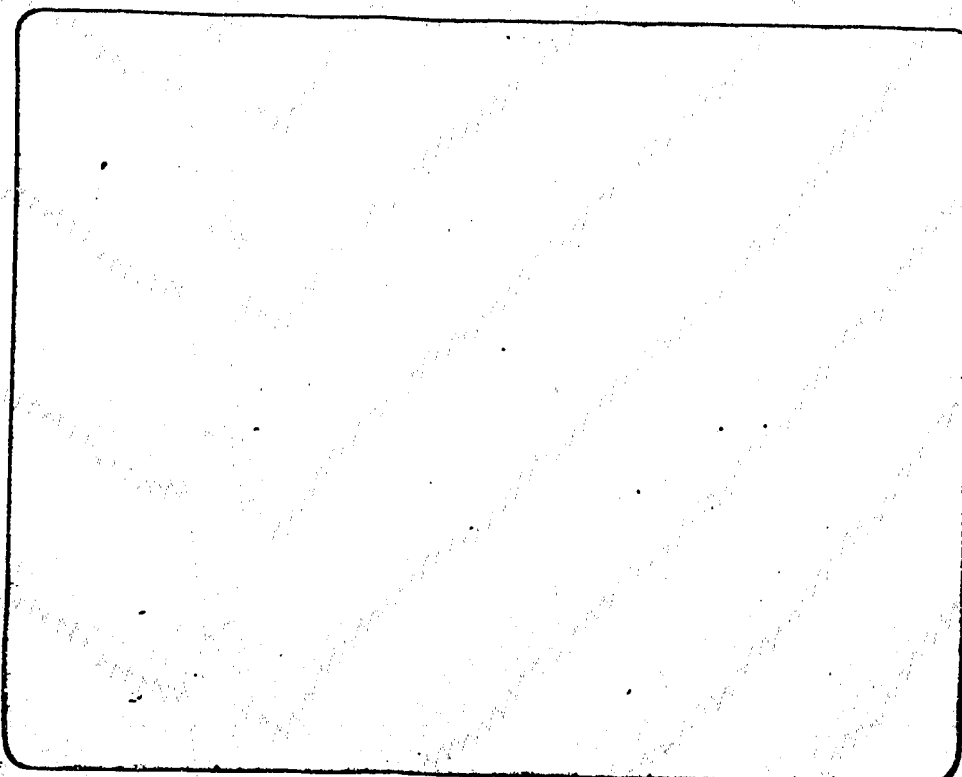
CANDEL DECKMG FT. NORMAN K-14
INTERVAL 2234 - 2400
DST NO. 1 REC. 1875



CANDEL DECKMG FT. NORMAN K-14
INTERVAL 2234 - 2400
DST NO. 1 REC. NO. 3958



DST RECORDER CHARTS



DAILY DRILLING REPORT

REPORT NO. 12

DATE APR. 27/72

OPERATOR		NAME		WELL NO.		FIELD OR DIST.		COUNTY		STATE																			
CANADIAN DEANI		K-14 FORT NORMAN		K-14		FORT NORMAN		N.W.T.																					
CONTRACTOR		RIG NO.	DRILL PIPE STRING	TOOL JOINT	PUMPS		LAST CASING TUBING		SIZE		MAKE		WT. & GR.		NO. JOINTS		FEET		RKB. TO CSG. MD.		SET AT		REMARKS						
Jennings International Drilling		9	2 1/2	6 1/4 O.D.	1. EMSCO DA-500 16"		2. EMSCO DA-500 16"		9 1/8		NEW		36"		10		321				321								
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOL PUSHER																											
TIME DISTRIBUTION-HOURS		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR-D RM-R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
RIG UP & TEAR DOWN		STANDS D.P.		FT.		BIT NO.		TIME		FROM		TO																	
DRILLING ACTUAL		SINGLES D.P.		FT.		SIZE		WEIGHT																					
REAMING		D.C.				MFG.		VISC.-SEC																					
CONDITIONING MUD & CIRCULATING		I.D. O.D.		FT.		TYPE		W.L.-C.C.																					
TRIPS		D.C.				NOZZLE		FLTR. CK.																					
LUBRICATE RIG		I.D. O.D.		FT.		NO.		PH																					
DEVIATION SURVEY		STB. BODY O.D.		FT.		SER. NO.		SD. CONT. %																					
TEST B.O.P.		STB. BODY O.D.		FT.		DEPTH OUT		PRESSURE GRADIENT																					
CUT OFF DRILLING LINE		RMR. BODY O.D.		FT.		DEPTH IN																							
REPAIR RIG		SUBS O.D.		FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																					
CORING		BIT OR C.B.		FT.		TOTAL HR. RUN		TYPE AMT. TYPE AMT.																					
WIRE LINE LOGGING		KELLY DOWN		FT.		COND. OF BIT																							
RUNNING CASING & CEMENTING		TOTAL		FT.		REAMER NO.																							
WAITING ON CEMENT		WT. OF STRING		LBS.		REAMER TYPE		DRILLER																					
DRILL STEM TEST		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR-D RM-R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
OTHER		STANDS D.P.		FT.		BIT NO.		TIME		FROM		TO																	
FISHING		SINGLES D.P.		FT.		SIZE		WEIGHT																					
A. PERFORATING		D.C.				MFG.		VISC.-SEC																					
B. TUBING TRIPS		I.D. O.D.		FT.		TYPE		W.L.-C.C.																					
C. SWABBING		D.C.				NOZZLE		FLTR. CK.																					
D. TESTING		I.D. O.D.		FT.		NO.		PH																					
E. ADDITIONAL		STB. BODY O.D.		FT.		SER. NO.		SD. CONT. %																					
TOTALS		STB. BODY O.D.		FT.		DEPTH OUT		PRESSURE GRADIENT																					
TIME SUMMARY (OFFICE USE ONLY)		RMR. BODY O.D.		FT.		DEPTH IN																							
DAY WORK		SUBS O.D.		FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																					
HRS. W/DP		BIT OR C.B.		FT.		TOTAL HR. RUN		TYPE AMT. TYPE AMT.																					
HRS. WO/DP		KELLY DOWN		FT.		COND. OF BIT																							
HRS. STANDBY		TOTAL		FT.		REAMER NO.																							
		WT. OF STRING		LBS.		REAMER TYPE		DRILLER																					
TOTAL DAY WORK		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR-D RM-R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
WIRE LINE RECORD		STANDS D.P.		FT.		BIT NO.		TIME		FROM		TO																	
REEL NO.		SINGLES D.P.		FT.		SIZE		WEIGHT																					
NO. OF LINES		D.C.				MFG.		VISC.-SEC																					
FEET SLIPPED		I.D. O.D.		FT.		TYPE		W.L.-C.C.																					
FEET CUT OFF		D.C.				NOZZLE		FLTR. CK.																					
PRESENT LENGTH		I.D. O.D.		FT.		NO.		PH																					
TON M. OR TRIPS SINCE LAST CUT		STB. BODY O.D.		FT.		SER. NO.		SD. CONT. %																					
CUMULATIVE TON M. OR TRIPS		STB. BODY O.D.		FT.		DEPTH OUT		PRESSURE GRADIENT																					
NO. OF DAYS FROM SPUD		RMR. BODY O.D.		FT.		DEPTH IN																							
CUMULATIVE ROTATING HRS.		SUBS O.D.		FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																					
		BIT OR C.B.		FT.		TOTAL HR. RUN		TYPE AMT. TYPE AMT.																					
		KELLY DOWN		FT.		COND. OF BIT																							
		TOTAL		FT.		REAMER NO.																							
		WT. OF STRING		LBS.		REAMER TYPE		DRILLER																					



A.A.O.D.C.-A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DATE APRIL 26/72

OPERATOR CAN. DELHI		LEASE K-14 FORT NORMAN		REPORT NO. K-14		DATE APRIL 25/72		WELL NO. K-14		FIELD OR DIST. FORT NORMAN		COUNTY		STATE N.W.T.																	
CONTRACTOR Jennings International Drilling Division of Pancana Industries Ltd.		RIG NO. 9		DRILL PIPE STRING NO. 2 SIZE 4 1/2 TYPE THD. X-H		TOOL JOINT 6 1/2 O.D.		PUMPS		LAST CASING TUBING OR LINER		SIZE 9 5/8		MAKE NEW		WT. & CR. 36		NO. JOINTS 10		FEET 321		RKB. TO CSG. HD. 321		SET AT 321		REMARKS					
SIGNATURE OF OPERATOR'S REPRESENTATIVE				SIGNATURE OF CONTRACTOR'S TOOL PUSHER				NO.		MANUFACTURER		TYPE		STROKE LENGTH		SIZE		MAKE		WT. & CR.		NO. JOINTS		FEET		RKB. TO CSG. HD.		SET AT		REMARKS	
								1.		EMSCO		DA-500		14																	
								2.		EMSCO		DA-500		14																	
								3.																							



APPROVED



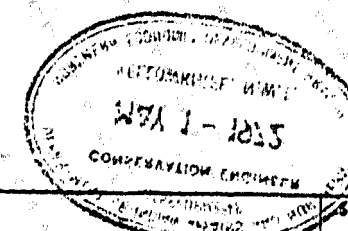
APPROVED

A.A.O.D.C--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 10

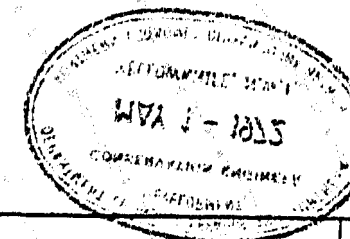
DATE Apr. 25/72



OPERATOR		LEASE		WELL NO.		FIELD OR DIST.		COUNTY		STATE																	
CANADIAN DELHI		FORT NORMAN		K-14		FORT NORMAN																					
CONTRACTOR		RIG NO.	DRILL PIPE STRING	TOOL JOINT	PUMPS		LAST CASING TUBING OR LINER		SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS											
Jennings International Drilling Division of Pacana Industries Ltd.		9	2 4 1/2	TYPE TMD. X-H					9 3/4	NEW	34	10	321		331												
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOLPUSHER		1. MANUFACTURER		TYPE		STROKE LENGTH																			
				2. EMSCO		DA-500		14"																			
				3. EMSCO		DA-500		14"																			
TIME DISTRIBUTION—HOURS		NO. DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR. D RM. R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO. 1		PUMP NO.		METHOD RUN SGL-S PART-L-P COM-D-C	
RIG UP & TEAR DOWN		23 STANDS D.P.		BIT NO. 4		TIME 2:30 5:00		FROM 2800 TO 2810		RM				FUEL 3 1/2		45		3m		1200		5 1/2		60			
DRILLING ACTUAL		2 SINGLES D.P.		SIZE 8 3/4		WEIGHT 9.2 9.2																					
REAMING		D.C. 6 1/4		MFG. H W		VISC.-SEC 75 65																					
CONDITIONING MUD & CIRCULATING		18 I.D. O.D.		TYPE RR 5-55		W.L.-C.C.																					
TRIPS		D.C.		NO. 3		FLTR. CK.																					
LUBRICATE RIG		I.D. O.D.		NOZZLE SIZE 11		PH																					
DEVIATION SURVEY		STB. BODY O.D.		SER. NO. K-10-859		SD. CONT. %																					
TEST B.O.P.		STB. BODY O.D.		DEPTH OUT		PRESSURE GRADIENT																					
CUT OFF DRILLING LINE		RMR. BODY O.D.		DEPTH IN																							
REPAIR RIG		SUBS O.D.		TOTAL FTG. REAM 10'		MUD & CHEMICALS ADDED																					
CORING		1 BIT OR C.B.		TOTAL HR. RUN		TYPE AMT. TYPE AMT.																					
WIRE LINE LOGGING		1 5/8 SUBS		COND. OF BIT		GEL 1500																					
RUNNING CASING & CEMENTING		KELLY DOWN 32.92 FT.		REAMER NO.																							
WAITING ON CEMENT		TOTAL 2810.00 FT.		REAMER TYPE		DRILLER Ray J. Lister																					
DRILL STEM TEST		WT. OF STRING 82000 LBS.																									
OTHER SERVICE		NO. DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR. D RM. R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO. 1		PUMP NO.		METHOD RUN SGL-S PART-L-P COM-D-C	
FISHING		23 STANDS D.P.		BIT NO.		TIME		FROM TO																			
A. PERFORATING		SINGLES D.P.		SIZE		WEIGHT																					
B. TUBING TRIPS		D.C.		MFG.		VISC.-SEC																					
C. SWABBING		I.D. O.D.		TYPE		W.L.-C.C.																					
D. TESTING		D.C.		NO. NOZZLE SIZE		FLTR. CK.																					
E. ADDITIONAL		I.D. O.D.		SER. NO.		SD. CONT. %																					
TOTALS		STB. BODY O.D.		DEPTH OUT		PRESSURE GRADIENT																					
TIME SUMMARY (OFFICE USE ONLY)		STB. BODY O.D.		DEPTH IN																							
DAY WORK		RMR. BODY O.D.		TOTAL FTG.		MUD & CHEMICALS ADDED																					
HRS. W/DP		SUBS O.D.		TOTAL HR. RUN		TYPE AMT. TYPE AMT.																					
HRS. WO/DP		BIT OR C.B.		COND. OF BIT																							
HRS. STANDBY		KELLY DOWN		REAMER NO.		DRILLER Dave Finkbe																					
TOTAL DAY WORK		TOTAL		REAMER TYPE																							
WIRE LINE RECORD		WT. OF STRING 81000 LBS.																									
REEL NO.		NO. DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR. D RM. R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO. 1		PUMP NO.		METHOD RUN SGL-S PART-L-P COM-D-C	
NO. OF LINES 8 SIZE 1 1/2		23 STANDS D.P.		BIT NO.		TIME 9:00 11:00		FROM TO																			
FEET SLIPPED		2 SINGLES D.P.		SIZE		WEIGHT 9.1 9.0																					
FEET CUT OFF		D.C. 6 1/4		MFG.		VISC.-SEC 85 55																					
PRESENT LENGTH		18 I.D. O.D.		TYPE		W.L.-C.C.																					
TON M. OR TRIPS SINCE LAST CUT		D.C.		NO. NOZZLE SIZE		FLTR. CK.																					
CUMULATIVE TON M. OR TRIPS		I.D. O.D.		SER. NO.		SD. CONT. %																					
NO. OF DAYS FROM SPUD 10		STB. BODY O.D.		DEPTH OUT		PRESSURE GRADIENT																					
CUMULATIVE ROTATING HRS.		RMR. BODY O.D.		DEPTH IN																							
		SUBS O.D.		TOTAL FTG.		MUD & CHEMICALS ADDED																					
		1 BIT OR C.B.		TOTAL HR. RUN		TYPE AMT. TYPE AMT.																					
		1 40 SUBS		COND. OF BIT																							
		KELLY DOWN 22.92 FT.		REAMER NO.		DRILLER Ray J. Lister																					
		TOTAL 2410.00 FT.		REAMER TYPE																							
		WT. OF STRING 81000 LBS.																									



A.A.O.D.C.-A.P.I. OFFICIAL DAILY DRILLING REPORT FORM



Operator: CANADIAN PELL... Report No.: Fort Norman R14 Date: April 27/72 Well No.: R14 Field or Dist: Fort Norman County: NWT

Contractor: Jennings International Drilling Division of Pancana Industries Ltd. Rig No.: 9

Drill Pipe String: 2 7/8 TYPE THD. X H Tool Joint: 6 1/4 O.D. Pumps: 1 EMSCO DA 500 16 2 EMSCO DA 600 16

Signature of Operator's Representative: Signature of Contractor's Tool Pusher: George Lindeman

Time Distribution - Hours: Morning Tour, Day Tour, Evening Tour

Drilling Assembly at End of Tour: 23 STANDS D.P. 2165.79 FT. 2 SINGLES D.P. 6 1/4 FT. 18 6 1/4 O.D. 543.55 FT. 1 STB. BODY O.D. 80 FT. 1 SUBS O.D. 150 FT. 1 BIT OR C.B. 3.00 FT. 1 JARS 780 FT. 1 KELLY DOWN 21.00 FT. TOTAL 2808.44 FT. WT. OF STRING 83000 LBS.

Bit Record: BIT NO. 8 SIZE 6 1/4 MFG. WESDILL TYPE 8 NO. 8 NOZZLE SIZE 15-70 SER. NO. 15-70 DEPTH OUT 2800 DEPTH IN 2800 TOTAL FTG. 8 TOTAL HR. RUN 3 COND. OF BIT 08 REAMER NO. REAMER TYPE DRILLER B. Wazirzho

Mud Record: TIME 4.00 WEIGHT 9.1 VISC.-SEC 46 W.L.-C.C. FLTR. CK. 9.0 SD. CONT. % PRESSURE GRADIENT

Footage: 8 FROM 2800 TO 2808 CORE NO. 1 FORMATION (SHOW CORE RECOVERY) ROTARY RPM 70 WT. ON BIT 12000 # PUMP PRESS 815 PUMP NO. 52 LINER SIZE 5 1/2 S.P.M. 52

Deviation Record: DEPTH DEVI. DIRECTION

Time Log: FROM 1200 TO 1215 ELAPSED TIME 15 MIN. DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS: Rig Service, Rig up CORE BARREL, Run in To CUT CORE No 1, Work on Pump, Circ TO CUT CORE No 1, CUT CORE No 1.

Completion Work: A. PERFORATING, B. TUBING TRIPS, C. SWABBING, D. TESTING, E. ADDITIONAL

Time Summary (Office Use Only): DAY WORK, HRS. W/DP, HRS. WO/DP, HRS. STANDBY

Drilling Assembly at End of Tour: 23 STANDS D.P. 2165.79 FT. 2 SINGLES D.P. 6 1/4 FT. 18 6 1/4 O.D. 543.55 FT. 1 STB. BODY O.D. 80 FT. 1 SUBS O.D. 150 FT. 1 BIT OR C.B. 3.00 FT. 1 JARS 780 FT. 1 KELLY DOWN 21.00 FT. TOTAL 2808.44 FT. WT. OF STRING 83000 LBS.

Bit Record: BIT NO. 8 SIZE 6 1/4 MFG. WESDILL TYPE 8 NO. 8 NOZZLE SIZE 15-70 SER. NO. 15-70 DEPTH OUT 2800 DEPTH IN 2800 TOTAL FTG. 8 TOTAL HR. RUN 3 COND. OF BIT 08 REAMER NO. REAMER TYPE DRILLER B. Wazirzho

Mud Record: TIME 8.00 WEIGHT 9.1 VISC.-SEC 45 W.L.-C.C. FLTR. CK. 9.0 SD. CONT. % PRESSURE GRADIENT

Footage: 2 FROM 2808 TO 2810 CORE NO. 1 FORMATION (SHOW CORE RECOVERY) ROTARY RPM 70 WT. ON BIT 12000 # PUMP PRESS 815 PUMP NO. 52 LINER SIZE 5 1/2 S.P.M. 52

Deviation Record: DEPTH DEVI. DIRECTION

Time Log: FROM 800 TO 815 ELAPSED TIME 15 MIN. DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS: RIG SERVICE & CHECK BOP'S, CUT 6 1/4" CORE NO 1, CIRC TO LOG, PULL CORE NO 1, RECOVER CORE NO 1, LAY DOWN CORE BARREL, RIG UP SLIMBERGIER LOGGERS & LOGGING.

Completion Work: A. PERFORATING, B. TUBING TRIPS, C. SWABBING, D. TESTING, E. ADDITIONAL

Time Summary (Office Use Only): DAY WORK, HRS. W/DP, HRS. WO/DP, HRS. STANDBY

Drilling Assembly at End of Tour: 23 STANDS D.P. 2165.79 FT. 2 SINGLES D.P. 6 1/4 FT. 18 6 1/4 O.D. 543.55 FT. 1 STB. BODY O.D. 80 FT. 1 SUBS O.D. 150 FT. 1 BIT OR C.B. 3.00 FT. 1 JARS 780 FT. 1 KELLY DOWN 21.00 FT. TOTAL 2808.44 FT. WT. OF STRING 83000 LBS.

Bit Record: BIT NO. 8 SIZE 6 1/4 MFG. WESDILL TYPE 8 NO. 8 NOZZLE SIZE 15-70 SER. NO. 15-70 DEPTH OUT 2800 DEPTH IN 2800 TOTAL FTG. 8 TOTAL HR. RUN 3 COND. OF BIT 08 REAMER NO. REAMER TYPE DRILLER B. Wazirzho

Mud Record: TIME 8.00 WEIGHT 9.1 VISC.-SEC 45 W.L.-C.C. FLTR. CK. 9.0 SD. CONT. % PRESSURE GRADIENT

Footage: 2 FROM 2808 TO 2810 CORE NO. 1 FORMATION (SHOW CORE RECOVERY) ROTARY RPM 70 WT. ON BIT 12000 # PUMP PRESS 815 PUMP NO. 52 LINER SIZE 5 1/2 S.P.M. 52

Deviation Record: DEPTH DEVI. DIRECTION

Time Log: FROM 800 TO 815 ELAPSED TIME 15 MIN. DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS: RIG SERVICE & CHECK BOP'S, CUT 6 1/4" CORE NO 1, CIRC TO LOG, PULL CORE NO 1, RECOVER CORE NO 1, LAY DOWN CORE BARREL, RIG UP SLIMBERGIER LOGGERS & LOGGING.

Completion Work: A. PERFORATING, B. TUBING TRIPS, C. SWABBING, D. TESTING, E. ADDITIONAL

Time Summary (Office Use Only): DAY WORK, HRS. W/DP, HRS. WO/DP, HRS. STANDBY



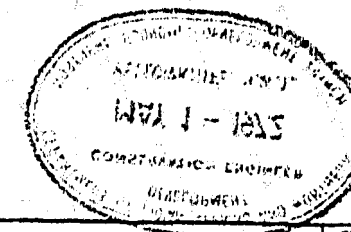
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A.A.O.D.C--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DATE *Apr. 12.3.177*



OPERATOR CANADIAN DELTA						LEASE PORT NORMAN K-14		WELL NO. K-14				FIELD OR DIST. PORT NORMAN				COUNTY		STATE NWT											
CONTRACTOR Jennings International Drilling Division of Pancana Industries Ltd.						RIG NO. 9	DRILL PIPE STRING NO. 2 SIZE 7 1/8" TYPE THD. XH		TOOL JOINT 604 O.D.		PUMPS				LAST CASING TUBING OR LINER		SIZE 7 7/8"	MAKE NEW	WT. & GR. 36"	NO. JOINTS 10	FEET 321	RKB. TO CSG. HD. 321	SET AT 321	REMARKS					
SIGNATURE OF OPERATOR'S REPRESENTATIVE <i>[Signature]</i>						SIGNATURE OF CONTRACTOR'S TOOL PUSHER <i>[Signature]</i>																							
TIME DISTRIBUTION-HOURS																													
MORN		DAY		EVE																									
RIG UP & TEAR DOWN																													
DRILLING ACTUAL		7 1/2		7 1/2																									
REAMING																													
CONDITIONING MUD & CIRCULATING																													
TRIPS																													
LUBRICATE RIG		1 1/4		1 1/4																									
DEVIATION SURVEY		1 1/4		1 1/4																									
TEST B.O.P.																													
CUT OFF DRILLING LINE																													
REPAIR RIG																													
CORING																													
WIRE LINE LOGGING																													
RUNNING CASING & CEMENTING																													
WAITING ON CEMENT																													
DRILL STEM TEST																													
OTHER																													
FISHING																													
COMPLETION WORK																													
A. PERFORATING																													
B. TUBING TRIPS																													
C. SWABBING																													
D. TESTING																													
E. ADDITIONAL																													
TOTALS		8		8																									
TIME SUMMARY (OFFICE USE ONLY)																													
DAY WORK																													
HRS. W/D.P.																													
HRS. WO/D.P.																													
HRS. STANDBY																													
TOTAL DAY WORK																													
WIRE LINE RECORD																													
REEL NO.																													
NO. OF LINES		8		SIZE 1 1/8"																									
FEET SLIPPED																													
FEET CUT OFF																													
PRESENT LENGTH																													
TON MI. OR TRIPS SINCE LAST CUT																													
CUMULATIVE TON MI. OR TRIPS																													
NO. OF DAYS FROM SPUD		8																											
CUMULATIVE ROTATING HRS.																													
MORNING TOUR																													
NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR. D RM-R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000#		PUMP PRESS		PUMP NO. 1		PUMP NO.		METHOD RUN			
21		STANDS D.P. 2039.67 FT.		BIT NO. 9		TIME 200 400 700		FROM 2590 TO 2680		D		D		FORMATION		45		35		130		52		60		Q			
2		SINGLES D.P. 55.66 FT.		SIZE 8 3/4		WEIGHT 91 91 91		VISC.-SEC 70 70 50																					
2		D.C. Sq		MFG. H.W.		VISC.-SEC 70 70 50																							
2		I.D. O.D. 55.66 FT.		TYPE 5-55		W.L.-C.C.																							
18		D.C. 6 1/4		NOZZLE NO. 3		FLTR. CK.																							
1		STB. BODY O.D. 8.63 FT.		SER. NO. KW839		SD. CONT. %																							
1		STB. BODY O.D. 5.80 FT.		DEPTH OUT		PRESSURE GRADIENT																							
1		RM.R. BODY O.D. 5.50 FT.		DEPTH IN 2542																									
1		SUBS O.D. 1.70 FT.		TOTAL FTG. 138		MUD & CHEMICALS ADDED																							
1		BIT OR C.B. .50 FT.		TOTAL HR. RUN 12 1/2		COND. OF BIT OK																							
1		% SUB 1.05 FT.		REAMER NO.		REAMER TYPE																							
1		KELLY DOWN 18.00 FT.		DRILLER B. Wosington																									



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A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DATE Dec 12 1972

WFA 1-1025



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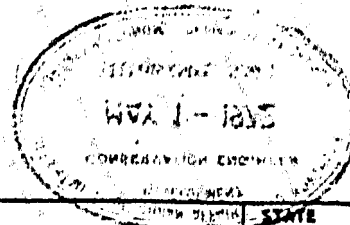
A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM



DAILY DRILLING REPORT

REPORT NO. 2

DATE April 19/72

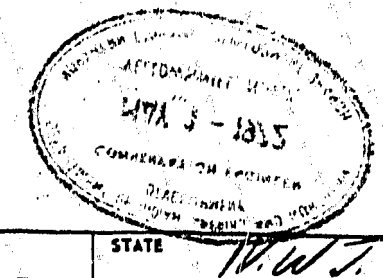


OPERATOR		LEASE		WELL NO.		FIELD OR DIST.		COUNTY		STATE														
CANADIAN DELTA		Fort Norman X14		K11		Fort Norman		NT		NT														
CONTRACTOR		RIG NO.	DRILL PIPE STRING	TOOL JOINT	PUMPS		LAST CASING TUBING OR LINER		SIZE		MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS							
Jennings International Drilling		9	2 1/2"	6 1/4" O.D.	1. EMSCO DA500 16		2. EMSCO DA500 16		9 1/4"		New	36"	10	321		321								
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOL PUSHER		NO.		MANUFACTURER	TYPE	STROKE LENGTH	NO.		MANUFACTURER	TYPE	STROKE LENGTH	NO.		MANUFACTURER	TYPE	STROKE LENGTH						
				1.		EMSCO	DA500	16	2.		EMSCO	DA500	16	3.										
TIME DISTRIBUTION-HOURS		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR. D R.M.R. CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1	PUMP NO.	METHOD RUN	
MORN DAY EVE		3		STANDS D.P. 282.95 FT.		BIT NO. HW		TIME		FROM 450		TO 941		D				70	25	11	55	60		
RIG UP & TEAR DOWN		18		SINGLES D.P. 6 1/4"		SIZE 8 3/4"		WEIGHT		FROM 1200		TO 1215		1/4		R. & Serv.								
DRILLING ACTUAL 7 1/2		18		D.C. 562.79 FT.		MFG. X16		VISC.-SEC		FROM 1215		TO 1245		2 1/2		Drill 8 3/4" HOLE								
REAMING		2		D.C. 556.6 FT.		NO. 3		FLTR. CK.		FROM 1245		TO 800		1/4		SURVEY								
CONDITIONING MUD & CIRCULATING		1		STB. BODY O.D. 582 FT.		SER. NO. 31329		SD. CONT. %		FROM 800		TO 815		1/4		RIG SERVICE & CHECK BOP'S O.K.								
TRIPS		1		STB. BODY O.D. 863 FT.		DEPTH OUT		PRESSURE GRADIENT		FROM 815		TO 1015		2		DRLG 8 3/4" HOLE								
LUBRICATE RIG 1/4		1		RMR. BODY O.D. 550 FT.		DEPTH IN		TOTAL FTG.		FROM 1015		TO 1030		3/4		SURVEY								
DEVIATION SURVEY 1/4		1		SUBS. O.D. 170 FT.		TOTAL HR. RUN		COND. OF BIT		FROM 1030		TO 1045		3/4		DRLG 8 3/4" HOLE								
TEST B.O.P.		1		BIT OR C.B. 50 FT.		REAMER NO.		REAMER TYPE		FROM 1045		TO 1100		1/2		SURVEY								
CUT OFF DRILLING LINE 1/2		1		KELLY DOWN 41.00 FT.		COND. OF BIT		REAMER NO.		FROM 1100		TO 1130		1/2		DRLG 8 3/4" HOLE								
REPAIR RIG		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1130		TO 1145		1/2		SURVEY								
CORING		1		WT. OF STRING 60.000 LBS.		REAMER TYPE		DRILLER B. W. Brainerd		FROM 1145		TO 1200		1/2		SURVEY								
WIRE LINE LOGGING		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1200		TO 1215		1/4		R. & Serv.								
RUNNING CASING & CEMENTING		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1215		TO 1245		2 1/2		Drill 8 3/4" HOLE								
WAITING ON CEMENT		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1245		TO 800		1/4		SURVEY								
DRILL STEM TEST		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 800		TO 815		1/4		RIG SERVICE & CHECK BOP'S O.K.								
OTHER		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 815		TO 1015		2		DRLG 8 3/4" HOLE								
FISHING		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1015		TO 1030		3/4		SURVEY								
COMPLETION WORK		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1030		TO 1045		3/4		DRLG 8 3/4" HOLE								
A. PERFORATING		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1045		TO 1100		1/2		SURVEY								
B. TUBING/TRIPS		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1100		TO 1130		1/2		DRLG 8 3/4" HOLE								
C. SWABBING		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1130		TO 1145		1/2		SURVEY								
D. TESTING		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1145		TO 1200		1/2		SURVEY								
E. ADDITIONAL		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1200		TO 1215		1/4		R. & Serv.								
TOTALS		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1215		TO 1245		2 1/2		Drill 8 3/4" HOLE								
TIME SUMMARY (OFFICE USE ONLY)		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1245		TO 800		1/4		SURVEY								
DAY WORK		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 800		TO 815		1/4		RIG SERVICE & CHECK BOP'S O.K.								
HRS. W/DP		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 815		TO 1015		2		DRLG 8 3/4" HOLE								
HRS. W/O/DP		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1015		TO 1030		3/4		SURVEY								
HRS. STANDBY		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1030		TO 1045		3/4		DRLG 8 3/4" HOLE								
TOTAL DAY WORK		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1045		TO 1100		1/2		SURVEY								
WIRE LINE RECORD		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1100		TO 1130		1/2		DRLG 8 3/4" HOLE								
REEL NO.		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1130		TO 1145		1/2		SURVEY								
NO. OF LINES 8 SIZE 1 1/2		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1145		TO 1200		1/2		SURVEY								
FEET SLIPPED		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1200		TO 1215		1/4		R. & Serv.								
FEET CUT OFF		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1215		TO 1245		2 1/2		Drill 8 3/4" HOLE								
PRESENT LENGTH		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1245		TO 800		1/4		SURVEY								
TON M. OR TRIPS SINCE LAST CUT		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 800		TO 815		1/4		RIG SERVICE & CHECK BOP'S								
CUMULATIVE TON M. OR TRIPS		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 815		TO 1015		2		DRLG 8 3/4" HOLE								
NO. OF DAYS FROM SPUD		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1015		TO 1030		3/4		SURVEY								
CUMULATIVE ROTATING HRS.		1		TOTAL 944.21 FT.		REAMER NO.		REAMER TYPE		FROM 1030		TO 1045		3/4		DRLG 8 3/4" HOLE								



A.A.O.D.C.-A.P.I. OFFICIAL DAILY DRILLING REPORT FORM





DAILY DRILLING REPORT

REPORT NO. 2 DATE April 17/72

OPERATOR CANADIAN DECHI LEASE FORT NORMAN

CONTRACTOR Jennings International Drilling Division of Pancan Industries Ltd.

RIG NO. DRILL PIPE STRING NO. 2 SIZE 4 1/2" TOOL JOINT 6 1/4" O.D. TYPE THD. XH

WELL NO. K-17 FIELD OR DIST. FORT NORMAN COUNTY STATE W.V.

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA 500	16"
3.			

LAST CASING TUBING OR LINER

SIZE 9 5/8" MAKE NEW WT. & GR. #36 NO. JOINTS 10 FEET RKB. TO CSG. HD. SET AT 321' REMARKS 250 SACKS CEMENT 2% CCL

SIGNATURE OF OPERATOR'S REPRESENTATIVE SIGNATURE OF CONTRACTOR'S TOOL PUSHER

George Lindholm

TIME DISTRIBUTION-HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	14	14	
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT	6 3/4	1	
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK			
A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	6 3/4	8	
TIME SUMMARY (OFFICE USE ONLY)			
DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			
WIRE LINE RECORD			
REEL NO.			
NO. OF LINES	8	SIZE	1 1/8"
FEET SLIPPED			
FEET CUT OFF			
PRESENT LENGTH			
TON M. OR TRIPS SINCE LAST CUT			
CUMULATIVE TON M. OR TRIPS			
NO. OF DAYS FROM SPUD	2		
CUMULATIVE ROTATING HRS.			

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	BIT RECORD	MUD RECORD	FOOTAGE	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE S.P.M.	PUMP NO. LINER SIZE S.P.M.	METHOD RUN SOL-S PAR-P COM-C
	STANDS D.P. FT.	BIT NO.	TIME	FROM	TO								
	SINGLES D.P. FT.	SIZE	WEIGHT										
	D.C.	MFG.	VISC.-SEC										
	I.D. O.D. FT.	TYPE	W.L.-C.C.										
	D.C.	NOZZLE NO. SIZE	FLTR. CK.										
	I.D. O.D. FT.	PH	SD. CONT. %										
	STB. BODY O.D. FT.	SER. NO.	PRESSURE GRADIENT										
	STB. BODY O.D. FT.	DEPTH OUT											
	RMR. BODY O.D. FT.	DEPTH IN											
	SUBS O.D. FT.	TOTAL FTG.	MUD & CHEMICALS ADDED TYPE AMT. TYPE AMT.										
	BIT OR C.B. FT.	TOTAL HR. RUN											
	KELLY DOWN FT.	COND. OF BIT											
	TOTAL FT.	REAMER NO.											
	WT. OF STRING LBS.	REAMER TYPE	DRILLER David Frykbo										

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	BIT RECORD	MUD RECORD	FOOTAGE	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE S.P.M.	PUMP NO. LINER SIZE S.P.M.	METHOD RUN SOL-S PAR-P COM-C
	STANDS D.P. FT.	BIT NO.	TIME	FROM	TO								
	SINGLES D.P. FT.	SIZE	WEIGHT										
	D.C.	MFG.	VISC.-SEC										
	I.D. O.D. FT.	TYPE	W.L.-C.C.										
	D.C.	NOZZLE NO. SIZE	FLTR. CK.										
	I.D. O.D. FT.	PH	SD. CONT. %										
	STB. BODY O.D. FT.	SER. NO.	PRESSURE GRADIENT										
	STB. BODY O.D. FT.	DEPTH OUT											
	RMR. BODY O.D. FT.	DEPTH IN											
	SUBS O.D. FT.	TOTAL FTG.	MUD & CHEMICALS ADDED TYPE AMT. TYPE AMT.										
	BIT OR C.B. FT.	TOTAL HR. RUN											
	KELLY DOWN FT.	COND. OF BIT											
	TOTAL FT.	REAMER NO.											
	WT. OF STRING LBS.	REAMER TYPE	DRILLER Roy J. Lester										

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	BIT RECORD	MUD RECORD	FOOTAGE	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE S.P.M.	PUMP NO. LINER SIZE S.P.M.	METHOD RUN SOL-S PAR-P COM-C
	STANDS D.P. FT.	BIT NO.	TIME	FROM	TO								
	SINGLES D.P. FT.	SIZE	WEIGHT										
	D.C.	MFG.	VISC.-SEC										
	I.D. O.D. FT.	TYPE	W.L.-C.C.										
	D.C.	NOZZLE NO. SIZE	FLTR. CK.										
	I.D. O.D. FT.	PH	SD. CONT. %										
	STB. BODY O.D. FT.	SER. NO.	PRESSURE GRADIENT										
	STB. BODY O.D. FT.	DEPTH OUT											
	RMR. BODY O.D. FT.	DEPTH IN											
	SUBS O.D. FT.	TOTAL FTG.	MUD & CHEMICALS ADDED TYPE AMT. TYPE AMT.										
	BIT OR C.B. FT.	TOTAL HR. RUN											
	KELLY DOWN FT.	COND. OF BIT											
	TOTAL FT.	REAMER NO.											
	WT. OF STRING LBS.	REAMER TYPE	DRILLER Bob Worthington										

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

12:00 12:15 14 RIG SERVICE

12:15 8:00 7:34 CIRC. WAIT ON B.S.

8:00 8:15 24 RIG SERVICE

8:15 4:00 7:34 CIRC. WAIT ON B.S.

4:00 4:15 2 RIG SERVICE

4:15 6:00 124 CIRC. CASING F W/O B.S.

6:00 7:00 1 CEMENT CASING @ 321' WITH 250 SKS. CEMENT

7:00 12:00 5 WOC 2% CACL

PLUG DOWN AT 7:00 P.M.



DAILY DRILLING REPORT

REPORT NO. 1

DATE APR. 16/72

OPERATOR		LEASE		WELL NO.	FIELD OR DIST.	COUNTY	STATE																						
CANADIAN DELHS				N-14	PORT NORMAN		N.W.T.																						
CONTRACTOR		RIG NO.	DRILL PIPE STRING	TOOL JOINT	PUMPS			NO.	MANUFACTURER	TYPE	STROKE LENGTH	LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS									
Jennings International Drilling		9	2 4 5	6 4 O.D.				1.	EMSCO	DA-500	16																		
Division of Panca Industries Ltd.				TYPE THD. XH				2.	EMSCO	DA-500	16																		
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOL PUSHER																											
TIME DISTRIBUTION-HOURS		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR-D RML-R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000 #		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
RIG UP & BREAKDOWN		8		STANDS D.P. FT.		BIT NO. 1A		TIME		FROM 0		TO 286		D		SPUD IN @ 12:00 AM		571		950		7"		5 1/2					
DRILLING ACTUAL		7 1/4		SINGLES D.P. FT.		SIZE 13 3/4		WEIGHT		VISC.-SEC																			
REAMING		3 3/4		D.C. 6 1/4		MFG. HW		VISC.-SEC		W.L.-C.C.																			
CONDITIONING MUD & CIRCULATING		1 1/2		I.D. O.D. 240.61		TYPE OSC3J		FLTR. CK.		NO. 3																			
TRIPS		1 1/2		D.C.		NO. 3		PH		SIZE 16																			
LUBRICATE RIG		1/4 1/4		STB. BODY O.D. FT.		SER. NO. 30225		SD. CONT. %																					
DEVIATION SURVEY		3/4 1/4		STB. BODY O.D. FT.		DEPTH OUT		PRESSURE GRADIENT																					
TEST B.O.P.				RMR. BODY O.D. FT.		DEPTH IN																							
CUT OFF DRILLING LINE				SUBS. 46.0		TOTAL FTG. 286																							
REPAIR RIG				BIT OR C.B. 1.00		TOTAL HR. RUN 7		COND. OF BIT 0/B																					
CORING				KELLY DOWN 41.00		REAMER NO.		REAMER TYPE		DRILLER Dave Fykes																			
WIRE LINE LOGGING				TOTAL 286.66																									
RUNNING CASING & CEMENTING		1		WT. OF STRING 26,000																									
WAITING ON CEMENT																													
DRILL STEM TEST																													
OTHER																													
FISHING																													
COMPLETION WORK																													
A. PERFORATING																													
B. TUBING TRIPS																													
C. STABBING																													
D. TESTING																													
E. ADDITIONAL																													
TOTALS		8 8																											
TIME SUMMARY (OFFICE USE ONLY)																													
DAY WORK																													
HRS. W/DP																													
HRS. WO/DP																													
HRS. STANDBY																													
TOTAL DAY WORK																													
WIRE LINE RECORD																													
REEL NO.																													
NO. OF LINES		8		SIZE 1 1/8																									
FEET SLIPPED																													
FEET CUT OFF																													
PRESENT LENGTH																													
TONS OR TRIPS SINCE LAST CUT																													
CUMULATIVE TON OR TRIPS																													
NO. OF DAYS FROM SPUD																													
CUMULATIVE ROTATING HR.																													



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A.A.O.D.C.-A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DATE PA 1/15/72



A.A.O.D.C--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO.

DATE

April 14/72

OPERATOR CANADIAN DELHI		LEASE		WELL NO. R17		FIELD OR DIST. PORT NORMAN		COUNTY		STATE NWT						
CONTRACTOR Jennings International Drilling Division of Pancana Industries Ltd.		RIG NO. 9	DRILL PIPE STRING NO. 2 SIZE 4 1/2 TYPE THD. XH	TOOL JOINT 6 1/2 O.D.	PUMPS		LAST CASING TUBING OR LINER		SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOL PUSHER <i>George Lindstrom</i>		1. EMSCO DA 500 16"		2. EMSCO DA 500 16"		3.								

TIME DISTRIBUTION—HOURS				NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		DR-D RM-R CORE-C		CORE NO.		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000 #		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
						STANDS D.P. FT.		BIT NO.		TIME		FROM		TO																	
RIG UP & TEAR DOWN						SINGLES D.P. FT.		SIZE		WEIGHT																					
DRILLING ACTUAL						D.C.		MFG.		VISC.-SEC																					
REAMING						I.D. O.D. FT.		TYPE		W.L.-C.C.																					
CONDITIONING MUD & CIRCULATING						D.C.		NOZZLE NO.		FLTR. CK.																					
TRIPS						I.D. O.D. FT.		SER. NO.		SD. CONT. %																					
LUBRICATE RIG						STB. BODY O.D. FT.		DEPTH OUT		PRESSURE GRADIENT																					
DEVIATION SURVEY						STB. BODY O.D. FT.		DEPTH IN																							
TEST B.O.P.						RMR. BODY O.D. FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																					
CUT OFF DRILLING LINE						SUBS O.D. FT.		TOTAL HR. RUN		COND. OF BIT																					
REPAIR RIG						BIT OR C.B. FT.		REAMER NO.		DRILLER <i>Dave Fykes</i>																					
CORING						KELLY DOWN FT.		REAMER TYPE																							
WIRE LINE LOGGING						TOTAL FT.																									
RUNNING CASING & CEMENTING						WT. OF STRING LBS.																									
WAITING ON CEMENT																															
DRILL STEM TEST																															
OTHER																															
FISHING																															
A. PERFORATING																															
B. TUBING TRIPS																															
C. SWABBING																															
D. TESTING																															
E. ADDITIONAL																															
TOTALS																															
TIME SUMMARY (OFFICE USE ONLY)																															
DAY WORK																															
HRS. W/DP																															
HRS. WO/DP																															
HRS. STANDBY																															
TOTAL DAY WORK																															
WIRE LINE RECORD																															
REEL NO.																															
NO. OF LINES SIZE																															
FEET SLIPPED																															
FEET CUT OFF																															
PRESENT LENGTH																															
TON MI. OR TRIPS SINCE LAST CUT																															
CUMULATIVE TON MI. OR TRIPS																															
NO. OF DAYS FROM SPUD																															
CUMULATIVE ROTATING HRS.																															



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DAILY DRILLING REPORT

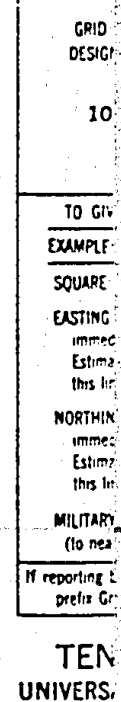
REPORT NO.

DATE 15 Apr. 72

OPERATOR		LEASE		WELL NO.		FIELD OR DIST.		COUNTY		STATE															
CANADIAN DELHI				R17		Fort Norman																			
CONTRACTOR		RIG NO.	DRILL PIPE STRING	TOOL JOINT	PUMPS		LAST CASING TUBING OR LINER		REMARKS																
Jennings International Drilling		9	2 4 3	TYPE THD. XH	1. MANUFACTURER EMSCO 2. TYPE DA-500 3. STROKE LENGTH 16																				
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOL PUSHER																							
TIME DISTRIBUTION-HOURS		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000 #		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
RIG UP & TEAR DOWN		STANDS D.P.		FT.		BIT NO.		TIME		FROM		TO		CORE NO.											
DRILLING ACTUAL		SINGLES D.P.		FT.		SIZE		WEIGHT																	
REAMING		D.C.				MFG.		VISC.-SEC																	
CONDITIONING MUD & CIRCULATING		I.D. O.D.		FT.		TYPE		W.L.-C.C.																	
TRIPS		D.C.				NOZZLE		NO.																	
LUBRICATE RIG		I.D. O.D.		FT.		SIZE		FLTR. CK.																	
DEVIATION SURVEY		STB. BODY O.D.		FT.		SER. NO.		SD. CONT. %																	
TEST B.O.P.		STB. BODY O.D.		FT.		DEPTH OUT		PRESSURE GRADIENT																	
CUT OFF DRILLING LINE		RMR. BODY O.D.		FT.		DEPTH IN																			
REPAIR RIG		SUBS O.D.		FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																	
CORING		BIT OR C.B.		FT.		TOTAL HR. RUN		TYPE																	
WIRE LINE LOGGING		KELLY DOWN		FT.		COND. OF BIT																			
RUNNING CASING & CEMENTING		TOTAL		FT.		REAMER NO.																			
WAITING ON CEMENT		WT. OF STRING		LBS.		REAMER TYPE		DRILLER																	
								Ray J. Lester																	
DRILL STEM TEST		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000 #		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
OTHER		STANDS D.P.		FT.		BIT NO.		TIME		FROM		TO		CORE NO.											
FISHING		SINGLES D.P.		FT.		SIZE		WEIGHT																	
COMPLETION WORK		D.C.				MFG.		VISC.-SEC																	
A. PERFORATING		I.D. O.D.		FT.		TYPE		W.L.-C.C.																	
B. TUBING TRIPS		D.C.				NOZZLE		NO.																	
C. SWABBING		I.D. O.D.		FT.		SIZE		FLTR. CK.																	
D. TESTING		STB. BODY O.D.		FT.		SER. NO.		SD. CONT. %																	
E. ADDITIONAL		STB. BODY O.D.		FT.		DEPTH OUT		PRESSURE GRADIENT																	
TOTALS		RMR. BODY O.D.		FT.		DEPTH IN																			
TIME SUMMARY (OFFICE USE ONLY)		SUBS O.D.		FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																	
DAY WORK		BIT OR C.B.		FT.		TOTAL HR. RUN		TYPE																	
HRS. W/DP		KELLY DOWN		FT.		COND. OF BIT																			
HRS. WO/DP		TOTAL		FT.		REAMER NO.																			
HRS. STANDBY		WT. OF STRING		LBS.		REAMER TYPE		DRILLER																	
								B. W. S. W. S.																	
TOTAL DAY WORK		NO.		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		FORMATION (SHOW CORE RECOVERY)		ROTARY RPM		WT. ON BIT 1000 #		PUMP PRESS		PUMP NO.		PUMP NO.		METHOD RUN	
WIRE LINE RECORD		STANDS D.P.		FT.		BIT NO.		TIME		FROM		TO		CORE NO.											
RES. NO.		SINGLES D.P.		FT.		SIZE		WEIGHT																	
NO. OF LINES		D.C.				MFG.		VISC.-SEC																	
FEET SLIPPED		I.D. O.D.		FT.		TYPE		W.L.-C.C.																	
FEET CUT OFF		D.C.				NOZZLE		NO.																	
PRESENT LENGTH		I.D. O.D.		FT.		SIZE		FLTR. CK.																	
TON M. OR TRIPS SINCE LAST CUT		STB. BODY O.D.		FT.		SER. NO.		SD. CONT. %																	
CUMULATIVE TON M. OR TRIPS		STB. BODY O.D.		FT.		DEPTH OUT		PRESSURE GRADIENT																	
NO. OF DAYS FROM SPUD		RMR. BODY O.D.		FT.		DEPTH IN																			
CUMULATIVE ROTATING HRS.		SUBS O.D.		FT.		TOTAL FTG.		MUD & CHEMICALS ADDED																	
		BIT OR C.B.		FT.		TOTAL HR. RUN		TYPE																	
		KELLY DOWN		FT.		COND. OF BIT																			
		TOTAL		FT.		REAMER NO.																			
		WT. OF STRING		LBS.		REAMER TYPE		DRILLER																	
								Steve Frykas																	



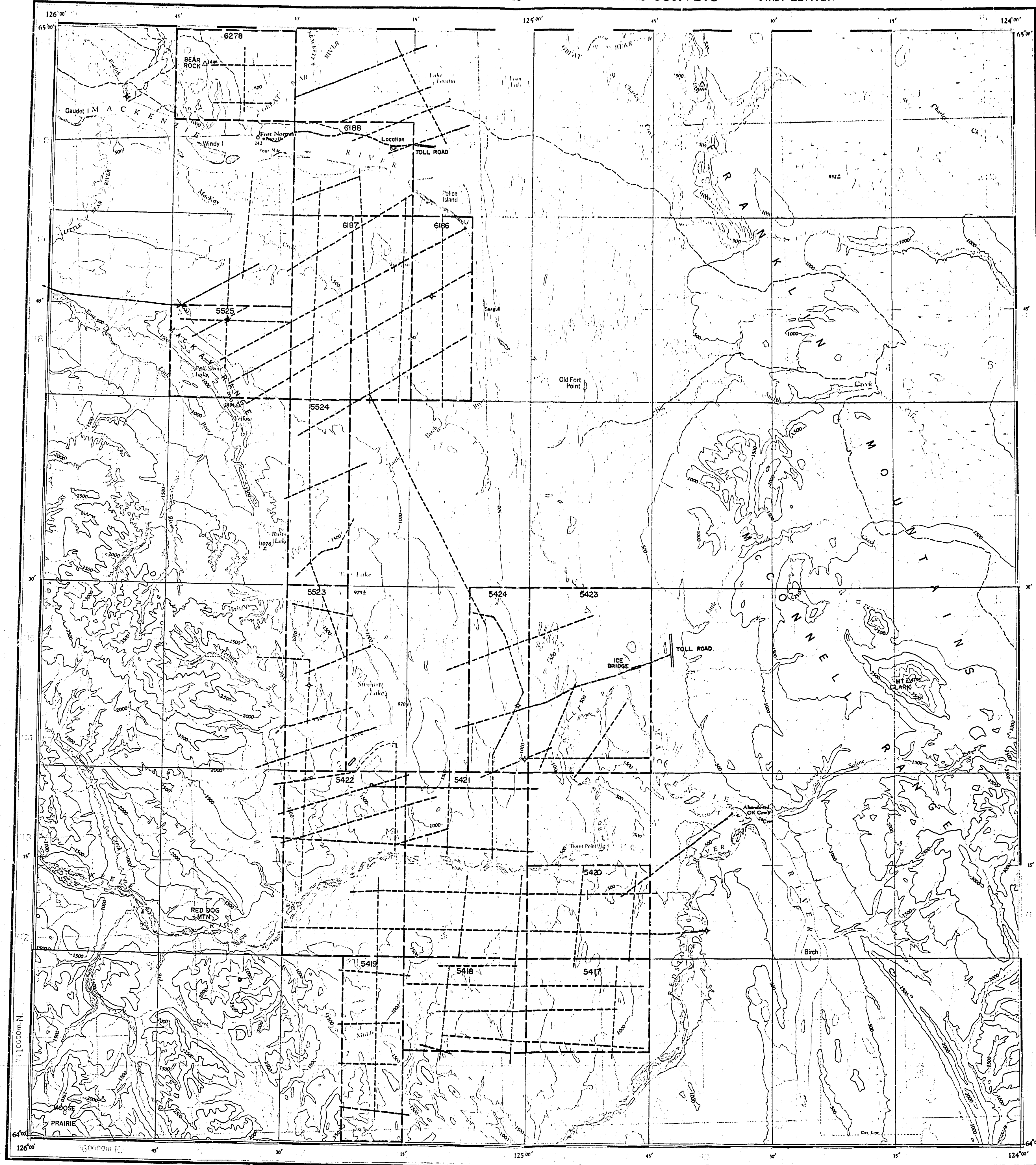
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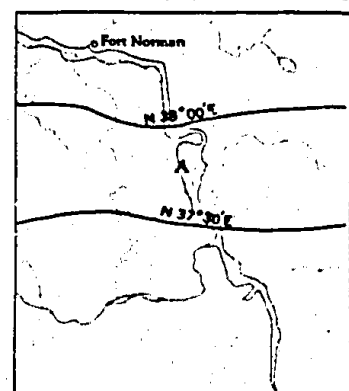
On the above index the published area shown first

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Ottawa.

Airfield, on Land... ☒ Water... ☒ Landing Ground... ☒ Anchorage...
 Power Transmission Line

Refer to
this Map

DECLINATION OF THE COMPASS NEEDLE, 1957



The declination of the compass needle at any place along a red line is the declination on that red line. At other places the declination is between those given on the neighboring red lines; thus at the place marked A, the declination is between N. 37° 30' E. and N. 38° E. The accuracy of declination of the compass needle are decreasing 7.5 minutes annually.

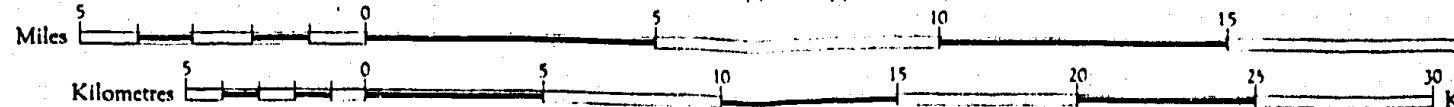
Surveyed, 1951. Compiled, drawn and printed by the
ARMY SURVEY ESTABLISHMENT R.C.E., 1956-57
Aerial photography by the R.C.A.F., 1949

REFERENCE

Road, Hard Surface, All Weather	More than 2 Lanes Wide
" " " " " " " "	2 Lanes, Roadway
" " " " " " " "	Less than 2
" " " " " " " "	2 Lanes Wide or More
" " " " " " " "	All Weather
" " " " " " " "	Less than 2 Lanes
Cart Track, Trail	Cart Track
Railway, Multiple Track	Single Track
Boundary, International	Province or State
" " " " " " " "	County or District
" " " " " " " "	Reservations, Indian, Military, etc.

FORT NORMAN DISTRICT OF MACKENZIE NORTHWEST TERRITORIES

Scale 1: 250,000
1 Inch to 4 Miles approximately.



Copies may be obtained from
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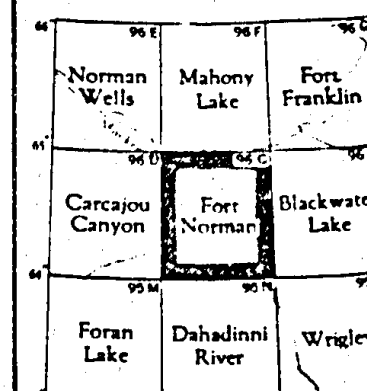
CANDEL OIL LTD.

FORT NORMAN

PROPOSED WELL LOCATION

- Proposed Well Location (S.P. 119)
- Access Road
- Existing Seismic

Artificially on Line ... Water ... Landing Ground ... Anchorage ...
Power Transmission Line



On the above index the ... published one ...