

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME:	RANGER NOTA CREEK C-17			DATE:	870216	REPORT NO.:	54
DEPTH:	1953	mks	PROGRESS:	TD	m	FORMATION:	Precambrian
OPERATIONS AT 08:00 HOURS:	Centrifuging Invert, clean and tear out drill rig						
CONTRACTOR/RIG SUPT.:	Shenhua Drilling Limited		Date	Escandell	CO. SUPERVISOR:	Lee Brazel	
DAILY COST:	\$	25,351.00	CUM. COST:	\$	3,734,114.00	AFE NO.:	ETD-029

WELL CONTROL

DAILY RIG CHECK: _____ DAILY BOP CHECK: _____ R.S.S.P.: _____ kPa @ _____ SPM
TRIP RECORDS: CALCULATED HOLE FILL _____ m3 ACTUAL HOLE FILL: _____ m3
BOP DRILLS: CONDUCTED WHILE _____ WELL SECURED IN _____ MIN.
CONDUCTED AT _____ HRS. CREW PERFORMANCE _____
DAYS SINCE BOP DRILL (EACH CREW): _____ MAXIMUM CASING HOLD BACK _____ kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS	
BIT NUMBER			WEIGHT (kg/m ³)			No. 1 LINER (mm)	152X218
SIZE (mm)			VISCOSITY (cP)			No. 1 SPM	
TYPE			Lime (Kg/m ³)			No. 2 LINER (mm)	152X216
SERIAL No.			PV (mPa S)			No. 2 SPM	
NOZZLES (mm)			YP (Pa)			VOLUME (m ³ /min.)	
DEPTH IN (m)			GELS (Pa)			PRESSURE (kPa)	
METERS (m)			SAND (%)			D.P&CSG. ANN. VEL. (m/min.)	
HOURS			Electrical Stability			D.P. ANN. VEL. (m/min.)	
WOB (1000 Dwt)			FILTER CAKE (mm desc.)			D.C. ANN. VEL. (m/min.)	
R.P.M.			WATER LOSS HT HP			SOLIDS CONTROL	D-1000
CONDITION			Water Activity			SHAKER SCREENS	50X50
			Oil Water Ratio			PUMP OUT (m ³ /hr)	0.01181

DRILLING ASSEMBLY

ITEMS				G.D.	L.D.	Y.J. TYPE	MUD ADDITIVES			O.F. (kg/m3)	D. SILT.	CENT.
							Sacks	Product	Cost Per sack	U.F. (kg/m3)		
								OMV 100	\$ 175.00	VOL. (l/min.)		
								Chemul 1	\$ 1,900.00	HOURS		
								Chemul 11	\$ 2,750.00			
								Chemwet OM	\$ 2,400.00			
								Hot Lime	\$ 27.00			
								Sawdust	\$ 7.25	SURVEYS		DIRECTION
								cal carbonate	\$ 10.00	m		
								Circulation +	\$ 141.00	m		
								Bore Jacket	\$ 141.00	m		
								Barite	\$ 18.00	m		
								Daily Mud Cost	\$ -	m		
								Total Mud Cost	\$ 390,983.00	m		
										m		

BHA LENGTH _____ m

HOOK LOAD _____ daN

AVAILABLE WOB _____ daN

Joints DP. on Racks: 235

In String: _____

TOTAL: 235

Time Break Down

TRAINING OPERATIONS

EVALUATION

PROBLEMS

SUMMARY

DRILLING		CORING		RIG REPAIR		DRILL OF EVALUATION	
TRIPPING		LOGGING		LOST CIRC.		TODAY	CUM.
RIG SERVICE		TESTING		REAM & WASH		24.00	
SURVEY		CIRC. SAMPLE		WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH		24.00	
COND. MUD		TRIP		Mix LCM pill			
NIPPLE UP/DN		REAM RATHOLE					Showing
RUN CASING							-18 C
CEMENT							Good
HANDLE TOOLS		Rig out	24.00				
				Total Hours	24.00		

Time

24 Hour Summary

Time

Tear out rig to move

Centrifuge Invert from 1230 to 1010 to 1030 kg/m³.

Move drill pipe, mud products and support equipment to Ranger Little Bear with Arrowhead Construction trucking

Rig released 08/02/14 at 2350 hours

SIGNED BY: Leo Brazil

MOBILE No.: 403-282-9301

February 16, 1998
4:49 pm

PathTracker 4.0
Survey Calculation Program
L. BRAZEL OILFIELD CONSULTING INC

Customer: RANGER OIL LIMITED
WellName: RANGER NOTA CREEK C-17
Location: AFE E7D - 029

Vertical Section Calculated on: 0.0000
Survey Calculation Method: Minimum Curvature
FileName: C:\LEE\OILFIELD\PATHTRK\RANC17.SR3

#	Depth Meters	Inc Degrees	Azimuth Degrees	TVD Meters	North Meters	East Meters	Section Meters	Dogleg /30m	Subsea Meters	Cls Dist Meters	Cls Az Degrees
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	172.22	0.00	0.0
1	40.50	0.70	339.00	40.50	0.23	-0.09	0.23	0.52	131.72	0.25	339.0
2	68.90	1.20	337.00	68.90	0.87	-0.27	0.87	0.53	103.32	0.72	338.1
3	95.50	2.80	333.00	95.48	1.50	-0.67	1.50	1.81	78.74	1.65	335.9
4	124.40	2.00	341.00	124.35	2.61	-1.16	2.61	0.90	47.87	2.85	336.1
5	152.60	2.10	337.00	152.53	3.55	-1.52	3.55	0.19	19.69	3.88	336.8
6	238.00	1.20	329.00	237.90	5.76	-2.59	5.76	0.33	-85.68	6.31	335.7
7	351.00	0.40	347.00	350.89	7.15	-3.29	7.15	0.22	-178.67	7.87	335.3
8	455.00	0.50	12.00	454.88	7.95	-3.28	7.95	0.08	-282.88	8.60	337.6
9	568.00	0.70	62.00	567.88	8.76	-2.58	8.76	0.14	-395.68	9.13	343.6
10	604.00	0.20	146.00	603.88	8.81	-2.34	8.81	0.60	-431.68	9.11	345.1
11	662.00	0.60	42.00	661.88	8.95	-2.08	8.95	0.35	-489.66	9.18	348.9
12	706.00	1.20	12.00	705.87	9.57	-1.83	9.57	0.51	-533.65	9.74	348.1
13	727.00	0.90	357.00	726.87	9.95	-1.79	9.95	0.58	-554.85	10.11	349.7
14	773.00	1.00	47.00	772.88	10.58	-1.52	10.58	0.53	-600.64	10.69	351.8
15	824.00	1.60	49.00	823.85	11.35	-0.65	11.35	0.35	-651.83	11.37	358.7
16	839.00	1.20	72.00	838.84	11.54	-0.35	11.54	1.36	-686.62	11.55	358.2
17	868.00	1.50	37.00	867.84	11.84	0.17	11.84	0.89	-695.62	11.84	0.8
18	881.00	1.80	57.00	880.83	12.37	0.85	12.37	0.84	-718.61	12.39	3.0
19	912.00	1.80	57.00	911.82	12.73	1.21	12.73	0.00	-739.60	12.79	5.4
20	940.00	2.00	47.00	939.80	13.31	1.93	13.31	0.41	-767.58	13.45	8.2
21	959.00	1.80	52.00	958.79	13.72	2.41	13.72	0.41	-788.57	13.93	9.9
22	993.00	1.20	49.00	992.78	14.28	3.10	14.28	0.53	-820.56	14.61	12.2
23	1021.00	1.00	12.00	1020.77	14.71	3.37	14.71	0.78	-848.55	15.09	12.9
24	1081.00	1.00	17.00	1080.76	16.72	3.64	16.72	0.04	-908.64	16.14	13.0
25	1145.00	1.80	27.00	1144.74	17.15	4.25	17.15	0.39	-972.53	17.67	13.8
26	1190.00	1.50	7.00	1189.73	18.37	4.65	18.37	0.43	-1017.51	18.95	14.2
27	1209.00	2.00	357.00	1208.72	18.95	4.66	18.95	0.92	-1036.50	19.51	13.8
28	1287.00	2.70	357.00	1286.65	22.14	4.48	22.14	0.27	-1114.43	22.59	11.2
29	1345.00	2.80	17.00	1344.58	24.91	4.85	24.91	0.51	-1172.38	25.37	11.1
30	1525.00	5.40	35.00	1524.10	36.20	11.04	36.20	0.46	-1351.88	37.85	16.8
31	1535.00	5.40	36.00	1534.06	36.97	11.58	36.97	0.00	-1361.84	38.74	17.2
32	1565.00	6.10	40.00	1563.91	39.35	13.41	39.35	0.68	-1391.69	41.57	18.2
33	1581.00	6.60	44.00	1589.75	41.48	15.34	41.48	0.77	-1417.53	44.23	20.2
34	1629.00	6.70	45.00	1627.49	44.62	16.43	44.62	0.12	-1455.27	48.28	22.2
35	1667.00	6.80	43.00	1665.23	47.83	21.53	47.83	0.20	-1493.01	52.45	24.2

February 18, 1998
 :49 pm

PathTracker 4.0
 Survey Calculation Program
 L. BRAZEL OILFIELD CONSULTING INC

Customer: RANGER OIL LIMITED
 WellName: RANGER NOTA CREEK C-17
 Location: AFE E7D - 029

Vertical Section Calculated on: 0.0000
 Survey Calculation Method: Minimum Curvature
 FileName: C:\LEE\OILFIELD\PATHTRK\RANC17.SR3

#	Depth Meters	Inc Degrees	Azimuth Degrees	TVD Meters	North Meters	East Meters	Section Meters	Dogleg /30m	Subsea Meters	Cls Dist Meters	Cls Az Degrees
36	1704.00	7.80	42.00	1701.93	51.30	24.70	51.30	0.82	-1529.71	58.94	25.7
37	1741.00	7.00	47.00	1738.82	54.70	28.03	54.70	0.83	-1568.40	61.47	27.1
38	1808.00	8.80	37.00	1805.14	60.66	33.40	60.66	0.54	-1632.82	69.25	28.8
39	1864.00	8.80	27.00	1860.74	66.30	36.93	66.30	0.64	-1688.52	75.89	28.1
-1	1853.00	7.00	11.11	1849.00	76.43	40.41	76.43	0.85	-1776.87	86.46	27.8

Closure is 86.4573 Meters on an azimuth of 27.8634



WELL NAME:	RANGER NOTA CREEK C-17		DATE:	07/02/15	REPORT NO.:	53
DEPTH:	1953	mKB	PROGRESS:	TD	m	FORMATION: Precambrian
OPERATIONS AT 08:00 HOURS:	Centrifuging Invert, clean and tear out drill rig					
CONTRACTOR/RIG SUPT.:	Sheelah Drilling Limited		Dale Baxandall		CO. SUPERVISOR: Lee Brazel	
DAILY COST:	\$	52,180.00	CUM. COST:	\$	3,708,763.78	AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: kPa @: SPM

TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3

BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.

CONDUCTED AT HRS. CREW PERFORMANCE

DAYS SINCE BOP DRILL (EACH CREW): 3 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER		WEIGHT (kg/m ³)	1230	No. 1 LINER (mm)	152X218
SIZE (mm)		VISCOSITY (cP)	88	No. 1 SPM	100
TYPE		Lime (Kg/m ³)	17.8	No. 2 LINER (mm)	152X216
SERIAL No.		PV (mPa S)	35	No. 2 SPM	
NOZZLES (mm)		YP (Pa)	10	VOLUME (m ³ /min.)	1.18
DEPTH IN (m)		GELS (Pa)	516	PRESSURE (kPa)	5200
METERS (m)		SAND (%)		D.P.&CSG. ANN. VEL. (m/min.)	40
HOURS		Electrical Stability	1400	D.P. ANN. VEL. (m/min.)	41
WOB (1000 lbs)		FILTER CAKE (mm desc.)	1.5	D.C. ANN. VEL. (m/min.)	74
R.P.M.		WATER LOSS HT HP	1.5	SOLIDS CONTROL	D-1000
CONDITION		Water Activity	0.73	SHAKER SCREENS	50X50
		Oil Water Ratio	81/19	PUMP OUT (m ³ /stroke)	0.01181

DRILLING ASSEMBLY

ITEMS				O.D.	I.D.	T.J. TYPE	MUD ADDITIVES			O.F. (kg/m3)		D. SILT.		CENT.
							Sacks	Product	Cost Per sack					
								OMV 100	\$ 175.00					
								Chemul 1	\$ 1,900.00					
								Chemul 11	\$ 2,750.00					
								Chemwel OM	\$ 2,400.00					
								Hot Lime	\$ 27.00					
								Sawdust	\$ 7.25					
								cal carbonate	\$ 10.00					
								Circulation +	\$ 141.00					
								Bore Jacket	\$ 141.00					
								Barite	\$ 18.00					
							Daily Mud Cost		\$ -					
							Total Mud Cost		\$ 390,963.00					
							Time Break Down							
BHA LENGTH _____ m														
HOOK LOAD _____ daN														
AVAILABLE WOB _____ daN														
Joints DP. on Racks: <u>235</u>														
In String: _____														
TOTAL: <u>235</u>														

TOTAL: 235		TIME BREAK DOWN		m			
DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	_____	CORING	_____	RIG REPAIR	_____	DRILL OP	TODAY
TRIPPING	_____	LOGGING	_____	LOST CIRC.	_____	EVALUATION	CUM.
RIG SERVICE	_____	TESTING	_____	REAM & WASH	_____	PROBLEMS	24.00
SURVEY	_____	CIRC. SAMPLE	_____	WORK PIPE	_____	TOTAL	24.00
SLIP & CUT	_____	HANDLE TOOLS	_____	FISH	_____	WEATHER	Snowing
COND. MUD	_____	TRIP	_____	Mix LCM pill	_____	TEMPERATURE	-18 C
NIPPLE UP/DN	12.00	REAM RATHOLE	_____		_____	ROADS	Good
RUN CASING	_____		_____		_____		
CEMENT	2.00		_____		_____		
HANDLE TOOLS	10.00	Safety Meeting	_____		_____		
				Total Hours	24.00		

Time	24 Hour Summary	Time
	Cement Stage No 2. Tear out BOPs and set slips.	
	Tear out and clean rig. Move off drill pipe with Flint.	
	Centrifuge out invert from 1230 to 1080	

NOTE: Slips in well head will not set properly as there is cement to casing bowl and crew did not get BOP's off to set slips before cement set up.

SIGNED BY: Lee Brazel

MOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/14 REPORT NO.: 52
 DEPTH: 1953 mKB PROGRESS: TD m FORMATION: Precambrian
 OPERATIONS AT 08:00 HOURS: Cementing 177 mm production casing
 CONTRACTOR/RIG SUPT.: Shehah Drilling Limited Dale Baxendale CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 205,347.56 CUM. COST: \$ 3,629,752.76 AFE NO: E7D-028

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: kPa @: SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
 CONDUCTED AT HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 3 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES		PUMPS	
BIT NUMBER			WEIGHT (kg/m3)	1230	No. 1 LINER (mm)	152X216
SIZE (mm)			VISCOSITY (cP)	86	No. 1 SPM	100
TYPE			Lime (Kg/m3)	17.6	No. 2 LINER (mm)	152X216
SERIAL No.			PV (mPa S)	35	No. 2 SPM	
NOZZLES (mm)			YP (Pa)	10	VOLUME (m3/min.)	1.18
DEPTH IN (m)			GELS (Pa)	516	PRESSURE (kPa)	5200
METERS (m)			SAND (%)		D.P.CSG. ANN. VEL. (m/min.)	40
HOURS			Electrical Stability	1400	D.P. ANN. VEL. (m/min.)	41
WOB (1000 lbs)			FILTER CAKE (mm disc.)	1.5	D.C. ANN. VEL. (m/min.)	74
R.P.M.			WATER LOSS HT HP	1.5	SOLIDS CONTROL	Q-1000
CONDITION			Water Activity	0.73	SHAKER SCREENS	50X50
			Oil Water Ratio	81/19	PUMP OUT (m3/stk)	0.01181
			Temp	29		

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	MUD ADDITIVES			D. SILT. CENT.	
				Sacks	Product	Cost Per Sack	O.F. (kg/m3)	
					OMV 100	\$ 175.00	U.F. (kg/m3)	
					Chemul 1	\$ 1,900.00	VOL. (l/min.)	
					Chemul 11	\$ 2,750.00	HOURS	
					Chemulwet OM	\$ 2,400.00		
					Hot Lime	\$ 27.00		
					Sawdust	\$ 7.25		
					cal carbonate	\$ 10.00		
					Circulation +	\$ 141.00		
					Bore Jacket	\$ 141.00		
					Barite	\$ 18.00		
BHA LENGTH			m		Daily Mud Cost	\$ -		
HOOK LOAD			daN		Total Mud Cost	\$ 390,963.00		
AVAILABLE WOB			daN					
Joints DP. on Racks:	235							
In String:								
TOTAL:	235							

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING		CORING		RIG REPAIR		TODAY	CUM
TRIPPING		LOGGING		LOST CIRC.		20.26	
RIG SERVICE	0.75	TESTING		REAM & WASH		0.50	
SURVEY		CIRC. SAMPLE		WORK PIPE		3.25	
SLIP & CUT		HANDLE TOOLS		FISH		24.00	
COND. MUD	0.50	TRIP		Mix LCM pill			
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING	0.50						
CEMENT	3.50			Dress Casing	3.25		
HANDLE TOOLS		Safety Meeting	0.50	Total Hours	24.00		

Time 24 Hour Summary Time

Dress casing

Rig service. Function test remote choke.

Safety meeting with Power Tongs personal and rig crew on safe operating procedures while running casing

Rig to run and run casing. Circulate casing at 1500 m. Ran 137 Joints of Algoma 177 mm, 34.2 Kg/m, Soo 55, LT&C

Overall length 1931 m. Landed at 1929 mKb. Top of float shoe (1928.55 mKb) Float Collar (1928.21 mKb) ECP (1911.45 mKb)

Stage tool (404.95 mKb). Circulated hole clean and centrifuged mud to 1230 kg/m3. (Centrifuge broke down).

Pre cement safety meeting with rig crew and Dowell cementers on safe operating procedures while cementing

Rig in Dowell cementers and cement Stage No 1 with Preflush 3.2 m3 of CW101 with 18%D44. Lead cement 25 m3 of 1-1-2 "G" with 18%D44, .1%B71 (Calculated top 850 mKb). Tail cement 3 m3 of RFC with 1%B30, .3%B71, .2%D46 (Calculated top 1750 mKb). Displaced with 31 m3 of fresh water followed by 8.6 m3 of invert mud. Check floats and activated ECP. Activated stage tool and circulated well. Cemented Stage No 2 with 6.1 m3 of RFC with 1%B30, .3%B71, .2D46. Displaced with 8.3 m3 of fresh water. .5 m3 of good cement returns. Closed and pressure checked stage tool.

Annular fluid stable.

SIGNED BY: Lee Brazel MOBILE No.: 403-282-9301

Ranger Oil Limited

CASING CALCULATIONS

WELL NAME & LOCATION:

Ranger Nota Creek C-17

Hole Size:	222	mm	Manufacture:	Algoma	
Casing OD:	177.8	mm	Weight:	34.2 Kg/m	
Casing ID:	161.7	mm	Grade:	Soo 55	
Hole Depth:	1953	m	Threads:	8	
Casing Depth:	1929	m	New or used:	New	
Casing Capacity:	0.0205	m3/m	Pipe Yard:	Norman Wells	
Annular Volume:	0.0139	m3/m	Price/m:	\$38.81	
Shoe	Make: Weatherford	Type: Float	Length: 0.45	m	Casing costs
Float Collar	Make: Weatherford	Type: Float	Length: 0.34	m	\$74,788.81
Casing Packer	Make: Baker	Type: RTD	Length: 2.75	m	
Centralizers	Make: Weatherford	Type: ELB	Make-up Torque:		
Scratchers	Make:	Type:	Optimum 4240	N/m	
Turbolizers	Make:	Type:	Optimum 3130	Ft/lb	

Jt No.	Casing Weight Kg/m	Length Of Casing Joint	Centralizers Scratchers Casing Equipment	Length Of Casing Equip	Length From Bottom Up	Length of Casing String	Length Of Casing	Capacity Of Casing m ³	Capacity of Annulus m ³	Average hole size mm
					1929.00					
JT 1	34.23	14.04	Shoe, Collar, ECP	3.51	1911.45	17.55	14.04		0.24	
JT 2	34.23	13.85	Centralizers		1897.80	31.40	27.89	0.28	0.44	
JT 3	34.23	14.10	Centralizers		1883.50	45.50	41.99	0.57	0.63	
JT 4	34.23	13.98			1869.52	59.48	55.97	0.86	0.83	
JT 5	34.23	14.07			1855.45	73.55	70.04	1.15	1.02	
JT 6	34.23	14.24			1841.21	87.79	84.28	1.44	1.22	
JT 7	34.23	13.94			1827.27	101.73	98.22	1.73	1.41	
JT 8	34.23	14.19			1813.08	115.82	112.41	2.02	1.61	
JT 9	34.23	14.06			1799.02	129.98	126.47	2.31	1.80	
JT 10	34.23	13.84			1785.18	143.82	140.31	2.59	2.00	
JT 11	34.23	13.89			1771.29	157.71	154.20	2.88	2.19	
JT 12	34.23	14.12			1757.17	171.83	168.32	3.17	2.38	
JT 13	34.23	14.24			1742.93	186.07	182.58	3.46	2.58	
JT 14	34.23	13.98			1728.95	200.05	196.54	3.75	2.78	
JT 15	34.23	14.22			1714.73	214.27	210.76	4.04	2.97	
JT 16	34.23	14.19			1700.54	228.46	224.96	4.33	3.17	
JT 17	34.23	14.06			1686.48	242.62	239.01	4.62	3.37	
JT 18	34.23	14.19			1672.29	256.71	253.20	4.91	3.56	
JT 19	34.23	13.98			1658.31	270.89	267.18	5.20	3.76	
JT 20	34.23	13.83			1644.38	284.82	281.11	5.48	3.96	
JT 21	34.23	13.76			1630.62	298.38	294.87	5.77	4.14	
JT 22	34.23	13.94			1616.68	312.32	308.81	6.05	4.33	
JT 23	34.23	14.12			1602.56	326.44	322.93	6.34	4.53	
JT 24	34.23	14.10			1588.48	340.54	337.03	6.63	4.73	
JT 25	34.23	14.12			1574.34	354.66	351.15	6.92	4.92	
JT 26	34.23	14.21			1560.13	368.87	365.36	7.21	5.12	
JT 27	34.23	14.28			1545.85	383.15	379.64	7.51	5.32	
JT 28	34.23	14.07			1531.78	397.22	393.71	7.80	5.51	
JT 29	34.23	13.26			1518.53	410.47	406.96	8.07	5.70	

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JT	30	34.23	14.10	1604.43	424.57	421.06	8.36	6.89
JT	31	34.23	14.24	1490.19	438.81	435.30	8.65	6.09
JT	32	34.23	14.20	1475.99	453.01	449.50	8.94	6.29
JT	33	34.23	14.16	1461.84	467.16	463.65	9.23	6.48
JT	34	34.23	14.03	1447.81	481.19	477.68	9.52	6.68
JT	35	34.23	14.37	1433.44	495.56	492.05	9.82	6.88
JT	36	34.23	14.08	1419.38	509.82	506.11	10.11	7.07
JT	37	34.23	14.19	1405.19	523.81	520.30	10.40	7.27
JT	38	34.23	14.17	1391.02	537.98	534.47	10.69	7.47
JT	39	34.23	14.13	1376.89	552.11	548.60	10.98	7.66
JT	40	34.23	14.07	1362.62	566.18	562.67	11.27	7.86
JT	41	34.23	13.90	1348.92	580.08	576.57	11.55	8.05
JT	42	34.23	14.23	1334.69	594.31	590.80	11.84	8.25
JT	43	34.23	14.23	1320.46	608.54	605.03	12.14	8.45
JT	44	34.23	14.24	1306.22	622.78	619.27	12.43	8.64
JT	45	34.23	14.19	1292.03	636.97	633.46	12.72	8.84
JT	46	34.23	14.15	1277.88	651.12	647.61	13.01	9.04
JT	47	34.23	14.48	1263.40	665.80	662.09	13.31	9.24
JT	48	34.23	14.11	1249.29	679.71	676.20	13.60	9.43
JT	49	34.23	14.27	1235.02	693.98	690.47	13.89	9.63
JT	50	34.23	14.09	1220.93	708.07	704.58	14.18	9.83
JT	51	34.23	13.97	1206.96	722.04	718.53	14.47	10.02
JT	52	34.23	13.88	1193.08	735.92	732.41	14.75	10.21
JT	53	34.23	13.97	1179.11	749.89	746.38	15.04	10.41
JT	54	34.23	14.02	1165.09	763.81	760.40	15.33	10.60
JT	55	34.23	14.25	1150.84	778.16	774.66	15.62	10.80
JT	56	34.23	14.12	1136.72	792.28	788.77	15.91	11.00
JT	57	34.23	13.98	1122.76	806.24	802.73	16.20	11.19
JT	58	34.23	14.20	1108.58	820.44	816.93	16.49	11.39
JT	59	34.23	14.17	1094.39	834.81	831.10	16.78	11.58
JT	60	34.23	14.60	1079.79	849.21	845.70	17.08	11.79
JT	61	34.23	14.15	1065.84	863.36	859.85	17.37	11.98
JT	62	34.23	13.82	1051.82	877.18	873.67	17.65	12.17
JT	63	34.23	14.13	1037.69	891.31	887.80	17.94	12.37
JT	64	34.23	14.12	1023.67	905.43	901.92	18.23	12.57
JT	65	34.23	14.07	1009.50	919.50	915.99	18.52	12.76
JT	66	34.23	14.09	995.41	933.59	930.08	18.81	12.96
JT	67	34.23	14.12	981.28	947.71	944.20	19.10	13.15
JT	68	34.23	14.18	967.11	961.89	958.38	19.39	13.35
JT	69	34.23	13.98	953.15	975.85	972.34	19.68	13.54
JT	70	34.23	14.08	939.07	989.83	986.42	19.97	13.74
JT	71	34.23	14.09	924.88	1004.02	1000.51	20.26	13.93
JT	72	34.23	14.08	910.90	1018.10	1014.58	20.55	14.13
JT	73	34.23	14.07	896.03	1032.17	1028.66	20.84	14.33
JT	74	34.23	13.98	882.85	1046.15	1042.64	21.12	14.52
JT	75	34.23	13.84	869.01	1059.99	1056.48	21.41	14.71
JT	76	34.23	14.13	854.88	1074.12	1070.61	21.70	14.91
JT	77	34.23	13.83	841.05	1087.95	1084.44	21.98	15.10
JT	78	34.23	14.23	826.82	1102.18	1098.67	22.27	15.30
JT	79	34.23	13.86	812.88	1116.14	1112.63	22.56	15.49
JT	80	34.23	14.10	798.76	1130.24	1126.73	22.86	15.69
JT	81	34.23	13.98	784.80	1144.20	1140.68	23.14	15.88
JT	82	34.23	14.07	770.73	1158.27	1154.76	23.43	16.08
JT	83	34.23	13.99	758.74	1172.28	1168.75	23.71	16.27

Ranger Oil Limited

JT	84	34.23	13.97		742.77	1186.23	1182.72	24.00	16.46
JT	85	34.23	14.06		728.71	1200.29	1196.78	24.29	16.66
JT	86	34.23	13.86		714.85	1214.15	1210.64	24.67	16.86
JT	87	34.23	13.36		701.50	1227.50	1223.99	24.85	17.04
JT	88	34.23	14.07		687.43	1241.57	1238.08	25.14	17.23
JT	89	34.23	14.15		673.28	1255.72	1252.21	25.43	17.43
JT	90	34.23	14.17		659.11	1269.89	1266.38	25.72	17.62
JT	91	34.23	13.96		645.16	1283.85	1280.34	26.00	17.82
JT	92	34.23	14.15		631.00	1298.00	1294.48	26.30	18.01
JT	93	34.23	13.84		617.16	1311.84	1308.33	26.58	18.21
JT	94	34.23	13.98		603.18	1325.82	1322.31	26.87	18.40
JT	95	34.23	14.08		589.10	1339.90	1336.39	27.16	18.60
JT	96	34.23	14.24		574.86	1354.14	1350.63	27.45	18.79
JT	97	34.23	14.09		560.77	1368.23	1364.72	27.74	18.99
JT	98	34.23	14.16		546.62	1382.38	1378.87	28.03	19.19
JT	99	34.23	14.24		532.38	1396.62	1393.11	28.32	19.38
JT	100	34.23	13.84		518.54	1410.46	1406.95	28.60	19.68
JT	101	34.23	14.16		504.38	1424.62	1421.11	28.90	19.77
JT	102	34.23	14.11		490.27	1438.73	1435.22	29.19	19.97
JT	103	34.23	14.08		476.19	1452.81	1449.30	29.47	20.16
JT	104	34.23	14.24		461.95	1467.05	1463.54	29.77	20.36
JT	105	34.23	14.22		447.73	1481.27	1477.78	30.08	20.58
JT	106	34.23	14.14		433.58	1495.41	1491.90	30.36	20.75
JT	107	34.23	14.19	Centralizer	419.40	1509.60	1506.09	30.64	20.96
JT	108	34.23	13.85	Stop Collar 0.50	404.95	1524.05	1520.04	30.93	21.15
JT	109	34.23	14.05	Centralizer	390.90	1538.10	1534.09	31.22	21.35
JT	110	34.23	13.47		377.43	1551.57	1547.56	31.49	21.53
JT	111	34.23	14.31		363.12	1565.88	1561.87	31.79	21.73
JT	112	34.23	14.09		349.03	1579.97	1575.96	32.08	21.93
JT	113	34.23	14.13		334.90	1594.10	1590.09	32.37	22.12
JT	114	34.23	13.79		321.11	1607.89	1603.88	32.65	22.32
JT	115	34.23	13.97		307.14	1621.86	1617.85	32.94	22.51
JT	116	34.23	13.72		293.42	1635.58	1631.57	33.22	22.70
JT	117	34.23	14.16		279.28	1649.74	1645.73	33.51	22.90
JT	118	34.23	13.89		265.37	1663.63	1659.62	33.79	23.09
JT	119	34.23	14.15		251.22	1677.78	1673.77	34.08	23.29
JT	120	34.23	14.08		237.14	1691.86	1687.85	34.37	23.48
JT	121	34.23	14.10		223.04	1705.80	1701.96	34.66	23.68
JT	122	34.23	14.10		208.94	1720.08	1716.06	34.95	23.87
JT	123	34.23	14.11		194.83	1734.17	1730.16	35.24	24.07
JT	124	34.23	14.21		180.62	1748.38	1744.37	35.53	24.27
JT	125	34.23	14.08		166.54	1762.46	1758.45	35.82	24.46
JT	126	34.23	14.08		152.45	1776.55	1772.54	36.11	24.66
JT	127	34.23	13.86		138.79	1790.21	1786.20	36.39	24.85
JT	128	34.23	14.08		124.71	1804.29	1800.28	36.68	25.04
JT	129	34.23	14.18		110.55	1818.45	1814.44	36.97	25.24
JT	130	34.23	14.12		96.43	1832.57	1828.56	37.26	25.43
JT	131	34.23	13.90		82.53	1846.47	1842.46	37.55	25.63
JT	132	34.23	14.01		68.52	1860.48	1856.47	37.84	25.82
JT	133	34.23	14.15		54.37	1874.63	1870.62	38.13	26.02
JT	134	34.23	14.20		40.17	1888.83	1884.82	38.42	26.21
JT	135	34.23	14.22		26.95	1903.05	1899.04	38.71	26.41
JT	136	34.23	13.86		12.08	1916.91	1912.90	38.99	26.60
JT	137	34.23	14.15		-2.06	1931.06	1927.05	39.28	26.80

RANGER OIL LIMITED



CASING AND CEMENT REPORT

WELL NAME: RANGER NOTA CREEK C-17SUPERVISOR: LEE BRAZELDATE: 08/02/14CEMENTERS: DOWELL SCHLUMBERGERTOTAL DEPTH: 1853 m

CASING

SURFACE CASING ☐INTERMEDIATE CASING ☐PRODUCTION CASING ☒LINER CASING ☐

FROM TOP OF STRING:

JOINTS	O.D. (mm)	MASS (kg/m)	GRADE	COUPLING	RANGE	TORQUE	MAKE	LENGTH (m)
137	177.8	34.23	S00 55	LT&C	3	4240	Algoma	1927.05
CASING BOWL								GUIDE/FLOAT SHOE (m) 0.45
SHOE JOINT WAS:								0.34
MAKE	Barber		THREAD LOCKED	X				0.5
TYPE	ODSO		WELDED	X				2.72
SIZE	352.4 mm x 339.7 mm		GRD. ELEV	186.72 m				1831.06
RATING	21000 kPa		KB ELEV	172.22 m				2
SERIAL No			FLANGE ELEV	167.07 m				1929
SCRATCHERS: TYPE, NUMBER/JT, INTERVALS:								PLUG BACK T.D. (m)
								STAGE COLLAR TOP AT (m)
								404.95
								EXTERNAL CASING PACKER (m)
								1911.45
CENTRALIZERS (TYPE & COLLAR NUMBERS):								MARKER JOINT TOP AT (m)
lock ring on joints 1,2,3,107,109								CUT OFF LENGTH (m)
								5.5

CEMENTING STAGE NO 1

CONVENTIONAL CEMENTING ☐FOAMED CEMENTING ☐STAGED CEMENTING ☒OTHER ☐

ITEM	TONNES	CLASS	TYPE	ADDITIVES	kg/m3	m3	RATE (m3/min.)
PRE-FLUSH			CW101	18%D44	1100	3.2	0.8
LEAD	16.6	"C"	11112	18%D44, .01%B71	1750	15	0.8
TAIL	3.5	RFC		1%B30, .3%B71, .2%D48	1740	3	0.9
Displace			Fresh water		1000	31	1
			Invert		1230	8.8	1
				Calculated top lead 850 mKb			
				Calculated top Tail 1750 mKb			

TIME MIXING STARTED	3:21	HRS.	CEMENT HEAD TYPE	Plug Loading
TIME DISPLACEMENT STARTED	4:00	HRS.	WIPER PLUG TYPE	Rubber
TIME PLUG BUMPED	5:10	HRS.	DISPLACEMENT PLUG TYPE	Rubber
FINAL PUMPING PRESSURE	18000	kPa	VOLUME CEMENT RETURNS	m3
PLUG BUMPING PRESSURE	21000	kPa	VOLUME LOST RETURNS	m3
FLOATS HELD?	YES		CALCULATED CEMENT TOP AT	1750 m

Pipe was reciprocated until 31 m3 left to displace. Cement volume based on caliper plus 20 % excessMUD WEIGHT 1230 kg/m3 VISCOSITY 88 sec/A YIELD POINT 10 Pa SLIPS SET WITH deN

ABANDONMENT PLUGS

COMMENTS

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
BOTTOM								
TOP								
CEMENT TONNES								
CEMENT TYPE								
ADDITIVES								
TIME SPOTTED HRS.								
TIME LOCATED HRS.								
DEPTH LOCATED								
FELT LOGGED								

BOWL CUT OFF?

PLATE WELDED ON?

RANGER OIL LIMITED



CASING AND CEMENT REPORT

WELL NAME: RANGER NOTA CREEK C-17

SUPERVISOR: LEE BRAZEL

DATE: 98102114

CEMENTERS: DOWELL SCHLUMBERGER

TOTAL DEPTH: 1953 M

CASING

SURFACE CASING

INTERMEDIATE CASING

PRODUCTION CASING

☒LINER CASING ☐

FROM TOP OF STRING:

FROM TOP OF STAKE:								
JOINTS	O.D. (mm)	MASS (kg/m)	GRADE	COUPLING	RANGE	TORQUE	MAKE	LENGTH (m)
137	177.8	34.23	S00 55	LT&C	3	4240	Algema	1927.05
CASING BOWL					GUIDE/FLOAT SHOE (m)		0.45	
SHOE JOINT WAS:					FLOAT COLLAR (m)		0.34	
MAKE	Barber		THREAD LOCKED	☒	STAGE COLLAR (m)		0.5	
TYPE	ODSO		WELDED	☒	EXTERNAL CASING PACKER (m)		2.72	
SIZE	352.4 mm x 330.7 mm		GRD. ELEV	166.72 m	TOTAL STRING LENGTH (m)		1831.06	
RATING	21000 kPa		KB ELEV	172.22 m	STICK UP (m)		2	
SERIAL No			FLANGE ELEV	187.07 m	LANDED AT (m)		1929	
SCRATCHERS: TYPE, NUMBER/JT, INTERVALS:					PLUG BACK T.D. (m)		404.95	
					STAGE COLLAR TOP AT (m)		1911.45	
					EXTERNAL CASING PACKER (m)		1911.45	
CENTRALIZERS (TYPE & COLLAR NUMBERS):					MARKER JOINT TOP AT (m)		5.5	
Centralizer with					CUT OFF LENGTH (m)		5.5	
lock ring on joints 1,2,3,107,109								

CEMENTING STAGE NO 2

CONVENTIONAL CEMENTING

FOAMED CEMENTING

STAGED CEMENTING

☐

OTHER

ITEM	TONNES	CLASS	TYPE	ADDITIVES	kg/m3	m3	RATE (m3/min.)
LEAD	6.1	RFC		1%B30, .3%B71, .2% d46	1740	6.1	0.8
Displace			Fresh water		1000	8.3	0.9

TIME MIXING STARTED	7:30	HRS.
TIME DISPLACEMENT STARTED	7:43	HRS.
TIME PLUG BUMPED	7:59	HRS.
FINAL PUMPING PRESSURE	6000	kPa
PLUG BUMPING PRESSURE	21000	kPa
FLOATS HELD?	Slide Collar	YES

CEMENT HEAD TYPE	Plug Loading	
WIPER PLUG TYPE	Rubber	
DISPLACEMENT PLUG TYPE	Rubber	
VOLUME CEMENT RETURNS	0.6	m3
VOLUME LOST RETURNS		m3
CALCULATED CEMENT TOP AT	Surface	m

Pipe was reciprocated until 31 m3 left to displace. Cement volume based on caliper plus 20 % excess

MUD WEIGHT 1230 kg/m³ VISCOSITY 88 sec./l YIELD POINT 10 Pa SLIPS SET WITH d&N

ABANDONMENT PLUGS

COMMENTS

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
BOTTOM								
TOP								
CEMENT TONNES								
CEMENT TYPE								
ADDITIVES								
TIME SPOTTED HRS.								
TIME LOCATED HRS.								
DEPTH LOCATED								
FELT/LOGGED								

BOWL CUT OFF?

PLATE WELDED ON?

Ranger Oil Limited



DAILY DRILLING REPORT

WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/13 REPORT NO.: 51
 DEPTH: 1953 mKB PROGRESS: TO m FORMATION: Precambrian
 OPERATIONS AT 08:00 HOURS: Rig to run casing
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Dale Bazandell CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 28,357.80 CUM. COST: \$ 3,424,405.22 AFE NO: E70-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2300 kPa @: 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL 9.88 m3 ACTUAL HOLE FILL: 10.25 m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
 CONDUCTED AT HR5 CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 2 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	<u>7</u>	WEIGHT (kg/m3)	<u>1242</u>	No. 1 LINER (mm)	<u>152X218</u>
SIZE (mm)	<u>222</u>	VISCOSITY (s/l)	<u>80</u>	No. 1 SPM	<u>100</u>
TYPE	<u>TJ86RG</u>	Lim (Kg/m3)	<u>4.7</u>	No. 2 LINER (mm)	<u>152X218</u>
SERIAL No.	<u>C88YJ</u>	PV (mPa S)	<u>36</u>	No. 2 SPM	<u>100</u>
NOZZLES (mm)	<u>1953</u>	YP (Pa)	<u>10</u>	VOLUME (m3/min.)	<u>1.18</u>
DEPTH IN (m)	<u>1953</u>	GELS (Pa)	<u>5.517.5</u>	PRESSURE (kPa)	<u>5200</u>
METERS (m)	<u>1953</u>	SAND (%)	<u>1730</u>	D.P.CSG. ANN. VEL. (m/min.)	<u>40</u>
HOURS	<u>1953</u>	Electrical Stability	<u>1730</u>	D.P. ANN. VEL. (m/min.)	<u>41</u>
WOB (1000 lbs)	<u>1953</u>	FILTER CAKE (mm desc.)	<u>1.5</u>	D.C. ANN. VEL. (m/min.)	<u>74</u>
R.P.M.	<u>1953</u>	WATER LOSS HT HP	<u>1.8</u>	SOLIDS CONTROL	<u>D-1000</u>
CONDITION	<u>Clean</u>	Water Activity	<u>0.77</u>	SHAKER SCREENS	<u>50X50</u>
	<u>out</u>	Oil Water Ratio	<u>81/19</u>	PUMP OUT (m3/eth)	<u>0.01181</u>
	<u>out</u>	Temps	<u>28</u>		

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	MUD ADDITIVES			D SILT		CENT.		
				Sacks	Product	Cost Per Unit	O.F. (kg/m3)				
					DMV 100	\$ 175.00	U.F. (kg/m3)				
					Chemul 1	\$ 1,800.00	VOL. (l/min.)				
					Chemul 11	\$ 2,750.00	HOURS				
					Chemwet OM	\$ 2,400.00					
					Hot Lime	\$ 27.00					
				15	Sawdust	\$ 7.25					
					cal carbonate	\$ 10.00					
					Circulation +	\$ 141.00					
					Bore Jacket	\$ 141.00					
				50	Barite	\$ 18.00					
BHA LENGTH			m		Daily Mud Cost	\$ 1,008.75					
HOOK LOAD			daN		Total Mud Cost	\$ 380,883.00					
AVAILABLE WOB			daN								
Joints DP. on Racks:	<u>235</u>										
In String:											
TOTAL:	<u>235</u>										

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING		CORING		RIG REPAIR		TODAY	CUM.
TRIPPING	<u>2.25</u>	LOGGING		LOST CIRC.		<u>18.50</u>	
RIG SERVICE	<u>0.75</u>	TESTING		REAM & WASH		<u>0.50</u>	
SURVEY		CIRC. SAMPLE		WORK PIPE		<u>5.00</u>	
SLIP & CUT		HANDLE TOOLS		FISH		<u>24.00</u>	
COND. MUD	<u>3.00</u>	TRIP		Mix LCM pill			
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING							
CEMENT				Dress Casing	<u>5.00</u>		
HANDLE TOOLS	<u>12.50</u>	Safety Meeting	<u>0.50</u>	Total Hours	<u>24.00</u>		

Time 24 Hour Summary Time
 Tripped in to hole
 Rig serviced. Function test HCR
 Circulate and condition mud
 Pre Job safety meeting. Pumped pill and laid down drill pipe.
 Rig serviced. Function test pipe rams
 Laid down drill pipe, BHA, and break down swivel
 Rig service. Function blind rams
 Dress 177 mm casing. Change out BOP rams

(FORMATIONS) Precambrian (1934 mKB)

SIGNED BY: Lee BrazelMOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/12 REPORT NO.: 50
 DEPTH: 1953 mKB PROGRESS: TD m FORMATION: Precambrian
 OPERATIONS AT 08:00 HOURS: Tripping in clean out bit.
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Date Baxandall CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 93,753.60 CUM. COST: \$ 3,396,047.42 AFE NO: E7D-028

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2300 kPa @ 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL 9.96 m3 ACTUAL HOLE FILL: 10.25 m3
 BOP DRILLS: CONDUCTED WHILE Tripping WELL SECURED IN MIN.
 CONDUCTED AT HR. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	<u>7</u>		WEIGHT (kg/m3)	<u>1242</u>		No. 1 LINER (mm)	<u>152X218</u>	
SIZE (mm)	<u>222</u>		VISCOSITY (a/l)	<u>80</u>		No. 1 SPM	<u>100</u>	
TYPE	<u>ATJ55RG</u>		Lim (Kg/m3)	<u>4.7</u>		No. 2 LINER (mm)	<u>152X218</u>	
SERIAL No.	<u>C89YJ</u>		PV (mPa S)	<u>36</u>		No. 2 SPM		
NOZZLES (mm)			YP (Pa)	<u>10</u>		VOLUME (m3/min.)	<u>1.18</u>	
DEPTH IN (m)	<u>1953</u>		GELS (Pa)	<u>5.57.5</u>		PRESSURE (kPa)	<u>5200</u>	
METERS (m)			SAND (%)			D.P&C.B. ANN. VEL. (m/min.)	<u>40</u>	
HOURS			Electrical Stability	<u>1730</u>		D.P. ANN. VEL. (m/min.)	<u>41</u>	
WOB (1000 lbs)			FILTER CAKE (mm desc.)	<u>1.5</u>		D.C. ANN. VEL. (m/min.)	<u>74</u>	
R.P.M.			WATER LOSS HT HP	<u>1.8</u>		SOLIDS CONTROL	<u>D-1000</u>	
CONDITION	<u>Clean</u>		Water Activity	<u>0.77</u>		SHAKER SCREENS	<u>50X50</u>	
	<u>out</u>		Oil Water Ratio	<u>81/19</u>		PUMP OUT (m3/atk)	<u>0.01181</u>	

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	MUD ADDITIVES			D. SILT.		CENT.		
Bit Sub	<u>171</u>	<u>88</u>	<u>127 H90</u>	Sacks	Product	Cost Per sack	O.F. (kg/m3)				
					OMV 100	\$ 175.00	U.F. (kg/m3)				
					Chemul 1	\$ 1,900.00	VOL. (l/min.)				
Monel	<u>171</u>	<u>72</u>	<u>127 H90</u>		Chemul 11	\$ 2,750.00	HOURS				
2 Drill Collars	<u>171</u>	<u>88</u>	<u>127 H90</u>		Chemwet OM	\$ 2,400.00					
Jars	<u>172</u>	<u>88</u>	<u>127 H90</u>		Hot Lime	\$ 27.00					
5 Drill Collars	<u>171</u>	<u>88</u>	<u>114 XH</u>		Lime	\$ 17.00					
X.O.	<u>170</u>	<u>89</u>	<u>114 XH</u>	33	cal carbonate	\$ 10.00					
BHA LENGTH	<u>240.97</u>		m		Circulation +	\$ 141.00					
HOOK LOAD	<u>85000</u>		daN		Bore Jacket	\$ 141.00					
AVAILABLE WOB	<u>9000</u>		daN	20	Barite	\$ 18.00					
Joints DP. on Racks:	<u>45</u>				Daily Mud Cost	\$ 890.00					
In String:	<u>190</u>				Total Mud Cost	\$ 390,963.00					
TOTAL:	<u>235</u>										

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING		CORING		RIG REPAIR		TODAY	CUM.
TRIPPING	<u>17.00</u>	LOGGING	<u>1.00</u>	LOST CIRC.		<u>21.25</u>	
RIG SERVICE	<u>0.75</u>	TESTING		REAM & WASH		<u>1.25</u>	
SURVEY		CIRC. SAMPLE		WORK PIPE		<u>1.50</u>	
SLIP & CUT		HANDLE TOOLS		FISH		<u>24.00</u>	
COND. MUD	<u>3.50</u>	TRIP		Mix LCM pill	<u>1.50</u>		
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING							
CEMENT							
HANDLE TOOLS		Safety Meeting	<u>0.25</u>				
				Total Hours	<u>24.00</u>		

Time 24 Hour Summary Time

Logged with Schlumberger.
 Rig serviced. Function tested blind rams
 Tripped in 10 drill collars and laid down same. Dressed casing and measured. Measured 18 joints of drill pipe
 Picked up drill pipe. Tripped in open ended to run calcium carbonate plug on bottom
 Circulated hole clean. Conducted a pre plug safety meeting with Schlumber dowell and rig crews
 Rig to run plug and spotted 1.5 m3 of drilling fluid with 825 kg of calcium carbonate 1934 to 1953 mKB
 Tripped out of plug 8 stands and mixed and pumped 20 sac barite pill.
 Tripped out to pick up drill bit to clean out to 1934 mKB
 Rig serviced. Function tested blind rams.
 Picked up BHA and tripped in to hole.

(FORMATIONS) Precambrian (1834 mKB)

SIGNED BY: Lee BrazelMOBILE No: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 87/02/11 REPORT NO.: 49
 DEPTH: 1953 mKB PROGRESS: TD m FORMATION: Precambrian
 OPERATIONS AT 06.00 HOURS: Logging with Schlumberger
 CONTRACTOR/RIG SUPT.: Shekiah Drilling Limited Dale Baxendell CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 44,253.00 CUM. COST: \$ 3,302,293.82 AFE NO.: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.P.: 2300 kPa @: 55 SPM
TRIP RECORDS: CALCULATED HOLE FILL 9.08 m³ ACTUAL HOLE FILL: 10.25 m³
BOP DRILLS: CONDUCTED WHILE _____ WELL SECURED IN _____ MIN.
CONDUCTED AT _____ HRS CREW PERFORMANCE _____
DAYS SINCE BOP DRILL (EACH CREW): 4 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	7	WEIGHT (kg/m3)	1230	No. 1 LINER (mm)	152X216
SIZE (mm)	222	VISCOSITY (cP)	80	No. 1 SPM	70
TYPE	ATJ56RC	LINE (kg/m3)	12	No. 2 LINER (mm)	152X216
SERIAL No.	C8BYJ	PV (mPa S)	35	No. 2 SPM	
NOZZLES (mm)	3/12.4	YP (Pa)	9.5	VOLUME (m3/min.)	0.83
DEPTH IN (m)	1808	GELS (Pa)	5.517.5	PRESSURE (kPa)	5200
METERS (m)	47	SAND (%)		O.P.&CSG. ANN. VEL (m/min.)	28
HOURS	41	Electrical Stability	1440	D.P.ANN. VEL (m/min.)	29
WOB (1000 Dyn)	1920	FILTER CAKE (mm desc.)	1.5	D.C. ANN. VEL (m/min.)	52
R.P.M.	4045	WATER LOSS IT HIP	1.8	SOLIDS CONTROL	D-1000
CONDITION	4-4-WT	Water Activity	0.71	SHAKER SCREENS	50X50
	E-J-N-TD	Oil Water Ratio	82118	PUMP OUT (m3/stk)	0.01181

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	171	88	127 H90
Shock Sub	173	66	127 H90
Monel	171	72	127 H90
5 Drill Collars	171	68	127 H90
Jars	172	88	127 H90
13 Drill Collars	171	68	114 XH
X.O	170	68	114 XH

MUD ADDITIVES

Sacks	Product	Cost Per sack
38	OMV 100	\$ 175.00
	Chemul 1	\$ 1,900.00
	Chemul 11	\$ 2,750.00
	Chemwet OM	\$ 2,400.00
7	Hot Lime	\$ 27.00
10	Lime	\$ 17.00
7	Diesel m3	\$ 470.00
	Circulation +	\$ 141.00
22	Bore Jacket	\$ 141.00
99	Barite	\$ 18.00

O.F. (kg/m³)
U.F. (kg/m³)
VOL. (l/min.)
HOURS

SURVEYS

DIRECTION

BHA LENGTH	240.87
HOOK LOAD	80000
AVAILABLE WOB	18780
Joints DP. on Racks:	54
In String:	181
TOTAL:	235

Time Break Down

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING		CORING		RIG REPAIR			
TRIPPING	7.25	LOGGING	8.50	LOST CIRC.		DRILL OP	14.50
RIG SERVICE	0.25	TESTING		REAM & WASH		EVALUATION	8.50
SURVEY		CIRC SAMPLE		WORK PIPE		PROBLEMS	
SLIP & CUT		HANDLE TOOLS		FISH		TOTAL	24.00
COND MUD	7.00	TRIP		Mix LCM		WEATHER	Windy
NIPPLE UP/DN		REAM RATHOLE				TEMPERATURE	-18 C
RUN CASING						ROADS	Good
CEMENT							
HANDLE TOOLS		Safety Meeting					
				Total Hours	24.00		

Time.

24 Hour Summary

Time

Circulated and conditioned mud to 1235 kg/m³ and 80 viscosity at 1931 mKb
Flow check. Rig serviced. Function tested pipe rams
Circulated and conditioned mud to 1235 kg/m³ and 80 viscosity at 1931 mKb
Tripped out to log. Strapped out.
Rig serviced. Function tested blind rams.
Rigged up to log and log with Schlumberger.

Log No 1 DIESEL BHCS

Drillers Depth 1953 mKb

Loggers Depth 1948.9

Log No 2 CNL - LDT - XY Cal

(FORMATIONS) Precambrian (1834 mKB)

SIGNED BY: Lee Brazil

MOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/10 REPORT NO.: 46
 DEPTH: 1953 mKB PROGRESS: 3 m FORMATION: Precambrian
 OPERATIONS AT 08:00 HOURS: Circulate and condition mud
 CONTRACTOR/RIG SUPT.: Shehah Drilling Limited Dale Baxendall CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 71,518.63 CUM. COST: \$ 3,258,040.82 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2300 kPa @: 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE Tripping WELL SECURED IN 1.5 MIN.
 CONDUCTED AT average HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 3 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BII NUMBER	<u>7</u>		WEIGHT (kg/m3)	<u>1249</u>		No. 1 LINER (mm)	<u>152X216</u>	
SIZE (mm)	<u>222</u>		VISCOSITY (cP)	<u>79</u>		No. 1 SPM	<u>70</u>	
TYPE	<u>ATJ55RC</u>		Lime (Kg/m3)	<u>12.8</u>		No. 2 LINER (mm)	<u>152X216</u>	
SERIAL No.	<u>C89YJ</u>		PV (mPa S)	<u>38</u>		No. 2 SPM		
NOZZLES (mm)	<u>3/12.4</u>		YP (Pa)	<u>10</u>		VOLUME (m3/min.)	<u>0.83</u>	
DEPTH IN (m)	<u>1908</u>		GELS (Pa)	<u>517</u>		PRESSURE (kPa)	<u>5200</u>	
METERS (m)	<u>47</u>		SAND (%)			D.P.CSG. ANN. VEL. (m/min.)	<u>28</u>	
HOURS	<u>41</u>		Electrical Stability	<u>1490</u>		D.P. ANN. VEL. (m/min.)	<u>29</u>	
WOB (1000 DaN)	<u>18/20</u>		FILTER CAKE (mm disc.)	<u>1.5</u>		D.C. ANN. VEL. (m/min.)	<u>52</u>	
R.P.M.	<u>40/45</u>		WATER LOSS HT HP	<u>1.8</u>		SOLIDS CONTROL	<u>D-1000</u>	
CONDITION			Water Activity	<u>0.75</u>		SHAKER SCREENS	<u>140X140</u>	
			Oil Water Ratio	<u>80/20</u>		PUMP OUT (m3/hr)	<u>0.01181</u>	

DRILLING ASSEMBLY

ITEMS	D.D.	I.D.	T.J. TYPE	MUD ADDITIVES			D. SILT. CENT.	
Bit Sub	<u>171</u>	<u>88</u>	<u>127 H90</u>	Sacks	Product	Cost Per Sak	D.F. (kg/m3)	
				<u>27</u>	<u>OMV 100</u>	<u>\$ 175.00</u>	U.F. (kg/m3)	
Shock Sub	<u>173</u>	<u>88</u>	<u>127 H90</u>	<u>1</u>	<u>Chemul 1</u>	<u>\$ 1,800.00</u>	VOL. (l/min.)	
Monel	<u>171</u>	<u>72</u>	<u>127 H80</u>	<u>1</u>	<u>Chemul 11</u>	<u>\$ 2,750.00</u>	HOURS	
5 Drill Collars	<u>171</u>	<u>88</u>	<u>127 H80</u>	<u>1</u>	<u>Chemwet OM</u>	<u>\$ 2,400.00</u>		
Jars	<u>172</u>	<u>88</u>	<u>127 H90</u>	<u>54</u>	<u>Hot Lime</u>	<u>\$ 27.00</u>		
13 Drill Collars	<u>171</u>	<u>88</u>	<u>114 XH</u>	<u>10</u>	<u>Cellophane</u>	<u>\$ 48.00</u>		
X.O	<u>170</u>	<u>88</u>	<u>114 XH</u>	<u>40</u>	<u>Diesel m3</u>	<u>\$ 470.00</u>		
BHA LENGTH	<u>240.97</u>	<u>m</u>		<u>38</u>	<u>Circulation +</u>	<u>\$ 141.00</u>		
HOOK LOAD	<u>80000</u>	<u>daN</u>		<u>98</u>	<u>Mica</u>	<u>\$ 35.25</u>		
AVAILABLE WOB	<u>18790</u>	<u>daN</u>		<u>195</u>	<u>Barite</u>	<u>\$ 18.00</u>		
Joints DP. on Racks:	<u>59</u>				Daily Mud Cost	<u>\$ 44,815.50</u>		
In String:	<u>178</u>				Total Mud Cost	<u>\$ 375,140.00</u>		
TOTAL:	<u>235</u>							

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	<u>2.80</u>	CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.	<u>21.00</u>	<u>3.00</u>	
RIG SERVICE	<u>0.60</u>	TESTING		REAM & WASH		EVALUATION	
SURVEY		CIRC SAMPLE		WORK PIPE		PROBLEMS	<u>21.00</u>
SLIP & CUT		HANDLE TOOLS		FISH		TOTAL	<u>24.00</u>
COND. MUD		TRIP		Mix LCM		WEATHER	<u>Overcast</u>
NIPPLE UPON		REAM RATHOLE				TEMPERATURE	<u>-20 C</u>
RUN CASING						ROADS	<u>Good</u>
CEMENT							
HANDLE TOOLS		Safety Meeting					
				Total Hours	<u>24.00</u>		

Time 24 Hour Summary Time

Drilled 222 mm 1950 to 1953 mKB.
 Flow check. Losses of 4 m3/hour in static condition. Mix a LCM pill of prima seal, Cellophane, Circulation Plus and Bore Jacket. Spotted at 1953 to 1900 m. Pulled up to 1930 m and conditioned mud with LCM. On the circulation of bottoms up mud came around with the LCM and an 1190 mud weight with gas peaks of 800 units over 10 units background.
 Circulated and conditioned mud
 Rig serviced. Function tested Hydril, HCR
 Circulated and conditioned mud to 1235 kg/m3 and 80 viscosity
 Rig serviced. Function tested pipe rama
 Circulated and conditioned mud to 1235 kg/m3 and 80 viscosity
 CIRC 30m OFF BOTTOM EST 1230 Kg/m3 HIGH RES DENSITY TO TRIP
 No FLUID LOST SINCE MIDNIGHT. 69.9m3 WOB @ MIDNIGHT 68m3 @ 0600
 TOTAL DEPTH: 0900 hours 97/02/09 at 1953 mKB
 CIRCULATION + MATERIAL WORKED BEST ON LC.
 PRIMASEAL + CELLOPHANE CAUSE MAJOR PROBLEMS w/ MUD PROPERTIES. BARITE COATED LCM MATERIAL
 (FORMATIONS) Precambrian (1934 mKB)
 SIGNED BY: Lee Brazel AND ALLOWED DENSITY TO DROP TO 1190. MOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/02/09 REPORT NO.: 47
 DEPTH: 1950 mKB PROGRESS: 24 m FORMATION: Mount Clark
 OPERATIONS AT 08:00 HOURS: Drilling 222 mm hole
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Date Baxandall CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 27,311.00 CUM. COST: \$ 3,180,522.12 AFE NO: E7D-029

WELL CONTROL

DPY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2300 kPa @: 55 SPM
 TI. RECORDS: CALCULATED HOLE FILL 9.88 m³ ACTUAL HOLE FILL: 11.48 m³
 BOP DRILLS: CONDUCTED WHILE Tripping WELL SECURED IN 1.5 MIN.
 CONDUCTED AT _____ HRS. CREW PERFORMANCE average
 DAYS SINCE BOP DRILL (EACH CREW): 2 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	<u>7</u>	WEIGHT (kg/m ³)	<u>1228</u>	No. 1 LINER (mm)	<u>152X216</u>
SIZE (mm)	<u>222</u>	VISCOSITY (s/l)	<u>70</u>	No. 1 SPM	<u>90</u>
TYPE	<u>ATJ55RC</u>	Lime (Kg/m ³)	<u>8.9</u>	No. 2 LINER (mm)	<u>152X216</u>
SERIAL No.	<u>C89YJ</u>	PV (mPa S)	<u>30</u>	No. 2 SPM	
NOZZLES (mm)	<u>3/12.4</u>	YP (Pa)	<u>7.5</u>	VOLUME (m ³ /min.)	<u>1.08</u>
DEPTH IN (m)	<u>1906</u>	GELS (Pa)	<u>315</u>	PRESSURE (kPa)	<u>5200</u>
METERS (m)	<u>44</u>	SAND (%)		D.P.ACSG. ANN. VEL. (m/min.)	<u>38</u>
HOURS	<u>38.5</u>	Electrical Stability	<u>1080</u>	D.P.ANN. VEL. (m/min.)	<u>37</u>
WOB (1000 lbs)	<u>1920</u>	FILTER CAKE (mm desc.)	<u>1.5</u>	D.C. ANN. VEL. (m/min)	<u>66</u>
R.P.M.	<u>40W5</u>	WATER LOSS HT HP	<u>3.1</u>	SOLIDS CONTROL	<u>D-1000</u>
CONDITION		Water Activity	<u>0.89</u>	SHAKER SCREENS	<u>140X140</u>
		Oil Water Ratio	<u>79/21</u>	PUMP OUT (m ³ /stk)	<u>0.01181</u>
		Temp	<u>33.5</u>		

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	MUD ADDITIVES			D. SILT.	CENT.
Bit Sub	171	88	127 H90	Sacks	Product	Cost Per/100		
				10	OMV 100	\$ 173.00		
Shock Sub	173	66	127 H90	1	Chemul 1	\$ 1,800.00		
Monel	171	72	127 H90	1	Chemul 11	\$ 2,750.00		
5 Drill Collars	171	68	127 H90		Chemwel OM	\$ 2,400.00		
Jars	172	88	127 H90	10	Hot Lime	\$ 27.00		
13 Drill Collars	171	88	114 XH		CaCl ₂ HT	\$ 95.00		
X.O	170	68	114 XH	3.5	Diesel m3	\$ 470.00		
BHA LENGTH	<u>240.97</u> m			15	Circulation +	\$ 141.00		
HOOK LOAD	<u>80000</u> daN			7	Mica fine	\$ 35.25		
AVAILABLE WOB	<u>18790</u> daN			20	Barite	\$ 18.00		
Joints DP. on Racks:	<u>59</u>			Daily Mud Cost		\$ 8,011.25		
In String:	<u>178</u>			Total Mud Cost		\$ 326,058.00		
TOTAL:	<u>255</u>			Time Break Down				

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	<u>20.00</u>	CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.		<u>21.00</u>	
RIG SERVICE	<u>1.00</u>	TESTING		REAM & WASH			
SURVEY		CIRC. SAMPLE		WORK PIPE		<u>3.00</u>	
SLIP & CUT		HANDLE TOOLS		FISH		<u>24.00</u>	
COND. MUD		TRIP		Mx LCM	<u>3.00</u>		
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING							
CEMENT							
HANDLE TOOLS		Safety Meeting					
				Total Hours	<u>24.00</u>		

Time 24 Hour Summary Time
 Rig serviced. Function tested Pipe Rams. Cleaned suction screens
 Drilled 222 mm hole to 1935 mKB
 Rig serviced. Function tested Hydril
 Drilled 222 mm hole to 1944 mKB
 Flow Check. Losses to formation of 1 m³ per hour of drilling fluid. Mixed an LCM pill and spot at 1944 to 1860 mKB.
 Rig serviced. Function tested pipe rams
 Drilled 222 mm 1844 to 1950 mKB

NOTE: Minor Drill fluid loss started at 1836 m increasing to 1 m³ per hour at 1944 mKB. Sealed with an static LCM pill
 Losses while drilling ahead approx. 3 m³/hour

NOTE: Background gas 4 to 8 units
 (FORMATIONS) Mount Clark (1889 mKB)
 SIGNED BY: Lee Brazel MOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME:	RANGER NOTA CREEK C-17	DATE:	87/02/08	REPORT NO.:	46
DEPTH:	1926 mKB	PROGRESS:	18 m	FORMATION:	Mount Clark
OPERATIONS AT 08:00 HOURS:	Drilling 222 mm hole				
CONTRACTOR/RIG SUPT.:	Shehah Drilling Limited	Date Baxandall	CO. SUPERVISOR: Lee Brazal		
DAILY COST:	\$ 81,888.34	CUM COST:	\$ 3,159,211.18	AFE NO:	E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2300 kPa @ 55 SPM
TRIP RECORDS: CALCULATED HOLE FILL 9.96 m3 ACTUAL HOLE FILL: 11.46 m3
BOP DRILLS: CONDUCTED WHILE Tripping WELL SECURED IN 1.5 MIN.
CONDUCTED AT _____ MRS CREW PERFORMANCE average
DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	7	WEIGHT (kg/m3)	1212	No. 1 LINER (mm)	152X218
SIZE (mm)	222	VISCOSITY (cP)	73	No. 1 SPM	110
TYPE	ATJ55RC	Lime (Kg/m3)	8.5	No. 2 LINER (mm)	152X216
SERIAL No.	C88YJ	PV (mPa S)	30	No. 2 SPM	
NOZZLES (mm)	3/12.4	YP (Pa)	7.5	VOLUME (m3/min.)	1.30
DEPTH IN (m)	1906	GELS (Pa)	314	PRESSURE (kPa)	6500
METERS (m)	20	SAND (%)		D.P.&C.G. ANN. VEL. (m/min.)	44
HOURS	18.5	Electrical Stability	1235	D.P. ANN. VEL. (m/min)	46
WOB (1000 lbs)	1920	FILTER CAKE (mm desc.)	1.5	D.C. ANN. VEL. (m/min)	81
R.P.M.	40/46	WATER LOSS HT HP	3	SOLIDS CONTROL	D-1000
CONDITION		Water Activity	0.66	SHAKER SCREENS	140X140
		Oil Water Ratio	79/21	PUMP OUT (m3/stk)	0.01181

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	MUD ADDITIVES				D. SILT.	CENT.
Bit Sub	171	88	127 H90	Sacks	Product	Cost Per Sack	O.F. (kg/m3)		
				25	OMV 100	\$ 175.00	U.F. (kg/m3)		
Shock Sub	173	88	127 H90		Chemul 1	\$ 1,900.00	VOL. (l/min.)		
Manal	171	72	127 H90		Chemul 11	\$ 2,750.00	HOURS		
5 Drill Collars	171	88	127 H90		Charnwet OM	\$ 2,400.00			
Jars	172	88	127 H90	37	Hot Lime	\$ 27.00	SURVEYS		DIRECTION
13 Drill Collars	171	88	114 XH		CaCl2 H7	\$ 85.00	m		
X.O	170	88	114 XH	1	Diesel m3	\$ 470.00	m		
BHA LENGTH	240.97	m			TDL Defoamer	\$ 262.25	m		
HOOK LOAD	80000	daN		0.8	Water m3		m		
AVAILABLE WOB	18790	daN		25	Berite	\$ 18.00	m		
Joints DP. on Racks:	59				Daily Mud Cost		m		
In String:	176				Total Mud Cost	\$ 326,058.00	m		
TOTAL:	235				Time Break Down		m		

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	18.50	CORING	_____	RIG REPAIR	_____		
TRIPPING	5.00	LOGGING	_____	LOST CIRC.	_____	DRILL OP	TODAY CUM.
RIG SERVICE	0.50	TESTING	_____	REAM & WASH	_____	EVALUATION	24.00
SURVEY	_____	CIRC SAMPLE	_____	WORK PIPE	_____	PROBLEMS	_____
SLIP & CUT	_____	HANDLE TOOLS	_____	FISH	_____	TOTAL	24.00
COND. MUD	_____	TRIP	_____		_____	WEATHER	Overcast
NIPPLE UP/DN	_____	REAM RATHOLE	_____		_____	TEMPERATURE	-18 C
RUN CASING	_____		_____		_____	ROADS	Good
CEMENT	_____		_____		_____		
HANDLE TOOLS	_____	Safety Meeting	_____		_____		
				Total Hours	24.00		

Time	24 Hour Summary	Time
	Tripped in hole. Broke circulation at 1300 m. Washed to bottom 3 m of fill	
	Rig serviced. Function tested hydriil	
	Drilled 222 mm hole to 1917 mKB.	
	Rig serviced. Changed oil in swivel	
	Drilled 222 mm hole to 1928 mKB.	

NOTE: Background gas 4 to 17 units.
(FORMATIONS) Mount Clark (1889 mKB)
SIGNED BY: Lee Brazal

MOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/07 REPORT NO.: 45
 DEPTH: 1906 mKB PROGRESS: 18 m FORMATION: Mount Clark
 OPERATIONS AT 08:00 HOURS: Tripping in with 222 mm drill bit
 CONTRACTOR/RIG SUPT.: Shehlah Drilling Limited Dale Baxendall CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 35,085.98 CUM. COST: \$ 3,097,631.85 AFE NO: E7D-029

WELL CONTROL
 DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2300 kPa @ 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE Tripping WELL SECURED IN 2 MIN.
 CONDUCTED AT HRS. CREW PERFORMANCE average
 DAYS SINCE BOP DRILL (EACH CREW): MAXIMUM CASING HOLD BACK 3554 kPa

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	8		WEIGHT (kg/m3)	1230		No. 1 LINER (mm)	152X216	
SIZE (mm)	222		VISCOSITY (cP)	70		No. 1 SPM	110	
TYPE	FM2665		Lime (Kg/m3)	12.7		No. 2 LINER (mm)	152X216	
SERIAL No	5983350		PV (mPa S)	32		No. 2 SPM		
NOZZLES (mm)	6/11.1		YP (Pa)	8		VOLUME (m3/min.)	1.30	
DEPTH IN (m)	1384		GELS (Pa)	334.5		PRESSURE (kPa)	6500	
METERS (m)	522		SAND (%)			D.P.CSG. ANN. VEL. (m/min.)	44	
HOURS	104.75		Electrical Stability	1210		D.P. ANN. VEL. (m/min.)	46	
WOB (1000 daN)	0-4		FILTER CAKE (mm desc.)	1.5		D.C. ANN. VEL. (m/min.)	81	
R.P.M.	70-80		WATER LOSS HT HP	3.3		SOLIDS CONTROL	D-1000	
CONDITION	70%		Water Activity	0.57		SHAKER SCREENS	140X140	
			Oil Water Ratio	82/18		PUMP OUT (m3/stk)	0.01181	
			Temp	34				

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	171	88	127 H80
Teledrift	165		127 H80
Shock Sub	173	86	127 H80
Monel	171	72	127 H80
5 Drill Collars	171	68	127 H80
Jars	172	68	127 H80
13 Drill Collars	171	68	114 XH
X.O	170	69	114 XH
BHA LENGTH	241.07		m
HOOK LOAD	80000		daN
AVAILABLE WOB	18790		daN
Joints DP. on Racks:	59		
In String:	176		
TOTAL:	235		

MUD ADDITIVES

Sacks	Product	Cost Per Sack
25	OMV 100	\$ 175.00
	Chemul 1	\$ 1,800.00
	Chemul 11	\$ 2,750.00
	Chemwet OM	\$ 2,400.00
37	Hol Lime	\$ 27.00
	CaCl2 HT	\$ 85.00
1	Diesel m3	\$ 470.00
	TDL Defoamer	\$ 262.25
0.8	Water m3	
25	Barite	\$ 18.00
	Daily Mud Cost	\$ 8,294.00
	Total Mud Cost	\$ 326,058.00

O.F. (kg/m3)
 U.F. (kg/m3)
 VOL. (l/min.)
 HOURS

SURVEYS

	DIRECTION
m	
m	
m	
m	
m	
m	
m	
m	

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	9.00	CORING		RIG REPAIR	2.00	TODAY	CUM.
TRIPPING	7.00	LOGGING		LOST CIRC.		22.00	
RIG SERVICE	0.50	TESTING		REAM & WASH			
SURVEY		CIRC. SAMPLE		WORK PIPE		2.00	
SLIP & CUT	1.50	HANDLE TOOLS		FISH		24.00	
COND. MUN		TRIP					
NIPPLE UP/DN	4.00	REAM RATHOLE					
RUN CASING							
CEMENT							
HANDLE TOOLS		Safety Meeting					
				Total Hours	24.00		

Time 24 Hour Summary Time
 Repairs to rotary chain and clean pump suction
 Drilled 222 mm hole to 1900 mKB
 Rig serviced. Function tested pipe rams
 Drilled 222 mm hole to 1900 mKB
 Pump pill and tripped out to drill collars
 Slipped and cut drilling line
 Tripped out and laid down bit. Laid down teledrift assembly
 Rig to pressure test and tested BOP's & valves, manifold valves and chokes. Hydriil and chokes 1500 kpa at 10 minutes
 14000 kpa at 10 minutes. All other tests at 1500 kpa at 10 minutes. 18000 kpa at 10 minutes. Pressure tested with test
 plug.
 Picked up drilling BHA and tripped in to hole.

NOTE: Background gas 11 to 22 units.

(FORMATIONS) Mount Clark (1889 mKB)

SIGNED BY: Lee Brazel

MOBILE No: 403-282-9301

Ranger Oil Limited



DAILY DRILLING REPORT

WELL NAME	RANGER NOTA CREEK C-17		DATE:	97/02/06	REPORT NO.:	44
DEPTH:	1860	mKS	PROGRESS:	132	m	FORMATION: Mount Cap
OPERATIONS AT 06.00 HOURS:			Drilling 222 mm main hole			
CONTRACTOR/RIG SUPT.:			Shehatah Drilling Limited Dale Bazandall		CO SUPERVISOR: Les Brazel	
DAILY COST	\$	28,320.56	CUM. COST.	\$	3,062,445.87	AFE NO: E7D-029

WELL CONTROL

WELL CONTROL

DAILY RIG CHECK:	X	DAILY BOP CHECK:	X	R S S.P.:	2300	kPa @:	55	SPM
TRIP RECORDS	CALCULATED HOLE FILL			m3	ACTUAL HOLE FILL:			m3
BOP DRILLS:	CONDUCTED WHILE			Drilling	WELL SECURED IN	1.5		MIN
	CONDUCTED AT				HRS. CREW PERFORMANCE	average		
DAYS SINCE BOP DRILL (EACH CREW):	2			MAXIMUM CASING HOLD BACK	3554		kPa	

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	6	WEIGHT (kg/m ³)	1220	No. 1 LINER (mm)	152X216
SIZE (mm)	222	VISCOSITY (cP)	74	No. 1 SPM	110
TYPE	FM2685	Lime (Kg/m ³)	11.1	No. 2 LINER (mm)	152X216
SERIAL No.	5003350	PV (mPa S)	32	No. 2 SPM	
NOZZLES (mm)	8/11.1	YP (Pa)	10	VOLUME (m ³ /min.)	1.30
DEPTH IN (m)	1384	GELS (Pa)	3.5/5	PRESSURE (kPa)	6300
METERS (m)	506	SAND (%)		D.P.A.C.G. ANN. VEL. (m/min.)	44
HOURS	85.75	Electrical Stability	1220	D.P. ANN. VEL. (m/min.)	46
WOB (1000 Dm)	0-4	FILTER CAKE (mm desc.)	1.5	D.C. ANN. VEL. (m/min.)	81
R.P.M.	70-80	WATER LOSS HT HP	3.2	SOLIDS CONTROL	D-1000
CONDITION		Water Activity	0.57	SHAKER SCREENS	140X140
		Oil Water Ratio	82/18	PUMP OUT (m ³ /stk)	0.01181

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	171	88	127 H90
Teledrift	165		127 H90
Shock Sub	173	88	127 H90
Monel	171	72	127 H90
5 Drill Collars	171	68	127 H90
Jars	172	68	127 H90
13 Drill Collars	171	68	114 XH
X.O.	170	69	114 XH

BHA LENGTH	241.07	m
HOOK LOAD	80000	daN
AVAILABLE WOB	18790	daN
Joints DP on Racks:	61	
In String:	174	
TOTAL:	235	

MUD ADDITIVES

Sacks	Product	Cost Per Sak
19	OMV 100	\$ 175.00
1	Chemul 1	\$ 1,900.00
1	Chemul 11	\$ 2,750.00
1	Chemwel OM	\$ 2,400.00
60	Hot Lime	\$ 27.00
	CaCl ₂ HT	\$ 95.00
8	Diesel m3	\$ 470.00
	TDL Defoamer	\$ 292.25
2	Water m3	
82	Barite	\$ 18.00

Daily Mud Cost	\$ 18,291.00
Total Mud Cost	\$ 319,764.00

	D. SILT.	CENT.
O.F. (kg/m ³)		
U.F. (kg/m ³)		
VOL. (l/min.)		
HOURS		

SURVEYS

CONVERTS			DIRECTOR
1808	m	6.8	37
1864	m	8.9	27
	m		
	m		
	m		
	m		
	m		

DRILLING OPERATIONS

Drilling		Evaluation		Weather		Summary	
DRILLING	21.75	CORING	_____	RIG REPAIR	_____	DRILL OP	TODAY
TRIPPING	_____	LOGGING	_____	LOST CIRC	_____	EVALUATION	CUM
RIG SERVICE	0.75	TESTING	_____	REAM & WASH	_____	PROBLEMS	24.00
SURVEY	1.50	CIRC. SAMPLE	_____	WORK PIPE	_____	TOTAL	_____
SLIP & CUT	_____	HANDLE TOOLS	_____	FISH	_____	WEATHER	Overcast
COND MUD	_____	TRIP	_____	_____	_____	TEMPERATURE	-12 C
NIPPLE UP/DN	_____	REAM RATHOLE	_____	_____	_____	ROADS	Good
RUN CASING	_____	_____	_____	_____	_____		
CEMENT	_____	_____	_____	_____	_____		
HANDLE TOOLS	_____	Safety Meeting	_____	_____	_____		
				Total Hours	24.00		

Time 24 Hour Summary

Drilled 222 mm hole to 1815 mKB. Survey as required.
Rig serviced. Function tested pipe rams
Drilled 222 mm hole to 1872 mKB. Survey as required.
Rig serviced. Function tested hydril
Drilled 222 mm hole to 1890 mKB. Survey as required.

HARD DRIVING 1875 10000

1840 Harb Dr. V. l. v.

NOTE: Background gas 11 to 22 units. Peak at 1887 m at 27 units

(FORMATIONS) Mount Cap (1759 mKB)

SIGNED BY: Lee Brazel

MOBILE No.: 403-282-9301

February 6, 1998
5:48 amPathTracker 4.0
Survey Calculation Program
L. BRAZEL OILFIELD CONSULTING INCCustomer: RANGER OIL LIMITED
WellName: RANGER NOTA CREEK C-17
Location: AFE E7D - 029Vertical Section Calculated on: 0.0000
Survey Calculation Method: Minimum Curvature
FileName: C:\LEE\OILFIELD\PATHTRK\RANC17.SR3

#	Depth Meters	Inc Degrees	Azimuth Degrees	TVD Meters	North Meters	East Meters	Section Meters	Dogleg /30m	Subsea Meters	Cls Dist Meters	Cls / Degree
20	840.00	2.00	47.00	939.80	13.31	1.93	13.31	0.41	-787.58	13.45	8.
21	959.00	1.80	52.00	958.79	13.72	2.41	13.72	0.41	-786.57	13.93	9.
22	983.00	1.20	49.00	992.78	14.28	3.10	14.28	0.53	-820.56	14.61	12.
23	1021.00	1.00	12.00	1020.77	14.71	3.37	14.71	0.78	-848.55	15.09	12.
24	1081.00	1.00	17.00	1080.76	15.72	3.84	15.72	0.04	-908.54	16.14	13.
25	1145.00	1.80	27.00	1144.74	17.15	4.25	17.15	0.39	-972.53	17.67	13.
26	1190.00	1.50	7.00	1189.73	18.37	4.85	18.37	0.43	-1017.51	18.95	14.
27	1209.00	2.00	357.00	1208.72	18.95	4.86	18.95	0.92	-1036.50	19.51	13.
28	1287.00	2.70	357.00	1286.85	22.14	4.49	22.14	0.27	-1114.43	22.59	11.
29	1345.00	2.90	17.00	1344.58	24.91	4.85	24.91	0.51	-1172.36	25.37	11.
30	1525.00	5.40	35.00	1524.10	38.20	11.04	38.20	0.48	-1351.88	37.85	16.
31	1535.00	5.40	35.00	1534.06	38.97	11.58	38.97	0.00	-1361.84	38.74	17.
32	1565.00	6.10	40.00	1563.91	39.35	13.41	39.35	0.86	-1391.69	41.57	18.
33	1591.00	6.60	44.00	1589.75	41.48	15.34	41.48	0.77	-1417.53	44.23	20.
34	1629.00	6.70	45.00	1627.49	44.62	18.43	44.62	0.12	-1455.27	48.28	22.
35	1667.00	6.80	43.00	1665.23	47.83	21.53	47.83	0.20	-1493.01	52.45	24.
36	1704.00	7.80	42.00	1701.93	51.30	24.70	51.30	0.82	-1529.71	56.94	25.
37	1741.00	7.00	47.00	1738.82	54.70	28.03	54.70	0.83	-1566.40	61.47	27.
38	1808.00	6.80	37.00	1805.14	60.66	33.40	60.66	0.54	-1632.92	69.25	28.
39	1864.00	6.90	27.00	1860.74	66.30	36.93	66.30	0.64	-1688.52	75.89	29.

Closure is 75.8916 Meters on an azimuth of 29.1147

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/02/05 REPORT NO.: 43
 DEPTH: 1758 mKB PROGRESS: 124 m FORMATION: Saline River
 OPERATIONS AT 06.00 HOURS: Drilling 222 mm main hole
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Dale Baxandall CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 28,291.87 CUM COST: \$ 3,034,125.31 AFE NO.: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @ 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: 1.5 m3
 BOP DRILLS: CONDUCTED WHILE Drilling WELL SECURED IN 1.5 MIN.
 CONDUCTED AT 0.00 HRS. CREW PERFORMANCE average
 DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 3564 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	<u>8</u>		WEIGHT (kg/m3)	<u>1228</u>		No. 1 LINER (mm)	<u>152X218</u>	
SIZE (mm)	<u>222</u>		VISCOSITY (cP)	<u>66</u>		No. 1 SPM	<u>110</u>	
TYPE	<u>FM2665</u>		Line (Kg/m3)	<u>10</u>		No. 2 LINER (mm)	<u>152X218</u>	
SERIAL No.	<u>5883350</u>		PV (mPa S)	<u>31</u>		No. 2 SPM		
NOZZLES (mm)	<u>6/11.1</u>		YP (Pa)	<u>7</u>		VOLUME (m3/min.)	<u>1.30</u>	
DEPTH IN (m)	<u>1384</u>		GELS (Pa)	<u>3/3.5</u>		PRESSURE (kPa)	<u>6300</u>	
METERS (m)	<u>374</u>		SAND (%)			D.P.CSG ANN. VEL. (m/min.)	<u>44</u>	
HOURS	<u>74</u>		Electrical Stability	<u>1180</u>		D.P. ANN. VEL. (m/min.)	<u>46</u>	
WOB (100 lbf)	<u>0.4</u>		FILTER CAKE (mm desc.)	<u>1.5</u>		D.C. ANN. VEL. (m/min.)	<u>61</u>	
R.P.M.	<u>70-80</u>		WATER LOSS HT HP	<u>4.7</u>		SOLIDS CONTROL	<u>D-1000</u>	
CONDITION			Water Activity	<u>0.55</u>		SHAKER SCREENS	<u>140X140</u>	
			Oil Water Ratio	<u>78/22</u>		PUMP OUT (m3/hr)	<u>0.01181</u>	

DRILLING ASSEMBLY

DRILLING RECORD				MUD ADDITIVES					D. SILT.	CENT.
ITEMS	O.D.	I.D.	T.J. TYPE	Sacks	Product	Cost Per Sak	O.F. (kg/m3)			
Bit Sub	171	88	127 H90							
Teledrift	165		127 H90	11	OMV 100	\$ 175.00	U.F. (kg/m3)			
Shock Sub	173	88	127 H90	1	Chemul 1	\$ 1,900.00	VOL (l/min.)			
Monel	171	72	127 H90	1	Chemul 11	\$ 2,750.00	HOURS			
5 Drill Collars	171	88	127 H90		Chemwel OM	\$ 2,400.00				
Jars	172	88	127 H90	41	Hot Lime	\$ 27.00	SURVEYS			DIRECTION
13 Drill Collars	171	88	114 XH	20	CaCl2 HT	\$ 95.00	1667	m	6.8	43
X.O.	170	88	114 XH	20	Diesel m3	\$ 470.00	1704	m	7.8	42
BHA LENGTH	241.07	m			TOL Defoamer	\$ 282.25	1741	m	7	47
HOOK LOAD	77000	daN		5	Water m3			m		
AVAILABLE WOB	18780	daN		24	Banta	\$ 18.00		m		
Joints DP. on Racks:	74				Daily Mud Cost	\$ 19,414.00		m		
In String:	181				Total Mud Cost	\$ 303,473.00		m		
TOTAL:	235							m		
				Time Break Down						

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	20.00	CORING		RIG REPAIR	0.50	DRILL OP	TODAY
TRIPPING		LOGGING		LOST CIRC.		EVALUATION	23.25
RIG SERVICE	0.75	TESTING		REAM & WASH		PROBLEMS	0.25
SURVEY	2.50	CIRC. SAMPLE		WORK PIPE		TOTAL	0.50
SLIP & CUT		HANDLE TOOLS		FISH		WEATHER	24.00
COND. MUD		TRIP				TEMPERATURE	Scattered Cloud
NIPPLE UP/DN		REAM RATHOLE				ROADS	-12 C
RUN CASING							Good
CEMENT				Changed			
HANDLE TOOLS		Safety Meeting	0.25	Screens			
				Total Hours	24.00		

Time	24 Hour Summary	Time
Circulate and survey		
Drilled 222 mm hole to 1648 mKB.		
Drilled 222 mm hole to 1571 mKB. Survey as required.		
Rig serviced. Function tested hydril		
BOP drill with crew. Well secure in 1.5 minutes		
Drilled 222 mm hole to 1712 mKB. Survey as required.		
Rig serviced. Function tested pipe rams		
Drilled 222 mm hole to 1749 mKB. Survey as required.		
Rig serviced. Function tested hydril		
Drilled 222 mm hole to 1758 mKB.		

NOTE: Background gas 13 to 20 units

(FORMATIONS) Saline River (915 mKB)

SIGNED BY: Lee Brazel

MOBILE No.: 403-282-9301

February 5, 1988
7:30 am

PathTracker 4.0
Survey Calculation Program
L. BRAZEL OILFIELD CONSULTING INC

Customer: RANGER OIL LIMITED
WellName: RANGER NOTA CREEK C-17
Location: AFE E7D - 029

Vertical Section Calculated on: 0.0000
Survey Calculation Method: Minimum Curvature
FileName: C:\LEEIOILFIELD\PATHTRKR\RANC17.SR3

#	Depth Meters	Inc Degrees	Azimuth Degrees	TVD Meters	North Meters	East Meters	Section Meters	Dogleg /30m	Subsea Meters	Cls Dist Meters	Cls A Degrees
18	891.00	1.80	57.00	890.53	12.37	0.65	12.37	0.84	-718.61	12.39	3.0
19	912.00	1.80	57.00	911.82	12.73	1.21	12.73	0.00	-739.80	12.79	5.4
20	940.00	2.00	47.00	939.80	13.31	1.93	13.31	0.41	-767.58	13.45	8.2
21	959.00	1.80	52.00	959.79	13.72	2.41	13.72	0.41	-788.57	13.93	9.9
22	993.00	1.20	49.00	992.78	14.28	3.10	14.20	0.53	-820.56	14.61	12.7
23	1021.00	1.00	12.00	1020.77	14.71	3.37	14.71	0.78	-848.55	15.09	12.9
24	1081.00	1.00	17.00	1080.76	15.72	3.64	15.72	0.04	-908.54	16.14	13.0
25	1145.00	1.80	27.00	1144.74	17.15	4.25	17.15	0.39	-972.53	17.67	13.9
26	1190.00	1.50	7.00	1189.73	18.37	4.85	18.37	0.43	-1017.51	18.95	14.2
27	1209.00	2.00	357.00	1208.72	18.95	4.66	18.95	0.92	-1036.50	19.51	13.8
28	1287.00	2.70	357.00	1286.65	22.14	4.49	22.14	0.27	-1114.43	22.59	11.6
29	1345.00	2.90	17.00	1344.58	24.91	4.85	24.91	0.51	-1172.38	25.37	11.0
30	1525.00	5.40	35.00	1524.10	36.20	11.04	36.20	0.46	-1351.88	37.85	18.9
31	1535.00	5.40	35.00	1534.06	36.97	11.58	36.97	0.00	-1361.84	38.74	17.2
32	1565.00	6.10	40.00	1563.91	39.35	13.41	39.35	0.86	-1391.69	41.57	18.8
33	1591.00	6.60	44.00	1589.75	41.48	15.34	41.48	0.77	-1417.53	44.23	20.1
34	1629.00	6.70	45.00	1627.49	44.62	18.43	44.62	0.12	-1455.27	48.28	22.4
35	1667.00	6.80	43.00	1665.23	47.83	21.53	47.83	0.20	-1493.01	52.45	24.2
36	1704.00	7.80	42.00	1701.83	51.30	24.70	51.30	0.82	-1529.71	56.94	25.7
37	1741.00	7.00	47.00	1739.62	54.70	28.03	54.70	0.83	-1566.40	61.47	27.1

Closure is 61.4681 Meters on an azimuth of 27.1300

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/04 REPORT NO.: 42
 DEPTH: 1634 mKB PROGRESS: 88 m FORMATION: Saline River
 OPERATIONS AT 06:00 HOURS: Drilling 222 mm main hole
 CONTRACTOR/RIG SUPT.: Shehlah Drilling Limited Dale Baxandall CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 35,867.06 CUM. COST: \$ 3,005,833.44 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @: 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
 CONDUCTED AT HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 5 MAXIMUM CASING HOLD BACK 3534 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	6		WEIGHT (kg/m3)	1240		No. 1 LINER (mm)	152X216	
SIZE (mm)	222		VISCOSITY (cP)	73		No. 1 SPM	110	
TYPE	FM2085		Lime (Kg/m3)	8.9		No. 2 LINER (mm)	152X216	
SERIAL No.	5983350		PV (mPa S)	34		No. 2 SPM		
NOZZLES (mm)	8/11.1		YP (Pa)	8		VOLUME (m3/min.)	1.30	
DEPTH IN (m)	1364		GELS (Pa)	3/4.5		PRESSURE (kPa)	6000	
METERS (m)	250		SAND (%)			D.P.CSG. ANN. VEL. (m/min.)	44	
HOURS	54		Electrical Stability	1000		D.P. ANN. VEL. (m/min.)	48	
WOB (1000 lbs)	0-4		FILTER CAKE (mm disc)	1.5		D.C. ANN. VEL. (m/min.)	81	
R.P.M.	70-80		WATER LOSS HT HP	4		SOLIDS CONTROL	D-1000	
CONDITION			Water Activity	0.71		SHAKER SCREENS	140X140	
			Oil Water Ratio	80/20		PUMP OUT (m3/hr)	0.01181	
			Temp	32				

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	171	88	127 H90
Teledrift	165		127 H90
Shock Sub	173	88	127 H90
Motor	171	72	127 H90
5 Drill Collars	171	88	127 H90
Jars	172	88	127 H90
13 Drill Collars	171	88	114 XH
X.O.	170	69	114 XH

BHA LENGTH 241.07 m
 HOOK LOAD 77000 daN
 AVAILABLE WOB 18780 daN
 Joints DP, on Racks: 87
 In String: 148
 TOTAL: 235

MUD ADDITIVES

Sacks	Product	Cost Per Sak	O.F. (kg/m3)
28	OMV 100	\$ 175.00	U.F. (kg/m3)
1	Chemul 1	\$ 1,900.00	VOL. (l/min.)
1	Chemul 11	\$ 2,750.00	HOURS
	Chemwet OM	\$ 2,400.00	
28	Hot Lime	\$ 27.00	
	CaCl2 HT	\$ 89.00	
	Diesel m3	\$ 470.00	
	TDL Defoamer	\$ 282.25	
	Water m3		
	Barite	\$ 18.00	
	Daily Mud Cost	\$ 8,956.00	
	Total Mud Cost	\$ 243,782.00	

D. SILT	CENT.

SURVEYS

		DIRECTION
1565	m	8.1
1591	m	6.8
1629	m	6.7
	m	
	m	
	m	
	m	
	m	

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	18.25	CORING		RIG REPAIR	0.75	TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC		21.25	
RIG SERVICE	0.75	TESTING		REAM & WASH		2.00	
SURVEY	2.25	CIRC. SAMPLE	2.00	WORK PIPE		0.75	
SLIP & CUT		HANDLE TOOLS		FISH		24.00	
COND. MUD		TRIP					
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING							
CEMENT				Changed			
HANDLE TOOLS		Safety Meeting		Screens			
				Total Hours	24.00		

Time 24 Hour Summary Time
 Repairs (Replace hydraulic motor on survey tool winch)
 Drilled 222 mm hole to 1558 mKB.
 Circulate up samples.
 Drilled 222 mm hole to 1571 mKB. Survey as required.
 Rig serviced. Function tested hydri
 Drilled 222 mm hole to 1588 mKB. Survey as required.
 Rig serviced. Function tested pipe rams
 Drilled 222 mm hole to 1617 mKB. Survey as required.
 Rig serviced. Function tested hydri
 Drilled 222 mm hole to 1634 mKB. Survey as required.
 (NOTE) Gas 380 units over a back ground of 20 units 1552 m. 50 units over bkgd of 20 units at 1559 m.
 Gas 97 units over a bkgd of 20 units 1571 m. Gas 209 units over bkgd of 20 units at 1578 m.
 Losses of 6m3 of drilling fluid to formation
 Control drill at 6 to 7 m per hour using at least 1 dan to a max of 6 dan
 (FORMATIONS) Saline River (915 mKB)
 SIGNED BY: Lee Brazel MOBILE No.: 403-282-8301



Midas Drilling Fluids

Telephone - 24 Hr. 1-800-929-3570
Fax - (403) 531-0464

DRILLING MUD SERVICE REPORT

SPUD DATE 27-12-21 DATE 28-02-03

WELL NAME and LOCATION

Ranger Noted Creek C-17

REPORT NO. 35

OPERATOR

Banger Oil Ltd

CONTRACTOR

Sheelah Rig

REPORT FOR

Lee Brazel

REPORT FOR

Dale Barondall

[illegible]

in consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

February 4, 1998
7:16 am

PathTracker 4.0
Survey Calculation Program
L. BRAZEL OILFIELD CONSULTING INC

Customer: RANGER OIL LIMITED
WellName: RANGER NOTA CREEK C-17
Location: AFE E7D - 029

Vertical Section Calculated on: 0.0000
Survey Calculation Method: Minimum Curvature
FileName: C:\LEE\OILFIELD\PATHTRK\RANC17.SR3

#	Depth Meters	Inc Degrees	Azimuth Degrees	TVD Meters	North Meters	East Meters	Section Meters	Dogleg /30m	Subsea Meters	Cls Dist Meters	Cls Az Degree
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	172.22	0.00	0.0
1	40.50	0.70	339.00	40.50	0.23	-0.09	0.23	0.52	131.72	0.25	339.0
2	68.90	1.20	337.00	68.80	0.87	-0.27	0.87	0.53	103.32	0.72	338.1
3	95.50	2.80	333.00	95.48	1.50	-0.87	1.50	1.81	78.74	1.65	335.9
4	124.40	2.00	341.00	124.35	2.61	-1.16	2.61	0.90	47.87	2.85	338.1
5	152.80	2.10	337.00	152.53	3.55	-1.52	3.55	0.19	19.68	3.86	336.8
6	238.00	1.20	329.00	237.90	5.76	-2.59	5.76	0.33	-65.68	6.31	335.7
7	351.00	0.40	347.00	350.89	7.15	-3.29	7.15	0.22	-178.67	7.87	335.3
8	455.00	0.50	12.00	454.88	7.95	-3.28	7.95	0.06	-282.66	8.60	337.6
9	568.00	0.70	62.00	567.88	8.76	-2.56	8.76	0.14	-395.88	9.13	343.8
10	604.00	0.20	148.00	603.88	8.81	-2.34	8.81	0.60	-431.88	9.11	345.1
11	662.00	0.60	42.00	661.88	8.95	-2.08	8.95	0.35	-489.88	9.19	346.9
12	708.00	1.20	12.00	705.87	9.57	-1.83	9.57	0.51	-533.85	9.74	349.1
13	727.00	0.90	357.00	726.87	9.95	-1.79	9.95	0.58	-554.85	10.11	349.7
14	773.00	1.00	47.00	772.88	10.58	-1.52	10.58	0.53	-600.84	10.69	351.8
15	824.00	1.80	49.00	823.85	11.35	-0.85	11.35	0.35	-651.63	11.37	356.7
16	839.00	1.20	72.00	838.84	11.54	-0.35	11.54	1.38	-666.62	11.55	358.2
17	868.00	1.50	37.00	867.84	11.84	0.17	11.84	0.89	-895.82	11.94	0.8
18	891.00	1.80	57.00	890.83	12.37	0.65	12.37	0.84	-718.61	12.38	3.0
19	912.00	1.80	57.00	911.82	12.73	1.21	12.73	0.00	-739.80	12.79	5.4
20	940.00	2.00	47.00	939.80	13.31	1.93	13.31	0.41	-767.58	13.45	8.2
21	959.00	1.80	52.00	958.79	13.72	2.41	13.72	0.41	-788.57	13.93	9.9
22	983.00	1.20	49.00	982.78	14.28	3.10	14.28	0.53	-820.56	14.61	12.2
23	1021.00	1.00	12.00	1020.77	14.71	3.37	14.71	0.78	-848.55	15.09	12.9
24	1081.00	1.00	17.00	1080.76	15.72	3.64	15.72	0.04	-908.54	16.14	13.0
25	1145.00	1.80	27.00	1144.74	17.15	4.25	17.15	0.39	-972.53	17.67	13.9
26	1190.00	1.50	7.00	1189.73	18.37	4.65	18.37	0.43	-1017.51	18.95	14.2
27	1208.00	2.00	357.00	1208.72	18.95	4.66	18.95	0.92	-1036.50	19.51	13.8
28	1287.00	2.70	357.00	1286.65	22.14	4.49	22.14	0.27	-1114.43	22.59	11.4
29	1345.00	2.90	17.00	1344.58	24.91	4.85	24.91	0.51	-1172.36	25.37	11.0
30	1525.00	5.40	35.00	1524.10	36.20	11.04	36.20	0.46	-1351.88	37.85	18.9
31	1535.00	5.40	35.00	1534.06	36.97	11.58	36.97	0.00	-1361.84	38.74	17.3
32	1565.00	6.10	40.00	1563.91	39.35	13.41	39.35	0.86	-1391.89	41.57	18.8
33	1591.00	6.60	44.00	1589.75	41.48	15.34	41.48	0.77	-1417.53	44.23	20.3
34	1629.00	6.70	45.00	1627.49	44.62	18.43	44.62	0.12	-1455.27	48.28	22.4

Closure is 48.2753 Meters on an azimuth of 22.4374



Midas Drilling Fluids

Telephone - 24 Hr. 1-800-929-3570

Fax - (403) 531-0484

DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-31 DATE 98-02-11

WELL NAME and LOCATION Ranger Noto Creek C-17

REPORT NO. 13

OPERATOR Ranger Oil Co.

CONTRACTOR Sheelah Rm 1

REPORT FOR Lee Brize

REPORT FOR Drug

BIT RECORD		NOZZLE DATA		ANNULAR GEOMETRY AND VELOCITY				PUMP DATA	
NO.		SIZE (mm)		ANNUALUS	OD / ID	LENGTH (m)	VELOCITY (ft/min)	MAKE	RPM
TYPE	<i>Open Ended</i>	VELOCITY (m/s)		LAST CASING	<i>244/226</i>	<i>589</i>		MODEL	<i>PP80</i>
SIZE (mm)		JET FORCE (N)		LINER				LINER DIA (mm)	<i>152</i>
DEPTH IN (m)		NWP (AW)		OPEN HOLE	<i>114</i>	mDP		HQD DIA (mm)	
DEPTH OUT (m)				OPEN H/F	<i>1473</i>	mF	<i>55</i>	STAMP (mm)	<i>216</i>
HOURS RUN		DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE		mDC	<i>0</i>	DSP LACK	<i>11.01</i>
W.O.B. (psi)				CIRCULATION TIME (min)				SPM	
RPM				MUD THICK / MUDP			BOTTOMS UP	CUTOUT (inches)	
ROP (m/hour)				DRILL STRING		TOTAL	PRESSURE (PSI)		
CYCLING TEST FREQUENCIES				WELL VOLUMES (cu ft)				SOLIDS CONTROL	
MATERIAL	UNITS	COST	TOTAL COST	TANK / SUMP	EQUIPMENT				
<i>Barite</i>	<i>20</i>		<i>360.00</i>	HOLE	OVERFLOW PERCENT (%)				
<i>Calcium Carbonate</i>				TOTAL	UNDERFLOW PERCENT (%)				
<i>Feed Grd</i>	<i>12</i>		<i>180.00</i>	LOST TO HOLE	UNDERFLOW RATE (L/min)				
<i>0</i>	<i>15</i>		<i>150.00</i>	LOST TO EQUIP.	SOLIDS REMOVAL RATE (G/G)				
				DUMPED	LIQUID PHASE RATE (L/min)				
				NEW WATER	HOURS RUN				
				NEW MUD / PREMIX	SHAKER 1	MESH	SHAKER 2	MESH	
				WELL INFORMATION					
COST SINCE LAST CHECK				<i>690.0002-11 - Finish logging. R/H to set G/LD - plug open ended w/ SCH. 10 well; POOH w/ 6 stds., run pill. POOH</i>					
PREVIOUS COST				<i>27232.50</i>					
TOTAL COST				<i>27922.50</i>					
				<i>-w/ 50% packing density estimate top of plug @ 1234m.</i>					
GDI	<i>91</i>	200							
300	<i>56</i>	100		<i>10/14</i>					
NK	<i>0.10 / 0.36</i>								
☐ FLOWLINE ☐ SUCTION TEMP °C				<i>26</i>					
SAMPLE TIME (H)				<i>1900</i>					
PRESENT DEPTH (H)				<i>1934</i>					
MUD DENSITY (kg/m³)				<i>1242</i>					
HYD. PRESSURE GRADIENT (kPa)				<i>12.18</i>					
FUNNEL VISCOSITY (cP)				<i>80</i>					
PLASTIC VISCOSITY (cP) @ <i>28</i> °C				<i>36</i>					
YIELD POINT (PSI)				<i>10</i>					
GEL STRENGTH (PSI) 10 min / 10 sec				<i>5.7</i>					
API FILTRATE (ml/30min) @ 700 kPa									
PROPERLY CORRECTED Q/W (Corrected) <i>8/19</i>				<i>NR</i>					
HTHP FL (ML/30 min) °C				<i>NR</i>					
HTHP FILTER CASE (mm)									
GM □ BTMP □ METER									
TEMPERATURE (°C) <i>Water (Hole?)</i>				<i>4.7</i>					
TEMPERATURE (°C) <i>Filter Cake</i>				<i>1730</i>					
OVERFLOW RATE (L/min) <i>Water Activity</i>				<i>0.99</i>					
UNDERFLOW RATE (L/min) <i>Water Mo</i>				<i>1.6</i>					
CALCIUM (mg/L) <i>Water Phase Mud</i>				<i>11.6</i>					
CHLORIDE (mg/L) <i>Water Phase Mud</i>				<i>29.5</i>					
% SOLIDS VOLUME FRACTION <i>Report</i>				<i>16.4</i>					
% OIL - VOLUME FRACTION <i>Report</i>				<i>23.0</i>					
% TOTAL SOLIDS - VOLUME FRACTION <i>Report</i>				<i>10.6</i>					
% SOLIDS BY WEIGHT <i>Report</i>				<i>2.1</i>					
DRILLED SOLIDS (g/m³)				<i>125</i>					
TOTAL HIGH GRAVITY SOLIDS (g/m³)				<i>191</i>					
TOTAL LOW GRAVITY SOLIDS (g/m³)				<i>125</i>					
POLYMER CONCENTRATION (ppm)									
<i>Water Phase (Hole?)</i>									
<i>Calcium Chloride</i>				<i>119</i>					
<i>Sodium Chloride</i>				<i>129</i>					
<i>Potassium Chloride</i>				<i>10</i>					
<i>Chlorides</i>				<i>180</i>					
<i>Undissolved Solids</i>									
<i>Report Water Mud</i>									
SERVICE REP: <i>Udo Zender</i>				PHONE / MOBILE: <i>250 Rig</i>					
WAREHOUSE:				PHONE:					

In consideration of the furnishing of this report and any oral suggestions it is agreed that MWDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

01/11/1998 07:25

2629381



Midas Drilling Fluids

Telephone - 24 Hr. 1-800-929-3570

Fax - (403) 531-0464

DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-21 DATE 98-02-10WELL NAME and LOCATION Ranger Nola Creek C-17REPORT NO. 42OPERATOR Ranger Oil LtdCONTRACTOR Shenah Rig 1REPORT FOR Lee BrazelREPORT FOR Dale / Doug

WELL INFORMATION		MUD LOG DATA		MUD LOG DATA		MUD LOG DATA		MUD LOG DATA	
NO.	SIZE (mm)	SIZE (mm)	VELOCITY (m/s)	ANNULARS	OD / ID	LENGTH (m)	VELOCITY (m/s)	MAKE	MODEL
TYPE	<u>ADSSR6</u>	222		LAST CASING	<u>200</u>	<u>509</u>		MODEL	<u>0800</u>
SIZE (mm)			JET FORCE (N)	LINEAR				LINEAR DIA (mm)	<u>152</u>
DEPTH (m)			HSP (N)	OPEN HOLE	<u>10</u>	<u>100</u>		ROD DIA (mm)	<u>216</u>
DEPTH OUT (m)				OPEN HOLE	<u>100</u>	<u>106</u>		STROKE (mm)	<u>11.01</u>
HOURS RUN			DEPTH (m)	OPEN HOLE	<u>100</u>	<u>106</u>		DISP (L/hr)	<u>70</u>
W/O B (mm)			ANGLE - DIRECTION					SPM	<u>0.03</u>
RPM				MUD TANKS / SLIP		BOTTOMS UP		OUTPUT (m/min)	<u>5300</u>
ROP (m/hr)				DRILL STRING		TOTAL		PRESSURE (kPa)	
MUD LOG DATA									
MATERIAL	UNITS	COST	TOTAL COST	TANK / BUMP	<u>63.5</u>	EQUIPMENT	<u>Conditioning</u>		
<u>Barite</u>	<u>99</u>		<u>1702.00</u>	HOLE					
<u>Barite Jacket C</u>	<u>22</u>		<u>302.00</u>	TOTAL					
<u>CMV-100</u>	<u>2</u>		<u>350.00</u>	LOST TO HOLE					
<u>Eprirphone</u>	<u>36</u>		<u>6300.00</u>	LOST TO EQUIP					
<u>Hot Lime</u>	<u>3</u>		<u>180.00</u>	DUMPED					
<u>Hydrated Lime</u>	<u>10</u>		<u>180.00</u>	NEW WATER					
				NEW MUD / PREMIX					
COST SINCE LAST CHECK <u>11,893.00</u> <u>10: conditioning mud and building volume, at 2m³</u>									
PREVIOUS COST <u>2000.50</u> <u>direct 1m³ reduce density to 1230; Poon show</u>									
TOTAL COST <u>878.70</u> <u>to log, 74h; Log hole</u>									
600	<u>90</u>	<u>600</u>							
300	<u>55</u>	<u>300</u>							
100									
MUD LOG DATA									
OP / PLUMLINE	☐ SUCTION TEMP °C	<u>32</u>							
SAMPLE TIME (m)		<u>0.500</u>	<u>P12</u>						
PRESENT DEPTH (m)		<u>1853</u>							
MUD DENSITY (g/cm ³)		<u>1250</u>	<u>1230</u>						
HYD. PRESSURE GRADIENT (g/cm ³)		<u>1226</u>	<u>1207</u>						
FURNEL VELOCITY (m/s)		<u>79</u>							
PLASTIC VISCOSITY (mPa·s)	<u>35</u>	<u>35</u>	<u>35</u>						
YIELD POINT (Pa)	<u>10</u>	<u>10</u>	<u>10</u>						
GEL STRENGTH (Pa)	<u>5.8</u>	<u>5.8</u>	<u>5.8</u>						
API FILTERATE (mL/30 min)		<u>80/80</u>	<u>82/18</u>						
WATER FLOW (mL/30 min)		<u>1.0</u>							
WATER FILTER CASE (mm)		<u>15.0-15.0</u>	<u>15.0-15.0</u>						
pH	☐ STRIP								
WATER PHASE (mL/m ³)		<u>18.6</u>	<u>18.0</u>						
WATER PHASE (mL/m ³)		<u>140</u>	<u>140</u>						
WATER PHASE (mL/m ³)		<u>0.71</u>	<u>0.71</u>						
WATER PHASE (mL/m ³)		<u>0</u>	<u>0</u>						
CALCIUM (mg/L)		<u>15.2</u>	<u>14.8</u>						
CHLORIDES (mg/L)		<u>36.0</u>	<u>36.0</u>						
% SOLIDS VOLUME FRACTION		<u>18.6</u>	<u>16.3</u>						
% OIL - VOLUME FRACTION		<u>24.0</u>	<u>24.9</u>						
% TOTAL SOLIDS - VOLUME FRACTION		<u>10.1</u>	<u>2.8</u>						
% TOTAL SOLIDS - VOLUME FRACTION		<u>8.7</u>	<u>8.1</u>						
DRILLED SOLIDS (g/L)		<u>30.0</u>	<u>53.0</u>						
TOTAL HIGH DENSITY SOLIDS (g/L)		<u>251.0</u>	<u>252.0</u>						
TOTAL LOW DENSITY SOLIDS (g/L)		<u>10.0</u>	<u>53.0</u>						
POLYMER CONCENTRATION (g/L)									
Water Phase (mL/m ³)									
Calcium Chloride		<u>141</u>	<u>146</u>						
Sodium Chloride		<u>203</u>	<u>202</u>						
Magnesium Chloride		<u>0</u>	<u>0</u>						
Chlorides		<u>215</u>	<u>216</u>						
Undissolved Solids		<u>0</u>	<u>0</u>						
Water Phase (mL/m ³)									
SERVICE REP: <u>Udo Zerdler</u>				PHONE / MOBILE: <u>209 23</u>					
WAREHOUSE:				PHONE:					

In consideration of the furnishing of this report and any and suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be responsible for and making the responsibility of any well owner.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/03 REPORT NO.: 41
 DEPTH: 1548 mKB PROGRESS: 81 m FORMATION: Saline River
 OPERATIONS AT 08:00 HOURS: Drilling 222 mm main hole
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Dale Baxendale CO SUPERVISOR: Lee Brazel
 DAILY COST: \$ 64,213.80 CUM. COST: \$ 2,870,166.38 AFE NO: E7D-028

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @: 55 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
 CONDUCTED AT HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 4 MAXIMUM CASING HOLD BACK 3554 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	<u>6</u>	WEIGHT (kg/m3)	<u>1235</u>	No. 1 LINER (mm)	<u>152X218</u>
SIZE (mm)	<u>222</u>	VISCOSITY (cP)	<u>70</u>	No. 1 SPM	<u>110</u>
TYPE	<u>FM2685</u>	Lime (Kg/m3)	<u>7</u>	No. 2 LINER (mm)	<u>152X216</u>
SERIAL No	<u>5883350</u>	PV (mPa S)	<u>33</u>	No. 2 SPM	<u> </u>
NOZZLES (mm)	<u>8/11.1</u>	YP (Pa)	<u>8</u>	VOLUME (m3/min.)	<u>1.30</u>
DEPTH IN (m)	<u>1384</u>	GELS (Pa)	<u>2.5/3</u>	PRESSURE (kPa)	<u>5600</u>
METERS (m)	<u>162</u>	SAND (%)	<u> </u>	D.P.A.C.S.G. ANN. VEL. (m/min.)	<u>44</u>
HOURS	<u>35.75</u>	Electrical Stability	<u>1050</u>	D.P.A.N.N. VEL. (m/min.)	<u>46</u>
WOB (1000 lbs)	<u>0-4</u>	FILTER CAKE (mm desc.)	<u>1.5</u>	D.C. ANN. VEL. (m/min.)	<u>81</u>
R.P.M.	<u>80-100</u>	WATER LOSS HT HP	<u>4.4</u>	SOLIDS CONTROL	<u>D-1000</u>
CONDITION	<u> </u>	Water Activity	<u>0.72</u>	SHAKER SCREENS	<u>84X84</u>
		Oil Water Ratio	<u>81/19</u>	PUMP OUT (m3/atk)	<u>0.01181</u>

DRILLING ASSEMBLY

ITEMS				O.D.	I.D.	Y.J. TYPE	MUD ADDITIVES					D. SILT.	CENT.
Bit Sub	171	88	127 H80	Sacks	Product	Cost Per/Sack	O.F. (kg/m3)						
Telegraph	163		127 H80	42	OMV 100	\$ 175.00	U.F. (kg/m3)						
Shock Sub	173	66	127 H90	4	Chemul 1	\$ 1,800.00	VOL. (l/min.)						
Motor	171	72	127 H90	4	Chemul 11	\$ 2,750.00	HOURS						
5 Drill Collars	171	68	127 H80	1	Chemwel OM	\$ 2,400.00							
Jars	172	68	127 H80	33	Hot Lime	\$ 27.00	SURVEYS		DIRECTION				
13 Drill Collars	171	88	114 XH		CaCl2 HT	\$ 85.00	1493	m	4.5	*			
X.O	170	69	114 XH		Diesel m3	\$ 470.00	1502	m	4.5	*			
BHA LENGTH	241.07		m		TDL Defoamer	\$ 262.25	1513	m	4.5	*			
HOOK LOAD	71000		daN		Water m3		1522	m	4.5	*			
AVAILABLE WOB	18780		daN	80	Barite	\$ 18.00	1535	m	5.4	*		35	
Joints DP. on Racks:	97			Daily Mud Cost		\$ 30,321.00		m	*				
In String:	138			Total Mud Cost		\$ 243,782.00		m	*				
TOTAL:	235			Time Break Down				m	*				

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	21.25	CORING		RIG REPAIR		DRILL OP	TODAY
TRIPPING		LOGGING		LOST CIRC.		EVALUATION	24
RIG SERVICE	0.75	TESTING		REAM & WASH		PROBLEMS	
SURVEY	2.00	CIRC. SAMPLE		WORK PIPE		TOTAL	
SLIP & CUT		HANDLE TOOLS		FISH		WEATHER	Clear
COND. MUD		TRIP				TEMPERATURE	-15 C
NIPPLE UP/DN		REAM RATHOLE				ROADS	Good
RUN CASING							
CEMENT				Changed			
HANDLE TOOLS		Safety Meeting		Screens			
				Total Hours	24.00		

Time	24 Hour Summary	Time
Drilled 222 mm hole to 1495 mKB. Survey as required.		
Rig service. Function test hydril and HCR		
Drilled 222 mm hole to 1505 mKB. Survey as required.		
Rig service. Function test pipe rams and HCR		
Drilled 222 mm hole to 1533 mKB. Survey as required.		
Rig serviced. Function tested hydril		
Drilled 222 mm hole to 1548 mKB. Survey as required.		
(NOTE) Fann hole. Time drill 25 minutes a metre 1480 mKB to 1505 mKB.		
(NOTE) Fann hole. Time drill 15 minutes a metre 1505 mKB to 1548 mKB.		
(FORMATIONS) Saline River (915 mKB)		
SIGNED BY: <u>Lee Brazel</u>	MOBILE No.: <u>403-282-8301</u>	

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/02/02 REPORT NO.: 40
DEPTH: 1485 mKB PROGRESS: 101 m FORMATION: Saline River
OPERATIONS AT 06:00 HOURS: Tripping in hole
CONTRACTOR/RIG SUPT.: Shehatah Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
DAILY COST: \$ 50,889.94 CUM. COST: \$ 2,805,882.58 AFE NO: E7D-029

WELL CONTROL
DAILY NIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @ 55 SPM
TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
CONDUCTED AT HRS. CREW PERFORMANCE
DAYS SINCE BOP DRILL (EACH CREW): 3 MAXIMUM CASING HOLD BACK 3727 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	8	WEIGHT (kg/m3)	1180	No. 1 LINER (mm)	152X316
SIZE (mm)	222	VISCOSITY (cP)	58	No. 1 SPM	110
TYPE	FM2885	Lime (Kg/m3)	15	No. 2 LINER (mm)	152X316
SERIAL No.	5883350	PV (mPa S)	24	No. 2 SPM	
NOZZLES (mm)	6/11.1	YP (Pa)	7	VOLUME (m3/min.)	1.30
DEPTH IN (m)	1384	GELS (Pa)	3/3	PRESSURE (kPa)	5540
METERS (m)	101	SAND (%)		D.P.CSG. ANN. VEL. (m/min)	44
HOURS	14.5	Electrical Stability	880	D.P. ANN. VEL. (m/min.)	46
WOB (1000 lbs)	2-4	FILTER CAKE (mm desc.)	1.5	D.C. ANN. VEL. (m/min.)	81
R.P.M.	40-55	WATER LOSS HT HP	4	SOLIDS CONTROL	D-1000
CONDITION		Water Activity	0.71	SHAKER SCREENS	84X84
		Oil Water Ratio	60/20	PUMP OUT (m3/hr)	0.01181
		Temp	31		

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	Sacks	Product	Cost Per sack	O.F. (kg/m3)	D. SILT.	CENT.
Bit Sub	171	88	127 H90	19	OMV 100	\$ 175.00	U.F. (kg/m3)		
Teledrift	165		127 H90	2	Chemul 1	\$ 1,900.00	VOL. (l/min.)		
Shack Sub	173	66	127 H90	2	Chemul 11	\$ 2,750.00	HOURS		
Monel	171	72	127 H90	1	Chemwel OM	\$ 2,400.00			
5 Drill Collars	171	68	127 H90		Hot Lime	\$ 27.00			
Jars	172	68	127 H90		CaCl2 HT	\$ 95.00			
13 Drill Collars	171	68	114 XH		Diesel m3	\$ 470.00			
X.O	170	68	114 XH		TDL Defoamer	\$ 282.25			
BHA LENGTH	241.07	m		3	Water m3				
HOOK LOAD	71000	daN		25	Barite	\$ 18.00			
AVAILABLE WOB	18780	daN			Daily Mud Cost	\$ 15,475.00			
Joints DP. on Racks:	104				Total Mud Cost	\$ 243,782.00			
In String:	131								
TOTAL:	235								

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	14.50	CORING		RIG REPAIR		TODAY	CUM
TRIPPING	5.25	LOGGING		LOST CIRC		24	
RIG SERVICE	0.75	TESTING		REAM & WASH	2.00		
SURVEY	1.00	CIRC. SAMPLE		WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH			
COND. MUD		TRIP					
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING							
CEMENT				Changed			
HANDLE TOOLS		Safety Meeting		Screens	0.50		
				Total Hours	24.00		

Time 24 Hour Summary Time
Tripped in hole to 1277 mKB. Washed hole 1277 mKB to 1287 mKB.
Tripped in hole to 1262 mKB. Washed hole 1262 mKB to 1383 mKB.
Changed shaker screens on shaker no. 2, 50X80.
Rig serviced and functioned pipe rams.
Drilled 222 mm hole to 1421 mKB. Survey as required.
Rig service and functioned hydril.
Drilled 222 mm hole in 1458 mKB. Survey as required.
Rig service and functioned hydril.
Drilled 222 mm hole to 1484 mKB. Survey as required.

(NOTE) Fann hole. Time drill 14 minutes a metre 1480 mKB to 1485 mKB.

(FORMATIONS) Saline River (R15 mKB)

SIGNED BY Jack Brazel

MOBILE No. 403-282-9301



Midas Drilling Fluids

Telephone - 24 Hr. 1-800-929-3570

Fax - (403) 531-0464

DRILLING MUD SERVICE REPORT

SPUD DATE 07-12-24 DATE 20-12-08

WELL NAME and LOCATION Banger Nona Creek C-17

REPORT NO. 10

OPERATOR Bonper Oil Ltd

CONTRACTOR Sheehan Rig 1

REPORT FOR Lee Brazel

REPORT FOR DATE Barandall

NO

TYPE

SIZE (mm)

IN (m)

OUT (m)

HOURS RUN

W.O.B. (kPa)

APM

APM (m/min)

ATT-55-R6

822

1906

20,000

40

1.0

SIZE (mm)

VELOCITY (m/s)

JET FORCE (N)

HP (kW)

DEPTH (m)

ANGLE - DIRECTION

312.7

57

ANNUITY

DD / ID

LENGTH (m)

VELOCITY (ft)

LAST CASHING

LINER

OPEN HOLE

OPEN HOLE

OPEN HOLE

MUD TANKS / SUMP

MUD STRING

529

43.5

24/12/86

101

101

101

15

1130

NAME

MODEL

LINER DIA (mm)

ROD DIA (mm)

STROKE (mm)

DISP (LBS)

SPM

OUTPUT (m/min)

PRESSURE (LPS)

National

0 P80

152

216

11.61

110

1.3

2500-3600

SPALLING MUD PROPERTIES

MUD VISCOSITY (cP)

SOLIDS CONTENT (%)

MATERIAL

UNITS

COST

TOTAL COST

TANK / SUMP

EQUIPMENT

Barik

20

360.00

62.1

Equipment

Chemul I

1

1900.00

62.2

Equipment

Chemul II

1

2750.00

125.3

Not Run

Hot Lime

10

230.00

1.7

Run

Mica Fine

10

246.75

2467.50

0.5

Circulation Plus

10

2116.00

OMV-100

10

1750.00

COST SINCE LAST CHECK

PREVIOUS COST

TOTAL COST

11,411.75

2,028,575

2,040,000

PERFORMANCE

600

300

WV

23/84

51/52

100

OFF-LOWLINE

TIME (h)

PRESENT DEPTH (m)

MUD DENSITY (kg/m³)

MUD VISCOSITY (cP)

FUNKEL VISCOSITY (cP)

PLASTIC VISCOSITY (cP)

YIELD POINT (Pa)

GEL STRENGTH (Pa)

API FILTRATE (mL/30min @ 700 kPa)

Filtrate pH (mL/30min @ 700 kPa)

Filtrate Solids (g/L)

Filtrate Gravity (SG)

Filtrate Viscosity (cP)

Filtrate Density (kg/m³)

Filtrate Activity

Filtrate Solids (g/L)

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Filtrate Viscosity (cP)

Filtrate Density (kg/m³)

Filtrate Activity

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 87/02/01 REPORT NO.: 38
DEPTH: 1384 mKB PROGRESS: 40 m FORMATION: Saline River
OPERATIONS AT 06:00 HOURS: Tripping in hole
CONTRACTOR/RIG SUPT.: Shahshah Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
DAILY COST: \$ 28,984.05 CUM. COST: \$ 2,855,002.64 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @: 44 GPM
TRIP RECORDS: CALCULATED HOLE FILL 7.6 m3 ACTUAL HOLE FILL: 7.98 m3
BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
CONDUCTED AT HRS. CREW PERFORMANCE
DAYS SINCE BOP DRILL (EACH CREW): 2 MAXIMUM CASING HOLD BACK 3727 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	5	6	WEIGHT (kg/m3)	1185		No. 1 LINER (mm)	152X218	
SIZE (mm)	222	222	VISCOSITY (cP)	65		No. 1 SPM	100	
TYPE	ATJ33	FM2665	Lime (kg/m3)	15		No. 2 LINER (mm)	152X218	
SERIAL No.	H49YD	5883350	PV (mPa S)	22		No. 2 SPM		
NOZZLES (mm)	3/11.9	8/11.1	YP (Pa)	12		VOLUME (m3/min.)	1.18	
DEPTH IN (m)	916		GELS (Pa)	8/8		PRESSURE (kPa)	4500	
METERS (m)	467		SAND (%)			D.P.CSG. ANN. VEL. (m/min.)	40	
HOURS	82.5		Electrical Stability	300		D.P. ANN. VEL. (m/min.)	41	
WOB (1000/Dan)	2 to 3		FILTER CAKE (mm deas.)	2		D.C. ANN. VEL. (m/min.)	74	
R.P.M.	70		WATER LOSS HT HP	5.4		SOLIDS CONTROL	D-1000	
CONDITION	2-2-WT		Water Activity	0.73		SHAKER SCREENS	50X50	
E-WT-J-Hrs			Oil Water Ratio	82/18		PUMP OUT (m3/stk)	0.01181	
			Temp	31				

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	MUD ADDITIVES			D SILT		CENT.		
Bit Sub	171	88	127 H90	Sacks	Product	Cost Per/Sk	O.F. (kg/m3)				
Teledrift	165		127 H90	10	OMV 100	\$ 175.00	U.F. (kg/m3)				
Shock Sub	173	86	127 H90	1	Chemul 1	\$ 1,800.00	VOL. (l/min.)				
Monel	171	72	127 H90	1	Chemul 11	\$ 2,750.00	HOURS				
5 Drill Collars	171	68	127 H90		Chemwet OM	\$ 2,400.00					
Jars	172	58	127 H90	20	Hot Lime	\$ 27.00					
13 Drill Collars	171	68	114 XH	40	CaCl2 HT	\$ 95.00					
X.O.	170	88	114 XH		Diesel m3	\$ 470.00					
BHA LENGTH	242.88	m			TDL Defoamer	\$ 262.25					
HOOK LOAD	67000	dan			Water m3						
AVAILABLE WOB	16780	dan			Barite	\$ 18.00					
Joints DP. on Racks:	114			Daily Mud Cost	\$ 10,740.00						
In String:	121			Total Mud Cost	\$ 228,307.00						
TOTAL	235										

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	11.25	CORING		RIG REPAIR		TODAY	CUM.
TRIPPING	4.75	LOGGING		LOST CIRC.		24	
RIG SERVICE	0.50	TESTING		REAM & WASH			
SURVEY	1.50	CIRC. SAMPLE	0.75	WORK PIPE			
SLIP & CUT		HANDLE TOOLS	2.00	FISH			
COND. MUD		TRIP		Set Brakes	0.50		
NIPPLE UP/DN		REAM RATHOLE		Work Tight			
RUN CASING		Pump Pill	0.75	Connection	1.00		
CEMENT				Change			
HANDLE TOOLS		Safety Meeting	0.25	Screens	0.75		
				Total Hours	24.00		

Time 24 Hour Summary Time
Drilled 222 mm hole to 1356 mKB.
Circulated hole and ran survey at 1345 mKB.
Drilled 222 mm hole to 1363 mKB.
Rig serviced and functioned pipe rams.
Drilled 222 mm hole to 1384 mKB.
Circulated bottom hole sample.
Set up brakes, rig serviced and functioned hydro and pumped survey.
Hoisted out of hole to 1219 mKB. Pumped a pill.
Hoisted out of hole.
Handled bottom B.H.A., picked up and made up teledrift.
(NOTE) Dropped survey on trip. MISSRUN
(NOTE) Fan hole, weight on bit 2-3000 Dan from 1344 mKB to 1384 mKB. RPM 70-75
(Note) Tight hole prior to making connection, depth 1376 mKB to 1378 mKB.

(FORMATIONS) Saline River (B15 mKB)

SIGNED BY Jack Brazel

MOBILE No.: 403-282-9301



Midas Drilling Fluids
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Fax - (403) 531-0484

DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-24 DATE 98-02-07

WELL NAME and LOCATION Ranger North Creek P-17

REPORT NO. 39

OPERATOR Ranger Oil Ltd.

CONTRACTOR Shehtah Rig 1

REPORT FOR Lee Brazel

REPORT FOR Dale Brammell

MATERIALS				MATERIALS				MATERIALS			
NO.	SIZE (mm)	VELOCITY (m/s)	LAST CASING	NO. / ID	LENGTH (m)	VELOCITY (m/s)	NAME	NO.	SIZE (mm)	VELOCITY (m/s)	LAST CASING
1	3/16" x 1/8"	57	241/226	589	13.5	15.6	15.6	2	3/16" x 1/8"	57	241/226
2	222	1500	111	mmOP	56	15.6	15.6	3	222	1500	111
3	1906	1500	111	mmDC	56	15.6	15.6	4	1906	1500	111
4	1906	1500	111	mmDC	56	15.6	15.6	5	1906	1500	111
5	1906	1500	111	mmDC	56	15.6	15.6	6	1906	1500	111
6	1906	1500	111	mmDC	56	15.6	15.6	7	1906	1500	111
7	1906	1500	111	mmDC	56	15.6	15.6	8	1906	1500	111
8	1906	1500	111	mmDC	56	15.6	15.6	9	1906	1500	111
9	1906	1500	111	mmDC	56	15.6	15.6	10	1906	1500	111
10	1906	1500	111	mmDC	56	15.6	15.6	11	1906	1500	111
11	1906	1500	111	mmDC	56	15.6	15.6	12	1906	1500	111
12	1906	1500	111	mmDC	56	15.6	15.6	13	1906	1500	111
13	1906	1500	111	mmDC	56	15.6	15.6	14	1906	1500	111
14	1906	1500	111	mmDC	56	15.6	15.6	15	1906	1500	111
15	1906	1500	111	mmDC	56	15.6	15.6	16	1906	1500	111
16	1906	1500	111	mmDC	56	15.6	15.6	17	1906	1500	111
17	1906	1500	111	mmDC	56	15.6	15.6	18	1906	1500	111
18	1906	1500	111	mmDC	56	15.6	15.6	19	1906	1500	111
19	1906	1500	111	mmDC	56	15.6	15.6	20	1906	1500	111
20	1906	1500	111	mmDC	56	15.6	15.6	21	1906	1500	111
21	1906	1500	111	mmDC	56	15.6	15.6	22	1906	1500	111
22	1906	1500	111	mmDC	56	15.6	15.6	23	1906	1500	111
23	1906	1500	111	mmDC	56	15.6	15.6	24	1906	1500	111
24	1906	1500	111	mmDC	56	15.6	15.6	25	1906	1500	111
25	1906	1500	111	mmDC	56	15.6	15.6	26	1906	1500	111
26	1906	1500	111	mmDC	56	15.6	15.6	27	1906	1500	111
27	1906	1500	111	mmDC	56	15.6	15.6	28	1906	1500	111
28	1906	1500	111	mmDC	56	15.6	15.6	29	1906	1500	111
29	1906	1500	111	mmDC	56	15.6	15.6	30	1906	1500	111
30	1906	1500	111	mmDC	56	15.6	15.6	31	1906	1500	111
31	1906	1500	111	mmDC	56	15.6	15.6	32	1906	1500	111
32	1906	1500	111	mmDC	56	15.6	15.6	33	1906	1500	111
33	1906	1500	111	mmDC	56	15.6	15.6	34	1906	1500	111
34	1906	1500	111	mmDC	56	15.6	15.6	35	1906	1500	111
35	1906	1500	111	mmDC	56	15.6	15.6	36	1906	1500	111
36	1906	1500	111	mmDC	56	15.6	15.6	37	1906	1500	111
37	1906	1500	111	mmDC	56	15.6	15.6	38	1906	1500	111
38	1906	1500	111	mmDC	56	15.6	15.6	39	1906	1500	111
39	1906	1500	111	mmDC	56	15.6	15.6	40	1906	1500	111
40	1906	1500	111	mmDC	56	15.6	15.6	41	1906	1500	111
41	1906	1500	111	mmDC	56	15.6	15.6	42	1906	1500	111
42	1906	1500	111	mmDC	56	15.6	15.6	43	1906	1500	111
43	1906	1500	111	mmDC	56	15.6	15.6	44	1906	1500	111
44	1906	1500	111	mmDC	56	15.6	15.6	45	1906	1500	111
45	1906	1500	111	mmDC	56	15.6	15.6	46	1906	1500	111
46	1906	1500	111	mmDC	56	15.6	15.6	47	1906	1500	111
47	1906	1500	111	mmDC	56	15.6	15.6	48	1906	1500	111
48	1906	1500	111	mmDC	56	15.6	15.6	49	1906	1500	111
49	1906	1500	111	mmDC	56	15.6	15.6	50	1906	1500	111
50	1906	1500	111	mmDC	56	15.6	15.6	51	1906	1500	111
51	1906	1500	111	mmDC	56	15.6	15.6	52	1906	1500	111
52	1906	1500	111	mmDC	56	15.6	15.6	53	1906	1500	111
53	1906	1500	111	mmDC	56	15.6	15.6	54	1906	1500	111
54	1906	1500	111	mmDC	56	15.6	15.6	55	1906	1500	111
55	1906	1500	111	mmDC	56	15.6	15.6	56	1906	1500	111
56	1906	1500	111	mmDC	56	15.6	15.6	57	1906	1500	111
57	1906	1500	111	mmDC	56	15.6	15.6	58	1906	1500	111
58	1906	1500	111	mmDC	56	15.6	15.6	59	1906	1500	111
59	1906	1500	111	mmDC	56	15.6	15.6	60	1906	1500	111
60	1906	1500	111	mmDC	56	15.6	15.6	61	1906	1500	111
61	1906	1500	111	mmDC	56	15.6	15.6	62	1906	1500	111
62	1906	1500	111	mmDC	56	15.6	15.6	63	1906	1500	111
63	1906	1500	111	mmDC	56	15.6	15.6	64	1906	1500	111
64	1906	1500	111	mmDC	56	15.6	15.6	65	1906	1500	111
65	1906	1500	111	mmDC	56	15.6	15.6	66	1906	1500	111
66	1906	1500	111	mmDC	56	15.6	15.6	67	1906	1500	111
67	1906	1500	111	mmDC	56	15.6	15.6	68	1906	1500	111
68	1906	1500	111	mmDC	56	15.6	15.6	69	1906	1500	111
69	1906	1500	111	mmDC	56	15.6	15.6	70	1906	1500	111
70	1906	1500	111	mmDC	56	15.6	15.6	71	1906	1500	111
71	1906	1500	111	mmDC	56	15.6	15.6	72	1906	1500	111
72	1906	1500	111	mmDC	56	15.6	15.6	73	1906	1500	111
73	1906	1500	111	mmDC	56	15.6	15.6	74	1906	1500	111
74	1906	1500	111	mmDC	56	15.6	15.6	75	1906	1500	111
75	1906	1500	111	mmDC	56	15.6	15.6	76	1906	1500	111
76	1906	1500	111	mmDC	56	15.6	15.6	77	1906	1500	111
77	1906	1500	111	mmDC	56	15.6	15.6	78	1906	1500	111
78	1906	1500	111	mmDC	56	15.6	15.6	79	1906	1500	111
79	1906	1500	111	mmDC	56	15.6	15.6	80	1906	1500	111
80	1906	1500	111	mmDC	56	15.6	15.6	81	1906	1500	111
81	1906	1500	111	mmDC	56	15.6	15.6	82	1906	1500	111
82	1906	1500	111	mmDC	56	15.6	15.6	83	1906	1500	111
83	1906	1500	111	mmDC	56	15.6	15.6	84	1906	1500	111
84	1906	1500	111	mmDC	56	15.6	15.6	85	1906	1500	111
85	1906	1500	111	mmDC	56	15.6	15.6	86	1906	1500	111
86	1906	1500	111	mmDC	56	15.6	15.6	87	1906	1500	111
87	1906	1500	111	mmDC	56	15.6	15.6	88	1906	1500	111
88	1906	1500	111	mmDC	56	15.6	15.6	89	1906	1500	111
89	1906	1500	111	mmDC	56	15.6	15.6	90	1906	1500	111
90	1906	1500	111	mmDC	56	15.6	15.6	91	1906	1500	111
91	1906	1500	111	mmDC	56	15.6	15.6	92	1906	1500	111
92	1906	1500	111	mmDC	56	15.6	15.6	93	1906	1500	111
93	1906	1500	111	mmDC	56	15.6	15.6	94	1906	1500	111
94	1906	1500	111	mmDC	56	15.6	15.6	95	1906	1500	111
95	1906	1500	111	mmDC	56	15.6	15.6	96	1906	1500	111
96	1906	1500	111	mmDC	56	15.6	15.6	97	1906	1500	111
97	1906	1500	111	mmDC	56	15.6	15.6	98	1906	1500	111
98	1906	1500	111	mmDC	56	15.6	15.6	99	1906	1500	111
99	1906	1500	111	mmDC	56	15.					

P.06



Midas Drilling Fluids

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DRILLING MUD SERVICE REPORT

SPUD DATE **97-12-24** DATE **98-02-06**

WELL NAME and LOCATION Hanger Hole Creek C-17

REPORT NO. 38

OPERATOR Ranger Oil Ltd

CONTRACTOR Sheehan Eng'g

REPORT FOR Lee Brazel

REPORT FOR Dick Barendse

[illegible]

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

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1-403-282-9301

BRAZEL CONSULTING

PAGE 01 0002

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/01/30 REPORT NO.: 37
 DEPTH: 1282 mKB PROGRESS: 33 m FORMATION: Saline River
 OPERATIONS AT 08:00 HOURS: Drilling 222 mm hole
 CONTRACTOR/RIG SUPT.: Sheहत Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
 DAILY COST: \$ 82,114.13 CUM. COST: \$ 2,782,924.13 AFE NO: E7D-029

WELL CONTROL

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2500 kPa @: 60 SPM
TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
CONDUCTED AT HRS. CREW PERFORMANCE
DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	5	WEIGHT (kg/m3)	1182	No. 1 LINER (mm)	152X218
SIZE (mm)	222	VISCOSITY (s/l)	64	No. 1 SPM	100
TYPE	ATJ33	Lime (Kg/m3)	11	No. 2 LINER (mm)	152X218
SERIAL No.	H48YD	PV (mPa S)	29	No. 2 SPM	
NOZZLES (mm)	3/11.8	YP (Pa)	13.5	VOLUME (m3/min.)	1.18
DEPTH IN (m)	916	GELS (Pa)	1	PRESSURE (kPa)	4500
METERS (m)	288	Electric Stability	1180	D.P.&CSG ANN. VEL. (m/min.)	40
HOURS	59.5	SOLIDS (%)	9.6	D.P.ANN. VEL. (m/min.)	41
WOB (1000 Dm)	2 to 3	FILTER CAKE (mm disc.)	2	D.C. ANN. VEL. (m/min.)	74
R.P.M.	50-55	WATER LOSS HI HP	5.6	SOLIDS CONTROL	D-1000
CONDITION		Water Activity	0.65	SHAKER SCREENS	84X84
		Oil Water Ratio	82/18	PUMP OUT (m3/eth)	0.01181

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.Y. TYPE
Bt Sub	171	88	127 H80
Shock sub	173	88	127 H80
Monel	173	72	127 H80
5 Drill Collars	171	68	127 H80
Jars	172	68	127 H80
13 Drill Collars	171	68	127 H80
XO	170	88	114 XM
6 HW	153	70	114 XM

BHA LENGTH	241.07	m
HOOK LOAD	84000	daN
AVAILABLE WOB	16790	daN
Joints DP. on Racks:	128	
In String:	106	
TOTAL:	235	

MUD ADDITIVES

Secks	Product	Cost Per Unit
30	OMV 100	\$ 175.00
2	Chemul 1	\$ 1,900.00
2	Chemul 11	\$ 2,750.00
2	Chemwel OM	\$ 2,400.00
	Hot Lime	\$ 27.00
	CaCl ₂ HT	\$ 96.00
	Diesel m3	\$ 470.00
	TDL Defoamer	\$ 282.25
	Water m3	
150	Barte	\$ 18.00

Daily Mud Cost	\$ 22,050.00
Total Mud Cost	\$ 207,145.00

O.F. (kg/m³)
U.F. (kg/m³)
VOL. (l/min.)
HOURS

[illegible]

SURVEYS

DIRECTION

[illegible]

TOTAL: 235		TIME BREAK DOWN		SUMMARY	
DRILLING OPERATIONS		EVALUATION		PROBLEMS	
DRILLING	11.25	CORING	_____	RIG REPAIR	_____
TRIPPING	_____	LOGGING	_____	LOST CIRC.	_____
RIG SERVICE	0.75	TESTING	_____	REAM & WASH	_____
SURVEY	_____	CIRC. SAMPLE	_____	WORK PIPE	_____
SLIP & CUT	_____	HANDLE TOOLS	_____	FISH	_____
COND. MUD	12.00	TRIP	_____	_____	_____
NIPPLE UP/DN	_____	REAM RATHOLE	_____	_____	_____
RUN CASING	_____	_____	_____	_____	_____
CEMENT	_____	_____	_____	_____	_____
HANDLE TOOLS	_____	Safety Meeting	_____	_____	_____
				Total Hours	24.00

DRILL OP

EVALUATION

PROBLEMS

TOTAL

WEATHER

TEMPERATURE

ROADS

TODAY	CUM.
24	

Clear

-20 C

Good

Time

24 Hour Summary

Time

Circulated and cleaned to bottom 1249 mKB, Hoisted up to 1229 mKB, Ran in and checked for fill, (5 m)
Circulated and worked hole from 1229 mKB to 1240 mKB, mixed barite at 2 minutes a sack for one circulation. Chem (1)
and chem (11). Dowell pumped was shearing the drilling fluid. Density increased to 1118 Kg/m³.
Continued to work hole and mix barite, OMV-100, Chem (1) Chem (11) until hole stabilized
Density of 1185, viscosity 80 S/L, Plastic 22 Yield of 14, electric stability 1180.
(NOTE) Fill on bottom decreased as mud density increased.
Rig serviced and functioned HCR and Hydril.
Drilled 222 mm hole to 1259 mKB.
Rig serviced and functioned Pipe Rams.
Drilled 222 mm hole to 1282 mKB.

(NOTE) Rigged in Wedeco Normix hopper and rigged into pump no. 2 to shear, pump rate 1 m³/min, 6500 kPa.

(NOTE) Released Dowell pumped at 1845 hrs.

(FORMATIONS) Saline River (815 mKB)

SIGNED BY: Jack Brazil

MOBILE No.: 403-282-9301



Midas Drilling Fluids

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DRILLING MUD SERVICE REPORT

SPUD DATE 27-12-24 DATE 29-12-05WELL NAME and LOCATION Ranger North Creek C-17REPORT NO. 37OPERATOR Ranger Oil Ltd.CONTRACTOR Shehlah Rig 1REPORT FOR Lee BrazelREPORT FOR Dale Baranick

BIT RECORD		NOZZLE DATA		ANNULAR GEOMETRY and VELOCITY				PUMP DATA	
NO	<u>6</u>	SIZE (mm)	<u>6.11.1</u>	ANNULUS	OD / ID	LENGTH (m)	VELOCITY (ft/s)	MAKE	<u>Robson</u>
TYPE	<u>DBS FM2665</u>	VELOCITY (m/s)	<u>39.0</u>	LAST CASING	<u>244/226</u>	<u>589</u>	<u>45.5</u>	MODEL	<u>AP80</u>
SIZE (mm)	<u>222</u>	JET FORCE (N)	<u>1.08dN</u>	LINER				LINER DIA (mm)	<u>252</u>
DEPTH in (m)	<u>1385</u>	HOP (mm)		OPEN HOLE	<u>114</u>	<u>114</u>	<u>12.8</u>	POD DIA (mm)	
DEPTH OUT (m)		DEVIATION RECORD		OPEN HOLE	<u>114</u>	<u>114</u>	<u>12.8</u>	STROKE (mm)	<u>216</u>
HOURS RUN		DEPTH (m)	ANGLE / DIRECTION	OPEN HOLE	<u>114</u>	<u>114</u>	<u>12.8</u>	DISP (L/min)	<u>16.81</u>
WOB (lbm)	<u>1-8000</u>	<u>1711</u>	<u>3.0 NARE</u>	CIRCULATION TIMES (min)				SPM	<u>116</u>
RPM	<u>60-80</u>	<u>1800</u>	<u>6.8 N/E</u>	MUD TANKS / SUMP	<u>15</u>	BOTTOMS UP	<u>28</u>	OUTPUT (L/min)	<u>1.36</u>
PDP (min/hr)				DRILL STRING	<u>6.9</u>	TOTAL	<u>80</u>	PRESSURE (kPa)	
DRILLING MUD PRODUCTS				MUD VOLUMES (m³)		SOLIDS CONTROL			
MATERIAL	UNITS	COST	TOTAL COST	TANK / SUMP	<u>66.2</u>	EQUIPMENT <u>Centrifuge</u>			
Belite	<u>82</u>		<u>1176.00</u>	HOLE	<u>69.6</u>	OVERFLOW DENSITY (g/cm³)			
Chemul I	<u>1</u>		<u>1200.00</u>	TOTAL	<u>125.8</u>	UNDERFLOW DENSITY (g/cm³)			
Chemul II	<u>1</u>		<u>2150.00</u>	LOST TO HOLE	<u>1.8</u>	UNDERFLOW RATE (L/min)			
Versa Wet (Chemul)	<u>1</u>		<u>2900.00</u>	LOST TO EQUIP	<u>1.5</u>	SOLIDS REMOVAL RATE (L/min)			
DMV-100	<u>19</u>		<u>3325.00</u>	DUMPED		LIQUID REMOVAL RATE (L/min)			
Inventory (Chemul I & II)				NEW WATER	<u>4.4</u>	HOURS RUN			
Chemul II (TC)	<u>4</u>		<u>11000.00</u>	DIESEL MIX	<u>7.0</u>	SHAKER 1 <u>3X110</u> MESH SHAKER 2 <u>3X140</u> MESH			
Hot Lime	<u>60</u>		<u>1620.00</u>	WELL HISTORY & REMARKS					
COST SINCE LAST CHECK				<u>24,471.00 28-05: drill & survey from 1732 to 1872</u>					
PREVIOUS COST				<u>280,716.25</u>					
TOTAL COST				<u>245,186.25</u>					
RHEOLOGY									
500	<u>76/79</u>	200							
300	<u>95/49</u>	100							
100			<u>6/6</u>						
FLOWLINE / SUCTION TEMP °C									
		<u>32</u>	<u>34</u>						
SAMPLE TIME (m)		<u>1130</u>	<u>2400</u>						
PRESENT DEPTH (m)		<u>1301</u>	<u>1872</u>	MAINTENANCE					
MUD DENSITY (g/cm³)		<u>1228</u>	<u>1223</u>	1. Continue to run in Chemul I & Chemul II					
HYD PRESSURE GRADIENT (kPa/m)		<u>12.05</u>	<u>12.00</u>	& Versa Wet at about 7 min/viscup. when					
FUNNEL VISCOSITY (mPa.s)		<u>66</u>	<u>68</u>	they are run in, discontinue addition					
PLASTIC VISCOSITY (mPa.s) @ 30 °C		<u>31</u>	<u>30</u>	of same					
YIELD POINT (Pa)		<u>7</u>	<u>9</u>	2. Density @ 1220-1230 kg/m³ with Belite					
GEL STRENGTHS (Pa) 10 sec / 10 min		<u>3</u>	<u>3.5</u>	- 20% Belite @ 4 min/vis over 1 circulation					
API FILTRATE (mL/30 min) @ 700 kPa		<u>80/20</u>	<u>82/18</u>	will increase density by about 5 kg/m³					
HTAP FILTRATE (mL/30 min) @ 350 kPa		<u>3.2</u>	<u>3.2</u>	- add 20% Chemul II over hopper discharge					
API FILTER CAKE (mm)		<u>1.5-3 mm</u>	<u>no free H₂O</u>	at same time Belite is added Add					
API STRIP (mm)		<u>no free H₂O</u>	<u>no free H₂O</u>	Chemul II @ 4 min/vis					
MUD PHASE (kg/m³)		<u>10.0</u>	<u>11.1</u>	3. Viscosity @ 90-75 s/s with DMV-100					
Electrical Stab		<u>1160</u>	<u>1235</u>	- maximum BSA DMV-100 @ 10 min/vis					
Water Activity		<u>0.54</u>	<u>0.57</u>	over one circulation					
Magnesium		<u>0.6</u>	<u>3.0</u>	4. Watch shaker screens for blinding and					
Calcium (mg/L)		<u>19.2</u>	<u>19.3</u>	notify me upon occurrence Thanks & Info					
Chloride (mg/L)		<u>19.0</u>	<u>16.7</u>	SERVICE REP. <u>Libo Zender</u> PHONE / MOBILE: <u>239-89</u>					
% SOL. VOLUME FRACTION (Water)		<u>15.7</u>	<u>14.3</u>	PHONE:					
% SOL. VOLUME FRACTION (Belite)		<u>10.8</u>	<u>12.7</u>						
% SOL. VOLUME FRACTION (Chemul I)		<u>13.5</u>	<u>13.3</u>						
% SOL. VOLUME FRACTION (Chemul II)		<u>11.3</u>	<u>11.20</u>						
DRILLED SOLIDS (g/m³)		<u>106</u>	<u>106</u>						
TOTAL HIGH GRAVITY SOLIDS (g/m³)		<u>302</u>	<u>301</u>						
TOTAL LOW GRAVITY SOLIDS (g/m³)		<u>106</u>	<u>106</u>						
POLYMER CONCENTRATION (g/m³)									
Water Phase (kg/m³)									
Calcium Chloride		<u>243</u>	<u>238</u>						
Sodium Chloride		<u>249</u>	<u>184</u>						
Magnesium Chloride		<u>15</u>	<u>2.1</u>						
Undissolved Solids		<u>8</u>	<u>11</u>						
Water Phase Chlorides (kg/m³)		<u>294</u>	<u>279</u>						

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/01/29 REPORT NO.: 36
 DEPTH: 1249 mKB PROGRESS: m FORMATION: Saline River
 OPERATIONS AT 08:00 HOURS: Circulating and mixing barite and cleaning to bottom 1249 mKB.
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
 DAILY COST: \$ 26,841.00 CUM. COST: \$ 2,700,809.00 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R S S P.: 2200 kPa @: 80 SPM
 TRIP RECORDS: CALCULATED HOLE FILL: m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE Circulating WELL SECURED IN 1.5 MIN.
 CONDUCTED AT 14:15 HRS. CREW PERFORMANCE Fair
 DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 4305 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	<u>5</u>	WEIGHT (kg/m3)	<u>1092</u>	No 1 LINER (mm)	<u>152X218</u>
SIZE (mm)	<u>222</u>	VISCOSITY (s/l)	<u>54</u>	No. 1 SPM	<u>125</u>
TYPE	<u>ATJ33</u>	Lime (Kg/m3)	<u>12</u>	No 2 LINER (mm)	<u>152X216</u>
SERIAL No.	<u>H48YD</u>	PV (mPa S)	<u>18</u>	No. 2 SPM	
NOZZLES (mm)	<u>3/11.9</u>	YP (Pa)	<u>10.5</u>	VOLUME (m3/min.)	<u>1.48</u>
DEPTH IN (m)	<u>815</u>	GELS (Pa)	<u>3.5/3.5</u>	PRESSURE (kPa)	<u>4500</u>
METERS (m)	<u>333</u>	SAND (%)		D.P.ACSG ANN VEL (m/min.)	<u>50</u>
HOURS	<u>48.25</u>	SOLIDS (%)		D.P. ANN. VEL. (m/min.)	<u>52</u>
WOR (1000 Dns)	<u>2 to 3</u>	FILTER CAKE (mm desc.)	<u>2</u>	D.C. ANN. VEL (m/min.)	<u>92</u>
R.P.M.	<u>50-55</u>	WATER LOSS HT HP	<u>4.4</u>	SOLIDS CONTROL	<u>D-1000</u>
CONDITION		Water Activity	<u>0.82</u>	SHAKER SCREENS	<u>84X84</u>
		Oil Water Ratio	<u>80/20</u>	PUMP OUT (m3/stk)	<u>0.01181</u>
		Temp	<u>30</u>		

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE	Sacks	Product	Cost Per/sk	O.F. (kg/m3)	D. SILT.	CENT
Bit Sub	171	88	127 H90	16	OMV 100	\$ 175.00			
Shock sub	173	66	127 H90	1	Chemul 1	\$ 1,900.00			
Monel	173	72	127 H90	1	Chemul 11	\$ 2,750.00			
5 Drill Collars	171	68	127 H90	1	Chemwet CM	\$ 2,400.00			
Jars	172	88	127 H90	68	Hot Lime	\$ 27.00			
13 Drill Collars	171	68	127 H90	72	CaCl2 HT	\$ 95.00			
XO	170	69	114 XH		Diesel m3	\$ 470.00			
8 HW	153	70	114 XH		TOL Defoamer	\$ 262.25			
BHA LENGTH	<u>241.07</u>		m		Water m3				
HOOK LOAD	<u>84000</u>		daN	75	Barite	\$ 18.00			
AVAILABLE WOB	<u>18790</u>		daN	Daily Mud Cost		\$ 19,552.00			
Joints DP. on Racks:	<u>129</u>			Total Mud Cost		\$ 185,095.00			
In String:	<u>108</u>			Time Break Down					
TOTAL	<u>235</u>								

DRILLING OPERATIONS	EVALUATION	PROBLEMS	SUMMARY
DRILLING	CORING	RIG REPAIR	TODAY
TRIPPING	LOGGING	LOST CIRC.	24
RIG SERVICE	TESTING	REAM & WASH	
SURVEY	CIRC. SAMPLE	WORK PIPE	
SLIP & CUT	HANDLE TOOLS	FISH	
COND. MUD	TRIP		
NIPPLE UP/ON	REAM RATHOLE		
RUN CASING			
CEMENT			
HANDLE TOOLS	Safety Meeting		
	0.50		
		Total Hours	18.00

Time 24 Hour Summary Time
 Circulated at 1240 mKB and mixed 16 sks hot lime and 16 sks OMV-100, 5 minutes a sack.
 Problem with shaker screens plugging off with barite and gel.
 Circulated at 1229 mKB, bypassed shackers, mixed 16 sks hot lime. (NOTE) Electric stability Dropped to 200.
 Circulated at 1240 mKB and mixed 100 L chem (1), 100 L chem (11) and 100 L chemwet CM over two circulations.
 15:00 hrs, electric stability was 300. (NOTE) Had safety meeting with Dowell and Shehtah personal.
 Rigged in Dowell C&A Pumper, two shear invert, hopper pressure was 10500 kPa, rate .84 m3/min.
 Circulated at 1240 mKB and shear mud. Worked pipe above 1230 and back to 1240. (1.5 m of fill was on bottom)
 After two circulations electric stability was 460.
 Circulated at 1240 m KB, sheared and mixed 205 L Chem (1), 205 L Chem (11), 205 L Chem wet CM.
 15 Sacks OMV-100.
 After two circulations electric stability was 1020.
 Circulated at 1240 mKB, sheared and mixed 15 sks OMV-100, electrical stability 1200.
 (NOTE) Todd Giske, Personal mander for Shehtah, Had safety meeting and company policy with both rig crews.

(FORMATIONS) Saline River (815 mKB) (NOTE) Had fire drill with personal at Shehtah Camp. 20:00 hrs.
 SIGNED BY: Jack Brazel MOBILE No.: 403-282-9301



Midas Drilling Fluids

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DRILLING MUD SERVICE REPORT

SPUD DATE 27-12-24 DATE 28-02-04WELL NAME and LOCATION Ranger Notia Creek C-17REPORT NO. 36OPERATOR Ranger Oil Ltd.CONTRACTOR Shehlah Rig 1REPORT FOR Lee BrazelREPORT FOR Dale Barandall

BIT RECORD		NOZZLE DATA		ANNULAR GEOMETRY and VELOCITY				PUMP DATA	
NO.	<u>6</u>	SIZE (mm)	<u>6x11.1</u>	ANNULUS	OD / ID	LENGTH (m)	VELOCITY (min)	MAKE	<u>ASHOK</u>
TYPE	<u>DBS FM2665</u>	VELOCITY (m/s)	<u>37.3</u>	LAST CASING	<u>244/226</u>	<u>589</u>	<u>43.5</u>	MODEL	<u>8880</u>
SIZE (mm)	<u>222</u>	JET FORCE (N)		LINER				LINER DIA (mm)	<u>152</u>
DEPTH IN (m)	<u>1383</u>	MHP (kW)		OPEN HOLE	<u>114</u> mmDP		<u>15.6</u>	ROD DIA (mm)	
DEPTH OUT (m)		DEVIATION RECORD		OPEN HOLE	<u>141/1</u> mmDC	<u>55</u>	<u>15.6</u>	STROKE (mm)	<u>216</u>
HOURS RUN		DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE	<u>174/73</u> mmDC	<u>108</u>	<u>82.6</u>	DISP (L/min)	<u>11.81</u>
WOB (daN)	<u>1-3000</u>	<u>1629</u>	<u>6.7 N45E</u>	CIRCULATION TIMES (min)				SPM	<u>110</u>
RPM	<u>73</u>	<u>1663</u>	<u>6.8 N43E</u>	MUD TANKS / SUMP	<u>43</u>	BOTTOMS UP	<u>33</u>	OUTPUT (m ³ /min)	<u>1.3</u>

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/01/28 REPORT NO.: 35
DEPTH: 1249 mKB PROGRESS: m FORMATION: Saline River
OPERATIONS AT 06:00 HOURS: Mixing circulation OMV-100 and Hot Lime
CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
DAILY COST: \$ 33,886.00 CUM. COST: \$ 2,673,888.89 AFE NO: E7D-029

WELL CONTROL
DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2000 kPa @: 83 SPM
TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
CONDUCTED AT HRS. CREW PERFORMANCE
DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 4188 kPa

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	5		WEIGHT (kg/m3)	1110		No. 1 LINER (mm)	152X218	
SIZE (mm)	222		VISCOSITY (s/l)	44		No. 1 SPM	124	
TYPE	ATJ33		Lime (Kg/m3)	15		No. 2 LINER (mm)	152X218	
SERIAL No.	H48YD		PV (mPa S)	15		No. 2 SPM		
NOZZLES (mm)	3/11.9		YP (Pa)	6		VOLUME (m3/min.)	1.46	
DEPTH IN (m)	916		GELS (Pa)	2.5/3		PRESSURE (kPa)	4600	
METERS (m)	333		SAND (%)			D.P.A.S.G. ANN. VEL. (m/min.)	51	
HOURS	48.25		SOLIDS (%)			D.P. ANN. VEL. (m/min.)	49	
WOB (1000 lbs)	2 to 3		FILTER CAKE (mm desc.)			D.C. ANN. VEL. (m/min.)	92	
R.P.M.	50-55		WATER LOSS HT HP	4.8		SOLIDS CONTROL	D-1000	
CONDITION			Water Activity	0.74		SHAKER SCREENS	84X84	
			Oil Water Ratio	78/22		PUMP OUT (m3/stk)	0.01181	
			Temp	25				

DRILLING ASSEMBLY				MUD ADDITIVES				D. SILT. CENT.	
ITEMS	O.D.	I.D.	T.J. TYPE	Sacks	Product	Cost Per/sk	O.F. (kg/m3)		
Bit Sub	171	88	127 H90		OMV 100	\$ 175.00	U.F. (kg/m3)		
Shock sub	173	88	127 H90	25	Chemul 1	\$ 1,800.00	VOL. (l/min.)		
Mohel	173	72	127 H90		Chemul 11	\$ 2,750.00	HOURS		
5 Drill Collars	171	88	127 H90	1	Chemwet CM	\$ 2,400.00			
Jars	172	68	127 H90	25	Hot Lime	\$ 27.00			
13 Drill Collars	171	68	127 H90	15	CaCl2 HT	\$ 95.00			
XO	170	69	114 XH		Diesel m3	\$ 470.00			
6 HW	153	70	114 XH		TDL Defoamer	\$ 282.25			
BHA LENGTH	241.07		m	8	Water m3				
HOOK LOAD	84000		daN	848	Barite	\$ 18.00			
AVAILABLE WOB	18790		daN		Daily Mud Cost	\$ 20,557.00			
Joints DP. on Racks:	129				Total Mud Cost	\$ 165,543.50			
In String:	108								
TOTAL:	235								

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING		CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.		24	
RIG SERVICE	0.75	TESTING		REAM & WASH			
SURVEY		CIRC. SAMPLE		WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH			
COND. MUD	22.75	TRIP					
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING							
CEMENT							
HANDLE TOOLS		Safety Meeting	0.50				
				Total Hours	24.00		

Time 24 Hour Summary Time
Circulated at 1240 mKB and increased density to 1080 kg/m3, Viscosity 45 S/L.
Pulled up to 1228 m, waited 5 minutes, ran bit into 1238 mKB, (2 m of Fill) washed to 1240 mKB.
Circulated at 1240 mKB and increased density to 1105 kg/m3, Viscosity 47 S/L.
Pulled up to 1228 m, waited 5 minutes, ran bit into 1238.5 mKB, (2 m of Fill) washed to 1240 mKB.
Changed shaker screens to 84 X 84. (NOTE) Had safety and well control meeting with Shehtah crew.
Circulated at 1240 mKB and increased density to 1118 kg/m3, viscosity 46 S/L.
Problems with water wet barite, shaker screens where plugging up. Bypass shakers, positioned bit at 1229 mKB.
Electric stability dropped to 200. Rigged up pump no. 2 and circulated through bleed off line to shear invert.
Circulated and sheared mud, added 8 m3 of water increased Oil/Water ratio to 80/20, Electric stability increased to 720.
Density dropped to 1100 Kg/m3, Circulated and mixed one circulation of 32 sacks hot lime.
Ran bit into a depth of 1238.5 mKB, 1.5 m of fill, cleaned to 1240 mKB.
Circulated at 1240 mKB and mixed 70 sacks Barite, 20 Liters each of Chem (1), (11) and Chemwet CM.
Density increased to 1109 kg/m3, Electric stability dropped to 420. Problems with water wet barite plugging shaker screens.
Circulated at 1240 mKB and mixed OMV-100 and hot lime 5 minutes each.
(FORMATIONS) Saline River (915 mKB) (NOTE) Rig inspection by ED Reyvan N.E.B.
SIGNED BY: Jack Brazel MOBILE No.: 403-282-9301

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 97/01/27 REPORT NO.: 34
 DEPTH: 1249 mKB PROGRESS: 9 m FORMATION: Saline River
 OPERATIONS AT 08:00 HOURS: Circulating and increasing density drilling fluid.
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Niel Speers CO SUPERVISOR: Jack Brazel
 DAILY COST: \$ 67,390.35 CUM. COST: \$ 2,640,182.89 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @ 75 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
 CONDUCTED AT HRS CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 3 MAXIMUM CASING HOLD BACK 4536 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	5		WEIGHT (kg/m3)	1060		No. 1 LINER (mm)	152X218	
SIZE (mm)	222		VISCOSITY (s/l)	43		No. 1 SPM	120	
TYPE	ATJ33		Lime (Kg/m3)	7		No. 2 LINER (mm)	152X218	
SERIAL No.	H48YD		PV (mPa S)	12		No. 2 SPM		
NOZZLES (mm)	3/11.8		YP (Pa)	5		VOLUME (m3/min.)	1.42	
DEPTH IN (m)	916		GELS (Pa)	1		PRESSURE (kPa)	4500	
METERS (m)	333		SAND (%)			D.P.CSG. ANN. VEL. (m/min.)	50	
HOURS	48.25		SOLIDS (%)	4.5		D.P. ANN. VEL. (m/min.)	48	
WOB (1000 lbs)	2 to 3		FILTER CAKE (mm desc)	2.5		D.C. ANN. VEL. (m/min.)	89	
R.P.M.	60-65		WATER LOSS HT HP	11.2		SOLIDS CONTROL	D-1000	
CONDITION			Water Activity	0.76		SHAKER SCREENS	110x140	
			Oil Water Ratio	85/15		PUMP OUT (m3/stk)	0.01181	
			Temp	30				

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	171	88	127 H90
Shock sub	173	88	127 H90
Monel	173	72	127 H90
5 Drill Collars	171	68	127 H90
Jara	172	68	127 H90
13 Drill Collars	171	68	127 H90
XO	170	68	114 XH
6 HW	153	70	114 XH

BHA LENGTH 241.07 m
 HOOK LOAD 68000 daN
 AVAILABLE WOB 18790 daN
 Joints DP on Racks: 129
 In Strip: 108
 TOTAL: 235

MUD ADDITIVES

Items	Product	Cost Per/100
100	OMV 100	\$ 175.00
	Chemul 1	\$ 1,900.00
	Chemul 11	\$ 2,750.00
1	Chemwet CM	\$ 2,400.00
70	Hot Lime	\$ 27.00
90	CaCl2 HT	\$ 95.00
	Diesel m3	\$ 470.00
	TDL Defoamer	\$ 282.25
9	Water m3	
504	BARITE	
	Daily Mud Cost	\$ 30,340.00
	Total Mud Cost	\$ 144,966.50

O.F. (kg/m3)
 U.F. (kg/m3)
 VOL. (l/min.)
 HOURS

D. SILT	CENT.
	850
	1435
	350
	8

SURVEYS

DIRECTION

m	
m	
m	
m	
m	
m	
m	
m	
m	

DRILLING OPERATIONS	EVALUATION	PROBLEMS	SUMMARY
DRILLING 2.50	CORING	RIG REPAIR	TODAY 24
TRIPPING	LOGGING	LOST CIRC.	CUM.
RIG SERVICE 0.50	TESTING	REAM & WASH	
SURVEY	CIRC. SAMPLE	WORK PIPE	
SLIP & CUT	HANDLE TOOLS	HISH	
COND. MUD 21.00	TRIP		
NIPPLE UP/DN	REAM RATHOLE		
RUN CASING			
CEMENT			
HANDLE TOOLS	Safety Meeting		
		Total Hours 24.00	

Time 24 Hour Summary Time

Circulated and mixed invert product to increase yield and viscosity.
 Circulate above problem shale at 1230 mKB, increased viscosity 40 S/L, density 905 kg/m3, added 9 m3 water.
 oil water ratio 87 - 13. Circulating above shale hole cleaned up very good.
 Reamed hole down to 1240 mKB, circulated bottoms up, lot of medium gray shale came over shaker.
 Worked and circulated 1230 mKB to 1240 mKB.
 Picked up single and made connection, had 2.8 m of fill on bottom, washed down to get Kelly bushing in table.
 Drilled 222 mm hole 1240 mKB to 1249 mKB. Increased density to 980 kg/m3, viscosity 45 S/L, hole was cleaning well.
 Circulated 20 minutes, hoisted bit up to 1228 mKB, shut pump down for 3 minutes, circulated back in hole to 1244 mKB.
 5 meters of fill on bottom, ream to bottom, circulated and mixed barite, density 880 kg/m3. Problems
 with water wet barite plugging shaker screens. Hoisted bit up to 1228 mKB, circulated and mixed barite and Chemwet CM.
 Density increased to 1020 kg/m3, washed in hole and check for fill (13 metres). Circulated and mixed Chem (1) 45 L,
 Chem (11) 45 L, 10 sks OMV 100, 10 Sks Hot Lime and 90 barite, density increased to 1060 kg/m3. Pulled up to 1228
 mKB. Shut down pump for 3 minutes, run in and check hole, 2 m of fill, clean to 1240 mKB.
 (NOTE) Problems with pressured medium gray salty shale, depth 1230 mKB to 1235 mKB.
 (FORMATIONS) Saline River (915 mKB)

SIGNED BY: Jack Brazel

MOBILE No.: 403-282-9301



Midas Drilling Fluids

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DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-24 DATE 98-02-02

WELL NAME and LOCATION Ranger Not Creek C-17

REPORT NO. 34

OPERATOR Ranger Oil Ltd.

CONTRACTOR Shehlah Rig 1

REPORT FOR Hick Braze/Lee Brazel

REPORT FOR Dale Brazandall

KEY NUMBER		MOBILE DATA		ANNUAL PLAN SUMMARY AND VELOCITY				PUMP DATA	
NO	6	SIZE (mm)	617.1	ANNUAL	DD / IS	LENGTH (m)	VELOCITY (ft/s)	MAKE	Model
TYPE	DBS FM2665	VELOCITY (m/s)	37.3	LAST CASING	44/226	509	13.5	MODEL	8820
SIZE (mm)	222	JET FORCE (N)	990	LINER				LINER DIA (mm)	152
DEPTH IN (m)	1303	ROP (m/h)		OPEN HOLE	114	55	15.6	ROD DIA (mm)	
DEPTH OUT (m)		DEVIATION RECORD		OPEN HOLE	114	55	15.6	STROKE (mm)	216
HOURS RUN		DEPTH (m)	ANGLE - DEGREE	OPEN HOLE	114	55	15.6	DISP (L/min)	11.81
WOB (kN)	TSTM	1429	2°	CIRCULATION - TUBES (mm)					
RPM	80	1493	18°	MUD TANKS / SUP	42	BOTTOMS UP	38	SPM	110
RCP (m/hour)	3.0	1522	12°	DRILL STRING	7.9	TOTAL	82	OUTPUT (m/min)	1.3
DRILLING MUD PRODUCTS				MUD VOLUMES (m³)				SOLIDS CONTROL	
MATERIAL	UNITS	COST	TOTAL COST	TANK / SUP	54.2	EQUIPMENT	Centrifuge		
Chemical I	400L		3800.00	HOLE	52.1	CHEMICAL DENSITY (g/cc)			
Chemical II	100L		550.00	TOTAL	106.3	UNDERFLOW DENSITY (g/cc)	Not		
Chemical DM	100L			LOST TO HOLE		UNDERFLOW RATE (L/min)	Run		
DMV 100	42		7350.00	LOST TO EQUIP		SOLIDS REMOVAL RATE (g/min)			
Lime (Hot)	33		500.00	DUMPED		LIQUID REMOVAL RATE (L/min)			
				NEW WATER		HOURS RUN			
				NEW MUD / PREMIX	0.8	SHAKER 1	3401	MESH	SHAKER 2
						SHAKER 2	3401	MESH	
WELL HISTORY & REMARKS									
COST SINCE LAST CHECK 17211.00 PREVIOUS COST 15104.75 TOTAL COST 19076.76 17211.00 - drill from 1125 to 1126m @ 0.25h. Time drill @ 20 min/h (for deviation) to 1129m. Establish actual cuttings discharge rate at 1129m. To be 1000kwh compared to 300kwh as per ROP; raise density for well bore stability									
PHYSIOLOGY									
SDU	62.64	200							
SDU	36.38	100							
AK	0.75/0.15								
MAINTENANCE									
1. Continuously add 100L each (12 drum) of Chemical I and Chemical II into active system every 12 hours through Chemical barrel - addition rate is 3 1/2 min/L (Viscup) from Chemical barrel (If Chemical I & II are not mixed together for adding to system, addition rate is 7 min/L from each barrel) 2. Density @ 1820-1830 kg/m³ with Barite - 20 sx Barite @ 4 min/sx over 1 Circ. will increase density by 8 kg/m³ - if density climbs over 1830, run centrifuge for 1 or 2 circulation to reduce solids 3. Viscosity @ 70-75 s/L with DMV 100 - minimum addition rate is 8 sx @ 10 min/sx over 1 circulation. Checks 1000 L/min									
SERVICE REP. <u>Lito Zedler, dim Wieler</u> PHONE / MOBILE: <u>0818, 23</u> WAREHOUSE: PHONE:									

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/01/26 REPORT NO.: 33
 DEPTH: 1240 mKB PROGRESS: 104 m FORMATION: Saline River
 OPERATIONS AT 08:00 HOURS: Circulating and conditioning drilling fluid.
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Nief Speers CO. SUPERVISOR: Jack Brazel
 DAILY COST: \$ 26,941.00 CUM. COST: \$ 2,572,782.54 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 2200 kPa @ 75 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
 CONDUCTED AT HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 2 MAXIMUM CASING HOLD BACK 5750 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	<u>5</u>		WEIGHT (kg/m3)	<u>855</u>		No. 1 LINER (mm)	<u>152X216</u>	
SIZE (mm)	<u>222</u>		VISCOSITY (cP)	<u>31</u>		No. 1 SPM	<u>75</u>	
TYPE	<u>ATJ33</u>		pH			No. 2 LINER (mm)	<u>152X216</u>	
SERIAL No.	<u>H48YD</u>		PV (mPa S)			No. 2 BPM	<u>75</u>	
NOZZLES (mm)	<u>3/11.9</u>		YP (Pa)			VOLUME (m3/min.)	<u>1.77</u>	
DEPTH IN (m)	<u>916</u>		GELS (Pa)			PRESSURE (kPa)	<u>6280</u>	
METERS (m)	<u>324</u>		SAND (%)			D.P.CSG ANN. VEL. (m/min.)	<u>62</u>	
HOURS	<u>45.75</u>		SOLIDS (%)			D.P. ANN. VEL. (m/min.)	<u>60</u>	
WOR (1000 DAL)	<u>2 to 6</u>		FILTER CAKE (mm desc.)			D.C. ANN. VEL. (m/min.)	<u>111</u>	
K.P.M.	<u>50-55</u>		WATER LOSS (cc)			SOLIDS CONTROL	<u>0-100U</u>	
CONDITION			CHLORIDES (mg/l)			SHAKER SCREENS	<u>110x140</u>	
			MBT			PUMP OUT (m3/stk)	<u>0.01181</u>	

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.Y. TYPE
Bit Sub	<u>171</u>	<u>88</u>	<u>127 H90</u>
Shock sub	<u>173</u>	<u>65</u>	<u>127 H90</u>
Monel	<u>173</u>	<u>72</u>	<u>127 H90</u>
5 Drill Collars	<u>171</u>	<u>68</u>	<u>127 H90</u>
Jars	<u>172</u>	<u>68</u>	<u>127 H90</u>
13 Drill Collars	<u>171</u>	<u>68</u>	<u>127 H90</u>
XO	<u>170</u>	<u>69</u>	<u>114 XH</u>
8 HW	<u>153</u>	<u>70</u>	<u>114 XH</u>

BHA LENGTH 241.07 m
 HOOK LOAD 63000 daN
 AVAILABLE WOB 18780 daN
 Joints DP on Racks: 235
 In String:
 TOTAL: 235

MUD ADDITIVES

Items	Product	Cost Per Unit
	DMV 100	\$ <u>172.00</u>
	Chemul 1	\$ <u>1,800.00</u>
	Chemul 11	\$ <u>2,750.00</u>
1	Chemwet CM	\$ <u>2,400.00</u>
	Hot Lime	\$ <u>27.00</u>
26	CaCl2 HT	\$ <u>95.00</u>
8	Diesel m3	\$ <u>470.00</u>
2	TDL Defoamer	\$ <u>262.25</u>
Daily Mud Cost		\$ <u>9,624.50</u>
Total Mud Cost		\$ <u>116,414.50</u>

O.F. (kg/m3)
 U.F. (kg/m3)
 VOL. (l/min.)
 HOURS

SURVEYS

1145 m
 1190 m
 1209 m
 m
 m
 m
 m
 m

DIRECTION

1.8 °
 1.5 °
 2 °
 °
 °
 °
 °
 °

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	<u>17.00</u>	CORING	<u> </u>	RIG REPAIR	<u> </u>	DRILL OF	
TRIPPING	<u> </u>	LOGGING	<u> </u>	LOST CIRC.	<u> </u>	EVALUATION	
RIG SERVICE	<u>0.75</u>	TESTING	<u> </u>	REAM & WASH	<u> </u>	PROBLEMS	
SURVEY	<u>2.00</u>	CIRC. SAMPLE	<u> </u>	WORK PIPE	<u> </u>	TOTAL	
SLIP & CUT	<u> </u>	HANDLE TOOLS	<u> </u>	FISH	<u> </u>	WEATHER	<u>Clear</u>
COND. MUD	<u>2.50</u>	TRIP	<u> </u>	Change	<u> </u>	TEMPERATURE	<u>-17 C</u>
NIPPLE UP/DN	<u> </u>	REAM RATHOLE	<u> </u>	Shaker	<u> </u>	ROADS	<u>Good</u>
RUN CASING	<u> </u>			Screens	<u>1.00</u>		
CEMENT	<u> </u>			Set up Brakes	<u>0.50</u>		
HANDLE TOOLS	<u> </u>	HSE Meeting	<u>0.25</u>	Total Hours	<u>24.00</u>		

Time 24 Hour Summary

Time

Drilled 222 mm hole to 1166 mKB and survey as required.
 Rig serviced and functioned pipe rams.
 Drilled 222 mm hole to 1198 mKB and survey as required.
 Rig serviced and functioned HCR.
 Drilled 222 mm hole to 1240 mKB and survey as required.
 Rig serviced and functioned hydril.
 (NOTE) Problems with pressured medium gray salty shale depth 1230 mKB to 1235 mKB.
 Circulated and mixed invert product to increase yield and viscosity.
 (NOTE) Fan hole, weight on bit 3-5000 Dan from 1135 mKB to 1171 mKB.
 weight on bit 2-3000 Dan from 1171 mKB to 1240 mKB.
 (NOTE) Gas monitor alarm went off in cellar, Masked up two Shehtah personal and checked for H2S and gas. (NONE)
 Crews followed proper procedure for situation. (Monitor was wet)
 (FORMATIONS) Saline River (915 mKB)
 SIGNED BY: Jack Brazel MOBILE No.: 403-282-9301



Midas Drilling Fluids

Telephone - 24 Hr. 1-800-929-3570
Fax - (403) 531-0464

DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-24 DATE 98-02-01

WELL NAME and LOCATION Ranger Nota Creek C-17

REPORT NO. 33

OPERATOR Ranger Oil Ltd

CONTRACTOR Shehlab Rig 1

REPORT FOR Jack Brazel

REPORT FOR Dale Barandall

BIT RECORD		NOZZLE DATA		APPROXIMATE GEOMETRY & VELOCITY				MUD DATA	
NO	<u>6</u>	SIZE (mm)	<u>512211.1</u>	ANNULUS	OO / ID	LENGTH (m)	VELOCITY (ft/s)	MAKE	<u>101042</u>
TYPE	<u>DBS FM2665</u>	VELOCITY (m/s)	<u>37.3</u>	LAST CASING	<u>244/226</u>	<u>589</u>	<u>43.5</u>	MODEL	<u>0080</u>
SIZE (mm)	<u>222</u>	JET FORCE (N)	<u>960</u>	LINER				LINER DIA (mm)	<u>152</u>
DEPTH IN (m)	<u>1383</u>	RHP (kW)		OPEN HOLE	<u>114</u>	mmDP	<u>95.6</u>	ROD DIA (mm)	
DEPTH OUT (m)		CUTTING RECORD		OPEN HOLE	<u>11471</u>	mmDC	<u>95.6</u>	STROKE (mm)	<u>216</u>
HOURS RUN		DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE	<u>12173</u>	mmDC	<u>106</u>	DISP (L/min)	<u>11.81</u>
WOB (kN)	<u>35000</u>	<u>1381</u>	<u>2 1/2</u>	CIRCULAR REVOLUTIONS (RPM)				SPM	<u>110</u>
RPM	<u>65</u>	<u>1411</u>	<u>2</u>	MUD TANKS / SUMP	<u>43</u>	BOTTOMS UP	<u>30</u>	OUTPUT (m/min)	<u>1.3</u>
ROP (m/min)				DRILL STRING	<u>3.4</u>	TOTAL	<u>31</u>	PRESSURE (kPa)	<u>2300</u>

DRILLING MUD PRODUCTS				MUD VOLUMES (m³)		EQUIPMENT	
MATERIAL	UNITS	COST	TOTAL COST	TANK / SUMP			
<u>Barite (chip)</u>	<u>25</u>		<u>950.00</u>	HOLE	<u>56.3</u>		
<u>Chemul I</u>	<u>400</u>		<u>3800.00</u>	TOTAL	<u>104.9</u>		
<u>Chemul II</u>	<u>490</u>		<u>5800.00</u>	LOST TO HOLE			
<u>Chemul DM</u>	<u>1904</u>		<u>2400.00</u>	LOST TO EQUIP	<u>0.3</u>		
				DUMPED			
				NEW WATER	<u>3</u>		
				NEW MUD / PREMIX	<u>0.5</u>		
						SHAKER 1 <u>3184</u> MESH	SHAKER 2 <u>3150</u> MESH

COST SINCE LAST CHECK	<u>12150.00</u>	02-01: PDM make up Teledrift stem bit, RHM, ream	
PREVIOUS COST	<u>15822.75</u>	tight hole 1277-1297 for 0.75h, wash beam from	
TOTAL COST	<u>17037.25</u>	1802-TAM in 1.25h: Drill ahead from 1383m @ 11.81h	
		to 1425m @ 11.81h: Condition mud w/ chemicals, filter &	
		wetting agents to raise F3 and reduce screen blinding	

EFFLOW RATE (L/min)	<u>6.8</u>	<u>200</u>	<u>6</u>				
SAMPLE TIME (min)	<u>1700</u>	<u>2400</u>					
PRESSURE DEPTH (m)	<u>1190</u>	<u>1190</u>					
MUD DENSITY (kg/m³)	<u>11.67</u>	<u>11.67</u>					
HYD PRESSURE GRADIENT (kPa/m)	<u>57</u>	<u>58</u>					
FUNNEL VISCOSITY (cP)	<u>24</u>	<u>24</u>					
PLASTIC VISCOSITY (cP)	<u>9</u>	<u>7</u>					
YIELD POINT (Pa)	<u>5.5</u>	<u>3.3</u>					
GEL STRENGTH (Pa) 10 sec / 10 min							
API FILTRATE (mL/min) @ 100 kPa							
FILTER CAKE (mm)							
TEMP FIL (mL/min) @ 3500-25 °C	<u>4.0</u>						
TEMP FILTER CAKE (mm)	<u>1.5</u>						
API CL, NTMP, W METER	<u>12</u>	<u>15</u>					
Water (kg/L)	<u>400</u>	<u>880</u>					
Electrical Slab	<u>0.91</u>	<u>0.91</u>					
Water Activity	<u>80/20</u>	<u>80/20</u>					
OHV	<u>23</u>	<u>25</u>					
CALCIUM (mg/L)	<u>66</u>	<u>66</u>					
CHLORIDES (mg/L)	<u>16.3</u>	<u>16.5</u>					
WATER VOLUME FRACTION	<u>72.4</u>	<u>72.2</u>					
% SOLIDS - VOLUME FRACTION	<u>11.2</u>	<u>11.2</u>					
SOLIDS - WEIGHT FRACTION	<u>9.8</u>	<u>9.8</u>					
DRILLED SOLIDS (g/m³)	<u>181</u>	<u>157</u>					
TOTAL HIGH GRAVITY SOLIDS (g/m³)	<u>166</u>	<u>157</u>					
TOTAL LOW GRAVITY SOLIDS (g/m³)	<u>151</u>	<u>157</u>					
POLYMER CONCENTRATION (g/m³)							
Water Phase (kg/L)							
Calcium Chloride	<u>286</u>	<u>282</u>					
Sodium Chloride	<u>29</u>	<u>30</u>					
Chlorides	<u>201</u>	<u>198</u>					
Unsoluble Salt							
kg/L Water Mud	<u>31</u>	<u>30</u>					

SERVICE REP: Udo Zedler / Jim Wheeler PHONE / MOBILE:
WAREHOUSE: PHONE:

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CRFEK C-17 DATE: 9/30/25 REPORT NO.: 32
 DEPTH: 1138 mKB PROGRESS: 154 m FORMATION: Saline River
 OPERATIONS AT 06:00 HOURS: Drilling 222 mm hole
 CONTRACTOR/RIG SUPT.: Shehlah Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
 DAILY COST: \$ 26,841.00 CUM. COST: \$ 2,343,851.54 AFE NO: E7D-028

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 1840 kPa @ 75 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
CONDUCTED AT HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 5692 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	<u>5</u>	WEIGHT (kg/m3)	<u>850</u>	No. 1 LINER (mm)	<u>152X216</u>
SIZE (mm)	<u>222</u>	VISCOSITY (cP)	<u>31</u>	No. 1 SPM	<u>75</u>
TYPE	<u>ATJ33</u>	pH		No. 2 LINER (mm)	<u>152X216</u>
SERIAL No.	<u>H49YD</u>	PV (mPa.s)		No. 2 SPM	<u>79</u>
NOZZLES (mm)	<u>3/11.9</u>	YP (Pa)		VOLUME (m3/min.)	<u>1.77</u>
DEPTH IN (m)	<u>816</u>	GELS (Pa)		PRESSURE (kPa)	<u>6280</u>
METERS (m)	<u>220</u>	SAND (%)		D.P.CSG. ANN. VEL. (m/min.)	<u>62</u>
HOURS	<u>28.75</u>	SOLIDS (%)		D.P.ANN. VEL. (m/min.)	<u>60</u>
WOB (1000 lbs)	<u>2 to 6</u>	FILTER CAKE (mm disc.)		D.C. ANN. VEL. (m/min.)	<u>111</u>
R.P.M.	<u>50-55</u>	WATER LOSS (cc)		SOLIDS CONTROL	<u>D-1000</u>
CONDITION		CHLORIDES (mg/l)		SHAKER SCREENS	<u>110x140</u>
		MBT		PUMP OUT (m3/stk)	<u>0.01181</u>

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	<u>171</u>	<u>88</u>	<u>127 H90</u>
Shock sub	<u>173</u>	<u>86</u>	<u>127 H90</u>
Monel	<u>173</u>	<u>72</u>	<u>127 H90</u>
5 Drill Collars	<u>171</u>	<u>68</u>	<u>127 H90</u>
Jars	<u>172</u>	<u>68</u>	<u>127 H90</u>
13 Drill Collars	<u>171</u>	<u>68</u>	<u>127 H90</u>
XO	<u>170</u>	<u>69</u>	<u>114 XH</u>
6 ITW	<u>153</u>	<u>70</u>	<u>114 XH</u>

BHA LENGTH 241.07 m
 HOOK LOAD 58000 daN
 AVAILABLE WOB 18780 daN
 Joints OP. on Racks: 141
 In String: 84
 TOTAL: 235

MUD ADDITIVES

Sacks	Product	Cost Per Sak
	OMV 100	\$ <u>175.00</u>
	Chemul 1	\$ <u>1,900.00</u>
	Chemul 11	\$ <u>2,750.00</u>
	Chemwel CM	\$ <u>2,400.00</u>
<u>36</u>	Hot Lime	\$ <u>27.00</u>
<u>32</u>	CaCl2 HT	\$ <u>85.00</u>
	Diesel m3	\$ <u>470.00</u>

Daily Mud Cost \$ 4,012.00
 Total Mud Cost \$ 106,790.00

O.F. (kg/m3)
 U.F. (kg/m3)
 VOL. (l/min.)
 HOURS

SURVEYS

	D. SILT	CENT
		<u>845</u>
		<u>1465</u>
		<u>350</u>
		<u>24</u>

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	<u>21.00</u>	CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.		<u>24</u>	
RIG SERVICE	<u>0.75</u>	TESTING		REAM & WASH			
SURVEY	<u>1.75</u>	CIRC. SAMPLE		WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH			
COND MUD		TRIP					
NIPPLE UPON		REAM RATHOLE		CLN Pump			
RUN CASING				Suction			
CEMENT				Screens	<u>0.50</u>		
HANDLE TOOLS		Safety Meeting		Total Hours	<u>24.00</u>		

DRILL OP
 EVALUATION
 PROBLEMS
 TOTAL
 WEATHER
 TEMPERATURE
 ROADS

Clear
 -29 C
 Good

Time 24 Hour Summary Time

Drilled 222 mm hole to 988 mKB and survey as required.
 Rig serviced and Function HCR.
 Drilled 222 mm hole to 1029 mKB and survey as required.
 Rig serviced and functioned pipe rams.
 Drilled 222 mm hole to 1102 mKB and survey as required
 Rig serviced and functioned annular.
 Drilled 222 mm hole to 1136 mKB.

(NOTE) Fann hole, weight on bit 3000 Dan from 982 mKB to 1001 mKB.
 weight on bit 3-5000 Dan from 1001 mKB to 1136 mKB.

FORMATIONS) Saline River

SIGNED BY: Jack Brazel

MOBILE No.: 403-282-8301



Midas Drilling Fluids

Telephone - 24 Hr. 1-800-929-3570
Fax - (403) 531-0484

DRILLING MUD SERVICE REPORT

SPLD DATE 99-12-29 DATE 99-01-31

WELL NAME and LOCATION Ranger Not Creek C-17

REPORT NO. 32

OPERATOR Ranger Oil Ltd.

CONTRACTOR Shechtel Rig.

REPORT FOR Jack Brazel

REPORT FOR Dale Baxandall

GENERAL DATA		MATERIALS		ANALYSIS		GEOMETRY AND VELOCITY		PHASE		
NO	ATJ33	SIZE (mm)	JAIL-9	AIRLUB	CD / ID	LENGTH (m)	VELOCITY (ft/min)	MAKE	Material	
TYPE	S	VELOCITY (m/s)		LAST CASING	P4/PB6	522		MODEL	B222	
SIZE (mm)	222	JET FORCE (N)		LINER				LINER DIA (mm)	102.4	
DEPTH IN (m)	916	HMP (N/m)		OPEN HOLE	1M	mmDP		MOO DIA (mm)		
DEPTH OUT (m)	1383			OPEN HOLE	14/21	mmDC	55	STROKE (mm)	206	
HOURS RUN	52.5	DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE	10/23	mmDC	106	DSP (L/min)	11.81	
W.G.S. (mm)	Tripping							SPH	100	
RPM				MUD TANKS / SLURP	45		BOTTOMS UP	32	OUTPUT (ml/min)	1.18
ROP (in/hr)	5.05			DRILL STRING	9.8		TOTAL	05	PRESSURE (psi)	
MATERIALS USED - PHASES				MESH VOLUMES (cc)		SOLIDS CONTROL				
MATERIAL		UNITS	COST	TANK / SLUMP		EQUIPMENT				
Calcium Chloride		40	3000.00	HOLE		OVERFLOW DENSITY (g/cm³)				
Chemul I		50		TOTAL		UNDERFLOW DENSITY (g/cm³)				
Chemul II		185	5500.00	LOST TO MULE		UNDERFLOW RATE (L/min)				
Chemul OIL		185	2100.00	DUMPED		3-SEC SEDIMENTATION RATE (L/min)				
Red Lime		20	50.00	NEW WATER		HOURS RUN				
				NEW MUD / PREMIUM		SHAKER 1 3101 MESH SHAKER 2 3101 MESH				
COST SINCE LAST CHECK				WELL: HISTORY & REMARKS						
PREVIOUS COST				at 31: Drill from 1383m to 1503m @ 1500 ft/min. Light circulation @ 1326, mark 1st, 2nd & 3rd for bit. Note sudden reduction in ES from 910 to 100 gpm, caused by fresh condition mud at Chemul I & R. Filter test and determine Chemul I & Chemul OIL @ 1500 ft/min. Mud hard to regain ES of 1000+ g/g water settling attributed to undissolved salt in mud from formation						
TOTAL COST										
SPECIFICATIONS										
MOO	95.46	200								
SOO	62.46	100								
NK	0.62/0.68		11.10							
UPFLOWLINE □ SUCTION TEMP °C				31						
SAMPLE TIME (m)				1030						
PRESENT DEPTH (m)				1383						
MUD DENSITY (g/cm³)				1220						
HYD PRESSURE (PSI) (m)				11.77						
FUNNEL VISCOSITY (mL)				31						
PLASTIC VISCOSITY (mPa-s) @ °C				33						
YIELD POINT (mPa) @ °C				14.5						
GEL STRENGTHS (Pa) to sec / 10 min				6.5/0.0						
API FILTRATE (mL) @ 700 psi				5.6						
FILTER CAKE (mm)				31						
HTAP PL. (mL/30 min)				3600.95						
HTAP FILTER CAKE (mm)				5.4						
FM □ STMP □ WATER				R soft, no free H2O						
ALKALINITY (ppm) (mg/L)				15						
HYPOXID (mg/L) Electrical Shop				460						
CARBONATES (mg/L) Water Activity				0.73						
DICARBONATES (mg/L) ONV				0.317						
CALCIUM (mg/L) 10% 5% 10% 22				22						
CHLORIDES (mg/L) 10% 5% 10% 65				65						
% SOL. VOLUME FRACTION Report				24.3						
% TOTAL SOLIDS % VOLUME FRACTION Report				73.9						
Losses Incl Solids (%)				11.8						
GRILLED SOLIDS (gpm)				151						
TOTAL HIGH GRAVITY SOLIDS (gpm)				203						
TOTAL LOW GRAVITY SOLIDS (gpm)				151						
POLYMER CONCENTRATION (gpm)										
Water Phase (g/mL)				222						
Calcium Chloride				22						
Sodium Chloride				190						
Undissolved Salt (g/mL) (Whale Mud)				39						

After trip when circulating add the following:

- 1 drum Chemul II and 1 drum Chemul OIL together at 49 sec/Viscup from each drum
- at the same time, and where Chemul I & Chemul OIL are being added, run water at 206 l/min (same as 3 sec/Viscup) for 2 circulations (2 hour & 60 min)

NOTE:

1. Make sure mud man is on hand at start of the treatment
2. Always keep 1 drum each of Chemul I, Chemul II & Chemul OIL warmed up and ready for use

Maintenance Thanks J.P. & Jim

1. Viscosity @ 70-75 cSt w/only 100; maximum 10/circ
2. Density @ 1150-1200 kg/m³; maximum 30 g/ccul-shmp. Add 30L Chemul per circulation if barite addition

SERVICE REP: Otto Zindler, Jim Winder PHONE / MOBILE: C.Ry * 23
WAREHOUSE: PHONE:

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.



Midas Drilling Fluids

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DRILLING MUD SERVICE REPORT

SPUD DATE 1997-12-24 DATE 28-01-30WELL NAME and LOCATION Ranger Not Creek C-17REPORT NO. 31OPERATOR Ranger Oil Ltd.CONTRACTOR Shehtah Rig 1REPORT FOR Jack BrazelREPORT FOR Dale Baxandall

ENV. RECORDING		WELL DATA		ANNULUS GEOMETRY AND VELOCITY			PUMP DATA			
NO.	A7133	SIZE (mm)	3X11.9	ANNULUS	OD / ID	LENGTH (m)	VELOCITY (ft/s)	MAKE	Model	
TYPE	4	VELOCITY (m/s)	58.9	LAST CASING	244/226	589	39.5	MODEL	8200	
SIZE (mm)	282	JET FORCE (N)	1390	LINER				LINER DIA (mm)	152	
DEPTH IN (m)	916	HIP (MW)	45.2	OPEN HOLE	114 mmDP		41.4	ROD DIA (mm)		
DEPTH OUT (m)				OPEN HOLE	124/71 mmDC	55	41.4	STROKE (mm)	216	
HOURS RUN		DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE	124/73 mmDC	186	25	DISP (L/min)	11.01	
W.O.B (kN)	3-4000	1847	2.7° N3W	Circulation (min)						SPM
RPM	80			MUD TANKS / SLUMP	49	BOTTOMS I/P	31	OUTPUT (m/min)	1.45	
ROP (m/hr)	4.2			DRILL STRING	3.5	TOTAL	83	PRESSURE (kPa)	5800	

MATERIAL	UNITS	COST	TOTAL COST	TANK / SLAP	58.0	EQUIPMENT	Centrifuge
Barite	<u>157</u>		<u>2086.00</u>	HOLE	<u>45.1</u>	OVERFLOW	DENSITY
Chemul T & II	<u>1746</u>			TOTAL	<u>103.1</u>	UNDERFLOW	Not
OMV-100	<u>20</u>		<u>3500.00</u>	LOST TO HOLE	<u>2.9</u>	UNDERFLOW	Run
Calcium Chloride H	<u>18</u>		<u>1710.00</u>	LOST TO EQUIP	<u>0.5</u>	SOLOS REMOVAL	Rate (g/min)
Hot Lime	<u>18</u>		<u>486.00</u>	DUMPED		LIQUID REMOVAL	Rate (g/min)
Ins. Corr. Chemul I	<u>1</u>		<u>1900.00</u>	NEW WATER		HOURS RUN	
Chemul II	<u>3</u>		<u>8250.00</u>	NEW MUD / PREMIER		SHAKER 1	<u>3109</u> MESH
OMV-100	<u>63</u>		<u>11025.00</u>			SHAKER 2	<u>3109</u> MESH

COST SINCE LAST CHECK	<u>29607.00</u>	01-30	drill from 1865m: light connections @ 20' & 1826m, work 0.5h each. drill ahead to 1325m; cement drilling for direction, drilling salt & hot lime mud ahead
PREVIOUS COST	<u>11622.95</u>		
TOTAL COST	<u>41229.95</u>		NOTE: Flowline temp increased 1°C

NO.	SIZE (mm)	VELOCITY (m/s)	ANNULUS	OD / ID	LENGTH (m)	VELOCITY (g)	MAKE
100	<u>78.30</u>						
200	<u>54.46</u>						

FLOWLINE	☐ Suction Temp °C	<u>30</u>	
SAMPLE TIME (m)	<u>1930</u>	<u>2400</u>	
PRESENT DEPTH (m)	<u>1595</u>	<u>1595</u>	MAINTENANCE
MUD DENSITY (kg/m³)	<u>1800</u>	<u>1800</u>	
HYD. PRESSURE GRADIENT (kPa/m)	<u>11.73</u>	<u>11.73</u>	1. Viscosity @ 65-70 s/s w/OMV 100 through Harnix pressure hopper
RUNNEL VISCOSITY (mPa·s)	<u>6.5</u>	<u>6.5</u>	
PLASTIC VISCOSITY (mPa·s) @ 35 °C	<u>2.4</u>	<u>2.4</u>	
YIELD POINT (Pa) @ 35 °C	<u>1.5</u>	<u>1.5</u>	- Maximum 10 s/circulation @ 9 min/sx
GEL STRENGTH (Pa) @ 10 min / 10 min	<u>6.8</u>	<u>5.6</u>	- Do NOT let viscosity drop below 6.5 s/s
AIR FILTRATE (mL/30 min) @ 700 kPa			
FILTER CAKE (mm)			2. Density @ 1190-1200 kg/m³ w/Barite
HTHP FL. (mPa·s) @ 3500 kPa	<u>5.0</u>		
HTHP FILTER CAKE (mm)	<u>2.0</u>	<u>1.0</u>	- For every sack Barite added, add 1 litre each of Chemul I and Chemul II
PH	<u>11.0</u>		
ALKALINITY (mg/L)	<u>12</u>		
HYDROLYSIS (mg/L)	<u>1000</u>	<u>1030</u>	- Do NOT add Barite faster than 2 min/sx
CARBONATES (mg/L)	<u>0.78</u>		
BICARBONATES (mg/L)	<u>0.21</u>	<u>0.21</u>	- 30 Barite over 1 circulation will increase mud density by about 10 kg/m³
CALCIUM (mg/L)	<u>18</u>		
CHLORIDES (mg/L)	<u>47</u>		
% SOLIDS VOLUME FRACTION	<u>15.3</u>		3. Once each hour add the following
% OIL - VOLUME FRACTION	<u>72.9</u>		
% TOTAL SOLIDS - VOLUME FRACTION	<u>12.2</u>		- 45L each of Chemul I & Chemul II together through chemical barrel at 1 litre/min (1 Viscopump)
% SOLIDS (mg/L)	<u>11.2</u>		- 10 s/s Hot Lime @ 2 min/sx
DRILLED SOLIDS (mg/L)	<u>166</u>		
TOTAL HIGH GRAVITY SOLIDS (mg/L)	<u>202</u>		
TOTAL LOW GRAVITY SOLIDS (mg/L)	<u>166</u>		
POLYMER CONCENTRATION (mg/L)			
Water Phase (kg/L)			
Calcium Chloride	<u>217</u>		
Sodium Chloride	<u>36</u>		
Chlorides	<u>161</u>		
Underdrill Salt	<u>6</u>		
Chloride (Mud)			

SERVICE REP: Chad MillerPHONE / MOBILE: 081-23

WAREHOUSE:

PHONE:

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/01/23 REPORT NO.: 30
DEPTH: 890 mKB PROGRESS: 105 m FORMATION: Franklin Mountain
OPERATIONS AT 08:00 HOURS: Drilling 222 mm hole
CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Niel Speers CO. SUPERVISOR: Jack Brazel
DAILY COST: \$ 27,620.15 CUM. COST: \$ 2,202,193.31 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 1600 kPa @: 65 SPM
TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
BOP DRILLS: CONDUCTED WHILE Drilling WELL SECURED IN 2.5 MIN.
CONDUCTED AT 16:00 HRS. CREW PERFORMANCE Fair
DAYS SINCE BOP DRILL (EACH CREW): 1 MAXIMUM CASING HOLD BACK 5092 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	4		WEIGHT (kg/m3)	880		No. 1 LINER (mm)	152X216	
SIZE (mm)	222		VISCOSITY (cP)	31		No. 1 SPM	75	
TYPE	ATJ 35C		pH			No. 2 LINER (mm)	152X216	
SERIAL No.	808YX		PV (mPa S)			No. 2 SPM	75	
NOZZLES (mm)	3/11.8		YP (Pa)			VOLUME (m3/min.)	1.77	
DEPTH IN (m)	588		GELS (Pa)			PRESSURE (kPa)	6280	
METERS (m)	301		SAND (%)			D.P.A.C.S.G. ANN. VEL (m/min.)	62	
HOURS	58.75		SOLIDS (%)			D.P.A.C.S.G. VEL. (m/min.)	60	
WOB (1000 lbs)	15		FILTER CAKE (mm sec.)			D.C. ANN. VEL (m/min.)	111	
R.P.M.	60		WATER LOSS (cc)			SOLIDS CONTROL	D-1000	
CONDITION			CHLORIDES (mg/l)			SHAKER SCREENS	110x140	
			MBT			PUMP OUT (m3/stk)	0.01181	

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	Y.J. TYPE	MUD ADDITIVES			D. SILT. CENT.	
Bit Sub	171	88	127 H90	Sacks	Product	Cost Per sack	O.F. (kg/m3)	860
Shock sub	173	88	127 H90		OMV 100	\$ 175.00	U.F. (kg/m3)	1985
Motor	173	72	127 H90		Chemul 1	\$ 1,800.00	VOL. (l/min.)	350
5 Drill Collars	171	68	127 H90		Chemul 11	\$ 2,750.00	HOURS	24
Jars	172	68	127 H90		Chemul CM	\$ 2,400.00		
13 Drill Collars	171	68	127 H90	6	Hot Lime	\$ 27.00		
XO	170	68	114 XH	6	CaCl2 HT	\$ 95.00		
6 HW	153	70	114 XH	63	Diesel m3	\$ 470.00		
BHA LENGTH	241.07	m						
HOOK LOAD	58000	daN						
AVAILABLE WOB	16790	daN						
Joints DP. on Racks:	167				Daily Mud Cost	\$ 39,832.00		
In String:	68				Total Mud Cost	\$ 85,242.00		
TOTAL:	235							

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	20.80	CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.		24	
RIG SERVICE	1.00	TESTING		REAM & WASH			
SURVEY	2.00	CIRC. SAMPLE	0.25	WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH			
COND MUD		TRIP					
NIPPLE UP/DN		REAM RATHOLE					
RUN CASING				(Repair)			
CEMENT				Wash Pipe			
HANDLE TOOLS		Safety Meeting	0.25	Total Hours	24.00		

Time 24 Hour Summary Time
Drilled 222 mm hole to 832 mKB and survey as required.
Had safety meeting and B.O.P drill with Shehtah crew.
Drilled 222 mm hole to 890 mKB and survey as required.

(NOTE) Functioned Hydril and pipe rams.

(FORMATIONS) Franklin Mountain (585 mKB)

SIGNED BY: Jack Brazel MOBILE No.: 403-282-9301



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DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-24 DATE 98-01-29
 WELL NAME and LOCATION Ranger Not Creek
 OPERATOR Ranger Oil Ltd
 REPORT FOR Jack Brazel

 CONTRACTOR Shehlah Rig 1
 REPORT FOR Dale Barandall
REPORT NO. 30

BIT INFORMATION		MATERIAL DATA		ANNUAL SERVICE HISTORY AND VELOCITY				MATERIAL DATA	
NO	<u>A7133</u>	SIZE (mm)	<u>3411.9</u>	ANNUAL SERVICE	DO / ID	LENGTH (m)	VELOCITY (ft/min)	MAKE	<u>MATERIAL</u>
TYPE	<u>1</u>	VELOCITY (m/s)	<u>58.9</u>	LAST CASING	<u>244/226</u>	<u>509</u>	<u>39.5</u>	MODEL	<u>8000</u>
SIZE (mm)	<u>222</u>	JET FORCE (N)		LINER				LINER DIA (mm)	<u>168</u>
DEPTH IN (m)	<u>916</u>	HWP (mm)		OPEN HOLE	<u>114</u>	<u>mmDP</u>	<u>41.1</u>	ROD DIA (mm)	
DEPTH OUT (m)		HWP (mm)		OPEN HOLE	<u>11471</u>	<u>mmDC</u>	<u>55</u>	STROKE (mm)	<u>216</u>
HOURS RUN		DEPTH (m)		OPEN HOLE	<u>11473</u>	<u>mmDC</u>	<u>186</u>	DISP (L/hr)	<u>11.81</u>
WOB (kN)	<u>3-1000</u>	ANGLE - DIRECTION		CUTtings REMOVAL SYSTEMS				APM	<u>100</u>
RPM	<u>55</u>			MUD TANKS / SLUMP	<u>63</u>	BOTTOMS UP	<u>29</u>	OUTPUT (m/min)	<u>1.18</u>
RCP (m/min)				DRILL STRING	<u>9.1</u>	TOTAL	<u>89</u>	PRESSURE (kPa)	<u>5300</u>
MATERIALS USED				MUD VOLUMES				SOLIDS CONTROL	
MATERIAL	UNITS	COST	TOTAL COST	TANK / SLUMP	<u>63.0</u>	EQUIPMENT			
<u>Chemul I</u>	<u>80L</u>	<u>(11.00)</u>	<u>1900.00</u>	HOLE	<u>43.0</u>	OVERFLOW DENSITY (kg/m ³)			
<u>Chemul II</u>	<u>80L</u>	<u>(11.00)</u>	<u>2750.00</u>	TOTAL	<u>106.0</u>	UNDERFLOW DENSITY (kg/m ³)			
<u>Chemul OM</u>	<u>80L</u>	<u>(11.00)</u>	<u>2100.00</u>	LOST TO HOLE		UNDERFLOW RATE (L/min)			
<u>Barite</u>	<u>150</u>		<u>2700.00</u>	LOST TO EQUIP.		ADDENDUMS (kg/m ³)			
<u>OMV 100</u>	<u>30</u>		<u>5250.00</u>	DUMPED		LIQUID REMOVAL RATE (L/min)			
				NEW WATER		HOURS RUN			
				NEW MUD / PREPARE		SHAKER 1 <u>3.84</u> MESH SHAKER 2 <u>3.84</u> MESH			
COST SINCE LAST CHECK				TOTAL COST					
				<u>15000.00</u>					
PREVIOUS COST				<u>101592.25</u>					
TOTAL COST				<u>116592.25</u>					
REMARKS				<u>15000.00</u> or <u>22</u> : Circ. and condition hole shear mud w/ Dowell; check <u>101592.25</u> and room for hole for stability of wellbore; rig up <u>116592.25</u> Normix high pressure hopper; drill ahead from 1200m <u>at 1000m to 1265m @ 2000m.</u>					
DO	<u>62</u>	200	8						
DO	<u>42</u>	100	3	<u>10</u>					
DO									
FLOWLINE SUCCTION TEMP °C				<u>26</u>					
SAMPLE TIME (hr)				<u>2400</u>					
PRESENT DEPTH (m)				<u>1265</u>					
MUD DENSITY (kg/m ³)				<u>1182</u>					
HYD PRESSURE GRADIENT (kPa/m)				<u>11.6</u>					
FLUID VISCOSITY (cP)				<u>58</u>					
PLASTIC VISCOSITY (cP) @ °C				<u>20</u>					
YIELD POINT (Pa)				<u>11</u>					
DEL STRENGTH (Pa) 10 sec / 10 min				<u>5.16</u>					
API FILTRATE (mL/min) @ 700 kPa									
FILTER CAKE (mm)									
HT-HF FL MUD RIN				<u>3500</u> <u>95</u> °C					
HT-HF FILTER CAKE (mm)				<u>2.90</u>					
IM □ STRIP □ METER									
ALKALINITY (mg/L)				<u>11</u>					
HYDROLYS (mg/L)				<u>1180</u>					
CARBONATES (mg/L)				<u>0.85</u>					
BICARBONATES (mg/L)				<u>82/18</u>					
CALCIUM (mg/L)				<u>15</u>					
CHLORIDES (mg/L)				<u>40</u>					
% OIL - VOLUME FRACTION				<u>15.3</u>					
% SOLIDS - VOLUME FRACTION				<u>93.7</u>					
% TOTAL SOLIDS - VOLUME FRACTION				<u>10.6</u>					
DRILLED SOLIDS (kg/m ³)				<u>9.6</u>					
TOTAL HIGH GRAVITY SOLIDS (kg/m ³)				<u>237</u>					
TOTAL LOW GRAVITY SOLIDS (kg/m ³)				<u>91</u>					
POLYMER CONCENTRATION (ppm)									
Water Phase (kg/m ³)									
Calcium Chloride				<u>163</u>					
Sodium Chloride				<u>39</u>					
Chlorides				<u>130</u>					
Undissolved Salt				<u>0</u>					
Rig 1 Waste Mud				<u>0</u>					
REMARKS				<u>Add to system now (Goreyards)</u> <u>1. 10 Hot Lime @ 50 min/sx through hopper</u> <u>together with 36 Calcium Chloride HT</u> <u>at 5 min/sx</u> <u>MAINTENANCE</u> <u>1. Viscosity @ 60-65 sec/l with OMV-100</u> <u>(maximum 10 sec/circulation)</u> <u>NOTE: Viscosity may not come up right away</u> <u>: Don't let it get below 60 sec/l</u> <u>2. Density @ 1180 to 1190 kg/m³ w/ Barite</u> <u>over one circulation.</u> <u>NOTE: 25 Barite over 1 circulation will</u> <u>raise density by 10 kg/m³</u> <u>3. Once each hour add 40L Chemul I</u> <u>together with 40L Chemul II evenly over</u> <u>one circulation through the chemical</u> <u>barrel at 6.5 sec/Viscup.</u> <u>Thanks ?</u> <u>Joe & Jim</u>					
SERVICE REP:				<u>Udo Erdler, Jim Winder</u>					
WAREHOUSE:				<u>@ Rig 23</u>					

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.



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DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-24 DATE 98-01-28

WELL NAME and LOCATION Ranger Noto Creek C-17

REPORT NO. 69

OPERATOR Banco Oil Ltd.

CONTRACTOR Sheehan Rig

REPORT FOR Jack Brazel

REPORT FOR

WELL DATA			APPROXIMATE WELL LOG DATA			WELL LOG DATA		
NO	1	SIZE (mm)	311.9	ANNULUS	OO / ID	LENGTH (m)	VELOCITY (ft)	MAKE
TYPE	ATJ33	VELOCITY (m / s)	73.7	LAST CASING	244226	509	19.4	MODEL
SIZE (mm)	222	JET FORCE (N)		LINER				LINER DIA (mm)
DEPTH IN (m)	916	HWP (N)		OPEN HOLE	114	mmDP		NOO DIA (mm)
DEPTH OUT (m)				OPEN HOLE	114/21-DOC	55	51.8	STROKE (mm)
HOURS RUN		DEPTH (m)		OPEN HOLE	114/21-DOC	186	23.8	CLIP (mm)
W.C.B. (GPM)		ANGLE - DIRECTION						SPM
APM	22			MUD TANKS / SLUMP	43	BOTTOMS UP	23	OUTPUT (m/min)
ROP (m/hr)				DRILL STRING	5.6	TOTAL	32	PRESSURE (psi)
OVERLIES USED PRODUCTS			PROD VOLUMES (m³)			EQUIPMENT		
MATERIAL	UNITS	COST	TOTAL COST	TANK / SLUMP	63.7	EQUIPMENT		
Barite	25		1350.00	HOLE	91.7	OVERFLOW DENSITY (ppm)		
DMY 100	16		2000.00	TOTAL	105.4	UNDERFLOW DENSITY (ppm)		
Chemical I	180			LOST TO HOLE		UNDERFLOW RATE (L/min)		
Chemical II	80			LOST TO EQUIP		FOLLOW REMOVAL RATE (ppm)		
Chemical OM	100			DUMPED		LIQUID REMOVAL RATE (L/min)		
				NEW WATER	0.0	HOURS RUN		
				NEW MUD / PREHEAT		SHAKER 1	3204	MESH
						SHAKER 2	3204	MESH
COST SINCE LAST CHECK			4150.00	01-28: Circulated condition mud for water wet barite				
PREVIOUS COST			9742.75	Add barite & DMY 100 after ES 600, water wet again:				
TOTAL COST			101292.75	rig up barrel & shear mud while size & condition. Run shear rate ~ 5 times bit. Increase flowline temp. due to shear?				
REMARKS								
000	50	45	200					
300	30	31	100					
400								
FLOWLINE FLOWLINE TEMP L			80					
SAMPLE TIME (m)			1600	2400				
PRESENT DEPTH (m)			1842	1842				
MUD DENSITY (ppm)			1095	1098				
MUD VISCOSITY (cP)			10.64	10.33				
PLASTIC VISCOSITY (cP)			30	45				
YIELD POINT (Pa)			17	19				
GEL STRENGTH (Pa) 10 sec / 10 min			3.4	3.3				
API FILTRATE (mL/min) @ 700 kPa								
Filtrate Rate (mL/min)								
TEMPERATURE (°C)			3500	25				
TEMPERATURE (°C)				4.4				
TEMPERATURE (°C)				2.80				
PH (D) STRIP (D) METER								
ALKALINITY (ppm)				18				
HYDROLYSIS (mg/L)				1080				
CARBONATES (mg/L)			300	0.82				
BICARBONATES (mg/L)				20/20				
CALCIUM (mg/L)				21				
CHLORIDES (mg/L)				45				
% SOLIDS VOLUME FRACTION				17.3				
% SOLIDS VOLUME FRACTION				35.5				
% TOTAL SOLIDS VOLUME FRACTION				7.1				
% TOTAL SOLIDS VOLUME FRACTION				5.3				
DRILLED SOLIDS (g/m³)				1				
TOTAL HIGH GRAVITY SOLIDS (g/m³)				222				
TOTAL LOW GRAVITY SOLIDS (g/m³)				1				
POLYMER CONCENTRATION (g/m³)								
Water Phase (g/L)								
Sodium Chloride				233				
Sodium Chloride				181				
Chlorides				223				
Undissolved Salt				11				
g/L of Water Mud								
SERVICE REP.			400 Zeidler	PHONE / MOBILE: 212 23				
WAREHOUSE:				PHONE:				

IN CONSIDERATION OF THE FURNISHING OF THIS REPORT AND ANY ORAL SUGGESTIONS IT IS AGREED THAT MIDAS DRILLING FLUIDS SHALL NOT BE LIABLE FOR ANY DAMAGES RESULTING FROM THEM, NOR SHALL THEY BE CONSIDERED AS AUTHORIZING THE INFRINGEMENT OF ANY VALID PATENT.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/01/21 REPORT NO.: 28
 DEPTH: 693 mKB PROGRESS: 100 m FORMATION: Franklin Mountain
 OPERATIONS AT 06:00 HOURS: Drilling 222 mm hole
 CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Nisi Speers CO. SUPERVISOR: Jack Brazel
 DAILY COST: \$ 36,171.10 CUM. COST: \$ 2,136,362.88 AFE NO.: ETD-028

WELL CONTROL
 DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 1160 kPa @: 83 SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE Drilling WELL SECURED IN 3 MIN.
 CONDUCTED AT 10:15 HRS. CREW PERFORMANCE Fair
 DAYS SINCE BOP DRILL (EACH CREW): MAXIMUM CASING HOLD BACK 6807 kPa

DRILLING PARAMETERS

BIT PERFORMANCE		MUD PROPERTIES		PUMPS	
BIT NUMBER	<u>4</u>	WEIGHT (kg/m3)	<u>870</u>	No. 1 LINER (mm)	<u>152x216</u>
SIZE (mm)	<u>222</u>	VISCOSITY (m)	<u>30</u>	No. 1 SPM	<u>75</u>
TYPE ATJ 38C		pH		No. 2 LINER (mm)	<u>152x218</u>
SERIAL No. <u>B08YX</u>		PV (mPa S)		No. 2 SPM	<u>75</u>
NOZZLES (mm)	<u>3/11.1</u>	YP (Pa)		VOLUME (m3/min.)	<u>1.77</u>
DEPTH IN (m)	<u>588</u>	GELS (Pa)		PRESSURE (kPa)	<u>6280</u>
METERS (m)	<u>184</u>	SAND (%)		D.P.CSG. ANN. VEL. (m/min.)	<u>82</u>
HOURS	<u>19.75</u>	SOLIDS (%)		D.P. ANN. VEL. (m/min.)	<u>60</u>
WOB (1000 lbs)	<u>15</u>	FILTER CAKE (mm disc.)		D.C. ANN. VEL. (m/min.)	<u>111</u>
R.P.M.	<u>45-60</u>	WATER LOSS (cc)		SOLIDS CONTROL	
CONDITION		CHLORIDES (mg/l)		SHAKER SCREENS	<u>110x140</u>
		MBT		PUMP OUT (m3/6hr)	<u>0.01181</u>

DRILLING ASSEMBLY

ITEMS				O.D.	I.D.	T.Y. TYPE	MUD ADDITIVES			O.F. (kg/m3)		D. SILT. CENT.	
Bit Sub	171	88	127 H80			Socket	Product	Cost PerLtrk					
Shock sub	173	88	127 H80				OMV 100	\$ 175.00					
Monel	173	72	127 H80			1	Chemul 1	\$ 1,800.00					
5 Drill Collars	171	88	127 H80			1	Chemul 11	\$ 2,780.00					
Jara	172	88	127 H80				Chemul CM	\$ 2,400.00					
13 Drill Collars	171	88	127 H80			50	Hot Lime	\$ 27.00					
XO	170	69	114 XH			40	CaCl2 HT	\$ 95.00					
6 HW	153	70	114 XH										
BHA LENGTH				241.07		m							
HOOK LOAD				84000		daN							
AVAILABLE WOB				18780		daN							
Joints DP. on Racks:				188			Daily Mud Cost		\$ 9,800.00				
In String:				47			Total Mud Cost		\$ 52,666.00				
TOTAL:				235			Time Break Down						

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	19.00	CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.		24	
RIG SERVICE	0.75	TESTING		REAM & WASH			
SURVEY	0.75	CIRC. SAMPLE		WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH			
COND. MUD		TRIP					
NIPPI F IIP/MN		REAM RATHOLE		CLN Screens	0.50		
RUN CASING				(Repair)			
CEMENT				Wash Pipe	2.25		
HANDLE TOOLS		Safety Meeting	0.75	Total Hours	24.00		
						DRILL OP	
						EVALUATION	
						PROBLEMS	
						TOTAL	
						WEATHER	Clear
						TEMPERATURE	-35 C
						ROADS	Good

Time 24 Hour Summary Time

Had safety meeting and B.O.P drill with Shehtah crew.
 Drilled 222 mm hole to 602 mKB.
 Had safety meeting and B.O.P drill with Shehtah crew.
 Drilled 222 mm hole to 641 mKB.
 Had safety meeting and B.O.P drill with Shehtah crew.
 Drilled 222 mm hole to 650 mKB.
 Changed wash pipe and packing.
 Drilled 222 mm hole to 655 mKB.
 Changed wash pipe and packing.
 Drilled 222 mm hole to 693 mKB.

(FORMATIONS) Franklin Mountain (586 mKB)

SIGNED BY: Jack BrazelMOBILE No.: 403-282-9301



Midas Drilling Fluids
Telephone - 24 Hr. 1-800-929-3570
Fax - (403) 531-0484

DRILLING MUD SERVICE REPORT

SPUD DATE 98-12-24 DATE 98-01-27

WELL NAME and LOCATION Ranger Nola Creek
OPERATOR Ranger Oil Ltd
REPORT FOR Jack Brazel

CONTRACTOR Shrekiah Rig 1
REPORT FOR Neil Speeds

REPORT NO 28

BIT RECORD		NOZZLE DATA		ANNULAR GEOMETRY AND VELOCITY				PUMP DATA	
NO	<u>1</u>	SIZE (mm)	<u>210/2</u>	ANNULUS	OD / ID	LENGTH (m)	VELOCITY (ft/s)	MAKE	<u>National</u>
TYPE	<u>HT35</u>	VELOCITY (ft/s)		LAST CASING	<u>204/226</u>	<u>589</u>	<u>48.2</u>	MODEL	<u>CP80</u>
SIZE (mm)	<u>222</u>	JET FORCE (N)		LINE				LINE DIA (mm)	<u>152</u>
DEPTH IN (m)	<u>916</u>	180° (mm)		OPEN HOLE	<u>179</u>	<u>mmUP</u>	<u>51.2</u>	ROD DIA (mm)	
DEPTH OUT (m)		DEVIATION RECORD		OPEN HOLE	<u>174</u>	<u>mmDC</u>	<u>55</u>	STROKE (mm)	<u>216</u>
HOURS RUN		DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE	<u>177</u>	<u>mmDC</u>	<u>186</u>	DISP (L/min)	<u>11.81</u>
W.O.B. (mm)		CIRCULATION RATES (L/min)						SPM	<u>2162</u>
RPM		MUD TANKS / SUMP				BOTTOMS UP		OUTPUT (m³/hr)	<u>1.46</u>
ROP (m/hr)		DRILL STRING				TOTAL	<u>79</u>	PRESSURE (kPa)	
DRILLING FLUID PRODUCTS				MUD VOLUMES (m³)		SOLIDS CONTROL			
MATERIAL	UNITS	COST	TOTAL COST	TANK / SUMP	<u>60.3</u>	EQUIPMENT			
<u>Chemical DM</u>	<u>245</u>		<u>2400.00</u>	HOLE	<u>41.7</u>	OVERFLOW DENSITY (ppm)			
<u>Chemical T</u>	<u>145</u>			TOTAL		UNDERFLOW DENSITY (ppm)			
<u>Chemical II</u>	<u>145</u>			LOST TO HOLE		UNDERFLOW DENSITY (ppm)			
<u>Barite</u>	<u>325</u>		<u>5850.00</u>	LOST TO EQUIP.		SOLIDS REMOVAL RATE (ppm)			
<u>Hot Lime</u>	<u>25</u>		<u>675.00</u>	DUMPED		SOLIDS REMOVAL RATE (ppm)			
<u>Calcium Chloride</u>	<u>15</u>		<u>1475.00</u>	NEW WATER		SOLIDS REMOVAL RATE (ppm)			
<u>DMX 100</u>	<u>25</u>		<u>4375.00</u>	NEW MUD / PRENIX		SOLIDS REMOVAL RATE (ppm)			
COST SINCE LAST CHECK				SHAKER 1		<u>3104</u>	MESH	SHAKER 2	<u>3104</u>
PREVIOUS COST				SHAKER 1			MESH	SHAKER 2	
TOTAL COST				SHAKER 2			MESH	SHAKER 2	
REMARKS				WELL HISTORY & REMARKS					
				<u>01-27 condition mud for running shale; reach threshold limit for barite in fresh, dry shale interval, water not handle increasing density above 1125; try up high shear device; ES dropped from 180 to 120 & 100 kPa, increased to 720 with 2 cur. of clay; etc.</u>					
WAL	<u>39/42</u>	200							
SOD	<u>26/27</u>	100							
IVR	<u>0.63/0.26</u>								
☐ FLOWLINE ☐ SUCTION TEMP °C									
SAMPLE TIME (m)				<u>85</u>					
PRESENT DEPTH (m)				<u>1100</u>	<u>2400</u>				
MUD DENSITY (kg/m³)				<u>1110</u>	<u>1098</u>				
HYD PRESSURE GRADIENT (kPa/m)				<u>10.2</u>	<u>10.2</u>				
FUNNEL VISCOSITY (mL)				<u>13</u>	<u>14</u>				
PLASTIC VISCOSITY (mPa-s) @ °C				<u>13</u>	<u>15</u>				
YIELD POINT (Pa)				<u>6.5</u>	<u>6</u>				
CEL. STRUTCHING (mg 10 min / 10 min)				<u>2.5/2.5</u>	<u>3:0</u>				
API FILTERATE (mL/min) @ 100 kPa									
FILTER CASE (mm)									
HTMP PL (mL/min) @ °C				<u>4.8</u>					
HTMP FILTER CASE (mm)				<u>2.0/2.1</u>					
☐ HTMP ☐ METER									
WATER ENTRY (mL/min)				<u>15</u>	<u>18</u>				
HYDROLYSIS (mL/min)				<u>400</u>	<u>720</u>				
CARBONATES (mL/min)				<u>0.33</u>	<u>0.31</u>				
DICARBONATES (mL/min)				<u>85/15</u>	<u>78/22</u>				
CALCIUM (mL/min)				<u>20</u>	<u>21</u>				
CHLORIDES (mL/min)				<u>46</u>	<u>33</u>				
% SOL. VOLUME FRACTION				<u>12</u>	<u>19</u>				
% OIL - VOLUME FRACTION				<u>80</u>	<u>74</u>				
% TOTAL SOLIDS - VOLUME FRACTION				<u>8</u>	<u>8</u>				
TOTAL SOLIDS (kg/m³)				<u>6.2</u>	<u>5.4</u>				
DRILLED SOLIDS (kg/m³)				<u>15</u>	<u>21</u>				
TOTAL HIGH GRAVITY SOLIDS (kg/m³)				<u>238</u>	<u>191</u>				
TOTAL LOW GRAVITY SOLIDS (kg/m³)				<u>15</u>	<u>21</u>				
POLYMER CONCENTRATION (ppm)									
Water Phase (kg/m³)									
Calcium Chloride				<u>355</u>	<u>215</u>				
Sodium Chloride				<u>238</u>	<u>133</u>				
Chlorides				<u>392</u>	<u>245</u>				
Undissolved Salt (kg/m³ whole mud)					<u>18</u>				
SERVICE REP: <u>Udo Zaidler</u>				PHONE / MOBILE: <u>P. Rig 23</u>					
WAREHOUSE:				PHONE:					

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patent.

Ranger Oil Limited

DAILY DRILLING REPORT



WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/01/20 REPORT NO.: 27
DEPTH: 593 mKB PROGRESS: 4 m FORMATION: Franklin Mountain
OPERATIONS AT 08:00 HOURS: Running formation Leak off.
CONTRACTOR/RIG SUPT.: Shehtah Drilling Limited Tom Carrier CO. SUPERVISOR: Jack Brazel
DAILY COST: \$ 45,143.38 CUM. COST: \$ 2,102,221.58 AFE NO: E7D-029

WELL CONTROL

DAILY RIG CHECK: X DAILY BOP CHECK: X R.S.S.P.: 1180 kPa @: 63 SPM
TRIP RECORDS: CALCULATED HOLE FILL 4.79 m3 ACTUAL HOLE FILL: 5.87 m3
BOP DRILLS: CONDUCTED WHILE Drilling WELL SECURED IN 2 MIN.
CONDUCTED AT 8:00 HRS. CREW PERFORMANCE Fair
DAYS SINCE BOP DRILL (EACH CREW): MAXIMUM CASING HOLD BACK 5807 kPa

DRILLING PARAMETERS

BIT PERFORMANCE			MUD PROPERTIES			PUMPS		
BIT NUMBER	4		WEIGHT (kg/m3)	850		No. 1 LINER (mm)	152X218	
SIZE (mm)	222		VISCOSITY (s/l)	27		No. 1 SPM		
TYPE	ATJ 35C		pH			No. 2 LINER (mm)	152X218	
SERIAL No.	B08YX		PV (mPa S)			No. 2 SPM	125	
NOZZLES (mm)	3/11.1		YP (Pa)			VOLUME (m3/min.)	1.48	
DEPTH IN (m)	588		GELS (Pa)			PRESSURE (kPa)	8280	
METERS (m)	3		SAND (%)			D.P. ANN. VEL. (m/min.)	40	
HOURS	0.75		SOLIDS (%)			D.C. ANN. VEL. (m/min.)	81	
WOB (1000 lbs)	15		FILTER CAKE (mm desc.)			D.C. ANN. VEL. (m/min.)		
R.P.M.	80		WATER LOSS (cc)			SOLIDS CONTROL		
CONDITION			CHLORIDES (mg/l)			SHAKER SCREENS	110x140	
			MBT			PUMP OUT (m3/hr)	0.01181	

DRILLING ASSEMBLY

ITEMS	O.D.	I.D.	T.J. TYPE
Bit Sub	171	88	127 H90
Shock sub	173	88	127 H90
Monel	173	72	127 H90
5 Drill Collars	171	88	127 H90
Jars	172	88	127 H90
13 Drill Collars	171	88	127 H90
XO	170	88	114 XH
8 HW	153	70	114 XH

BHA LENGTH

241.07 m

HOOK LOAD

49000 daN

AVAILABLE WOB

daN

Joints DP. on Racks:

189

In String:

38

TOTAL:

235

MUD ADDITIVES

Secs	Product	Cost Per Ltr
	OMV 100	\$ 175.00
	Chemul 1	\$ 1,800.00
	Chemul 11	\$ 2,750.00
	Chemwet CM	\$ 2,400.00
8	Hot Lime	\$ 27.00
	CaCl2 HT	\$ 95.00
13	Gel	\$ 15.00

Daily Mud Cost

\$ 357.00

Total Mud Cost

\$ 42,885.00

O.F. (kg/m3)

U.F. (kg/m3)

VOL. (l/min.)

HOURS

SURVEYS

m

m

m

m

m

m

m

m

m

DIRECTION

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DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING	0.75	CORING		RIG REPAIR		DRILL OP	
TRIPPING		LOGGING		LOST CIRC.		EVALUATION	
RIG SERVICE	1.00	TESTING		REAM & WASH		PROBLEMS	
SURVEY		CIRC. SAMPLE		WORK PIPE		TOTAL	
SLIP & CUT		HANDLE TOOLS		FISH		WEATHER	Clear
COND. MUD	3.50	TRIP		TRIP Plugged jets	5.5	TEMPERATURE	-25 C
NIPPLE UP/DN		REAM RATHOLE		CLN Flow line	8.25	ROADS	Good
RUN CASING		Drill Cement	1.00	(Repair)			
CEMENT		Leak Off Test	1.00	Kelly Spinner	1.00		
HANDLE TOOLS		Safety Meeting	0.50	MUD Tanks	4.50		
				Total Hours	24.00		

Time

24 Hour Summary

Time

Prepare mud tanks for invert.

Displaced hole to diesel.

Drilled out float cement and shoe. On formation 1998/01/19, 1600 hrs.

Drilled 1 metre of hole, (problems with flow line not handling flow from well bore)

Attempted to clean flow line.

Tripped for plugged jet. Cleaned jet and changed jets from 11.1 mm to 11.9 mm.

Broke circulation, problems with flow line, dismantled flow line and clean.

Drilled 222 mm hole to 592 mKB.

Ran formation leak off. Leak off Gradient 24.19 kPa/m.

Had safety meeting and B.O.P drill with Shehtah Drilling crew.

NOTE: Replaced dog house module of Pason PVT and Geograph system

(FORMATIONS) Franklin Mountain (595 mKB)

SIGNED BY: Jack Brazel

MOBILE No.: 403-282-9301

DAILY DRILLING REPORT





Midas Drilling Fluids
Telephone - 24 Hr. 1-800-929-3570
Fax - (403) 531-0484

DRILLING MUD SERVICE REPORT

SPUD DATE 97-12-24 DATE 98-01-25

WELL NAME and LOCATION Ranger Nala Creek C-17
OPERATOR Ranger Oil
REPORT FOR Jack Brazel

CONTRACTOR Sheilah L
REPORT FOR Neil Speed

REPORT NO. 26

BIT RECORD		MUDLOG DATA		ANNULUS GEOMETRY AND VELOCITY				MUD DATA	
NO.	<u>4</u>	SIZE (mm)	<u>3.11.9</u>	ANNULUS	OD / ID	LENGTH (m)	VELOCITY (m/s)	NAME	<u>National</u>
TYPE	<u>ATT 33</u>	VELOCITY (m/s)	<u>7.0</u>	LAST CASING	<u>244/26</u>	<u>532</u>	<u>59.3</u>	MODEL	<u>BPRC</u>
SIZE (mm)	<u>222</u>	JET FORCE (N)		LINER				LINER DIA (mm)	<u>152</u>
DEPTH IN (m)	<u>946</u>	NHP (mm)		OPEN HOLE	<u>119</u>	<u>55</u>	<u>62.2</u>	HOOD DIA (mm)	
DEPTH OUT (m)		CONCENTRATION (ppm)		OPEN HOLE	<u>1421</u>	<u>55</u>	<u>62.2</u>	STRIKE (mm)	<u>216</u>
HOURS RUN		DEPTH (m)	ANGLE - DIRECTION	OPEN HOLE	<u>1423</u>	<u>186</u>	<u>112.6</u>	DISP (L/min)	<u>7.5</u> <u>7.5</u>
W.O.B. (kN)	<u>2-8000</u>			CONCENTRATION - TRENCH (mm)				SPM	<u>11.81</u> <u>11.81</u>
RPM	<u>50</u>			MUD TANKS / SUMP	<u>31</u>	BOTTOMS UP	<u>19</u>	OUTPUT (m/min)	<u>0.8</u> <u>0.89</u>
ROP (m/min)				DRILL STRING	<u>46</u>	TOTAL	<u>55</u>	PRESSURE (kPa)	
DRILLING MUD PRODUCTS				MUD VOLUMES (m)		SOLIDS CONTROL			
MATERIAL	UNITS	COST	TOTAL COST	TANK / SUMP	<u>54.7</u>	EQUIPMENT			
<u>Line</u>	<u>26</u>			HOLE	<u>41.7</u>	<u>845</u>			
<u>Chemul I</u>	<u>20L</u>			TOTAL	<u>96.4</u>	<u>1470</u>			
<u>" II</u>	<u>20L</u>			LOST TO HOLE	<u>none</u>	<u>little?</u>			
<u>Chemul OM</u>	<u>1dr</u>	<u>2400</u>		LOST TO EQUIP	<u>1</u>				
<u>(added)</u>	<u>9L</u>			DUMPED					
<u>Deframer TOL</u>	<u>2</u>			NEW WATER					
				NEW MUD (L/min)	<u>10</u>				
				WELL HISTORY & REMARKS					
COST SINCE LAST CHECK				<u>dull from 1092m @ 0000h to 1228m</u>					
PREVIOUS COST				<u>60119.25</u>					
TOTAL COST									
TOTAL COST									
RTN	<u>3</u>	<u>200</u>	<u>6</u>						
300	<u>0</u>	<u>100</u>	<u>3</u>						
RTN	<u>1.00/0.003</u>								
DOWNLINE	BUCTION TEMP °C	<u>22</u>							
SAMPLE TIME (m)	<u>2400</u>								
PRESENT DEPTH (m)	<u>1228</u>								
MUD DENSITY (kg/m³)	<u>852</u>								
MUD PRESSURE GRADIENT (kPa/m)	<u>8.36</u>								
FUNNEL VISCOSITY (mL)	<u>31</u>								
PLASTIC VISCOSITY (mPa.s) @ <u>20</u> °C	<u>3</u>								
YIELD POINT (Pa)	<u>0</u>								
GEL STRENGTHS (Pa) 10 sec / 10 min	<u>0.0</u>								
API FILTRATE (mL/min) @ 700 kPa	<u>9.6 (at 10 min)</u>								
FILTER CAKE (mm)	<u>9.6 (at 10 min)</u>								
HT-HF FL (mL/30 min)	<u>3500-95</u>								
HT-HF FILTER CAKE (mm)									
ON / STRIP / METER									
QUALITY (mm)	<u>Line (hydro)</u>	<u>3</u>							
HYDROLYSIS (mm)	<u>Flow Stability</u>	<u>612</u>							
CARBONATES (mm)	<u>Water Soluble</u>	<u>0.69</u>							
MICARBONATES (mm)	<u>Oil</u>	<u>93.7</u>							
CALCIUM (mm)	<u>kg/L calculated</u>	<u>19</u>							
CHLORIDES (mm)		<u>6</u>							
% OIL - VOLUME FRACTION	<u>Rebort</u>	<u>3.2</u>							
% OIL - VOLUME FRACTION		<u>93.8</u>							
% TOTAL SOLIDS - VOLUME FRACTION		<u>3</u>							
WST (TOTAL BENTONITIC SOLIDS %)									
DRILLED SOLIDS (mm)	<u>24</u>	<u>or 0.92%</u>							
TOTAL HIGH GRAVITY SOLIDS (mm)									
TOTAL LOW GRAVITY SOLIDS (mm)									
POLYMER CONCENTRATION (mm)									
<u>Liquid Phase (kg/L)</u>									
	<u>566</u>	<u>379</u>							
	<u>NaCl</u>	<u>566</u>							
				RECOMMENDATIONS					
				<u>Maintenance</u>					
				<u>1. Run Penthiptop @ all times</u>					
				<u>2. Keep 1 drum of liquid chemicals on site @ all times</u>					
				<u>3. Reverse Invert from around 14</u>					
				<u>4. Note addition of all chemicals, water and diesel in tool sheets</u>					
				<u>Additions:</u>					
				<u>To raise vis for shales</u>					
				<u>1. 60 CMV 100 @ 500ml/sx</u>					
				<u>60 Linn @ 500ml/sx</u>					
				<u>60 Calcium Chloride HLP 500ml/sx</u>					
				<u>- all together through hopper</u>					
				<u>2. At same time add</u>					
				<u>606 Chemul I</u>					
				<u>606 Chemul II</u>					
				<u>- mix together & add @ 500ml/sx</u>					
				<u>(same as viscosity test)</u>					
				<u>3. At the same time add 30L/min water</u>					
				<u>(same as Viscosity test or 20L per 10 sec)</u>					
				<u>Thanks JFB</u>					
				SERVICE REP: <u>H. Aldo Zaidler</u> PHONE / MOBILE: <u>284 23</u>					
				WAREHOUSE: _____ PHONE: _____					

In consideration of the furnishing of this report and any oral suggestions it is agreed that MIDAS DRILLING FLUIDS shall not be liable for any damages resulting from them, nor shall they be construed as authorizing the infringement of any valid patents.

DAILY DRILLING REPORT



Ranger Oil Limited



DAILY DRILLING REPORT

WELL NAME: RANGER NOTA CREEK C-17 DATE: 07/01/17 REPORT NO.: 24
 DEPTH: 589 mKB PROGRESS: m FORMATION: Franklin Mountain
 OPERATIONS AT 08:00 HOURS: Nipple up
 CONTRACTOR/RIG SUPT.: Shehshah Drilling Limited Tom Carlier CO. SUPERVISOR: Lee Brazel
 DAILY COST: \$ 30,685.59 CUM. COST: \$ 1,981,839.39 AFE NO: E7D-029

WELL CONTROL
 DAILY RIG CHECK: X DAILY BOP CHECK: R.S.S.P.: kPa @ SPM
 TRIP RECORDS: CALCULATED HOLE FILL m3 ACTUAL HOLE FILL: m3
 BOP DRILLS: CONDUCTED WHILE WELL SECURED IN MIN.
CONDUCTED AT HRS. CREW PERFORMANCE
 DAYS SINCE BOP DRILL (EACH CREW): MAXIMUM CASING HOLD BACK kPa

DRILLING PARAMETERS		
BIT PERFORMANCE	MUD PROPERTIES	PUMPS
BIT NUMBER	WEIGHT (kg/m3)	No. 1 LINER (mm) <u>152X218</u>
SIZE (mm)	VISCOSITY (s/l)	No. 1 SPM
TYPE	pH	No. 2 LINER (mm) <u>152X218</u>
SERIAL No.	PV (mPa S)	No. 2 SPM
NOZZLES (mm)	YP (Pa)	VOLUME (m3/min)
DEPTH IN (m)	GELS (Pa)	PRESSURE (kPa)
METERS (m)	SAND (%)	D.P. ANN. VEL. (m/min.)
HOURS	SOLIDS (%)	D.C. ANN. VEL. (m/min.)
WOB (1000 lbs)	FILTER CAKE (mm disc.)	D.C. ANN. VEL. (m/min.)
R.P.M.	WATER LOSS (cc)	SOLIDS CONTROL
CONDITION	CHLORIDES (mg/l)	SHAKER SCREENS <u>110x140</u>
	MBT	PUMP OUT (m3/atx) <u>0.01181</u>
	Temp	

DRILLING ASSEMBLY				MUD ADDITIVES			D. SILT		CENT.		
ITEMS	O.D.	I.D.	T.J. TYPE	Backs	Product	Cost Per/ft	O.F. (kg/m3)				
Bit Sub					Caulatic	\$ 77.00	U.F. (kg/m3)				
Shock sub					Bentonite	\$ 15.00	VOL. (l/min.)				
3 Drill Collars					Soda Ash	\$ 40.00	HOURS				
Jars					Barite	\$ 18.00					
3 Drill Collars					XCD	\$ 845.00					
XO					Aquapac	\$ 380.00					
12 Drill Collars					Desco	\$ 112.00					
BHA LENGTH			m		Lignite	\$ 15.25					
HOOK LOAD			40000 daN		Sawdust	\$ 7.25					
AVAILABLE WOB			daN		Service	\$ 350.00					
Joints DP. on Racks:			235		Daily Mud Cost	\$ -					
In String:					Total Mud Cost	\$ 42,508.00					
TOTAL:			235		Time Break Down						

DRILLING OPERATIONS		EVALUATION		PROBLEMS		SUMMARY	
DRILLING		CORING		RIG REPAIR		TODAY	CUM.
TRIPPING		LOGGING		LOST CIRC.		24	
RIG SERVICE	0.75	TESTING		REAM & WASH			
SURVEY		CIRC. SAMPLE		WORK PIPE			
SLIP & CUT		HANDLE TOOLS		FISH			
COND. MUD		TRIP		TRIP			
NIPPLE UP/DN	23.25	REAM RATHOLE					
RUN CASING							
CEMENT							
HANDLE TOOLS							
				Total Hours	24.00		

Time 24 Hour Summary Time
 Install 279 mm BOP's. Clean Mud tanks. Change out hydril rubber and ram rubbers.
 Rig serviced
 Install 279 mm BOP's. Clean Mud tanks. Change out hydril rubber and ram rubbers. Change out heads and liners.
 Rig serviced
 Nipple up BOPs
 Rig serviced
 Nipple up BOPs

NOTE: Three men on shift from 2000 hours to 0800 hours.
 Welded (Repairs) to mudtank 14 hours

(FORMATIONS) Franklin Mountain (525 mKB)
 SIGNED BY: Lee Brazel

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