Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 58

I-46 IMP. SUN ARROW HEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor T.O.L. Type Rig NAT 80B Month 5 Day 25 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From / To / Hole Made / Hole Size / Formation	From / To / Hole Made / Hole Size / Formation	From / To / Hole Made / Hole Size / Formation
	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.
DRILLING STRING	DRILL COLLAR DATA: Number / OD / ID / Length / INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length / INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length / INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS
BIT RECORD	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE: Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE: Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE: Drilled / Reamed
	Bit Serial No. / Table R.P.M. / Jet or Conventional - / Nozzle Size / Kind / at / Ft. / Deg. off	Bit Serial No. / Table R.P.M. / Jet or Conventional - / Nozzle Size / Kind / at / Ft. / Deg. off	Bit Serial No. / Table R.P.M. / Jet or Conventional - / Nozzle Size / Kind / at / Ft. / Deg. off
SURVEYS			
SLUSH PUMP RECORD No. 1 No. 2	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS Full. For Plug #5 @ 2 a.m. Plug @ 815 ft.	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS Plug AT Surface - 5sx Cement. Plate welded on 13⅜ Casing. Wellhead Collar & Riser & Nameplate. Completed - 10 a.m. Rig Released at 4 PM G Hounslow	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. TEARING OUT — 12 / 8 / 8 HRS laying down balance of 3½ pipe	From / To / Hrs. Cutting off Handling bowl, welding on plate.	From / To / Hrs. Leaving out. — 4 Moving & Racking Casing & 3½ Drill Pipe — 12
	Driller L.W. Bishop	Driller Hunt	Driller G Hounslow

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....
DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #57

LSD. ... SEC. ... TWN. ... RGE. ... W. ... Contractor ... Type Rig ... Month May Day 24 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From / To / Hole Made / Hole Size / Formation	From / To / Hole Made / Hole Size / Formation	From / To / Hole Made / Hole Size / Formation
	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.
DRILLING STRING	DRILL COLLAR DATA: Number / OD / ID / Length; INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length; INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length; INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS
BIT RECORD	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed
	Bit Serial No. ... Table R.P.M. ... Jet or Conventional - ... Nozzle Size	Bit Serial No. ... Table R.P.M. ... Jet or Conventional - ... Nozzle Size	Bit Serial No. ... Table R.P.M. ... Jet or Conventional - ... Nozzle Size
SURVEYS	Kind ... at ... Ft. ... Deg. off	Kind ... at ... Ft. ... Deg. off	Kind ... at ... Ft. ... Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS
	Recovered 3358' - 7" CASING (Measured) J-55 - 23# pipe.	Ran Cement. Plug # 4 = 3450' - ~~3350'~~ 40 SKS. Cement. - 2% CaCl2. Plug Down @ 8 A.M.	Felt. for. Plug. # 4 @ 4 P.M. Plug At. 3320'. Ran Plug. # 5. 930'-1030' = 100 lk. Cement. - 2% CaCl2. Plug Down 5:45 P.
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
			Felt for Plug # 4 @ 8:15 Plug at 8:15 (5)
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. LAYED DOWN 7" CASING 12 / 6:30 / 6½ RUN IN HOLE - OPEN END 6:30 / 7:30 / 1 TO 3550' PREPARING TO RUN PLUG 7:30 / 8 / ½ 8 HRS	From / To / Hrs. W.O.C & laying down pipe Hauling Casing pick up flare line 8	From / To / Hrs. Felt for. Plug. # 4. 4:00 / 4:30 / ½ Pulled up to 1030 ft. 4:30 / 5:15 / ¾ Ran Cement. Plug. # 5 5:15 / 5:45 / ¾ W.O.C. 5:45 Rolling Casing & Layed down 89 joints 3½ Pipe & Racking same 7:45 / 8:15 / ½ Ran 10 stds Felt Plug # 5 7:45 / 8:15 Layed down 10 stds 3½ + 8-4¾ DC's 8:15 Cleaning up on Cellar to Back off Landing Boat.
	Driller L. A. Bishop	Driller J. Mills	Driller

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: ... TOTCO: ... CONDITIONING MUD: ... CASING: ... LOGGING: ... RIG MAINTENANCE: ... REAMING CLEANING: ... MNFR. DRILLING LINE IN USE ... REEL SERIAL No. ... DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: ... FISHING: ... TRIPPING: ... W.O.C. ... W O ORDERS: ... MISCELLANEOUS: ... WORKING PIPE:

REAMING: ... CIRCULATING: ... CORING: ... D.S. TESTING: ... RIG REPAIRS: ... CONDITION HOLE: ... LOST CIRC.: ... MNFR. OF KELLY HOSE IN USE ... HOSE SERIAL No. ... YES ... NO

Total Contract Time ... hrs. Total Company Time ... hrs. Toolpusher ... Approved by ...

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #56

Wainwright LSD. I SEC. 46 TWN. RGE. W.

Contractor Imp Oil Ltd (C.D. Tools) Type Rig NAT #1-8C-B Month MAY Day 23 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7425				

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

No. 1
No. 2

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					250# Caustic
					25# Viscah.

Mud #3 6031 - 6131

150 sacks cement plus 2% Ca Cl

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Circ. Hole - Cond. Mud.	12 00	12 30	1/2
Run Plug Plug # 6130 -	12 30		
6030.		1 30	1
Pulled out 12 std s	1 30	2 00	1/2
W.O.C.	2 00	8 00	6

Driller Tim Kerby

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Serviced Rig	8	9 30	1/2
W.O.C.	9 30	10	1/2
Felt for Plug	10		
Layed down 36 stds of		12 45	2 3/4
3 1/2" Drill Pipe	12 45	1 15	1/2
Pulled 30 std out of Hole	1 15		
~~Preparing to cut off Casing~~		4 00	
Remove B.O.P.s			

Driller Robert Bishop

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					7" casing cut at 3376'

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
~~Preparing To cut off~~	4		
Remove B.O.P.s & ~~Casing~~ Replace Table		5 30	2 1/2
Rig up To Pull & Cut Casing	5 30	7 00	1/2
Runing in & cutting casing	7	8 45	1 3/4
Try To Pull Casing & work	8 45		
Casing ~~not free~~		9 45	1
Lay Down B.O.Ps &			
Rig up To Lay Down Casing	9 45	11 30	1 1/4
Lay Down Casing	11 30	12	1/2

Driller W. Coghill

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE REEL SERIAL No.

MNFR. OF KELLY HOSE IN USE HOSE SERIAL No.

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher T.S. Yuke. Approved by .....

Form 34402 (250 bks.-3-59)

IMPERL OIL LIMITED

DAILY DRILLING REPORT #55

imp SUN ARROWHEAD LSD. I44 SEC. TWN. RGE. W. Contractor Loffland Bros Co Tools Type Rig NAT 80-B Month MAY Day 22 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
	71				

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2			1000	14"	60	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					WATER
					CAUSTIC-150#
					VIS-KAL-300#
5:30	41				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
TRIP IN hole	12:00	1:30	1 1/2
BREAK CIRC. + CIRC hole	1:30		
COND. mud.		4:30	3
Picked up 4 std + sgl. +	4:30		
ran into 6 5/20'		5:00	1/2
Circ & cond. mud. To T.T.	5:00		
		8:00	3
			8 HRS

Driller Keeby

2nd Tour: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation

DRILLING STRING

Size-D.P.	Stands	Ss	Kelly	Drill. Collar Ft.	Core Bbl. Ft.

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS

BIT RECORD

No.	Type	Time Bott A	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

Kind a Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circting	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

MUD RECORD

Time	Visc	Wt	W L	pH	ADDITIVES — POUNDS
					D.S.T.#5 Johnson Hook-Wall-
					6070-6720'- I.O. 3hrs. Shut in 1/2 hr.
					Small bi blow dying completely
					after 3/4 hrs.
					Recover:- 2000ft Mud 2200ft. Salty Water.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CIRCULATING TO TEST	8	9:15	1 1/4
PULLED OUT TO TEST	9:15	10:45	1 1/2
SERVICE RIG - CHECKED BOP'S	10:45	11	1/4
MADE UP JOHNSTON HOOK WALL PACKER + RUN IN HOLE		1:30	2 1/2
TESTING - VALVE OPEN	1:30	4	2 1/2
			8 HRS

Driller ROBERT BISHOP

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
	67	1			

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					100 lbs. Vis Kal
					50 lbs. Caustic

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Tested	4:00	5:00	1
Pull out with tester	5:00	7:45	2 3/4
Break out + lay down tester	7:45	8:30	3/4
run in hole	8:30	10:15	1 3/4
Cond. mud	10:15	12:00	1 3/4
			8

Driller C.V. Pinkston

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: DRILLING: REAMING: TOTCO: FISHING: CIRCULATING: CONDITIONING MUD: TRIPPING: CORING: CASING: W.O.C. D.S. TESTING: LOGGING: W O ORDERS: RIG REPAIRS: RIG MAINTENANCE: MISCELLANEOUS: CONDITION HOLE: REAMING CLEANING: WORKING PIPE: LOST CIRC.:

MNFR. DRILLING LINE IN USE REEL SERIAL No.

MNFR. OF KELLY HOSE IN USE HOSE SERIAL No.

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time hrs. Total Company Time hrs. Toolpusher H.S. Wade Approved by

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 34

Imp SUN I-46 Rowhead LSD. SEC. TWN. RGE. W.

Contractor Imp Oil Ltd (Co. Tools) Type Rig NAT #1 - 80 B Month MAY Day 21 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: 7425'	From:	From:
	To:	To:	To:
	Hole Made:	Hole Made:	Hole Made:
	Hole Size:	Hole Size:	Hole Size:
	Formation:	Formation:	Formation:
DRILLING STRING	Size-D.P.: 3 1/2	Size-D.P.:	Size-D.P.:
	Stands: 76	Stands:	Stands:
	Singles: —	Singles:	Singles:
	Kelly:	Kelly:	Kelly:
	Drill. Collar Ft.:	Drill. Collar Ft.:	Drill. Collar Ft.:
	Core Bbl. Ft.:	Core Bbl. Ft.:	Core Bbl. Ft.:
	DRILL COLLAR DATA: Number / OD / ID / Length	DRILL COLLAR DATA: Number / OD / ID / Length	DRILL COLLAR DATA: Number / OD / ID / Length
	INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS	INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS	INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS
BIT RECORD	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed
	Bit Serial No. / Table R.P.M.	Bit Serial No. / Table R.P.M.	Bit Serial No. / Table R.P.M.
	Jet or Conventional - / Nozzle Size	Jet or Conventional - / Nozzle Size	Jet or Conventional - / Nozzle Size
SURVEYS	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off
SLUSH PUMP RECORD	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
No. 1	1 1/2 — 18" — 6 1/4		
No. 2	2 R — 1050 — 14" — 40 — 6 3/4		
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. (5) / Wt. / W L / pH / ADDITIVES — POUNDS
	RETAN Cement plug #2-6850-6950 with 30 SACKS cement plug down AT 2 20 AM	Felt for plug after 10 hrs. Plug - #2 @ 6950	D.S.T. #4 - JOHNSON HOOK WALL PACKER. 5 3/4" - 8 Rubbers - Packer set 3 50 INTERVAL 6070-6700' - INITIAL SHUT-IN - 30 MIN V. Open = 120 MIN - F.S.I = 60 MIN. SMALL air blow, dying completely after 80 MIN
	6:30 41 9.2 — CAUSTIC - 250# — VIS-KAL-300# — RAY-FLO - 150#		
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
			Recovery -
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs.	From / To / Hrs.	From / To / Hrs.
	RUN IN hole with open end — 12 00	W.O.C. — 8	Testing — 4 00 7 45 3 3/4
	PIPE. To 6950 picked up 4 jts. — 1 15 — 1 1/4	PULLED OUT - CUT 60' OFF LINE	Pull out Tools — 7 45 10 30 2 3/4
	CIRC. To cement Plug. #5 @. 1 15 — 2 15 — 1	SERVICED RIG - CHECKED B.O.P.'S	Break and Lay down tools — 10 30 11 15 3 3/4
	6950-6950 Cement with 20 cement — 2 15	RUN IN HOLE - FELT FOR — 10 45 — 2 3/4	waiting on orders — 11 15 - 12 00 — 3/4
	CP C/2. Displace plug. — 3 30 — 1 1/4	PLUG	
	Pulled 9 std's and circulated — 3 30	CIRCULATING ABOVE PLUG — 10 45 — 12 10 — 1 1/2	
	at — 7 00 — 3 1/2	PULLED OUT TO TEST — 12 15 — 1 45 — 1 1/2	
	T of hole — 7 00 — 8 00 — 1	MADE UP JOHNSTON HOOK WALL — 1 45	
	Plugs	& RUN IN HOLE — 4 — 2 1/4	
		8 HRS	
	Driller: Kerby	Driller: L. A. Bishop	Driller: E. V. McIntyre

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher H. Stone Approved by .....

Form 34402 (250 bks.-5-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #53

IMP. SUN ARROW HEAD LSD. I.46 SEC. TWN. RGE. W. Contractor CO. TOOLS Type Rig NAT. 80B Month MAY Day 20 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: — To: — Hole Made: — Hole Size: 6 1/8 Formation: —	From: — To: — Hole Made: — Hole Size: — Formation: —	From: — To: — Hole Made: — Hole Size: — Formation: —
DRILLING STRING	Size-D.P.: 3 1/2 Stands: 76 Singles: — Kelly: — Drill. Collar Ft.: — Core Bbl. Ft.: —	Size-D.P.: 3 1/2 Stands: 74 Singles: 2 Kelly: 10 Drill. Collar Ft.: — Core Bbl. Ft.: —	Size-D.P.: — Stands: 74 Singles: 2 Kelly: — Drill. Collar Ft.: — Core Bbl. Ft.: —
	DRILL COLLAR DATA: Number: 8 OD: 4 3/4 ID: — Length: — INDICATOR WEIGHT OF TOTAL DRILLING STRING: — DRILL COLLARS: — (Standard DRILLING STRING)	DRILL COLLAR DATA: Number: — OD: — ID: — Length: — INDICATOR WEIGHT OF TOTAL DRILLING STRING: — DRILL COLLARS: —	DRILL COLLAR DATA: Number: — OD: — ID: — Length: — INDICATOR WEIGHT OF TOTAL DRILLING STRING: — DRILL COLLARS: —
BIT RECORD	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed —	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed —	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed —
	Bit Serial No. — Table R.P.M. — Jet or Conventional - — Nozzle Size —	Bit Serial No. — Table R.P.M. — Jet or Conventional - — Nozzle Size —	Bit Serial No. — Table R.P.M. — Jet or Conventional - — Nozzle Size —
SURVEYS	Kind — at — Ft. — Deg. off	Kind — at — t. — Deg. off	Kind — at — Ft. — Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size
MUD RECORD	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS REBAN CEMENT PLUG #2 - 6850-6950 WITH 30 SKS PLUG DOWN @ 8:10 AM	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS Reban Cement plug #2 6850-6950 with 50 sacks Plug down at 4:30 P	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS
CORING	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

From	To	Hrs.	Remarks
12:00	6	6	W.O.C.
6			RUN IN TO FEEL FOR PLUG
	6:30	1/2	#2 PLUG WAS NOT THERE
6:30	7:15	3/4	CIRC. HOLE
	7:30	1/4	RUN PLUG #3 30 SKS OF CEMENT 3% CACL2 6950'
7:30	8	1/2	PUMPING PLUG DOWN
		8 HRS	

Driller: JIM KERBY

From	To	Hrs.	Remarks
8	8:15	1/4	DISPLACED CEMENT PLUG #3
8:15	2:45	6 1/2	W.O.C.
			PULLED 3 STDS. CIRCULATED
			PULLED OUT OF HOLE
			SERVICE RIG - CHECKED B.O.P.'S
			RUN IN TO 6600 WITH CUT
			OUT BIT. TO WAIT & FEEL FOR PLUG
2:45	3	1/4	FELT FOR PLUG - NO PLUG
3	4	1	CIRCULATING - PREPARING TO RUN PLUG
		8 HRS	

Driller: C. Bishop

From	To	Hrs.	Remarks
			Run Cement plug #4
4:00	4:30	1/2	Pumping Plug down
4:30	8:30	4	Pull 3 std Circulating
8:30	11:00	2 1/2	measuring out hole
11:00	12:00	1	Run in hole
		8	

Driller: C. V. McLafferty

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: — DRILLING: — REAMING: — TOTCO: — FISHING: — CIRCULATING: — CONDITIONING MUD: — TRIPPING: — CORING: — CASING: — W.O.C. — D.S. TESTING: — LOGGING: — W O ORDERS: — RIG REPAIRS: — RIG MAINTENANCE: — MISCELLANEOUS: — CONDITION HOLE: — REAMING CLEANING: — WORKING PIPE: — LOST CIRC.: —

MNFR. DRILLING LINE IN USE — REEL SERIAL No. —

MNFR. OF KELLY HOSE IN USE — HOSE SERIAL No. —

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES — NO —

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher M. S. Ware Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 52

Lynx Arrowhead LSD. I 46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp Oil Ltd. (Co. Tools) Type Rig NAT #1 NAT 80B Month MAY Day 19 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: 7425 · To: · Hole Made: · Hole Size: 6 1/8 · Formation: Green shale.	From: 7425 · To: · Hole Made: · Hole Size: · Formation:	From: · To: · Hole Made: · Hole Size: · Formation:
	Size-D.P.: 3 1/2 · Stands: 78 · Singles: 2 · Kelly: 8 · Drill. Collar Ft.: 237-03 · Core Bbl. Ft.:	Size-D.P.: 3 1/2 · Stands: 81 · Singles: 1 · Kelly: · Drill. Collar Ft.: · Core Bbl. Ft.:	Size-D.P.: · Stands: 76 · Singles: 1 · Kelly: · Drill. Collar Ft.: · Core Bbl. Ft.:
DRILLING STRING	DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING 94M · DRILL COLLARS 10M	DRILL COLLAR: Number · OD · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING · DRILL COLLARS	DRILL COLLAR: Number · OD · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING · DRILL COLLARS
	DATA:	DATA:	DATA:
BIT RECORD	No. · Type · Time On Bottom At · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds · FOOTAGE Drilled · Reamed	No. · Type · Time On Bottom At · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds · FOOTAGE Drilled · Reamed	No. · Type · Time On Bottom At · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds · FOOTAGE Drilled · Reamed
	Bit Serial No. · Table R.P.M.	Bit Serial No. · Table R.P.M.	Bit Serial No. · Table R.P.M.
	Jet or Conventional - · Nozzle Size	Jet or Conventional - · Nozzle Size	Jet or Conventional - · Nozzle Size
SURVEYS	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS: On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size 18" · 6 1/4 14" · 6 3/4	HOURS: On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size	HOURS: On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size
MUD RECORD	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS Cement plug #1 down at 7 30 P 20 sacks 7425 - 7325 Cement Plug #2. - 6850-6950' - 30 sx Cement - Down @ 9 45 P.M.
CORING	From · To · Ft. Cored · Ft. Rec'd. · Core No. · Type Bbl.	From · To · Ft. Cored · Ft. Rec'd. · Core No. · Type Bbl.	From · To · Ft. Cored · Ft. Rec'd. · Core No. · Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Run I.E.S. Log.	12 00	12 45	3/4
" Sonic Gamma Caliper Log.	12 45	5 45	5
" Geo Phone V. Survey.	2 45	9	
8 HRS			

Driller Jim Kerby

	From	To	Hrs.
SERVICED RIG - CHECKED BOP'S			
VELOCITY SURVEY	8	9 30	1 1/2
WAITING ON ORDERS	9 30	12 45	3 1/4
RUN IN HOLE - OPEN END	12 45		
MEASURED IN HOLE		3 15	
PICKED UP 10 SINGLES			2 1/2
TIGHT HOLE - PULLED 4 STD	3 15		
+ CIRCULATING		4	3/4
8 HRS			

Driller R. A. Bishop

	From	To	Hrs.
Circulating	4	6 30	2 1/2
Running Cement plug #1	6 30	7 30	1
Pull out 5 std	7 30	7 45	1/4
Circulating	7 45	8 45	1
Running cement plug #2	8 45	9 45	1
Pull out 3 std			
Circulating	9 45	10 45	1
Lay down 5 std			
W O C	1 45	12 30	1 1/4

Driller C. V. McIntyre

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: · CONDITIONING MUD: · CASING: · LOGGING: · RIG MAINTENANCE: · REAMING CLEANING: · MNFR. DRILLING LINE IN USE ..... REEL SERIAL No.

DRILLING: · FISHING: · TRIPPING: · W.O.C. · W O ORDERS: · MISCELLANEOUS: · WORKING PIPE:

REAMING: · CIRCULATING: · CORING: · D.S. TESTING: · RIG REPAIRS: · CONDITION HOLE: · LOST CIRC.: · MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY · YES ✓ · NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher A. S. Ware Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 51

Lake Sun Arrowhead LSD. I 4C SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp. Oil Ltd (Co. Tools) Type Rig NAT #1 NAT 80B. Month MAY Day 18 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 7406 / 7483 — Hole Made 17' — Hole Size 6 1/16 — Formation Shale.	From — To — Hole Made — Hole Size 6 1/16 — Formation	From 7423 — To — Hole Made — Hole Size 6 1/16 — Formation
DRILLING STRING	Size-D.P. 3 1/2 — Stands 78 — Singles — — Kelly 1 — Drill. Collar Ft. 237-03 — Core Bbl. Ft. 56-36	Size-D.P. 3 1/2 — Stands — Singles — Kelly — Drill. Collar Ft. 237.03 — Core Bbl. Ft.	Size-D.P. 3 1/2 — Stands 78 — Singles 2 — Kelly — Drill. Collar Ft. 237.03 — Core Bbl. Ft. —
	DRILL COLLAR DATA: Number 8 — OD 4 3/4 — ID — Length — INDICATOR WEIGHT OF TOTAL: DRILLING STRING 96 — DRILL COLLARS 10 M	DRILL COLLAR DATA: Number 8 — OD 4 3/4 — ID — Length — INDICATOR WEIGHT OF TOTAL: DRILLING STRING — DRILL COLLARS	DRILL COLLAR DATA: Number 8 — OD 4 3/4 — ID — Length — INDICATOR WEIGHT OF TOTAL: DRILLING STRING — DRILL COLLARS
BIT RECORD	No. 5 — Type DIA — Time On Bottom At 7.30 pm — Time Pulled At 3 a.m. — Total Hours Run 8 1/4 — Depth Pulled 7423 — Weight On Bit M Pounds 11M — FOOTAGE Drilled 35' — Reamed Bit Serial No. EC-5103 — Table R.P.M. 90 Jet or Conventional - DIAMOND 6 1/16" — Nozzle Size ◇	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed Bit Serial No. — Table R.P.M. Jet or Conventional - — Nozzle Size	No. PR 18 OSC — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed Bit Serial No. 52798-6 1/8 bit. — Table R.P.M. Jet or Conventional - — Nozzle Size
SURVEYS	Kind — at — Ft. — Deg. off	Kind — at — Ft. — Deg. off	Kind — at — Ft. — Deg. off
SLUSH PUMP RECORD	HOURS: On Line / Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size No. — / — — — 18" — — 6 1/4 No. 2 — 3 1/2 / — — 1450 — 14" — 28 — 6 3/4	HOURS: On Line / Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size	HOURS: On Line / Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size — / — — — 14 — — 6 1/4 2 / — — 1650 — 18 — — 6 3/4
MUD RECORD	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS 1:00 — 57 — 9.8 — — — WATER 2:30 — 55 — — — —		Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS 6:15 — 69 — 9.6 — — — Water - Angel 2 - 10 min 18 7 — 56 — 9.7 — 11.8 — 13 — 600 - 7.3 PM. 34 300 - 40 P7 4.8 Mud 33 7 7:09 Final
	Measured out of hole. = 7425.62'	D.S.T. #4. - Johnson. Hook wall packer. 5 3/4" interval - 6060' - 7423'. Packer Set. 9.35 A.M. I.S.I. - 9 3/4 - 10 - 30 min - Valve Open - 10 a. - 10 3/4. 1/2 hr. F.S.I. - 10 3/4 - 11 3/4 - 1 Hr.	
CORING	From 7388 — To 7423 — Ft. Cored 35 — Ft. Rec'd. 35' — Core No. 37 — Type Bbl. Hycalog	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl. RECOVERED 2500' OF SALTY MUD	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	12 00	3 45	3 3/4
Trip out of hole measure out.	3 45	6 15	2 1/2
Recover core & serviced bbl.	6 15		
& Steel back some.		6 45	1/2
Picking up Hook Wall	6 45		
packer & making up same.		7 15	1/2
Running in the hole.	7 15	8 00	3/4
			8 hrs

	From	To	Hrs.
SERVICED RIG WHILE TESTING			
RUN IN HOLE WITH HOOK WALL	8		
TESTING TOOLS - JOHNSTON		9.30	1 1/2
INITIAL SHUT IN	9.30	10	1/2
VALVE OPEN	10	10.30	1/2
FINAL SHUT IN	10.30	11.30	1
PULLED PACKER OUT OF HOLE	11.30	2	2 1/2
BROKE & LAYED DOWN PACKER	2		
BROKE & LAYED DOWN CORE BARREL		3	1
RUNNING IN HOLE TO CLEAN OUT.	3	4	1
			8 HRS

	From	To	Hrs.
Running in hole to clean out [redacted]		5 15	1 1/2
Ream from 7355 to 7423	5 15	6 00	3/4
Circulate hole clean	6 00	7 00	1
Pull out to log.	7 00	9 30	2 1/2
Rigging up to log.	9 30	10 00	1/2
Logging	10 00	12 00	2
			7

Driller Jim Kerby — Driller L. A. Bishop — Driller C. V. McKaffee

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: — CONDITIONING MUD: — CASING: — LOGGING: — RIG MAINTENANCE: — REAMING CLEANING:
DRILLING: — FISHING: — TRIPPING: — W.O.C. — W.O. ORDERS — MISCELLANEOUS: — WORKING PIPE:
REAMING: — CIRCULATING: — CORING: — D.S. TESTING: — RIG REPAIRS: — CONDITION HOLE: — LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ..... NO .....

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher H. S. Owre. Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 50

Imp Susa Arrowhead LSD. I-46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp Oil LTD. (Co Tools) Type Rig NATCO B Month MAY Day 17 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7357	7376	19	6 1/8	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	2	19	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4				
DATA					96 m	10 m

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA	5 PM				10M		

Bit Serial No. 2336 Table R.P.M. 85

Jet or Conventional - DIAMOND. Nozzle Size ◇

SURVEYS Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2	8 hrs		1450	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1:00	56	9.7	9.8		SHOVEL-D.T.&H.
4:00	55				
6:00	57				
					F/C 7/32

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7338				#36	Hycolog.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring.	12 noon	8:00	8 hrs

Driller Jim Kerby

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

From	To	Hole Made	Hole Size	Formation
7376	7388	12	6 1/8	

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	2	8	237.03	56.36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4				
DATA					96M	10M

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA.	5 PM	11:45 AM	18 3/4	7388	11M	Cored 50'	
18	W7							

Bit Serial No. 2336-42164 Table R.P.M. 85

Jet or Conventional - HYCALOG Nozzle Size

Kind ..... at ..... Ft. ..... Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			18"		6 1/4
		1450	14"	28	6 3/4
700					

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8:15	57	9.8			SHOVEL DITCH
10:30	58		10.2		WATER 600-53 300-29 PH 13
					Solid 12.90 & 90 Oil 4 gp. 6
					Mud 7. 10 Min 15. PH. 53 - PH 6.5 6.89 Lime

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7338	7388	50	50	36	HYCALOG

	From	To	Hrs.
DIAMOND CORING	8	11:45	3 3/4
PULLED OUT OF HOLE	11:45	1:45	2
RECOVERED CORE	1:45	2	1/4
SERVICE BBLS LAYED DOWN SAME	2	2:45	3/4
CUT 60' OFF DRILLING LINE	2:45	3:15	1/2
SERVICE RIG - CHECKED BOP'S	3:15	3:30	1/4
waiting for orders	3:30	4	1/2
			8 HRS

Driller L. A. Bishop

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

From	To	Hole Made	Hole Size	Formation
7388	1406	18	6 1/4	Shale

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	78	-	18	237.03	56.36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4				
DATA					96	10M

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
5	DIA	730		4 1/2		10M		

Bit Serial No. EC-5103 Table R.P.M. 80

~~Jet or Conventional~~ - Christensen Nozzle Size

Kind ..... at ..... Ft. ..... Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	1 1/2		18"		6 1/4
4 3/4		1450	14"	28	6 3/4

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9:30	62	gels 2-13			100 lbs. Caustic
1:45	60	9.8	10.4	13	200 " Lime
			600-53		400 " Hydrogel
			300-39		200 " Rayflo
PM 35	P7		PV-14		YP. 5 7.28 Lime Water

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7388				#37	Hycolog

	From	To	Hrs.
Pick up Core bbl	4	4:45	3/4
Run in to Core	4:45	7:15	2 1/2
Circulate before Core	7:15	7:30	1/4
Coring	7:30	12:00	4 1/2
			8 HRS

Driller ..... C. W. Hewitson

HEADING UP & DRLG. OUT: DRILLING: REAMING:

CLASSES OF TIME BREAKDOWN
TOTCO: FISHING: CIRCULATING: CONDITIONING MUD: TRIPPING: CORING: CASING: W.O.C. D.S. TESTING: LOGGING: W O ORDERS: RIG REPAIRS: RIG MAINTENANCE: MISCELLANEOUS: CONDITION HOLE: REAMING CLEANING: WORKING PIPE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher A. S. Darke. Approved by .....

Form 34402 (250 bks.-3-59) IMP. SUN

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 449

ARROW HEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor I.O.L. Type Rig NAT. 80B Month 5 Day 16 1961

I-46

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7315	7329	14	6 1/8	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	—	6	237.03	56-36

	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
DRILL COLLAR	8	4 3/4			96 M	10 M
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	Reamed
4	DIA	3 AM.				11 M.		

Bit Serial No. 2336 HycoLog. Table R.P.M. 90

Jet or Conventional - DIA Nozzle Size D

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2	5 1/4		1400	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4 00	61				Water
6 00	60	9.6			
7 30	59				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7315				35	HycoLog.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Recovered Core From Bll	12	12 15	1/4
Changed Core Bll Swivel +	12 15		
Service C. Bll.		12.30	1/4
Service Rig Checked BOPs	12 30	12 45	1/4
TRIP IN to Core	12 45	2.45	2
Circulated before coring	2 45	3 -	1/4
CORING	3	8 00	5
			8 HRS

Driller Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7329	7338	9	6 1/8	Shale & shut

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	1	27.43	237-03	56-36

	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
DRILL COLLAR	8	4 3/4			96.	10 M
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	Reamed
4	DIA	3 PM	12 PM	9 1/4	7338	10 M	23	
4	1.							

Bit Serial No. 2336-2336. Table R.P.M. 90

Jet or Conventional - DIAMOND Nozzle Size D

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18"		6 1/4
	4 1/4		1400	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8 15	60				200# Lime
10 00	60				150# Visbal
					100# Caustic
					90 gal Diesel fuel
					water

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7315	7338	23	23	#35	Hycolog.
7328				#3	"

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	8 00	12 15	4 1/4
TRIPING out of hole	12 15	2 15	2
Core Jammed in Bbl. Removing	2 15		
SAME SERVICE Bbl.		2 45	1/2
SERVICE RIG, check BOPS	2 45	3 00	1/4
TRIP IN hole	3 00	4 00	1
			8 HRS

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7338	7357	19	6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	1	8.43	237.03	56.36

	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
DRILL COLLAR	8	4 3/4			96M	10M
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	Reamed
4	HYCALOG	5 PM				10M		

Bit Serial No. 2336 Table R.P.M. 85

Jet or Conventional - DIAMOND Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			18"		6 1/4"
		1450	14"	28	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
6:30	58	9.7	10.0		WATER
8:30	56				SHOVEL DITCH
10:30	56				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
				4	

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
RUNNING IN HOLE WITH CORE BBL.	4	5	1
DIAMOND CORING	5	12	7
			8 HRS

Driller L.A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. Driller Kelly used

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher .....

Approved by .....

Form 34402 (250 bks.-3-59) I 46

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT F48

Imp. Dunvegan LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Ltd. Type Rig Nat. 80-B Month 5 Day 15 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7275	7294	19	6 1/8	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	76	2	10	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			96	10 M
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA	2.30 PM.				11 M.		

Bit Serial No. 2336 Hycalog. Table R.P.M. 90

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SURVEYS

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				15"		6 1/4
No. 2	8		1400	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1 00	57				
3 00	55				
5 00	59	9.8	10.5		Water
7 00	56				Loaded ditch

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7255				3	HYCOLOG.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12	8	8

Driller J. Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

From	To	Hole Made	Hole Size	Formation
7294	7301	7	6 1/8	Shale & chert

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	—	32	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			96	10M
DATA						

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA	2 30 PM	9 00 AM	18 1/2	7297	11M	Cored 42	
4	DIA					11M		

Bit Serial No. 2336 Hycalog Table R.P.M. 90

Jet or Conventional - DIA Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			18"		6 1/4
3 1/2		1100	14"	28	6 3/4

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8 00	56	9.8	10.8		108 Gal Handfuls
1 00	58				6-28 3 Gel 1
3 30	60				3-28 10 " 20
		Solids 12%			7 20 Pm 3.0
		oil 2%			4 8 Pf 6.5

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7255 7297	7297	42	42	#3 Hycolog. #3 Hycolog.	

	From	To	Hrs.
CORING	8 00	9 00	1
TRIP OUT of hole.	9 00	10 45	1 3/4
RECOVER CORE & SERVICE bbl.	10 45	11 15	1/2
put on new catcher & swivel			
Service rig & check B.O.P's	11 15	11 30	1/4
TRIP IN The hole	11 30	1 30	2
CORING	1 30	4 00	2 1/2
			8 HRS

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

From	To	Hole Made	Hole Size	Formation
7301	7315	14	6 1/8	

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	77	—	17	237.03	56.36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			96M	10M
DATA						

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	HYCALOG	1 30 PM	10 P.M	8 1/2	7315	11M		

Bit Serial No. 2336 Table R.P.M. 95

Jet or Conventional DIAMOND Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
—	—		18"		6 1/4"
6	2	1400	14"	28	6 3/4"

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
5:30	60	9.7	9.8		SHOVEL DITCH
7:00	58				WATER
9:30	60				

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7297	7315	18	18	4	HYCALOG

	From	To	Hrs.
DIAMOND CORING	4	10	6
PULLED OUT OF HOLE	10	12	2
			8 HRS

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: P.I.G MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. ..... DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY
Chk B.O.P's & Kelly cock.
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. ..... YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher G. Bennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 47

Imperial I 46 LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Ltd. Type Rig Nat 80-B Month 5 Day 14 1964

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7224	7247	23	6 1/8	Shale Chert

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	76	1	27	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4				
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA	5:45 PM				11 M.		

Bit Serial No. 2336 Hycolog. Table R.P.M. 90

Jet or Conventional - Nozzle Size

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18"		6 1/4
No. 1	8		1400	14"	28	6 3/4
No. 2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1:00	57				Shovelled Ditch
3:00	57	9.7	10.2		
5:00	57				
7:00	58				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7205	7247	CORING		32	Hycolog

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12	8	8

Driller Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7247	7257	10	6 1/8	Shale & chert.

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	76	1	17	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4				
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
FH	DIA	5:45 PM	10:00 A	16 1/4	10	11M	50	
FH	"	2:30 PM						

Bit Serial No. 2336 - 2336. Table R.P.M. 90

Jet or Conventional - DIA Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18"		6 1/4
No. 1	3 1/2	2	1400	14"		6 3/4
No. 2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8:00	60	9.8	10.2		6 — 60 Lignite
9:30	58				3 — 34 10 " 12'
					P/ 26 PW 31.5'
					4 8 PF 6.5'
					Lime To.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7205	7255	50	50	#32	Hycolog Bit
7255				#33	" "

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	8:00	10:00	2
TRIP OUT of hole	10:00	11:45	1 3/4
RECOVER CORE. SERVICE bbl.	11:45		
Look @ bit.		12:15	1/2
SERVICE RIG & check B.OP's.	12:15	12:30	1/4
TRIP in Hole	12:30	2:30	2.
CORING	2:30	4:00	1 1/2
			8 hrs

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7257	7275	18		

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	76	2	29	22	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			96 M	11 M
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	HYCALOG	2:30 PM				11 M		

Bit Serial No. 2336 Table R.P.M. 100

Jet or Conventional - DIAMOND Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS 700 On Line	HOURS 700 Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	—	1 1/2		18"		6 1/4"
No. 1	8	—	1400	14"	27	6 3/4"
No. 2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
5:30	65				HYDROGEL - 1000 #
6:45	65	9.7	10.4		VISKAL - 150 #
8:00	60				LIME - 400 #
11:00	57				CAUSTIC - 100 #
					DIESEL FUEL - 90 gals.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7255				35	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DIAMOND CORING	4	12	8 HRS

Driller L. Alex Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. check BOP Kelly Cocks

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 46

Bow Fourhead LSD I 46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp Oil Ltd Type Rig Nat. 80-B Month ..... Day ..... 19 .....

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7178	7193	15	6 1/8	Chert

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	75	2	20	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			95M.	10 M.
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA	3 4M.				10 M.		

Bit Serial No. 2336 Table R.P.M. 80

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SURVEYS

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18"		6 1/4"
No. 1	7	1	1400	14"	28	6 3/4
No. 2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
3 00	58				Water
5 00	57	9.8	10.		Shovel ditch
7 00	57				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7178				31	Hycolog

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
TRIP IN hole WITH CORE BIT to 7135.	12	1	1
CIRCULATED ROTATING BIT	1		
FROM 7135 to 7178, HOLE TIGHT, undue Gauge at Intervals for Bit #4		2.45	1 3/4
CIRCULATING Before CORING	2.45	3	1/4
CORING	3	8	5
			8 hrs

Driller J. Dunstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7193	7205	12	6 1/8	Chert

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	75	2	8	237-03	56-36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			95M	10M.
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
#4	DIA	3 PM	12 30 P	9 1/2	7205'	10M	27	
#4	DIA							

Bit Serial No. 2336-2336 Table R.P.M. 80

Jet or Conventional - DIA Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			18"		6 1/4
4 1/2		1400	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8 00	58	9.8			6-4-1 gel 0
11	55'				3-2-6 10 - 18
12 00	55		10N		R 4-1 -
					B 5' Soda - 12 6
PAN 38' - PIT 6.2 Line 7.2 oil 30 0					

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7178	7205'	27	27	31	Hycolog

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	8 00	12 30	4 1/2
TRIPPING out of hole	12 30	2 15	1 3/4
RECOVER CORE. change CATCHER & swivel check CORE BIT.	2'S	3 00	3/4
Check B.O.P's. SERVICE RIG	3 00	3 15	1/4
TRIP IN hole changed FLOAT	3 15	4 00	3/4
			8 HRS

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7205	7224	19	6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	76	—	17	237.03	56.36

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			95M	11M
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	HYCALOG	5 45 PM				11 M		

Bit Serial No. 2336 Table R.P.M. 100

Jet or Conventional - DIA. Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
—	—		18"		6 1/1"
6 1/2	1 1/2	1450	14"	28	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
7:30	57				SHOVEL DITCH
9:30	56	9.7	10.2		
11:00	56				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7205				32	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
RUN IN HOLE WITH CORE BBL	4		
FILLED PIPE @ 5000'		5 30	1 1/2
CIRCULATED BEFORE CORING	5 30	5 45	1/4
DIAMOND CORING	5 45	12	6 1/4
			8 HRS

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #45

Imp Bassano Unit I-46 LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp Oil Ltd Type Rig Nat. 80-B Month 5 Day 12 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7157	7167	10	6 1/8	Shale Chert

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	75	1	16	237-03	56-35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			94 M	16 M.
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
3	DIA	4 AM.				11 M		

Bit Serial No 2363 Table R.P.M. 80

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SURVEYS

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2	4	4	1350	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					Unweighted Mud
5 30	58				
7 15	54	9.8	10.2		

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7131	7157	26	26	29	Hycolog.
7157	7167	CORING		30	"

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
TRIP OUT OF hole	12	1.30	1 1/2
Recovered Core FROM BIT.	1.30	1.45	1/4
Service Bit Checked Dia BIT	1.45	2	1/4
Service Rig " BOPs	2	2.15	1/4
TRIP IN WITH CORE BIT	2.15	4	1 3/4
CORING	4	8	4

Driller J Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7167	7178	11	6 1/8	Lime & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	75	1	5	237-03	56-35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4			95 M	10 M.
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
3	DIA	4 Am.	1 00	9	7178	11 M	21	

Bit Serial No. 2363 Table R.P.M. 80

Jet or Conventional - Diamond Nozzle Size ◻

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
		2		18"		6 1/4
5			1350	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8 00	54	9.8	10.4		1000# Gel
10 00	55				300# Lime
12 00	60				150# Vis Kol 150# Lignite
					Sawdust on floor March + April
					1 35 Sacks. GB.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
7167	7178	21	21	30	Hycolog.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	8 00	1 00	5
Pulling out of hole	1 00	2 45	1 3/4
Recovered CORE changed	2 45		
swivels + checked by T. SERVICE			
15 bbls. But no good Stock			
back on bbl.		3 00	3/4
Serviced rig + checked BOPs	3 00	3 15	1/4
	3 45	4 00	1/4
			Thru

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
7178			6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2				237.03	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	8	4 3/4				
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	DIA.							

Bit Serial No. 2336 Table R.P.M.

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Waiting for 6 1/8 diamond bit	4	11	7
Strung back to sup lines,			
+ cut 52' off line			
Picked up core barrel	11		
+ running in hole		12	1
			8 HRS

Driller L. A. Lesiuk

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher C. Bennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 44

Imp. Swan Rourhead I-46 LSD..... SEC..... TWN..... RGE..... W.....

Contractor Imp. Oil Ltd. Type Rig Nat. 80-B Month 5 Day 11 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.					2nd Tour From: 8:00 a.m. To: 4:00 p.m.					3rd Tour From: 4:00 p.m. To: 12:00 p.m.				
DEPTH	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation
	7123	7130	8	6 1/8	Shale	7131	7141	10	6 1/8	Shale	7141	7157	16	6 1/8	Shale
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
	3 1/2	75		27-92	237-03	56-35	3 1/2	75	—	11	237-03	56-35	3 1/2	75	1	26	237.03	56.35
	DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS
		8	4 3/4			10 M.		8	4 3/4			96 m / 10m		8	4 3/4			94M
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
	2	Dia	5:45 PM.	6 AM	12 1/4	7131	10M.			3	Dia	10:30 AM				10 M			3	HYCALOG	10:30 AM	11:30	13	7141	10-12M	26	
	Bit Serial No. A-10-36-1				Table R.P.M. 80		Bit Serial No. 2363				Table R.P.M. 80-90		Bit Serial No. 2363				Table R.P.M. 85-90	
	Jet or Conventional -				Nozzle Size		Jet or Conventional - Diamond				Nozzle Size ◇		Jet or Conventional DIAMOND				Nozzle Size	
SURVEYS	Kind	at	Ft.		Deg. off	Kind	at	Ft.			Deg. off	Kind	at	Ft.			Deg. off	
SLUSH PUMP RECORD	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4	Or. Line	2		18"		6 1/4	—	—		18"		6 1/4"
No. 2	6		1500	14"	26	6 3/4			1350	14"		6 3/4	9 1/2	—	1300	14"	27	6 3/4"
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
	12:30	64				Water	12:00	59					4:30	52	9.4			
	2:00	62	9.8	11.2		Shoveled ditch	1:00	58				6-H 4qw 0	12:00	59		10.8		1000# Gel
	5:00	63					2:00	54		10.6		3-27-0 " 8	2:00	58				300# Lime
										lime 6 1/2		PV 21 Pm 3.1	2:00	54				200# Rayflo
												4/7 Pf 6.2	7:00	52	9.7			150# Caustic
													9:00	52				water
													11:00	53	9.7			
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
	7111	7131	20	5	28	Hycolog	7131				29	Hycolog Tip	7131	7157	26		29	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	12	6	6
Trip out of hole	6	7.45	1 3/4
Recovered Core Catcher shoe backed off cone bbl.	7.45	8	1/4

Driller L. Vanstone

	From	To	Hrs.
Servicing core bbl. changed swivel, changed bit.	8:00	8:30	1/2
Service Rig check B.O.P.S	8:30	8:45	
Trip in the hole	8:45	10:30	1 3/4
Coring	10:30	4:00	5 1/2
		TIME	7 1/4
Checks: all fire fighting equip. and safety check.			

Driller Jim Kerby

	From	To	Hrs.
DIAMOND CORING	4	11:30	7 1/2
PULLING OUT OF HOLE	11:30	12	1/2
			8 HRS

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. ..... DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

Check Kelly. Cock YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher C. Bennett Approved by .....

Form 34502 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 43

Imp Sun Provhead. I-46 LSD. SEC. TWN. RGE. W. Contractor Imp Oil Ltd Type Rig Nat 80-B Month 5 Day 10 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 7085 · To 7100 · Hole Made 15 · Hole Size 6 1/8 · Formation	From 7100 · To 7111 · Hole Made 11 · Hole Size 6 1/8 · Formation	From 7111 · To 7123 · Hole Made 12 · Hole Size 6 1/8 · Formation SHALE
DRILLING STRING	Size-D.P. 3 1/2 · Stands 74 · Singles 2 · Kelly 20 · Drill. Collar Ft. 237-03 · Core Bbl. Ft. 56-35	Size-D.P. 3 1/2 · Stands 74 · Singles 2 · Kelly 11 · Drill. Collar Ft. 237-03 · Core Bbl. Ft. 56-35	Size-D.P. 3 1/2 · Stands 75 · Singles — · Kelly 30 · Drill. Collar Ft. 237.03 · Core Bbl. Ft. 56-35
	DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL DRILLING STRING 92 M. · DRILL COLLARS 10 M.	DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL DRILLING STRING 94 M · DRILL COLLARS 10 M	DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL DRILLING STRING 93 M · DRILL COLLARS
BIT RECORD	No. 2 · Type DIA · Time On Bottom At 2:30 AM · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds 10 M. · FOOTAGE Drilled · Reamed Bit Serial No. A-10-36-1 · Table R.P.M. 80 Jet or Conventional - · Nozzle Size	No. 2 · Type DIA · Time On Bottom At 2:30 AM · Time Pulled At 1:15 PM · Total Hours Run 10 3/4 · Depth Pulled 7111 · Weight On Bit M Pounds 10 · FOOTAGE Drilled 26 · Reamed 2 DIA Bit Serial No. A-10-36-1 - A-10-36-1 · Table R.P.M. 80 Jet or Conventional - · Nozzle Size	No. 2 · Type DIA · Time On Bottom At 5:45 PM · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit 11 M · FOOTAGE Drilled · Reamed Bit Serial No. A 10-36-1 · Table R.P.M. 90 Jet or Conventional - DIA. · Nozzle Size
SURVEYS	Kind at Ft. Deg. off	Kind at Ft. Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD No. 1 / No. 2	HOURS On Line 5 3/4 · Circulating · Pump Press 1400 · Length of Pump Stroke 14" · Strokes Per Min. 28 · Liner Size 6 3/4	HOURS On Line 5 1/4 · Circulating 2 · Pump Press 1400 · Length of Pump Stroke 14" · Strokes Per Min. 28 · Liner Size 6 3/4	HOURS 7 2 5 On Line 6 1/4 · Circulating 1 3/4 · Pump Press 1400 · Length of Pump Stroke 14" · Strokes Per Min. 28 · Liner Size 6 3/4"
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 3:30 / 62 / / / / 200# Viskol 5:00 / 57 / / / / 6-43 Gel 6 7:00 / 54 / 9.7 / 11.1 / / 3-23 10 7 PF 6.5' / PV 20 / Lime 6.6 PV 32. / 4/3 / Solids 12%	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 8:00 / 53 / X9.7 / 11.2 / / water 10:10 / 54 / 9.7 / / / 800# gel. 12:30 / 54 / / / / 100# Vis Kol 100# Caustic	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 7:45 / 52 / 9.7 / 10.9 / / PV 32.5' 10:10 / 57 / / / / YP 6.5' 11:15 / 56 / / / / Lime 6.9
CORING	From 7085 · To 7100 · Ft. Cored CORING · Ft. Rec'd. · Core No. 27 · Type Bbl. Hycolog	From 7085' · To 7111 · Ft. Cored 26 · Ft. Rec'd. 26 · Core No. #27 · Type Bbl. Hycolog.	From 7111 · To · Ft. Cored · Ft. Rec'd. · Core No. 28 · Type Bbl. HYCALOG
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. Service Rig Checked BOP. 12 / 12:15 / 1/4 Serviced Coffee Pot Broke Off. 12:15 Checked Core Bit 12:30 / 1/4 TRIP IN to Core 12:30 / 2:15 / 1 3/4 Circ. to Bottom Added Single 2:15 / 2:30 / 1/4 CORING 2:30 / 8 / 5 1/2 8 hrs	From / To / Hrs. CORING. 8:00 / 1:15 / 5 1/4 TRIPPING out of hole 1:15 / 2:45 / 1 1/2 Recover. core service 2:45 bbl + break off core bit. / 3:30 / 3/4 Service rig + check B.O.P's 3:30 / 3:45 / 1/4 Running in hole. 3:45 / 4:00 / 1/4 8 HRS	From / To / Hrs. RUN IN HOLE WITH CORE BBL. 4 / 5:45 / 1 3/4 DIAMOND CORING 5:45 / 12 / 6 1/4 8 HRS
	Driller J. Vantone	Driller Tim Kerby	Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: · CONDITIONING MUD: · CASING: · LOGGING: · RIG MAINTENANCE: · REAMING CLEANING: · MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: · FISHING: · TRIPPING: · W.O.C. · W O ORDERS: · MISCELLANEOUS: · WORKING PIPE:

REAMING: · CIRCULATING: · CORING: · D.S. TESTING: · RIG REPAIRS: · CONDITION HOLE: · LOST CIRC.: · MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

Stuck Kelly Bar?

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher A Bennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 42

IMP. SUN ARROW HEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Type Rig Nat. 80-B Month 5 Day 9 19.61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 7025' To 7036 Hole Made 11 Hole Size 6 1/8 Formation LIME & Dol.	From 7036 To 7056 Hole Made 20 Hole Size 6 1/8 Formation Lime + ~~Dolomite~~ Lst	From 7056 To 7085' Hole Made 29 Hole Size 6 1/8 Formation Lime & Anhydrite
	Size-D.P. 3 1/2 Stands 74 Singles Kelly 25' Drill. Collar Ft. 237.03 Core B.I. Ft. 56.35'	Size-D.P. 3 1/2 Stands 74 Singles — Kelly 5 Drill. Collar Ft. 237-03 Core Bbl. Ft. 56-35	Size-D.P. 3 1/2 Stands 74 Singles 1 Kelly 7 Drill. Collar Ft. 237-03 Core Bbl. Ft. 56-35'
DRILLING STRING	DRILL COLLAR DATA — Number 8, OD 4 3/4, ID, Length; INDICATOR WEIGHT OF TOTAL: DRILLING STRING 92-M., DRILL COLLARS 10-M	DRILL COLLAR DATA — Number 8, OD 4 3/4, ID, Length; INDICATOR WEIGHT OF TOTAL: DRILLING STRING 92 M., DRILL COLLARS 10 M.	DRILL COLLAR DATA — Number 8, OD 4 3/4, ID, Length; INDICATOR WEIGHT OF TOTAL: DRILLING STRING 92 M, DRILL COLLARS 10 M
BIT RECORD	No. 2-Diam. Type; Time On Bottom At 3 45/A; Time Pulled At 7 1/2; Total Hours Run 3 1/2; Depth Pulled 7036; Weight On Bit M Pounds 5-10; FOOTAGE Drilled, Reamed. Bit Serial No. A-10-36-1 Table R.P.M. 100 Jet or Conventional - Nozzle Size	No. 2 Type DIA Time On Bottom At 12 PM; Time Pulled At; Total Hours Run; Depth Pulled; Weight On Bit M Pounds 10 M.; FOOTAGE Drilled, Reamed. Bit Serial No. A-10-36-1 Table R.P.M. 85 Jet or Conventional - Nozzle Size	No. 2 Type DIA Time On Bottom At 12 PM; Time Pulled At 10 AM; Total Hours Run 10; Depth Pulled 7085; Weight On Bit M Pounds 10m; FOOTAGE Drilled 49, Reamed. Bit Serial No. A-10-36-1 Table R.P.M. 85 Jet or Conventional - Nozzle Size
SURVEYS	Kind at Ft. Deg. off	Kind at Ft. Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD No. 1 / No. 2	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size No. 1: 18; 6 1/2 No. 2: 1400; 14; 28; 6 3/4	HOURS On Line 4 / Circulating; Pump Press 1400; Length of Pump Stroke 18", 14"; Strokes Per Min. 26; Liner Size 6 1/4, 6 3/4	HOURS On Line 1/2 / Circulating; Pump Press 1400; Length of Pump Stroke 18", 14"; Strokes Per Min. 28, 28; Liner Size 6 1/4, 6 3/4
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 5:45 / 68 / 9.6 / / / Water 6:30 / 68 / 9.7 / 11.0 / / Shoveled Ditch	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 1 45 / 75 / / / / Water 3 30 / 74 / 9.5 / 11.2 / / Shoveled ditch Lst gel 10 / 600- / 5.7 / PH 23. 10 m 38 / 300 / 3.4 / 4/14 Salt — 1 ~~5000~~ Hi 15 ppm	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 11 00 / 44 / 9.5 / 13.2 / / water 6 00 / 73 / / / / 200# Lime 9 15 / 63 / / / / 150# Visbal 9 15 / 60 / 9.5 / 12.8 / / 600# Caustic
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl. 7025' / / / / 25 / DIAMOND	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl. Recovered 11 ft core F 25. Rec. 3' of core #24 7036 / 26' Hycolog	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl. 7036 / 7085 / 49 / 49 / #26 / Hycolog.
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. PULLING OUT / 12 / 12 1/2 / 1/2 SERVICING CORE Bbl / 12 1/2 / 12 45/2 / 1/2 CUTTING DRLG. LINE / 12 45 / 1 30 / 3/4 SERVICING RIG 52' / 1 30 / 1 45 / 1/4 RUNING IN HOLE & / 1 45 / 3 45 / 2 BREAKING CIRCULATION CORING / 3 45 / 7 15 / 3 1/2 PULLING OUT Bbl. / 7 45 / 8 / 3/4 JAMMED	From / To / Hrs. TRIP OUT OF hole / 8 / 9.15 / 1 1/4 REMOVING JAMMED CORE FROM C.B. / 9 15 / ~~9.30~~ / 1/4 & Service Core Bbl. / 9.45 / 1/2 Service Rig Checked BOPs / 9.45 / 10 TRIP IN hole to 5275 / 10 / 11 15 / 1 1/4 BROKE CIRC. @ 5275 FOR 5 MIN / 11 15 RUN to BOTTOM. / 12 / 3/4 CORING / 12 / 4 / 4	From / To / Hrs. CORING / 4 00 / 10 00 / 6 TRIPPING OUT of hole / 10 00 / 11 30 / 1 1/2 RECOVERING CORE. / 11 30 / 12 00 / 1/2 Checking CORE bbl. / / / 8 HRS
	Driller Archibald	Driller G. Vanstone	Driller Tim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher G. Bennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 41

Imp. Sun Harrowfield LSD.... SEC.... TWN.... RGE.... W.... Contractor Imp. Oil Type Rig Nat. 50-B Month 5 Day 8 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6947	6975	28	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	73	1	25	237.03	56-35

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
	8	4 3/4			92-M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	DIAMOND	8 AM	7 PM	11	6975	10	40	

Bit Serial No. A-10-36-1 Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SURVEYS

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18		6 1/4
No. 2	7 1/2		1350	14	29	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12:30	60	9.4	10.2		
2:30	57	9.5			
4:00	59				
6:00	62	9.5			

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6947	6975			23	DIAMOND
6935	6976	41	41		

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12	7 30	7 1/2
PULLING CORE	7 30	8	1/2
			8

Driller ....

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6976	6993	17	6 1/8	Lime

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	73	1	7	237.03	56-35

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
	8	4 3/4			92 M.	10M.

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	DIA	12.15 PM				10M		

Bit Serial No. A-10-36-1 Table R.P.M. 85

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18		6 1/4
	3 3/4	2	1400	14	26	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1 45	65				300# Lime
3 00	68	9.4			150# Visbal
					100# caustic
					Shoveled ditch

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
Cored # 23 Recovered 6976		41		24	Hycolog

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
TRIP OUT OF hole	8	9.30	1 1/2
Removing Jammed core From C.B.	9 30	10	1/2
Service Core B. Changed Swivel	10	10.15	1/4
Service Rig Checked BOPs	10.15	10.30	1/4
TRIPIN Co Cores @ 6976	10 30	12.15	1 3/4
Coring	12.15	4 -	3 3/4
			8 hrs

Driller E. Vanstone

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6993	7025	32	6 1/8	Lmst Dol.

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	73	2	6	237.05	56-35

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
	8	4 3/4			92 M	10 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	DIA	12 AM	10 30 PM	10 1/4	7025	10 M	2/9	

Bit Serial No. A-10-36-1 Table R.P.M. 85

Jet or Conventional - Nozzle Size

Kind at Ft. — Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	1	1	1400	18"	28	6 1/4
	5 1/2		1350	14"		6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4 00	7				water
5 30	70	9.5	11		
6 45	68				
8 30	66				
9 30	66				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6976	7025	49	46	#24	Hycolog

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	4 00	10 30	6 1/2
TRIPPING OUT of hole	10 30	12 00	1 1/2
			8 hrs

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

Checked Kelly BOP.

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES U NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #40

IMP. SUN ARROWHEAD LSD. SEC. TWN. RGE. W. Contractor Imp. Oil Type Rig Nat. 80-B Month 5 Day 7 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6923 To 6935 Hole Made 12 Hole Size 6 1/8 Formation LIME	From 6935 To Hole Made Hole Size 6 1/8 Formation	From 6935 To 6947 Hole Made 12 Hole Size 6 1/8 Formation Lime
	Size-D.P. 3 1/2 Stands 72 Singles 2 Kelly 5' Drill. Collar Ft. 237-03 Core Bbl. Ft. 56-35	Size-D.P. Stands Singles Kelly Drill. Collar Ft. Core Bbl. Ft.	Size-D.P. 3 1/2 Stands 73 Singles — Kelly 23 Drill. Collar Ft. 237-03 Core Bbl. Ft. 56-35
DRILLING STRING	DRILL COLLAR Number 9 OD 4 3/4 ID Length INDICATOR WEIGHT OF TOTAL DRILLING STRING DRILL COLLARS; DATA 72-M.	DRILL COLLAR Number OD ID Length INDICATOR WEIGHT OF TOTAL DRILLING STRING DRILL COLLARS; DATA	DRILL COLLAR Number 8 OD 4 3/4 ID Length INDICATOR WEIGHT OF TOTAL DRILLING STRING 92 M DRILL COLLARS; DATA
BIT RECORD	No. 2 Type Diamond Time On Bottom At 2:45 Time Pulled At 6:30 Total Hours Run 3 3/4 Depth Pulled 6935 Weight On Bit M Pounds 5-10 FOOTAGE Drilled 12 Reamed	No. Type Time On Bottom At Time Pulled At Total Hours Run Depth Pulled Weight On Bit M Pounds FOOTAGE Drilled Reamed	No. 2 Type Diamond Time On Bottom At 8:30 PM Time Pulled At Total Hours Run Depth Pulled Weight On Bit M Pounds 8 M FOOTAGE Drilled Reamed
	Bit Serial No. A-10-36-1 Table R.P.M. 100 Jet or Conventional - Nozzle Size	Bit Serial No. Table R.P.M. Jet or Conventional - Nozzle Size	Bit Serial No. A-10-36-1 Table R.P.M. 80 Jet or Conventional - Diamond Nozzle Size 4
SURVEYS	Kind at Ft. Deg. off	Kind at Ft. Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD	HOURS On Line Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
No. 1	2 — 18 — 6 1/4	3 1/2 — 18 — 6 1/4	16" — 6 1/4
No. 2	3 3/4 4 1/4 1400 14 29 6 3/4	14 6 3/4	14" 6 3/4
MUD RECORD	Time Visc. Wt. W L pH ADDITIVES — POUNDS	Time Visc. Wt. W L pH ADDITIVES — POUNDS	Time Visc. Wt. W L pH ADDITIVES — POUNDS
	4.00 56 9.9 Hydrogel-1800 lbs Husky Gel-10 lbs	Hydrogel-1500 lbs Flow-50 lbs	9:00 65 water 10:00 65 74 11.2 400# gel 11:00 64
	HOLE TAKEN MUD	D.S.T. #3 H.O. Johnston Testers. 5" Single Rubber, Interval 6905 — 35' Shut in 1/2 hr. V.O. 1/2 M. Strong air blow THRU out TEST V.O. 1 1/2 M. Ft. Cored 30 Min. Ft. Rec 2270 muddy water 4230 salt water Cored # 22 12' Recovery	From 6500 SALTY WATER To 6935 Ft. Cored Ft. Rec'd. Core No. #23 Type Bbl. Hycalog LIA.
CORING	From 6923 To 6935 Ft. Cored 12 Ft. Rec'd. Core No. 22 Type Bbl. Diamond (Ball jammed)		
DETAIL OF OPERATIONS AND REMARKS	From To Hrs. SERVICING CORE BBL. 12 12 1/2 SERVICING RIG 12 12 1/2 RUNING IN HOLE 12 2 2 BREAKING CIRCULATION 2 6 3 3/4 CORING 6 7 1 1/2 PULLING OUT	From To Hrs. TRIP OUT OF hole 8 8.45 3/4 Recovered CORE FROM C.B. 8.45 9 1/4 Service Core BBl 9 9.15 1/4 Set Back C.B. Service Rig Checked BOP 9.15 9.30 1/4 Making up Packer Changing Subs 9.30 10.30 1 TRIP IN to Test Interval 6905-35 10.30 12.30 2 Testing 12.30 2.15 1 3/4 Pulling Packer 2.15 4 1 3/4	From To Hrs. Pulling out hole. WET 4:00 All The WAY. 5:15 1 1/4 Back down Testing tool 5:15 & laying down same. 6:15 1 1/4 Picking up Core 43 bbl. 6:15 6:30 1/4 Running in hole 6:30 7:15 3/4 Breaking core C. 2885 # 7:15 Running in hole 8:30 1 1/4 CORING 8:30 12:00 3 1/2 8 HRS
	Driller Carl Cabell	Driller Vantone	Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W.O. ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 38

IMP. SUN ARROWHEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Type Rig NAT. 90-B Month 5 Day 5 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.					2nd Tour From: 8:00 a.m. To: 4:00 p.m.					3rd Tour From: 4:00 p.m. To: 12:00 p.m.				
DEPTH	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation
	6799	6820	22	6 1/4	LIME & SHALE	6820	6844	24	6 1/8	Lime & Shale	6844	6870	26	6 1/8	Lime & Shale
	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
	3 1/2	71	2	29	237.03	56.35	3 1/2	71	2	~~5~~	237.03	56.35	3 1/2	72	—	9	237.03	56.35
DRILLING STRING	DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS
		9	4 3/4			90 M.		8	4 3/4			90 M.		8	4 3/4			92 M —
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	Reamed	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	Reamed
	2-Diamond	4	5 1/2	12 3/4	6820	10	50			2	Dia	10:15 AM				10 M.				2	Dia	10 AM	11	12 3/4	6870	10M	50 Cored	
	Bit Serial No.			Table R.P.M. 100			Bit Serial No.			Table R.P.M. 100			Bit Serial No. A-10-36-1 HycoLog.			Table R.P.M. 100		
	Jet or Conventional -			Nozzle Size			Jet or Conventional -			Nozzle Size			Jet or Conventional - Diamond			Nozzle Size 4		
SURVEYS	Kind	at	Ft.	Deg. off			Kind	at	Ft.	Deg. off			Kind	at	Ft.	Deg. off		
SLUSH PUMP RECORD	HOURS On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size	HOURS On Line	Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	4 1/2		1400	18	25	6 1/4				16"		6 1/4				18"		6 1/4
No. 2	1	2 1/2	1400	14	24	6 3/4	5 3/4	2 4	1350	14"	28	6 3/4	7	1	1400	14"	28	6 3/4
MUD RECORD	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS	Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
	10	57	10				11:15	60	10.1	8.8	13	Treat 2-10M sigel 15	5:30	58				water
	2:30	56					1:15	58		600-54		Mud	6:30	58				
	4:00	56	10.1				3:30	60		300-30 PV 24		600# Hydrogel	8:30	57	10	88 cc		
								1.5% Sand		YP 6		1400 Soda 490 Oil	10:00	57				
										PM 1.3		PF 6.5 - 6.5 # lime						
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.	From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
	6799	6820	22	50	18	DIAMOND	6820				19	HycoLog. Dia	6820	6870	50		#19	HycoLog DIA.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12	5-15	5-11/4
PULLING CORE	5-15/4	7 12	2
SERVICING CORE Bbl	7 15	7 45	3/4
SERVICING RIG	7 45	8	1/4
			8

	From	To	Hrs.
Checked BOP's	8	8.15	1/4
Greased Blocks & Swivels, Checked Float	8.15	9	3/4
TRIP in hole	9	9.15	1/4
WORK ON POWER SLIPS	9.15	10.15	1
TRIP in hole	10.15	4	5 3/4
CORING			8 hrs

	From	To	Hrs.
CORING	4 cc	11 cc	7
Pulling out of hole	11 cc	12 cc	1
			8 HRS

Driller Ole Lehndorff

Driller J. Vanstone

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher Otterness Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 37

T.M.P. SUM
BARROWHEAD LSD. SEC. TWN. RGE. W. Contractor Imp. Oil Type Rig NAT. 80-B. Month 5 Day 4 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6720 · To 6752 · Hole Made 32 · Hole Size 6 1/8 · Formation LIME & SHALE	From 6752 · To 6770 · Hole Made 18 · Hole Size 6 1/8 · Formation Lime & Shale	From 6770 · To 6798 · Hole Made 28 · Hole Size 6 1/8 · Formation Lime & Shale.
DRILLING STRING	Size-D.P. 3 1/2 · Stands 70 · Singles 2 · Kelly 5' · Drill. Collar Ft. 237.03 · Core Bbl. Ft. 56.35 DRILL COLLAR DATA: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING 89-M · DRILL COLLARS	Size-D.P. 3 1/2 · Stands 71 · Singles — · Kelly 17 · Drill. Collar Ft. 237.03 · Core Bbl. Ft. 56.35 DRILL COLLAR DATA: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING 89 M. · DRILL COLLARS	Size-D.P. 3 1/2 · Stands 71 · Singles 1 · Kelly 21 · Drill. Collar Ft. 237.03 · Core Bbl. Ft. 56.35 DRILL COLLAR DATA: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING 89 M. · DRILL COLLARS
BIT RECORD	No. 2 · Type 2-DIAMOND · Time On Bottom At 12 PM · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds 10 · FOOTAGE Drilled · Reamed Bit Serial No. · Table R.P.M. 100 · Jet or Conventional - · Nozzle Size	No. 2 · Type Dia · Time On Bottom At 12 AM. · Time Pulled At 11:45 PM · Total Hours Run 11 3/4 · Depth Pulled 6770 · Weight On Bit M Pounds 10 M. · FOOTAGE Drilled 50 CORED. · Reamed No. 2 · Type Dia Bit Serial No. A1036-1 HycoLog. · Table R.P.M. 100 · Jet or Conventional - · Nozzle Size	No. 2 · Type Dia · Time On Bottom At 4:30 PM · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds 10 M · FOOTAGE Drilled · Reamed Bit Serial No. HycoLog. · Table R.P.M. 100 · Jet or Conventional - Diamond. · Nozzle Size
SURVEYS	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off
SLUSH PUMP RECORD	HOURS On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size No. 1 — 2 · 18 · 6 1/8 No. 2 8 — 1400 · 14 · 30 · 6 3/4	HOURS On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size No. 1 3 3/4 · 1450 · 14" · 30 · 6 3/4	HOURS On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size No. 1 3 · 1400 · 18" · 25 · 6 1/4 No. 2 4 1/4 — · 1400 · 14" · 30 · 6 3/4
MUD RECORD	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS 2:00 · 61 · 10.1 · · · Hydrogel - 600 lbs 4:00 · 58 · · 8.6 · · Lime - 300 lbs 6:30 · 56 · · · · Caustic - 100 lbs 7:30 · 56 · 10.1 · 8.8 · · Kaylo - 150 lbs Shoveled Ditch	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS 8:30 · 55 9:30 · 55 · 10.1 · 8.8 · 13 · 600-58 PV. 30.2 11:30 · 55 · · · · 300-26 PV. 6.6 YP-22 YP. 6 6. 11" Wall Treat 2-10 Mix in 15.	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS 5:45 · 58 · 10.0 · Sand · · Treat 2-10 Mix gel 15 7:10 · 56 · 10.1 · 9.2 · 13 · 600-56 PV. 30 YP 26 9:00 · 56 · · · · 300-31 10:30 · 55 · · · · YP 25 6.03 Wall 6.14 90 Sold 4 90 Oil 240 Gals Water 2.1
CORING	From 6720 · To ~~6795~~ · Ft. Cored ~~55~~ · Ft. Rec'd. · Core No. 17 · Type Bbl. DIAMOND	From 6720 · To 6770 · Ft. Cored 50 · Ft. Rec'd. 50 · Core No. 17 · Type Bbl. HycoLog.	From 6770 · To · Ft. Cored · Ft. Rec'd. · Core No. #18 · Type Bbl. HycoLog.
DETAIL OF OPERATIONS AND REMARKS	From · To · Hrs. CORING · 12 · 9 · 9	From · To · Hrs. CORING · 8 · 11:45 · 3 3/4 PULLING CORE · 11:45 · 1:30 · 1 3/4 ~~SERVICE RIG Checked BOPs~~ · ~~1:30~~ RECOVERING CORE FROM B-4 · 1:30 SERVICE CORE · · 2 · 1/2 SERVICE RIG CHECKED BOPs · 2 · 2:15 · 1/4 TRIP IN HOLE · 2:15 · 4 · 1 3/4	From · To · Hrs. RUNNING IN HOLE. · 4:00 · 4:30 · 1/2 CORING · 4:30 · 8:45 · 4 1/4 CHANGED PUMP-ON · 8:45 · 9:00 · 1/4 CORING · 9:00 · 12:00 · 3 3 HRS.
	Driller Gerald	Driller J. Stanton	Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: · DRILLING: · REAMING: · TOTCO: · FISHING: · CIRCULATING: · CONDITIONING MUD: · TRIPPING: · CORING: · CASING: · W.O.C. · D.S. TESTING: · LOGGING: · W O ORDERS: · RIG REPAIRS: · RIG MAINTENANCE: · MISCELLANEOUS: · CONDITION HOLE: · REAMING CLEANING: · WORKING PIPE: · LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. ..... MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY — YES / NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher H. Tennette Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 36

IMP. SUN ARROWHEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Type Rig Vert. 1-E Month 5 Day 3 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6686	6710	24	6 1/8	LIME & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	70	1	16	237.03	

	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
						DRILLING STRING	DRILL COLLARS
COLLAR		9	4 3/4				
DATA						9 M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAMOND 7 7/8					10		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	—		18		6 1/4
No. 2	8	—	1400	14	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12:30	53	10.1			Shovel Ditch
3:00	54		9.6		Mid-IH 905 Bbls Oil
5:00	55				25-25# Sand 3040
7:30	55	10.0	9.2	13.	600-55# Gel 2-10 Min 16 300-27 Oil 2% PW 22.5 7 Kels

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6686	6710	24		16	DIAMOND

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12	8	8

Driller Lee Schell

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6710	6719	9	6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	70	+	8	237.03	56.35

	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
						DRILLING STRING	DRILL COLLARS
COLLAR		8	4 3/4		30		
DATA						85 M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAM 7 7/8	7.45 pm	10.30	14 3/4	6719	10 M	50	
1915 W7								

Bit Serial No. 3473-C (42164) Table R.P.M. 100

Jet or Conventional - Conv Nozzle Size

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2	2 1/2		1450	14"	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8:30	55	10.	9.2		
10:00	54				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6710	6719	9	5.0	#16	DIAM

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	8:00	10:30	2 1/2
Pulling out with motor + pipe displacing a bit	10:30	1:15	2 3/4
Recover Core + Lower Bbl + re-change Swivels + Set back CB	1:15	2:30	1 1/4
Pick up Junk Sub + Run in + Change 6 Singles.	2:30	4:00	1 1/2

Driller Jack

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6710	6720	1	6 1/8	Lime + shale.

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	70	2	37	237.03	56-35

	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
						DRILLING STRING	DRILL COLLARS
COLLAR		8	4 3/4		30		
DATA						89 M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	196 RW7	4:30	6:00 pm	1 1/2	6720	8 M	1	

Bit Serial No. H2164 - Hycalog Table R.P.M. 60

Jet or Conventional Conv - Nozzle Size

Kind Totco at 6690 Ft. 1° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				15"		6 1/4
No. 2				14"		6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
Recovered 6720	Piece of IRON			#17	DIAM.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Running in hole.	4:00	4:30	1/2
Circ. and Surging pump for Junk in hole drilled 1' hole.	4:30	6:00	1 1/2
Totco @ 6690 1°	6:00	6:15	1/4
Tripping out hole.	6:15	8:45	2 1/2
Check B.O.P.'s & service Rig	8:45	9:00	1/4
Picking up Core Bbl. & running in Junk Sub to bottom hole.	9:00	9:30	1/2
Running in hole.	9:30	11:45	2 3/4
Circ & Cond. for Core	11:45	12:00	1/4

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. Chas. Kelly Co.

DRILLING: FISHING: TRIPPING: W.O.C. W.O. ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES X NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher H.S. Owre. Approved by .....

Form 3446Z (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #35

IMP. SUN ARROWHEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor IMP. OIL Type Rig Nat 80-B Month May Day 2 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6612 To 6627 Hole Made 15 Hole Size 6 7/8 Formation LIME	From 6627 To 6669 Hole Made 42 Hole Size 6 7/8 Formation LIME	From 6669 To 6686 Hole Made 17 Hole Size 6 7/8 Formation LIME & SHALE
	Size-D.P. 3 1/2 Stands 69 Singles 1 Kelly 9 Drill. Collar Ft. 237.03 Core Bbl. Ft. 56.35	Size-D.P. 3 1/2 Stands 70 Singles — Kelly 27 Drill. Collar Ft. 237.03 Core Bbl. Ft. 56.35	Size-D.P. 3 1/2 Stands 70 Singles — Kelly 10 Drill. Collar Ft. 237.03 Core Bbl. Ft. 56.35
DRILLING STRING	DRILL COLLAR DATA: Number 8 OD 4 3/4 ID Length — INDICATOR WEIGHT OF TOTAL: DRILLING STRING 84 m DRILL COLLARS —	DRILL COLLAR DATA: Number 8 OD 4 3/4 ID Length — INDICATOR WEIGHT OF TOTAL: DRILLING STRING 94 m DRILL COLLARS —	DRILL COLLAR DATA: Number 8 OD ID Length 3 INDICATOR WEIGHT OF TOTAL: DRILLING STRING 85 m DRILL COLLARS
BIT RECORD	No. 1 Type DIAM Time On Bottom At 2:15 p.m. Time Pulled At 1:30 a.m. Total Hours Run 11 1/4 Depth Pulled 6619 Weight On Bit M Pounds 10m FOOTAGE Drilled 50 Reamed — 1-DIAMOND 5 7/8" Bit Serial No. 3473-C Table R.P.M. 100 Jet or Conventional - Nozzle Size Kind at Ft. Deg. off	No. 1-DIAMOND Type Time On Bottom At 5 3/4 p.m. Time Pulled At 3 3/4 a.m. Total Hours Run 10 Depth Pulled 6669 Weight On Bit M Pounds 10 FOOTAGE Drilled 50 Reamed — Bit Serial No. 3473-C Table R.P.M. 100 Jet or Conventional - Nozzle Size Kind at Ft. Deg. off	No. 1 Type DIAM Time On Bottom At 7:45 p.m. Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 10 m FOOTAGE Drilled — Reamed — Bit Serial No. 3473-C Table R.P.M. 100-80 Jet or Conventional - Nozzle Size Kind at Ft. Deg. off
SURVEYS			
SLUSH PUMP RECORD	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke 18" Strokes Per Min. — Liner Size 6 1/4" No. 1 No. 2 4 4 1450 14" 31 6 3/4"	HOURS On Line 7 1/2 Circulating — Pump Press 1400 Length of Pump Stroke 14 Strokes Per Min. 30 Liner Size 6 3/4	HOURS On Line 4 1/4 Circulating 3 3/4 Pump Press 1450 Length of Pump Stroke 14" Strokes Per Min. 30 Liner Size 6 3/4
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: 12:15 / 56 / 10.0 / 9.2 / — / SHOVEL DITCH 7:00 / 57	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: 8:00 / 60 / 10 / 14 / 9.0 / 15 / Hydrogel - 600lbs; 7:00 / 55 / 59 / Oil / 12.0-32 / pH 9.5 / Lime - 200lbs; 12:30 / 53 / 101 / 9 1/2 / 9.0 / 7 / Rayflo - 100lbs; 3:00 / 54 / 10 / 5.27 / Lime / Loustic - 100lbs Trip 9-10 Min 15 PM 16.5 / 17.2	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: 9:15 / 55 / — / — / — / Shoveled ditch; 10:30 / 53 / 10. / 8.9 / — / —; 11:30 / 53 / — / — / — / —
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.: 6612 / 6619 / 50 / 50 / #14 / DIAM; 6619 / 6627 / 8 / — / 15 / "	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.: 6627 / 6669 / 42 / 50' / 15 / DIAMOND	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.: 6669 / 6686 / 17 / — / #16 / DIAM
DETAIL OF OPERATIONS AND REMARKS	Coring — From 12:00 To 1:30 Hrs. 1 1/2 Pulling out of hole — 1:30 / 3:15 / 1 3/4 Recover core & Service Bbl — 3:15 / 3:45 / 1/2 Run in hole — 3:45 / 5:30 / 1 3/4 CORING — 5:30 / 8 / 2 1/2	CORING — From 8 To 3:30 Hrs. 7 1/2 PULLING CORE — 3:30 / 4 / 1/2 8	Pulling out — From 4:00 To 5:15 Hrs. 1 1/4 Recover Core Service & Change Swivel on Core Bbl — 5:15 / 5:45 / 1/2 Service Rig & Bops — 5:45 / 6:15 / 1/2 Run in hole — 6:15 / 7:45 / 1 1/2 Coring — 7:45 / 12:00 / 4 1/4
	Driller Hunt & Churchill	Driller Churchill	Driller Hunt

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher F. S. Dwke Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 34

IMP SUN ARROWHEAD LSD. SEC. TWN. RGE. W. Contractor IMP. OIL Type Rig NAT 80-B Month MAY Day 1 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6534	6565	31	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. F..
3 1/2	68	2	10	237.03	56.55

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8	4 3/16		30	DRILLING STRING / DRILL COLLARS
DATA				84 M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAM.	9 P.M.				10M		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	—		18"		6 1/4"
No. 2	8	—	1350	14"	29	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1:00	56	10.0	9.2	13	SHOVEL DITCH
3:15	55				600-53 Trgd. 2-
5:30	57				300-30
7:15	54				P.V. 23 10 Min ID
					Y.P. 7 5.46 #/sq ft
					PH 13.5 PF 5.5

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6534	6565	31		13	DIAM.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12:00	8:00	8

Driller Tumpa & Archibald

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6565	6578	6 5/8	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	69		27	237.03	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8	4 3/4			DRILLING STRING / DRILL COLLARS
DATA				84M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAM	6 PM	9 15 AM	12 1/4	6569	10M	50	
1-D#AMANY	2.15							

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
						6 1/4
	3		1350	14	29	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9 45	57	10	9.6	13	600-53 Trgd 2-15 Pf 24 gels 2-15
3.	58	10.1	5.61 #/sq ft		300-30 4 Pf 26.5 Pf
					1370 Solid 4700 Cl
					Hydrogel-600 lbs
					Kayflo-50 lbs Limetreated
					Caustic-100 lbs

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6565	6569	4	50 Rec	13	DIAM
6569	6578	9		14	"

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	8	9 15	1 1/4
PULLING BORE	9 15	11 4	1 3/4
SERVICING BORE ASS.	11	11 30	1/2
SERVICING RIG	11 30	12	1/2
CUTTING DRLG. LINE	12	12 45	3/4
RUNNING IN HOLE	12 45	2 15	1 1/2
CORING	2 15	H	1 3/4

Driller Tumpa & Archibald

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6578	6612	34	6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	69	1	24	237.03	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8	4 3/4		30	DRILLING STRING / DRILL COLLARS
DATA				84m	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAM	2.15 PM				10m		

Bit Serial No. 3473-C Table R.P.M. 80-100

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				14"		6 1/4
	8		1450	14"	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
5-00	61				180 Gals. diesel fuel
7 00	59	10.	9.	13	Water
9 15	57				600-51 Trgd 2. 10 Min 15"
1 30	58	10.			300-29 PV 29. PF 6.2
					YP. 7 5.92 #/sq ft

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6578	6612	34		#14	DIAM

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	4P	12P	8

Driller Tumpa

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: DRILLING: REAMING: TOTCO: FISHING: CIRCULATING: CONDITIONING MUD: TRIPPING: CORING: CASING: W.O.C. D.S. TESTING: LOGGING: W O ORDERS: RIG REPAIRS: RIG MAINTENANCE: MISCELLANEOUS. CONDITION HOLE: REAMING CLEANING: WORKING PIPE. LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher E. S. Dure Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #33

IMP. SUN ARROWHEAD LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Type Rig NAT 80.B Month 4 Day 30 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6469	6469	0	6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	67	2	14	23703	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8	4 3/4			DRILLING STRING / DRILL COLLARS
DATA					84

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
RR 18	OSC	8 HRS						

Bit Serial No. 52798 Table R.P.M. 80

Jet or Conventional - Cone Nozzle Size

Kind at Ft. Deg. off

SURVEYS

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18		6 1/4
No. 2			1400	14	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Break down Bbl + recover Core	12 00	12 30	1/2
Service Rig + Core Bbl & Set Brake	12 30		
Changed Sleeve swivel on Bail		1.15	3/4
Run in Bit to Clean out +	115		
drill up Core		3 15	2
Cleaning out to Bottom	3 15	4 15	1
PULLING OUT	4 00	6	1 3/4
RUNING IN HOLE	6	8	2

Driller Frank Eichhorst

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

From	To	Hole Made	Hole Size	Formation
6469	6514	45	6 1/8	LIME

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	68		30	237.03	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8	4 3/4			DRILLING STRING / DRILL COLLARS
DATA					84 M.

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1-DIAMOND 8 HRS						10 M.		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
—	2		18		6 1/4
8	—	1400	14	30	6 3/4

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8 45	64	10.1	9.8		Hydrogel - 600 lbs
11:00	63		6.8-6.8		Lime - 200 lbs
1:00	59	10.1	5.8-5.8		Viskal - 100 lbs
3:30	56		6.2		Caustic - 100 lbs
Finish 10 Minutes					Shoveled Ditch

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6469	6514	45		12	DIAMOND

	From	To	Hrs.
CORING	8	4	8

Driller Carl Eichhorst

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

From	To	Hole Made	Hole Size	Formation
6514	6534	20	6 1/8	

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	68	1	11	237.03	56.37

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8	4 3/4		30	DRILLING STRING / DRILL COLLARS
DATA					84.

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1 DIAM		8 am	5 pm	9	6519	10 M	50	
1 DIAM		9 P.M.				10 M		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
4		1450	14"	30	6 3/4

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4 30	56				Shoveled ditch
9 30	58	10.1	9.2		
11 30	57				

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6514	6519	50	50	12	DIAM
6519				13	DIAM

	From	To	Hrs.
Coring	4 00	5 00	1
Pulling out	5 00	6 30	1 1/2
Recover Core + Service Bbl	6 30	7 00	1/2
Run in Hole	7 00	8 45	1 3/4
Cut Core Bbl	8 45	9 00	1/4
Coring	9 00	12 00	3
			8

Driller Frank

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher H.S. Owre Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #32

IMP. SUN ARROWHEAD LSD. I SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor CO-TOOLS Type Rig NAT. 808 Month 4 Day 29 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6390	6419	29	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	67	—	5	237.03	56.35

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
	8	4 3/4			84M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	CORED SET	6:15 PM	7:15 AM	13	6419	11M	50	

Bit Serial No. 3473C Table R.P.M. 100

Jet or Conventional - DIAMOND Nozzle Size

SURVEYS

Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	—		18"		6 1/4"
No. 2	7 3/4	3/4	1400	14"	30	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12:30	55	9.9			SHOVEL DITCH
3:00	56				
5:00	55				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6369	6419	50	50	10	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	12	7:15	7 1/4
PULLING CORE OUT OF HOLE	7:15	8	3/4
			8 HRS

Driller R. A. Bishop

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6419	6439	20	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	67	1	14	237.03	56.35

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
	9	4 3/4			94-M.	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1-DIAMOND		11 3/4				10-M.		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	—	—		18	15	6 1/4
	4 1/2	3 1/2	1400	14	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1:00	62	10.1	8.2	13	Hydrogel-10 oclls
7:15	55	600-54	PV 25		Shovel Ditch
3:30	55	300-30 PV 24 YP 6	5.1 Time 5.16		Imgel 2-10 #/bbl mi gel 11 1290 Solid-H90 oil 150% Sand

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6419				11	DIAMOND

	From	To	Hrs.
PULLING CORE	8	9	1
SERVICING CORE Bbl.	9	9 30	1/2
SERVICING RIG	9 30	9 45	1/4
RUNING IN W/CORE Bbl.	9 45	11 30	1 3/4
CORING	11 30	4	4 1/2

Driller A. Mitchell

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6439	6469	30	6 1/8	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	67	2		237.03	56.35

DRILL COLLAR DATA	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
	8	4 3/4		30	84 m	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAM	11:30 A	10 P	10 3/4	6469	10 m	50	

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				15"		6 1/4
	6 1/4		1425	14"	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4 30	57				Water
6 30	59				Shoveled Ditch
9	60	10.1	8.7	13	600-58 Imgel 2-10#/bbl 12 300-33 Pv-25 Pv 26 pH 9 YP 8 5.1 2 18 #/bbl.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6439	6469	50		11	DIAM

	From	To	Hrs.
Coring	4 30	10 15	6 1/4
Pulling out of hole	10 15	12 30	1 3/4

Driller J. Smith

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W/O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher H. S. Owre Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #31

IMP-SUN ARROW HEAD LSD. 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor CO-TOOLS ..... Type Rig NAT. 803 ..... Month 4 ..... Day 28 ..... 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6319 · To 6336 · Hole Made 17 · Hole Size 6 1/8 · Formation LIME-QUARTZ	From 6336 · To 6369 · Hole Made ~~33~~ 33 · Hole Size 6 1/8 · Formation LIME & QUARTZ	From 6369 · To 6390 · Hole Made 21 · Hole Size 6 1/8 · Formation ?
DRILLING STRING	Size-D.P. 3 1/2 · Stands 66 · Singles 1 · Kelly 27 · Drill. Collar Ft. 237.03 · Core Bbl. Ft. 56.35 DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS DATA: 84M	Size-D.P. 3 1/2 · Stands 66 · Singles 2 · Kelly 27 · Drill. Collar Ft. 237.03 · Core Bbl. Ft. DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length · INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS DATA: 84	Size-D.P. 3 1/2 · Stands 66 · Singles 2 · Kelly 3 · Drill. Collar Ft. 237.03 · Core Bbl. Ft. DRILL COLLAR: Number 8 · OD 4 3/4 · ID · Length 30 · INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS DATA: 84 M
BIT RECORD	No. 1 · Type COLD SET · Time On Bottom At 4 AM · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds 10M · FOOTAGE Drilled · Reamed Bit Serial No. 3473-C · Table R.P.M. 100 Jet or Conventional - DIA. · Nozzle Size	No. 1-DIAMOND · Time On Bottom At 2 PM · Time Pulled At · Total Hours Run 10 · Depth Pulled 6369 · Weight On Bit M Pounds 10-M. · FOOTAGE Drilled 50 · Reamed Bit Serial No. 3H73-C · Table R.P.M. 100 Jet or Conventional - · Nozzle Size	No. 1 DIAM · Time On Bottom At 6:15 PM · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds 10M · FOOTAGE Drilled · Reamed Bit Serial No. 3473-C · Table R.P.M. 100 Jet or Conventional - · Nozzle Size
SURVEYS	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off
SLUSH PUMP RECORD	HOURS On Line 700 · Circulating 700 · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size No. 1 — — · 18" · 6 1/4" No. 2 4 1/4 · 3 3/4 · 1400 · 14" · 30 · 6 3/4	HOURS On Line 6 · Circulating 2 · Pump Press 1400 · Length of Pump Stroke 14 · Strokes Per Min. 30 · Liner Size 6 3/4	HOURS On Line 5 3/4 · Circulating · Pump Press 1400 · Length of Pump Stroke 14" · Strokes Per Min. 30 · Liner Size 6 3/4
MUD RECORD	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS 5:00 · 57 · 10.0 · · · SHOVEL DITCH 7:00 · 60	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS 8:10 · 62 · Pit 12# · 17.5 · Lime 4.90# · Sand-30 · Soda 14 lbs 8:50 · 60 · 10.1 · 8.6 · 13.6-6.1 · Hydrogel-600lbs 10:30 · 58 · 1290 Solids · 35-35 · Vikal-150lbs 11:30 · 60 · 1190 Oil · 4P 9 · Lime-200lbs 1:15 · 58 · 10. · Trol-10 Min 15. · Caustic 100lbs	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS 8:15 · 54 · 10.1 · · 13. · 100 gel. 9:30 · 55 · 10.1 · 9.2 · 13 · 600-53 Trol 2-10 Min 10 11:30 · 55 · · · · 300-30 Pit 11.27.5 PT 58 · · · · · 10 25 LIQ # Lime. · · · · · 3090 Sand 4 Pit. 7 Hydrol 1200 Solids
CORING	From 6269 · To 6319 · Ft. Cored 50 · Ft. Rec'd. 50 · Core No. 8 · Type Bbl. HYCALOG 6319 · · · · 9 · HYCALOG	From 6336 · To 6369 · Ft. Cored 33 · Ft. Rec'd. 50 · Core No. 9 · Type Bbl. DIAMOND	From 6369 · To 6390 · Ft. Cored · Ft. Rec'd. · Core No. 10 · Type Bbl. DIAM
DETAIL OF OPERATIONS AND REMARKS			

	From	To	Hrs.
PULLED CORE	12	1.15	1/4
RECOVERED CORE-SERVICE BBL	1.15	1.45	1/2
SERVICE RIG-CHECKED B.O.P'S	1.45	2	1/4
RUN IN WITH CORE BARREL	2	3.45	1 3/4
CIRC. BEFORE CORING	3.45	4	1/4
CORING	4	8	4
			8 HRS

Driller R. A. Bishop

	From	To	Hrs.
CORING	9	2	6
PULLING CORE	2	3.45	1 3/4
SERVICING CORE BBL	3.45	4	1/4

Driller Art Tidball

	From	To	Hrs.
Check DIAMOND B.T. + Service Rig	4P	4.30	1/2
Run in Hole	4.30	6.15	1 3/4
Coring	6.15	12P	5 3/4
			8

Driller Jamko

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: · CONDITIONING MUD: · CASING: · LOGGING: · RIG MAINTENANCE: · REAMING CLEANING:
DRILLING · FISHING: · TRIPPING: · W.O.C. · W O ORDERS: · MISCELLANEOUS: · WORKING PIPE:
REAMING · CIRCULATING: · CORING: · D.S. TESTING: · RIG REPAIRS: · CONDITION HOLE: · LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....
DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY — YES ✓ NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher M.S. Owre. Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #30

E.O.L. SUN ARROW HEAD LSD. 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor CO-TOOLS Type Rig NAT. 80 B Month 4 Day 27 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6243 To 6269 Hole Made 26 Hole Size 6 1/8 Formation	From 6269 To 6287 Hole Made 18 Hole Size 6 1/8 Formation LIME	From 6287 To 6319 Hole Made 32 Hole Size 6 1/8 Formation
DRILLING STRING	Size-D.P. 3 1/2 Stands 65 Singles 2 Kelly 6 Drill. Collar Ft. 7 D.C.'S Core Bbl. Ft. 56-35	Size-D.P. 3 1/2 Stands 65 Singles 2 Kelly 16 Drill. Collar Ft. 237.03 Core Bbl. Ft. 56.35	Size-D.P. 3 1/2 Stands 65 Singles — Kelly 14 Drill. Collar Ft. 237.03 Core Bbl. Ft. 56.35
	DRILL COLLAR DATA Number 7 OD 4 3/4 ID Length INDICATOR WEIGHT OF TOTAL DRILLING STRING 84M DRILL COLLARS	DRILL COLLAR DATA Number 8 OD 4 3/4 ID Length 30.00 INDICATOR WEIGHT OF TOTAL DRILLING STRING 84-M DRILL COLLARS	DRILL COLLAR DATA Number 8 OD 4 3/4 ID Length 30 INDICATOR WEIGHT OF TOTAL DRILLING STRING 84M DRILL COLLARS
BIT RECORD	No. 1 Type COLD SET Time On Bottom At 6:30 PM Time Pulled At 6:30 AM Total Hours Run 12 Depth Pulled 6269 Weight On Bit M Pounds 10M FOOTAGE Drilled 50 Reamed	No. 1-DIAMOND Type 11 #A Time On Bottom At Time Pulled At Total Hours Run Depth Pulled Weight On Bit M Pounds 10 FOOTAGE Drilled Reamed	No. 1 Type DIAM Time On Bottom At 11.45 AM Time Pulled At 11:15 Total Hours Run 11 1/2 Depth Pulled 6319 Weight On Bit M Pounds 10M FOOTAGE Drilled 50 Reamed
	Bit Serial No. 3473-C Table R.P.M. 100 Jet or Conventional - DIA. Nozzle Size	Bit Serial No. 3473-C Table R.P.M. 110 Jet or Conventional - Nozzle Size	Bit Serial No. 3473-C Table R.P.M. 100 Jet or Conventional - DIAM Nozzle Size
SURVEYS	Kind at Ft. Deg. off	Kind at Ft. Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD	HOURS On Line 6 7/5 Circulating — Pump Press — Length of Pump Stroke 18" Strokes Per Min. — Liner Size 6 1/4"	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke 18 Strokes Per Min. — Liner Size 6 1/4	HOURS On Line — Circulating — Pump Pres — Length of Pump Stroke 18" Strokes Per Min. — Liner Size 6 1/4
No. 1	— —		
No. 2	— — 1350 14" 29 6 3/4"	24 1/4 1350 14 30 6 3/4	7 1/4 1350 14" 30 6 3/4
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 12:30 / 60 / 10.0 / / / SHOVEL DITCH 2:30 / 57 / / / / / 4:30 / 55 / / / / /	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 1:00 / 60 / 10.1 / 8.8 / 13. / Shovel Ditch 2:15 / 62 / / 6.0-5.8 / Engels / Hydrogel - 700 lb. 3:30 / 55 / 10.1 / 5.00-5.33 PV 25 16 Min 12 / HP 8 / Fm 125 5.12 Thick 1100 Added P7.53 H.T.O Pit.	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 4:30 / 55 / / / / 400# Hydrogel Shoveled Ditch 6:00 / 57 / / / / / 8:00 / 58 / 10. / 9.5 / / / 10:00 / 58 / / / / /
CORING	From 6219 To 6269 Ft. Cored 50 Ft. Rec'd. 50/50 Core No. 7 Type Bbl. HYCALOG	From 6269 To 6287 Ft. Cored 18 Ft. Rec'd. Core No. 8 Type Bbl. DIAMOND	From 6287 To 6319 Ft. Cored 50 Ft. Rec'd. Core No. 8 Type Bbl. DIAM
DETAIL OF OPERATIONS AND REMARKS	DIAMOND CORING From 12 To 6:30 Hrs. 6 1/2 PULLING OUT OF HOLE From 6:30 To 8 Hrs. 1 1/2 8 HRS	PULLING CORE From 8 To 8:30 Hrs. 1/2 SERVICING CORE BBL From 8:30 To 9 Hrs. 1/2 SERVICING RIG From 9 To 9:15 Hrs. 1/4 CHANGING TO 3 1/2 RAMS From 9:15 To 9:45 Hrs. 1/2 RUNNING C&W/CORE BBL From 9:45 To 11:45 Hrs. 2 CORING From 11:45 To 4 Hrs. 4 1/4	Coring. From 4:15 To 11:15 Hrs. 7 1/4 Pulling out of hole. From 11:15 To 12:15 Hrs. 3/4 8
	Driller L. A. Bishop	Driller Archfield	Driller Hunt

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher W. S. CURRIE Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #29

Field ARROW HEAD LSD. I SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor Co-TOOLS Type Rig NAT. 80 B Month 4 Day 26 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6169	6195	26	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	65		17	7 D.C.'S	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
COLLAR	7	4 3/4			DRILLING STRING	DRILL COLLARS
DATA					83 M	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	COLD SET	12 M.N.				10M		

Bit Serial No. 3473C Table R.P.M. 100

Jet or Conventional - DIAMOND Nozzle Size

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	2		18"		6 1/4
No. 2	8	—	1300	14"	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
2:30	60	10.0	8.8		HYDROGEL - 800#
4:30	58	10.1			
6:15	55				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6169				6	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DIAMOND CORING	12	8	8 HRS

Driller L. A. Bishop

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6195	6219	24	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	65	1	24'6"	7 D.C.	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
COLLAR	7	4 3/4			DRILLING STRING	DRILL COLLARS
DATA					83-M.	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAMOND	12	1 3/4 P	13'/2	6219	10	50	

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18		6 1/4
	5 1/2		1300	14	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9:15	62.	10.1	8.3	10.1	Hydrogel - 600 lbs
9	61	10.1	8.6	13.	Dakolite - 50 lbs
10:30	57		600-58 300-34		Caustic 50 lbs
			P V 24		Fuel Oil 240 gallons
			P M .23 P F 1.1		

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6195	6219	24	50/50	6	DIAMOND

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	9	1 30	5 1/2
PULLING CORE	1 30 P.	3 15	1 3/4
SERVICING CORE BBL	3 15	3 45	1/2
SERVICING BIT	3 45	4	1/4
			8

Driller Archibald

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6219	6243	24	6 1/8	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
3 1/2	65	2	31	7 D.C.s	56.35

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
COLLAR	7	4 3/4		30	DRILLING STRING	DRILL COLLARS
DATA					83 m	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAM	6.30 PM				10 m		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - DIAM Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
		2		18"		6 1/4
	5 3/4		1300	14"	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
7	60				Mud 600 gel 300 lime
2:45	61	10.1	9.	13	600-45 100 Caus water.
4:15	60		Pm. 22	300 37	600# Gel
			P7 H1.3	4 pg	300# Lime 100# caustic
		4090 Oil	Lime 4.60	Fuel 2.10	Wat 10 1490 Solids

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6219	6243			7	

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Run in hole	4.00	4.45	3/4
Repairing Rotary table clyr	4.45	5.15	1/2
Ream in the Bottom	5.15	6.15	1
Circ Core Bbl	6.15	6.30	1/4
Coring	6.30	12.00	5 1/2
			8

Driller J. Murphy

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher H. S. Dwrie Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 28

Imp Arrowhead LSD. I 46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp. Oil. Ltd. (Co Tools) Type Rig NAT #1 80B Month 4 Day 25 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6119 / To 6133 / Hole Made 14 / Hole Size 6 1/8 / Formation	From 6133 / To 6159 / Hole Made 26 / Hole Size 6 1/8 / Formation ?	From 6159 / To 6169 / Hole Made 10 / Hole Size 6 1/8 / Formation LIME & SHALE
DRILLING STRING	Size-D.P. 3 1/2 / Stands / Singles / Kelly / Drill. Collar Ft. 2 / Core Bbl. Ft. 56-35 DRILL COLLAR Number 7 / OD 4 3/4 / ID / Length INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS DATA 82 M	Size-D.P. 3 1/2 / Stands 64 / Singles 2 / Kelly 23 / Drill. Collar Ft. 7DC's / Core Bbl. Ft. 56-35 DRILL COLLAR Number 7 / OD 4 3/4 / ID / Length INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS DATA	Size-D.P. 3 1/2 / Stands 64 / Singles 2 / Kelly 12 / Drill. Collar Ft. 7 / Core Bbl. Ft. 56-35 DRILL COLLAR Number 7 / OD 4 3/4 / ID / Length INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS DATA 0 3-M.
BIT RECORD	No. 1 / Type ◇ / Time On Bottom At 2:00 AM / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds 10M. / FOOTAGE Drilled / Reamed Bit Serial No. 3473 C. / Table R.P.M. 160 Jet or Conventional - DIAMOND / Nozzle Size ◇	No. 1 / Type DIA / Time On Bottom At 2:00 AM / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds 10M / FOOTAGE Drilled / Reamed Bit Serial No. 3473C - COLD SET / Table R.P.M. 100 Jet or Conventional - DIAMOND / Nozzle Size	No. 1 / Type DIAMOND / Time On Bottom At 2 AM / Time Pulled At 6 1/2 PM / Total Hours Run 16 1/4 / Depth Pulled 6164 / Weight On Bit M Pounds 10 / FOOTAGE Drilled 50 / Reamed Bit Serial No. 3473-C / Table R.P.M. 100 Jet or Conventional - / Nozzle Size
SURVEYS	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off
SLUSH PUMP RECORD	HOURS On Line / Circulating / Pump Press / Length of Pump Stroke / Strokes Per Min. / Liner Size No. 1: — / 1/2 / / 18" / / 6 1/4" No. 2: 6 / 2 / 1150 / 14" / 30 / 6 3/4"	HOURS On Line 675 / Circulating / Pump Press / Length of Pump Stroke / Strokes Per Min. / Liner Size No. 1: — / 2 / / 18" / / 6 1/4" No. 2: 8 / — / 1300 / 14" / 30 / 6 3/4"	HOURS On Line / Circulating / Pump Press / Length of Pump Stroke / Strokes Per Min. / Liner Size No. 1: / / / 18 / / 6 1/4 No. 2: 2 3/4 / / 1900 / 14 / 30 / 6 3/4
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 30° / 65 / / / / HYDROGEL - 1200# 4:00 / 65 / / / / 5:30 / 55 / 101 / 9.0 / / 7:00 / 52 / / / /	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 8:15 / 55 / 10.1 / 8.8 / 13 / GEL-5# Frgl 6-10 Min 15 10' / 56 / / PM.17 / 30-30 PV-32 1 HOP Solid 3% Oil 12:30 / 64 / 10.0 / P7,H8 / 4H. 2 2:00 / 60 / / Lime 3.17# / LIME - 410# CAUSTIC - 110#	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 4:30 / 61 / 10.2 / / / 6:00 / 59 / / 9.1 / /
CORING	From 6119 / To / Ft. Cored / Ft. Rec'd. / Core No. 5 / Type Bbl. Hycolog	From 6133 / To / Ft. Cored / Ft. Rec'd. / Core No. 5 / Type Bbl. HYCALOG	From 6159 / To 6169 / Ft. Cored 10 / Ft. Rec'd. 50/50 / Core No. 5 / Type Bbl. DIAMOND
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. Running in hole. / 12 1/2 / 2:00 / 2 Circ. before coring / 2:00 / 2:30 / 1/2 Coring / 2:30 / 8:00 / 5 1/2 8 hrs	From / To / Hrs. CORING / 8 / 4 / 8 HRS	From / To / Hrs. Coring / 4 / 6 45 / 2 3/4 Pulling core / 6 45 / 8 30 / 1 3/4 Servicing core bbl. / 8 30 / 9 15 / 3/4 Runing in D.C. / 9 15 / 9 30 / 1/4 Cutting Drl. line / 9 30 / 10 / 1/2 Servicing Rig / 10 / 10 15 / 1/4 Runing in w/ core bbl. / 10 15 / 12 / 1 3/4
	Driller JIM KERBY	Driller L. A. Bishop	Driller [illegible]

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: / DRILLING: / REAMING: / TOTCO: / FISHING: / CIRCULATING: / CONDITIONING MUD: / TRIPPING: / CORING: / CASING: / W.O.C. / D.S. TESTING: / LOGGING: / W O ORDERS: / RIG REPAIRS: / RIG MAINTENANCE: / MISCELLANEOUS: / CONDITION HOLE: / REAMING CLEANING: / WORKING PIPE: / LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher M. S. Dwire. Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #27

Lsd. ARROWHEAD LSD. F 46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp. Oil Ltd (Ca Tools) Type Rig NAT #1 80B Month 4 Day 24 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: / To: / Hole Made: / Hole Size: 6 1/8 / Formation:	From: / To: / Hole Made: / Hole Size: / Formation:	From: 6119 / To: / Hole Made: / Hole Size: 6 1/16 / Formation:
	Size-D.P.: / Stands: / Singles: / Kelly: / Drill. Collar Ft.: / Core Bbl. Ft.:	Size-D.P.: 3 1/2 / Stands: 63 / Singles: 2 / Kelly: 30 / Drill. Collar Ft.: B-4 3/4 / Core Bbl. Ft.:	Size-D.P.: 3 1/2 / Stands: / Singles: / Kelly: / Drill. Collar Ft.: 237.03 / Core Bbl. Ft.: 56.35
DRILLING STRING	DRILL COLLAR: Number: / OD: / ID: / Length: / INDICATOR WEIGHT OF TOTAL: DRILLING STRING: / DRILL COLLARS: ; DATA:	DRILL COLLAR: Number: 8 / OD: 4 3/4 / ID: / Length: / INDICATOR WEIGHT OF TOTAL: DRILLING STRING: / DRILL COLLARS: ; DATA:	DRILL COLLAR: Number: 9 / OD: 4 3/4 / ID: / Length: / INDICATOR WEIGHT OF TOTAL: DRILLING STRING: 90 / DRILL COLLARS: ; DATA:
BIT RECORD	No.: 18 / Type: OSC / Time On Bottom At: / Time Pulled At: / Total Hours Run: / Depth Pulled: / Weight On Bit M Pounds: / FOOTAGE Drilled: / Reamed:	No.: 18 / Type: OSC / Time On Bottom At: / Time Pulled At: / Total Hours Run: / Depth Pulled: / Weight On Bit M Pounds: / FOOTAGE Drilled: / Reamed:	No.: 18 / Type: OSC / Time On Bottom At: / Time Pulled At: / Total Hours Run: / Depth Pulled: / Weight On Bit M Pounds: / FOOTAGE Drilled: / Reamed:
	Bit Serial No.: 52798 / Table R.P.M.: / Jet or Conventional: - / Nozzle Size:	Bit Serial No.: 52798 / Table R.P.M.: / Jet or Conventional: CON. / Nozzle Size: 1/2	Bit Serial No.: 52798 / Table R.P.M.: / Jet or Conventional: / Nozzle Size:
SURVEYS	Kind: / at: / Ft.: / Deg. off:	Kind: / at: / Ft.: / Deg. off:	Kind: / at: / Ft.: / Deg. off:
SLUSH PUMP RECORD No. 1 No. 2	HOURS On Line: / Circulating: / Pump Press: / Length of Pump Stroke: / Strokes Per Min.: / Liner Size:	HOURS On Line: / Circulating: / Pump Press: / Length of Pump Stroke: / Strokes Per Min.: / Liner Size:	HOURS On Line: / Circulating: / Pump Press: 650 / Length of Pump Stroke: 18 / Strokes Per Min.: 50 / Liner Size: 6 7/16 ; 6 3/16
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS
		Pressure Testing Casing & B.O.P.'s 1500 P.S.I. - 15 MIN. - Held O.K. 6 A.M.	5 30 / 115 / / / / 300 # VISKAL 6 30 / 95 / 10.1 / 8.8 / 13. / 300 # LIME 7 30 / 78 / 60-63 / F.L. 17.5 / / 150 # CAUSTIC 300-37 P.V. 2.9 PV-24 Y.P. 11 3.79 Time Stroke 3-10 Mingel 25
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
			Corrected Depth = 6119.38
DETAIL OF OPERATIONS AND REMARKS	W.O.C 8 HRS. Laying down 5" D.P. via mouse hole & R. & R. Hydril Lines. Picking up 3 1/2" pipe	From / To / Hrs. 12:00 / 8:00 / 8 HRS	From / To / Hrs. W.O.C. / 4 / 6 / 2. DRILLING OUT FLOAT & SHOE & CLEANING TO BOTTOM. / 6 / 6 30 / 1/2. CIRCULATING & CONDITIONING MUD TO CORE / 6 30 / 8 / 1 1/2. PULLING OUT & MEASURING / 8 / 10 / 2 SERVICING CORE BBL. / 10 / 10 30 / 1/2. RUNING IN HOLE / 10 30 / 17 / 7 1/2
	Driller: Jim Kerby	Driller: L. A. Bishop	Driller: Confidential

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: / DRILLING: / REAMING: / TOTCO: / FISHING: / CIRCULATING: / CONDITIONING MUD: / TRIPPING: / CORING: / CASING: / W.O.C. / D.S. TESTING: / LOGGING: / W O ORDERS: / RIG REPAIRS: / RIG MAINTENANCE: / MISCELLANEOUS: / CONDITION HOLE: / REAMING CLEANING: / WORKING PIPE: / LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES / NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher A. S. Unrue Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #26

Imp Drumheller LSD. I 46 SEC. TWN. RGE. W. Contractor Imp. Dlg. Ltd (Co Tools) Type Rig NAT #1-80B Month 4 Day 23 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6117 / To / Hole Made / Hole Size / Formation	From 6117 / To / Hole Made / Hole Size / Formation	From / To / Hole Made / Hole Size / Formation
	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.
DRILLING STRING	DRILL COLLAR DATA: Number / OD / ID / Length; INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length; INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length; INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS
BIT RECORD	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE: Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE: Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE: Drilled / Reamed
	Bit Serial No. / Table R.P.M.	Bit Serial No. / Table R.P.M.	Bit Serial No. / Table R.P.M.
	Jet or Conventional - / Nozzle Size	Jet or Conventional - / Nozzle Size	Jet or Conventional - / Nozzle Size
SURVEYS	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS: On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS
	Rec'd 161 Jts. - 5133.95' - 7" J.55. 23# Smls. Tal. Tag. Casing + 25 Jts - 983.86' - 7" J55 26# Nat. Tube. Casing - Landed at 6081.50 & Cemented with 400 sks. Neat Portland Cement. Plug down 9.15 A.M.	W.O.C. - 8 hrs	W.O.C - 8 hrs
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. Running 7" Casing — 12 00 / 4 00 / 4 Working Tight Hole — 4 00 / 7 45 / 3 3/4 Cementing 7" Casing — 7 45 / 8 00 / 1/4 8 Hrs	From / To / Hrs. Run 400 sks Neat Portland Cement — 8 / 8.30 / 1/2 Pumped Plug Down @ 9.15 AM — 8.30 / 9.15 / 3/4 W.O.C. — 9.15 / + / 6 3/4 8 Hrs Cleaned Cellar - Raised Bops Set 7" Casing Slips - Cut Casing off - Installed Casing Sock & Nippling up.	From / To / Hrs. W.O.C - 8 hrs — / / — Heading up — 4 / 4.45 / 3/4 Laying Down 5" — 4.45 / 7.30 / 2 3/4 Kelley & picking up 4" — 7.30 / 12 / 4 1/2 3" Kelley Laying Down 5" — 7.30 / 12 / 4 1/2 L. P. in Mouse Hole 7
	Driller Jim Kerby	Driller R. A. Bishop	Driller

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No.
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No.

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES — NO .....

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher ..... Approved by .....

Form 34402 (250 blks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 25

Imp Arrowhead LSD. I-46 SEC. TWN. RGE. W. Contractor Imp Oil Ltd (Co. Tools) Type Rig Nat #1 80-B Month 4 Day 22 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: 6117 · To: · Hole Made: · Hole Size: 9" · Formation: —	From: 6117 · To: · Hole Made: · Hole Size: 9" · Formation:	From: 6117 · To: · Hole Made: · Hole Size: 9 · Formation:
	Size-D.P.: 5" · Stands: 47 · Singles: · Kelly: 28' · Drill. Collar Ft.: · Core Bbl. Ft.:	Size-D.P.: 5" · Stands: 66 · Singles: · Kelly: 15' · Drill. Collar Ft.: 3 DC's · Core Bbl. Ft.:	Size-D.P.: · Stands: · Singles: · Kelly: · Drill. Collar Ft.: · Core Bbl. Ft.:
DRILLING STRING	DRILL COLLAR DATA — Number · OD · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING · DRILL COLLARS	DRILL COLLAR DATA — Number: COLLAR 1, DATA 2 · OD: 7", 6¼ · ID: 2 7/8 · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING: 120M · DRILL COLLARS: 9M	DRILL COLLAR DATA — Number · OD · ID · Length · INDICATOR WEIGHT OF TOTAL: DRILLING STRING · DRILL COLLARS
BIT RECORD	No. · Type · Time On Bottom At · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds · FOOTAGE Drilled · Reamed	No.: 17 · Type: OSC1G · Time On Bottom At · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds · FOOTAGE Drilled · Reamed	No. · Type · Time On Bottom At · Time Pulled At · Total Hours Run · Depth Pulled · Weight On Bit M Pounds · FOOTAGE Drilled · Reamed
	Bit Serial No. · Table R.P.M. · Jet or Conventional - · Nozzle Size	Bit Serial No. 4613 · Table R.P.M. · Jet or Conventional - CON · Nozzle Size 11/16	Bit Serial No. · Table R.P.M. · Jet or Conventional - · Nozzle Size
SURVEYS	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off	Kind · at · Ft. · Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS: On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size	HOURS: On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size	HOURS: On Line · Circulating · Pump Press · Length of Pump Stroke · Strokes Per Min. · Liner Size
MUD RECORD	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS	Time: 9:15 · Visc.: 188 · Wt.: 10.3 · W L: 8.4 · pH: 13 · ADDITIVES — POUNDS: 600-110 Pv. 16; 300-65 Yp 49; 10 sec. 20 Thix. 3.31#; Mud Hog el; Fuged 10-11/0-Min 28	Time · Visc. · Wt. · W L · pH · ADDITIVES — POUNDS
CORING	From · To · Ft. Cored · Ft. Rec'd. · Core No. · Type Bbl.	From · To · Ft. Cored · Ft. Rec'd. · Core No. · Type Bbl.	From · To · Ft. Cored · Ft. Rec'd. · Core No. · Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

From	To	Hrs.	Remarks
12:00	1:00	1	Pulling out of hole
1:00			Picking up and making up straddle packer with hook wall slips.
	2:15	1 1/4	
2:15			Running in hole To 4329.
	4:00	1 3/4	
4:00	7:15	3 1/4	Int Shut in Testing.
7:15	8:00	3/4	Pulling out of hole
		8 1/4 HRS	

Driller Jim Kerby

From	To	Hrs.	Remarks
			RECOVERED 110' MUD & WATER
8	9	1	PULLED SELECTIVE ZONE TOOL
9	10	1	LAYING DOWN TESTING TOOLS
10	10:15	1/4	SERVICE RIG - CHECKED B.OP'S
10:15	12:30	2 1/4	RUN IN HOLE
12:30	2:30	2	CIRCULATING & CONDITIONING
2:30	3	1/2	PULLED 10 STDS & BROKE EACH JOINT
3	4	1	LAYING DOWN 5" PIPE
		8 HRS	

Driller L. R. Bishop

From	To	Hrs.	Remarks
4	5	1	LAYING DOWN DRILL PIPE
5	6:45	1 3/4	PULLED 40 STDS. & BROKE EACH JOINT.
6:45	7:30	3/4	RIGGING UP TO RUN 7" CASING
7:30	12	4 1/2	RUNNING CASING

Driller [illegible]

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: · DRILLING: · REAMING: · TOTCO: · FISHING: · CIRCULATING: · CONDITIONING MUD: · TRIPPING: · CORING: · CASING: · W.O.C. · D.S. TESTING: · LOGGING: · W O ORDERS: · RIG REPAIRS: · RIG MAINTENANCE: · MISCELLANEOUS: · CONDITION HOLE: · REAMING CLEANING: · WORKING PIPE: · LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher H. S. Unke. Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 24

Imp Arrowhead I-46. LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp Oil Ltd - 80B Type Rig NAT #1-80B Month 4 Day 21 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 6117 — To — — Hole Made — — Hole Size 9" — Formation —	From 6117 — To — — Hole Made — — Hole Size — — Formation —	From 6117 — To — — Hole Made — — Hole Size 9 — Formation —
	Size-D.P. 5" — Stands — — Singles — — Kelly — — Drill. Collar Ft. — — Core Bbl. Ft. —	Size-D.P. — — Stands — — Singles — — Kelly — — Drill. Collar Ft. — — Core Bbl. Ft. —	Size-D.P. — — Stands — — Singles — — Kelly — — Drill. Collar Ft. — — Core Bbl. Ft. —
DRILLING STRING	DRILL COLLAR — Number — — OD — — ID — — Length — — INDICATOR WEIGHT OF TOTAL DRILLING STRING — DRILL COLLARS —	DRILL COLLAR — Number — — OD — — ID — — Length — — INDICATOR WEIGHT OF TOTAL DRILLING STRING — DRILL COLLARS —	DRILL COLLAR — Number 1 — OD 7 — ID — — Length — — INDICATOR WEIGHT OF TOTAL DRILLING STRING — DRILL COLLARS —
	DATA —	DATA —	DATA 2 — 6¼ —
BIT RECORD	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed —	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed —	No. — Type — Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds — FOOTAGE Drilled — Reamed —
	Bit Serial No. — Table R.P.M. —	Bit Serial No. — Table R.P.M. —	Bit Serial No. — Table R.P.M. —
	Jet or Conventional - — Nozzle Size —	Jet or Conventional - — Nozzle Size —	Jet or Conventional - — Nozzle Size —
SURVEYS	Kind — at — Ft. — Deg. off —	Kind — at — Ft. — Deg. off —	Kind — at — Ft. — Deg. off —
SLUSH PUMP RECORD	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size	HOURS On Line — Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size
No. 1	½ — 18" — — 6 1/4	— — — — — —	— — — 18 — 74 — 6 1/4
No. 2	8 — 14" — — 6 3/4	— — — — — —	— — — 14 — 74 — 6 3/4
MUD RECORD	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS	Time — Visc. — Wt. — W L — pH — ADDITIVES — POUNDS
			930 — 330 — 10.2 — — — Mixed 800# Gel
			1030 — 220 — 10.3 — 8 — 12.5 — 600-118 PV 20
			300-74 YP 3.7
			PV-44 4.23 " Mud
			Gels 30 10-10 # Min 40
CORING	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl.
DETAIL OF OPERATIONS AND REMARKS		SERVICED RIG — From — To — Hrs.	From — To — Hrs.
	INDUCTION-E-LOG: — 12 00 — 2 30 — 2½	SONIC GAMA-RAY CALIPER LOG — 8 — 11.45 — 3¾	LAYING DOWN D.C. — 4 — 6 30 — 2½
	MICRO-LATEROLOG. — 2 30 — 5 00 — 1½	LATERAL LOG — 11.45 — 3 — 3¼	RUNING IN HOLE & MEASURING TO 6 30 — 8 30 — 2
	CALIPER LOG. SONIC GAMA 5 00 — 8 00 — 3	RU: DRILL COLLARS IN HOLE — 3 — 3.30 — ½	4 5 00
	8 HRS	LAY DOWN 3-6¼ COLLARS — 3.30 — 3.45 — 1¼	CIRCULATING TO RUN TEST. — 8 30 — 11 30 — 3
		LOG: SCHLUMBERGER — 3.45 — 4 — ¼	PULLING OUT — 11 30 — 12 — ½
		EQUIPMENT — 8 HRS	
	Driller JIM KERBY	Driller E. C. Bishop	Driller Carl Ladd

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: — DRILLING: — REAMING: — TOTCO: — FISHING: — CIRCULATING: — CONDITIONING MUD: — TRIPPING: — CORING: — CASING: — W.O.C. — D.S. TESTING: — LOGGING: — W O ORDERS: — RIG REPAIRS: — RIG MAINTENANCE: — MISCELLANEOUS: — CONDITION HOLE. — REAMING CLEANING: — WORKING PIPE: — LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY — YES ✓ — NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher A. S. Wiree. Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 23

Imp Arrowhead I46 LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp Oil LTd (Co Tools Type Rig NAT #1 - 80 B Month 4 Day 20 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6117	6117	0	9"	Shale.

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	57	1	1	868-76	—

	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
						DRILLING STRING	DRILL COLLARS
COLLAR		12	7"	2 7/8			
DATA		17	6 1/4			166M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
17	OSC1G	1 45 pm						

Bit Serial No. 4613 Table R.P.M. 120

Jet or Conventional - CONV. Nozzle Size 11/16

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	5	160	18"	34	6 1/4"
No. 2	6 1/4	—	1100	14"	66	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					HYDROGEL-1600#
730	136				WATER.
5:00	120				SHOVEL-DITCH
6:00	120				STARCH-400#
7:00	123				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Rutted out off Hole	12 00	12 30	1/2
Ran back in hole to 5' 2" to Cleaning & circ to Bottom Condition Mud	12 30	8 00	7 1/2
			8 HRS

Driller Tim Kerby

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

From	To	Hole Made	Hole Size	Formation
6117			9"	

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	57	1	1	868.76	

	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
						DRILLING STRING	DRILL COLLARS
COLLAR		12	7"	2 7/8			
DATA		17	6 1/4			166M	66M

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
17	OSC1G	1.45	11 AM					

Bit Serial No. 4613 Table R.P.M.

Jet or Conventional - CON Nozzle Size 11/16

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					HYDROGEL — 500#

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

	From	To	Hrs.
CONDITIONING HOLE & MUD	8	11	3
PULLED OUT OF HOLE	11	2	3
INDUCTION ELECTRIC LOG	2	3.30	7/2
FAILED TO GET TO BOTTOM			
PULLING LOGGING TOOLS	3.30		
OUT OF HOLE		4 1/2	
			8 HRS

Driller L. A. Bishop

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

From	To	Hole Made	Hole Size	Formation
6117			9.	

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	64	1			

	DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
						DRILLING STRING	DRILL COLLARS
COLLAR		6	7	2 7/8			
DATA		2.	6 1/4			128	

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
17	OSC1G	8 00	9 30				✓	

Bit Serial No. 4613 Table R.P.M. 100

Jet or Conventional ✓ Nozzle Size 11/16

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			18		6 11/16
		1 600	14	70	6. 1

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8.45	311	10.3			Gel 400 #
0.-					Water

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

	From	To	Hrs.
LOGGING	4	4 45	11
CUTTING DRI. LINE	4 45	4 46	1/2
RUNING IN HOLE	4 46	6 30	1 3/4
CLEANING TO BOTTOM	6 30	8	1 1/2
CIRCULATING TO LOG	8	9 30	1 1/2
PULLING OUT	9 30	11 30	2
LOGGING	11 30	12	1/2

Driller Archibald

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ..... NO .....

Totai Contract Time .....hrs. Total Company Time .....hrs. Toolpusher H.S. Owre Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 22

Imp Arrowhead LSD. I-46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp. Oil LTD (Co. Tools) Type Rig NAT 80B Month 4 Day 19 19.61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6097	6116	19	6 1/8	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	13	1	10'		57-65 North SUB.

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	9	6 1/4	2 7/8		DRILLING STRING / DRILL COLLARS
DATA					

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIA	11:30 PM	5:30 AM	6	6116	10m	20' cored.	

Bit Serial No. 3473C. Table R.P.M. 90

Jet or Conventional - DIA Nozzle Size DIA

SURVEYS

Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1		V3	100	18"	30	6 1/4
No. 2	5 1/2		800	14"	38	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1:30	155	10.4			WATER
3:00	144				HYDROGEL-800#
4:30	132	10.5	7.4	F.C. 2/32	SHOVEL-DITCH
					DIESEL-FUEL-FROGS

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6097.	6116	20	20	4	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	12:00	5:30	5 1/2
Pulling out of hole	5:30	7:15	1 3/4
Recovering core.	7:15	7:45	1/2
Taking Check Core Bbl. on Derrick	7:45	8:00	1/4

Driller Jim Kerby

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6116			9"	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	57	1		868-76	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	12	7"	2 7/8		DRILLING STRING / DRILL COLLARS
DATA	17	6 1/4			166M / 66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
17	OSC1G	1:45 PM				15-20		

Bit Serial No. 4613 Table R.P.M. 120

Jet or Conventional - CON Nozzle Size 11/16

SURVEYS

Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	—	1		18"		6 1/4"
	5 1/2	2 1/2	1150	14"	68	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1:45	118				HYDROGEL - 600#
2:30	112			K.	CAUSTIC - 100#
3:30	98	10.4	8.2	10-8.5	LIME - 600#
Tract. 2. 10 M in 20				30-50	VISKAL - 300#
				40-55	
				4R 15	SHOVEL DITCH - WATER

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
SERVICE RIG - CHECKED BOPS	8	8:15	1/4
LAYED DOWN 6 1/4 BIT DRILL COLLAR	8:15	8:30	1/4
RUN IN HOLE TO 5200'	8:30	10:30	2
CLEANING & CIRCULATING	10:30		
CONTINUOUSLY TO BOTTOM		1:45	3 1/4
REAMED 6 1/8 CORE HOLE	1:45		
INTERVAL - 6096 - 6114		4	2 1/4
		8 HRS	

Driller L. A. Bishop

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6116	6117	1	9"	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	57	1	1	868-76	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	12	7"	2 7/8		DRILLING STRING / DRILL COLLARS
DATA	17	6 1/4			166M / 66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
17	OSC1G	1:45				20M	1	20'

Bit Serial No. 4-613 Table R.P.M. 120

Jet or Conventional - CON Nozzle Size 11/16

SURVEYS

Kind ..... at ..... Ft. ..... Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18"		(1"
			1100	14"	64	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4:30	97	10.4			
6:30	98.		6.0-9.8		
1:15	99		30-38		
			40-38		
			UP-20		41.25# Imt. / 150 Solid Sqal
					Incr 3-10 / in 22 [illegible]

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
REAMED - 6114 - 6116	4	4:15	1/4
DRILLED 1 FT. OF NEW HOLE	4:15	4:30	1/4
CIRCULATING - CONDITIONING	4:30	6	1 1/2
PULLING OUT OFF TIGHT HOLE	6	12. 6	
25 STANDS			

Driller BISHOP - Archibald

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher A. S. Ounce Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #21

Imp. Sun Prov. Ltd. I-46 SD. SEC. TWN. RGE. W. Contractor Imp. Dr. Ltd. Type Rig Nat. 50-B Month 4 Day 18 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5875	5935	60	9"	Dol.

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	55	1	2	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"		159	66

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
16	OSC-3	4:45 a.m.				25-35		

Bit Serial No. 23243 Table R.P.M. 120

Jet or Conventional - Conv. Nozzle Size 11/16

SURVEYS

Kind Totco at 5870 Ft. 1/4° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				14"		6 1/4
No. 2	4	4	1200	14"	70	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
6:00	120				Shoveled ditch
7:15	109	10.3	7.6		Water
					Mixed 110 bbls. Gelo. Mud Ltd

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Trip out of hole	12	1:45	1 3/4
Service Rig Checked BOP's	1:45	2	1/4
Trip in hole to 4825	2	3:45	1 3/4
Drilled out Bridge 4825-4885	3:45	4:15	1/2
Run to 5845 + Circulated to Bottom	4:15	4:45	1/2
Drilling	4:45	8	3 3/4
			8 hrs.

Driller J. Wanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5935	6096	161	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	57	1	23	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"		~~160m~~	66m

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
16	OSC 3	8:45 a.m.		10 1/4	6096	30-33m	221	

Bit Serial No. 23243 Table R.P.M. 120

~~Jet~~ or Conventional - Conv. Nozzle Size 11/16

SURVEYS

Kind Totco at 6045' Ft. 1/2° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	8	800	18"	50	6 1/4
No. 2	7 1/2	5	1250	14"	72	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8:30	112	10.4	8.2		SHOVEL-DITCH
10:00	96	10.0-9.5			CAUSTIC - 100#
11:45	94	9.5-9.4			LIME - 600#
2:15	98	9.4-9.3			VISKAL - 300#
3:45	113	9.4	7.0	11.5	Lost 110 bbls. Gel. 2-20

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Drilling	8:00	2:30	6 1/2
Circ. sample for Geo.	2:30		
" hole before Coring		3:30	1
Totco @ 6095'	3:30	3:45	1/4
Trip out of hole	3:45	4:00	1/4
			8 hrs.

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
6096	6097	1	6 1/8	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	63	1	29		57.65 WITH SUB

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	9	6 1/4	2 7/8			
DATA					130m	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIA.	11:30 a.m.				10M		

Bit Serial No. 3473C Table R.P.M. 90

Jet or Conventional - DIA. Nozzle Size DIA.

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	1.50					
	—	—		18"		6 1/4"
			850	14"	40	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					40 gals. to Tank

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
6096				4	HYCALOG

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Measured out of hole Pulled to Core	4	7	3
Picked up core barrel bottom	7		
6 1/4" Drill Collar		7:45	3/4
Service Rig - Checked BOP's	7:45	8	1/4
Run in hole with core bbl.	8	10	2
Bridged @ 5900' - Cleaning hole	10		
Run to bottom		11	1
Circulating before coring	11	11:30	1/2
Coring	11:30	12	1/2
			8 hrs.

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING. FISHING: TRIPPING: W.O.C. W.O. ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher J. M. Tinkham Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 20

Imp. Sun Arrowhead I-46 LSD. SEC. TWN. RGE. W. Contractor Imp. Oil Ltd. Type Rig Dist 80-B Month 4 Day 17 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5490	5569	79	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	51	1	7	867-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7	7			
DATA	17	6 1/4	6 1/4		160 M.	66 M.

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
14	OSC-3	8.45 AM	4.15 PM	19 1/2	5569	30M	395	
15	OSC-3							

Bit Serial No. 7735 — 7356 Table R.P.M. 120

Jet or Conventional - Conv. Nozzle Size 11/16

SURVEYS

Kind TOTCO at 5560 Ft. 2 1/2 Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2	4 1/4		1150	14"	70	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12.30	97				Water
2.00	98	10.2	8.3		Shoveled Ditch
3.30	102				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Drilling	12	4.15	4 1/4
Pulled up 60' Run to Bottom Circ.	4.15	4.30	
Before Running Totco	4.30		1/4
Circulated & Totco		4.45	1/4
Trip out of hole	4.45	6.45	2 —
Service Rig Checked BOPs.	6.45	7 —	1/4
Trip in hole	7	8	1

Driller J. Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m

DEPTH

From	To	Hole Made	Hole Size	Formation
5569	5707	138	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	53	—	18	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"		162 M	66 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
15	OSC3	9 AM						

Bit Serial No. 7356 Table R.P.M. 120

Jet or Conventional - Conv Nozzle Size 11/16

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
		1100	18"	58	6 1/4
		1850	14"	74	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
3.00	gals Diesel	Fuel		13.	SHOVEL-DITCH
11.00	118	10.2	8.2	60-100	CAUSTIC - 200#
1.00	98	10.2	300-44 PM-11		LIME - 600#
2.30	88	10.2	4.4 2.3 Sand 2.5		VISKAL - 300#
			PM. 7.5 P.M. 2		HYDROGEL - 1000#

CORING

From time 2080 Ft. Cored Ft. Rec'd. Core No. Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Running in Hole	8.00	8.45	3/4
Hole sticky @ 4699.-4714.	8.45		
Ran in 9 std. 42 jts and cleaned to 5569		9.45	1
Drilling	9.45	8.00	6 1/4
			8 HRS

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5707	5875	168	9"	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	54	2	1	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8"			
DATA	17	6 1/2"	2 7/8"		158 M	66 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
15	OSC-3	9.45 AM	11.30 PM	13 1/2	5875	30-35	306	

Bit Serial No. 7356 Table R.P.M. 120

Jet or Conventional - CON Nozzle Size 11/16

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS 925 On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
—	1		18"		6 3/4"
7 1/2	2	1250	14"	76	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4.15	89	10.2	4.5	9.0 Sand	CAUSTIC - 100#
7:00	80	10.2	7.4	15.	LIME - 500#
8.45	100	10.2	60-100		VISKAL - 200#
10:30	97		300-60 PV-40		HYDROGEL - 1000#
			9.30 PM		Pump 2-10 1/4" in 20 PM 20 P7 H.H Line 1105

1H 45 Slow 1H 46 Slow Ft. Cored Ft. Rec'd. Core No. Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	4	11.15	7 1/4
TOTCO @ 5870'	11.15	11.30	1/4
PULLING OUT OF HOLE	11.30	12	1/2
			8 HRS

Driller L. R. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING: MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:

REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.: MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher J. D. McIntyre Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 19

Imp Sun Arrowhead I46 LSD..... SEC..... TWN..... RGE..... W..... Contractor L. J. Dick Ltd. Type Rig Nat 80-B Month 4 Day 16 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5150	5174	24	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	47	—	7	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"			66

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
13	OSC-3	4 15 PM	11 5 AM	19 1/2	5174	30M	389	
14	OSC-3							

Bit Serial No. 7727 — 7735 Table R.P.M. 120

Jet or Conventional - Conv. Nozzle Size 11/16

SURVEYS

Kind TOTCO at 5165 Ft. 4 Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4
No. 2	1 1/4		1200	14"	72	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12 30	110	10.2	12		Water

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
Pulled first 15 stds Slowly.					

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Drilling	12	1 15	1 1/4
Circulated + ToTco	1 15	1 30	1/4
Trip out of hole	1 30	1 45	1/4
Slips Struck. Pulled Table out	1 45	2 15	1/2
of Position. Replacing Table			
Trip out	2 15	4	1 3/4
Cut 52' off Drill. Line Service	4		
Checked BOPs. Repaired Broken Air Line		5 15	1 1/4
Trip in hole Twice to Break in	5 15	7	1 3/4
Bit Plugged Pulled 2 stds CONTINUING	7	8	1

Driller A. Sanford

1 BROKE CIRCULATION @ 5050

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5174	5314	140	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	48	2	19	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"		150M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
14	OSC 3	8 45 AM				25-33		

Bit Serial No. 7735 Table R.P.M. 120

Jet or Conventional - Nozzle Size 11/16

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	2 1/2	300	18"	38	6 1/4
No. 2	4 1/2		1000	14"	68	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9'	118	10.2	10	13	DRISCOSE - 150
4P	72	10.2	10	12	CAUSTIC - 210
12:00	123	10.2	7	12	LIME - 600
1:30	128		10.2	13	VIS-KAL - 200
3:00	118	10.2	Lime	MD3	DAKOLITE - 200

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
1:15	3:05				

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Broke Circ + Circ. @ 5050' RAN	8 00		
in Two Std. and cleaned to			
Bottom. 20'	8 45	4 00	7 1/4
Drilling.			Shrs

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
5314	5490	176	9"	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	50	2	25	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4"	2 7/8"		157M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
14	OSC3	8 45 AM				30M		

Bit Serial No. 7735 Table R.P.M. 120

Jet or Conventional - CON Nozzle Size 11/16

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	—	1		18"		6 1/4"
No. 2	8	—	1100	14"	70	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
6:00	88	10.1		13	DAKOLITE - 100#
7:15	98		8.6		Lime - 300#
9:45	96		60-38 30-31		Vis. - 100#
11:15	112	10.1	9P-37 9P-32		540 gals Dies. Fuel.
			Fmd 2-10 Min 22. Pm 16. Pf 11. 3 Lime		3.04 Salt

From To Ft. Cored Ft. Rec'd. Core No. Type Bbl.

Sand 3190 Ft

HYDROGEL - 600#

VISKAL - 200#

	From	To	Hrs.
DRILLING	4	12	8 HRS

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. ..... Gulf Ray 5017

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ... NO ...

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher J. M. McLatyre Approved by .....

Form 34402 250 bks.-8-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 18

In Sundre Grouphead I-46 LSD. SEC. TWN. RGE. W. Contractor Lyle Dale Ltd. Type Rig Nat 80-B Month 4 Day 15 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 4985 To 4850 Hole Made 65 Hole Size 9" Formation Shale	From 4850 To 4994 Hole Made 144 Hole Size 9" Formation Shale	From 4994 To 5150 Hole Made 156 Hole Size 9" Formation SHALE
	Size-D.P. 5" Stands 43 Singles 2 Kelly 30 Drill. Collar Ft. 868-76 Core Bbl. Ft. —	Size-D.P. 5" Stands 45 Singles — Kelly 8 Drill. Collar Ft. 868-76 Core Bbl. Ft. —	Size-D.P. 5" Stands 46 Singles 2 Kelly DOWN Drill. Collar Ft. 868-76 Core Bbl. Ft.
DRILLING STRING	DRILL COLLAR 12 7" 2 7/8 — DRILL DATA 17 6 1/4 " — INDICATOR WEIGHT OF TOTAL: DRILLING STRING 143 M. DRILL COLLARS 66 M.	DRILL COLLAR 12 7" 2 7/8 — DRILL DATA 17 6 1/4 " — INDICATOR WEIGHT OF TOTAL: DRILLING STRING 143 m DRILL COLLARS 66M	DRILL COLLAR 12 7" 2 7/8 — DRILL DATA 17 6 1/4 2 7/8" — INDICATOR WEIGHT OF TOTAL: DRILLING STRING 148 M DRILL COLLARS 66M
BIT RECORD	No. 13 Type OSC3 Time On Bottom At 4:15 AM Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 20-25M FOOTAGE Drilled — Reamed —	No. 13 Type OSC3 Time On Bottom At 4:15 AM Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 25-33 FOOTAGE Drilled — Reamed —	No. 13 Type OSC-3 Time On Bottom At 4:15 AM Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 30M FOOTAGE Drilled — Reamed —
	Bit Serial No. 7727 Table R.P.M. 120	Bit Serial No. 7727 Table R.P.M. 120	Bit Serial No. 7727 Table R.P.M. 120
	Jet or Conventional - Nozzle Size 11/16	Jet or Conventional - CONV Nozzle Size 11/16	Jet or Conventional - CON Nozzle Size 11/16
SURVEYS	Kind TOTCO at 4840 Ft. 6 1/8° Deg. off	Kind TOTCO at 4940 Ft. 5 1/2° Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD No. 1 / No. 2	HOURS On Line — / Circulating 1 1/2 / 4; Pump Press — / 1150; Length of Pump Stroke 18 / 14; Strokes Per Min. — / 72; Liner Size 6 1/4 / 6 3/4	HOURS On Line — / Circulating — / —; Pump Press — / 1150; Length of Pump Stroke 18" / 14"; Strokes Per Min. — / 74; Liner Size 6 1/4 / 6 3/4	HOURS On Line — / Circulating — / 8; Pump Press — / 1100; Length of Pump Stroke 18" / 14"; Strokes Per Min. — / 68; Liner Size 6 1/4 / 6 3/4
MUD RECORD	Time 5:30 / 7:45 / 10:00 / 11:15; Visc. 86 / 78; Wt. 9.9; W L 10 / 600-300-6%-4% / 85 / 50-35-20; pH 13; ADDITIVES — POUNDS: 600# Lime, 300# Viskal, 200# Caustic	Time 8:45 / 9:30 / 11 / 1:15 / 3:00; Visc. 74 / 68 / 65 / 76 / 118; Wt. 90 / 1/16 99; W L 10 / 10; pH 15 / 13; ADDITIVES — POUNDS: HYDROGEL-1200, STARCH-200, LIME-350, CAUSTIC-100, DAKOLITE-100	Time 5:30 / 7:45 / 10:00 / 11:15; Visc. 45 / 85 / 88 / 98; Wt. 10.1 / 10.0 / 9.9; W L 10 / 11 / 6 / 4; pH 10 / 11 / 10; ADDITIVES — POUNDS: Sand DAKOLITE - 100#, SHOWER DITCH, WATER, 6 sx Gel 2-10 Mud Gel 20
	Mud Engr. Ingel 2-10 Mud Gel 15 Pm 6.5 Pf 3.2 Lime 3.45	Mud Engr. Gelp. 2-15 Pm 8.0 Pf 4.9 Lime 3.92	Mud Engr. Gelp. 2-10 Pm 6.2 Pf 4.5 Lime 3.04
CORING	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl. —	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl. —	From — To — Ft. Cored — Ft. Rec'd. — Core No. — Type Bbl. —
	TOTCO @ 4780. Registered 6 1/2 degrees		

DETAIL OF OPERATIONS AND REMARKS

1st Tour	From	To	Hrs.
TRIP OUT OF hole	12	1.30	1 1/2
Service Rig Checked BOPs	1.30	1.45	
TRIP IN hole to 3975	1.45	3.15	1 1/2
Cleaned out Bridge 3975-4015	3.15	3.45	1/2
Run 9 stds & Circulate to BOTTOM	3.45	4.15	1/2
DRILLING	4.15	7.30	3 1/4
Circulated Before TOTCO	7.30	7.45	1/4
Running Bit to Retrieve TOTCO	7.45	8	1/4

Driller Danstone

2nd Tour	From	To	Hrs.
RETRIVE TOTCO AND pulling out	8.00	8.15	1/4
DRILLING Ahead	8.15	12.15	4
CIRC before TOTCO	12.15	12.30	1/4
TOTCO @ 4940 5 1/2°	12.30	1.00	1/2
DRILLING	1.00	4.00	3
			8 hrs

Driller Jim Kerby

3rd Tour	From	To	Hrs.
DRILLING	4	12	8 HRS

Driller R. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....
DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY? YES ✓ NO .....

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher Geo. Strathdee Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 17

Imp Swn Arrowhead LSD. 1-46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp. Oil Ltd. (Co. Tools) Type Rig Nat #1 S.C.B. Month April Day 14 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4496	4500	4	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	39	2	16	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	11		140M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
11	S4	7.15 AM	12.15	17	4500	30M	220	
12	OSC-3							

Bit Serial No. 407864 — 7349 Table R.P.M. 120

Jet or Conventional - Conv. Nozzle Size

SURVEYS

Kind TOTCO at 4495 Ft. 1 3/4 Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				#6"		6 1/4
No. 2	4	4	1100	14"	72	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
5.30	90	9.9			
5.45	92	9.9	9.8	13	600-96 Trig 8 10 Min 10 300-58 PV 36 YP 22 PM 1.25 PF 1.1 Lime 2.18#
6.30	92				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Drilling	12	12.15	1/4
Circulating & TOTCO	12.15	12.30	1/4
Trip out of hole	12.30	2	1 1/2
Service Rig Checked BOPs	2	2.15	1/4
Repaired Broken Oil Line on Drawworks	2.15	2.30	1/4
Trip in hole to 3840	2.30	3.45	1 1/4
Cleaning out Bridges & Tight hole 3870 to 4328 Shales Caving in at Intervals	3.45	8	4 1/4
			8 hrs.

Driller J. Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4500	4662	162	9"	Shale & silt

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	41	1	6	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"		142M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
12	OSC3	8.15 AM				30-37M.		

Bit Serial No. 7349 Table R.P.M. 120

Jet or Conventional - CONV Nozzle Size 11/16

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
		3	300	18"	38	6 1/4
	7 3/4		1100	14"	72	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9.45	92	9.9			CAUSTIC - 100#
10.50	89	9.9			LIME - 500#
					VISKAL - 150#
					STARCH - 300#
					HYDROGEL - 1,000#

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Running in hole and clean out 10' To bottom	8 AM	8.15	1/4
Drilling	8.15	2 PM	5 3/4
Shovelled out Ditch	2 PM	2.15	1/4
Drilling	2.15	4 PM	1 3/4
			8 hrs

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4662	4785	123	9"	SILTY SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	42	2	5	868-76	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	2 7/8		142M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
12	OSC-3	8 AM	11 PM	15 1/4	4785	35M	285	

Bit Serial No. 7349 Table R.P.M. 120

Jet or Conventional - CON. Nozzle Size 11/16

Kind at 4780 Ft. 6 1/2 Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	—	2		18"		6 1/4
	7 3/4	4 1/4	1150	14"	74	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4.15	95	9.9		13	CAUSTIC - 100#
7.30	98	10.0			LIME - 300#
9.30	120	9.9	10.0		DAKOLITE - 300#
11.00	100				STARCH - 200#
					VISKAL - 100#

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Drilling	4	11.30	7 1/2
TOTCO @ 4780	11.30	11.45	1/4
Pulling out of hole	11.45	12	1/4
			8 hrs

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY? YES / NO

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #16

Imp. Sun Arrowhead I-46 LSD. SEC. TWN. RGE. W. Contractor Imp. Oil Ltd. Type Rig Nat 80-B Month 4 Day 13 1961

DEPTH

1st Tour From: 12:00 Midnight To: 8:00 a.m.					2nd Tour From: 8:00 a.m. To: 4:00 p.m.					3rd Tour From: 4:00 p.m. To: 12:00 p.m.				
From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation	From	To	Hole Made	Hole Size	Formation
4279	4289	10	9"	Lime	4289	4417	128	9"	Lime & shale	4417	4496	79	9"	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	37	1	16	868-76	—
5	38	2	8	868-76	—
5"	39	2	20	868-76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4	"		134	66 M.
COLLAR	12	7	2 7/8			
DATA	17	6 1/4	"		136 m	66 m
COLLAR	12	7	2 7/8			
DATA	17	6 1/4	2 7/8		140 M	66 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
10	YM	8.45 AM	12 AM	15 1/4	4280		64	100
11	S4	7.15 AM				15-20		

Bit Serial No. 606453-407864 Table R.P.M. 120 Jet or Conventional - Nozzle Size 11/16

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
11	S-4	7 AM				30 m		

Bit Serial No. 407864 Table R.P.M. 120 Jet or Conventional - (CON:) Nozzle Size 11/16

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
11	S-4	7 AM				30M		

Bit Serial No. 407864 Table R.P.M. 120 Jet or Conventional - CON Nozzle Size 11/16

SURVEYS

Kind TOTCO at 4275 Ft. 3 Deg. off

Kind at Ft. Deg. off

Kind at Ft. Deg. off

SLUSH PUMP RECORD

No.	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
1				14"		6 1/4
2	3		1100	14"	72	6 3/4
1		6	800	18"		6 1/4
2	8		1100	14"	74	6 3/4
1		—		18"		6 1/4"
2	8	—	1000	14"	60	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
6.30	66				
11.15	75	9.9	8.4	8.5	HYDROGEL - 5,500 #
					VIS-KAL - 2,550 #
Changed	8	Tons	Mud	with	LIME - 2,550 #
	Jar	4350			CAUSTIC - 1,000 #
6:00	115	9.9			VISKAL - 150 #
8:00	87	9.9	10 cc	13.	WATER -
10:00	76		600-83		600 - gels 0-10 min 10
11:15	75	9.9	300-47 PV 36 YP 11		300 - PV - 2nd Land. 30 Solid. YP - 11

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
Tight hole 5th Std. of Bottom					

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Circulated + Totco	12	12.15	1/4
Trip out of hole	12.15	12.45	1/2
Repair Installed New Low Gear Transmission Drive Chain	12.45	1.30	3/4
Trip out	1.30	2.45	1 1/4
Service Rig Checked BOPs	2.45	3	1/4
Trip in hole to 3800	3	4.15	1 1/4
Drilling out Continuous Bridges	4.15	7.15	3
From 3800-4100, Drilling	7.15	8 —	3/4
			8 Hrs

Driller J. Vanstone

	From	To	Hrs.
Drilling	8.00	4.00	8
			8 Hrs

Driller Jim Keeby

	From	To	Hrs.
Drilling	4	12	8 Hrs

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: DRILLING: REAMING: TOTCO: FISHING: CIRCULATING: CONDITIONING MUD: TRIPPING: CORING: CASING: W.O.C. D.S. TESTING: LOGGING: W O ORDERS: RIG REPAIRS: RIG MAINTENANCE: MISCELLANEOUS: CONDITION HOLE: REAMING CLEANING: WORKING PIPE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ____ REEL SERIAL No. Check Welly Cook

MNFR. OF KELLY HOSE IN USE ____ HOSE SERIAL No. ____

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO ____

Total Contract Time ____ hrs Total Company Time ____ hrs. Toolpusher J. Vanstone Approved by ____

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 15

Imp. Sun Provost I-46 LSD. SEC. TWN. RGE. W. Contractor Imp. Oils Ltd. Type Rig Nat 80-B Month 4 Day 12 1961

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4189	4216	27	6 1/8	Lime

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	42	—	4		57-65

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	6	7"	2 7/8			
DATA	2	6 1/4				66

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIA	7.45 PM	4.30 AM	8 3/4	4216	12M	50 cored.	
10	YM							

Bit Serial No. 3473-C YM 006453 Table R.P.M. 100

Jet or Conventional - Conv. Nozzle Size 11/16

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	5		550	18"	28	6 1/4
No. 2		3		14		6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12.30	64				Water
2.00	63	10.3			Shoveled ditch
4.30	62				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
4166	4216	50	50/50	3	Hycolog

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	12	4.30	4 1/2
Trip out of hole	4.30	5.45	1 1/4
Layed Down 2-4 3/4 DCs	5.45	6	1/4
Removing Core From Bll	6	6.30	1/2
Service & Set Back Core Bll	6.30	6.45	1/4
" Rig Checked BOPs	6.45	7	1/4
Trip in hole	7	8	1

Driller J. Vanstone

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4216			9"	Lime

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	36	1	13	868-76	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	12	7	2 7/8			
DATA	17	6 1/4	"		130	66 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
10	YM	8.45 AM				15 M		

Bit Serial No. 006453 Table R.P.M. 100

Jet or Conventional - Conv Nozzle Size 11/16

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	1/2	1/2	900	18	58	6 1/4
	7		1000	14	70	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
10	58	10.3	8.4		60-61 Gyp-Lo-Vis 22
12:00	61				78-55 1140 Solid 1750
1:30	59				95-75 HYDROGEL-800#
3:00	60				WATER

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Running in hole	8.00	8.30	1/2
Cleaned out 15' to top of set. hole	8.30	8.45	1/4
Reaming 6 1/4 hole To 9" From 4116 - 4202	8.45	4.00	7 1/4
			7 hr

Driller Jim Kerby

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4216	4279	63	9"	LIME

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	37	1	26	868-76	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
COLLAR	12	7	2 7/8			
DATA	17	6 1/4	2 7/8		133 M	66M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
10	YM	8.45 AM				15-25M		100

Bit Serial No. 006453 Table R.P.M. 120

Jet or Conventional - CON Nozzle Size 11/16

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	—	—		18"		6 1/4"
	7	1	900	14"	74	6 3/4"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4:15	63	10.2			WATER
6:30	63				
8:00	65	10.3			
10:00	62				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Reaming 6 1/4" hole to 9"	4		
4202 - 4216		5.45	1 3/4
Drilling	5.45	12	6 1/4
			8 hrs

Driller L. A. Bishop

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE REEL SERIAL No. Cheek

MNFR. OF KELLY HOSE IN USE HOSE SERIAL No. Kellycock

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time hrs. Total Company Time hrs. Toolpusher Jno. Bishop Approved by

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 14

LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil LTD. Type Rig NAT. 80-B. Month 4 Day 11 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4116	4137	21	6 1/8	SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	42		30	2-10' pups 57.65	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
					DRILLING STRING / DRILL COLLARS
COLLAR	6	7"			
DATA	2	6 1/4			100-M.

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIAMOND	4:45 PM 4th HR				8-10		

Bit Serial No. 3473-C Table R.P.M. 90

Jet or Conventional - Nozzle Size

SURVEYS Kind TOTCO at 4016 Ft. 2° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18"		6 1/4"
No. 2	5 1/4		375	14"	29	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
3:45	72				Water Gel 800#
5:00	67				
6:00	53	10	9.7		
7:30	54				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
4116	4137	21		2	DIAMOND

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
SERVICING CORE BBL.	12	12 30	1/2
RUNING W/CORE BBL.	12 30	2 15	1 3/4
& MEASURING IN			
CIRCULATING	2 15	2 30	1/4
TOTCO	2 30	2 45	1/4
CORING	2 45	8	5 1/4
Core #1 4116-4137			

Driller Campbell

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4137	4166	29	6 1/8	Lime

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	42	—	1	2-5' Pups 57.65	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
					DRILLING STRING / DRILL COLLARS
COLLAR	6	7"			
DATA	2	6 1/4			100M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIA	2:45 AM.	1:30 PM	11 3/4	4166	10-12M	50 cored.	

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Nozzle Size

Kind TOTCO at 4055 Ft. 2° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1	3 1/2		475	18"	27	6 1/4
No. 2	2	2	450	14"	28	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8:30	55	10.1			
9:15	54	10.1	9	8.5	600-CF 300, 55 Tot. 24 YP. 11
11	57				
1:15	61	10.1			
Treated 0-10 Mix 20-1300 Solids 7.5% Sand					

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
4116	4166	50	50/50	2	Hycolog.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Coring	8	1.30	5 1/2
TOTCO @ 4055 to Check with Previous Survey	1.30	1.45	1/4
TRIP out of hole	1.45	3	1 1/4
Recovering Core	3	3.30	1/2
Service & Rig Bill Service Rig	3.30		
Pick up Part of testing tool			
broke double pin 5 pts of same	4	1/2	

Driller Carstone

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
4166	4189	23	6 1/4	Lime

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	41	2	1	2 1/2	57.65

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
					DRILLING STRING / DRILL COLLARS
COLLAR	6	7"	2 1/2		
DATA	2	1 1/4	"		100M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	diamond	7:00 PM				10-12M		

Bit Serial No. 3473-C Table R.P.M. 100

Jet or Conventional - Diamond Nozzle Size ◇

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
		1		18"		6 1/4"
			700	14"	30	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					SHOOL-D.TAN
					WATER
7:30	63	10.2	8.6		
1:00	62	10.2			

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
4166	4189	23			Hycolog.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
broke in tool.	4 00	4 30	1/2
Picking up 2 4 3/4" D.C	4 30	5 15	3/4
Run in hole. check B.OPS	5 15	7 00	1 3/4
Clean out to bottom 21'	7 00	7 15	1/4
Coring	7 15	12 00	4 1/2
			11 HRS

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher G Bennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #13

Imp Arrow head LSD. 1-46 SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp Oil Ltd Type Rig NAT 66B Month 4 Day 10 19 61

DEPTH

1st Tour From: 12:00 Midnight To: 8:00 a.m.				
From	To	Hole Made	Hole Size	Formation
3731	3820	89	9	Shale + salt

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	32	1	30	868-76	—

DRILLING STRING

	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
DRILL COLLAR	12	7	2 7/8		122	66
DATA	17	6 1/4	"			

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
8	OSC1G	12:- P	2:30 A	14 1/4	3765'	35'	205	
9	OSC1G	6:15 A						

Bit Serial No. 7754 — 4445' Table R.P.M. 120

Jet or Conventional ✓ Nozzle Size 11/16

SURVEYS

Kind TOTCO at 3765' Ft. 1/2° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1				18		6 1/4
No. 2	8		1000	14	72	6 3/4

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
130	41	10.2			Water.
TRIP.					
730	44	10.2			

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

From	To	Hrs.	
12:00	2:30	2 1/2	Drilling
7:30	2:45	1/4	To TCO
2:45	4:15	1 1/2	Pulling out
4:30			Running in hole.
4:15	4:30	1/4	Service Rig
4:30	6:45	1 1/4	Running in hole
6:45	6:15	1/2	Cleaning to bottom
6:15	8:00	1 3/4	Drilling
		8 hrs	

Driller Archibald

2nd Tour From: 8:00 a.m. To: 4:00 p.m.				
From	To	Hole Made	Hole Size	Formation
3820	4032	212	9"	Shale

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	34	2	31	868-76	—

	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
DRILL COLLAR	12	7	2 7/8		124m	66
DATA	17	6 1/4	"			

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
9	OSC1G	6:15 A				40		

Bit Serial No. 4445' Table R.P.M. 120

Jet or Conventional - Con Nozzle Size 11/16

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			18		6 1/4
8		1100	14	72	6 3/4

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
845	43	10.4	9.8	8.5	LCO H2 300 2 5# Lignite-10#
10 45	44				PF-17 16
11 30	41				MF - 8 14 1/2 Lig 15 0 Lime
1	39				water + gel.
320	41	10			Mixed 3200 gal.
					Dumped 175 bbl mud to clean tank.

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

Safety inspection made. checked all fire fighting equipment.

From	To	Hrs.	
8	4	8 hrs	Drilling

Driller Vanstone

3rd Tour From: 4:00 p.m. To: 12:00 p.m.				
From	To	Hole Made	Hole Size	Formation
4032	4136	84	9"	Shale

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	35'	1	8	868-76	—

	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL DRILLING STRING	DRILL COLLARS
DRILL COLLAR	12	7	2 7/8		126m	66 m
DATA	17	6 1/4	"			

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
9	OSC1G	6:15 A		14 1/4	4116	40		

Bit Serial No. 4445' Table R.P.M. 120

Jet or Conventional - Con. Nozzle Size 11/16

Kind TOTCO at 4110 Ft. [redacted] Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
5:00	46	10.1			Shoulbat. Mixed
7:00	47	10			Water.
9:00	48	10			

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bb

From	To	Hrs.	
4:00	8:30	4 1/2	Drilling
8:30	9:30	1	Circ To core
9:30	9:45	1/4	To TCO @ 4110
9:45	11:15	1 1/2	Pulling out of hole.
11:15			Checked B.O.P.S. strung
	12:00	3/4	core Bbl
		8 hrs.	

Driller Tom Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. dredged Kelly used

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY? YES ✓ NO .....

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher G. Kennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 12

INS P. SUNCOR FROM HEALD SEC. TWN. RGE. W. Contractor IMP. OIL LTD. Type Rig NAT. 80-B. Month 4 Day 9 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 3417 To 3549 Hole Made 132 Hole Size 9 Formation SHALE & SILT	From 3549 To 3622 Hole Made 73 Hole Size 9" Formation Shale & silt	From 3622 To 3731 Hole Made 109 Hole Size 9" Formation Shale & silt.
	Size-D.P. 5 Stands 29 Singles 1 Kelly 27 Drill. Collar Ft. 868.76 Core Bbl. Ft.	Size-D.P. 5" Stands 30 Singles — Kelly 15 Drill. Collar Ft. 868.76 Core Bbl. Ft. —	Size-D.P. 5" Stands 31 Singles 1 Kelly 28 Drill. Collar Ft. 868-76 Core Bbl. Ft. —
DRILLING STRING	DRILL COLLAR 12 7 2 7/8 DATA 11 6 5/8 INDICATOR WEIGHT OF TOTAL DRILLING STRING 115 DRILL COLLARS 66	DRILL COLLAR 12 7" 2 7/8 DATA 17 6 1/4 " INDICATOR WEIGHT OF TOTAL DRILLING STRING 122 DRILL COLLARS 66	DRILL COLLAR 12 7" 2 7/8 DATA 17 6 1/4 " INDICATOR WEIGHT OF TOTAL DRILLING STRING 122 M DRILL COLLARS 66 M
BIT RECORD	No. 7 Type OSC 1G Time On Bottom At 2 PM Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 40 FOOTAGE Drilled — Reamed —	No. 7 Type OSC-1 Time On Bottom At 12 PM Time Pulled At 8.30 AM Total Hours Run 18 1/2 Depth Pulled 3560 Weight On Bit M Pounds 35-40 FOOTAGE Drilled 346 Reamed — No. 8 Type OSC 1G Time On Bottom At 12 15 PM	No. 8 Type OSC-1-G Time On Bottom At 12 15 PM Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 35-40 FOOTAGE Drilled — Reamed —
	Bit Serial No. 99468 Table R.P.M. 120 Jet or Conventional - Nozzle Size	Bit Serial No. 99468 — 7754 Table R.P.M. 120 Jet or Conventional - Jet Conv. Nozzle Size 11/16	Bit Serial No. 7754 Table R.P.M. i Jet or Conventional - Conv Nozzle Size 11/16
SURVEYS	Kind at Ft. Deg. off	Kind TOTCO at 3550 Ft. 3/4 Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
No. 1	2 1/2 — 1300 18 40 6 1/16	4 1/2 3 1/2 1100 18" 72 6 3/4	8 — 1000 18" 72 6 3/4
No. 2	5 1/2 — 1600 14 70 6 3/4		
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS
	1.30 38 — Water	8.30 40 10.2 — — Water	4 — 39 10-1 — 8.5 Solids 1290 Sand .5090
	2.45 39 9.8 — 500 # GEL	2 00 41 10.1 — — Dumped ditch	5.30 40 10.2 60-51 — Caco-10 Mingel 7
	5 00 40 — —	3 30 40 — 9 8.5 —	7:00 39 10.2 30-18 — Hydrogel 900 lbs
	6.30 39 — — SHOVELED DITCH		9:00 41 — PV 4 YP 5 —
			11:30 41 10.2 10.6 —
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From To Hrs. DRILLING 12 8 8	From To Hrs. DRILLING 8 8.30 1/2 CIRCULATING + TO TCO 8.30 8.45 1/4 TRIP OUT OF HOLE 8.45 10 1 1/4 SERVICE RIG CHECKED BOPs 10 10.15 1/4 CUT 52' OFF DRILL LINE 10.15 10.45 1/2 TRIP IN HOLE 10.45 12 1 1/4 CLEANED TO BOTTOM 20' 12 12.15 1/4 DRILLING 12.15 4 3 3/4 8 hrs	From To Hrs. DRILLING 4.00 12.00 8 8 HRS
	Driller Con Hebert	Driller G. Warstone	Driller Jim Keeby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ——— REEL SERIAL No. Hydril Kelly BOP.

MNFR. OF KELLY HOSE IN USE ——— HOSE SERIAL No. ———

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY. YES ✓ NO ———

Total Contract Time ——— hrs. Total Company Time ——— hrs. Toolpusher ——— Approved by ———

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 11

Indian Arrow Head LSD. SEC. TWN. RGE. W. Contractor Imp. Oil. LTD. Type Rig N.A.T. 80-B Month 4 Day 8 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From 2972 To 3172 Hole Made 200 Hole Size 9 Formation SHALE	From 3172 To 3266 Hole Made 94 Hole Size 9" Formation Shale Lime	From 3266 To 3417 Hole Made 151 Hole Size 9" Formation Shale & salt
	Size-D.P. 5" Stands 25 Singles — Kelly 10 Drill. Collar Ft. 864.76 Core Bbl. Ft. —	Size-D.P. 5" Stands 26 Singles — Kelly 7 Drill. Collar Ft. 868-76 Core Bbl. Ft. —	Size-D.P. 5" Stands 27 Singles 2 Kelly 7 Drill. Collar Ft. 868-76 Core Bbl. Ft. —
DRILLING STRING	DRILL COLLAR: Number 12 OD 7 ID 2 7/8 Length — INDICATOR WEIGHT OF TOTAL: DRILLING STRING — DRILL COLLARS — DATA: Number 17 OD 6 1/4 ID — Length — DRILLING STRING 117 DRILL COLLARS 66	DRILL COLLAR: Number 12 OD 7" ID 2 7/8 Length — DRILLING STRING — DRILL COLLARS — DATA: Number 17 OD 6 1/4 ID " Length — DRILLING STRING 115 M DRILL COLLARS 66 M	DRILL COLLAR: Number 12 OD 7 ID 2 7/8 Length — DRILLING STRING 115 M DRILL COLLARS 66 M DATA: Number 17 OD 6 1/4 ID " Length —
BIT RECORD	No. 6 Type OSC3J Time On Bottom At 6 PM Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 30-35 FOOTAGE Drilled — Reamed — Bit Serial No. 28633 Table R.P.M. 120 Jet or Conventional - Nozzle Size	No. 6 Type OSC-3J Time On Bottom At 6:45 PM Time Pulled At 10 AM Total Hours Run 15 1/2 Depth Pulled 3244 Weight On Bit M Pounds 40 M FOOTAGE Drilled 427 Reamed — 7 OSC1H 2 PM 30-35 Bit Serial No. 28633 - 9948 Table R.P.M. 120 Jet or Conventional - Nozzle Size 2-12/32 1-11/16	No. 7 Type OSC1GJ Time On Bottom At — Time Pulled At — Total Hours Run — Depth Pulled — Weight On Bit M Pounds 35 FOOTAGE Drilled — Reamed — Bit Serial No. 99468 Table R.P.M. 120 Jet or ~~Conventional~~ - Jet Nozzle Size 2 12/32 1 7/16
SURVEYS	Kind at Ft. Deg. off	Kind Totco at 3210 Ft. 3/4 Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD	HOURS On Line / Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size No. 1: 5 7/2 — 1000 — 18 — 50 — 6 1/4 No. 2: 2 1/2 — 1200 — 14 — 70 — 6 3/4	HOURS On Line / Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size 4 1/4 — 1700 — 14" — 60 — 6 1/4	HOURS On Line / Circulating — Pump Press — Length of Pump Stroke — Strokes Per Min. — Liner Size 5 — 1300 — 18 — 40 — 6 1/4 2 — 1700 — 14 — 60 — 6 3/4
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 1 00 / 38 / — / — / — / Water 500# GEL 3 00 / 37 / — / — / — / 5 30 / 37 / 10.2 / — / — / 7 00 / 38 / — / — / — /	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 8 30 / 40 / 10.3 / — / 8. / Pumped settling tank 140 gals Gel 10 00 / 39 / — / 9.6 / 8.5 / 00-35 20 15 1600 Gel 3 00 / 38 / 9.9 / — / PH / 1600 Gel 9 to 9-10 Visc 7 / — / YP 5 / Water .25% Sand Mumbled 150 Bbls Flush oil & tank & cleaned sand	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS 4:30 / 41 / 10.2 / — / — / 600 Hydrogel 6:00 / 40 / 9.9 / — / — / Water 9:00 / 38 / 9.9 / — / 8. / .25% Sand-100 Gals 10:30 / 39 / 9.9 / 9 600-33 300-20 PH 11 PV 7 / 9 Gals-0-10% Visc 8.
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	12	8	8

	From	To	Hrs.
DRILLING	8	10	2
CIRCULATING & TOTCO	10'	10.15	1/4
TRIP OUT OF HOLE	10.15	11.45	1 1/2
SERVICE RIG REPAIRED 4" CAMERON	11.45		
VALVE ON STAND PIPE Mud LINE @ 700 psi		12.15	1/2
TRIP IN HOLE	12.15	1.45	1 1/2
FILLED PIPE CIRCULATED to BOTTOM	1.45	2	1/4
DRILLING	2	4	2
			8 HRS

	From	To	Hrs.
DRILLING	4:00	9:15	5 1/4
CHANGED PUMPS REPAIRING	9:15		
UNIBOLT UNION ON CHECK HOSE.		9:45	1/2
DRILLING.	9:45	11:15	1 1/2
REPAIR LEAK IN STAND PIPE	11:15		
LINE FROM PUMP TO STAND PIPE		11:45	1/2
DRILLING	11:45	12:00	1/4
			7 HRS

Driller Carl Kirkwall

Driller G. Ranstone

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W D ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. Checked Kelly BOP

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher .....

Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 10

LSD..... SEC..... TWN..... RGE..... W..... Contractor Imp. Oil Ltd. Type Rig NAT. 20-B Month 4 Day 7 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
2312	2577	265'	9"	LIME & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	20	1	Down	687.04	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	11	6 1/4		1100		56

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
5	OSC3J	10 PM				30		

Bit Serial No. 28799 Table R.P.M. 120

Jet or Conventional - Nozzle Size 9/16

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1						7 3/8
No. 2	8		1200	14	65	8

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1300	37	9.7			WATER GEL 500#
2345	38				
415	38				
545	37				
700	39				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	12	8	8

Driller Archibald

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
2577	2787	210	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	22	2	Down	687-04	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	11	6 1/4		105		56

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
5	OSC3J	10:45 PM	2:45 PM	16	2787	30-35	536	

Bit Serial No. 28799 Table R.P.M. 130

Jet or Conventional - Nozzle Size 9/11

Kind TOTCO at 2735 Ft. 3/4 Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18		7 1/4
	6 3/4		1200	14	56	8

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
8:15	41	10.3	9.2	8.	1140 Solid 1250 Sand
11	42	10.4	6.0		Gelco-10 Mil-Co.
1	45	10.25	3.0		Water
2:30	44	10-3.	4 p/p		600-BE 300-22 100 16 4 P.L.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	8	2:45	6 3/4
TOTCO + Greasing Rig	2:45	3	1/4
TRIP OUT of hole	3	4	1

Driller J. Armstrong

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
2787	2972	185'	9"	Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	23	—	27	868.76	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	17	6 1/4		106'		660'

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
6	OSC3J					30-35		

Bit Serial No. 28633 Table R.P.M. 130

Jet or Conventional - Jet Nozzle Size 9/16

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	1		1000	18'	50	6 1/4
	4 1/2		1200	14	56	8

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
7:25	45	10.4			
					Dakalite 50 lbs
10:45	40	10-3		8.	Dumped Ditch

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
Changed to 6 1/4 liner & head @ 350 psi.					

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
TRIP out of hole	4:00	4:15	1/4
Check BOPS & Kelly cock	4:15	4:30	1/4
Runn. in D.C pick up.	4:30		
6-6 1/4 D.C. Laydown 6 sgls. +			
Runn in hole.		6:15	1 3/4
Unplug bit.	6:15	6:30	1/4
Drilling	6:30	12:00	5 1/2
			8 HRS

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher A. Kennett Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 9

Pmp. Sus. Arrowhead LSD. ..... SEC. ..... TWN. ..... RGE. ..... W. ..... Contractor Imp. Oil ..... Type Rig NAT. 80-B. Month F4 Day 6 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1376	1911	535'	9"	SAND & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	13		Down	687.04	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7	2 3/8			
DATA	11	6 1/4			60	

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
RR-3	OSC1G	11 AM	7 30 PM	7 1/2	1911	30	605'	

Bit Serial No. 97394 Table R.P.M. 120

Jet or Conventional - Nozzle Size

SURVEYS Kind TOTCO at 1519 Ft. 1° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1		19 1/2	1850 N 1500 N	18		7 3/4
No. 2	6 1/2		2000	14	68	8

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
11 00	37	9.3			WATER
2 15	38				500# GEL
3 45	38				
5 00	37				
					SHOVELED DITCH

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	12	1 15	1 1/4
TOTCO @ (1517) 1°	1 15	1 30	1/4
" " 1850-MISRUN	6	6 15	1/4
DRILLING	1 30	6	4 1/2
DRILLING	6 15	7 30	3/4
PULLING OUT	7 30	8	1/2
TOTCO (1911) 3/4°			

Driller Archibald

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1911	2176	265	9"	Shale & Lite

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	16	—	8	687.04	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	11	6 1/4	"		83 M.	50 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	OSC3	10 30 AM				30-35		

Bit Serial No. 99571 Table R.P.M. 140

Jet or Conventional - Nozzle Size 11/16

Kind Totco at 1911 Ft. 3/4° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
	5 1/2	2	1100	14	62	8

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
11	39	9.4			Water
1 00	38				1,600# Gel.
2 00	38				Pumped into Reserve
3 30	38	9.8			Add back tanks Cleaned
					Mud same.

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
TRIP OUT OF hole & BRINGING up	8		
D.C. Handling Subs to Let Back D.C.	8.45		3/4
Services Rig Checked BOP's Repaired	8.45		
Leaking Main Fuel Line to Motors		9.30	3/4
TRIP IN hole	9.30	10.30	1
DRILLING	10.30	4	5 1/2

Driller J. Wanstone

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
2176	2312	136	9"	Lime & Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	17	2	23	687.04	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	12	7"	2 7/8			
DATA	11	6 1/4			85'	56 M

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
4	OSC3	10 30 am	7 PM	9 1/2	2251	30 35'	340	
5'	OSC3J	1 45 pm						

Bit Serial No. 495 71-28799 Table R.P.M. 140

Jet or Conventional - Conv. Jet Nozzle Size 9/16

Kind Totco at 2250 Ft. 1° Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
				18		7 3/4
	3 hrs 2 hrs		1100 1200	14	63 55	8

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4 30	37	9.7	9.6	8	25# Sand
11 15	37	9.9			600-25 Gels 0-3
					300-15
					PV. 10
					YP. 5

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	4 00	7 00	3
TOTCO @ 2250 1°	7 00	7 15	1/4
Pulling out of hole	7 15	8 30	1 1/4
Running back in hole	8 30	8 45	1/4
DRILLING	8 45	12 00	2 1/4
			8 HRS

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59) IMP Lsd ARROWHEAD #I-46

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 8

I-46 LSD. SEC. TWN. RGE. W. Contractor Imp. Oil Type Rig NAT. 80-B Month 4 Day 5 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1276	1301	25'	6 1/8	SAND & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	10	2	10		57.10

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	8				DRILLING STRING / DRILL COLLARS
DATA					

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
	DIAMOND 12	4½				8-10		

Bit Serial No. 3473-C Table R.P.M. 80

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

No.	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min	Liner Size
1	7¼		300	18	21	7 3/4
2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1.30	36				900# Gel
3.00	37	9.1			Water
5.15	38				
6.45	38				
7.45	37				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
1276	1301	25'	NOT-OUT	1	DIAMOND

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
RUNING W/CORE BARREL	12	12 20	1/2
CIRCULATING	12 20	12 45	1/4
CORING	12 45	8	7 1/4
			8

Driller Archibald

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1301	1306	5	9" 6 1/8	SAND & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	8	1	Drum	507-21	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	12	7"			DRILLING STRING / DRILL COLLARS
DATA	5	6 1/4			

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	DIA	12:35 AM	9:30	8 3/4	1306	10M.	30 cored.	
RR 3	OSC 1A	12 PM	1:15 PM	1 1/4				30

Bit Serial No. 3473-C - 97394 Table R.P.M. 140

Jet or Conventional - CUT OUT WC. Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
7.30	39	9.1		8	

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
1276	1306	30	30	1	DIA

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
CORING	8	9.30	1 1/2
Pulling Core	9.30	10.15	3/4
Rec. Core Service C.B. Stood Back CB	10.15	10.45	1/2
Service Rig Checked BOPs	10.45	11	1/4
STRUNG Band Line	11	11.15	1/4
TRIP IN to Ream Core Hole	11.15	12	3/4
Reamed 6 1/8 hole to 9"	12	12.30	1/2
CIRC. to Test	12.30	1.15	3/4
TRIP OUT OF Hole	1.15	2.00	3/4
Making up Packer	2.00	3.30	1 1/2
Running Packer	3.30	4	1/2
			8 hrs

Driller Tom Stone

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1306	1376	70	9"	sand & shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	7	1	20	687.04	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	12	7"	2 7/8		DRILLING STRING / DRILL COLLARS
DATA	11	6 1/4			

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
RR 3	OSC 1C	11 00 PM				20-25		

Bit Serial No. 97394 Table R.P.M. 140

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
			15		7¾
1		800	14	64	8

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
	D.S.S. #1		710		Johnston Testers
7½	Dual	rubbers	1 Tapered	1230-1306	
I.S.I. 30 min. W.O.S. Faint blow					
thru out Test. V.C. 6.10 Shut in 1hr.					
11.15 HO Rec 60' mud					

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
RUNNING PACKER TEST #1	4 00	4 30	1/2
SETTING " " "	4 30		
TESTING & F.S.I.		7 15	
Pulling out of hole.	7 15	8 00	3/4
Racking and laying down tool	8 00		
		9 00	1
Running in hole & picking up 6 6 1/4 D.C. laying down 6 sgls.	9 00	11 00	2
Drilling	11 00	12 00	1
			8 HRS

Driller Jim Kerby

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ____ REEL SERIAL No. ____

MNFR. OF KELLY HOSE IN USE ____ HOSE SERIAL No. ____

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO ____

Total Contract Time ____ hrs. Total Company Time ____ hrs. Toolpusher A. Lennox Approved by ____

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #7

LSD..... SEC..... TWN..... RGE..... W..... Contractor Co-TOOLS Type Rig NAT. 80B Month 4 Day 4 1961

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: 1011	From: 1011	From: 1011 To: 1276 Hole Made: 265 Hole Size: 9" Formation: Sand.
DRILLING STRING	Size-D.P.: 5" Stands: 9 Singles: — Kelly: 10 Drill. Collar Ft.: Core Bbl. Ft.:	Size-D.P.: 5 Stands: 5 Singles: 1 Kelly: 25 Drill. Collar Ft.: 507.21 Core Bbl. Ft.:	Size-D.P.: 5" Stands: 8 Singles: 1 Kelly: 30 Drill. Collar Ft.: 507-21 Core Bbl. Ft.:
	DRILL COLLAR: Number: 4 OD: 7 ID: Length: INDICATOR WEIGHT OF TOTAL DRILLING STRING: DRILL COLLARS:	DRILL COLLAR: Number: 12 OD: 7 ID: Length: INDICATOR WEIGHT OF TOTAL DRILLING STRING: DRILL COLLARS:	DRILL COLLAR: Number: 12 OD: 7" ID: Length: INDICATOR WEIGHT OF TOTAL DRILLING STRING: DRILL COLLARS:
	DRILL DATA: Number: 1 OD: 6 1/2 ID: Length:	DRILL DATA: Number: 5 OD: 6 1/4 ID: Length:	DRILL DATA: Number: 5 OD: 6 1/4 ID: Length: DRILL COLLARS: 40 M.
BIT RECORD	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed:	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed:	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed:
		3 OSC1G	3 OSC1G 5 PM 9 PM 4 1276 20M 265
			Core1 DIA
	Bit Serial No. Tabie R.P.M.	Bit Serial No. 97394 Table R.P.M.	Bit Serial No. 97394 - 3473-C cold Table R.P.M. 140
	Jet or Conventional - Nozzle Size	Jet or Conventional ✓ Nozzle Size	Jet or Conventional - CUT out W.C. Nozzle Size
SURVEYS	Kind at Ft. Deg. off	Kind at Ft. Deg. off	Kind at Ft. Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size:	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size:	HOURS On Line / Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size:
		18 7 3/4	18" 7 1/4
		14 8	4 800 14" 70 8
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: 200 lbs BICARB. SODA	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS:	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: Water Shoveled ditch
			4 30 38
			6 00 36 9.1
			9 00 35
	Crew. Shut & Shaker off, saw oil rubber into pit. Gausene pump & Lid.		
CORING	From / To / Ft. Cored / Ft. Rec'd / Core No. / Type Bbl.: Continued	From / To / Ft. Cored / Ft. Rec'd / Core No. / Type Bbl.:	From / To / Ft. Cored / Ft. Rec'd / Core No. / Type Bbl.:

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
PREPARING TO RUN IN TO	12		
DRILL OUT & PRESSURE TEST		1	1
PICKED UP 2-7" DRILL COLLARS	1	1 30	1/2
THAWED DRILL PIPE &	1 30		
MEASURED IN HOLE		5	1 1/2
PRESSURE TESTED MUD LINES 1800 PSI	3		
& BLOW OUT PREVENTERS TO BOTTOM		3 30	1/2
DRILLED OUT-FLOAT-SHOE & CEMENT	3 30	6 30	3
LAYED DOWN 16 SINGLES & PULLED OUT	6 30	8	1 1/2
PICKED UP 2-7" DRILL COLLARS			
		8 HRS	

Driller L. A. Barker

	From	To	Hrs.
DRILLING MOUSE HOLE &	10 45	2 3/4	
PICKING UP (17-DC)	10 45	1	2 1/4
RUNING IN HOLE	1	2	1
CIRCULATING	2	2 30	1/2
PULLED OUT BIT PLUGGED			
W/RUBBER	2 30	3 30	1
SERVICING RIG	3 20	3 45	1/4
REPAIRING PUMP	3 45	4	1/4

Driller Cal Richard

	From	To	Hrs.
Set Back DC's Run Kelly IN Hole	4		
CIRCULATed Mud System Free		4 30	1/2
OF Rubber etc	4 30	5	1/2
RUN IN Hole	5	9	4
DRILLING	9	9 30	
CIRCULATING TO Core.	9 30	10 15	3/4
PULLED to Core @ 1376	10 15	11 15	1
Making up Core Bll	11 15	12	3/4
TRIP IN to Core			

Driller J. Wanstone

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: / DRILLING: / REAMING: / TOTCO: / FISHING: / CIRCULATING: / CONDITIONING MUD: / TRIPPING: / CORING: / CASING: / W.O.C. / D.S. TESTING: / LOGGING: / W O ORDERS: / RIG REPAIRS: / RIG MAINTENANCE: / MISCELLANEOUS: / CONDITION HOLE: / REAMING CLEANING: / WORKING PIPE: / LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ✓ NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #6

LSD. 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor Co-Tools Type Rig NAT. 80B Month 4 Day 3 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From: 1011	From: 1011	From: 1011
	To:	To:	To:
	Hole Made:	Hole Made:	Hole Made:
	Hole Size:	Hole Size:	Hole Size:
	Formation:	Formation:	Formation:
	Size-D.P.:	Size-D.P.:	Size-D.P.:
	Stands:	Stands:	Stands:
	Singles:	Singles:	Singles:
	Kelly:	Kelly:	Kelly:
	Drill. Collar Ft.:	Drill. Collar Ft.:	Drill. Collar Ft.:
	Core Bbl. Ft.:	Core Bbl. Ft.:	Core Bbl. Ft.:
DRILLING STRING	DRILL COLLAR DATA; Number; OD; ID; Length; INDICATOR WEIGHT OF TOTAL DRILLING STRING; DRILL COLLARS	DRILL COLLAR DATA; Number; OD; ID; Length; INDICATOR WEIGHT OF TOTAL DRILLING STRING; DRILL COLLARS	DRILL COLLAR DATA; Number; OD; ID; Length; INDICATOR WEIGHT OF TOTAL DRILLING STRING; DRILL COLLARS
BIT RECORD	No.; Type; Time On Bottom At; Time Pulled At; Total Hours Run; Depth Pulled; Weight On Bit M Pounds; FOOTAGE Drilled; Reamed	No.; Type; Time On Bottom At; Time Pulled At; Total Hours Run; Depth Pulled; Weight On Bit M Pounds; FOOTAGE Drilled; Reamed	No.; Type; Time On Bottom At; Time Pulled At; Total Hours Run; Depth Pulled; Weight On Bit M Pounds; FOOTAGE Drilled; Reamed
	Bit Serial No.; Table R.P.M.	Bit Serial No.; Table R.P.M.	Bit Serial No.; Table R.P.M.
	Jet or Conventional -; Nozzle Size	Jet or Conventional -; Nozzle Size	Jet or Conventional -; Nozzle Size
SURVEYS	Kind; at; Ft.; Deg. off	Kind; at; Ft.; Deg. off	Kind; at; Ft.; Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS On Line; Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line; Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size	HOURS On Line; Circulating; Pump Press; Length of Pump Stroke; Strokes Per Min.; Liner Size
MUD RECORD	Time; Visc.; Wt.; W L; pH; ADDITIVES — POUNDS	Time; Visc.; Wt.; W L; pH; ADDITIVES — POUNDS	Time; Visc.; Wt.; W L; pH; ADDITIVES — POUNDS
CORING	From; To; Ft. Cored; Ft. Rec'd.; Core No.; Type Bbl.	From; To; Ft. Cored; Ft. Rec'd.; Core No.; Type Bbl.	From; To; Ft. Cored; Ft. Rec'd.; Core No.; Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

From	To	Hrs.	Detail
12	8	8 HRS	W.O.C. CLEANED CELLAR, DITCH WORKING ON PUMPS PREPARING TO NIPPLE UP.

Driller L. A. Bishop

From	To	Hrs.	Detail
8	4	8	W.O.C. Heading up.

Driller Earl Stahl

From	To	Hrs.	Detail
4	12	8	W.O.C. Heading up

Driller J. Vanstone

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: DRILLING: REAMING: TOTCO: FISHING: CIRCULATING: CONDITIONING MUD: TRIPPING: CORING: CASING: W.O.C. D.S. TESTING: LOGGING: W O ORDERS: RIG REPAIRS: RIG MAINTENANCE: MISCELLANEOUS: CONDITION HOLE: REAMING CLEANING: WORKING PIPE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #5

LSD 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor CO-TOOLS Type Rig NAT 80 B Month 4 Day 2 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1011			17½"	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	7	1	25	60 C's	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	3	9"				
DATA	2-7"-16½					

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	REAMER					10-15M		

Bit Serial No. PILOT REAMER Table R.P.M. 150

Jet or Conventional - Nozzle Size

SURVEYS

Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1						
No. 2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
1.00	168				500 lbs MAGCOBEL
3.30	168				
5.15	170				
7.00	168				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
REAMING 13¾ HOLE TO 17½	12		
INTERVAL - 535 - 874		8	8 HRS

Driller L. A. Bishop

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1011			17½	SANDY SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	8	1	DOWN	6	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	3	9"				
DATA	2-7"-1-6½					

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
1	REAMER		10:45	2½	990	16		990

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9.15	160				

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

	From	To	Hrs.
REAMING 13¾ - 17½ 874 - 990	8	10:45	2¾
CIRCULATING	10:45	11	¼
PULLED OUT	11	12	1
SERVICING RIG	12	12:15	¼
RUNNING IN HOLE	12:15	1:30	1
CIRCULATING TO RUN CASING	1:30	1:45	¾
CASING - PULLED OUT	1:45	2:45	1
LAYED DOWN D.C. & RIGGING UP TO RUN CASING	2:45	4	1¼

Driller [illegible]

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1011				

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR						
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed

Bit Serial No. Table R.P.M.

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
Ran 32 joints 13⅜, 54.5, J.55. S.C. 984.06 ft. Landed 978.83 K.B. CEMENTED WITH 800 SACKS CEMENT + 2% $CaCl_2$ PLUG DOWN 10:15 P.M.					

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

	From	To	Hrs.
Running 13⅜ Casing & Cemented Same.	4	8	4
W.O.C.	8	10:15	2¼
Cutting Cellar.	10:15		
Pumped out Suction Pit.			
		12	1¾

Driller [illegible]

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ..... NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher [illegible] Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT

Pg 4

LSD. 1 SEC. 46 TWN. RGE. W. Contractor I.O.L. Type Rig NAT. 808 Month 4 Day 1 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
900	1008	108	13 3/4	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5"	8	2	8	6 DC's	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	3	9"				
DATA	2-7"-1-6 1/2"					

BIT RECORD (RE-BUILT)

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	OSC3	10:30 PM	2:30 AM	19	947	15-20M	947	
1	OSC	4:15 AM				15-20M		

Bit Serial No. 83845-22122 Table R.P.M. 140

Jet or Conventional - CON CON Nozzle Size 3/4

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

No.	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
1						
2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
12.00	65				40# Mo Maco gel
1.30	65				
5.30	68				
7.00	70				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	12	2.30	2 1/2
PULLED OUT OF HOLE	2.30	3.30	1
CHANGED BITS RUN IN HOLE	3.30	4	1/2
CLEANED TO BOTTOM	4	4.15	1/4
DRILLING	4.15	8	3 3/4
			8 HRS

Driller L. A. Bishop

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1008	1011	3	13 3/4	SAND & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
			DOWN	1-17 1/2-Reamer.	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	4					
DATA						

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
Bit No. 1 RE-1	OSC	4 P	8 P	4	1011	5-10	64	

Bit Serial No. 22122 Table R.P.M. 140

Jet or Conventional - Nozzle Size

Kind TOTCO at 1011 Ft. 3/4 Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
9 P	81				2,000 Gel
11 P	65				
2.30	60				
4 P	120				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.
Reamed 0-173'					

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
DRILLING	9	9 P	1/4
TOTCO	8 P	8 30	1/2
PULLED TO REAM & HAVING DOWN 3 DC.	8 30	9 30	1
SERVICING RIG	9 30	9 45	1/4
REAMING	9	2 30	4 3/4
REPAIRING PUMP LINE	2 30	3	1/2
JETING CELLAR	3	4	1

Driller

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
1011			17 1/2	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	3	2	29	6 Dcs	17 1/2 Reamer 2.45

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL	
					DRILLING STRING	DRILL COLLARS
COLLAR	3	9"				
DATA	2-7"-1-6 1/2					

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
Reamer								

Bit Serial No. Table R.P.M. 140

Jet or Conventional - Nozzle Size

Kind at Ft. Deg. off

SLUSH PUMP RECORD

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
6 1/2		450	18"	62	7 1/4"
	8		14"		8"

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
5.00	125				Water
7.00	58				3,700 Gel
9.00	61	9.2			
11.00	64				

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
Packing off wash out in Cellar	4	5	1
Picking up 7" D.C. - Changing Sub	5	5.15	1/4
Reaming	5.15	8.45	3 1/2
WORK On Pump & WASHED OUT	8.45	9	1/4
Bleeder Line			
Reaming	9	11	2
Welded Hole IN Stand Pipeline	11	11.30	1/2
Reaming	11.30	12	1/2
Reamed 13 3/4 hole to 17 1/2 - From 173-535			8 hrs.

Driller J. Vanstone

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE REEL SERIAL No.

MNFR. OF KELLY HOSE IN USE HOSE SERIAL No.

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES NO

Total Contract Time hrs. Total Company Time hrs. Toolpusher C. Bennett Approved by

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT # 3

LSD. 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor I.O.L. Type Rig NAT. 80B Month 3 Day 31 19 61

1st Tour From: 12:00 Midnight To: 8:00 a.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
350	381	31	13 3/4	

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	2		30	6 DC's	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	3	9"			DRILLING STRING / DRILL COLLARS
DATA	2-7"-16½"				

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	OSC3	10 30 PM						

Bit Serial No. 83845 Table R.P.M.

Jet or Conventional - CON Nozzle Size 3/4

SURVEYS Kind at Ft. Deg. off

SLUSH PUMP RECORD

	HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
No. 1						
No. 2						

MUD RECORD

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
					5 00 MACOGEL
					10 SAX SAWDUST
					200 lbs CAUSTIC

CORING

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

DETAIL OF OPERATIONS AND REMARKS

	From	To	Hrs.
WORKED 5 SINGLES OUT OF	12		
TIGHT HOLE		1	1
MIXING MUD	1	2.15	1 1/4
CLEANED TO BOTTOM	2.15	3.15	1
DRILLING	3.15	4.15	1
LAYED DOWN 3 SINGLES WORKING STUCK PIPE	4.15	5.15	1
MIXING MUD	5.15	7.15	2
CIRCULATING & CONDITION-	7.15		
ING HOLE		8	3/4
		8 HRS	

Driller L. A. Rushford

2nd Tour From: 8:00 a.m. To: 4:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
381	674	293	13 3/4	SAND & SHALE

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	5		10	6	

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	3	9"			DRILLING STRING / DRILL COLLARS
DATA	2-7"-1-6½				50

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	OSC3	10 30 P				20		

Bit Serial No. 83845 Table R.P.M. 110

Jet or Conventional - Nozzle Size

Kind TOTCO at 530 Ft. 3/4 Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
		450	18		7 1/4

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
10 00	48				400 Gel
1230	85				200 Caustic
300	61				Water

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

	From	To	Hrs.
MIXING MUD.	8	9 45	1 3/4
DRILLING	9 45	2 30	4 3/4
TOTCO (530)	2 30	2 45	1/4
DRILLING	2 45	4	1 1/4
			8

Driller Archibald

3rd Tour From: 4:00 p.m. To: 12:00 p.m.

DEPTH

From	To	Hole Made	Hole Size	Formation
674	900	226	13 3/4	Sand & Shale

DRILLING STRING

Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft.	Core Bbl. Ft.
5	7	2	24	6 DC	—

DRILL	Number	OD	ID	Length	INDICATOR WEIGHT OF TOTAL
COLLAR	3	9			DRILLING STRING / DRILL COLLARS
DATA	2-7"-1-6½				52

BIT RECORD

No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run	Depth Pulled	Weight On Bit M Pounds	FOOTAGE Drilled	FOOTAGE Reamed
2	OSC-3	10-30 P				15-20		

Bit Serial No. 83845 Table R.P.M. 121

Jet or Conventional - Conv. Nozzle Size

Kind Lotco at 800' Ft. 3/4 0 Deg. off

HOURS On Line	HOURS Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
7½		500	15"	62	7 1/4
	8		14"		8"

Time	Visc.	Wt.	W L	pH	ADDITIVES — POUNDS
4.30	300				Water
8 00	55	9.3			1,700 Gel.
11 00	62				

From	To	Ft. Cored	Ft. Rec'd.	Core No.	Type Bbl.

	From	To	Hrs.
Jetting Cellar Pumping Mud	4		
Supply From Pit To Tanks.		4.15	1/4
Drilling	4.15	7.45	3 1/2
To Tco	7.45	8 —	1/4
Drilling	8	9.45	1 3/4
Thawed Rig Cleaned Ditch	9.45	10 —	1/4
Drilling	10	12	2
			8 hrs.

Driller J. Danstone

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ... NO ...

Total Contract Time ..... hrs. Total Company Time ..... hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT 2

LSD. 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor ..... Type Rig NAT 20-B Month 3 Day 30 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.				
DEPTH	From	To	Hole Made	Hole Size	Formation
	103	171	68	13 3/4	
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft. / Core Bbl. Ft.
				DOWN	
	DRILL COLLAR: Number 3, OD 9"	DATA: 1, 7"			
	ID / Length / INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS				
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run
	2	OSC3	5.30 PM		
	Depth Pulled	Weight On Bit M Pounds	FOOTAGE: Drilled	Reamed	
	Bit Serial No. 83845	Table R.P.M.			
	Jet or Conventional - ECIV	Nozzle Size 3/4			
SURVEYS	Kind Totco at 259 Ft. 3/4° Deg. off				
SLUSH PUMP RECORD No. 1 No. 2	HOURS: On Line / Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
MUD RECORD	Time	Visc.	Wt.	W L	pH / ADDITIVES — POUNDS
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From	To	Hrs.		
	WORKED ON WASHED OUT 12 CELLAR	5.30	5 1/2		
	DRILLING 13 3/4" HOLE	5.30	8	2 1/2	
	PICKED UP 7" D.C. & CHANGE OVER SUBS			8 HRS	
	Driller R. A. Bishop				

	2nd Tour From: 8:00 a.m. To: 4:00 p.m.				
DEPTH	From	To	Hole Made	Hole Size	Formation
	171	320	149	13 3/4	SAND & SHALE
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft. / Core Bbl. Ft.
		1	1	30	
	DRILL COLLAR: Number 6	DATA			
	ID / Length / INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS				
				140	
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run
	2	OSC3			
	Depth Pulled	Weight On Bit M Pounds	FOOTAGE: Drilled	Reamed	
		10-20			
	Bit Serial No. 93845	Table R.P.M. 140			
	Jet or Conventional -	Nozzle Size			
	Kind Totco at 259 Ft. 3/4° Deg. off				
SLUSH PUMP RECORD	HOURS: On Line / Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
MUD RECORD	Time	Visc.	Wt.	W L	pH / ADDITIVES — POUNDS
					45 00 Gel + Water 100 # Caustic.
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From	To	Hrs.		
	CLEANING - PLUGGED FLOW PIPE	8 9.30	1 1/2		
	DRILLING	9.30 1.30	4		
	POOLING OUT	1.30 2.30	1		
	WORKING IN CELLAR	2.30			
	WASHED OUT	4	1 1/2		
	Driller Erik Tell				

	3rd Tour From: 4:00 p.m. To: 12:00 p.m.				
DEPTH	From	To	Hole Made	Hole Size	Formation
	320	350	30	13 3/4	Sand - Shale
DRILLING STRING	Size-D.P.	Stands	Singles	Kelly	Drill. Collar Ft. / Core Bbl. Ft.
	5"	1	2	30	6 Dcs —
	DRILL COLLAR: Number 3, OD 9"	DATA: 2-7"-1-6 1/2"			
	ID / Length / INDICATOR WEIGHT OF TOTAL: DRILLING STRING / DRILL COLLARS				
BIT RECORD	No.	Type	Time On Bottom At	Time Pulled At	Total Hours Run
	2	OSC3	10.30 1250		
	Depth Pulled	Weight On Bit M Pounds	FOOTAGE: Drilled	Reamed	
	Bit Serial No. 83845	83845	Table R.P.M. 140		
	Jet or Conventional -	Nozzle Size			
	Kind at Ft. Deg. off				
SLUSH PUMP RECORD	HOURS: On Line / Circulating	Pump Press	Length of Pump Stroke	Strokes Per Min.	Liner Size
MUD RECORD	Time	Visc.	Wt.	W L	pH / ADDITIVES — POUNDS
CORING	From	To	Ft. Cored	Ft. Rec'd.	Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From	To	Hrs.		
	Digging Suction Pit & Ditch to Same, Welding Flow Line From Conductor Pipe to Pit, Welded 8 5/8 Line From Pump to Suction Pit.	4	9.30	5 1/2	
	Running Hole	9.30	10 -	1/2	
	Filling Suction Pit	10 -	10.30	1/2	
	Drilling	10.30	11.30	1	
	Formation taking Mud, No Returns with Pump Running Pipe on Bottom	11.30	12 -	1/2	
	Driller J. Cantrop				

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: TOTCO: CONDITIONING MUD: CASING: LOGGING: RIG MAINTENANCE: REAMING CLEANING:
DRILLING: FISHING: TRIPPING: W.O.C. W O ORDERS: MISCELLANEOUS: WORKING PIPE:
REAMING: CIRCULATING: CORING: D.S. TESTING: RIG REPAIRS: CONDITION HOLE: LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. .....
MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. .....

DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY YES ..... NO .....

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher ..... Approved by .....

Form 34402 (250 bks.-3-59)

IMPERIAL OIL LIMITED

DAILY DRILLING REPORT #1

Imp

Swan Ownowhead SD. 1 SEC. 46 TWN. ..... RGE. ..... W. ..... Contractor ..... Type Rig KAT #1 Month 3 Day 29 19 61

	1st Tour From: 12:00 Midnight To: 8:00 a.m.	2nd Tour From: 8:00 a.m. To: 4:00 p.m.	3rd Tour From: 4:00 p.m. To: 12:00 p.m.
DEPTH	From / To / Hole Made / Hole Size / Formation	From / To / Hole Made / Hole Size / Formation	From: 0 / To: 103 / Hole Made: 103 / Hole Size: 13 3/4 / Formation
	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly / Drill. Collar Ft. / Core Bbl. Ft.	Size-D.P. / Stands / Singles / Kelly: 30 / Drill. Collar Ft. / Core Bbl. Ft.
DRILLING STRING	DRILL COLLAR DATA: Number / OD / ID / Length / INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number / OD / ID / Length / INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS	DRILL COLLAR DATA: Number: 3 / OD: 9" / ID / Length / INDICATOR WEIGHT OF TOTAL DRILLING STRING / DRILL COLLARS
BIT RECORD	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed	No. / Type / Time On Bottom At / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed	No.: 1 / Type: OSC3 / Time On Bottom At: 7.30 PM / Time Pulled At / Total Hours Run / Depth Pulled / Weight On Bit M Pounds / FOOTAGE Drilled / Reamed
	Bit Serial No. / Table R.P.M.	Bit Serial No. / Table R.P.M.	Bit Serial No. [redacted] 83845 / Table R.P.M. 15.
	Jet or Conventional - / Nozzle Size	Jet or Conventional - / Nozzle Size	Jet or Conventional - Conv. / Nozzle Size
SURVEYS	Kind / at / Ft. / Deg. off	Kind / at / Ft. / Deg. off	Kind TOTCO at 75 Ft. 1/4 Deg. off
SLUSH PUMP RECORD No. 1 No. 2	HOURS On Line / Circulating / Pump Press / Length of Pump Stroke / Strokes Per Min. / Liner Size	HOURS On Line / Circulating / Pump Press / Length of Pump Stroke / Strokes Per Min. / Liner Size	HOURS On Line / Circulating / Pump Press / Length of Pump Stroke / Strokes Per Min. / Liner Size
MUD RECORD	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: 2500 gel.	Time / Visc. / Wt. / W L / pH / ADDITIVES — POUNDS: 10 bag sawdust
CORING	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.	From / To / Ft. Cored / Ft. Rec'd. / Core No. / Type Bbl.
DETAIL OF OPERATIONS AND REMARKS	From / To / Hrs. Rigging up. / 8	From / To / Hrs. Rigging up. / 8	Spudded in at 7.30 PM. From / To / Hrs. Rigging up to Spud in / 4 / 6 / 2 R/Ream 11 3/4 Bit on @ 7 1/2" / 6 Reamers to Centre punch Laped down Reamers. / 7 / 1 Picked up 9" Drill Collars. / 7 / 7.30 / 1/2 Drilling 8 / 7.30 / 10.15 / 2 3/4 Losing Circ. Mud Comin[illegible] Cellar TOTCO @ 75 ft / 10.15 / 10.30 / 1/4 Rigging up to Pump into Cellar / 10.30 / 12 / 1 1/2
	Driller K. Bishop	Driller Archibald	Driller Danstone

CLASSES OF TIME BREAKDOWN

HEADING UP & DRLG. OUT: / TOTCO: / CONDITIONING MUD: / CASING: / LOGGING: / RIG MAINTENANCE: / REAMING CLEANING:
DRILLING: / FISHING: / TRIPPING: / W.O.C. / W O ORDERS: / MISCELLANEOUS: / WORKING PIPE:
REAMING: / CIRCULATING: / CORING: / D.S. TESTING: / RIG REPAIRS: / CONDITION HOLE: / LOST CIRC.:

MNFR. DRILLING LINE IN USE ..... REEL SERIAL No. ..... DID YOU CHECK BLOWOUT PREVENTER EQUIPMENT TODAY

MNFR. OF KELLY HOSE IN USE ..... HOSE SERIAL No. ..... YES NO

Total Contract Time .....hrs. Total Company Time .....hrs. Toolpusher [signature] Approved by .....

Arrowhead I-46

Report No. HRB 41 AEHP 72

Report on 17 lots of subsurface Devonian fossils from the District of Mackenzie submitted by H.R. Belyea. NTS 85C, D, E, 95A, B, 96E.

The relevant parts of any manuscript prepared for publication that paraphrase or quote from this report should be referred to the Paleontology Subdivision, Calgary, for possible revision.

Depth & Stratigraphy	Well, Fauna & Age	GSC Loc. No.
2,156' Watt Mountain Fm., 4' above base, 26' below top.	Briggs N.E. Tathlina Lake No. 1 60°46'01"N; 117°19'45"W. NTS 85C. *Alaiophyllum* sp. nov. gastropod moulds, indet. age: Probably Givetian (Middle Devonian).	C-9897
2,159' Watt Mountain Fm., 1' above base, 29' below top.	Same well as above *Chaetetes* sp. age: Ordovician to Permian.	C-9898
2,396' Sulphur Point Fm. 104' above base, 6' below top.	Briggs N.E. Tathlina Lake No. 9 60°43'12"N; 117°22'17"W. NTS 85C. fragment of a large pseudopunctate brachiopod, possibly *Megastrophia* age: Middle Devonian?	C-9899
2,397' Sulphur Point Fm., 103' above base, 7' below top.	Same well fragment of a large nautiloid age: not determined.	C-9901
2,399' Sulphur Point Fm., 101' above base, 9' below top.	Same well stromatoporoids, not studied *Dendrostella* sp. cf. *D. disjuncta* (Whiteaves) age: probably Middle Devonian, Givetian.	C-9900
2,414' Sulphur Point Fm., 86' above base, 24' below top.	Same well stromatoporoid, not studied *Syringopora* sp. *Grypophyllum* sp. cf. *G. mackenziense* (Pedder) age: probably Middle/Upper Devonian, *Mackenziense* Zone?	C-22943
2,438' Sulphur Point Fm., 62' above base, 48' below top.	Same well *Stachyodes* sp., broad sense *Thamnopora* sp. *Psydracophyllum* sp. age: Middle Devonian, probably late Eifelian or Givetian.	C-9902

Depth & Stratigraphy	Well, Fauna & Age	GSC Loc. No.
2,452' Sulphur Point Fm., 48' above base, 62' below top.	Same well stromatoporoids, not studied indeterminate brachiopod fragments age: not determined.	C-9903
2,486' Sulphur Point Fm., 14' above base, 96' below top.	Same well *Thamnopora* sp. *Dohmophyllum* or *Psydracophyllum* sp. age: Lower Devonian (Siegenian) to Middle Devonian (early Givetian?).	C-9904
2,707' Pine Point Fm., 121' above base, 7' below top.	Briggs Rabbit Lake No. 2 60°54'53"N; 118°49'37"W. NTS 85D. *Thamnopora* sp. *Alveolites* sp. *Psydracophyllum lonsdaleiaforme* Pedder age: Middle Devonian, late Eifelian, *dysmorphostrota* Zone.	C-7672
2,717' Pine Point Fm., 111' below base, 17' below top.	Same well as above *Thamnopora* sp. rugose coral, indet. age: Silurian or Devonian.	C-7673
1,805' Ernestina Lake Fm., 2' above base, 1' below top.	CS Laferte River A-66 61°45'07"N; 118°41'29"W. NTS 85E fragment of a large orthoconic nautiloid age: not determined.	C-15924
5,853' Sulphur Point Fm.,	Union Pan Am. Trainor L-59 60°28'33"N; 120°40'50"W. NTS 95A *Stachyodes* sp. cf. *S. thomasclarki* Steam age: probably Middle/Upper Devonian *mackenziense* Zone to early Frasnian.	C-19211
6,474.5' Sulphur Point Fm., 20.5 ' above base, 62.5' below top.	Imperial Sun Arrowhead I-46 60°45'37"N; 122°22'47"W. NTS 95B stromatoporoids, not studied *Thamnopora* sp. *Grypophyllum mackenziense* (Pedder) age: Middle/Upper Devonian, *mackenziense* Zone.	C-8946

Depth & Stratigraphy	Well, Fauna & Age	GSC Loc. No.
5,791.5' Sulphur Point Fm., 253.5' above base 97.5' below top.	Murphy-B.O.C. Arrowhead River No. 1 60°50'25"N; 122°05'50"W. NTS 95B. *Temnophyllum richardsoni* (Meek)? age: Middle Devonian, late Givetian, *Stringocephalus aleskaus* to Lower *hermanni-cristatus* Zone?	C-8998
6,195' Pine Point Fm., 140' above base, 150' below top.	Same well *Exilifrons* sp. nov. age: Eifelian, probably *dysmorphostrota* Zone.	C-9002
1,369' Ramparts Fm., (broad sense), 70' above base, 346' below top.	Imperial Norman Wells No. 37X 65°16'57"N; 126°51'50"W. NTS 96E *Grypophyllum mackenziense* (Pedder) age: Middle/Upper Devonian, *mackenziense* Zone.	C-9905

Remarks

Psydracophyllum lonsdaleiaforme (C-7672) and the new species of *Exilifrons* (C-9002) are regarded as reliable indices to the late Eifelian *dysmorphostrota* Zone, which, at surface, occurs in the pre-*Leiorhynchus castanea* bearing beds of the Headless, Nahanni and Hume Formations. It is thus probable that the subsurface Pine Point of the Rabbit Lake and Arrowhead River areas is just older than the *Leiorhynchus castanea* bearing beds of the Pine Point Formation of the Great Slave Lake area. *P. lonsdaleiaforme* has also been reported (Pal. Rept. HRB 25 AEHP 71, p. 2) from the subsurface Keg River Formation of the Gulf et al. Trout River D-14 well (C-7153, C-7154).

Good examples of *Grypophyllum mackenziense* occur in the Sulphur Point of the Arrowhead I-46 well (C-8946) and the Ramparts of Norman Wells 37X well (C-9905). The latter identification extends the range of the *mackenziense* Zone in the Norman Wells 37X well to 1,369 feet, giving it a total thickness of at least 208 feet (see Pal. Rept. HRB 28 AEHP 71, p. 2, for further details). *Grypophyllum mackenziense* may also be present in beds assigned to the Sulphur Point Formation in Briggs N.E. Tathlina Lake No. 9 well (C-22943), but the only specimen available has 17x2 septa and a diameter of 9.2 mm whereas normally in adult stages the species has 18x2 to 26x2 septa and a diameter ranging from 9.0 to 19.0 mm. *G. mackenziense* is believed to be a good megafossil index to the Upper *hermanni-cristatus* conodont zone, which, on this continent, is usually accepted as the latest Middle Devonian Zone.

The occurrence of a species comparable with *Dendrostella disjuncta* in C-9900 is of considerable interest in that *D. disjuncta*, sensu stricto, is known only from the older *Stringocephalus*-bearing Methy and Winnipegosis Formations of Alberta and Manitoba respectively.

The *Temnophyllum* from the Sulphur Point Formation of the Murphy-B.O.C. Arrowhead River No. 1 well (C-8998) is worn peripherally and has suspiciously wedge-shaped septa, and can therefore only be questionably referred to the species *T. richardsoni*. If the identification were upheld it would strongly suggest that this part of the Sulphur Point Formation in the Arrowhead River No. I well is older than much of the Sulphur Point of other subsurface sections, as current data indicate that the range of *T. richardsoni* entirely predates that of *Grypophyllum mackenziense*.

Alan Pedder.

A.E.H. Pedder

Paleontology Subdivision
Institute of Sedimentary and Petroleum Geology
Calgary, December 28, 1972.

SUMMARY

DEPT. OF NORTHERN AFFAIRS & NATIONAL RESOURCES
CALGARY, ALBERTA
JUN 29 1961
Oil Conservation Engineer
Northwest Territories & Yukon Territory

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

WELL SUMMARY

KB: 1904

Location: I-46: 60° 50' - 122° 15'
Coordinates 2320' South and 843' West of Northeast corner of Section 46, NWT Permit #1040

Elevation: Ground 1890'
KB: 1904.5'

Permit: NWT Permit #1040

Contract: NC-7

Drilling Contractor: Imperial Oil Ltd., National #1

Operator: Imperial Oil Ltd.

Permittee: Sun Oil Co.

Classification: New Field Wildcat

Spudded: 7:30 P.M., March 29, 1961

Completed Drilling: 3:30 A.M., May 18, 1961

Final Total Depth: 7425' (Measured-Driller)
7425' (Schlumberger)

Abandoned: May 25, 1961

Rig Release: 4:00 P.M., May 25, 1961

Well Status: Abandoned with no shows

Hole Size:

C-1011	13 3/4"
1011-6119	9"
6119-7388	6 1/8"
7388-7425	6 1/16"

Casing:

13 3/8	x 978.83'	C-800 sacks + 2% $CaCl_2$
7"	x 6081.50'	C-400 sacks

. . ./2

DEPT. OF NORTHERN AFFAIRS & NATIONAL RESOURCES
CALGARY, ALBERTA
JUN 29 1961
Northwest Territories & Yukon Territory

Plugs:

#1)	7325'-7425'	C-20 sacks	Not felt for	
#2)	6850'-6950'	C-30 sacks	Felt for, Plug not there	
#3)	6850'-6950'	C-30 sacks	Felt for, Plug not there	
#4)	6850'-6950'	C-50 sacks	Felt for, Plug not there	
#5)	6850'-6950'	C-30 sacks	Felt plug at 6750'	
3 #6)	6030'-6130'	C-40 sacks	Felt	
4 #7)	3350'-3450'	C-40 sacks	Felt	3320
5 #8)	930'-1030'	C-100 sacks		875
#9)	5 sacks at surface plate.			

Formation Tops:	Sample	E Log	Elevation
CRETACEOUS			
FORT ST. JOHN GROUP	200'	-	+1704'
Sandstone Member	1230'	1220'	+ 684'
MISSISSIPPIAN			
RUNDLE GROUP			
Banff Formation	1600'	1637'	+ 267'
Exshaw Formation	1980'	1975'	- 71'
DEVONIAN			
Wabamun Formation	1995'	2003'	- 99'
Winterburn Formation	3230'	3223'	-1419'
Island River Member	4105'	4106'	-2202'
Woodbend Formation	4430'	4418'	-2514'
Middle Devonian Carbonate	6138'	6140'	-4236'
PRE DEVONIAN	7095'	7095'	-5191'
Final Total Depth	7425'	7426'	-5521'

Cores:

Number	Interval	Formation	Recovery
# 1	1276'-1306'	Cretaceous, Lower Sandstone	65%
# 2 4116	~~4166'~~-4166'	Island River	100%
# 3	4166'-4216'	Island River	100%
# 4	6096'-6117'	Dark Shale	100%
# 5	6119'-6169'	Middle Devonian carbonate	100%
# 6	6169'-6219'	" " "	100%
# 7	6219'-6269'	" " "	100%
# 8	6269'-6319'	" " "	100%
# 9	6319'-6369'	" " "	100%
#10	6369'-6419'	" " "	100%
#11	6419'-6469'	" " "	70%
#12	6469'-6519'	" " "	100%
#13	6519'-6569'	" " "	100%
#14	6569'-6619'	" " "	100%
#15	6619'-6669'	" " "	100%

. . ./3

Number	Interval	Formation	Recovery
#16	6669'-6719'	Middle Devonian carbonate	100%
#17	6720'-6770'	" " "	100%
#18	6770'-6820'	" " "	100%
#19	6820'-6870'	" " "	100%
#20	6870'-6905'	" " "	100%
#21	6905'-6923'	Middle Devonian dolomite	100%
#22	6923'-6935'	" " "	100%
#23	6935'-6976'	" " "	100%
#24	6976'-7026'	" " "	92%
#25	7026'-7036'	Middle Devonian Anhydrite	100%
#26	7036'-7085'	" " "	100%
#27	7085'-7111'	Pre Devonian	100%
#28	7111'-7131'	" "	25%
#29	7131'-7157'	" "	100%
#30	7157'-7178'	" "	100%
#31	7178'-7205'	" "	100%
#32	7205'-7255'	" "	100%
#33	7255'-7297'	" "	100%
#34	7297'-7315'	" "	100%
#35	7315'-7338'	" "	100%
#36	7338'-7388'	" "	100%
#37	7388'-7423'	" "	100%

Drill Stem Tests:

No.	Formation	Interval	V.O.	
#1)	Cretaceous "Lower Sandstone"	1230'-1306'	60	Recovered 90' mud. HP: 600-600; FP: 10-25; SIP: 400-390.
#2)	Island River	4272'-4326'	60	Recovered 10' mud and 100' muddy water. HP: 2315'-2315'; FP: 50'-50'; SIP: 1670'-1450'.
#3)	Middle Devonian dolomite	6905'-6935'	30	Recovered 270' muddy water and 4230' salt water at 170,000 ppm. HP: 3600'-3415'; FP: 1200'-2100'; SIP: 2350'-2525'.
#4)	Middle Devonian Pre Devonian	6670'-7425'	30	Recovered 2490' mud. HP: 3240'-3400; FP: 450'-1430'; SIP: 2360'-2330'.
#5)	Middle Devonian	6060'-6750'	120	MISRUN: Tool. Plugged with cement Recovered 3330' mud and 30' very viscous mud.
#6)	Middle Devonian	6060'-6750'	180	Recovered 1800' mud, 540' watery slightly gas cut mud and 2160' salt water at 160,000 ppm. HP: 2920'-2920'; FP: 100'-2250'; FSIP: 2260'.

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Logs: Schlumberger

Type	Run	Date	
Induction-Electric	1	April 20, 1961	6110'-979'
Microlaterolog-Caliper	1	April 21, 1961	4500'-979'
Sonic-Gamma-Ray	1	April 21, 1961	6108'-979'
Laterolog "7"	1	April 21, 1961	4500'-979'
Induction Electric	2	May 18, 1961	7421'-6078'
Sonic-Gamma Ray-Caliper	2	May 19, 1961	7418'-6078'

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

ANALYSES

CGL

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field British Columbia Well No. Imp. Sun Arrowhead I-46

Operator Imperial Oil Limited Date Received June 3, 1961

Formation Depths 6905' - 6935'

Other pertinent data D.S.T. #3. Sample No. 1.

Date June 7th, 1961 Lab. No. E17684-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
%	29.70	7.53	0.87		0.78	61.12				
P.P.M.	53,465	13,560	1,568	present	1,393	110,010	---	---	---	---

MILLIGRAM EQUIVALENTS

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
2325.72	676.64	128.89	---	28.97	310,228	---	---	---	---

MILLIGRAM EQUIVALENTS IN PERCENT

Na & K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
37.14	10.80	2.06		0.46	49.54				

Total Solids in Parts per Million

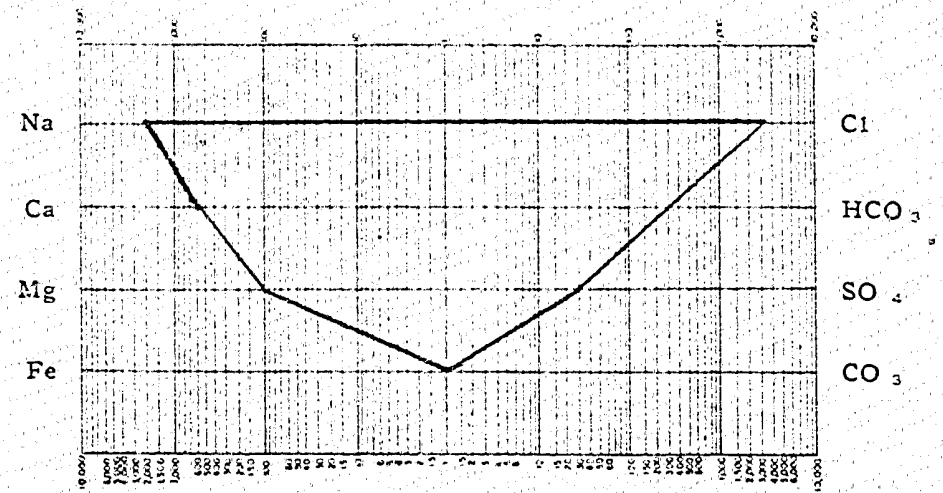
By evaporation	181,200
After ignition	158,180
Calculated	179,996
Specific Gravity	1.112
Observed pH	1.2
Resistivity	0.060 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	74.28
Secondary salinity	25.72
Primary alkalinity	---
Secondary alkalinity	---
Chloride salinity	99.08
Sulfate salinity	0.92

Remarks and conclusions There was organic matter present in this sample. This sample appears to be an acid water. It was contained in a bottle from an acid electrolyte for batteries, so this could account for low pH and the higher sulfate.

LOGARITHMIC PATTERN
MEQ per unit



CGL-6

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton — Fort St. John — Calgary

WATER ANALYSIS REPORT

Field British Columbia Well No. Imp. Sun Arrowhead I-46

Operator Imperial Oil Limited Date Received June 3, 1961

Formation Depths DST 3.

Other pertinent data Sampled 450 feet above tool. Sample No. 2.

Date June 7th, 1961 Lab. No. E17684-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

	Na + K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
%	28.62	9.66	0.13		0.25	61.17	0.15		0.03	
P.P.M.	59,566	20,120	261	---	527	127,380	310	---	54	---

MILLIGRAM EQUIVALENTS

Na + K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
2591.14	1003.99	21.45	---	10.96	3592.12	10.32	---	3.18	---

MILLIGRAM EQUIVALENTS IN PERCENT

Na + K	Ca	Mg	Fe	SO_4	Cl	CO_3	HCO_3	OH	H_2S
35.82	13.88	0.30	---	0.15	49.66	0.14	---	0.05	---

Total Solids in Parts per Million

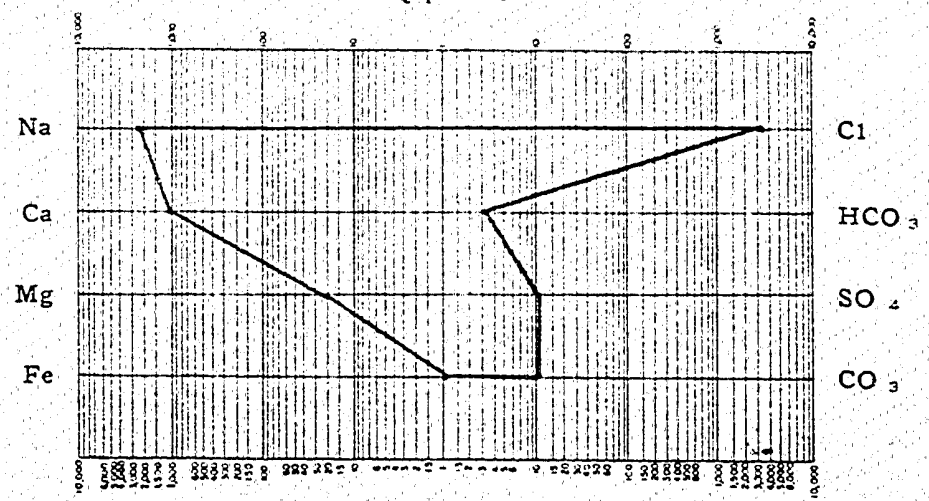
By evaporation	317,480
After ignition	195,400
Calculated	208,218
Specific Gravity	1.132
Observed pH	11.3
Resistivity	0.056 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	71.64
Secondary salinity	27.98
Primary alkalinity	---
Secondary alkalinity	0.38
Chloride salinity	99.70
Sulfate salinity	0.30

Remarks and conclusions This was insufficient information to correlate this sample with any known formation water. The general characteristics of this sample, especially the presence of the hydroxide ion and the relatively high calcium, indicate drilling mud water.

LOGARITHMIC PATTERN
MEQ per unit



IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

LITHOLOGICAL DESCRIPTION

50' - 200'	Glacial Drift consisting of gravel, sand minor clay. Pebbles of igneous, metamorphic and sedimentary debris, mainly granite, quartzite, gneiss, dolomite, pitted limestone, and shale. Yellow to maroon oxidized shales at base.
200' - 250'	Shale, medium grey, fissile, slightly silty. Minor interbedded sandstone, light grey very fine.
250' - 305'	Sandstone, light grey, very fine, subangular, poorly sorted quartz, chert and minor glauconite grains, Traces mica and carbonaceous grains, silty argillaceous, calcareous cemented in part.
305' - 470'	Shale, medium grey fissile, micaceous in part, scattered carbonaceous flakes. Minor silty laminae. Interbedded siltstone, grey.
470' - 575'	Siltstone, medium to dark grey, coarse microgranular, quartzose, scattered glauconite grains, sandy, argillaceous. Scattered carbonaceous shale partings. Minor interbedded dark grey silty shale.
575' - 655'	Interbedded sandstone and siltstone. Sandstone, light grey "salt and pepper", very fine subangular. Poorly sorted quartz grains, slightly glauconitic, silty and argillaceous below 600'. Siltstone, medium grey, sandy grading to very fine sandstone, argillaceous. Scattered carbonaceous flakes.
655' - 800'	Sandstone, light grey to grey white, very fine, subangular moderately sorted, quartz, grains, slightly glauconitic, recrystallized in part, calcareous cemented in part, very friable. Below 750', scattered silty bands, finely laminated, and numerous argillaceous partings.
800' - 880'	Interbedded sandstone and siltstone. Siltstone, medium grey, coarse micrograined, argillaceous, sandy. Sandstone, medium grey, very fine, quartzose, slightly glauconitic, poorly sorted very silty in part, finely laminated.

880' - 1090'	Interbedded siltstone, sandstone, minor shale. Siltstone, medium grey brown, thinly laminated with sandy lenses and shaly streaks, scattered glauconite grains and carbonaceous flakes, argillaceous, sandy. Sandstone, medium grey, very fine, grading to siltstone. Minor shale, dark grey brown, blocky very silty.
1090' - 1220'	Shale, dark grey, blocky, scattered mica flakes, and glauconite grains, silty. Below 1200' occasional brown, oil stained, siltstone stringer.
1220' - 1350'	Sandstone, grey brown, very fine, glauconitic in part silty, grades to and interlaminated with coarse microgranular siltstone, brown, glauconitic, argillaceous. Interbedded shale, dark grey, silty.
1350' - 1400'	Shale, dark grey, subfissile, silty. Few siltstone stringers, brown.
1400' - 1637'	Shale, dark grey micromicaceous, fissile, smooth. Trace carbonaceous flecks.
1637' - 1975'	Shale, mottled medium to dark grey having greenish cast below 1700', fissile, carbonaceous flecks, scattered glauconite grains. Trace lignite stringers. Minor brown dolomitic shale stringers at 1700' very slightly calcareous and slightly silty below 1750'.
1975' - 2003'	Shale, dark brown, bituminous, petroliferous, calcareous, grading to argillaceous and bituminous. Limestone in part, cherty at top, light brown streak, calcite veins and stringers at base, scattered glauconite pyrite and skeletal debris.
2003' - 2130'	Interbedded siltstone, grey green, calcareous, argillaceous, and shale, medium grey, slightly calcareous, fissile, silty in part.
2130' - 2190'	Shale, greenish grey, fissile to subfissile, micromicaceous, slightly silty.
2190' - 2250'	Limestone, buff, micritic-skeletal to microgranular, scattered skeletal grains. Interbeds of grey green shale at top, silty at base grading to calcareous and argillaceous siltstone below 2230'.

2250' - 2470'	Interbedded siltstone, grey green, calcareous, slightly argillaceous. Tight, and shale, green blocky to splintery, slightly calcareous, waxy in part. Scattered buff, skelets throughout. Minor buff-brown, micritic-skeletal and tight limestone stringers.
2470' - 2560'	Shale, grey green, blocky to subfissile, minor interbeds of buff-brown and yellow, micritic-skeletal limestone, silty.
2560' - 2960'	Shale, green and greenish grey, splintery, waxy, very slightly calcareous.
2960' - 3065'	Interbedded shale green, splintery and shale, dark grey brown, slightly bituminous, blocky to fissile.
3065' - 3210'	Limestone, brown-buff, micritic, argillaceous, scattered skelets. Trace quartz grains, interbeds of brown bituminous, calcareous shale.
3210' - 3250'	Interbedded limestone, brown, micritic, argillaceous, silty. Tight and shale grey green, calcareous, silty. Minor siltstone, grey green, quartzose.
3250' - 3323'	Siltstone, grey-green, friable, slightly argillaceous, slightly calcareous. Interbedded silty shale at base.
3323' - 3600'	Interbedded, siltstone, grey to grey green, blocky, slightly calcareous, slightly argillaceous, and shale, medium grey to greenish grey, subfissile, calcareous, silty, nodular in part. Minor interbeds of brown fissile shale and occasional buff micritic limestone stringers.
3600' - 3620'	Limestone, brown to buff medium-coarse rounded, variable very fine to very coarse skelets in white calcite cement and grey micrite matrix, silty, argillaceous with green, shale matrix in part, sandy at base.
3620' - 3630'	Sandstone, brown, fine, subrounded, quartz grains, poorly sorted, slightly glauconitic, slightly argillaceous, silty, grading below 3630' to siltstone, grey, quartzose, calcareous, argillaceous. Interbeds of grey shale, splintery, silty.

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3660' - 3700'	Shale, green, grey, silty, slightly calcareous, fissile to blocky, nodular in part. Few scattered buff skeletal grains, and micrite stringers.
3700' - 3940'	Interbedded maroon to brown and green to olive shales, fissile, splintery.
3940' - 4106'	Shale, grey, green, subfissile to blocky. Minor silicified very fine sandstone and siltstone laminae grey green, blocky. Traces skeletal fragments.
4106' - 4193'	Limestone, grey buff to brown buff, skeletal, fair sorted very coarse to "pea sized" skeletal grains, calcite cemented. Minor grey-brown, shale lenses, having fragmental appearance. Traces bituminous infill at base.
4193' - 4340'	Limestone, cream to very light buff. Minor micrite at base. Minor bituminous shale lenses at base.
4340' - 4418'	Limestone, brown, blocky, dense grading to very limy shale, bituminous, slightly dolomitic, containing very fine dolomite rhombs. Scattered thin micritic - skeletal bands. Below 4400' argillaceous, limestone becomes silty silty with traces pyrite. Minor grey-green calcareous, argillaceous siltstone at base.
4418' - 4600'	Shale, medium grey to grey green, fissile to blocky. Minor thin stringers of grey to grey green, siltstone and very fine sandstone, calcareous. Scattered mica flakes.
4600' - 6084'	Shale, medium grey, slight greenish cast in part, fissile and splintery. Traces calcareous. Traces silty laminae.
6084' - 6140'	Shale dark grey to black, blocky, siliceous bituminous, brown streak, pyritic. Trace near vertical hairline fractures.
6140' - 6236'	Limestone, medium grey-brown, cemented skeletal with 5% lime mud matrix, skeletal fragments.
6236' - 6320'	Limestone, medium grey-brown to buff, micritic grading to skeletal. Numerous argillaceous and bituminous partings.
6320' - 6670'	Limestone, medium grey brown to buff. Calcite filled fractures and vugs. Numerous argillaceous and bituminous partings.

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6670' - 6847'	Limestone, medium grey brown to buff micritic skeletal. Calcite filled fractures, argillaceous and bituminous partings. Gradational contact with above section.
6847' - 6916'	Limestone as above with intermottled shale, light green, blocky, pyritic.
6916' - 6946'	Dolomite, white and medium grey.
6946' - 7016'	Dolomite, light grey to medium brown, microcrystalline to cryptocrystalline, dolomitized lime mud, trace disseminated pyrite, argillaceous partings.
7016' - 7060'	Anhydrite, medium brown, massive, dolomitic cryptocrystalline.
7060' - 7085'	Anhydrite breccia, medium to light grey 30% fine to very coarse, light grey angular, anhydrite, fragments in dark grey shaly matrix. Fragments increase in size and percentage to base, slightly silicified at base, sandy with fine to medium subrounded, quartz grains in matrix grading to sandstone in part. Pyritic.
7085' - 7095'	Shale, light to medium grey, similar to matrix of overlaying breccia, thinly bedded to laminated, slightly sandy very pyritic, slightly anhydritic at top.
7095' - 7150'	Thinly interbedded shale and chert. Shale, light grey, light greenish grey, medium grey at base, very pyritic, silicified in part. Chert, dense light bluish grey. Beds fractured, fractures infilled with dolomite and lined with pyrite. Fractured chert at base, infilled with red-brown iron carbonate.
7150' - 7425'	Thinly interbedded shale and chert. Shale banded, greenish grey, and medium to dark grey, siliceous in part, dark shale beds, mottled with altered bituminous material below (7150') mottled beds abundant between (7200'-7400'), slightly pyritic, pyrite decreases from heavily disseminated at top to scattered patches at base. Chert, light grey, light greenish grey, dense, grades to silicified shale in part. Minor thin (6") silicified dolomite beds at 7292', 7297', 7283'. Fractured throughout vertical and irregular horizontal fractures, infilled with dolomite, lined with pyrite. Below 7400', shales, light green, uniformly dense, micaceous, with abundant muscovite flakes. Scattered very fine clear quart grains. Trace very thin grey white, quartzite bands, fine to medium crystallinity.

-- F. Rayer --
Geologist

FR:sg

CHRONOLOGICAL

Form 21417 (4m-8-58) IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP SUI ARROWHEAD I-46 Locction 60° 50';122° 15' Elev. 1890' Grd. 1903' KB. est.

District Peace River Week Ending April 4, 1961 Report No. 1

Date	Total Depth	Progress	Days	REMARKS
March 30	171'	171'	1	Spudded 7:30 pm March 29, 1961. Drilled 0'-103' with 13¾" OSC-3 bit in 2¾ hrs. Lost circulation in surface hole at 103'. Drilled 103'-171' with OSC-3 bit #2 in 2½ hours.
March 31	381'	211'	2	Cellar washed out. Dug suction pit and ditch. Welded flow line from ditch to conductor pipe. Drilled 171'-381' with OSC-3 13¾" bit #2 @ 140 RPM in 2 hrs. Lost circulation in Cretaceous porous sand. Mixed mud, conditioned hole. Worked stuck drill pipe.
April 1	1008'	627'	3	Drilled 381'-947' with OSC-3 13¾" bit #2A in 28 hrs. Tripped, drilled 947'-1008' with OSC-3. Rerun bit #1 in 3¾ hrs. @ 15-20,000 lbs. & 140 RPM.
April 2	1011'	3'	4	Drilled 1008'-1011' with OSC 13¾". Rerun bit #1 in ½ hr. @ 5-10,000 & 140 RPM. Pulled out, reamed 0'-874' from 13¾" to 17½" with pilot reamer #1 @ 150 RPM & 10-15,000 lb. Packed washed out cellar.
April 3	1011'	0	5	Reamed 13¾" surface hole to 17½" 874'-990' with pilot reamer #1. Circulated, conditioned hole. Ran 32 jts., 13 3/8", 54.5#, J-55, S.C. casing. Landed @ 978.33' KB. Cemented with 800 sacks + 2% $CaCl_2$. Plug down 10:15 p.m. April 2, 1961. W.O.C. @ 8:00 a.m.
April 4	1011'	0	6	Headed up, pressure tested mud lines and BOP's. Drilled out float shoe & plug to 990' with 12¼" bit. Pulled out, drilling mouse hole @ 8:00 a.m.

— F. Rayer —

Geologist

Form 2417 4m-8-58)

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP SUN ARGONAUT I-46 Location 60° 50'; 122°15' Elev 1904'

District Peace River Week Ending April 12/61 Report No 2

Date	Total Depth	Progress	Days	REMARKS
April 5	1301'	290'	7	Drilled out below shoe. Drilled 1011'-1276' with 9" OSC-1-G in 4 hrs. @ 20,000 lbs. Circulated. Ran in with core barrel, cored 1276'-1301' with 6 1/8" coldset diamond bit #3473-G @ 80 rpm & 8-10,000 lbs. Coring at 8:00 am.
April 6	1911'	610'	8	Cored 1301'-1306' with 6 1/8" coldset diamond bit #3473 @ 80 rpm & 8-10,000 lb. in 1 hr. Recovered core #1. Ran in, reamed rathole with 9" rerun OSC-1G bit #3 @ 140 rpm & 10M lb. in 1½ hrs. Tripped, made up packer. Ran DST #1. (1230'-1306'). Tripped, drilled 1306'-1911' with 9" OSC-1G rerun bit #3 @ 120 rpm & 30,000 lb. in 7½ hrs. DST #1. (1230'-1306') IF. 3 mins; ISI. 30; FC. 60; FSI. 60 mins. Weak air blow increasing. Recovered 90 feet mud. Pressures: H. . 600-600; 1st.F.. 25-25; 2nd. . . 10-25; S.I.. 400-390. Tripping @ 8:00 am.
April 7	2577'	666'	9	Drilled 1911'-2251' with 9" OSC-3 bit #4 @ 30-34,000 lbs. @ 140 rpm. in 9½ hrs. Tripped. Drilled 2251'-2577' with 9" OSC-3J bit #5 @ 30,000 lb. @ 130 RPM in 10½ hrs. Drilling @ 8:00 a.m.
April 8	3172'	595'	10	Drilled 2577'-2777' with 9" OSC-3J bit #5 @ 35,000 lb. @ 130 RPM in 5½ hrs. Tripped. Drilled 2777'-3172' with 9" OSC-3J bit #5 @ 35,000 lb. @ 120 rpm in 13½ hrs. Drilling @ 8:00 a.m.
April 9	3549'	377'	11	Drilled 3172'-3214' with 9" OSC-3J bit @ @ 40,000 lb. @ 120 RPM in 2 hrs. Tripped. Drilled 3214'-3549' with 9" OSC-1G bit #7 @ 40,000 lb. @ 120 RPM in 17 hrs. Drilling @ 8:00 a.m.

../2

Form 2447 4m-6-58

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IOP SUN AT OMINAD I-46 Location 60°50'; 122°15' Elev. 1904' KB.

District Peace River Week Ending April 11/61 Report No. 2

Date	Total Depth	Progress	Days	REMARKS
April 10	3820'	271'	12	Drilled 3549'-3560' with 9" OSC-1G-J bit #7 @ 120 RPM & 40,000 lb. in ½ hr. Tripped. Drilled 3560'-3765' with 9" OSC-1G bit #8 @ 35,000 lb. & 120 RPM in 14½ hrs. Tripped. Drilled 3765'-3820' with 9" OSC-1G bit #9 @ 12- RPM & 35,000 lb. in 1½ hrs. Drilled @ 8:00 a.m.
April 11	4137'	317'	13	Drilled 3820'-4116' with 9" OSC-1G bit #9 @ 40,000 lb. & 120 RPM in 14½ hrs. Circulated. Measured out. Diamond cored 4116'-4137' with 6 1/8" bit #3473 @ 8-10,000 lb. & 90 rpm. in 5½ hrs. Coring @ 8:00 a.m.

— F. Layer —

Geologist

Form 2437 (4m-8-58)

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well BP SUN ARC ONEHEAD I-46 Location 60°50'; 122°15' Elev. 1904' KB.

District Peace River Week Ending April 13/61 Report No. 3

Date	Total Depth	Progress	Days	REMARKS
April 12	4216'	79'	14	Cored 4137'-4166' with 6 1/8" Coldset bit #3473-C @ 10-20,000 lb. & 100 rpm in 11½ hrs. Tripped recovered core #1. Diamond cored 4166'-4216' with 6 1/8" bit #3473-C @ 10-12,000 lb. & 100 rpm in 8½ hrs. Recovered core #2. Running in to ream 100' rathole @ 8:00 a.m.
April 13	4289'	73'	15	Cleaned out 15' to rathole top, reamed 4116'-4216' with 9" XM bit #10 @ 15-2500 lb. & 120 rpm in 9 hrs. Drilled 4216'-4280' with bit #10 @ 20,000 lb. & 120 rpm in 6½ hrs. Tripped, cleaned out bridges 3500'-4100'. Drilled 4280'-4289' with 9" S4 bit #11 @ 120 rpm & 15-20,000 lb. in ½ hr. Drilling @ 8:00 a.m.
April 14	4500'	211'	16	Drilled 4289'-4500' with 9" S4 bit #11@ 120 rpm & 30,000 lb. in 17 hrs. Tripped. Reamed bridges 3870'-4320' with 9" OSC-3 bit #12 in 4½ hrs. Cleaning out hole @ 8:00 a.m.
April 15	4850'	350'	17	Drilled 4500'-4785' with 9" OSC-3 bit #12 @ 35,000 & 120 rpm in 15½ hrs. Tripped. Drilled out bridges @ 3975'-4015'. Drilled 4785'-4850' with 9" OSC-3 bit #13 @ 25,000 lb. @ 120 rpm in 3½ hrs. Deviation 6½° @ 4780'. Drilling @ 8:00 a.m.
April 16	5174'	324'	18	Drilled 4850'-5174' with 9" OSC-3 bit #13 @ 120 rpm & 30,000 lb. in 16½ hrs. Tripped, cleaned out to bottom, preparing to drill ahead at 8 a.m.
April 17	5569'	395'	19	Drilled 5174'-5569' with 9" OSC-3 bit #14 @ 120 rpm & 30,000 lb. in 19½ hrs. Tripping at 8:00 am.
April 18	5935'	366'	20	Drilled 5569'-5875' with 9" OSC-3 bit #15 @ 30-35,000 lb. & 120 rpm in 13½ hrs. Tripped. Ran in drilled out bridges 4825'-4845'. Circulated at 5845'. Drilled 5874'-5935' with 9" OSC-3 bit #14 @ 30,000 & 120 rpm in 3½ hrs. Drilling at 8:00 a.m.

F. Bayer
Geologist

Form 21417 (4m-8-58) IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well D.P. SUN. ARROWHEAD I-46 Location 60°50'; 122°15' Elev. 1904'K.

District Peace River Week Ending April 25, 1961 Report No. 4

Date	Total Depth	Progress	Days	REMARKS
April 19	6117'	182'	21	Drilled 5935'-6096' with 9" OSC-3 bit #16 @ 30,000 lb. & 120 rpm in 6½ hrs. Circulated, measured out. Ran in core barrel, bridged at 5900'. Diamond cored 6096'-6117' @ 10,000 lb. & 90 rpm in 6 hrs. with 6 1/8" coldset bit #3473-C. Recovered core #4, preparing to ream 8:00 a.m.
April 20	6117'	0'	22	Reamed 6096'-6117' in 2½ hrs. with bit #17 OSC-G @ 20M & 120 rpm. Pulled out of tight hole 25 stands. Ran back in hole cleaning and circulating to bottom. Conditioning mud to log.
April 21	6117'	0'	23	Conditioned hole and mud. Ran Induction log. Failed to get to bottom. Drilled out bridge @ 6050' & cleaned to bottom. Ran Induction log and Microlaterolog. Running Sonic Log.
April 22	6117'	0'	24	Ran Sonic log & Laterolog. Circulated to condition hole to test. Ran DST #2. 4272'-4326'. ISI. 60; VO. 60; FSI. 60; GIP. WAB. increasing to fair. Rec. 10' drilling mud and 100' muddy water. H.P. 2315'-2315'; 1st. FP. 50-50; 2nd FP. 50-50; S.I.P. 1670'-1450'.
April 23	6117'	0'	25	Finished pulling DST #1. Circulated to condition hole for casing. Ran 7" casing. Cementing casing.
April 24	6117'	0'	26	Ran 161 jts., 7" J-55, 23# short T.&C. casing and 25 jts., 7", 26# Nat. Tube casing. Landed at 6081.50'. Cemented with 400 sacks neat Portland. Plug down 9:15 a.m. April 23. W.O.C.
April 25	6133'	14'	27	Corrected depth 6119'. Drilled out float and shoe and cleaned to bottom. Circulate to condition mud to core. Cored core #5. 6119'-6133' in 5½ hrs. @ 10M, 100 rpm and 220 G.P.M.

— R.H. Tatham —
Geologist

Form 2447 4m-6-58)

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP SUN ARRO HEAD I-46 Location 60°50'; 122°15' Elev. 1004'[illegible].

District Peace River Week Ending May 2, 1961 Report No. 5

Date	Total Depth	Progress	Days	REMARKS
April 26	6195'	62'	28	Cut core #5. 6119'-6169' Rec. 50 feet with coldset @ 10M & 85 rpm in 16 ½ hrs. Cutting core #6 6119'-6138'
April 27	6269'	74'	29	Cut core #6. 6169'-6219': Recovered 50 feet. with coldset @ 10M & 85 rpm. in 13½ hrs. Cut Core #7. 6219'-6269' with Coldset @ 10M & 85 rpm in 14 hrs. Pulling core #7.
April 28	6336'	67'	30	Core #7. 6219'-6269' Recovered 50 feet. Cut core #8 6269'-6319' Recovered 50 feet, with Coldset @10M 85 rpm in 13½ hrs. Cutting core #9.
April 29	6419'	83	31	Cut Core #9 6319'-6369' Recovered 50 feet with Coldset @ 10M 100 rpm in 10 hrs. Cut core #10 6369'-6419' with Coldset @ 11M, 100 rpm in 12 hrs. Recovering core #10.
April 30	6469'	50'	32	Core #10. 6369'-6419' Recovered 50 feet. Cut core #11 6419'-6469' Recovered 35 feet with Coldset @ 11M 100 rpm in 10½ hrs. Coring core #12.
May 1	6565'	93'	33	Cut core #12 6469'-6519' Recovered 50 feet with Coldset @ 11M 100 rpm in 9 hrs. Cutting core #13.
May 2	6627'	62'	34	Cut core #13 6519'-6569' Recovered 50 feet with Coldset @ 11M 100 rpm in 12 hrs. Cut core #14 6569'-6619'. Recovered 5 feet with Coldset @ 11M 100 rpm in 11½ hrs.

— L. H. Tatham —

Geologist

Form 2187 4m-8-58

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP. SUN. ARC. ORTHEAD I-46 Location 60°50'; 122°15'. Elev. 1904' KB.

District Liard River Week Ending May 9, 1961 Report No. 6

Date	Total Depth	Progress	Days	REMARKS
May 3	6710'	83'	35	Cut core #15 6619'-6669' Rec. 50 feet with Coldset C 10M 100 rpm in 10 hrs. Cutting core #16.
May 4	6752'	42'	36	Cut core #16 6669'-6719': Recovered 50 feet with Coldset C 10M 100 rpm in 14½ hrs. Iron in hole forced bit against casing. Gauge diamonds gone and matrix cracked. Ran in with junk sub. Made 1' hole recovered iron. cutting core #17.
May 5	6820'	68'	37	Cut core #17 6720'-6770' Recovered 50 feet with Hycalog C 10M, 100 rpm in 11¾ hrs. Cut core #18 6770'-6820' Recovered 50 feet with Hycalog C 10M, 100 rpm in 12¾ hrs. Preparing to cut core #19.
May 6	6886'	66'	38	Cut core #19 6820'-6870' Recovered 50 feet with Hycalog C 10M, 100 rpm in 12¾ hrs. Cutting core #20.
May 7	6935'	49'	39	Cut core #20 6870'-6905' Recovered 35 feet, core jammed, Hycalog bit C 10M, 100 rpm in 8¾ hrs. Cut core #21 6905'-6923'. Rec. 18' core jammed. Hycalog bit C 10M, 100 rpm in 4¾ hrs. Lost 40 bbls. mud @ 6916'. Cut core #22 6923'-6935', core jammed. Hycalog bit C 10M 100 rpm in 3¾ hrs. Recovering core #22.
May 8	6976'	41'	40	Core #22 6923'-35': Recovered 12 feet, cut core #23 6935'-76' with Hycalog C 10M, 90 rpm in 11 hrs. Recovering core #23. DST #3. 6905'-6935': ISI. 30; VO. 30; FSI. 30: Recovered 270' muddy water & 4230' salty water, 17,000 ppm NaCl. GIP. SAB. throughout test. Pressures: H. . 2600-2415 1st F. . 1675-900, 2nd F. . 1900-2100 S.I. . 2450-2525 . . . 122°F.
May 9	7036'	60'	41	Core #23 6935'-6976': Recovered 41 feet. Cut core #23 6976'-7036': Recovered 46 feet

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Form 2447 4m 6-58

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP SUN AR ONSLAD I-46 Location 60°50'; 122°15' Elev. 1904' KB.

District Peace River Week Ending May 9, 1961 Report No. 6
Page 2

Date	Total Depth	Progress	Days	REMARKS
May 9 con't				with Hycalog C 11M, 90 rpm in 10½ hrs. Cut core #25 7026'-7036' with Hycalog C 11M, 90 rpm in 3½ hrs. Core jammed. Recovering core #25.

— R. H. Tasham —

Geologist

Form 21417 (4m-8-58) IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP SUN ANOMHEAD I-46 Location 60°50'; 122° 15' Elev 1904'

District Peace River Week Ending May 16, 1961 Report No. 7

Date	Total Depth	Progress	Days	REMARKS
May 10	7100'	64'	42	Core 25 7026'-7036' Recovered 10', cut core #26 7036'-7085'. Recovered 49'. Used Hycalog bit @ 10 M. 90 rpm in 10 hrs. Cutting core #27
May 11	7131	31	43	Cut core #27, 7100'-7111', with Hycolog bit A-10-36-1 at 80 RPM & 10 M lb. in 5½ hr. Recovered core #27, cut core #28, 7111'-7131' with bit #A-10-36-1 in 12½ hrs. at 80-90 RPM and 10M. lb. Recovered core #28. Cathcher shoe bakced off and diamond bit cracked. Running in with bit #2363 at 8:00 A.M. to cut core #29: Base Anhydrite breccia 7085'-5181'. Core #27 (7085'-7111') Recovered 26 feet. Core #28 (7111'-7131') Recovered 5 feet.
May 12	7167'	36'	44	Cut core #29 (7131'-7157') with diamond bit #2362 at 90 RPM and 10M. lb. in 13 hrs. Recovered 26 feet. Cutting core #30 at 8:00 A.M.
May 13	7193'	26'	45	Completed core #30 7167'-7178' with diamond bit #2363 at 11M. lb. and 80 RPM in 5 hours. Recovered core #30, (7157'-7178'); Recovered 21 feet. Diamond bit, scrubbed out and ruined. Waited on diamond bit, charged drilling lines. Ran in to cut core #31, cored 7178'-7193' with bit #2336 at 10M. lb. and 80 RPM in 5 hrs. Coring at 8:00 A.M.
May 14	7247'	54'	46	Completed core #31 (7178'-7205') with diamond bit #2336 at 10M. lb. and 80 RPM in 4½ hrs. Recovered core #31 (7178'-7205'): Recovered 27 feet. Ran in with bit #2335 and cored 7205'-7247' at 11M. lb. and 90 RPM in 14½ hrs. Cutting core #32 at 8:00 A.M.
May 15	7294'	47'	47	Complete core #32, 7247'-7255' with bit #2336 in 2 hours at 11M. lb. and 90 RPM: Recovered core #32 (7205'-7255') Recovered 50 feet. Ran in with bit #2336

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Form 21417 (4m-8-58)

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well IMP. SUN ARNOUHAD I-46 Location 60°50'; 122°13' Elev. 1904'

District Peace River Week Ending May 16, 1961 Report No. 7

Date	Total Depth	Progress	Days	REMARKS
May 15 cont'd				cored 7255'-7297' at 1 M. lb. and 90-100 RPM in 17½ hrs. Cutting core #33 at 8:00 A.M.
May 16	7329'	35'	48	Completed core #33 7294'-7297' with bit #2336 in 1 hours at 11M. lb. and 90 RPM. Recovered core #33 (7255'-2797'): Recovered 42 feet. Cut core 34 (7297'-7315' with bit #2336 at 11M. lb. and 95 RPM in 8½ hrs. Recovered core #34 (7297'-7315') Recovered 18': Cutting core #35 at 8:00 A.M.

— F. Rayer —

Geologist

Form 21417 (4m-8-58) IMPRIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well BP SUN ARLOUAD I-46 Location 60°50'; 122° 15' Elev. 1904'

District Peace River Week Ending May 23, 1961 Report No. 8

Date	Total Depth	Progress	Days	REMARKS
May 17	7376'	47'	49	Completed core #35 (7329'-7338') with bit #2336 at 10M. lb. and 90 RPM in 4½ hrs. Recovered core #35 (7315'-7338'). Recovered 23 feet. Ran in cored 7338'-7367' with bit #2336 in 15 hours at 85 RPM and 10M lb. Cutting core #36 at 8:00 A.M.
May 18	PTD 7423	47'	50	Completed core #36 (7376'-7388') with bit #2335 in 3½ hrs. at 11M. lb. and 85 RPM. Core #36 (73[illegible]'-7388'). Recovered 50 feet. Ran in cut core #37 (7388'-7423'0 with bit #TC-5103 in 8 hours at 90 RPM And 10M lb. Recovered core #37 (7388'-7423'0. Recovered 35 feet. Measured out, corrected depth: 7425.6' Made up packer. Running in Hookwall packer at 8:00 A.M.
May 19	PTD 7425'	0'	51	Ran DST #4. Ran in circulated 2 hours and bypassed salt watery mud from test to sump, before logging. Ran IES log (Run #2) from 7418'-607[illegible]'. Ran Sonic-Gamma Ray. Integrated Caliper Log. 7421'-6078': Running SBS, velicity Survey at at 8:00 A.M.
May 20	PTD 7425'	0'	52	Completed velocity survey. Measured in circulated. Ran [illegible]NG #1, (7125'-7325') with 30 sacks. Plug down 7:30 P.M. May 19. 1961. Pulled 5 stands, circulated. Ran plug #2 (6[illegible]'-6950') with 30 sacks. Plug down 9:30 P.M. May 19, 1961. WOC: 6 hours. Ran in hole, felt for plug, plug at there. Circulated. Ran [illegible]NG #3 (Rerun #2) (6850'-6950')with 30 sacks. Running plug #3 at 8:00 A.M.
May 21	PTD 7425	0'	53	Finished Plug #3, lug down at 6:10 P.M. May 20th. Displaced plug #3, WOC 6 hours. Felt for plug, plug not there. Ran Plug A (Rerun plug #3),

. . ./2

Form 2115 (10-58) IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well [illegible] D I-46 Location 6895'; 10815' Elev 1804'

District Fosten River Week Ending May 23, 1961 Report No. 8

Page 2

Date	Total Depth	Progress	Days	REMARKS
May 21 cont'd.				(6350'-6950') with 30 sakes, plug down at 2:30 A. M., May 21st 1961. WOC at 8:00 A.M..
May 22	TD 7425'	0'	54	Wait for cement plug #5. Top plug at 6750'. Circulated hole clean. Ran DST #6. Ran in circulated hole clean. Conditioned cement contaminated mud. Circulating at 8:00 A. M. DST #6 (Rockwall) (6664'-6750') ISI 30 min. FP: 2hours. FSI 60' GTS, Weak air blow increasing for 30 mins. Decreasing for remainder of flow period. Dead in 30 mins. Recovered 3330 feet, mud and 30 feet very viscous, cement contaminated mud. Pressures: IH: 3100-2975 PSI 1st FP: 100-400 2nd FP: 350-1300 (plugged) SIP: 2450-2300 FH: tool plugged with cement. Inadequate recovery and pressures. Test inconclusive.
May 23	PBD 6750	0'	55	Conditioned mud, Ran DST #6. Ran PLUG #6 (6030'-6130'): Cemented with 30 sacks. Plug down 1:30 A.M., May 23, 1961. WOC 8 A.M.

— F. Mayer —

Geologist

Form 21417 (1m-8-58)

IMPERIAL OIL LIMITED

WEEKLY CHRONOLOGICAL WELL REPORT

Well HUSKY ADLAI-SNAD I-46 Location 60°50'; 122°15' Elev. 1904'

District Peace River Week Ending May 30, 1961 Report No. 9

Date	Total Depth	Progress	Days	REMARKS
May 24	PBD 6091'	0'	56	Felt for Plug #6. Layed down drill pipe. Pulled BOP's. Cut off 7" intermediate casing at 3370 feet. Pulling 7" casing at 8:00 A.M.
May 25	PBD 3359'	0'	57	Layed down 3376' of 7" casing. Ran plug #7 (3360'-3450') Cemented with 40 sacks. WOC at 8 A.M.
May 26	PBD Surface	0'	58	Ran PLUG #8 (930'-1030'). Cemented with 40 sacks. Landed 5 sacks at surface plate.

Rig Released: 4:00 P.M., May 25, 1961.

— F. Mayer —

Geologist

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #1. 1276' - 1306' Recovered 19 feet.

1276' - 1281.2' 5.2'	Thinly interlaminated very fine sandstone and coarse microgranular siltstone. Sandstone, light to medium grey-brown, angular to subangular, poorly sorted, quartz chert and glauconite grains, slightly argillaceous. Siltstone, medium grey brown, slightly glauconitic variably argillaceous, containing abundant lenses and streaks of dark grey bituminous shale.
1281.2'-1282.8' 1.6'	Sandstone, brown, very fine, poorly sorted, subangular quartz, chert, and glauconite grains. Scattered very glauconitic lenses; silty, argillaceous, infilled in part.
1282.8'- 1295' 12.2'	Interlaminated and interbedded very fine sandstone, coarse microgranular siltstone and shale. Sandstone, grey brown, quartzose, slightly glauconitic, poorly sorted, infilled in part. Siltstone, brown, sandy, argillaceous, slightly glauconitic, patches of dark grey bituminous shale. Interbeds vary from paper thin laminae to 6" alternating bands. Abundant shale lenses, streaks, and thin bands.

— F. Rayer —

Geologist

FR:rf
April 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #2.	4116' - 4166' Recovered 50 feet.
4116' - 4128' 12.0'	Limestone, grey buff to brown buff, skeletal, clean, moderately sorted, very coarse to pea sized skeletal grains, calcite cemented. Scattered minor shale streaks, medium grey to grey brown.
4128' - 4129.4' 1.4'	Limestone, as above, interlensed with grey to grey brown shale. Core has fragmental appearance.
4129.4'-4131.3' 1.9'	Limestone, grey buff to buff brown, skeletal, coarse to pea sized, skeletal grains, calcite cemented throughout. Trace argillaceous.
4131.3'-4139.0' 7.7'	Limestone, skeletal as above, fragmental with interlensed and interbedded grey brown shale. Trace silty, nodular in part.
4139.0'-4157.3' 18.3'	Limestone, buff brown, skeletal, clean, calcite cemented. Minor patchy micrite matrix, very slightly argillaceous. Traces bituminous infilling at base. Scattered minor shale streaks.
4157.3'-4163.7' 6.4'	Limestone, brown, skeletal, moderately sorted, clean, skeletal grains, calcite cemented, minor micrite matrix, slightly argillaceous, traces bituminous infilling. Uniform gross texture.
4163.7'-4166.0' 2.3'	Limestone brown to dark brown, skeletal as above, trace micrite, calcite cemented, slightly argillaceous, minor bituminous infilling. Interbedded and interlensed, dark brown, slightly bituminous shale.

— F. Rayer —

Geologist

FR:rf
April 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #3. 4166' - 4216' Recovered 50 feet.

4166' - 4177.5' 11.5'	Limestone, buff-brown to brown, skeletal, clean, moderately sorted very coarse to pea sized skeletal grains, calcite cemented. Scattered grey to grey brown, shale streaks and lenses, slightly bituminous in part, scattered stylolites, traces pyrite. Minor alternating dark brown, argillaceous, skeletal limestone, slightly bituminous, calcite cemented.
4177.5'-4193.5' 16.0'	Limestone, buff brown, skeletal as above, calcite cemented, minor patchy argillaceous streaks, skeletal content is slightly finer grained, very scattered brown bituminous shale lenses, less abundant than above. Uniform gross texture.
4193.5'- 4216' 22.5'	Limestone, cream, to very light buff, minor micrite patches, calcite cemented. Basal 10 feet, vertically fractured, infilled with calcite, varying up to ½" thick, scattered irregular thin calcite veins.

— F. Rayer —

Geologist

FR:rf
April 1961
Dawson Creek.

DMP SUN ARROWHEAD I-46

60° 50'; 122° 45'

CORE DESCRIPTION

CORE #4. 6096' - 6117' Recovered 21 feet.

6096' - 6117' 21'	Shale, dark grey, blocky, bituminous, brown streaks, siliceous, uniform gross texture, pyritic with pyrite as irregular thin horizontal laminae and as disseminated flakes. Trace scattered near vertical hairline fractures.

— F. Rayer —

Geologist

FR:rf
April 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #5.	6119' - 6169' Recovered 50 feet.
6119.0' - 37.9' 18,9'	Shale, dark grey brown, blocky, very slightly siliceous, disseminated pyrite, slightly bituminous.
6137.9' - 69.0' 31.1'	Limestone, medium grey brown, skeletal micritic, lime mud matrix with calcite cemented numerous bituminous styolitic partings, tight.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #6. 6169' - 6219' Recovered 50 feet.

6169' - 6219' 50'	Limestone, medium grey brown, cemented skeletal, poorly sorted, cemented with calcite scattered bands of cemented pellet and vague pellet limestone with lime mud matrix, occasional calcite filled hairline fractures, numerous bituminous stylolitic partings with scattered traces of pyrobitumen.

-- R. H. Tatham --

Geologist

RH:T:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #7 — 6219' - 6269' Recovered 50 feet.

6219' - 6236' 17'	Limestone, medium grey brown, cemented skeletal consisting mainly of fine to very coarse skeletal fragments, cemented with calcite, minor amounts of micrograined micrite matrix at base,
6236' - 6269' 33'	Limestone, medium grey brown, micritic grading to vague pellet and pellet. Micrite is cryptograined lime mud with calcit cement, traces of pseudo oolite structures, minor fine to coarse skeletal fragments. Numerous argillaceous and bituminous partings, occasional fractures filled with calcite.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 00'; 122° 15'

CORE DESCRIPTION

CORE #8 6269' - 6319' Recovered 50 feet.

6269.0' - 6319.0' 50.0'	Limestone, medium grey-brown to buff, micritic grading in part to skeletal, cemented pellet and vague pellet, fine to coarse skeletal fragments, poorly sorted. Micrite is cryptograined lime mud with some pellets and vague pellets. Core is cemented with calcite. Numerous bituminous partings.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #9. 6319' - 6369' Recovered 50 feet.

6319' - 6334.2' (15.2') Limestone, light to medium grey, cemented skeletal, coarse to very coarse, poorly sorted skeletal fragments, cemented with coarse crystalline calcite.

6334.2'-6369.0' (34.8') Limestone, medium grey brown to buff, skeletal micritic. Coarse to very coarse skeletal fragments, micrograined matrix grading to lime mud in part, calcite cement, occasional large calcite filled fractures and vugs .

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #10. 6369' - 6419' Recovered 50 feet.

6369' - 6419' 50'	Limestone, light grey to buff, skeletal micritic, fine to very coarse skeletal fragments, recrystallized in part, lime mud matrix grading in part to micrograined, matrix in bottom 6' becomes dark grey brown bituminous calcite cement over all core.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #11. 6419' - 6469' Recovered 35 feet.

6419' - 6440' (21')
Limestone, skeletal micritic, light grey to dark grey brown, dark grey brown bituminous, micrograined matrix,

6440' - 6454' (14')
Limestone, medium grey brown to buff, cemented skeletal, fine to coarse skeletal fragments, partially recrystallized lime mud matrix, cemented with calcite, scattered traces of pyrobitumen,

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #12. 6469' - 6519' Recovered 50 feet.

6469' - 95.7' 26.7'	Limestone, light grey buff, cemented skeletal, lime mud matrix becoming bituminous in part, calcite cement.
6495.7'-6519.0' 23.3'	Limestone, medium grey brown, skeletal micritic, lime mud matrix, bituminous in part grading to dark grey-brown limy shale in top 3', occasional bands of cemented pellet limestone, calcite cement throughout section.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #13. 6519' - 6569' Recovered 50 feet.

6519' - 50.6' 21.6'	Limestone, medium grey brown, cemented pellet and skeletal variable pellets and fine to coarse skeletal fragments cemented with calcite cement, bituminous in part, trace lime mud matrix, occasional dark grey brown bituminous shale partings,
6550.6'-69.0' 28.4'	Limestone, dark grey brown, micritic skeletal, very fine to medium skeletal fragments, poorly sorted, micrograined matrix, argillaceous, bituminous, grading in part to lime mud, numerous dark grey brown bituminous shale partings, occasional calcite filled high angle fractures.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #14. 6569' - 6619' Recovered 50 feet.

6569' - 6619' 50'	Limestone, medium grey brown, mottled, micritic skeletal very fine to fine skeletal fragments poorly sorted in lime mud matrix, bituminous and argillaceous in part, numerous bituminous argillaceous partings, calcite cement.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #15. 6619' - 6669' Recovered 50 feet.

6119' - 6669'
50'

Limestone, medium to dark grey brown, mottled, micritic skeletal, fine skeletal casts infilled with calcite, calcite cement, numerous bituminous argillaceous partings.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

DIP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #16. 6669' - 6719' Recovered 50 feet.

6669' - 6719' 50'	Limestone, medium grey brown, micritic skeletal, dolomitic in part with white very fine dolomite rhombs, calcite cement, bituminous partings.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #17. 6720' - 6770' Recovered 50 feet.

6720' - 6770' 50'	Limestone, medium brown to light buff, micritic skeletal with some vugs infilled with coarse crystalline calcite, dolomitic in part (6736'-6740'), calcite cement, numerous argillaceous, bituminous partings.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #18 — 6770' - 6820' Recovered 50 feet.

6770' - 6820' 50'	Limestone, medium brown to buff, slightly dolomitic in part (6817'-19'), calcite cemented with occasional calcite infilled horizontal fractures, numerous argillaceous, bituminous partings.

-- R. E. Tatham --

Geologist

RET:rf
May 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #19. 6820' - 6870' Recovered 50'

6820' - 6847' 27'	Limestone, medium brown to light buff, micritic, dolomitic in part, calcite cement, occasional calcite filled fractures, numerous dark grey bituminous argillaceous partings.
6847' - 6870' 23'	Limestone, as above, with interbedded and intermottled shale, light green, blocky, calcareous, pyritic.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #20. 6870' - 6905' Recovered 35 feet.

6870' - 6905' 35'	Limestone, buff to light buff, micritic, cryptograined, very slightly siliceous in part, scattered floating acicular quartz crystals, calcite cement, intermottled shale, light green, blocky, pyritic, numerous calcite filled hairline fractures.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #21. 6905' - 6923' Recovered 18 feet.

6905' - 6916' 11'	Limestone, light grey buff, micritic with scattered acicular quartz crystals, calcite cement, slightly dolomitic at base, numerous argillaceous and styolitic partings.
6916' - 6923' 7'	Dolomite, mottled white and medium grey, coarse subhedral and euhedral dolomite rhombs, scattered pyrobitumen.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #22. 6923' - 6935' Recovered 12 feet.

6923' - 6935' 12'	Dolomite, mottled white and medium grey, coarse subhedral and euhedral dolomite rhombs, scattered pyrobitumen.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #23. 6935' - 6976' Recovered 41 feet.

6935' - 6946' 11'	Dolomite, medium brown to grey, cryptocrystalline.
6946' - 6976' 30'	Dolomite, medium brown to grey, interbedded cryptocrystalline and microcrystalline, numerous argillaceous partings, occasional calcite filled fractures.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek

IMP SUN ARPONHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #24. 6976' - 7026' Recovered 46 feet.

6976' - 7016' 40'	Dolomite, light grey, fine microcrystalline to cryptocrystalline, disseminated pyrite, numerous argillaceous partings, hairline fractures filled with dolomite, scattered vugs filled with white dolomite near base.
7016' - 7022' 6'	Anhydrite, medium brown, cryptocrystalline dolomitic.

-- P. H. Tatham --

Geologist

PHT:rf
May 1961
Dawson Creek

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #25. 7026' - 7036' Recovered 10 feet.

7026' - 7036' 10'	Anhydrite, medium brown, cryptocrystalline dolomitic.

-- R. H. Tatham --

Geologist

RHT:rf
May 1961
Dawson Creek.

DMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #26. 7036' - 7085' Recovered 49'.

7036' - 7060'
24' Anhydrite, medium brown, massive, cryptocrystalline, slightly dolomitic.

7060' - 7085'
25' Anhydrite, medium to light grey, brecciated with fine to very coarse light grey angular anhydrite fragments in dark grey argillaceous matrix, increasing in size and percentage at base, fine to medium, subrounded, poorly sorted quartz grains, grading in part to sandstone, argillaceous in part with dark grey shale partings, disseminated pyrite with clusters of coarse pyrite cubes, pyrite associated with fractures.

— H. Tatham —

Geologist

HT:sg

May, 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #27. 7085' - 7111' Recovered 26 feet.

7085' - 7111' 26'	Shale, anhydritic at top, light to medium grey, leached appearance, thinly bedded, waxy in part, laminated in part with thin greenish grey shale partings and interbeds; slightly sandy with micro-fine clear quartz crystals, siliceous to very siliceous below 7105', with thin interbands of blue-grey chert, pyritic throughout with disseminated flakes and clustics of micro-fine pyrite cubes, Fractues in part, with irregualr hairline fractures infilled with silica and pyrite.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #28. 7111' - 7131' Recovered 5 feet.

7111' - 7131' 1.5'	Chert, light bluish grey, cryptocrystalline, vitreous in part, traces disseminated pyrite.
3.5'	Shale, light grey, waxy in part, blocky, banded, scattered thin greenish grey, waxy shale partings, then siliceous bands, scattered chert laminae at base. Pyritic, fractured in part with irregular hairline fractures infilled with silica and pyrite.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #29. 7131' - 7157' Recovered 26 feet.

7131' - 7140' 9'	Shale, light greenish grey and medium grey, siliceous in part, pyritic. Minor interbedded chert. Core is banded consisting of alternating bands of waxy, greenish grey shale, medium grey siliceous shale, and minor medium bluish grey chert. Irregular to vertical hairline fractures infilled with dolomite, silica and pyrite. Pyrite associated with fractures and disseminated throughout shale.
7140' - 7146.5' 6.5'	Chert, dense, light grey to bluish grey, Fractured, hairline to ¼" thick fractures infilled with coarse crystalline white eolomite, pyrite, and red brown secondary iron carbonate. At 7143', a 6" band heavily fractured and shattered, infilled with lenses of red brown iron carbonate. Minor scattered shale partings and bands (to 3"), greenish grey, pyritic.
7146.5' - 7157' 10.5'	Shale, dark grey, siliceous in part, disseminated pyrite throughout. Upper 3' banded with alternating grey green and dark grey shale bands. Thin interbands (to 3") of very wil siliceous shale and dense chert.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

EMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #30. 7157' - 7178' Recovered 21 feet.

7157' - 7178'
21'

Thinly interbedded shale and chert. Shale, light greenish grey, waxy, pyritic; and medium to dark grey, blocky, siliceous in part, pyritic. Chert light grey, dense. Core consists of alternating paper thin to 2 feet bands of shale and chert. Minor irregular lenses of chert scattered throughout basal 10 feet. Basal 1 foot comprises irregular lenses of shale and chert, having pseudo fragmental appearance. Irregular hairline fractures throughout; fracture planes coated with pyrite.

— F. Rayer —

Geologist

FR:sg

IMP SUN ARLONHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #31. 7178' - 7205' Recovered 27 feet.

7178' - 7191' 13' Interbedded shale and chert. Shale light greenish grey and medium to dark grey, siliceous in part, pyritic in part, dark shale b bands mottled in part. Chert, light grey to light greenish grey, dense. Core consists of alternating paper thin to ? foot interbands of chert and shale, laminated in part, fractured throughout. Fractures, vertical, and horizontal, infilled with coarse crystalline light buff to white dolomite, in part, milky quartz in part, and lined with pyrite. Vertical fractures show bedding displacement and are associated with horizontal tension fractures.

7191' - 7201' 10' Interbedded chert and shale as above.

7201' - 7205' 4' Shale, medium to dark grey and minor interbanded chert.
Shale mottled, with micro-coarse flakes patches, and needle-like inclusions, of altered, relic(?) carbonaceous material. Mottled texture prominent towards basal part of core and preserved in silicified bands. Pyrite developed as patches with decreasing amounts of disseminated pyrite.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #32. 7205' - 7255' Recovered 50 feet.

7205' - 7209' (4') Interbedded shale and chert. Shale, greenish grey, blocky, slightly pyritic, pyrite as scattered patches in shale. Minor medium grey shale, mottled with patches and irregular laminae of dark grey, greasy, carbonaceous (?) material, slightly pyritic. Chert, light greenish grey, dense, grades to silicified shale. Shale and chert occurs chiefly as alternating thin bands, with monor irregular lenses. Scattered near vertical fractures and associated horizontal tension fractures, infilled with buff to white dolomite, lined with pyrite.

7209' - 7219' (10') Interbedded chert and shale as above.

7219' - 7230' (11') Shale, banded greenish grey and medium grey blocky, slightly siliceous in part. Minor thin chert interbands, light greenish grey dense. Darker shale bands mottled with carbonaceous (?) patches. Shales becoming less pyritic, with pyrite as irregular patches. Scattered horizontal and vertical fractures, infilled with dolomite, as above.

7230'- 7232' (2') Chert, light greenish grey, dense.

7232' - 7242' (10') Shale, greenish grey, blocky, slightly siliceous in part. Minor thin chert interbands, light greenish grey, dense. Scattered pyrite patches. Core becomes less siliceous towards base, with more uniform gross texture.

7242' - 7255' (13') Shale, greenish grey and medium grey, mottled in part, very slightly siliceous thin chert interbands and lenses. Scattered pyrite patches. Scattered vertical and horizontal fractures, infilled with dolomite and pyrite.

— F. Rayer —

Geologist

FR:sg

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #33. 7255' - 7297' Recovered 42 feet.

7255' - 7261.5' Interbedded shale and chert. Shale, light grey, greenish-grey, and medium grey, thinly banded, laminated in part, siliceous in part scattered pyrite patches. Medium grey shale bands, mottled with scattered patches and laminae of bituminous material.
Chert, light greenish grey, light grey, dense, grades to silicified shale in part. Fractured, with hairline vertical and irregular horizontal fractures infilled with dolomite, and lined with pyrite.

7261.5' - 7266' Interbedded chert and shale as above. Fractures as above.

7266'- 7297' Shale and chert with thin interbands of silicified dolomite in basal 5'. Shale light grey, grey, green, medium grey, banded as above, mottled in part, with bituminous patches and laminae; silicified in part scattered pyrite patches. Chert, light grey to grey green, dense. Silicified dolomite comprises two thin bands interbedded in grey green shales; a 4" bed at 7292', and a 6" bed at 7296.5'.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

DEP SUN ARCHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #24. 7297' - 7315' Recovered 18 feet.

7297' - 7315' 18'

Interbedded shale and chert. Shale, banded, light grey, grey-green, and dark grey. Banding varies from paper thin laminae to 2 foot interbeds. Minor irregular light and dark shale lenses. Light grey shale, blocky, siliceous in part, Traces pyrite, traces scattered bituminous flakes. Dark grey shale, blocky, silicified in part, pyritic mottled with bituminous, material, chert, light grey, with bluish cast, dense, grades to and interlaminated with silicified shale. Dark grey shales increasing in abundance towards base, with increasing bituminous content and pyrite. Pyrite as scattered patches and in part disseminated. Occasional scattered near vertical hairline fractures, dolomite infilled and lined with pyrite.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #35. 7315' - 7338' Recovered 23 feet.

7315' - 7338'
23'

Shale, medium and dark grey, siliceous, pyritic. Generally uniform gross texture. Very slightly silty to very slightly sandy in part, with micro - very fine, angular, clear, quartz grains in dark grey shale matrix. Micaceous below 7328' with abundant clear micro-fine muscovite flakes. Minor scattered dark grey, greasy, altered, bituminous/carbonaceous flakes.(?) Scattered silicified shale laminae, light grey, and thin chert bands, light to medium grey, dense in part, grading to quartzite in part. Few scattered laminated bands with paper thin to ¼", differentially silicified shale laminae. Silica segregated into horizontal light grey to grey green laminae, alternating with dark shale laminae.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

EMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #36. 7338' - 7388' Recovered 50 feet.

7338' - 7388' 50'	Shale, banded, medium and dark grey, laminated in part. Alternating medium and dark grey shale bands (up to 2') and scattered laminated bands containing alternating light, medium and dark grey shale, silicified shale, and chert laminae. Occasional thin light grey chert and quartzite bands. Occasional irregular wavy, concretion-like, lenses of light and dark shale. Shale micaceous to very micaceous with abundant clear muscovite flakes, in part oriented in horizontal planes, silicified in part, scattered micro-very fine, argular clear quartz grains at top. Traces pyrite, scattered, dark grey, greasy, altered bituminous flakes, mottled appearance in part, Interbedded quartzite, light grey, micro-fine crystallinity in part, dense silica (chert) in part. A 6" siliceous dolomite band occurs at 7383', medium grey, coarse crystalline, (When boiled out, leaves granular network of black (pyrobitumen?) material.

— F. Rayer —

Geologist

FR:sg

May, 1961
Dawson Creek.

IMP SUN ARROWHEAD I-46

60° 50'; 122° 15'

CORE DESCRIPTION

CORE #37. 7388' - 7423' Recovered 35 feet.

7388' - 7403' (15')

Shale, medium to dark grey, siliceous, scattered micro-fine muscovite mica flakes, traces scattered clear, angular, micro-very fine quartz grains, slightly mottled in part, few thin bands heavily mottled, with dark grey, greasy, altered, carbonaceous material scattered thin light grey, smooth textured shale partings, Few thin silicified shale laminae. Trace pyrite.

7403' - 7423' (20')

Shale light grey, to light grey green, uniform gross texture, smooth dense appearance, siliceous in part, scattered muscovite-mica flakes. Traces scattered pyrite, minor slightly sandy to sandy interlaminae with scattered micro-very fine, clear angular quartz grains, thin interbands of grey white. fine to medium crystalline quartzite. Minor grey-green, silicified shale laminae. Trace thin (1"-2") medium grey silicified dolomite laminae.
Scattered fractures throughout core, vertical fractures infilled and cemented with buff crystalline dolomite and lined with pyrite; irregular hairline fractures infilled with pyrite.

-- F. Rayer --

Geologist

FR:sg

May, 1961
Dawson Creek.

Key to Description of Cores

Letters are used to describe the porosity

A	Large Vugs
B	Vugs
C	Cracks
D	Fine Pores
E	Impermeable
F	Fractures

Numbers are used to describe the Character of the rock.

1	Dark Grey
2	Grey
3	Light Grey
4	White
5	Anhydrite
6	Shales
7	Iron Stains
8	Pyrites
9	Sand Grains
10	Hard
11	Medium
12	Soft
13	Oil Stains
14	Pyrobitumin
15	Stylolite
16	Sandstone

(a)	Unsuitable for test
Sp	Small Plug
VC	Vertical Crack
VF	Vertical Fracture
HF	Horizontal Fracture

CORE ANALYSIS CODE KEY

I Permeability (md) Columns F, G, H)

Code

(m) when K max, and $K_{\frac{H}{2}}$ are measured
(r) when K radial is measured
(h) when a single horizontal K is measured

II Plug Quality (Column N)

Code Condition (Subcolumn 1)

1 - Fractured
2 - Missing (includes cement plugs)
3 - Broken or unconsolidated
4 - Uncored
5 - Portion of core not analyzed

Texture (Subcolumn 2)

1 - Dense

Interpretation (Subcolumn 3)

1 - Same as
2 - Interpreted Value (editing stage)
3 - Assigned footage
4 - Interpreted Values for footage, permeability, porosity and lithology

III Plug Type (Column O)

Code

1 - Full diameter (includes 4 3/8", 3 1/2", 2 5/8", 2 3/4" diameter)
2 - Slim hole (less than 2 1/2" diameter)
3 - Cubes - any size
4 - Horizontal test plugs - any size
5 - Vertical test plug - any size
6 - Test plugs - all sizes - undifferentiated position
7 - Unconsolidated technique
8 - Combined plugs - full diameter, plus cubes test plugs, etc.....
9 - All measurements except vertical permeability on horizontal test plugs. Vertical permeability taken on vertical test plugs
10 - Horizontal permeabilities run on small diameter plugs (other meas. full diameter)
11 - Full diameter (glazed surface removed)

CGL 30

Location: 60° 50'-122° 15' CHEMICAL & GEOLOGICAL LABORATORIES LTD. Field: Wildcat, N.W.T.

Operator Imperial Oil Limited Well No. Imperial Arrowhead I-46 Lab. No. F-1043 Date April 21, 1961

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Permeability md Horizontal	Permeability md Vertical	% Porosity	Porosity Feet	Description
1	1281.5	1276 - 1306		12.	16.	20.7		1 6 9 19 S SP
2	1286.3	1276 - 1306		8.2	10.	19.0		1 6 9 19 S SP
3	1288.8	1276 - 1306		8.1	11.	18.5		1 6 9 19 S SP

Note: Porosity and permeability on three plugs from Core Number 1 as requested.

KEY TO DESCRIPTION OF SANDSTONE CORE SAMPLES

1	Grey
6	Medium
9	Fine (less than 0.25 mm. diameter)
19	Massive Sand (no visible shale)
S	Oil Stains
SP	Small Plugs

CHEMICAL & GEOLOGICAL LABORATORIES LIMITED (R=1)

COMPANY : Imperial Oil Limited
WELL : Imp. Sun Arrowhead I-46
FIELD : ---
PROVINCE: British Columbia

DATE REPORT: June 7th, 1961
LOCATION : ---
FORMATION : ---
CORES : 9,12,22 & 23

PAGE : 1
FILE : ---
ANALYSIS: E17686
D. FLUID: H_2O Base Mud.

Plug No. (Card. Field)	Interval Represented Top B	Base C	Thick D	(m)	Permeability (md.) Maximum F	90° G	Vertical H	Porosity % I	Density Bulk J	Grain K	Plug Quality N Condition (1)	Texture (2)	Interpretation (3)	Plug Type O	Description
			Core Number 9			6319.0' - 6369.0'			Received 4.3 Feet						
Not received	6319.0	6332.7	13.7		---	---	---	---	---	---	---	---	---	---	---
1	6332.7	6333.3	0.6		0.02	0.02	0.04	1.8	2.67	2.72	---	---	---	---	---
2	6333.3	6334.2	0.9		0.08	0.06	0.05	3.3	2.62	2.71	---	---	---	1	D 3 10
3	6334.2	6335.6	1.4		0.33	0.18	0.16	6.8	2.53	2.71	---	---	---	1	D 3 10
4	6335.6	6337.0	1.4		0.17	0.15	0.05	6.2	2.55	2.72	---	---	---	1	C D 3 10
Not Received	6337.0	6346.1	9.1		---	---	---	---	---	---	---	---	---	1	C D 3 10
5	6346.1	6347.3	1.2		0.25	0.21	0.17	7.1	2.53	2.72	---	---	---	---	---
6	6347.3	6349.0	1.7		0.07	0.07	0.03	4.2	2.60	2.71	---	---	---	1	C D 3 5 10 15
7	6349.0	6350.1	1.1		0.47	0.21	0.14	6.7	2.54	2.72	---	---	---	1	C D 3 5 10 15
8	6350.1	6350.6	0.5		0.95	0.63	0.13	6.2	2.53	2.70	---	---	---	1	C D 3 5 10 15
Not Received	6350.6	6369.0	18.4		---	---	---	---	---	---	---	---	---	1	C D 3 5 10
			Core Number 12			6469.0' - 6519.0'			Received 4.6 Feet						
9	6469.0	6469.8	0.8		0.04	0.03	0.04	2.5	2.63	2.70	---	---	---	1	C D 3 10
10		6470.7	0.9		0.13	0.10	0.08	3.6	2.61	2.71	---	---	---	1	C D 3 10
11		6472.1	1.4		0.08	(a)	0.02	2.8	2.64	2.71	---	---	---	1	C D 3 10 15
12		6473.0	0.9		0.05	0.04	0.07	4.9	2.58	2.72	---	---	---	1	C D 3 10 15
13		6473.6	0.6		0.11	0.06	0.02	2.2	2.63	2.69	---	---	---	1	D 3 10
Not Received		6519.0	45.4		---	---	---	---	---	---	---	---	---	---	---
			Core Number 22			6923.0' - 6935.0'			Received 5.0 Feet						
Not received	6923.0	6928.0	5.0		---	---	---	---	---	---	---	---	---	---	---
14	6928.0	6929.4	1.4		211.	0.34	0.19	9.6	2.55	2.82	---	---	---	1	B C D 3 5 10
15	6929.4	6930.8	1.4		174.	0.36	0.19	11.3	2.52	2.84	---	---	---	1	B D 3 5 10
16	6930.8	6933.0	2.2		82.	43.	0.13	11.3	2.53	2.85	---	---	---	1	B D 3 5 10
Not Received	6933.0	6935.0	2.0		---	---	---	---	---	---	---	---	---	---	---
			Core Number 23			6935.0' - 6976.0'			Received 4.9 Feet						
Not Received	6935.0	6953.9	18.9		---	---	---	---	---	---	---	---	---	---	---
17	6953.9	6954.6	0.7		3.8	1.4	0.37	8.4	2.58	2.81	---	---	---	1	B C D 3 10
18	6954.6	6955.3	0.7		0.87	0.77	0.09	5.4	2.66	2.81	---	---	---	1	B C D 3 5 10
19	6955.3	6956.3	1.0		20.	19.	3.8	19.5	2.30	2.85	---	---	---	1	B D 2 11
20	6956.3	6957.3	1.0		5.6	5.0	2.6	16.0	2.41	2.87	---	---	---	1	B D 2 11 15
21	6957.3	6958.8	1.5		0.80	0.32	0.07	2.1	2.77	2.83	---	---	---	1	D 3 5 10
Not Received	6958.8	6976.0	17.2		---	---	---	---	---	---	---	---	---	---	---

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T #1

Well Name IMP SUN ARROWHEAD I-46 ... Formation Cretaceous ..... Date April 5, 1961.

Location 60° 50'; 122° 15' K.B. 1903' .... Interval tested from 1230 .... to 1306 ...

Basis for test. Porous and oil stained very fine sands tone (1230'-1276') .....
Core #1 (1276'-1306') oil stained bleeding oil from trace to poor porosity.
Sand oil stained at Netla #E-1 and Murphy BCC Arrowhead #1 .....

Results. GIP. Weak Air Blow, increasing throughout test. Recovered 90 feet mud ...

.....

TESTING DATA

Well Depth 1306' ..... Full Hole Size ... 9" ..... Drill Pipe: OD 4½ Weight 16.6

Grade E .... Joint Type 4½ ... Capacity ---

Rat Hole Top ..... --- ..... Rat Hole Size ... --- ..... Drill Collars: OD 7" Feet 360

Joint Type --- Capacity ---

Size Top Choke ..... --- ..... Size Bottom Choke ... ¾" .....

Packer Type Full Hole Conventional ..... No. of Packers ... 2 ..... Packer Size ... 7¾" .....

Bomb Type T & E ..... No. of Bombs ... 2 .. Bomb Ranges 3000 lb. .....

Position of Bombs ... 1222 (inside) & 1306 ..... Hours on Clock ... 12 .....

Cushion: Type ... --- ..... Air Chamber: Vol ... --- .....

Amount --- ..... Length ... --- .....

Drilling Mud: Type GEL .... Weight 9.1 .... Visc. 37 .... W.L. --- .... NaCl --- .... Ph. ---

Recovery Mud: Type ..... Weight ..... Visc ..... W.L. ..... NaCl ..... Ph. .....

	Time	Duration	
Tester Started in hole	3 PM ..	.....	Weight set on packer 35,000 lbs.
Tester on Bottom	4:30 ..	.....	
Packer Set	4:35 ..	.....	Mud level drop. NIL ..... feet
Tool Open	4:37 ..	.....	
Tool Closed	4:40 ..	.....	Pulled packer loose with 10,000 lbs.
Tool Open	5:10 ..	.....	
Tool Closed	6:10 ..	.....	
Pulled Packer loose	7:10 ..	.....	
Started out of hole	7:12 ..	.....	
Tester out of hole	8:10 ..	.....	

FLOW AND RECOVERY DATA:

	Time	Pressure	Riser	Mcf/day		Time	Pressure	Riser	Mcf/day
1	.....	.....	.....	.....	7	.....	.....	.....	.....
2	.....	.....	.....	.....	8	.....	.....	.....	.....
3	.....	.....	.....	.....	9	.....	.....	.....	.....
4	.....	.....	.....	.....	10	.....	.....	.....	.....
5	.....	.....	.....	.....	11	.....	.....	.....	.....
6	.....	.....	.....	.....	12	.....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est.rate.....

TOTAL FLUID IN DRILL PIPE

(including water cushion)	Type	Stands	Feet	ppm NaCl
1	Normal Mud	1	90	---
2				
3				
4				
5				
6				

Sampling Position (Feet above packer) Sample No. 1 Position 0-90'

Salinity of water...---.....ppm NaCl

Gravity of oil...---.....°API

Gas (Sweet...---...Sour...---...).

Samples sent for analysis to...---.....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb (X) (Inside)

I.H.P...600.....2nd I.F.P.....10....
1st I.F.P...25.....2nd F.F.P....25....
1st F.F.P...25.....2nd S.I.P...390....
1st S.I.P...400..... F.H.P...600....
B.H.T.....°F.

Bottom Bomb ( )

I.H.P...650.....2nd I.F.P....50...
1st I.F.P.....2nd F.F.P....65...
1st F.F.P.....2nd S.I.P...450...
1st S.I.P...450..... F.H.P...660...
B.H.T.....°F.

Do charts show normal operation. Yes..... Was test satisfactory...Yes.....

Remarks (Explain misruns etc.) .Good shut in buildup.....
Levelled off initial and final curves.
.....
.....

Test No.....1..... Signature.(Original signed)..Fred Baron.....

Testing Co.N.D. Johnston ..... Title...Geologist.....

Operator...D. Sim..... Well Name.BOU. SIM. ARCTIC MARITIME #1-46.....

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T #2

Well Name. Imp. SUI. ARROWHEAD .....Formation. Island River Mbr Date. April 22, 1961

Location. 60°50' - 122°15' .....K.B. 1904.5 .Interval tested from. 4272 .to. 4326

Basis for test. Logs indicate 5% - 8% porosity in calcite plugged limestone reef

.....

Results. G.I.R. FAB on 1st Flow. WAB increasing to fair after 15 mins on 2nd Flow

. Rec. 10'. drilling mud and 100'. muddy water.....

TESTING DATA

Well Depth. 6117 .....Full Hole Size. 9" .....Drill Pipe: OD. 5" Weight. 19 lbs.

Grade. E .....Joint Type. I.F. .Capacity. .0172

Rat Hole Top. --- .....Rat Hole Size. --- .....Drill Collars: OD. --- Feet. ---

Joint Type. --- ..Capacity. ---

Size Top Choke. --- .....Size Bottom Choke. 1" .....

Packer Type. Bobtail .....No. of Packers. 2 .....Packer Size. 7¾" .....

Bomb Type. L. & E. .....No. of Bombs. 2 ....Bomb Ranges. both 3000 lbs. .....

Position of Bombs. 1 blanked off above packer .....Hours on Clock. 24 .....

Cushion: Type. --- .....Air Chamber: Vol. .....

Amount. --- .....Length. .....

Drilling Mud: Type. Lime .Weight. 10.3 ...Visc. 220 ...W.L. 8.0 ...Res. .754 @ 76° ...Ph. 13 ...

Recovery Mud: Type. Lime .Weight. 10.3 ...Visc. 220 ...W.L. 8.0 ...NaCl. .....Ph. 13 ...

	Time	Duration	
Tester Started in Hole	0130	.....	Weight set on packer. 20,000 lbs.
Tester on Bottom	0355	..210 mins.	
Packer set	0406	..189 mins.	Mud level drop. Nil .....feet.
Tool Open	0410	....5 mins.	
Tool Closed	0415	...60 mins.	Pulled packer loose with. 1500 lbs.
Tool Open	0515	...60 mins.	
Tool Closed	0615	...60 mins.	
Pulled Packer loose	0715	.....	
Started out of hole	0725	.....	
Tester out of hole	0930	.....	

FLOW AND RECOVERY DATA:

	Time	Pressure	Riser	Mcf/day		Time	Pressure	Riser	Mcf/day
1	.....	.....	.....	.....	7	.....	.....	.....	.....
2	.....	.....	.....	.....	8	.....	.....	.....	.....
3	.....	.....	.....	.....	9	.....	.....	.....	.....
4	.....	.....	.....	.....	10	.....	.....	.....	.....
5	.....	.....	.....	.....	11	.....	.....	.....	.....
6	.....	.....	.....	.....	12	.....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est. rate.....

TOTAL FLUID IN DRILL PIPE

(including water cushion)	Type	Stands	Feet	ppm NaCl Ree
1	Drilling Mud	.....	10	.573 @ 60°
2	Muddy Water	.....	100	.....
3	.....	.....	.....	.....
4	.....	.....	.....	.....
5	.....	.....	.....	.....
6	.....	.....	.....	.....

Sampling Position (Feet above packer)

Sample No.	Position
1	5
.....	.....
.....	.....
.....	.....

Salinity of water.....ppm NaCl

Gravity of oil.....°API

Gas (Sweet.....Sour.....).

Samples sent for analysis to .....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb ( )

I.H.P.	2313	2nd I.F.P.	50
1st I.F.P.	50	2nd F.F.P.	50
1st F.F.P.	50	2nd S.I.P.	2319
1st S.I.P.	1870	F.H.P.	.....
B.H.T.	132 °F.		

Bottom Bomb ( )

I.H.P.	2310	2nd I.F.P.	100
1st I.F.P.	?	2nd F.F.P.	1400
1st F.F.P.	2665	2nd S.I.P.	2280
1st S.I.P.	.....	F.H.P.	.....
B.H.T.	..... °F.		

Do charts show normal operation.....Yes..... Was test satisfactory.....Yes.....

Remarks (Explain misruns etc.).....Packer skidded slightly between 1st flow and 1st shut in

.....Recovery probably filtrate. Resistivity of recovery is very close to that of the

.....mud filtrate.....

Test No.....Two..... Signature.....Hugh Tatham.....

Testing Co.....Johnston Testers Ltd..... Title.....Geol.....

Operator.....Don Sim..... Well Name..60°50'..122°15'.....DEP. SUR ARROWHEAD

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T

3

Well Name..Dp. Sin. Ambrose-I-46..Formation..Middle Devonian..Date..May.7.1961.

Location..60°56'-122°15'.....K.B.1904...Interval tested from.6905..to.6935.

Basis for test.Coarse crystalline dolomite with large vugs.....

.....

Results.G. I. P.- S. A. D. Throughout test.....

.....

TESTING DATA

Well Depth..6935.....Full Hole Size...6 1/8.....Drill Pipe: OD3½..Weight.13.30

Grade...E.....Joint Type I.F...Capacity.0072 bbls. ft.

Rat Hole Top.....Rat Hole Size.....Drill Collars: OD4 3/4..Set.237..

Joint Type. I. F.Capacity.0030. bbls/ft.

Size Top Choke.....Size Bottom Choke.....

Packer Type.Conventional.No. of Packers....1.....Packer Size...5"....

Bomb Type..I. S. I.....No. of Bombs...2...Bomb Ranges..7000 & 5000.....

Position of Bombs..6535 & 6898.....Hours on Clock....24.....

Cushion: Type.....Air Chamber: Vol.....

Amount.....Length.....

Drilling Mud: Type.Lime.Weight.9.9...Visc.56....W.L..9.6...NaCl.18500...Ph.13.0

Recovery Mud: Type.....Weight.....Visc.....W.L.....NaCl.....Ph.....

	Time	Duration
Tester Started in Hole	1045	.....
Tester on Bottom	1225	...5.mins.
Packer set	1230	...5.mins.
Tool Open	1237	...5.mins.
Tool Closed	1242	..30.mins.
Tool Open	1312	..30.mins.
Tool Closed	1342	...30.mins.
Pulled Packer loose	1412	....3..mins.
Started out of hole	1415	.....
Tester out of hole	1645	.....

Weight set on packer.....20M.....lbs.

Mud level drop.....Nil.....feet.

Pulled packer loose with.....25M.....lbs.

FLOW AND RECOVERY DATA:

	Time	Pressure	Riser	Mcf/day		Time	Pressure	Riser	Mcf/day
1	.....	.....	.....	.....	7	.....	.....	.....	.....
2	.....	.....	.....	.....	8	.....	.....	.....	.....
3	.....	.....	.....	.....	9	.....	.....	.....	.....
4	.....	.....	.....	.....	10	.....	.....	.....	.....
5	.....	.....	.....	.....	11	.....	.....	.....	.....
6	.....	.....	.....	.....	12	.....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est. rate.....

TOTAL FLUID IN DRILL PIPE

(including ~~Muddy~~ water cushion)	Type	Stands	Feet	ppm NaCl
1	Salt Water	47	4230	170,000
2				
3				
4				
5				
6				

Sampling Position (Feet above packer)

Sample No.	Position
2	2250
3	30

Salinity of water 170,000 ppm NaCl

Gravity of oil — °API

Gas (Sweet — Sour —).

Samples sent for analysis to .....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb (6)

I.H.P.	3602		
1st I.F.P.	675	2nd I.F.P.	1200
1st F.F.P.	900	2nd F.F.P.	2100
1st S.I.P.	1890	2nd S.I.P.	2325
B.H.T.		F.H.P.	3415
	°F.		

Bottom Bomb ( )

I.H.P.	3729		
1st I.F.P.	750	2nd I.F.P.	1175
1st F.F.P.	1000	2nd F.F.P.	2520
1st S.I.P.	2500	2nd S.I.P.	2790
B.H.T.	222	F.H.P.	3575
	°F.		

Do charts show normal operation Yes

Was test satisfactory Yes

Remarks (Explain misruns etc.) Recorded pressures vary up to 10% between the two bombs

.....

.....

3

Test No.....

Johnston Testers Ltd.

Testing Co.....

Don Sin

Operator.....

Hugh Tatham

Signature.....

Geogogist

Title.....

BP. SUN ARROWHEAD I-46

Well Name.....

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T #4

Well Name. IMP SUN ARROWHEAD ..... Formation. Middle Devonian & Pre Devonian ... Date. May 10, 1961

Location. I-46 60° 50'; 122° 15' ..... Interval tested from. 6070' ... to. 7423 FTD

Basis for test. Blanket test called before logging.

Results. GIP. Fair air blow steady throughout test.

Recovered 240 feet salty mud.

TESTING DATA

Well Depth. 7423 ..... Full Hole Size. 6 1/8" ..... Drill Pipe: OD. 3½. Weight 13.30

Grade. E ..... Joint Type. IF ... Capacity. ---

Rat Hole Top. --- ..... Rat Hole Size. --- ..... Drill Collars: OD. 3½. Feet. 240'

Joint Type. IF ... Capacity. ---

Size Top Choke. ¾" ..... Size Bottom Choke. ---

Packer Type. Hookwall ..... No. of Packers. 1 ..... Packer Size. 5½" ... (inside 26-32 casing)

Bomb Type. T.A.F. ..... No. of Bombs. 2 .. Bomb Ranges. 700 (Inside) & 5000

Position of Bombs. 6062 (inside) & 6082 ..... Hours on Clock. 24

Cushion: Type. --- Air Chamber: Vol. ---

Amount. --- Length. ---

Drilling Mud: Type. Lime ... Weight. 9.7 .. Visc. 55 ... W.L. 10.4 ... NaCl 2500 ... Ph 13.0. Rm 2.3

Recovery Mud: Type. Lime ... Weight. 9.5 ... Visc. 40 ... W.L. 11-14 .. NaCl 14,000 .. Ph. 13.0 (Rm=.456 @72°) Rm .4

	Time	Duration
Tester Started in hole	7:00 AM	.....
Tester on Bottom	9:10	.....
Packer Set	9:20	.....
Tool Open	9:25	5 Min.
Tool Closed	9:30	30 "
Tool Open	10:00	30 "
Tool Closed	10:30	60"
Pulled Packer loose	11:30	.....
Started out of hole	11:35	.....
Tester out of hole	2 PM	.....

Weight set on packer 67,000 lbs.

Mud level drop. NIL ..... feet

Pulled packer loose with 5,000 lbs.

FLOW AND RECOVERY DATA:

	Time	Pressure	Riser	Mcf/day		Time	Pressure	Riser	Mcf/day
1	.....	.....	.....	.....	7	.....	.....	.....	.....
2	.....	.....	.....	.....	8	.....	.....	.....	.....
3	.....	.....	.....	.....	9	.....	.....	.....	.....
4	.....	.....	.....	.....	10	.....	.....	.....	.....
5	.....	.....	.....	.....	11	.....	.....	.....	.....
6	.....	.....	.....	.....	12	.....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est.rate.....

TOTAL FLUID IN DRILL PIPE

(including water cushion)	Type	Stands	Feet	ppm NaCl
1	Salty Drilling Mud.....	.....	25,000	14,000 BH.=.0.456 @72°
2	.....	.....	.....	.....
3	.....	.....	.....	.....
4	.....	.....	.....	.....
5	....	.....	.....	.....
6	.....	.....	.....	.....

Sampling Position (Feet above packer)

Sample No.	Position
....1.....	2300' above tool
....2.....	1200' above "
....3.....	250' above "
...4.....	90' above "

Salinity of water BH.=.456....ppm NaCl @ 72°

Gravity of oil.....°API

Gas (Sweet..--.....Sour..--.....).

Samples sent for analysis to...Corehouse.....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb ( ) Inside		Bottom Bomb ( ) Outside	
I.H.P..3240.....	2nd I.F.P..420.....	I.H.P..3340.....	2nd I.F.P..450....
1st I.F.P...160.....	2nd F.F.P..1240....	1st I.F.P...165.....	2nd F.F.P.1430....
1st F.F.P...275.....	2nd S.I.P..2220....	1st F.F.P...300.....	2nd S.I.P.2330....
1st S.I.P..2325.....	F.H.P..3400....	1st S.I.P..2360.....	F.H.P.3440....
B.H.T...162.....°F.		B.H.T.....°F.	

Do charts show normal operation..Yes..... Was test satisfactory..Yes.....

Remarks (Explain misruns etc.) Good pressure build-up. Assume 200' of muddy salt water below Hookwall tool in open hole. Circulation of mud after test samples on 1st cycle and was very salty watery mud with water loss from 40-50'. Recovered mud 14000 ppm while Drlg. Mud = 2500 ppm.

Test No..4..... Signature (Original signed)..Fred Payer.....

Testing Co..Johnston Testers..... Title...Geologist.....

Operator..I.Head..... Well Name IMP. SUN. AP. OTTAWA L-46.....

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T #5

Well Name. IMP. SUN ARROWHEAD.....Formation Middle Devonian....Date May 21, 1961...

Location..I-46.60°.50'; 122°.15'.....Interval tested from.6060....to 6750. (PBD)

Basis for test. Indicated porosity from log evation over intervals. (6211'-6216')...
Ø AV. 5-8% S.W. = 40%; (6333'-6335') Ø AV. 6-9%; S.W. = 60% (6360'-6365')
Ø AV. 7-10%, S.W. = 50% (6454'-6477'). Ø AV. 4½-7½%.....

Results. MISRUN. Tool plugged. GIP. Fair blow, decreasing. Dead in 80 mins.....

Recovered 3330 feet mud and 30 feet viscous mud...(Rm of Drlg. Mud 2.10 @77°
Rm Rec. Mud = .342 @ 75°
Rmf = 0.22 @ 75°

TESTING DATA

Well Depth. PBD: 6750.....Full Hole Size. 6.1/8.....Drill Pipe: OD 3½..Weight. 13.3

Grade...E....Joint Type. IF...Capacity.---..

Rat Hole Top.....Rat Hole Size.....Drill Collars: OD 4¾. Feet. 240.

Joint Type IF....Capacity.....

Size Top Choke.....Size Bottom Choke...½".....

Packer Type. Hookwall.....No. of Packers....1.....Packer Size..5¾"....

Bomb Type..T.&.S.....No. of Bombs. 2....Bomb Ranges. 7000. (Inside). &. 5000. (Outside)

Position of Bombs. 6052. and. 6070.....Hours on Clock..24.....

Cushion: Type. Mud..(in. open hole) Air Chamber: Vol.....

Amount. 690'..... Length.....

Rm = 2.1 @ 72°

Drilling Mud: Type. Lime...Weight. 9.2....Visc. 4.1....W.L. 10.4....NaCl 3000....Ph.....
Rm = .34 @ 77°

Recovery Mud: Type.....Weight.....Visc.....W.L.....NaCl 17,000..Ph.....

	Time	Duration
Tester Started in hole	2:00 PM	.....
Tester on Bottom	3:40..	.....
Packer Set	3:50..	.....
Tool Open	3:55..	.5 Min..
Tool Closed	4:00...	30.."....
Tool Open	4:30...	120.."....
Tool Closed	6:30..	30.."....
Pulled Packer loose	7:30..	.....
Started out of hole	7:40..	.....
Tester out of hole	10:30..	.....

Weight set on packer 25,000..lbs.

Mud level drop..Nil.....feet

Pulled packer loose with....lbs.
5,000

FLOW AND RECOVERY DATA:

	Time	Pressure	Riser	Mcf/day		Time	Pressure	Riser	Mcf/day
1	.....	.....	.....	.....	7	.....	.....	.....	.....
2	.....	.....	.....	.....	8	.....	.....	.....	.....
3	.....			.....	9	.....	.....	.....	.....
4	.....	.....	.....	.....	10	.....	.....	.....	.....
5	.....	.....	.....	.....	11	.....	.....	.....	.....
6	.....	.....	.....	.....	12	.....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est.rate.....

TOTAL FLUID IN DRILL PIPE

(including water cushion) Type	Stands	Feet	ppm NaCl
1. Drilling Mud (salty).....	..27..	3330'..	Rm=0.240@75°.....
2. Bisenus Mud.....	..2/3..	30....	Rmf=0.220 @ 75°....
3.....	.....	.....	.....
4.....	.....	.....	NB. Drilling Mud = 3000 ppm
5.....	.....	.....	Kcoo Mud = 17000 ppm
6.....	.....	.....	Mud Filtrate = 30,000 ppm

Sampling Position (Feet above packer)

Sample No.	Position	
..1.....	2800	above tool
..2.....	2000	"
..3.....	670	"
..4.....	30	"

Salinity of water Rmf = .0122 .ppm NaCl @75°

" Gravity of oil.....°API

" Gas (Sweet....—...Sour..—.....).

Samples sent for analysis to. Dawson Creek Warehouse .....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb ( ) Inside				Bottom Bomb ( )			
I.H.P. 3100		2nd I.F.P. 350		I.H.P. 3160		2nd I.F.P. 520	
1st I.F.P. 100		2nd F.F.P. 1700	(Plugged)	1st I.F.P. 100		2nd F.F.P. 2000	
1st F.F.P. 400		2nd S.I.P. 2300		1st F.F.P. 450		2nd S.I.P. 2340	
1st S.I.P. 2450		F.H.P. 2975		1st S.I.P. 2510		F.H.P. 3110	
B.H.T.....°F.				B.H.T.....°F.			

Do charts show normal operation..Yes..... Was test satisfactory.Inconclusive..... Initial shut in successful

Remarks (Explain misruns etc.) MISRUN. Heavy cement contaminated mud plugged tool with muddy cement, tool plugging throughout. Good pressure buildup without sample of formation fluid (No hydrocarbon shows). Mud in open hole (Kcl). Packer set 3000'.. pipe misc.. Fm. Fluid dispersed in mud.....

Test No....5..... Signature (Original signed)..Fred Roven.....

Testing Co. No Johnston..... Title..Geologist.....

Operator...L. Head..... Well Name DEP. SHL ARCHEAD #1-16.....

NB: Test similar to open hole test #3 (6070'-7425'); however plug #2 (6850'-6950') felt for with 40,000 lb. Hence fluid from 6910 - F.T.D. not involved.

IMPERIAL OIL LIMITED

PEACE RIVER DISTRICT

D R I L L S T E M T E S T R E P O R T #6

Well Name. DSP .SUN .ARROWHEAD.....Formation Middle Devonian...Date May 22, 1961..

Location..I-46.60°.50'-122°.15'.....Interval tested from..6060'...to6750'..(RBD)

Basis for test..Indicated (6-10% Porosity from log Evaluation.....

.....Retest DST #5 (MISRUN).....

Results. GIP. Fair air blow, decreasing..Dead in 2 hours..45 Min.....

Recovered 1800 feet mud, 540feet watery slightly gas cut mud and 2160 feet muddy.. salt water (Rw = 0.052 @75°

TESTING DATA

Well Depth PBD: 6750.....Full Hole Size..6 1/8"....Drill Pipe: OD.3½..Weight.13.3

Grade...E...Joint Type.IF...Capacity.....

Rat Hole Top.....Rat Hole Size.....Drill Collars: OD.3.Feet240'..

Joint Type.IF...Capacity.....

Size Top Choke.....Size Bottom Choke..¾"....

Packer Type..Hookwall.....No. of Packers...1.....Packer Size..5¾"....

Bomb Type....T & E.....No. of Bombs...2..Bomb Ranges.7000.(inside);.500.(outside)

Position of Bombs.6050.(inside).and.6070.(outside)....Hours on Clock...24.....

Cushion: Type.....NR. 690' Mud Cushion Air Chamber: Vol.....

Amount..... Length.....

Rm=0.3 @ 75°

Drilling Mud: Type..Lime..Weight..9.0...Visc...41...W.L.....NaCl 20,000 Ph.13.0

Rm = .15

Recovery Mud: Type..Lime..Weight..9.0...Visc.....W.L.....NaCl 45,000..Ph.....

NB. Rec. water = 160,000 ppm

Rw = 0.052 @ 72°

	Time	Duration
Tester Started in hole	11:30 AM	.....
Tester on Bottom	1:15 PM	.....
Packer Set	1:25 "	.....
Tool Open	1:30 "	180 Min.
Tool Closed	4:30 "	15 Min.
Tool Open	.....	.....
Tool Closed	.....	.....
Pulled Packer loose	.....	.....
Started out of hole	.....	.....
Tester out of hole	.....	.....

Weight set on packer.25,000.lbs.

Mud level drop.Nil.....feet

Pulled packer loose with....lbs. 5,000

FLOW AND RECOVERY DATA:

	Time	Pressure	Riser	Mcf/day		Time	Pressure	Riser	Mcf/day
1	.....	.....	.....	.....	7	.....	.....	.....	.....
2	.....	.....	.....	.....	8	.....	.....	.....	.....
3	.....	.....	.....	.....	9	.....	.....	.....	.....
4	.....	.....	.....	.....	10	.....	.....	.....	.....
5	.....	.....	.....	.....	11	.....	.....	.....	.....
6	.....	.....	.....	.....	12	.....	.....	.....	.....

Liquid to Surface Mud....mins, Oil....mins, Water....mins, Est.rate.....

TOTAL FLUID IN DRILL PIPE

(including water cushion) Type	Stands	Feet	ppm NaCl
1. Drilling Mud.....	.20....	1800'..	Rmf. .34 @ 20,000.
2. flocculated. watery, slightly	..6....	540'..	.....
3. gas. cut. drilling mud.....	.....	.....	45000. ppm. Rmf. @ .15
4.....	.....	.....	.....
5. Muddy. salt. water.....	..24...	2160'.	160,000. Rw. = .0516 @ 75°
6.....	.....	.....	.....

Sampling Position (Feet above packer)

Sample No.	Position
..1.....	4800'. above Tool
..2.....	1500'...".
..3.....	900'...".
..4.....	450'...".
5 6	230' " "

Salinity of water. 160,000....ppm NaCl

" Gravity of oil.....°API

" " Gas (Sweet.....Sour.....).

Samples sent for analysis to.....Dawson Creek Porehouse.....

FIELD PRESSURE DATA: (Check if blanked off)

Top Bomb ( ) Inside			Bottom Bomb ( )		
I.H.P. 2920	2nd	I.F.P. 100	I.H.P. 2980	2nd	I.F.P. 100
1st I.F.P. NR	2nd	F.F.P. 2250	1st I.F.P. NR	2nd	F.F.P. 2300
1st F.F.P. NR	2nd	S.I.P 2260	1st F.F.P. NR	2nd	S.I.P. 2315
1st S.I.P. NR		F.H.P 2920	1st S.I.P. NR		F.H.P. 2970
B.H.T.....°F.			B.H.T.....°F.		

Do charts show normal operation...Yes..... Was test satisfactory...Yes.....

Remarks (Explain misruns etc.) ..ISI & IF Not run (Duplicated on successful initial...

..part of DST #5. FF essentially levelled off with FSIP after 3 hour flow.....

..NB: (Assume 150 to 400' salt water in open hole equivelent to 600-2400 feet of pipe rise. Rm has significant increase due to salt water contamination from DST #5

Test No.....6.....

Testing Co. M. O. Johnston.....

Operator. I. Read.....

Signature. (Original signed). Fred Bayer.....

Title..Geologist.....

Well Name. INC. SBT. ARGONEAD. I-46.....

JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE AL 5-1151

SERVICE REPORT

Pressure Recorder: No. 826	Cap. 3000#	Location	Outside 1306'	
PRESSURE DATA	Point	Pressure	Point	Pressure
A Initial Hyd. 650#				
B Initial Shut-In 442#				
C Initial Flow 0 - 55#				
C - 59#				
D Final Flow 62#				
E Final Shut-In 431#				
F Final Hyd. 646#				
Remarks:				

SECONDARY RECORDER

Pressure Recorder: No. T-187	Cap. 3000#	Location	Inside 1222'	
PRESSURE DATA	Point	Pressure	Point	Pressure
A Initial Hyd. 608#			D- 0	42#
	B- 0	29#	D- 5	206#
B Initial Shut-In 405#	B- 5	331#	D-10	314#
	B-10	379#	D-15	363#
C Initial Flow 0 - 29#	B-15	392#	D-20	380#
C - 30#	B-20	399#	D-25	389#
D Final Flow 42#	B-25	402#	D-30	394#
	B-30	405#	D-35	397#
E Final Shut-In 404#			D-40	399#
			D-45	401#
F Final Hyd. 608#			D-50	402#
			D-55	403#
Remarks:			E-60	404#

PRIMARY RECORDER

JOHNSTON TESTERS LTD.

321 - 50th Avenue S.E. Calgary, Alberta

Phone AL 5-1151

COMPANY Imperial Oil Limited TICKET # B-3081

FIELD Wildcat P.O. # 142732

WELL NAME Imperial Sun Arrowhead I-46

COMPANY REP. F. Rayer JOHNSTON OP. D. Sim

GENERAL TEST DATA

TYPE TEST	Open hole			BOTTOM HOLE TEMP	83 °F
TOTAL DEPTH	1306'			CHOKE SIZE	1/2"
INTERVAL TESTED	1230'-1306'			FLUID CUSHION TYPE	AMT
TIME STARTED IN HOLE	3:30	A.M.	P.M.	AIR CHAMBER SIZE I.D.	AMT
TIME TOOL ON BOTTOM		A.M.	P.M.	WAS TOOL CHASED TO BOTTOM	no
TIME TOOL OPENED		A.M.	P.M.	DID PACKERS HOLD	yes
INITIAL SHUT-IN PERIOD	30 mins.			WAS TOOL PLUGGED	no
FLOW PERIOD	60 mins.			WAS JARRING NECESSARY	no
FINAL SHUT-IN PERIOD	60 mins.			WAS TEST REVERSED OUT	no

REMARKS

Test satisfactory.

AIR OR GAS BLOW

Weak initial puff increasing slightly throughout test.

FLUID RECOVERY.

90 feet of drilling mud.

SURFACE INFORMATION WHEN CHOKE OR ORIFICE USED

TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE

OTHER TEST DATA

MAIN HOLE SIZE 9" RAT HOLE SIZE DRILL PIPE SIZE

TYPE MUD Gel WEIGHT 9.6 VISCOSITY 56 WATER LOSS 6.0 FILTER CAKE 2/32

TYPE PACKER'S 2 B.T. SIZE 7 1/2" TYPE SIZE

RECORDERS

TOP NO	T-187	CAPACITY	3000#	INSIDE ☒	OUTSIDE ☐	DEPTH	1222'
BOTTOM	826	CAPACITY	3000#	INSIDE ☐	OUTSIDE ☒	DEPTH	1306'
EXTRA		CAPACITY		INSIDE ☐	OUTSIDE ☐	DEPTH	

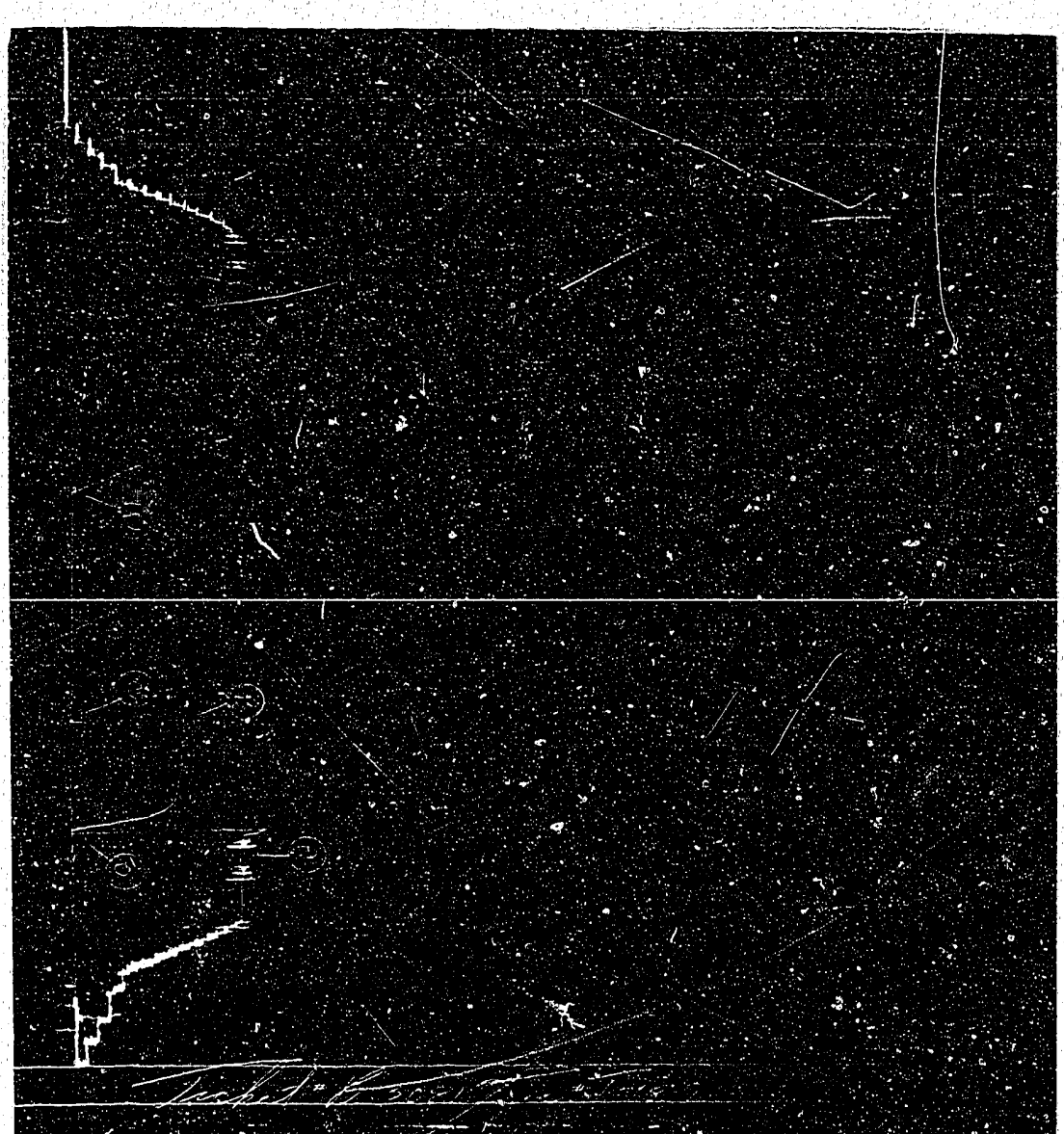
NO. SERVICE REPORTS 5 - Imperial Oil Limited Dawson Creek B.C.

IMPERIAL OIL LIMITED — COMPANY

IMPERIAL SUN ARROWHEAD I-46 60° 50' 122° 15' — WELL NAME AND NUMBER

1 — TEST NO.

APRIL 6, 1961 — DATE



JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE AL 5-1151

SERVICE REPORT

Pressure Recorder: No. T-187	Cap. 3000#	Location	Inside 4262'	
PRESSURE DATA	Point	Pressure	Point	Pressure
A Initial Hyd. 2368#				
B Initial Shut-In 1642#				
C Initial Flow 0 - 63#				
C - 67#				
D Final Flow 67#				
E Final Shut-In 1423#				
F Final Hyd. 2241#				
Remarks:				

SECONDARY RECORDER

Pressure Recorder: No. T-128	Cap. 3000#	Location	Outside 4299'	
PRESSURE DATA	Point	Pressure	Point	Pressure
A Initial Hyd. 2389#	B- 0	117#	D- 0	111#
	B- 5	1350#	D- 5	668#
B Initial Shut-In 1673#	B-10	1521#	D-10	1016#
	B-15	1574#	D-15	1156#
C Initial Flow 0 - 117#	B-20	1602#	D-20	1230#
C - 112#	B-25	1620#	D-25	1284#
Cl- 96#	B-30	1640#	D-30	1322#
F.Flow D - 111#	B-35	1645#	D-35	1354#
E Final Shut-In 1449#	B-40	1653#	D-40	1380#
	B-45	1661#	D-45	1401#
F Final Hyd. 2258#	B-50	1666#	D-50	1419#
	B-55	1671#	D-55	1436#
Remarks:	B-60	1673#	E-60	1449#

PRIMARY RECORDER

JOHNSTON TESTERS LTD.

321 - 50th Avenue S.E. Calgary, Alberta

Phone AL 3-1151

COMPANY Imperial Oil Limited TICKET # B-3085

FIELD Wildcat P.O. #

WELL NAME # Imperial Sun Arrowhead I-46

COMPANY REP. H.Tatham JOHNSTON OP. D.Sim

GENERAL TEST DATA

TYPE TEST	Selective Zone Straddle by pass	BOTTOM HOLE TEMP	132°F
TOTAL DEPTH	6117'	CHOKE SIZE	1/2"
INTERVAL TESTED	4272'-4326'	FLUID CUSHION TYPE	AMT
TIME STARTED IN HOLE	1:30 A.M. P.M.	AIR CHAMBER SIZE I.D.	AMT
TIME TOOL ON BOTTOM	A.M. P.M.	WAS TOOL CHASED TO BOTTOM	no
TIME TOOL OPENED	A.M. P.M.	DID PACKERS HOLD	yes
INITIAL SHUT-IN PERIOD	60 mins.	WAS TOOL PLUGGED	no
FLOW PERIOD	60 mins.	WAS JARRING NECESSARY	no
FINAL SHUT-IN PERIOD	60 mins.	WAS TEST REVERSED OUT	no

REMARKS

Tail pipe indicated slight plugging------Test satisfactory.

AIR OR GAS BLOW Good initial blow on first 5 minutes of flow, weak air blow increasing to fair after 15 minutes steady throughout test, too small to measure.

FLUID RECOVERY.

100 feet of muddy water, 10 feet of drilling mud.

SURFACE INFORMATION WHEN CHOKE OR ORIFICE USED

TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE
TIME	MAXIMUM PRES	CHOKE SIZE

OTHER TEST DATA

MAIN HOLE SIZE 9" RAT HOLE SIZE DRILL PIPE SIZE 5" I.F.

TYPE MUD Lime WEIGHT 10.3 VISCOSITY 220 WATER LOSS 8.0 FILTER CAKE

TYPE PACKER S 2 B.T. SIZE 7 1/2" TYPE SIZE

RECORDERS.

TOP NO.	T-187	CAPACITY	3000#	INSIDE ☒	OUTSIDE ☐	DEPTH	4262'
BOTTOM	T-128	CAPACITY	3000#	INSIDE ☐	OUTSIDE ☒	DEPTH	4299'
EXTRA		CAPACITY		INSIDE ☐	OUTSIDE ☐	DEPTH	

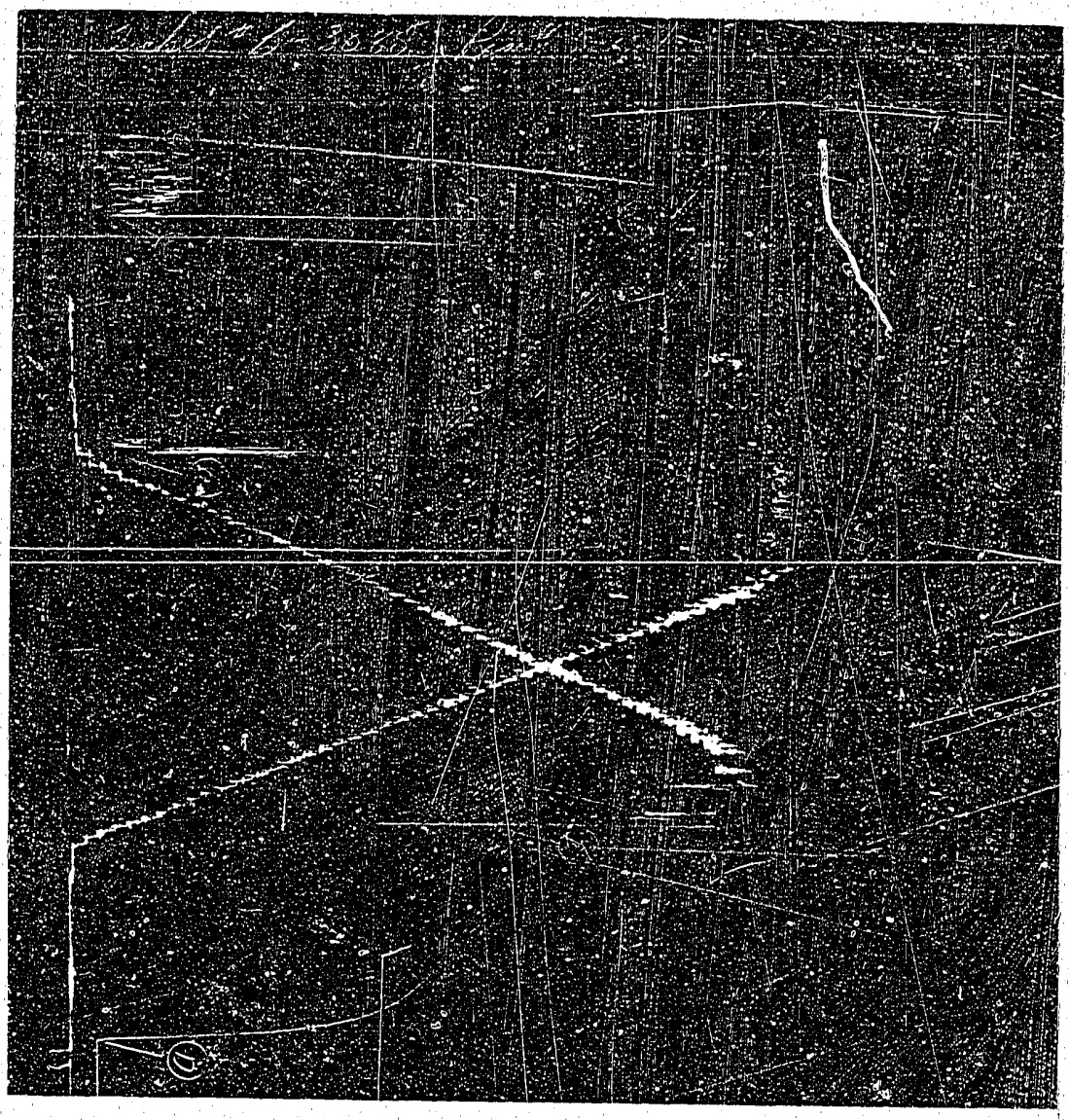
NO. SERVICE REPORTS 5 - Imperial Oil Limited Dawson Creek.

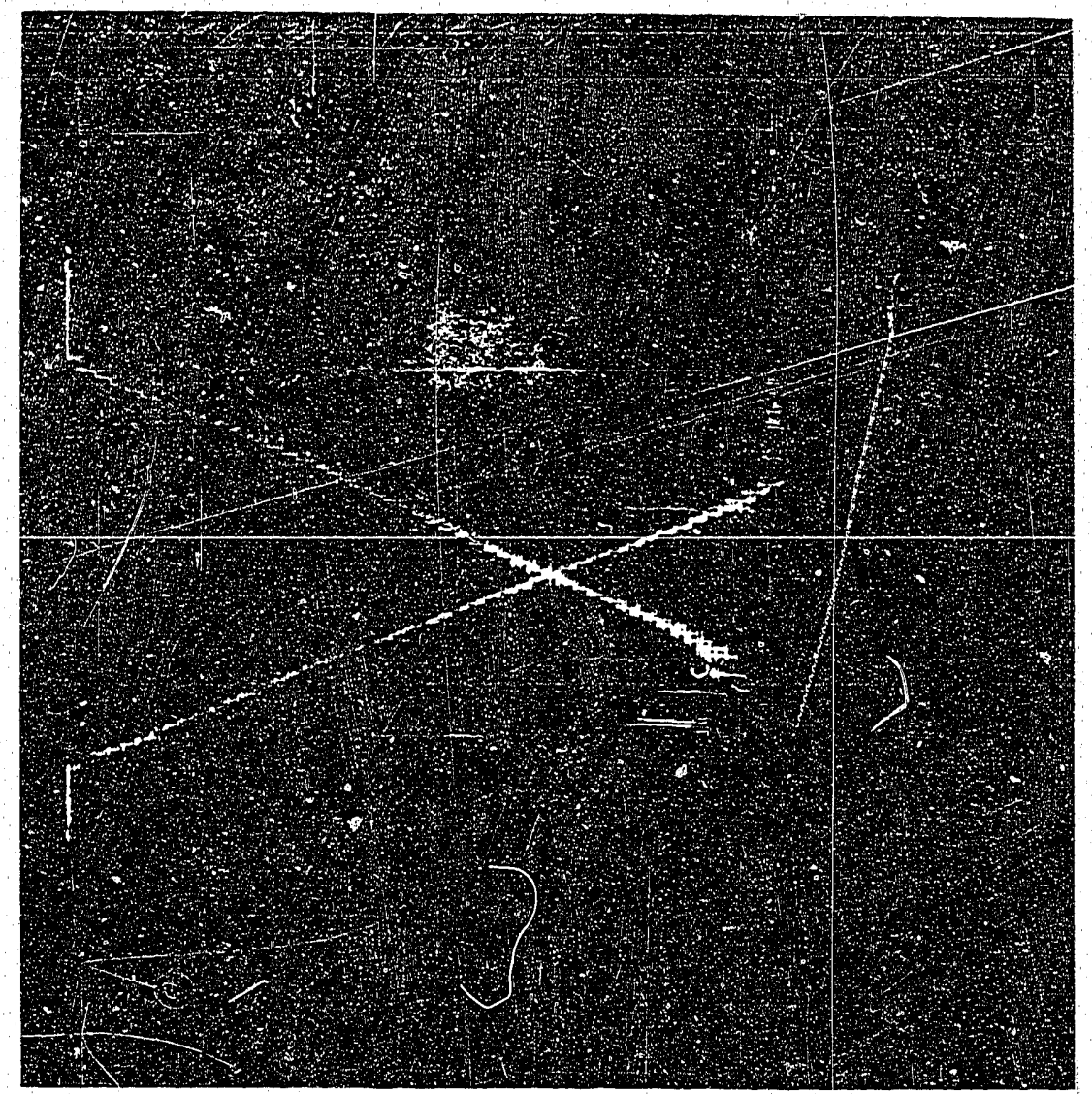
IMPERIAL OIL LIMITED — COMPANY

IMPERIAL SUN ARROWHEAD # I-46 — WELL NAME AND NUMBER

2 — TEST NO.

APRIL 22, 1961 — DATE





JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE AL 5-1151

SERVICE REPORT

Pressure Recorder No. B-177 Cap 5000# Location Outside 6935' Temp. 222 °F.

PRESSURE DATA	
A INITIAL HYD.	3639#
B FIRST INT. FLOW	568#
C INITIAL SHUT-IN	2815#
D SECOND INT. FLOW	1143#
E FINAL FLOW	2271#
F FINAL SHUT-IN	2714#
G FINAL HYD.	3558#
REMARKS	

POINT	PRESSURE	POINT	PRESSURE
C- 0	1003#	E- 0	2270#
C- 5	2709#	E- 5	2605#
C-10	2775#	E-10	2644#
C-15	2795#	E-15	2669#
C-20	2806#	E-20	2686#
C-25	2811#	E-25	2701#
C-30	2815#	E-30	2714#

SECONDARY RECORDER

Pressure Recorder No. T-188 Cap 7000# Location Inside 6899' Temp. 222 °F.

PRESSURE DATA	
A INITIAL HYD.	3577#
B FIRST INT. FLOW	513#
C INITIAL SHUT-IN	2800#
D SECOND INT. FLOW	1093#
E FINAL FLOW	2241#
F FINAL SHUT-IN	2691#
G FINAL HYD	3530#
REMARKS	

POINT	PRESSURE	POINT	PRESSURE

PRIMARY RECORDER

Company Representative H. Tatham P.O. No. 142739

Johnston Operator Lon Sim

Distribution of Reports 5-Imperial Oil Limited, Dawson Creek, B.C.

TESTING DATA

TYPE OF TEST CASING OPEN HOLE Bottom Hole INTERVAL 6905 FT. TO 6935 FT.

FORMATION TESTED -- POROSITY IN FEET -- WELL DEPTH T.D. 6935 FT.

BOTTOM HOLE CHOKE SIZE 1/2" TEMPERATURE 222 °F. MAIN HOLE SIZE 6 1/8 RAT HOLE SIZE --

MUD TYPE -- MUD WEIGHT 9.9 VISCOSITY 56 WATER LOSS 8.8 FILTER C 2/32

DRILL PIPE SIZE 3 1/2 I.F. DRILL COLLARS SIZE --

TIME STARTED IN HOLE 10:45 A M. ON BOTTOM -- M.

TOOL OPEN -- M. WAS TOOL CHASED NO X YES FEET

FIRST OPEN FLOW 8 est. MINS. INITIAL SHUT-IN 30 MINS.

SECOND FLOW 30 MINS. FINAL SHUT-IN 30 MINS.

TIME PULLED LOOSE -- M. PACKER SET WITH WT --

PULLED LOOSE WITH WT -- CONDITION OF HOLE AND TIGHT SPOTS

Good.

TIME OUT OF HOLE -- M. WAS TEST REVERSED OUT NO No YES

FLUID RECOVERED

4500' salt water

WAS JARRING NECESSARY No WAS TOOL PLUGGED No

DID PACKERS HOLD Yes DESCRIPTION OF BLOW DURING TEST AND REMARKS

Good initial blow holding throughout test.

DID MUD DROP IN ANNULUS DURING TEST PERIOD NO X YES FT.

REMARKS

Test satisfactory

TOTAL FLUID IN D.P. FLUID CUSHION

GAS BLOW MEASUREMENTS MEASURED WITH I.D. RISER OR EST.

SIDE STATIC TIME	IMPACT SURFACE CHOKE	MERCURY READING INCHES	WATER MCF/DAY

TOOL DESCRIPTION

TOOLS	LENGTH & O.D.

Company IMPERIAL OIL LIMITED District Peace River

Well Name and Number IMPERIAL SUN ARROWHEAD I-46 60 50' 12 15

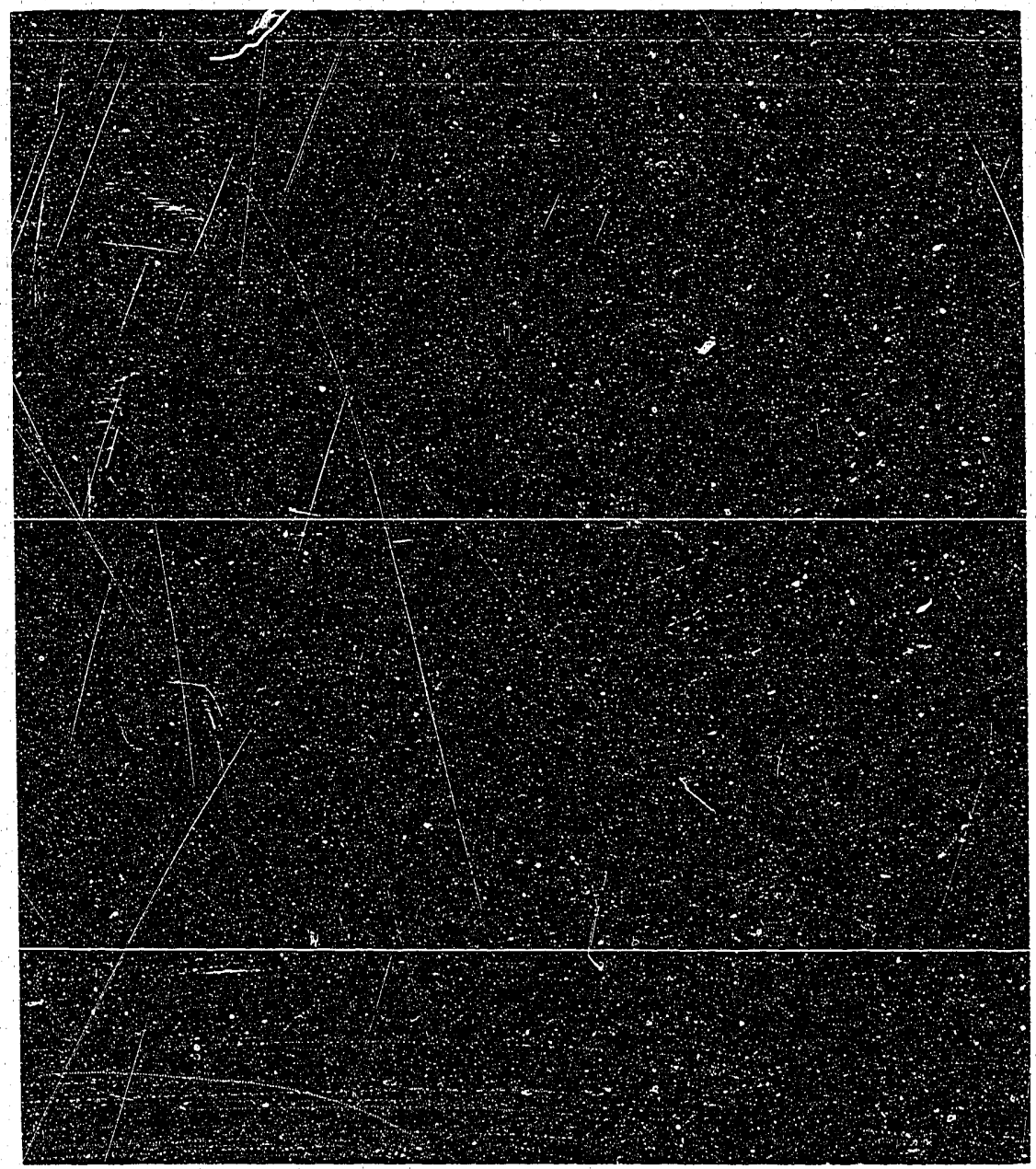
Province British Columbia

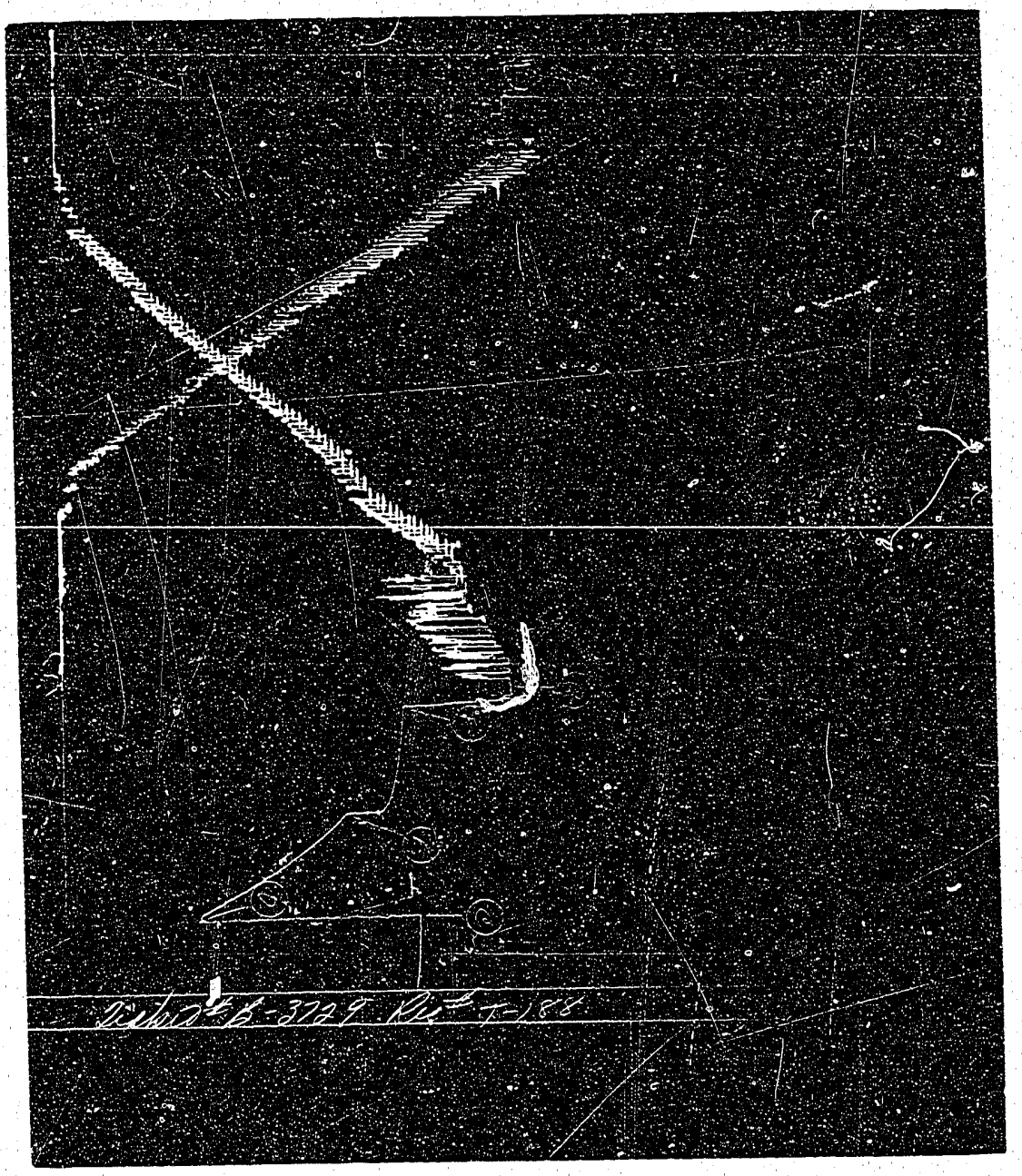
Ticket No. B-3729

Date May 7, 1961

JTL Test No. 3

Test




Detail B-37 F Rev F-188

JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE AL 5-1151

SERVICE REPORT

Pressure Recorder No. B-177 Cap 5000# Location Outside 6082' Temp. 130°F.

PRESSURE DATA		POINT	PRESSURE	POINT	PRESSURE
A INITIAL HYD.	3216#				
B FIRST INT. FLOW	171#				
C INITIAL SHUT-IN	2339#				
D SECOND INT. FLOW	445#				
E FINAL FLOW	1401#				
F FINAL SHUT-IN	2301#				
G FINAL HYD.	3200#				
REMARKS					

SECONDARY RECORDER

Pressure Recorder No. T-188 Cap 7000# Location Inside 6062' Temp. 130°F.

PRESSURE DATA		POINT	PRESSURE	POINT	PRESSURE
A INITIAL HYD.	3229#	C- 0	365#	E- 0	1393#
B FIRST INT. FLOW	155#	C- 5	2256#	E- 5	2196#
C INITIAL SHUT-IN	2340#	C-10	2296#	E-10	2230#
D SECOND INT. FLOW	431#	C-15	2310#	E-15	2245#
E FINAL FLOW	1393#	C-20	2319#	E-20	2256#
F FINAL SHUT-IN	2296#	C-25	2323#	E-25	2264#
G FINAL HYD.	3195#	C-30	2340#	E-30	2272#
REMARKS				E-35	2277#
				E-40	2283#
				E-45	2285#
				E-50	2289#
				E-55	2294#
				F-60	2296#

PRIMARY RECORDER

Company Representative Fred Rayer P.O. No.

Johnston Operator I. Head

Distribution of Reports 5-Imperial Oil Limited, Dawson Creek, B.C.

TESTING DATA

TYPE OF TEST OPEN HOLE CASING x Hookwall INTERVAL 6070 FT. TO 7423 FT.

FORMATION TESTED -- POROSITY IN FEET -- WELL DEPTH T.D. 7423 FT.

BOTTOM HOLE CHOKE SIZE 1/2" TEMPERATURE 130° Est. MAIN HOLE SIZE -- RAT HOLE SIZE 6 1/16

MUD TYPE Lime MUD WEIGHT 9.7 VISCOSITY 56 WATER LOSS 9.8 FILTER C 2/32

DRILL PIPE SIZE 3 1/2 I.F. DRILL COLLARS SIZE --

TIME STARTED IN HOLE 7:30 A.M. ON BOTTOM 9:15 A.M.

TOOL OPEN 9:28 A.M. WAS TOOL CHASED NO x YES -- FEET

FIRST OPEN FLOW 5 MINS. INITIAL SHUT IN 30 MINS.

SECOND FLOW 30 MINS. FINAL SHUT-IN 60 MINS.

TIME PULLED LOOSE 11:33 A.M. PACKER SET WITH WT. 25,000

PULLED LOOSE WITH WT 30,000 CONDITION OF HOLE AND TIGHT SPOTS Good

TIME OUT OF HOLE 1:30 P.M. WAS TEST REVERSED OUT NO x YES No

FLUID RECOVERED 2490' drilling mud

WAS JARRING NECESSARY No WAS TOOL PLUGGED No

DID PACKERS HOLD Yes DESCRIPTION OF BLOW DURING TEST AND REMARKS

Good initial puff. Fair air blow throughout test.

DID MUD DROP IN ANNULUS DURING TEST PERIOD NO x YES FT.

REMARKS

Test satisfactory.

TOTAL FLUID IN D.P. 2490' FLUID CUSHION --

GAS BLOW MEASUREMENTS	MEASURED WITH	I.D. RISER OR EST.	
SIDE STATIC TIME	IMPACT SURFACE CHOKE	MERCURY READING INCHES	WATER MCF/DAY

TOOL DESCRIPTION

TOOLS	LENGTH & O.D.
Hookwall 7"	
Total Length	37.00

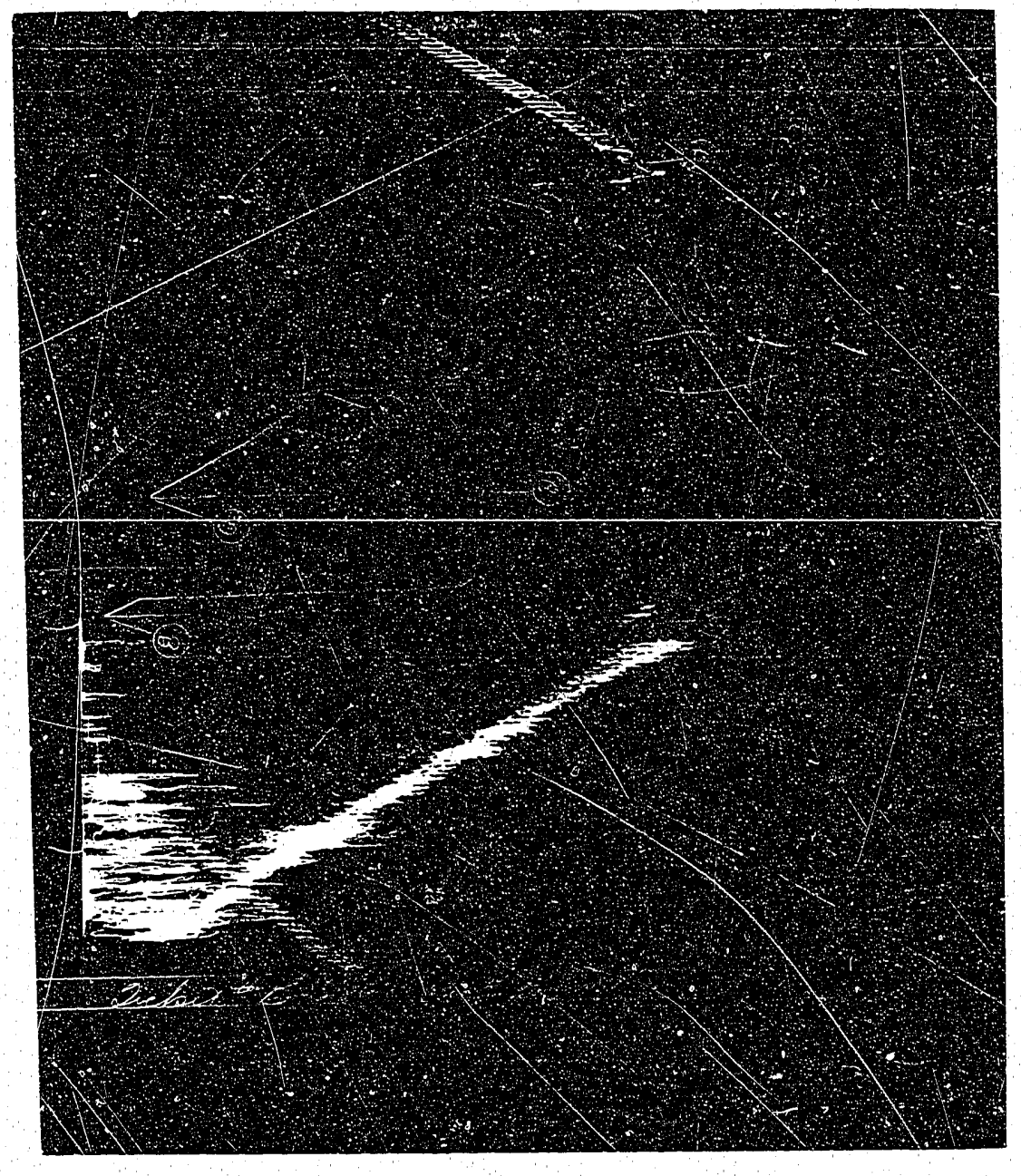
Company IMPERIAL OIL LIMITED District Peace River

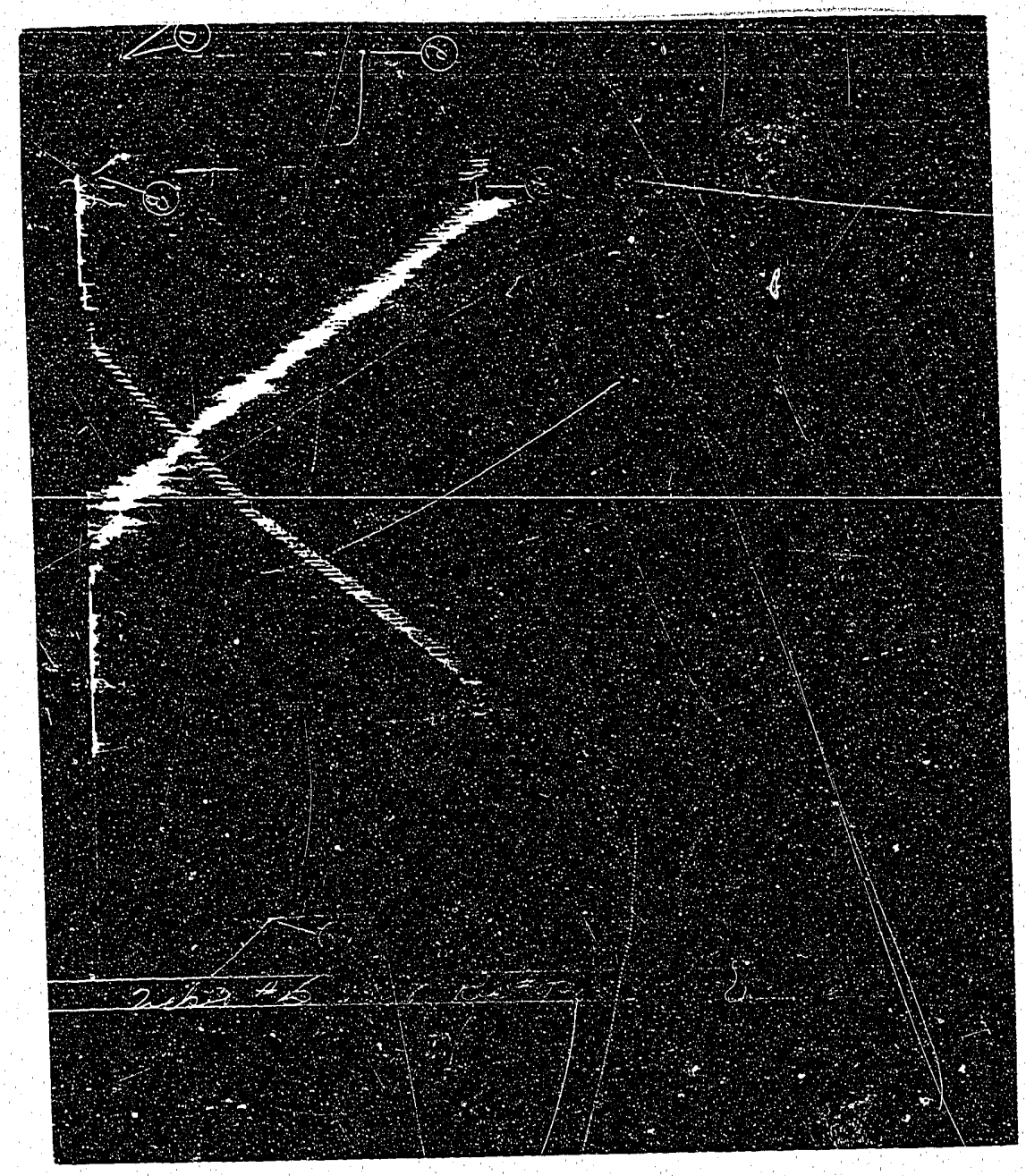
Well Name and Number IMPERIAL SUB ARROWHEAD I-46 Field Wildcat

Province North West Territories

Date May 18, 1961 Ticket No. B-3808

Test No. 4 JTL Test No.





JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE AL 5-1151

SERVICE REPORT

Pressure Recorder No. B-177 Cap 5000# Location Outside 6070' Temp. 140 °F.

PRESSURE DATA		POINT	PRESSURE	POINT	PRESSURE
A INITIAL HYD.	3002#				
B FIRST INT. FLOW	108#				
C INITIAL SHUT-IN	2461#				
D SECOND INT. FLOW	506#				
E FINAL FLOW	2296#				
F FINAL SHUT-IN	2326#				
G FINAL HYD.	2807#				
REMARKS					

SECONDARY RECORDER

Pressure Recorder No. T-188 Cap 7000# Location Inside 6052' Temp. 140 °F.

PRESSURE DATA		POINT	PRESSURE	POINT	PRESSURE
A INITIAL HYD.	2990#	E- 0	2289#		
B FIRST INT. FLOW	82#	E- 5	2292#		
C INITIAL SHUT-IN	2448#	E-10	2294#		
D SECOND INT. FLOW	332#	E-15	2296#		
E FINAL FLOW	2289#	E-20	2298#		
F FINAL SHUT-IN	2310#	E-25	2299#		
G FINAL HYD.	2801#	E-30	2300#		
REMARKS		E-35	2302#		
		E-40	2303#		
		E-45	2304#		
		E-50	2306#		
		E-55	2308#		
		F-60	2310#		

PRIMARY RECORDER

Company Representative F. Rayer P.O. No.

Johnston Operator I. Head

Distribution of Reports 5-Dawson Creek, Imperial Oil Limited

TESTING DATA

CASING X
TYPE OF TEST OPEN HOLE Hookwall INTERVAL 6060 FT. TO 6700 FT.

FORMATION TESTED -- POROSITY IN FEET -- WELL DEPTH T.D. 7423 FT.

BOTTOM HOLE CHOKE SIZE 1/2" TEMPERATURE 140° Est. MAIN HOLE SIZE 6 1/8" RAT HOLE SIZE --

MUD TYPE Lime MUD WEIGHT 9.2 VISCOSITY 41 WATER LOSS -- FILTER C. 2/32

DRILL PIPE SIZE 3 1/2 I.F. DRILL COLLARS SIZE --

TIME STARTED IN HOLE 2:00 P M. ON BOTTOM 3:40 P M.

TOOL OPEN 3:55 P M. WAS TOOL CHASED NO X YES FEET

FIRST OPEN FLOW 5 MINS. INITIAL SHUT-IN 30 MINS

SECOND FLOW 120 MINS. FINAL SHUT-IN 60 MINS.

TIME PULLED LOOSE 7:30 P M. PACKER SET WITH WT. 25,000

PULLED LOOSE WITH WT. 30,000 CONDITION OF HOLE AND TIGHT SPOTS
Hole plugged back to 6700'

TIME OUT OF HOLE 10:30 P M. WAS TEST REVERSED OUT NO X YES No

FLUID RECOVERED
3360'

WAS JARRING NECESSARY No WAS TOOL PLUGGED Yes

DID PACKERS HOLD Yes DESCRIPTION OF BLOW DURING TEST AND REMARKS
Fair air blow decreasing gradually dead in 80 min.

DID MUD DROP IN ANNULUS DURING TEST PERIOD NO X YES FT.

REMARKS
Charts show tool plugging throughout test, eventually plugged off completely — Tool was plugged off with cement. One stand above tool was cement.
Initial shut-in too eratic to breakdown. Breakdown on final shut-in.
Mis-run.

TOTAL FLUID IN D.P. 3360' FLUID CUSHION --

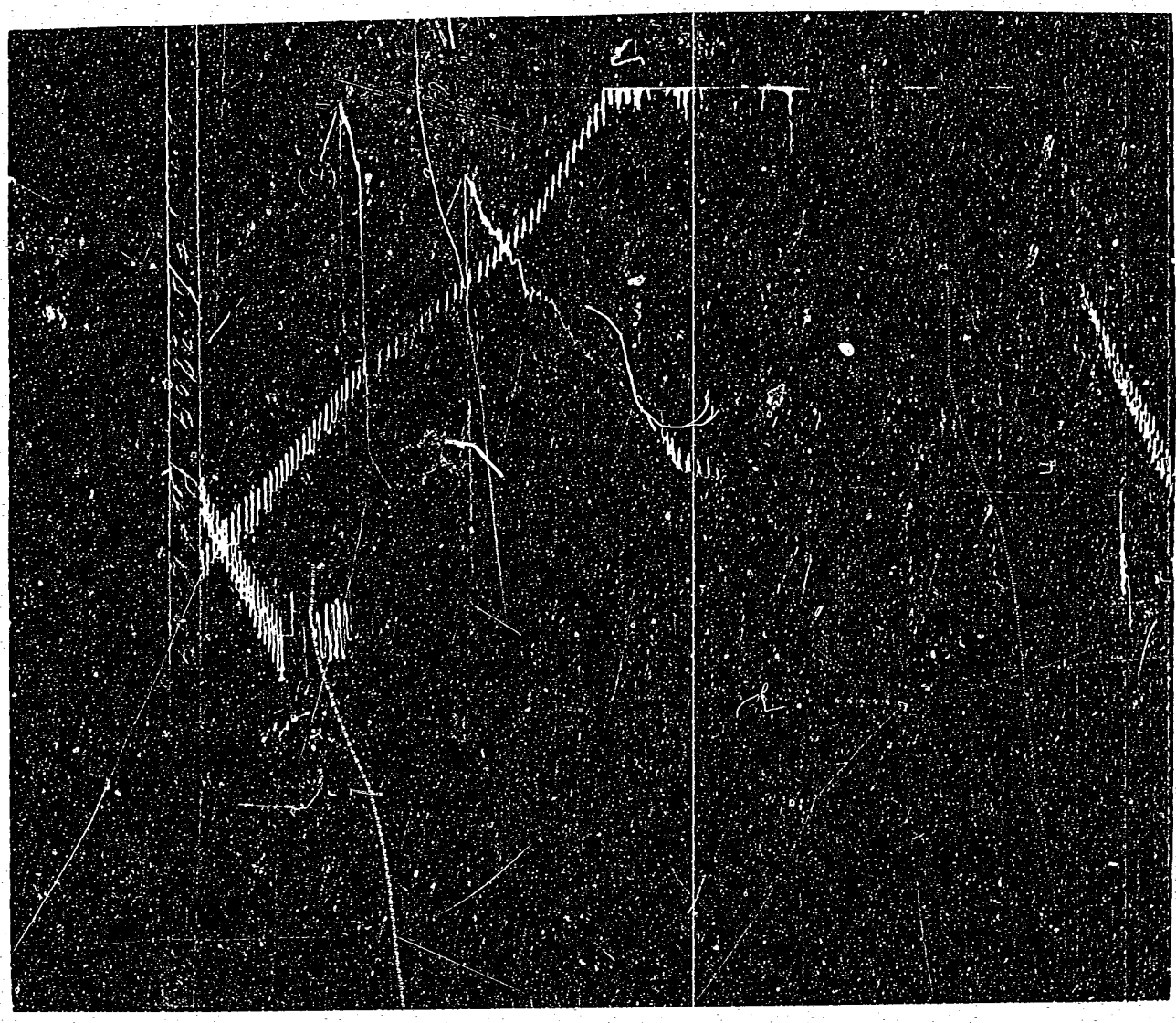
3270' mud
90' cement

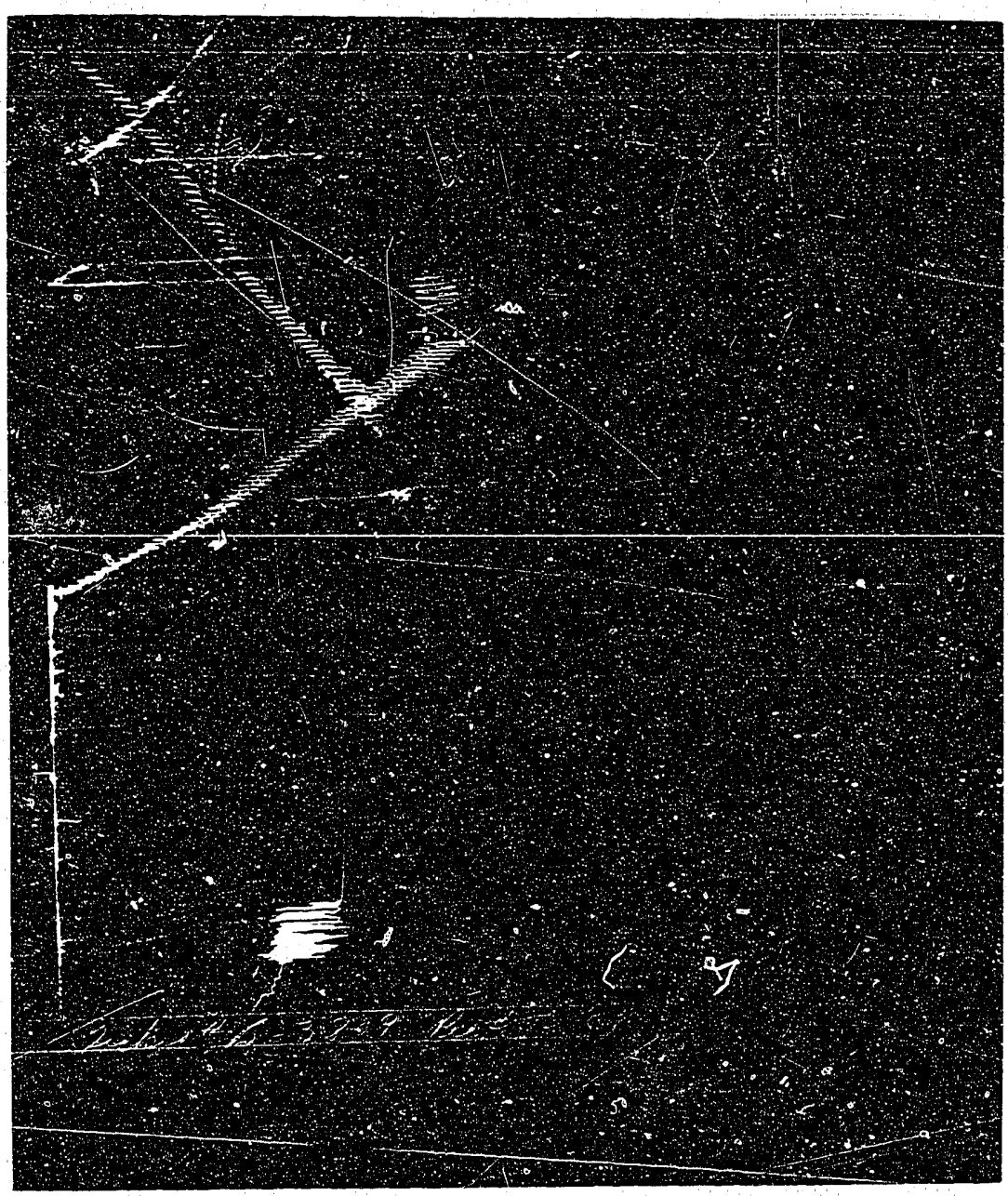
GAS BLOW MEASUREMENTS		MEASURED WITH		I.D. RISER OR EST.
SIDE STATIC		IMPACT	MERCURY	WATER
TIME	SURFACE CHOKE		READING INCHES	MCF/DAY

TOOL DESCRIPTION

TOOLS	LENGTH & O.D.	
Hookwall		
	6060	23.40
26-32		
Anchor Length	13.60	
O.D. 2 1/2	& 4 3/4	
Total Length	37.00	

Company IMPERIAL OIL LIMITED
Well Name and Number ARROWHEAD I-46
District Peace River
Field Wildcat
Province North West Territories
Ticket No. B-3809
JTL Test No. 5
Date May 21, 1961
Test No.





JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE AL 5-1151

SERVICE REPORT

Pressure Recorder No. B-177 Cap 5000# Location Outside 6070' Temp. 140 °F.

PRESSURE DATA		POINT	PRESSURE	POINT	PRESSURE
A INITIAL HYD	2941#				
B FIRST INT. FLOW					
C INITIAL SHUT-IN					
D SECOND INT. FLOW	126#				
E FINAL FLOW	2273#				
F FINAL SHUT-IN	2290#				
G FINAL HYD.	2924#				
REMARKS					

SECONDARY RECORDER

Pressure Recorder No. T-188 Cap 7000# Location Inside 6052' Temp. 140 °F.

PRESSURE DATA		POINT	PRESSURE	POINT	PRESSURE
A INITIAL HYD.	2936#	E- 0	2254#		
B FIRST INT. FLOW		E- 5	2265#		
C INITIAL SHUT-IN		E-10	2266#		
D SECOND INT. FLOW	109#	E-15	2266#		
E FINAL FLOW	2254#	E-20	2266#		
F FINAL SHUT-IN	2266#	F-25	2266#		
G FINAL HYD.	2906#				
REMARKS					

PRIMARY RECORDER

Company Representative Fred Rayer P.O. No.

Johnston Operator I. Head

Distribution of Reports 5-Imperial Oil Limited, Dawson Creek, B.C.

TESTING DATA

TYPE OF TEST CASING x OPEN HOLE Hookwall INTERVAL 6070 FT. TO 6700 FT.

FORMATION TESTED -- POROSITY IN FEET -- WELL DEPTH T.D. 7423 FT.

BOTTOM HOLE CHOKE SIZE 1/2" TEMPERATURE 140° Est. MAIN HOLE SIZE -- RAT HOLE SIZE --

MUD TYPE --- MUD WEIGHT 9.7 VISCOSITY 41 WATER LOSS -- FILTER C 2/32

DRILL PIPE SIZE 3 1/2 I.F. DRILL COLLARS SIZE --

TIME STARTED IN HOLE 11:30 A M. ON BOTTOM 1:15 P M.

TOOL OPEN 1:30 P.M. WAS TOOL CHASED NO x YES FEET

FIRST OPEN FLOW -- MINS. INITIAL SHUT-IN -- MINS.

SECOND FLOW 3 hrs. MINS. FINAL SHUT-IN 25 MINS.

TIME PULLED LOOSE 4:55 P M PACKER SET WITH WT. 25,000

PULLED LOOSE WITH WT. 30,000 CONDITION OF HOLE AND TIGHT SPOTS
Hole plugged back to 6700'

TIME OUT OF HOLE 8:00 P M WAS TEST REVERSED OUT NO x YES No

FLUID RECOVERED
4530'

WAS JARRING NECESSARY No WAS TOOL PLUGGED No

DID PACKERS HOLD Yes DESCRIPTION OF BLOW DURING TEST AND REMARKS
Good initial puff. Fair air blow gradually decreasing.

DID MUD DROP IN ANNULUS DURING TEST PERIOD NO x YES FT.

REMARKS
Test satisfactory

TOTAL FLUID IN D.P. 4500' FLUID CUSHION --

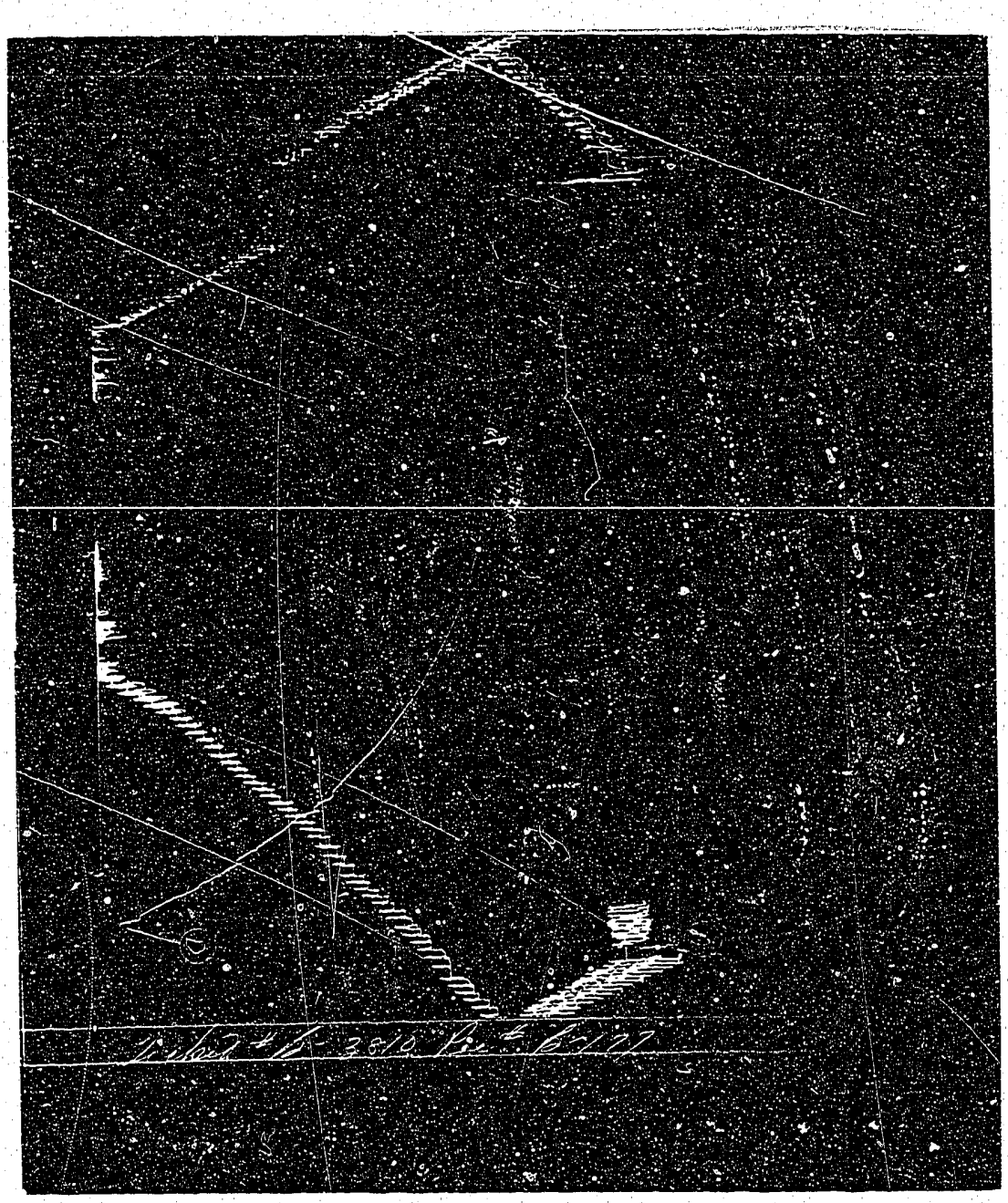
1800' mud
540' slightly gas cut mud
2160' muddy salt water

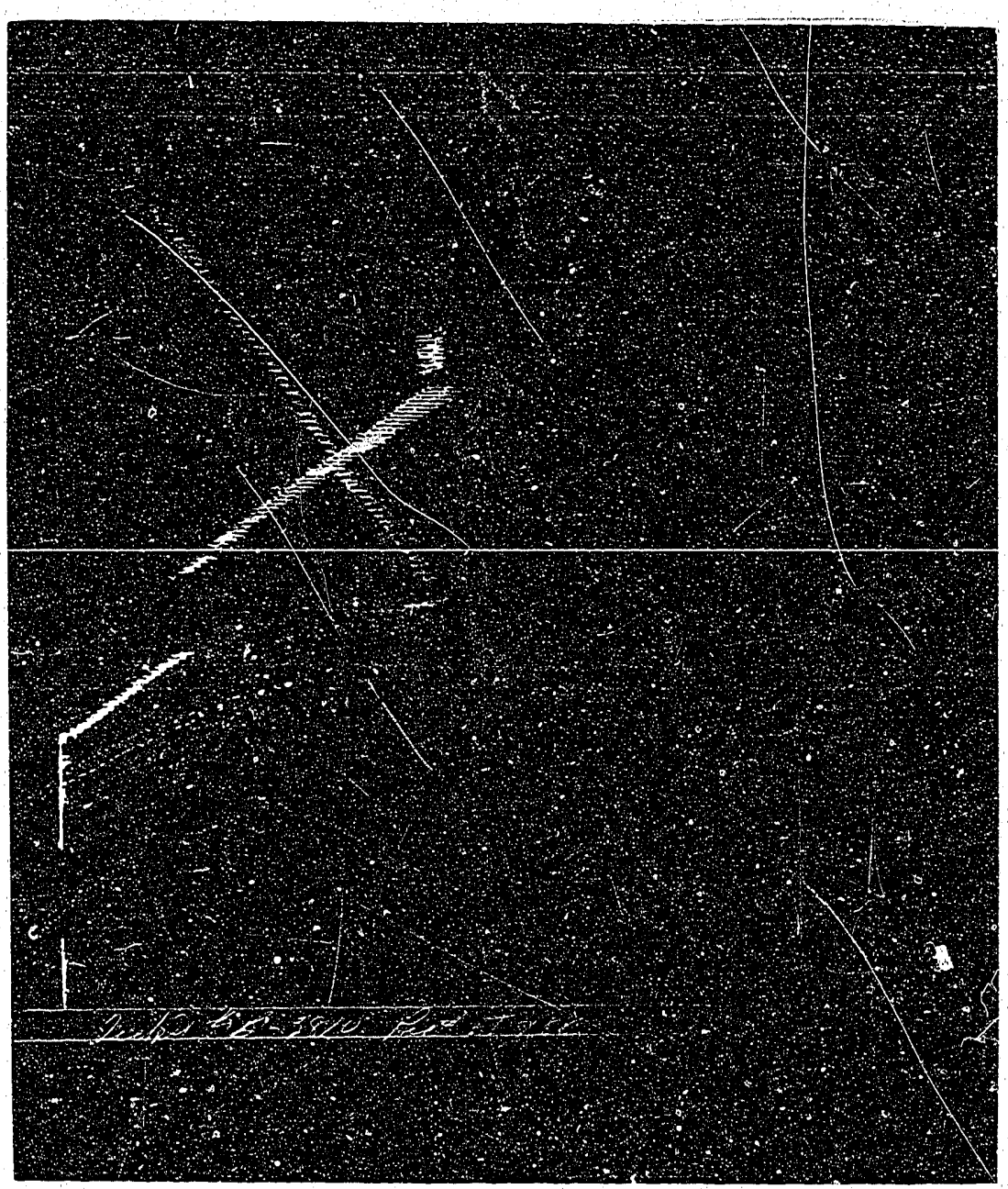
GAS BLOW MEASUREMENTS	MEASURED WITH	I.D. RISER OR EST.		
SIDE STATIC TIME	IMPACT SURFACE CHOKE	MERCURY READING INCHES	WATER MCF/DAY	

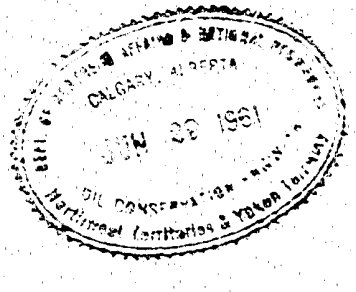
TOOL DESCRIPTION

TOOLS	LENGTH & O.D.
Total	23.40
Hookwall	
26-32	
Anchor Length	13.60
Total Length	37.00

Company IMPERIAL OIL LIMITED
Well Name and Number IMPERIAL ARROWHEAD I-46
Field Wildcat
District Peace River
Province North West Territories
Ticket No. B-3810
Date May 22, 1961
Test No. 6
JTL Test No. 6
60°50'122°15'




Scale 1/4" = 1'0" Real Size


CALGARY, ALBERTA
JUN 22 1981
OIL CONSERVATION
Northwest Territories & Yukon Territory

IMPERIAL OIL LIMITED

EDMONTON PRODUCING DIVISION

FORM No. 558

DATE April 20, 1961

PAGE No. 1

CASING—CEMENTING REPORT

REFERENCE TALLY No. 2

NAME OF WELL Imp Sun Arrowhead I-46

CONTRACT RIG Co. Tools PREPARED BY G. Hounslow

CASING	SIZE O.D. (IN.)	WEIGHT LB./FT.	GRADE	MANUFACTURER	COLLARS SHORT/LONG	No. OF JOINTS	AMOUNT FT.	DEPTH FT K.B. (C)
	7"	23	J-55	Jap.	Short	161	5133.95	
	7"	26	J-55	Nat.	Long	24	943.86	
STAGING COLLAR								
BACK-OFF COLLAR OR PACKER								
FLOAT COLLAR							1.74	
CASING						1	40.42	
SHOE							1.65	
TOTAL						186	6121.62	6121.62
CALC. AMT. UP ON LAST JT.								4.62
ACTUAL AMT. UP ON LAST JT								40.10
MAKE UP ALLOWANCE								
CASING SET								6081.52
TOTAL DEPTH OF HOLE							6117	6117

HOLE SIZE 17½ IN. FROM 0 TO 1011 FT.

HOLE SIZE 9 IN. FROM 1011 TO 6117 FT.

HOLE SIZE ___ IN. FROM ___ TO ___ FT.

K.B. TO TOP OF SURFACE CASING FLANGE 18.97 FT

CASING CUTOFF 4½ IN. ABOVE TOP OF CASING FLGE.

TYPE OF CASING - A.P.I. [X] EXTREME LINE [ ]

POWER TONGS USED — YES [ ] NO [X]

POWER TONGS SUPPLIED BY —

TYPE OF FLOAT EQUIPMENT Float Shoe Guide Collar MANUFACTURER Baker

ITEM	TYPE	MANUFACTURER	No.	SPACING FT.	INTERVAL COVERED	FT. K.B. (C
SCRATCHERS						
CENTRALISERS	Latch on	Baker	1		Shoe Jt.	

TYPE OF MUD Line

INITIAL MUD WT. 10.3 LB./GAL. VISCOSITY 188 SEC

FINAL MUD WT. ___ LB./GAL. VISCOSITY ___ SEC.

CEMENTED BY Co. Tools

CEMENT USED 400 SKS. GEL ___ SKS.

ADDITIVES ___ AMT. ___ SKS.

___ AMT. ___ SKS.

TIME CASING STARTED IN HOLE 7:30 A.M. P.M.

DROPPING RATE AT 2000' WAS ___ SEC. FOR ___ FT. JT.

4000' WAS ___ SEC. FOR ___ FT. JT.

6000' WAS ___ SEC. FOR ___ FT. JT.

8000' WAS ___ SEC. FOR ___ FT. JT.

WAS THERE LOSS OF FLUID WHILE RUNNING PIPE? No

IF SO AT WHAT DEPTH? ___ FT.

TIME CASING ON BOTTOM ___ A.M. ___ P.M.

CIRCULATION BROKEN AT 4:05 A.M. ___ P.M.

PRESSURE REQUIRED TO BREAK CIRCULATION 400 P.S.I.

CIRCULATING PRESSURE AFTER CLEANUP ___ P.S.I.

STROKE LENGTH WHILE RECIPROCATING 15 FT. INITIALLY

nil FT. FINALLY

TIME STARTED MIX CEMENT 8:15 A.M. ___ P.M.

WAS BOTTOM PLUG USED No ?

PRESSURE JUST BEFORE PLUG HITS 800 P.S.I.

MAXIMUM PRESSURE 1400 P.S.I.

PLUG CHASED WITH Mud AND BUMPED AT 9:15 A.M. ~~P.M.~~

STROKE LENGTH WHILE CEMENTING Nil FT.

WAS THERE ANY DIFFERENCE IN PUMP PRESSURE ON UPSTROKE AND DOWNSTROKE? NONE — P.S.I.

MUD RETURNS WHILE CEMENTING [ ] FULL [ ] PARTIAL [ ] NONE. EXPLAIN IN REMARKS.

RECIPROCATION STOPPED AT — A.M. ___ P.M.

REMARKS: Pipe tight last 50'. Lost some mud - could not reciprocate pipe while cementing.

LITHOGRAPHED BY HAMLY, EDMONTON

IMPERIAL OIL LIMITED

FORM No. 558

DATE April 2, 1961

EDMONTON PRODUCING DIVISION

PAGE No. 1

CASING—CEMENTING REPORT

REFERENCE TALLY No. 1

NAME OF WELL Imp Sun Arrowhead I-46

CONTRACT RIG Co Tools

PREPARED BY H. F. MacKenzie

CASING	SIZE O.D. (IN.)	WEIGHT LB./FT.	GRADE	MANUFACTURER	COLLARS SHORT/LONG	NO. OF JOINTS	AMOUNT FT.	DEPTH FT K.B. (o)
Landing	13-3/8	54.50	J55	Republic	Short	1	27.18	
Casing	13-3/8	54.50	J55	Republic	Short	30	926.72	
STAGING COLLAR								
BACK-OFF COLLAR OR PACKER								
FLOAT COLLAR	13-3/8			Baker			1.55	
CASING	13-3/8	54.50	J55	Republic		1	30.09	
SHOE	13-3/8			Baker			1.50	
TOTAL						32	987.04	
CALC. AMT. UP ON LAST JT.							8.21	
ACTUAL AMT. UP ON LAST JT.							8.21	
MAKE UP ALLOWANCE								
CASING SET								978.83
TOTAL DEPTH OF HOLE								

HOLE SIZE 17-1/2 IN FROM 0 TO 990 FT.

HOLE SIZE 13-3/4 IN FROM 990 TO 1011 FT.

HOLE SIZE ____ IN. FROM ____ TO ____ FT.

K.B. TO TOP OF SURFACE CASING FLANGE 18.97 FT.

CASING CUTOFF ____ IN. ABOVE TOP OF CASING FLGE.

TYPE OF CASING - A.P.I. [X] EXTREME LINE [ ]

POWER TONGS USED — YES [ ] NO [X]

POWER TONGS SUPPLIED BY ____

TYPE OF FLOAT EQUIPMENT Guide Shoe & Float Collar MANUFACTURER Baker

ITEM	TYPE	MANUFACTURER	NO.	SPACING FT.	INTERVAL COVERED	FT. K.B. (o)
SCRATCHERS						
CENTRALISERS	Latch On	Weatherford	1	1st Joint		

TYPE OF MUD Gel

INITIAL MUD WT. 10.0 LB./GAL. VISCOSITY 130 SEC.

FINAL MUD WT. 10.0 LB./GAL. VISCOSITY 85 SEC.

CEMENTED BY Dowell

CEMENT USED 800 SKS. GEL ____ % ____ SKS.

ADDITIVES $CaCl_2$ AMT 15 SKS.

____ AMT. ____ SKS.

TIME CASING STARTED IN HOLE 4:00 ~~A.M.~~ P.M.

DROPPING RATE AT 2000' WAS ____ SEC. FOR ____ FT. JT.

4000' WAS ____ SEC. FOR ____ FT. JT.

6000' WAS ____ SEC. FOR ____ FT. JT.

8000' WAS ____ SEC. FOR ____ FT. JT.

WAS THERE LOSS OF FLUID WHILE RUNNING PIPE? No

IF SO AT WHAT DEPTH? ____ FT.

TIME CASING ON BOTTOM 8:00 ~~A.M.~~ ____ P.M.

CIRCULATION BROKEN AT ____ A.M. 8:30 P.M.

PRESSURE REQUIRED TO BREAK CIRCULATION 400 P.S.I.

CIRCULATING PRESSURE AFTER CLEANUP 350 P.S.I.

STROKE LENGTH WHILE RECIPROCATING 30 FT. INITIALLY

30 FT. FINALLY

TIME STARTED MIX CEMENT ____ A.M. 9:05 P.M.

WAS BOTTOM PLUG USED No ?

PRESSURE JUST BEFORE PLUG HITS 800 P.S.I.

MAXIMUM PRESSURE 1200 P.S.I.

PLUG CHASED WITH Mud AND BUMPED AT 10:15 ~~A.M.~~ P.M.

STROKE LENGTH WHILE CEMENTING 30 FT.

WAS THERE ANY DIFFERENCE IN PUMP PRESSURE ON UPSTROKE AND DOWNSTROKE? NONE ____ P.S.I.

MUD RETURNS WHILE CEMENTING [X] FULL [ ] PARTIAL

[ ] NONE EXPLAIN IN REMARKS.

RECIPROCATION STOPPED AT ____ A.M. 10:15 P.M.

REMARKS: Cement to surface

LITHOGRAPHED BY BARNEY, EDMONTON

MUD & BIT REC

BIT RECORD

WELL: IMP SUN ARROWHEAD LOCATION: I-46 60°50'-122°15' CONTRACTOR: IOL-NATIONAL #1

DATE SPUDDED: MARCH 29, 1961 F.T.D.: 7425 F.T.D. REACHED: May 18, 1961

NO.	SIZE	MAKE	TYPE	DEPTH IN	DEPTH OUT	F.T.G.	HRS.	WEIGHT	R.P.M.	G.P.M.	SERIAL	FORMATION	REMARKS
1A	13¾	HTC	OSC	0	103	103	2¾	10-20 000	140	—	22122	Surface Drift	
2A	13¾	HTC	OSC-3	103	947	844	28	15-20 000	140	-	83845	Cretaceous	
1A	13¾	HTC	OSC	947	1011	64	4	5-10 000	140	—	RERUN	Cretaceous	
3A	17½	PILOT	REAMER	0	990	990		15000	150	—	RERUN	Reamed Surface hole	
3	9	HTC	OSC-1G	1011	1276	265	4	5000	120	732	97394	Cretaceous	
3B	6⅛	COLDSET	◇	1276	1306	30	8¾	8-10000	80	215	3473-C	Cretaceous	
RR-3	9	HTC	OSC-1G	1276	1306	30	1½	10000	140	672	RERUN	Cretaceous	
RR-3	9	HTC	OSC-1G	1306	1911	605	7½	30000	120	714	RERUN	Mississippian	
4	9	HTC	OSC-3	1911	2251	340	9½	30-35000	120	651	99571	Mississippian	
5	9	HTC	OSC-3-J	2251	2787	536	16	30-35000	140	682	18799	Devonian	
6	9	HTC	OSC-3-J	2787	3214	427	15½	40000	130	400	28633	Wabamun	
7	9	HTC	OSC-1G-J	3214	3560	346	18½	35-40000	120	533	99468	Winterburn	
8	9	HTC	OSC-1G	3560	3765	205	14¼	40000	120	533	7754	Winterburn	
9	9	HTC	OSC-1G	3765	4116	351	14¼	40000	120	533	4495	Winterburn	
3B	6⅛	COLDSET	◇	4116	4166	50	11¼	10-12000	100	205	3473-C	Island River	
3B	6⅛	COLDSET	◇	4166	4216	50	8¾	10-12000	100	205	3473-C	Island River	
10	9	REED	YM	4116	4216	100	6¼	15-25000	120	520	6453	Ream rathole	
10	9	REED	YM	4216	4280	64	9	15-25000	120	540	6453	Island River	
11	9	SEC.	S4	4280	4500	220	17	20 000	120	540	407864	Island River	
12	9	HTC	OSC-3	4500	4785	285	15¼	35 000	120	540	7349	Woodbend	
13	9	HTC	OSC-3	4785	5174	389	19½	30000	120	532	7727	Woodbend	
14	9	HTC	OSC-3	5174	5569	395	19½	30 000	120	540	7735	Woodbend	
15	9	HTC	OSC-3	5569	5875	306	13½	30-35000	120	550	7356	Woodbend	
16	9	HTC	OSC-3	5875	6096	221	10¼	30-33000	120	532	23243	Woodbend	
RR3B	6⅛	COLDSET	◇	6096	6116	20	6	10000	90	280	3473-C	"Dark shale"	
17	9	HTC	OSC-1G	6096	6117	21	4½	20 000	120	—	4613	" "	Reamed 21'
RR-3B	6⅛	COLDSET	◇	6119	6169	50	16¼	10 M	100	220	3473-C	M. Dev. Carb.	

BIT RECORD

WELL: IMP. SUN ARROWHEAD LOCATION: I-46 60°50' 122°15' CONTRACTOR: I.O.L. NATIONAL #1

DATE SPUDDED: MARCH 29, 1961 F.T.D.: 7425 F.T.D. REACHED: May 10, 1961

NO.	SIZE	MAKE	TYPE	DEPTH IN	DEPTH OUT	F.T.G.	HRS.	WEIGHT	R.P.M.	G.P.M.	SERIAL	FORMATION	REMARKS
1	6 1/8	Coldset	Dia.	6169	6219	50	13 1/2	10 M	85	220	3473-C	M. Dev. Carb.	Good
1	6 1/8	"	"	6219	6269	50	12	10 M	85	220	3473-C	"	Good.
1	6 1/8	"	"	6269	6319	50	11 1/2	10 M	85	220	3473-C	"	Good
1	6 1/8	"	"	6319	6369	50	10	10 M	100	220	3473-C	"	Good
1	6 1/8	"	"	6369	6419	50	13	11 M	100	220	3473-C	"	Good
1	6 1/8	"	"	6419	6469	50	10 3/4	11M	100	220	3473-C	"	Good
1	6 1/8	"	"	6469	6519	50	9	11 M	100	220	3473-C	"	Good
1	6 1/8	"	"	6519	6569	50	11 1/4	11M	100	220	3473-C	"	Good
1	6 1/8	"	"	6569	6619	50	10	10M	100	220	3473-C	"	Good
1	6 1/8	"	"	6619	6669	50	10	10M	100	220	3473-C	"	Good
1	6 1/8	"	"	6669	6719	50	14 3/4	10 M	100	220	3473-C	"	Matrix crushed Gauge diamonds gone
2	6 1/8	Hycalog	"	6720	6770	50	11 1/4	10 M	100	220	A1036-1	"	Sl washed on inside
2	6 1/8	"	"	6770	6820	50	12 3/4	10 M	100	190	A1036-1	"	" " "
2	6 1/8	"	"	6820	6870	50	12 3/4	10M	100	190	A1036-1	"	washon on inside
2	6 1/8	"	"	6870	6905	35	9 3/4	10 M	100	190	A1036-1	"	" " "
2	6 1/8	"	"	6905	6923	18	4 1/2	10M	100	190	A1036-1	"	" " "
2	6 1/8	"	"	6923	6935	12	3 1/2	10M	100	190	A1036-1	"	" " "
2	6 1/8	"	"	6935	6976	41	11	11M	90	190	A1036-1	"	" " "
2	6 1/8	"	"	6976	7026	50	10 1/4	11M	90	190	A1036-1	"	" " "
2	6 1/8	"	"	7026	7036	10	3 1/2	11M	90	190	A1036-1	"	" " "
2	6 1/8	"	"	7036	7085	49	10	10 M	90	190	A1036-1	"	slightly burned from plugged water course
2	6 1/8	"	"	7085	7111	26	10 3/4	10	90	190	A1036-1	PRE DEVONIAN	caliber backed off Matrix cracked, lost gauge diamonds.
2	6 1/8	"	"	7111	7131	20	12 1/4	10	90	190	A10-36-1	"	slightly washed
3	6 1/8	"	"	7131	7157	26	13	10-12	90	190	2363	"	Rng. cones at start
3	6 1/8	"	"	7157	7178	21	9	11	80	190	2363	"	Bit scrubbed out
4	6 1/8	"	"	7178	7205	27	0 1/2	10	80	190	2336	"	Good
4	6 1/8			7205	7255	50	16 1/4	11	90	190	2336	"	Shank cut [illegible] Good.

BIT RECORD

WELL: IMP SUN ARROWHEAD #I-46 LOCATION: 60°50' - 122°15 CONTRACTOR: IOL: NATIONAL "1"

DATE SPUDDED: MARCH 29, 1961 F.T.D.: 7425 F.T.D. REACHED: May 18, 1961

NO.	SIZE	MAKE	TYPE	DEPTH IN	DEPTH OUT	F.T.G.	HRS.	WEIGHT	R.P.M.	G.P.M.	SERIAL	FORMATION	REMARKS
4	6 1/8	I-Hycalog	Diamond	7255	7297	42	18 1/2	11	90	190	2336	Pre Devonian	Good
4	6 1/8	"	"	7297	7315	18	9 1/2	11	90	190	2336	"	Worked slightly
4	6 1/8	"	"	7315	7338	23	8 1/2	10	90	190	2336	"	Good
4	6 1/8	"	"	7338	7388	50	18 3/4	10	85	190	2336	"	Good
5	6 1/16	Christianson	Diamond	7388	7423	35	8	10	90	190	EC 5103	"	Good - Gauge Diamonds worn by rotating through casing.

DAILY MUD RECORD

WELL NAME: IMP SUN ARROWHEAD #I-46 LOCATION [illegible] 12 15

DATE	DEPTH	ADDITIVES						MUD PROPERTIES				REMARKS & OPERATIONS
		GEL	CAUSTIC	VISKAL	LIME	STARCH						
MAR 30	171						Sawdust 10 SX	–	–			Spud 8:30 PM Mar. 29/61
31	381	1300	300				10 SX					Ran 1 Circ. (103') Cellar washed out
APRIL 1	1008	2100					20 SX		71			Cellar washed out, using ditch
" 2	1011	6300						–	164			Reaming surface hole @ 847 (15¾-17½)
" 3	1011	-						–				Ran 15 7/8" casing to 978.8-C-800+29%
" 4	1011	-					BICHRO 200	–				Cementing, preparing to drill out.
" 5	1301	900						9.1	37			Drilling, Testing Cretaceous
" 6	1911	500						1.3	37			* Rmf 9.51; Rmc-3.5; Rm 6.87 @ 66°
" 7	2577	2300						9.1	29			Drilling Cretaceous & Miss.
" 8	3172	500					DAKOLITE 50	10 –	38			* Rmf 5.52; Rmc-3.98; Rm .565 @ 1500'
" 9	3549	2900						1.8	31			Drilling Devonian (9")
" 10	3820	900						1.2	44	10.0	8.5	* Rmf 5.52; Rmc-1.69 Rm 2.34 @ 64° @ 3200'
" 11	4137	4000						10.0	54	9.7	–	Drilling Winterburn fm.
" 12	4216	-						10.3	62	8.6	–	Coring Island River Member
" 13	4289	800					DAKOLITE	10.2	66	8.4	–	* Rmf 4.04, Rmc-8.30; Rm-5.28 @ 72° @ 39
" 14	4500	5500	1000	2450	2550	–	–	9.9	92	9.8	13.0	Coring Island River
" 15	4850	1000	400	550	1100	500	50	9.9	78	10.6	13.0*	Reaming Island River (6 1/8"-9")
" 16	5174	1200	100	-	350	200	200	10.2	110	12.0	13.0	Change over mud to lime base
" 17	5569	600	200	400	1100	DRISCOSE 150	300	10.2	97	8.3	13.0	Drilling Woodbend shales
" 18	5935	2000	300	500	1100	–	–	10.3	109	7.6	13.0	* Rmf-.506; Rmc-.578; Rm-.716; @ 64° @ 5000'
" 19	6116	800	100	300	600	–	–	10.5	132	7.4	13.0	540 gal. diesel fuel
" 20	6117	2200	100		600	STARCH 400		10.4	123	8.2	13.0*	Drilling Woodbend shales.
" 21	6117	900						10.3	311	8.2	13.0	Coring "dark shale"
" 22	6117	800						10.3	220	8.0	13.0	Conditioning mud to log. Rmf .514 Rmc 1.24 Rm .764 T=76 @ 6117
" 23	6117	1000				DRISCOSE 100	VISKAL 100	10.2	190	8.2		Logging D.S.T.#2 Rw = .573 @ 68°
" 25	6133	1200	300		300		300	10.1	55	9.0	13.0	Testing
" 26	6195	800	100		400		DRACOLITE	10.1	55	8.8	13.0	Running Casing
" 27	6269	1200	150		300		50	10.0	00	9.0	13.0	CORING
" 28	6336	1100						10.0	60	9.5		"
												"

* Resistivity Determination

DAILY MUD RECORD

WELL NAME IMP. SUN. ARROWHEAD I-46 LOCATION I-46 60°50' 122°15'

DATE	DEPTH	ADDITIVES						PROPERTIES					REMARKS & OPERATIONS
		GEL	CAUSTIC	~~QUEB.~~	LIME	VISAMIL	RAYFLOW	WT.	VISC.	W.L.	F.C.		
APRIL 29	6419	100	100		300	150		9.9	55	9.2		13.0	CORING
" 30	6469	100						10.1	60	8.7		13.0	"
MAY 1	6565	600	100		300	100		10.0	54	9.2		13.0	"
MAY 2	6627	600	100		200		50	10.0	56	9.2		13.0	" 180 gals. diesel
" 3	6710	600	100		300		100	10.0	55	9.2		13.0	"
" 4	6752	600	100		300		150	10.1	56	8.8		13.0	"
" 5	6820							10.1	56	8.8		13.0	"
" 6	6886	600						10.0	57	8.2		13.0	"
" 7	6935	4100	200		500	250	Husky Sweep 25 sks	9.9	56	8.8		13.0	Lost 40 bbls mud @ 6916'
" 8	6976	1900			50			9.4	60	10.2		13.0	Testing Rmf 18,500 ppm NaCl
" 9	7036		100			100		9.7	68	11.6		13.0	Coring
" 10	7100		600		200	350		10.3	54	11.1		13.0	"
11	7131	800	100			100		9.8	63	11.2		13.0	Coring
12	7167	1000	150		300		200	9.8	54	10.2		13.0	Coring
13	7193	1000	150		300	150		9.8	57	10.0		13.0	Coring
14	7247	—			—	—		9.7	57	10.2		13.0	Coring
15	7314	1000	110		400	150		9.8	56	10.5		13.0	90 gal diesel fuel : Cg
16	7329	—	—		—	—		9.6	60	9.8		13.0	Coring
17	7376	—	100		200	150		9.7	57	9.8		13.0	90 gal diesel fuel.
18	7423	400	100		200		Rayflow 200	9.8	55	10.4		13.0 *	Coring (Rm=1.36 @ 77°, Rmf=.248 @ 77°, Rmc=.705)
19	FTO 7423		250			300	150	9.9	55	10.8		13.0	Testing, Logging
20	FTD							9.2	41	—		13.0	Running plugs

* DST #4: Rm: (Rec Mud) = .456 @ 72°
Rm (Drlg Mud) = 2.3 @ 77°

* DST #5 Rm = 0.342 @ 76°
Rmf = 0.22 @ 75°
Rm (Drlg Mud) = 2.1 @ 76°

* DST #6: Rw = 0.052 @ 75°
Rm (Drlg Mud) = 0.3 @ 75°

SURVEY

WELL NAME: IMP SUN ARROWHEAD #I-94

LOCATION: 60°50' - 122° 5

Type	Depth	Deg.	Type	Depth	Deg.
TOTCO	75	1/4°			
	239	3/4°			
	550	3/4°			
	800	3/4°			
	1011	3/4°			
	1519	1°			
	1911	3/4°			
	2250	1°			
	2735	3/4°			
	3210	3/4°			
	3550	3/4°			
	3765	1 1/2°			
	4016	2°			
	4055	2°			
	4110	3 1/4°			
	4275	3°			
	4405	1 3/4°			
	4780	6 1/2°			
	4820	6 1/8°			
	4940	3 1/4°			
	5165	2°			
	5560	2 1/2°			
	5870	1/4°			
	6095	1/2°			
	6690	1°			