

Drilling Authority No. 539
Date Issued 8-10-71

WELL NAME ARCO et al Hume River D-53
FIELD Area:
LOCATION: Unit D Section 53 Grid 66-00-129-00
Latitude 65°52'03" Longitude 129°11'00"
U.W.L.R. 65.86750 - 129.18337
U.W.I. 30.0536600129000

Rig Release Date: 11-02-72
Status D + A
Information Release Date: 11-02-74

CHANGE OF NAME:

DATE RECEIVED	INDEX
8-10-71	Application for a Drilling Authority.
02-01-73	Well Completion Data.
02-01-73	Well History Report.
	Application to Amend a Drilling Authority.
19-10-71	Application to change a Well Name.
10-05-71	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.
04-02-72	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.....

DATE RECEIVED																																					
LOGS: <table><thead><tr><th>Name</th><th>Run No.</th><th>Type</th><th>Interval</th></tr></thead><tbody><tr><td>SNP</td><td>1</td><td></td><td></td></tr><tr><td>BHC-S</td><td>1</td><td></td><td></td></tr><tr><td>DIL</td><td>1</td><td></td><td></td></tr><tr><td>FDC</td><td>1</td><td></td><td></td></tr><tr><td>HR-Dip</td><td>1</td><td></td><td></td></tr></tbody></table> ANALYSES: <table><thead><tr><th>Sample</th><th>Lab. No.</th><th>Formation</th><th>Interval</th></tr></thead><tbody></tbody></table> <table><thead><tr><th>A.O.F. Potential</th><th>Formation</th><th>Interval</th><th>MC.F.D.</th><th>Test Date</th></tr></thead><tbody></tbody></table> DRILL STEM TESTS: <table><thead><tr><th>No.</th><th>Formation</th><th>Interval</th></tr></thead><tbody></tbody></table>		Name	Run No.	Type	Interval	SNP	1			BHC-S	1			DIL	1			FDC	1			HR-Dip	1			Sample	Lab. No.	Formation	Interval	A.O.F. Potential	Formation	Interval	MC.F.D.	Test Date	No.	Formation	Interval
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WELL COMPLETION DATA
RENSEIGNEMENTS SUR LES FORAGES

Drilling Authority No. 539
N° de l'autorisation de forage
Date Issued October 8, 1971
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 ARCO Clarke et al Hume River D-53	Permit No. — N° de permis 3290	Lease No. — N° de concession
Exploratory Licence No. — N° de licence de sondage 1821 and 1943		
Operator — (Exécutant) Atlantic Richfield Canada Ltd.		Exploratory Licence No. — N° de licence de sondage 1821

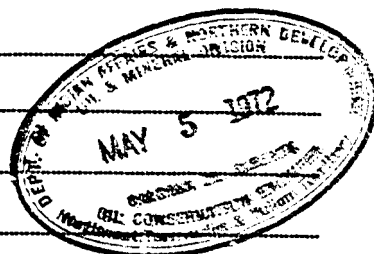
LOCATION — EMPLACEMENT

Unit — Unité D	Section 53	Grid — Étendue quadrillée 66-00-129-00	Latitude 65°52'03"	Longitude 129°11'00"
Unique Well Identifier — Code d'ordinateur 300D536600129000			Universal Well Location Reference — Références universelles d'emplacement du puits Lat. 65.86750° N Long. 129.18333° W	

	Date	Depth — Profondeur
Spudded Début des travaux	1-20-72	
Suspended Suspension des travaux		
Resumed Operations Reprise des travaux		
Finished Drilling Forage terminé	Feb-6-72	4159
Deepened Approfondissement		
Complete (Gas/Oil) Achèvement (Gaz/Pétrole)		
Abandoned Abandon	Feb-11-72	Surface
Rig Released Fin des travaux	Feb-11-72	

Pool(s)
Gisement(s)

Interval(s) Open to Production
Intervalle(s) de production



Elevation: Gr. 275 K.B. 290
Altitude du sol du carré d'entraînement

Rig No. 11 Drilling Contractor Regent Drilling
N° de la tour de forage Entrepreneur en forage

Contractor's Business Licence No. 983
N° du permis de l'entrepreneur

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. 13 3/8	H-40	48		110 KB	300 sz Permafrost cmt
2. 9 5/8	J-55	36		613 KB	324 sz cmt + 2% CaCl2
3.					
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
Cretaceous	75		1613	1673	60		
Imperial	?	+1183					
Middle Devonian			3741	3791	50		
Kee Scarp	1605	-1326					
Platform	1940	-1664					
Hare Indian	2078	-1794					
Hume	2730	-2450					

Geological Tops Sommet des formations			Log Record — Diagrammes			
			Run Série	Type of Log Genre de diagramme	From — De	To — À
Lower Devonian						
Bear Rock Limestone	3040	-2760	✓1	DILL	4154	613
Bear Rock Dolomite	3610	-3330	✓1	BHC-Sonic	4159	613
			✓1	SNP	4159	613
Siluro-Ordovician			✓1	FD L	4159	613
			✓1	Dipmeter	4159	613
Ronning Group	3875	-3638				
Total Depth	3950	-3869				



Drilling Authority No. 539

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION

Application to Abandon a Well or ~~Suspend Drilling~~

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to abandon, ~~the suspended drilling~~

Name and number of well ARCC Clarke et al Eume River D-53
Location: Unit D Section 53 Grid 66-00-129-00
Latitude 65°52'03" Longitude 129°11'00"
From Established Reference Marker
Universal Well Location Reference Lat. 65.86750° N. Long. 129.18333° W
Permit No. 3290 Lease No.

Atlantic Richfield Canada Ltd.
Canada Cities Service Ltd., Triad Petroleum
(Permittee, Licencee, Lessee) Dev. Ltd.

Date of commencement of proposed program

OIL, GAS, AND WATER ENCOUNTERED
(Depths)

Oil at --
Gas at --
Water at --
Total Depth 4159 Date of last operations February 11, 1972
Present condition of well Plugged and abandoned

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Sacks of Cement and Additives	Amount Pulled
1. 13 3/8	48#		110' KB	300 sx Permafrost cmt	--
2. 9 5/8	36		613' KB	324 sx Cmt + 2% CaCl2	--
3.					
4.					
5.					

PROPOSED ABANDONMENT PROGRAM

Plug		Geological Formation	Number of Sacks of Cement	Remarks
No.	Position			
1	4159-3600	Bear Rock-Siluro-Ordovician	280	No Feel
2	1800-1550	Kee Scarp	150	Felt at 1495'
3	"Terrestrial Heat Flow Monitoring". Ran 58 jts (1206.18') of 2", 3.75# T&C line pipe & landed at 1215.18' KB. Cemented with 382 sx cement + 3% CaCl2. Cement was preceded by 5 bbls water, 20 bbls diesel, 25 bbls water & diesel returns were obtained at surface when displacing cement. 4.8 bbls. of diesel were used to displace the cement.			

The following logs have been run DILL, BHC-SGrC, SNP, FD, Dipmeter
Other operations proposed --

Operations to be carried out by Regent Drilling Limited Contractor Licence No. 983
Address 12912 125 Avenue, Edmonton, Alberta Address
Responsible Agent in field P. J. Murray
Dated at Edmonton, this 4 Day of May 1972
Signed by (Original Signed) J. K. BIRRELL Company Atlantic Richfield Canada Ltd.
Title Area Drilg. & Prod. Supervisor Operator's Exploratory Licence No.

Note:—The District Conservation Engineer's office must be notified before work is commenced.

(For OIL AND MINERAL DIVISION use only)

APPROVAL

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

Confirming oral approval given by Mr. M. D. Thomas
on the 10th February 1972.

Dated May 10, 1972

M. D. Thomas
District Conservation Engineer



N° de l'autorisation de forage.

MINISTÈRE DES AFFAIRES INDIENNES ET DU NORD CANADIEN

DIVISION DU PÉTROLE ET DES MINÉRAUX

Demande d'abandon d'un puits ou de suspension du forage

Conformément au «Règlement sur les terres pétrolifères et gazifères du Canada», nous demandons l'autorisation d'abandonner le puits ci-après ou de suspendre les travaux de forage

Nom et n° du puits

Emplacement: Unité..... Section..... Étendue quadrillée.....

Latitude..... Longitude.....

Code d'ordinateur

Références universelles d'emplacement du puits.....

N° de permis..... N° de concession.....

(Détenant de permis ou de licence, ou concessionnaire)

Date du début d'exécution du programme projeté

PÉTROLE, GAZ ET EAU

(Profondeur)

Pétrole à

Gaz à

Eau à

Profondeur globale..... Date des derniers travaux.....

État actuel du puits

TUBAGE

Diamètre extérieur (en pouces)	Poids	Longueur	Fixation à	Sacs de ciment et d'additifs	Longueur récupérée
1.....					
2.....					
3.....					
4.....					
5.....					

PROGRAMME D'ABANDON PROJETÉ

Bouchon		Formation géologique	Nombre de sacs de ciment	Remarques
N°	Profondeur			
.....				
.....				
.....				
.....				
.....				
.....				
.....				
.....				
.....				

Les diagrammes suivants ont été tracés:

Autres travaux projetés

Les travaux seront exécutés par..... N° de permis de l'entrepreneur.....

Adresse..... Adresse.....

Agent extérieur responsable.....

Fait à..... le..... 19.....

Signé par..... Société.....

Titre..... N° de licence de sondage de l'exécutant.....

Nota: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux

(A l'usage de la Division du pétrole et des minéraux)

APPROBATION

Demande étudiée et programme approuvé, sous réserve des conditions suivantes:

.....

.....

.....

Date....., 19.....

Ingénieur en conservation du district

Présenter les formules en triple exemplaire à l'ingénieur en conservation du district

ministère des Affaires indiennes et du Nord canadien.

File No.

Drilling Authority No. 539



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION



Application to Change a Well Name

Application is made hereby to change the name of the well, recorded in the Well-names Register as—

ARCO et al Hume River D-53

(Old name)

to ARCO Clarke et al Hume River D-53

(Proposed new name)

Well Location

Location: Unit D Section 53 Grid 64-00-129-00

Latitude 65°52'03" Longitude 129°11'00"

Unique Well Identifier 300D536600129000

Universal Well Location Reference Lat 65.86750° N, Long 129.18333° W

Reason for Changing Well Name

The name is changed to reflect the two major participants involved in the drilling of the well.

Dated at Edmonton this 18 day of October 19 71

Signed by

Title Area Drilling & Production Supervisor

Company Atlantic Richfield Canada Ltd.

(For Oil and Mineral Division use only)

APPROVED

This application has been examined and approved:

Date 19th October, 19 71

Oil Conservation Engineer

Forms to be submitted in triplicate to the Oil Conservation Engineer,
Department of Indian Affairs and Northern Development, Calgary, Alberta.



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 ARCO et al Burne River D-53

Location: Unit D Section 53 Grid 66-00-129-00

Latitude 65°52'03" Longitude 129°11'00"

Unique Well Identifier 3000536600129000

Universal Well Location Reference Lat. 65.86750° N., Long. 129.18333° W.

Elevation: Ground 275' (estimate) K.B. 290' (estimate) feet above sea-level.

Well is expected to produce from Siluro-Ordovician formation at a depth

of about 3875 feet. Expected total final depth 3950'

Area assigned to well

(for District Conservation Engineer's use only)

Permit No. 3290 Lease No. Acreage 52,306

Permittee, licensee, or lessee Atlantic Richfield Canada Ltd. and Canada-Cities Service, Ltd.

Explanatory Licence No. 1821 & 1943 Triad

Surface owned by Crown or Crown

(If alienated submit name and address of owner and occupant.)

Petroleum and natural gas rights owned by Atlantic Richfield Canada Ltd. 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. 13 3/8"	48	H-40, ST&C	New	100'	150
2. 9 5/8"	36	J-55, ST&C	New	600'	400
3. 4 1/2"	9.5	J-55, ST&C	New	3950'	750
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment. Kee Scarp, Bear Rock Siluro-Ordovician

Hydril GK Size 12" - 900 Series & Size 10" - 900 Series

Cameron SS Size 10" - 900 Series

Double Gate (hydraulic)

Well will be drilled with Rotary Rig No. 11-H by Regent Drilling Limited

(Drilling Contractor or company)

Responsible agent of applicant:- Contractor's Business Licence No. 983

At well. Not known at this time At registered office. 11440 Kingsway Avenue, Edmonton 19

Address 11440 Kingsway Avenue, Edm. Address J. K. Birrell

It is understood that if changes become necessary, notice of the change of plan will be submitted.

Dated at Edmonton, this 8 day of October 1971

Signed by J. K. Birrell Company Atlantic Richfield Canada Ltd.

Title Area Drilling & Prod. Supvr. Operator's Licence No. 1821

(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 of Approval.

Dated. 8 Oct 1971

District Conservation Engineer

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



APPLICATION TO ABANDON A WELL OR SUSPEND DRILLING

Form 10-1-79 with the "Canada Oil & Gas Land Regulations", application is hereby made for approval to abandon, to suspend drilling -

DRILLING AUTHORITY NO. DE L'AUTORISATION DE FORAGE

DEMANDE D'ABANDON D'UN Puits OU DE SUSPENSION DU FORAGE

Conformément au Règlement sur les terres pétrolières et gazéifères du Canada, nous demandons l'autorisation d'abandonner le puits ci-après ou de suspendre les travaux de forage.

DE 539

NAME OF WELL: ARCO CLARKE HUME RIVER D-55

LOCATION OF WELL EMPLACEMENT DU Puits	SECTION	GRID - ETENDUE QUADRILLEE	LATITUDE	LONGITUDE
UNIVERSAL LOCATION REFERENCE - REFERENCE UNIVERSELLES D'EMPLACEMENT DU Puits		UNIQUE WELL IDENTIFIER NO. - CODE D'ORDINATEUR	65 52.0N	129 11.0W

DATE OF COMMENCEMENT OF PROPOSED PROGRAM DATE DE DEBUT D'EXECUTION DU PROGRAMME PROJETE	LEASE NO. - NO. DE CONCESSION	EXPLORATION AGREEMENT NO. - NO. D'ACCORD D'EXPLORATION
Sept. 1977		

OIL, GAS & WATER ENCOUNTERED (DEPTH) - PETROLE, GAZ ET EAU (PROFONDEUR)

OIL AT - PETROLE A	GAS AT - GAZ A	WATER AT - EAU A

CASING RECORD - TUBAGE					
NO.	MASS - MASSE	AMOUNT - LONGUEUR	SET AT - FIXATION A	MASS OF CEMENT & ADDITIVES MASSE DE CIMENT ET D'ADDITIONS	AMOUNT RULLED LONGUEUR RECUPEREE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

PROPOSED ABANDONMENT PROGRAM - PROGRAMME D'ABANDON PROJETE

PLUG - BOUCHON	POSITION - PROFONDEUR	GEOLOGICAL FORMATION FORMATION GEOLOGIQUE	MASS OF CEMENT MASSE DE CIMENT	REMARKS - REMARQUES
	SURFACE		10 Meters	

THE FOLLOWING LOGS HAVE BEEN RUN - LES DIAGRAMMES SUIVANTS ONT ETE TRACES
Temperature Logs 25/03/72, 28/07/72 and 26/06/73

OTHER OPERATIONS PROPOSED - AUTRES TRAVAUX PROJETES

Remove surface installations. Swab Diesel to 35 ft. Run Plug and top with cement to surface. Reinstall Riser with fluorescent well Identifier Plate.

OPERATIONS TO BE CARRIED OUT BY - LES TRAVAUX SERONT EXECUTES PAR
G.M. LOOMIS

ADDRESS - ADRESSE NORMAN WELLS, N.W.T.	REGIONAL CONSERVATION OFFICER Regional Conservation Officer	ADDRESS - ADRESSE	DATED AT - FAIT A	DATE 20/07/79
SIGNATURE Alan Judge	TITLE - TITRE Research Scientist	COMPANY - SOCIETE E.M.R.		

NOTE: The District Conservation Engineer's office must be notified before work is commenced. NOTA: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux.

APPROVAL (FOR BRANCH USE ONLY)
This application has been examined & proposed program approved, subject to the following conditions:

APPROBATION (À L'USAGE DE LA DIRECTION)
Demande étudiée et programme approuvé, sous réserve des conditions suivantes:

Regional Conservation Engineer
L. J. Thomas
DATE 17 Oct-79

PRESENTED TO THREE EXEMPLARIES A L'INGÉNIEUR EN CONSERVATION DU DISTRICT
MINISTRE DES AFFAIRES INDIENNES ET DU DEVELOPPEMENT DU NORD



APPLICATION TO ALTER CONDITION OF A WELL
DEMANDE DE MODIFICATION DE L'ÉTAT D'UN PUIT

Northern Non-Renewable Resources Branch - Direction des ressources non renouvelables du Nord

DRILLING AUTHORITY NO

N° DE L'AUTORISATION DE FORAGE

PRODUCTION LICENSE NO

N° DE PERMIS DE PRODUCTION

DATE ISSUED

DATE DE DELIVRANCE

NOTICE OF INTENTION TO - AVIS D'INTENTION DE:

☐ RESUME OPERATIONS
REPRENDRE LES TRAVAUX

☐ RECONDITION
RECONDITIONNER

☐ RECOMPLETE
APPROFONDIR

☐ REOPEN A SUSPENDED WELL
REOUVRIR UN PUIT SUSPENDU

In compliance with the "Canada Oil and Drilling Regulations", application is hereby made for approval to:
Conformément au Règlement sur les terres pétrolières et gazières du Canada, nous demandons l'autorisation de:

TYPE OF OPERATION - TYPE DE TRAVAUX

SURFACE PLUG PLACEMENT

NAME AND LOCATION OF WELL - NOM ET EMPLACEMENT DU PUIT

ARCO CLARKE HUME RIVER D-53

PERMIT NO. - N° DE PERMIS

LEASE NO. - N° DE CONCESSION

EXPLORATION AGREEMENT NO.
N° D'ACCORD D'EXPLORATION

HOLDER - TITULAIRE

OIL, GAS, AND WATER ENCOUNTERED (Depths) - PÉTROLE, GAS ET EAU (Profondeur)

OIL AT - PÉTROLE A

GAS AT - GAZ A

WATER AT - EAU A

PRESENT CONDITIONS OF WELL - ÉTAT ACTUEL DU PUIT

TEMPERATURE OBSERVATION

TOTAL DEPTH - PROFONDEUR GLOBALE

DATE OF LAST OPERATION - DATE DES DERNIERS TRAVAUX

CASING RECORD - TUBAGE

	CASING SIZE O.D. (mm) DIAMÈTRE EXTÉRIEUR	MASS MASSE	AMOUNT LONGUEUR	SET AT FIXATION A	MASS OF CEMENT AND ADDITIVES MASSE DE CIMENT ET D'ADDITIFS	AMOUNT PULLED LONGUEUR RECUPERÉE
1.						
2.						
3.						
4.						
5.						
6.						

OPERATION PROPOSED - TRAVAUX PROJETÉS:

Attach an additional sheet if required - Au besoin, annexer une feuille additionnelle

Program of Operations - (Plugs, perforations, rework, etc.):

Programme des travaux - (Bouchon, perforation, reconditionnement):

SURFACE PLUG PLACEMENT

SEE ATTACHMENTS

OPERATIONS TO BE CARRIED OUT BY - LES TRAVAUX SERONT EXÉCUTÉS PAR

G.M. LOOMIS

ADDRESS - ADRESSE

Norman Wells - N.W.T.

RESPONSIBLE AGENT IN FIELD - AGENT EXTÉRIEUR RESPONSABLE

ADDRESS - ADRESSE

DATED AT - FAIT A

DATE

SIGNED BY - SIGNÉ PAR

Alan Judge

TITLE - TITRE

Research Scientist

COMPANY - SOCIÉTÉ

E.M.R.

NOTE: The District Conservation Engineer's Office must be notified before work is commenced

NOTA: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux.

APPROVAL - APPROBATION (For Branch use only - À l'usage de la Direction)

This application has been examined and program of operations approval, subject to the following conditions:
Demande étudiée et programme approuvé, sous réserve des conditions suivantes:

DATE

17 Oct-79

DISTRICT CONSERVATION ENGINEER - INGÉNIEUR EN CONSERVATION DU DISTRICT

Forms to be submitted in triplicate to District Conservation Engineer

Présenter les formulaires en triple exemplaires à l'ingénieur en conservation du district.

APPLICATION TO ABANDON A WELL OR SUSPEND DRILLING

For compliance with the "Canada Oil & Gas Land Regulations", application is hereby made for approval to abandon, to suspend drilling -

**DEMANDE D'ABANDON D'UN Puits ou
DE SUSPENSION DU FORAGE**

Conformément au Règlement sur les terres pétrolières et gazières du Canada, nous demandons l'autorisation d'abandonner le puits ci-après ou de suspendre les travaux de forage.

ARCO CLARKE HUME RIVER D-53				
LOCATION EMPLACEMENT UNTE	SECTION	GRID - ETENDUE QUADRILLEE	LATITUDE 65 52.0N	LONGITUDE 129 11.0W
UNIQUE WELL IDENTIFIER N° - CODE D'ORDINATEUR				
DATE OF COMMENCEMENT OF PROPOSED PROGRAM DATE - DEBUT D'EXECUTION DU PROGRAMME PROJETE	Sept. 1977			

OIL GAS & WATER ENCOUNTERED (DEPTH) - PÉTROLE, GAZ ET EAU (PROFONDEUR)		Sept. 1977
OIL AT - PÉTROLE A	GAS AT - GAZ A	WATER AT - EAU A
TOTAL DEPTH - PROFONDEUR GLOBALE	DATE OF LAST INFORMATION - DATE DES DERNIERS TRAVAUX	PRESENT CONDITION OF WELL - ETAT ACTUEL DU PUIS
CASING RECORD - TUBAGE		

CASING RECORD - TUBAGE					
DATE OF TEST	MASS - MASSE	AMOUNT - LONGUEUR	SET AT - FIXATION A	MASS OF CEMENT & ADDITIVES MASSE DE CIMENT ET D'ADDITIONS	AMOUNT PULLED LONGUEUR RECUPEREE

PROPOSED ABANDONMENT PROGRAM: _____

PROPOSED ABANDONMENT PROGRAM - PROGRAMME D'ABANDON PROJETÉ				
PLUG - BOUCHEON		GEOLOGICAL FORMATION FORMATION GÉOLOGIQUE	MASS OF CEMENT MASSE DE CIMENT	REMARKS - REMARQUES
#	POSITION - PROFONDEUR			
	SURFACE		10 Meters	

THE FOLLOWING LOGS HAVE BEEN RUN - LES DIAGRAMMES SUIVANTS ONT ÉTÉ EXÉCUTÉS

Temperature Logs 25/03/72, 28/07/72 and 26/06/73

PROJECTIONS PROPOSEES - AUTRES TRAVAUX PROJETES

Remove surface installations.. Swab Diesel to 35 ft. Run Plug and top with cement to surface. Reinstall Riser with fluorescent well Identifier Plate.

OPERATIONS TO BE CARRIED OUT BY - LES TRAVAUX SERONT EXECUTES PAR
G.M. LOOMIS

~~UPPER~~ ~~ADRESS~~
NORMAN WELLS, N.W.T.

REGIONAL FIELD AGENT EXTERIEUR RESPONSABLE Regional Conservation Officer		ADDRESS - ADRESSE		DATED AT - FAIT A		DATE 20/07/79	
NAME Alan Judge		TITLE - TITRE Research Scientist		COMPANY - SOCIETE E.M.R.			

NOTE: The District Conservation Engineer's office must be notified before work is commenced

NOTA: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux.

APPROVAL (FOR BRANCH USE ONLY)

APPROBATION (À L'USAGE DE LA DIRECTION)

The Education has been examined & proposed program approved,
S.E.C. on the following conditions:

Demande étudiée et programme approuvé, sous réserve des conditions suivantes:

Regional
of the SUPERSEDITION ENGINEER
of the SUPERSEDITION OF DISTRICT

REGIONAL OFFICE, DISTRICT CONSERVATION ENGINEER, DEPARTMENT OF INDIAN AFFAIRS, OTTAWA, CANADA

PRESENTED TO: TO ALL EMPLOYEES A LONGER IN CONSERVATION OF CULTURE
MINISTRE DES AFFAIRES INDIANES ET DU DEVELOPPEMENT



APPLICATION TO ALTER CONDITION OF A WELL
DEMANDE DE MODIFICATION DE L'ÉTAT D'UN PUITS

Northern Non-Renewable Resources Branch - Direction des ressources non renouvelables du Nord

DRILLING AUTHORITY NO. DA 539	PRODUCTION LICENSE NO. N° DE PERMIS DE PRODUCTION	DATE ISSUED DATE DE DELIVRANCE
---	--	-----------------------------------

NOTICE OF INTENTION TO - AVIS D'INTENTION DE

☐ RESUME OPERATIONS REPRENDRE LES TRAVAUX	☐ RECONDITION RECONDITIONNER	☐ RECOMPLETE APPROFONDIR	☐ REOPEN A SUSPENDED WELL REOUVRIRE UN PUITS SUSPENDU
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In compliance with the "Canada Oil and Drilling Regulations", application is hereby made for approval to:
Conformément au Règlement sur les terres pétrolières et gazières du Canada, nous demandons l'autorisation de:

TYPE OF OPERATION - TYPE DE TRAVAUX

SURFACE PLUG PLACEMENT

NAME AND LOCATION OF WELL - NOM ET EMPLACEMENT DU PUITS:

ARCO CLARKE HUME RIVER D-53

PERMIT NO. - N° DE PERMIS	LEASE NO. - N° DE CONCESSION	EXPLORATION AGREE NO. N° D'ACCORD D'EXPLORATION	HOLDER - TITULAIRE
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OIL, GAS, AND WATER ENCOUNTERED (Depths) - PÉTROLE, GAS ET EAU (Profondeur)

OIL AT - PÉTROLE A

GAS AT - GAZ A

WATER AT - EAU A

PRESENT CONDITIONS OF WELL - ÉTAT ACTUEL DU PUITS

TEMPERATURE OBSERVATION

TOTAL DEPTH - PROFONDEUR GLOBALE

DATE OF LAST OPERATION - DATE DES DERNIERS TRAVAUX

CASING RECORD - TUBAGE

	CASING SIZE O.D. (mm) DIAMÈTRE EXTÉRIEUR	MASS MASSE	AMOUNT LONGUEUR	SET AT FIXATION A	MASS OF CEMENT AND ADDITIVES MASSE DE CIMENT ET D'ADDITIFS	AMOUNT PULLED LONGUEUR RÉCUPÉRÉE
1.						
2.						
3.						
4.						
5.						
6.						

OPERATION PROPOSED - TRAVAUX PROJÉTÉS:

Attach an additional sheet if required - Au besoin, annexer une feuille additionnelle

Program of Operations - (Plugs, perforations, rework, etc.):

Programme des travaux - (Bouchon, perforation, reconditionnement):

SURFACE PLUG PLACEMENT

SEE ATTACHMENTS

OPERATIONS TO BE CARRIED OUT BY - LES TRAVAUX SERONT EXÉCUTÉS PAR G.M. LOOMIS		ADDRESS - ADRESSE Norman Wells - N.W.T.
RESPONSIBLE AGENT IN FIELD - AGENT EXTÉRIEUR RESPONSABLE		ADDRESS - ADRESSE
DATED AT - FAIT A	DATE	SIGNED BY - SIGNÉ PAR Alan Judge
TITLE - TITRE Research Scientist		COMPANY - SOCIÉTÉ E.M.R.

NOTE: The District Conservation Engineer's Office must be notified before work is commenced.
NOTA: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux.

APPROVAL - APPROBATION (For Branch use only - À l'usage de la Direction)

This application has been examined and program of operations approval, subject to the following conditions:
Demande étudiée et programme approuvé, sous réserve des conditions suivantes:

DATE **17 Oct-79** DISTRICT CONSERVATION ENGINEER - INGÉNIEUR EN CONSERVATION DU DISTRICT
[Signature]

Forms to be submitted in triplicate to District Conservation Engineer.
Documents à soumettre en triple exemplaire à l'ingénieur en conservation du district.



MINISTÈRE DES AFFAIRES INDIENNES ET DU NORD CANADIEN
DIVISION DU PÉTROLE ET DES MINÉRAUX

Demande d'autorisation de forage

Avant de commencer les travaux, soumettre (en triple exemplaire) et faire approuver le présent avis (indiquant l'intention d'entreprendre des travaux de forage) et, au besoin, un plan d'arpentage reconnu par l'arpenteur général, montrant l'aire de sondage ou l'emplacement du puits.

Conformément au «Règlement sur les terres pétrolifères et gazifères du Canada», nous demandons l'autorisation d'effectuer des travaux de forage.

Nom et n° du puits

Emplacement: Unité Section Étendue quadrillée
Latitude Longitude
Code d'ordinateur
Références universelles d'emplacement du puits:

Élévation: du sol du carré d'entraînement pieds au-dessus du niveau de la mer
Production prévue quand les tiges atteindront la formation à une profondeur approximative de
pieds. Profondeur totale prévue
Superficie assignée au puits
(à l'usage de l'ingénieur en conservation du district)

N° de permis N° de concession Superficie
Dé détenteur de permis ou de licence, ou concessionnaire
N° de licence de sondage
Terres appartenant à la Couronne ou à
(Dans le cas de terres aliénées, donner le nom et l'adresse du propriétaire et de l'occupant)

Détenteur(s) des droits pétroliers et gaziers
Nous prévoyons utiliser les colonnes de tubage suivantes et de les cimenter ou de les sceller, tel qu'il est indiqué ci-dessous:—

Diamètre extérieur (en pouces) de tubages	Poids (liv./pi.)	Qualité	Tubages neufs ou usagés	Profondeur estimative	Sacs de ciment
1.					
2.					
3.					
4.					
5.					

Nappes d'eau, de gaz et de pétrole prévues et genre de matériel anti-éruption.
.....
.....

Le puits sera foré à l'aide de la tour rotary n° par
(Entrepreneur ou société de forage)

Agent responsable pour le requérant:— N° de permis de l'entrepreneur
Sur le chantier Au siège
Adresse Adresse
Il est entendu que, dans le cas de modifications indispensables, un avis sera soumis.
Datée — le 19.....
Signé par Société.....
Titre N° de licence de sondage de l'exécutant

(À l'usage de la Division du pétrole et des minéraux)

APPROBATION

Demande étudiée et approuvée sous réserve des conditions suivantes:

Date 19..... Ingénieur en conservation du district

Présenter les formules à l'ingénieur en conservation du district,
Ministère des Affaires indiennes et du Nord canadien.

CONDITIONS OF APPROVAL FOR DRILLING AUTHORITY NO. 539
FOR ARGO ET AL HUME RIVER D-53

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, the latest reports received by radio on the progress of the well.
3. During well drilling and testing operations, every effort shall be made to ensure that drilling fluids, chemicals and wastes shall be disposed of or contained in a manner that will prevent the contamination of adjacent vegetation and surface or sub-surface waters.
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.

Maurice S. Thomas
M. D. Thomas
District Conservation Engineer
District 2

DRILLING PROGNOSIS (EXPLORATORY)

CONFIDENTIAL

ARCO ET AL HUME RIVER 53-d

SEPTEMBER 1, 1971

Authorization:

Telephone Charge: 072-5875-454

Region: Canadian

District: Northern

Location: Shot Point 111, Line 69RG17. Approximately 65°52' N and 129°11' W in Unit d, Section 53.

Project: Mackenzie Block. Prospect - Hume River

Status: Wildcat Well - Confidential. All tight hole procedures to be followed.

Objective: 3950' test to evaluate oil and gas potential of the Devonian Kee Scarp, Bear Rock and Siluro-Ordovician Carbonates.

Elevations: Ground (est.) 275'; KB (est.) 290'

Casing Program:

	<u>Hole Size</u>	<u>Description</u>	<u>Interval</u>	<u>Approx. Cmt.</u>
Sfc. Conductor	17 1/2"	13 3/8", 48#, H-40, ST&C	0 - 100'	150 sx Perma Frost Cement
Surface	12 1/4"	9 5/8", 36#, J-55, ST&C	0 - 600'	400 sx Perma Frost Cement
Production	8 3/4"	4 1/2", 9.5#, J-55	0 - 3950'	750 sx OWC

Estimated Formation Tops: Depths based on estimated KB elevation of 290'. Report corrected KB on first tour report.

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>	<u>Corr. Depth</u>
Spud in Quaternary			
Cretaceous	75	+ 215	_____
Upper Devonian			
Imperial	1490	-1200	_____
Middle Devonian			
Kee Scarp	1560	-1270	_____
Platform	1970	-1680	_____
Hare Indian	2080	-1790	_____
Hume	2685	-2395	_____
Lower Devonian			
Bear Rock Limestone	3000	-2710	_____
Dolomite	3550	-3260	_____

Estimated Formation Tops (Cont'd.):

<u>Formation</u>	<u>Depth</u>	<u>Subsea</u>	<u>Corr. Depth</u>
Siluro-Ordovician			
Ronning Group	3875	-3585	_____
TD	3950	-3660	_____

Location & Transportation:

This well will be drilled on the tentative location 65°52' N, 129° 11' W in Unit d, Section 53.

Equipment and supplies will be loaded from a central site (Hay River, NWT) onto barges to be transported down the Mackenzie River to a staging point in the vicinity of the Sans Sault rapids. Material will be unloaded and stockpiled on matting above the high water mark to ensure no damage from flooding during the fall ice flow. The portable garage and maintenance shop may be erected at the staging point to house vehicles.

Barge transportation will be scheduled for September 1, 1971. Air transportation will be used for personnel and supplies during drilling operations.

Drilling & Mud Program:

Surface Conductor Hole 0 - 100'

Spud with 12 1/4" bit and spud mud and drill to $\pm 100'$, open hole to 17 1/2", run and cement 13 3/8", 48#, H-40 casing with permafrost-type cement.

Surface Hole 0 - 600'

Install 12" Hydril on 13 3/8" surface conductor. Pressure test to 1000 psi and hydraulic lines to 3000 psi. Drill out below surface conductor with a 12 1/4" medium to hard-type rock tooth-type bit and drill ahead to $\pm 600'$ or below any anticipated gravel beds, and into a competent formation.

Run 9 5/8", 36#, J-55 casing and cement in place with permafrost-type cement.

Main Hole

Install 10" series 900 BOP's, double-ram and hydril-type, ARCO high pressure manifold and test all equipment to 2000# and hydraulic lines to 3000#. Drill out under 9 5/8" shoe with an 8 3/4" medium to hard rock tooth bit. Pressure test cement and formation to a maximum pressure equal to 0.7#/ft. gradient. This includes pressure exerted by mud column plus pressure applied.

Continue drilling with rock tooth-type bits and a low solids mud system. Solids content and mud weight will be controlled by the use of a desilter,

Drilling & Mud Program (Cont'd.):

Main Hole (Cont'd.)

dumping tanks and water addition. Solids content should be maintained below 5%. A water loss of ± 10 should be controlled while drilling KeeScarp formation and an immediate DST obtained to ensure good formation fluid samples may be recovered. Insert-type bits will possibly be used upon reaching the hard Devonian formations.

Continue drilling to TD maintaining mud properties to ensure good samples and hole condition for testing and logging. Testing and coring to be completed at the request of the Well Site Geologist.

Logging Program:

1. Dual Induction Laterolog
2" and 5" scales total depth to surface casing. Run SP on 2" scale while going into the hole as well as logging out. Print both runs.
2. Borehole Compensated Sonic Gamma Ray-Caliper
2" and 5" scales. Total depth to surface casing. 100-70-40 scales.

Note: Run Sonic log into surface casing to obtain velocity check.

3. Compensated Formation Density Gamma Ray-Caliper
2" and 5" scales. Surface casing to total depth.
4. Sidewall Neutron Porosity Log
Limestone porosity scale.
5. Four-Arm Digital Dipmeter
From base of surface casing to total depth.
6. Synergetic Dol-Limestone Lithology Plot

Note: Well Site Geologist to be responsible for logging program and quality control. Geologist must check log reproducibility on repeat sections and before and after calibrations. Service company invoice to be signed after approval by Well Site Geologist. Well Site Geologist and Logging Engineer will fill out one copy of log quality control sheet which will be forwarded to H. V. Messineo in Dallas.

Log Distribution:

Films and field prints to be returned to Calgary by Well Site Geologist. Field prints to be distributed according to Tight Hole Procedures as follows:

Log Distribution (Cont'd.):

1 copy - J. K. Birrell, Edmonton
1 copy - F. G. Rayer, Calgary
1 copy - Well Site Geologist/Well Site Engineer
Copies to Partners as Required.

Samples:

Catch two sets of samples at 10' intervals from surface to the top of the Kee Scarp carbonates. One set of samples to be placed in cloth bags and the other set of samples to be placed in plastic lined bags. Catch one set of cloth bagged samples from the top of the Kee Scarp to total depth. Sample interval may be reduced to 5' at the discretion of the Well Site Geologist. The samples in plastic lined sacks are to be retained by ARCO for special analysis. One cut of washed and bottled samples to be retained for ARCO file from surface to total depth and washed samples for partners to be taken as required.

Coring Program:

1. One 60' core at top of Kee Scarp after positive identification of the formation has been made.
2. If porosity and staining is present at base of first core, cut an additional 60' core, or if porosity and staining observed in cutting samples deeper in the Kee Scarp carbonates, cut an additional 60' core.
3. One 60' core to be cut at the top of the Bear Rock if porosity and staining observed in cuttings. If porosity and staining not observed, cut a 60' strat core beginning 75' below top of Bear Rock dolomite. If core jams off after 25' or more of core has been cut and recovery is satisfactory, resume drilling.
4. One 60' core to be cut at top of Siluro-Ordovician carbonates only if porosity and hydrocarbons observed in cuttings. If porosity and staining not observed, drill to total depth.

Note: Estimate total of three 60' cores - total 180'.

Drill Stem Tests:

Tests of Kee Scarp, Bear Rock and Siluro-Ordovician to be run on penetration if warranted from core evaluation. If hydrocarbons not encountered in cored zones, test zones if warranted from log evaluations after logging at total depth. (Estimate 3 tests.)

Note: Drill stem tests to be run with a Johnson MFE tool and formation fluid samples to be taken in each drill stem test. Samples to be shipped to Core Lab for dissolved gas and benzene-toluene analysis. To obtain a useable sample of formation fluid, sample must be taken

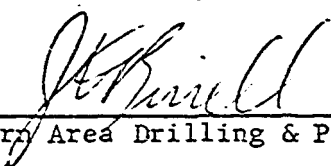
Drill Stem Tests (Cont'd.):

Note: before end of blow or just after end of blow. Estimate one drill stem test.

Drilling Time:

Install drilling time recorder prior to drilling out surface casing shoe.

ENDORSED:



Northern Area Drilling & Production Supervisor

Date: 9-1-71

Vice-President, Operations

Date: _____

Vice-President, Northern Exploration

Date: _____

APPROVED:

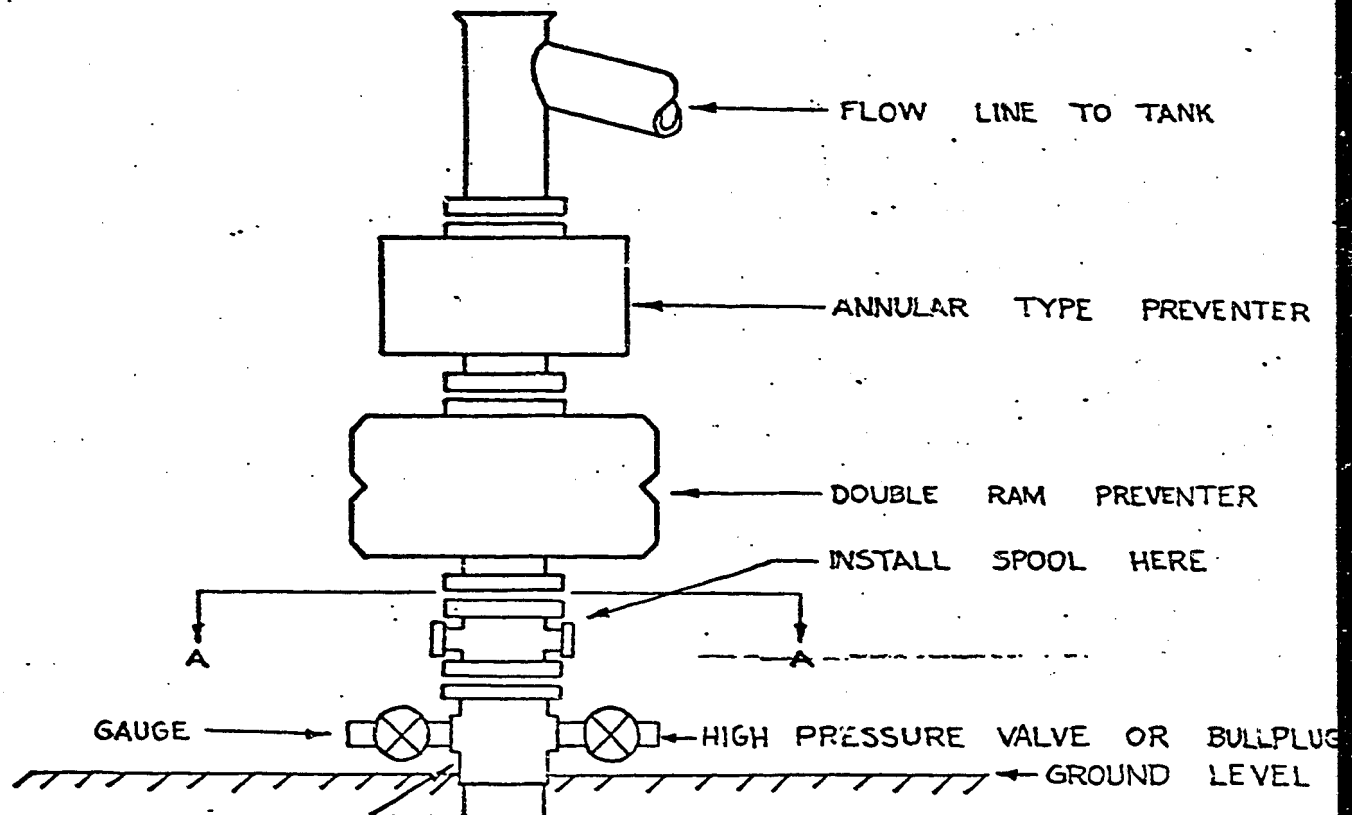
President

Date: _____

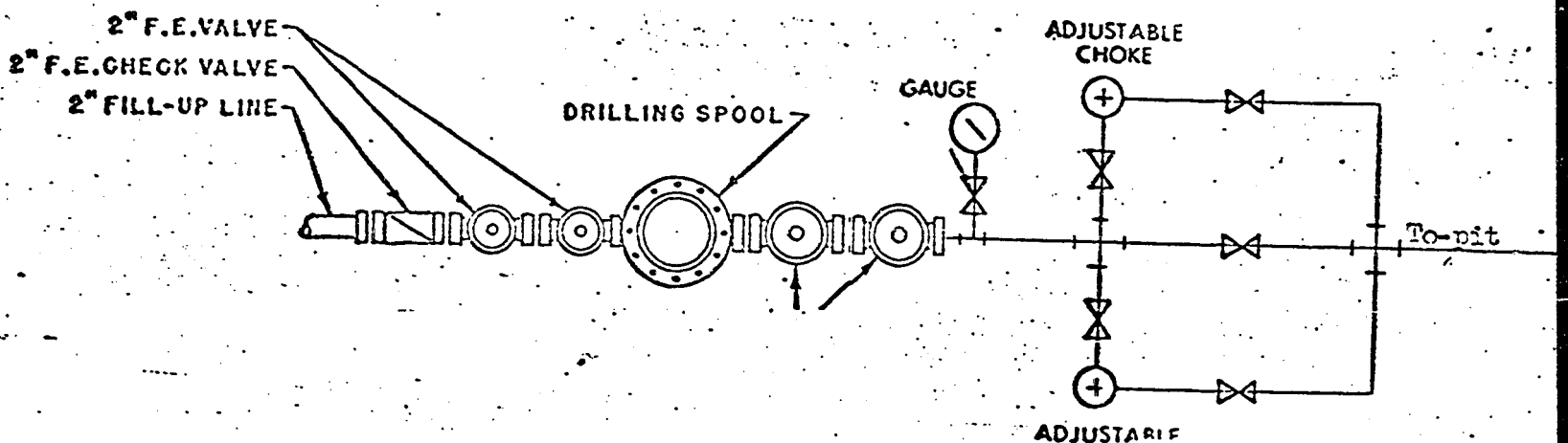
ATLANTIC RICHFIELD COMPANY

BLOWOUT PREVENTER HOOKUP

— HIGH PRESSURE —



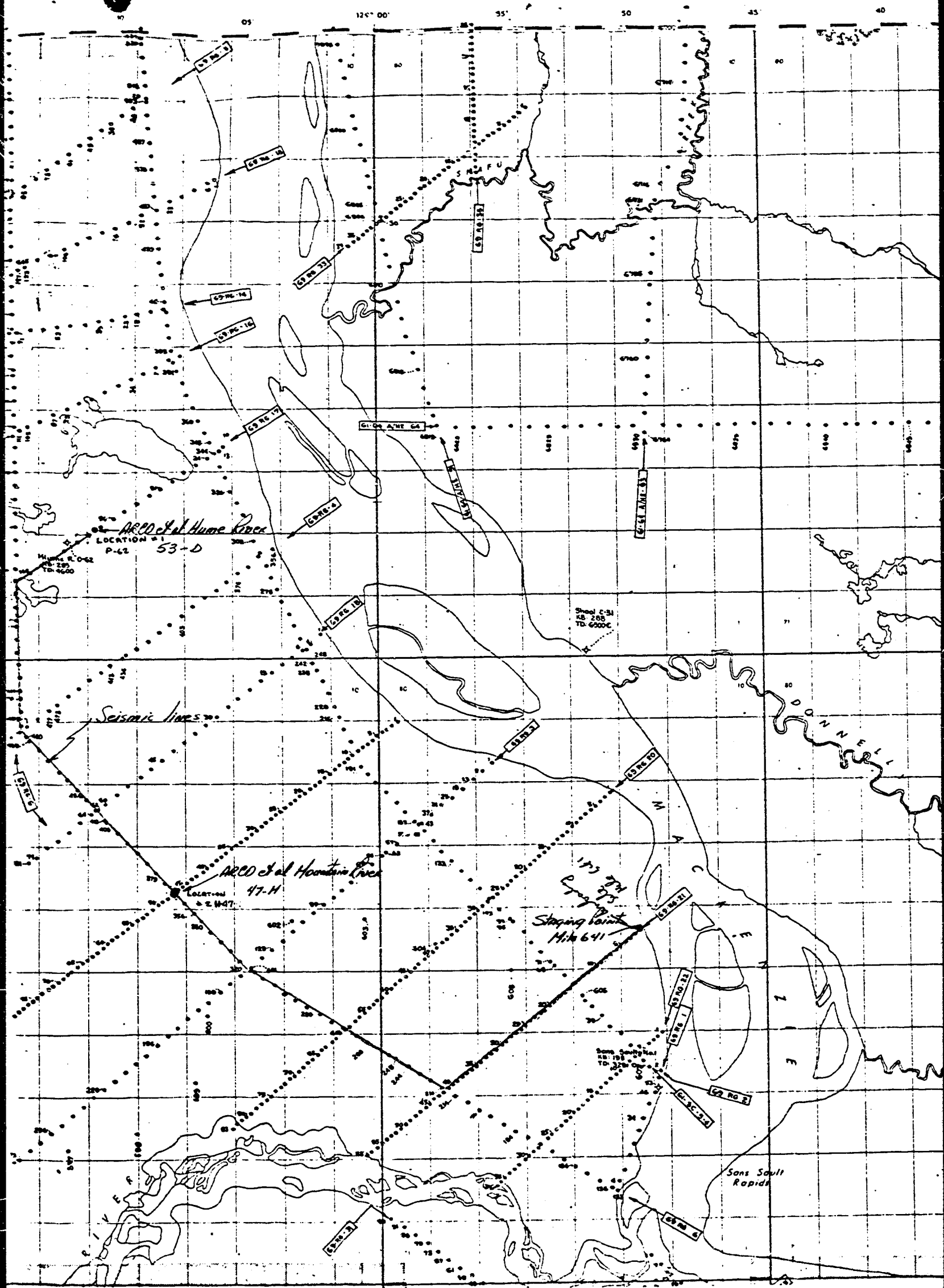
AREA OF HIGH HAZARD
(See 709 Oil and Gas Conservation Regulations)

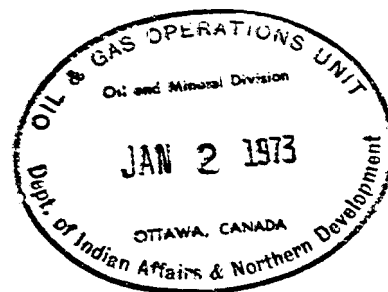


SECTION A-A CHOKE MANIFOLD

NOTE: THE TEST PRESSURE OF THE BLOWOUT PREVENTERS, DRILLING SPOOL AND CHOKE MANIFOLD WILL BE AT LEAST AS HIGH AS THE TEST PRESSURE OF THE OPERATOR'S CASING HEAD FLANGE, USUALLY 6000 OR 10000 P.S.I.

ALL VALVES, NIPPLES AND CONNECTIONS FURNISHED BY CONTRACTOR





WELL SUMMARY & SAMPLE DESCRIPTION

ARCO CLARKE ET AL HUME RIVER D-53

ATLANTIC RICHFIELD CANADA LTD
D. W. Holmes & G. H. Koller
Geologists
February - 1972

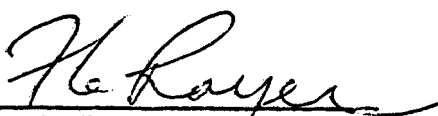

F. G. Rayer P. Geol.
District Geologist

TABLE OF CONTENTS

SECTION I - Summary of Well Data

SECTION II - Geological Summary

SECTION III - Engineering Summary

SECTION IV - Logs

SECTION V - Analysis

SECTION VI - Completion Summary

SECTION I - SUMMARY OF WELL DATA

(a) WELL NAME AND NUMBER

ARCO Clarke et al Hume River D-53

(b) PERMITTEE

Atlantic Richfield Canada Ltd.
BP Oil and Gas Ltd.
Canada-Cities Service Ltd.
Triad Petroleum Dev. Ltd.

(c) NAME OF OPERATOR

Atlantic Richfield Canada Ltd.
650 Guinness House, 727 - 7th Avenue S.W.,
Calgary, Alberta

(d) LOCATION

Unit D, Section 53, Grid 66°00'N, 129°00'W
Latitude 65°52'N, Longitude 129°11'W
Unique Well Identifier 300D536600129000
Universal Well Location Reference - 65.86750°N, 129.18333°W

(e) PERMIT NUMBER

3290

(f) DRILLING CONTRACTOR

Regent - Rig No. 11

(g) DRILLING AUTHORITY

No. 539

(h) CLASSIFICATION

Wildcat

(i) ELEVATION

Ground 275 (est.) KB 290' (est.)

(j) DATE SPUDDED

January 20, 1972 (2:00 p.m.)

(k) DATE COMPLETED DRILLING

February 6, 1972

(l) TOTAL DEPTH AND PLUGGED BACK TOTAL DEPTH

TD 4159'; PBTD Surface

(m) WELL STATUS

Dry and Abandoned. Government heat flow observation station.

(n) DATE RIG RELEASED

February 11, 1972 (7:00 p.m.)

(o) HOLE SIZE

12 1/4" 0 - 614'
8 3/4" 614 - 4159' (TD)

(p) CASING

Conductor Pipe - 13 3/8" to 110' with 300 sax cement.

Surface Casing - 9 5/8" to 613' with 325 sax cement.

SECTION II - GEOLOGICAL SUMMARY

(a) Formation Tops

<u>Formation</u>	<u>Sample</u>	<u>Log</u>	<u>Subsea Log</u>
Quaternary			
Cretaceous	75?	?	
Upper Cretaceous			
Imperial	?	1473	+1183
Middle Devonian			
Kee Scarp	1605	1616	-1326
Platform	1940	1954	-1664
Hare Indian	2078	2084	-1794
Hume	2730	2740	-2450
Lower Devonian			
Bear Rock Limestone	3040	3050	-2760
Bear Rock Dolomite	3610	3620	-3330
Siluro-Ordovician			
Ronning Group	3875	3928	-3638
Total Depth	3950	4159	-3869

(b) Cored Intervals

Core No. 1 1613 - 1673' (Kee Scarp)

Core No. 2 3741 - 3791' (Bear Rock)

(c) Core Description

Core No. 1 - 1613 - 1673' (Kee Scarp) Recovered 60'

1613 - 1627' Limestone, brown microcrystalline to fine crystalline, micritic calcarenite, approximately 20% stachyodes, occasional bulb and massive stroms, scattered encrusting algae, occasional coral, some medium to coarse calcarenite interbeds, scattered amphipora and crinoidal fragments, scattered stylolites, trace pyrobitumen, poor very fine intercrystalline porosity, common light oil staining, sparry calcite fills most intra and interorganic porosity.

1627 - 1636' Limestone, light brown, fine micritic calcarenite, approximately 60% is formed of amphipora, stachodes and encrusting algal fragments, scattered bulb stroms, stylolites, trace of very fine intercrystalline porosity, common sparry calcite fills all other porosity, scattered light oil stain throughout.

1635 - 1652' Limestone, light brown, skeletal micrite, mottled (boudinage), common stylolites, occasional amphipora and crinoidal frags, some fine crystalline recrystallized limestone with poor fine intercrystalline porosity, common light oil staining.

1652 - 1673' Limestone, tan micritic calcarenite, fine to coarse, approximately 20% of this interval composed of tabular stroms and bulb stroms, scattered crinoids, alveolites, corals and, amphipora throughout, two massive stroms 10" in diameter, some matrix recrystallized to slightly dolomitic calcite, scattered stylolites, poor intercrystalline porosity, common light oil staining throughout. Sparry calcite fills in most porosity.

<u>Depth</u>	<u>Min. /Foot</u>
1613 - 1614'	10
1614 - 1615'	13
1615 - 1616'	13
1616 - 1617'	8
1617 - 1618'	14
1618 - 1619'	16
1619 - 1620'	10
1620 - 1621'	12
1621 - 1622'	13
1622 - 1623'	11
1623 - 1624'	14
1624 - 1625'	13
1625 - 1626'	13
1626 - 1627'	14
1627 - 1628'	13
1628 - 1629'	14
1629 - 1630'	13
1630 - 1631'	10
1631 - 1632'	10
1632 - 1633'	9
1633 - 1634'	8
1634 - 1635'	9
1635 - 1636'	11
1636 - 1637'	13
1637 - 1638'	14
1638 - 1639'	19
1639 - 1640'	23
1640 - 1641'	17
1641 - 1642'	24
1642 - 1643'	17
1643 - 1644'	18
1644 - 1645'	21
1645 - 1646'	22
1646 - 1647'	23
1647 - 1648'	22
1648 - 1649'	18
1649 - 1650'	21
1650 - 1651'	19
1651 - 1652'	11
1652 - 1653'	12
1653 - 1654'	12
1654 - 1655'	13
1655 - 1656'	12
1656 - 1657'	11
1657 - 1658'	8
1658 - 1659'	10
1659 - 1660'	12
1660 - 1661'	9
1661 - 1662'	10

<u>Depth</u>	<u>Min./Foot</u>
1662 - 1663'	9
1663 - 1664'	9
1664 - 1665'	12
1665 - 1666'	12
1666 - 1667'	13
1667 - 1668'	15
1668 - 1669'	14
1669 - 1670'	13
1670 - 1671'	12
1671 - 1672'	13
1672 - 1673'	13

Core No. 2 - 3741 - 3791' (Bear Rock) Recovered 56'

- 3741 - 3756' Dolomite, light brown, cryptocrystalline, micrite, fine laminae, scattered poor intercrystalline porosity, scattered stylolites, common interbeds of fine crystalline, fine grained calcarenitic (?) dolomite with poor to fair intercrystalline and very fine vuggy porosity, salty.
- 3756 - 3771' Dolomite, brown, microcrystalline to fine crystalline, sucrosic, laminated (possibly algal), fair to good intercrystalline and fine vuggy porosity, scattered secondary calcite crystals, some interbeds of massive microcrystalline dolomite, poor porosity, probably mostly micrite, fetid, salty.
- 3771 - 3778' Dolomite, dark brown, microcrystalline, micrite, slightly calcareous, scattered small vertical and horizontal fractures filled with white calcite, massive, slightly mottled, occasional tube like forms (corals?), trace of poor intercrystalline porosity.
- 3778 - 3781' Dolomite, light tan, lithographic micrite, fine wavy laminae, trace of small slumps, dense.
- 3781 - 3789' Dolomite, brown to dark brown, microcrystalline to fine crystalline, sucrosic, some laminations, bed commonly mottled to massive, some fine calcarenite (?). Fair to good intercrystalline and fine vuggy porosity, trace of calcite filled fractures, salty.
- 3789 - 3790' Dolomite, tan, lithographic, micrite, fine laminae, dense.
- 3789 - 3791' Dolomite, dark brown, microcrystalline to fine crystalline, massive, sucrosic, poor to good intercrystalline porosity, fetid, salty.

<u>Depth</u>	<u>Min./Foot</u>
3741 - 3742'	10
3742 - 3743'	9
3743 - 3744'	10
3744 - 3745'	9
3745 - 3746'	8
3746 - 3747'	8
3747 - 3848'	8
3748 - 3749'	8
3749 - 3750'	8
3750 - 3751'	8
3751 - 3752'	7
3752 - 3753'	7
3753 - 3754'	5
3754 - 3755'	5
3755 - 3756'	5
3756 - 3757'	4
3757 - 3758'	5
3758 - 3759'	5
3759 - 3760'	5
3760 - 3761'	4
3761 - 3762'	5
3762 - 3763'	5
3763 - 3764'	6
3764 - 3765'	5
3765 - 3766'	5
3766 - 3767'	5
3767 - 3768'	8
3768 - 3769'	6
3769 - 3770'	6
3770 - 3771'	6
3771 - 3772'	5
3772 - 3773'	7
3773 - 3774'	6
3774 - 3775'	6
3775 - 3776'	5
3776 - 3777'	10
3777 - 3778'	10
3778 - 3779'	7
3779 - 3780'	8
3780 - 3781'	7
3781 - 3782'	7
3782 - 3783'	5
3783 - 3784'	6
3784 - 3785'	5
3785 - 3786'	6
3786 - 3787'	5
3787 - 3788'	6
3788 - 3789'	8
3789 - 3790'	9
3790 - 3791'	15

(d) Sample Description

- 0 - 100' No caught.
- 100 - 110' Coal, black, brittle, minor bituminous shale, black.
- 110 - 220' Clay, unconsolidated.
- 220 - 240' As above, some calcareous siltstone interbeds or pebbles.
- 240 - 300' Siltstone, very fine sandstone, glauconite, argillaceous, light-medium grey, trace pyrite and Inoceramus prisms?
- 300 - 1375' Shale, medium grey, silty in part, slightly glauconitic in part, minor siltstone and very fine sandstone interbeds.
- 1375 - 1420' Sandstone, very fine-fine grained, occasional coarse stringers, light grey, trace to fair porosity, some argillaceous matrix, trace glauconite, and oil stain and fluorescence.
- 1410 - 1460' Shale, silty, minor coal interbeds.
- Imperial 1473' (?) - Log Pick
- 1460 - 1550' Shale, silty.
- 1550 - 1605' Siltstone-very fine sandstone, trace fair porosity and stain, fluorescence, very argillaceous in part, shaly in base.
- Kee Scarp - 1605'
- 1605 - 1660' Limestone, micrite, abundant stroms, amphipora, calcite filled porosity and fractures, some fine crystalline calcarenite, with fair to poor porosity and stain and fluorescence, bituminous in part.
- 1660 - 1770' Limestone, micrite, bituminous in part, trace porosity and stain, medium brown.
- 1700 - 1750' Limestone, micro to very fine crystalline, stroms, corals (coenities?), trace of porosity and stain, earthy to chalky in part. 1730 - 1740' abundant oil stain, light brown.
- 1750 - 1850' Limestone, micrite to very fine crystalline, buff to white, earthy, trace of poor porosity and stain.
- 1850 - 1930' As above, trace to no porosity, strom material, pores plugged with calcite.
- 1930 - 1940' As above, no porosity, no strom, argillaceous in part.

- 1940 - 1990' Limestone, argillaceous, dark grey, trace dark grey shale, calcareous.
- 1990 - 2080' Limestone, micrite, medium brown, dense, silty in part.
Hare Indian - 2078'
- 2080 - 2690' Shale, light grey, silty, calcareous.
- 2690 - 2730' Shale, black, bituminous with a few limestone interbeds.
Hume - 2730'
- 2730 - 2760' Limestone, dark grey, micrite, argillaceous, dense, earthy, ostracodes and brachiopods.
- 2760 - 2800' Interbedded limestone and shale, medium grey, micrite, dense.
- 2800 - 2900' Limestone, argillaceous - bituminous, dense, earthy, micrite, trace brachiopods in top 20'.
- 2900 - 3040' Interbedded argillaceous limestone, micrite, medium grey, dense, earthy, with shale, light green grey.
Bear Rock Limestone - 3040'
- 3040 - 3330' Pelletal micrite, dark brown, trace bituminous partings, top 20' with trace of poor to fair intercrystalline porosity, 3060 - 3330' with trace of poor porosity, no stain.
- 3330 - 3550' Micrite limestone, dark brown-grey, pelletal in part, chalky in part, very chalky basal 60', trace bituminous - shaly partings and trace pyrite.
- 3550 - 3611' Micrite limestone, trace pelletal, dark brown, trace white calcite crystals, dense, trace microcrystalline dolomite, dense.
Bear Rock Dolomite - 3611'
- 3611 - 3640' Dolomite, dark brown, very fine crystalline, dense.
- 3640 - 3800' Dolomite, micro to fine crystalline, dark brown, trace of fair to good vuggy and intercrystalline porosity, no stain, trace of fossil at 3750 and 3775', bleeding salt water in core (see core description) shaly stylolites, trace blind vugs.
- 3800 - 3860' Dolomite micro to very fine crystalline, medium brown, calcite healed fractures, dense, rare porosity at 3820 - 3830'.
- 3860 - 3890' Dolomite, tight, interbeds with fair intercrystalline porosity, medium brown, very fine crystalline, trace bituminous laminae, tight dolomite interbeds with calcareous cement.

3890 - 3910' Dolomite, white to medium brown, dense, with trace to fair vuggy and intercrystalline porosity, trace light grey shale and very argillaceous dolomite, microcrystalline to very fine crystalline, trace pyrobitumen.
Unconformity with grey green shale beds 2-4' thick, trace pyrite, interbedded dolomite, as above.

Siluro-Ordovician - 3928'

3928 - 4150' Dolomite, white to medium brown, dense, trace fair vuggy and intercrystalline porosity, microcrystalline to very fine crystalline, trace pyrobitumen.

4159' Total Depth.

(e) Paleontological Determinations

None.

SECTION III - ENGINEERING SUMMARY

(a) Drill Stem Tests

Drill Stem Test No. 1: 1607 - 1755' Kee Scarp

Times: 5 minutes preflow
60 minutes ISI
30 minutes final flow
60 minutes FSI

Very weak blow, died in 15 minutes. Recovered 80' of very slightly oil cut mud.

IHP	793	ISIP	475	IFP	70
FHP	793	FSIP	150	FFP	763

Drill Stem Test No. 2: 1370 - 1610' - Misrun.

Drill Stem Test No. 3: 1370 - 1610' Cretaceous

Times: 3 minutes preflow
60 minutes ISI
30 minutes final flow
60 minutes FSI

Fair initial puff, ~~was~~ air blow decreasing to nil in 15 minutes. Recovered 80' of mud.

IHP	667	IFP	135	ISIP	280
FHP	651	FFP	175	FSIP	222

BHT 102°

Drill Stem Test No. 4: 3650 - 3760' Bear Rock Dolomite

Times: 3 minutes preflow
60 minutes ISI
75 minutes final flow
90 minutes FSI

Recovered 375' muddy sulphurous salt water, and 2180' dark sulphurous salt water.

IHP	1715	IFP	246	ISIP	1643
FHP	1715	FFP	1191	FSIP	1643

BHT 112°F

(b) Casing Record

Conductor Pipe - 13 3/8" to 110' with 300 sax cement.

Surface Casing - 9 5/8" to 613' with 325 sax cement.

(c) Bit Record

<u>Number</u>	<u>Type</u>	<u>Size</u>	<u>Depth Out</u>	<u>Feet</u>	<u>Hours</u>	<u>Condition</u>
1A	OSCIC	12 1/4	614	614	31 1/2	4-2-I
1	M4N	8 3/4	1452	838	30 1/4	8-7-I
2	SCM5	8 3/4	1613	161	14 3/4	2-2-I
Diamond	Christensen	8 22/32	1673	60	14	---
2RR	SCM5	8 3/4	2799	1126	77	2-3-I
3	X55R	8 3/4	3741	942	80 3/4	6-2-I
Diamond	Christensen	8 22/32	3791	50	6 3/4	---
4	X55R	8 3/4	4150	359	34 3/4	---

(d) Mud Report

<u>Date</u>	<u>Amount</u>	<u>Type</u>
01.24.72	1200 lbs. 4 lbs.	gel rapid drill
01.25.72	3400 lbs. 10 lbs. 50 lbs. 100 lbs.	gel rapid drill caustic CMC
01.26.72	1500 lbs. 4 lbs.	gel rapid drill
01.27.72	1500 lbs. 5 lbs.	gel rapid drill
01.28.72	900 lbs. 3 lbs. 25 lbs. 50 lbs.	gel rapid drill caustic CMC

<u>Date</u>	<u>Amount</u>	<u>Type</u>
01.29.72	1800 lbs.	gel
	6 lbs.	rapid drill
	25 lbs.	caustic
	50 lbs.	CMC
01.30.72	3600 lbs.	gel
	9 lbs.	rapid drill
	75 lbs.	caustic
	100 lbs.	CMC
	3 lbs.	drill aid
01.31.72	3500 lbs.	gel
	6 lbs.	drill aid
	5 lbs.	rapid drill
	100 lbs.	caustic
	50 lbs.	CMC
02.01.72	2800 lbs.	gel
	3 lbs.	drill aid
	5 lbs.	rapid drill
	25 lbs.	caustic
	50 lbs.	CMC
02.02.72	2100 lbs.	gel
	3 lbs.	drill aid
	4 lbs.	rapid drill
	25 lbs.	caustic
02.03.72	2000 lbs.	gel
	2 lbs.	drill aid
	4 lbs.	rapid drill
	50 lbs.	caustic
	50 lbs.	CMC
02.04.72	600 lbs.	gel
	3 lbs.	drill aid
	50 lbs.	caustic
02.05.72	1100 lbs.	gel
	3 lbs.	rapid drill
	50 lbs.	CMC
02.06.72	2400 lbs.	gel
	8 lbs.	rapid drill
	50 lbs.	caustic
02.07.72		

<u>Date</u>	<u>Amount</u>	<u>Type</u>
02.08.72		
02.09.72	1500 lbs. 5 lbs. 25 lbs.	gel drill aid caustic

(e) Deviation Record

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
110	1/2	1745	1 1/4
187	1/4	1939	1
288	1/2	2120	1 3/8
376	1/2	2347	7/8
465	1/4	2593	1
614	1/2	2843	1 7/8
799	1/4	2906	1 7/8
986	3/8	3088	1 1/2
1165	7/8	3340	1 1/2
1320	1/8	3589	2
1450	1/4	3741	2
1613	3/4	4120	1/4

(f) Abandonment Plugs

Plug No. 1 - 4159 - 3600'

Plug No. 2 - 1800 - 1550'

(g) Lost Circulation Zones

None.

(h) Report of Blowouts

None.

SECTION IV - LOGS

Logs - Schlumberger

1. Dual Induction-Laterolog - 4154 - 613'
2" and 5"
2. Borehole Compensated Sonic Log - 4159 - 613'
2" and 5"
3. Sidewall Neutron Porosity Log - 4159 - 613'
5"
4. Compensated Formation Density Log - 4159 - 613'
2" and 5"
5. Four Arm Digital Dipmeter - TD to surface casing.

SECTION V - ANALYSIS

- (a) Core Analysis - Core #2.
- (b) Water Analysis - DST No. 1, 3, & 4.
- (c) Gas Analysis - DST's No's. 1 & 3.
- (d) Oil Analysis - Nil.

SECTION VI - COMPLETION SUMMARY

(a) Tubing Record

None.

(b) Perforation Record

None.

(c) Cementation Record

Plug No. 1 - 4159 - 3600'

with 280 sax cement.

Plug No. 2 - 1800 - 1550'

with 150 sax cement.

(d) Acidization and Fracturing Record

None.

(e) Back Pressure and Production Tests

None.

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CORE ANALYSIS REPORT
FOR
ATLANTIC RICHFIELD CANADA LTD.
ARCO CLARK ET AL HUME RIVER D-53
WILDCAT, HUME RIVER AREA
NORTHWEST TERRITORIES

CORE LABORATORIES - CANADA LTD.

Petroleum Reservoir Engineering
CALGARY - EDMONTON - REGINA

CORE LABORATORIES — CANADA, LTD.
CALGARY, ALBERTA

COMPANY ATLANTIC RICHFIELD CANADA LTD.
WELL ARCO CLARK ET AL HUME RIVER D-53
FIELD WILDCAT, HUME RIVER AREA, N.W.T.
LOCATION 65° 52' 03.00" NORTH LAT.
 129° 11' 00.00" WEST LONG.

FORMATION
DRILLING FLUID
ELEVATION
ANALYSIS
REMARKS

WATER BASE MUD

FULL DIAMETER
 ALL SAMPLES SANDBLASTED
 PRIOR TO KH ANALYSIS.

PAGE 1 OF 3
FILE 913-253
DATE REPORT FEB. 9/72
ANALYSTS SP, BK

AST - APPEAR SIMILAR TO
 * - SPOKEN CORE
 HSD - USED FOR SUMMARY PURPOSES
 ** - PERMEABILITY > 3000 MD
 FS - FINE SAND

MS - MEDIUM SAND
 CS - COARSE SAND
 CONG - CONGLOMERATE
 DOL - DOLOMITE
 SH - SHALE

LSV - LSVY
 SHV - SHLY
 BK - BREAK
 ST - PYROBITUMEN
 CARB - CARBONACEOUS

A - ANHYDRITE
 POS - POSSIBLE
 XLN - CRYSTALLINE
 LAM - LAMINATE
 V - VUGULAR

LV - LARGE VUGS
 SV - SMALL VUGS
 PPV - PIN POINT VUGS
 I - INTERDIGITATE
 STY - STYOLITIC

HF - HORIZONTAL FRACTURE
 VF - VERTICAL FRACTURE
 SL - SMALL SAMPLE
 SL - SLIGHTLY
 V - VERY
 W - WITH

SAMPLE NUMBER	INTERVAL REPRESENTED FEET		PERMEABILITY TO AIR MILLIDARCY			PERMEABILITY FEET	POROSITY %	POROSITY FEET	DENSITY		VISUAL EXAMINATION
	DEPTH	THICK	KMAX	KDOP	KV				BULK	GRAIN	
	CORED INTERVAL 3741 - 3791										
	CORE 2 3741 - 3791 REC. 50.0 14 BOXES										
1	3741.0-42.1	1.1	.02	.01	-0.1	.02	1.5	1.65	2.74	2.78	PPV STY
2	3742.1-43.1	1.0	.03	.03	-0.1	.03	3.2	3.20	2.70	2.79	I FEW PPV STY
	3743.1-44.7	1.6	-	-	-	-	-	-	-	-	DENSE
3	3744.7-45.8	1.1	7.41	.69	.36	8.15	4.6	5.06	2.67	2.80	I FEW PPV STY F
4	3745.8-46.7	.9	*	.20	*	.18	3.9	3.51	2.68	2.79	I FEW PPV F
5	3746.7-47.7	1.0	.42	.05	.13	.42	5.0	5.00	2.66	2.80	I PPV F
6	3747.7-48.3	.6	5.07	.15	.27	3.04	4.3	2.58	2.71	2.83	I VF
	3748.3-52.4	4.1	-	-	-	-	-	-	-	-	DENSE
7	3752.4-53.8	1.4	.40	.06	.08	.56	5.2	7.28	2.65	2.80	I STY F
8	3753.8-54.8	1.0	.36	.31	-0.1	.36	9.1	9.10	2.58	2.84	I STY F
9	3754.8-56.0	1.2	.50	.46	.19	.60	8.4	10.08	2.59	2.83	I
10	3756.0-57.2	1.2	1.15	1.02	-0.1	1.38	7.8	9.36	2.59	2.82	I
11	3757.2-58.1	.9	.35	.30	-0.1	.32	1.4	1.26	2.76	2.80	PPV
12	3758.1-59.2	1.1	1.80	1.62	.15	1.98	7.2	7.92	2.60	2.80	I PPV
13	3759.2-60.2	1.0	3.03	2.85	4.09	3.03	7.5	7.50	2.59	2.79	I PPV
14	3760.2-61.3	1.1	52.50	7.99	13.20	57.75	10.9	11.99	2.51	2.82	I PPV VF
15	3761.3-62.4	1.1	13.90	10.80	11.20	15.29	11.2	12.32	2.50	2.81	I PPV
16	3762.4-63.4	1.0	1.96	1.13	.13	1.96	6.5	6.50	2.61	2.80	I FEW PPV
17	3763.4-64.5	1.1	1.31	.78	.17	1.44	6.4	7.04	2.61	2.79	I F
18	3764.5-65.5	1.0	.42	.25	-0.1	.42	5.0	5.00	2.66	2.80	I FEW PPV
19	3765.5-66.3	.8	*	.97	*	.77	.5	.40	2.79	2.81	DENSE F
20	3766.3-67.4	1.1	*	1.82	*	2.00	5.5	6.05	2.67	2.82	I F
21	3767.4-68.1	.7	.37	.09	.16	.26	.3	.21	2.80	2.81	DENSE F
22	3768.1-69.3	1.2	.56	.10	-0.1	.67	.6	.72	2.77	2.78	DENSE STY F
23	3769.3-70.4	1.1	10.70	1.07	.35	11.77	1.6	1.76	2.75	2.79	I F
24	3770.4-71.6	1.2	.16	.08	-0.1	.19	2.0	2.40	2.75	2.81	PPV STY F
25	3771.6-72.6	1.0	.15	.09	-0.1	.15	.4	.40	2.77	2.78	FEW PPV F

CORE LABORATORIES - CANADA LTD.

COMPANY ATLANTIC RICHFIELD CANADA LTD.
WELL ARCO CLARK ET AL HUME RIVER D-53

PAGE 2 OF 3
FILE 913-253

SAMPLE NUMBER	INTERVAL REPRESENTED, FEET		PERMEABILITY TO AIR, MILLIDARCYS			PERMEABILITY FEET	POROSITY, PER CENT	POROSITY FEET	DENSITY, gm/cc.		VISUAL EXAMINATION
	DEPTH	THICK	KMAX	K90°	KV				BULK	GRAIN	
26	3772.6-73.7	1.1	-0.1	-0.1	-0.1	-	.7	.77	2.73	2.75	FEW PPV
27	3773.7-74.8	1.1	-0.1	-0.1	-0.1	-	1.1	1.21	2.75	2.78	I STY
28	3774.8-75.9	1.1	.07	.04	-0.1	.08	2.5	2.75	2.73	2.80	I FEW PPV
29	3775.9-77.1	1.2	.12	.08	-0.1	.14	.8	.96	2.75	2.78	FEW PPV F
	3777.1-80.7	3.6	-	-	-	-	-	-	-	-	DENSE
30	3780.7-81.7	1.0	*	5.14	*	5.14	8.6	8.60	2.58	2.82	I PPV VF
31	3781.7-82.7	1.0	16.40	14.60	.49	16.40	8.8	8.80	2.56	2.81	I PPV
32	3782.7-83.6	.9	5.75	4.40	.32	5.18	6.5	5.85	2.62	2.80	I PPV STY
33	3783.6-84.5	.9	13.50	13.30	6.44	12.15	7.4	6.66	2.62	2.83	I PPV
34	3784.5-85.5	1.0	133.00	107.00	93.10	133.00	12.4	12.40	2.48	2.83	I PPV
35	3785.5-86.4	.9	23.90	11.10	.28	21.51	7.1	6.39	2.60	2.80	I PPV STY F
36	3786.4-87.5	1.1	13.00	11.80	3.04	14.30	8.1	8.91	2.61	2.84	I PPV
37	3787.5-88.6	1.1	2.62	.20	.57	2.88	.5	.55	2.79	2.80	FEW PPV F
38	3788.6-89.8	1.2	.42	.36	-0.1	.50	6.0	7.20	2.63	2.80	I PPV F
	3789.8-91.0	1.2	-	-	-	-	-	-	-	-	DENSE

CORE LABORATORIES - CANADA, LTD.

Petroleum Reservoir Engineering

WELL: ARCO CLARK ET AL HUME RIVER D-53

PAGE: 3 OF 3

FORMATION:

FILE: 913-253

SUMMARY INTERVAL: 3741.0 - 3791.0

TOTAL FOOTAGE: 50.0

FOOTAGE ANALYZED 39.5

FOOTAGE NOT ANALYZED: TOTAL: 10.5 DENSE 10.5 LOST .0 DRILLED .0 *NABR .0 RUBBLE .0

SUMMARY OF ANALYZED CORE:

TOTAL

BY
PERM
RANGES:

LESS THAN 0.10 Md.

0.10 0.49 Md.

0.50 0.99 Md.

1.00 9.99 Md.

GREATER THAN 9.99 Md.

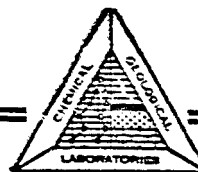
FOOTAGE	% OF ANALYZED CORE	WEIGHTED AVERAGE POROS. %	POROSITY FEET	WEIGHTED AVERAGE PERM. MD.	PERM. FEET	WEIGHTED AVERAGE RESID. OIL %	WEIGHTED AVERAGE TOT. WATER %
39.5	100.00	5.05	199.34	8.20	324.03	.00	.00
5.4	13.67	1.77	9.58	.02	.13	.00	.00
11.5	29.12	3.68	42.32	.30	3.50	.00	.00
3.2	8.10	3.50	11.20	.64	2.05	.00	.00
11.2	28.35	5.98	67.01	3.23	36.18	.00	.00
8.2	20.76	8.44	69.23	34.41	282.17	.00	.00

*NOT ANALYZED BY REQUEST

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CHEMICAL & GEOLOGICAL LABORATORIES LTD.

14240 - 115 AVENUE, EDMONTON 42, ALBERTA



Date Reported: February 17, 1972

LABORATORY REPORT NUMBER: E72-7769

ATLANTIC RICHFIELD CANADA LTD.

Date Received: February 11, 1972

Well: ARCO Clarke et al Hume River
D-53

Date Sampled: February 9, 1972

Method of Production: D.S.T. #3

Interval: 1370' - 1615'

Recovered: 80' drilling mud.

Container Number: JT 556

RESISTIVITY ON THE WATER: 1.45 OHM-meters @ 68°F.

A Johnston Testers MFE Chamber was received under a pressure of 20 psig. Recovered from the chamber was 1650 c.c. mud and 150 c.c. gas. The gas was analyzed to consist of 93% air. Further analysis was not made.

BENZENE CONTENT: No trace of benzene or toluene indicated

Sample was received in a down hole sampler. Water was very muddy, and had to be filter pressed prior to analysis.

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CHEMICAL & GEOLOGICAL LABORATORIES LTD.

WATER ANALYSIS

Lab No. E72-7744

Received Feb. 11, 1972 Reported: Feb. 17, 1972

Well: Location: ARCO Clarke et al Hume River D-53

Operator: ATLANTIC RICHFIELD CANADA LTD.

Field or Area: Hume River

Elev.: K.B. Grd. Zone/Formation:

Sample Interval: 1370' - 1615'

Method of Production: D.S.T. #3

Sampled from: Recovery

Sampled by: Johnston Testers Date: Feb. 9, 1972

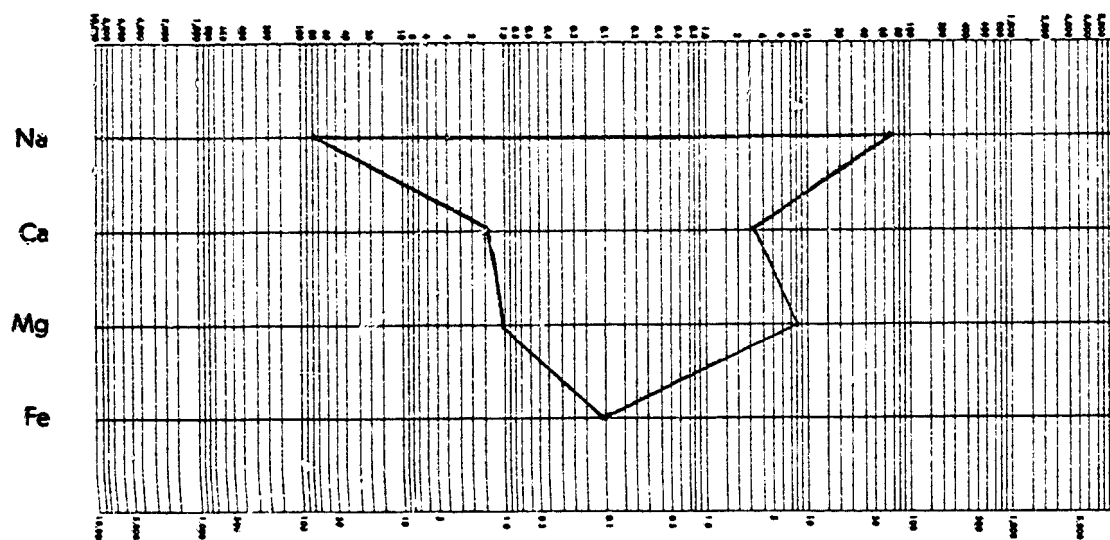
OTHER PERTINENT DATA Recovered 80' drilling mud.

(Signed)

	Na & K	K	Ca	Mg					SO ₄	Cl			CO ₃	HCO ₃		
Mg./L	1755		29	13					399	2380				210		
Meq./L	76.34		1.45	1.07					8.30	67.12				3.44		
Meq. %	48.40		0.92	0.68					5.26	42.56				2.18		

Total Solids Mg/L: By Evaporation 4,780 Fe Present Specific Gravity 1.005 @60°F Observed pH 8.2 @ 69 °F
 Calculated 4,786 After Ignition 3,620 H₂S Nil Refractive Index 1.3336 @25°C Resistivity 1.48 ohm meters @ 68 °F

Pattern Unit Meq./L



Remarks and Conclusions

Analysis determined on water extracted from mud by filtering under air pressure. Organic matter present in dissolved solids.

BENZENE CONTENT: No trace of benzene indicated

Sample was received in a 1 quart metal container with a foil insert present in the screw cap. Container was full, water was very muddy, and had to be filter pressed prior to analysis.

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

WATER ANALYSIS

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Lab No. E72-7696

Received: Feb. 8, 1972 Reported: Feb. 17, 1972 Well: Location: ARCO Clarke et al Hume River D-53

Operator: ATLANTIC RICHFIELD CANADA LTD.

Field or Area:

Elev.: K.B.

Grd.

Zone/Formation:

Sample Interval:

Method of Production: I.S.T. #1

Sampled from:

Sampled by:

Date: Jan. 28, 1972

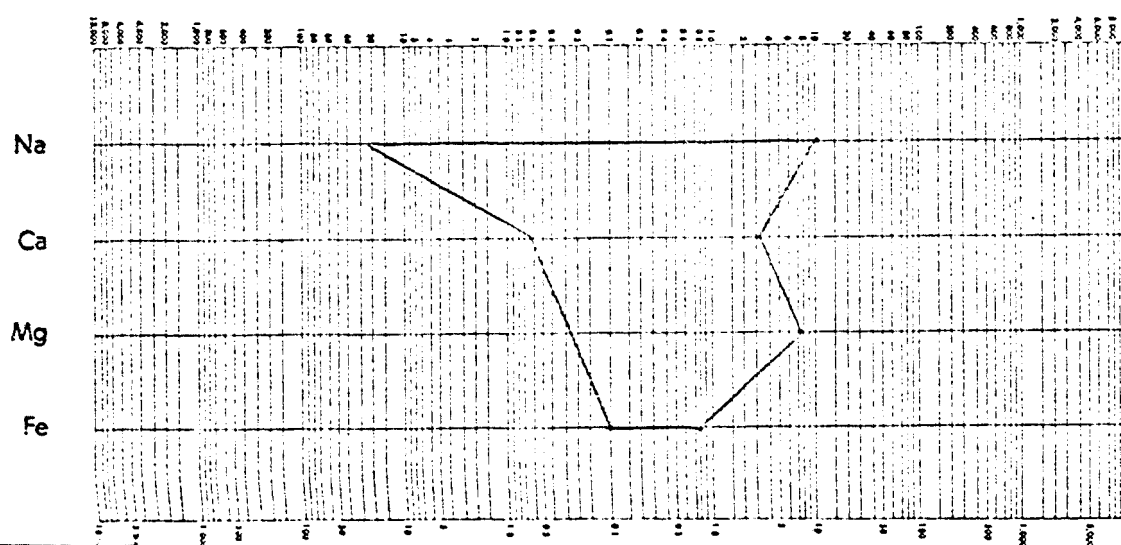
OTHER PERTINENT DATA Packer set at 1600'

(Signed)

	Na & K	K	Ca	Mg					SO ₄	Cl			CO ₂	HCO ₃		
Mg./L	508		12	Trace					374	384			24	200		
Meq./L	22.09		0.60	---					7.78	10.83			0.80	3.28		
Meq. %	48.68		1.32	---					17.14	23.87			1.76	7.23		

Total Solids Mg/L: By Evaporation 2,160 Fe Present Specific Gravity 1.002 @60°F Observed pH 8.5 @ 70 °F
 Calculated 1,502 After Ignition 880 H₂S Nil Refractive Index 1.3332 @25°C Resistivity 5.14 ohm meters @ 68 °F

Pattern Unit Meq./L



Remarks and Conclusions

A Johnston Testers MFE Chamber was received under a pressure of 35 psig. Contained in the chamber was 1790 c.c. of watery mud and 2500 c.c. of gas.

Colorless water was recovered for analysis by filtering under air pressure.

Organic matter present in dissolved solids.

BENZENE CONTENT: 0.02 P.P.M.

Sample was received in a Down Hole Sampler. Water was very muddy, and had to be filter pressed prior to analysis. No trace of toluene indicated.

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CHEMICAL & GEOLOGICAL LABORATORIES LTD.

WATER ANALYSIS

Lab No. E72-7743-4

Received: Feb. 11, 1972 Reported: Feb. 17, 1972

Well: Location: ARCO Clarke et al Hume River D-53

Operator: ATLANTIC RICHFIELD CANADA LTD.

Field or Area: Hume River

Elev.: K.B. Grd. Zone/Formation:

Sample Interval: 3650' - 3760'

Method of Production: D.S.T. #4

Sampled from: Bottom

Sampled by: Johnston Testers Date: Feb. 10, 1972

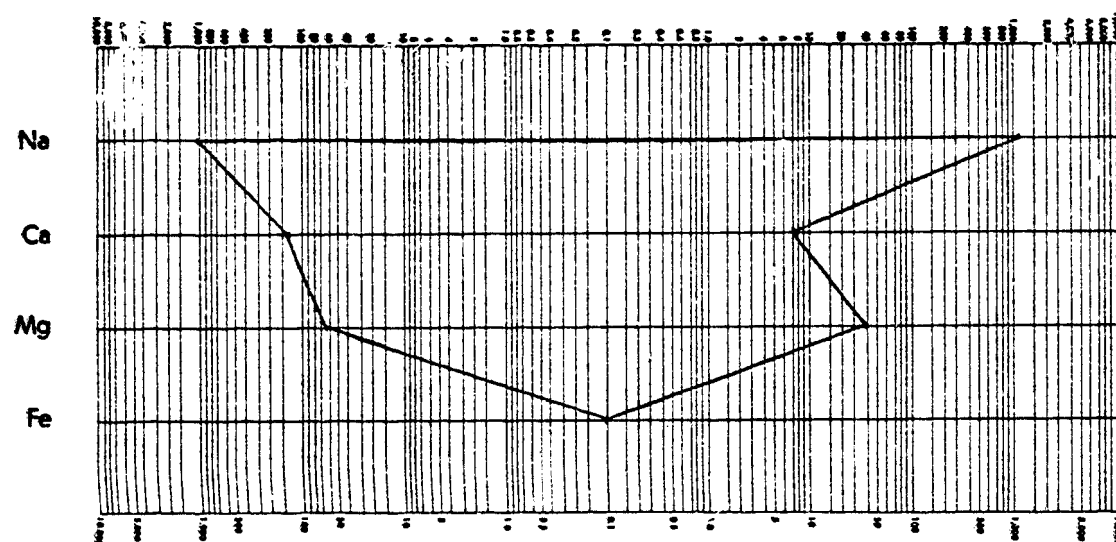
OTHER PERTINENT DATA Recovered 2560' fluid

(Signed)

	Na & K	K	Ca	Mg				SO ₄	Cl			CO ₃	HCO ₃		
Mg./L	24005		2799	778				1881	42600				450		
Meq./L	1044.20		139.67	63.95				39.12	1201.32				7.33		
Meq. %	41.84		5.60	2.56				1.57	48.14				0.30		

Total Solids Mg/L: By Evaporation 81,900 Fe Present Specific Gravity 1.057 @60°F Observed pH 7.1 @ 71 °F
 Calculated 72,513 After Ignition 71,240 H₂S Present Refractive Index 1.3469 @25°C Resistivity 0.120 ohm meters @ 68 °F

Pattern Unit Meq./L



Remarks and Conclusions

Sample consisted of colorless water with some sediment present. Organic matter present in dissolved solids.

Continued.....

CHEMICAL & GEOLOGICAL LABORATORIES LIMITED

- Page 2 -

OPERATOR: ATLANTIC RICHFIELD CANADA LTD.

REPORT NUMBER: E72-7743-1/-4

DATE SAMPLED: February 10, 1972

DATE RECEIVED: February 11, 1972

DATE REPORTED: February 17, 1972

WELL: ARCO Clarke et al Hume River D-53

LABORATORY NUMBER

E72-7743-1: Sampled from Top

RESISTIVITY: 0.189 OHM-meters @ 68°F.

Colorless water filtered from mud.

E72-7743-2: Sampled from Middle.

RESISTIVITY: 0.119 OHM-meters @ 68°F.

Colorless water with some sediment. Hydrogen Sulfide Present.

E72-7743-3: Sampled 475' from Bottom.

RESISTIVITY: 0.121 OHM-meters @ 68°F.

Colorless water with some sediment. Hydrogen Sulfide Present.

E72-7743-4: "See complete water analysis"

BENZENE CONTENT: No trace of benzene indicated.

Sample was received in a 1 quart metal container with a foil insert present in the screw cap. Container was full, water was very muddy, and had to be filter pressed prior to analysis.

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WATER ANALYSIS

Lab No. C72-4320-2

Received: Feb. 4, 1972 Reported: Feb. 23, 1972

Well: Location: ARCO Clarke Hume River D-53

Operator: ATLANTIC RICHFIELD CANADA LTD.

Field or Area: Hume River

Elev.: K.B. Grd. Zone/Formation:

Sample Interval: 1607' - 1755'

Method of Production: D.S.T. #1

Sampled from: Bottom

Sampled by: Date:

OTHER PERTINENT DATA

Recovery: 80' very slightly oil cut mud.

(Signed)

	Na	K	Ca	Mg					SO ₄	Cl				CO ₃	HCO ₃		
Mg./L										60							
Meq./L										1.69							
Meq. %																	

Total Solids Mg/L: By Evaporation 1,780 Fe Nil Specific Gravity @60°F Observed pH 8.0 @ 76 °F
Calculated After Ignition 895 H₂S Nil Refractive Index 1.3330 @25°C Resistivity 5.76 ohm meters @ 68 °F.

Pattern Unit Meq./L

Na	
Ca	
Mg	
Fe	

Remarks and Conclusions

Analysis determined on clear colorless filtrate recovered from mud. Much organic matter detected in evaporated total dissolved solids.

C72-4320-1 Top. Description same as above.
Resistivity: 6.05 OHM-meters at 68°F.

Cl
HCO₃
SO₄
CO₃

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Calgary

GAS ANALYSIS REPORT: Lab. No. E72-7770 Received: Feb. 11, 1972 Reported: Feb. 17, 1972

Well: ARCO Clark et al Hume River D-53 Operator: ATLANTIC RICHFIELD CANADA LTD.

Field or Area: _____ Location: _____ Elev.: K.B. Grd.: _____

Zone and Formation: _____ Sample Interval: 3650' - 3760'

Well production at sampling time: Oil _____ bpd; Gas _____ MCFD; Water _____ bpd.

Sampled from: _____ Sampled by: _____ Date: Feb. 10, 1972

Pressure: (a) at point of sampling _____ psig (b) Gas Bomb pressure _____ psig

Temperature: (a) at point of sampling _____ °F (b) Separator _____ °F

Pressures: Reservoir _____ Tubing _____ Casing _____ Separator _____

OTHER PERTINENT DATA _____ Method of Production: D.S.T. #4 Recovered 2560' fluid

Container #JT 518

(Signed)

COMPOSITION	% by Volume	G.P.M. in Imp. Gal. @ 60°F. & 14.65 PSIA	G.P.M. (Calculated)	SPECIFIC GRAVITY
Helium	<u>1.88</u>		pentanes + <u>0.006</u>	Calculated <u>0.944</u>
Hydrogen sulfide	<u>0.</u>		at 12 lbs. <u>0.</u>	Insufficient by Weight <u>Sample</u>
Carbon dioxide	<u>0.53</u>		at 15 lbs. <u>0.</u>	CRITICALS (Calculated)
Nitrogen	<u>93.90</u>		at 22 lbs. <u>0.007</u>	Pc <u>453.6</u>
Methane	<u>2.94</u>		at 26 lbs. <u>0.007</u>	Tc <u>230.5</u>
Ethane	<u>0.69</u>		VAPOR PRESSURE (Calc.) @ 100°F. Pentanes + <u>18.01</u>	
Propane	<u>0.02</u>	<u>0.005</u>	H ₂ S Grains per 100 cu. ft. @ 60°F. & 14.65 p.s.i.a. <u>0.</u>	
Isobutane	<u>0.01</u>	<u>0.003</u>	GROSS B.T.U. (Calc.) @ 60°F. & 14.65 p.s.i.a. (dry) <u>43.7</u>	
N-butane	<u>0.01</u>	<u>0.003</u>	(sat.) <u>43.0</u>	
Isopentane	<u>0.01</u>	<u>0.003</u>	Acid Gas Free (dry) <u>44.0</u>	
N-pentane	<u>0.01</u>	<u>0.003</u>	DEW POINT (Calc.) p.s.i. 950 1050 1200	
Hexanes	<u>TRCE</u>	<u>0.</u>	FAH. <u>-61</u> <u>-61</u> <u>-61</u>	
Heptanes	<u>TRCE</u>	<u>0.</u>	Mol. Wt.: Total Gas <u>27.329</u> Heptanes + <u>0.</u>	
Octanes	<u>TRCE</u>	<u>0.</u>	A Johnston Testers MFE Chamber was received under a pressure of 80 psig. Contained in the chamber was gas and 2410 c.c. water.	
Nonanes	<u>0.</u>	<u>0.</u>	RESISTIVITY OF WATER: 0.122 OHM-meters @ 68°F.	
Decanes +	<u>0.</u>	<u>0.</u>	BENZENE CONTENT: No trace of benzene or toluene indicated.	
TOTAL	<u>100.00</u>	<u>0.017</u>	Sample was received in a down hole sampler. Water was clear, and appeared to be a good sample. △	

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Fort St. John

Calgary

GAS ANALYSIS REPORT: Lab. No. E72-7695 Received: Feb. 8, 1972 Reported: Feb. 17, 1972Well: ARCO Clarke et al Hume River D-53 Operator: ATLANTIC RICHFIELD CANADA LTD.Field or Area: _____ Location: _____ Elev.: K.B. Grd. _____

Zone and Formation: _____ Sample Interval: _____

Well production at sampling time: Oil _____ bpd; Gas _____ MCFD; Water _____ bpd.

Sampled from: _____ Sampled by: _____ Date: Jan. 28, 1972

Pressure: (a) at point of sampling _____ psig (b) Gas Bomb pressure _____ psig

Temperature: (a) at point of sampling _____ °F (b) Separator _____ °F

Pressures: Reservoir _____ Tubing _____ Casing _____ Separator _____

OTHER PERTINENT DATA: Packer Set at 1600' Method of Production: D.S.T. #1Container Number: JT #553

(Signed)

COMPOSITION	% by Volume	G.P.M. in Imp. Gal. @ 60°F. & 14.65 PSIA	G.P.M. (Calculated)	SPECIFIC GRAVITY
Helium	<u>0.01</u>		pentanes + <u>0.116</u>	Calculated: <u>0.690</u>
Hydrogen sulfide	<u>0.</u>		at 12 lbs. <u>0.</u>	Insufficient by Weight <u>Sample</u>
Carbon dioxide	<u>0.02</u>		at 15 lbs. <u>0.120</u>	CRITICALS (Calculated)
Nitrogen	<u>4.29</u>		at 22 lbs. <u>0.139</u>	Pc <u>664.9</u>
Methane	<u>78.73</u>		at 26 lbs. <u>0.154</u>	Tc <u>381.4</u>
Ethane	<u>11.49</u>		VAPOR PRESSURE (Calc.) @ 100°F. Pentanes + <u>13.32</u>	
Propane	<u>3.92</u>	<u>0.894</u>	H_2S Grains per 100 cu. ft. @ 60°F. & 14.65 p.s.i.a. <u>0.</u>	
Isobutane	<u>0.42</u>	<u>0.114</u>	GROSS B.T.U. (Calc.) @ 60°F. & 14.65 p.s.i.a. (dry) <u>1147.7</u>	
N-butane	<u>0.76</u>	<u>0.199</u>	(sat.) <u>1127.6</u>	
Isopentane	<u>0.12</u>	<u>0.036</u>	Acid Gas Free (dry) <u>1148.0</u>	
N-pentane	<u>0.12</u>	<u>0.036</u>	DEW POINT (Calc.) p.s.i. 950 1050 1200	
Hexanes	<u>0.06</u>	<u>0.021</u>	FAH. <u>36</u> <u>34</u> <u>31</u>	
Heptanes	<u>0.04</u>	<u>0.014</u>	Mol. Wt.: Total Gas <u>19.996</u> Heptanes + <u>102.093</u>	
Octanes	<u>0.02</u>	<u>0.009</u>	A Johnston Testers MFE Chamber was received under a pressure of 35 psig. Contained in the chamber was 1790 c.c. watery mud. and 2500 c.c. gas.	
Nonanes	<u>0.</u>	<u>0.</u>		
Decanes +	<u>0.</u>	<u>0.</u>		
TOTAL	<u>100.00</u>	<u>1.323</u>		

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**technical
report**



JOHNSTON TESTERS

TEST DATA

TOOL SEQUENCE

Formation	Keyscarp	Depth	1755	1755	P.O. Sub	Length	0.0
Interval	1608	1755		1755	P.P. Sub	1.00	
Tool	Open Hole, Bottom Hole				MFF Tool	1.00	
Time	1200			1412	Bypass Tool	9.38	
First Flow	7			60	Jars	2.03	
Second Flow	30				Safety Joint	6.50	
Third Flow				60	S.S. & Packer	1.75	
Fourth Flow	1650			2000	T.C. & Packer	9.38	7 3/4"
Water	28,000			25,000 +	Total	5.20	7 3/4"
Remarks	Weak initial blow. Weak blow on second flow, dead in 15 minutes.				Stub	36.24	
FLUID RECOVERY	80				Perf	1.20	
Recovery	80'				Perf	5.00	
					Recorder	5.00	
					Recorder	5.90	
					Drill Pipe	4.40	
					Total Interval	125.95	
						147.45	

GAS FLOW MEASUREMENT

NIL

Test satisfactory.
Tool was chased 10' during test period.

183.69

308 KB (est.) 295 GL (est.)

1/2"

Nil

MUD AND HOLE DATA

Gel

2/32

77

w. 9.1

Regent Drilling

Rig No 11

4 1/2" FH

2 7/8" ID length

442.35'

7 3/4"

District Inuvik D06626
Company Atlantic Richfield Canada Ltd.
Well Name ARCO Clark et al Hume River D-53
Number 65°52'03"N 129°11'00"W 00
Format Keyscarp
Interval 1608 - 1755

January 28/72

1

1

Address 650 Guinness House
Calgary 2, Alberta
N.W.T.

Wildcat
L. Bell
D. L'Heureux

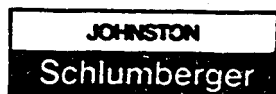
17 - Mr. Rayer, Calgary

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D06626		PRESSURE DATA		FLUID SAMPLE REPORT	
INSTRUMENT No.	AK1-2593	AK1-2526		Sample No.	553
CAPACITY (psig)	3050	3200		Type	5"
INSTRUMENT DEPTH FT.	1619	1625		Depth	1583 ft.
INSTRUMENT OPENING	Outside	Outside		Volume	2500 cc
PRESSURE GRADIENT psi/FT.					
WELL TEMP. °F.	82				
INITIAL HYDROSTATIC	A 760#	774#		Sample Pressure:	
FIRST FLOW	B 43#	51#			psig. at Surface
	B-1 46#	52#		Gravity	API @ °F
INITIAL SHUT-IN	C 421#	433#		Gas Oil Ratio	Cu.Ft./bbl.
SECOND FLOW	D 52#	59#			
	D-1 56#	61#		Recovery:	
SECOND SHUT-IN	E				Cu. Ft. Gas
THIRD FLOW	F				cc. Oil
	F-1				cc. Water
FINAL SHUT-IN	G 142#	150#			cc. Mud
FINAL HYDROSTATIC	H 758#	770#			Total Liquid cc.
REMARKS:	MFE sample sent to Core Lab., Edmonton.				

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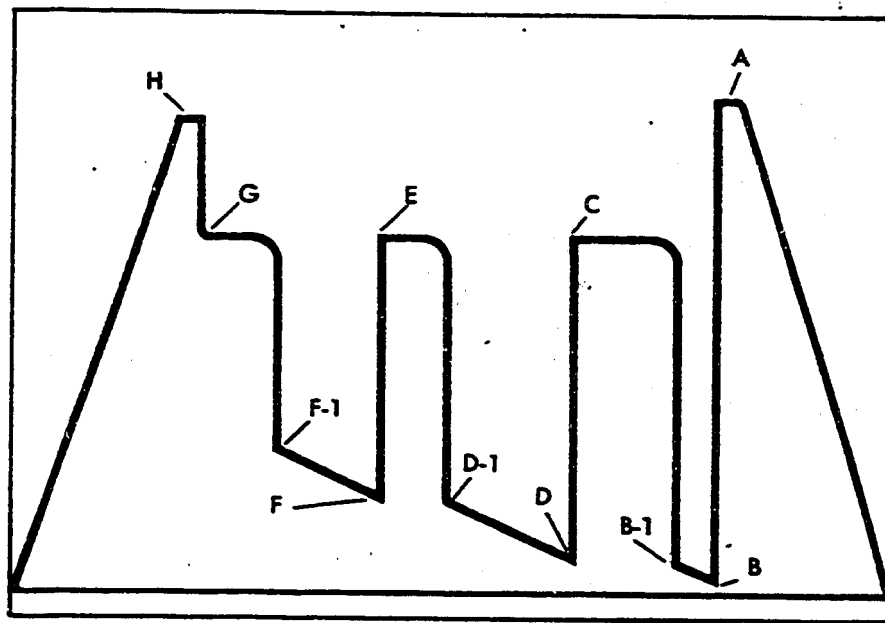
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GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

FIELD
REPORT NO.
D06626

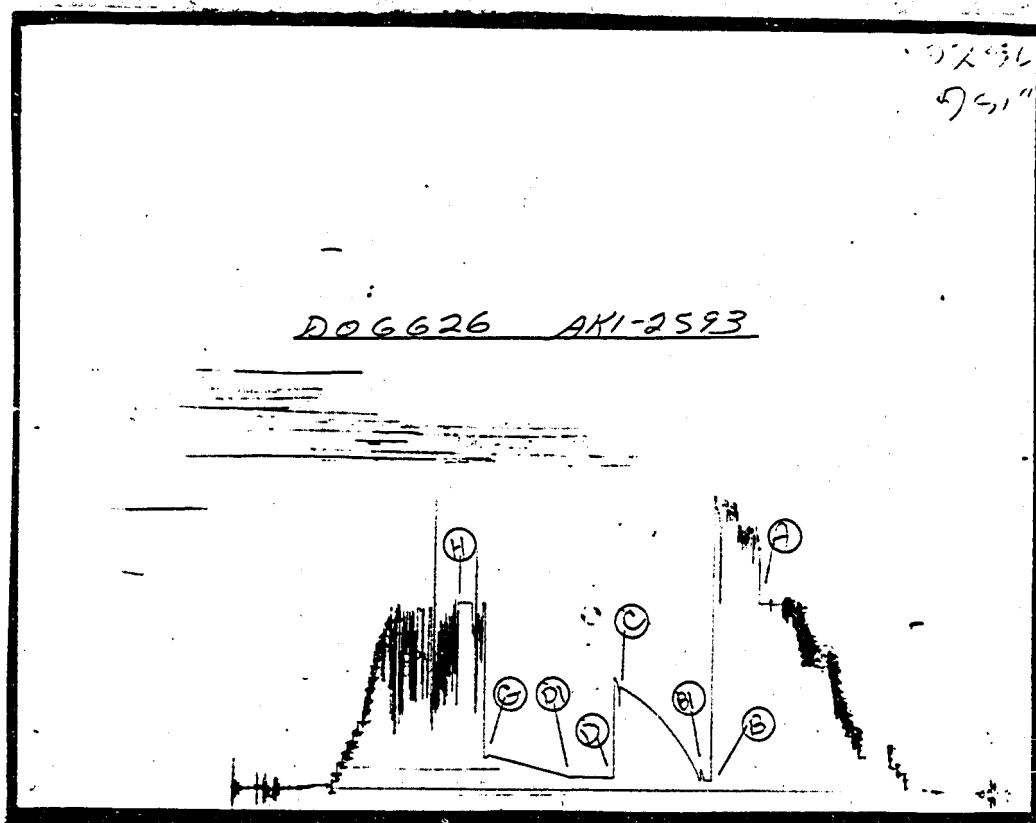
RECORDER NO.
AK1-2593



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z — Special pressure points such as pumping pressures recorded for formation breakdown.



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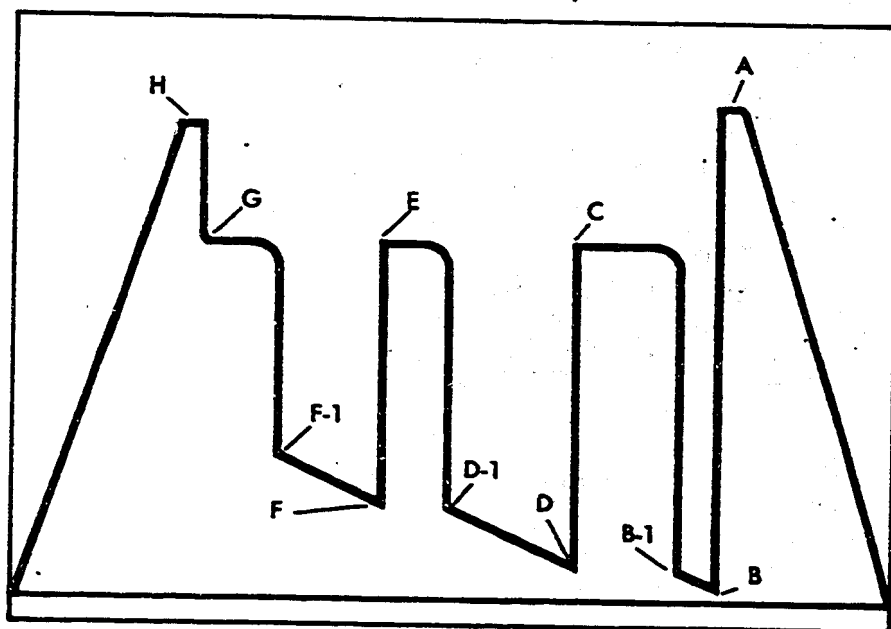
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

FIELD
REPORT NO.

RECORDER NO.

D06626

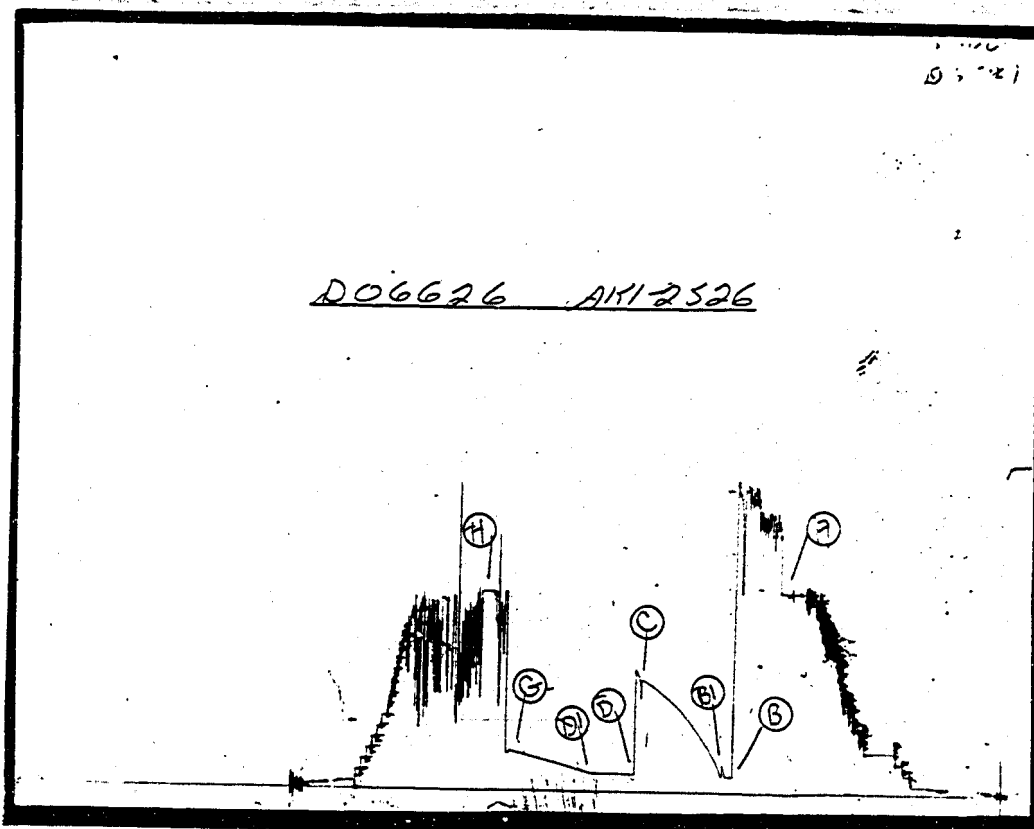
AK1-2526



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- Z - Special pressure points such as pumping pressures recorded for formation breakdown.



TEST DATA					TOOL SEQUENCE		
Type of Test Open Hole, Straddle, Conventional					Tool	Length	O.D.
Time Started in Hole	1200	Hrs.	Tool Opened	Hrs.	P.O. Sub	.90	
First Flow		Min.	Initial Shut-In	Min.	Sub	.90	
Second Flow		Min.	Second Shut In	Min.	MFE Tool	9.05	
Third Flow		Min.	Final Shut In	Min.	Bypass Tool	3.00	
Pulled Loose @		Hrs.	Out of Hole	1900	Jara	6.50	
Wt. Set/on Packers	15,000	#	Pulled Loose Wt.	#	Safety Joint	1.75	
Description of Blow During Test					S.S. & Packer	9.35	7 1/2"
NIL					T.C. & Packer	5.00	7 1/2"
					Total	36.45	
					Stub	1.20	
					Perfs	17.00	
					Recorder	6.00	
					Recorder	4.40	
					Sub	.95	
					Drill Collar	209.44	
					Sub	.90	
					Blank off sub	.85	
					Travel Collar	3.50	
					Total Interval	244.24	
					Packer	2.80	7 1/2"
					T.C. & Packer	6.25	7 1/2"
					Perfs	12.00	
					Recorder	4.40	
					Sub	.80	
					Drill Pipe	2516.28	
					Sub	.80	
					B.N. & Perf	1.50	
					Total Below Intv	2544.83	
					TOTAL LENGTH	2581.28	
					Elevation G.L.	n/a	K.B. n/a
					Bottom Hole Choke Size	1/2"	
					Fluid Cushion Type	Nil	Amr.
					MUD AND HOLE DATA		
					Mud Type	W.L.	
					Filter Cake	Visc. 48	Wt. 9.1
					Time Taken		
					Contractor	Regent Drilling	Rig No. 11
					Drill Pipe Size	4 1/2" FH	
					Drill Collar Size	2 3/4" ID	&
					Drill Collar Length	345.89'	&
					Main Hole Size	8 3/4" Rat Hole	
					RESISTIVITY		
					SALT CONTENT		
					Recovery Water	@	°F.
					Mud Pit sample filtrate	@	°F.
					District	Inuvik	Ticket No. D06613
					Company	Atlantic Richfield Canada Ltd.	
					Well Name	ARCO Clark et al Hume River D-53	
					Number	65°52'03"N 129°11'00"W	
					Formation	Thickness	Field Wildcat
					Interval	1370 - 1615	Province N.W.T.
					Distribution of Reports	17 - Mr. Rayer, Calgary	Co. Rep. Phil Murray
							Technician H. Palmer

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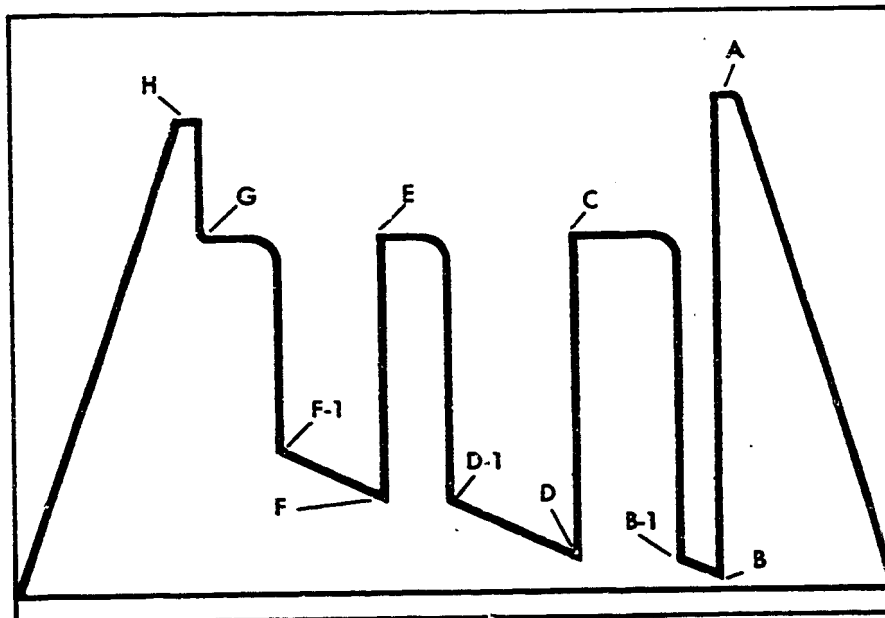
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GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTSFIELD
REPORT NO.

D06613

RECORDER NO.

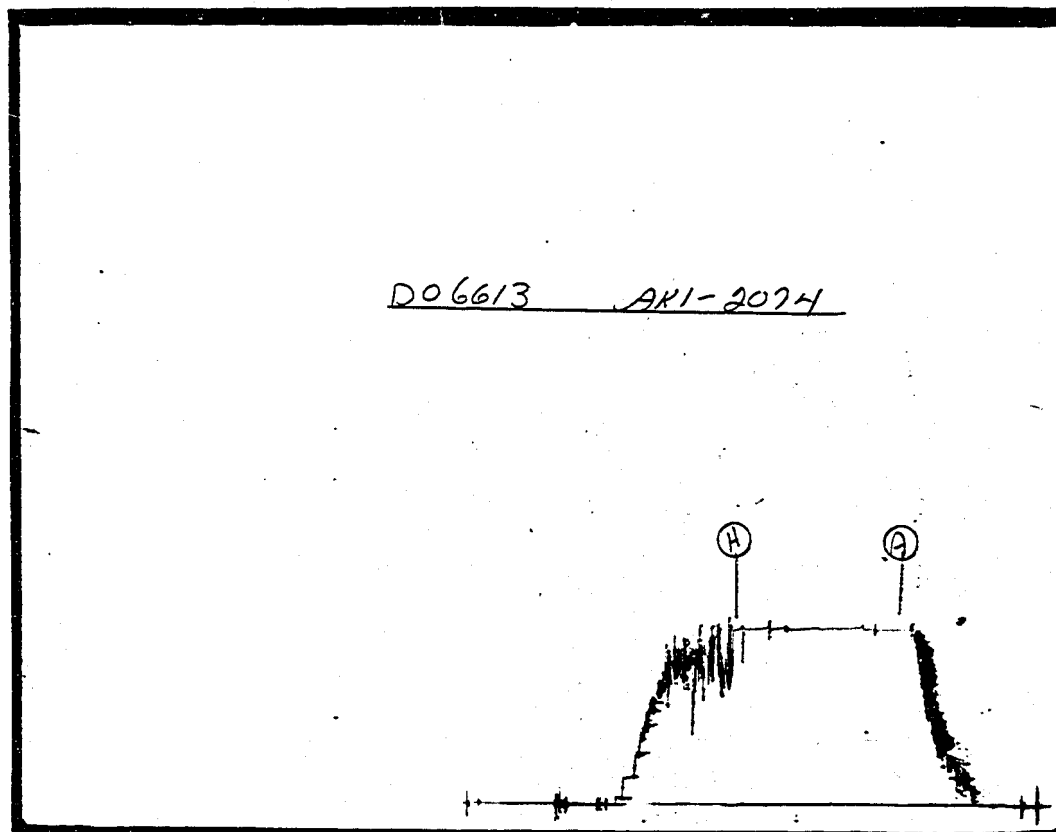
AK1-2074



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z — Special pressure points such as pumping pressures recorded for formation breakdown.



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TEST DATA						TOOL SEQUENCE		
Type of Test	Open hole, Selective Zone.					Tool	Length	O.D.
Time Started in Hole	0830	Hrs.	Tool Opened	1142	Hrs.	P.O. Sub	.90	
First Flow	3	Min.	Initial Shut-In	60	Min.	Sub	.90	
Second Flow	20	Min.	Second Shut In		Min.	MFE Tool	9.05	
Third Flow		Min.	Final Shut In	60	Min.	Bypass Tool	3.00	
Pulled Loose @	1415	Hrs.	Out of Hole	1700	Hrs.	Jars	6.50	
Wt. Set/on Packers	40,000	#	Pulled Loose Wt.	10,000	#	Safety Joint	1.75	
Description of Blow During Test	Fair initial puff on preflow.					S.S. & Packer	9.35	7 1/2"
Weak blow on flow, completely dead in 15 minutes.						T.C. & Packer	5.00	7 1/2"
						Total	36.45	
						Strub	1.20	
						Perfs	10.00	
						Recorder	6.00	
						Recorder	4.40	
						Sub	.80	
						Drill Pipe	218.22	
						Sub	.80	
						Blank off Sub	.85	
						Travel Collar	3.50	
						Total Interval	245.77	
						Packer	2.80	7 1/2"
						T.C. & Packer	6.25	7 1/2"
						Perf	3.00	
						Recorder	4.40	
						Selec. Zone Tool	6.30	
						Total Below Intv.	22.75	
						TOTAL LENGTH 304.97		
						Elevation G.L.	N/A	K.B. N/A
						Bottom Hole Choke Size	1/2"	
						Fluid Cushion Type	NH	Amt.
						MUD AND HOLE DATA		
						Mud Type	Gel Chem	W.L.
						Filter Cake	2/32	Visc. 80 Wt. 9.1
						Time Taken		
						Contractor	Regent Drilling	Rig No. 11
						Drill Pipe Size	4 1/2" FH	
						Drill Collar Size	2 3/4" ID	&
						Drill Collar Length	564.58'	&
						Main Hole Size	8 3/4"	Rat Hole
						J.T. No. 3		
						RESISTIVITY SALT CONTENT		
Recovery Water	@	°F.	1400	ppm.				
Mud Pit sample filtrate	@	°F.	1000	ppm.				
District	Inuvik	Ticker No.	D06614	Date	February 9, 1972			
Company	Atlantic Richfield Canada Ltd.		Address	650 Guinness House				
Well Name	Arco Clark at al Hume River D-53		Calgary 2, Alberta					
Number	65°52'03"N 129°11'00"W		Field	Wildcat		Province N.W.T.		
Formation			Thickness	Co. Rep.	P. Murray			
Interval	1370 - 1615		T.D.	4159	Technician	H. Palmer		
Distribution of Reports						17 - Calgary Attention: Mr. Rayer		

D06614

REMARKS: MPE Sample sent to C & G Labs., Edmonton.

On Recorder AKI-2526

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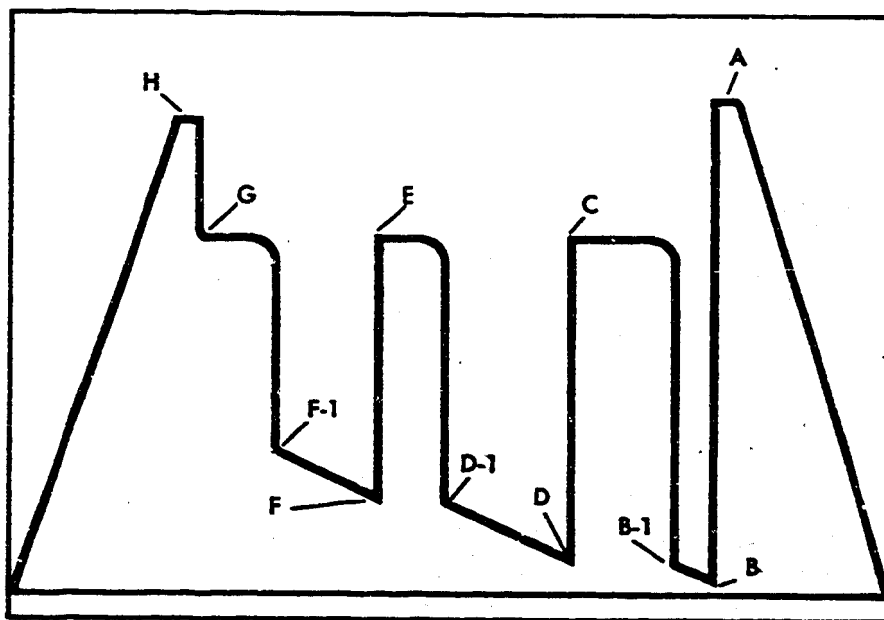
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FIELD
REPORT NO.

RECORDER NO.

D06614

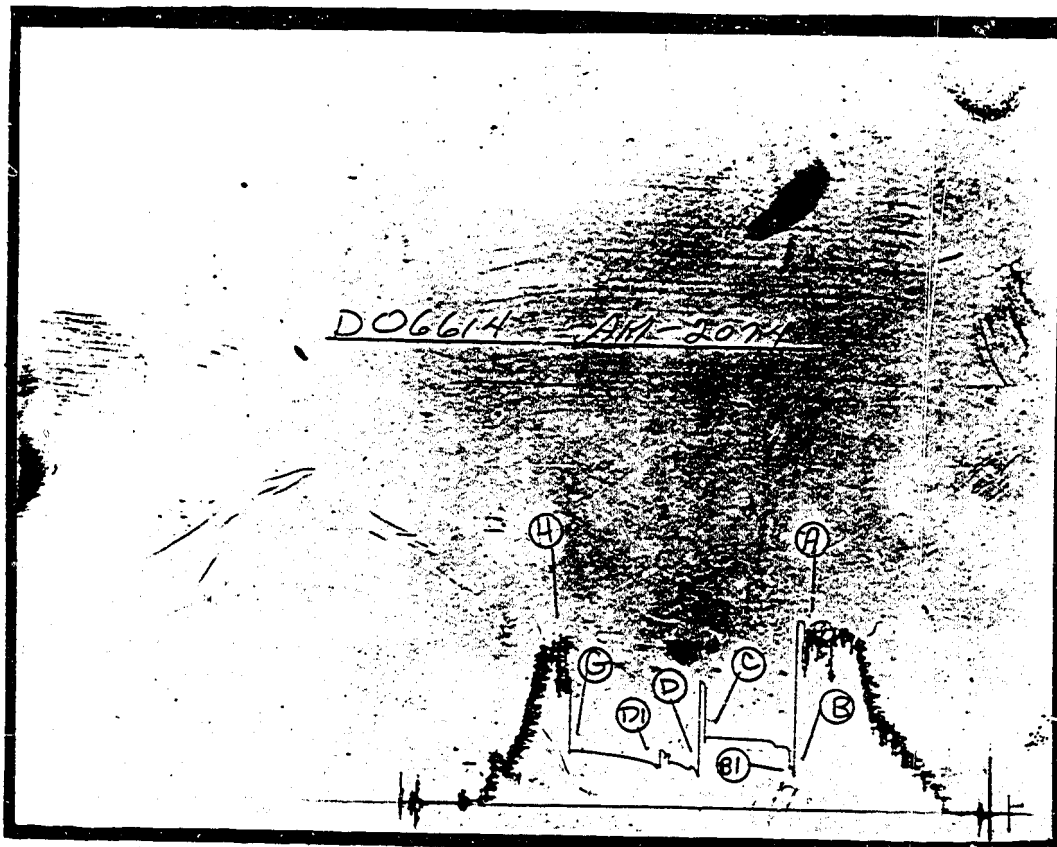
AK1-2074

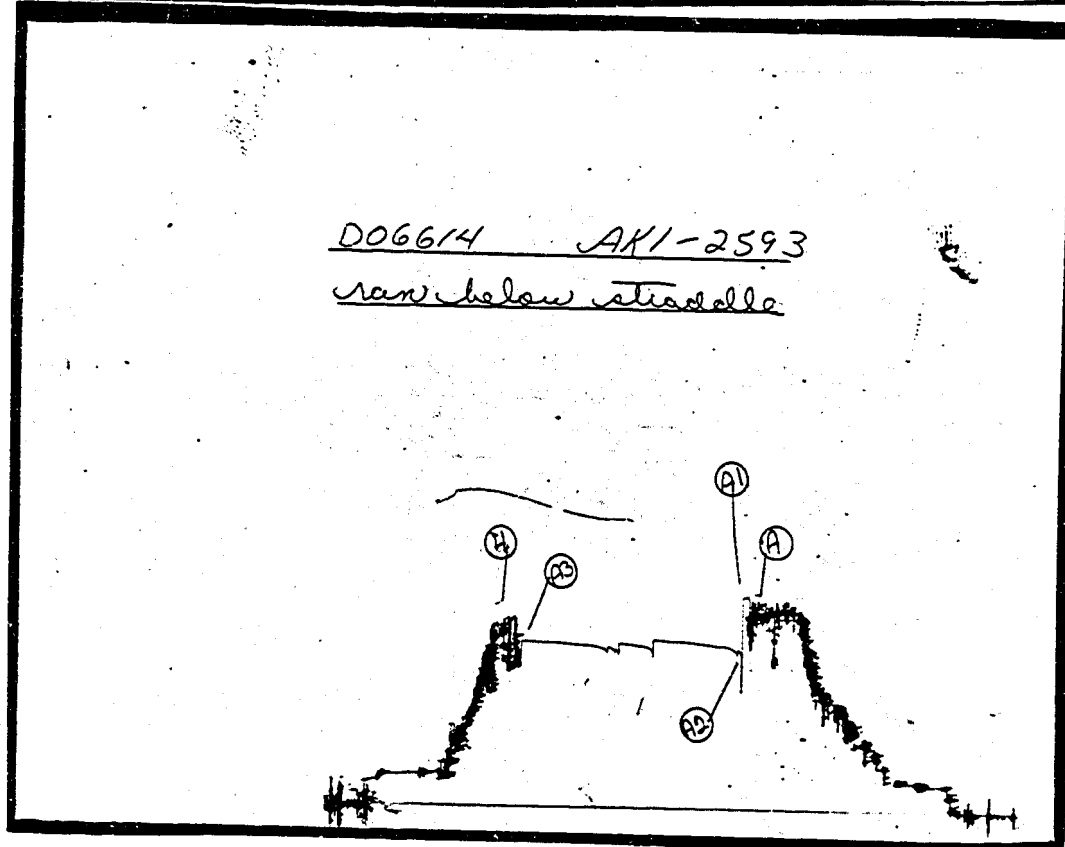
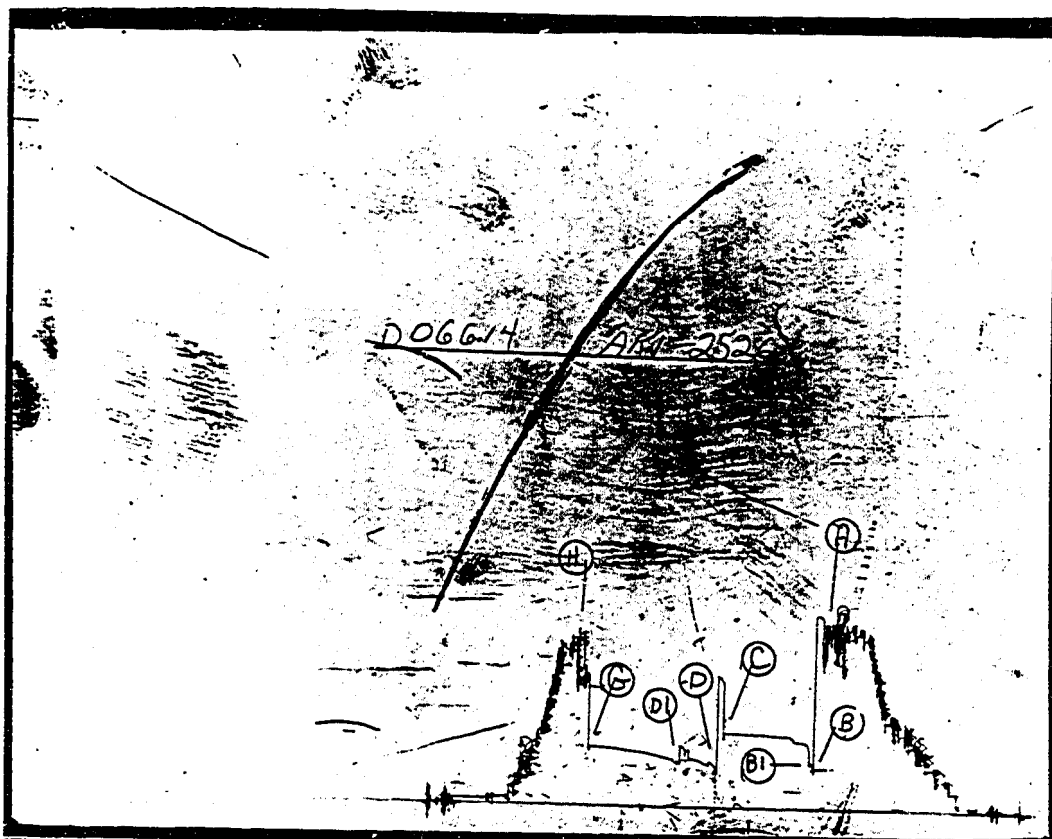


- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z - Special pressure points such as pumping pressures recorded for formation breakdown.





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TEST DATA					TOOL SEQUENCE		
Type of Test	Open Hole, Straddle, Bypass				Tool	Length	O.D.
Time Started in Hole	1800	Hrs.	Tool Opened	2157	Hrs.	P.O. Sub	.90
First Flow	3	Min.	Initial Shut-In	60	Min.	Sub	.90
Second Flow	75	Min.	Second Shut In		Min.	MFE Tool	9.05
Third Flow		Min.	Final Shut In	90	Min.	Bypass Tool	3.00
Pulled Loose @	0145	Hrs.	Out of Hole	0500	Hrs.	Jars	6.50
Wt. Set/on Packers	40,000	#	Pulled Loose Wt.	10,000	#	Safety Joint	1.75
Description of Blow During Test						H. Sub	.85
Strong initial puff, good air blow throughout test.						S.S. & Packer	9.35 7 1/2"
						T.C. & Packer	5.00 7 1/2"
						Total	37.30
						Stub	1.20
FLUID RECOVERY Was Test Reverse Circulated Yes ☐ No ☐						Perf	6.00
Total Fluid Recovered 2560 Ft.						R. Sub	.85
Description of Fluid Recovered						Recorder	4.40
375' muddy sulphurous salt water.						Recorder	4.40
2185' dark sulphurous salt water.						Sub	.90
						Drill Collars	89.38
						Sub	.90
						Travel Collar	3.50
						Total Interval	111.53
GAS BLOW MEASUREMENT							
Measured With				I.D. Riser		Packer	2.80 7 1/2"
Time	Sfce. Choke	Reading psi inches	M Cubic Feet/Day			T.C. & Packer	6.25 7 1/2"
						Perfs	12.00
			NIL			Recorder	6.00
						Sub	.80
						Drill Pipe	369.13
						Sub	.80
						B.N. & Perf	1.50
						Total Below Intv	399.28
						TOTAL LENGTH	548.11
						Elevation G.L.	n/a K.B. n/a
						Bottom Hole Choke Size	1 1/2"
						Fluid Cushion Type	nil Amt.
REMARKS: Test satisfactory.						MUD AND HOLE DATA	
						Mud Type	Gel Chem W.L.
						Filter Cake	2/32 Visc. 80 Wt. 9.1
						Time Taken	
						Contractor	Regent Drilling Rig No. 11
						Drill Pipe Size	4 1/2" FH
						Drill Collar Size	2 3/4" ID &
						Drill Collar Length	475' &
						Main Hole Size	8 3/4" Rat Hole
RESISTIVITY					SALT CONTENT		
Recovery Water	@	°F.	67,800	ppm.			
Mud Pit sample filtrate	@	°F.	1,400	ppm.			
District	Inuvik	Ticket No.	D06615	Date	February 9, 1972	Test No.	4 J.T. No. 4
Company	Atlantic Richfield Canada Ltd.				Address	650 Guinness House	
Well Name	ARCO Clark et al Hume River D-53				Calgary 2, Alberta		
Number	65°52'03"N 129°11'00"W				Field	Wildcat Province N.W.T.	
Formation	Bear Rock	Thickness	Co. Rep. p. Murray				
Interval	3649 - 3760	T.D.	4159	Technician	H. Palmer		
Distribution of Reports					17 - Mr. Rayer, Calgary		

[illegible]

JOHNSTON
Schlumberger

JOHNSTON TESTERS

321 - 50TH AVENUE S.E. - CALGARY 24, ALBERTA - PH. 255-1151

A DIVISION OF SCHLUMBERGER CANADA LIMITED

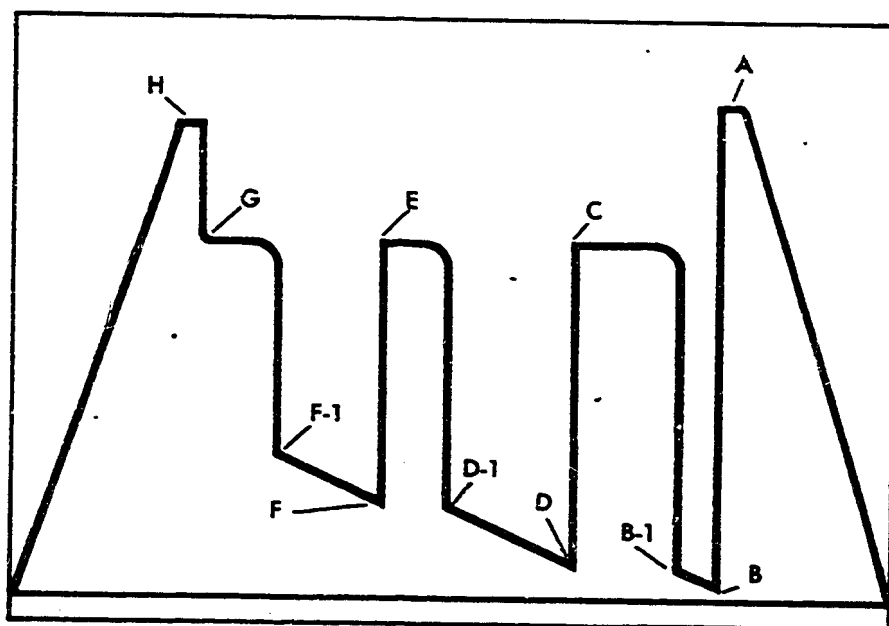
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

FIELD
REPORT NO.

D06615

RECORDER NO.

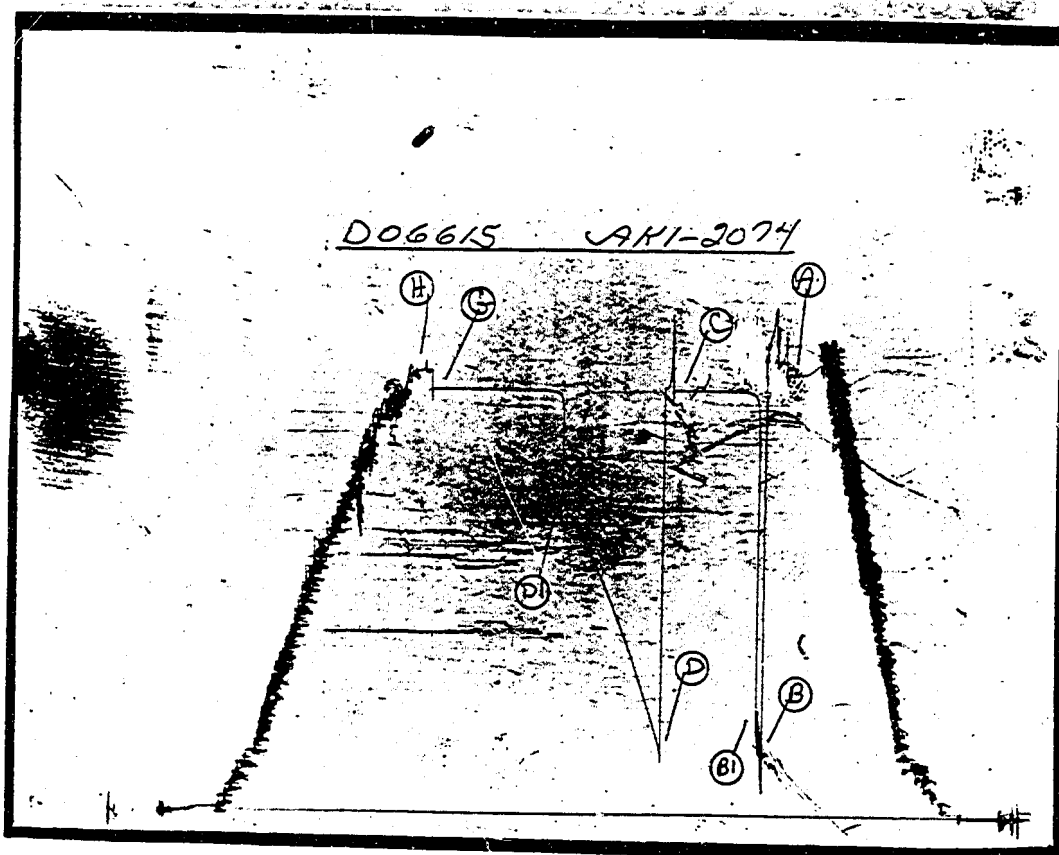
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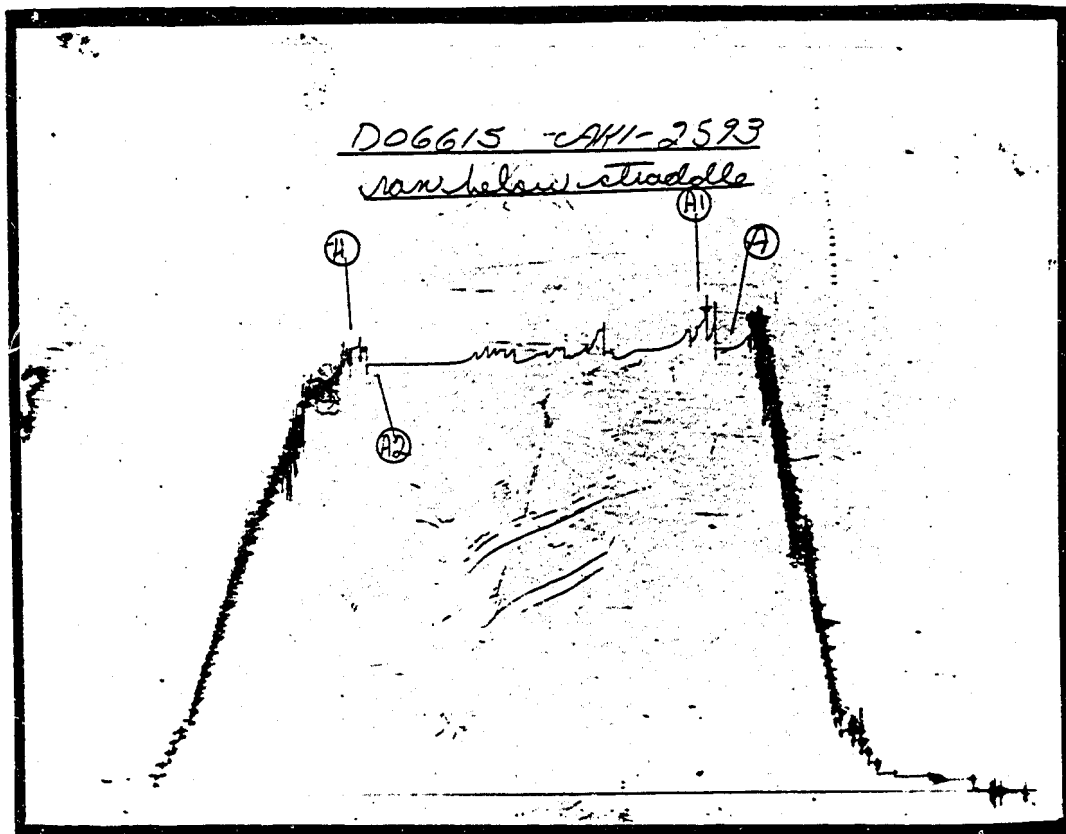
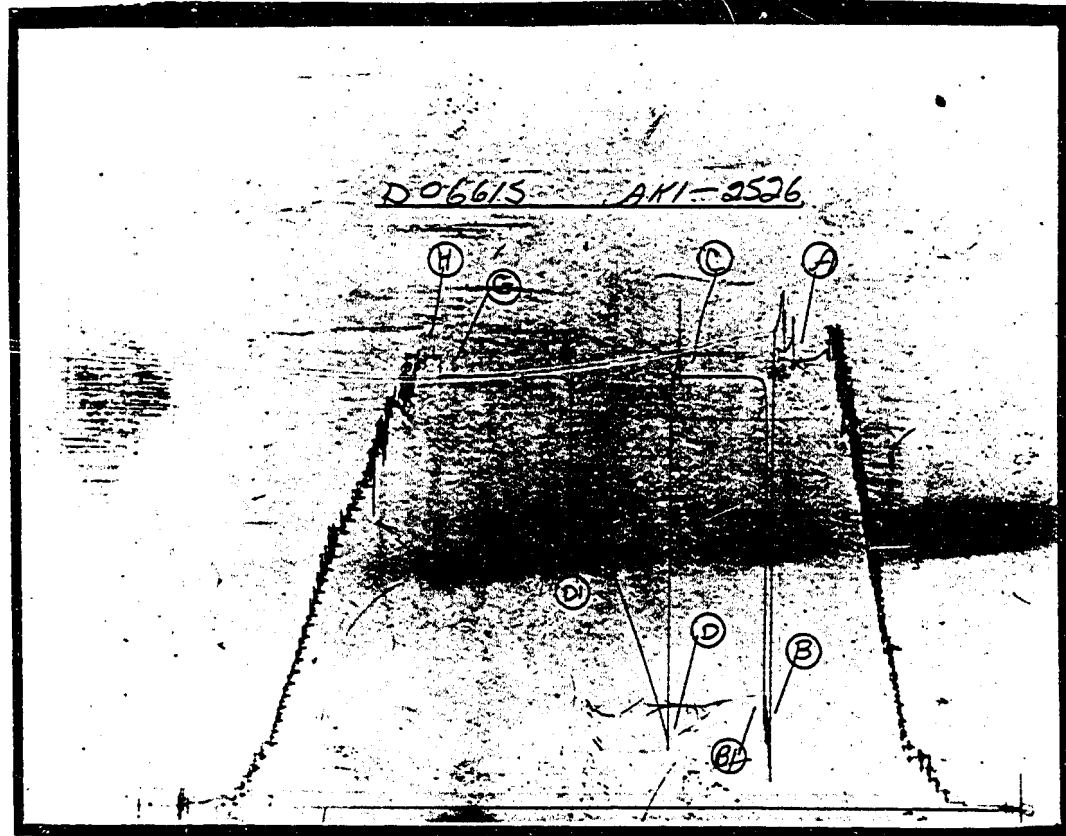


- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z — Special pressure points such as pumping pressures recorded for formation breakdown.





1-2-11-72

DAILY DRILLING REPORT

REPORT NO.

DATE

ATLANTIC RICHFIELD CANADA LTD.

LEASE
HARBOUR-CHAPPE HUNTER A

WELL NO.

FIELD OR DIST.

COUNTY

STATE

N.W.T.

CANADA

AT Drilling

RIG NO.

DRILL PIPE

TOOL JOINT

O.D.

PUMPS

SIZE

MAKE

WT. & CR.

NO. JOINTS

FEET

RKB. TO

SET AT

REMARKS

NAME OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER

NO.

MANUFACTURER

TYPE

STROKE LENGTH

LAST CASING TUBING OR LINER

CONFIDENTIAL

TIGHT HOLE

TIME DISTRIBUTION—HOURS

MORN DAY EVE

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

SCALES PARTS

COND.

STANDS D.P.

FT.

BIT NO.

TIME

WEIGHT

VISC.-SEC

W.L.-C.C.

FLTR. CK.

PH

SD. CONT. %

PRESSURE GRADIENT

NO.

SIZE

NOZZLE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

WT. OF STRING

LBS.

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

SCALES PARTS

COND.

STANDS D.P.

FT.

BIT NO.

TIME

WEIGHT

VISC.-SEC

W.L.-C.C.

FLTR. CK.

PH

SD. CONT. %

PRESSURE GRADIENT

NO.

SIZE

NOZZLE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

WT. OF STRING

LBS.

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

SCALES PARTS

COND.

STANDS D.P.

FT.

ACTUAL

DRILLING MUD

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DAILY DRILLING REPORT

REPORT NO. 22

DATE

FEB 10-72

ATLANTIC RICH FIELD CANADA LTD.

LEASE

ARCO-CLARK HUNTER FIELD

FIELD OR DIST. EXPLORATION

COUNTY N.W.T.

STATE CANADA

AGENT DRILLING

RIG NO. 11

DRILL PIPE

TOOL JOINT

Q.D.

PUMPS

NO.

MANUFACTURER

TYPE

STROKE

LAST

SIZE

MAKE

WT. & CR.

NO. JOINTS

FEET

RKB. TO

SET AT

REMARKS

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER

1.

2.

3.

TIGHT HOLE

CONFIDENTIAL

TIME DISTRIBUTION-HOURS

MORNING TOUR				DAY TOUR				EVENING TOUR					
NO.	DRILLING ASSEMBLY AT END OF TOUR	BIT RECORD	MUD RECORD	FOOTAGE	DR. D. R. R. CORE NO.	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO.	PUMP NO.	METH. RUN
STANDS D.P.	FT.	BIT NO.	TIME	FROM	TO								
SINGLES D.P.	FT.	SIZE	WEIGHT										
D.C.		MFG.	VISC.-SEC										
L.D. O.D.	FT.	TYPE	W.L.-C.C.										
D.C.		NO.	FLTR. CK.										
L.D. O.D.	FT.	NOZZLE	PH										
STB. BODY O.D.	FT.	SER. NO.	SD. CONT. %										
STB. BODY O.D.	FT.	DEPTH OUT	PRESSURE GRADIENT										
RMR. BODY O.D.	FT.	DEPTH IN											
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										
1				2				3					
4				5				6					
7				8				9					
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811				812				813					

DAILY DRILLING REPORT

REPORT NO. 19

DATE FEB 7-72

ATLANTIC RICH FIELD CANADA LTD.

LEASE

ARCO CLARK Hume Pump

WELL NO. 6-52

FIELD OR DIST. EX-10-11-1

COUNTY

STATE

CTOR

RIG NO. 11

DRILL PIPE

STRING

TOOL JOINT

TYPE THD. F-1

PUMPS

LAST CASING

TUBING

OR LINER

SIZE

MAKE

WT. & GR.

NO. JOINTS

FEET

RKB. TO

CSG. NO.

SET AT

REMARKS

NAME 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

SCL-S

PARTS

CON'D

MORN DAY EYE

ACTUAL

ONING MUD

LATING

RIG

ON SURVEY

P.P.

G LINE

RIG

RE

E CASING

TING

ON

TEST

DOWN

H

PERFORATING

TUBING TRIPS

SWABBING

TESTING

ADDITIONAL

TIME SUMMARY

(OFFICE USE ONLY)

RK

DP

VDP

ANDBY

DAY WORK

WIRE LINE RECORD

NO.

LINES

SIZE

CLIPPED

CUT OFF

NT LENGTH

L OR TRIPS

LAST CUT

LATIVE

E OR TRIPS

7 DAYS

SPUD

LATIVE

ING HRS.

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

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LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

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LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

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LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

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LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

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STB. BODY

STB. BODY

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SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

WT. OF STRING

LBS.

REAMER TYPE

DRILLER

NO.

STANDS D.P.

SINGLES D.P.

D.C.

LD. O.D.

D.C.

LD. O.D.

STB. BODY

STB. BODY

RMR. BODY

SUBS

BIT OR C.B.

KELLY DOWN

TOTAL

DAILY DRILLING REPORT

REPORT NO. 18

DATE 7.1.1 1972

ATLANTIC RICHFIELD CANADA LTD.

LEASE

WELL NO.

FIELD OR DIST.

COUNTY

STATE

RIG NO.

DRILL PIPE STRING

TOOL JOINT

O.D.

PUMPS

SIZE

MAKE

WT. & GR.

NO. JOINTS

FEET

RKB. TO CSG. HD.

SET AT

REMARKS

NO.

SIZE

TYPE THD.

NO.

MANUFACTURER

TYPE

STROKE LENGTH

LAST CASING TUBING OR LINER

SIZE

MAKE

WT. & GR.

NO. JOINTS

FEET

RKB. TO CSG. HD.

SET AT

REMARKS

SIGNATURE OF CONTRACTOR'S TOOL PUSHER

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

SOL-S

PAR-EL

COM-D

STANDS D.P.

2713.91 FT.

BIT NO.

4

TIME

12.00 2.00 6.00

FROM

TO

2719 4015

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

SINGLES D.P.

60.30 FT.

SIZE

4 3/4

WEIGHT

9.1 9.1 9.1

FROM

TO

2719 4015

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

D.C.

6 7/8

MFG.

H.W.

VISC-SEC

48 56 50

FROM

TO

2719 4015

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

I.D.

117.81 FT.

TYPE

X 5 1/2

W.L.-CC

9.0

FROM

TO

2719 4015

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

D.C.

6 7/8

NOZZLE

2-12

FLTR. CK.

3/32

FROM

TO

2719 4015

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

STB. BODY

O.D.

FT.

SER. NO.

31121

SD. CONT. %

PH

10.5

FROM

TO

ELAPSED TIME

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

STB. BODY

O.D.

FT.

SER. NO.

31121

SD. CONT. %

PH

10.5

FROM

TO

ELAPSED TIME

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

RMR. BODY

O.D.

FT.

SER. NO.

31121

SD. CONT. %

PH

10.5

FROM

TO

ELAPSED TIME

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

SUBS

O.D.

FT.

SER. NO.

31121

SD. CONT. %

PH

10.5

FROM

TO

ELAPSED TIME

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

DEPTH

DEV.

DIRECTION

BIT OR C.B.

FT.

TOTAL FTG.

224

TOTAL HR. RUN

92

COND. OF BIT

R-1

REAMER NO.

REAMER TYPE

DRILLER

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

KELLY DOWN

31.11 FT.

COND. OF BIT

R-1

REAMER NO.

REAMER TYPE

DRILLER

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

TOTAL

4015 FT.

REAMER NO.

REAMER TYPE

DRILLER

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

WT. OF STRING

87000 LBS.

REAMER TYPE

DRILLER

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

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

SOL-S

PAR-EL

COM-D

STANDS D.P.

3512.31 FT.

BIT NO.

4

TIME

8.00 12.00 2.00

FROM

TO

4015 4096

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

SINGLES D.P.

3512.31 FT.

SIZE

8 3/4

WEIGHT

9.1 9.1 9.1

FROM

TO

4015 4096

D

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO.

PUMP NO.

METHOD RUN

SOL-S

PAR-EL

COM-D

D.C.

DAILY DRILLING REPORT

REPORT NO. 16

DATE Feb 4-1972

ATLANTIC RICHFIELD CANADA LTD.

LEASE ARCO-CLARKE

HUMBER RIVER

WELL NO. D-53

FIELD OR DIST. EXPLORATION

COUNTY NWT

STATE CANADA

DRILLER

RIG NO. 11

DRILL PIPE STRING

TOOL JOINT

O.D.

PUMPS

LAST CASING TUBING OR LINER

SIZE

MAKE

WT. & GR.

NO. JOINTS

FEET

RKB. TO CSG. HD.

SET AT

REMARKS

AGENT DRILLING

NAME OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER

NO.

MANUFACTURER

TYPE

STROKE LENGTH

LAST CASING TUBING OR LINER

SIZE

MAKE

WT. & GR.

NO. JOINTS

FEET

RKB. TO CSG. HD.

SET AT

REMARKS

TIME DISTRIBUTION-HOURS

MORN

DAY

EVE

MORNING TOUR

DAY TOUR

EVENING TOUR

NO.

DRILLING ASSEMBLY AT END OF TOUR

BIT RECORD

MUD RECORD

FOOTAGE

DR-D R/L-R CORE-C

CORE NO.

FORMATION (SHOW CORE RECOVERY)

ROTARY RPM

WT. ON BIT 1000#

PUMP PRESS

PUMP NO. 1

PUMP NO.

METHOD RUN

SOLIDS

PARTS

CON'D

NO.

STANDS D.P.

FT.

BIT NO.

TIME

WEIGHT

VISC-SEC

W.L.-CC.

FLTR. CK.

PH

SD. CONT. %

PRESSURE GRADIENT

MUD & CHEMICALS ADDED

TYPE

AMT.

TYPE

AMT.

FROM

TO

ELAPSED TIME

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

REAMER NO.

REAMER TYPE

DRILLER

NO.

SINGLES D.P.

FT.

SIZE

MFG.

TYPE

NO.

NOZZLE

SIZE

SER. NO.

DEPTH OUT

DEPTH IN

TOTAL FTG.

TOTAL HR. RUN

COND. OF BIT

DATE JAN 31 1972

ATLANTICRICHFIELDCANADALTD:

ARCO CLARKE HUMIE EVER

WELL NO.
D-57

FIELD OR DIST.

EXULORATION

COUNTY

N.w.T

STATE	CAN
-------	-----

REGENT DRUG LTD

NAME OF OPERATOR'S REPRESENTATIVE _____

SIGNATURE OF CONTRACTOR'S TOOL BUSH

DISTRIBUTION-HOURS

ACTUAL	421	71	114
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ENDING MRID			31
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				27

IN SURVEY		3	44
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LINE			
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[illegible]

PLACING			
PLACING			

TEST			
------	--	--	--

[illegible]

PERFORATING			
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WRABING			
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ADDITIONAL			
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TIME SUMMARY
(OFFICE USE ONLY)

--	--	--	--

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

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[illegible]

DAY WORK			
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2. _____

CLIPPED

TESTING

TIME

PU
TIME

9. 11

[illegible]

100

1. *Journal of the American Medical Association*, 1997; 277: 1033-1038.

[illegible]

DAILY DRILLING REPORT

REPORT NO. 2

DATE JAN 21/72

ATLANTIC RICHFIELD CANADA LTD.

LEASE

HRCO CLARKE Hume RIVER D53

WELL NO. D-53

FIELD OR DIST.

EXPLORATION

COUNTY

N.W.T.

STATE

CAN

FOR	RIG NO.	DRILL PIPE STRING	TOOL JOINT	O.D.	PUMPS	LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
REGENT DRLG	11						13 1/8		42"	4	1		110	
NAME OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S TOOL PUSHER		NO.		MANUFACTURER	TYPE	STROKE LENGTH						
J. R. Bell		J. Corbett		1.		EMSCO	D-300	14						
				2.		EMSCO	D-175	12						
				3.										

CONFIDENTIAL
TIGHT

DISTRIBUTION-HOURS				DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		FORMATION (SHOW CORE RECOVERY)		ROTARY		PUMP		PUMP		METHOD	
				NO.		NO.		NO.		FROM		TO		RPM		PRESS		NO.		RUN	
				STANDS D.P.		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
MORNING TOUR				STANDS D.P.		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SINGLES D.P.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
RMR. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SUBS O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
BIT OR C.B.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
KELLY DOWN				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
TOTAL				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
WT. OF STRING				LBS.		REAMER TYPE		DRILLER		B. Lyall											
DAY TOUR				STANDS D.P.		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SINGLES D.P.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
RMR. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SUBS O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
BIT OR C.B.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
KELLY DOWN				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
TOTAL				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
WT. OF STRING				LBS.		REAMER TYPE		DRILLER		B. Bell											
EVENING TOUR				STANDS D.P.		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SINGLES D.P.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
RMR. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SUBS O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
BIT OR C.B.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
KELLY DOWN				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
TOTAL				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
WT. OF STRING				LBS.		REAMER TYPE		DRILLER		B. Lyall											
WIRE LINE RECORD				STANDS D.P.		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SINGLES D.P.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
D.C.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
I.D. O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
STB. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
RMR. BODY O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
SUBS O.D.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
BIT OR C.B.				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
KELLY DOWN				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
TOTAL				TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME		TIME	
WT. OF STRING				LBS.		REAMER TYPE		DRILLER		B. Lyall											

