

**Manta 2a****Date : 08 Feb 2006****Geology Report Number : 13****(associated DDR # 17)****Well Details**

Depth MDRT:	3,064.0m	Rig:	OCEAN PATRIOT	Date:	08 Feb 2006
Depth TVDBRT:	2,852.3m	RTE amsl:	21.5m	Report Start:	00:00
Depth TVDSS:	2,830.8m	GLE amsl:	133.3m	Report End:	24:00
Progress:	346.0m	Last Csg Size:	9.625in	Days On Location:	16.10
Hole Size:	8.500in	Last Csg Shoe:	2,527.2m	Days since Spud:	16.19
Hole Size Carbide:		F.I.T. / L.O.T.:	13.50ppg /		

Operations Summary

24hr Summary:	<p>Drilled 216 mm (8 1/2") hole from 2718.0 mMDRT to 3064.0 mMDRT.</p> <p>2715.0 - 2760.0 mMDRT Interbedded Sandstone and Siltstone ROP = 8.6 - 90.9 m/hr (24.0 m/hr)</p> <p>2760.0 - 2774.0 mMDRT Carbonaceous Claystone ROP = 10.9 - 30.6 m/hr (20.9 m/hr)</p> <p>2774.0 - 2793.0 mMDRT Interbedded Sandstone, Siltstone and minor Coal ROP = 9.1 - 45.4 m/hr (26.7 m/hr)</p> <p>2793.0 - 2817.0 mMDRT Zone 2 Interbedded Sandstone and Siltstone. ROP=2.2 - 61.0 m/hr (17.0 m/hr)</p> <p>2817.0 - 2845 mMDRT Zone 3 Interbedded Sandstone and Siltstone. ROP=4.9 - 36.0 m/hr (26.0 m/hr)</p> <p>2845.0 - 2853.0 mMDRT Zone 4 Interbedded Sandstone and Siltstone ROP=10.8 - 35.0 m/hr (14.0 m/hr)</p> <p>2853.0 - 2910.0 mMDRT Zone 5 Interbedded Sandstone and Siltstone ROP=3.7 - 55.0 m/hr (14.0 m/hr)</p> <p>2910.0 - 2927.0 mMDRT Zone 6 Interbedded Sandstone and Siltstone ROP=14.0 - 42.0 m/hr (24.0 m/hr)</p> <p>2927.0 - 2978.0 mMDRT Zone 7 Upper and Lower Interbedded Sandstone and Siltstone ROP=8.6 - 78.0 m/hr (29.0 m/hr)</p> <p>2978.0 - 3046.0 mMDRT Interbedded thin Sandstone and Siltstone ROP=8.9 - 107.7 m/hr (33.2 m/hr)</p> <p>3046.0 - 3064.0 mMDRT Weathered Volcanics with thin minor Sandstone ROP=7.2 - 73.9 m/hr (28.5 m/hr ave)</p>
Forward Plan:	Pull out of hole from 3113.0 mMDRT to surface for wireline logging.



WBM Data

Mud Type:	KCL/PHPA	Flowline Temp:	Cl:	37000mg/l	Low Gravity Solids:	Viscosity	65sec/qt
Sample From:	Pits	MWD Circ Temp:	Hard/Ca:	240mg/l	High Gravity Solids:	PV	19cp
Time:	2245	Glycol CP Temp:	MBT:	4	Solids (corrected):	YP	31lb/100ft²
Weight:	9.20ppg	Glycol:	PM:	0.1	H2O:	Gels 10s	10
ECD TD:		Nitrates:	PF:	0.02	Oil:	Gels 10m	14
ECD Shoe:		Sulphites:	MF:	0.2	Sand:	Fann 003	8
ECD Cuttings:		API FL:	pH:	9	Barite:	Fann 006	10
KCl Equiv:	6%	API Cake:	PHPA Excess:			Fann 100	32
						Fann 200	43
						Fann 300	50
						Fann 600	69

Formation Tops

Formation	Prognosed		Actual		Diff.	Thickness MD	Pick Criteria
	MDRT	TVDSS	MDRT	TVDSS	+ / - TVD		
Sea Foor Gippsland Limestone	155.80m	134.30m	156.00m	134.50m	0.20m	1,476.00m	
Lakes Entrance Formation	1,625.90m	1,519.00m	1,632.00m	1,522.72m	3.72m	453.00m	LWD logs
Latrobe Group	2,081.40m	1,939.00m	2,085.00m	1,936.60m	-2.40m	90.00m	LWD and Samples
Base Tuna flounder Channel	2,171.40m	2,022.00m	2,175.00m	2,018.00m	-4.00m	410.00m	LWD and Samples
K2 Dolomite Sand Marker	2,578.00m	2,397.00m	2,585.00m	2,395.00m	-2.00m	135.00m	LWD and ROP
Ma2 Dolomitic Sand Marker	2,710.40m	2,518.00m	2,720.00m	2,519.13m	1.13m	73.00m	LWD
Top Zone 2 Sand	2,784.80m	2,585.00m	2,793.00m	2,586.00m	1.00m	52.00m	LWD
Top Zone 4 Sand	2,834.70m	2,630.00m	2,845.00m	2,633.50m	3.50m	82.50m	LWD
Top Zone 7 Upper Sand	2,923.50m	2,710.00m	2,927.50m	2,708.30m	-1.70m	18.50m	LWD
Top Zone 7 Lower Sand	2,940.20m	2,725.00m	2,946.00m	2,725.00m	0.00m	100.00m	LWD
Top Volcanics Unit 1	3,034.60m	2,810.00m	3,046.00m	2,814.80m	4.80m	67.00m	LWD & cuttings
Total Depth (TD)	3,101.60m	2,870.40m					

Oil Shows

From	To	Formation	Lithology	White Light			UV Light			Rating
				Stain	Cut	Residue	Fluor.	Cut Fluor.	Residue	
2795.00m	2800.00m			None	None	None	Yellowish-white	Blue-white	Yellow-white ring	Poor
2800.00m	2805.00m			None	None	None	Pale Yellow	Blue-white	Yellow-white	Poor
2805.00m	2810.00m			None	None	None	Bright-Yellow	Blue-White	Yellow-White	Moderate
2845.00m	2850.00m						light green	green / cream	green cream	moderate
2945.00m	2965.00m						cream / light green	cream / light green	dull yellow	Good
3000.00m	3030.00m						green	green	dull cream	good
3030.00m	3045.00m						yellow-white	yellow-green	dull cream-yellow	moderate



Gas														
Depth Range	Gas Type	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)	C1/C2 (ppm)	C1/C3 (ppm)	C1/C5 (ppm)	* (ppm)	F2* (ppm)	F3* (ppm)
2715.00 - 2760.00	Background	0.04	314	40	15	6	5	4	7.85	20.93	78.5	28.55	1.2	151.25
Comment:														
2760.00 - 2774.00	Background	0.24	1971	263	109	17	15	21	7.49	18.08	93.86	61.59	1.13	566.86
Comment:														
2774.00 - 2793.00	Background	1.64	11673	1690	1012	194	187	34	6.91	11.53	343.32	30.64	1.04	30,278.29
Comment:														
2787.00 - 2787.00	Peak	3.10	18240	2546	1572	303	551	378	7.16	11.6	48.25	21.36	0.55	9,303.63
Comment:														
2789.00 - 2789.00	Peak	3.20	18731	2463	1420	262	474	312	7.6	13.19	60.04	25.45	0.55	9,159.9
Comment:														
2793.00 - 2817.00	Background	0.70	3492	836	374	81	95	44	4.18	9.34	79.36	19.84	0.85	4,840
Comment:														
2796.00 - 2796.00	Peak	5.70	29272	4392	2760	490	897	560	6.66	10.61	52.27	21.1	0.55	17,713.97
Comment:														
2803.00 - 2803.00	Peak	5.40	26015	4127	2790	504	954	612	6.3	9.32	42.51	17.84	0.53	16,478.74
Comment:														
2817.00 - 2845.00	Background	0.80	3301	508	338	72	130	117	6.5	9.77	28.21	16.34	0.55	1,460.62
Comment:														
2833.00 - 2833.00	Peak	4.70	28456	2757	1434	241	379	207	10.32	19.84	137.47	45.9	0.64	12,552.75
Comment:														
2845.00 - 2853.00	Background	2.40	14958	1790	953	183	263	159	8.36	15.7	94.08	33.54	0.7	7,694.2
Comment:														
2850.00 - 2850.00	Peak	6.80	40207	4988	2859	507	906	540	8.06	14.06	74.46	28.46	0.56	20,532.98
Comment:														
2853.00 - 2910.00	Background	1.10	6908	908	533	100	173	114	7.61	12.96	60.6	25.3	0.58	3,450.82
Comment:														
2857.00 - 2857.00	Peak	8.20	50797	5163	2739	467	741	391	9.84	18.55	129.92	42.05	0.63	24,413.34
Comment:														
2868.00 - 2868.00	Peak	5.50	36546	3394	1464	261	402	245	10.77	24.96	149.17	55.12	0.65	13,146.34
Comment:														
2910.00 - 2927.00	Background	1.90	13279	1441	708	120	192	112	9.22	18.76	118.56	42.56	0.62	5,986.5
Comment:														
2910.00 - 2910.00	Peak	3.40	23089	2277	1053	193	273	143	10.14	21.93	161.46	49.55	0.71	10,851.61
Comment:														
2918.00 - 2918.00	Peak	7.30	38394	3567	1799	314	464	247	10.76	21.34	155.44	49.35	0.68	16,901.81
Comment:														
2927.00 - 2978.00	Background	1.50	8409	1042	615	114	206	149	8.07	13.67	56.44	26.28	0.55	3,558.66
Comment:														
2930.00 - 2930.00	Peak	8.00	42675	3964	2005	359	519	281	10.77	21.28	151.87	48.6	0.69	18,650.47
Comment:														
2950.00 - 2950.00	Peak	5.00	28058	3555	2160	385	670	371	7.89	12.99	75.63	26.6	0.57	16,251.55
Comment:														
2977.00 -	Peak	3.30	21900	2361	1235	222	366	223	9.28	17.73	98.21	37.24	0.61	9,481.83



Gas														
Depth Range	Gas Type	Total Gas (%)	C1 (ppm)	C2 (ppm)	C3 (ppm)	iC4 (ppm)	nC4 (ppm)	C5 (ppm)	C1/C2 (ppm)	C1/C3 (ppm)	C1/C5 (ppm)	* (ppm)	F2* (ppm)	F3* (ppm)
2977.00														
Comment:														
2978.00 - 3046.00	Background	3.40	21546	2613	1477	377	320	153	8.25	14.59	140.82	30.91	1.18	18,632.22
Comment:														
3046.00 - 3113.00	Background	0.96	5916	445	215	50	45	40	13.29	27.52	147.9	62.27	1.11	1,567.5
Comment:														

F1*: C1 / (nC4 + iC4) F2*: iC4 + nC4 F3*: (C2 + C3) / (C5 / (iC4 + nC4))

Survey									
MDRT (m)	Incl. (deg)	Corr. Az (deg)	TVDBRT (m)	'V' Sect (deg)	Dogleg (deg/30m)	N/S (m)	E/W (m)	Tool Type	
2795.09	23.7	91.2	2609.48	893.2	0.3	589.0	675.9	MWD	
2824.38	24.4	91.0	2636.23	902.7	0.8	588.5	687.9	MWD	
2853.10	24.8	90.9	2662.34	912.2	0.3	588.5	699.8	MWD	
2881.53	25.1	90.3	2688.13	921.8	0.3	588.4	711.8	MWD	
2909.96	25.2	90.9	2713.86	931.5	0.1	588.3	723.9	MWD	
2938.50	25.4	90.8	2739.67	941.3	0.2	588.1	736.1	MWD	
2946.06	25.6	90.6	2746.50	943.9	0.6	588.1	739.3	MWD	
2967.29	26.0	90.2	2765.61	951.3	0.6	588.0	748.5	MWD	
2996.10	26.3	89.7	2791.48	961.5	0.3	588.0	761.2	MWD	
3024.89	26.7	89.2	2817.25	972.0	0.5	588.1	774.1	MWD	

06:00 Hrs Update	
Time:	06:00 Hrs on 09 Feb 2006
Depth:	3113/2895.5
Progress Since Midnight:	49
Drilling Status:	Run in hole from shoe at 2706m.
Formation:	Weathered Volcanics from 3046.0 mMDRT to TD of 3113.0 mMDRT
Lithology:	Weathered Volcanics with minor thin interbedded Sandstone from 3046.0 - 3113.0 mMDRT (TD)
ROP:	3064.0 - 3113.0 mMDRT ROP = 5.0 - 65.0 m/hr (25.0 m/hr)
Gas:	3064.0 - 3113.0 mMDRT Total Gas = 0.90% C1 = 5100 ppm C2 = 425 ppm C3 = 200 ppm iC4 = 50 nC4 = 70 iC5 = 30 nC5 = 39

Wellsite Geologist(s)	
(Days) - Rob Blackmore	(Nights) - Mike Woodmansee

Lithology Report					
Depth Interval		Main Lithology	Lithology %	Qualifier	Description
Depth (mRT)	Depth Range				
2715.0	2720.0	Sst	50		Sandstone, clr, transl, occ wh, Loose, Angular, to Sub-rounded, Very Poor sorted, to Poor sorted, Slightly Elongated, to Spherical, 5% siliceous clay, 95% siliceous sand, 5% fine grained, 40% medium grained, 40% coarse grained, 10% very coarse grained, 5% granular grained, 1% Calcite cement, 0.1% Pyrite, 15% porosity, no Hydrocarbon shows.
2715.0	2720.0	Siltst	50	arg	Siltstone, brnsh gy, , Very soft, to Soft, amorphous, to sub-blocky, 20% siliceous clay, 80% siliceous silt, 1% Coal, 0.1% Pyrite, 0.1% Mica, 5% porosity, no Hydrocarbon shows.
2735.0	2740.0	Sst	100		Sandstone, clr, transl, wh, Loose, Angular, to Sub-angular, Very Poor sorted, to Poor sorted, Slightly Elongated, to Elongated, 100% siliceous sand, 5% very fine grained, 10% fine grained, 20% medium grained, 50% coarse grained, 10% very coarse grained, 5% granular grained, 0.1% Pyrite, 25% porosity, no Hydrocarbon shows.
2760.0	2765.0	Clyst	100	sly	Claystone, brnsh gy, occ blk-gy-dk brn, Very soft, to Soft, amorphous, to sub-blocky, 80% siliceous clay, 20% siliceous silt, 1% Coal, 0.1% Pyrite, 0.1% Mica,

Lithology Report					
Depth Interval		Main Lithology	Lithology %	Qualifier	Description
Depth (mRT)	Depth Range				
2780.0	2785.0	Sst	60		Sandstone, clr, transl, occ wh, yel, pk, Loose, Angular, to Sub-rounded, Poor sorted, Slightly Elongated, to Slightly Spherical, 100% siliceous sand, 30% medium grained, 40% coarse grained, 20% very coarse grained, 10% granular grained, 0.1% Pyrite, 25% porosity, no Hydrocarbon shows.
2780.0	2785.0	Clyst	40	slty	Claystone, brnish gy, occ blk-gy, brn, Very soft, to Firm, sub-blocky, to blocky, 80% siliceous clay, 20% siliceous silt, 0.1% Coal, 0.1% Pyrite, 0.1% Mica,
2795.0	2800.0	Clyst	20	slty	Claystone, brnish gy, dk gy, Very soft, to Soft, amorphous, to sub-blocky, 80% siliceous clay, 20% siliceous silt, 0.1% Coal, 0.1% Pyrite, 0.1% Mica,
2795.0	2800.0	Sst	80		Sandstone, clr, transl, occ wh, Loose, Angular, to Sub-angular, Poor sorted, to Very Poor sorted, Slightly Elongated, to Slightly Spherical, 100% siliceous sand, 20% fine grained, 50% medium grained, 20% coarse grained, 5% very coarse grained, 5% granular grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
2800.0	2805.0	Clyst	10	slty	Claystone, brnish gy, dk gy, Very soft, to Soft, amorphous, to sub-blocky, 80% siliceous clay, 20% siliceous silt, 0.1% Coal, 0.1% Pyrite, 0.1% Mica,
2800.0	2805.0	Sst	90		Sandstone, clr, transl, occ wh, Loose, Angular, to Sub-angular, Poor sorted, to Very Poor sorted, Slightly Elongated, to Slightly Spherical, 100% siliceous sand, 20% fine grained, 50% medium grained, 20% coarse grained, 5% very coarse grained, 5% granular grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
2820.0	2825.0	Sst	5		Sandstone, clr, transl, occ wh, Loose, Angular, to Sub-angular, Poor sorted, Slightly Elongated, to Slightly Spherical, 100% siliceous sand, 10% very fine grained, 30% fine grained, 40% medium grained, 10% coarse grained, 0.1% Pyrite, 15% porosity, no Hydrocarbon shows.
2820.0	2825.0	Clyst	95	slty	Claystone, brnish gy, dk-med brn, , Soft, to Firm, amorphous, to sub-blocky, 70% siliceous clay, 30% siliceous silt, 0.1% Coal, 0.1% Pyrite, 0.1% Mica,
2940.0	2945.0	Sst	80		Sandstone, clr, transl, Loose, Sub-angular, to Rounded, Well sorted, Slightly Elongated, to Spherical, 2% siliceous clay, 98% siliceous sand, 20% medium grained, 70% coarse grained, 10% very coarse grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
2940.0	2945.0	Sltst	20		Siltstone, lt brnish gy, brnish gy, rare med gy, rare brnish / blk, Soft, to Firm, sub-blocky, to blocky, 5% siliceous clay, 95% siliceous silt, 0.1% Coal,
2950.0	2955.0	Sltst	5		Siltstone, lt brnish gy, brnish gy, rare med gy, rare brnish / blk, Soft, to Firm, sub-blocky, to blocky, 5% siliceous clay, 95% siliceous silt, 0.1% Coal,
2950.0	2955.0	Sst	95		Sandstone, clr, transl, trace white, Loose, Angular, to Sub-rounded, Well sorted, Slightly Elongated, to Spherical, 2% siliceous clay, 98% siliceous sand, 20% medium grained, 70% coarse grained, 10% very coarse grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
2955.0	2960.0	Sltst	1		Siltstone, lt brnish gy, brnish gy, rare med gy, rare brnish / blk, Soft, to Firm, sub-blocky, to blocky, 5% siliceous clay, 95% siliceous silt, 0.1% Coal,
2955.0	2960.0	Sst	99		Sandstone, clr, transl, trace white, Loose, Sub-angular, to Sub-rounded, Well sorted, Slightly Elongated, to Slightly Spherical, 2% siliceous clay, 98% siliceous sand, 30% medium grained, 60% coarse grained, 10% very coarse grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
3010.0	3015.0	Sst	95		Sandstone, clr, transl, very lt gy, Loose, to Friable, Sub-angular, to Sub-rounded, Well sorted, Elongated, to Spherical, 1% siliceous clay, 99% siliceous sand, 5% fine grained, 60% medium grained, 30% coarse grained, 5% very coarse grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
3010.0	3015.0	Sltst	5		Siltstone, brnish gy, rare olv gy, Very soft, to Firm, sub-blocky, to blocky, 1% siliceous clay, 94% siliceous silt, 5% siliceous sand, 0.1% Coal,
3025.0	3030.0	Sltst	5		Siltstone, brnish gy, rare olv gy, Very soft, to Firm, sub-blocky, to blocky, 1% siliceous clay, 91% siliceous silt, 8% siliceous sand, 0.1% Coal,
3025.0	3030.0	Sst	95		Sandstone, clr, transl, very lt gy, Loose, Sub-angular, to Sub-rounded, Poor sorted, Slightly Elongated, to Slightly Spherical, 100% siliceous sand, 5% very fine grained, 5% fine grained, 50% medium grained, 40% coarse grained, 0.1% Pyrite, 15% porosity, Hydrocarbon shows.
3030.0	3035.0	Sltst	5		Siltstone, brnish gy, lt gy, Very soft, to Soft, sub-blocky, to blocky, 15% siliceous clay, 85% siliceous silt, 0.1% Calcite cement, 0.1% Coal,
3030.0	3035.0	Sst	95		Sandstone, clr, transl, very lt gy, Loose, to Firm, Sub-angular, to Sub-rounded, Moderately sorted, Slightly Elongated, to Slightly Spherical, 100% siliceous sand, 5% fine grained, 55% medium grained, 40% coarse grained, 0.1% Pyrite, 20% porosity, Hydrocarbon shows.
3045.0	3050.0	Vol	100	kaol	Volcanic, grn, gy, wh-lt brn, Very soft, to Hard, amorphous, to splintery, 0.1% Calcite cement, 0.1% Pyrite, 0.1% Mica, 1% Chert, 5% porosity, no Hydrocarbon shows.
3050.0	3055.0	Vol	100	kaol	Volcanic, grn, gy, wh-lt brn, orng-brn, multi, Very soft, to Hard, amorphous, to splintery,



Lithology Report					
Depth Interval		Main Lithology	Lithology %	Qualifier	Description
Depth (mRT)	Depth Range				
					0.1% Calcite cement, 0.1% Pyrite, 0.1% Mica, 1% Chert, 5% porosity, no Hydrocarbon shows.
3055.0	3060.0	Vol	100	kaol	Volcanic, grn, gy, wh-lt brn, orng-brn, multi, Soft, to Hard, amorphous, to splintery, 0.1% Calcite cement, 0.1% Pyrite, 0.1% Mica, 1% Chert, 5% porosity, no Hydrocarbon shows.
3060.0	3065.0	Vol	100	kaol	Volcanic, grn, gy, wh-lt brn, orng-brn, multi, Soft, to Hard, amorphous, to splintery, 0.1% Calcite cement, 1% Silica cement, 0.1% Pyrite, 1% Chert, 5% porosity, no Hydrocarbon shows.