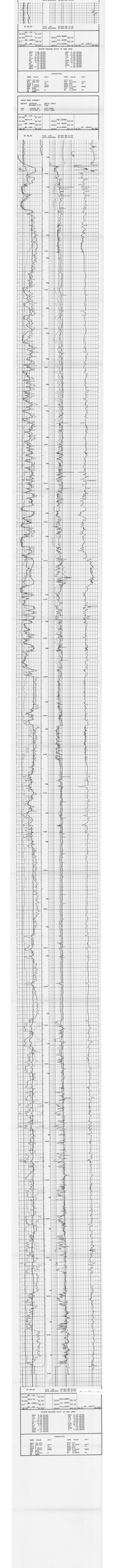
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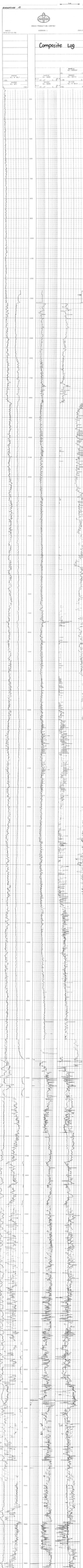
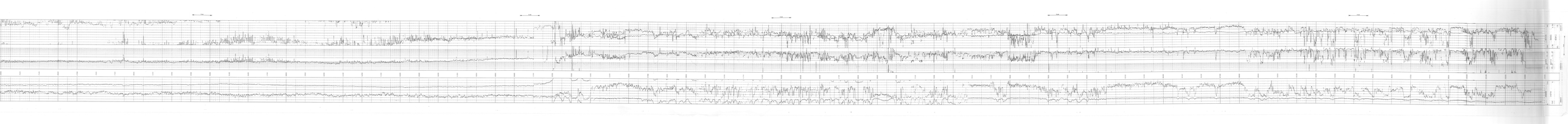
HAMSON

OIL CLUB

PERMANENT 40





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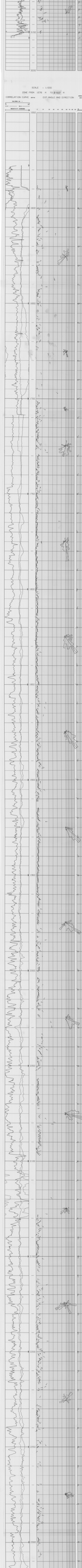
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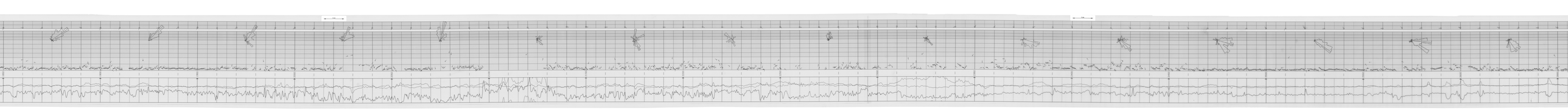

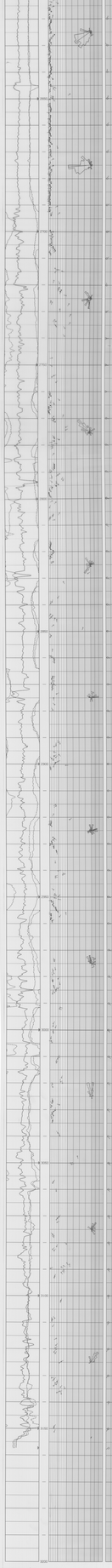
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DEVIATION SENSOR
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TPR
OR-286
VOL III/3

R136/86

277178

CONFIDENTIAL
CLASS 1

Amoco Australia Petroleum Company

KOORKAH-1

Final Well Report

Volume III- Drilling

TPR
OR-286
(VOL III)/3

September 1986

277179

I N D E X

		PAGE
I	Summary Section	
	- Final Well Report Data Sheet	1
II	Introduction	2
III	Summary Section	
	- Conclusions	3
	- Recommendations	4
	- Operations by Intervals	5
	- Well Cost Summary Sheet	7
IV	Discussion	
	- Summary of Daily Drilling Reports	16
	- Casing and Cementing Reports	22
	- Pipe Tally Records	25
	- Mud Summary	28
	- Bit Records	51
	- Bottom Hole Assemblies	52
	- Directional Surveys	53
	- Well Location Map	60
	- Time Distribution	61
	- Form 46	64
	- Form 850	65
	- Plug and Abandon Data	68
	- Workboat Performance Evaluation	69
	- Amoco Storage Areas	72
	- Contractors	76
	- Anchors	78
	- Geomex Positioning Survey Recap	79

I

SUMMARY SECTION

DATA SHEET

COUNTRY	:	Bass Strait, Australia
WELL NAME	:	Koorkah No 1
LOCATION	:	Lat: 39 DEG 37' 57.241" South Long: 145 DEG 9' 05.13" East
SP LOCATION	:	Along Shot Line TP05-7 (SP 290)
WATER DEPTH	:	Approximately 67.6 M (222 FT)
ROTARY KELLY BUSHING	:	Approximately 22.5 m (74 ft) above MSL
TOTAL DEPTH	:	3148.9 M (10,331 FT) RKB
TOTAL OPERATING TIME	:	31 Days
DRILLING CONTRACTOR/RIG	:	Diamond M Exploration Company/ Diamond M Epoch (Semisubmersible)
ARRIVE ON LOCATION	:	25 November, 1985 at 1630 hours
SPUD DATE	:	27 November, 1985 at 1512 hours
RIG RELEASE DATE	:	25 December, 1985 at 2245 hours
DAYS ON WELL	:	29 days
TOTAL WELL COST	:	US $ 4,864,969 Estimated
STATUS OF WELL	:	Permanently Plug and Abandon
WELLHEAD SYSTEM	:	Cameron 18-3/4" WS-I, 10,000 psi
CASING SETTING DEPTHS	:	30" - 190.1 M (624 FT) RKB 20" - 402.0 M (1319 FT) RKB 13-3/8" - 1587.4 M (5208 FT) RKB

277181

II INTRODUCTION

Koorkah No 1 was spudded on 27 November 1985 in 67.6 m (222 ft) of water as an exploratory well offshore Northwestern Tasmania, Exploration permit - T18/P. The primary objective of this test was to evaluate the late Eocene through late Cretaceous sediments occuring between 1637.1 and 3009.3 m (5371 - 9873 ft).

The subject well was drilled to a total depth of 3148.9 m (10,331 ft) RKB in 25 drilling days. No production casing was run and no drill stem testing performed. Koorkah No 1 was permanently abandoned as a dry hole on 25 December 1985 following 31 days at an estimated gross cost of US$ 4.86 MM.

III

SUMMARY SECTION

CONCLUSIONS

1. The Diamond M Epoch semisubmersible drilling vessel performed well during the course of wellsite operations, spud to total depth.

2. Substantial time and cost savings were achieved by drilling the 26" hole interval without the Pin Connector and Riser.

3. Substantial time and cost savings were achieved by drilling the 17-1/2" hole section directly, without first drilling a 12-1/4" pilot hole for logs.

4. Drilling fluid designed to handle carbonate contamination is a necessity for drilling similar wells.

5. Closed loop solids control equipment proved cost effective in controlling drilling fluid dilution rates and associated chemical additions.

6. Logging problems associated with gumbo shales can be controlled via adjustments to mud weight and inhibition (oil base mud).

RECOMMENDATIONS

1. Due to the overall effectiveness of the Diamond M Epoch operation, it is recommended a semi-submersible be used on future Bass Basin projects.

2. Continue drilling the 26" hole section without using the pin connector and riser in areas with no indication of shallow gas.

3. An evaluation of the log quality obtained from the 17-1/2" hole should be undertaken. If log quality is acceptable, substantial cost savings are possible through continued elimination of the 12-1/4" pilot hole sequence.

4. Continued use of the closed-loop, mud processing system is recommended. Improvements to the current system could be made by replacing the rig supplied Swaco Shale Shakers with more effective equipment.

5. Logging problems due to gumbo shales in the 17-1/2" hole section can be solved with mud weight increases. Future wells should be evaluated for mud weight increases prior to attempting wireline logs.

OPERATIONS BY INTERVAL

36" HOLE AND 30" CASING INTERVAL

Koorkah No 1 was spudded at 1512 Hrs 27 November 1985, in 67.6 m (222 ft) of water offshore Northern Tasmania. The well location was 145 Deg 9' 05.13" East (Longitude) and 39 Deg 37' 57.241" South (Latitude) of prime meridian respectively.

A total of 40 hours (1.6 days) was spent drilling, casing, cementing, and drilling out of 30" casing set at 190.1 m (624 ft) RKB. The 36" hole section was drilled to a total depth of 191.7 M (629 Ft).

No problems were incurred during this hole section. A total of 101.8 M (334 ft) of 36" hole was drilled in 9 rotational hours. No difficulties were observed during subsequent casing and cementing operations. The well was successfully cemented back to the seafloor without incident.

26" HOLE AND 20" CASING INTERVAL

A total of 56 hours (2.3 days) was spent drilling, casing, cementing, and drilling out of 20" casing set at 402 m (1319 ft) RKB.

No problems were incurred while drilling the 26" hole from 191.7 - 405.3 m (629 - 1330 ft) RKB. The 222.8 m (731 ft) of hole was drilled in 10.5 hours. No pin connector was used and all cuttings were returned to the seafloor. Cement was successfully circulated to the seabed.

Following casing and cementing operations, the 10,000 psi BOP stack and marine riser were run and tested to Amoco specifications prior to drilling out of 20" casing.

17-1/2" HOLE/13-3/8" CASING INTERVAL

A total of 185 hours (7.7 days) was spent drilling, evaluating, casing, cementing, and drilling out of 13-3/8" casing. The casing was set at 1587.4 m (5208 ft), after drilling to a total depth of 1599 m (5246 ft) RKB.

After obtaining a 13.2 ppg FCCT (to leak off) at 416.0 m (1365 ft), Koorkah No 1 was drilled to 1599 m (5246 ft) in 58.5 rotating hours.

The 17-1/2" hole section was drilled using a fresh-water dispersed mud system. CO2 was observed to be a problem as were the gumbo clays drilled between 771.1 m and 1398.4 m (2530 - 4588 ft). The inability to off load work boats in 7-14' seas necessitated some dilution with seawater. This caused some mud stability problems that would have been avoided, had the work boat been able to offload.

A total of 19.5 hours was spent handling gumbo related problems. Additionally, 10.5 hours of reaming resulted when wireline logs encountered a bridge at 1235.3 m (4053 ft). Subsequent logging operations were performed without incident.

Future wells drilled in the area should be expected to exhibit similar problems; therefore the mud system should be designed to handle carbonate contamination while suffering few derrogatory effects. The mud system used on the Koorkah No 1 performed admirably - especially the closed-loop mud processing system used to control mud rheologies and dilution requirements. An overall hole interval dilution rate of 1.48 bbl per ft of hole drilled is extremely acceptable when considering the amounts of rapidly dispersing clays (gumbo) drilled. Hole stability problems would have been virtually nonexistant had the workboats been able to offload the supplies necessary to maintain operations.

Future wells drilled where gumbo shales are encountered can be expected to have problems logging; therefore the wellsite conditions at logging point should be evaluated for mud weight increases prior to attempting wireline logs.

12-1/4" HOLE INTERVAL

A total of 406 hours (16.9 days) was spent drilling and evaluating the 12-1/4" hole section drilled between 1599 and 3148.9 m (5246 - 10,331 ft) (including 68 hours for plug and abandonment, anchor handling, etc.). No production casing was run and the well was permanently plugged and abandoned on 25 December 1985. The total gross well cost incurred is estimated to have been $4.86 MM.

A 16.0 ppg FCCT (to leak off) was obtained at 1600.5 m (5251 ft). Drilling continued to 3148.9 m (10,331 ft) RKB requiring 236.5 rotating hours to complete.

Very few operational problems were encountered. Carbon dioxide was again encountered below 2133.6 m (7000 ft). Subsequent alkalinity problems were addressed successfully via lime additions. The solids control system again functioned admirably. Comparisons with the Tilana No 1 well show savings of approximately 7000 bbls of drillwater dilution and associated chemical additions over the same interval.

Following logging operations, Koorkah No 1 was plugged and abandoned as a dry hole.

ESTIMATED TOTAL WELL COST BY INTERVAL

WELL: KOORKHA #1 ATD: 3200m (10,500')	TOW & RUN ANCHORS	36"HOLE	26"HOLE	17.5"HOLE	12.25"HOLE	P & A	PULL ANCHORS	TOTAL
1 Rig	89,105	70,146	71,093	360,209	717,573	46,447	36,969	1,391,542
2 Work Boats	20,219	15,918	16,133	81,740	162,833	10,540	8,390	315,773
3 Standby Boat	4,181	3,291	3,336	16,902	33,671	2,180	1,734	65,295
4 Helicopter Base Charge	8,341	6,566	6,655	33,717	67,168	4,347	3,461	130,255
5 E-Log Base Charge	9,106	7,169	7,266	36,812	73,335	4,747	3,778	142,213
6 Mud Logging Base Charge	2,753	2,168	2,197	11,130	22,174	1,436	1,142	43,000
7 Mud Laboratory	196	155	156	791	1,578	102	81	3,059
8 Solids Equipment	1,419	1,118	1,133	5,740	11,433	740	590	22,173
9 DST - Otis	2,155	1,696	1,718	8,709	17,348	1,122	894	33,642
10 DST - Halliburton	262	207	209	1,061	2,113	137	109	4,098
11 Diving	4,800	3,779	3,830	19,403	38,655	2,502	1,991	74,960
12 Rental Tools	2,309	1,818	1,842	9,334	18,594	1,203	958	36,058
13 Mud Engineer	593	467	474	2,399	4,778	309	247	9,267
14 Mud Consultant	881	694	703	3,563	7,097	459	366	13,763
15 Cementer & Pressure testing	1,273	1,002	1,016	5,146	10,251	663	528	19,879
16 Weather Forecast	302	237	241	1,219	2,429	157	125	4,710
17 Communications	405	319	324	1,639	3,264	211	169	6,331
18 Well Site Supervision	2,943	2,317	2,349	11,899	23,703	1,534	1,222	45,967
19 Wharfage, Labour & Assoc.	1,056	831	842	4,267	8,500	550	438	16,484
20 Rig Mob/Demob	1,093,000	0	0	0	0	0	0	1,093,000
21 Miscellaneous Mob/Demob	16,450	0	0	0	0	0	0	16,450
22 Location Survey	54,733	848	859	4,354	8,674	561	447	70,476
23 Rig Positioning Survey	14,703	734	743	3,769	7,507	485	387	28,328
24 Helicopter Hourly Charges	1,802	1,418	1,438	7,283	14,509	939	748	28,137
25 E-Log Services	0	0	0	54,234	216,948	0	0	271,182
26 DST Services	0	0	0	0	0	0	0	0
27 Rig Fuel	4,391	3,241	5,719	33,846	66,529	3,604	3,682	121,012
28 Heli Fuel	478	377	381	1,931	3,843	249	198	7,457
29 Work Boat Fuel	1,419	1,118	1,133	5,740	11,418	740	590	22,158
30 Drill Water	0	192	155	1,241	1,119	109	0	2,816
31 Bits	0	12,822	12,822	14,956	41,100	0	0	81,700
32 Mud Material	0	4,364	5,975	50,944	58,366	0	2,924	122,573
33 Cement & Additives	0	12,739	15,321	39,000	0	6,000	0	73,060
34 Cementing Services	0	2,729	3,071	4,311	0	9,511	0	19,622
35 Casing Accessories	0	7,893	2,666	6,072	0	0	0	16,631
36 Misc Services	7,893	0	0	14,715	14,337	4,300	0	41,245
37 Miscellaneous	9,792	7,708	7,813	39,583	78,854	5,104	4,063	152,917
TOTAL INTANGIBLES	1,356,960	176,081	179,613	897,659	1,749,701	110,988	76,231	4,547,233
TANGIBLES								
38 Wellhead	0	41,996	29,602	15,791	0	0	0	87,389
39 Casing	0	71,350	49,625	109,372	0	0	0	230,347
TOTAL TANGIBLES	0	113,346	79,227	125,163	0	0	0	317,736
CUM INTERVAL COST	1,356,960	289,427	258,840	1,022,822	1,749,701	110,988	76,231	4,864,969
CUM WELL COST	1,356,961	1,646,388	1,905,228	2,928,050	4,677,751	4,788,739	4,864,970	

277187

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:TOW & RUN ANCHORS

WELL: KOORKHA #1	NOV	NOV	NOV	INTERVAL
ATD: 3200m (10,500')	26	27	28	TOTAL
1 Rig	39,813	45,500	3,792	89,105
2 Work Boats	9,034	10,325	860	20,219
3 Standby Boat	1,868	2,135	178	4,181
4 Helicopter Base Charge	3,727	4,259	355	8,341
5 E-Log Base Charge	4,069	4,650	387	9,106
6 Mud Logging Base Charge	1,230	1,406	117	2,753
7 Mud Laboratory	88	100	8	196
8 Solids Equipment	634	725	60	1,419
9 DST - Otis	963	1,100	92	2,155
10 DST - Halliburton	117	134	11	262
11 Diving	2,145	2,451	204	4,800
12 Rental Tools	1,032	1,179	98	2,309
13 Mud Engineer	265	303	25	593
14 Mud Consultant	394	450	37	881
15 Cementer & Pressure testing	569	650	54	1,273
16 Weather Forecast	135	154	13	302
17 Communications	181	207	17	405
18 Well Site Supervision	1,315	1,503	125	2,943
19 Wharfage, Labour & Assoc.	472	539	45	1,056
20 Rig Mob/Demob	1,093,000			1,093,000
21 Miscellaneous Mob/Demob	7,350	8,400	700	16,450
22 Location Survey	481	54,206	46	54,733
23 Rig Positioning Survey	417	14,246	40	14,703
24 Helicopter Hourly Charges	805	920	77	1,802
25 E-Log Services				0
26 DST Services				0
27 Rig Fuel	2,179	2,128	84	4,391
28 Heli Fuel	214	244	20	478
29 Work Boat Fuel	634	725	60	1,419
30 Drill Water				0
31 Bits				0
32 Mud Material				0
33 Cement & Additives				0
34 Cementing Services				0
35 Casing Accessories				0
36 Misc Services			7,893	7,893
37 Miscellaneous	4,375	5,000	417	9,792
TOTAL INTANGIBLES	1,177,506	163,639	15,815	1,356,960

TANGIBLES

39 Wellhead				0
40 Casing				0
TOTAL TANGIBLES	0	0	0	0
DAILY WELL COST	1,177,506	163,639	15,815	
CUM INTERVAL COST	1,177,506	1,341,145	1,356,960	1,356,960
CUM WELL COST	1,177,506	1,341,145	1,356,960	

277188

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:36"HOLE
WELL: KOORKHA #1
ATD: 3200m (10,500')

		NOV 28	NOV 29	INTERVAL TOTAL
1	Rig	41,708	28,438	70,146
2	Work Boats	9,465	6,453	15,918
3	Standby Boat	1,957	1,334	3,291
4	Helicopter Base Charge	3,904	2,662	6,566
5	E-Log Base Charge	4,263	2,906	7,169
6	Mud Logging Base Charge	1,289	879	2,168
7	Mud Laboratory	92	63	155
8	Solids Equipment	665	453	1,118
9	DST - Otis	1,008	688	1,696
10	DST - Halliburton	123	84	207
11	Diving	2,247	1,532	3,779
12	Rental Tools	1,081	737	1,818
13	Mud Engineer	278	189	467
14	Mud Consultant	413	281	694
15	Cementer & Pressure testing	596	406	1,002
16	Weather Forecast	141	96	237
17	Communications	190	129	319
18	Well Site Supervision	1,378	939	2,317
19	Wharfage, Labour & Assoc.	494	337	831
20	Rig Mob/Demob	0	0	0
21	Miscellaneous Mob/Demob	0	0	0
22	Location Survey	504	344	848
23	Rig Positioning Survey	436	298	734
24	Helicopter Hourly Charges	843	575	1,418
25	E-Log Services	0	0	0
26	DST Services	0	0	0
27	Rig Fuel	929	2,312	3,241
28	Heli Fuel	224	153	377
29	Work Boat Fuel	665	453	1,118
30	Drill Water	82	110	192
31	Bits	12,822	0	12,822
32	Mud Material	4,364	0	4,364
33	Cement & Additives	0	12,739	12,739
34	Cementing Services	0	2,729	2,729
35	Misc. Services		7,893	7,893
36	Casing Accessories			0
37	Miscellaneous	4,583	3,125	7,708
	TOTAL INTANGIBLES	96,744	79,337	176,081
	TANGIBLES			
38	Wellhead		41,996	41,996
39	Casing		71,350	71,350
	TOTAL TANGIBLES	0	113,346	113,346
	DAILY WELL COST	96,744	192,683	
	CUM INTERVAL COST	96,744	289,427	289,427
	CUM WELL COST	1,453,704	1,646,387	
		1,356,960		

277189

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:26"HOLE
WELL: KOORKHA #1
ATD: 3200m (10,500')

		NOV 29	NOV 30	DEC 1	INTERVAL TOTAL
1	Rig	17,062	45,500	8,531	71,093
2	Work Boats	3,872	10,325	1,936	16,133
3	Standby Boat	801	2,135	400	3,336
4	Helicopter Base Charge	1,597	4,259	799	6,655
5	E-Log Base Charge	1,744	4,650	872	7,266
6	Mud Logging Base Charge	527	1,406	264	2,197
7	Mud Laboratory	37	100	19	156
8	Solids Equipment	272	725	136	1,133
9	DST - Otis	412	1,100	206	1,718
10	DST - Halliburton	50	134	25	209
11	Diving	919	2,451	460	3,830
12	Rental Tools	442	1,179	221	1,842
13	Mud Engineer	114	303	57	474
14	Mud Consultant	169	450	84	703
15	Cementer & Pressure testing	244	650	122	1,016
16	Weather Forecast	58	154	29	241
17	Communications	78	207	39	324
18	Well Site Supervision	564	1,503	282	2,349
19	Wharfage, Labour & Assoc.	202	539	101	842
20	Rig Mob/Demob				0
21	Miscellaneous Mob/Demob				0
22	Location Survey	206	550	103	859
23	Rig Positioning Survey	178	476	89	743
24	Helicopter Hourly Charges	345	920	173	1,438
25	E-Log Services				0
26	DST Services				0
27	Rig Fuel	1,387	3,648	684	5,719
28	Heli Fuel	91	244	46	381
29	Work Boat Fuel	272	725	136	1,133
30	Drill Water		86	69	155
31	Bits	12,822			12,822
32	Mud Material	1,577	4,398		5,975
33	Cement & Additives			15,321	15,321
34	Cementing Services			3,071	3,071
35	Casing Accessories				0
36	Misc Services			2,666	2,666
37	Miscellaneous	1,875	5,000	938	7,813
	TOTAL INTANGIBLES	47,917	93,817	37,879	179,613
	TANGIBLES				
38	Wellhead			29,602	29,602
39	Casing			49,625	49,625
	TOTAL TANGIBLES	0	0	79,227	79,227
	DAILY WELL COST	47,917	93,817	117,106	258,840
	CUM INTERVAL COST	47,917	141,734	258,840	
	CUM WELL COST	1,694,304	1,788,121	1,905,227	
		1,646,387			

CONFIDENTIAL
CLASS 1

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:17.5"HOLE
WELL: KOORKHA #1
ATD: 3200m (10,500')

	DEC 1	DEC 2	DEC 3	DEC 4	DEC 5	DEC 6	DEC 7	DEC 8	DEC 9	INTERVAL TOTAL
1 Rig	36,969	45,500	45,500	45,500	45,500	45,500	45,500	45,500	4,740	360,209
2 Work Boats	8,389	10,325	10,325	10,325	10,325	10,325	10,325	10,325	1,076	81,740
3 Standby Boat	1,735	2,135	2,135	2,135	2,135	2,135	2,135	2,135	222	16,902
4 Helicopter Base Charge	3,460	4,259	4,259	4,259	4,259	4,259	4,259	4,259	444	33,717
5 E-Log Base Charge	3,778	4,650	4,650	4,650	4,650	4,650	4,650	4,650	484	36,812
6 Mud Logging Base Charge	1,142	1,406	1,406	1,406	1,406	1,406	1,406	1,406	146	11,130
7 Mud Laboratory	81	100	100	100	100	100	100	100	10	791
8 Solids Equipment	589	725	725	725	725	725	725	725	76	5,740
9 DST - Otis	894	1,100	1,100	1,100	1,100	1,100	1,100	1,100	115	8,709
10 DST - Halliburton	109	134	134	134	134	134	134	134	14	1,061
11 Diving	1,991	2,451	2,451	2,451	2,451	2,451	2,451	2,451	255	19,403
12 Rental Tools	958	1,179	1,179	1,179	1,179	1,179	1,179	1,179	123	9,334
13 Mud Engineer	246	303	303	303	303	303	303	303	32	2,399
14 Mud Consultant	366	450	450	450	450	450	450	450	47	3,563
15 Cementer & Pressure testing	528	650	650	650	650	650	650	650	68	5,146
16 Weather Forecast	125	154	154	154	154	154	154	154	16	1,219
17 Communications	168	207	207	207	207	207	207	207	22	1,639
18 Well Site Supervision	1,221	1,503	1,503	1,503	1,503	1,503	1,503	1,503	157	11,899
19 Wharfage, Labour & Assoc.	438	539	539	539	539	539	539	539	56	4,267
20 Rig Mob/Demob										0
21 Miscellaneous Mob/Demob										0
22 Location Survey	447	550	550	550	550	550	550	550	57	4,354
23 Rig Positioning Survey	387	476	476	476	476	476	476	476	50	3,769
24 Helicopter Hourly Charges	747	920	920	920	920	920	920	920	96	7,283
25 E-Log Services							54,234			54,234
26 DST Services										0
27 Rig Fuel	3,623	3,648	4,712	4,256	4,712	4,155	3,648	4,818	274	33,846
28 Heli Fuel	198	244	244	244	244	244	244	244	25	1,931
29 Work Boat Fuel	589	725	725	725	725	725	725	725	76	5,740
30 Drill Water		289	237	207	89	88		331		1,241
31 Bits	7,478				7,478					14,956
32 Mud Material	7,682	9,187	10,690	1,009	1,762	2,251	17,026	1,337		50,944
33 Cement & Additives									39,000	39,000
34 Cementing Services									4,311	4,311
35 Casing Accessories									6,072	6,072
36 Misc Services					3,858				10,857	14,715
37 Miscellaneous	4,062	5,000	5,000	5,000	5,000	5,000	5,000	5,000	521	39,583
TOTAL INTANGIBLES	88,400	98,809	101,324	91,157	103,584	92,179	160,593	92,171	69,442	897,659
TANGIBLES										
39 Wellhead									15,791	15,791
40 Casing									109,372	109,372
TOTAL TANGIBLES	0	0	0	0	0	0	0	0	125,163	125,163
DAILY WELL COST	88,400	98,809	101,324	91,157	103,584	92,179	160,593	92,171	194,605	1,022,822
CUM INTERVAL COST	88,400	187,209	288,533	379,690	483,274	575,453	736,046	828,217	1,022,822	
CUM WELL COST	1,993,627	2,092,436	2,193,760	2,284,917	2,388,501	2,480,680	2,641,273	2,733,444	2,928,049	
	1,905,227									

277191

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:12.25" HOLE
WELL: KOORKHA #1
ATD: 3200m (10,500')

	DEC 9	DEC 10	DEC 11	DEC 12	DEC 13	DEC 14	DEC 15	DEC 16
1 Rig	40,760	45,500	45,500	45,500	45,500	45,500	45,500	45,500
2 Work Boats	9,249	10,325	10,325	10,325	10,325	10,325	10,325	10,325
3 Standby Boat	1,913	2,135	2,135	2,135	2,135	2,135	2,135	2,135
4 Helicopter Base Charge	3,815	4,259	4,259	4,259	4,259	4,259	4,259	4,259
5 E-Log Base Charge	4,166	4,650	4,650	4,650	4,650	4,650	4,650	4,650
6 Mud Logging Base Charge	1,260	1,406	1,406	1,406	1,406	1,406	1,406	1,406
7 Mud Laboratory	90	100	100	100	100	100	100	100
8 Solids Equipment	649	725	725	725	725	725	725	725
9 DST - Otis	985	1,100	1,100	1,100	1,100	1,100	1,100	1,100
10 DST - Halliburton	120	134	134	134	134	134	134	134
11 Diving	2,196	2,451	2,451	2,451	2,451	2,451	2,451	2,451
12 Rental Tools	1,056	1,179	1,179	1,179	1,179	1,179	1,179	1,179
13 Mud Engineer	271	303	303	303	303	303	303	303
14 Mud Consultant	403	450	450	450	450	450	450	450
15 Cementer & Pressure testing	582	650	650	650	650	650	650	650
16 Weather Forecast	138	154	154	154	154	154	154	154
17 Communications	185	207	207	207	207	207	207	207
18 Well Site Supervision	1,346	1,503	1,503	1,503	1,503	1,503	1,503	1,503
19 Wharfage, Labour & Assoc.	483	539	539	539	539	539	539	539
20 Rig Mob/Demob								
21 Miscellaneous Mob/Demob								
22 Location Survey	493	550	550	550	550	550	550	550
23 Rig Positioning Survey	426	476	476	476	476	476	476	476
24 Helicopter Hourly Charges	824	920	920	920	920	920	920	920
25 E-Log Services								
26 DST Services								
27 Rig Fuel	2,361	3,648	3,040	4,307	4,155	4,307	5,118	5,320
28 Heli Fuel	213	244	244	244	244	244	244	244
29 Work Boat Fuel	634	725	725	725	725	725	725	725
30 Drill Water		209	66	44	81	140	61	55
31 Bits	4,300	9,200			9,200			9,200
32 Mud Material	11,183	8,346	4,261	6,665	680	5,766	3,622	1,991
33 Cement & Additives								
34 Cementing Services								
35 Casing Accessories								
36 Misc Services				969	1380			
37 Miscellaneous	4,479	5,000	5,000	5,000	5,000	5,000	5,000	5,000
TOTAL INTANGIBLES	94,580	107088	93,052	97,670	101,181	95,898	94,486	102,251
TANGIBLES								
38 Wellhead								
39 Casing								
TOTAL TANGIBLES	0	0	0	0	0	0	0	0
DAILY WELL COST	94,580	107,088	93,052	97,670	101,181	95,898	94,486	102,251
CUM INTERVAL COST	94,580	201,668	294,720	392,390	493,571	589,469	683,955	786,206
CUM WELL COST	3,022,629	3,129,717	3,222,769	3,320,439	3,421,620	3,517,518	3,612,004	3,714,255

2928049

277192

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:12.25" HOLE
WELL: KOORKHA #1
ATD: 3200m (10,500')

	DEC 17	DEC 18	DEC 19	DEC 20	DEC 21	DEC 22	DEC 23	DEC 24	INTERVAL TOTAL
1 Rig	45,500	45,500	45,500	45,500	45,500	45,500	45,500	39,813	717,573
2 Work Boats	10,325	10,325	10,325	10,325	10,325	10,325	10,325	9,034	162,833
3 Standby Boat	2,135	2,135	2,135	2,135	2,135	2,135	2,135	1,868	33,671
4 Helicopter Base Charge	4,259	4,259	4,259	4,259	4,259	4,259	4,259	3,727	67,168
5 E-Log Base Charge	4,650	4,650	4,650	4,650	4,650	4,650	4,650	4,069	73,335
6 Mud Logging Base Charge	1,406	1,406	1,406	1,406	1,406	1,406	1,406	1,230	22,174
7 Mud Laboratory	100	100	100	100	100	100	100	88	1,578
8 Solids Equipment	725	725	725	725	725	725	725	634	11,433
9 DST - Otis	1,100	1,100	1,100	1,100	1,100	1,100	1,100	963	17,348
10 DST - Halliburton	134	134	134	134	134	134	134	117	2,113
11 Diving	2,451	2,451	2,451	2,451	2,451	2,451	2,451	2,145	38,655
12 Rental Tools	1,179	1,179	1,179	1,179	1,179	1,179	1,179	1,032	18,594
13 Mud Engineer	303	303	303	303	303	303	303	265	4,778
14 Mud Consultant	450	450	450	450	450	450	450	394	7,097
15 Cementer & Pressure testing	650	650	650	650	650	650	650	569	10,251
16 Weather Forecast	154	154	154	154	154	154	154	135	2,429
17 Communications	207	207	207	207	207	207	207	181	3,264
18 Well Site Supervision	1,503	1,503	1,503	1,503	1,503	1,503	1,503	1,315	23,703
19 Wharfage, Labour & Assoc.	539	539	539	539	539	539	539	471	8,500
20 Rig Mob/Demob									0
21 Miscellaneous Mob/Demob									0
22 Location Survey	550	550	550	550	550	550	550	481	8,674
23 Rig Positioning Survey	476	476	476	476	476	476	476	417	7,507
24 Helicopter Hourly Charges	920	920	920	920	920	920	920	805	14,509
25 E-Log Services								216,948	216,948
26 DST Services									0
27 Rig Fuel	4,662	4,662	4,662	6,334	4,814	3,648	3,141	2,350	66,529
28 Heli Fuel	244	244	244	244	244	244	244	214	3,843
29 Work Boat Fuel	725	725	725	725	725	725	725	634	11,418
30 Drill Water	67	41		83	53	88	42	89	1,119
31 Bits			9,200						41,100
32 Mud Material	3,598	1,956	2,825	3,909	3,460		104		58,366
33 Cement & Additives									0
34 Cementing Services									0
35 Casing Accessories									0
36 Misc Services	457							11531	14,337
37 Miscellaneous	5,000	5,000	5,000	5,000	5,000	5,000	5,000	4,375	78,854
TOTAL INTANGIBLES	94,469	92,344	102,372	96,011	94,012	89,421	88,972	305,894	1,749,701
TANGIBLES									
38 Wellhead									
39 Casing									
TOTAL TANGIBLES	0	0	0	0	0	0	0	0	0
DAILY WELL COST	94,469	92,344	102,372	96,011	94,012	89,421	88,972	305,894	1,749,701
CUM INTERVAL COST	880,675	973,019	1,075,391	1,171,402	1,265,414	1,354,835	1,443,807	1,749,701	
CUM WELL COST	3,808,724	3,901,068	4,003,440	4,099,451	4,193,463	4,282,884	4,371,856	4,677,750	

2928049

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:P&A
WELL: KOORKHA #1
RTD: 3200m (10,500')

		DEC 24	DEC 25	INTERVAL TOTAL
1	Rig	5,687	40,760	46,447
2	Work Boats	1,291	9,249	10,540
3	Standby Boat	267	1,913	2,180
4	Helicopter Base Charge	532	3,815	4,347
5	E-Log Base Charge	581	4,166	4,747
6	Mud Logging Base Charge	176	1,260	1,436
7	Mud Laboratory	12	90	102
8	Solids Equipment	91	649	740
9	DST - Otis	137	985	1,122
10	DST - Halliburton	17	120	137
11	Diving	306	2,196	2,502
12	Rental Tools	147	1,056	1,203
13	Mud Engineer	38	271	309
14	Mud Consultant	56	403	459
15	Cementer & Pressure testing	81	582	663
16	Weather Forecast	19	138	157
17	Communications	26	185	211
18	Well Site Supervision	188	1,346	1,534
19	Wharfage, Labour & Assoc.	68	482	550
20	Rig Mob/Demob			0
21	Miscellaneous Mob/Demob			0
22	Location Survey	69	492	561
23	Rig Positioning Survey	59	426	485
24	Helicopter Hourly Charges	115	824	939
25	E-Log Services			0
26	DST Services			0
27	Rig Fuel	336	3,268	3,604
28	Heli Fuel	30	219	249
29	Work Boat Fuel	91	649	740
30	Drill Water		109	109
31	Bits			0
32	Mud Material			0
33	Cement & Additives	6,000		6,000
34	Cementing Services	9,511		9,511
35	Casing Accessories			0
36	Misc Services		4300	4,300
37	Miscellaneous	625	4,479	5,104
	TOTAL INTANGIBLES	26,556	84,432	110,988
	TANGIBLES			
38	Wellhead			
39	Casing			
	TOTAL TANGIBLES	0	0	0
	DAILY WELL COST	26,556	84,432	110,988
	CUM INTERVAL COST	26,556	110,988	
	CUM WELL COST	4,704,306	4,788,738	

4677750

ESTIMATED DAILY WELL COST BY INTERVAL

INTERVAL:PULL ANCHORS
WELL: KOORKHA #1
ATD: 3200m (10,500')

	DEC 25	DEC 26	INTERVAL TOTAL
1 Rig	4,740	32,229	36,969
2 Work Boats	1,076	7,314	8,390
3 Standby Boat	222	1,512	1,734
4 Helicopter Base Charge	444	3,017	3,461
5 E-Log Base Charge	484	3,294	3,778
6 Mud Logging Base Charge	146	996	1,142
7 Mud Laboratory	10	71	81
8 Solids Equipment	76	514	590
9 DST - Otis	115	779	894
10 DST - Halliburton	14	95	109
11 Diving	255	1,736	1,991
12 Rental Tools	123	835	958
13 Mud Engineer	32	215	247
14 Mud Consultant	47	319	366
15 Cementer & Pressure testing	68	460	528
16 Weather Forecast	16	109	125
17 Communications	22	147	169
18 Well Site Supervision	157	1,065	1,222
19 Wharfage, Labour & Assoc.	56	382	438
20 Rig Mob/Demob			0
21 Miscellaneous Mob/Demob			0
22 Location Survey	57	390	447
23 Rig Positioning Survey	50	337	387
24 Helicopter Hourly Charges	96	652	748
25 E-Log Services			0
26 DST Services			0
27 Rig Fuel	380	3,302	3,682
28 Heli Fuel	25	173	198
29 Work Boat Fuel	76	514	590
30 Drill Water			0
31 Bits			0
32 Mud Material	375	2,549	2,924
33 Cement & Additives			0
34 Cementing Services			0
35 Casing Accessories			0
36 Misc Services			0
37 Miscellaneous	521	3,542	4,063
TOTAL INTANGIBLES	9,683	66,548	76,231
TANGIBLES			
38 Wellhead			
39 Casing			
TOTAL TANGIBLES	0	0	0
DAILY WELL COST	9,683	66,548	
CUM INTERVAL COST	9,683	76,231	
CUM WELL COST	4,798,421	4,864,969	

4788738

IV

DISCUSSION

DAILY SUMMARY SHEETS

DATE	OPERATION
25 November 1985	TD 0 m. Progress-0 m. * DFS - 0. Finish towing rig to location. Running anchors and performing satellite positioning survey.
26 November 1985	TD - 0 m. Progress 0 m. DFS - 0. Positioning rig over location. Rig position 39 Deg 37' 57.241" South and 145 Deg 09' 05.13" E (within 2 m of proposed location). Rig heading - 234 Deg. Finish running anchors. Tension same. Ballast rig down to drilling draft.
27 November 1985	TD-191.7 m (629 ft). Progress 101.8 m (334 ft). DFS - 1. Water depth - 67.6 m (222 ft); 89.9 m (295 ft) RKB. Run TGB. Stab into TGB and spud well at 1512 hours 27 November 1985. Drill 36" hole with Bit # 1, 89.9 m (295 ft) - 191.7 m (629 ft) in 9 hours. Survey at 191.7 m (629 ft) - 1 Deg. Running 30" casing at report time.
28 November 1985	TD - 320.0 m (1050 ft). Progress 128.3 m (421 ft) DFS-2. Finish run 30" casing and PGB. Land casing at 190.1 m (624 ft). Cement 30" CSG via inner string with 1680 sx 'G' cement w/ 1% CACL2, yield - 1.15 Ft/sx, density - 15.8 PPG. Cement observed at seafloor. TOH. M/U 26" Drlg assembly while WOC. TIH. Drill cement 188.6 - 190.1 m (619 - 624 ft). Drill 26" hole with Bit # 2, 191.7 - 320.0 m (629 - 1050 ft). Survey at 244.4 m (802 ft) - 3/4 Deg.
29 November 1985	TD-414.5 (1360 ft). Progress-94.4 m (310 ft). DFS-3. Finish drill 26" hole 320.0 - 414.5 (1050 - 1360 ft). Survey at 405.3 m (1330 ft) - 1/2 Deg. Short trip and fill hole with 9.1 ppg mud for casing. Run 20" casing. Land 18-3/4" wellhead with 20" casing shoe at 402.0 m (1319 ft). Cement 20" casing with 1500 sxs lead slurry 12.8 PPG, and 500 sxs tail slurry - 15.8 PPG. Displace same. TOH with cementing string, wash wellhead on TOH.

* DFS - Days from spud

DATE	OPERATION
30 November 1985	TD - 414.5 m (1360 ft). Progress - 0 m (0 ft). DFS-4 .Wash off guidebase, guideposts, and wellhead. R/U and run BOP and riser. Latch onto wellhead. Pull 50,000 lb overpull. R/U diverter equipment. Test BOP equipment per Amoco specs. M/U 17-1/2" Drlg assembly. TIH. Tag cement at 396.5 m (1301 ft).
1 December 1985	TD - 862.5 m (2830 ft). Progress 448.0 m (1470 ft) DFS - 5. 13.2 PPG leakoff at 416.0 m (1365 ft - 5' of new formation) Drill and survey 17-1/2" hole with Bit # 3, 414.5 m - 862.5 m (1360 ft - 2830 ft). Surveys at 555.9 m and 715.6 m (1824 and 2348 ft respectively) - 1/4 Deg. Had problems handling gumbo shale at surface (flowline plugging off).
2 December 1985	TD - 1204.8 m (3953 ft). Progress - 342.2 m (1123 ft). DFS-6. Drill and survey 17-1/2" hole 862.5 - 1204.8 m (2830 - 3953 ft). Surveys 871.4 m (2859 ft) - 3/4 deg. N45E. 1041.5 m (3417 ft) - 1-1/2 deg N8E. Continue having gumbo shale related handling problems at surface.
3 December 1985	TD - 1444.7 m (4740 ft). Progress - 239.8 m (787 ft). DFS-7 Drill and survey 17-1/2" hole 1204.8 - 1444.7 m (3953 - 4740 ft). Survey at 1204.8 m (3953 ft) 3/4 Deg N62W and 1361.5 m (4467 ft) 1.5 Deg S85W. Continue to have problems handling gumbo at surface.
4 December 1985	TD - 1599 m (5246 ft). Progress - 135.6 m (445 ft). DFS - 8. Drill 17-1/2" hole 1444.7 - 1463.3 m (4740 - 4801 ft). TOH with bit # 3. TIH with bit # 4 and drill 17-1/2" hole 1463.3 - 1599 m (4801 - 5246 ft). Circulate up drilling break 1597.1 - 1599 m (5240 - 5246 ft).
5 December 1985	TD - 1599 m (5246 ft). Progress - 0 m. DFS - 9. Drop multishot survey. TOH for logs. Run # 1 ISF-BHC-SP-GR-CAL. Hit bridge at 1233.8 m (4048 ft). TIH with bit # 5 RR. Ream 17-1/2" hole 1235.3 - 1407.8 m (4053 - 4619 ft). Re-ream 1292.3 - 1355.4 m (4240 - 4447 ft).

DATE	OPERATION
6 December 1985	TD - 1599 m (5246 ft). Progress - 0 m. DFS - 10. Circulate hole clean at 1355.4 m (4447 ft). Increase mud wt to 9.8 PPG. Spot-ream 1355.4 - 1599 m (4447 - 5246 ft). Circulate and condition for logs. TOH for logs. Run # 1 ISF-BHC-SP-GR-CAL. Make up 13-3/8" casing landing string and stand back in derrick. TIH and condition for casing.
7 December 1985	TD - 1599 m (5246 ft). Progress - 0 m. DFS - 11. POH. RIH w/ wash tool. Wash wear bushing and POH. RIH and retrieve wear bushing. R/U and run 43 jts 68 lb/ft, 13-3/8", N-80 buttress csg, 83 jts 72 lb/ft, 13-3/8", N-80 buttress csg. Shoe at 1587.4 m (5208 ft). Circulate annular volume. Pump 20 bbl freshwater, 20 bbls scavenger cement, 20 bbls freshwater, 20 bbls preflush (14 bbl freshwater - 6 bbl Flo-Check), 20 bbls freshwater. Sheared lead plug. Mix and pump lead slurry - 2400 sx 'G' w/ 2.5% pre-hydrated gel, 0.5% CFR-2, 0.16% HR-5. Volume - 475 cu/ft, 12.8 ppg, 1.94 cuft/sx, 10.8 gal/sx water. Tail slurry -- 500 sx class 'G' w/ 0.5% CFR2, 0.2% HR-5. Volume - 575 cuft, 15.8 ppg, 1.15 cuft/sx, 5 gal/sx water. Release dart and displace plug w/ rig pumps. Displaced 713 bbls at 14 BPM. Bumped plug at 2300 psi, pressure dropped to 1450 psi. Suspected by-passing. Displaced cmt 3 bbls below float collar, had 120 bbls cmt returns to surface. Floats held. Release running tool, flush riser w/ seawater. POH w/ running tool. RIH w/ washing tool to wash wellhead.
8 December 1985	TD - 1621.8 m (5321 ft). Progress - 22.8 m (75 ft). DFS - 12. RIH, wash wellhead, POH. Run and set seal assembly. Test to 5000 psi - OK. Test BOP to Amoco specs - ok. Slip and cut drill line. Set wear bushing, M/U 12-1/4" BHA, (TIH w/ Bit # 5 to Float Collar). Test CSG 2000 psi - ok. Drill float shoe and 2 feet below shoe. Perform CCCT, reached 16.0 ppg EMW - no leak off. Drlg cmt, clean rathole, and 5' new formation to 1600.5 m (5251 ft). Performed FCCT to 16.0 ppg EMW - no leak off. Drlg 1600.5 - 1621.8 m (5251 - 5321 ft). Drlg break at 1616.0 - 1621.8 m (5302 - 5321 ft). Circ up sample.

DATE	OPERATION
9 December 1985	TD - 1926.6 m (6321 ft). Progress - 304.8 m (1000 ft). DFS - 13. Drill and survey 12-1/4" hole 1621.8 - 1926.6 m (5321 - 6321 ft). Survey 1834.3 m (6018 ft) 3/4 Deg N 50 W. Circulate bottoms up. TOH with bit # 5.
10 December 1985	TD - 2105.5 m (6908 ft). Progress - 178.9 m (587 ft). DFS - 14. TIH x bit # 6. Drill and survey 12-1/4" hole 1926.6 - 2105.5 m (6321 - 6908 ft). Survey at 2105.5 m (6908 ft) 1 deg N 40 W.
11 December 1985	TD - 2267.7 m (7440 ft). Progress - 162.1 m (532 ft). DFS - 15. Drill and survey 12-1/4" hole 2105.5 - 2267.7 m (6908 - 7440 ft). Survey at 2137.8 m (7014 ft) misrun. Survey at 2175.3 m (7137 ft) 0.5 deg S 22 W.
12 December 1985	TD - 2348.5 m (7705 ft). Progress - 80.7 m (265 ft). DFS - 16. Drill 12-1/4" hole 2267.7 m - 2289 m (7440 - 7510 ft). Circulate bottoms up. Drop survey. TOH with bit # 6. Some drag on TOH. TIH with bit # 7. Drill 12-1/4" hole 2289 - 2348.5 m (7510 - 7705 ft). Survey at 2289 m (7510 ft) 3/4 deg S 50 W.
13 December 1985	TD - 2486.2 m (8157 ft). Progress - 137.7 m (452 ft). DFS - 17. Drill 12-1/4" hole 2348.5 - 2486.2 m (7705 - 8157 ft). Circulate up drilling break at 2422.7 m (7949 ft).
14 December 1985	TD - 2586.2 m (8485 ft). Progress - 99.9 m (328 ft). DFS - 18. Drill and survey 12-1/4" hole 2486.2 - 2586.2 m (8157 - 8485 ft). Survey at 2498.7 m (8198 ft) 3/4 deg N 28 E.
15 December 1985	TD - 2614.6 m (8578 ft). Progress - 28.3 m (93 ft). DFS - 19. Drill 12-1/4" hole 2586.2 - 2589 m (8485 - 8494 ft). Drop survey and TOH with bit # 7. Test BOP's as per Amoco specifications. TIH x Bit # 8 with shock tool. Drill 12-1/4" hole 2589 - 2614.6 m (8494 - 8578 ft). Survey at 2589 m (8494 ft) 1-1/4 deg N 16 W.
16 December 1985	TD - 2744.7 m (9005 ft). Progress - 130.1 m (427 ft). DFS - 20. Drill 12-1/4" hole 2614.6 m - 2744.7 m (8578 - 9005 ft). Circulate up drlg break at 2712.7 m (8900 ft).

DATE	OPERATION
17 December 1985	TD - 2878.8 m (9445 ft). Progress - 134.1 m (440 ft). DFS - 21. Drill and survey 12-1/4" hole 2744.7 - 2878.8 m (9005 - 9445 ft). Survey at 2776.1 m (9108 ft) 3/4 deg S 60 E.
18 December 1985	TD - 2942.5 m (9654 ft). Progress - 63.7 m (209 ft). DFS - 22. Drill 12-1/4" hole 2878.8 - 2926.1 m (9445 - 9600 ft). Lost 300 psi pump pressure. TOH. L/D 2 joints of washed - out drillpipe. TIH. Drill 12-1/4" hole 2926.1 - 2927 m (9600 - 9603 ft). Lost additional 100 psi pump pressure. TOH. L/D DC/HWDP crossover sub. TIH with bit # 9. Drill 12-1/4" hole 2927 - 2942.5 m (9603 - 9654 ft).
19 December 1985	TD - 3059.3 m (10,037 ft). Progress - 116.7 m (383 ft). DFS - 23. Drill and survey 12-1/4" hole 2942.5 - 3059.3 m (9654 - 10,037 ft). Circulate up drilling break 2980 - 2984.9 m (9777 - 9793 ft). Survey at 2984.9 m (9793 ft) 1 deg N 73 E.
20 December 1985	TD - 3140 m (10,302 ft). Progress - 80.8 m (265 ft). DFS - 24. Drill 12-1/4" hole 3059.3 - 3140 m (10,037 - 10,302 ft).
21 December 1985	TD - 3148.9 m (10,331 ft). Progress - 8.8 m (29 ft). DFS - 25. Drill 12-1/4" hole 3140 - 3148.9 m (10,302 - 10,331 FT). Circulate and condition hole for logging. Drop mulitshot, TOH. Inclination at TD - 1-1/2 Deg. N 10 E Closure: 39.97 ft at 12.65 deg. Log with Schlumberger. Run # 1: MSFL-GR-BHC-SP-ISF. Run # 2: LDT-CNL-GR-CAL. Tool failed. Run # 3: LDT-CNL-GR-CAL. Tool failed.
22 December 1985	TD - 3148.9 m (10,331 ft). Progress - 0 m. DFS - 26. Run # 4: LDT-CNL-GR-CAL. Run # 5: HDT - Dipmeter GR-CAL. Run # 6: CST - shot 55, recovered 51, lost 4, 1 empty. Run # 7: VSP. R/D loggers. Total logging time - 31 hours. TIH with open-ended drillpipe to 1617.8 m (5308 ft).

DATE	OPERATION
23 December 1985	TD - 3148.9 m (10331 ft). Progress - 0 m. DFS - 27. Set balanced cement plug # 1 1617.8 - 1556.9 m (5308 - 5108 ft). L/D excess 5" drillpipe. Test cement plug # 1 - 1500 psi - ok. TIH with open-ended drillpipe to 173.7 m (570 ft). Set balanced plug # 2 173.7 - 128.0 m (570 - 420 ft). Finish lay down 5" DP pull LMRP and BOP stack.
24 December 1985	TD - 3148.9 m (10,331 ft). PBTD - 128.0 m (420 ft). DFS - 28. Blow wellhead with rig 500 ft from location on fourth attempt. RIH to recover guide base and 30" wellhead assembly. No recovery. Blow wellhead again. Recovered 30" wellhead and casing stubs. Secured TGB and PGB and layed down casing stubs. Secured rig for tow to Pelican # 5, T22/P, Bass Strait, Australia.
25 December 1985	TD - 3148.9 m (10,331 ft). PBTD - 128 m (420 ft). DFS - 29. Ballast rig up to 23 ft towing draft. Pull anchors. Conducted 75 m radius subsea site inspection with R.O.V. Rig under tow at 2245 hours 25 December 1986.

277201

CONFIDENTIAL

CLASS 1

Casing — Cementing Report
Form 20 (6-79)

22

Company	Attach Form 19
AMOCO AUSTRALIA PETROLEUM	

Well	Area	Field
KOORKAH NO 1	BASS STRAIT	TASMANIA
Rig	**Casing Size**	**Date**
DIAMOND M EPOCH	(30 ")	28 NOVEMBER 1985

Cement Data

Job Type (Check one)	Well Depth	Bit Size	Mud Weight (Prior to cementing) In	Mud Weight (Prior to cementing) Out
☒ (1) Single Stage ☐ (1) and (2) Two Stage	629'	36"	Seawater	Seawater

Cement Interval		From	To	Total	Remarks
	1.	624'	295'	329'	Returns to Seabed
	2.				

	Cement Type	Sacks	Yield (Cu. Ft./Sx)	Slurry Volume (Cu. Ft.)	Lbs./Gal.	Additives and amount (Pre blend)
1 Lead	Class 'G'	1680	1.15	1932	15.8	
1 Tail						
2 Lead						
2 Tail						

	Mixed Water Used: Type	Amount	Additives and amount (Pre mixed in water)
1 Lead	Seawater	200 bbls	1% CaCl2 (BWOW)
1 Tail			
2 Lead			
2 Tail			

(a) Total Slurry Volume (cu. ft.) 1	2	(b) Gauge Hole Volume (cu. ft.) 1	2	(c) Caliper Volume (cu. ft.) 1	2	Average Hole Size 1	2	% Excess 1	2
1932		712						171%	

Note: % Excess is calculated on basis of (a-b) ÷ b with no caliper survey or by (a-c) ÷ c with caliper survey (within the cement interval)

No. of Bbl's to Displace Plug		Calculated		Actual
☐ Rig Pump or ☒ CMT Unit	1	26	1	26
	2		2	

*** Casing Data**

Last Casing Set (measured from RKB)	Size	Weight	Grade
	- "	-	-

Final Casing String — Top to Bottom
(RKB to top of CSG string 288')

Joints	Description	Length	Set @ RKB
1	30" Cameron WSI Wellhead	46.68	334.68
1-6	30" 1" wall, Grade (B)	246.46	581.14
1	30" shoe JNT	42.85	623.99
	Note: All connectors are		
	Dril Quip NS-60 Quik Stab		

Total Joints in string	Total Joint length
	(335.99')

Centralizers: Quantity	Make	Type
NONE		

Total Section Covered	Spacing

Overall Job Remarks:
Cut job short from 2000 SXS to 1680 SXS due to faulty vent line pressure regulator caused by cement and rocks

Operational Times

Start CSG in @	0300 Hrs.			
Running CSG	10 Hrs.	0 Min's.		
Circulating 1	0 Hrs.	30 Min's.		
2	Hrs.	Min's.		
Mixing CMT 1	1 Hrs.	25 Min's.		
2	Hrs.	Min's.		
Displacing 1	0 Hrs.	5 Min's.		
2	Hrs.	Min's.		
Plug Bumped @	N/A			
w/1	Psi			
w/2	Psi			
Total Time	12 Hrs.	0 Min's.		

Surveys Run
CBL ____ Temp. ____ None X
Top of CMT @ Seabed
Based upon Observation

Toolpusher C. Jenkins
Cementer P. Unwin
Co. Rep. J. E. Guillory

*Casing measurements in ☒ feet ☐ meters

Company Representative
J. E. Guillory/J. G. Rankin

277202

Casing – Cementing Report

Form 20 (6-79)

23

Company	Attach Form 10
AMOCO AUSTRALIA PETROLEUM	

Well	Area	Field
KOORKAH NO 1	BASS STRAIT	TASMANIA
Rig	**Casing Size**	**Date**
DIAMOND M EPOCH	(20 ")	30 NOVEMBER, 1985

Cement Data

Job Type (Check one)	Well Depth	Bit Size	Mud Weight (Prior to cementing) In	Mud Weight (Prior to cementing) Out
☒ (1) Single Stage ☐ (1) and (2) Two Stage	1360'	26"	Seawater	Seawater

Cement Interval		From	To	Total	Remarks
	1.	1319'	288'	1031'	Returns to 30" Wellhead
	2.				

	Cement Type	Sacks	Yield (Cu. Ft./Sx)	Slurry Volume (Cu. Ft.)	Lbs./Gal.	Additives and amount (Pre blend)
1 Lead	Class 'G'	1500	1.94	2910	12.8	
1 Tail	Class 'G'	500	1.15	575	15.8	
2 Lead						
2 Tail						

	Mixed Water Used: Type	Amount	Additives and amount (Pre mixed in water)
1 Lead	Drillwater	386 BBLS	2.5% BWOC Gel
1 Tail	Seawater	59.5 BBLS	
2 Lead			
2 Tail			

(a) Total Slurry Volume (cu. ft.)		(b) Gauge Hole Volume (cu. ft.)		(c) Caliper Volume (cu. ft.)		Average Hole Size		% Excess	
1	2	1	2	1	2	1	2	1	2
3485		1735						101	

Note: % Excess is calculated on basis of (a-b) ÷ b with no caliper survey or by (a-c) ÷ c with caliper survey (within the cement interval)

No. of Bbl's to Displace Plug		Calculated		Actual
☐ Rig Pump or ☒ CMT Unit	1	30.4 BBLS	1	30.4 BBLS
	2		2	

* Casing Data

Last Casing Set (measured from RKB)	Size	Weight	Grade
624'	30 "	1" Wall	B

Final Casing String – Top to Bottom
(RKB to top of CSG string 286')

Joints	Description	Length	Set @ RKB
1	18 3/4" Cameron WS-1 W.H.	47.60	333.60
1	X/O 20" Grade (B) S-60 x NS-60 Pin	900.61	1234.21
23	20" Grade(B)	41.40	1275.61
1	20" Shoe Jt	43.45	1319.06

Total Joints in string	Total Joint length
26	(1023.06)

Centralizers: Quantity	Make	Type
None		

Total Section Covered	Spacing

Overall Job Remarks:
Good job, Cement line to Howco unit clogged up which shut down job for 10 mins

Operational Times

Start CSG in @	2000	Hrs.		
Running CSG	6	Hrs.	30	Min's.
Circulating 1	0	Hrs.	30	Min's.
2		Hrs.		Min's.
Mixing CMT 1	1	Hrs.	55	Min's.
2		Hrs.		Min's.
Displacing 1	0	Hrs.	5	Min's.
2		Hrs.		Min's.

Plug Bumped @ N/A
w/1 _____ Psi
w/2 _____ Psi

Total Time 9 Hrs. 0 Min's.

Surveys Run
CBL _____ Temp. _____ None _____
Top of CMT @ Seabed
Based upon Observation w/ ROV

Toolpusher C. Jenkins
Cementer P. Unwin
Co. Rep. J. G. Guillory

* Casing measurements in ☒ feet ☐ meters

Company Representative: J. E. Guillory/J. G. Rankin

277203

Casing – Cementing Report
Form 20 (6-79)

24

Company	Attach Form 18
AMOCO AUSTRALIA	

Well	Area	Field
KOOKKAH # 1	BASS BASIN	I/18P
Rig	**Casing Size**	**Date**
DIAMOND M 'EPOCH'	(13 3/8 ")	8 DECEMBER, 1985

Cement Data

Job Type (Check one)	Well Depth	Bit Size	Mud Weight (Prior to cementing) In	Mud Weight (Prior to cementing) Out
☒ (1) Single Stage ☐ (1) and (2) Two Stage	5246'	12 1/4"	9.8	9.8

Cement Interval		From	To	Total	Remarks
	1.	4475'	919'	3556	Lead Slurry
	2.	5208'	4475'	733	Tail Slurry

Cement Type		Sacks	Yield (Cu. Ft./Sx)	Slurry Volume (Cu. Ft.)	Lbs./Gal.	Additives and amount (Pre blend)
1 Lead	G	2400	1.94	4656	12.8	
1 Tail	G	500	1.15	575	15.8	
2 Lead						
2 Tail						

	Mixed Water Used. Type	Amount	Additives and amount (Pre mixed in water)
1 Lead	Freshwater	617 bbls	2.5% Gel (BWOW), 0.5% CFR-2 0.16% HR-5 (BWOC)
1 Tail	Freshwater	60 bbls	0.5% CFR-2, 0.2% HR-5 (BWOC)
2 Lead			
2 Tail			

(a) Total Slurry Volume (cu. ft.)		(b) Gauge Hole Volume (cu. ft.)		(c) Caliper Volume (cu. ft.)		Average Hole Size		% Excess	
1	2	1	2	1	2	1	2	1	2
5165				3940		19.1		31	

Note: % Excess is calculated on basis of (a-b) ÷ b with no caliper survey or by (a-c) ÷ c with caliper survey (within the cement interval)

No. of Bbl's to Displace Plug	Calculated		Actual	
☒ Rig Pump or ☐ CMT Unit	1	6116	1	6070
	2		2	

*** Casing Data**

Last Casing Set (measured from RKB)	Size	Weight	Grade
1319	20 "	94 lb/ft	NS-60

Final Casing String – Top to Bottom
(RKB to top of CSG string 288')

Joints	Description	Length	Set @ RKB
1	Weatherford 13 3/8" Float Shoe	2.08	5207.89
2-3	13 3/8" Casing, 68 lb/ft, N-80	78.50	5205.81
4	Weatherford 13 3/8" Float Collar	1.61	5127.31
5-45	13 3/8" Casing, 68 lb/ft, N-80	1582.47	5125.7
46-128	13 3/8" Casing, 72 lb/ft, N-80	3238.46	3543.23
129	13 3/8" Casing, 72 lb/ft, N-80,	14.45	304.77
130	13 3/8" Casing Hanger	2.32	290.32

Total Joints in string 126 | Total Joint length (4919.89)

Centralizers. Quantity	Make	Type

Total Section Covered	Spacing

Overall Job Remarks:

Operational Times

Start CSG in @ 1000 Hrs.
Running CSG 11 Hrs. 30 Min's.
Circulating 1 1 Hrs. 30 Min's.
2 Hrs. Min's.
Mixing CMT 1 4 Hrs. 0 Min's.
2 Hrs. Min's.
Displacing 1 1 Hrs. 0 Min's.
2 Hrs. Min's.
Plug Bumped @ 2300 PSI
w/1 Psi
w/2 Psi
Total Time 18 Hrs. 0 Min's.
Surveys Run
CBL Temp. None X
Top of CMT @ 919 FT
Based upon CALCULATED.
Toolpusher Jenkins/Jordan
Cementer Sisely
Co. Rep. Transier/Cowan

* Casing measurements in ☒ feet ☐ meters

Company Representative
L. Transier

277204

Pipe and Auxiliary Equipment Tally
(Permanent Detailed Record)
Form 19 (6-79)

Attach to Form 20

Field	Well No.	Article	Size	Date
KOORKAH			30"	28 November, 1985

Note: For casing and tubing with Hydril, Extremeline, or similar joints, record shoulder to shoulder measurements; for other tubulars, record measurement from outer edge of mill coupling to last engaged thread on field end.

Note: Denote Centralizers on or Between Joints With (X)

Measurements made with
☒ Decimal Footage Tape
☐ Meters Centimeters Tape

No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters	
1	Shoe 42	85	51			101			151			201		
2	41	17	52			102			152			202		
3	40	87	53			103			153			203		
4	39	22	54			104			154			204		
5	43	83	55			105			155			205		
6	41	52	56			106			156			206		
7	39	85	57			107			157			207		
8	Wellhead 46	68	58			108			158			208		
9			59			109			159			209		
10			60			110			160			210		
11			61			111			161			211		
12			62			112			162			212		
13			63			113			163			213		
14			64			114			164			214		
15			65			115			165			215		
16			66			116			166			216		
17			67			117			167			217		
18			68			118			168			218		
19			69			119			169			219		
20			70			120			170			220		
21			71			121			171			221		
22			72			122			172			222		
23			73			123			173			223		
24			74			124			174			224		
25			75			125			175			225		
26			76			126			176			226		
27			77			127			177			227		
28			78			128			178			228		
29			79			129			179			229		
30			80			130			180			230		
31			81			131			181					
32			82			132			182					
33			83			133			183					
34			84			134			184					
35			85			135			185					
36			86			136			186					
37			87			137			187					
38			88			138			188					
39			89			139			189					
40			90			140			190					
41			91			141			191					
42			92			142			192					
43			93			143			193					
44			94			144			194					
45			95			145			195					
46			96			146			196					
47			97			147			197					
48			98			148			198					
49			99			149			199					
50			100			150			200					

Tally of Joints Not Run

No.	Feet or Meters	
1	32	34
2	40	54
3	40	52
4	41	13
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		

No. Joints Delivered: 12

No. Joints Run: 8

Total Run – Overall: 335.99 FT

Top Pipe Below:
☒ Rotary Drive Bushing
☐ Derrick Floor

Depth Landed: 624 FT RKB

Operational Data

Casing Makeup Torque ..squinch..... ft.-lbs.

Hanging Weight @ Setting Depth ..250..... lbs.

Pick Up Weight-Drag Setting Depth .260..... lbs.

Set Down Weight-Drag Setting Depth ..240.....

Casing Hung in Tension w/ .....lbs. on hanger

Pipe Run

Item(s) No.	Size	Weight	Grade	Type Joint	Range	Qty.
1-7	30"	1"	B	D.Q. NS-60		7
8	30"	1"	B	D.Q. NS-60		1
				30" Cameron Wellhead		

277205

Pipe and Auxiliary Equipment Tally
(Permanent Detailed Record)
Form 19 (6-79)

Attach to Form 20

Field	Well No.	Article	Size	Date
Koorkah	1	Casing	20"	11/30/85

Note: For casing and tubing with Hydril, Extremeline, or similiar joints, record shoulder to shoulder measurements; for other tubulars, record measurement from outer edge of mill coupling to last engaged thread on field end.

Note: Denote Centralizers on or Between Joints With (X)

Measurements made with
☐ Decimal Footage Tape
☐ Meters Centimeters Tape

No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters	
1	Shoe 43	45	51			101			151			201		
2	38	72	52			102			152			202		
3	38	42	53			103			153			203		
4	38	53	54			104			154			204		
5	38	59	55			105			155			205		
6	38	57	56			106			156			206		
7	38	56	57			107			157			207		
8	38	55	58			108			158			208		
9	38	59	59			109			159			209		
10	38	49	60			110			160			210		
11	38	70	61			111			161			211		
12	38	59	62			112			162			212		
13	38	55	63			113			163			213		
14	37	73	64			114			164			214		
15	40	07	65			115			165			215		
16	39	12	66			116			166			216		
17	40	90	67			117			167			217		
18	40	90	68			118			168			218		
19	40	87	69			119			169			219		
20	39	01	70			120			170			220		
21	40	92	71			121			171			221		
22	40	92	72			122			172			222		
23	38	66	73			123			173			223		
24	38	65	74			124			174			224		
25	41	40	75			125			175			225		
26	47	60	76			126			176			226		
27			77			127			177			227		
28			78			128			178			228		
29			79			129			179			229		
30			80			130			180			230		
31			81			131			181					
32			82			132			182					
33			83			133			183					
34			84			134			184					
35			85			135			185					
36			86			136			186					
37			87			137			187					
38			88			138			188					
39			89			139			189					
40			90			140			190					
41			91			141			191					
42			92			142			192					
43			93			143			193					
44			94			144			194					
45			95			145			195					
46			96			146			196					
47			97			147			197					
48			98			148			198					
49			99			149			199					
50			100			150			200					

Tally of Joints Not Run

No.	Feet or Meters	
1	39	16
2	38	65
3	38	51
4	40	88
5	48	86
6	Shoe 42	23
7	X-O 41	43
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		

No. Joints Delivered: 33

No. Joints Run: 26

Total Run – Overall: 1033.06 FT

Top Pipe Below:
☒ Rotary Drive Bushing
☐ Derrick Floor

Depth Landed: 1319.06 FT RKB

Operational Data

Casing Makeup Torque ...10,000..... ft.-lbs.

Hanging Weight @ Setting Depth .160..... lbs.

Pick Up Weight-Drag Setting Depth ..160... lbs.

Set Down Weight-Drag Setting Depth .160.....

Casing Hung in Tension w/ .....lbs. on hanger

Pipe Run

Item(s) No.	Size	Weight	Grade	Type Joint	Range	Qty.
1	20"	94 #	B	D.Q. S-60	III	1
2-13	20"	129 #	B	D.Q. S-60	III	12

Pipe and Accessory Equipment Tally
(Permanent Detailed Record)
Form 19 (6-79)

Attach to Form 20

Field	Well No.	Article	Size	Date
KOORKAH	1	SURFACE CASING	13 3/8"	7 DECEMBER, 1985

Note: For casing and tubing with Hydril, Extremeline, or similar joints, record shoulder to shoulder measurements; for other tubulars, record measurement from outer edge of mill coupling to last engaged thread on field end.

Note: Denote Centralizers on or Between Joints With (X)

Measurements made with
☐ Decimal Footage Tape
☐ Meters Centimeters Tape

No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters		No.	Feet or Meters	
1	Shoe 2	08	51	39	40	101	39	58	151			201		
2	39	50	52	39	53	102	38	99	152			202		
3	39	00	53	33	91	103	38	46	153			203		
4	1	61	54	39	41	104	39	57	154			204		
5	39	11	55	38	94	105	39	11	155			205		
6	37	27	56	39	26	106	38	99	156			206		
7	38	88	57	38	17	107	38	79	157			207		
8	39	37	58	37	42	108	39	58	158			208		
9	39	65	59	38	40	109	39	59	159			209		
10	37	86	60	38	37	110	39	58	160			210		
11	39	06	61	38	99	111	39	58	161			211		
12	38	94	62	39	58	112	39	56	162			212		
13	38	64	63	39	57	113	39	59	163			213		
14	38	60	64	38	60	114	39	60	164			214		
15	38	74	65	38	86	115	39	59	165			215		
16	39	71	66	38	88	116	39	05	166			216		
17	39	70	67	39	33	117	39	58	167			217		
18	39	26	68	39	58	118	39	29	168			218		
19	39	36	69	39	58	119	38	81	169			219		
20	35	98	70	37	91	120	39	04	170			220		
21	38	49	71	38	91	121	39	59	171			221		
22	36	73	72	39	57	122	38	57	172			222		
23	38	74	73	38	98	123	37	75	173			223		
24	38	39	74	38	64	124	38	69	174			224		
25	36	26	75	39	57	125	38	72	175			225		
26	38	92	76	39	09	126	39	55	176			226		
27	38	15	77	39	10	127	39	24	177			227		
28	37	30	78	38	64	128	38	13	178			228		
29	37	12	79	39	58	129	14	45	179			229		
30	39	57	80	39	58	130	2	32	180			230		
31	39	75	81	39	45	131			181					
32	39	40	82	37	99	132			182					
33	39	14	83	39	59	133			183					
34	39	34	84	39	57	134			184					
35	34	29	85	38	20	135			185					
36	39	64	86	39	24	136			186					
37	39	25	87	39	25	137			187					
38	38	85	88	39	58	138			188					
39	39	60	89	39	59	139			189					
40	39	21	90	39	33	140			190					
41	38	49	91	38	22	141			191					
42	39	60	92	39	59	142			192					
43	38	57	93	39	59	143			193					
44	38	51	94	39	06	144			194					
45	39	60	95	39	59	145			195					
46	38	15	96	39	45	146			196					
47	38	88	97	39	31	147			197					
48	38	93	98	37	99	148			198					
49	38	18	99	38	08	149			199					
50	38	97	100	39	59	150			200					

Tally of Joints Not Run

No.	Feet or Meters	
1	38	50
2	39	59
3	39	28
4	38	58
5	38	52
6	38	94
7	39	57
8	36	05
9	38	18
10	39	24
11	38	15
12	39	08
13	38	57
14	39	59
15	38	67
16	38	68
17	39	57
18	38	84
19	38	70
20	39	56
21	39	43
22	38	27
23	39	57
24	39	16
25	39	16
26	39	58
27	38	91
28		
29		

No. Joints Delivered: 153

No. Joints Run: 126

Total Run – Overall: 4919.89 FT

Top Pipe Below:

☒ Rotary Drive Bushing
☐ Derrick Floor

Depth Landed: 5207.89 FT RKB

Operational Data

Casing Makeup Torque (...) 8000 ft.-lbs.

Hanging Weight @ Setting Depth 308K lbs.

Pick Up Weight-Drag Setting Depth 368K lbs.

Set Down Weight-Drag Setting Depth 298K

Casing Hung in Tension w/ ..... lbs. on hanger

Pipe Run

Item(s) No.	Size	Weight	Grade	Type Joint	Range	Qty.
1	13 3/8			Buttress (Shoe)		1
2-3	13 3/8	68	N-80	Buttress	3	2
4	13 3/8			Buttress (Float Collar)		1
5-45	13 3/8	68	N-80	Buttress	3	43
46-128	13 3/8	72	N-80	Buttress	3	83
129-130	13 3/8			Buttress (pup jt/Hgr)		

SUBMITTED BY: BAROID

FOR

AMOCO AUSTRALIA PETROLEUM CO

DRILLING FLUID RECAP

KOORKAH NO. 1

DATA MAY NOT AGREE WITH AMOCO DATA

Prepared By : Steve Eckfeld
Miles Sewell
Steve Bracker

Dated : January 1986

277203

TABLE OF CONTENTS

1. WELL SUMMARY

2. DISCUSSION BY INTERVAL

3. CONCLUSIONS AND RECOMMENDATIONS

4. MATERIAL RECAP (BY INTERVAL)

5. MATERIAL RECAP SUMMARY

6. DRILLING FLUID PROPERTIES RECAP

7. GRAPHS

WELL SUMMARY

Operator	:	Amoco Australia Petroleum Company
Well Number	:	Koorkah No. 1
Location	:	T-18P, Bass Basin, Tasmania
Contractor	:	Diamond M
Rig	:	Epoch
Total Depth	:	10331 ft (3148.9 M)
Water Depth/KB to Ocean Floor	:	222 ft / 295 ft (67.6/89.9 M)
Arrived on Location	:	25 November 1985
Spud Date	:	27 November 1985
* Date Reached T.D.	:	22 December 1985
* Total Days Drilling	:	25
Date off Location	:	25 December 1985
Total Days on Well	:	29
* Total Cost of Mud Materials	:	$120,205.35
* Mud Costs/Ft	:	$11.98
* Mud Costs/Day	:	$4,452.05
* Engineer Service 27 Days @ $250	:	$6,750.00
Total Cost Materials and Engineer Service	:	$126,955.35
Mud Materials Not Charged to Drilling	:	$1,740.80
Engineer Service Not Charged to Drilling	:	$750.00
Casing Program	:	30" @ 624 ft (190.1 M)
		20" @ 1319 ft (402.0 M)
		13 3/8" @ 5208 ft (1587.4 M)

* Calculated from actual spud to P and A.

277210

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

36" Hole	RKB to 629 ft (RKB to Seabed = 297 ft)	(90.5 - 191.7 M)
	30" casing set at 624 ft	(190.1 M)

Koorkah No. 1 was spudded at 15:12 hrs on November 28, 1985.

The 36" hole was drilled with seawater, pumping a 50 bbl high viscosity pill every 60 feet. Fluid returns were to the seabed. At 629 feet the hole was flushed with 75 bbls of high viscosity mud followed by seawater. After making a wiper trip to the mudline, 450 bbls of high viscosity mud were displaced into the hole.

The high viscosity mud was prepared by prehydrating 40 ppb AQUAGEL bentonite in drill water and then flocculating this mix with Lime just prior to pumping downhole.

Mud carrying capacity was excellent and good yield points were obtained. No problems were experienced in running the 30" casing to 624 feet.

26" Hole	629 to 1360 ft	(191.7 - 414.5 M)
	20" casing set at 1319 ft	(402.0 M)

As with the previous 36" hole section, 26" hole was drilled with seawater. 50 bbl pills of high viscosity Bentonite mud were pumped periodically to assist with hole cleaning and stability. Returns were to the seabed.

At 1330 feet, the hole was swept with a 200 bbl high viscosity pill prior to making a wiper trip to the 30" hole. When running back in the hole, the hole had to be washed back from 1192 feet to 1330 feet because of fill. Drilling proceeded to 1360 feet. 600 bbls of high viscosity mud weighted to 9.0 ppg were pumped into the hole. A wiper trip was run to 600 ft. No fill was encountered. A further 600 bbls of high viscosity mud weighted to 9.1 ppg were displaced into the hole prior to pulling out to run casing. 20" casing was run and cemented at 1319 feet.

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

$17^1/2$" Hole	1360 ft to 5246 feet	(414.5 - 1599.0 M)
	$13^3/8$" casing set at 5208 feet	(1587.4 M)

General

After running the B.O.P. stack and riser, the cement was drilled out using seawater. The hole was displaced while drilling the float shoe with a freshly prepared Freshwater - AQUAGEL (25 ppb) - DEXTRID (4 ppb) mud.

Drilling proceeded to 2530 ft when the flowline became plugged with gumbo. The gumbo was unexpected and continued to give problems in this hole section. Heavy mud losses were experienced over the shakers due to plugging of the screens by gumbo. Screen sizes were changed from 40/20 mesh to 20/20 mesh in an attempt to minimize losses. Due to substantial viscosity increases from the incorporation of bentonitic solids into the mud, the mud treatment centered around the addition of water, Caustic Soda and thinners as well as the continuous use of all solids control equipment.

As drilling continued, drillwater and thinner quantities were short as a result of the workboat being unable to unload due to bad weather. Dilution with seawater commenced, resulting in flocculation of the mud which couldn't be adequately treated with the reduced supply of thinner avaiable.

At 3953 ft, 4172 ft and 4588 ft the flowline again became blocked with gumbo. Mud viscosities were becoming increasingly unstable and resistant to low available supplies of thinners and drillwater.

Below 4500 ft, the presence of CO_2 was suspected. CO_2 has been encountered in both Yolla No. 1 and Tilana No. 1 in this hole phase. Steps were taken to counter the carbonate contamination with additions of Lime and Q-BROXIN.

At T.D. for this hole section of 5246 ft, the mud was again conditioned for carbonate contamination. The mud weight at this time was 9.1 ppg.

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

$17^1/2$" Hole (Cont'd)

General (Cont'd)

On running in to log, the hole was bridged at 4048 ft. The mud weight was subsequently raised to 9.8 ppg, the hole reconditioned and logs and casing were successfully run.

Solids Control Equipment

Upon the recommendation of Amoco's Mud Consultant, the solids control equipment was upgraded by the addition of a second high volume centrifuge.

The solids control system was run as a closed loop system, thereby saving on estimated 600 - 700 bbls of water and chemicals per day, which would otherwise be discharged overboard. Considering the shortage of drillwater in this hole phase (see General section), the importance of this system can not be over-emphasized.

The solids control equipment consisted of a 5 x 10" cone desander, a 15 x 4" cone desilter, 2 Sweco mud cleaners which were run as desilters, a Baroid 24" x 38" High Volume Centrifuge, a Sweco 24" x 40" SC4 Centrifuge, and 2 Swaco shale shakers which were run for most of the drilling with 20/20 mesh screen to reduce mud losses due to blinding with gumbo.

Despite high drilling rates of 200-300 ft hour, and dispersive formations being drilled, the solids control equipment running in a closed loop mode generally performed well. Maximum mud weight for this section was 9.3 ppg and maximum low gravity solids content was 59 ppb with an average of 45-50 ppb, despite massive volumes of solids being generated (up to 50 tons per hour).

To be able to maintain a low-solids system as requested by Amoco, without this system could only be accomplished by significantly higher dilution rates than 1.7 bbls/ft as experienced on Koorkah No. 1 and the resultant higher chemical consumption and cost.

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

17 1/2" Hole (Cont'd)

Mud Properties

Mud weights while drilling were maintained as low as possible and ranged from 8.8 ppg when fresh to 9.3 ppg. This was subsequently raised to 9.8 ppg prior to logging and running casing.

Plastic viscosities showed an increasing trend, despite continuous use of all solids control equipment, as fine solids build-up occurred. Yield points were kept high enough to ensure adequate hole cleaning. Typical PV/YP ranges were 8-17 / 10-20.

Filtration control was obtained through the use of DEXTRID initially, but as drilling of dispersive gumbo clays proceeded, filtrate control was suplemented through a higher MBT content and Q-BROXIN. API filtrate loss values ranged from 4.2 to 10.7 cc /30 min.

Mud solids were kept at an acceptable average of 5-7% at low mud weights as a result of the efficient solids control system. A mud dilution rate as calculated on the material recap of 1.71 bbl/ft gives an acceptable but artificially high figure, as this also includes pills and weighted mud displaced into the hole after reaching 5246 ft. A dilution rate of 1.48 bbl/ft is correct for this section while actual drilling was in progress.

The clay content was maintained at 25-27.5 ppb. The fact that the clay content did not become any higher, despite the presence of significant amounts of gumbo, is further proof of the value of the improved solids control equipment layout.

Slight carbonate contamination was inferred below 5,000 feet. This was corrected with small additions of Lime to the system. Carbonate contamination was also evident in Yolla No. 1 and Tilana No. 1.

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

$17^1/2$" Hole (Cont'd)

Mud Properties (Cont'd)

Recommended mud properties are compared against actual mud properties below:

Mud Property		Programmed	Actual
Density	lb/gal	8.9 - 9.2	8.8 - 9.3 *
Yield Value	lbs/100 ft^2	8 - 20	10 - 20
10 sec gel	lbs/100 ft^2	6 - 15	6 - 12
10 min gel	lbs/100 ft^2	15 -20	20 - 35
API Fluid Loss	cc/30 min	<20	4.2 - 10.7
Bentonite	ppb	20 - 30	25 - 27.5
Nitrate	ppm	150 - 250	Not run - KNO_3 shortage
pH		10.5 - 11.0	10.2 - 11.7

* The mud weight was subsequently raised to 9.8 ppg prior to running casing.

HOLE PROBLEMS

Two types of hole problems were experienced.
The first problem was the presence of "gumbo" clays. These clays caused blocking of the flowline, heavy mud losses over the shakers and problem running back to bottom after connections. A partial solution may have been to drill with a controlled drilling rate of up to 100 ft/hr and if possible, increased pump rates. The flowline became blocked with gumbo at 2530 ft, 3953 ft, 4172 ft and 4588 ft.

Hole instability was the second problem. Upon running in to log, the tool was unable to pass 4048 ft. When running in to clean out the hole, a gumbo ball was pushed to bottom, and the lower 1000 feet of hole had to be reamed back.

277215

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

17 1/2" Hole (Cont'd)

HOLE PROBLEMS (Cont'd)

The mud weight was subsequently raised from 9.1 ppg to 9.8 ppg. Two high viscosity pills of 50 bbls each containing 5 ppb KWIK-SEAL LCM were pumped. Quantities of small blocky shale pieces were circulated out of the hole. Prior to pulling out of the hole, 350 bbls of 10.7 ppg mud were spotted on bottom. Logs were run to bottom at 5246 feet. The caliper log showed an average hole diameter of 19.2 inches with portions, particularly around 4000 feet, washed out to in excess of 22 inches.

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

$12^1/4$" HOLE: 5246 to 10331 ft (1599.0 - 3148.9 M)

General

After testing the BOP stack, picking up a new BHA and running into the hole, cement and the shoe were drilled out with mud from the previous interval. At the shoe the hole was displaced with premixed Low-Solids/Non-Dispersed Freshwater Mud. New formation was drilled to to 5251 ft, where a sample from a drilling break was circulated up. At 5740 ft, another drilling break occurred and a sample was again circulated up. $12^1/4$" hole was drilled to 6321 ft where the bit was changed.

Drilling continued through Sandstone and Siltstone. At this stage, fine sand began blocking the shaker screens and the pump rate was reduced to minimise mud losses. New mud was premixed and continually added to the system to maintain volume. All available solids equipment was run, but it was still necessary to dilute with premix mud to minimise solids build-up, as well as to maintain volume.

At approximately 7000 ft, contamination by CO_2 was noticed and additions of Lime were begun to counteract this. Mud properties improved after breakover and drilling continued without any major problems.

While drilling from 7500 ft to 8500 ft, one shaker needed repairs and it was necessary to increase dilution with premixed mud to maintain minimum drill solids.

At 7510 ft, the bit was changed and the trip recorded drag at 7180 ft (20 klb.), 7118 ft (415 klb.) and 7205 ft (60 klb.). No fill was evident on the trip in the hole and drilling continued.

277217

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

$12^1/4$" HOLE (Cont'd)

General (Cont'd)

At 8494 ft, another bit trip was made and this time, the hole showed neither drag nor fill. Drilling continued through Sandstone and Siltstone without any problems. Additions of premixed mud and Lime were continued until the hole was drilled to T.D. at 10331 ft. A wiper trip was made and after the hole was shown to be in good condition, electric logs were run. The hole was then plugged and abandoned.

Solids Control Equipment

Throughout the $12^1/4$" section, the solids control equipment was run as a closed loop, as in the $17^1/2$" section. This proved extremely effective and, upon comparison with Tilana No. 1, showed a saving of 6675 bbls of drillwater over the same section. Drill solids were in the range of 35-45 ppb and a maximum of 52 ppb was achieved through the use of this system. The importance of this system cannot be overemphasized. Not only were the drilled solids minimised, but any problems that were experienced through lack of drillwater on other wells in the area, were eliminated due to the efficient processing of all effluent by this closed system.

Mud Properties

While drilling, mud weights were maintained at a minimum through the use of the closed loop solids control system and minimal dilution with premixed mud.

Despite the maintenance of a minimum mud weight, the fine drill solids content rose slowly and was evident in the increase of the Plastic Viscosity. This PV however only reached a maximum of 20 and was never the cause of any problems. The yield point was maintained at 10-15 and this ensured that the hole was adequately cleaned.

277213
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CLASS 1

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

12 1/4" HOLE (Cont'd)

Mud Properties (Cont'd)

Filtration control was initially achieved through the use of DEXTRID and later supplemented with PAC. API filtrate loss values ranged from 5.0 - 7.0 cc/30 min.

Mud solids were maintained at 5 - 7.5% due to the improved efficiency of the solids control system. The section recap yielded a mud dilution factor of 1.21 bbls/ft. This showed that, despite maintaining very acceptable levels of mud solids, usage of premixed mud was kept to a minimum, and further emphasised the importance of an efficient solids control system.

Carbonate contamination was evident below 7000 ft and was treated with additions of Lime.

Below are the ranges of the mud properties through this section.

Density	:	8.8 - 9.3 ppg
Plastic Viscosity	:	12 - 20 cp
Yield Point	:	10 - 15 lbs/100 sq ft
10 sec Gel	:	8 - 15 lbs/100 sq ft
10 min Gel	:	15 - 30 lbs/100 sq ft
API Fluid Loss	:	5 - 7 cc/30 min
HPHT Fluid Loss	:	18 - 21 cc/30 min @ 220°F
Solids	:	5 - 7.5%
Meth. Blue Content	:	18 - 20 ppb
pH	:	10.5 - 11.5

4 ppb Gilsonite and 0.3 ppb HME were maintained in the mud system throughout this interval to control and minimise any shale problems.

277219

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

DISCUSSION BY INTERVAL

$12^1/4$" HOLE (Cont'd)

Hole Problems (Cont'd)

The only problem experienced during this section was contamination by CO_2. This was overcome by the additions of small amounts of Lime. DFLC was used as a deflocculant to maintain acceptable rheological properties. Observations on the performance of DFLC deflocculant are included in the following section.

277220

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

CONCLUSIONS AND RECOMMENDATIONS

The mud system used in the $17^1/2$" hole performed well and at reasonable cost, despite a shortage of drillwater and thinners in the presence of highly dispersible clays. Good solids control equipment is essential to good mud performance, particularly in the claystones and gumbo clays of the Torquay Group.

The $12^1/4$" section was drilled with minimal problems and, due to the improved solids control equipment, dilution was kept to a minimum and so mud costs were also minimised. Carbonate contamination is a problem that has been experienced before in the Bass Basin and should be expected in future wells. Treatment should be commenced immediately signs of CO_2 are noticed and adequate supplies of appropriate chemicals should be maintained on the rig at all times.

DFLC Usage in $12^1/4$" Section

Prior to drilling out the $13^3/8$" casing shoe, the new mud (20 ppb AQUAGEL, 0.75 ppb Caustic Soda, 3 ppb DEXTRID) was pretreated with 0.05 ppb DFLC. The concentration was raised to 0.1 ppb over the first 8 hours of drilling. There was a definite viscosity "hump" noticed at a concentration of 0.075 ppb. This was possibly due to flocculation from very high pH (cement contamination) and initial flocculation by DFLC before it sheared. After approximately 8 hours circulation, the viscosity broke back and values of 45 sec (Suction Pit) and 48 secs (Flowline) were recorded. Comparison of rheological properties show the effects of DFLC on the mud.

	PV	YP	Gels (10s/10m)	Viscosity (In/Out)
Premix Mud	13	33	13/16	50/60
Mud with 0.1 ppb DFLC (after 24 hrs)	12	5	3/15	37/39

277221

AMOCO AUSTRALIA PETROLEUM COMPANY
KOORKAH NO. 1

CONCLUSIONS AND RECOMMENDATIONS

DFLC Usage in $12^1/4$" Section (Cont'd)

Additions of 4 ppb Gilsonite and 0.3 ppb HME were also made to the system and these only caused a slight increase in the PV (10-12).

The use of DFLC produced acceptable rheology. However, if used as an alternative to Q-BROXIN, it is not as cost effective. 1 sack of DFLC can be considered roughly equivalent to 10 sacks of Q-BROXIN. Using a price of $235.50/sx for DFLC and $15.11/sx for Q-BROXIN, it can be seen that Q-BROXIN is far cheaper. As it seems to take several circulations before the DFLC takes effect, then if the rheology needs rapid treatment, DFLC would not be as effective as Q-BROXIN.

277222

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL RECAP

COMPANY AMOCO AUSTRALIA
WELL KOORKAH NO. 1
LOCATION T-18P BASS STRAIT
COST/DAY US $3,942.42
COST/FT US $ 11.11
COST/BBL US $ 4.01
RECAPPED BY M SEWELL/S ECKFELD
DATE DECEMBER 1985

MUD TYPES SEAWATER & FRESHWATER SPUD MUD
CONTRACTOR DIAMOND M EPOCH
DRILLING DAYS/PHASE 3
ROTATING HRS/PHASE 9.4 HRS

HOLE SIZE 36"/26"
INTERVAL TO 1360 Ft (414.5 M)
FROM 295 Ft (89.9 M)
FEET DRILLED 1065 Ft (324.6 M)

MUD CONSUMPTION FACTOR 2.8 BBL/Ft

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	ESTIMATED KG/M³	ACTUAL USED	ACTUAL PPB	TOTAL COST ESTIMATED	TOTAL COST ACTUAL
AQUAGEL	100 lb	13.21			590	20.0		7,793.90
CAUSTIC SODA	70 kg	53.93			16	0.8		862.88
SODA ASH	40 kg	14.01			5	0.1		70.05
LIME	25 kg	5.38			29	0.5		156.02
BARITE	100 lb	8.66			340	-		2,944.40
CEMENTING MATERIALS: NOT INCLUDED IN COST OF DRILLING MUD								
CALCIUM CHLORIDE	25 kg	7.78			20			155.60
AQUAGEL	100 lb	13.21			60			792.60

- NOT CHARGED TO DRILLING US$(948.20)

CHEMICAL VOLUME	45 BBL	
FRESH WATER	29.95 BBL	
SEA WATER		
TOTAL MUD MADE	29.95 BBL	
COST LESS BARYTES		US$8,882.85
COST WITH BARYTES		US$11,827.25

COMMENTS : THESE SECTIONS WERE DRILLED WITH SEAWATER AND RETURNS TO SEA FLOOR. HIGH VISCOSITY SLUGS WERE PUMPED AS REQUIRED.

277223

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL RECAP

COMPANY AMOCO AUSTRALIA
WELL KOORKAH NO. 1
LOCATION T-18P BASS STRAIT
COST/DAY US$6,660.99
COST/FT US$ 12.00
COST/BBL US$ 7.02
RECAPPED BY S ECKFELD
DATE DECEMBER 1985

MUD TYPES DISPERSED GEL-STARCH

CONTRACTOR DIAMOND M, EPOCH
DRILLING DAYS/PHASE 5 (PLUS 2 CONDITIONING HOLE/LOGGING)
ROTATING HRS/PHASE 35.0 HRS

HOLE SIZE 17½"
INTERVAL TO 5246 Ft (1599 M
FROM 1360 Ft (414.5 M
MTRS DRILLED 3886 Ft (1184.4M

MUD CONSUMPTION FACTOR 1.71 BBL/Ft

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	ESTIMATED KG/M³	ACTUAL USED	ACTUAL PPB	TOTAL COST ESTIMATED	TOTAL COST ACTUAL
AQUAGEL	100 lb	13.21			890	13.4		11,756.90
CAUSTIC SODA	70 kg	53.93			59	1.4		3,181.87
DEXTRID	25 kg	28.27			306	2.6		8,650.62
POTASSIUM NITRATE	50 kg	45.01			3	0.05		135.03
Q-BROXIN	25 kg	15.11			241	2.0		3,641.51
DFLC	25 lb	235.00			2	-		470.00
CARBONOX	50 lb	7.78			76	0.6		591.28
LIME	25 kg	5.38			27	0.2		145.26
SODA ASH	40 kg	14.01			2	-		28.02
KWIK SEAL	40 lb	19.68			12	-		236.16
PAC-L	25 kg	85.53			48	0.4		4,105.44
BARITE	100 lb	8.66			1580	-		13,682.80

CHEMICAL VOLUME	160 BBL
FRESH WATER	5525 BBL
SEA WATER	950 BBL
TOTAL MUD MADE	6635 BBL
COST LESS BARYTES	US$32,942.09
COST WITH BARYTES	US$46,624.89

COMMENTS : DRILLED 17½" HOLE IN ONE PASS. CLAYSTONES AND GUMBO IN TORQUAY GROUP. GUMBO PROBLEMS SEVERE. SOME CO^2 CONTAMINATION SUSPECTED IN LOWER PORTION OF HOLE. NEEDED TO RAISE WEIGHT TO 9.8 PPG PRIOR TO RUNNING CSG - HOLE INSTABILITY.

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL RECAP

COMPANY AMOCO AUSTRALIA
WELL KOORKAH NO. 1
LOCATION T-18P BASS STRAIT
COST/DAY US$3,632.54
COST/FT US$ 12.14
COST/BBL US$ 10.04
RECAPPED BYS BRACKER
DATE DECEMBER 1985

MUD TYPES NON-DISPERSED FRESHWATER GEL-POLYMER
CONTRACTOR DIAMOND M, EPOCH
DRILLING DAYS/PHASE 17
ROTATING HRS/PHASE 199.7 HRS

HOLE SIZE 12¼"
INTERVAL TO 10,331 Ft 3148.
FROM 5,246 Ft 1599
FEET DRILLED 5,085 Ft 1549
MUD CONSUMPTION FACTOR 1.21 BBL/Ft

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	ESTIMATED KG/M³	ACTUAL USED	ACTUAL PPB	TOTAL COST ESTIMATED	TOTAL COST ACTUAL
AQUAGEL	100 lb	13.21			980	16.0		12,945.80
CAUSTIC SODA	70 kg	53.93			50	1.3		2,696.50
DEXTRID	25 kg	28.27			381	3.4		10,770.87
POTASSIUM NITRATE	50 kg	45.01			41	0.7		1,845.41
DFLC	25 lb	235.00			53	0.2		12,455.00
LIME	25 kg	5.38			99	0.9		532.62
PAC-L	25 kg	85.53			78	0.7		6,671.34
PAC-R	25 kg	85.53			6	0.05		513.18
CELPOL	25 kg	85.53			8	0.07		684.24
GILSONITE	50 lb	27.00			259	2.1		6,993.00
HME	25 gal	52.00			54	0.5		2,808.00
ALUMINIUM STEARATE	25 lb	22.75			1	-		22.75
BARITE	100 lb	8.66			325	5.3		2,814.50

CHEMICAL VOLUME 227 BBL
FRESH WATER 5925 BBL
SEA WATER
TOTAL MUD MADE 6152 BBL
COST LESS BARYTES US$58,938.71
COST WITH BARYTES US$61,753.21

COMMENTS: DRILLED THIS SECTION WITHOUT ANY MAJOR PROBLEMS. CO^2 CONTAMINATION EVIDENT BELOW 7000 FT. CLOSED LOOP SOLIDS CONTROL SYSTEM USED THROUGHOUT THIS SECTION - PROVED VERY EFFECTIVE AS VOLUME OF DRILLWATER DRAMATICALLY REDUCED AS COMPARED TO TILANA NO. 1.

277225

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

MATERIAL SUMMARY

COMPANY	AMOCO AUSTRALIA	MUD TYPE	HOLE SIZE	FEET DRILLED	DRILLING DAYS
WELL	KOORKAH NO. 1	SEAWATER AND FRESHWATER GEL PILLS	36"	334	1 (101.8 M)
LOCATION	T-18P BASS STRAIT	DISPERSED GEL-STARCH	26"	731	2 (222.8 M)
COST/DAY	US$4,452.05	NON-DISPERSED FRESHWATER GEL-POLYMER	17½"	3886	7 (1184.4M)
COST/FT	US$ 11.98	TOTAL ROTATING HRS 244.1	12¼"	5085	17 (1549.9 M)
COST/BBL	US$ 7.62	TOTAL DAYS ON HOLE 27			
RECAPPED BY	S BRACKER	TOTAL DEPTH 10,331 Ft	TOTAL	10336 Ft	27 Days
DATE	DECEMBER 1985	MUD CONSUMPTION : WELL AVERAGE 1.57 BBL/Ft			

MATERIAL	UNIT	UNIT COST	ESTIMATED USED	KG/M³	ACTUAL USED	PPB	TOTAL COST ESTIMATED	ACTUAL
AQUAGEL	100 lb	13.21			2460	15.6		32,496.60
CAUSTIC SODA	70 kg	53.93			125	1.2		6,741.25
SODA ASH	40 kg	14.01			7	0.04		98.07
LIME	25 kg	5.38			155	0.5		833.90
DEXTRID	25 kg	28.27			687	2.4		19,421.49
POTASSIUM NITRATE	50 kg	45.01			44	0.3		1,980.44
Q-BROXIN	25 kg	15.11			241	0.8		3,641.51
DFLC	25 lb	235.00			55	0.09		12,925.00
CARBONOX	25 kg	7.78			76	0.3		591.28
KWIKSEAL	40 lb	19.68			12	0.03		236.16
PAC-L	25 kg	85.53			126	0.4		10,776.78
PAC-R	25 kg	85.53			6	0.02		513.18
CELPOL	25 kg	85.53			8	0.03		684.24
GILSONITE	50 lb	27.00			259	0.8		6,993.00
HME	25 gal	52.00			54	0.2		2,808.00
ALUMINIUM STEARATE	25 lb	22.75			1			22.75
BARITE	100 lb	8.66			2245	14.2		19,441.17
								US$120,205.35
CEMENTING MATERIALS: NOT CHARGED TO DRILLING								
CALCIUM CHLORIDE	25 kg	7.78			20			155.60
AQUAGEL	100 lb	13.21			120			1,585.20
								US$1,740.80

CHEMICAL VOLUME	432 BBL	
FRESH WATER	14400 BBL	
SEA WATER	950 BBL	
TOTAL MUD MADE	15782 BBL	
COST LESS BARYTES		US$100,763.65
COST WITH BARYTES		US$120,205.35
COMMENTS		

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

DRILLING FLUID PROPERTY RECAP

COMPANY AMOCO AUSTRALIA PETROLEUM COMPANY WELL KOORKAH NO. 1

DATE 1985	DEPTH Ft	HOLE SIZE	TEMP °F	WEIGHT ppg	VIS SEC	PV	YP	GELS 10 sec	GELS 10 min	WATER LOSS A.P.I.	CAKE mm	pH	Pf	Mf	Cl mg/l	Ca mg/l	SAND %	SOLIDS %	WATER %	OIL %	MBC ppb	REMARKS TREATMENT	FORMATION
NOVEMBER																							
28	629	36"	-	8.8	170																	SPUD MUD, RETURNS TO SEA FLOOR	
29	774	26"	-	8.8+	20	11	51	11	35			10.5									25	" " " " " "	
30	1360	"	-	9.0	20	11	50	11	35			10.5									25	" " " " " "	
DECEMBER																							
1	1360	-	-	8.8	59	14	22	12	26	4.3	1	11.7	1.4	1.5	2500	30	-	3	97	-	25	GEL-STARCH MUD	
2	2570	17½"	98	9.1	41	8	11	10	23	4.2	1	11.1	1.4	2.2	1100	20	Tr	5	95	-	22.5	ADD Q-BROXIN, GUMBO	CLYST, GUMBO
3	3750	"	118	9.0+	58	8	10	9	44	6.4	1	9.7	0.2	0.4	8200	200	Tr	7	93	-	27.5	DRILLWATER SHORT, ADD SEAWATER	CLYST, GUMBO
4	4560	"	123	9.3	64	7	11	8	23	10.7	2	11.3	0.9	1.7	6100	100	Tr	7.5	92	-	27.5	ADD DRILLWATER	" "
5	5120	"	130	9.2+	48	11	17	15	33	10.2	2	10.2	0.5	0.9	5000	40	Tr	8	92	-	25	SUSPECT CO_2 ADD LIME/Q-BROXIN	" "
6	5246	"	132	9.1	48	10	10	6	18	6.8	2	10.5	0.7	0.9	6100	80	Tr	7	93	-	25	" " " " "	" "
7	5246	"	130	9.8	44	17	16	8	24	6.2	2	10.7	0.8	1.4	5200	80	Tr	9	91	-	25	HOLE INSTABILITY, RAISE WEIGHT	" "
8	5246																					DUMP & CLEAN PITS, MIX NEW MUD	
9	5265	12¼"	118	8.7+	60	13	35	13	34	5.0	1	11.7	1.3	1.9	700	10	Tr	3.5	96	-	20	NEW LSND MUD, ADD DFLC	CLYST, SAND
10	6285	"	133	8.8+	42	12	7	4	26	6.5	1	10.5	0.4	0.6	500	20	Tr	4	96	-	20	ADD DFLC & GILSONITE	SLTST, SDST
11	6780	"	136	8.9	44	19	10	3	22	5.6	1	11.2	0.7	1.2	750	10	Tr	5	95	-	20	ADD PREMIX, SAND BLINDING SHAKERS	" "
12	7370	"	135	9.0+	42	18	9	3	14	6.2	1	10.5	0.4	0.7	550	30	Tr	6.75	93	-	20	CO_2 CONTAM.-ADD LIME	CLYST, SLTST
13	7648	"	134	9.1+	47	15	13	9	19	6.5	1	10.4	0.2	0.4	500	20	Tr	7.5	92	-	20	" " " "	" "
14	8100	"	143	9.1+	45	14	9	13	34	7.8	1	11.5	0.5	0.8	480	20	Tr	6.0	94	-	20	ADD LIME & PREMIX	SDST, SLTST
15	8437	"	147	9.1+	47	9	14	15	28	6.8	1	11.4	0.5	0.8	510	10	Tr	6.5	93	-	20	" " " "	CLYST
16	8520	"	133	9.2	47	13	15	16	27	6.6	1	11.0	0.4	0.7	550	10	Tr	6.75	93	-	20	" " " "	SDST, SLTST, CLYST
17	8905	"	137	9.2+	52	15	13	12	20	6.3	1	11.6	0.7	1.2	460	Tr	Tr	7.25	92	-	20	" " " "	SDST, SLTST
18	9372	"	149	9.2+	52	19	12	12	22	6.2	1	11.4	0.5	1.1	950	40	Tr	7.5	92	Tr	20	" " " "	" "
19	9623	"	136	9.2+	50	17	11	9	18	6.7	1	11.5	0.4	1.1	1500	80	Tr	7.5	92	Tr	17	" " " "	SDST, SLTST, CLYST
20	9965	"	149	9.2+	56	20	13	8	20	6.4	1	11.4	0.6	1.4	1900	80	Tr	7.2	92	Tr	18	" " " "	SDST
21	10238	"	154	9.3	49	15	11	10	23	7.0	1	11.0	0.4	1.0	2000	80	Tr	7.2	92	Tr	18	" " " "	SDST, CLYST

277226

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

DRILLING FLUID PROPERTY RECAP

COMPANY AMOCO AUSTRALIA PETROLEUM COMPANY WELL KOORKAH NO.1

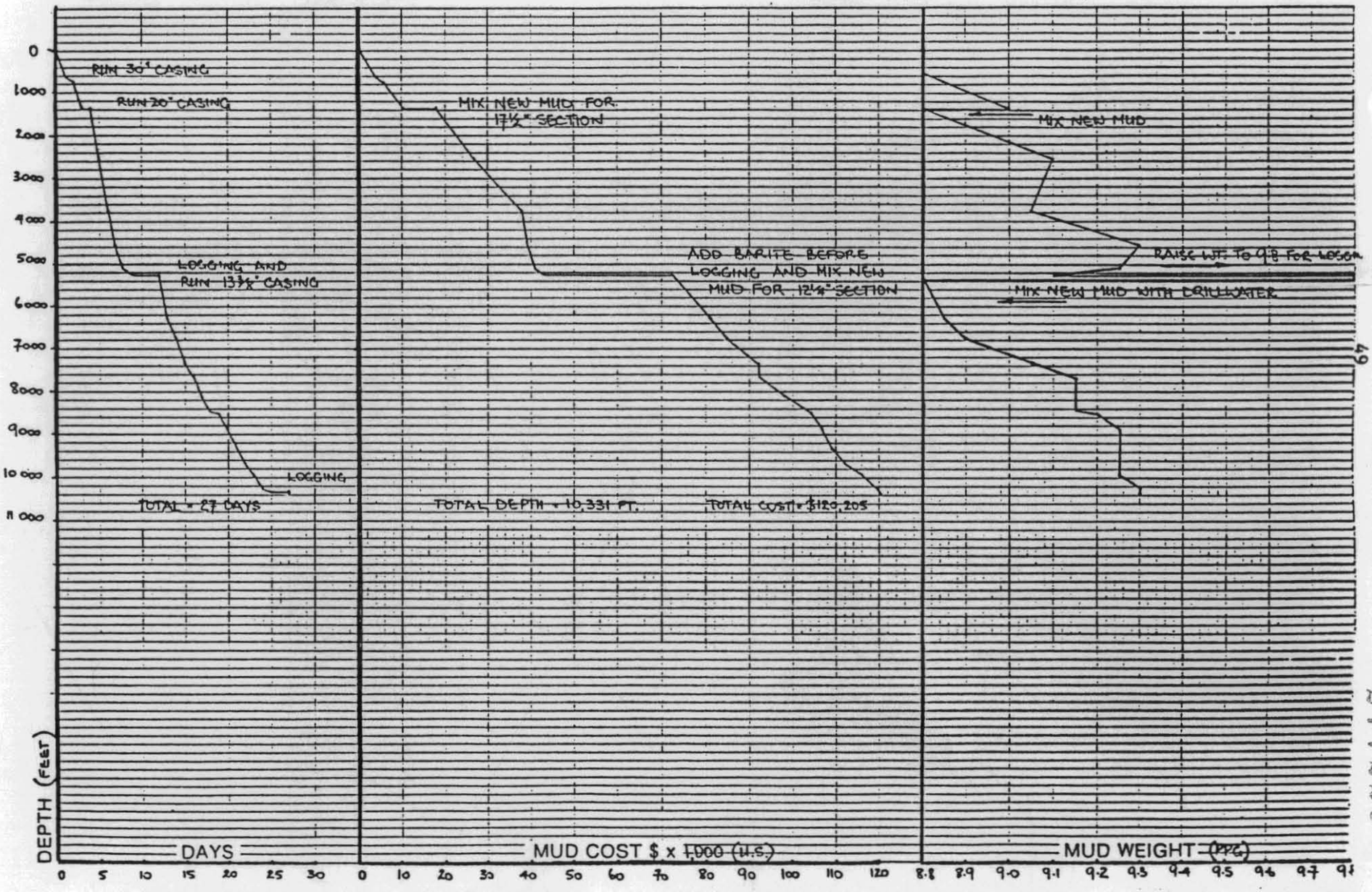
DATE 1985	DEPTH Ft	HOLE SIZE	TEMP °F	WEIGHT ppg	VIS SEC	PV	YP	GELS 10 sec	GELS 10 min	WATER LOSS A.P.I	CAKE mm	pH	Pf	Mf	Cl mg/l	Ca mg/l	SAND %	SOLIDS %	WATER %	OIL %	MBC ppb	REMARKS TREATMENT FORMATION
DECEMBER																						
22	10331	12¼"	-	9.3	56	16	13	12	25	7.0	.1	11.1	.5	1.1	2200	80	Tr	7.5	92	Tr	20	ELEC LOGS
23	10331	"	-	9.3	56	16	13	12	25	7.0	1	11.1	.5	1.1	2200	80	Tr	7.5	92	Tr	20	ELEC. LOGS, P. & A.

Baroid Australia PTY. LTD./NL INDUSTRIES INC.

GRAPH SUMMARY

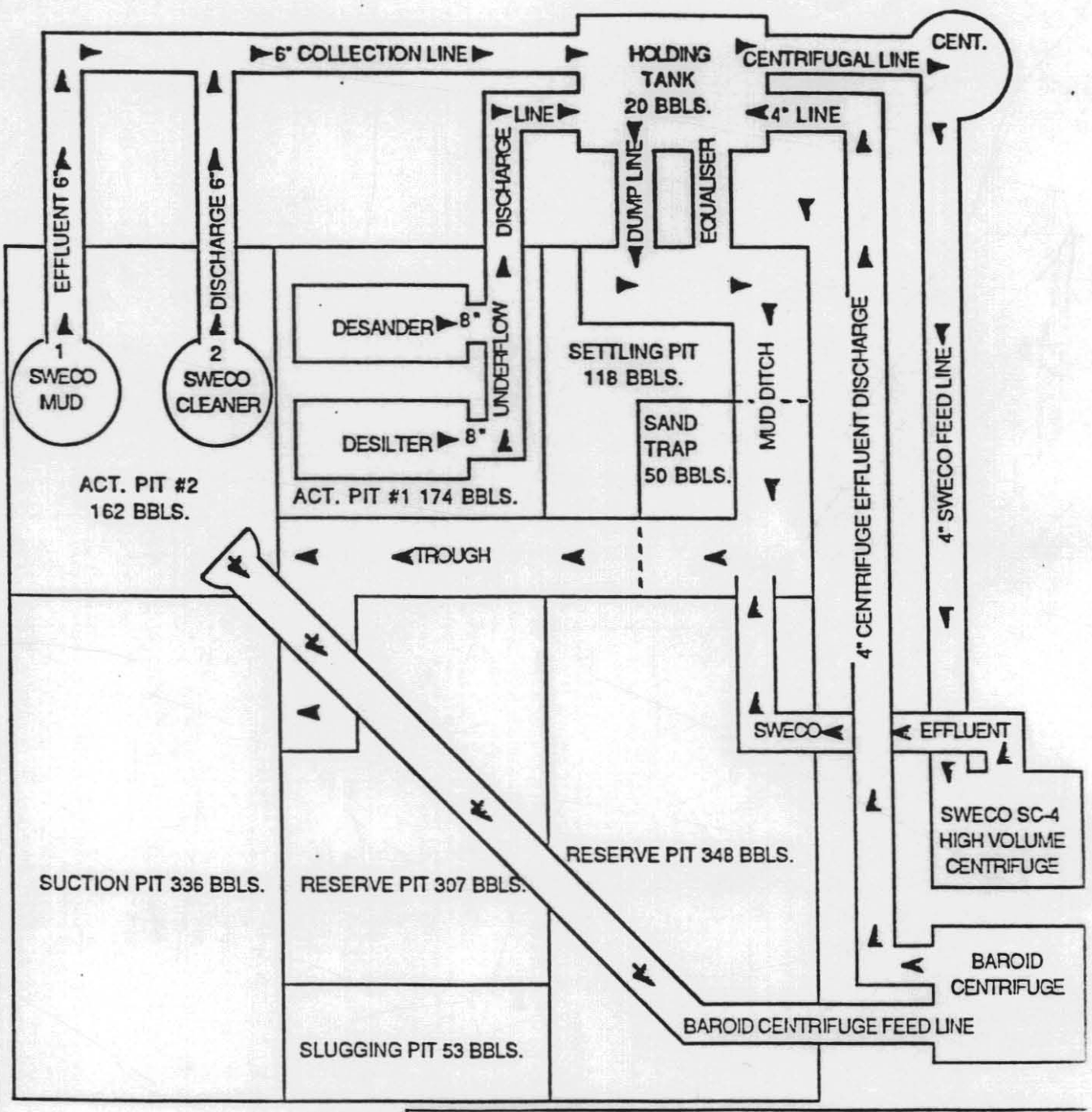
OPERATOR AMOCO AUSTRALIA

WELL KOORKAH Nº 1



49

2 7 2 6 8



DRILLING FLUIDS SYSTEMS
AUSTRALIA PTY LTD
48A HENLEY STREET, MILE END,
SOUTH AUSTRALIA. 5031 TEL. 436149

CLOSED-LOOP MUD SYSTEM

INSTALLED FOR AMOCO ON BOARD THE DIAMOND.M EPOCH SEMI-SUBMERSIBLE, BASS BASIN AUGUST 1985 - APRIL 1986

SCALE	NTC
DRAWN BY	GRA
ENGINEER	GRA
DATE	4/86
DRAW NO	054

BIT RECORD

COMPANY	CONTRACTOR	COUNTY	STATE
AMOCO AUSTRALIA PETROLEUM CO.	DIAMOND M EPOCH	AUSTRALIA	TASMANIA

LEASE	WELL NO	SEC	TOWNSHIP	RANGE	BLOCK	FIELD
KOORKAH # 1	No 1	T-18 P				Bass Strait

TOOL PUSHER: Jenkins/Bracey/Jordan/Hazelwood	DRILL PIPE: 5" S-135/E	DRAW WORKS: Oilwell # 3000	27/11/85 Spud 1512 hours
DAY DRILLER: Hale/Graham	TOOL JOINT: MAKE / SIZE / TYPE	POWER: 2000 HP	UNDER SURF
EVENING DRILLER: Stires/Cochran	DRILL COLLAR: NO / O D / I D / LENGTH	PUMP NO 1: MAKE Oilwell, MODEL A1700 PT, STROKE 12"	INT DATE
MORNING DRILLER:	DRILL COLLAR: NO / O D / I D / LENGTH	PUMP NO 2: MAKE Oilwell, MODEL A1700 PT, STROKE 12"	T D DATE

BIT NO	BIT SIZE	BIT MFGR	BIT TYPE	SERIAL NO OF BIT	JET SIZE 1	JET SIZE 2	JET SIZE 3	DEPTH OUT	FTGE	HOURS RUN	ACC HOURS	FT/HR	WEIGHT 1000 LBS	ROTARY R P M	VENT DEV	PUMP PRESS	PUMPS No	PUMPS Liner	PUMPS SPM	MUD WT	MUD Vis	DULL CODE T	DULL CODE B	DULL CODE G	REMARKS FORMATION CIRC FLUID ETC	DATE
1	26/36	STC	DGJ	ER 7449 AH 01011	14 20	14 20	14 20	629	334	9	9	37.1	0/5	30/50	1°	1200	2	6½	200	8.8	170	1	1	I	Seawater w/ Vis Sweeps	28/11
2	26	STC	DS	ER 6372	24	24	24	1360	731	10½	19½	69.6	5/20	100	½°	2000	2	6½	200	8.8	170	1	1	I	Seawater w/ vis sweeps	29/11
3	17½	STC	SDSC	XD 9932	16	12 16	16	4801	3441	47½	67	72.4	10/50	120	0°	2820	2	6½	164	9.2	48	6	2	I		4/12
4	17½	STC	SDSC	XE 0167	16	13 16	16	5246	445	11	78	40.5	50	120		2850	2	6½	164	9.2	48	3	3	I		5/12
5	12¼	STC	SDGH	ER 8778	13	13	15	6321	1075	22	100	48.9	55-65	150	3/4°	2900	2	6½	136	8.8	42	7	7	1/16	One seal ineffective	10/12
6	12¼	STC	F-2	XD 5312	13	13	13	7510	1189	42½	142½	30	35/45	120	3/4°	2950	2	6½	121	9.1	52	2	5	1/4	15 BI	13/12
7	12¼	STC	F-2	EV 5972	13	13	13	8494	984	57½	200	17.1	45/50	110	1¼°	2900	2	6½	125	9.2	47	1	5	1/8	0 BI	16/12
8	12¼	STC	F-2 CE	CZ 0955	12	9 12	12	9603	1109	60½	260½	18.3	45/50	110	3/4°	2800	2	6½	122	9.2	50	1	5	1/8	0 BI	19/12
9	12¼	STC	F-2 CE	EV 9382	12	12	12	10,331	728	54	314½	13.5	45/50	110	1½°	2900	2	6½	123	9.3	56	8	8	1/8	2 Locked cones	22/12

Compliments of SMITH TOOL

SMITH REPRESENTATIVE _____ PHONE _____

P.O. BOX C19511 • IRVINE, CALIF. 92713-9511
DIVISION OF SMITH INTERNATIONAL, INC.

0037472

COMPANY	WELL NAME & No.	FIELD	COUNTRY	SPUD DATE	RIG RELEASE
AMOCO AUSTRALIA	Koorkah # 1	Bass Strait	TASMANIA	27 Nov 1985	25 Dec 1985

BHA No.	BIT No.	BOTTOM HOLE ASSEMBLY	WOB	RPM	DEPTH IN	DEPTH OUT	ANGLE BELOW	ANGLE ABOVE
1	1	26" Bit / 36" H.O. / 15-8" D.C. / X O / 3-5" HWDP	0/5	30/50	295	629	1	0
2	2	26" Bit / F.S. / 15-8" D.C. / X O / 1-5" HWDP / Jar / 14-5" HWDP	5/20	100	629	1360	3/4	1
3	3-4	17½" Bit / F.S. / 8" Monel / 17-8" D.C. / X O / 1-5" HWDP / Jar / 14-5" HWDP	10/45	120	1360	5246	2	3/4
4	5	12¼" Bit / F.S. / 8" Monel / 8" DC / X / 16-8" DC / X O / 1-5" HWDP / Jar / 14-5" HWDP	55/65	150	5246	6321	1	2
5	6	12¼" Bit / F.S. / 8" Monel / 8" DC / X / 13-8" DC / X O / 1-5" HWDP / Jar / 14-5" HWDP	35/45	120	6321	7510	3/4	1
6	7	12¼" Bit / Junk Sub / F.S. 8" Monel / 8" DC / X / 13-8" / X O / 1-5" HWDP / Jar / 14-5" HWDP	45	110	7510	8494	1½	3/4
7	8-9	12¼" Bit / Shock Sub / 8" Monel / 8" D.C. / X / 13-8" DC / X O / 1-5" HWDP / Jar / 14-5" HWDP	45/50	110	8494	10331	1½	1½

52

2 1 7 2 3 1

Eastman Whipstock
A PETROLANE COMPANY

REPORT of SUB-SURFACE DIRECTIONAL SURVEY

AMOCO AUSTRALIA PETROLEUM COMPANY LTD.
COMPANY

KOORKAH #1
WELL NAME

BASS STRAIT
LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
AS 1285 MS 035	MAGNETIC MULTISHOT	5 DECEMBER'85
AS 1285 MS 039	MAGNETIC MULTISHOT	21 DECEMBER'85

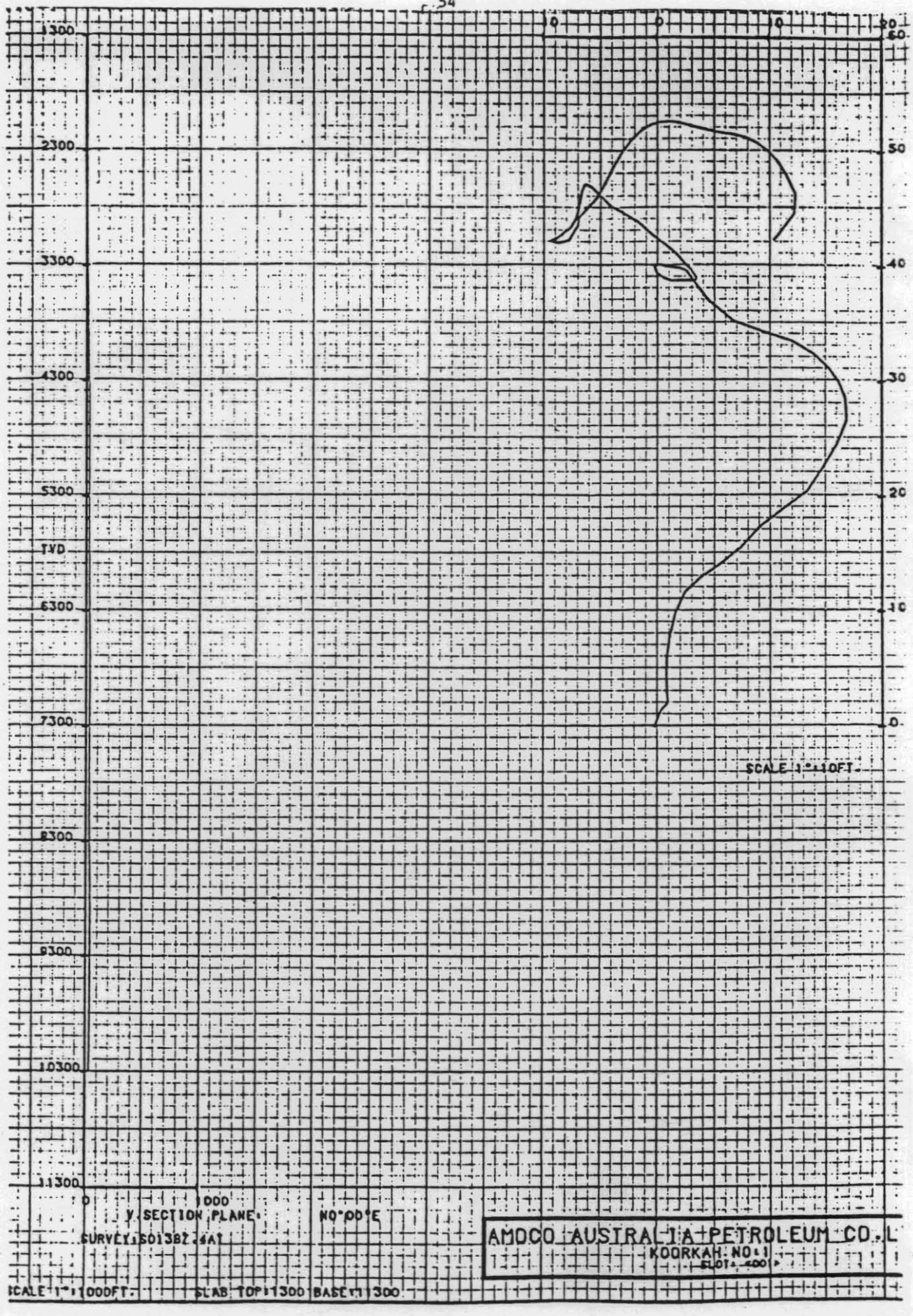
SURVEY BY
G. SAYERS/MARK NEWTON

OFFICE
SALE, VICTORIA

277233

5 cm

54



Eastman Whipstock (Aust) Pty. Ltd.

SALE

WELL DEFLECTION SURVEY

for

AMOCO AUSTRALIA PETROLEUM CO.LTD

KOORKAH NO:1

Slot : <001>
Well :

Survey Reference : S01325.4A1

55

CONFIDENTIAL
CLASS 1

277934

Eastman Whipstock
A PETROLANE COMPANY

TOTAL AUSTRALIA PETROLEUM CO.LTD
LEGRAH NO'1

Slot : <0001>
Well :
RKB : 0.00

Date Printed : 31-DEC-93
Our Ref : S0133U.4A1

Page : 2

Measured Depth	Drift Angle	Drift Direction	Course Length	Vertical Depth	Vertical Section	RECTANGULAR COORDINATES		Dogleg Severity
1319.00	0.00	0.00	0.00	1319.00	0.00	0.00 N	0.00 E	0.00
1374.00	0.30	17.00	55.00	1374.00	0.23	0.23 N	0.07 E	0.90
1465.00	0.33	29.00	91.23	1465.00	0.84	0.84 N	0.31 E	0.20
1557.24	0.17	9.00	91.61	1557.24	1.21	1.21 N	0.43 E	0.20
1647.39	0.25	48.00	90.15	1647.39	1.47	1.47 N	0.62 E	0.19
1737.34	0.33	36.00	90.15	1737.33	1.81	1.81 N	0.92 E	0.11
1829.41	0.09	62.00	91.87	1829.40	2.06	2.06 N	1.13 E	0.28
1919.31	0.00	62.00	90.10	1919.30	2.09	2.09 N	1.19 E	0.09
2010.64	0.00	62.00	91.13	2010.63	2.09	2.09 N	1.19 E	0.00
2100.63	0.00	62.00	90.01	2100.64	2.09	2.09 N	1.19 E	0.00
2191.91	0.09	320.00	91.24	2191.90	2.14	2.14 N	1.15 E	0.09
2281.83	0.00	320.00	89.94	2281.84	2.19	2.19 N	1.11 E	0.09
2372.97	0.70	358.00	91.12	2372.96	2.79	2.79 N	1.05 E	0.82
2463.32	1.00	257.00	90.35	2463.81	4.17	4.17 N	0.94 E	0.29
2553.22	1.33	4.00	89.42	2553.24	5.99	5.99 N	1.03 E	0.42
2642.24	1.25	11.00	89.96	2642.19	7.99	7.99 N	1.33 E	0.16
2731.97	1.25	16.00	89.73	2731.91	9.87	9.87 N	1.79 E	0.12
2823.14	1.25	32.00	91.17	2822.06	11.47	11.47 N	2.58 E	0.38
2913.95	1.33	42.00	90.79	2912.82	13.01	13.01 N	4.04 E	0.74
3004.55	1.23	31.00	90.93	3004.73	14.17	14.17 N	5.79 E	0.28
3094.46	1.50	52.00	91.53	3093.28	15.58	15.58 N	7.56 E	0.19
3187.70	1.73	32.00	91.24	3187.49	17.41	17.41 N	9.36 E	0.31
3277.64	1.67	71.00	91.94	3277.35	18.95	18.95 N	11.49 E	1.06
3371.31	1.67	39.00	91.67	3371.02	20.43	20.42 N	13.59 E	1.00
3462.74	1.50	29.00	91.43	3462.42	22.50	22.50 N	15.01 E	0.35
3553.24	1.30	64.00	90.60	3552.99	24.52	24.52 N	16.25 E	0.14
3644.65	1.33	4.00	91.31	3644.37	26.56	26.56 N	17.02 E	0.69
3734.78	1.25	342.00	90.33	3734.37	28.34	28.34 N	16.94 E	0.67
3825.65	0.75	330.00	90.87	3825.23	29.99	29.99 N	16.34 E	0.59
3916.91	1.00	319.00	91.26	3916.48	31.11	31.11 N	15.52 E	0.33

Continued on next page ...

Eastman Whipstock

277235

[illegible] AUSTRALIA PETROLEUM CO.LTD
[illegible]RAH NO11

Slot : <001>
Well :
PDHL : 0.00

Date Printed : 31-DEC-83
Our Ref : 901385.A01

Page : 3

Measured Depth	Drift Angle	Drift Direction	Course Length	Vertical Depth	Vertical Section	RECTANGULAR COORDINATES		Dogleg Severity
[illegible]	1.25	309.00	90.28	4001.74	32.32	32.32 N	14.24 E	0.35
[illegible]	1.67	294.00	92.15	4092.86	33.50	33.50 N	12.23 E	0.61
4183.46	1.75	291.00	90.12	4182.94	34.30	34.30 N	9.68 E	0.44
4274.22	2.00	286.00	89.76	4275.66	35.23	35.23 N	6.93 E	0.61
4365.75	1.75	322.00	91.53	4370.14	37.05	37.05 N	4.63 E	0.96
4451.46	1.00	325.00	90.71	4460.82	38.74	38.74 N	3.27 E	0.83
4542.73	0.33	342.00	91.27	4552.09	39.61	39.61 N	2.68 E	0.77
4641.84	0.50	247.00	92.11	4644.19	39.94	39.94 N	2.19 E	0.57
4731.49	0.67	283.00	90.65	4734.81	39.94	39.94 N	1.25 E	0.26
4823.23	0.50	294.00	89.74	4824.57	40.15	40.15 N	0.40 E	0.19
4911.11	0.33	196.00	90.28	4915.48	39.99	39.99 N	0.06 W	0.65
5003.13	0.50	127.00	92.37	5004.82	39.45	39.45 N	0.12 E	0.47
5092.87	0.50	113.00	90.09	5094.91	38.97	38.97 N	0.73 E	0.20
5183.10	0.50	104.00	92.33	5187.43	38.68	38.68 N	1.49 E	0.12
5231.10	0.50	67.00	48.00	5280.43	38.71	38.71 N	1.83 E	0.74
5269.00	0.50	97.00	38.90	5329.33	38.74	38.74 N	2.07 E	0.90
5353.00	0.50	87.00	93.00	5352.33	38.71	38.71 N	2.89 E	0.09
5446.00	0.33	92.00	93.00	5445.33	38.73	38.73 N	3.49 E	0.27
5537.00	0.25	331.00	92.00	5538.33	38.90	38.90 N	3.59 E	0.47
5629.00	0.25	217.00	92.00	5621.32	39.25	39.25 N	3.38 E	0.02
5722.00	0.25	227.00	93.00	5724.32	39.59	39.59 N	3.16 E	0.00
5811.00	0.50	218.00	156.00	5813.32	40.47	40.47 N	2.34 E	0.14
5904.00	0.50	229.00	93.00	5903.32	41.05	41.05 N	1.78 E	0.08
6000.00	0.50	224.00	93.00	6000.31	41.61	41.61 N	1.19 E	0.12
6133.00	0.75	301.00	133.00	6132.30	42.84	42.84 N	0.42 W	0.13
6224.00	1.00	317.00	93.00	6223.29	43.81	43.81 N	1.43 W	0.31
6317.00	1.00	294.00	93.00	6317.27	44.63	44.63 N	2.78 W	0.37
6412.00	0.75	310.00	95.00	6412.27	45.30	45.30 N	3.99 W	0.37
6510.00	0.66	312.00	98.00	6507.23	46.91	46.91 N	5.61 W	0.06
6601.00	0.25	237.00	91.00	6600.25	47.15	47.15 N	6.17 W	0.69

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Eastman Whipstock

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Measured Depth	Drift Angle	Drift Direction	Course Length	Vertical Depth	Vertical Section	RECTANGULAR COORDINATES		Dogleg Severity
6934.00	0.66	193.00	93.00	6932.25	46.52	46.52 N	6.46 W	0.53
7027.00	0.75	190.00	93.00	7026.24	45.40	45.40 N	6.69 W	0.10
7120.00	0.75	196.00	93.00	7119.22	44.22	44.22 N	6.94 W	0.08
7213.00	0.50	228.00	93.00	7212.23	43.36	43.36 N	7.43 W	0.45
7306.00	0.66	232.00	93.00	7305.22	42.76	42.76 N	8.16 W	0.19
7399.00	0.22	237.00	93.00	7398.22	42.32	42.32 N	8.73 W	0.44
7492.00	0.25	252.00	93.00	7491.22	42.16	42.16 N	9.12 W	0.06
7571.00	0.30	91.00	279.00	7570.22	41.95	41.95 N	8.42 W	0.27
7584.00	0.66	62.00	93.00	7583.21	42.19	42.19 N	7.60 W	0.33
8030.00	0.30	248.00	196.00	8029.20	43.49	43.49 N	6.83 W	0.33
8123.00	0.50	32.00	93.00	8122.20	44.23	44.23 N	6.69 W	0.40
8216.00	0.75	31.00	93.00	8215.19	44.96	44.96 N	6.01 W	0.35
8309.00	0.75	35.00	93.00	8308.19	45.84	45.84 N	5.18 W	0.22
8402.00	1.00	28.00	93.00	8401.18	47.05	47.05 N	4.45 W	0.29
8495.00	1.00	27.00	93.00	8494.16	48.49	48.49 N	3.71 W	0.02
8588.00	1.00	32.00	93.00	8587.15	49.90	49.90 N	2.89 W	0.11
8681.00	0.75	44.00	93.00	8680.14	51.02	51.02 N	2.03 W	0.32
8774.00	0.44	49.00	93.00	8773.13	51.80	51.80 N	1.20 W	0.12
8867.00	0.50	71.00	93.00	8866.13	52.29	52.29 N	0.41 W	0.27
8960.00	0.66	77.00	93.00	8959.12	52.54	52.54 N	0.49 E	0.19
9053.00	0.66	98.00	93.00	9052.12	52.59	52.59 N	1.54 E	0.24
9146.00	0.56	107.00	93.00	9145.11	52.36	52.36 N	2.59 E	0.11
9239.00	0.50	104.00	93.00	9238.10	52.10	52.10 N	3.49 E	0.12
9332.00	0.75	102.00	93.00	9331.10	51.87	51.87 N	4.46 E	0.27
9425.00	0.75	100.00	93.00	9424.09	51.62	51.62 N	5.67 E	0.04
9518.00	0.75	97.00	93.00	9517.08	51.49	51.49 N	6.98 E	0.10
9611.00	0.75	112.00	93.00	9610.08	51.23	51.23 N	8.05 E	0.27
9704.00	0.75	120.00	93.00	9703.07	50.69	50.69 N	9.14 E	0.11
9797.00	0.75	132.00	93.00	9796.06	49.98	49.98 N	10.12 E	0.17
9890.00	0.75	111.00	93.00	9889.05	49.10	49.10 N	10.96 E	0.13

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Eastman Whipstock

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[illegible] AUSTRALIA PETROLEUM CO.LTD Slot : <0001> Date Printed : 31-DEC-95 Page : 3
[illegible] NO1 Well : Our Ref : 901385.401
PBHL : 0.00

Measured Depth	Drift Angle	Drift Direction	Course Length	Vertical Depth	Vertical Section	RECTANGULAR COORDINATES		Dogleg Severity
[illegible]	1.06	131.01	93.00	10002.04	47.72	47.92 N	11.73 E	0.31
[illegible]	1.20	[illegible]	93.00	10093.02	46.27	46.27 N	12.52 E	0.30
[illegible]	1.25	212.00	97.00	10188.00	44.48	44.48 N	12.38 E	1.24
[illegible]	1.30	221.00	93.00	[illegible]	42.74	42.74 N	11.00 E	0.41
10307.00	1.50	219.00	25.00	10303.97	42.26	42.26 N	10.56 E	0.47

CALCULATION METHOD : Minimum curvature Report Units : Feet
SLOT COORDINATES : 0.00 N 0.00 E
BOTTOM HOLE LOCATION : Referenced to SLOT
DISTANCE : 43.51
DIRECTION : 14.03

SURVEY RUN INFORMATION

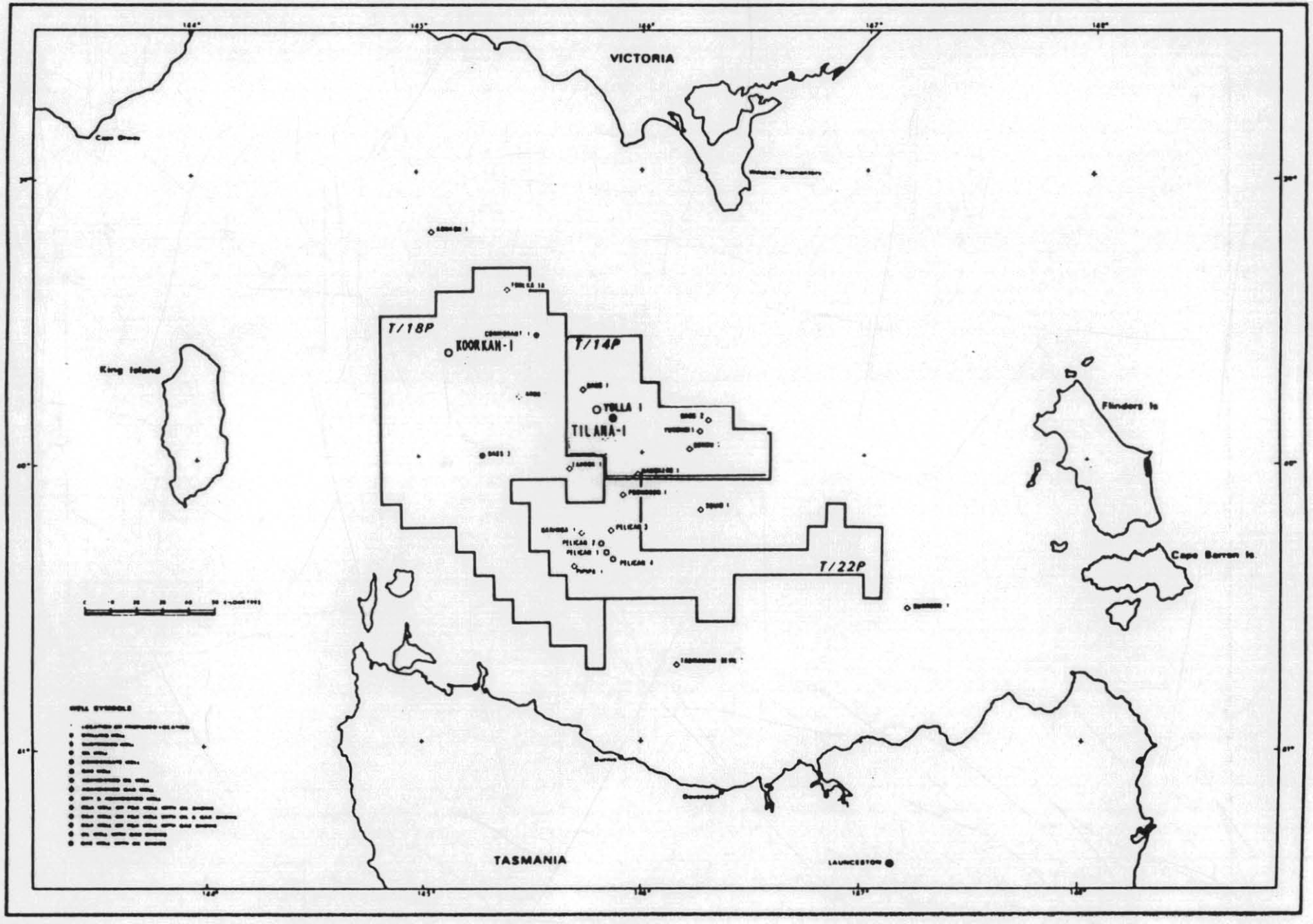
MAG.MULTI-SHOT SURVEY 1371 TO 3321 FT. 3-DEC-95 G.SAYERS

59

2717238

Eastman Whipstock

5 cm



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2972339

COST-TIME SUMMARY - KOORKAH NO 1

I TOW - RIG RELEASE

	TOTAL HRS	PERCENT UTILIZATION
Drilling New Hole	312.5	42.57
Washing & Reaming	12.5	1.70
Circulate & Condition	44.0	5.99
Trip (include P/U-L/D)	103.0	14.03
Rig Service	2.5	0.34
Rig Repair	4.0	0.54
Survey	10.5	1.43
Logging	39.5	5.38
Casing & Cementing	54.5	7.43
Drill Cement/Float Equipment	4.5	0.62
Run/Retrieve BOP/Test BOP/CSG	45.5	6.20
Anchors	30.5	4.16
Ballast/Position Rig	22.0	3.00
Circulate Samples	6.5	0.89
Plug & Abandonment	32.0	4.36
Tow	10.0	1.36
TOTAL	734 Hrs	100%

II HOLE SECTION SUMMARIES

A. TOW AND ANCHOR HANDLING (PRE-SPUD)

	HOURS	%
Run Anchors	19.5	41.49
Ballast	2.0	4.26
Position Rig	14.0	29.79
Tow	7.5	15.96
Rig Repair	4.0	8.50
TOTAL	47.0	100.00%

B. 36" HOLE/30" CASING

	HOURS	%
Drilling New Hole	9.0	22.50
Circulate and Condition Mud	1.0	2.50
Tripping	4.0	10.00
Running and Cementing Casing	13.0	32.50
Run TGB	2.5	6.25
P/U or L/D BHA	9.5	23.75
Drill Cmt/Float Equipment	1.0	2.50
TOTAL	40.0 HRS	100.00%

C. 26" HOLE/20" CASING

Drilling New Hole	9.5	16.96
Circulate and Condition Mud	2.5	4.46
Tripping	7.5	13.39
Running and Cementing Casing	16.0	28.57
Drill Cmt/Float Equipment	2.0	3.57
Run/Test BOP	17.0	30.36
Wash and Ream	1.5	2.69
TOTAL	56.0 HRS	100.00%

D. 17-1/2" HOLE/13-3/8" CASING

Drilling New Hole	56.5	30.54
Wash and Ream	11.0	5.95
Circulate and Condition Mud	33.0	17.84
Tripping	32.5	17.57
Survey	6.0	3.24
Logging	8.5	4.59
Running and Cementing Casing	25.5	13.78
Test BOP/Casing/L.O.T.	9.5	5.14
Rig Service/Cut Drill line	1.0	.54
Drill Cement/Float Equipment	1.5	.81
TOTAL	185.0 HRS	100.00%

E. 12-1/4" HOLE

Drilling New Hole	237.5	70.27
Circulate and Condition	7.5	2.22
Tripping	41.0	12.13
Survey	4.5	1.33
Logging	31.0	9.17
Test BOP/Casing/L.O.T.	8.5	2.51
Circulate Samples	6.5	1.92
Rig Service	1.5	0.45
TOTAL	338.0	100.00%

F. PLUG AND ABANDOMENT

	HOURS	%
Retrieve Wellhead Set	21.0	43.30
Test Abandonment Plugs	10.0	20.62
Backload	1.0	2.06
L/D Drill String	8.5	17.53
Pull BOP	8.0	16.49
TOTAL	48.5 HRS	100.00%

G. PULL ANCHORS FOR TOW

Secure for Tow	2.5	12.82
Ballast Rig	6.0	30.77
Pull Anchors	11.0	56.41
TOTAL	19.5 HRS	100.0%

ATTACHMENT # 1

277243

AMOCO AUSTRALIA PETROLEUM COMPANY
NAME OF COMPANY

FORM 46 3-85 REVISED

DRILLING AND COMPLETION PROGRAM

FILE NO. 400
DATE AUGUST 7, 1985
OCTOBER 22, 1985

WELL NAME KOORKAH WELL NO. 1
COUNTRY AUSTRALIA PROVINCE BASS STRAIT TASMANIA AREA BASS BASIN T-1BP

LOCATION
SEISMIC LINE TPD 5-7 S.P. 290 (39 DEGREES 37' 57.11" SOUTH LATITUDE, 145 DEGREES 9' 6.83" EAST LONGITUDE

OBJECT
EASTERN VIEW GROUP: LATE EOCENE THRU LATE CRETACEOUS (5373 - 9873 RKB)

METHOD OF DRILLING

TYPE TOOLS	DEPTH INTERVAL
ROTARY	SEABED TO 10,500 T.D.

SPECIAL SURVEYS

TYPE	DEPTH INTERVAL.ETC
ISF-BHC-GR-SP-CAL (GR TO SEABED)	1219 - 5300' SS
ISF-BHC-GR-SP-(MSFL/CAL)	5300 - 10427' SS
LDT-CNT	5300 - 10427' SS
NDT (1219'-5300'SS IF REQUIRED)	5300 - 10427' SS
VSP (AT T.D. OR EARLIER IF REQUIRED)	1219 - 10427' SS
CST (1219'-5300'SS IF REQUIRED)	5300 - 10427' SS

REMARKS
SINGLE SHOT SURVEYS ON TRIPS EVERY 500' - LOGS TO BE RUN AT 13 3/8" CSG. DEPTH, AT T.D. AND IN THE INTERIM AS REQUIRED TO EVALUATE FORMATIONS BEING DRILLED.

SPECIAL TEST

TYPE	DEPTH INTERVAL ETC
RFT'S	AS REQUIRED
DST'S	AS REQUIRED

REMARKS THE DECISION TO TEST THE HOLE WILL BE BASED ON ENCOURAGEMENT FROM MUD LOG SHOWS AND WIRELINE ANALYSIS THE RIG WILL BE EQUIPPED TO CONDUCT RFT'S AND CONVENTIONAL DST'S THROUGH CASING.

APPROXIMATE DEPTHS OF GEOLOGICAL MARKERS

ESTIMATED ELEVATION

MARKER	DEPTH	ELEVATION
TORQUAY GROUP (Sea Bottom)	RKB 292	219' SS
DEMONS BLUFF (Top Eocene)	RKB 4773	4,700' SS
*EASTERN VIEW GROUP	RKB 5373	5,300' SS
*within Lower Eocene	RKB 6773	6,700' SS
*within Lower Paleocene	RKB 8073	8,000' SS
OTWAY GROUP	RKB 9873	9,800' SS
TOTAL DEPTH	10,500 RKB	10,427' SS

* POSSIBLE PAY # PROBABLE COMPLETION INTERVAL

DRILL CUTTING SAMPLES

FREQUENCY	DEPTH INTERVAL	
10M	394M-±1460M	6 SETS WASHED & DRIED 2 SETS WET CLOTH BAGS
5M	1460M-1638M	6 SETS WASHED & DRIED
10M		2 SETS WET CLOTH COMPOSITES
3M	1638M-TD	6 SETS WASHED AND DRIED
9M	1638M-TD	2 SETS WET CLOTH COMPOSITES
9M	1638M-TD	1 SET WET CANNED COMPOSITE

REMARKS
THE ABOVE CONFORMS WITH REQUIREMENTS OF THE PETROLEUM (SUBMERGED LANDS) ACT, 1967, CLAUSE 14

MUD PROGRAM

APPROXIMATE INTERVAL	TYPE MUD	WEIGHT #/GAL	VISCOSITY SEC. API	W.L. CC/30M	OTHER SPECIFICATION
ML - 1322 RKB	SEAWATER	W/VISCOUS SWEEPS			
1322 - 5,403 RKB	SW/CEL/DISP	8.9-9.2	40-50	15 OR LESS	YV 8-20
5403 - 10,500 RKB	FW/CEL/DISP	8.9-12.5	40-50	10 OR LESS	YV 6-20 HTHP 20 OR LESS

REMARKS

PROPERTIES OF MUD SYSTEM ARE DESCRIBED IN THE DETAILED OPERATIONS PLAN.

CASING PROGRAM

CASING STRING	EST. DEPTH	CASING SIZE *	HOLE SIZE *	SX. CEMENT	TYPE CEMENT	DESCRIPTION OF LANDING POINT,ET
CONDUCTOR	607 RKB	30"	36"	2000	CLASS "C" + ADDITIVES	
SURFACE	1292 RKB	20"	26"	2000	CLASS "C" + ADDITIVES	
INTERMEDIATE	5373 RKB	13-3/8"	17-1/2	BY CALIPER	CLASS "C" + ADDITIVES	
OIL STRING	10500 RKB	9-5/8"	12-1/4	BY CALIPER	CLASS "C" + ADDITIVES	
LINER CASING						

REMARKS

1. ALL CASING POINTS ARE TENTATIVE
2. CEMENT COMPOSITIONS TO BE LAB TESTED
3. 30" AND 20" CASING TO BE CEMENTED BY INNER STRING METHOD

*NORMAL. THE TUBULAR GOODS ALLOCATION LETTER SPECIFIES CASING SIZES TO BE USED.HOLE SIZES WILL BE GOVERNED BY CONTRACTOR

CORING PROGRAM CONVENTIONAL CORES TO MORE THOROUGHLY INVESTIGATE SHOWS AND POTENTIAL RESERVOIR ROCKS WILL BE CUT IF DRILLING CONDITIONS PERMIT UPON THE RECOMMENDATION OF THE WELLSITE GEOLOGIST WITH CONCURRENCE OF AMOCO'S SYDNEY OFFICE, SIDEWALL CORES WILL BE TAKEN IN SHALES AND OTHER FORMATIONS OF INTEREST BELOW 5300' SS FOR PALYNOLOGY GEOCHEMISTRY AND LITHOLOGICAL DATA. NOTE REQUIREMENTS OF PETROLEUM (SUBMERGED LANDS) ACT, 1967. CLAUSE 14.

COMPLETION PROGRAM

AUTHORISED COMPLETION PROGRAM WILL BE FURNISHED ON DECISION TO COMPLETE WELL.

GENERAL REMARKS

ALL VALUES REPORTED TO GOVERNMENT MUST BE IN METRIC UNITS. DRILL CUTTING SAMPLE FREQUENCY, DEPTH INTERVALS AND REQUIRED QUANTITIES HAVE BEEN REVISED.

PREPARED BY	APPROVED:	APPROVED:
R.J. WALLA /G.M. Kjellgren	OPERATING AREA MANAGER	COMPANY MANAGER

277244

Well Identification Code											
Country		Authority Code		Well Number						Suffix	
1	2	3	4	5	6	7	8	9	10	11	12
9	7	0	5	5	0	3	7	9	3	6	0

AMOCO AUSTRALIA PETROLEUM COMPANY
Name of Company

Well or Platform Authorization

[X] Well Or [ ] Platform

[ ] Construct [ ] Recomplete [ ] Revision [ ] Development Well [X] Offshore

[X] Drill [ ] Repair [ ] Cancel [X] Exploratory Well [ ] Onshore

[ ] Multiple Completion [ ] Extension Well

Well or Platform Identification: KOORKAH # 1

Field: T-18P

Country: AUSTRALIA

Depth: 10,500 FT.

Formation: EARLY CRETACEOUS

Surface Location: LAT 39° 37' 57.11" S. LONG 145° 9' 6.83" E

Bottom Hole Objectives: OTWAY GROUP

Rig Cost: 59 Days @ $ 45,500 Per Day

Company Working Interest: 50% *

Other Interest (Describe): SADGC 25% BASS GROUP 25%

*66-2/3% INTEREST OF THE FIR 4,020,691 AS OF JULY 31, 19 AND 50% THEREAFTER.

			Gross Amount
Intangible Costs	Mobilization		$ 839,300
	Platform Fabrication		$
	Platform Transportation and Installation/Location Preparation		$
	Drilling Intangibles 59 Days @ $ 118,925 Per Day		$ 7,016,600
	Demobilization		$
		Total Intangibles	$ 7,855,900
Tangible Costs	Platform Materials		$
	Well Equipment		$ 842,000
		Total Tangibles	$ 842,000

	Net Amount	Gross Amount
Total This Authorization	$ 5,020,405	$ 8,697,900
Budget Estimate	$ 4,829,605	$ 8,316,300

Remarks And/Or Action By Other Offices

Concurred
CSAPE Reg Mgmt Committee
Meeting 323
July 12, 1985

Recommended By C. S. Haring — Date August 20, 1985

[ ] Authorized [ ] Rejected By — Date

277245

GROSS ESTIMATED SPREAD COSTS

	US$/DAY	59 DAYS TOTAL US$M
Rig Rate (Diamond M Epoch)	45,500	2684.50
Position and Site Survey	2,719	160.4
Two supply boats, one standby boat	13,010	767.6
Helicopters and base	5,006	295.4
Logging/Velocity survey	9,735	574.4
Coring	800	47.2
Cement & Testing Service	2,000	118.0
Mud Logging	1,570	92.6
Mud Engineering & Equipment	1,000	59.0
Drilling Tools Rental	3,000	177.0
Specialty Equipment & Service	739	43.6
Prod. Test Equipment	2,000	118.0
Diving	3,213	189.6
Pollution, Sampling, Tests	500	29.5
Weather Forecast	150	8.8
Communication	400	23.6
Customs	1,398	82.5
Post Drilling Analysis	200	11.8
Material : Mud, Cmt, Fuel	15,580	919.2
Miscellaneous	5,000	295.0
Salaries	1,500	88.5
Bits	3,500	206.5
Onshore Transport, Handling Eqpt.	405	23.9
TOTAL SPREAD DAY RATE	118,925	7,016.6
Mobe/ (After Prorating for 2 wells)	839,300	839.3
Tangibles - 10,500 feet	842,000	842.0
GRAND TOTAL EST.		8,697.9

277246

BASS BASIN T/1BP KOORKAH NO.1

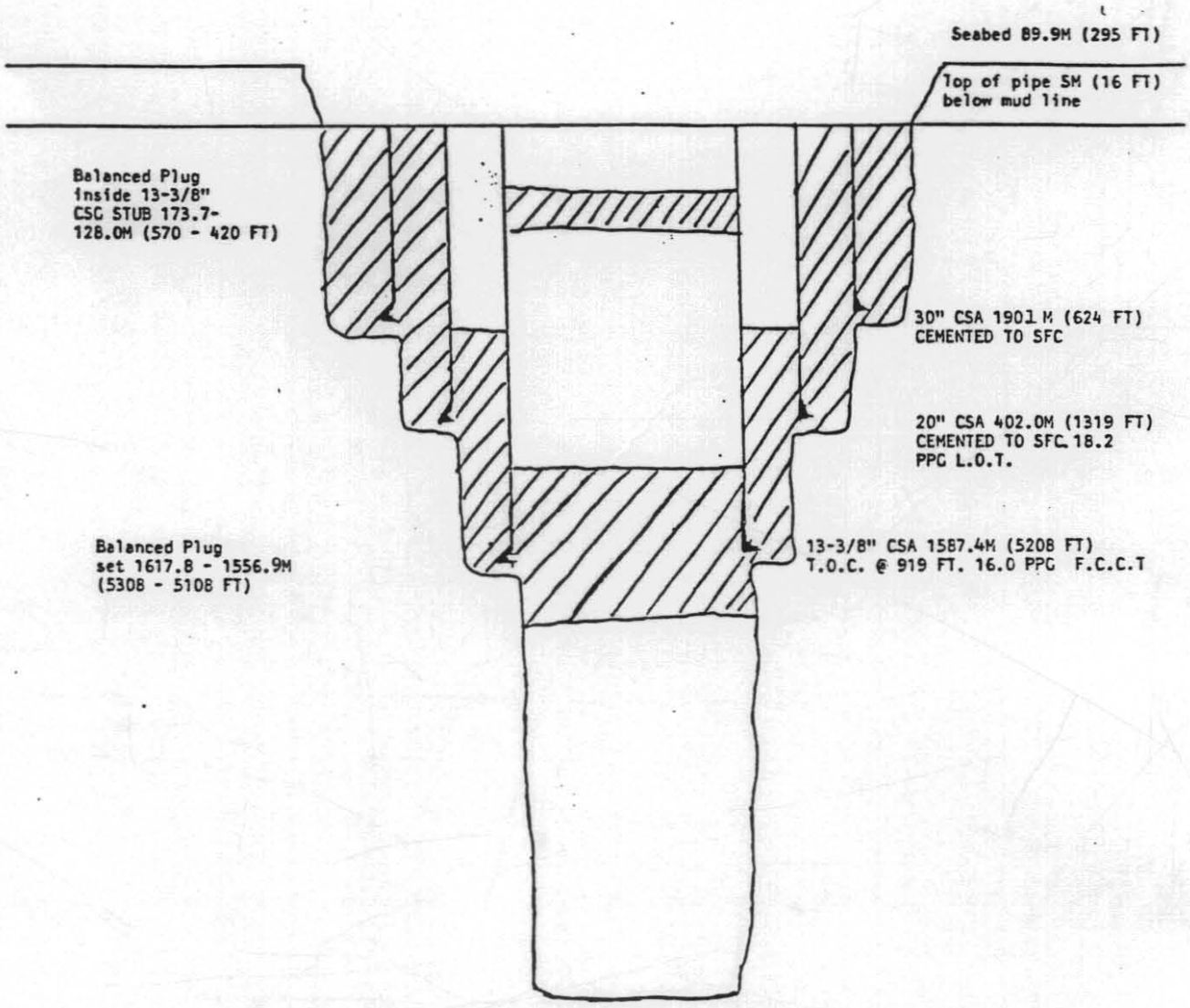
MOBE/DEMOBE

RIG MOBE (DIAMOND M EPOCH)	$1,100,000
LOAD OUT 7 days in Port plus 6 days additional tow @ $44,500/day	578,500
SUB TOTAL	1,678,500
MOBE/Prorated over 2 wells	839,250

NOTE: These costs were for Koorkah if it had been the first well drilled.

Actual mobe cost was charged to Tilana No 1

KOORKAH # 1
WELLBORE - DIAGRAM
CONDITION AT ABANDONMENT



* Wellbore left permanently PXA'D. Casing strings were shot off 4.8M (16 FT) below mud line, and all subsea wellhead equipment and casing stubs were retrieved. A 75M (radius) subsea inspection survey was performed.

* All measurements are with respect to Rotary Kelly Bushing (RKB). RKB to mean sea level (MSL) = 22.5M (74 FT)

WORKBOAT PERFORMANCE EVALUATION

Amoco employed two workboats to service the Diamond M. Epoch during Koorkah No. 1. These vessels were named the Lady Kirry and the Atlas Hartog/Lady Lorraine which was re-named during the contract with Amoco.

The following is a performance evaluation listed under Pros and Cons.

Pros

1). Vessels completed their required tasks.

2). Vessels did not contribute to any weather down time.

3). Vessels did not contribute to any labour disputes.

Cons

1). Vessels unable to work in seas greater that 5 ft.

2). Vessels require daylight to offload after arriving on location and after a suitable rest period.

3). Vessels unable to accurately gauge bulk tanks after discharge.

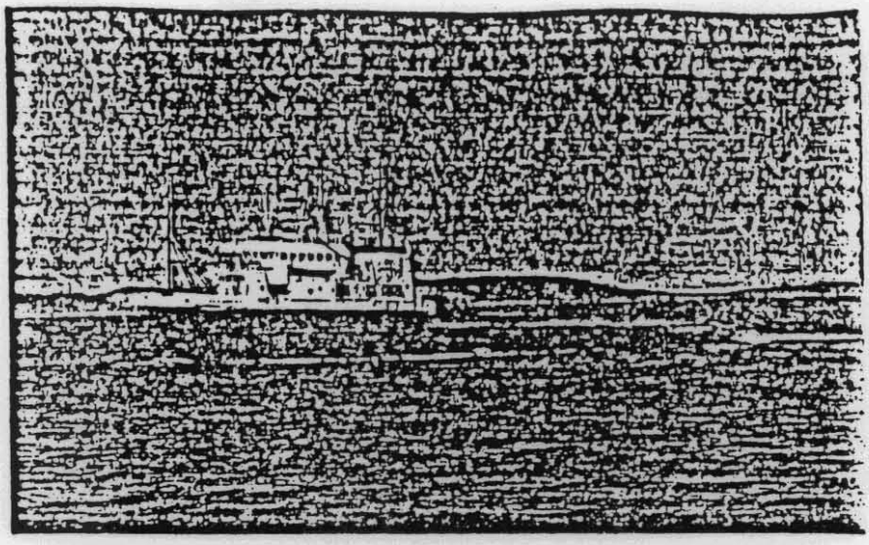
4). Vessels unable to manouvere in moderate weather while alongside to relieve tension on mooring lines.

Conclusions

Both vessels accomplished their specified duties while under contract. However, the vessels did not demonstrate any outstanding performances.

Both vessels were marginal in horsepower and bollard pull requirements. They demonstrated their marginal capabilities continuously throughout the operation.

In future operations in the Bass Strait, larger workboats with greater horsepower and bollard pull would handle the job requirements with some reserve to spare. However, these larger boats were not available due to timing and cost factors.



277949

AUSTRALIAN OFFSHORE SERVICES

7040 BHP ANCHOR HANDLING TUG SUPPLY VESSELS

m.v. LADY CAROLINE, LADY LORRAINE

LADY CAROLINE
Call Sign VJOA
Built December 1981 State Dockyard, Newcastle, NSW.

LADY LORRAINE
Call SignVJOB
Built June 1982 State Dockyard, Newcastle, NSW.

CLASSIFICATION:

DNV NV + 1A1 Supply Ship/Tug + MVEO

FLAG:
Australian

DIMENSIONS:

Length o.a.	64.65 m
Beam, moulded	13.80 m
Depth, moulded	6.90 m
Full load draft	6.00 m
G.R.T. 1179	N.R.T. 517

CAPACITIES:

Deck cargo	about 800 tonnes
Clear deck space	36.5 x 10.7m
Deck loading	5 tonnes/m²
Total DWT	1816 tonnes (Lady Lorraine) 1921 tonnes (Lady Caroline)
Fuel oil	about 660 tonnes
Drill/ballast water	about 650 tonnes
Potable water	about 345 tonnes
Glycol	about 91 tonnes
Cement/bulk materials	4 low pressure tanks each 42.5cu. metres totalling 170cu. metres
Refrigerated storage	about 8cu. metres freezer and about 8cu. metres cooler

SPEED AND CONSUMPTION:

Economical supply role	about 11 knots on about 9 tonnes/day.
Service speed	about 13 knots on about 15 tonnes/day.
Full power/towing	about 14 knots on about 20 tonnes/day.

TOWING AND ANCHOR HANDLING:

Bollard Pull	87 tonnes at M.C.R.
Winch	Braatvaag low pressure hydraulic triple drum waterfall winch rated at 250 tonnes static and 150 tonnes at 6.8m/min
Drum Capacity	Tow Drum 1000m x 64mm steel wire rope. Working Drums 500m x 64mm steel wire rope
Rig Chain lifters	Two non declutchable for 76mm rig chain
Towing Bollards/Guides	Two hydraulic vertical rope guide pins for'd stern roller with 25 tonnes static side thrust remotely controlled from bridge
Stern Roller	3.66m x 1.83m diameter 250 tonnes S.W.L.
Chain lockers	2 rig chain lockers are situated below winch with total capacity 150cu. metres, coated for carriage ballast/drill water.

MACHINERY:

Main Engines	2 x 3520 BHP Nohab Polar F216V-825, totalling 7040 BHP, 2 x Ulstein CP propellers in fixed nozzles.
Bow Thruster	Ulstein 150-TV CP tunnel thruster drive by 725HP Caterpillar D-348 diesel 7 to thrust.
Electrical Generators	3 x Kato 230KW 415V Ac 50Hz driven b 3 x Caterpillar D3408 auxilliary engine 1 x Kato 125KW 415V AC 50Hz harbou driven by Caterpillar 3406 PCT engine

PUMPING:

Fuel oil	190 cu. metres/hour at 60m head
Potable water	50cu. metres/hour at 60m head
Drill/Ballast water	Two pumps each capable 160cu. metres/hour at 60m head
Glycol	40cu. metres/hour at 60m head
Bulk materials	Two compressors each rated 11.4cu. metres/minute at 420 kPa discharge ra about 25cu. metres/hour against total head 40m.

EXTERNAL FIREFIGHTING:
One Skum manual fire monitor fitted with water barrel and spray deflector mounted on walkway between funnels, capacity 10000 litres/minute range 100 metres.

ANCHORS AND MOORING:

Anchors	2 x AC-14 high holding anchors
Cables	2 x 500m x 34mm U3 high strength st cable
Tugger Winch	2 x Brattvaag low pressure hydraulic tonne S.W.L. with drum capacity 300 34mm steel wire rope equipped for re control
Capstans	2 x Brattvaag low pressure electro hydraulic 10 tonne S.W.L. at aft end v deck with local controls

ACCOMMODATION:

Crew	9 x 1 berth
Contractor	2 x 1 berth
Passengers	2 x 6 berth
Fully airconditioned	

ELECTRONICS:

Radars	2 x Decca R.M. 916c
Echo Sounder	Simrad EN 1C
Auto Pilot	Decca 550 Gyro and Magnetic
Gyro Compass	Plath Navigat 2
Radio main	Sailor R1117 T1127
standby	Sailor R 110 T 124
VHF	Sailor RT144B

LIFESAVING EQUIPMENT:
One 4.7m 35h.p. rescue boat and launching davit on bridge dec Statutory life rafts, life buoys, life jackets and flares

MISCELLANEOUS:
Two 415V 3-phase 50 Hz reefer container power outlets on wor deck. Enclosed control room overlooking work deck with remo controls for anchor handling winch, tuggers and pins.

Spark arresters fitted to engine silencers.

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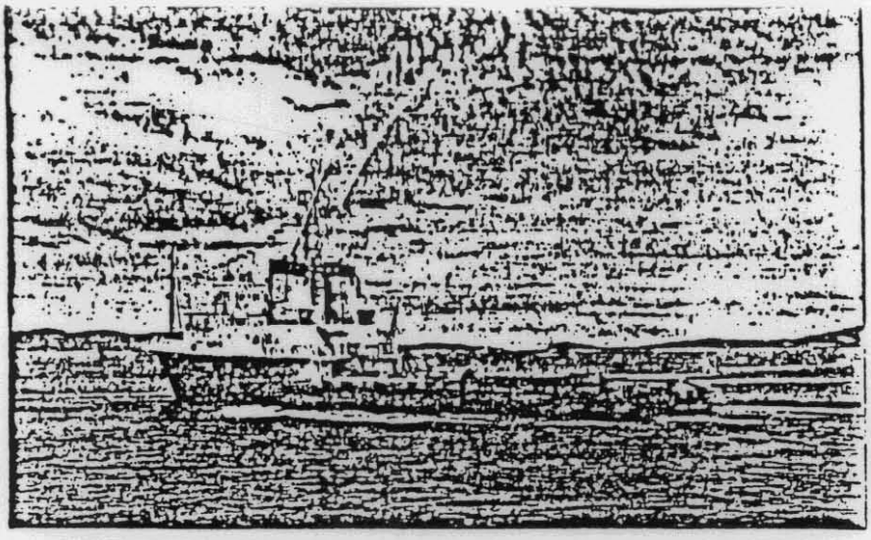
AUSTRALIAN OFFSHORE SERVICES



6000 BHP ANCHOR HANDLING
TUG SUPPLY VESSEL

m.v. LADY KIRRY

CALL SIGN:
VJOD

BUILT:
1954, Hudong Shipyard, Shanghai

CLASSIFICATION:
Lloyds + 100A1 Anchor handling Tug/Supply + LMC UMS

FLAG:
Australian

DIMENSIONS:

Length o.a.	60.85 m
Beam, moulded	13.00 m
Depth, moulded	6.20 m
Full load draft	5.06 m
G.R.T. 1252	N.R.T. 375

MACHINERY:

Main Engines	4 x 1500 BHP M.A.N. 12V 20/27 diesel engines, total 6000 BHP, 2 x CP propellers in fixed nozzles.
Bow Thruster	Jastrum BU-80V CP transverse tunnel thruster 556 HP 6.8 tonnes thrust.
Electrical Generators	2 x Van Kaick 245KW 440V 60Hz 3-phase driven off main engine gearboxes. 2 x Van Kaick 245KW 440V 60Hz 3-phase driven by 2 x M.A.N. 5L 20/27 565 BHP auxilliary engines.

SPEED AND CONSUMPTION:

Economical supply role (2 engines)	about 11.5 knots on about 8 tonnes/day.
Service speed (2 engines)	about 12.3 knots on about 10.4 tonnes/day.
Full power loaded condition or towing (4 engines)	about 14 knots on about 19 tonnes/day.

TOWING AND ANCHOR HANDLING:

Bollard Pull	78 tonnes at M.C.R.
Winch	Norwinch low pressure hydraulic double drum waterfall winch rated at 250 tonnes static load and 180 tonnes at 6.5m/min line pull
Drum Capacity	Tow Drum 960m x 57m steel wire rope. Working Drum 960m x 57m steel wire rope.
Rig Chain lifters	Two non declutchable for 64mm and 82mm inch rig chain cable
Towing Bollards/Guides	Two hydraulic vertical rope guide pins 1.4m high and 24 tonnes static side force remotely controlled from bridge
Stern Roller	4.68 metres x 1.83 metres diameter with 180 tonnes SWL
Powered Reel	One hydraulic storage reel fitted above tow winch capacity 960m x 57m diameter wire.
Chain Lockers	2 rig chain lockers with capacity 60cu. metres

CAPACITIES:

Deck cargo	about 500 tonnes
Clear deck space	30.6m x 10.0m
Deck loading	5 tonnes/m²
Total DWT	1172 tonnes
Fuel oil	about 442 tonnes
Drill/ballast water	about 519 tonnes
Potable water	about 227 tonnes
Cement/bulk materials	4 Smatco low pressure tanks totalling 170cu. metres
Refrigerated storage	about 12cu. metres cooler about 8.5cu. metres freezer

PUMPING:

Fuel oil	100cu. metres/hour at 65m head
Pot Water/Drill Water	80 cu. metres/hour at 65m head
Bulk materials	Two Tanabe VLH2114 compressors ea rated at 13.7cu. metres/min. Remote control system from deck and Bridge. Refrigerated air dryer.

Computerised measuring system with printouts for liquid cargoes

EXTERNAL FIREFIGHTING
Two remotely controlled fire monitors situated atop bridge each capacity 10000 litres/min with throw at 167 metres.

ANCHORS AND MOORING:

Anchors	2 x Danforth stockless high holding
Cables	2 x 450m x 32mm U2 grade steel cable
Tugger Winch	2 x Norwinch LV-10 low pressure hydraulic 10 tonne S.W.L. with drum capacity 300m x 34mm wire equipped remote control
Capstans	2 x Norwinch C-9 low pressure hydrau 10 tonne S.W.L. at after end work deck

ACCOMMODATION:

Crew	9 x 1 berth
Contractor	2 x 1 berth
Passengers	2 x 6 berth
Fully airconditioned	

ELECTRONICS:

Satellite Navigator	Furuno FSN-70
Radars	2 x Furuno FR 1011/2
Echo Sounder	Furuno FE 502
Auto Pilot	Tokyo Keiki connected to Gyro and Magnetic Compasses
Gyro Compass	Tokyo Keiki ES-11A
Doppler Speed Log	Furuno MF-220
Radio main	Sailor R 1120 T 1127 400 watt
standby	Sailor R 110 T 124 140 watt
VHF	Sailor RT145
RDF	Furuno FD-120B

LIFESAVING EQUIPMENT:
40HP 5 man inflatable rescue boat Statutory liferafts, life buoys, jackets and flares

MISCELLANEOUS:
1.5 tonne SWL crane with 6.7m outreach, fitted on starboard side boat deck. Oil dispersant system fitted. Spark arresters fitted to engine silencers. Double hull throughout in compliance IMO Resolution A469.

AMOCO STORAGE AREAS

MACQUARIE WHARF NO. 4 (See Figure No 1)

2 pipe racks @ 50' x 70'	=	325 M2 (3500 FT2)
1 bulk plant @ 60' x 50'	=	279 M2 (3000 FT2)
Macquarie Wharf No 4	=	876 M2 (9430 FT2) (275 LINEAR METERS OF WHARFAGE)
Covered Shed	=	2664 M2 (28,676 FT2) (USAGE AVERAGES 890 M2/MONTH)

HALE STREET (See Figure No 2)

Pipe yard	=	1769 M2 (19,040 FT2)
Warehouse used for mud and cement storage	=	836 M2 (9000 FT2)

LAMPTON AVE - OFFICE (See Figure No 3)

Office Centre	=	780 M2 (8400 FT2)
Warehouse used for storehouse stock	=	525 M2 (5650 FT2)
Yard	=	5790 M2 (61,455 FT2)

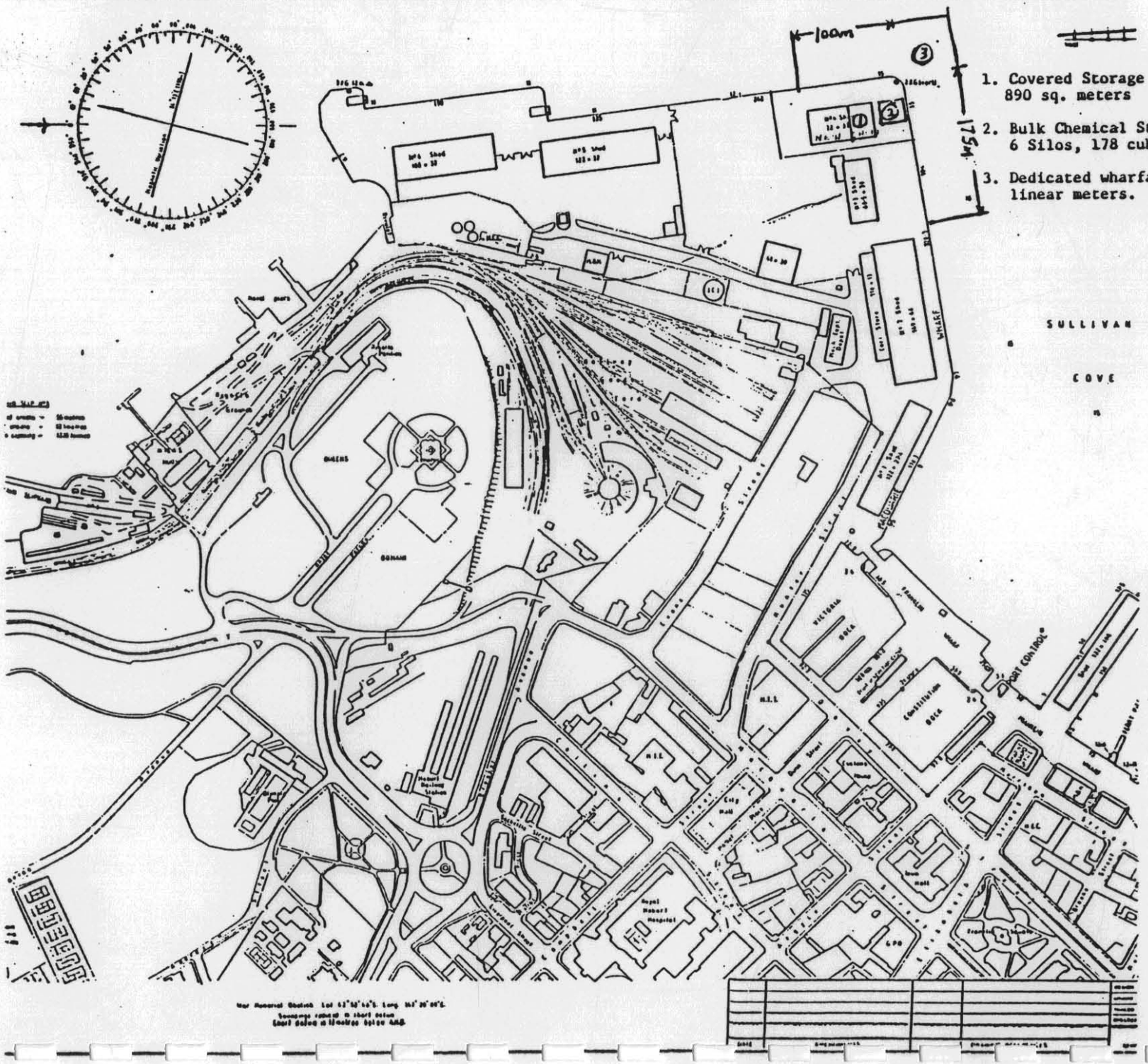


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Figure No 1

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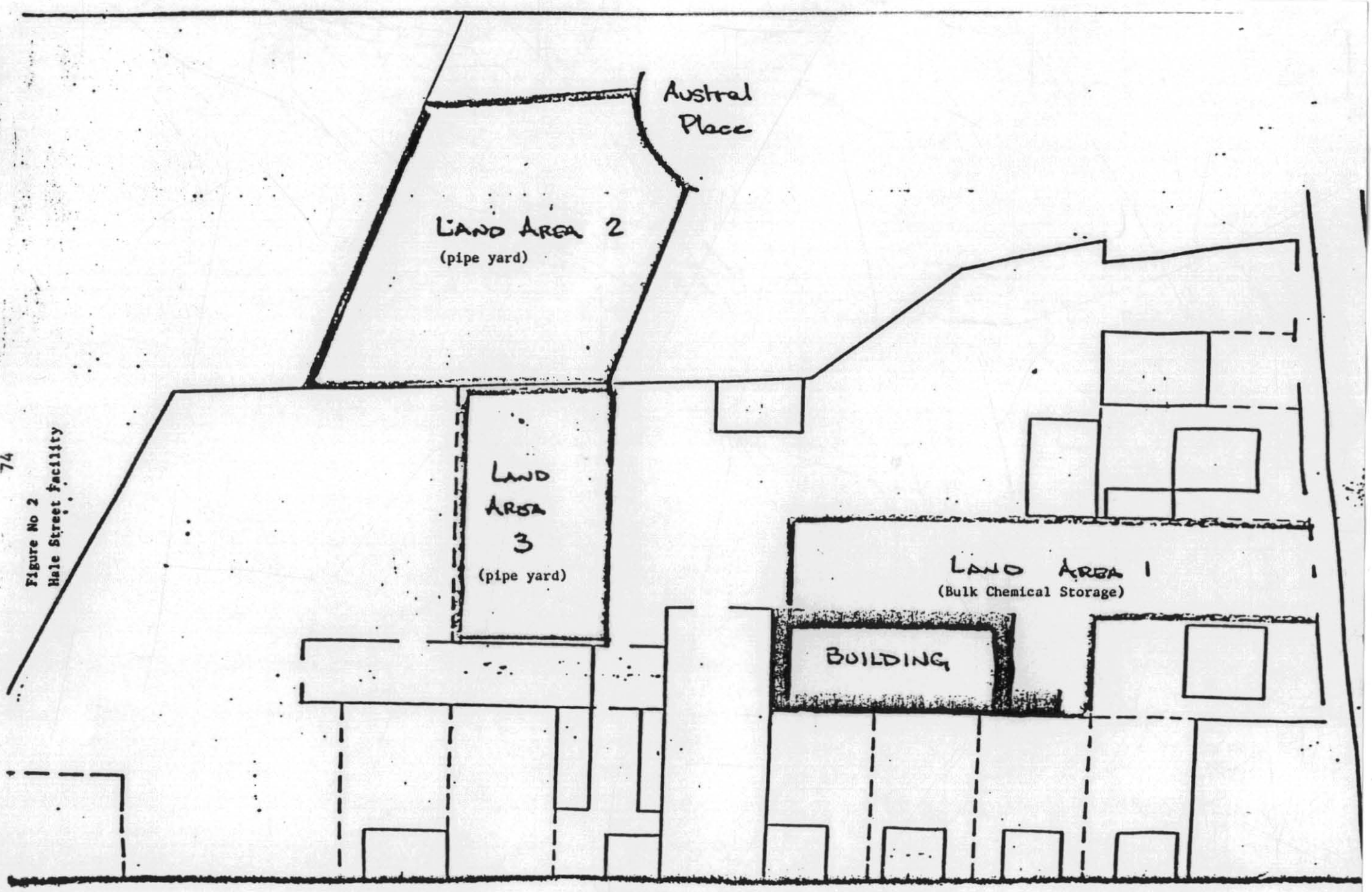

Figure No 2
Hale Street Facility

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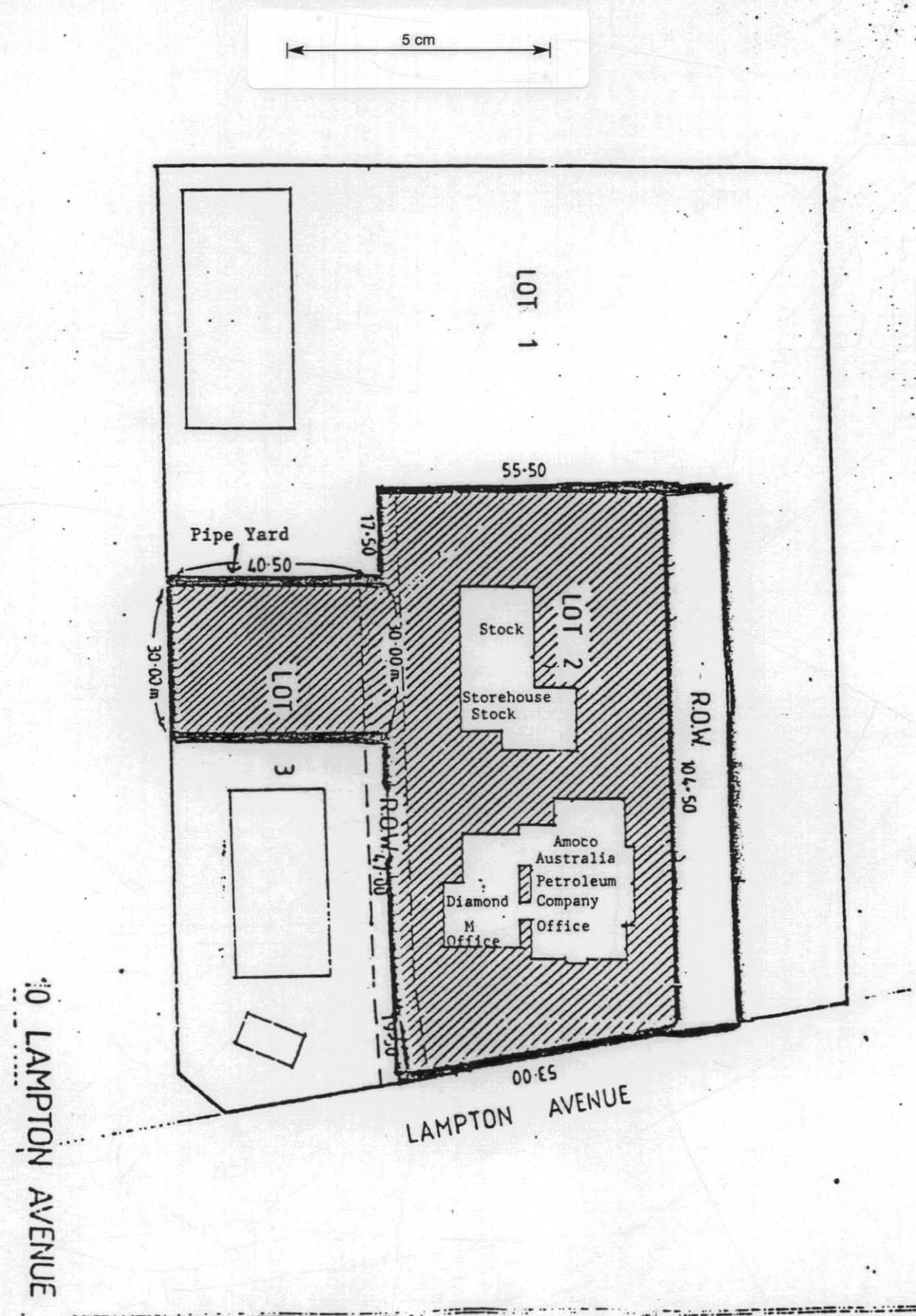
Figure No 3

AMOCO AUSTRALIA PETROLEUM COMPANY
HOBART, TASMANIA OPERATIONS OFFICE



CONTRACTORS

1.	Diamond M	(Rig)
2.	Halliburton	(Cement & Tools)
3	Otis	(DST)
4.	Baroid	(Mud)
5.	Tri-State	(Tools)
6.	Exlog	(Mud Log)
7.	SubSea International	(Divers)
8.	Eastman Whipstock	(Directional)
9.	Schlumberger	(Logs)
10.	Cameron Iron Works	(Wellhead)
11.	Drilling Fluids Systems Australia	(Mud Cleaners)
12.	Diamond Boart	(Corebarrel/Stabilizers)
13.	Lloyds Aviation	(Helicopters)
14.	A.O.S.	(Boats)
15.	Taylor Brothers	(Labor/Machining)
16.	T.N.T	(Transport)
17.	Wards Express Service	(Transport)
18.	Hazell Brothers	(Transport)
19.	Baker Inspection Service	(Pipe Inspection Service)
20.	Speciality Press Printers	(Printers)
21.	Thompson Business Center	(Manuals)
22.	Thrifty Rent-A-Car	(Pool Cars)
23.	Ansett Air Freight	(Air Freighters)
24.	Tasman Oil Tools	(Rental Tools)
25.	Australian Oilfield Services	(Rental Tools)

26.	Ocean Routes	(Weather Forecast)
27.	LSE - IFCO	(Communications)
28.	Rutledge Oilfield Services	(H2S Training)
29.	Dril Quip International	(Casing Connectors)
30.	Geomex	(Location Survey)
31.	ICI Explosives	(Wellhead Recovery)
32.	Weatherford	(Casing Crews)
33.	Smith International	(Bits)
34.	P & O Australia	(Transport)
35.	Thorpe Transport	(Transport)

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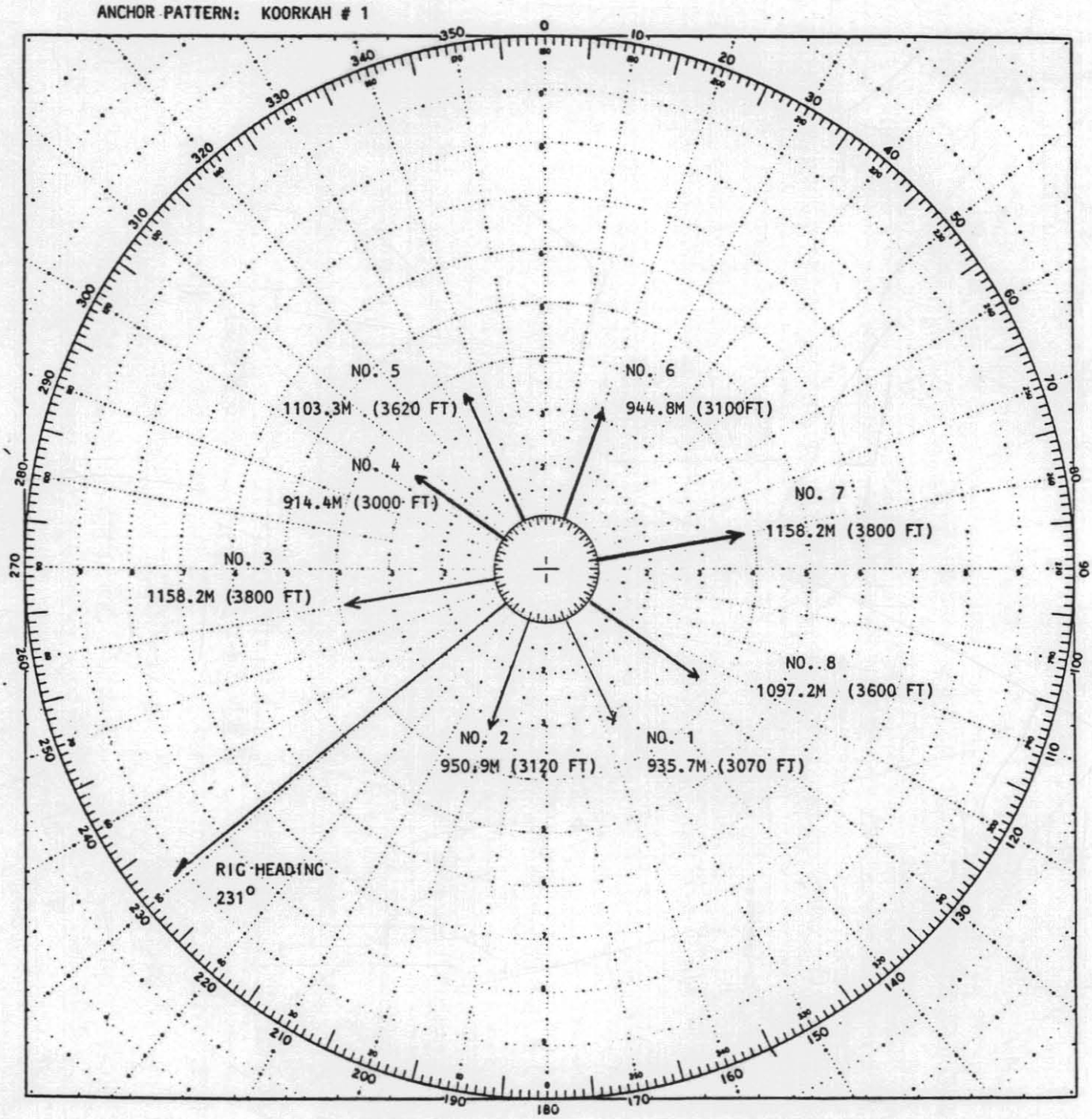
ANCHOR PATTERN: KOORKAH # 1



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GEOMEX POSITIONING SURVEY RECAP

On 25 November, 1985 the Diamond M Epoch approached the Koorkah No 1 drilling location and dropped No 6 anchor on bottom at 1621 Hrs. The rig was pulled onto the desired location with the Atlas Van Diemen by paying out 4000 ft of chain on No 6 Anchor.

The Navigators were consulted as to the location from the desired well-head position. The bearing and distance that the No 2 anchor would need to be run to pull the rig into the desired position was then calculated. No 2 anchor was subsequently run and tension pulled between Nos 2 and 6. The navigators were asked to give a rig position in relation to the desired position as the Atlas Van Diemen was slack on the tow bridle and the rig was tensioned between the two anchors so that we would know how far to run the other anchors to avoid having insufficient chain out in the direction the rig was to move. The navigators stated that the rig was off position 86 meters at 102 Degrees. The time was 1740 hrs.

The other anchors were subsequently run with the help of the navigators giving distances and bearings, insuring that the anchor pattern previously agreed upon was upheld. The anchor job was proceeding smoothly and swiftly until the navigators advised that an error had been made and that the rig would possibly be off location more than first predicted. This prohibited completion of the anchor pattern. The final anchor (No 1) was not set. The time was 2056 hrs on November 25, 1985.

After lengthy discussion with Geomex's home office in Perth, it was decided that we were indeed off location. At 2200 hrs, the rig was pulled toward the desired location by drawing in with the anchor chain. After pulling the rig 60 meters along 102 Degrees, additional positioning instructions were requested to find out how much further the rig would have to move. At this time the Navigators advised that they were still having problems with their coordinates and that the operation needed to be shut down until they had their problems solved and their position fixes confirmed. The time was 2245 hrs.

The work boats dropped their anchors and went on rest break at 2250 hrs so that when the Navigators had their positions confirmed we would be able to go back to work.

At 0640 26 November, 1985 the Geomex navigators decided that the rig was still 234 meters off location even though we had already moved 60 meters in the same direction previously. This much movement would completely void the anchor pattern after proper tensioning was achieved; therefore the anchors would have to be re-run to make a stable anchor pattern.

Work began immediately and anchorage was completed at 0200 hrs 27 November, 1985. The rig was pulled into position within 5 meters of desired location and all anchors were tensioned to storm tension rating.

Ballasting operations began at 0235 hours 27 November 1985. The rig position was held constant during ballasting operations; however the final post-spud survey showed the rig to be 41 meters off the desired location rather than the 5 meters calculated by the positioning crew (Geomex).