

APPENDIX 1

DRILLING FLUID SUMMARY

ALTREE 1 & 2

DATE	TIME	DEPTH (M)	WT (PPG)	FV (SEC)	PV/YP	WL	PH	KCI	CAKE (MM)	OPERATION	MUD USED
<u>Altree 1</u>		Drilled without circulation									40 sacks Rapidgel
<u>Altree 2</u>											
6/10/88	0800	8	8.5	42						Drill 12 $\frac{1}{2}$ " Hole	5xA, 2xB
7/10/88	0300	55	8.8	43						Drill 8 $\frac{1}{2}$ " Hole	2xA, B, C, Quik Seal x 2
		Drilled without circulation									16xA, 9xB, Rapidgel x 59,
10/10/88	0730	112	8.6	37						Quikseal x 1	
11/10/88	2200	142	8.7	29						"	A, Rapidgel x 1
12/10/88	0330	155	8.8	29						"	Rapidgel x 4
15/10/88	0600	232	8.6	35						"	Ax2, Rapidgel x 11, Quikseal x 10
	2100	260	8.6	34						Core CHD 101	Hi-Seal x 9
16/10/88	0600	275	8.7	36	7/8	17	8			"	A, 8x3, Cx2, Rapidgel x 3
	2300	308	8.7	34		16	8			"	Quikseal x 1
17/10/88	0900	329	8.7	35						"	A,B,C
	1900	369	8.7	35			7.5			"	A,B
18/10/88	0930	407	8.6	37						"	A,B
	2300	431	8.7	37		12.5	7.5			"	
19/10/88	0700	447	8.6	40	6/7	15	8.5			"	
	1800	474	8.9	42		14	8			"	
20/10/88	0600	500	8.6	39		12	8.5			"	A,B
	2100	532	8.6	37		14.5	7.5			"	
21/10/88	0800	556	8.5	37		12	8.5			"	
22/10/88	0900	596	8.5	37						"	
	2300	616	8.6	39		14	7.5			Remove Split Rod	A,B,C
23/10/88	0500	627	8.5	39		13	8			Core CHD 101	
	1900	654	8.6	40		15	7.5			"	
24/10/88	0600	671	8.6	42		12	8			"	A,B
	2300	707	8.6	36		15	7.5			"	A,B C

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25/10/88	0600	720	8.6	38						Core with CHD 101	
	1700	742	8.6	39		16	7.5			"	C
26/10/88	0600	762	8.7	40		16	7.5			"	A,B,C
	2300	786	8.6	39		15.5	7.5			"	
27/10/88	0800	798	8.5	40						"	A,B
	1630	814	8.6	39		15.5	7.5			"	
28/10/88	0800	839	8.6	41		15	7.5			"	C
	2300	846	8.7	39		12	8			"	
29/10/88	1130	836	8.5	40		15.5	7.5			"	A
	1600	870	8.6	39	5/8	14	7.5			"	B
30/10/88	0800	886	8.6	40		16.5	7.5			"	A
	1800	899	8.6	35	7/2	14.5	8			"	
31/10/88	1100	916	8.6	34		13	7.5			"	A,B,C
	1500	923	8.6	37		14	8			"	
1/11/88	0900	953	8.6	35	9/4	13	7.5			"	A,B,C
	2030	962	8.6	35	9/4	14	8			"	
2/11/88	0800	970	8.6	41	9/4	13	7.5	3%		"	A,B,C, KCL x 22
	1800	982	8.9	35	5/4	9.0	7.5	3%		"	
3/11/88	0630	1000	8.9	34				3%		"	B,C KCL x 3
	1800	1017	8.9	35	7/1	10.5	7	3%	.3	"	C
4/11/88	0830	1036	8.9	33	10/2	10.5	9	3%	.5	"	A,B,C, KCI x 3
	1900	1043	8.9	35	8/1	10.5	7.5	3%	.3	"	Ax2, Bx2, Cx2, KCIX12
5/11/88	0800	1056	8.9	34	9/0		8.5	3%		"	B,C KCI x 6
	1800	1068	8.8	35	10/3	14	8.5	3%	.3	"	A,B, Cx2 KCIX6
6/11/88	0800	1085	8.9	34	10/1	11	8.0	3%	.4	"	
	1800	1097	8.9	34	8/2	10	9.0	3%	.4	"	
7/11/88	0800	1112	9.0	34	9/0	9.5	8.0	3%	.4	P.O.D.H.	
	1800	1129	9.0	39	9/4	10	8.5	3%	.4	Core with CHD 101	A,B,C, KCI x 12
8/11/88	0800	1158	9	34	12/1	10	8.5	3%	0.5	"	
	2000	1178	9.2	37	10/3	9.5	8.5	3%	0.5	"	
9/11/88	0800	1196	9.0	34	10/3	10.5	8.5	3%	0.5	"	
	1830	1212	9.1	37	13/4		8.5	3%	0.5	"	

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10/11/88	1130	1237	9.2	36	11/3	8.5	8.5	3%	0.5	Core with CHD 101	
	2000	1251	8.9	40	14/9	10.5	8.5	3%	0.5	"	Ax2, Bx2, Cx2, KCLx15
11/11/88	1130	1258	9.0	38	11/6	9	9.5	3%	0.5	"	B
	1600	1264	9.0	37	12/8	9.5	9	3%	0.5	"	
12/11/88	0800	1270	8.9	34	8/5	9	8	3%	0.4	"	A,B,Cx2, KCI x 6
	2300	1273	8.9	37	12/3	9	8.5	3%	0.5	"	C
13/11/88	1200	1291	9	38	15/3	9	8.5	3%	0.4	"	C
14/11/88	0830	1306	9	37	12/3	8.5	8.5	3%	0.5	"	A,B, Cx2, KCI x 6
	1800	1307	8.8	35	12/5	9	9	3%	0.5	"	
15/11/88	0400	1310	8.9	38	6/4	10	8.5	3%	0.5	"	C
	2030	1313	8.9	44	15/13					"	
16/11/88	0800	1315	8.9	40	16/9					"	
	2000	1316	8.8	44	17/16					"	A, Bx3, C, CKI x 12
17/11/88	2030	1317	8.9	40	15/11	12				"	
18/11/88	0830	1322	8.8	40	12/5	11	7.5	3%	0.5	"	
	2030	1328	8.9	40	13/4	10	8.5	3%	0.5	"	
19/11/88	0800	1330	8.9	40	16/5	11	8.0	3%	0.4	"	B, Cx2, KCI x 6
	2030	1341	8.9	41	15/3	10	7	3%	0.5	"	
20/11/88	0830	1351	8.9	41	20/15	9.5	7.5	3%	0.5	"	
	2000	1370	8.9	40	15/5	10	7.5	3%	0.5	"	Cx2
21/11/88	0900	1380	9.0	41	15/5	9.5	7	3%	0.5	"	A, B, KCI x 6
	2045	1400	9.0	42	14/5	8.5	7	3%	0.5	"	
22/11/88	1200	1415	8.9	42						"	
	1800	1428	9.1	44	26/18	5	7.5	3%	0.5	"	
23/11/88	0800	1442	8.9	44	15/5	8	7.5	3%	0.5	"	B,C, KCI x 8
24/11/88	0830	1455	9.0	43	18/1		7	3%	0.5	"	A,B, 2 x C, KCL x 18
	1900	1459	9.0	41	16/7	8	7.5	3%	0.5	"	A,B,C, KCI x 8
25/11/88	0900	1486	9.1	44	17/13	7.5	7.5	3%	0.5	Repair Rig	C, KCI x 8
	2230	1492	9.5	43	22/15		7.5			Core with CHD 101	C x 2
26/11/88	1130	1493	8.9	48	21/5	6	7.5	3%	0.5	Repair Rig	
	1830	1499	8.8	43	16/4	6	8	3%	0.5	Core with CHD 101	
27/11/88	0830	1514	9.1	43	8/9	8	7	3%	0.5	"	

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27/11/88	1830	1522	9.1	39	16/5	5	7.5	3%	0.4	Core with CHD 101	
28/11/88	0800	1547	9.1	40	18/4	7	7	3%	0.5	"	
30/11/88	0830	1576	8.9	41	15/6	7.5	8	3%	0.3	"	C, KCI x 4 14xA, 6xB, 4xC, 4B&KCL, 90lts Milfree, 2000 lts Diesel
	1600	1593	8.7	40	13/4	7.5	9	3%	0.4	"	
1/12/88	1200	1609	8.9	39	15/0	5.5	9.5	3%	0.4	"	C
	2000	1615	8.7	41	15/3	7.5	9	3%	0.3	"	C
2/12/88	0800	1624	8.9	40	13/6	6.5	8.5	3%	0.4	"	A,B, 2xC, KCI x 6
	1600	1632	8.8	40	15/3	7	8.5	3%	0.3	"	
3/12/88	0700	1638	8.9	42	16/5	7	10	3%	0.4	"	
	1600	1645	8.9	41	15/5		9	3%		"	A, KCI x 6
4/12/88	0945	1652	8.9	43	16/7	5	9	3%	0.4	Service Rig	
	2000	1665	8.8	41	17/2	7	8	3%		Core with CHD 101	
5/12/88	0900	1680	8.9	41	15/4	6.8	8.5	3%	0.4	"	A,B,C, KCI x 6
	2000	1693	8.8	41	13/5	6.5	8	3%	0.4	"	
<p>N.B. A = OMLV (25kg)    B = New Vis (20kg)    C = New Drill (25lt)    KCL = 50kg.</p>											

APPENDIX 2

DRILLING SUMMARY

ALTREE-1

<u>DATE</u>	<u>HOUR</u>	
25 September	0600	Rig up
	1800	Make up 8½" B.H.A & Run in hole to 30m
	1900	
26 September	0600	Run in hole to 54m
	0730	Repair major oil leak on HR4
	0830	Ream 54m - 59.45m
	1100	Weld up kelly
	1200	Ream 59.45 - 73.22
	2000	Back Ream 73.22 - 66
27 September	0000	Ream 66 - 68.65, Back Ream 68.65 to 62.65. Ream 62.65 to 68.65
	0400	Wait on water
	0530	Ream 62.65 to 68.65
	0700	Pull out of hole and lay down 8½" Collars and Bit
	0800	Run in hole with 4 3/4" Collars and 6" Bit
	0900	Ream 61m - 75.4m
	1200	Ream 73 - 79.6 (no mud returns)
28 September	0000	Back Ream 79.6 - 73.6m
	0300	Ream 67.6 - 73.6
	0600	Ream 67.6 - 61.6
	0900	Ream 61.6 - 55.6
	1000	Pull out of hole, lay down 4 4/3" Collars Run in hole with 134 Drill Pipe to bottom 59m
	1100	Mix cement 25 bbls
	1200	Mix, pump and displace cement
	1345	Pull out of hole
	1400	Wait on cement
	2000	Run in hole with 6" assembly to 59, no cement
	2030	Ream 59 - 74m
2330	Blocked bit or connection. Attempt to pull out of hole. Hanging up at 60m	

<u>DATE</u>	<u>HOUR</u>	
29 September	0000	Free pipe, Pull out of hole, clear bit, Run in hole to 54m
	0300	Ream 54 - 67.6
	0630	Repair kelly, (Build up drive faces)
	0800	Ream 55.6 - 67.6m
	1200	Ream 61.6 - 67.6m
	1330	Wait on water
	1345	Ream 61.6 - 67.6m
	1715	Wait on water
	1800	Ream 61.6 - 67.6. Hanging up to 66m
		1930
	2015	Ream 66 - 73.6
30 September	0000	Ream 67.6 - 73.6m
	0415	Pull out of hole. Run in hole with 134 Drill pipe, Tag bottom at 65.5m
	0415	Mix 25 bbls cement slurry, displace and Pull out of hole
	0515	Wait on cement
	1200	Run in hole
	1230	Mix, pumps and displace cement 20 bbls slurry
	1345	Pull out of hole
	1400	Wait on cement
	2000	Run in hole with 8 1/2" B.H.A. Tag bottom 52.2m
	2045	Drill/Ream 52.5 62m
1 October	0000	Ream 61.27 - 67.27
	0100	Ream 67.27 -73.27
	1130	Pull out of hole for futher cement job
	1200	Run in hole to 63m open pipe
	1215	Mix, pump and displace cement 25 bbls
	1345	Pull out of hole
	1400	Wait on cement
	1745	Run in hole open pipe to 62m
	1800	Mix, pump and displace cement 15 bbls
	1830	Pull out of hole
1845	Wait on cement	
2 October	0000	Wait on cement
	0115	Run in hole with 8 1/2" assembly. Tag bottom at 57m
	0200	Ream 57 - 61.27m. Cement to 60m approximately
	0300	Ream 61.27 - 62.67m
	0415	Ream 67.27 - 73.27m
	0515	Ream 73.27 - 75m
	0630	Stuck at 75m, unable to rotate, attempt to pull back to 73m
	0730	Pull back to 67.27m. Ream 67.27 - 73.27m
	1200	Ream 67.27 - 73.27 and back ream
	1230	Pull out of hole. Lay down pipe. Break down B.H.A
1430	Rig down	

ALTREE-2

<u>DATE</u>	<u>HOUR</u>	
5 October	0600	Rig up
	1330	Spud hole. Auger hole to 8.5m
	1600	Run and cement casing 13-5/8".
	1630	Cut off casing. Make up flow line and mix mud.
6 October	0600	Start up Rig and Mud Pump. Run in hole and Tag Bottom at 6m.
	0700	Drill 6m - 22m.
	1100	Pull out of hole.
	1130	Run in hole. 9-5/8" Casing.
	1200	Hook up Kelly. Circulate until cement arrived.
	1245	Mix, pump and displace cement, 15.6 PPG; 4.1 bbls. Bump plug 200 psi, no back flow.
	1315	Wait on cement.
	2045	Run in hole. Make up B.H.A. Bit No. 2.
	2100	Drill out plug and cement.
	2130	Drill from 22 - 26.65.
	2230	Change over water.
	2300	Drill 26.65 - 33m.
7 October	0000	Drill 33m-65m. Circulation lost 65m.
	0445	Pump lost circulation material pill - no effect.
	0515	Drill 65 - 68.65m.
	0530	Pull out of hole.
	0630	Run in hole with 101 for cement. Jog and tag bottom 68m.
	0645	Mix cement 4.60 bbl slurry 24 sacks cement CFR 2 and displace.
	0745	Pull out of hole.
	0800	Wait on cement
	1200	Wait on cement
	1415	Run in hole with bit No. 2.
	1445	Ream and drill out cement.
	1545	Drill from 68.65-80.65m.
	1900	Pull out of hole.
	2000	Run in hole with 101 open pipe.
	2015	Circulate tag bottom.
	2030	Mix, pump and displace cement plug. 4.6 bbls slurry 15.6 ppg.
2100	Pull out of hole.	
2145	Wait on cement	

<u>DATE</u>	<u>HOUR</u>	
8 October	0000	Wait on cement
	0415	Run in hole 8½" assembly tag cement 75m.
	0515	Drill out cement 75m to 78m, Ream 78m-80.65m.
	0600	Drill 80.65m - 86.65m.
	0645	Wait on water, mix mud.
	0715	Drill 86.65-102m.
	1145	Wait on water.
	1230	Drill 102-104m.
	1330	Wait on water. Pull back 5 stands.
	1700	Run in hole. Hole closed in.
	1715	Ream 62-104m.
	1900	Circulate pill.
	1915	Pull out of hole, lay down 6½" collars. Run casing 7", wash last joint of casing to bottom.
	2400	Mix pump and displace cement. 15.6 ppg, 14bbls slurry, bumped plug at 300 psi.
	9 October	0000
1530		Nipple up B.O.P. Test blind rams to 1,000 psi. functions test.
2130		Run in hole. Make up B.H.A. with Bit No. 4.
2230		Test B.O.P. hydril and pipe rams, floor manifold, choke manifold and HCR valve to 1,000 P.S.I.
2330		Remove cup tester and pick up collars.
10 October	0000	Drill out cement from 94.5m-96m, 100m-103.4m.
	0115	Drop sand trap and settling tank.
	0145	Drill 103.4-105.6m.
	0215	Leak off test, held 510 psi around 105m.
	0300	Survey around 105.6m, ½'.
	0315	Drill 105.6m-126.6m.
	1200	Drill 126.6m-135.6m.
	1530	Change over Kelly's.
	1545	Drill 135.6m-137.6m.
	1630	Cat (Rig) overheated. Pull back to casing. Remove head from engine, check out and found no apparent cause of overheating. Refit head and test. Engine still overheating.
2400	Pressurizing cooling system.	
11 October	0000	Find fault in water pump. Wait on replacement.
	1200	Wait on replacement water pump. Repair.
	1945	Run in hole.
	2000	Drill from 137.6-147m.



<u>DATE</u>	<u>HOUR</u>	
12 October	0000	Drill 147m-165.6m.
	0800	Wait on water.
	0815	Drill 165.6m-167m.
	0830	Mix and pump lost circulation material pill.
	0845	Drill 167m-169m.
	0915	Mix and pump lost circulation material pill with bag closed in attempt to squeeze pill into formations.
	1015	Drill 169m-176m.
	1200	Drill from 176m-180m.
	1300	Weld pad on kelly where chuck jaws attempt to grip.
	1315	Drill from 180m-184m.
	1430	Remove kelly, repair chuck jaw surfaces. Replace jaws.
	1830	Drill from 184m-187m.
	2000	Rig overheated, replace seal kit in water pump.
	2130	Drill from 187m-189.6m.
	2245	Wait on water.
	2330	Drill 189.6m-191m.
	13 October	0000
0800		Circulate Pill.
0830		Pull out of hole.
0930		Rig up Loggers, Run.
1200		Logging, Rig down logging gear.
1730		Run in hole wiper trip.
1815		Circulate.
1845		Pull out of hole, lay down sideways.
2030		Run casing and cement. 13 bbls slurry around 15.6 ppg, bumped plug 250 psi, no returns.
2330	Wait on cement.	
14 October	0000	Wait on cement.
	0930	Run in hole.
	1030	Drill out float collar from 198.4m. Cement from 202m-207.7m.
	1200	Drill out cement and plugs.
	1300	Drill 209.2m-209.7m.
	1330	Pull out of hole and run in hole with core barrel.
	1415	Ream to bottom.
	1430	Dump tanks, circulate new mud.
	1500	Core 209.7m-214.75m and retube.
	1800	Formation integrity test, 650 P.S.I.
	1830	Core 214.75m-217.45m, $\frac{1}{4}$ retube.
	2015	Core 217.45m-218.10m, $\frac{1}{4}$ retube.
	2100	Core 218.10m-220.55m, $\frac{1}{4}$ retube.
	2215	Repair rig, kelly hose stand pipe fittings washed out.
	2330	Pull out of hole.

<u>DATE</u>	<u>HOUR</u>	
15 October	0000	Clean bit waterways and inspect. Run in hole.
	0100	Core 220.55m-226.75m, $\frac{1}{4}$ retube.
	0345	Core 226.75m-231.85m, $\frac{1}{4}$ retube.
	0600	Core 231.85m-238m, $\frac{1}{4}$ retube.
	0815	Core 238m-244.15m
	1100	Survey Deviation, 1'.
	1115	Retube
	1130	Core 244.15m-245m.
	1200	Core 245-250.25m, $\frac{1}{4}$ retube.
	1445	Core 250.25m-252.60m, $\frac{1}{4}$ retube.
	1600	Core 252.6m-253.75m, $\frac{1}{4}$ retube.
	1700	Core 253.75m-257.05m, $\frac{1}{4}$ retube.
	1900	Core 257.05m-263.05m, $\frac{1}{4}$ retube
	2230	Core 263.05m-263.85m, $\frac{1}{4}$ retube, no core.
	2330	Pull out of hole, core blocked in barrel.
	16 October	0000
0045		Core 263.88-265.05m, Retube $\frac{1}{4}$
0145		Core 265.05-269.15m, Retube $\frac{1}{4}$
0330		Core 269.15-275.05m, Retube $\frac{1}{4}$
0600		Core 275.05-277.55m, Retube $\frac{1}{4}$
0700		Core 277.55-278.4m, Stuck tube, retube $\frac{1}{4}$
0800		Core 278.4-281.75m, Retube $\frac{1}{4}$
0915		Core 281.75-283.40m, Retube $\frac{1}{4}$
1000		Core 283.4-286.35m, Retube $\frac{1}{4}$
1115		Core 286.35-287.15m, Retube $\frac{1}{4}$
1200		Core 287.15-292.15m, Retube $\frac{1}{4}$
1400		Core 292.15-293.95m, Retube $\frac{1}{4}$
1500		Core 293.95-295.85m, Retube $\frac{1}{4}$
1545		Core 295.85-302.65m, Retube $\frac{1}{4}$ x 2
1945		Core 302.65-307.85m, Retube $\frac{1}{4}$
2230		Core 307.85-308.9m, Retube $\frac{1}{4}$
2315	Core 308.9-310m	
17 October	0000	Core 310.0-310.45m, Retube $\frac{1}{4}$
	0030	Core 310.45-315.75m, Retube $\frac{1}{4}$
	0400	Core 315.75-320.45m, Retube $\frac{1}{4}$
	0645	Core 320.45-326.65m, Retube $\frac{1}{4}$
	0800	Core 326.65-328.65m, Retube $\frac{1}{4}$
	0845	Core 328.65-334.65m, Retube $\frac{1}{4}$
	0945	Core 334.65-339.15m, Retube $\frac{1}{4}$
	1030	Pull out of hole, fit bit No. 6, Run in hole.
	1200	Run in hole with bit No. 6
	1230	Core 339.15-345.30m, Retube $\frac{1}{4}$
	1345	Core 345.30-351.45m, Retube $\frac{1}{4}$
	1515	Core 351.45-357.65m, Retube $\frac{1}{4}$
	1630	Survey around 350m, $\frac{1}{4}$ '
	1645	Core 357.65-363.75m, Retube $\frac{1}{4}$
	1800	Core 363.75-369.90m, Retube $\frac{1}{4}$

<u>DATE</u>	<u>HOUR</u>	
	1900	Core 369.90-375.95m, Retube $\frac{1}{4}$
	1945	Core 375.95-381.95m, Retube $\frac{1}{4}$
	2100	Core 381.95-387.85m, Retube $\frac{1}{4}$
	2200	Core 387.85-392.15m, Retube $\frac{1}{4}$
	2330	Core 392.15-393.0m
18 October	0000	Core 393.0-398.35m, Retube $\frac{3}{4}$
	0345	Core 398.35-404.55m, Retube $\frac{1}{2}$
	0745	Core 404.55-410.75m, Retube $\frac{1}{4}$
	1145	Core to 411.0m.
	1200	Core 411.0-416.95m, Retube $\frac{1}{4}$
	1515	Core 416.95-423.15m, Retube $\frac{1}{2}$
	1830	Core 423.15-429.25m, Retube $\frac{1}{4}$
	2215	Core 429.25-433m.
19 October	0000	Core 433.0-435.25m, Retube $\frac{1}{4}$
	0115	Core 435.25-441.25m, Retube $\frac{1}{2}$
	0400	Core 441.25-447.25m, Retube $\frac{1}{2}$
	0700	Core 447.25-453.25m, Retube $\frac{1}{2}$
	1000	Core 453.25-459.25m.
	1200	Retube
	1230	Core 459.25m-456.15m, Retube $\frac{1}{4}$
	1445	Core 465.15-471.15m, Retube $\frac{1}{4}$
	1700	Core 471.15-477.15m, Retube $\frac{1}{2}$
	1945	Survey around 475m.
	2000	Core 477.15-483.05m, Retube $\frac{1}{4}$
	2230	Dump and clean settling tank.
	2245	Core 483.05-486.05m.
20 October	0000	Core 486.05-489.05m, Retube $\frac{1}{4}$
	0130	Core 489.05-494.95m, Retube $\frac{1}{4}$
	0400	Core 494.95-500.05m, Retube $\frac{1}{4}$
	0615	Core 500.95-506.85m, Retube $\frac{1}{4}$
	0900	Core 506.85-512.85m, Retube $\frac{1}{4}$
	1115	Core 512.85-515.05m
	1200	Core 515.05-518.65m, Retube $\frac{1}{4}$
	1345	Core 518.65-524.55m, Retube $\frac{1}{2}$
	1630	Fit new chain to wireline drive.
	1700	Core 524.55-530.55m, Retube $\frac{1}{4}$
	2000	Core 530.55-536.55m, Retube $\frac{1}{4}$
	2230	Core 536.55-540.55m.
21 October	0000	Core 540.55-542.55m, Retube $\frac{1}{2}$
	0115	Repair wireline chain
	0130	Core 542.55-548.55m, Retube $\frac{1}{2}$
	0415	Core 448.55-554.45m, Retube $\frac{1}{4}$
	0700	Core 554.55-560.45, Retube $\frac{1}{2}$
	1000	Core 560.45-565.0m.
	1200	Core 565.0-566.35m, Retube $\frac{1}{4}$
	1245	Dump and clean settling tank and sand trap.
	1300	Core 566.35-572.35m, Retube $\frac{1}{4}$
	1530	Test B.O.P., test hydrill to 1,000 PSI, test pipe, rams, HCR, Choke manifold, floor manifold to 1,500 psi.

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	1600	Core 572.35-578.35m, Retube $\frac{1}{4}$
	1845	Core 578.35-584.35m
	2130	Fit new winch rope.
	2200	Pull out of hole.
	2330	Remove water pump from rig cat.
22 October	0000	Strip water pump, fit new kit, install to prime mover.
	0115	Run in hole with bit No. 6.
	0230	Core 584.35-590.35m, Retube $\frac{1}{2}$
	0545	Core 590.35-596.35m, Retube $\frac{1}{4}$
	0845	Retube x 2 as no mud pressure when starting to drill. Pull out of hole. Stand, find and remove split rod.
	1030	Core 596.35m-599.35m.
	1200	Rig clutch making excess noise. Stop engine and check. Make attempts to restart rig.
	1315	Core 599.35-602.35, Retube $\frac{1}{4}$
	1515	Core 602.35-608.35m, Retube $\frac{1}{4}$
	1845	Core 608.35-614.2m, Retube $\frac{1}{4}$
	2000	Core 614.2-618.55m.
23 October	0000	Core 618.55-620.15m, Retube $\frac{1}{4}$
	0100	Core 620.15-626.05m, Retube $\frac{1}{4}$
	0400	Retube $\frac{1}{2}$ . Pick up core 623.55-625.65m.
	0430	Core 625.65m-626.05m
	0445	Core 626.05-631.80m, Recore $\frac{1}{4}$
	0730	Core 631.80m-637.75m, Recore $\frac{1}{4}$
	1030	Core 637.75-640.65m.
	1200	Core 640.65-643.65m, Retube $\frac{1}{4}$
	1400	Core 643.65-649.65m, Retube $\frac{1}{4}$
	1700	Deviation survey at 650m. (failed)
	1715	Core 649.65-655.65m, Retube $\frac{1}{4}$
	2030	Deviation survey at 650m. 3°
	2045	Clean hydraulic suction filter.
	2100	Core 655.65-661.65m.
24 October	0000	Repair wireline, strands unspinning.
	0045	Retube
	0100	Core 661.65-667.45m, Retube $\frac{1}{2}$
	0400	Core 667.45-673.45m, Retube $\frac{1}{2}$
	0700	Change over kelly.
	0715	Core 673.45-679.35m, Retube $\frac{1}{4}$
	1015	Deviation survey, 3°
	1030	Core 679.35-683.65m.
	1200	Core 683.65-683.35m, Retube $\frac{1}{4}$
	1300	Core 685.35-691.35m, Retube $\frac{1}{4}$
	1600	Core 691.35-697.35m, Retube $\frac{1}{4}$
	1845	Core 697.35-703.35m, Retube $\frac{1}{4}$
	2130	Core 703.35-708.35m.

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25 October	0000	Core 708.35-709.35m, Retube $\frac{1}{2}$
	0045	Core 709.35-715.35m, Retube $\frac{1}{2}$
	0330	Core 715.35-721.25m, Retube $\frac{1}{2}$
	0615	Core 721.25-727.25m, Retube $\frac{1}{2}$
	0900	Core 727.25-733.25m.
	1130	Deviation Survey at 730m, 4°
	1200	Core 733.25-739.25m, Retube $\frac{1}{2}$
	1545	Core 739.25-745.15m, Retube $\frac{1}{2}$
	1915	Core 745.15-751.05m, Retube $\frac{1}{2}$
	2245	Core 751.05-753.25m
26 October	0000	Core 753.25-756.85m, Retube $\frac{1}{2}$
	0230	Core 756.85-762.75m, Retube $\frac{1}{2}$
	0645	Core 762.75-768.55m, Retube $\frac{1}{2}$
	0930	Core 768.55-771.55m, Retube $\frac{1}{2}$
	1200	Core 771.55-777.7m, Retube $\frac{1}{2}$
	1345	Deviation Survey, failed
	1400	Core 777.7-780.05m, Retube
	1745	Run Survey tool, hung up half way down. Run in sinker bar knock out core. Run survey, hung up off bottom.
	1900	Pump tube and pull tube, pump and seat tube.
	1930	Core 780.05-786.25m.
2330	Repair blown hydraulic hose.	
27 October	0000	Deviation Survey, 6°
	0030	Retube
	0100	Core 786.25-792.15m, Retube $\frac{1}{2}$
	0500	Core 792.15-798.05m, Retube $\frac{1}{2}$
	0830	Core 798.05-803.85m, Retube
	1130	Core 803.85-804.85m
	1200	Core 804.85-809.85m, Retube $\frac{1}{2}$
	1445	Core 809.85-815.75m, Retube $\frac{1}{2}$
	1730	Core 815.75-821.75m, Retube $\frac{1}{2}$
	2030	Alternator on rig cat cracked the bearing-housing allowing fan belts to loosen. Made up idler pulley to suit cat and fitted.
2200	Core 821.25-825.65m, Retube $\frac{1}{2}$	
28 October	0000	Retube
	0015	Core 825.65-827.75m, Retube $\frac{1}{2}$
	0145	Core 827.75-833.75m, Retube $\frac{1}{2}$
	0430	Core 833.75-839.65m, Retube $\frac{1}{2}$
	0830	Repair Wireline resplice
	1030	Core 839.65-841.0m.

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	1200	Core 841.0-845.65m, Retube $\frac{1}{2}$
	1430	Directional Deviation Survey at 845m., N.F. 6
	1500	Pull out of hole.
	1700	Repair feed ram and rig clutch
	1945	Make up new B.H.A. Run in hole.
	2215	Core 845.65-848.0m
29 October	0000	Core 848.0-851.65m, Retube $\frac{1}{2}$
	0245	Deviation Survey at 850m, $7\frac{1}{2}^{\circ}$
	0315	Change over water swivels
	0345	Core 851.65-857.55m, Retube $\frac{1}{2}$
	0800	Core 857.55-863.35m, Retube $\frac{1}{2}$
	1200	Core 863.35-869.25m, Retube $\frac{1}{2}$
	1530	Core 869.25-875.25m
	1900	Tube stuck
	2030	Pull out of hole
	2230	Run in hole
30 October	0000	Run in hole with Bit No. 7.
	0130	Core 875.25-881.05m, Retube $\frac{1}{2}$
	0500	Core 881.05-886.95m, Retube $\frac{1}{2}$
	0845	Core 886.95-892.55m
	1200	Core 892.55-892.95m, Retube $\frac{1}{2}$
	1245	Core 892.95-898.85m, Retube $\frac{1}{2}$
	1700	Core 898.85-904.75m, Retube $\frac{1}{2}$
	2230	Deviation Survey at 900, $7\frac{1}{2}^{\circ}$
	2300	Core 904.75-905.75m
31 October	0000	Core 905.75-910.75m, Retube $\frac{1}{2}$
	0400	Core 910.75-911.5m, Retube $\frac{1}{2}$ . Loss of water pressure
	0500	Core 911.5-912.0m, no recovery. Pull out tube, run in bar and knock core out of barrel and seat tube.
	0630	Drill out core
	0700	Core 912.0-916.65m, Retube $\frac{1}{2}$
	1000	Core 916.65-918.0m.
	1200	Core 918-922.55m, Retube $\frac{1}{2}$
	1430	Core 922.55-928.55m, Retube $\frac{1}{2}$
	1800	Core 928.55-934.55m, Retube $\frac{1}{2}$
	2215	Core 934.55-937.55m.
1 November	0000	Core 937.55-940.55m, Retube $\frac{1}{2}$
	0200	Core 940.55-946.55m, Retube $\frac{1}{2}$
	0500	Core 946.55-952.45m, Retube $\frac{1}{2}$
	0830	Core 952.45-955.85m, Retube $\frac{1}{2}$
	1115	Repair water leak in Kelly hose.
	1130	Core 955.85-957.0m.

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	1200	Core 957.0-958.45m, Retube $\frac{1}{2}$
	1330	Core 958.45-960.0m.
	1445	Rod twisted off, pull out 160 metres. Run in hole with fishing tool and pull out to break.
	1600	Rebuild rig clutch
	2030	Retube
	2100	Run in hole to 953m.
	2130	Ream 953.0-960.0m.
	2145	Core 960.0-962.0m.
2 November	0000	Core 962.0-964.35m, Retube $\frac{1}{2}$
	0215	Ream 963.0-964.35m.
	0230	Core 964.35-970.25m, Retube $\frac{1}{2}$
	0815	Deviation Survey at 970.0m, $7\frac{1}{2}^{\circ}$
	0845	Ream 968.0m-970.0m.
	0900	Add KCL mud to system, 3% KCL.
	1030	Core 970.25-973.0m
	1200	Core 973.0-976.15m, Retube $\frac{1}{2}$
	1415	Core 976.15-982.15m, Retube $\frac{1}{2}$
	1800	Core 982.15-988.05m, Retube $\frac{1}{2}$
	2200	Core 988.05-991.0m.
3 November	0000	Core 991.0-994.05m, Retube $\frac{1}{2}$
	0215	Core 994.05-1000.05m, Retube $\frac{1}{2}$
	0700	Core 1000.05-1005.95m, Retube $\frac{1}{2}$
	1130	Core 1005.95-1007.0m
	1200	Core 1007-1011.95m, Retube $\frac{1}{2}$
	1530	Core 1011.95-1017.85m, Retube $\frac{1}{2}$
	1930	Core 1017.85-1023.85m, Retube $\frac{1}{2}$
	2345	Core 1023.85-1024m.
4 November	0000	Core 1024-1029.85m, Retube $\frac{1}{2}$
	0400	Core 1029.85-1035.75m, Retube $\frac{1}{2}$
	0815	Core 1035.75-1040.55m.
	1200	Retube
	1230	Attempt to core, no good.
	1245	Pull out of hole. Pull out two leaking rods.
	1500	Run in hole
	1730	Core 1040.55-1046.65m, Retube $\frac{1}{2}$
	2300	Core 1046.65-1047.75m.
5 November	0000	Core 1047.75-1052.9m, Retube $\frac{1}{2}$
	0430	Ream over lost core.
	0445	Core 1052.9-1055.45m, Retube $\frac{1}{2}$
	0730	Core 1055.45-1059.15m, Retube $\frac{1}{2}$
	1045	Core 1059.15-1060.5m
	1200	Core 1060.5-1065.05m, Retube $\frac{1}{2}$
	1530	Deviation survey at 1065m.
	1600	Core 1065.05-1070.95m, Retube $\frac{1}{2}$
	2000	Core 1070.95-1076m.

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6 November	0000	Core 1076-1076.95m, Retube $\frac{1}{2}$	
	0115	Core 1076.95-1082.95m, Retube $\frac{1}{2}$	
	0600	Core 1082.95-1088.95m, Retube $\frac{1}{2}$	
	1015	Core 1088.95-1092m.	
	1200	Core 1092-1094.95m, Retube $\frac{1}{2}$	
	1330	Core 1094.95-1097.4m.	
	1500	Stuck tube attempt to free, no good	
	1615	Pull out of hole	
	1845	Free tube, run in hole	
	2100	Core 1077.4-1101.05m, Retube $\frac{1}{2}$	
	2300	Core 1101.05-1102m.	
	7 November	0000	Core 1102-1106.95m, Retube $\frac{1}{2}$
		0415	Core 1106.95-1112.95m, Retube $\frac{1}{2}$
		0845	Core 1112.95-1118m.
1200		Core 1118-1118.95m, Retube $\frac{1}{2}$	
1245		Core 1118.95-1124.95m, Retube $\frac{1}{2}$	
1600		Core 1124.95-1130.85m, Retube $\frac{1}{2}$	
1845		Core 1130.85-1136.85m, Retube $\frac{1}{2}$	
2200		Core 1136.85-1141.85m	
8 November		0000	Core 1141.85-1142.85m, Retube $\frac{1}{2}$
		0115	Core 1142.85-1148.75m, Retube $\frac{1}{2}$
	0400	Core 1148.75-1154.75m, Retube $\frac{1}{2}$	
	0415	Core 1154.75-1160.75m, Retube $\frac{1}{2}$	
	1030	Core 1160.75-1164m	
	1200	Core 1164-1166.65m, Retube $\frac{1}{2}$	
	1330	Core 1166.65-1172.65m, Retube $\frac{1}{2}$	
	1715	Core 1172.65-1178.65m, Retube $\frac{1}{2}$	
	2030	Core 1178.65-1184.65m.	
	9 November	0000	Retube
0030		Core 1184.65-1190.65m, Retube $\frac{1}{2}$	
0415		Core 1190.65-1196.55m, Retube $\frac{1}{2}$	
0800		Core 1196.55-1202.55m, Retube $\frac{1}{2}$	
1115		Deviation Survey. Tool hung up off bottom.	
1145		Run in bar and free core from pipe.	
1200		Retube	
1230		Core 1202.55-1208.55m, Retube $\frac{1}{2}$	
1545		Deviation survey at 1208m.	
1615		Core 1208.55-1214.45m, Retube $\frac{1}{2}$	
2000	Core 1214.45-1220.35m.		
10 November	0000	Core 1220.35-1226.35m, Retube $\frac{1}{2}$	
	0300	Core 1226.35-1232.25m, Retube $\frac{1}{2}$	
	0600	Standby. Wait for core to be checked, set pipe at 1224 prepare and swab hole for 50 minutes. Annulus took 1 bbl to fill.	
	0800	Reverse circulate mud out of hole.	
	0930	Seat tube	
	0945	Core 1232.25-1238.25m, Retube $\frac{1}{2}$	



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	1200	Core 1238.25-1244.25m, Retube $\frac{1}{2}$
	1530	Core 1244.25-1250.25m, Retube $\frac{1}{2}$
	1930	Core 1250.25-1256.25m.
11 November	0000	Retube
	0030	Core 1256.35-1257.9m, Retube $\frac{1}{2}$
	0330	Pull out of hole
	0645	Maintenance service rig cat and clean radiator.
	0745	Run in hole with Bit No. 8 (Rerun).
	1100	Core 1257.9-1259m.
	1200	Core 1259-1262.25m, Retube $\frac{1}{2}$
	1545	Core 1262.25-1265m.
	1815	Pull out of hole
	2015	Test BOP, repaired leaking unions - o.k.
	2215	Pull out of hole
	2300	Run in hole with Bit No. 9.
12 November	0000	Run in hole with Bit No. 9
	0215	Core from 1265-1268.25m, Retube $\frac{1}{2}$
	0515	Core 1268.25-1272.5m.
	1200	Core 1272.5-1272.6m, Retube $\frac{1}{2}$
	1515	Core 1272.6-1273.7m.
	1815	Pull out of hole
	2030	Make up BHA, Run in hole with Bit No. 10
	2330	Core 1273.7-1274m.
13 November	0000	Core 1274-1279.9m, Retube $\frac{1}{2}$
	0515	Core 1279.9-1286.05m, Retube $\frac{1}{2}$
	0930	Core 1286.05-1291m
	1200	Core 1291-1291.95m, Retube $\frac{1}{2}$
	1315	Core 1291.95-1297.85m, Retube $\frac{1}{2}$
	1845	Core 1297.85-1298.85m, Retube $\frac{1}{2}$
	2045	Core 1298.85-1302.25m
14 November	0000	Core 1302.25-1303.75m. Retube
	0200	Stuck tube. Tube stuck on spinout 24 metres from surface. Free tube. Pull out of hole. Pump down 5 bbl water slug in front of tube.
	0400	Core 1303.75-1304.5. Rod rattle.
	0430	Circulate water slug up annulus
	0445	Core 1304.5-1305.2m, Retube $\frac{3}{4}$
	0730	Core 1305.2-1306.5m, Retube $\frac{1}{2}$
	0930	Tube hung up in rods (spinout), recover tube.
	1030	Pull out of hole
	1200	Pull out of hole
	1330	Make up BHA, Run in hole with Bit No. 11.
	1730	Core 1306.05-1309.25m.

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15 November	0000	Core 1309.25-1309.55m, Retube 3/4
	0200	Core 1309.55-1310m, Retube $\frac{1}{2}$
	0430	Core 1310-1310.35m
	0800	Pull out of hole
	1100	Make up BHA. Run in hole with Bit No. 12
	1200	Run in hole
	1430	Core 1310.35-1311.95m, Retube 3/4
	1730	Core 1311.95-1314.2m.
16 November	0000	Core 1314.2-1314.45m, Retube 3/4
	0630	Core 1314.45-1315.30m, Retube 3/4
	1130	Deviation survey 1310m - 9°
	1200	Seat tube
	1215	Core 1315.3-1316.9m.
17 November	0000	Core 1316.9-1317.10m, Retube 3/4
	0430	Pull out of hole
	0730	Standby wait on series 10 bit
	1200	Standby wait on series 10 Bit
	1645	Run in hole with Bit No. 10
	2030	Core 1317.10-1319.05m.
18 November	0000	Core 1319.05-1320.7m, Retube 3/4
	0430	Core 1320.7-1324.25m
	1200	Core 1324.25-1327.25m, Retube 3/4
	1915	Core 1327.25-1329.2m
19 November	0000	Core 1329.2-1332.9m, Retube 3/4
	1130	Core 1332.9-1333.2m
	1200	Core 1333.2-1339.05m, Retube 3/4
	1830	Core 1339.05-1343.85m
20 November	0000	Core 1343.85-1344.95m, Retube 3/4
	0145	Core 1344.95-1350.95m, Retube 3/4
	0745	Core 1350.95-1356.85m, Retube $\frac{1}{2}$
	1115	Deviation Survey at 1355m, 9°
	1145	Seat tube
	1200	Core 1356.85-1362.75m, Retube 3/4
	1430	Core 1362.75-1368.65m, Retube $\frac{1}{2}$
	1730	Core 1368.65-1374.55m, Retube $\frac{1}{2}$
	2200	Core 1374.55-1376.15m.

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21 November	0000	Core 1376.15-1377.25m
	0215	Assemble and change over water swivel. Change return line hydraulic filters.
	0345	Core 1377.25-1379.15m, Retube 3/4
	0745	Remove, clean and replace suction screen for hydraulics.
	0800	Core 1379.15-1385.35m, Retube 3/4
	1145	Core 1385.5m
	1200	Core 1385.5-1386.35m, Retube 3/4
	1315	Core 1386.35-1392.25m, Retube 3/4
	1645	Core 1392.25-1398.15m, Retube 3/4
	2015	Core 1398.15-1404.05m, Retube 3/4
	2215	Core 1404.05-1408.05m,
	2330	Seat Tube
	22 November	0000
0015		Pull out of hole
0130		Repair tong jaws
0145		Pull out of hole
0415		Run in hole with Bit No. 15. Make up BHA
0845		Core 1408.5-1414.15m, Retube 3/4
1030		Core 1414.15-1415.85m, Retube 3/4
1145		Replace water swivel
1200		Core 1415.85-1421.75m, Retube 3/4
1515		Core 1421.75-1427.65m, Retube 3/4
1730		Core 1427.65-1433.55m, Retube 3/4
2030		Core 1433.55-1438.55m.
23 November		0000
	0045	Retube, tube hung up on spinout
	0200	Core 1439.55-1444.9m.
	1200	Core 1444.9-1445.1m
	1430	Pull out of hole, Retube $\frac{1}{2}$
	1830	Run in hole with Bit No. 16, Series 10
24 November	0000	Core 1445.1-1451.35m, 1hr retube due to spinout.
	0445	Core 1451.35-1457.45m, 1 hr retube due to spinout.
	1015	Core 1457.45-1458.4m.
	1130	Repair wireline sheaves, replace brgs.
	1200	Retube $\frac{1}{2}$
	1230	Core 1458.4-1463.25m, Retube 3/4
	1645	Core 1463.25-1469.25m, Retube 3/4
	2045	Core 1469.25-1471m.

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25 November	0000	Core 1471-1475.15m, Retube 3/4
	0145	Core 1475.15-1481.05m, Retube 3/4
	0430	Core 1481.05-1486.95m, Retube 3/4
	0830	Repair blown Kelly hose
	0930	High water pressure when starting to core. Retube
	1100	Core 1486.95-1487.3m, Retube $\frac{1}{2}$
	1200	Pull out of hole
	1630	Run in hole with new Bit No. 17 series 10
	2115	Core 1487.3-1492.85m, Retube 3/4
	2345	Core 1492.85-1493.15m
26 November	0000	Core 1493.15-1493.25m, Retube 3/4 (High water press)
	0130	Pull out of hole
	0515	File down water ways in bit. Make up BHA
	0600	Run in hole with Bit No. 18
	0945	Core 1493.25-1493.55m, Retube 3/4
	1130	Replace hydraulic hose on head
	1145	Core 1493.55-1493.65m
	1200	Core 1493.65-1498.75m
	1645	Deviation Survey - miss run
	1715	Retube 3/4
1800	Core 1498.75-1501.15m, wedged off. Retube 3/4	
2030	Core 1501.15-1504.75m.	
27 November	0000	Core 1504.75-1510.75m. Retube 3/4
	0415	Core 1510.75-1515.25m, Retube 3/4
	0930	Core 1515.25-1515.45m, Tube not seated
	0945	Pull out tube, pump down tube with 2 barrels of water. Tube hanging up on spinout.
	1100	Core 1515.45-1516.15m.
	1200	Core 1516.15-1516.65m
	1315	Deviation Survey 10°
	1345	Seat tube, Retube $\frac{1}{2}$
	1415	Core 1516.65-1522.55m
	1900	Standby at Geologist's order to fix Gearhart depth sensor connection.
1915	Seat tube, 1 hour. Retube	
2015	Core 1522.55-1528.45m.	
28 November	0000	Retube
	0030	Core 1528.45-1534.35m, Retube 1
	0300	Core 1534.35-1540.25m, Retube 3/4
	0515	Core 1540.25-1546.15m, Retube 3/4
	0730	Core 1546.15-1552.05m, Retube 3/4
	1030	Core 1552.05-1554.6m.

<u>DATE</u>	<u>HOUR</u>	
	1200	Core 1554.6-1557.95m, Retube 3/4
	1500	Drill string stuck when lowering to bottom. Work pipe.
	1700	Pump milfree/diesel mix. Spot on bottom.
	1900	Hold weight on string (51,000 wait for millfree to work).
	2000	Work pipe, pump 170 stks - hold 51,000
	2200	Work pipe, pump 170 stks - hold 51,000
29 November	0000	Attempt to free stuck pipe. Pump pill 170 stks.
	0300	Attempt to free stuck pipe. Pump rill 250 stks.
	0400	Dump and clean mud tanks, bring over new mud.
	0500	Attempt to free stuck pipe.
	0515	Pump 8½ barrels of water to bit. Spot 2½ barrels outside rods.
	0645	Attempt to free pipe. Pump water spot to 4½ barrels outside rods.
	0900	Attempt to free pipe every ¼ hour.
	1200	Displace water pill
	1315	Pull tube, work pipe
	1345	Pump 6 barrels Milfree/Diesel pill, 1 barrel diesel spacer.
	1430	Spot pill on bottom 5960 stks.
	1530	Hold 57,000 on string while Milfree works.
	1730	Work stuck pipe
	1800	Hold 51,000 on string
	1830	Pump 100 stks
	1900	Work pipe, came free
	1930	Displace Milfree pill, bring up water loss. Condition and Circulate.
	2300	Pump Tube
	2330	Core 1557.95-1559.55m.
30 November	0000	Core 1559.55-1563.95m, Retube 3/4
	0245	Core 1563.95-1569.85m, Retube 3/4
	0545	Core 1569.85-1575.75m, Retube 3/4
	0815	Core 1575.75-1581.75m, Retube 3/4
	1045	Core 1581.75-1587m.
	1200	Core 1587-1587.65m, Retube 3/4
	1315	Core 1587.65-1593.55m, Retube 3/4
	1630	Core 1593-1598.45m, Retube 3/4
	1830	Pull out of hole - Run in hole, bit change
1 December	0000	Run in hole with Bit No. 19
	0500	Core 1598.45-1604.55m, Retube 1
	0845	Core 1604.55-1607m.
	1000	Repair leaking water swivel
	1045	Core 1607-1609.25m.

<u>DATE</u>	<u>HOUR</u>	
	1200	Core 1609.25-1610.65m, Retube 1
	1400	Repair broken Kelly - swivel fitting
	1430	Core 1610.65-1612.45m, Retube 1
	1730	Core 1612.45-1617.15m, 1 Retube
	2330	Core 1617.15-1618.65m.
2 December	0000	Core 1618.65-1623.15m, Retube 1
	0430	Core 1623.15-1623.35m.
	0445	Remove rotation gear box. Change parts over to spare gear box and fit box.
	0730	Core 1623.35-1629.05m, Retube 1
	1145	Core 1629.05-1629.3m.
	1200	Core 1629.3-1635.05m
	1800	Pull out of hole. Tube not seated
	2230	Remove 6m core from barrel
	2330	Run in hole Bit 19.
3 December	0000	Run in hole with Bit No. 19
	0400	Wash 1610-1635m.
	0415	Core 1635.05-1640.95m.
	0900	Retube. Tube not seating
	1115	Core 1640.95-1642m.
	1200	Core 1642-1646.50m, Retube 1½
	1730	Core 1646.5-1649m, Retube 1½
	2100	Pull out of hole
4 December	0000	Pull out of hole. Make up BHA. Run in hole with Bit No. 20.
	0600	Core 1649-1652.65m, Retube 1½
	0930	Change fuel filter, rig cat.
	0945	Core 1652.65-1657m.
	1200	Core 1657-1658.55m, Retube 1½
	1415	Core 1658.55-1664.45m, Retube 1½
	1915	Core 1664.45-1670.35m, Retube 1½
5 December	0000	Retube
	0015	Core 1670.35-1676.25m, Retube 1½
	0530	Core 1676.25-1678m.
	0700	Fit new packing and washpipe to water swivel.
	0730	Core 1678-1682.05m, Retube 1½
	1100	Core 1682.05-1683.5m.
	1200	Core 1683.5-1688.05m, Retube 1½
	1600	Core 1688.05-1694.05m, Retube 1½
	2115	Core 1694.05-1698.35m.

<u>DATE</u>	<u>HOUR</u>		
6 December	0000	Core 1698.35-1699.85m, T.D.	
	0030	Condition and Circulate	
	0100	Retube	
	0200	Deviation Survey, 11' at 1605m.	
	0245	Pull out of hole. Lay down collars	
6 December	0645	Rig up for logging. Run temp log.	
	1200	Wireline logs	
7 December	0000	Wireline logs	
	1200	Wireline logs	
8 December	0000	Wire line logs and start velocity survey	
	1200	Wire line logs and velocity survey	
9 December	0000	Wireline logs and complete velocity survey.	
	0245	Run in hole with open pipe to 1230.	
	0530	Mix, pump, displace cement plug. 3 barrels slurry at 15.6ppg.	
	0700	Pull out of hole. 10 stands	
	0715	Condition and Circulate	
	0745	Pull out of hole, 75 stands	
	0930	Mix, pump, displace, cement plug. 4 barrels slurry at 15.6ppg.	
	1030	Pull back 7 stands (Wait on cement)	
	1045	Condition and Circulate (Wait on cement)	
	1100	Lay down, pull out of hole (Wait on cement).	
	9 December	1200	Lay down pipe (Wait on cement)
		1400	Wait on cement
		1830	Standby on Operators orders.
10 December	0000	Run in hole. Tag cement plug, 183 metres - slack off 2000 lbs.	
	0100	Lay down 101 pipe	
	0600	Nipple down B.O.P.	
	1030	Run top cement plug; rig released from contract.	
	1145	Rig down.	
	1200	Tear down.	

APPENDIX 3

TIME DISTRIBUTION

ALTRÉE-1

DATE (88)	DRILLING REAMING	CORING	RECOVER DROPPED CORE	TRIPS	REPAIR& SERVICE RIG	CASING	CEMENT	TEST NIPPLE UP BOP'S	FIT	SURVEY	MUD CIRCULATE	VEL. SURV. WIRELINE LOG	STANDBY	SET ABANDONMENT PLUGS
24/9	6													
25/9	22			-	2									
26/9	20.5			2										
27/9	13			2.25			8.75						1.5	
28/9	17.75			3	1.5								1.75	
29/9	7			2			15							
30/9	11.5			1.5			11							
1/10	11			7.25			1.25							
TOTL HRS	108.75		0	18	3.5	0	36	0	0	0	0	0	3.25	0
%	64.16		0.00	10.62	2.06	0.00	21.24	0.00	0.00	0.00	0.00	0.00	1.92	0.00



APPENDIX 3

TIME DISTRIBUTION

ALTREE-2

DATE (88)	DRILLING REAMING	CORING	RECOVER DROPPED CORE	TRIPS	REPAIR & SERVICE RIG	CASING	CEMENT	TEST NIPPLE UP BOP'S	FIT	SURVEY	MUD CIRCULATE	VEL. SURV. WIRELINE LOG	STANDBY	SET ABANDONMENT PLUGS
04/10	2.5					1.5								
05/10	6.5			2.75	0.5		7.5						0.75	
06/10	8.25			5.25			10.5							
07/10	9			2.25		3.75	4.25						4.75	
08/10				1.5			15.5	7						
09/10	15				7.5			0.75		0.25	0.5			
10/10	4			0.25	19.75									
11/10	16				5.75						1.25		1	
12/10	8			3.5		3	0.5					8		
13/10	3.25	6.75		2.25	1.25		9.5	0.5			0.5			
14/10		22.25		1.5						0.25				
15/10		23.25		0.75										
16/10		21.75		2						0.25				
17/10		24												
18/10		23.5								0.25	0.25			
19/10		23.5			0.5									
20/10		20.75		1.5	1			0.5			0.25			
21/10		18.5		3	2.5									
22/10		23.25			0.25					0.5				

APPENDIX 3 (cont.)

DATE (88)	DRILLING REAMING	CORING	RECOVER DROPPED CORE	TRIPS	REPAIR SERVICE RIG	CASING	CEMENT	TEST NIPPLE UP BOP'S	FIT	SURVEY	MUD CIRCULATE	VEL. SURV. WIRELINE LOG	STANDBY	SET ABANDONMENT PLUGS
23/10		22.75			1					0.25				
24/10		23.5								0.5				
25/10		21.5			0.5					2				
26/10		22			1.5					0.5				
27/10		14.25		4.5	4.75					0.5				
28/10		19.5		3.5	0.5					0.5				
29/10		22		1.5						0.5				
30/10		24												
31/10	0.25	17	0.75	1	5									
01/11	0.5	21.5								0.5	1.5			
02/11		24												
03/11		19.25		4.75										
04/11		23.5								0.5				
05/11		18		6										
06/11		24												
07/11		24												
08/11		22.75								1.25				
09/11		20.5							3				0.5	
10/11		10.75		10.25	1			2						
11/11		16.5		7.5										
12/11		24												
13/11		13.75		7							3.25			
14/11		17.5		6.5										
15/11		23.25								0.75				

APPENDIX 3 (cont.)

DATE (88)	DRILLING REAMING	CORING	RECOVER DROPPED CORE	TRIPS	REPAIR & SERVICE RIG	CASING	CEMENT	TEST NIPPLE UP BOP'S	FIT	SURVEY	MUD CIRCULATE	VEL. SURV. WIRELINE LOG	STANDBY	SET ABANDONMENT PLUGS
16/11		8		6.75									9.25	
17/11		24												
18/11		24												
19/11		23.5								0.5				
20/11		21.75			1.75						0.5			
21/11		15.25		8.25	0.5									
22/11		13.25		9.5							1.25			
23/11		23.5			0.5									
24/11		12.25		9.25	1						1.5			
25/11		15		8.25	0.25					0.5				
26/11		22								0.5	1.25		0.25	
27/11		15	9											
28/11		1	23											
29/11		18.5		5.5										
30/11		17.75		5	1.25									
01/12		15.25		6	2.75									
02/12	0.25	14.5		7							2.25			
03/12		17.75		6	0.25									
04/12		23.5			0.5									
05/12		0.5		4						0.75	1.5	17.25		
06/12												24		
07/12												24		
08/12				8							0.75	2.75	5.5	7
09/12														6
TOTL HRS	73.5	1023.5	32.75	162.5	62	8.25	47.75	10.75	3	11.5	17.5	76	22	13
X	4.70	65.44	2.09	10.39	3.96	0.53	3.05	0.69	0.19	0.74	1.12	4.86	1.41	0.83

APPENDIX 4

CORE DESCRIPTION

ALTREE-2

<u>Interval</u>	<u>Core Description</u>
<u>Nutwood Downs Volcanics</u>	
209.70m - 240.98m	Basalt, greyish black to greenish black fine to medium grained, massive, pyroxene xenocrysts, very hard. Minor fractures 80° - 85° to core axis, coated with a very dark green (chlorite) staining. Trace pyrite. Chilled base 240.38m - 240.98m. No visible porosity.
240.98m - 248.5m	Vesicular Basalt - greyish red to dusky red, minor medium dark grey. Variably vesicular and vughy 0 - 20%. Vesicles 1 to 5mm in diameter, 70% filled with light greenish-grey clay mineral but sometimes open (25%), 5% filled with white soft mineral (probable zeolite? calcite). Fine grained flow banded 241.5m - 248.5m with finer vesicles and coarse vughs to 20mm and irregular in shape. This section may have a tuffaceous component. Grades to:
248.5m - 272.0m	Basalt - brownish - grey to greyish-red, fine grained very hard with weathered xenocrysts, very minor 5 - 20mm tuff bands. Minor vesicles completely filled with grey-green clayey material. Very hard, moderately fractured. No Visible Porosity. Grades to:
272.0m - 320.10m	Basalt - (same flow as above) Greenish grey, medium to fine grained, non vesicular, very hard, strongly fractured and jointed. No visible porosity except for partially open vesicles from 297.3m to 299.0m and at 316.0m. Calcite veins 1 to 5mm wide from 311.5m to base.
<u>Moroak Sandstone</u>	
320.10m - 323.35m	Sandstone - light pinkish grey to light greenish grey, fine to medium grained, moderately well sorted, sub-angular to angular, poorly bedded. Pink to light green clay matrix and clay intraclasts. Minor pyrite low visible intergranular porosity 2-4%.

IntervalCore Description

323.35m - 340.20m Sandstone - pinkish white to very light green, fine grained, occasionally medium grained at bases of beds, poorly to occasionally moderately well sorted, sub-angular to angular, poorly bedded. Minor light greenish grey, grey and pink clay and silt, disrupted laminae and blebs. Intraclasts and clay matrix where poorly sorted, silica cement where moderately well sorted.

Minor cross bedding intervals of disrupted laminated light grey green siltstone, claystone and very fine white sandstone with scour and fill (329.0m - 329.13m, 324.70m - 324.90m, 339.15m - 3340.05m), moderately hard, occasionally friable. Very low intergranular visible porosity in moderately well sorted sands (up to 5%).

340.20m - 342.0m Sandstone - mottled pale pink to greyish red, fine to medium grained, poorly sorted, sub-angular to angular, patchy clay matrix, minor silica cement. Disrupted clay laminae, moderately abundant blebs of pyrite. Porosity nil to 5% in medium grained sections.

342.0m - 386.32m Sandstone - as for 323.35 - 340.20m. Blebs and framboids of pyrite, common white clay matrix, minor silica cement. Very firm to hard, individual grains can be rubbed off. Very low visible intergranular porosity (less than 3%).

386.32m - 391.72m Sandstone - medium light grey to medium grey, medium grained, poorly sorted quartz/lithic sandstone. Quartz grains angular to sub-angular. Minor elongate pebbles and clasts of light grey siltstone increase in abundance towards base of interval. Clay matrix and silica cement (cement increases in abundance and matrix decreases with depth). Visible porosity about 5%, except for interval 386.30m - 386.50m where visible porosity of 15%.

Upper Velkerri Formation

391.72m - 449.3m Siltstone - medium dark grey to dark grey, planar laminated, minor small scale slumping, often with pyrite nodules in slumps. Scoured surfaces common, minor dewatering features, small flakes of black carbonaceous matter. Occasional calcite veins 1 - 3mm wide. Abundant pyrite as disseminations in beds and as blebs and clots to 415m.

<u>Interval</u>	<u>Core Description</u>
391.72m - 449.3m (cont.)	Very minor laminae (often disrupted) and fine lenses of very fine clean quartz sand - silica cemented below 420m. Scouring, disrupted bedding and very fine grained sand content slowly increase in abundance with depth.
449.3m - 575.25m	<p>Siltstone - as above and minor claystone 15%, white to light grey 0.5 to 6cm interbeds and lenses of very fine grained quartz sand and coarse silt showing flaser-like crossbedding, scoured bases and strongly truncated tops. Abundance of interbeds increases with depth to 30% by 500m. Thicker interbeds have a very low (2-3%) porosity and contain oil bleeds - moderately heavy oil, bubbles out of core with minor gas.</p> <p>Heavy HC Odour, pale yellow fluorescence, streaming white crush-cut residue. Silt/sand interbeds with oil staining, fluorescence white - very pale yellow, darkest black siltstone laminae show bright - pale yellow pin point fluorescence. 10% to 25% of rock fluoresces, average 15%. Oil bleeds at (* wrapped in foil) 451.98m*, 452.5m*, 452.7m*, 453.2m, 453.60, 456.20m*, 460.40, 461.23m*, 461.55, 462.60m*, 463.50, 463.70m*, 464.00m*, 466.0m, 466.60m*, 467.55m - .65m*, 469.70m, 469.93m, 470.34m*, 470.62m - .78m*, 471.0m - 15m*. Shows less intense but still very common below 471m. Good oil shows again from 508.2m to 516.3m. 508.87m* - 509.0m, 510.20m - 510.47m, minor from 516.3m to 560.82m, moderately good bleeds and stains 560.82m to 563.40m (560.98m* - 561.07m), 561.25m* - 561.32m), 563.11m* - 563.34m.</p>
572.25m - 572.83m	Sandy siltstone - light grey quartz siltstone, approximately 30% - 40% very fine quartz sand, moderately well sorted. One bed (non bedded), moderately strong oil staining over top 10cm - pale yellow fluorescence, remainder very pale fluorescence, strong HC odour, but no obvious staining. Fracture @ 572.70m (70°) covered in oil - yellowish brown fluorescence.
572.83m - 575.55m	Siltstone. Good oil bleeds in cross bedded siltstone interbedded 575.02m - 575.18m.
575.55m - 576.76m	Sandy siltstone - 575.55m - 576.17m in top 20% shows a very pale yellow fluorescence over 80% - No visible stain, moderate HC odour.

IntervalCore Description

- 576.17m - 601.0m Siltstone - (as above 575m). Generally fines downwards. Interbeds of crossbedded coarser silt become less abundant, thinner and finer grained. No visible porosity. Very minor fluorescence (pale yellow) as spots in dark grey-black laminae and as rare pale yellow fluorescence in light grey laminae. Faint HC odour.
- 601.0m - 630m Siltstone - (as above) light grey to grey-black thin flat laminated fine grained siltstone (80% dark grey to grey black, 10% light grey, 10% very light grey. Cross bedded coarse quartz silt). Very minor oil staining in some coarser quartz silt interbedded. Minor weak fluorescence (pale yellow) in quartz silt. Very minor bright spots of yellow fluorescence in some grey-black laminae.
- Moderate to weak HC odour, streaming white-yellow crush cut.
- 630m - 672m Siltstone (as above) grey-black and light greenish grey, thin, flat, often alternating laminae. Grey black laminae increase in abundance from 60% at 635m, to 97% at 672m. Minor pyrite blebs. Rare white - very pale yellow fluorescence but moderate HC odour, strong white crush cut. Very minor horizontal veins (1-3mm thick) of dolomite below 646m. Grades to:

Middle Velkerri Formation

- 672m - 716.50m Siltstone - black fine grained weakly laminated with very rare faint light grey laminae. Very hard, siliceous cement. Occasional thin (1-2mm) dolomite veins, pyrite blebs. No visible porosity. No HC stains, very faint HC odour, no fluorescence, instant streaming white crush-cut, residual very pale yellow ring residue. Gradational change to:
- 716.5m - 772.2m Siltstone and claystone - black siltstone as above with interbeds of medium grey, very fine siltstone/claystone approximately 10cm thick increasing in abundance with depth from 10% @ 717m to 75% @ 728m. Minor-moderate light grey thin interbeds of cross bedded coarse siltstone with very minor oil bleeds and stains (@ 729.28m - 729.43m, 730.33m - 730.34m, 734.92m - 735.0m, 735.28m - 735.32m), pale yellow fluorescence, white-pale yellow crush cut. No visible porosity. Black siltstone with no obvious oil stain, fluorescence or HC odour, still gives a moderate white to whitish yellow crush cut.

IntervalCore Description

- 772.2m - 840.2m Siltstone - grading to claystone. Similar to unit described above but predominantly dark grey to greyish black, finely laminated becoming massive below 796m, hard, common concoidal fracture. Occasional thin interbeds (less than 5mm) dolomitic material.
- Initially thought to be bedded but deeper evidence suggests vein in-filling. Below 796m dolomite units become pyritic. In addition common pyrite, both as nodules (1-2cm across) and finely disseminated in core. Below 796m core has strong petroliferous odour and occasional 20% dull yellow fluorescence instant dull yellow cut and moderate ring residue, also increased gas readings while drilling. No porosity. No live oil shows. Beds are dipping at around 10°.
- 840.2 - 845.65m Siltstone - As above, but finely laminated with light grey to light olive grey siltstone (40%). Interbeds are dominantly fine laminae (1-2mm) but become more massive (2-36m) towards base of unit. No other sedimentary structure. Lighter colour siltstone contains increasing amounts of dolomite most likely as cement. Pyrite nodules/layers have disappeared, i.e. notable in their absence.
- 845.65m - 870m Siltstone - dark grey to greyish black, hard, fissile and massive but with occasional thin units (less than 10cm) of light olive grey siltstone (rich in dolomite) in particular around 862 metres. Bedding is finely laminate to massive, no other sedimentary features. Entire unit has moderate hydrocarbon odour, heavy gas readings while drilling and instant streaming cut with blue-white to yellow white ring residue. No visible porosity.
- 870m - 897.8m Interbedded Siltstone - two types, dark grey to greyish black (60%) and light grey to light olive grey, finely laminated (1-2mm - 2-3mm). No visible porosity. Contacts between the two types are sharp.
- 897.8m - 898.45m Siltstone as above but dominated by light grey to light olive grey (80%) becoming more massive.



Interval

Core Description

898.45m - 915m Siltstone as for 870m - 897.8m. Minor pin point oil bleeds at 908.43m and 909.25m, 912m-914m, occasional pin point to 2-3mm oil bleeds more common at 912.6m, 913.3m and 193.6m. Also small gas bubbles emanating from core. Oil looks light brown to green, strong blue white fluorescence. Increased total gas and chromatograph readings. No visible porosity.

915m - 948.25m Siltstone, dark grey to greyish black, massive. Dips are between 10-15°. Few minor oil bleeds at 924.95m, occasional oil bleeds between 947m and 947.8m. Common gas bubbling out of core. Relatively strong oil bleed 947.8m - 947.88m. No porosity.

Strong gas show on total gas detection and chromatographs. Strong blue-white fluorescence associated with oil. No porosity. Basal part of unit (2-3m) contains some light grey to light olive grey siltstone and dolomitic layers, which are draped and slumped. Dips in slumped units approach 60-70°, also some minor cross bedding. Occasional dolomitic layers as previously described often at the top of the light grey siltstones.

Lower Velkerri Formation

948.25m - 1010m Claystone - grading to siltstone in parts. Light bluish grey to medium bluish grey, with occasional interbeds of dark grey to greyish black claystone, also grading to siltstone. Massive for first 20m then becoming finely laminated (tends to grade more towards siltstone in areas where finely laminated). Beds dip at less than 10°. Claystone is highly fissile, cracks and flakes on reaching surface.

961 metres, cluster of thin (less than 3mm) dolomite veins dipping at 60°, may indicate a small fault. Core is badly broken up which makes lithological observation difficult. Gas readings have fallen away and core has no odour. Only very faint dull orange cut and weak residue.

Below 980 metres, occasional units 2-3m of interbedded light bluish grey to medium bluish grey claystone and light grey claystone, grading to siltstone. Interbeds are between 1 & 5 cm in thickness and often exhibit well defined fining upward cycles. Dip commonly at 20-30°, occasionally scoured and cross bedded. These interbedded units occur approximately every 10m. Remainder of claystone is massively bedded.

Interval

Core Description

- 948.25m - 1010m  
(cont.)
- Claystone, light bluish grey to bluish grey contains minor flecks of organic matter less than 1mm across. Grades to siltstone which is lighter in colour.
- Occasional minor thin veins of calcite less than 2mm in thickness, often dissects core at high angle 60-70°.
- 1010m - 1040m
- Claystone - Light bluish grey to bluish grey, sub fissile, contains minor flecks of organic matter less than 1mm across. Generally similar to above units. Occasionally grades to siltstone, lighter interbeds are absent. Very occasional evidence of slumping (1016.8m & 1022.68m). Also faulting cuts at 50° (at 1016.2m & 1035.3m). Faults have calcite veining. Beds are massive but vary occasionally and grade to finely laminated. Dip 20°.
- 1040m - 1081m
- Claystone, light bluish grey to medium dark grey, with occasional thin units of medium dark grey and dark grey claystone, less than 1cm. Also minor amounts of thin, less than 1mm, black wisps of organic matter. Unit is generally massive but some bedding evident where mudstone changes colour. Beds dip about 20°.
- Units are too fine grained to discern any coarsening or fining upward nature. Overall, unit is very similar to last 100 metres.
- 1081m - 1091m
- Claystone as above but contains faulting. Most common is vertical fracturing with throw of 5mm-10mm but with a larger fault, 50-60°, at 1083.10m. Most fault traces are filled with calcite veining (some dolomite may also be present), generally several mm across. Around 1087.5m fault trace is several cm across and contains brecciated claystone in a calcite/dolomitic matrix (same also applies to fault at 1083.1m). 10cm thick band of brecciated claystone with large amounts of calcite/dolomite at 1088.4m. This has bounding contacts that are sub-conformable with the bedding.
- N.B: Two small open cavities at 1087.65m & 1088.33m. Cavities are only several mm across, lined with calcite crystals and have a bituminous residue, no odour and no fluorescence.

IntervalCore Description

- 1091m - 1105.8m Claystone, light bluish grey to medium light grey as for above units. Minor vertical fracturing at 1096m - 1098m, fractures filled with thin (less than 1mm), calcite veins.
- 1105.8m - 1127m Claystone, grades from above unit to greyish black, to black at base. Unit is dominantly massive but with occasional thin (less than 1cm), interbeds of lighter material. Occasionally grade to siltstones and have trace to common visible mica. Dips are generally less than 10°. Note unit associated with increasing gas content and weak hydrocarbon odour at base.
- 1127m - 1130m Sandstone - dark grey, occasionally lighter, very fine to fine grained. Contains abundant siltstone and claystone matrix, highly micaceous. Thinly interbedded, (interbeds 2-3mm but occasionally several cm's) occasional fining upward patterns evident. Beds dip about 15°. Contact with overlying mudstone is sharp and dips at 60°, may be faulted. Between 1128.5m and 1129.5m, core is darker and has strong hydrocarbon odour.
- Looks oil saturated, but has no fluorescence and only weak blue white crush cut, suggests residual bitumen staining. Interval evolved a small amount of gas on being removed from tube. Poor porosity. Seal peeled 1128.92m - 1129.20m.
- 1130m - 1154m Interbedded medium dark grey to dark grey claystone and light grey very fine sandstone. Interbeds range from 1-2cm to 10-15cm and generally fine upwards, occasional evidence of cross bedding in the coarser units and scouring at the base of individual interbeds. Sand content increases from about 30% at top of unit to 60-70% around 1154m. Below 1154m, frequent evidence of soft sediment deformation, i.e. where the sands and silts have been pressed into the claystones. Sand appears to have poor to fair porosity. Oil bleed, 10cm interval at 1156.45m and 1191.3m. Approximately 50% of core over thin intervals is covered in live oil. Strong blue white fluorescence. Evidence of gas being evolved as core is removed from tube.

IntervalCore Description

- 1154m - 1202.5m Interbedded claystone (50%), siltstone (40%) and very fine grained sandstone (10%). Colour grades from dark grey to greyish black in claystones to medium light grey in the sandstones. Interbeds are generally less than a cm to several cm, but occasionally become thicker, especially in the claystone units. Occasional fining upward sequences are present. Coarser units are often cross bedded and scoured into underlying sediment. Overall most sedimentary structures are on a very small scale (several mm to a cm). Sandstones have common silty and clayey matrix, hence no visible porosity.
- 1202.5m - 1205.65m Claystone - greyish black to black, massive but grades into units above and below, faint HC odour and slight increase in gas detection readings.
- 1205.65m - 1213.5m Interbedded claystone and siltstone. Unit is dominantly claystone (dark greenish grey), at top and grades to dominantly siltstone (greenish grey), at base. Occasional 2-3cm thick units of greyish black claystone are present in lower few metres as unit grades into underlying unit.
- Unit is thinly interbedded to occasionally massive in places. Dips on interbeds generally less than 10°. 1206m, 1.56m thick band of dolomitic claystone. Mottled texture. Almost appears brecciated. Light grey to greyish black. Also thin 2-3mm veins of dolomite, pinkish grey, cutting core at 60° at 1207.2m. No porosity evident throughout unit.
- 1213.5m - 1220.25m Interbedded dark grey mudstones (70%) and medium bluish grey siltstones (30%). Interbeds are generally less than 1cm but occasionally 2-3cm. Occasional evidence of scouring and soft sediment deformation (minor en-echelon faulting 2-3mm scale).
- 1220.25m - 1224m Interbedded sandstone (60%) and siltstone (40%). Interbeds are generally several 10's of cm in thickness. Siltstones are generally massive but sandstones show common scouring and cross bedding, no discernable fining or coarsening upward pattern. Siltstones are as previously described (medium dark grey).

Interval

Core Description

1220.25m - 1224m  
(cont.)

Sandstones are fine to medium grained, poorly sorted with abundant clay matrix, light grey but often have brownish grey colour from HC staining. Staining particularly evident over the following intervals 1220.4m - 1220.55m, 1220.57m - 1221.04m (weak) 1221.18m - 1221.21m, 1221.75m - 1222.20m (best zone). No evidence of live oil on core but 80% mottled blue white Fluorescence over above zones. Also moderate blue-white cut and weak ring residue. Sands have poor visual porosity.

Sealed - 1220.4m - 1220.55m, 1221.75m - 1222.08m, 1222.08m - 1222.20m.

1224m - 1229.65m

Interbedded sandstone (very fine to fine grained light grey 70%) and claystones 30% (dark grey). Coarser units cross bedded and scoured at base. Occasional fining upward cycles evident. Interbeds are several mm to 1-2cm in thickness.

Bessie Creek Sandstone

1229.65m - <sup>1233.7</sup>1280m  
Volcs.

1233.7 [B.C.K.]

Sandstone-grades from light grey to medium dark grey (where abundant clay matrix). Dominantly medium grained although some coarser units do exist. Dominantly thinly interbedded (mm to several cm) to larger cross bedded units. Occasional minor thin units of claystone (2-3mm thick) and claystone intraclasts, (up to 1cm across). No real pattern to their occurrence, but often appear where sands look scoured. Claystones are dark grey to greyish black. Very generally sands appear to fine upwards. Porosity appears to be up to 5%. Generally the finer sands have less clay matrix but still a lot of quartz overgrowths.

Shows: Occasional small oil bleeds between 1239.4m and 1241.4m.

Between 1255.5m and 1257.9m, patchy oil stained core, with live oil over following intervals;

1253.6m, 1253.9m, 1255.33m - 1255.42m, 1255.7m, 1256.55m - 1256.60m, 1257.33m - 1257.40m, 1257.6m - 1257.9m.

This is associated with less than 10% pin point to banded yellow fluorescence. Crush cuts range from weak blue white to pink, with moderate blue-white, to pale crimson residue respectively. No increase in gas readings over either of these zones.

IntervalCore Description

- 1260m - 1273.7m Sandstone - as above but with no porosity. Sands are highly cemented with quartz overgrowths. Vertical fracturing, 1260 - 1262, exhibits some signs of fracture porosity. Oil bleeds at 1259.65m, 1259.8m, 1260.27m, 1262.65m, 1265.0, 1265.57m, 1265.8m. Gas shows, HC odour. Pin point yellow Fluorescence.
- 1273.7m - 1276.30m Sandstone (100%). Yellowish grey, very fine to fine grained. Sandstone is sub-rounded, well sorted. Displays crude large scale cross-bedding. No Visible porosity due to quartz overgrowths. No fluorescence. Grades to unit below.
- 1276.30m - 1328.95m Sandstone (85-95%) with sandy siltstone (5-15%) interbeds. (Similar to interval 1268m - 1273.7m). Sandstone is light grey to yellowish grey, very fine to fine grained, in beds 5-20cm thick. Flat lying units scour into cross-bedded units below which are cleaner (no clay in matrix) and yellowish grey. Interbedded siltstones are dark grey to greyish black and define cross-bedding planes.
- No visible porosity; sandstone has quartz overgrowths, replacing original porosity. Very minor pin point white-yellow fluorescence associated with some siltstone interbeds.
- No associated increase in gas readings. At least 2 sets of fracturing evident. One set sealed with quartz and dip at approx. 60°. Second set are sub vertical, cutting first set and appear open. Estimated fracture porosity is trace to 1%. No fluorescence. Gradational contact to unit below.
- 1328.95m - 1411.18m Sandstone pale greyish orange, fine to medium grained, sub-angular to sub-rounded. Faint crude 2-6cm cross bedding grading to massive (blocky). Occasional irregular sub-vertical fractures with trace porosity (less than 1%). Trace to nil visible intergranular porosity due to silicification.
- From 1364.13m and down are occasional 0.5 and 3cm light greyish green bands of sandstone. These share sharp contacts with greyish orange pink units. Light greyish green sandstone increases to 50% of gross unit near base of interval.

IntervalCore Description

- 1328.95m - 1411.18m  
(cont.)
- 2 to 3% estimated visual porosity from 1363 to 1369m (increase due to reduced silicification).
- Rare white pin point fluorescence at 1338.0m
- Minor patches of yellow-white fluorescence 1338.50m. Patchy very faint yellow-white fluorescence on fresh surface at 1347.25m. Patchy pale greenish-yellow fluorescence (possible contamination) at 1350.85m. Very gradual contact to unit below.
- 1411.18m - 1437.92m
- Interbedded multicoloured sandstone. Predominately (about 65%) fine grained, pale green to greyish green with some (15-20%) 3-15cm interbeds of pale red sandstone. Greenish units contain 5-15% interbedded darker greenish grey silty sandstone interbeds and display small scale crossbedding, minor slump features, syndepositional faults, scour surfaces, etc. All sandstones are fine grained sub-angular to sub-rounded with clay matrix which imparts the colour. Units are friable in places with up to 7% estimated visual porosity. Average visible porosity is 1 to 4%. No shows. Sharp contact to unit below.
- 1437.92m - 1443.85m
- Sandstone (75%) with several units of claystone (25% of interval). Sandstone is pale light grey to translucent, fine to medium grained, predominately sub-rounded and massive. Well cemented with silica. No visible porosity. Sharp contact with claystone units.
- Claystone is greyish yellow-green finely laminated 4-20 cm units containing thin dusky yellow green laminations which display plastic syndepositional deformation, in places enveloping contorted lenses of the pale green sandstone.
- Faint small patches of yellow to gold fluorescence from 1443.60m to 1443.65m. No associated increase in gas readings.
- Very gradual contact to unit below.
- 1443.85m - 1647.11m
- Interbedded sandstones, predominately (50-60%) light to medium grey units interbedded with lesser (30-40%) medium dark grey to greenish grey units. Occasional (i.e. 5-10%) 5 to 15cm pale reddish brown sandstone units.

Interval

Core Description

1443.85m - 1647.11m  
(cont.)

All sandstones are fine to medium grained, sub-angular to sub-rounded and display minor fine cross-bedding and scour surfaces. Colour is imparted by iron rich clay in darker units while lighter sandstones are cleaner and silicified. Trace to 3% visible intergranular porosity. Occasional zones with greyish black mudstone, rip-up clasts 3-12mm long (aligned with bedding), angular to sub-rounded.

Rare (less than 0.5%) 2-8mm open vughs aligned with bedding and often associated with sub-horizontal fractures. (May represent removal of mud clasts). Vughs are not interconnected.

Minor disseminated fine pyrite in sandstone along a subvertical fracture from 1484.51m to 1484.63m.

Minor pale to light brown mica along darker laminations throughout sandstone interval.

From 1480m to 1515m sandstones are more massive. Structural dip estimated at 5 - 10°.

Fault zone interpreted from 1627.05m - 1628.38m. Core is intensely broken and has several 20-30° dipping shear surfaces rich in secondary quartz. Minor surfaces with euhedral to subhedral quartz crystals indicating fault plane to be partially open. Approximately 1.5 to 2 fold increase in mud gas readings were registered across fault zone interval.

No oil shows in fault zone or any of the intervals.

From approximately 1640m, interbedding of sandstone units becomes generally thinner and mostly planar with only occasional small scale cross-bedded units between scour surfaces.

Gradual contact to formation below.

Corcoran Formation

1647.11m - 1671.14m

Interbedded sandstone (50%) siltstone (45%) and claystone (5%).

Sandstone is light grey to greenish grey, fine to medium grained, sub-angular to sub-rounded and silicified. Nil to trace visible porosity. Bases of units are sharp scour contacts and occasionally contain rip-up clasts. Units typically fine upwards.



Interval

Core Description

1647.11m - 1671.14m  
(cont.) Siltstone is dark grey to greyish black 0.5 - 5cm laminated units. Often sandy. Occasional slump features.

Claystone is bluish white to very light grey, soft. Occurs as 0.3 - 6cm interbeds in sandstones often at the top of a fining upwards cycle. Claystone exhibits dewatering features including occasional contorted bedding. One 18cm claystone unit was intersected.

Quantity and thickness of siltstone beds increases gradually to unit below.

1671.11m - 1688.23m Siltstone (60%) interbedded with silty claystone (30%) and minor fine to medium grained sandstones units (10%). Units commonly occur as 2-19cm fining upward cycles with sandstone rich, scoured bases.

Siltstone is medium greenish grey to medium grey units with sandy bases. No shows.

Claystone is light olive grey to dusky yellow and laminated.

Abrupt contact with igneous unit below.

Dolerite

1688.23m - 1688.36m Dolerite chilled margin. Brownish grey to brownish black. Cryptocrystalline.

Grades quickly to unit below.

1688.36m - 1699.85m  
(T.D.)

Dolerite, fine and grades by 1692.2m to medium grained. Rare sub-vertical, open fractures. No shows.

E.O.H.

APPENDIX 5

GEOCHEMICAL ANALYSES

by

ANALABS

ALTREE-2

DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
393.15	nd	nd	nd	nd	nd	nd	nd	nd	0.39	nd	nd
396.95	nd	nd	nd	nd	nd	nd	nd	nd	0.40	nd	nd
400.70	nd	nd	nd	nd	nd	nd	nd	nd	0.41	nd	nd
404.44	nd	nd	nd	nd	nd	nd	nd	nd	0.40	nd	nd
408.24	nd	nd	nd	nd	nd	nd	nd	nd	0.56	nd	nd
411.91	nd	nd	nd	nd	nd	nd	nd	nd	0.39	nd	nd
416.59	nd	nd	nd	nd	nd	nd	nd	nd	0.54	nd	nd
420.31	nd	nd	nd	nd	nd	nd	nd	nd	0.46	nd	nd
424.18	nd	nd	nd	nd	nd	nd	nd	nd	0.43	nd	nd
427.93	nd	nd	nd	nd	nd	nd	nd	nd	0.38	nd	nd
431.54	nd	nd	nd	nd	nd	nd	nd	nd	0.45	nd	nd
435.37	nd	nd	nd	nd	nd	nd	nd	nd	0.47	nd	nd
439.20	nd	nd	nd	nd	nd	nd	nd	nd	0.53	nd	nd
442.72	nd	nd	nd	nd	nd	nd	nd	nd	0.48	nd	nd
446.59	nd	nd	nd	nd	nd	nd	nd	nd	0.47	nd	nd
450.32	nd	nd	nd	nd	nd	nd	nd	nd	0.47	nd	nd
453.16	nd	nd	nd	nd	nd	nd	nd	nd	0.49	nd	nd
458.80	nd	nd	nd	nd	nd	nd	nd	nd	0.58	nd	nd
462.56	nd	nd	nd	nd	nd	nd	nd	nd	0.43	nd	nd
465.90	nd	nd	nd	nd	nd	nd	nd	nd	0.83	nd	nd
467.90	nd	nd	nd	nd	nd	nd	nd	nd	0.84	nd	nd
471.67	nd	nd	nd	nd	nd	nd	nd	nd	0.87	nd	nd

DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
475.43	nd	nd	nd	nd	nd	nd	nd	nd	0.66	nd	nd
479.22	nd	nd	nd	nd	nd	nd	nd	nd	0.56	nd	nd
483.01	nd	nd	nd	nd	nd	nd	nd	nd	0.65	nd	nd
486.85	nd	nd	nd	nd	nd	nd	nd	nd	0.45	nd	nd
490.53	nd	nd	nd	nd	nd	nd	nd	nd	0.42	nd	nd
494.33	nd	nd	nd	nd	nd	nd	nd	nd	0.41	nd	nd
498.05	nd	nd	nd	nd	nd	nd	nd	nd	0.66	nd	nd
501.86	nd	nd	nd	nd	nd	nd	nd	nd	0.51	nd	nd
504.78	nd	nd	nd	nd	nd	nd	nd	nd	0.43	nd	nd
508.62	433	0.19	1.61	0.17	1.80	9.47	0.11	0.15	0.69	233	24
512.92	nd	nd	nd	nd	nd	nd	nd	nd	0.53	nd	nd
516.64	nd	nd	nd	nd	nd	nd	nd	nd	0.51	nd	nd
520.31	nd	nd	nd	nd	nd	nd	nd	nd	0.82	nd	nd
523.25	nd	nd	nd	nd	nd	nd	nd	nd	0.55	nd	nd
526.87	nd	nd	nd	nd	nd	nd	nd	nd	0.54	nd	nd
530.69	nd	nd	nd	nd	nd	nd	nd	nd	0.45	nd	nd
534.41	nd	nd	nd	nd	nd	nd	nd	nd	0.56	nd	nd
538.18	nd	nd	nd	nd	nd	nd	nd	nd	0.36	nd	nd
542.00	nd	nd	nd	nd	nd	nd	nd	nd	0.47	nd	nd
545.74	nd	nd	nd	nd	nd	nd	nd	nd	0.50	nd	nd
549.07	nd	nd	nd	nd	nd	nd	nd	nd	0.53	nd	nd
552.90	nd	nd	nd	nd	nd	nd	nd	nd	0.59	nd	nd
556.64	nd	nd	nd	nd	nd	nd	nd	nd	0.27	nd	nd

DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
560.53	nd	nd	nd	nd	nd	nd	nd	nd	0.45	nd	nd
563.10	434	0.39	2.01	0.47	2.40	4.28	0.16	0.20	0.72	279	65
567.08	nd	nd	nd	nd	nd	nd	nd	nd	0.47	nd	nd
571.76	413	2.74	2.86	0.73	5.60	3.92	0.49	0.46	1.04	275	70
575.54	nd	nd	nd	nd	nd	nd	nd	nd	0.60	nd	nd
579.30	nd	nd	nd	nd	nd	nd	nd	nd	0.65	nd	nd
583.09	nd	nd	nd	nd	nd	nd	nd	nd	0.57	nd	nd
586.80	nd	nd	nd	nd	nd	nd	nd	nd	0.63	nd	nd
590.70	nd	nd	nd	nd	nd	nd	nd	nd	0.58	nd	nd
594.53	nd	nd	nd	nd	nd	nd	nd	nd	0.67	nd	nd
598.38	nd	nd	nd	nd	nd	nd	nd	nd	0.52	nd	nd
601.28	435	1.30	5.33	0.22	6.63	24.23	0.20	0.55	1.29	413	17
604.30	nd	nd	nd	nd	nd	nd	nd	nd	0.51	nd	nd
608.10	nd	nd	nd	nd	nd	nd	nd	nd	0.79	nd	nd
611.88	nd	nd	nd	nd	nd	nd	nd	nd	0.62	nd	nd
615.72	nd	nd	nd	nd	nd	nd	nd	nd	0.62	nd	nd
619.50	435	0.76	3.31	0.19	4.07	17.42	0.19	0.34	1.23	269	15
623.20	439	2.25	12.57	0.20	14.82	62.85	0.15	1.23	2.76	455	7
627.00	437	1.14	6.40	0.09	7.54	71.11	0.15	0.63	1.67	383	5
630.83	nd	nd	nd	nd	nd	nd	nd	nd	0.37	nd	nd
634.62	nd	nd	nd	nd	nd	nd	nd	nd	0.62	nd	nd
638.60	431	1.34	3.81	0.25	5.15	15.24	0.26	0.43	1.14	334	21

DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
642.39	nd	nd	nd	nd	nd	nd	nd	nd	0.60	nd	nd
646.24	440	1.70	6.67	0.15	8.37	44.47	0.20	0.69	1.63	409	9
650.20	437	2.58	10.78	0.26	13.36	41.46	0.19	1.11	2.68	402	9
653.81	433	2.36	7.50	0.55	9.86	13.64	0.24	0.82	1.70	441	32
657.68	442	2.61	10.37	0.26	12.98	39.88	0.20	1.08	2.33	445	11
661.47	437	3.24	7.53	0.56	10.77	13.45	0.30	0.89	1.82	413	30
665.35	439	2.36	13.27	0.32	15.63	41.47	0.15	1.30	3.06	433	10
669.00	441	2.40	21.31	0.52	23.71	40.98	0.10	1.97	4.62	461	11
672.90	440	2.47	22.56	1.00	25.03	22.56	0.10	2.08	4.82	468	20
676.71	443	2.23	19.89	0.94	22.12	21.16	0.10	1.84	4.80	414	19
680.54	440	2.29	20.20	1.18	22.49	17.12	0.10	1.87	5.43	372	21
684.46	443	2.47	19.45	1.11	21.92	17.52	0.11	1.82	4.90	396	22
688.13	433	2.29	19.18	0.91	21.47	21.08	0.11	1.78	6.07	315	14
694.82	438	2.27	15.80	0.74	18.07	21.35	0.13	1.50	5.07	311	14
698.70	434	2.45	20.23	1.25	22.68	16.18	0.11	1.88	6.30	321	19
702.50	435	2.15	19.45	1.68	21.60	11.58	0.10	1.79	6.12	317	27
706.30	433	2.19	18.63	0.75	20.82	24.84	0.11	1.73	5.38	346	13
710.15	436	2.44	29.60	1.09	32.04	27.16	0.08	2.66	8.63	342	12
713.01	434	2.20	20.39	0.81	22.59	25.17	0.10	1.87	5.34	381	15
717.78	434	1.98	22.65	0.60	24.63	37.75	0.08	2.04	6.15	368	9
721.57	437	1.73	17.13	0.89	18.86	19.25	0.09	1.57	3.91	438	22
725.42	436	2.07	22.92	1.11	24.99	20.65	0.08	2.07	6.66	344	16

DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
744.55	nd	nd	nd	nd	nd	nd	nd	nd	0.90	nd	nd
748.30	nd	nd	nd	nd	nd	nd	nd	nd	0.31	nd	nd
752.02	nd	nd	nd	nd	nd	nd	nd	nd	0.38	nd	nd
755.94	nd	nd	nd	nd	nd	nd	nd	nd	0.66	nd	nd
759.83	437	2.14	10.06	0.55	12.20	18.29	0.18	1.01	4.04	249	13
763.53	426	1.16	3.50	0.34	4.66	10.29	0.25	0.39	1.24	282	27
767.31	nd	nd	nd	nd	nd	nd	nd	nd	0.39	nd	nd
772.87	nd	nd	nd	nd	nd	nd	nd	nd	0.49	nd	nd
776.64	437	1.91	8.90	0.14	10.81	63.57	0.18	0.90	2.85	312	4
780.45	nd	nd	nd	nd	nd	nd	nd	nd	0.89	nd	nd
784.34	437	2.27	10.87	0.28	13.14	41.81	0.17	1.09	3.60	301	7
788.12	nd	nd	nd	nd	nd	nd	nd	nd	5.05	nd	nd
791.90	437	2.04	12.18	0.30	14.22	40.60	0.14	1.18	4.35	280	6
795.74	nd	nd	nd	nd	nd	nd	nd	nd	3.30	nd	nd
799.53	439	2.48	14.26	0.70	16.74	20.37	0.15	1.39	5.20	274	13
803.30	nd	nd	nd	nd	nd	nd	nd	nd	5.70	nd	nd
806.93	440	2.54	17.41	0.51	19.95	34.14	0.13	1.66	6.05	287	8
810.80	nd	nd	nd	nd	nd	nd	nd	nd	6.15	nd	nd
814.65	441	2.54	15.93	0.86	18.47	18.52	0.14	1.53	5.75	277	14
818.50	nd	nd	nd	nd	nd	nd	nd	nd	5.05	nd	nd
822.18	438	4.19	13.41	0.78	17.60	17.19	0.24	1.46	5.10	262	15
826.00	nd	nd	nd	nd	nd	nd	nd	nd	7.05	nd	nd
829.74	440	3.37	11.50	0.44	14.87	26.14	0.23	1.23	4.90	234	8

DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
833.55	nd	nd	nd	nd	nd	nd	nd	nd	4.50	nd	nd
837.40	435	2.70	7.92	0.19	10.62	41.68	0.25	0.88	2.90	273	6
841.20	nd	nd	nd	nd	nd	nd	nd	nd	1.35	nd	nd
845.00	427	2.37	5.32	0.28	7.69	19.00	0.31	0.64	1.90	280	14
848.83	nd	nd	nd	nd	nd	nd	nd	nd	4.20	nd	nd
852.52	434	3.60	9.48	0.28	13.08	33.86	0.28	1.09	3.55	267	7
856.37	nd	nd	nd	nd	nd	nd	nd	nd	1.85	nd	nd
860.25	435	3.67	8.71	0.18	12.38	48.39	0.30	1.03	3.75	232	4
864.00	nd	nd	nd	nd	nd	nd	nd	nd	2.80	nd	nd
868.95	429	2.90	6.57	0.52	9.47	12.63	0.31	0.79	2.50	262	20
872.55	nd	nd	nd	nd	nd	nd	nd	nd	1.55	nd	nd
876.42	437	2.71	5.89	0.37	8.60	15.92	0.32	0.71	2.75	214	13
880.28	nd	nd	nd	nd	nd	nd	nd	nd	2.70	nd	nd
884.08	434	2.40	5.50	0.22	7.90	25.00	0.30	0.66	2.50	220	8
888.00	nd	nd	nd	nd	nd	nd	nd	nd	2.95	nd	nd
891.85	435	2.00	4.92	0.25	6.92	19.68	0.29	0.57	2.15	228	11
895.61	nd	nd	nd	nd	nd	nd	nd	nd	2.40	nd	nd
899.43	437	3.02	7.84	0.17	10.86	46.12	0.28	0.90	3.75	209	4
903.25	nd	nd	nd	nd	nd	nd	nd	nd	2.65	nd	nd
907.02	438	2.75	6.80	0.40	9.55	17.00	0.29	0.79	3.30	206	12
910.85	nd	nd	nd	nd	nd	nd	nd	nd	4.20	nd	nd
914.87	425	2.34	5.09	0.21	7.43	24.24	0.31	0.62	1.80	282	11
918.70	nd	nd	nd	nd	nd	nd	nd	nd	4.30	nd	nd



DEPTH (m)	T MAX	S1	S2	S3	S1+S2	S2/S3	PI	PC	TOC	HI	OI
922.59	435	3.32	10.03	0.50	13.35	20.06	0.25	1.11	5.15	194	9
926.38	nd	nd	nd	nd	nd	nd	nd	nd	4.75	nd	nd
930.15	429	2.65	7.44	0.38	10.09	19.58	0.26	0.84	3.43	216	11
933.97	nd	nd	nd	nd	nd	nd	nd	nd	4.40	nd	nd
937.84	434	3.15	8.43	0.59	11.58	14.29	0.27	0.96	4.20	200	14
941.55	nd	nd	nd	nd	nd	nd	nd	nd	2.15	nd	nd
945.40	nd	nd	nd	nd	nd	nd	nd	nd	0.93	nd	nd
949.20	nd	nd	nd	nd	nd	nd	nd	nd	0.27	nd	nd
952.90	nd	nd	nd	nd	nd	nd	nd	nd	0.20	nd	nd
1120	453	1.81	4.24	0.11	6.05	38.55	0.30	0.50	3.44	123	3
1185	nd	nd	nd	nd	nd	nd	nd	nd	0.21	nd	nd
1195	nd	nd	nd	nd	nd	nd	nd	nd	0.25	nd	nd
1199	nd	nd	nd	nd	nd	nd	nd	nd	0.31	nd	nd
1202	467	1.35	2.45	0.18	3.80	13.61	0.36	0.32	3.55	73	5
1204	466	0.18	0.32	0.04	0.50	8.00	0.36	0.04	0.60	53	6
1206	nd	nd	nd	nd	nd	nd	nd	nd	0.28	nd	nd
1208	nd	nd	nd	nd	nd	nd	nd	nd	0.11	nd	nd
1213	nd	nd	nd	nd	nd	nd	nd	nd	0.10	nd	nd
1220	nd	nd	nd	nd	nd	nd	nd	nd	0.30	nd	nd
1222	nd	nd	nd	nd	nd	nd	nd	nd	0.27	nd	nd
1229	nd	nd	nd	nd	nd	nd	nd	nd	0.29	nd	nd
1652.68	nd	nd	nd	nd	nd	nd	nd	nd	0.05	nd	nd
1654.97	nd	nd	nd	nd	nd	nd	nd	nd	0.06	nd	nd
1664.15	nd	nd	nd	nd	nd	nd	nd	nd	0.07	nd	nd
1685.99	nd	nd	nd	nd	nd	nd	nd	nd	0.03	nd	nd
1687.91	nd	nd	nd	nd	nd	nd	nd	nd	0.02	nd	nd

TMAX = Max. temperature S2      S1 = Volatile hydrocarbons (HC)  
S1+S2 = Potential yield      S3 = Organic carbon dioxide  
PC = Pyrolysable carbon      TOC = Total organic carbon  
OI = Oxygen Index      nd = No data  
S2 = HC generating potential      PI = Production index  
HI = Hydrogen index

SUMMARY OF EXTRACTION AND LIQUID CHROMATOGRAPHY

ALTREE-2

A. Concentrations of Extracted Material

Depths (m)	Weight of Rock Extd (grams)	Total Extract (ppm)	Loss on Column (ppm)	Hydrocarbons			Nonhydrocarbons		
				Saturates (ppm)	Aromatics (ppm)	HC Total (ppm)	NSO's (ppm)	Asphaltenes (ppm)	Non HC Total (ppm)
508.62	71.9	713.5	132.1	321.3	157.2	478.4	102.9	nd	102.9
510.20-510.77	306.7	6047.3	1217.2	3397.1	989.3	4386.3	443.7	nd	443.7
561.25-561.40	204.0	6062.7	1243.5	3524.4	766.2	4290.6	528.7	nd	528.7
563.10	44.1	927.4	174.6	462.6	172.3	634.9	117.9	nd	117.9
571.76	22.6	6854.0	1114.0	3670.0	1244.5	4914.6	825.4	nd	825.4
572.75-572.83	140.1	8966.5	1263.7	5720.4	1223.4	6943.8	759.0	nd	759.0
710.15	9.1	5164.8	1439.6	2362.6	747.3	3109.9	615.4	nd	615.4

B. Compositional Data

Depth (m)	Hydrocarbons			Nonhydrocarbons			EOM (mg) TOC (g)	SAT (mg) TOC (g)	SAT AROM	ASPH NSO	HC Non HC
	%SAT	%AROM	%HC's	%NSO's	%ASPH	%Non HC's					
508.62	55.3	27.0	82.3	17.7	nd	17.7	103.4	46.6	2.04	nd	4.6
510.20-510.77	70.3	20.5	90.8	9.2	nd	9.2	nd	nd	3.43	nd	9.9
561.25-561.40	73.1	15.9	89.0	11.0	nd	11.0	nd	nd	4.60	nd	8.1
563.10	61.4	22.9	84.3	15.7	nd	15.7	128.8	64.2	2.68	nd	5.4
571.76	63.9	21.7	85.6	14.4	nd	14.4	659.0	352.9	2.95	nd	6.0
572.75-572.83	74.3	15.9	90.1	9.9	nd	9.9	nd	nd	4.68	nd	9.1
710.15	63.4	20.1	83.5	16.5	nd	16.5	60.1	27.5	3.16	nd	5.1

SUMMARY OF GAS CHROMATOGRAPHY DATA

ALTREE-2

A. Alkane Compositional Data

Depth (m)	Prist./Phyt	Prist./n-C17	Phyt./n-C18	CPI(1)	CPI(2)	(C21+C22)/(C28+C29)
508.62	nd	nd	nd	nd	nd	nd
510.20-510.77	nd	nd	nd	nd	nd	nd
561.25-561.40	nd	nd	nd	nd	1.00	6.33
563.10	nd	nd	nd	nd	nd	nd
571.76	nd	nd	nd	.90	.93	3.73
572.75-572.83	nd	nd	nd	nd	nd	nd
710.15	nd	nd	nd	nd	nd	nd

B. n-Alkane Distributions

Depth (m)	nC12	nC13	nC14	nC15	nC16	nC17	iC19	nC18	iC20	nC19	nC20	nC21	nC22	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30
508.62	32.3	22.8	13.8	10.5	6.8	4.5	nd	3.0	nd	1.8	1.0	.8	.8	.5	.5	.3	.3	.3	.3	<0.1	<0.1
510.20-510.77	28.4	21.5	14.1	11.5	7.7	5.4	nd	3.8	nd	2.3	1.5	1.8	.8	.5	.5	.3	.3	.3	.3	<0.1	<0.1
561.25-561.40	21.8	18.0	13.7	13.3	7.9	6.8	nd	5.2	nd	3.6	2.4	1.7	1.3	1.1	.8	.8	.6	.3	.3	.2	.2
563.10	21.9	21.4	15.0	12.5	8.5	6.1	nd	4.4	nd	2.4	1.7	1.4	1.1	1.1	.7	.7	.4	.4	.2	<0.1	<0.1
571.76	4.1	3.7	4.4	7.8	11.0	13.0	nd	12.7	nd	12.1	6.3	4.6	3.8	3.1	3.1	2.3	2.1	1.9	1.4	.9	1.0
572.75-572.83	21.0	18.1	14.6	13.1	8.8	7.1	nd	5.3	nd	3.6	2.2	1.7	1.2	1.0	.7	.5	.5	.3	.2	<0.1	<0.1
710.15	32.2	23.7	12.8	11.8	6.6	4.2	nd	3.7	nd	1.6	1.3	.7	.7	.3	.2	.2	<0.1	<0.1	<0.1	<0.1	<0.1

nd = No Data