WELL COMPLETION REPORT
BASIC TECHNICAL

BANGANNA 1
PEP 159

ONSHORE OTWAY BASIN

B.Corbett

Origin Energy Resources Limited
ABN 66 007 845 338
John Oxley Centre, 339 Coronation Drive
MILTON QLD 4064

November 2003

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ENCLOSURES

1. SUMMARY

Banganna 1 was drilled as a vertical gas exploration well in the south-western corner of PEP 159. It is located approximately 3.3 km northwest of Taralea 1, 4.4 km southwest of Killara 1 and 5.3 km east-northeast of Pretty Hill 1 (Figure 1). The Banganna prospect was interpreted to represent a fault-dependent dip closure at the base Laira Formation/Top Pretty Hill Formation level.

Banganna 1 was spudded at 2200 hours on 5th February 2003 using Century Drilling Limited Rig #11. A 251mm surface hole was drilled to 520m, and 194mm surface casing run and cemented to surface. The surface casing shoe was drilled out and a leak off test performed. The 171mm production hole was drilled to a depth of 2125m with a maximum deviation of 2-1/2 degrees. Total Depth (driller) of 2125.0m measured depth was reached at 2130 hours on 15th February 2003.

No fluorescence was encountered during drilling at Banganna 1 and no gas peaks were encountered either. The background gas content was also very low throughout the entire well section. The well was plugged and abandoned on the basis of missing hydrocarbon shows and the initial log interpretation which indicated the presence of water wet reservoirs. CDL Rig #11 was released on 18th August 2003.

2. WELL HISTORY

2.1 General Data

Well Name and Number	Banganna 1	
Location (GDA 94)	Easting:	603373.4
	Northing:	5770482.7
	Seismic: Station	60m west of SP 423
	2D-line	obe00a-06
Elevations	GL:	63.7m. ASL
	RT:	68.9m. ASL
Petroleum Tenement	PEP 159	
Name of Operator	ORIGIN ENERGY RESOURCES LIMITED ABN 66 007 845 338 South Tower, John Oxley Centre 339 Coronation Drive MILTON QLD 4064	
Other Participants	ESSENTIAL PETROLEUM RESOURCES ABN 38 089 956 150 Level 2 226 Albert Road SOUTH MELBOURNE VIC 3205	
Date Drilling Commenced	2200 hours	5th February 2003
Date Drilling Completed	2130 hours	15th February 2003
Date Rig Released	1200 hours	18th February 2003
Drilling Time to TD	3.8 days	
Total Depth	Driller:	2125m
	Logger:	2124m
Status	Plugged and abandoned	

2.2 Rig Data

Drilling Contractor	CENTURY DRILLING LIMITED 172 Fullarton Road DULWICH SA 5065
Drilling Rig	CDL Rig #11
CARRIER:	Cooper LTO 750 Carrier with triple front and rear axles: 54,000lb front and 70,000lb rear. All necessary highway equipment. Unit levelled with hydraulic jacks when stationary
SUBSTRUCTURE:	17' floor height – 14' below table beams with plates in base
DRAWWORKS:	Cooper 750 HP Double Drum Drawworks
ENGINES:	Driven by 2 each Caterpillar 3406 TA Diesel Engines
BRAKE:	Parmac V80 Hydromatic
ROTARY TABLE:	National Rotary Table Model C-175
DERRICK:	Cooper Derrick Model 118-365. Ground height 118' Maximum rated static hook load 350,000 lbs with 10 lines. Mast raised, lowered and telescoped hydraulically
CROWN BLOCK:	Cooper Crown Block with 4 working sheaves. Fast line sheave and dead line sheave. All grooved for $1^1/_8$" line. Sandline sheave grooved for $^9/_{16}$" line.
HOOK BLOCK:	National Hook Block Model 435 G-175. 175 ton capacity 4 - 35" sheaves grooved for $1^1/_8$" line.
SWIVEL:	P-200 National
SLUSH PUMPS:	2 Gardner Denver PZ-7 Triplex Pumps driven by Cat 379TA Diesel Engines Rated 550 HP each. Liner sizes $5\ ^1/_2$"
MUD SYSTEM:	2 × 300 bbl tanks incorporating 80 bbl pill tank and 54 bbl trip tank.

SHAKERS:	2 x Triton NNF Screening Machine (Linear Motion).
DEGASSER:	Drilco Atmospheric Degasser Standard Pit. $7^1/_2$ HP 60 Hz, 230v.
MUD / GAS SEPARATOR:	24" MGS.
VENT LINE:	8" vent line from Separator to flare pit.
DESANDER:	Demco Model 122. Two, 12" cone with Warman 6" × 4" Centrifugal pump driven by 50 HP Electric Motor.
DESILTER:	Pioneer Economaster Model T12-E4. 12 × 4" cones with Warman 6" × 4" Centrifugal pump, driven by a 50 HP Electric Motor.
MUD MIXING PUMP:	Warman 6" × 4" Centrifugal pump driven by a 50 HP Electric Motor
MUD AGITATORS:	4 only Brandt Mud Agitator Model MA 7.5
BOP's & ACCUMULATOR:	Annular: 11" 5,000psi Shaffer Spherical Rams: 11" 5,000psi Shaffer Double Gate Model 'LWS' Complete with $3^1/_2$", $4^1/_2$", $5^1/_2$", 7" Blind Rams – 7-5/8" (outside of day rate) Accumulator: Koomey Model 100-11S
CHOKE MANIFOLD:	Cameron 5,000 psi with hydraulic choke and remote control panel
DRILL PIPE SAFETY VALVE:	1 x 3-1/2" IF Inside BOP (Gray) 1 x 3-1/2" IF full Operating Stab Valve
SPOOL:	1 x 11 5,000 psi Flanged Drilling Spool with $3^1/_8$" 5,000 psi Flanged Choke Line out and $2^1/_{16}$" 5,000 psi Kill Line Outlet 1 x 11" 5,000 psi to 11" 3,000psi Double Studded Adaptor 1 x 11" 5,000 psi to $7^1/_{16}$" 5,000 psi Double Studded Adaptor
KILL LINE VALVES:	2 x $2^1/_{16}$" 5,000 psi Manual Flanged Valves
CHOKE LINE VALVES:	1 x $3^1/_8$" 5,000 psi Manual Flanged Valve 1 x $3^1/_8$" 5,000 psi HCR Flanged Valve
INSTRUMENTATION:	Martin–Decker 6 pen Record-O-Graph Martin–Decker Weight Indicator Type FS Martin–Decker Mud Pressure Gauge Martin–Decker Rotary RPM Indicator

	Martin–Decker Pump Stroke Indicator (2 off) Martin–Decker Rota Torque Indicator Martin–Decker Tong Torque Indicator Martin–Decker Mud Flow Sensor Martin–Decker Mud Flow Fill System Martin–Decker Mud Volume Totaliser (MVT)
KELLY SPINNER:	Foster Model K-77
KELLY:	1x $4^{1}/_{4}$" Hex Kelly 40' long with $6^{5}/_{8}$" API Reg LH Box up 3-1/2" IF Pin Down
UPPER KELLY VALVE:	Upper Kelly Cock. 10,000 test $6^{5}/_{8}$" API Reg LH Connections.
LOWER KELLY VALVE:	1 x Hydril Kelly Guard 4-3/4" OD 10,000 psi, 3-1/2" IF (NC38) Pin and Box Connection
KELLY DRIVE BUSHING:	Varco Type 4 KRS Kelly Drive Bushing
DRILL PIPE AND TOOLS:	3 joints 4-1/2" Range II Hevi Water Drill Pipe with 180 Taper 4" IF (NC46) Connections. 184 jts 3-1/2"13.3lbs/ft Grade 'S' Drill Pipe 6 x 3 ½" HWDP, 3 ½" IF 4 ¾" Bit Sub, 3 ½" IF Box Up, 3 ½" Reg Box Down All cross-over, lifting and saver subs to match above tools
DRILL COLLARS:	3 x 8" Drill Collars, Range II, with 65/8" Reg. Connections. 20 x 6-1/4" Drill Collars, Range II, with 4" IF (NC46) Connections. 30 x 4-3/4" slick Drill Collars 3-1/2" IF 1 x 4-3/4" pony collar, 3-1/2" IF, 10ft long 1 x 4-3/4" Non magnetic collar (outside of day rate) 1 x 6-1/4" Non magnetic collar (outside of day rate)
HANDLING TOOLS:	Elevators: 1 Set 13-3/8" Casing (outside day rate) 1 Set 9-5/8" Casing 1 Set 7-5/8" Casing 1 Set 7" Casing 1 Set 5-1/2" Casing 1 Set 9-5/8" Single Jt 1 Set 7-5/8" Single Jt 1 Set 7" Single Jt 1 Set 5-1/2" Single Jt 1 Set 3-1/2" DP 18 Degree

	1 Set 3-1/2" Tubing Elevators 1 Set 2-7/8" Tubing Elevators 1 Set 2-3/8" Tubing Elevators
HANDLING TOOLS:	Safety clamp: 1 clamp for 8" & 6-1/4" & 4-3/4" Drill Collars Slips: 1 Set 13-3/8" Casing (outside day rate) 1 Set 9-5/8" Casing 1 Set 7-5/8" Casing 1 Set 7" Casing 1 Set 5-1/2" Casing 1 Set 3-1/2" Drill Pipe 1 Set 3-1/2" Tubing Slips 1 Set 8" DC Slips 1 Set 6-1/4 DC Slips 1 Set 4-3/4" DC Slips Tongs: 1 set BJ Type 'B' Rotary Tongs 1 set Farr Hydraulic Power Tongs Jaws to suit 5-1/2", 7", 7-5/8", 9-5/8" and 133/8"
PIPE SPINNER:	Varco SSW-10 Spinning Wrench
SUBS:	1 x 6-5/8" Reg. X 65/8" Reg. Bit Sub (Double Box) 2 x 4-1/2" Reg. X 4" IF (NC46) Bit Subs 1 x 6-5/8" Reg. X 4" IF (NC46) Crossover Sub (Pin x Box) 1 x 4"IF pin to 3-1/2" IF Box Crossover Sub 2 x 3-1/2" IF (NC46) Saver Subs (Pin x Box) 3 x 6-5/8" Reg. Lift Nubbins 11 x 4" IF (NC46) Lift Nubbins 15 x 3-1/2" IF Lift Nubbins/Subs

CASING / TUBING DRIFTS:	1 x 9-5/8”	36 lb/ft
	1 x 7”	26 lb/ft
	1 x 7”	23 lb/ft
	1 x 5-1/2”	17 lb/ft
	1 x 5-1/2”	15.5 lb/ft
THREAD PROTECTORS:	3 x 9-5/8” Klampon Style	
	3 x 7” Klampon Style	
	3 x 5-1/2” Klampon Style	
WELDING EQUIPMENT:	Lincoln Electric Welder Model 400AS	
AIR COMPRESSORS:	Sullair compressor Package Model 10-30L - 100 cfm @ 125 psi Gardner Denver - 20 HP 80 cfm @ 110 psi.	
AC GENERATOR:	2 each Caterpillar 3408TA AC Generator Model SR-4. 1,800 rpm 60 hz 275 kw.	
FUEL TANKS:	1 each 25,000 litre - Skid Mounted	
WATER TANK:	400 BBL tank with two Warman 3 × 2 pumps driven by 24 HP electric motors	
PIPE RACKS:	3 sets 30ft in length	
CATWALKS:	2 piece Catwalk drill pipe construction 42" height	
COMMUNICATION:	Westinghouse Satellite Phone and Fax	
SURVEY UNIT:	Totco 80 Deg. Recorder	
MUD LAB:	Baroid Rig Laboratory Model 821	
RATHOLE DRILLER:	Manufactured Rat Hole Driller for 4-1/4” Hex Kelly	
MUD SAVER:	Harrisburg Unit with 4-1/2” Sealing Rubbers	
CELLAR PUMP:	1 only 3” Pacific Diaphragm Unit	
WATER PUMP:	1 only Centrifugal Pump Unit	
FIRE EXTINGUISHER:	1 lot as per State Mining Regulations for Rig and Camp	
PIPE BINS:	3 only 36’ L × 10’ W × 42” H	
CUP TESTER:	Cameron Type ‘F’ Cup Tester Mandrel with 3-1/2” IF Connections. 7-5/8” 26#- 36 lbs rubber for cup tester.	

PRESSURE TEST PUMP:	1 "Nearwich" 3000 psi test pump with chart recorder.
TRANSPORTATION:	International 530 Payloader or equivalent
	1 x Toyota 4 × 4 crew wagon
	1 x Toyota 4 x 4 ute
RIG ACCOMMODATION:	2 Skid-Mounted Rig Manager/Companyman Units
	1 Communication Hut 40ft x 10ft c/w smoko room at one end.
INTERCOM:	3 stations unit

2.3 Drilling Data

The following is the daily operations summary for Banganna 1. It has been compiled from the Tour Sheets and Daily Drilling Reports. Onsite drilling supervision for Oil Company of Australia Limited was provided by S. Porter. Further details are provided in the Time/Depth Curve (Figure 2) and Time Analysis Chart (Figure 3).

The depths in the following summary are those reached at 2400 hours on each day with the operations given for the previous 24 hour period.

Date	Depth	Operation
5.02.03	14m	Rig up - Prespud meeting held covering operational and environmental requirements – Attempt to enlarge rat hole from 216mm to 311mm; hole caving – Make up and set a 193mm mouse without re-drilling it; unable to clean out – make up RKB rollers for 108mm Kelly – make up bit and subs – drill 251mm hole from 12 to 14m (conductor preset at 12mRT) – install Kelly spinner and make up joints Kelly.
6.02.03	100m	Drill 251mm hole from 14 to 45m – lost total circulation - pump hi-vis/LCM slugs without effect – fill mud tanks – drill 251mm hole from 45 to 54m without returns – fill mud tanks from water well – drill 251mm hole from 54 to 100m with water, no returns – lay down kelly 5 drill collars and rack back 4 – RIH open ended and pump 40 bbls of hi-viscosity LCM mud – head up and run cement plugs from 100m (150 sacks of G cement with 1% CaCl and 75kg of enerseal – POH – run 30 sx of cement in rathole with pipe on bridge at 2m below GL – Wait on cement then RIH, tag cement at 68m – pump 40 bbls of hi-vis LCM mud – head up and run cement plug from 68m (150 sx of class G cement with 2% CaCl and 75kg of enerseal) – POH and wait on cement – RIH and tag cement at 48.5m –pump 40 bbls of high-vis LCM mud – run cement plug from 48.5m (150 sx of class G cement with 2% CaCl and 75kg of enerseal) – POH – re-drill rat hole with air hammer -

Date	Depth	Operation
7.02.03	229m	Continue to re-drill rat hole with air hammer and set 75/8" casing as a sock – rig down rat hammer and air-pack – RIH and tag cement at 40.5m – pump 30 bbls of hi-vis LCM mud – run cement plug #4 from 40.5m (150sx of class G cement with 2% CaCl an 75kg of enerseal) – POH and wait on cement – make up kelly bushing and lay out excess drill collars – RIH and tag cement at 39.5m – Rack back drill collars and RIH open ended – pump 20 bbls of hi-vis LCM mud – Run cement plug #5 from 39.5m (110sx of class G cement with 2% CaCl and 75kg of enerseal coarse – POH and wait on cement – RIH and tag cement at 39m – lay out drill pipe and run in with bit - drill out cement to 100m with no mud returns – drill 251mm hole from 100 to 210m with no returns – wait on water – drill 251mm hole from 210 to 229m with no returns.
8.02.03	248m	Out of water, pump LCM slug and POH - wait on water – RIH ream bridge at 14m – wash and ream from 106 to 129m – drill 251mm hole from 229 to 248m with no returns – pump LCM slug and POH – push cut up paper mud sacks to 40m and leave batch at 35m – run in to 30m and pump 180 sx cement plug – POH wait on cement then RIH tag top of plug at 37m – push cut up paper sacks to 35m – Run 150 sx cement plug – wait on cement and repair rig hydraulics – RIH and tag cement at 28m.
9.02.03	248m	Run cement plug from 28m (110 sx of class G cement with 2% CaCl), cement returns to surface – POH and wait on cement – RIH and tag cement at 8.5m – drill out cement from 8.5 to 45m – losing mud from 38m – POH and attempt to push mud sacks to 45m – RIH open ended and run cement plug #9 (150 sx) with some returns to surface – POH and wait on cement – PIH and drill out cement from 33 to 45m – ream and wash from 45 to 128m with full mud returns – lay out drill pipe and RIH drill collars – ream from 128 to 165m.
10.02.03	520m	Ream from 165 to 220m – lay out pipe and RIH drill collars – ream from 220 to 248m – Drill 251mm hole from 248 to 520m – circulate hole clean – wiper trip top surface and back – circulate hole clean – conduct survey and hoist to run casing
11.02.03	520m	Lay out 6-1/2" drill collars – rig up to run casing – run 45 joints of 7-5/8"casing – head up and circulating casing clean – hold safety meeting with Halliburton – pump water pre-flush pressure test lines – Mix and pump 302 sx of lead and 200 sx of tail cement – displace with 70 bbls of water – wait on cement – back out landing joint and install bradenhead – nipple up BOPs
12.02.03	849m	Pressure test BOPs – strap and clean BHA – RIH making up BHA – pick up drill collars and lay out excess drill pipe – slip line and drill out shoetrack – circulate to new mud and drill new hole from 520 to 523m – conduct leak off test to 15.4ppg EMW – drill 171mm hole from 523 to 849m conducting surveys.
13.02.03	1516m	Drill 171mm hole from 849 to 1516m conducting regular surveys.

Date	Depth	Operation
14.02.03	1859m	Drill 171mm hole from 1516 to 1859m conducting regular surveys.
15.02.03	2125m	Drill 171mm hole from 1859 to 2125m (TD) – circulate hole clean and conduct wiper trip back to 1700m.
16.02.03	2125m	RIH and wiper trip – circulate hole clean – POH – Rig up Schlumberger – conduct wireline logging survey including velocity survey.
17.02.03	2125m	Complete velocity survey – rig down Schlumberger – RIH BHA and layout – RIH open ended – Circulate hole clean – run cement plug #1 from 1960 to 1885m (55 sx) – run cement plug #2 from 1885-1810m (55 sx) – run cement plug #3 from 780 to 700m (70 sx) – run cement plug #4 690 to 630m – run cement #5 580-490m (70 sx) – pull up eight stands and circulate hole clean.
18.02.03	2125m	Wait on cement – RIH and tag cement at 495m – lay down drill pipe – flush BOPs with water – lay down kelly – nipple down BOPs – remove bradenhead – run 10m surface cement plug.

Hole Sizes and Depths

9.88" / 251mm. to 520m
6.73" / 171mm. to Total Depth

Casing and Cementing

13.375" conductor set at 12.0m

Surface
Size - 7.625" / 194mm
Weight - 26.4 lb/ft / 39.28 kg/m
Grade - L80
Shoe Setting Depth - 520m
Quantity of Cement - 302 sx "A" + 2% Gel followed by 200 sx "A" neat
Interval Cemented - To surface

Deviation Surveys

Depth (metres)	Deviation (degrees)	Azimuth (metres)	Depth (metres)	Deviation (degrees)	Azimuth (metres)
120	0.75	-	1281	1.0	-
275	0.75	-	1435	0.75	-
372	0.75	-	1581	1.00	-
682	0.25	-	1736	1.5	-
836	0.5	-	1881	2.25	-
982	0.75		2035	2.00	-
1137	0.75	-	2113	2.50	

Sperry directional drilling equipment was at location to be used in the event of excess deviation away from the target. This equipment was not required as no significant deviation occurred while drilling the 171mm production hole. A maximum deviation of 2.5 degrees was recorded via checkpoint survey at 2113m.

Drilling Fluid

(a) Spud - 520m	Fluid	Gel - Spud Mud
	Additives	Gel
(b) 520m - TD	Fluid	KCL - PHPA – Polymer
	Additives	KCl, Barite, Caustic Soda, Defoamer-L, idcide-20, JK-261, Kwikseal, Pac-R, Soda Ash, Sodium Sulphate, Trugel-13A, Xanthan Gum

Physical Mud Properties

Date	Depth (mRT)	Type	SG	Vis.	pH	Sand	KCl%	Solid	Cl-
5/02	12	spud	8.65	40	9.5	Tr	-	2.3	1000
6/02	100	spud	8.75	72	9.5	Tr	-	2.7	1000
7/02	100	spud	8.65	47	9.5	Tr	-	2.3	1000
8/02	284	spud	8.7	48	9.5	Tr	-	2.7	100
9/02	248	spud	8.7	33	9.5	Tr	-	2.7	100
10/02	365	Spud	8.8	33	9	0.25	-	3.4	1100
11/02	520	KCl PHPA Poly	8.7	36	9	0.25	3	4.2	15500
12/02	635	KCl PHPA Poly	8.9	34	9.5	0.25	3.8	1.0	21000
13/02	1134	KCl PHPA Poly	8.9	49	8.5	0.25	3.5	3.0	20000
14/02	1745	KCl PHPA Poly	9.1	42	9.5	0.25	3.9	4.4	22000
15/02	2000	KCl PHPA Poly	9.2	40	9.5	0.5	3.9	4.9	25000

Date	Depth (mRT)	Type	SG	Vis.	pH	Sand	KCl%	Solid	Cl-
16/02	2125	KCl PHPA Poly	9.2	44	9.0	0.25	3.9	5.0	24500

Chemicals Used:

Product	Units		Amount	
Barytes OD (25kg)	80	sacks	2000	Kg
Caustic Soda (25kg)	17	sacks	425	Kg
Defoam L (20 L)	2	drum	40	L
Enerseal C (25 kg)	24	sacks	600	Kg
Enerseal F (25kg)	48	sacks	1200	Kg
Idcide-20 (20L)	15	drum	300	L
JK-261 (25kg)	46	drums	1150	L
KCl fine (25kg)	440	sacks	11000	kg
Pac R (25kg)	24	sacks	600	kg
Soda Ash (25kg)	8	sacks	200	kg
Sodium Sulphite (25kg)	16	sacks	400	kg
Trugel 13A (25kg)	346	sacks	8650	kg
Kwikseal F (19kg)	54	sacks	1026	Kg
Kwikseal M (19 lb)	24	sacks	456	Kg

Water Supply

Water was obtained from an onsite bore.

Perforation Record

None

Plugging and Cementing

Cement abandonment plugs were spotted at the following depths post drilling.

Plug Number	Depth	Cement Sacks
1	1960m – 1885m	55
2	1885m – 1810m	55
3	780m – 700m	70
4	690m – 630m	45
5	580m – 490m	70

2.4 Logging and Testing

Wellsite Geologist

B. Corbett

Mudlogging

Mudlogging services were provided by Geoservices Overseas Pty Ltd. Cuttings gas was monitored from surface casing shoe to total depth using a hot-wire gas detector and a FID gas chromatograph.

A mudlog recording lithology, penetration rate, mud gas and other data is included at the back of this report as Enclosure 1.

Ditch Cutting Samples

Cuttings were collected at 10m interval from surface to 520m , then at 5m interval to 1800m, and finally at 3m intervals to T.D. The cuttings samples and sets were:

Sample Type	No. Sets	Receiver
Unwashed	1	Origin
Washed	2	1 set Origin / 1 set MPD of DPI
Sample Trays	2	Origin

Coring

Nil

Sidewall Cores

Nil

DST Testing

Nil

Wireline Logs

Two suites of logs were run by Schlumberger at TD.

Suite 1 (Schlumberger)	
Type Log	Interval
Run 1- PEX-DSI-GR	2124m - surface
Run 2- CSAT - GR	2124m – surface

Velocity Survey

A velocity survey was run at TD. Refer to Appendix 7 for details.

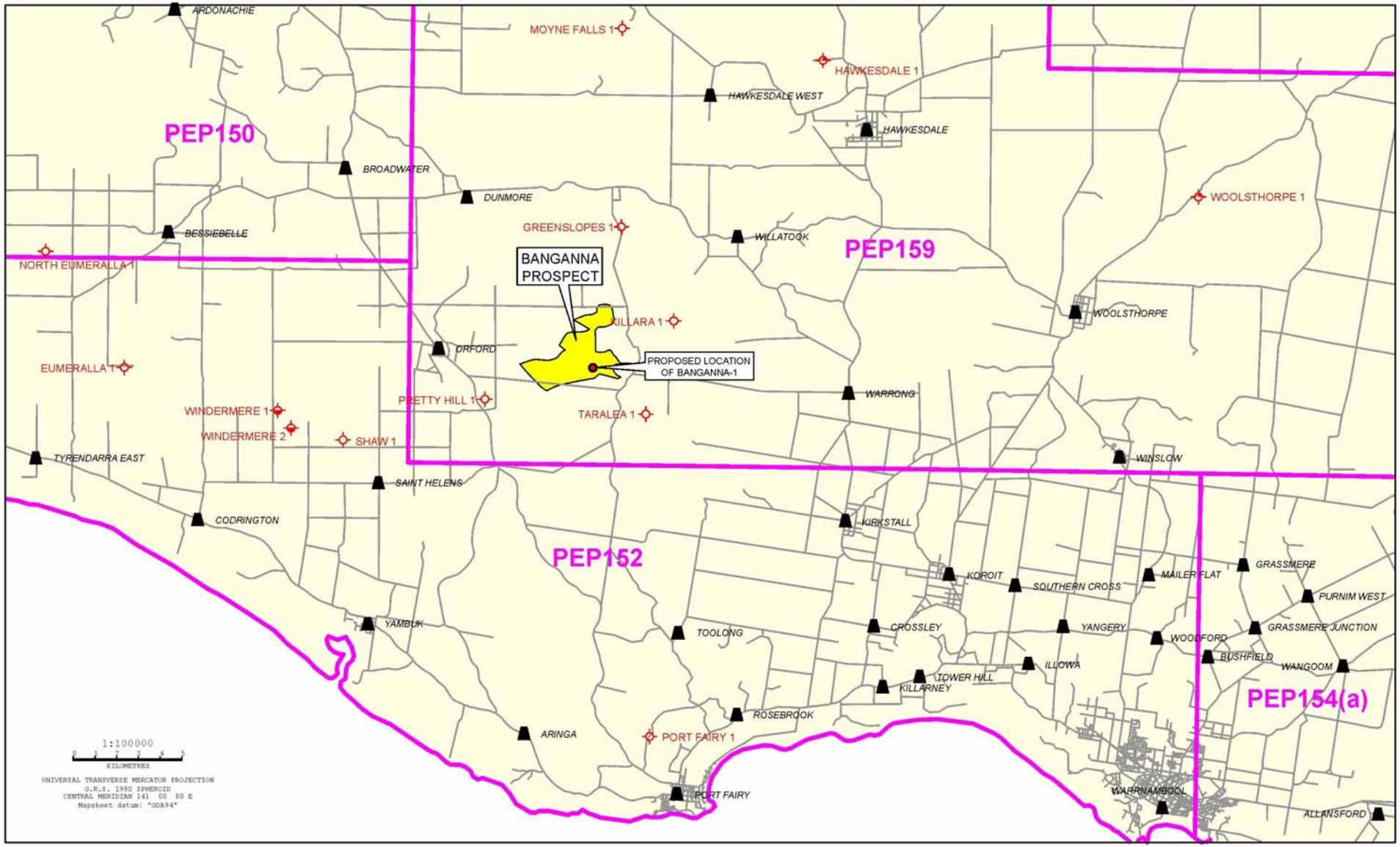
3. COMPLETION

Banganna 1 was plugged and abandoned.

4. REFERENCES

Origin Energy Developments Pty Ltd. Drilling Program (L1) – Banganna 1, unpublished report prepared for Origin Energy Developments Pty Ltd, January 2003.

Origin Energy Developments Pty Ltd. Well Proposal (PEP 159) – Banganna 1, unpublished report prepared for Origin Energy Developments Pty Ltd, December 2002.


ARDONACHIE
MOYNE FALLS 1
HAWKESDALE 1
HAWKESDALE WEST
HAWKESDALE
PEP150
BROADWATER
DUNMORE
WOOLSTHORPE 1
BESSIEBELLE
GREENSLOPES 1
WILLATOOK
PEP159
NORTH EUMERALLA 1
BANGANNA PROSPECT
WOOLSTHORPE
KILLARA 1
ORFORD
EUMERALLA 1
PROPOSED LOCATION OF BANGANNA-1
WARRONG
WINDERMERE 1
PRETTY HILL 1
TARALEA 1
WINDERMERE 2
SHAW 1
WINSLOW
TYRENDARRA EAST
SAINT HELENS
CODRINGTON
KIRKSTALL
PEP152
KOROIT
SOUTHERN CROSS
MAILER FLAT
GRASSMERE
PURNIM WEST
YAMBUK
TOOLONG
CROSSLEY
YANGERY
WOODFORD
GRASSMERE JUNCTION
BUSHFIELD
WANGOOM
ILLOWA
TOWER HILL
KILLARNEY
PEP154(a)
ROSEBROOK
ARINGA
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WARRNAMBOOL
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KILOMETRES
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G.R.S. 1980 SPHEROID
CENTRAL MERIDIAN 141 00 00 E
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Figure 1

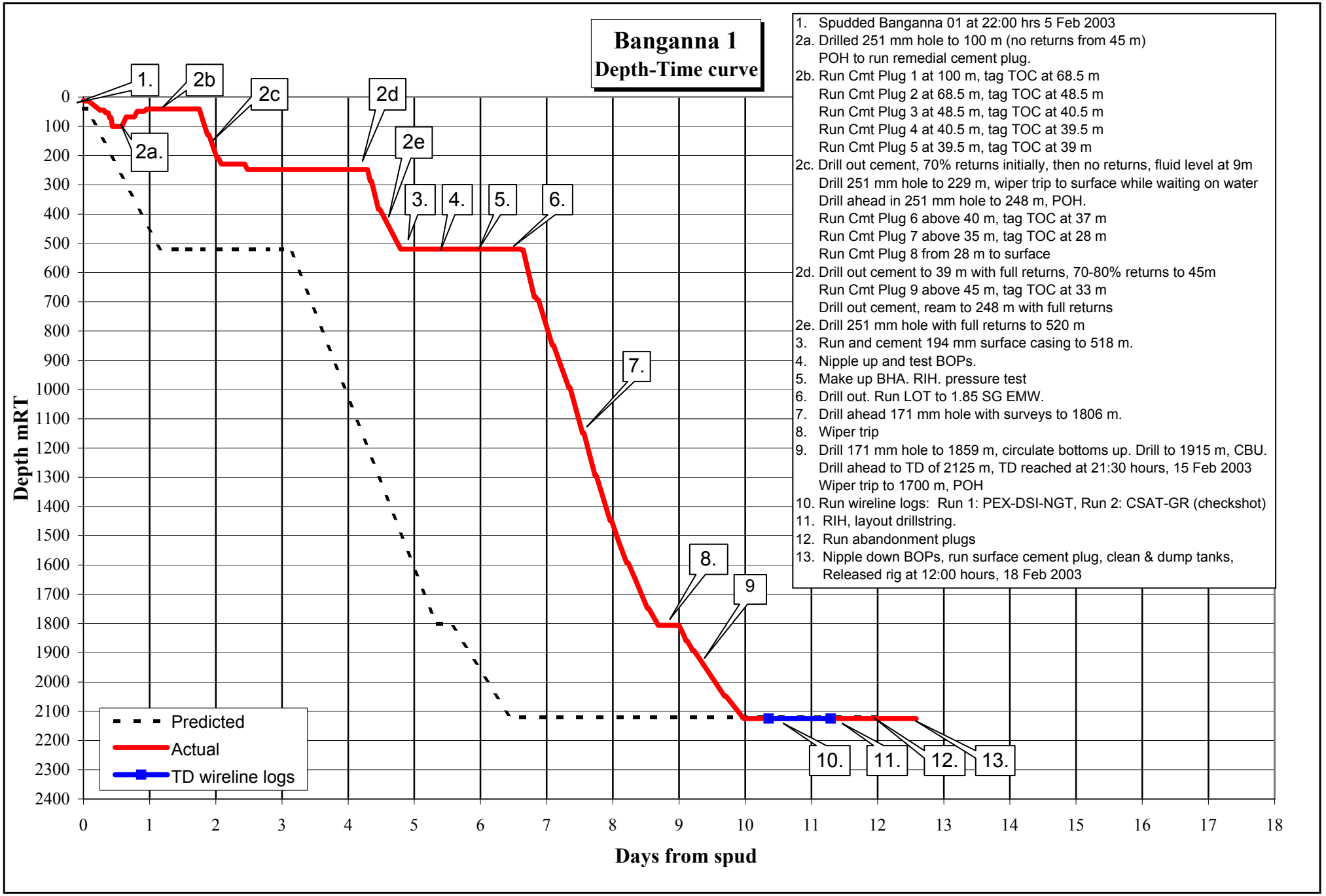
Banganna 1
Depth-Time curve
1. Spudded Banganna 01 at 22:00 hrs 5 Feb 2003
2a. Drilled 251 mm hole to 100 m (no returns from 45 m)
POH to run remedial cement plug.
2b. Run Cmt Plug 1 at 100 m, tag TOC at 68.5 m
Run Cmt Plug 2 at 68.5 m, tag TOC at 48.5 m
Run Cmt Plug 3 at 48.5 m, tag TOC at 40.5 m
Run Cmt Plug 4 at 40.5 m, tag TOC at 39.5 m
Run Cmt Plug 5 at 39.5 m, tag TOC at 39 m
2c. Drill out cement, 70% returns initially, then no returns, fluid level at 9m
Drill 251 mm hole to 229 m, wiper trip to surface while waiting on water
Drill ahead in 251 mm hole to 248 m, POH.
Run Cmt Plug 6 above 40 m, tag TOC at 37 m
Run Cmt Plug 7 above 35 m, tag TOC at 28 m
Run Cmt Plug 8 from 28 m to surface
2d. Drill out cement to 39 m with full returns, 70-80% returns to 45m
Run Cmt Plug 9 above 45 m, tag TOC at 33 m
Drill out cement, ream to 248 m with full returns
2e. Drill 251 mm hole with full returns to 520 m
3. Run and cement 194 mm surface casing to 518 m.
4. Nipple up and test BOPs.
5. Make up BHA. RIH. pressure test
6. Drill out. Run LOT to 1.85 SG EMW.
7. Drill ahead 171 mm hole with surveys to 1806 m.
8. Wiper trip
9. Drill 171 mm hole to 1859 m, circulate bottoms up. Drill to 1915 m, CBU.
Drill ahead to TD of 2125 m, TD reached at 21:30 hours, 15 Feb 2003
Wiper trip to 1700 m, POH
10. Run wireline logs: Run 1: PEX-DSI-NGT, Run 2: CSAT-GR (checkshot)
11. RIH, layout drillstring.
12. Run abandonment plugs
13. Nipple down BOPs, run surface cement plug, clean & dump tanks,
Released rig at 12:00 hours, 18 Feb 2003
1.
2a.
2b
2c
2d
2e
3.
4.
5.
6.
7.
8.
9
10.
11.
12.
13.
Predicted
Actual
TD wireline logs
Depth mRT
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Days from spud

FIGURE 2

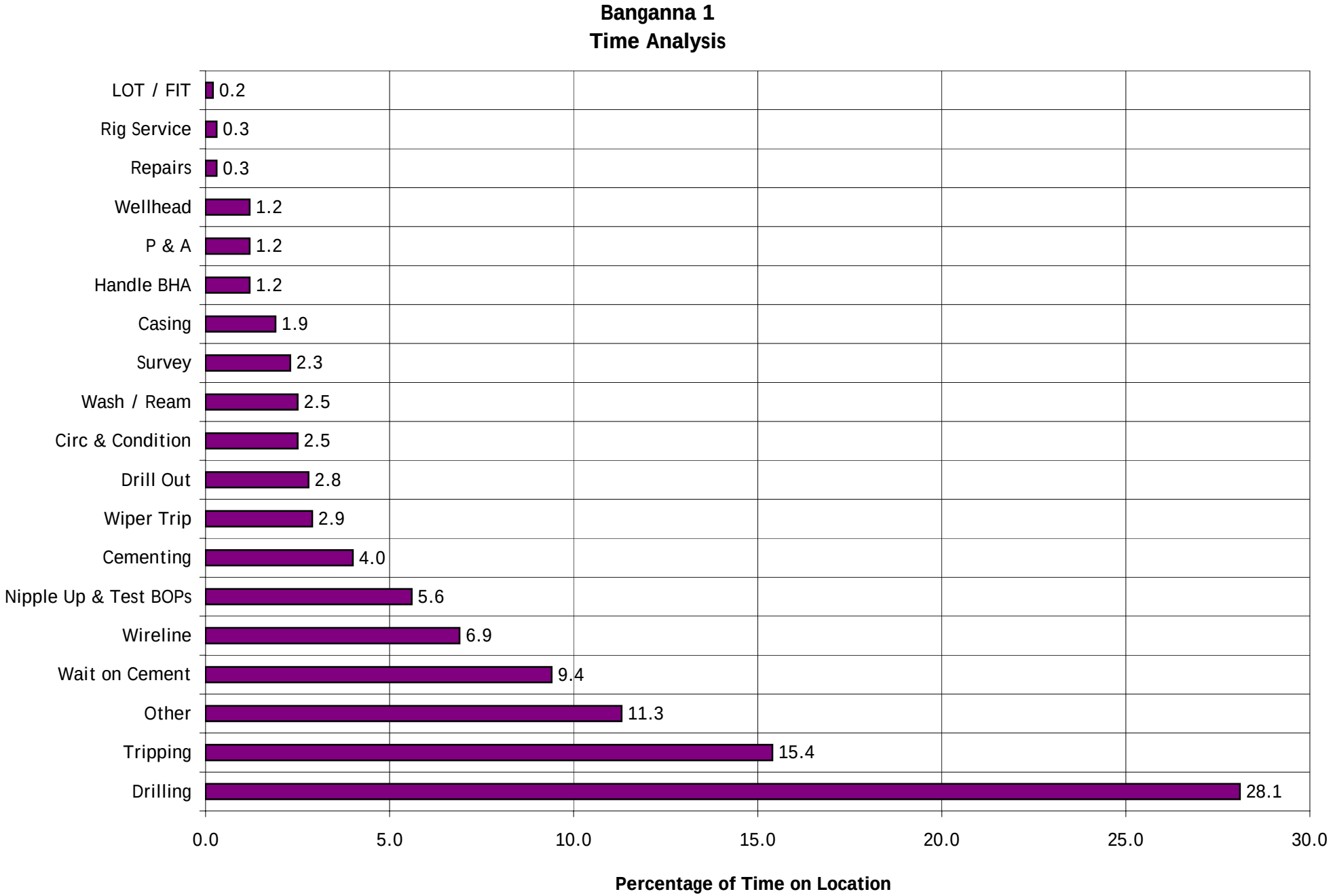
Banganna 1
Time Analysis
LOT / FIT
Rig Service
Repairs
Wellhead
P & A
Handle BHA
Casing
Survey
Wash / Ream
Circ & Condition
Drill Out
Wiper Trip
Cementing
Nipple Up & Test BOPs
Wireline
Wait on Cement
Other
Tripping
Drilling
0.2
0.3
0.3
1.2
1.2
1.2
1.9
2.3
2.5
2.5
2.8
2.9
4.0
5.6
6.9
9.4
11.3
15.4
28.1
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Percentage of Time on Location

Figure 3

APPENDIX 1

CUTTINGS DESCRIPTIONS

Oil Company of Australia

BANGANNA 1 - LITHOLOGICAL DESCRIPTIONS

Interval (mGL)	ROP (ave)	Lithology Description
6 - 40	0.5– 3.5 (1.3)	Sandstone with Interbedded Limestone SANDSTONE: 70-80% translucent to transparent, white to light yellow, fine to medium, predominately fine, moderate sorting, subangular to rounded, well rounded in places, calcareous cement in places, loose, good inferred porosity. No fluorescence. LIMESTONE: 20-30%, white, occasional light yellow, very fine to medium grains, occasional coarse fossil fragment, predominately calcsiltite, fossiliferous, firm to moderate hard. BASALT: Trace-5%, black, dark brown, very fine to fine crystals, olivine, plagioclase, vesicular.
40 - 100	0.5– 3.5 (1.0)	No samples, likely Port Campbell Limestone.
100 - 230	0.28–3.21 (.78)	No sample.
230 - 250	1.0–1.86 (1.6)	No samples.
250 - 290	0.29-1.61 (0.67)	MARL (calcareous silty claystone): 100%, medium grey, light grey to white in places, very fine, trace silt, abundant fine to very coarse calcite aggregates and fossiliferous material, trace fine quartz, trace glauconite very soft, sticky, non fissile, very poor visual porosity. Nil hydrocarbon fluorescence (trace mineral fluorescence).
290 - 377	0.35-1.01 (0.63)	MARL: light to medium grey, off white in places, very fine, fine in places, abundant fine to very coarse calcite grains, predominately calcarenite, common fossil material, trace fine quartz, soft, sticky, non fissile, calcite grains firm to hard, poor visual porosity, grading to limestone in places. Nil hydrocarbon fluorescence.
377 - 404	0.38-2.54 (1.09)	LIMESTONE: white to pale yellow/orange, moderate to bright orange in places, fine to medium, trace coarse and very coarse grains, abundant fossil material, common crystalline and microcrystalline carbonate cement, iron stained, firm to hard, minor grey clay matrix, silty in places, trace fine to coarse loose quartz, fair inferred porosity, good in places. Nil fluorescence.

Interval (mGL)	ROP (ave)	Lithology Description
404 - 440	0.13-7.67 **(**1.08**)**	SANDSTONE interbedded with Limestone and trace CLAYSTONE: SANDSTONE, translucent to transparent, white to light grey, fine to very coarse, predominately fine to medium, moderate sorted, sub angular to rounded, trace argillaceous matrix, rare mica, trace pyrite, loose, good inferred porosity, Nil fluorescence. LIMESTONE, white to pale orange, fine to coarse calcite grains, commonly fossiliferous, trace microcrystalline cement, firm to hard, minor iron stained grains, fair to good inferred porosity. Nil fluorescence. CLAYSTONE, light to moderate grey, silty in places, carbonaceous specks, soft, amorphous to subfissile, dispersive.
440 - 482	0.4-9.17 **(**2.00**)**	SANDSTONE: translucent to transparent, white to light grey, fine to very coarse, poorly sorted, subangular to rounded, loose, trace moderate hard aggregates, trace pyrite and mica, minor calcareous cement, trace argillaceous matrix, good inferred porosity. Nil fluorescence.
482 - 520	0.33-6.89 **(**1.46**)**	CLAYSTONE with rare to trace SANDSTONE CLAYSTONE, medium to dark brown, grey in places, arenaceous, rare calcareous fragments, trace carbonaceous specks, trace mica and pyrite, very soft to soft, amorphous, highly dispersive, grades to siltstone in places. SANDSTONE, translucent to transparent, white to light grey, fine to very coarse, poorly sorted, subangular to rounded, loose, trace pyrite and mica, minor calcareous cement, trace argillaceous matrix, fair inferred porosity. Nil fluorescence.
520 - 535	0.62-1.71 **(**1.36**)**	CLAYSTONE interbedded with trace SANDSTONE. CLAYSTONE, medium to dark brown, arenaceous, rare calcareous fragments, trace carbonaceous specks, trace mica and pyrite, trace glayconite, very soft to soft, amorphous, highly dispersive, grades to siltstone in places. SANDSTONE, translucent to transparent, white to light grey, fine to very coarse, poorly sorted, subangular to rounded, loose, trace pyrite and mica, minor calcareous cement, trace argillaceous matrix, fair inferred porosity. Nil fluorescence.

Interval (mGL)	ROP (ave)	Lithology Description
535 - 565	0.27-0.98 **(**0.49**)**	CLAYSTONE interbedded with SANDSTONE. CLAYSTONE, dark brown green, medium green in places, silty, minor carbonaceous specks and fragments, soft to firm, trace moderate hard, amorphous to sub blocky. SANDSTONE, translucent to transparent, fine to very coarse, predominately coarse, poorly sorted, subangular, minor subrounded, minor argillaceous matrix, predominately loose, poor to fair porosity. Nil fluorescence.
565 - 640	0.30-1.93 **(**0.85**)**	CLAYSTONE interbedded with SANDSTONE. CLAYSTONE, dark grey, grey brown, arenaceous, minor carbonaceous, soft to firm, amorphous, common dispersive, darker harder fragments grade to siltstone. SANDSTONE, translucent to transparent, light grey, fine to medium , trace coarse, moderate to well sorted, subangular to subrounded, argillaceous, trace calcareous grains and mica, loose, fair inferred porosity. Nil fluorescence.
640 - 670	0.57-3.53 **(**1.2**)**	CLAYSTONE interbedded with trace SANDSTONE. SANDSTONE, translucent and white, very fine to fine aggregates, fine to medium loose, trace coarse, poor sorting, subangular to subrounded, trace white argillaceous matrix, minor calcareous cement, trace carbonaceous specks, aggregates firm, very poor visual porosity, poor inferred porosity, Nil fluorescence. CLAYSTONE, medium to dark brown, grey brown, minor white argillaceous material, minor arenaceous fine to medium, trace coarse and very coarse, trace carbonaceous, trace pyrite, rare calcareous cement and fragments, soft to firm, amorphous, dispersive in places, commonly grades to siltstone.
670 - 700	0.73-3.87 **(**1.32**)**	CLAYSTONE interbedded with SANDSTONE. CLAYSTONE , medium brown, grey brown, arenaceous in part, trace carbonaceous specks, trace mica, soft, amorphous, dispersive, trace grades to siltstone. SANDSTONE, translucent to translucent, light grey to off white, predominately loose, fine to coarse, generally medium, subangular, rounded in places, minor very fine to aggregates, trace white argillaceous matrix, minor calcareous grains and cement, rare pyrite, trace carbonaceous material, trace glauconite, very poor to poor visual porosity, poor inferred porosity. Nil fluorescence.

Interval (mGL)	ROP (ave)	Lithology Description
700 - 726	0.60-2.00 **(**1.08**)**	CLAYSTONE. CLAYSTONE, dark brown, brown grey, very fine arenaceous, trace medium and coarse loose quartz grains, trace pyrite, trace carbonaceous specks and fragments, trace mica, very occasional calcite, soft, amorphous, dispersive.
726 - 753	0.21-8.26 **(**1.75**)**	CLAYSTONE interbedded with trace SANDSTONE . CLAYSTONE, medium to dark grey, brown grey, very fine arenaceous, trace medium and coarse loose quartz grains, trace pyrite, minor to common carbonaceous specks and fragments, trace mica, very occasional calcite, soft, amorphous, dispersive. SANDSTONE, translucent to translucent, light grey to off white, predominately loose, fine to coarse, generally medium, subangular, rounded in places, minor very fine to aggregates, trace white argillaceous matrix, minor calcareous grains and cement, rare pyrite, trace carbonaceous material, very poor to poor visual porosity, poor inferred porosity. Nil fluorescence.
753 - 783	0.66-4.07 **(**2.44**)**	SILTSTONE interbedded with trace to minor CLAYSTONE. SILTSTONE, medium to dark brown, dark green brown, argillaceous, trace medium loose quartz and lithics, trace carbonaceous, firm to moderately hard, subblocky. CLAYSTONE, medium to dark grey, silty in places, trace arenaceous, rare carbonaceous specks, trace mica and pyrite, trace calcareous fragments, soft, amorphous, dispersive.
783 - 810	0.36-1.2 **(**0.64**)**	CLAYSTONE. CLAYSTONE, medium to dark grey, silty in places, trace arenaceous, rare carbonaceous specks, trace mica and pyrite, trace calcareous fragments, trace glauconite, soft, amorphous, dispersive.
810 - 995	0.45-3.73 **(**1.16**)**	CLAYSTONE interbedded with SANDSTONE. SANDSTONE, light grey to off white, very fine to fine, trace medium, subangular to rounded, well sorted, minor white argillaceous matrix, trace calcareous cement, trace silica cement and overgrowths trace carbonaceous specks, soft to firm aggregates, poor visual porosity. Nil fluorescence. CLAYSTONE, light to medium grey, trace to rare carbonaceous specks, trace mica, soft to firm, amorphous to subblocky, minor dispersive, grades to very fine arenaceous in places.

Interval (mGL)	ROP (ave)	Lithology Description
995 - 1350	0.35-4.91 **(**0.86**)**	CLAYSTONE interbedded with SANDSTONE. SANDSTONE, light grey to off white, very fine to fine, trace medium, subangular to rounded, moderate to well sorted, minor white argillaceous matrix, trace calcareous cement, trace silica cement and overgrowths, trace carbonaceous specks, soft to firm aggregates, poor visual porosity. Nil fluorescence. CLAYSTONE, light to medium grey, trace to rare carbonaceous specks, trace mica, soft to firm, amorphous to subblocky, minor dispersive, minor grades to very fine arenaceous.
1350 - 1645	0.35-7.31 **(**1.2**)**	SANDSTONE interbedded with CLAYSTONE. SANDSTONE, off white to light grey, very fine to fine, trace medium, well sorted, subangular to subrounded, minor white argillaceous matrix, trace carbonaceous specks and mica, soft to firm aggregates, moderately calcareous, poor visual porosity. Nil fluorescence. CLAYSTONE, light to moderate grey to grey-brown, occasionally moderate brown, also dark grey and greenish grey, soft to firm, trace carbonaceous material, amorphous to sub-blocky, grades to siltstone.
1645 - 1798	1.05-4.79 **(**1.98**)**	SANDSTONE thinly interbedded / grading to arenaceous CLAYSTONE. SANDSTONE, light grey to off white, very fine to fine, trace medium, subangular to rounded, moderate to well sorted, minor to common argillaceous matrix (dispersive), trace calcareous cement, trace silica cement and overgrowths, trace carbonaceous specks, soft to firm aggregates, poor visual porosity. Nil fluorescence. CLAYSTONE, medium grey, minor dark grey, trace to rare carbonaceous specks, trace mica, soft to firm, amorphous to subblocky, minor dispersive, very fine to fine arenaceous, silty in places.
1798 - 1856	1.17-5.99 (2.42)	SILTSTONE grading to CLAYSTONE with interbedded SANDSTONE and trace COAL. SILTSTONE, off white, light to moderate brown, minor pale to moderate grey, soft to firm, argillaceous, common very fine carbonaceous specks / laminae, minor very dark green to black glauconite nodules. SANDSTONE, white to off white, very fine, sub-rounded, moderate to well sorted, feldspathic, abundant clay matrix, calcareous, friable to moderately hard, very poor porosity. Nil fluorescence. COAL, dark brown, black, sub-vitreous, brittle to firm, subfissile.

Interval (mGL)	ROP (ave)	Lithology Description
1856 - 1929	0.65-9.97 (2.39)	SANDSTONE with occasional minor SILTSTONE interbeds. SANDSTONE, white to cream, very fine to coarse, occasionally very coarse, sub-angular to sub-rounded, poor to moderately sorted, rare pink garnet, rare pyrite, trace dark green to black glauconite nodules, moderate clay matrix, moderately calcareous, weak silica cement, friable to firm, fair porosity, good porosity in places. Nil fluorescence. SILTSTONE, light to moderate brown to grey-brown, soft to firm, sub-fissile to sub-blocky, common very fine carbonaceous specks and laminae, occasionally grading to very fine silty sandstone, occasionally dark brown and argillaceous with dark green-black glauconite nodules.
1929 - 2125	0.97-14.1 (3.51)	Slightly argillaceous SANDSTONE interbedded with trace SILTSTONE. SANDSTONE, off white, cream , very fine to coarse, predominately fine to medium, poor to moderate sorting, sub rounded to angular, trace to minor argillaceous matrix, trace weak calcareous cement, trace carbonaceous specks and mica, loose, common friable aggregates, fair inferred porosity. Nil fluorescence. SILTSTONE, medium to dark grey, grey brown, carbonaceous, argillaceous matrix, trace carbonaceous specks and mica, soft to firm, trace moderate hard, amorphous to sub blocky, subfissile in places, grades to very fine arenaceous.

APPENDIX 2

BIT RECORD

OIL COMPANY OF AUSTRALIA

BIT RECORD

Well : **Banganna 01** Basin / Area : **Otway** Permit : **PEP 159** Field : **0**

Location : Latitude : **38° 12' 27.66" S** G.L. **63.70** metres Spud Date: **5-Feb-03**

Longitude : **142° 10' 50.62" E** Well Site Supervisor: **Seton Porter** K.B. **68.90** metres T.D. Date: **15-Feb-03**

Contractor : **Century Drilling** Rig #: **11** Proposed TD: **2120** metres Rig Released Date: **18-Feb-03**

PUMPS				MUD TYPE				
No.	**Type**	**Stroke (in)**	**Liner (in)**	**Output (gps)**	**Section**	**Dev**	**Interval**	**Type**	**Wt**
1	Gardner Denver PZ-7 Triplex	7.00	5.50	2.10	Surface	0.75°	0m to 520m	Spud	8.90
2	Gardner Denver PZ-7 Triplex	7.00	5.50	2.10	Main	2.00°	520m to 2125m	Poly/Phpa/Kcl	9.20

Bit No.	Run No.	Size (in)	Make	Type	IADC Code	Serial No.	# of nozzles Size- 32nds	Motor Y / N	Shock-Sub Serial No.	Depth Out	Metres	Hours	ROP (m/hr)	Accum Hours	Bit Grading I	O	D	L	B	G	O	R	WOB Mn	Mx	RPM Mn	Mx	Press (psi)	Pump (gpm)
1	1	9.875	VAREL	CH1 GMS	117	185424	3 16	N		520	520	23.5	22.1	23.5	2	2	WT	A	E	I	NO	TD	5	15	80	120	1500	503
2	2	6.75	Hycalog	DS185GNVW	M424	201917	4 13	N		2125	1605	67.5	23.8	91	2	1	WT	N	X	I	NO	TD	5	13	80	120	1850	352

Comments :

APPENDIX 3

DRILLING FLUID SUMMARY

OCA

Fluid Properties Summary

Banganna 1

						Rheology					Fluid loss data				Solids					Water Phase Chemistry									
Date	Day	Mud Type	Temp.	Depth	Weight	Vis	PV	YP	10 sec	10 min	API	Cake	HPHT	@Temp	Solids	Water	Oil	Sand	MBT	pH	Pm	Pf	Mf	Cl-	Ca++	$SO_3^=$	K^+	KCl	PHPA
5-Feb-03	1	Spud Mud		12	8.65	40	5	19	12	21	28	3			2.3	97.7		Tr	20	9.5		0.2	0.7	1000	160				
		Spud Mud		14	8.65	38	4	16	10	18	30	3			2.3	97.7		Tr	20	9		0.1	0.6	1000	120				
6-Feb-03	2	Spud Mud		100	8.7	72	12	41	17	19	16	3			2.7	97.3		Tr	25	9.5		0.2	0.7	1000	100				
		Spud Mud		100	8.75	81	15	50	25	28	15	3			3.1	96.9		Tr	27	9.5		0.3	0.75	1000	80				
7-Feb-03	3	Spud Mud		100	8.65	47	9	24	17	24	25	3			2.3	97.7		Tr	22	9.5		0.25	0.7	1000	120				
		Spud Mud		185	8.7	45	8	22	16	24	27	3			2.7	97.3		Tr	22	9.5		0.3	0.8	1000	100				
8-Feb-03	4	Spud Mud		248	8.7	48	9	25	16	26	25	3			2.7	97.3		Tr	22	9.5		0.35	0.8	1000	120				
		Spud Mud		248	8.7	43	7	20	14	21	28	3			2.7	97.3		Tr	20	9.5		0.3	0.75	1000	80				
9-Feb-03	5	Spud Mud		248	8.7	33	3	10	7	10	33	3			2.7	97.3		Tr	15	9.5		0.25	0.7	1000	80				
		Spud Mud		248	9.1	37	7	13	6	9	25	3			5.7	94.3		2	17.5	9.5		0.1	0.6	1250	40				
10-Feb-03	6	Spud Mud		365	8.8	33	4	12	8	10	n/c				3.4	96.6		Tr	15	9		0.1	0.35	1100	40				
		Spud Mud		520	8.9	35	5	14	9	12	n/c				4.2	95.8		0.5	15	9		0.1	0.3	1050	40				
11-Feb-03	7	KCl PHPA Polymer		520	8.9	36	5	16	9	11	n/c				4.2	95.8		0.25	15	9		0.1	0.4	1050	40				
		KCl PHPA Polymer		520	8.55	34	3	4	1	1	n/c				0.6	99.4		Tr		9		0.05	0.35	15500	120		16200	3	0.45
12-Feb-03	8	KCl PHPA Polymer	32	635	8.65	34	5	6	1	1	n/c				1.0	99.0		0.25	1.5	9.5		0.2	0.8	21000	240	120	20500	3.8	0.6
		KCl PHPA Polymer	36	841	8.7	38	10	10	2	3	8.5	1			1.4	98.6		0.25	5	9		0.1	0.6	21000	360	120	20000	3.7	1.2
13-Feb-03	9	KCl PHPA Polymer	38	1134	8.9	39	11	11	3	4	7.5	1			3.0	97.0		0.25	7.5	8.5		0.05	0.4	20000	440	120	18900	3.5	1.5
		KCl PHPA Polymer	41	1503	9	41	12	12	3	4	7	1			3.6	96.4		0.25	7.5	9		0.1	0.4	22500	320	120	20500	3.8	1.65
14-Feb-03	10	KCl PHPA Polymer	50	1745	9.1	42	13	13	3	5	7	1:3	28	250	4.4	95.6		0.25	7.5	9.5		0.25	0.6	22000	160	150	21100	3.9	1.7
		KCl PHPA Polymer	54	1841	9.1	43	12	13	3	6	6.5	1:3	26	250	4.2	95.8		0.25	10	9		0.15	0.5	25000	280	150	18400	3.4	1.7
15-Feb-03	11	KCl PHPA Polymer	56	2000	9.2	40	15	13	3	6	6	1:3	24	250	4.9	95.1		0.5	10	9.5		0.2	0.5	25000	200	150	21100	3.9	1.8
		KCl PHPA Polymer	58	2125	9.2	41	14	15	3	7	6	1:3	24	250	4.9	95.1		0.5	10	9		0.2	0.65	25000	140	100	21100	3.9	1.7
16-Feb-03	12	KCl PHPA Polymer		2125	9.2	44	15	16	3	6	6	1:3	24	250	5.0	95.0		0.25	10	9		0.15	0.7	24500	160	80	21100	3.9	1.7
		KCl PHPA Polymer		2125	9.2	48	17	18	4	7	6	1:3	24	250	4.9	95.1		0.25	10	9		0.1	0.7	25000	160	80	21100	3.9	1.7

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	1	Date	5-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	12	To	14 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 9 7/8	Varel GHIGMS	16 16 16	SURFACE SET @ 0 ft 0 m	HOLE 5 PITS 45	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 150 psi
DRILL PIPE SIZE 0	TYPE G Length Mtrs		INT. SET @ 0 ft 0 m	TOTAL CIRCULATING VOL. 50	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 1 min
DRILL PIPE SIZE 0	TYPE HW Length Mtrs		PROD. or LNR Set @ 0 ft 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 80; TOTAL CIRC. TIME (min) 13 min
DRILL COLLAR SIZE (") 6 1/4	Length 14 Mtrs		MUD TYPE Spud Mud		BBL/MIN 3.99; GAL / MIN 168; ANN VEL. (ft/min) DP 42 DCs 70 0

MUD PROPERTIES

		Pit	Pit
SAMPLE FROM		Pit	Pit
TIME SAMPLE TAKEN		1900	2350
FLOWLINE TEMPERATURE	^{0}F		
DEPTH	Metres	12	14
WEIGHT	ppg / SG	8.65 1.04	8.60 1.03
FUNNEL VISCOSITY (sec/qt) API @	^{0}F	40	38
PLASTIC VISCOSITY cP @	^{0}F	5	4
YIELD POINT (lb/100FT2)		19	16
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		12 21	10 18
FILTRATE API (cm3/30 min.)		28	30.0
API HPHT FILTRATE (cm3/30 min.) @	^{0}F		
CAKE THICKNESS API : HPHT (32nd in)		3	3
SOLIDS CONTENT		2.3	1.9
LIQUID CONTENT (%by Vol.) OIL/WATER		97.7	0.0 98.1
SAND CONTENT (% by Vol.)		Tr	Tr
METHYLENE BLUE CAPACITY (ppb equiv.)		20.0	20.0
PH		9.5	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.20 0.70	0.10 0.60
CHLORIDE (mg/L)		1,000	1,000
TOTAL HARDNESS AS CALCIUM (mg/L)		160	120
SULPHITE (mg/L)			
K+ (mg/L)			
KCL (% by Wt.)			
PHPA (Calc ppb)			

MUD PROPERTY SPECIFICATIONS

Mud Weight	0	MBT	0	API Filtrate	
Vis	32-45	Yield Point	0	pH	9
KCl		PHPA		Sulphites	

OBSERVATIONS

The water supply was tested as follows:
pH 8.5, Pf/Mf 0.01/0.35, Chlorides 1000 mg/l, Hardness 300 mg/l.
Initial preparation of mud was made with 20 ppb Trugel in the Pill Tank.
The remaining tanks were filled with water.

At 45 metres start treating mud with gel and 15 ppb Enerseal for losses

Rheology 600>3 RPM 24 20 18 17 12 11

OPERATIONS SUMMARY

Rig up.
Attempt to drill out rat hole and insert sock. No go.
Insert Mouse Hole sock.
Spud Well at 2200 hours.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	45	Desander	0	INITIAL VOLUME	0
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	10	Downhole	5	+ Fluid Received	55
Direct Recyc fm sump	0	Dumped	0	- Fluid Lost	5
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	55	TOTAL LOST	5	FINAL VOLUME	50

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	110/84/84	2	Desander	2	10	0	0	0	0
# 2	110/84/84	2	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Soda Ash	$ 12.49	20		1	19	$ 12.49
Trugel-13A	$ 10.89	384		30	354	$ 326.70

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	1.9	17.6
Bentonite	2.2	20.0
Drilled Solids	-0.3	-2.4
Salt	TR	
Avg .Spec. Grav. Solids		2.60
n @ 2350 Hrs		0.26
K (lb/100 ft^2)		3.88

BIT HYDRAULICS DATA

Jet Velocity	91 ft/sec
Impact force	68 lbs
HHP	6
HSI	0.1
Bit Press Loss	64 psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	0.0 ppg

DAILY COST	CUMULATIVE COST
$339.19	$339.19

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	2	Date	6-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	14	To	100 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 9 7/8	Varel GHIGMS	16 16 16	SURFACE SET @ 0 ft 0 m	HOLE 24 PITS 100	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 0 psi
DRILL PIPE SIZE 0	TYPE G Length Mtrs		INT. SET @ 0 ft 0 m	TOTAL CIRCULATING VOL. 124	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 0 min
DRILL PIPE SIZE 0	TYPE HW Length Mtrs		PROD. or LNR Set @ 0 ft 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 0; TOTAL CIRC. TIME (min) 0 min
DRILL COLLAR SIZE (") 6 1/4	Length 100 Mtrs		MUD TYPE Spud Mud	BBL/MIN 0.00; GAL / MIN 0	ANN VEL. (ft/min) DP 0 DCs 0 0

MUD PROPERTIES

		Pit	Pit
SAMPLE FROM			
TIME SAMPLE TAKEN		1100	1800
FLOWLINE TEMPERATURE	^{0}F		
DEPTH	Metres	100	100
WEIGHT	ppg / SG	8.70 1.04	8.75 1.05
FUNNEL VISCOSITY (sec/qt) API @	^{0}F	72	81
PLASTIC VISCOSITY cP @	^{0}F	12	15
YIELD POINT (lb/100FT2)		41	50
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		17 19	25 28
FILTRATE API (cm3/30 min.)		16	15.0
API HPHT FILTRATE (cm3/30 min.) @	^{0}F		
CAKE THICKNESS API : HPHT (32nd in)		3	3
SOLIDS CONTENT		2.7	3.1
LIQUID CONTENT (%by Vol.) OIL/WATER		97.3	0.0 96.9
SAND CONTENT (% by Vol.)		Tr	Tr
METHYLENE BLUE CAPACITY (ppb equiv.)		25.0	27.0
PH		9.5	9.5
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.20 0.70	0.30 0.75
CHLORIDE (mg/L)		1,000	1,000
TOTAL HARDNESS AS CALCIUM (mg/L)		100	80
SULPHITE (mg/L)			
K+ (mg/L)			
KCL (% by Wt.)			
PHPA (Calc ppb)			

MUD PROPERTY SPECIFICATIONS

Mud Weight	.	MBT	.	API Filtrate	.
Vis	32-45	Yield Point	.	pH	9
KCl	.	PHPA	.	Sulphites	.

OBSERVATIONS

As soon as static loses realised, prepare 35 barrels of 25 ppb Trugel, and 19 ppb Enerseal. And spot in hole, topping up as level fell. Repeat.

Prepare same brew to pump ahead of cement plugs 2 and 3.

Mud checks conducted on these brews.

Enerseal added to cement slurry as well.

Rheology 600>3 RPM 80 65 51 46 31 25

OPERATIONS SUMMARY

Encounter downhole loses at 42 metres.

Observe static loses. Spot LCM pills in the hole.

Resume drilling blind with water, with occasional sweeps. Wait on water pump to refill tank as required.

POOH at 100 metres. M/U drill pipe and RIH. Spot cement plug 1 at 97m.

POOH. WOC. RIH. Tag cement at 68 m. Spot cement plug 2, pumping high viscosity LCM pill ahead. POOH. WOC. RIH Tag cement at 48 m.

Repeat procedure for plug 3.

WOC. Redrill rat hole with air, and install sock.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	180	Desander	0	INITIAL VOLUME	50
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	900	Downhole	1007	+ Fluid Received	1,080
Direct Recyc fm sump	0	Dumped	0	- Fluid Lost	1,007
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	1080	TOTAL LOST	1007	FINAL VOLUME	124

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	110/84/84	4	Desander	2	10	0	0	0	0
# 2	110/84/84	4	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Enerseal C	$ 32.00	24		24	0	$ 768.00
Enerseal F	$ 32.00	48		33	15	$ 1,056.00
Soda Ash	$ 12.95	19		2	17	$ 25.90
Trugel-13A	$ 11.39	354		116	238	$ 1,321.24

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	3.1	27.9
Bentonite	3.0	27.0
Drilled Solids	0.1	0.9
Salt	TR	
Avg .Spec. Grav. Solids		2.60
n @ 1800 Hrs		0.30
K (lb/100 ft^2)		10.05

BIT HYDRAULICS DATA

Jet Velocity	ft/sec
Impact force	lbs
HHP	
HSI	
Bit Press Loss	psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	0.0 ppg

DAILY COST	CUMULATIVE COST
$3,171.14	$3,525.79

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	3	Date	7-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	100	To	229 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 9 7/8	Varel GHIGMS	16 16 16	SURFACE SET @ 0 ft 0 m	HOLE 58 PITS 100	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 0 psi
DRILL PIPE SIZE 0	TYPE G; Length 12 Mtrs		INT. SET @ 0 ft 0 m	TOTAL CIRCULATING VOL. 158	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 8 min
DRILL PIPE SIZE 3 1/2	TYPE HW; Length 46 Mtrs		PROD. or LNR Set @ 0 ft 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 130; TOTAL CIRC. TIME (min) 24 min
DRILL COLLAR SIZE (") 4 3/4 x 6 1/4	Length 54 117 Mtrs		MUD TYPE Spud Mud		BBL/MIN 6.49; GAL / MIN 272; ANN VEL. (ft/min) DP 68 DCs 89 114

MUD PROPERTIES

		Pit	Pit
SAMPLE FROM		Pit	Pit
TIME SAMPLE TAKEN		1400	2030
FLOWLINE TEMPERATURE	^{0}F		
DEPTH	Metres	100	185
WEIGHT	ppg / SG	8.65 1.04	8.70 1.04
FUNNEL VISCOSITY (sec/qt) API @	^{0}F	47	45
PLASTIC VISCOSITY cP @	^{0}F	9	8
YIELD POINT (lb/100FT2)		24	22
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		17 24	16 24
FILTRATE API (cm3/30 min.)		25	27.0
API HPHT FILTRATE (cm3/30 min.) @	^{0}F		
CAKE THICKNESS API : HPHT (32nd in)		3	3
SOLIDS CONTENT		2.3	2.7
LIQUID CONTENT (%by Vol.) OIL/WATER		97.7	0.0 97.3
SAND CONTENT (% by Vol.)		Tr	Tr
METHYLENE BLUE CAPACITY (ppb equiv.)		22.0	22.0
PH		9.5	9.5
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.25 0.70	0.30 0.80
CHLORIDE (mg/L)		1,000	1,000
TOTAL HARDNESS AS CALCIUM (mg/L)		120	100
SULPHITE (mg/L)			
K+ (mg/L)			
KCL (% by Wt.)			
PHPA (Calc ppb)			

MUD PROPERTY SPECIFICATIONS

Mud Weight	.	MBT	.	API Filtrate	.
Vis	32-45	Yield Point	.	pH	9
KCl	.	PHPA	.	Sulphites	.

OBSERVATIONS

Prepare 150 barrels of 20 ppb Trugel Spud Mud in preparation to drill ahead.
Add Kwikseal at 9 ppb. Use this for sweeps each connection and mix more up.
Mud check on sweep mud.

Rheology 600>3 RPM 38 30 27 23 18 16

OPERATIONS SUMMARY

Tag cement at 40.5 m. Spot cement plug 4, pumping high vis LCM pill ahead.
WOC. Tag cement at 39.5 m. Spot cement plug 5,pumping hi vis LCM pill ahead.
Tag cement at 39.5 m. POOH. Make up bit and BHA. RIH. Drill ahead with water and gel/LCM sweeps, with no returns.
At 229 metres, POOH to fill up empty tanks.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	260	Desander	0	INITIAL VOLUME	124
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	0	Downhole	2426	+ Fluid Received	2,460
Direct Recyc fm bore	2200	Dumped	0	- Fluid Lost	2,426
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	2460	TOTAL LOST	2426	FINAL VOLUME	158

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	110/84/84	0	Desander	2	10	0	0	0	0
# 2	110/84/84	0	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Enerseal F	$ 32.00	15		15	0	$ 480.00
Soda Ash	$ 12.95	17		3	14	$ 38.85
Trugel-13A	$ 11.39	238		116	122	$ 1,321.24
Kwikseal F	$ 43.00	0	89	40	49	$ 1,720.00
Kwikseal M	$ 43.00	0	64	24	40	$ 1,032.00

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	2.7	24.4
Bentonite	2.4	22.0
Drilled Solids	0.3	2.4
Salt	TR	
Avg .Spec. Grav. Solids		2.60
n @ 2030 Hrs		0.34
K (lb/100 ft^2)		3.58

BIT HYDRAULICS DATA

Jet Velocity	148 ft/sec
Impact force	182 lbs
HHP	27
HSI	0.4
Bit Press Loss	171 psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	0.0 ppg

DAILY COST	CUMULATIVE COST
$4,592.09	$8,117.88

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INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	4	Date	8-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	229	To	248 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 9 7/8	Varel GHIGMS	16 16 16	SURFACE SET @ 0 ft 0 m	HOLE 63 PITS 120	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 0 psi
DRILL PIPE SIZE 3 1/2	TYPE G Length 22 Mtrs		INT. SET @ 0 ft 0 m	TOTAL CIRCULATING VOL. 183	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 15 min
DRILL PIPE SIZE 3 1/2	TYPE HW Length 56 Mtrs		PROD. or LNR Set @ 0 ft 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 80; TOTAL CIRC. TIME (min) 46 min
DRILL COLLAR SIZE (") 4 3/4 6 1/4	Length 54 117 Mtrs		MUD TYPE Spud Mud		BBL/MIN 3.99; GAL / MIN 168; ANN VEL. (ft/min) DP 48 DCs 55 70

MUD PROPERTIES

		Pit	Pit
SAMPLE FROM		Pit	Pit
TIME SAMPLE TAKEN		0930	1900
FLOWLINE TEMPERATURE	°F		
DEPTH	Metres	248	248
WEIGHT	ppg / SG	8.70 1.04	8.70 1.04
FUNNEL VISCOSITY (sec/qt) API @	°F	48	43
PLASTIC VISCOSITY cP @	°F	9	7
YIELD POINT (lb/100FT2)		25	20
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		16 26	14 21
FILTRATE API (cm3/30 min.)		25	28.0
API HPHT FILTRATE (cm3/30 min.) @	°F		
CAKE THICKNESS API : HPHT (32nd in)		3	3
SOLIDS CONTENT		2.7	2.7
LIQUID CONTENT (%by Vol.) OIL/WATER		97.3	0.0 97.3
SAND CONTENT (% by Vol.)		Tr	Tr
METHYLENE BLUE CAPACITY (ppb equiv.)		22.0	20.0
PH		9.5	9.5
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.35 0.80	0.30 0.75
CHLORIDE (mg/L)		1,000	1,000
TOTAL HARDNESS AS CALCIUM (mg/L)		120	80
SULPHITE (mg/L)			
K+ (mg/L)			
KCL (% by Wt.)			
PHPA (Calc ppb)			

MUD PROPERTY SPECIFICATIONS

Mud Weight	.	MBT	.	API Filtrate	.
Vis	32-45	Yield Point	.	pH	9
KCl	.	PHPA	.	Sulphites	.

OBSERVATIONS

Carted water tested as follows:
pH 9, Pf/Mf 0.1/0.3, Chlorides 1000 mg/l, Hardness 120 mg/l.
Mud checks on sweep mud.

Rheology 600>3 RPM 34 27 25 21 16 14

OPERATIONS SUMMARY

Pump 50 bbls of Gel/LCM to hole. POOH to replenish water supply.
RIH to 14 m. Wash ream to 32m. RIH to 106 m. Wash and ream to 129m.
Work tight hole to 150m. RIH to 229m. Drill with water and sweeps to 248m.
POOH to replenish water supply. Push empty mud bags to 40m and 35m.
Pump cement plug 1, washing to 38m. POOH. WOC. RIH. Tag at 37m.
Push empty mud bags to 35m. Pump cement plug 2. POOH. WOC. RIH
Tag at 28m. POOH.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	120	Desander	0	INITIAL VOLUME	158
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	0	Downhole	1055	+ Fluid Received	1,080
Direct Recyc fm bore	960	Dumped	0	- Fluid Lost	1,055
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	1080	TOTAL LOST	1055	FINAL VOLUME	183

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	110/84/84	0	Desander	2	10	0	0	0	0
# 2	110/84/84	0	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Kwikseal F	$ 43.00	49		14	35	$ 602.00
Soda Ash	$ 12.95	14		2	12	$ 25.90
Trugel-13A	$ 11.39	122	383	62	443	$ 706.18

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	2.7	24.4
Bentonite	2.2	20.0
Drilled Solids	0.5	4.4
Salt	TR	
Avg .Spec. Grav. Solids		2.60
n @ 1900 Hrs		0.33
K (lb/100 ft^2)		3.40

BIT HYDRAULICS DATA

Jet Velocity	91 ft/sec
Impact force	69 lbs
HHP	6
HSI	0.1
Bit Press Loss	65 psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	0.0 ppg

DAILY COST	CUMULATIVE COST
$1,334.08	$9,451.96

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INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	5	Date	9-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	248	To	248 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 9 7/8	Varel GHIGMS	16 16 16	SURFACE 0 ft; SET @ 0 m	HOLE 64; PITS 300	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 270 psi
DRILL PIPE SIZE 3 1/2	TYPE G; Length 25 Mtrs		INT. 0 ft; SET @ 0 m	TOTAL CIRCULATING VOL. 364	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 9 min
DRILL PIPE SIZE 3 1/2	TYPE HW; Length 56 Mtrs		PROD. or LNR Set @ 0 ft; 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 129; TOTAL CIRC. TIME (min) 56 min
DRILL COLLAR SIZE (") 4 3/4 x 6 1/4	Length 54 113 Mtrs		MUD TYPE Spud Mud		BBL/MIN 6.44; GAL / MIN 270; ANN VEL. (ft/min) DP 78, DCs 88 113

MUD PROPERTIES

		Pit	FL
SAMPLE FROM		Pit	FL
TIME SAMPLE TAKEN		1700	2115
FLOWLINE TEMPERATURE	^{0}F		
DEPTH	Metres	248	248
WEIGHT	ppg / SG	8.70 1.04	9.10 1.09
FUNNEL VISCOSITY (sec/qt) API @	^{0}F	33	37
PLASTIC VISCOSITY cP @	^{0}F	3	7
YIELD POINT (lb/100FT2)		10	13
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		7 10	6 9
FILTRATE API (cm3/30 min.)		33	25.0
API HPHT FILTRATE (cm3/30 min.) @	^{0}F		
CAKE THICKNESS API : HPHT (32nd in)		3	3
SOLIDS CONTENT		2.7	5.7
LIQUID CONTENT (%by Vol.) OIL/WATER		97.3	0.0 94.3
SAND CONTENT (% by Vol.)		Tr	2.00
METHYLENE BLUE CAPACITY (ppb equiv.)		15.0	17.5
PH		9.5	9.5
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.25 0.70	0.10 0.60
CHLORIDE (mg/L)		1,000	1,250
TOTAL HARDNESS AS CALCIUM (mg/L)		80	40
SULPHITE (mg/L)			
K+ (mg/L)			
KCL (% by Wt.)			
PHPA (Calc ppb)			

MUD PROPERTY SPECIFICATIONS

Mud Weight	.	MBT	.	API Filtrate	.
Vis	32-45	Yield Point	.	pH	9
KCl	.	PHPA	.	Sulphites	.

OBSERVATIONS

Build up high vis sweep mud with Trugel.

Drill cement with water. Switch to mud at 59 metres, while washing and reaming.

Rheology 600>3 RPM 27 20 16 11 4 3

OPERATIONS SUMMARY

WOC. RIH. Tag cement at 8m. Drill cement with water to 45 metres.

Observe static losses. POOH. Push mud sacks down to 40 metres.

pump cement plug 1. WOC. RIH. Tag cement at 33m. Drill out cement to 44 m.

No apparent static losses. RIH to 59 m. Wash and ream.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	30	Desander	0	INITIAL VOLUME	184
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	200	Downhole	50	+ Fluid Received	230
Direct Recyc fm bore	0	Dumped	0	- Fluid Lost	50
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	230	TOTAL LOST	50	FINAL VOLUME	364

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	110/84/84	8	Desander	2	10	0	0	0	0
# 2	110/84/84	8	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Trugel-13A	$ 11.39	443		12	431	$ 136.68

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	5.7	51.6
Bentonite	1.9	17.5
Drilled Solids	3.7	34.1
Salt	TR	
Avg .Spec. Grav. Solids		2.60
n @ 2115 Hrs		0.43
K (lb/100 ft^2)		1.35

BIT HYDRAULICS DATA

Jet Velocity	147 ft/sec
Impact force	187 lbs
HHP	28
HSI	0.4
Bit Press Loss	177 psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	0.0 ppg

DAILY COST	CUMULATIVE COST
$136.68	$9,588.64

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INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	6	Date	10-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	248	To	520 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD / LOCATION / STATE	PEP 159 / Otway Basin / Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 9 7/8	Varel GHIGMS	16 16 16	SURFACE 0 ft; SET @ 0 m	HOLE 144; PITS 350	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 1500 psi
DRILL PIPE SIZE 3 1/2	TYPE G; Length 297 Mtrs		INT. 0 ft; SET @ 0 m	TOTAL CIRCULATING VOL. 494	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 11 min
DRILL PIPE SIZE 3 1/2	TYPE HW; Length 56 Mtrs		PROD. or LNR Set @ 0 ft; 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 240; TOTAL CIRC. TIME (min) 41 min
DRILL COLLAR SIZE (") 4 3/4 / 6 1/4	Length 54 113 Mtrs		MUD TYPE Spud Mud		BBL/MIN 11.98; GAL / MIN 503; ANN VEL. (ft/min) DP 145, DCs 164 211

MUD PROPERTIES

		FL	FL
SAMPLE FROM		FL	FL
TIME SAMPLE TAKEN		0830	2100
FLOWLINE TEMPERATURE	^{0}F		
DEPTH	Metres	365	520
WEIGHT	ppg / SG	8.80 1.06	8.90 1.07
FUNNEL VISCOSITY (sec/qt) API @	^{0}F	33	35
PLASTIC VISCOSITY cP @	^{0}F	4	5
YIELD POINT (lb/100FT2)		12	14
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		8 10	9 12
FILTRATE API (cm3/30 min.)		n/c	n/c
API HPHT FILTRATE (cm3/30 min.) @	^{0}F		
CAKE THICKNESS API : HPHT (32nd in)			
SOLIDS CONTENT		3.4	4.2
LIQUID CONTENT (%by Vol.) OIL/WATER		96.6	0.0 95.8
SAND CONTENT (% by Vol.)		Tr	0.50
METHYLENE BLUE CAPACITY (ppb equiv.)		15.0	15.0
PH		9.0	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.10 0.35	0.10 0.30
CHLORIDE (mg/L)		1,100	1,050
TOTAL HARDNESS AS CALCIUM (mg/L)		40	40
SULPHITE (mg/L)			
K+ (mg/L)			
KCL (% by Wt.)			
PHPA (Calc ppb)			

MUD PROPERTY SPECIFICATIONS

Mud Weight	.	MBT	.	API Filtrate	.
Vis	32-45	Yield Point	.	pH	9
KCl	.	PHPA	.	Sulphites	.

OBSERVATIONS

Add copious amounts of water to counteract dispersive Marl formation.
Dump sand trap and possum belly regularly. Jet flowline repeatedly.
Once into Dilwyn Sands, sweep hole with high viscosity 25 ppb Trugel mud.

Rheology 600>3 RPM 24 19 15 10 6 5

OPERATIONS SUMMARY

Wash and ream to bottom. Drill 9 7/8" hole to 520 metres with surveys, and with full returns.
Circulate hole clean. Pull wiper trip to 20 m, RIH. Wash 32 m to bottom.
Circulate hole clean. Drop survey. POOH.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	30	Desander	14	INITIAL VOLUME	364
Premix - Recyc fm sump	0	Desilter	52		
Drill Water	600	Downhole	78	+ Fluid Received	630
Direct Recyc fm bore	0	Dumped	355	- Fluid Lost	499
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	630	TOTAL LOST	499	FINAL VOLUME	494

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones	Size	Hrs	Centrifuge		Hrs
# 1	110/84/84	17	Desander	2	10	14	0	0	0
# 2	110/84/84	17	Desilter	12	5	14	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	8.8	11.0	0.70
Desilter	8.8	10.8	2.60
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Trugel-13A	$ 11.39	431		10	421	$ 113.90

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	4.2	38.1
Bentonite	1.6	15.0
Drilled Solids	2.5	23.1
Salt	TR	
Avg .Spec. Grav. Solids		2.60
n @ 2100 Hrs		0.34
K (lb/100 ft^2)		2.33

BIT HYDRAULICS DATA

Jet Velocity	273 ft/sec
Impact force	634 lbs
HHP	175
HSI	2.3
Bit Press Loss	598 psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	9.1 ppg

DAILY COST	CUMULATIVE COST
$113.90	$9,702.54

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	7	Date	11-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	520	To	520 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 6 3/4	Hycalog DS185GNVW	13 13 13 / 13	7 5/8 SURFACE SET @ 1700 ft / 518 m	HOLE 81 PITS 40	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 0 psi
DRILL PIPE SIZE 0	TYPE 0.0	Length 520 Mtrs	INT. SET @ 0 ft / 0 m	TOTAL CIRCULATING VOL. 121	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 0 min
DRILL PIPE SIZE 0	TYPE HW	Length Mtrs	PROD. or LNR Set @ 0 ft / 0 m	IN STORAGE 500	BBL/STK 0.0499; STK / MIN 0; TOTAL CIRC. TIME (min) 0 min
DRILL COLLAR SIZE (") 0		Length 0 Mtrs	MUD TYPE KCl PHPA Polymer	BBL/MIN 0.00; GAL / MIN 0	ANN VEL. (ft/min) DP 0 DCs

MUD PROPERTIES

		Pit	Pit
SAMPLE FROM			
TIME SAMPLE TAKEN		0830	2000
FLOWLINE TEMPERATURE	°F		
DEPTH	Metres	520	520
WEIGHT	ppg / SG	8.90 1.07	8.55 1.03
FUNNEL VISCOSITY (sec/qt) API @	°F	36	34
PLASTIC VISCOSITY cP @	°F	5	3
YIELD POINT (lb/100FT2)		16	4
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		9 11	1 1
FILTRATE API (cm3/30 min.)		n/c	n/c
API HPHT FILTRATE (cm3/30 min.) @	°F		
CAKE THICKNESS API : HPHT (32nd in)			
SOLIDS CONTENT		4.2	0.6
LIQUID CONTENT (%by Vol.) OIL/WATER		95.8	0.0 99.4
SAND CONTENT (% by Vol.)		0.25	Tr
METHYLENE BLUE CAPACITY (ppb equiv.)		15.0	
PH		9.0	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.10 0.40	0.05 0.35
CHLORIDE (mg/L)		1,050	15,500
TOTAL HARDNESS AS CALCIUM (mg/L)		40	120
SULPHITE (mg/L)			
K+ (mg/L)			16,200
KCL (% by Wt.)			3.0
PHPA (Calc ppb)			0.45

MUD PROPERTY SPECIFICATIONS

Mud Weight	9.0-9.3	MBT	<15	API Filtrate	7.0
Vis	35-45	Yield Point	12-15	pH	9
KCl	3-4	PHPA	1.25-1.75	Sulphites	.

OBSERVATIONS

Dump and clean tanks. Fill with 500 barrels of water, and mix 0.5 ppb PAC-R, 13 ppb KCl, and 0.45 ppb JK 261. Shear up with gun.

Rheology 600>3 RPM 13 10 7 3 1 1

OPERATIONS SUMMARY

Rig up and run surface casing. Circulate hole clean.
Conduct cement job, displacing with water. Good cement returns to surface.
Bump plug. WOC. Nipple up BOPs. Pressure Test.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	500	Desander	0	INITIAL VOLUME	494
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	10	Downhole	0	+ Fluid Received	510
Direct Recyc fm bore	0	Dumped	384	- Fluid Lost	384
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	500
		Other	0		
TOTAL RECEIVED	510	TOTAL LOST	384	FINAL VOLUME	621

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	110/84/84	2	Desander	2	10	0	0	0	0
# 2	110/84/84	2	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Defoamer-L	$ 103.18	16		1	15	$ 103.18
JK-261	$ 108.70	90		4	86	$ 434.80
KCl Fine	$ 15.00	480		120	360	$ 1,800.00
PAC-R	$ 154.67	40		5	35	$ 773.35

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	0.6	5.6
Bentonite	0.0	0.0
Drilled Solids	0.6	5.6
Salt	0.9	11.2
Avg .Spec. Grav. Solids		2.60
n @ 2000 Hrs		0.51
K (lb/100 ft^2)		0.28

BIT HYDRAULICS DATA

Jet Velocity	ft/sec
Impact force	lbs
HHP	
HSI	
Bit Press Loss	psi
ECD	.00 ppg
CSG Seat Fracture Pressure	0 psi
Equiv. Mud Wt.	0.0 ppg

DAILY COST	CUMULATIVE COST
$3,111.33	$12,813.87

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	8	Date	12-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	520	To	849 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 6 3/4	Hycalog DS185GNVW	13 13 13 / 13	7 5/8 SURFACE SET @ 1700 ft / 518 m	HOLE 106 PITS 385	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 1100 psi
DRILL PIPE SIZE 3 1/2	TYPE G Length 563 Mtrs		INT. SET @ 0 ft / 0 m	TOTAL CIRCULATING VOL. 491	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 10 min
DRILL PIPE SIZE 3 1/2	TYPE HW Length 56 Mtrs		PROD. or LNR Set @ 0 ft / 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 168; TOTAL CIRC. TIME (min) 59 min
DRILL COLLAR SIZE (") 4 3/4	Length 230 Mtrs		MUD TYPE KCl PHPA Polymer		BBL/MIN 8.38; GAL / MIN 352; ANN VEL. (ft/min) DP 259 DCs 375 0

MUD PROPERTIES

		FL	FL
SAMPLE FROM			
TIME SAMPLE TAKEN		1530	2345
FLOWLINE TEMPERATURE	°F	32	36
DEPTH	Metres	635	841
WEIGHT	ppg / SG	8.65 1.04	8.70 1.04
FUNNEL VISCOSITY (sec/qt) API @	36 °F	34	38
PLASTIC VISCOSITY cP @	°F	5	10
YIELD POINT (lb/100FT2)		6	10
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		1 1	2 3
FILTRATE API (cm3/30 min.)		n/c	8.5
API HPHT FILTRATE (cm3/30 min.) @	°F		
CAKE THICKNESS API : HPHT (32nd in)			1
SOLIDS CONTENT		1.0	1.4
LIQUID CONTENT (%by Vol.) OIL/WATER		99.0	0.0 98.6
SAND CONTENT (% by Vol.)		0.25	0.25
METHYLENE BLUE CAPACITY (ppb equiv.)		1.5	5.0
PH		9.5	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.20 0.80	0.10 0.60
CHLORIDE (mg/L)		21,000	21,000
TOTAL HARDNESS AS CALCIUM (mg/L)		240	360
SULPHITE (mg/L)			
K+ (mg/L)		20,500	20,000
KCL (% by Wt.)		3.8	3.7
PHPA (Calc ppb)		0.60	1.20

MUD PROPERTY SPECIFICATIONS

Mud Weight	Min	MBT	<15	API Filtrate	10.0
Vis	35-45	Yield Point	12-15	pH	9
KCl	3-4	PHPA	1.25-1.75	Sulphites	100

OBSERVATIONS

Add JK 261 direct to active to raise PHPA concentration.
Add premix as sweeps to increase rheology and improve fluid loss control.
Premix typically 1 ppb Xanthan Gum,1 ppb PAC-R, 10 - 16ppb KCl.
Make Sodium Sulphite additions to settling tank.
Upgrade shaker screens as soon as practical.
Crack sand trap regularly, and dump and clean possum belly on surveys.

Rheology 600>3 RPM 30 20 17 12 3 2

OPERATIONS SUMMARY

Pressure Test. Make up new bit and BHA. RIH.
Tag cement and drill out shoe track with water.
Change over to mud at shoe and drill to 523 m.
Circulate hole clean, and conduct LOT.
Drill 6 3/4" hole with surveys.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	110	Desander	3	INITIAL VOLUME	621
Premix - Recyc fm sump	0	Desilter	21		
Drill Water	0	Downhole	35	+ Fluid Received	110
Direct Recyc fm bore	0	Dumped	180	- Fluid Lost	240
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Other	0		
TOTAL RECEIVED	110	TOTAL LOST	240	FINAL VOLUME	491

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	84/84/84	14	Desander	2	10	10	0	0	0
# 2	84/84/84	14	Desilter	12	5	10	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	8.7	10.9	0.20
Desilter	8.7	11.0	1.50
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Caustic Soda	$ 35.60	32		2	30	$ 71.20
Defoamer-L	$ 103.18	15		1	14	$ 103.18
Idcide-20	$ 94.92	16		4	12	$ 379.68
JK-261	$ 108.70	86		9	77	$ 978.30
KCl Fine	$ 15.00	360		70	290	$ 1,050.00
PAC-R	$ 154.67	35		4	31	$ 618.68
Sodium Sulphite	$ 24.02	40		3	37	$ 72.06
Xanthan Gum P	$ 410.42	20		3	17	$ 1,231.26

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	1.4	12.7
Bentonite	0.5	5.0
Drilled Solids	0.8	7.7
Salt	1.3	14.8
Avg .Spec. Grav. Solids		2.60
n @ 2345 Hrs		0.58
K (lb/100 ft^2)		0.52

BIT HYDRAULICS DATA

Jet Velocity	217 ft/sec
Impact force	345 lbs
HHP	76
HSI	2.1
Bit Press Loss	369 psi
ECD	8.74 ppg
CSG Seat Fracture Pressure	1367 psi
Equiv. Mud Wt.	15.4 ppg

DAILY COST	CUMULATIVE COST
$4,504.36	$17,318.23

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INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	9	Date	13-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	849	To 1516	Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 6 3/4	Hycalog DS185GNVW	13 13 13 / 13	7 5/8 SURFACE SET @ 1700 ft / 518 m	HOLE 193 PITS 385	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 0 psi
DRILL PIPE SIZE 3 1/2	TYPE G; Length 1230 Mtrs		INT. SET @ 0 ft / 0 m	TOTAL CIRCULATING VOL. 578	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 19 min
DRILL PIPE SIZE 3 1/2	TYPE HW; Length 56 Mtrs		PROD. or LNR Set @ 0 ft / 0 m	IN STORAGE 0	BBL/STK; STK / MIN 168; TOTAL CIRC. TIME (min) 69 min
DRILL COLLAR SIZE (") 4 3/4	Length 230 Mtrs		MUD TYPE KCl PHPA Polymer		BBL/MIN 8.38; GAL / MIN 352; ANN VEL. (ft/min) DP 259 DCs 375 0

MUD PROPERTIES

		FL	FL
SAMPLE FROM			
TIME SAMPLE TAKEN		1000	2345
FLOWLINE TEMPERATURE	°F	38	41
DEPTH	Metres	1,134	1,503
WEIGHT	ppg / SG	8.90 1.07	9.00 1.08
FUNNEL VISCOSITY (sec/qt) API @	41 °F	39	41
PLASTIC VISCOSITY cP @	°F	11	12
YIELD POINT (lb/100FT2)		11	12
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		3 4	3 4
FILTRATE API (cm3/30 min.)		7.5	7.0
API HPHT FILTRATE (cm3/30 min.) @	°F		
CAKE THICKNESS API : HPHT (32nd in)		1	1
SOLIDS CONTENT		3.0	3.6
LIQUID CONTENT (%by Vol.) OIL/WATER		97.0	0.0 96.4
SAND CONTENT (% by Vol.)		0.25	0.25
METHYLENE BLUE CAPACITY (ppb equiv.)		7.5	7.5
PH		8.5	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.05 0.40	0.10 0.40
CHLORIDE (mg/L)		20,000	22,500
TOTAL HARDNESS AS CALCIUM (mg/L)		440	320
SULPHITE (mg/L)		120	120
K+ (mg/L)		18,900	20,500
KCL (% by Wt.)		3.5	3.8
PHPA (Calc ppb)		1.50	1.65

MUD PROPERTY SPECIFICATIONS

Mud Weight	Min	MBT	<15	API Filtrate	7.0
Vis	35-45	Yield Point	12-15	pH	9
KCl	3-4	PHPA	1.25-1.75	Sulphites	100

OBSERVATIONS

Back load to Portland:
192 Trugel 100, 288 Trugel 13A, 35 Kwikseal F, 40 Kwikseal M.

Bleed in premix to active to maintain properties, typically 1 ppb PAC-R,
13 ppb KCl, 2 ppb JK 261.
Add Caustic Soda to active to control hardness.

Run off excessive with s175 mesh screens all round.

Rheology 600>3 RPM 36 24 18 12 4 3

OPERATIONS SUMMARY

Drill 6 3/4" hole with surveys.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	320	Desander	7	INITIAL VOLUME	491
Premix - Recyc fm sump	0	Desilter	62		
Drill Water	0	Downhole	54	+ Fluid Received	320
Direct Recyc fm bore	0	Dumped	85	- Fluid Lost	233
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Shakers	25		
TOTAL RECEIVED	320	TOTAL LOST	233	FINAL VOLUME	578

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	175/175/140	24	Desander	2	10	24	0	0	0
# 2	175/175/80	24	Desilter	12	5	24	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	8.9	11.4	0.20
Desilter	8.9	10.5	1.80
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Caustic Soda	$ 35.60	30		8	22	$ 284.80
Idcide-20	$ 94.92	12		4	8	$ 379.68
JK-261	$ 108.70	77		16	61	$ 1,739.20
KCl Fine	$ 15.00	290	168	120	338	$ 1,800.00
PAC-R	$ 154.67	31		6	25	$ 928.02
Sodium Sulphite	$ 24.02	37		5	32	$ 120.10

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	3.6	32.6
Bentonite	0.8	7.5
Drilled Solids	2.8	25.1
Salt	1.4	15.4
Avg .Spec. Grav. Solids		2.60
n @ 2345 Hrs		0.58
K (lb/100 ft^2)		0.63

BIT HYDRAULICS DATA

Jet Velocity	217 ft/sec
Impact force	357 lbs
HHP	79
HSI	2.2
Bit Press Loss	382 psi
ECD	9.06 ppg
CSG Seat Fracture Pressure	1367 psi
Equiv. Mud Wt.	15.4 ppg

DAILY COST	CUMULATIVE COST
$5,251.80	$22,570.03

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INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	10	Date	14-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	1516	To 1845	Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD / LOCATION / STATE	PEP 159 / Otway Basin / Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 6 3/4	Hycalog DS185GNVW	13 13 13 / 13	7 5/8 SURFACE SET @ 1700 ft / 518 m	HOLE 236 PITS 380	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 1650 psi
DRILL PIPE SIZE 3 1/2	TYPE G Length 1559 Mtrs		INT. SET @ 0 ft / 0 m	TOTAL CIRCULATING VOL. 616	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 23 min
DRILL PIPE SIZE 3 1/2	TYPE HW Length 56 Mtrs		PROD. or LNR Set @ 0 ft / 0 m	IN STORAGE 0	BBL/STK; STK / MIN 168; TOTAL CIRC. TIME (min) 73 min
DRILL COLLAR SIZE (") 4 3/4	Length 230 Mtrs		MUD TYPE KCl PHPA Polymer		BBL/MIN 8.38; GAL / MIN 352; ANN VEL. (ft/min) DP 259 DCs 375 0

MUD PROPERTIES

		FL	FL
SAMPLE FROM		FL	FL
TIME SAMPLE TAKEN		1000	2345
FLOWLINE TEMPERATURE	^{0}F	50	54
DEPTH	Metres	1,745	1,841
WEIGHT	ppg / SG	9.10 1.09	9.10 1.09
FUNNEL VISCOSITY (sec/qt) API @	54 ^{0}F	42	43
PLASTIC VISCOSITY cP @	^{0}F	13	12
YIELD POINT (lb/100FT2)		13	13
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		3 5	3 6
FILTRATE API (cm3/30 min.)		7	6.5
API HPHT FILTRATE (cm3/30 min.) @	250 ^{0}F	28	26
CAKE THICKNESS API : HPHT (32nd in)		1:3	1:3
SOLIDS CONTENT		4.4	4.2
LIQUID CONTENT (%by Vol.) OIL/WATER		95.6	0.0 95.8
SAND CONTENT (% by Vol.)		0.25	0.25
METHYLENE BLUE CAPACITY (ppb equiv.)		7.5	10.0
PH		9.5	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.25 0.60	0.15 0.50
CHLORIDE (mg/L)		22,000	25,000
TOTAL HARDNESS AS CALCIUM (mg/L)		160	280
SULPHITE (mg/L)		150	150
K+ (mg/L)		21,100	18,400
KCL (% by Wt.)		3.9	3.4
PHPA (Calc ppb)		1.70	1.70

MUD PROPERTY SPECIFICATIONS

Mud Weight	9 - 9.3	MBT	<15	API Filtrate	7.0
Vis	35-45	Yield Point	12-15	pH	9
KCl	3-4	PHPA	1.25-1.75	Sulphites	100

OBSERVATIONS

Bleed in premix to active to maintain properties, typically 1 ppb PAC-R, 17 ppb KCl, 2 ppb JK 261.

Add Caustic Soda to active to control hardness.

Barite Potential: 9.55 ppg

Rheology 600>3 RPM : 37 25 19 13 4 3

OPERATIONS SUMMARY

Drill 6 3/4" hole with surveys.

Circulate hole clean at 1806 m. Pull wiper trip to shoe. RIH.

Wash and ream 614 m to 626 m, and from 1765 m to bottom. No fill.

Drill 6 3/4" hole with surveys.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	240	Desander	7	INITIAL VOLUME	578
Premix - Recyc fm sump	0	Desilter	39		
Drill Water	0	Downhole	56	+ Fluid Received	240
Direct Recyc fm bore	0	Dumped	75	- Fluid Lost	202
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Shakers	25		
TOTAL RECEIVED	240	TOTAL LOST	202	FINAL VOLUME	616

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	175/175/140	17	Desander	2	10	10	0	0	0
# 2	175/175/80	17	Desilter	12	5	17	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	9.0	11.6	0.50
Desilter	9.0	10.7	1.60
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Barite	$ 7.72	320		36	284	$ 277.92
Caustic Soda	$ 35.60	22		4	18	$ 142.40
Idcide-20	$ 94.92	8		2	6	$ 189.84
JK-261	$ 108.70	61		8	53	$ 869.60
KCl Fine	$ 15.00	338		70	268	$ 1,050.00
PAC-R	$ 154.67	25		4	21	$ 618.68
Sodium Sulphite	$ 24.02	32		4	28	$ 96.08

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	4.2	38.1
Bentonite	1.1	10.0
Drilled Solids	3.1	28.1
Salt	1.5	16.4
Avg .Spec. Grav. Solids		2.60
n @ 2345 Hrs		0.57
K (lb/100 ft^2)		0.74

BIT HYDRAULICS DATA

Jet Velocity	217 ft/sec
Impact force	361 lbs
HHP	79
HSI	2.2
Bit Press Loss	386 psi
ECD	9.16 ppg
CSG Seat Fracture Pressure	1367 psi
Equiv. Mud Wt.	15.4 ppg

DAILY COST	CUMULATIVE COST
$3,244.52	$25,814.55

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	11	Date	15-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	1845	To	2120 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 6 3/4	Hycalog DS185GNVW	13 13 13 / 13	7 5/8 SURFACE SET @ 1700 ft / 518 m	HOLE 272 PITS 385	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 1850 psi
DRILL PIPE SIZE 3 1/2	TYPE G Length 1834 Mtrs		INT. SET @ 0 ft / 0 m	TOTAL CIRCULATING VOL. 657	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 27 min
DRILL PIPE SIZE 3 1/2	TYPE HW Length 56 Mtrs		PROD. or LNR Set @ 0 ft / 0 m	IN STORAGE 0	BBL/STK; STK / MIN 168; TOTAL CIRC. TIME (min) 78 min
DRILL COLLAR SIZE (") 4 3/4	Length 230 Mtrs		MUD TYPE KCl PHPA Polymer		BBL/MIN 8.38; GAL / MIN 352; ANN VEL. (ft/min) DP 259 DCs 375 0

MUD PROPERTIES

		FL	FL
SAMPLE FROM			
TIME SAMPLE TAKEN		1030	2230
FLOWLINE TEMPERATURE	°F	56	58
DEPTH	Metres	2,000	2,125
WEIGHT	ppg / SG	9.20 | 1.10	9.20 | 1.10
FUNNEL VISCOSITY (sec/qt) API @	58 °F	40	41
PLASTIC VISCOSITY cP @	°F	15	14
YIELD POINT (lb/100FT2)		13	15
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		3 | 6	3 | 7
FILTRATE API (cm3/30 min.)		6	6.0
API HPHT FILTRATE (cm3/30 min.) @	250 °F	24	24
CAKE THICKNESS API : HPHT (32nd in)		1:3	1:3
SOLIDS CONTENT		4.9	4.9
LIQUID CONTENT (%by Vol.) OIL/WATER		95.1	0.0 | 95.1
SAND CONTENT (% by Vol.)		0.50	0.50
METHYLENE BLUE CAPACITY (ppb equiv.)		10.0	10.0
PH		9.5	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.20 | 0.50	0.20 | 0.65
CHLORIDE (mg/L)		25,000	25,000
TOTAL HARDNESS AS CALCIUM (mg/L)		200	140
SULPHITE (mg/L)		150	100
K+ (mg/L)		21,100	21,100
KCL (% by Wt.)		3.9	3.9
PHPA (Calc ppb)		1.80	1.70

MUD PROPERTY SPECIFICATIONS

Mud Weight	9 - 9.3	MBT	<15	API Filtrate	7.0
Vis	35-45	Yield Point	12-15	pH	9
KCl	3-4	PHPA	1.25-1.75	Sulphites	100

OBSERVATIONS

Continue to bleed in premix. Speed up rate of addition to kerb rising mud weight.

Barite Potential: 9.55 ppg

Rheology 600>3 RPM 43 29 23 15 5 3

OPERATIONS SUMMARY

Drill 6 3/4" hole with surveys to 2125 m.

Circulate bottoms up. Pump slug.

Pull wiper trip to 1700 m.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	280	Desander	0	INITIAL VOLUME	616
Premix - Recyc fm sump	0	Desilter	48		
Drill Water	0	Downhole	31	+ Fluid Received	280
Direct Recyc fm bore	0	Dumped	135	- Fluid Lost	239
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Shakers	25		
TOTAL RECEIVED	280	TOTAL LOST	239	FINAL VOLUME	657

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	175/175/140	21	Desander	2	10	0	0	0	0
# 2	175/175/140	21	Desilter	12	5	21	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	9.2	11.0	1.60
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Barite	$ 7.72	284		30	254	$ 231.60
Caustic Soda	$ 35.60	18		3	15	$ 106.80
Idcide-20	$ 94.92	6		4	2	$ 379.68
JK-261	$ 108.70	53		9	44	$ 978.30
KCl Fine	$ 15.00	268		60	208	$ 900.00
PAC-R	$ 154.67	21		5	16	$ 773.35
Sodium Sulphite	$ 24.02	28		4	24	$ 96.08

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	4.9	45.0
Bentonite	1.1	10.0
Drilled Solids	3.8	35.0
Salt	1.5	16.6
Avg .Spec. Grav. Solids		2.60
n @ 2230 Hrs		0.57
K (lb/100 ft^2)		0.84

BIT HYDRAULICS DATA

Jet Velocity	217 ft/sec
Impact force	365 lbs
HHP	80
HSI	2.2
Bit Press Loss	391 psi
ECD	.00 ppg
CSG Seat Fracture Pressure	1367 psi
Equiv. Mud Wt.	15.4 ppg

DAILY COST	CUMULATIVE COST
$3,465.81	$29,280.36

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

INDEPENDENT DRILLING FLUID SERVICES

A Division of Rheochem Pty Ltd ABN 35 194 744 281

Drilling Fluid Report

Report #	12	Date	16-Feb-2003
Rig No	11	Spud Date	5-Feb-2003
Depth	2125	To	2125 Metres

OPERATOR	OCA	CONTRACTOR	Century
REPORT FOR	Seton Porter	REPORT FOR	Eric Gardiner
WELL NAME AND No.	Banganna 1	FIELD	PEP 159
LOCATION	Otway Basin	STATE	Victoria

BHA	BIT TYPE	JET SIZE	CASING	MUD VOLUME (BBL)	CIRCULATION DATA
BIT SIZE 6 3/4	Hycalog DS185GNVW	13 13 13 / 13	7 5/8 SURFACE 1700 ft; SET @ 518 m	HOLE 272 PITS 285	PUMP SIZE 5 1/2 X 7 Inches; CIRCULATION PRESS (PSI) 0 psi
DRILL PIPE SIZE 3 1/2	TYPE G Length 1839 Mtrs		INT. 0 ft; SET @ 0 m	TOTAL CIRCULATING VOL. 557	PUMP MODEL GD PZ-8; ASSUMED % EFF 97; BOTTOMS UP (min) 0 min
DRILL PIPE SIZE 3 1/2	TYPE HW Length 56 Mtrs		PROD. or LNR Set @ 0 ft; 0 m	IN STORAGE 0	BBL/STK 0.0499; STK / MIN 0; TOTAL CIRC. TIME (min) 0 min
DRILL COLLAR SIZE (") 4 3/4	Length 230 Mtrs		MUD TYPE KCl PHPA Polymer		BBL/MIN 0.00; GAL / MIN 0; ANN VEL. (ft/min) DP 0 DCs 0 0

MUD PROPERTIES

		Pit	Pit
SAMPLE FROM			
TIME SAMPLE TAKEN		0800	1800
FLOWLINE TEMPERATURE	^{0}F		
DEPTH	Metres	2,125	2,125
WEIGHT	ppg / SG	9.20 1.10	9.20 1.10
FUNNEL VISCOSITY (sec/qt) API @	30 ^{0}F	44	48
PLASTIC VISCOSITY cP @	^{0}F	15	17
YIELD POINT (lb/100FT2)		16	18
GEL STRENGTH (lb/100ft2) 10 sec/10 min.		3 6	4 7
FILTRATE API (cm3/30 min.)		6	6.0
API HPHT FILTRATE (cm3/30 min.) @	250 ^{0}F	24	24
CAKE THICKNESS API : HPHT (32nd in)		1:3	1:3
SOLIDS CONTENT		5.0	4.9
LIQUID CONTENT (%by Vol.) OIL/WATER		95.0	0.0 95.1
SAND CONTENT (% by Vol.)		0.25	0.25
METHYLENE BLUE CAPACITY (ppb equiv.)		10.0	10.0
PH		9.0	9.0
ALKALINITY MUD (Pm)			
ALKALINITY FILTRATE (Pf / Mf)		0.15 0.70	0.10 0.70
CHLORIDE (mg/L)		24,500	25,000
TOTAL HARDNESS AS CALCIUM (mg/L)		160	160
SULPHITE (mg/L)		80	80
K+ (mg/L)		21,100	21,100
KCL (% by Wt.)		3.9	3.9
PHPA (Calc ppb)		1.70	1.70

MUD PROPERTY SPECIFICATIONS

Mud Weight	9 - 9.3	MBT	<15	API Filtrate	7.0
Vis	35-45	Yield Point	12-15	pH	9
KCl	3-4	PHPA	1.25-1.75	Sulphites	100

OBSERVATIONS

Transfer mud to clean out settling tanks. Lose some volume in the process.
Losing approx 1 barrel per hour to hole while logging.

Barite Potential: 9.55 ppg
Rheology 600>3 RPM 52 35 30 20 5 4

OPERATIONS SUMMARY

RIH. Ream and wash to bottom. No fill.
Douse mud to be left in hole with Idcide.
Circulate hole clean. POOH.
Log with Schlumberger.

MUD ACCOUNTING (BBLS)

FLUID BUILT & RECEIVED		FLUID DISPOSED		SUMMARY	
Premix - Drill water	0	Desander	0	INITIAL VOLUME	657
Premix - Recyc fm sump	0	Desilter	0		
Drill Water	0	Downhole	30	+ Fluid Received	0
Direct Recyc fm bore	0	Dumped	70	- Fluid Lost	100
Other (eg Diesel)	0	Centrifuge	0	Incl. Storage	0
		Shakers	0		
TOTAL RECEIVED	0	TOTAL LOST	100	FINAL VOLUME	557

SOLIDS CONTROL EQUIPMENT

SHALE SHAKERS		Hrs		Cones Size		Hrs	Centrifuge		Hrs
# 1	175/175/140	1	Desander	2	10	0	0	0	0
# 2	175/175/140	1	Desilter	12	5	0	Degasser	0	0

	Overflow (ppg)	Underflow (ppg)	Output (Gal/Min.)
Desander	0.0	0	0.00
Desilter	0.0	0	0.00
Centrifuge	0.0	0	0.00

Product	Price	Start	Received	Used	Close	Cost
Barite	$ 7.72	254		14	240	$ 108.08
Idcide-20	$ 94.92	2		1	1	$ 94.92

SOLIDS ANALYSIS

	%	ppb
Barite	0.0	0.0
Total LGS	4.9	45.0
Bentonite	1.1	10.0
Drilled Solids	3.8	35.0
Salt	1.5	16.6
Avg .Spec. Grav. Solids		2.60
n @ 1800 Hrs		0.57
K (lb/100 ft^2)		1.00

BIT HYDRAULICS DATA

Jet Velocity	ft/sec
Impact force	lbs
HHP	
HSI	
Bit Press Loss	psi
ECD	.00 ppg
CSG Seat Fracture Pressure	1367 psi
Equiv. Mud Wt.	15.4 ppg

DAILY COST	CUMULATIVE COST
$203.00	$29,483.36

I.D.F.S. Engineer: M. Docherty Office: BRISBANE Telephone: 07 3228 6562 Fax: 07 3806 0165

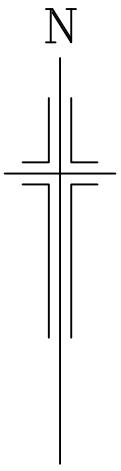
APPENDIX 4

WELL LOCATION SURVEY

ORIGIN ENERGY

WELL SET-OUT

BANGANNA - 1



STN 592 + 6
AMG 66
E 602155.6
N 5772965.7
AHD 71.0

STN 600 + 9
AMG 66
E 603241.7
N 5772960.8
AHD 74.1

BANGANNA – 1 DRILL HOLE
GDA 94
E 603373.4
N 5770482.7
AHD 63.70

NOTES

REFERENCE INFORMATION SUPPLIED BY O.C.A

ORIGINAL SIZE A3

Alexander & Symonds Pty Ltd
29 Ferrers Street
Mount Gambier
South Austrailia 5290
DX 29007
ACN 007 753 988
Email mtgam@alexander.com.au

Property, Engineering, Topographic, Mining and Satellite Surveying. Land Information Management.

SURVEYING CONSULTANTS

Alexander Symonds

Telephone (08) 8725 5299
Facsimile (08) 8724 9193

REFERENCE G000103.00

CAD REF G000103.00.DWG

SCALE 1 : 15000 metres

LICENSED SURVEYOR

DATE 16/12/02
UPDATED 28/04/03

APPENDIX 5

DAILY DRILLING REPORTS

Oil Company of Australia

DAILY DRILLING REPORT

05/02/03

REPORT # 01

WELL	**Banganna 01**	**24:00 DEPTH**	**14m**	**24 HR PROG**	**2m**	**CUM. COSTS**	**$560,343**
RIG	Century Drilling # 11	**FORMATION**	Surface Basalt	**PTD**	2120m	**DAILY COSTS**	$560,342.65

OP's TO 06:00 Made up kelly & K/Spinner. Drill to 45m, lost circulation. Continue to drill to 50m

REMARKS: Total losses from 45m. Fluid level standing at around 10m **PERSONNEL ON SITE:** **107**

LAST CASING	7 "	**SET AT**	2155.0m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	

AFD's: 46

SAFETY 1. Pre-spud with all crew & service hands

2. Drilling rat & mouse holes

WEATHER AM Overcast

PM Overcast

BIT INFORMATION				**BHA # 1**		**MUD PROPERTIES**		**OPERATION**	**HRS**	**CUM**
WOB(kLb)	1-2	**JET V(fps)**		**TOOL**	**LENGTH**	Time	2350	Air Rig up		
RPM	80	**H S I**		251mm CH1GMS	0.30	Depth (m)	14	Casing		
BIT NUMBER		**1**		Bit Sub	0.75	Temp (° C)		Cementing		
Size (in)		9.875		x/o	0.81	Mud Type	Spud	Circ & Condition		
Make		VAREL				Density (ppg)	8.60	Coring		
Type		CH1 GMS				ECD (ppg)		D/O Cement		
IADC Code		117				Viscosity (sec)	38	Drilling	1.0	1.0
Serial Number		185424				PV / YP (cp/lb)	4 / 16	Handle BHA	1.0	1.0
T.F.A.(")		0.589				Gells (s/m)	10 / 18	LOT / FIT		
Depth In (m)						API Filt. (cc)	30	N/U & Test BOP's		
Depth Out (m)		IN				Cake (/32")	3	P & A		
Total Meters		14				Solids (% Vol)	1.9	Repairs		
Hours		1				Sand (% Vol)	0.1	Rig Service		
ROP		14.0				MBT	20	Safety		
Condition Out				**BHA LENGTH (m)**	1.86	pH (strip)	9	Survey		
FLOW DATA				**BHA WEIGHT(kLb)**	0.8	Chlorides (mg/l)	1000	Tight hole / Fishing		
CIRC. RATE (gpm)				**STRING WT (kLb)**	1.4	KCL (%)		Tripping		
AV - DP (fpm)				**HOOK LOAD (kLb)**	20.0	PHPA (ppb)		Wait on Cement		
AV - DC (fpm)				**WT BELOW JARS (kLb)**		ALC - 50 (K)		Wash / Ream		
SPP (psi)		150		**DRAG UP (kLb)**		Circ. Vol. (Bbl)		Well Control		
SPP (calculated)				**DRAG DOWN (kLb)**		**CHEMICAL USAGE**		Well Test		
PUMP #1		**PUMP #2**		**TORQUE ON (Amps/Rel.)**		Soda Ash (dense)	1	Wellhead		
Gardner Denver PZ-7		**Gardner Denver PZ-7**		**TORQUE OFF (Amps/Rel.)**		Trugel 13A	30	Wiper Trip		
RATE	80	**RATE**		**ENVIRONMENTAL DATA**				Wireline		
LINER		**LINER**		FUEL ON SITE	23700 Litres			Other	22.0	22.0
STROKE	7.0"	**STROKE**	7.0"	DAILY USAGE	1100 Litres			**TOTALS**	24.0	24.0
				CUM. FUEL USED	1100 Litres			DAILY MUD COSTS		$354.65
SURVEYS				CUM. MUD MIXED				CUM. MUD COSTS		**$354.65**
				CUM. MUD LOSSES				**AFE COST - C&S**		$1,432,920
				CUM. GEL	750 kg			**AFE COST - P&A**		$1,269,954
				CUM. BARITES				**AFE COST - C&C**		$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
	3:00	Wait on crews
3:00	12:00	Change out off-side drawworks engine with one from Rig 5, Roma. Ready to run at 12 noon. Rigging up
12:00	18:30	Attempt to enlarge rat hole from 216mm to 311mm. Hole caving with rocks, & hard.
18:30	19:30	Made up & set a 193mm Mouse hole without re-drilling it. Unable to clean out R/Hole.
19:30	22:00	Made up RKB rollers for 108mm kelly. Made up bit & subs to start drilling
22:00	23:00	Drill 251mm hole from 12 to 14m (Conductor preset at 12 m RT).
23:00	0:00	Install kelly spinner & make up joints on kelly

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

06/02/03

REPORT # 02

WELL	**Banganna 01**	**24:00 DEPTH**	**100m**	**24 HR PROG**	**86m**	**CUM. COSTS**	**$620,033**
RIG	Century Drilling # 11	**FORMATION**	Pt Campbell L/Stone	**PTD**	2120m	**DAILY COSTS**	$59,690.14
OP's TO 06:00	Re-drill & set R/Hole. Tag cement at 40.5m, run 150 sack cement plug, wait on cement						
REMARKS:	At 0730hrs, tagged cement at 39.5m. Have ~220 sacks of cement left on site					**PERSONNEL ON SITE:**	**25**
LAST CASING	7 "	**SET AT**	2155.0m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	
AFD's: 47	**SAFETY**	1. Pick up BHA & Hazard Identification				**WEATHER AM**	Overcast
		2. Heat Stress, Haz Identification				**PM**	Overcast

BIT INFORMATION			
WOB(kLb)	5-10	**JET V(fps)**	
RPM	80	**H S I**	
BIT NUMBER		**1**	
Size (in)		9.875	
Make		VAREL	
Type		CH1 GMS	
IADC Code		117	
Serial Number		185424	
T.F.A.(")		0.589	
Depth In (m)			
Depth Out (m)		IN	
Total Meters		100	
Hours		6.5	
ROP		15.4	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	
AV - DP (fpm)	
AV - DC (fpm)	
SPP (psi)	400
SPP (calculated)	

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	80	**RATE**	80
LINER		**LINER**	
STROKE	7.0"	**STROKE**	7.0"

SURVEYS		

BHA # 1	
TOOL	**LENGTH**
251mm CH1GMS	0.30
Bit Sub	0.75
x/o	0.81
2 x 6.5" DC's	18.92
9-7/8" Stabiliser	1.04
7 x 6.5" DC's	66.19
BHA LENGTH (m)	88.01
BHA WEIGHT(kLb)	21.2
STRING WT (kLb)	21.8
HOOK LOAD (kLb)	35.0
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	22800 Litres
DAILY USAGE	900 Litres
CUM. FUEL USED	2000 Litres
CUM. MUD MIXED	
CUM. MUD LOSSES	
CUM. GEL	3650 kg
CUM. BARITES	

MUD PROPERTIES	
Time	1800
Depth (m)	100
Temp (° C)	
Mud Type	Spud
Density (ppg)	8.75
ECD (ppg)	
Viscosity (sec)	81
PV / YP (cp/lb)	15 / 50
Gells (s/m)	25 / 28
API Filt. (cc)	15
Cake (/32")	3
Solids (% Vol)	3.1
Sand (% Vol)	0.1
MBT	27
pH (strip)	9.5
Chlorides (mg/l)	1000
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	

CHEMICAL USAGE	
Enerseal C	24
Enerseal F	33
Soda Ash (dense)	2
Trugel 13A	116

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		
Cementing	4.0	4.0
Circ & Condition		
Coring		
D/O Cement		
Drilling	5.5	6.5
Handle BHA		1.0
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs		
Rig Service		
Safety		
Survey		
Tight hole / Fishing		
Tripping	4.5	4.5
Wait on Cement	4.0	4.0
Wash / Ream		
Well Control		
Well Test		
Wellhead		
Wiper Trip		
Wireline		
Other	6.0	28.0
TOTALS	24.0	48.0

DAILY MUD COSTS	$3,171.14
CUM. MUD COSTS	**$3,525.79**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	4:00	Drill 251mm hole from 14 to 45m
4:00	5:30	Lost total circulation, pump Hi-Vis/LCM slugs to no avail. Fill mud tanks
5:30	6:00	Drill 251mm hole from 45 to 54m, with no returns
6:00	7:00	Fill mud tanks from water well (Spud mud coming from water well 150m from well bore)
7:00	7:30	Drill 251mm hole from 54 to 71m with water, no returns
7:30	8:00	Fill mud tanks from water well
8:00	8:30	Drill 251mm hole from 71 to 100m with water, no returns
8:30	10:30	Lay down kelly
10:30	11:30	Lay down 5 DC's & rack back 4
11:30	12:00	Run in hole open-ended
12:00	13:30	Pump 40 bbls of Hi-Vis/LCM mud. Head up & run cement plug from 100m, 150 sacks of G cement with 1% CaCl & 75 kg of Enerseal Coarse
13:30	14:00	Pull out of hole
14:00	14:30	Run 30 sacks of cement in rat hole with pipe on bridge at 2m below GL
14:30	16:30	Wait on cement then run in & tag cement at 68m
16:30	17:30	Pump 40 bbls of Hi-Vis/LCM mud. Head up & run cement plug from 68m, 150 sacks of G cement with 2% CaCl & 75 kg of Enerseal Coarse
17:30	19:30	Pull out of hole then wait on cement
19:30	20:00	Run in hole & tag cement at 48.5m
20:00	21:00	Pump 40 bbls of Hi-Vis/LCM mud. Run cement plug from 48.5m, 150 sx of G cement with 2% CaCl & 75 kg of Enerseal Coarse. POH
21:00	23:30	Rig to re-drill Rat Hole with air hammer
23:30	0:00	Re-drill Rat Hole with air hammer

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

07/02/03

REPORT # 03

WELL	**Banganna 01**	**24:00 DEPTH**	**229m**	**24 HR PROG**	**129m**	**CUM. COSTS**	**$660,321**
RIG	Century Drilling # 11	**FORMATION**	Pt Campbell L/Stone	**PTD**	2120m	**DAILY COSTS**	$40,288.09

OP's TO 06:00 POH & wait on water. Work through several bridges getting back to bottom

REMARKS: Fluid level standing at 9m, mud returning through water well 150m away **PERSONNEL ON SITE:** 26

LAST CASING	7 "	**SET AT**	2155.0m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	

AFD's: 48

SAFETY 1. Run in hole
2. Handle BHA

WEATHER AM Overcast
PM Overcast

BIT INFORMATION				**BHA # 1**		**MUD PROPERTIES**		**OPERATION**	**HRS**	**CUM**
WOB(kLb)	10-15	**JET V(fps)**	148	**TOOL**	**LENGTH**	Time	2030	Air Rig up		
RPM	115	**H S I**	0.36	251mm CH1GMS	0.30	Depth (m)	185	Casing		
BIT NUMBER		**1**		Bit Sub	0.75	Temp (° C)		Cementing	2.0	6.0
Size (in)		9.875		x/o	0.81	Mud Type	Spud	Circ & Condition		
Make		VAREL		2 x 6.5" DC's	18.92	Density (ppg)	8.70	Coring		
Type		CH1 GMS		9-7/8" Stabiliser	1.04	ECD (ppg)	13.96	D/O Cement	2.0	2.0
IADC Code		117		10 x 6.5" DC's	94.29	Viscosity (sec)	45	Drilling	5.0	11.5
Serial Number		185424		x/o	0.93	PV / YP (cp/lb)	8 / 22	Handle BHA		1.0
T.F.A.(")		0.589		6 x 4.75" DC's	53.86	Gells (s/m)	16 / 24	LOT / FIT		
Depth In (m)				5 x 4.75" HWDP	46.39	API Filt. (cc)	27	N/U & Test BOP's		
Depth Out (m)		IN				Cake (/32")	3	P & A		
Total Meters		229				Solids (% Vol)	2.7	Repairs		
Hours		11.5				Sand (% Vol)	0.1	Rig Service		
ROP		19.9				MBT	22	Safety		
Condition Out				**BHA LENGTH (m)**	217.29	pH (strip)	9.5	Survey	0.5	0.5
FLOW DATA				**BHA WEIGHT(kLb)**	39.3	Chlorides (mg/l)	1000	Tight hole / Fishing		
CIRC. RATE (gpm)		272		**STRING WT (kLb)**	39.9	KCL (%)		Tripping	4.0	8.5
AV - DP (fpm)		78		**HOOK LOAD (kLb)**	50.0	PHPA (ppb)		Wait on Cement	7.5	11.5
AV - DC (fpm)		121		**WT BELOW JARS (kLb)**		ALC - 50 (K)		Wash / Ream		
SPP (psi)		450		**DRAG UP (kLb)**		Circ. Vol. (Bbl)		Well Control		
SPP (calculated)		490		**DRAG DOWN (kLb)**		**CHEMICAL USAGE**		Well Test		
PUMP #1		**PUMP #2**		**TORQUE ON (Amps/Rel.)**		Enerseal F	15	Wellhead		
Gardner Denver PZ-7		**Gardner Denver PZ-7**		**TORQUE OFF (Amps/Rel.)**		Soda Ash (dense)	3	Wiper Trip		
RATE	130	**RATE**		**ENVIRONMENTAL DATA**		Trugel 13A	116	Wireline		
LINER	5.5"	**LINER**	5.5"	FUEL ON SITE	21600 Litres	Kwikseal F	40	Other	3.0	31.0
STROKE	7.0"	**STROKE**	7.0"	DAILY USAGE	1200 Litres	Kwikseal M	24	**TOTALS**	24.0	72.0
				CUM. FUEL USED	3200 Litres			DAILY MUD COSTS		$4,592.09
SURVEYS				CUM. MUD MIXED				CUM. MUD COSTS		**$8,117.88**
.75° at 120m				CUM. MUD LOSSES				**AFE COST - C&S**		$1,432,920
				CUM. GEL	6550 kg			**AFE COST - P&A**		$1,269,954
				CUM. BARITES				**AFE COST - C&C**		$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:30	Re-drill Rat Hole with air hammer & set 7-5/8" casing as a sock
1:30	2:30	Rig down rat hole digger & tools, and air-pack
2:30	3:00	Run in & tag cement at 40.5m. Pump 30 bbls of Hi-Vis & LCM
3:00	4:00	Run cement plug #4 from 40.5m, 150 sx of G cement with 2% CaCl & 75 kg of Enerseal Coarse
4:00	7:00	POH, WOC. Make up kelly bushings & lay out excess DC's
7:00	8:30	Run in & tag cement at 39.5m. Rack back DC's and run in open-ended. Pump 20 bbls of Hi-Vis & LCM
8:30	9:30	Run cement plug #5 from 39.5m, 110 sx of G cement with 2% CaCl & 75 kg of Enerseal Coarse
9:30	14:00	POH & wait on cement
14:00	16:00	Run in & tag cement at 39m. Lay out DP & run in with bit
16:00	18:00	Drill out cement from 39 to 100m, no mud returns
18:00	19:00	Drill 251mm hole from 100 to 129m, no returns
19:00	19:30	Wireline survey at 120m, 3/4 deg
19:30	22:30	Drill 251mm hole from 129 to 210m, no returns
22:30	23:00	Wait on water
23:00	0:00	Drill 251mm hole from 210 to 229m, no returns

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

08/02/03

REPORT # 04

WELL	**Banganna 01**	**24:00 DEPTH**	**248m**	**24 HR PROG**	**19m**	**CUM. COSTS**	**$699,108**
RIG	Century Drilling # 11	**FORMATION**	Gellibrand Marl	**PTD**	2120m	**DAILY COSTS**	$38,787.08

OP's TO 06:00 Run cement plug to surface, WOC, drill out cement from 8.5m

REMARKS: Will get W/Well rig in to fix water well & ?perhaps drill another well **PERSONNEL ON SITE:** 25

LAST CASING	7 "	**SET AT**	2155.0m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	

AFD's: 49

SAFETY 1. Running wireline surveys; 2. Run in hole

WEATHER AM Overcast & fine

PM Overcast & cool

BIT INFORMATION			
WOB(kLb)	2-5	**JET V(fps)**	91
RPM	50	**H S I**	0.08
BIT NUMBER		**1**	
Size (in)		9.875	
Make		VAREL	
Type		CH1 GMS	
IADC Code		117	
Serial Number		185424	
T.F.A.(")		0.589	
Depth In (m)			
Depth Out (m)		IN	
Total Meters		248	
Hours		12.5	
ROP		19.8	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	168
AV - DP (fpm)	48
AV - DC (fpm)	74
SPP (psi)	200
SPP (calculated)	290

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	80	**RATE**	
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"

SURVEYS

BHA # 1	
TOOL	**LENGTH**
251mm CH1GMS	0.30
Bit Sub	0.75
x/o	0.81
2 x 165mm DC's	18.92
251mm Stabiliser	1.04
10 x 165mm DC's	94.29
x/o	0.93
6 x 120mm DC's	53.86
6 x 120mm HWDP	55.66
BHA LENGTH (m)	226.56
BHA WEIGHT(kLb)	40.1
STRING WT (kLb)	41.2
HOOK LOAD (kLb)	52.0
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	20400 Litres
DAILY USAGE	1200 Litres
CUM. FUEL USED	4400 Litres
CUM. MUD MIXED	
CUM. MUD LOSSES	
CUM. GEL	8100 kg
CUM. BARITES	

MUD PROPERTIES	
Time	1900
Depth (m)	248
Temp (° C)	
Mud Type	Spud
Density (ppg)	8.70
ECD (ppg)	12.80
Viscosity (sec)	43
PV / YP (cp/lb)	7 / 20
Gells (s/m)	14 / 21
API Filt. (cc)	28
Cake (/32")	3
Solids (% Vol)	2.7
Sand (% Vol)	0.1
MBT	20
pH (strip)	9.5
Chlorides (mg/l)	1000
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	

CHEMICAL USAGE	
Soda Ash (dense)	2
Trugel 13A	62
Kwikseal F	14

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		
Cementing	3.5	9.5
Circ & Condition		
Coring		
D/O Cement		2.0
Drilling	1.0	12.5
Handle BHA		1.0
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs	1.0	1.0
Rig Service		
Safety		
Survey		0.5
Tight hole / Fishing		
Tripping	9.0	17.5
Wait on Cement	6.0	17.5
Wash / Ream		
Well Control		
Well Test		
Wellhead		
Wiper Trip		
Wireline		
Other	3.5	34.5
TOTALS	24.0	96.0

DAILY MUD COSTS	$1,334.08
CUM. MUD COSTS	**$9,451.96**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:30	No returns, ran out of water. Pump LCM slug & pull out of the hole
1:30	4:00	Wait on water. Water well returning mud from well & production declining
4:00	8:30	Run in hole, ream bridge at 14m, ream & wash from 106 to 129m
8:30	9:30	Drill 251mm hole from 229 to 248m. No returns. Water well ceased production, almost straight mud & LCM being produced
9:30	11:00	Pump LCM slug & POH
11:00	12:00	Push cut up paper mud sacks to 40m, & leave one lot at 35m
12:00	13:00	Run in to sacks at 30m, pump 180 sack cement plug #6, moving pipe down to 38m
13:00	16:00	Wait on cement then run in & tag cement at 37m
16:00	18:30	Push cut up paper mud sacks to 35m, run cement plug # 7, 150 sacks
18:30	21:30	Wait on cement. Hauling water from quarry with truck since this morning
21:30	22:30	Repair hyraulics on rig
22:30	0:00	Clean cement out of bit & bit sub, run in hole & tag cement at 28m

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

09/02/03

REPORT # 05

WELL	**Banganna 01**	**24:00 DEPTH**	**248m**	**24 HR PROG**		**CUM. COSTS**	**$739,195**
RIG	Century Drilling # 11	**FORMATION**	Gellibrand Marl	**PTD**	2120m	**DAILY COSTS**	$40,086.68
OP's TO 06:00	Ream to bottom by 0500hrs. Drill to 287m & survey						
REMARKS:	No fluid losses now. W/Well rig is cleaning out water well, will be going this morni					**PERSONNEL ON SITE:**	**27**
LAST CASING	13 3/8"	**SET AT**	11.0m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	
AFD's: 50	**SAFETY**	1. Operating rig tongs				**WEATHER AM**	Overcast
		2. Using safety clamp. Weekly safety meeting held				**PM**	Fine, cool

BIT INFORMATION			
WOB(kLb)	5-10	**JET V(fps)**	147
RPM	90	**H S I**	
BIT NUMBER			
Size (in)			
Make			
Type			
IADC Code			
Serial Number			
T.F.A.(")			
Depth In (m)			
Depth Out (m)			
Total Meters			
Hours			
ROP			
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	270
AV - DP (fpm)	78
AV - DC (fpm)	120
SPP (psi)	270
SPP (calculated)	320

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	129	**RATE**	
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"

SURVEYS	

BHA # 1	
TOOL	**LENGTH**
251mm CH1GMS	0.30
Bit Sub	0.75
x/o	0.81
2 x 165mm DC's	18.92
251mm Stabiliser	1.04
10 x 165mm DC's	94.29
x/o	0.93
6 x 120mm DC's	53.86
6 x 120mm HWDP	55.66
BHA LENGTH (m)	226.56
BHA WEIGHT(kLb)	39.8
STRING WT (kLb)	40.9
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	17400 Litres
DAILY USAGE	3000 Litres
CUM. FUEL USED	7400 Litres
CUM. MUD MIXED	
CUM. MUD LOSSES	
CUM. GEL	8400 kg
CUM. BARITES	

MUD PROPERTIES	
Time	2115
Depth (m)	248
Temp (° C)	
Mud Type	Spud
Density (ppg)	9.10
ECD (ppg)	9.30
Viscosity (sec)	37
PV / YP (cp/lb)	7 / 13
Gells (s/m)	8 / 9
API Filt. (cc)	25
Cake (/32")	3
Solids (% Vol)	5.7
Sand (% Vol)	2
MBT	17.5
pH (strip)	9.5
Chlorides (mg/l)	1250
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	

CHEMICAL USAGE	
Trugel 13A	12

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		
Cementing	2.0	11.5
Circ & Condition		
Coring		
D/O Cement	5.5	7.5
Drilling		12.5
Handle BHA		1.0
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs		1.0
Rig Service		
Safety		
Survey		0.5
Tight hole / Fishing		
Tripping	3.0	20.5
Wait on Cement	7.5	25.0
Wash / Ream	4.0	4.0
Well Control		
Well Test		
Wellhead		
Wiper Trip		
Wireline		
Other	2.0	36.5
TOTALS	24.0	120.0

DAILY MUD COSTS	$136.68
CUM. MUD COSTS	**$9,588.64**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:30	Run cement plug #8 from 28m, 110 sx of G cement with 2% CaCl. Cement to surface
0:30	4:30	POH & wait on cement
4:30	5:00	Run in hole & tage cement at 8.5m.
5:00	9:00	Drill out cement from 8.5 to 45m. Loosing mud from 38m
9:00	10:00	Pull out of the hole
10:00	12:00	Attempt to push mud sacks to 45m, sacks stuck at 12m. Drill up & push to 45m
12:00	13:30	Run in open-ended & run Plug # 9, 150 sacks from 45m. Some returns but no cement to surface
13:30	17:00	POH & wait on cement
17:00	18:30	RIH & drill out cement from 33m to 45m
18:30	21:00	Ream & wash from 45 to 128m. A lot of sand coming back over the shakers, full mud returns
21:00	22:30	Lay out pipe & run in Drill Collars
22:30	0:00	Ream from 128 to 165m

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

10/02/03

REPORT # 06

WELL	**Banganna 01**	**24:00 DEPTH**	**520m**	**24 HR PROG**	**272m**	**CUM. COSTS**	**$769,859**
RIG	Century Drilling # 11	**FORMATION**	Pember Mudstone	**PTD**	2120m	**DAILY COSTS**	$30,663.90
OP's TO 06:00	POH, lay out 6.5" DC's. Run 7-5/8" casing						
REMARKS:	Water well is operating again					**PERSONNEL ON SITE:**	**27**
LAST CASING	13 3/8"	**SET AT**	11.0m	**LOT**		**MAASP**		**BOP TEST**	NIL	**TEST DUE**	
AFD's: 51	**SAFETY**	1. Weekly safety meeting				**WEATHER AM**	Fine
		2. Run casing				**PM**	Fine & cool

BIT INFORMATION			
WOB(kLb)	5-15	**JET V(fps)**	274
RPM	120	**H S I**	2.29
BIT NUMBER		**1**	
Size (in)		9.875	
Make		VAREL	
Type		CH1 GMS	
IADC Code		117	
Serial Number		185424	
T.F.A.(")		0.589	
Depth In (m)			
Depth Out (m)		IN	
Total Meters		520	
Hours		23.5	
ROP		22.1	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	503
AV - DP (fpm)	145
AV - DC (fpm)	223
SPP (psi)	1500
SPP (calculated)	1140

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	120	**RATE**	120
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"

SURVEYS
.75° at 275m
.75° at 372m

BHA # 1	
TOOL	**LENGTH**
251mm CH1GMS	0.30
Bit Sub	0.75
x/o	0.81
2 x 165mm DC's	18.92
251mm Stabiliser	1.04
10 x 165mm DC's	94.29
x/o	0.93
6 x 120mm DC's	53.86
6 x 120mm HWDP	55.66
BHA LENGTH (m)	226.56
BHA WEIGHT(kLb)	42.4
STRING WT (kLb)	56.4
HOOK LOAD (kLb)	63.0
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	14700 Litres
DAILY USAGE	2700 Litres
CUM. FUEL USED	10100 Litres
CUM. MUD MIXED	
CUM. MUD LOSSES	
CUM. GEL	8650 kg
CUM. BARITES	

MUD PROPERTIES	
Time	2100
Depth (m)	520
Temp (° C)	
Mud Type	Spud
Density (ppg)	8.90
ECD (ppg)	9.10
Viscosity (sec)	35
PV / YP (cp/lb)	5 / 14
Gells (s/m)	9 / 12
API Filt. (cc)	
Cake (/32")	
Solids (% Vol)	4.2
Sand (% Vol)	0.5
MBT	15
pH (strip)	9
Chlorides (mg/l)	1050
KCL (%)	
PHPA (ppb)	
ALC - 50 (K)	
Circ. Vol. (Bbl)	

CHEMICAL USAGE	
Trugel 13A	10

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		
Cementing		11.5
Circ & Condition	1.0	1.0
Coring		
D/O Cement		7.5
Drilling	11.0	23.5
Handle BHA		1.0
LOT / FIT		
N/U & Test BOP's		
P & A		
Repairs		1.0
Rig Service		
Safety		
Survey	1.0	1.5
Tight hole / Fishing		
Tripping	3.5	24.0
Wait on Cement		25.0
Wash / Ream	3.5	7.5
Well Control		
Well Test		
Wellhead		
Wiper Trip	4.0	4.0
Wireline		
Other		36.5
TOTALS	24.0	144.0

DAILY MUD COSTS	$113.90
CUM. MUD COSTS	**$9,702.54**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	2:30	Ream from 165 to 220m
2:30	4:00	Lay out pipe & run in Drill Collars
4:00	5:00	Ream from 220 to 248m
5:00	6:00	Drill 251mm hole from 248 to 287m
6:00	6:30	Wireline survey at 275m, 3/4 deg
6:30	9:00	Drill 251mm hole from 287 to 384m
9:00	9:30	Wireline survey at 372m, 3/4 deg
9:30	17:00	Drill 251mm hole from 384 to 520m
17:00	17:30	Circulate hole clean
17:30	21:30	Wiper trip to surface & back
21:30	22:00	Circulate hole clean
22:00	0:00	Drop survey & hoist to run casing

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

11/02/03

REPORT # 07

WELL	**Banganna 01**	**24:00 DEPTH**	**520m**	**24 HR PROG**		**CUM. COSTS**	**$863,498**
RIG	Century Drilling # 11	**FORMATION**	Pember Mudstone	**PTD**	2120m	**DAILY COSTS**	$93,639.33
OP's TO 06:00	NU & tested BOPE. Run in hole picking up BHA						
REMARKS:	Bit 1, 2-2-WT-A-E-I-NO-TD					**PERSONNEL ON SITE:**	**26**
LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**		**MAASP**	**BOP TEST** NIL **TEST DUE**
AFD's: 52	**SAFETY**	1. Cementing with Halliburton 2. NU BOP's				**WEATHER AM**	Fine **PM** Fine & warm

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	137
RPM		**H S I**	
BIT NUMBER			
Size (in)			
Make			
Type			
IADC Code			
Serial Number			
T.F.A.(")			
Depth In (m)			
Depth Out (m)			
Total Meters			
Hours			
ROP			
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	251
AV - DP (fpm)	72
AV - DC (fpm)	111
SPP (psi)	300
SPP (calculated)	340

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	120	**RATE**	
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"

SURVEYS
.25° at 507m

BHA # 1	
TOOL	**LENGTH**
251mm CH1GMS	0.30
Bit Sub	0.75
x/o	0.81
2 x 165mm DC's	18.92
251mm Stabiliser	1.04
10 x 165mm DC's	94.29
x/o	0.93
6 x 120mm DC's	53.86
6 x 120mm HWDP	55.66
BHA LENGTH (m)	226.56
BHA WEIGHT(kLb)	42.7
STRING WT (kLb)	56.8
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	13600 Litres
DAILY USAGE	1100 Litres
CUM. FUEL USED	11200 Litres
CUM. MUD MIXED	
CUM. MUD LOSSES	
CUM. GEL	8650 kg
CUM. BARITES	

MUD PROPERTIES	
Time	2000
Depth (m)	520
Temp (° C)	
Mud Type	Poly/Phpa/Kcl
Density (ppg)	8.55
ECD (ppg)	8.65
Viscosity (sec)	34
PV / YP (cp/lb)	3 / 4
Gells (s/m)	1 / 1
API Filt. (cc)	
Cake (/32")	
Solids (% Vol)	0.6
Sand (% Vol)	0.1
MBT	
pH (strip)	9
Chlorides (mg/l)	15500
KCL (%)	3
PHPA (ppb)	0.45
ALC - 50 (K)	
Circ. Vol. (Bbl)	

CHEMICAL USAGE	
Defoam L	1
JK-261	4
KCl Fine Tech- 25	120
Pac Reg	5

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing	6.0	6.0
Cementing	1.5	13.0
Circ & Condition	0.5	1.5
Coring		
D/O Cement		7.5
Drilling		23.5
Handle BHA	2.5	3.5
LOT / FIT		
N/U & Test BOP's	7.5	7.5
P & A		
Repairs		1.0
Rig Service		
Safety		
Survey		1.5
Tight hole / Fishing		
Tripping		24.0
Wait on Cement	4.0	29.0
Wash / Ream		7.5
Well Control		
Well Test		
Wellhead	2.0	2.0
Wiper Trip		4.0
Wireline		
Other		36.5
TOTALS	24.0	168.0

DAILY MUD COSTS	$3,111.33
CUM. MUD COSTS	**$12,813.87**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	2:30	Lay down 6.5" Drill Collars & tools
2:30	5:00	Rig to run casing
5:00	8:30	Run 45 joints of 7-5/8" casing
8:30	9:00	Head up
9:00	9:30	Circulate casing, hold safety meeting with Halliburton
9:30	10:30	Pump water pre-flush pressure test lines. Mix & pump 302 sacks of Lead & 200 sacks of Tail cement. Displace with 79bbls of water
10:30	14:30	Wait on cement
14:30	16:30	Back out landing joint & install Bradenhead
16:30	0:00	Nipple up BOP's

SUPERVISOR:	Seton porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

12/02/03

REPORT # 08

WELL	**Banganna 01**	**24:00 DEPTH**	**849m**	**24 HR PROG**	**329m**	**CUM. COSTS**	**$940,752**
RIG	Century Drilling # 11	**FORMATION**	Eumeralla	**PTD**	2120m	**DAILY COSTS**	$77,254.36

OP's TO 06:00 Running survey, 3/4 deg @ 982m, depth 994m. Previous survey, 1/2 deg @ 836m

REMARKS: Sperry Sun equip on site **PERSONNEL ON SITE:** 23

LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	**596psi**	**BOP TEST**	12/02/03	**TEST DUE**	26/02/03

AFD's: 53

SAFETY 1. Pressure test BOPE; 2. Drilling & rig floor operations

WEATHER AM Fine & warm

PM Fine & warm

BIT INFORMATION			
WOB(kLb)	5-10	**JET V(fps)**	218
RPM	120	**H S I**	2.12
BIT NUMBER		**2**	
Size (in)		6.75	
Make		Hycalog	
Type		DS185GNVW	
IADC Code			
Serial Number		201917	
T.F.A.(")		0.518	
Depth In (m)		520	
Depth Out (m)		IN	
Total Meters		329	
Hours		10	
ROP		32.9	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	352
AV - DP (fpm)	259
AV - DC (fpm)	375
SPP (psi)	1100
SPP (calculated)	1330

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	84	**RATE**	84
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"
SCR: 270 @ 80		SCR: 270 @ 80	

SURVEYS
.25° at 681m

BHA # 2	
TOOL	**LENGTH**
DS185GNVW	0.25
NB Stabiliser	0.56
Pony DC	2.95
String Stabiliser	1.25
20 x 4.75" DC's	180.09
Drilling Jars	9.00
4 x 4.75" DC's	35.79
6 x 3.5" HWDP	55.66
BHA LENGTH (m)	285.55
BHA WEIGHT(kLb)	35.4
STRING WT (kLb)	62.5
HOOK LOAD (kLb)	65.0
WT BELOW JARS (kLb)	22.2
DRAG UP (kLb)	65.0
DRAG DOWN (kLb)	65.0
TORQUE ON (Amps/Rel.)	40-60
TORQUE OFF (Amps/Rel.)	20

ENVIRONMENTAL DATA	
FUEL ON SITE	11200 Litres
DAILY USAGE	2400 Litres
CUM. FUEL USED	13600 Litres
CUM. MUD MIXED	110 Bbls
CUM. MUD LOSSES	240 Bbls
CUM. GEL	8650 kg
CUM. BARITES	

MUD PROPERTIES	
Time	2345
Depth (m)	841
Temp (° C)	38
Mud Type	Poly/Phpa/Kcl
Density (ppg)	8.70
ECD (ppg)	9.09
Viscosity (sec)	38
PV / YP (cp/lb)	10 / 10
Gells (s/m)	2 / 3
API Filt. (cc)	8.5
Cake (/32")	1
Solids (% Vol)	1.4
Sand (% Vol)	0.25
MBT	5
pH (strip)	9
Chlorides (mg/l)	21000
KCL (%)	3.7
PHPA (ppb)	1.2
ALC - 50 (K)	
Circ. Vol. (Bbl)	491

CHEMICAL USAGE	
Caustic Soda	2
Defoam L	1
Idcide-20	4
JK-261	9
KCl Fine Tech- 25	70
Pac Reg	4
Sodium Sulphite	3
Xanthan Gum (P)	3

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		6.0
Cementing		13.0
Circ & Condition		1.5
Coring		
D/O Cement	1.5	9.0
Drilling	10.0	33.5
Handle BHA	0.5	4.0
LOT / FIT	0.5	0.5
N/U & Test BOP's	5.0	12.5
P & A		
Repairs		1.0
Rig Service	0.5	0.5
Safety		
Survey	1.0	2.5
Tight hole / Fishing		
Tripping	5.0	29.0
Wait on Cement		29.0
Wash / Ream		7.5
Well Control		
Well Test		
Wellhead		2.0
Wiper Trip		4.0
Wireline		
Other		36.5
TOTALS	24.0	192.0

DAILY MUD COSTS	$4,504.36
CUM. MUD COSTS	**$17,318.23**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	5:00	Pressure test BOPE as per the programme
5:00	5:30	Strap & clean BHA
5:30	10:30	Run in hole making up BHA, picking up DC's & laying out excess DP
10:30	11:00	Slip line
11:00	12:30	Drill out shoe track
12:30	13:00	Circulate to new mud & drill new hole from 520 to 523m
13:00	13:30	Leak Off Test to 15.4 ppg EMW
13:30	17:30	Drill 171mm hole from 523 to 684m
17:30	18:00	Wireline survey at 671m, mis-run
18:00	18:30	Drill 171mm hole from 684 to 694m
18:30	19:00	Wireline survey at 682m, 1/4 deg
19:00	0:00	Drill 171mm hole from 694 to 849m

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

13/02/03

REPORT # 09

WELL	**Banganna 01**	**24:00 DEPTH**	**1516m**	**24 HR PROG**	**667m**	**CUM. COSTS**	**$988,904**
RIG	Century Drilling # 11	**FORMATION**	Lwr Eumeralla Fm	**PTD**	2120m	**DAILY COSTS**	$48,151.80

OP's TO 06:00 Drilling at 1645m. Survey at 1581m, 1 deg

REMARKS: Schlumberger, Sperry Sun & Aust DST on site **PERSONNEL ON SITE:** 31

LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	**569psi**	**BOP TEST**	12/02/03	**TEST DUE**	26/02/03

AFD's: 54

SAFETY 1. General housekeeping; 2. Wireline surveys

WEATHER AM Overcast

PM Overcast

BIT INFORMATION			
WOB(kLb)	5-13	**JET V(fps)**	218
RPM	80-110	**H S I**	2.19
BIT NUMBER		**2**	
Size (in)		6.75	
Make		Hycalog	
Type		DS185GNVW	
IADC Code			
Serial Number		201917	
T.F.A.(")		0.518	
Depth In (m)		520	
Depth Out (m)		IN	
Total Meters		996	
Hours		31.5	
ROP		31.6	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	352
AV - DP (fpm)	259
AV - DC (fpm)	375
SPP (psi)	1400
SPP (calculated)	2090

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	84	**RATE**	84
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"
SCR: 400 @ 59		SCR: 450 @ 70	

SURVEYS	
.5° at 836m	1° at 1281m
.75° at 982m	.75° at 1435m
.75° at 1137m	

BHA # 2	
TOOL	**LENGTH**
DS185GNVW	0.25
NB Stabiliser	0.56
Pony DC	2.95
String Stabiliser	1.25
20 x 4.75" DC's	180.09
Drilling Jars	9.00
4 x 4.75" DC's	35.79
6 x 3.5" HWDP	55.66
BHA LENGTH (m)	285.55
BHA WEIGHT(kLb)	35.3
STRING WT (kLb)	94.0
HOOK LOAD (kLb)	92.0
WT BELOW JARS (kLb)	22.1
DRAG UP (kLb)	92.0
DRAG DOWN (kLb)	92.0
TORQUE ON (Amps/Rel.)	140-160
TORQUE OFF (Amps/Rel.)	30-50

ENVIRONMENTAL DATA	
FUEL ON SITE	8200 Litres
DAILY USAGE	3000 Litres
CUM. FUEL USED	16600 Litres
CUM. MUD MIXED	430 Bbls
CUM. MUD LOSSES	473 Bbls
CUM. GEL	8650 kg
CUM. BARITES	

MUD PROPERTIES	
Time	2345
Depth (m)	1503
Temp (° C)	41
Mud Type	Poly/Phpa/Kcl
Density (ppg)	9.00
ECD (ppg)	9.34
Viscosity (sec)	41
PV / YP (cp/lb)	12 / 12
Gells (s/m)	3 / 4
API Filt. (cc)	7
Cake (/32")	1
Solids (% Vol)	3.6
Sand (% Vol)	0.25
MBT	7.5
pH (strip)	9
Chlorides (mg/l)	20500
KCL (%)	3.8
PHPA (ppb)	1.65
ALC - 50 (K)	
Circ. Vol. (Bbl)	578

CHEMICAL USAGE	
Caustic Soda	8
Idcide-20	4
JK-261	16
KCl Fine Tech- 25	120
Pac Reg	6
Sodium Sulphite	5

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		6.0
Cementing		13.0
Circ & Condition		1.5
Coring		
D/O Cement		9.0
Drilling	21.5	55.0
Handle BHA		4.0
LOT / FIT		0.5
N/U & Test BOP's		12.5
P & A		
Repairs		1.0
Rig Service		0.5
Safety		
Survey	2.5	5.0
Tight hole / Fishing		
Tripping		29.0
Wait on Cement		29.0
Wash / Ream		7.5
Well Control		
Well Test		
Wellhead		2.0
Wiper Trip		4.0
Wireline		
Other		36.5
TOTALS	24.0	216.0

DAILY MUD COSTS	$5,251.80
CUM. MUD COSTS	**$22,570.03**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:30	Wireline survey at 836m, 1/2 deg
0:30	6:00	Drill 171mm hole from 849 to 994m
6:00	6:30	Wireline survey at 982m, 3/4 deg
6:30	11:00	Drill 171mm hole from 994 to 1149m
11:00	11:30	Wireline survey at 1137m, 3/4 deg
11:30	15:30	Drill 171mm hole from 1149 to 1294m
15:30	16:00	Wireline survet at 1281m, 1 deg
16:00	21:00	Drill 171mm hole from 1294 to 1448m
21:00	21:30	Wireline survey at 1435m, 3/4 deg
21:30	0:00	Drill 171mm hole from 1448 to 1516m

SUPERVISOR: Seton Porter **GEOLOGIST:** Ben Corbett **MUD CO:** IDFS

Oil Company of Australia

DAILY DRILLING REPORT

14/02/03

REPORT # 10

WELL	**Banganna 01**	**24:00 DEPTH**	**1859m**	**24 HR PROG**	**343m**	**CUM. COSTS**	**$1,057,710**
RIG	Century Drilling # 11	**FORMATION**	Killara Coals	**PTD**	2120m	**DAILY COSTS**	$68,805.52
OP's TO 06:00	Drilling at 1928m						
REMARKS:	Survey at 1881m, 2-1/4 deg					**PERSONNEL ON SITE:**	**31**
LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	**560psi**
BOP TEST	12/02/03	**TEST DUE**	26/02/03				
AFD's: 55	**SAFETY**	1. Operating rig tongs				**WEATHER AM**	Fine
		2. Front-end loader operations				**PM**	Fine

BIT INFORMATION			
WOB(kLb)	5-12	**JET V(fps)**	218
RPM	80-100	**H S I**	2.22
BIT NUMBER		**2**	
Size (in)		6.75	
Make		Hycalog	
Type		DS185GNVW	
IADC Code			
Serial Number		201917	
T.F.A.(")		0.518	
Depth In (m)			
Depth Out (m)		IN	
Total Meters		1859	
Hours		47.5	
ROP		39.1	
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	352
AV - DP (fpm)	259
AV - DC (fpm)	375
SPP (psi)	1650
SPP (calculated)	2430

PUMP #1		PUMP #2	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	84	**RATE**	84
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"
SCR: 550 @ 70		SCR: 650 @ 80	

SURVEYS
1° at 1581m
1.5° at 1736m

BHA # 2	
TOOL	**LENGTH**
DS185GNVW	0.25
NB Stabiliser	0.56
Pony DC	2.95
String Stabiliser	1.25
20 x 4.75" DC's	180.09
Drilling Jars	9.00
4 x 4.75" DC's	35.79
6 x 3.5" HWDP	55.66
BHA LENGTH (m)	285.55
BHA WEIGHT(kLb)	35.2
STRING WT (kLb)	110.2
HOOK LOAD (kLb)	107.0
WT BELOW JARS (kLb)	22.1
DRAG UP (kLb)	109.0
DRAG DOWN (kLb)	105.0
TORQUE ON (Amps/Rel.)	100-200
TORQUE OFF (Amps/Rel.)	40

ENVIRONMENTAL DATA	
FUEL ON SITE	19000 Litres
DAILY USAGE	2200 Litres
CUM. FUEL USED	18800 Litres
CUM. MUD MIXED	670 Bbls
CUM. MUD LOSSES	675 Bbls
CUM. GEL	8650 kg
CUM. BARITES	900 kg

MUD PROPERTIES	
Time	2345
Depth (m)	1841
Temp (° C)	54
Mud Type	Poly/Phpa/Kcl
Density (ppg)	9.10
ECD (ppg)	9.44
Viscosity (sec)	43
PV / YP (cp/lb)	12 / 13
Gells (s/m)	3 / 8
API Filt. (cc)	6.5
Cake (/32")	1
Solids (% Vol)	4.2
Sand (% Vol)	0.25
MBT	10
pH (strip)	9
Chlorides (mg/l)	25000
KCL (%)	3.4
PHPA (ppb)	1.7
ALC - 50 (K)	
Circ. Vol. (Bbl)	616

CHEMICAL USAGE	
Barytes OD	36
Caustic Soda	4
Idcide-20	2
JK-261	8
KCl Fine Tech- 25	70
Pac Reg	4
Sodium Sulphite	4

OPERATION	HRS	CUM
Air Rig up		
Casing		6.0
Cementing		13.0
Circ & Condition	2.5	4.0
Coring		
D/O Cement		9.0
Drilling	16.0	71.0
Handle BHA		4.0
LOT / FIT		0.5
N/U & Test BOP's		12.5
P & A		
Repairs		1.0
Rig Service	0.5	1.0
Safety		
Survey	1.0	6.0
Tight hole / Fishing		
Tripping		29.0
Wait on Cement		29.0
Wash / Ream	0.5	8.0
Well Control		
Well Test		
Wellhead		2.0
Wiper Trip	3.5	7.5
Wireline		
Other		36.5
TOTALS	24.0	240.0

DAILY MUD COSTS	$3,244.52
CUM. MUD COSTS	**$25,814.55**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	3:00	Drill 171mm hole from 1516 to 1593m
3:00	3:30	Wireline survey at 1581m, 1 deg
3:30	10:30	Drill 171mm hole from 1593 to 1748m
10:30	11:00	Wireline survey at 1736m, 1-1/2 deg
11:00	14:30	Drill 171mm hole from 1748 to 1806m
14:30	15:00	Circulate hole clean
15:00	18:00	Wiper trip up to shoe
18:00	18:30	Slip line
18:30	19:00	Run in hole
19:00	19:30	Wash & ream from 614 to 626m
19:30	21:30	Run in hole
21:30	22:00	Wash & ream from 1765 to 1806m
22:00	0:00	Drill 171mm hole from 1806 to 1845m

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett/Doug Short	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

15/02/03

REPORT # 11

WELL	**Banganna 01**	**24:00 DEPTH**	**2125m**	**24 HR PROG**	**266m**	**CUM. COSTS**	**$1,100,875**
RIG	Century Drilling # 11	**FORMATION**	Pretty Hill Fm	**PTD**	2120m	**DAILY COSTS**	$43,165.81
OP's TO 06:00	Circulate hole clean & hoist to log						
REMARKS:	Hole in good condition, TD survey 2-1/2 deg					**PERSONNEL ON SITE:**	**31**
LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	**551psi**
BOP TEST	12/02/03	**TEST DUE**	26/02/03				
AFD's: 56	**SAFETY**	1. BOP drills & procedures				**WEATHER AM**	Fine
		2. BOP drills & procedures				**PM**	Overcast

BIT INFORMATION			
WOB(kLb)	5-10	**JET V(fps)**	218
RPM	80-100	**H S I**	2.24
BIT NUMBER		**2**	
Size (in)		6.75	
Make		Hycalog	
Type		DS185GNVW	
IADC Code		M424	
Serial Number		201917	
T.F.A.(")		0.518	
Depth In (m)		520	
Depth Out (m)		2125	
Total Meters		1605	
Hours		67.5	
ROP		23.8	
Condition Out		1 3 CT N X I WT TD	

FLOW DATA	
CIRC. RATE (gpm)	352
AV - DP (fpm)	259
AV - DC (fpm)	375
SPP (psi)	1850
SPP (calculated)	2850

PUMP #1		PUMP #2	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE	84	**RATE**	84
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"
SCR: 650 @ 70		SCR: 800 @ 80	

SURVEYS
2.25° at 1881m
2° at 2035m

BHA # 2	
TOOL	**LENGTH**
DS185GNVW	0.25
NB Stabiliser	0.56
Pony DC	2.95
String Stabiliser	1.25
20 x 4.75" DC's	180.09
Drilling Jars	9.00
4 x 4.75" DC's	35.79
6 x 3.5" HWDP	55.66
BHA LENGTH (m)	285.55
BHA WEIGHT(kLb)	35.1
STRING WT (kLb)	122.7
HOOK LOAD (kLb)	118.0
WT BELOW JARS (kLb)	22.0
DRAG UP (kLb)	120.0
DRAG DOWN (kLb)	115.0
TORQUE ON (Amps/Rel.)	100-160
TORQUE OFF (Amps/Rel.)	40-50

ENVIRONMENTAL DATA	
FUEL ON SITE	16200 Litres
DAILY USAGE	2800 Litres
CUM. FUEL USED	21600 Litres
CUM. MUD MIXED	950 Bbls
CUM. MUD LOSSES	905 Bbls
CUM. GEL	8650 kg
CUM. BARITES	1650 kg

MUD PROPERTIES	
Time	2230
Depth (m)	2125
Temp (° C)	58
Mud Type	Poly/Phpa/Kcl
Density (ppg)	9.20
ECD (ppg)	9.60
Viscosity (sec)	41
PV / YP (cp/lb)	14 / 15
Gells (s/m)	3 / 7
API Filt. (cc)	6
Cake (/32")	1
Solids (% Vol)	4.9
Sand (% Vol)	0.5
MBT	10
pH (strip)	9
Chlorides (mg/l)	25000
KCL (%)	3.9
PHPA (ppb)	1.7
ALC - 50 (K)	
Circ. Vol. (Bbl)	687

CHEMICAL USAGE	
Barytes OD	30
Caustic Soda	3
Idcide-20	4
JK-261	9
KCl Fine Tech- 25	60
Pac Reg	5
Sodium Sulphite	4

OPERATION	HRS	CUM
Air Rig up		
Casing		6.0
Cementing		13.0
Circ & Condition	1.0	5.0
Coring		
D/O Cement		9.0
Drilling	20.0	91.0
Handle BHA		4.0
LOT / FIT		0.5
N/U & Test BOP's		12.5
P & A		
Repairs		1.0
Rig Service		1.0
Safety		
Survey	1.5	7.5
Tight hole / Fishing		
Tripping		29.0
Wait on Cement		29.0
Wash / Ream		8.0
Well Control		
Well Test		
Wellhead		2.0
Wiper Trip	1.5	9.0
Wireline		
Other		36.5
TOTALS	24.0	264.0

DAILY MUD COSTS	$3,465.81
CUM. MUD COSTS	**$29,280.36**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:30	Drill 171mm hole from 1845 to 1859m
0:30	1:00	Circulate sample
1:00	3:00	Drill 171mm hole from 1859 to 1893m
3:00	3:30	Wireline survey at 1881m, 2-1/4 deg
3:30	14:30	Drill 171mm hole from 1893 to 2048m
14:30	15:00	Wireline survey at 2035m, 2 deg
15:00	21:30	Drill 171mm hole from 2048 to 2125m
21:30	22:30	Circulate hole clean
22:30	0:00	Wiper trip up to 1700m & back

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett/Doug Short	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

16/02/03

REPORT # 12

WELL	**Banganna 01**	**24:00 DEPTH**	**2125m**	**24 HR PROG**		**CUM. COSTS**	**$1,187,498**
RIG	Century Drilling # 11	**FORMATION**	Pretty Hill Fm	**PTD**	2120m	**DAILY COSTS**	$86,623.00
OP's TO 06:00	Running in BHA to lay it out						
REMARKS:	Will run P & A plugs to abandon well					**PERSONNEL ON SITE:**	**33**
LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	**551psi**
BOP TEST	12/02/03	**TEST DUE**	26/02/03				
AFD's: 57	**SAFETY**	1. Trip out of hole				**WEATHER AM**	Overcast
		2. W/line logging & R-A tools				**PM**	Overcast

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	
RPM		**H S I**	
BIT NUMBER			
Size (in)			
Make			
Type			
IADC Code			
Serial Number			
T.F.A.(")			
Depth In (m)			
Depth Out (m)			
Total Meters			
Hours			
ROP			
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	
AV - DP (fpm)	
AV - DC (fpm)	
SPP (psi)	
SPP (calculated)	

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE		**RATE**	
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"

SURVEYS
2.5° at 2113m

TOOL	**LENGTH**
BHA LENGTH (m)	
BHA WEIGHT(kLb)	
STRING WT (kLb)	
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	14400 Litres
DAILY USAGE	1800 Litres
CUM. FUEL USED	23400 Litres
CUM. MUD MIXED	950 Bbls
CUM. MUD LOSSES	1005 Bbls
CUM. GEL	8650 kg
CUM. BARITES	2000 kg

MUD PROPERTIES	
Time	1800
Depth (m)	2125
Temp (° C)	
Mud Type	Poly/Phpa/Kcl
Density (ppg)	9.20
ECD (ppg)	
Viscosity (sec)	48
PV / YP (cp/lb)	17 / 18
Gells (s/m)	4 / 7
API Filt. (cc)	6
Cake (/32")	1
Solids (% Vol)	4.9
Sand (% Vol)	0.25
MBT	10
pH (strip)	9
Chlorides (mg/l)	25000
KCL (%)	3.9
PHPA (ppb)	1.7
ALC - 50 (K)	
Circ. Vol. (Bbl)	557

CHEMICAL USAGE	
Barytes OD	14
Idcide-20	1

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		6.0
Cementing		13.0
Circ & Condition	1.0	6.0
Coring		
D/O Cement		9.0
Drilling		91.0
Handle BHA		4.0
LOT / FIT		0.5
N/U & Test BOP's		12.5
P & A		
Repairs		1.0
Rig Service		1.0
Safety		
Survey		7.5
Tight hole / Fishing		
Tripping	5.0	34.0
Wait on Cement		29.0
Wash / Ream		8.0
Well Control		
Well Test		
Wellhead		2.0
Wiper Trip	0.5	9.5
Wireline	17.5	17.5
Other		36.5
TOTALS	24.0	288.0

DAILY MUD COSTS	$203.00
CUM. MUD COSTS	**$29,483.36**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	0:30	Run in hole on wiper trip
0:30	1:30	Circulate hole clean
1:30	6:30	Hoist to log
6:30	7:00	Rig up Schlumberger, safety meeting
7:00	12:00	Logging with Schlumberger, run #1. Tool failed, POH & rectify problem
12:00	17:00	Logging with Schlumberger, run #1, PEX-Sonic
17:00	0:00	Run Velocity survey

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett/Doug Short	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

17/02/03

REPORT # 13

WELL	**Banganna 01**	**24:00 DEPTH**	**2125m**	**24 HR PROG**		**CUM. COSTS**	**$1,280,708**
RIG	Century Drilling # 11	**FORMATION**	Pretty Hill	**PTD**	2120m	**DAILY COSTS**	$93,210.00
OP's TO 06:00	Nippling down BOP's after tagging cement at 495m & laying down pipe						
REMARKS:	A 10m surface cement plug will be run in casing					**PERSONNEL ON SITE:**	**33**
LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	
BOP TEST	12/02/03	**TEST DUE**	26/02/03				
AFD's: 58	**SAFETY**	1. Run in hole with drill pipe				**WEATHER AM**	Fine & windy
		2. General floor operations				**PM**	Fine & windy

BIT INFORMATION			
WOB(kLb)		**JET V(fps)**	
RPM		**H S I**	
BIT NUMBER			
Size (in)			
Make			
Type			
IADC Code			
Serial Number			
T.F.A.(")			
Depth In (m)			
Depth Out (m)			
Total Meters			
Hours			
ROP			
Condition Out			

FLOW DATA	
CIRC. RATE (gpm)	
AV - DP (fpm)	
AV - DC (fpm)	
SPP (psi)	
SPP (calculated)	

PUMP #1		**PUMP #2**	
Gardner Denver PZ-7		**Gardner Denver PZ-7**	
RATE		**RATE**	
LINER	5.5"	**LINER**	5.5"
STROKE	7.0"	**STROKE**	7.0"

SURVEYS	

TOOL	**LENGTH**
BHA LENGTH (m)	
BHA WEIGHT(kLb)	
STRING WT (kLb)	
HOOK LOAD (kLb)	
WT BELOW JARS (kLb)	
DRAG UP (kLb)	
DRAG DOWN (kLb)	
TORQUE ON (Amps/Rel.)	
TORQUE OFF (Amps/Rel.)	

ENVIRONMENTAL DATA	
FUEL ON SITE	13400 Litres
DAILY USAGE	1000 Litres
CUM. FUEL USED	24400 Litres
CUM. MUD MIXED	950 Bbls
CUM. MUD LOSSES	1005 Bbls
CUM. GEL	8650 kg
CUM. BARITES	2000 kg

MUD PROPERTIES
Time
Depth (m)
Temp (° C)
Mud Type
Density (ppg)
ECD (ppg)
Viscosity (sec)
PV / YP (cp/lb)
Gells (s/m)
API Filt. (cc)
Cake (/32")
Solids (% Vol)
Sand (% Vol)
MBT
pH (strip)
Chlorides (mg/l)
KCL (%)
PHPA (ppb)
ALC - 50 (K)
Circ. Vol. (Bbl)

CHEMICAL USAGE	

OPERATION	**HRS**	**CUM**
Air Rig up		
Casing		6.0
Cementing		13.0
Circ & Condition	1.5	7.5
Coring		
D/O Cement		9.0
Drilling		91.0
Handle BHA		4.0
LOT / FIT		0.5
N/U & Test BOP's		12.5
P & A	4.0	4.0
Repairs		1.0
Rig Service		1.0
Safety		
Survey		7.5
Tight hole / Fishing		
Tripping	13.5	47.5
Wait on Cement		29.0
Wash / Ream		8.0
Well Control		
Well Test		
Wellhead		2.0
Wiper Trip		9.5
Wireline	5.0	22.5
Other		36.5
TOTALS	24.0	312.0

DAILY MUD COSTS	
CUM. MUD COSTS	**$29,483.36**
AFE COST - C&S	$1,432,920
AFE COST - P&A	$1,269,954
AFE COST - C&C	$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	4:00	Run Velocity survey
4:00	5:00	Rig down Schlumberger & re-start generator
5:00	9:30	Run in BHA & lay it out
9:30	13:00	Run in hole open-ended
13:00	14:00	Circulate hole clean
14:00	15:30	Run Plug #1, 1960 - 1885m, & Plug #2, 1885 - 1810m. 55 sacks each
15:30	19:30	Hoist laying out pipe
19:30	22:00	Run Plug #3, 780 - 700m, 70 sacks. Plug #4, 690 - 630m, 45 sacks. Plug #5, 580 - 490m, 70 sacks
22:00	22:30	Pull up 8 stands & circulate hole clean
22:30	0:00	Hoist laying out pipe

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

Oil Company of Australia

DAILY DRILLING REPORT

18/02/03

REPORT # 14

WELL	**Banganna 01**	**24:00 DEPTH**	**2125m**	**24 HR PROG**		**CUM. COSTS**	**$1,313,518**
RIG	Century Drilling # 11	**FORMATION**	Pretty Hill	**PTD**	2120m	**DAILY COSTS**	$32,810.00
OP's TO 06:00	Rig released at 12 noon, 18-2-03						
REMARKS:	All operator's materials moved off site to Portland					**PERSONNEL ON SITE:**	**26**
LAST CASING	7 5/8"	**SET AT**	518.0m	**LOT**	15.4ppg	**MAASP**	
BOP TEST	12/02/03	**TEST DUE**	26/02/03				
AFD's: 59	**SAFETY**	1. Nipple down BOP's 2. Rigging down				**WEATHER AM** **PM**	Overcast Overcast

BIT INFORMATION						**MUD PROPERTIES**	**OPERATION**	**HRS**	**CUM**
WOB(kLb)		**JET V(fps)**		**TOOL**	**LENGTH**	Time	Air Rig up		
RPM		**H S I**				Depth (m)	Casing		6.0
BIT NUMBER						Temp (° C)	Cementing		13.0
Size (in)						Mud Type	Circ & Condition	0.5	8.0
Make						Density (ppg)	Coring		
Type						ECD (ppg)	D/O Cement		9.0
IADC Code						Viscosity (sec)	Drilling		91.0
Serial Number						PV / YP (cp/lb)	Handle BHA		4.0
T.F.A.(")						Gells (s/m)	LOT / FIT		0.5
Depth In (m)						API Filt. (cc)	N/U & Test BOP's	5.5	18.0
Depth Out (m)						Cake (/32")	P & A		4.0
Total Meters						Solids (% Vol)	Repairs		1.0
Hours						Sand (% Vol)	Rig Service		1.0
ROP						MBT	Safety		
Condition Out				**BHA LENGTH (m)**		pH (strip)	Survey		7.5
FLOW DATA				**BHA WEIGHT(kLb)**		Chlorides (mg/l)	Tight hole / Fishing		
CIRC. RATE (gpm)				**STRING WT (kLb)**		KCL (%)	Tripping	2.5	50.0
AV - DP (fpm)				**HOOK LOAD (kLb)**		PHPA (ppb)	Wait on Cement	1.5	30.5
AV - DC (fpm)				**WT BELOW JARS (kLb)**		ALC - 50 (K)	Wash / Ream		8.0
SPP (psi)				**DRAG UP (kLb)**		Circ. Vol. (Bbl)	Well Control		
SPP (calculated)				**DRAG DOWN (kLb)**		**CHEMICAL USAGE**	Well Test		
PUMP #1		**PUMP #2**		**TORQUE ON (Amps/Rel.)**			Wellhead	2.0	4.0
Gardner Denver PZ-7		**Gardner Denver PZ-7**		**TORQUE OFF (Amps/Rel.)**			Wiper Trip		9.5
RATE		**RATE**		**ENVIRONMENTAL DATA**			Wireline		22.5
LINER	5.5"	**LINER**	5.5"	FUEL ON SITE			Other		36.5
STROKE	7.0"	**STROKE**	7.0"	DAILY USAGE			**TOTALS**	12.0	324.0
				CUM. FUEL USED	37800 Litres		DAILY MUD COSTS		
SURVEYS				CUM. MUD MIXED	950 Bbls		CUM. MUD COSTS		**$29,483.36**
				CUM. MUD LOSSES	1005 Bbls		**AFE COST - C&S**		$1,432,920
				CUM. GEL	8650 kg		**AFE COST - P&A**		$1,269,954
				CUM. BARITES	2000 kg		**AFE COST - C&C**		$1,461,994

HOURLY OPERATIONS SUMMARY 0000 to 2400

From	To	Description
0:00	1:30	Wait on cement. Clean mud tanks, load pipe bins
1:30	2:30	Run in hole & tag cement at 495m
2:30	3:30	Lay down drill pipe
3:30	4:00	Flush BOP's with water
4:00	4:30	Lay down drill pipe
4:30	6:00	Lay down kelly. Nipple down BOP's
6:00	10:00	Nipple down BOP's
10:00	12:00	Remove Bradenhead, run 10m surface cement plug. Clean mud tanks. Affix marker to well & weld on plate over casing

SUPERVISOR:	Seton Porter	**GEOLOGIST:**	Ben Corbett	**MUD CO:**	IDFS

APPENDIX 6

DAILY GEOLOGICAL REPORTS

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	1	**DAYS FROM SPUD:**	1	**DATE:**	6/02/03
0000 hrs DEPTH:	14m	**LAST DEPTH:**	12m	**24 HR PROGRESS:**	2m	**PTD:**	2120.0
0600 OPS:	Drilling ahead in Port Campbell Limestone.						
REMARKS:	Losses at approx 45m, mixed gel and enerseal, unable to collected usable cuttings sample (often no returns). Logging unit currently without RPM, mud pit levels, total gas, chromatographic gas, CO2, H2S monitoring. Expect all to be online today.						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**			Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

		All Depth are in METERS M.D.				Offset Wells	
						Taralea 1	Killara 1
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**11.2**	45.2	23.7	34	H	40	36
*Gellibrand Marl		149.9	-81.0			133	307
*Clifton Formation		380.9	-312.0			376	-
*Dilwyn Formation		411.9	-343.0			401	383
*Pember Mudstone		500.9	-432.0			485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description									
6	-	40	0.5– 3.5 (1.3)	Sandstone with Interbedded Limestone SANDSTONE: 70-80% translucent to transparent, white to light yellow, fine to medium, predominately fine, moderate sorting, subangular to rounded, well rounded in places, calcareous cement in places, loose, good inferred porosity. No fluorescence. LIMESTONE: 20-30%, white, occasional light yellow, very fine to medium grains, occasional coarse fossil fragment, predominately calcsiltite, fossiliferous, firm to moderate hard. BASALT: Trace-5%, black, dark brown, very fine to fine crystals, olivine, plagioclase, vesicular.									
Gas			**Units :**	0	**Composition (%) :**	100	/		/		/		/	
Show Details			Nil										
40	-	60	0.5 – 3.5 (2.0)	No Sample.									
Gas			**Units :**	0	**Composition (%) :**	100	/		/		/		/	
Show Details			Nil										

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	2	**DAYS FROM SPUD:**	2	**DATE:**	7/02/03
0000 hrs DEPTH:	100m	**LAST DEPTH:**	14m	**24 HR PROGRESS:**	86m	**PTD:**	2120.0
0600 OPS:	Making up BHA						
REMARKS:	Well cemented in order to cure losses. All mudlogging parameters now online.						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date: 5/2/03 @22:00 hrs
TD Reached Date -
Rig release Date: -
Rig Century Drilling Rig 11

TD = - **Metres R.T.**
G.L = 63.7 **Metres R.T.**
R.T. = 68.9 **Metres R.T.**

Surface Location
Latitude: 38°12'27.66"
Longitude: 142°10'50.62"
340mm Casing Depth: =
194mm Casing Depth: =

Eastings: 603373.4
Northings: 5770482.7
6 Metres
Metres

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

All Depth are in METERS M.D.

FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**Offset Wells Taralea 1 (mRT)**	**Offset Wells Killara 1 (mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**11.2**	45.2	23.7	34	H	40	36
*Gellibrand Marl		149.9	-81.0			133	307
*Clifton Formation		380.9	-312.0			376	-
*Dilwyn Formation		411.9	-343.0			401	383
*Pember Mudstone		500.9	-432.0			485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description									
40	-	100	0.5– 3.5 (1.0)	No samples, likely Port Campbell Limestone.									
Gas			**Units :**	0	**Composition (%) :**	100	/		/		/		/
Show Details			Nil										

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	3	**DAYS FROM SPUD:**	3	**DATE:**	8/02/03
0000 hrs DEPTH:	229m	**LAST DEPTH:**	100m	**24 HR PROGRESS:**	129m	**PTD:**	2120.0
0600 OPS:	RIH after filling mud tanks.						
REMARKS:	No returns, unable to collect samples.						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) 1916.9 mRT	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**			Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**11.2**	45.2	23.7	34	H	40	36
*Gellibrand Marl	**195(?)**	149.9	-81.0	45	L	133	307
*Clifton Formation		380.9	-312.0			376	-
*Dilwyn Formation		411.9	-343.0			401	383
*Pember Mudstone		500.9	-432.0			485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description									
100	-	230	0.28–3.21 (.78)	No sample.									
Gas			**Units :**	0	**Composition (%) :**	100	/		/		/		/
Show Details			Nil										

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	4	**DAYS FROM SPUD:**	4	**DATE:**	9/02/03
0000 hrs DEPTH:	248m	**LAST DEPTH:**	229m	**24 HR PROGRESS:**	19m	**PTD:**	2120.0
0600 OPS:	RIH, washing through cement plugs						
REMARKS:	No returns, unable to collect samples.						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**			Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**11.2**	45.2	23.7	34	H	40	36
*Gellibrand Marl	**195(?)**	149.9	-81.0	45	L	133	307
*Clifton Formation		380.9	-312.0			376	-
*Dilwyn Formation		411.9	-343.0			401	383
*Pember Mudstone		500.9	-432.0			485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description									
230	-	250	1.0–1.86 (1.6)	No samples.									
Gas			**Units :**	0	**Composition (%) :**	100	/		/		/		/
Show Details			Nil										

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	5	**DAYS FROM SPUD:**	5	**DATE:**	10/02/03
0000 hrs DEPTH:	248m	**LAST DEPTH:**	248m	**24 HR PROGRESS:**	0m	**PTD:**	2120.0
0600 OPS:	Drilling ahead in the Gellibrand Marl at 287m.						
REMARKS:	Losses cured, commenced drilling ahead with full returns at 05:00 hrs 10/02/03.						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**			Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**11.2**	45.2	23.7	34	H	40	36
*Gellibrand Marl	**195(?)**	149.9	-81.0	45	L	133	307
*Clifton Formation		380.9	-312.0			376	-
*Dilwyn Formation		411.9	-343.0			401	383
*Pember Mudstone		500.9	-432.0			485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description									
250	-	290	0.29-1.61 (0.67)	MARL (calcareous silty claystone): 100%, medium grey, light grey to white in places, very fine, trace silt, abundant fine to very coarse calcite aggregates and fossiliferous material, trace fine quartz, trace glauconite very soft, sticky, non fissile, very poor visual porosity. Nil hydrocarbon fluorescence (trace mineral fluorescence).									
Gas			**Units :**	0	**Composition (%) :**		/		/		/		/	
Show Details			Nil											

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	6	**DAYS FROM SPUD:**	6	**DATE:**	11/02/03
0000 hrs DEPTH:	520m	**LAST DEPTH:**	248m	**24 HR PROGRESS:**	272m	**PTD:**	2120.0
0600 OPS:	Running surface casing						
REMARKS:	Casing shoe set in Pember Mudstone						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**		520	Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
	All Depth are in METERS M.D.					**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**30.**	45.2	23.7	15	H	40	36
*Gellibrand Marl	**149.9(?)**	149.9	-81.0	-		133	307
*Clifton Formation	**377**	380.9	-312.0	3.9	H	376	-
*Dilwyn Formation	**404**	411.9	-343.0	7.9	H	401	383
*Pember Mudstone	**482**	500.9	-432.0	18.9	H	485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description
290	-	377	0.35-1.01 (0.63)	MARL: light to medium grey, off white in places, very fine, fine in places, abundant fine to very coarse calcite grains, predominately calcarenite, common fossil material, trace fine quartz, soft, sticky, non fissile, calcite grains firm to hard, poor visual porosity, grading to limestone in places. Nil hydrocarbon fluorescence.

Gas	Units :	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
377	-	404	0.38-2.54 (1.09)	LIMESTONE: white to pale yellow/orange, moderate to bright orange in places, fine to medium, trace coarse and very coarse grains, abundant fossil material, common crystalline and microcrystalline carbonate cement, iron stained, firm to hard, minor grey clay matrix, silty in places, trace fine to coarse loose quartz, fair inferred porosity, good in places. Nil fluorescence.

Gas	Units :	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
404	-	440	0.13-7.67 (1.08)	SANDSTONE interbedded with Limestone and trace CLAYSTONE: SANDSTONE, translucent to transparent, white to light grey, fine to very coarse, predominately fine to medium, moderate sorted, sub angular to rounded, trace argillaceous matrix, rare mica, trace pyrite, loose, good inferred porosity, Nil fluorescence. LIMESTONE, white to pale orange, fine to coarse calcite grains, commonly fossiliferous, trace microcrystalline cement, firm to hard, minor iron stained grains, fair to good inferred porosity. Nil fluorescence. CLAYSTONE, light to moderate grey, silty in places, carbonaceous specks, soft, amorphous to subfissile, dispersive.

Gas	Units :	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
440	-	482	0.4-9.17 (2.00)	SANDSTONE: translucent to transparent, white to light grey, fine to very coarse, poorly sorted, subangular to rounded, loose, trace moderate hard aggregates, trace pyrite and mica, minor calcareous cement, trace argillaceous matrix, good inferred porosity. Nil fluorescence.

Gas	Units :	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
482	-	520	0.33-6.89 **(**1.46**)**	CLAYSTONE with rare to trace SANDSTONE CLAYSTONE, medium to dark brown, grey in places, arenaceous, rare calcareous fragments, trace carbonaceous specks, trace mica and pyrite, very soft to soft, amorphous, highly dispersive, grades to siltstone in places. SANDSTONE, translucent to transparent, white to light grey, fine to very coarse, poorly sorted, subangular to rounded, loose, trace pyrite and mica, minor calcareous cement, trace argillaceous matrix, fair inferred porosity. Nil fluorescence.

Gas	**Units :**	0	**Composition (%) :**		/		/		/		/	
Show Details	Nil											

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	7	**DAYS FROM SPUD:**	7	**DATE:**	12/02/03
0000 hrs DEPTH:	520m	**LAST DEPTH:**	520m	**24 HR PROGRESS:**	0m	**PTD:**	2120.0
0600 OPS:	RIH to drill out casing shoe.						
REMARKS:							

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) 1916.9 mRT	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**		518	Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**30.**	45.2	23.7	15	H	40	36
*Gellibrand Marl	**149.9(?)**	149.9	-81.0	-		133	307
*Clifton Formation	**377**	380.9	-312.0	3.9	H	376	-
*Dilwyn Formation	**404**	411.9	-343.0	7.9	H	401	383
*Pember Mudstone	**482**	500.9	-432.0	18.9	H	485	423
*Pebble Point Formation		555.9	-487.0			523	440
*Paaratte Formation		580.9	-512.0			547	481
Skull Creek Mudstone		636.9	-568.0			589	513
Nullawarre Greensand		661.9	-593.0			601	526
Belfast Mudstone		682.9	-614.0			625	543
*Flaxmans / Waarre Fms		724.9	-656.0			682	578
*Eumeralla Formation		762.9	-694.0			693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	8	**DAYS FROM SPUD:**	8	**DATE:**	13/02/03
0000 hrs DEPTH:	849m	**LAST DEPTH:**	520m	**24 HR PROGRESS:**	329m	**PTD:**	2120.0
0600 OPS:	Drilling ahead in Eumeralla Formation at 993m.						
REMARKS:							

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**		518	Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**30**	45.2	23.7	15	H	40	36
*Gellibrand Marl	**149.9(?)**	149.9	-81.0	-		133	307
*Clifton Formation	**377**	380.9	-312.0	3.9	H	376	-
*Dilwyn Formation	**404**	411.9	-343.0	7.9	H	401	383
*Pember Mudstone	**482**	500.9	-432.0	18.9	H	485	423
*Pebble Point Formation	**540**	555.9	-487.0	15.9	H	523	440
*Paaratte Formation	**565**	580.9	-512.0	15.9	H	547	481
Skull Creek Mudstone	**640**	636.9	-568.0	3.1	L	589	513
Nullawarre Greensand	**670**	661.9	-593.0	8.1	L	601	526
Belfast Mudstone	**700**	682.9	-614.0	17.1	L	625	543
*Flaxmans / Waarre Fms	**726**	724.9	-656.0	1.1	L	682	578
*Eumeralla Formation	**753**	762.9	-694.0	9.9	H	693	589
Fault Zone		1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description
520	-	535	0.62-1.71 (1.36)	CLAYSTONE interbedded with trace SANDSTONE. CLAYSTONE, medium to dark brown, arenaceous, rare calcareous fragments, trace carbonaceous specks, trace mica and pyrite, trace glayconite, very soft to soft, amorphous, highly dispersive, grades to siltstone in places. SANDSTONE, translucent to transparent, white to light grey, fine to very coarse, poorly sorted, subangular to rounded, loose, trace pyrite and mica, minor calcareous cement, trace argillaceous matrix, fair inferred porosity. Nil fluorescence.

Gas	ppm :	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
535	-	565	0.27-0.98 (0.49)	CLAYSTONE interbedded with SANDSTONE. CLAYSTONE, dark brown green, medium green in places, silty, minor carbonaceous specks and fragments, soft to firm, trace moderate hard, amorphous to sub blocky. SANDSTONE, translucent to transparent, fine to very coarse, predominately coarse, poorly sorted, subangular, minor subrounded, minor argillaceous matrix, predominately loose, poor to fair porosity. Nil fluorescence.

Gas	ppm:	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
565	-	640	0.30-1.93 (0.85)	CLAYSTONE interbedded with SANDSTONE. CLAYSTONE, dark grey, grey brown, arenaceous, minor carbonaceous, soft to firm, amorphous, common dispersive, darker harder fragments grade to siltstone. SANDSTONE, translucent to transparent, light grey, fine to medium , trace coarse, moderate to well sorted, subangular to subrounded, argillaceous, trace calcareous grains and mica, loose, fair inferred porosity. Nil fluorescence.

Gas	ppm :	0	Composition (%) :	/	/	/	/
Show Details	Nil						

Interval			ROP (ave)	Lithology Description
640	-	670	0.57-3.53 (1.2)	CLAYSTONE interbedded with trace SANDSTONE. SANDSTONE, translucent and white, very fine to fine aggregates, fine to medium loose, trace coarse, poor sorting, subangular to subrounded, trace white argillaceous matrix, minor calcareous cement, trace carbonaceous specks, aggregates firm, very poor visual porosity, poor inferred porosity, Nil fluorescence. CLAYSTONE, medium to dark brown, grey brown, minor white argillaceous material, minor arenaceous fine to medium, trace coarse and very coarse, trace carbonaceous, trace pyrite, rare calcareous cement and fragments, soft to firm, amorphous, dispersive in places, commonly grades to siltstone.

Gas	ppm :	0	Composition (%) :		/		/		/		/	
Show Details	Nil											

Interval			ROP (ave)	Lithology Description
670	-	700	0.73-3.87 (1.32)	CLAYSTONE interbedded with SANDSTONE. CLAYSTONE , medium brown, grey brown, arenaceous in part, trace carbonaceous specks, trace mica, soft, amorphous, dispersive, trace grades to siltstone. SANDSTONE, translucent to translucent, light grey to off white, predominately loose, fine to coarse, generally medium, subangular, rounded in places, minor very fine to aggregates, trace white argillaceous matrix, minor calcareous grains and cement, rare pyrite, trace carbonaceous material, trace glauconite, very poor to poor visual porosity, poor inferred porosity. Nil fluorescence.

Gas	ppm	2 (max)	Composition (%) :	100	/		/		/		/	
Show Details	Nil											

Interval			ROP (ave)	Lithology Description
700	-	726	0.60-2.00 (1.08)	CLAYSTONE. CLAYSTONE, dark brown, brown grey, very fine arenaceous, trace medium and coarse loose quartz grains, trace pyrite, trace carbonaceous specks and fragments, trace mica, very occasional calcite, soft, amorphous, dispersive.

Gas	ppm :	2 (max)	Composition (%) :	100	/		/		/		/	
Show Details	Nil											

Interval			ROP (ave)	Lithology Description
726	-	753	0.21-8.26 (1.75)	CLAYSTONE interbedded with trace SANDSTONE . CLAYSTONE, medium to dark grey, brown grey, very fine arenaceous, trace medium and coarse loose quartz grains, trace pyrite, minor to comon carbonaceous specks and fragments, trace mica, very occasional calcite, soft, amorphous, dispersive. SANDSTONE, translucent to translucent, light grey to off white, predominately loose, fine to coarse, generally medium, subangular, rounded in places, minor very fine to aggregates, trace white argillaceous matrix, minor calcareous grains and cement, rare pyrite, trace carbonaceous material, very poor to poor visual porosity, poor inferred porosity. Nil fluorescence.

Gas	ppm :	307 (max)	Composition (%) :	100	/		/		/		/	

Show Details	Nil

Interval			**ROP (ave)**	**Lithology Description**								
753	-	783	0.66-4.07 **(**2.44**)**	SILTSTONE interbedded with trace to minor CLAYSTONE. SILTSTONE, medium to dark brown, dark green brown, argillaceous, trace medium loose quartz and lithics, trace carbonaceous, firm to moderately hard, subblocky. CLAYSTONE, medium to dark grey, silty in places, trace arenaceous, rare carbonaceous specks, trace mica and pyrite, trace calcareous fragments, soft, amorphous, dispersive.								
Gas			**ppm :**	83 (max)	**Composition (%) :**	100	/		/		/		/	
Show Details			Nil											

Interval			**ROP (ave)**	**Lithology Description**								
783	-	810	0.36-1.2 **(**0.64**)**	CLAYSTONE. CLAYSTONE, medium to dark grey, silty in places, trace arenaceous, rare carbonaceous specks, trace mica and pyrite, trace calcareous fragments, trace glauconite, soft, amorphous, dispersive.								
Gas			**ppm :**	263 (max)	**Composition (%) :**	100	/		/		/		/	
Show Details			Nil											

Interval			**ROP (ave)**	**Lithology Description**								
810	-	995	0.45-3.73 **(**1.16**)**	CLAYSTONE interbedded with SANDSTONE. SANDSTONE, light grey to off white, very fine to fine, trace medium, subangular to rounded, well sorted, minor white argillaceous matrix, trace calcareous cement, trace silica cement and overgrowths trace carbonaceous specks, soft to firm aggregates, poor visual porosity. Nil fluorescence. CLAYSTONE, light to medium grey, trace to rare carbonaceous specks, trace mica, soft to firm, amorphous to subblocky, minor dispersive, grades to very fine arenaceous in places.								
Gas			**ppm :**	507 (max)	**Composition (%) :**	100	/		/		/		/	
Show Details			Nil											

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	9	**DAYS FROM SPUD:**	9	**DATE:**	14/02/03
0000 hrs DEPTH:	1516m	**LAST DEPTH:**	849m	**24 HR PROGRESS:**	667m	**PTD:**	2120.0
0600 OPS:	Drilling ahead in Eumeralla Formation at 1645m						
REMARKS:	Formation description consistent from 815m..						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**		518	Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**30**	45.2	23.7	15	H	40	36
*Gellibrand Marl	**149.9(?)**	149.9	-81.0	-		133	307
*Clifton Formation	**377**	380.9	-312.0	3.9	H	376	-
*Dilwyn Formation	**404**	411.9	-343.0	7.9	H	401	383
*Pember Mudstone	**482**	500.9	-432.0	18.9	H	485	423
*Pebble Point Formation	**540**	555.9	-487.0	15.9	H	523	440
*Paaratte Formation	**565**	580.9	-512.0	15.9	H	547	481
Skull Creek Mudstone	**640**	636.9	-568.0	3.1	L	589	513
Nullawarre Greensand	**670**	661.9	-593.0	8.1	L	601	526
Belfast Mudstone	**700**	682.9	-614.0	17.1	L	625	543
*Flaxmans / Waarre Fms	**726**	724.9	-656.0	1.1	L	682	578
*Eumeralla Formation	**753**	762.9	-694.0	9.9	H	693	589
Fault Zone	-	1066.9	-998.0			-	-
*Eumeralla Formation		1209.9	-1141.0			-	-
*Killara Coals		1805.9	-1737.0			2472	1637
*Laira Formation		1878.9	-1810.0			2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description
995	-	1350	0.35-4.91 (0.86)	CLAYSTONE interbedded with SANDSTONE. SANDSTONE, light grey to off white, very fine to fine, trace medium, subangular to rounded, moderate to well sorted, minor white argillaceous matrix, trace calcareous cement, trace silica cement and overgrowths, trace carbonaceous specks, soft to firm aggregates, poor visual porosity. Nil fluorescence. CLAYSTONE, light to medium grey, trace to rare carbonaceous specks, trace mica, soft to firm, amorphous to subblocky, minor dispersive, minor grades to very fine arenaceous.

Gas	Units :	0-8	Composition (%) :	100	/	Tr	/		/		/	
Show Details	Nil											

Interval			ROP (ave)	Lithology Description
1350	-	1645	0.35-7.31 (1.2)	SANDSTONE interbedded with CLAYSTONE. SANDSTONE, off white to light grey, very fine to fine, trace medium, well sorted, subangular to subrounded, minor white argillaceous matrix, trace carbonaceous specks and mica, soft to firm aggregates, moderately calcareous, poor visual porosity. Nil fluorescence. CLAYSTONE, light to moderate grey to grey-brown, occasionally moderate brown, also dark grey and greenish grey, soft to firm, trace carbonaceous material, amorphous to sub-blocky, grades to siltstone.

Gas	Units :	1-14	Composition (%) :	98	/	2	/	Tr	/		/	
Show Details	Nil											

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	10	**DAYS FROM SPUD:**	10	**DATE:**	15/02/03
0000 hrs DEPTH:	1845m	**LAST DEPTH:**	1516m	**24 HR PROGRESS:**	329m	**PTD:**	2120.0
0600 OPS:	Drilling ahead at 1928m						
REMARKS:							

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**		518	Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
		All Depth are in METERS M.D.				**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**30**	45.2	23.7	15	H	40	36
*Gellibrand Marl	**149.9(?)**	149.9	-81.0	-		133	307
*Clifton Formation	**377**	380.9	-312.0	3.9	H	376	-
*Dilwyn Formation	**404**	411.9	-343.0	7.9	H	401	383
*Pember Mudstone	**482**	500.9	-432.0	18.9	H	485	423
*Pebble Point Formation	**540**	555.9	-487.0	15.9	H	523	440
*Paaratte Formation	**565**	580.9	-512.0	15.9	H	547	481
Skull Creek Mudstone	**640**	636.9	-568.0	3.1	L	589	513
Nullawarre Greensand	**670**	661.9	-593.0	8.1	L	601	526
Belfast Mudstone	**700**	682.9	-614.0	17.1	L	625	543
*Flaxmans / Waarre Fms	**726**	724.9	-656.0	1.1	L	682	578
*Eumeralla Formation	**753**	762.9	-694.0	9.9	H	693	589
Fault Zone	**-**	1066.9	-998.0			-	-
*Eumeralla Formation	**-**	1209.9	-1141.0			-	-
*Killara Coals	**1798**	1805.9	-1737.0	7.9	H	2472	1637
*Laira Formation	**1855.5**	1878.9	-1810.0	22.9	H	2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH		**2120.0**	**-2051.1**				

Interval			ROP (ave)	Lithology Description
1645	-	1798	1.05-4.79 (1.98)	SANDSTONE thinly interbedded / grading to arenaceous CLAYSTONE. SANDSTONE, light grey to off white, very fine to fine, trace medium, subangular to rounded, moderate to well sorted, minor to common argillaceous matrix (dispersive), trace calcareous cement, trace silica cement and overgrowths, trace carbonaceous specks, soft to firm aggregates, poor visual porosity. Nil fluorescence. CLAYSTONE, medium grey, minor dark grey, trace to rare carbonaceous specks, trace mica, soft to firm, amorphous to subblocky, minor dispersive, very fine to fine arenaceous, silty in places.

Gas	Units :	0-8	Composition (%) :	98	/	2	/	Tr	/		/	
Show Details	Nil											

Interval			ROP (ave)	Lithology Description
1798		1856	1.17-5.99 (2.42)	SILTSTONE grading to CLAYSTONE with interbedded SANDSTONE and trace COAL. SILTSTONE, off white, light to moderate brown, minor pale to moderate grey, soft to firm, argillaceous, common very fine carbonaceous specks / laminae, minor very dark green to black glauconite nodules. SANDSTONE, white to off white, very fine, sub-rounded, moderate to well sorted, feldspathic, abundant clay matrix, calcareous, friable to moderately hard, very poor porosity. Nil fluorescence. COAL, dark brown, black, sub-vitreous, brittle to firm, subfissile.

Gas	Units :	2-8	Composition (%) :	100	/	Tr	/		/		/	
Show Details	Nil											

Interval			ROP (ave)	Lithology Description
1856		1929	0.65-9.97 (2.39)	SANDSTONE with occasional minor SILTSTONE interbeds. SANDSTONE, white to cream, very fine to coarse, occasionally very coarse, sub-angular to sub-rounded, poor to moderately sorted, rare pink garnet, rare pyrite, trace dark green to black glauconite nodules, moderate clay matrix, moderately calcareous, weak silica cement, friable to firm, fair porosity, good porosity in places. Nil fluorescence. SILTSTONE, light to moderate brown to grey-brown, soft to firm, sub-fissile to sub-blocky, common very fine carbonaceous specks and laminae, occasionally grading to very fine silty sandstone, occasionally dark brown and argillaceous with dark green-black glauconite nodules.

Gas	Units :	2-21	Composition (%) :	98	/	2	/	Tr	/		/	
Show Details	Nil											

ORIGIN ENERGY LIMITED
DAILY GEOLOGICAL REPORT

WELL:	Banganna 1	**REPORT No.:**	11	**DAYS FROM SPUD:**	11	**DATE:**	16/02/03
0000 hrs DEPTH:	2125m	**LAST DEPTH:**	1845m	**24 HR PROGRESS:**	280m	**PTD:**	2120.0
0600 OPS:	POH for wireline logging survey.						
REMARKS:	Rock type consistent from 1855. 5 to TD; corresponding well to Pretty Hill Fm descriptions.						

PRIMARY OBJECTIVES:	SECONDARY OBJECTIVES:
Laira Fm (top AVO anomaly) **1916.9 mRT**	Nil

Spud Date:	5/2/03 @22:00 hrs			**Surface Location**	**Latitude:**	38°12'27.66"	**Eastings:**	603373.4	
TD Reached Date	-	**TD =**	-	**Metres R.T.**	**Longitude:**	142°10'50.62"	**Northings:**	5770482.7	
Rig release Date:	-	**G.L =**	63.7	**Metres R.T.**	**340mm Casing Depth: =**		6	Metres	
Rig	Century Drilling Rig 11	**R.T. =**	68.9	**Metres R.T.**	**194mm Casing Depth: =**		518	Metres	

(Nearby Well / Facility: 3.5 km NW of Taralea-1)

						Offset Wells	
	All Depth are in METERS M.D.					**Taralea 1**	**Killara 1**
FORMATION TOPS: * Geophysical Picks	**Geological Pick**	**Prognosed R.T.**	**Prognosed (mSS)**	**Diff.**	**High Low**	**(mRT)**	**(mRT)**
Surface Basalt	**5.2**	5.2	63.7	-		4.3	5.3
Port Campbell Limestone	**30**	45.2	23.7	15	H	40	36
*Gellibrand Marl	**149.9(?)**	149.9	-81.0	-		133	307
*Clifton Formation	**377**	380.9	-312.0	3.9	H	376	-
*Dilwyn Formation	**404**	411.9	-343.0	7.9	H	401	383
*Pember Mudstone	**482**	500.9	-432.0	18.9	H	485	423
*Pebble Point Formation	**540**	555.9	-487.0	15.9	H	523	440
*Paaratte Formation	**565**	580.9	-512.0	15.9	H	547	481
Skull Creek Mudstone	**640**	636.9	-568.0	3.1	L	589	513
Nullawarre Greensand	**670**	661.9	-593.0	8.1	L	601	526
Belfast Mudstone	**700**	682.9	-614.0	17.1	L	625	543
*Flaxmans / Waarre Fms	**726**	724.9	-656.0	1.1	L	682	578
*Eumeralla Formation	**753**	762.9	-694.0	9.9	H	693	589
Fault Zone	**-**	1066.9	-998.0			-	-
*Eumeralla Formation	**-**	1209.9	-1141.0			-	-
*Killara Coals	**1798**	1805.9	-1737.0	7.9	H	2472	1637
*Laira Formation	**1855.5**	1878.9	-1810.0	22.9	H	2704	1796
*Pretty Hill Formation		1959.9	-1891.0			-	2097
*Geophysical picks**							
TOTAL DEPTH	**2125**	**2120.0**	**-2051.1**	5	L		

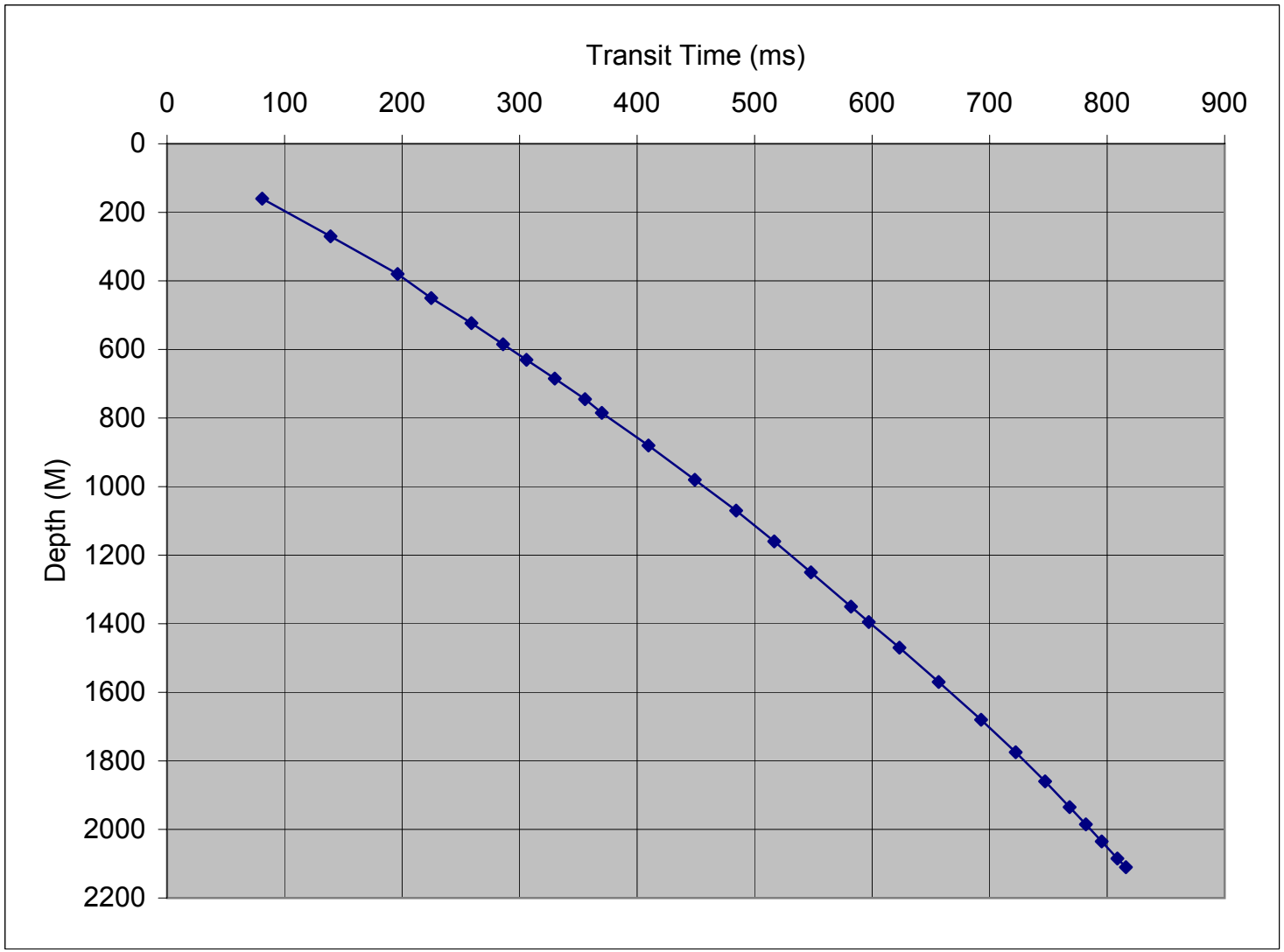
Interval			ROP (ave)	Lithology Description										
1885	-	2125	0.97-14.1 (3.51)	Slightly argillaceous SANDSTONE interbedded with trace SILTSTONE. SANDSTONE, off white, cream , very fine to coarse, predominately fine to medium, poor to moderate sorting, sub rounded to angular, trace to minor argillaceous matrix, trace weak calcareous cement, trace carbonaceous specks and mica, loose, common friable aggregates, fair inferred porosity. Nil fluorescence. SILTSTONE, medium to dark grey, grey brown, carbonaceous, argillaceous matrix, trace carbonaceous specks and mica, soft to firm, trace moderate hard, amorphous to sub blocky, subfissile in places, grades to very fine arenaceous.										
Gas			**Units :**	2-25	**Composition (%) :**	97	/	2	/	1	/	Tr	/	
Show Details			Nil											

APPENDIX 7

VELOCITY SURVEY

ORIGIN ENERGY
BANGANNA 1 SEISMIC DATA
16-Feb-03

Level Number	Depth (m)	TT (ms)
Calibration	47	23.16
LQC 1	523	259.73
LQC 2	980	449.49
LQC 3	1775	722.15
1	2110	815.99
2	2085	808.68
3	2035	795.36
4	1985	781.91
5	1935	768.01
6	1860	747.17
7	1775	722.14
8	1680	692.73
9	1570	656.67
10	1470	623.20
11	1395	597.19
12	1350	582.06
13	1250	547.94
14	1160	516.63
15	1070	484.26
16	980	449.08
17	880	409.64
18	785	369.96
19	745	355.71
20	685	329.92
21	630	305.81
22	585	285.94
23	523	259.04
24	450	224.85
25	380	196.17
26	270	139.09
27	160	80.97
28	80	



CHECKSHOT SURVEY STACK SUMMARY LISTING (TWO WAY CORRECTED TIMES)

Gun and Hydrophone Coordinates:

Gun Azimuth		45.0	DEG
Gun Offset		25.0	M
Gun Depth	From Schlumberger Zero	6.7	M
Hydrophone Depth	From Schlumberger Zero	6.7	M
SRD Depth	From Schlumberger Zero	68.9	M

Other VSP constants:

True Vertical Time Correction	YES
Surface Velocity	2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time (MS)	True Vert. Depth from SRD (2) (M)	Corrected Trans Time (3) (MS)	Average Velocity (4) (M/S)
31	159.9	80.99	91.0	99.11	1916.64
30	270.0	139.09	201.1	216.18	1901.57
29	380.0	196.17	311.1	330.70	1907.24
28	449.9	224.85	381.0	388.23	1974.21
27	522.8	259.04	453.9	456.71	1994.72
26	585.0	285.94	516.1	510.60	2024.32
25	630.0	305.81	561.1	550.38	2039.83
24	684.9	329.92	616.0	598.65	2057.02
23	745.0	355.71	676.1	650.25	2076.78
22	785.0	369.96	716.1	678.78	2104.83
21	880.0	409.64	811.1	758.19	2132.73
20	980.0	449.08	911.1	837.11	2168.04
19	1069.8	484.26	1000.9	907.51	2195.89
18	1160.0	516.64	1091.1	972.28	2232.84
17	1249.9	547.94	1181.0	1034.90	2269.33
16	1349.9	582.06	1281.0	1103.17	2308.05
15	1394.9	597.19	1326.0	1133.43	2324.94
14	1469.8	623.20	1400.9	1185.47	2348.05
13	1569.9	656.67	1501.0	1252.43	2380.78
12	1680.0	692.73	1611.1	1324.55	2415.78
11	1774.9	722.15	1706.0	1383.40	2448.77
10	1859.9	747.17	1791.0	1433.46	2480.51
9	1934.9	768.01	1866.0	1475.15	2510.84
8	1985.0	781.91	1916.1	1502.94	2530.30
7	2035.0	795.36	1966.1	1529.84	2550.36
6	2085.0	808.68	2016.1	1556.49	2570.17
5	2110.0	815.99	2041.1	1571.12	2577.78

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)TW Transit time with respect to SRD(5) corrected for Deviation
(4) Average Velocity from close to source sensor to geophone.
(5)SRD is Seismic Reference Depth.

CHECKSHOT SURVEY STACK SUMMARY LISTING (TWO WAY CORRECTED TIMES)

Gun and Hydrophone Coordinates:

Gun Azimuth		45.0	DEG
Gun Offset		25.0	M
Gun Depth	From Schlumberger Zero	6.7	M
Hydrophone Depth	From Schlumberger Zero	6.7	M
SRD Depth	From Schlumberger Zero	68.9	M

Other VSP constants:

True Vertical Time Correction	YES
Surface Velocity	2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time (MS)	True Vert. Depth from SRD (2) (M)	Corrected Trans Time (3) (MS)	Interval Velocity (4) (M/S)
31	159.9	80.99	91.0	99.11	1880.99
30	270.0	139.09	201.1	216.18	1920.95
29	380.0	196.17	311.1	330.70	2429.91
28	449.9	224.85	381.0	388.23	2129.21
27	522.8	259.04	453.9	456.71	2308.58
26	585.0	285.94	516.1	510.60	2262.52
25	630.0	305.81	561.1	550.38	2274.65
24	684.9	329.92	616.0	598.65	2329.25
23	745.0	355.71	676.1	650.25	2803.97
22	785.0	369.96	716.1	678.78	2392.58
21	880.0	409.64	811.1	758.19	2534.49
20	980.0	449.08	911.1	837.11	2551.08
19	1069.8	484.26	1000.9	907.51	2785.21
18	1160.0	516.64	1091.1	972.28	2871.16
17	1249.9	547.94	1181.0	1034.90	2929.49
16	1349.9	582.06	1281.0	1103.17	2974.75
15	1394.9	597.19	1326.0	1133.43	2878.43
14	1469.8	623.20	1400.9	1185.47	2989.81
13	1569.9	656.67	1501.0	1252.43	3053.06
12	1680.0	692.73	1611.1	1324.55	3225.53
11	1774.9	722.15	1706.0	1383.40	3396.01
10	1859.9	747.17	1791.0	1433.46	3597.82
9	1934.9	768.01	1866.0	1475.15	3605.83
8	1985.0	781.91	1916.1	1502.94	3716.51
7	2035.0	795.36	1966.1	1529.84	3752.47
6	2085.0	808.68	2016.1	1556.49	3418.73
5	2110.0	815.99	2041.1	1571.12	0.00

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)TW Transit time with respect to SRD(5) corrected for Deviation
(4)Interval Velocity corrected for Deviation.
(5)SRD is Seismic Reference Depth.

CHECKSHOT SURVEY STACK SUMMARY LISTING

Gun and Hydrophone Coordinates:

Gun Azimuth		45.0	DEG
Gun Offset		25.0	M
Gun Depth	From Schlumberger Zero	6.7	M
Hydrophone Depth	From Schlumberger Zero	6.7	M
SRD Depth	From Schlumberger Zero	68.9	M

Other VSP constants:

True Vertical Time Correction	YES	
Surface Velocity	2047.70	M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time (MS)	True Vert. Depth from SRD (2) (M)	Corrected Trans Time (3) (MS)	Average Velocity (4) (M/S)
31	159.9	80.99	91.0	49.55	1916.64
30	270.0	139.09	201.1	108.09	1901.57
29	380.0	196.17	311.1	165.35	1907.24
28	449.9	224.85	381.0	194.12	1974.21
27	522.8	259.04	453.9	228.36	1994.72
26	585.0	285.94	516.1	255.30	2024.32
25	630.0	305.81	561.1	275.19	2039.83
24	684.9	329.92	616.0	299.32	2057.02
23	745.0	355.71	676.1	325.13	2076.78
22	785.0	369.96	716.1	339.39	2104.83
21	880.0	409.64	811.1	379.10	2132.73
20	980.0	449.08	911.1	418.55	2168.04
19	1069.8	484.26	1000.9	453.75	2195.89
18	1160.0	516.64	1091.1	486.14	2232.84
17	1249.9	547.94	1181.0	517.45	2269.33
16	1349.9	582.06	1281.0	551.59	2308.05
15	1394.9	597.19	1326.0	566.71	2324.94
14	1469.8	623.20	1400.9	592.73	2348.05
13	1569.9	656.67	1501.0	626.22	2380.78
12	1680.0	692.73	1611.1	662.28	2415.78
11	1774.9	722.15	1706.0	691.70	2448.77
10	1859.9	747.17	1791.0	716.73	2480.51
9	1934.9	768.01	1866.0	737.57	2510.84
8	1985.0	781.91	1916.1	751.47	2530.30
7	2035.0	795.36	1966.1	764.92	2550.36
6	2085.0	808.68	2016.1	778.25	2570.17
5	2110.0	815.99	2041.1	785.56	2577.78

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)Transit time with respect to SRD(5) corrected for Deviation.
(4) Average Velocity from close to source sensor to geophone.
(5)SRD is Seismic Reference Depth.

CHECKSHOT SURVEY STACK SUMMARY LISTING

Gun and Hydrophone Coordinates:

Gun Azimuth		45.0	DEG
Gun Offset		25.0	M
Gun Depth	From Schlumberger Zero	6.7	M
Hydrophone Depth	From Schlumberger Zero	6.7	M
SRD Depth	From Schlumberger Zero	68.9	M

Other VSP constants:

True Vertical Time Correction	YES
Surface Velocity	2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time (MS)	True Vert. Depth from SRD (2) (M)	Corrected Trans Time (3) (MS)	Interval Velocity (4) (M/S)
31	159.9	80.99	91.0	49.55	1880.99
30	270.0	139.09	201.1	108.09	1920.95
29	380.0	196.17	311.1	165.35	2429.91
28	449.9	224.85	381.0	194.12	2129.21
27	522.8	259.04	453.9	228.36	2308.58
26	585.0	285.94	516.1	255.30	2262.52
25	630.0	305.81	561.1	275.19	2274.65
24	684.9	329.92	616.0	299.32	2329.25
23	745.0	355.71	676.1	325.13	2803.97
22	785.0	369.96	716.1	339.39	2392.58
21	880.0	409.64	811.1	379.10	2534.49
20	980.0	449.08	911.1	418.55	2551.08
19	1069.8	484.26	1000.9	453.75	2785.21
18	1160.0	516.64	1091.1	486.14	2871.16
17	1249.9	547.94	1181.0	517.45	2929.49
16	1349.9	582.06	1281.0	551.59	2974.75
15	1394.9	597.19	1326.0	566.71	2878.43
14	1469.8	623.20	1400.9	592.73	2989.81
13	1569.9	656.67	1501.0	626.22	3053.06
12	1680.0	692.73	1611.1	662.28	3225.53
11	1774.9	722.15	1706.0	691.70	3396.01
10	1859.9	747.17	1791.0	716.73	3597.82
9	1934.9	768.01	1866.0	737.57	3605.83
8	1985.0	781.91	1916.1	751.47	3716.51
7	2035.0	795.36	1966.1	764.92	3752.47
6	2085.0	808.68	2016.1	778.25	3418.73
5	2110.0	815.99	2041.1	785.56	0.00

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)Transit time with respect to SRD(5) corrected for Deviation.
(4)Interval Velocity corrected for Deviation.
(5)SRD is Seismic Reference Depth.

Schlumberger

Company: **Origin Energy**

Well: **Banganna 1**

Field: **Exploration, Licence PEP 159**

Rig: **Century Rig 11** Country: **Australia**

Seismic Checkshot Velocity Survey

CSAT−GR

6.75" Open Hole

Field: Exploration, Licence PEP 159 Location: Seismic Line : obe00a−06 Well: Banganna 1 Company: Origin Energy

LOCATION

Seismic Line : obe00a−06
Seismic Station : 60m west of SP 423
Easting : 603373.4, Northing : 5770482.7

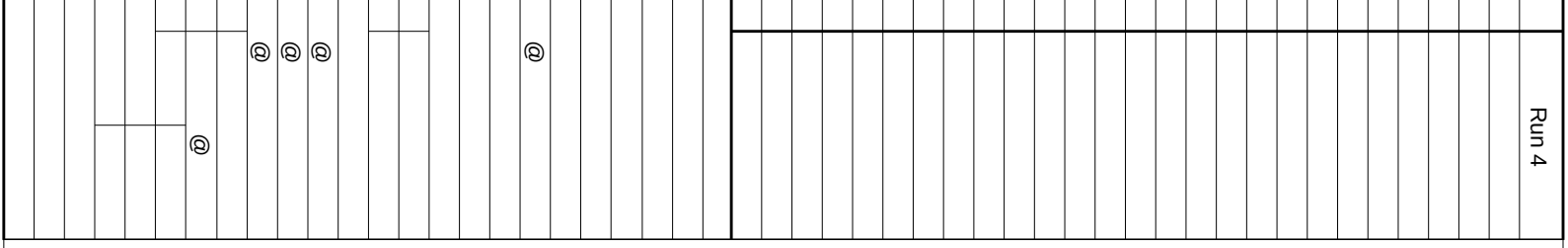
Elev.: K.B. 68.9 m
G.L. 63.7 m
D.F. 68.9 m

Permanent Datum: Ground Level Elev.: 63.7 m
Log Measured From: Rotary Table 5.2 m above Perm. Datum
Drilling Measured From: Rotary Table

State: Victoria	Max. Well Deviation 2.2 deg	Longitude 142 10' 50.62'' E	Latitude 038 12' 27.66'' S

	Run 1	Run 2	Run 3
Logging Date	16−Feb−2003		
Run Number	2		
Depth Driller	2125 m		
Schlumberger Depth	2124 m		
Bottom Log Interval	2110 m		
Top Log Interval	160 m		
Casing Driller Size @ Depth	7.625 in @ 518 m	@	@
Casing Schlumberger	518 m		
Bit Size	6.750 in		
Type Fluid In Hole	KCl PHPA Polymer		
MUD Density / Viscosity	9.2 lbm/gal / 15 s		
MUD Fluid Loss / PH	/ 9.5		
MUD Source Of Sample	Flow Line		
RM @ Measured Temperature	0.165 ohm.m @ 19 degC	@	@
RMF @ Measured Temperature	0.151 ohm.m @ 19 degC	@	@
RMC @ Measured Temperature	0.228 ohm.m @ 25 degC	@	@
Source RMF / RMC	Press / Press		
RM @ MRT / RMF @ MRT	0.056 @ 98 / 0.051 @ 98	@ / @	@ / @
Maximum Recorded Temperatures	98 degC		
Circulation Stopped Time	16−Feb−2003 01:30		
Logger On Bottom Time	16−Feb−2002 23:30		
Unit Number / Location	3170 QEA	/	/
Recorded By	Matthew Harris		
Witnessed By	Ben Corbett, Doug Short		

	Run 1	Run 2	Run 3
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@	@	@
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity	/		
MUD Fluid Loss / PH	/		
MUD Source Of Sample			
RM @ Measured Temperature	@	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC	/		
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @
Maximum Recorded Temperatures			
Circulation Stopped Time			
Logger On Bottom Time			
Unit Number / Location	/		
Recorded By			
Witnessed By			



DEPTH SUMMARY LISTING

Date Created: 24−FEB−2003 12:12:27

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−E	Type:	CMTD−B/A	Type:	7−42V−XS
Serial Number:	1933	Serial Number:	2007	Serial Number:	70091
Calibration Date:	dd−Mmm−yyyy	Calibration Date:	06−JAN−2003	Length:	2499.97 M
Calibrator Serial Number:	−999	Calibrator Serial Number:	1050		
Calibration Cable Type:	7−46P	Calibration Gain:	0.88	Conveyance Method:	Wireline
Wheel Correction 1:	−2	Calibration Offset:	497.00	Rig Type:	LAND
Wheel Correction 2:	−2				

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	HALS−DSI−PEX−HNG
Reference Log Run Number:	1
Reference Log Date:	16−Feb−2003

Depth Control Remarks

1. Log correlated to Schlumberger HALS−DSI−PEX−HNGS dated 16−02−200
2. IDW calibration not available
3.
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: HALS−DSI−MCFL−TLD−CNL−GR−NGR−	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Log correlated to Schlumberger Open Hole log dated 26−Jan−2003.	
Toolstring run as per toolsketch.	
Source Offset − Horiz 25.0m, Vertical 6.7m, Azimuth 045deg	
Geophone Offset − Horiz 21.0m, Vertical 5.7m, Azimuth 045deg	
Well directional and inclination survey data unavailable, well assumed	
to be vertical.	
Surface reference depth taken as mean sea level, 68.9m from RT.	
Surface reference velocity calculated to be 2047.7m/s from	
surface calibration conducted at 47.0m with TT of 22.16ms	

surface calibration conducted at 47.0m with TT of 23.16ms.

Survey Levels...

1 Surface Calibration

3 Quality control surveys while RIH

27 Main log checkshot levels

All main log survey shots used 450gram dynamite charges.

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:		10C0−306	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

WSAM−AB 838
GSR−U/Y 3144
WITM (CTS)−A

DOWNHOLE EQUIPMENT

LEH−QT 9.07
LEH−QT 1557

TCC−BF 8.19
ECH−KC 2775
TCC−BF 775

TelStatus — 7.27

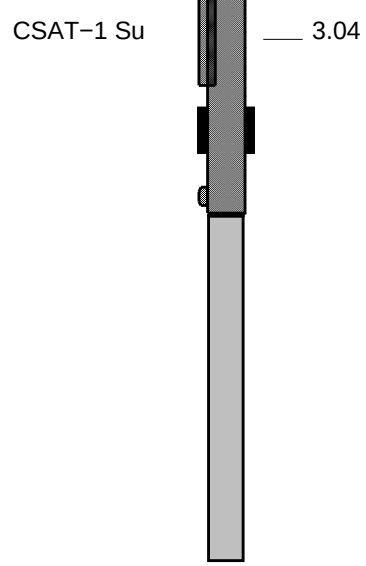
SGT−L 7.27
SGH−K 508
SGC−SA 367
SGD−TAA

Gamma Ray — 6.99

CSAT−B1 5.59
CSSH−A
CSSC−A 715
CSAS−A 709
Shaker
CSAH−A 767
CSAC−A 767
STAND−LO
STAND−HI
CSAD−B

CSAT−1 Ar — 4.03

RUN 2



BNS−CCS

DF
Tension HV 0.00

0.14

TOOL ZERO

MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Client: Origin Energy
Well: Banganna 1
Field: Exploration
State: Victoria
Country: Australia

Rig Name: Century Rig 11
Reference Datum: Mean Sea Level
Elevation: 68.9 m

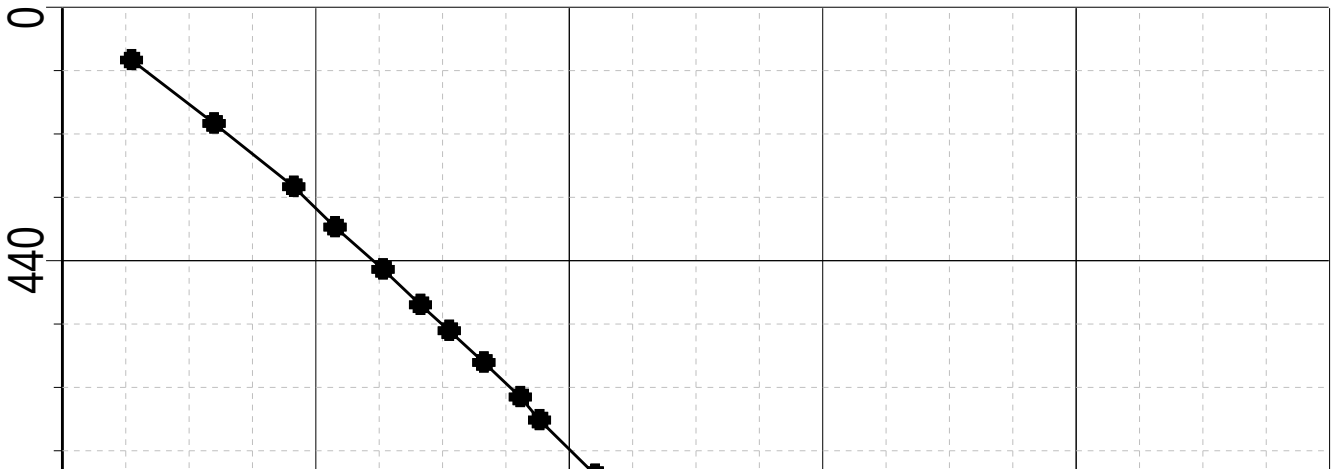
Production String	(in) OD	(in) ID	(m) MD	Well Schematic	(m) MD	(in) OD	(in) ID	Casing String
					0.0	7.625		Casing String, 39.4 kg/m
					518.0	7.625		Casing Shoe
					518.0	6.750		Borehole Segment

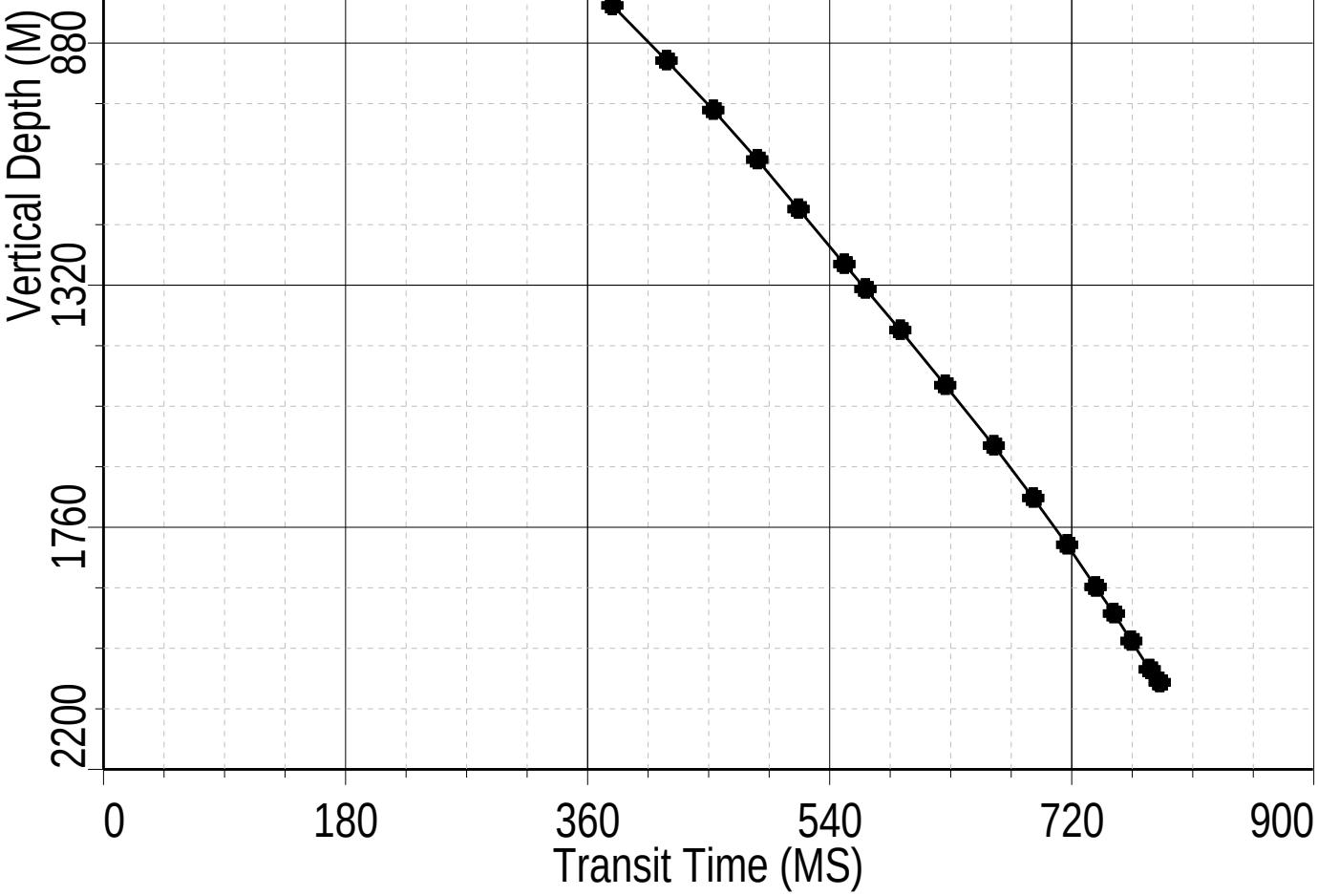
						2124.0	6.750	Borehole Segment Bottom

Schlumberger

TVD Depth vs Transit Time

MAXIS Field Log

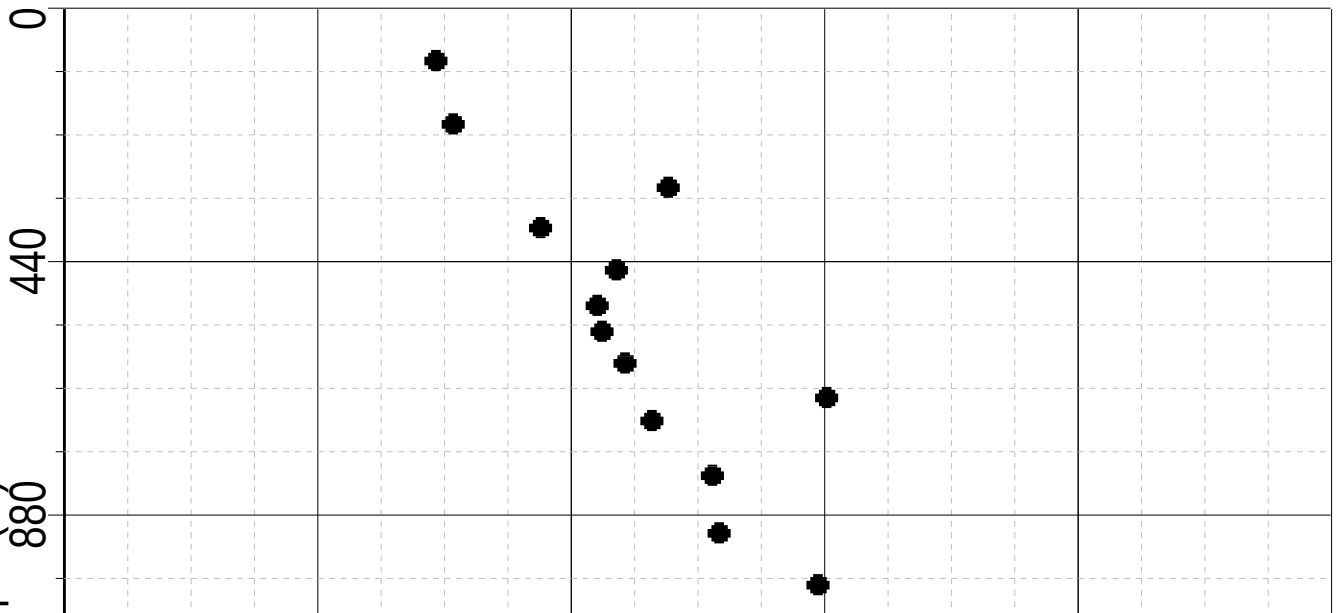


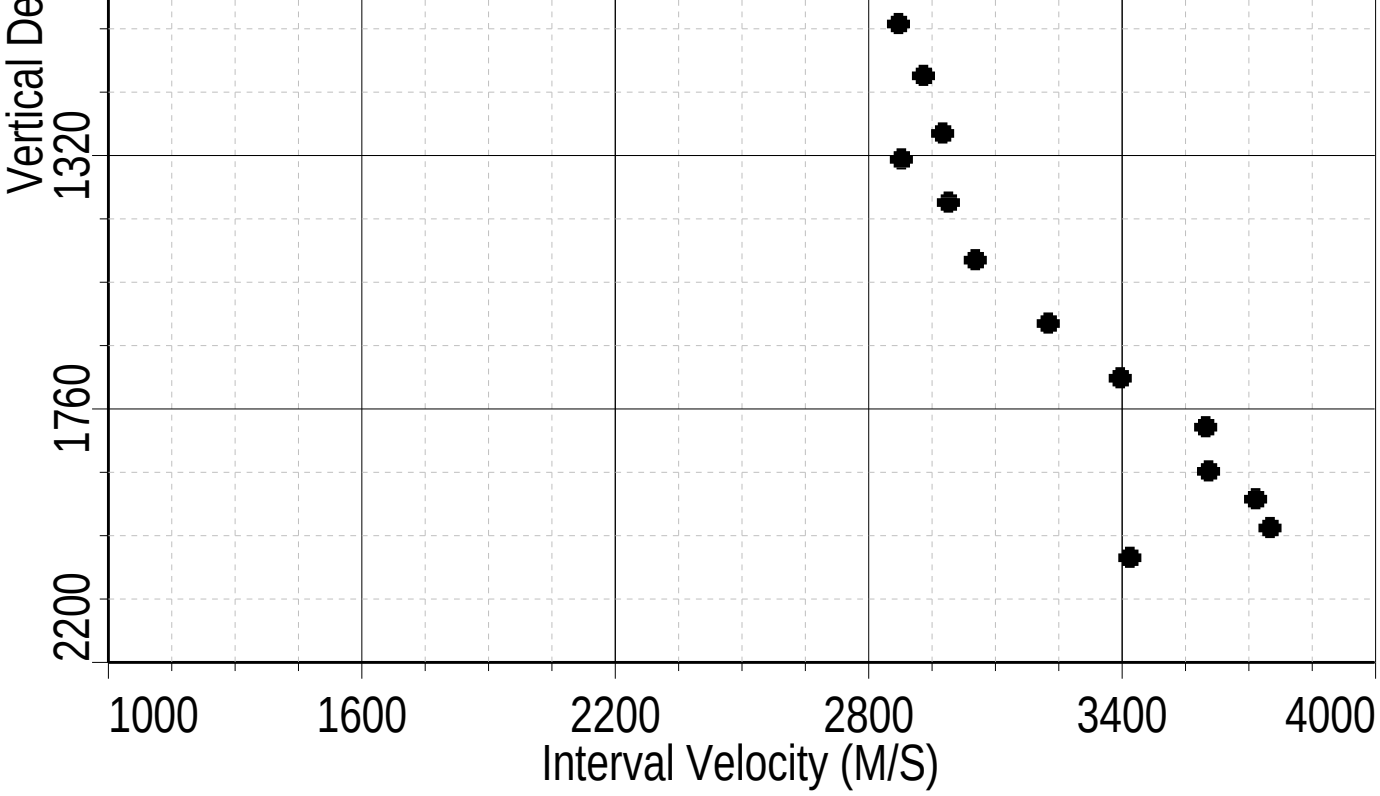


Schlumberger

TVD Depth vs Velocity

MAXIS Field Log





Schlumberger

VSP HBTA Plot

MAXIS Field Log

OP System Version: 10C0−306

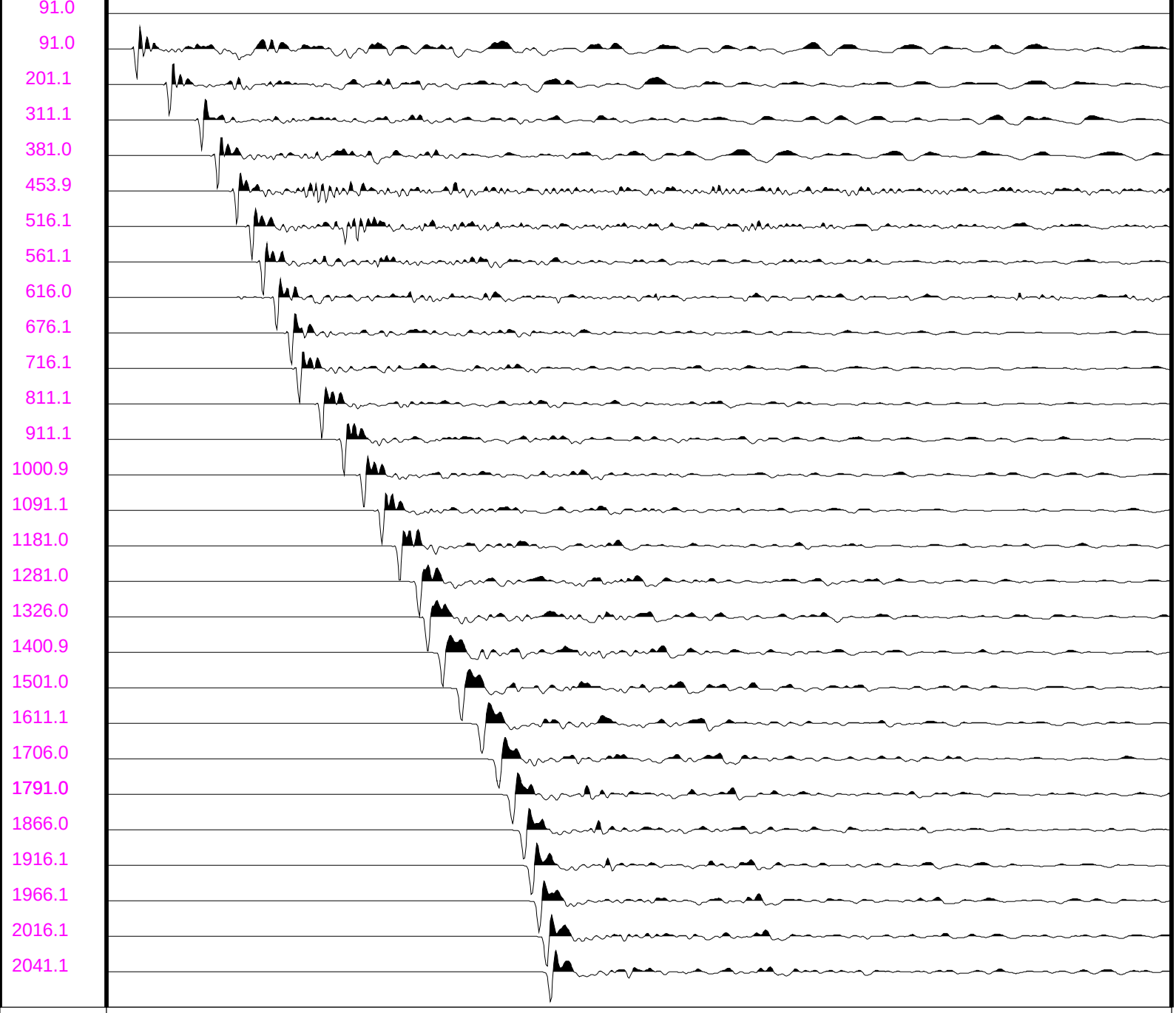
MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		

VSP PROCESSING

Data Corrected to SRD and TVD
Input data filtered from 5 to 120 Hz
One Way Time Scale Plot
SEG Reverse Polarity
TAR = DATA(I)*I**1.200
Z−AXIS Processed

Depth (PDE) (M)	VspHBTA (VspHBTA)
	0 (MS) 1900



Depth (PDE) (M)

VspHBTA (VspHBTA)

0 (MS) 1900

Format: vspHBTA Vertical Scale: 0.25" per 1SAMPLES Graphics File Created: 21−Feb−2003 09:50

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		

Schlumberger

One/Two Way Time Tables

MAXIS Field Log

CHECKSHOT SURVEY STACK SUMMARY LISTING

Gun and Hydrophone Coordinates:

Gun Azimuth 45.0 DEG
Gun Offset 25.0 M
Gun Depth From Schlumberger Zero 6.7 M
Hydrophone Depth From Schlumberger Zero 6.7 M

SRD Depth From Schlumberger Zero 68.9 M

Other VSP constants:

True Vertical Time Correction YES
Surface Velocity 2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time (MS)	True Vert. Depth from SRD (2) (M)	Corrected Trans Time (3) (MS)	Interval Velocity (4) (M/S)
31	159.9	80.99	91.0	49.55	1880.99
30	270.0	139.09	201.1	108.09	1920.95
29	380.0	196.17	311.1	165.35	2429.91
28	449.9	224.85	381.0	194.12	2129.21
27	522.8	259.04	453.9	228.36	2308.58
26	585.0	285.94	516.1	255.30	2262.52
25	630.0	305.81	561.1	275.19	2274.65
24	684.9	329.92	616.0	299.32	2329.25
23	745.0	355.71	676.1	325.13	2803.97
22	785.0	369.96	716.1	339.39	2392.58
21	880.0	409.64	811.1	379.10	2534.49
20	980.0	449.08	911.1	418.55	2551.08
19	1069.8	484.26	1000.9	453.75	2785.21
18	1160.0	516.64	1091.1	486.14	2871.16
17	1249.9	547.94	1181.0	517.45	2929.49
16	1349.9	582.06	1281.0	551.59	2974.75
15	1394.9	597.19	1326.0	566.71	2878.43
14	1469.8	623.20	1400.9	592.73	2989.81
13	1569.9	656.67	1501.0	626.22	3053.06
12	1680.0	692.73	1611.1	662.28	3225.53
11	1774.9	722.15	1706.0	691.70	3396.01
10	1859.9	747.17	1791.0	716.73	3597.82
9	1934.9	768.01	1866.0	737.57	3605.83
8	1985.0	781.91	1916.1	751.47	3716.51
7	2035.0	795.36	1966.1	764.92	3752.47
6	2085.0	808.68	2016.1	778.25	3418.73
5	2110.0	815.99	2041.1	785.56	0.00

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)Transit time with respect to SRD(5) corrected for Deviation.
(4)Interval Velocity corrected for Deviation.
(5)SRD is Seismic Reference Depth.

CHECKSHOT SURVEY STACK SUMMARY LISTING

Gun and Hydrophone Coordinates:

Gun Azimuth	45.0 DEG
Gun Offset	25.0 M
Gun Depth From Schlumberger Zero	6.7 M
Hydrophone Depth From Schlumberger Zero	6.7 M
SRD Depth From Schlumberger Zero	68.9 M

Other VSP constants:

True Vertical Time Correction	YES
Surface Velocity	2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time SRD (2) (MS)	True Vert. Depth from (3) (M)	Corrected Trans Time (4) (MS)	Average Velocity (M/S)
31	159.9	80.99	91.0	49.55	1916.64
30	270.0	139.09	201.1	108.09	1901.57
29	380.0	196.17	311.1	165.35	1907.24
28	449.9	224.85	381.0	194.12	1974.21
27	522.8	259.04	453.9	228.36	1994.72
26	585.0	285.94	516.1	255.30	2024.32
25	630.0	305.81	561.1	275.19	2039.83
24	684.9	329.92	616.0	299.32	2057.02
23	745.0	355.71	676.1	325.13	2076.78
22	785.0	369.96	716.1	339.39	2104.83
21	880.0	409.64	811.1	379.10	2132.73
20	980.0	449.08	911.1	418.55	2168.04
19	1069.8	484.26	1000.9	453.75	2195.89
18	1160.0	516.64	1091.1	486.14	2232.84
17	1249.9	547.94	1181.0	517.45	2269.33
16	1349.9	582.06	1281.0	551.59	2308.05
15	1394.9	597.19	1326.0	566.71	2324.94
14	1469.8	623.20	1400.9	592.73	2348.05
13	1569.9	656.67	1501.0	626.22	2380.78
12	1680.0	692.73	1611.1	662.28	2415.78
11	1774.9	722.15	1706.0	691.70	2448.77
10	1859.9	747.17	1791.0	716.73	2480.51
9	1934.9	768.01	1866.0	737.57	2510.84
8	1985.0	781.91	1916.1	751.47	2530.30
7	2035.0	795.36	1966.1	764.92	2550.36
6	2085.0	808.68	2016.1	778.25	2570.17
5	2110.0	815.99	2041.1	785.56	2577.78

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)Transit time with respect to SRD(5) corrected for Deviation.
(4) Average Velocity from close to source sensor to geophone.
(5)SRD is Seismic Reference Depth.

CHECKSHOT SURVEY STACK SUMMARY LISTING (TWO WAY CORREC

Gun and Hydrophone Coordinates:

Gun Azimuth	45.0 DEG
Gun Offset	25.0 M
Gun Depth From Schlumberger Zero	6.7 M
Hydrophone Depth From Schlumberger Zero	6.7 M
SRD Depth From Schlumberger Zero	68.9 M

Other VSP constants:

True Vertical Time Correction	YES
Surface Velocity	2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time SRD (2) (MS)	True Vert. Depth from (3) (M)	Corrected Trans Time (4) (MS)	Interval Velocity (M/S)
31	159.9	80.99	91.0	99.11	1880.99
30	270.0	139.09	201.1	216.18	1920.95
29	380.0	196.17	311.1	330.70	2429.91
28	449.9	224.85	381.0	388.23	2129.21
27	522.8	259.04	453.9	456.71	2308.58
26	585.0	285.94	516.1	510.60	2262.52
25	630.0	305.81	561.1	550.38	2274.65
24	684.9	329.92	616.0	598.65	2329.25
23	745.0	355.71	676.1	650.25	2803.97
22	785.0	369.96	716.1	678.78	2392.58
21	880.0	409.64	811.1	758.19	2534.49
20	980.0	449.08	911.1	837.11	2551.08
19	1069.8	484.26	1000.9	907.51	2785.21
18	1160.0	516.64	1091.1	972.28	2871.16
17	1249.9	547.94	1181.0	1034.90	2929.49
16	1349.9	582.06	1281.0	1103.17	2974.75
15	1394.9	597.19	1326.0	1133.43	2878.43
14	1469.8	623.20	1400.9	1185.47	2989.81
13	1569.9	656.67	1501.0	1252.43	3053.06
12	1680.0	692.73	1611.1	1324.55	3225.53
11	1774.9	722.15	1706.0	1383.40	3396.01
10	1859.9	747.17	1791.0	1433.46	3597.82
9	1934.9	768.01	1866.0	1475.15	3605.83
8	1985.0	781.91	1916.1	1502.94	3716.51
7	2035.0	795.36	1966.1	1529.84	3752.47
6	2085.0	808.68	2016.1	1556.49	3418.73
5	2110.0	815.99	2041.1	1571.12	0.00

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)
(3)TW Transit time with respect to SRD(5) corrected for Deviation
(4)Interval Velocity corrected for Deviation

(4)Interval Velocity corrected for Deviation.
(5)SRD is Seismic Reference Depth.

CHECKSHOT SURVEY STACK SUMMARY LISTING (TWO WAY CORREC

Gun and Hydrophone Coordinates:

Gun Azimuth	45.0 DEG
Gun Offset	25.0 M
Gun Depth From Schlumberger Zero	6.7 M
Hydrophone Depth From Schlumberger Zero	6.7 M
SRD Depth From Schlumberger Zero	68.9 M

Other VSP constants:

True Vertical Time Correction	YES
Surface Velocity	2047.70 M/S

Stack number	Measured Depth (1) (M)	Measured Trans Time (MS)	True Vert. Depth from SRD (2) (M)	Corrected Trans Time (3) (MS)	Average Velocity (4) (M/S)
31	159.9	80.99	91.0	99.11	1916.64
30	270.0	139.09	201.1	216.18	1901.57
29	380.0	196.17	311.1	330.70	1907.24
28	449.9	224.85	381.0	388.23	1974.21
27	522.8	259.04	453.9	456.71	1994.72
26	585.0	285.94	516.1	510.60	2024.32
25	630.0	305.81	561.1	550.38	2039.83
24	684.9	329.92	616.0	598.65	2057.02
23	745.0	355.71	676.1	650.25	2076.78
22	785.0	369.96	716.1	678.78	2104.83
21	880.0	409.64	811.1	758.19	2132.73
20	980.0	449.08	911.1	837.11	2168.04
19	1069.8	484.26	1000.9	907.51	2195.89
18	1160.0	516.64	1091.1	972.28	2232.84
17	1249.9	547.94	1181.0	1034.90	2269.33
16	1349.9	582.06	1281.0	1103.17	2308.05
15	1394.9	597.19	1326.0	1133.43	2324.94
14	1469.8	623.20	1400.9	1185.47	2348.05
13	1569.9	656.67	1501.0	1252.43	2380.78
12	1680.0	692.73	1611.1	1324.55	2415.78
11	1774.9	722.15	1706.0	1383.40	2448.77
10	1859.9	747.17	1791.0	1433.46	2480.51
9	1934.9	768.01	1866.0	1475.15	2510.84
8	1985.0	781.91	1916.1	1502.94	2530.30
7	2035.0	795.36	1966.1	1529.84	2550.36
6	2085.0	808.68	2016.1	1556.49	2570.17
5	2110.0	815.99	2041.1	1571.12	2577.78

(1)Measured Depth is Cable Depth Referenced to Schlumberger Zero.
(2)TVD is referenced to SRD (5)

|(3)TW Transit time with respect to SRD(5) corrected for Deviation|
|(4) Average Velocity from close to source sensor to geophone. |
|(5)SRD is Seismic Reference Depth. |
|_____|_____|_____|_____|_____|_____

Schlumberger

Waveform Plots

MAXIS Field Log

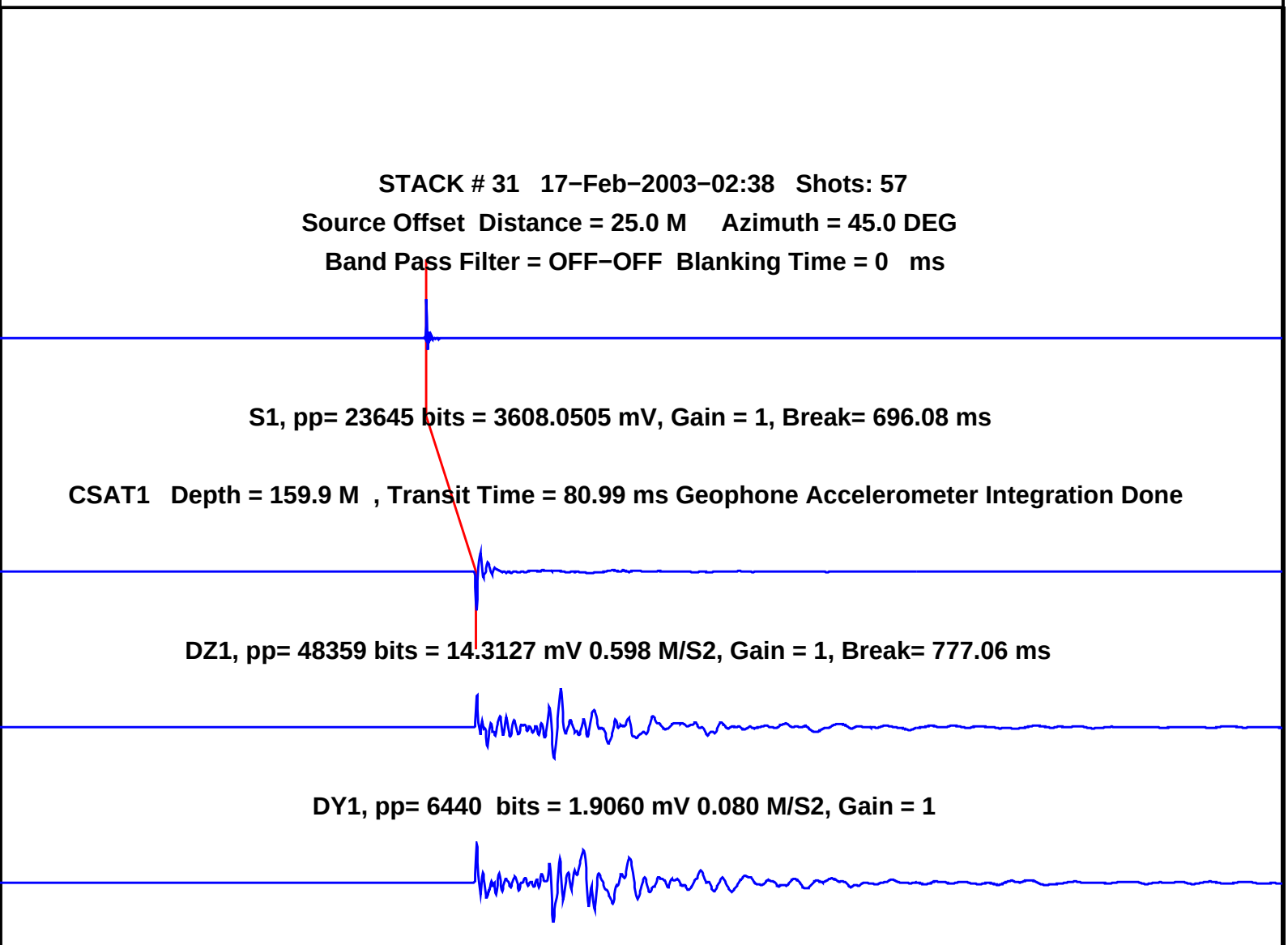
Output DLIS Files

DEFAULT	SEIS_CSI_018PNP	FN:13	PRODUCER	21−Feb−2003 08:26	0.0 M	0.1 M

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		



DX1, pp= 5048 bits = 1.4940 mV 0.062 M/S2, Gain = 1

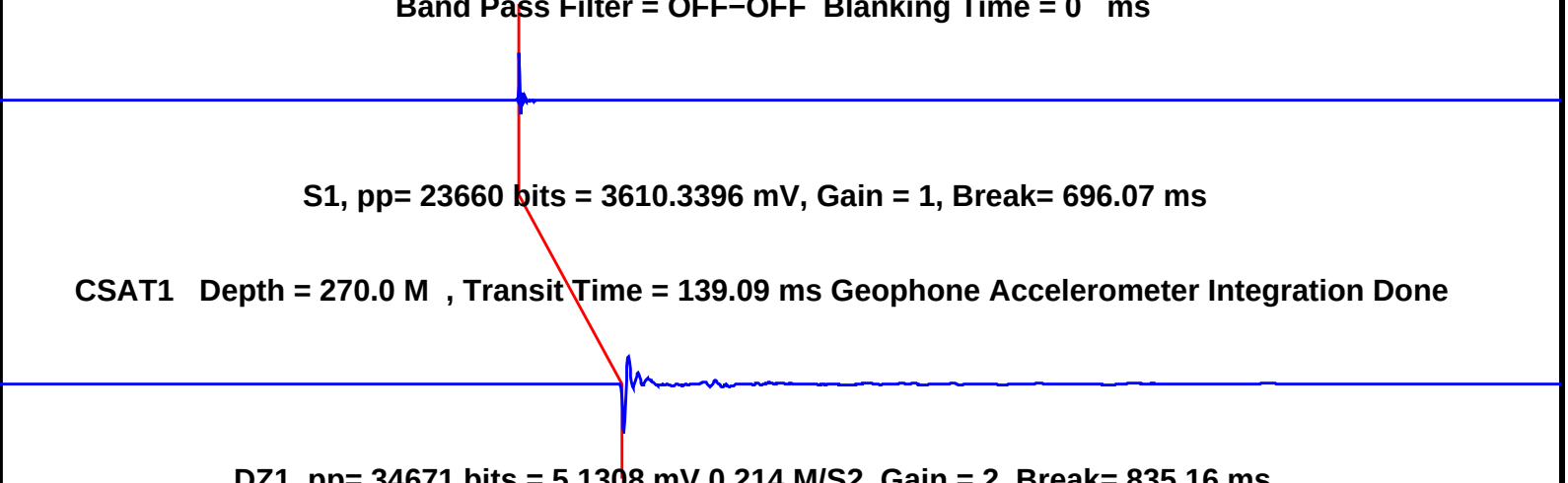
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 30 17−Feb−2003−02:32 Shots: 56

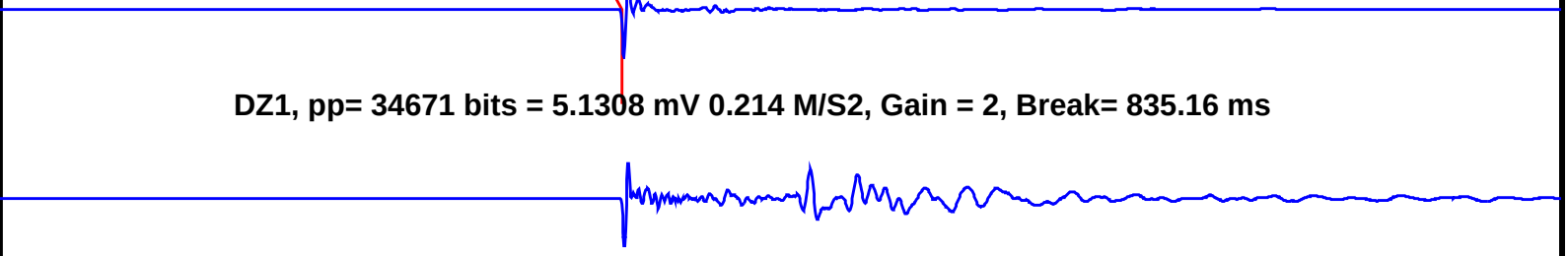
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



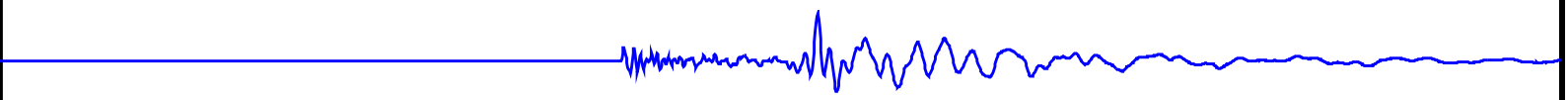
S1, pp= 23660 bits = 3610.3396 mV, Gain = 1, Break= 696.07 ms

CSAT1 Depth = 270.0 M , Transit Time = 139.09 ms Geophone Accelerometer Integration Done



DZ1, pp= 34671 bits = 5.1308 mV 0.214 M/S2, Gain = 2, Break= 835.16 ms

DY1, pp= 5395 bits = 0.7984 mV 0.033 M/S2, Gain = 2



DX1, pp= 2015 bits = 0.2982 mV 0.012 M/S2, Gain = 2

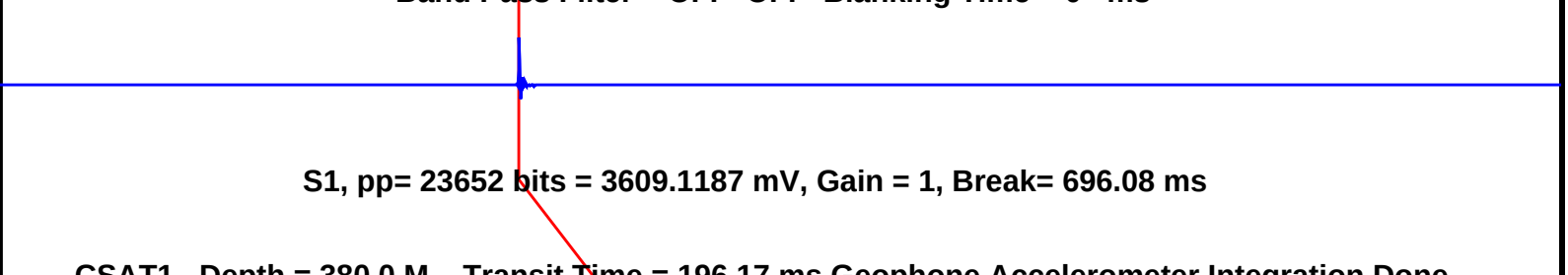
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 29 17−Feb−2003−02:25 Shots: 55

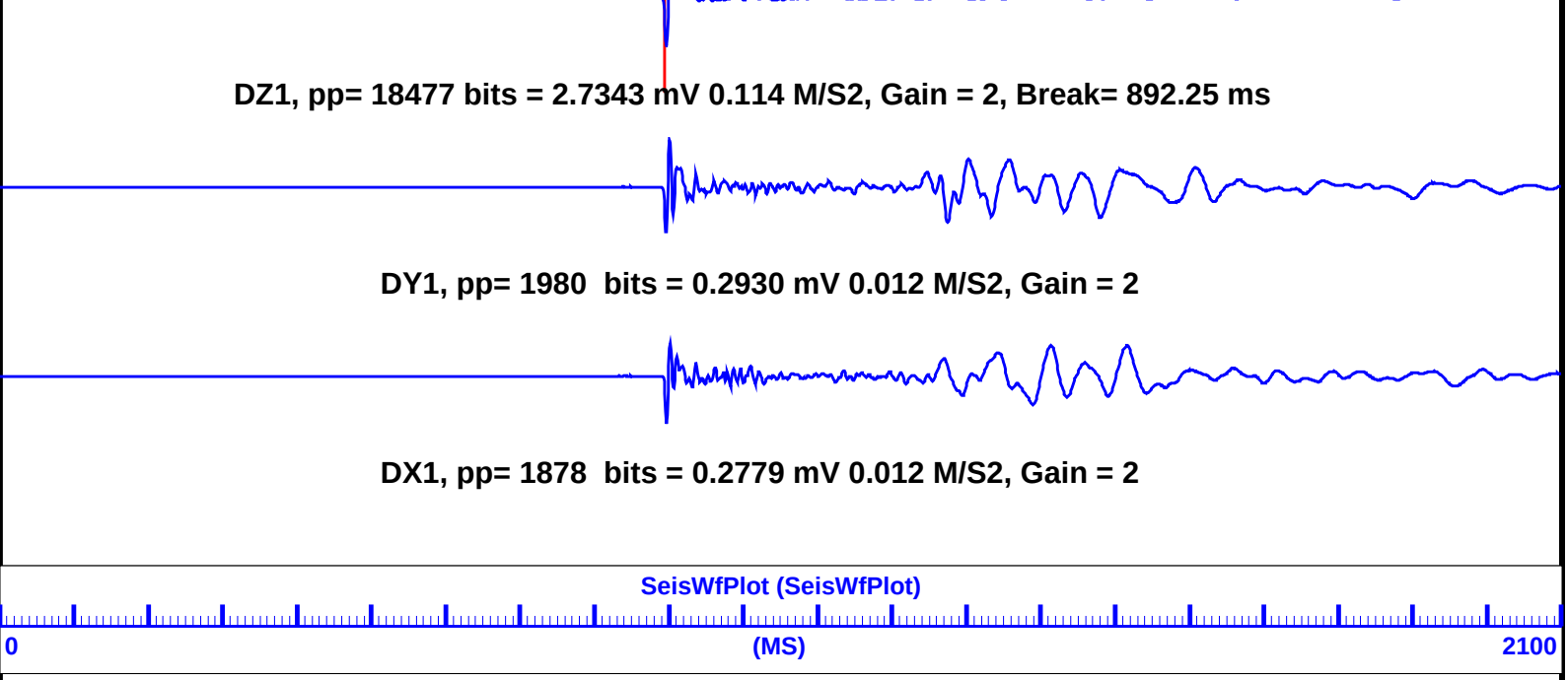
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

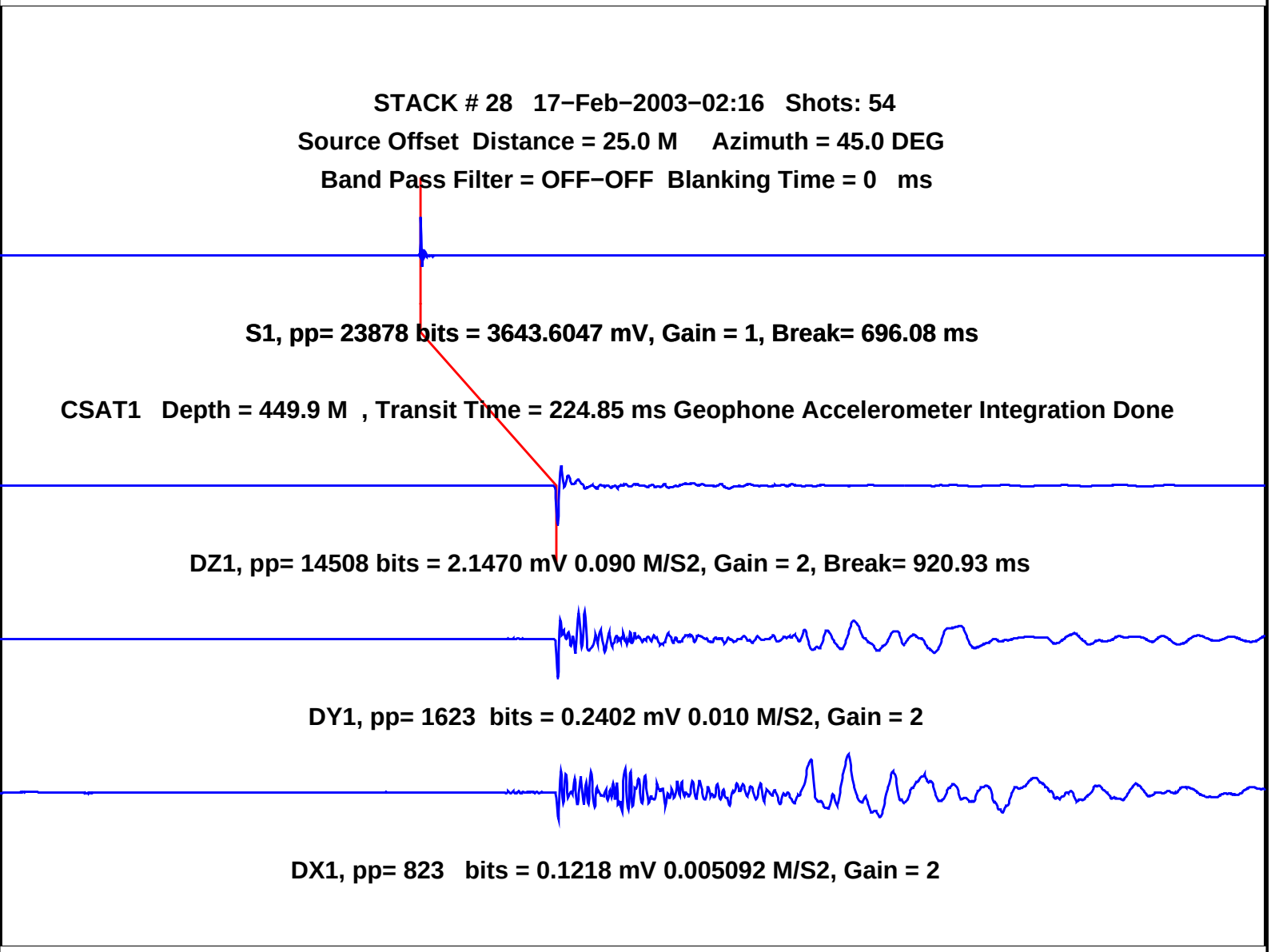
Band Pass Filter = OFF−OFF Blanking Time = 0 ms



S1, pp= 23652 bits = 3609.1187 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 380.0 M , Transit Time = 196.17 ms Geophone Accelerometer Integration Done

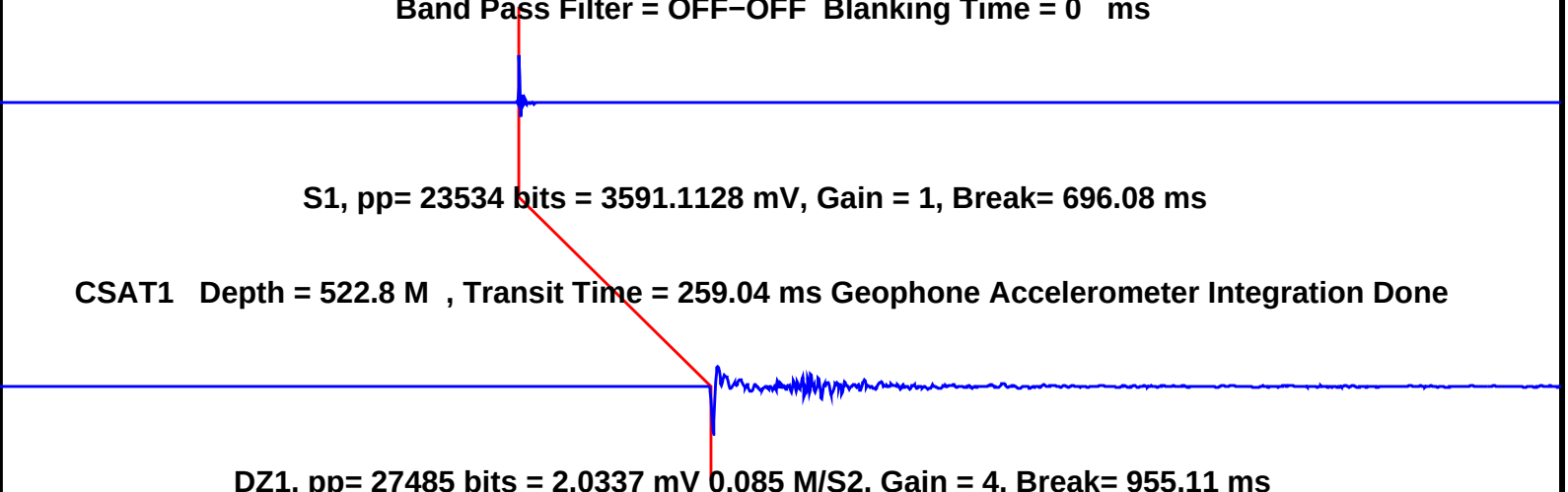

DZ1, pp= 18477 bits = 2.7343 mV 0.114 M/S2, Gain = 2, Break= 892.25 ms
DY1, pp= 1980 bits = 0.2930 mV 0.012 M/S2, Gain = 2
DX1, pp= 1878 bits = 0.2779 mV 0.012 M/S2, Gain = 2
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 28 17−Feb−2003−02:16 Shots: 54
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23878 bits = 3643.6047 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 449.9 M , Transit Time = 224.85 ms Geophone Accelerometer Integration Done
DZ1, pp= 14508 bits = 2.1470 mV 0.090 M/S2, Gain = 2, Break= 920.93 ms
DY1, pp= 1623 bits = 0.2402 mV 0.010 M/S2, Gain = 2
DX1, pp= 823 bits = 0.1218 mV 0.005092 M/S2, Gain = 2
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 27 17−Feb−2003−02:11 Shots: 53

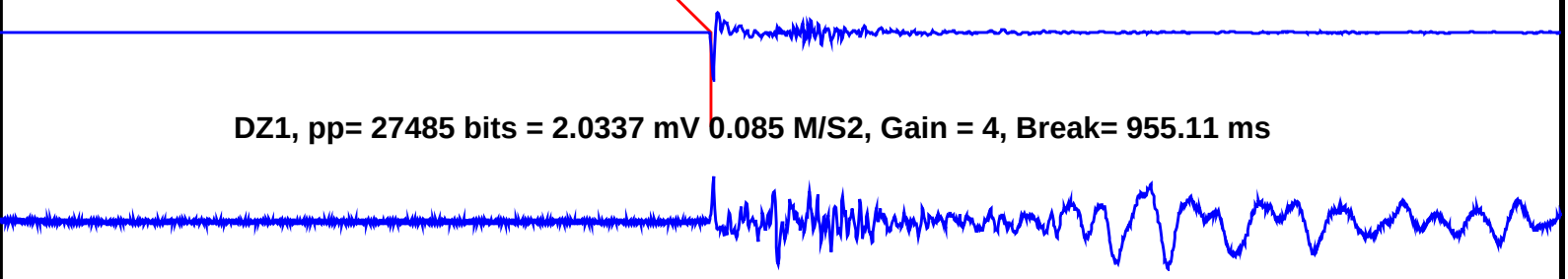
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



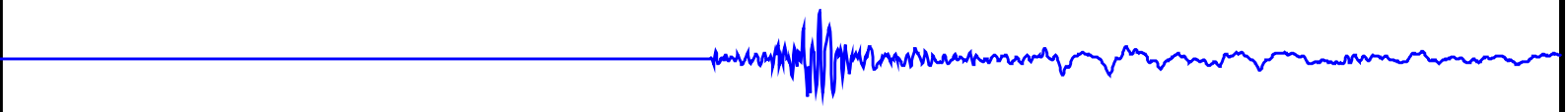
S1, pp= 23534 bits = 3591.1128 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 522.8 M , Transit Time = 259.04 ms Geophone Accelerometer Integration Done

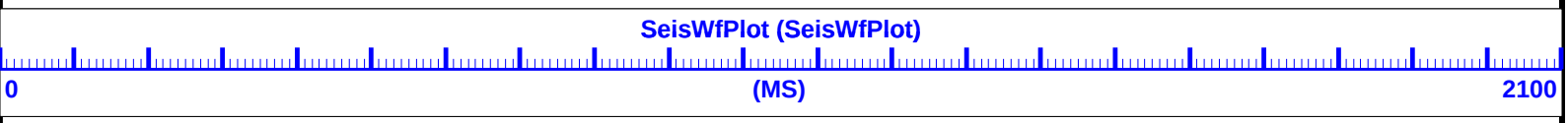


DZ1, pp= 27485 bits = 2.0337 mV 0.085 M/S2, Gain = 4, Break= 955.11 ms

DY1, pp= 1738 bits = 0.1286 mV 0.005376 M/S2, Gain = 4



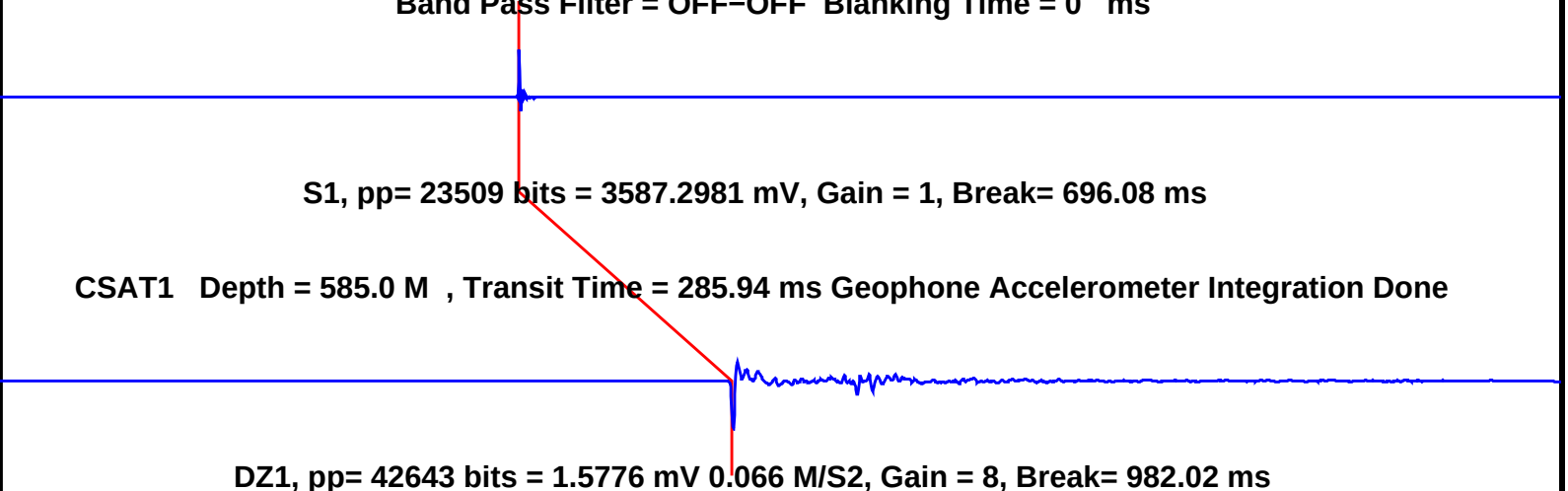
DX1, pp= 7348 bits = 0.5437 mV 0.023 M/S2, Gain = 4



STACK # 26 17−Feb−2003−02:03 Shots: 51

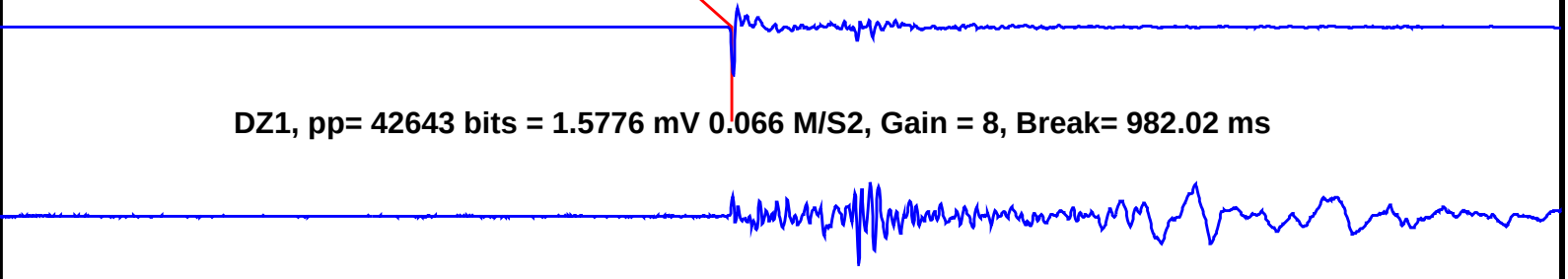
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



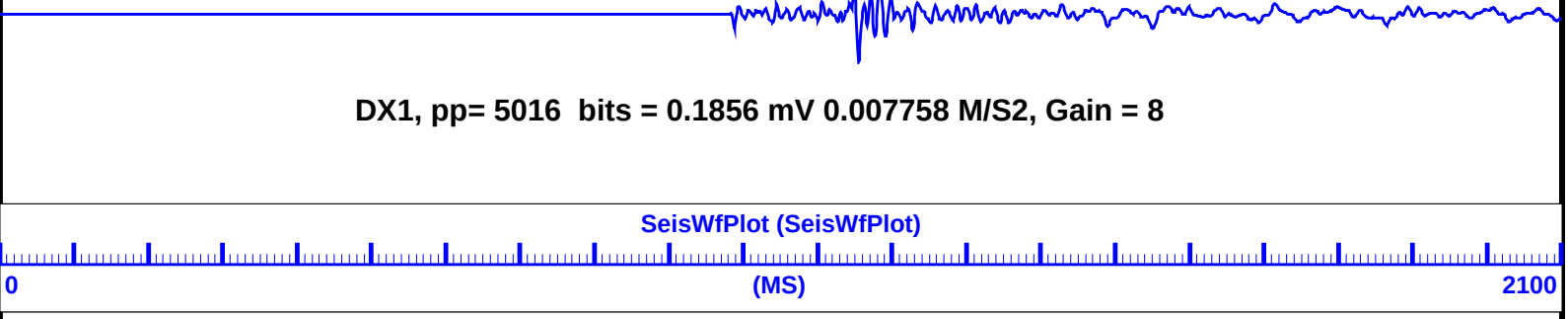
S1, pp= 23509 bits = 3587.2981 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 585.0 M , Transit Time = 285.94 ms Geophone Accelerometer Integration Done



DZ1, pp= 42643 bits = 1.5776 mV 0.066 M/S2, Gain = 8, Break= 982.02 ms

DY1, pp= 3878 bits = 0.1435 mV 0.005998 M/S2, Gain = 8



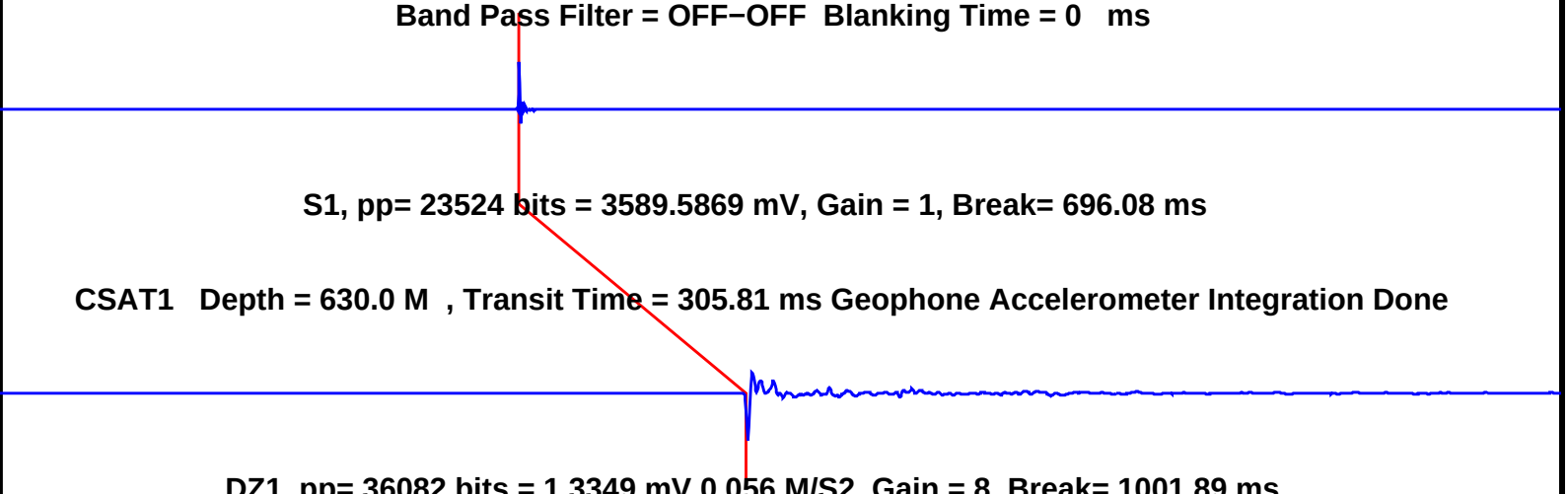
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

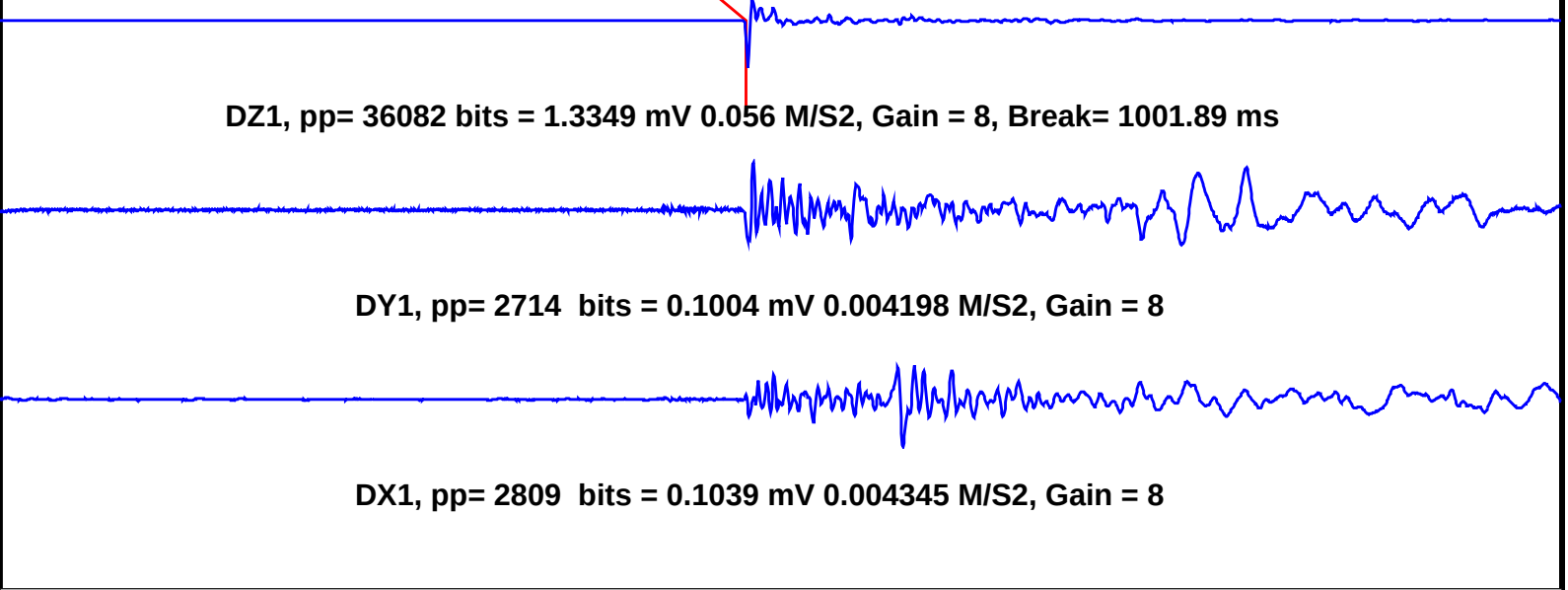
STACK # 25 17−Feb−2003−01:58 Shots: 50

Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



CSAT1 Depth = 630.0 M , Transit Time = 305.81 ms Geophone Accelerometer Integration Done



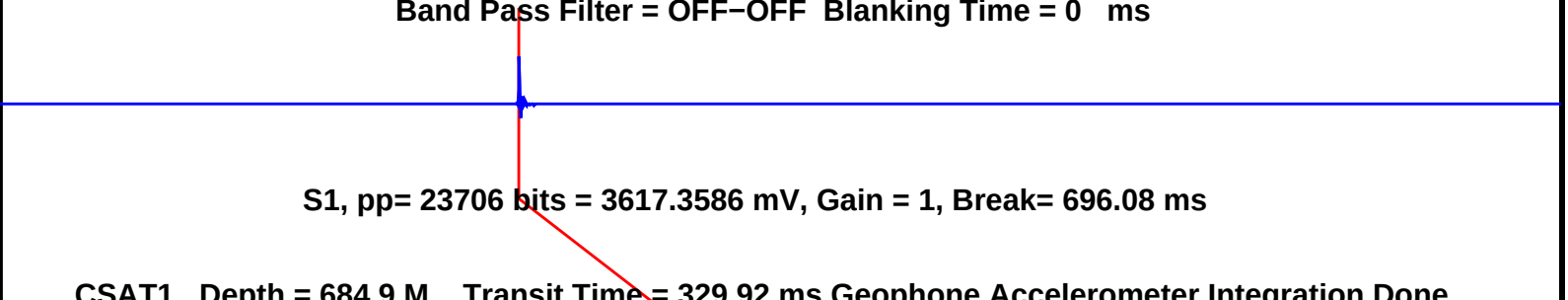
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

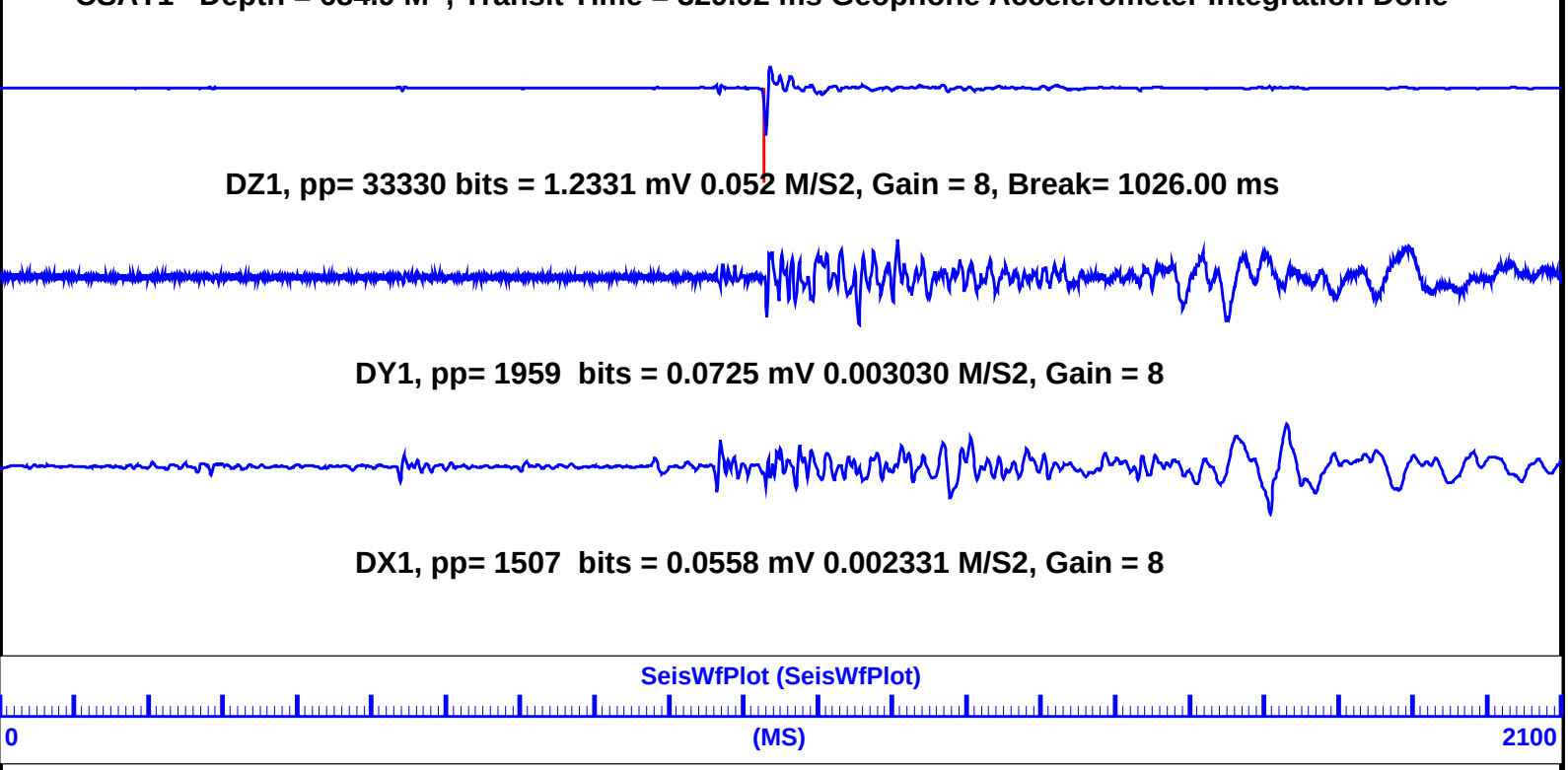
STACK # 24 17−Feb−2003−01:53 Shots: 49

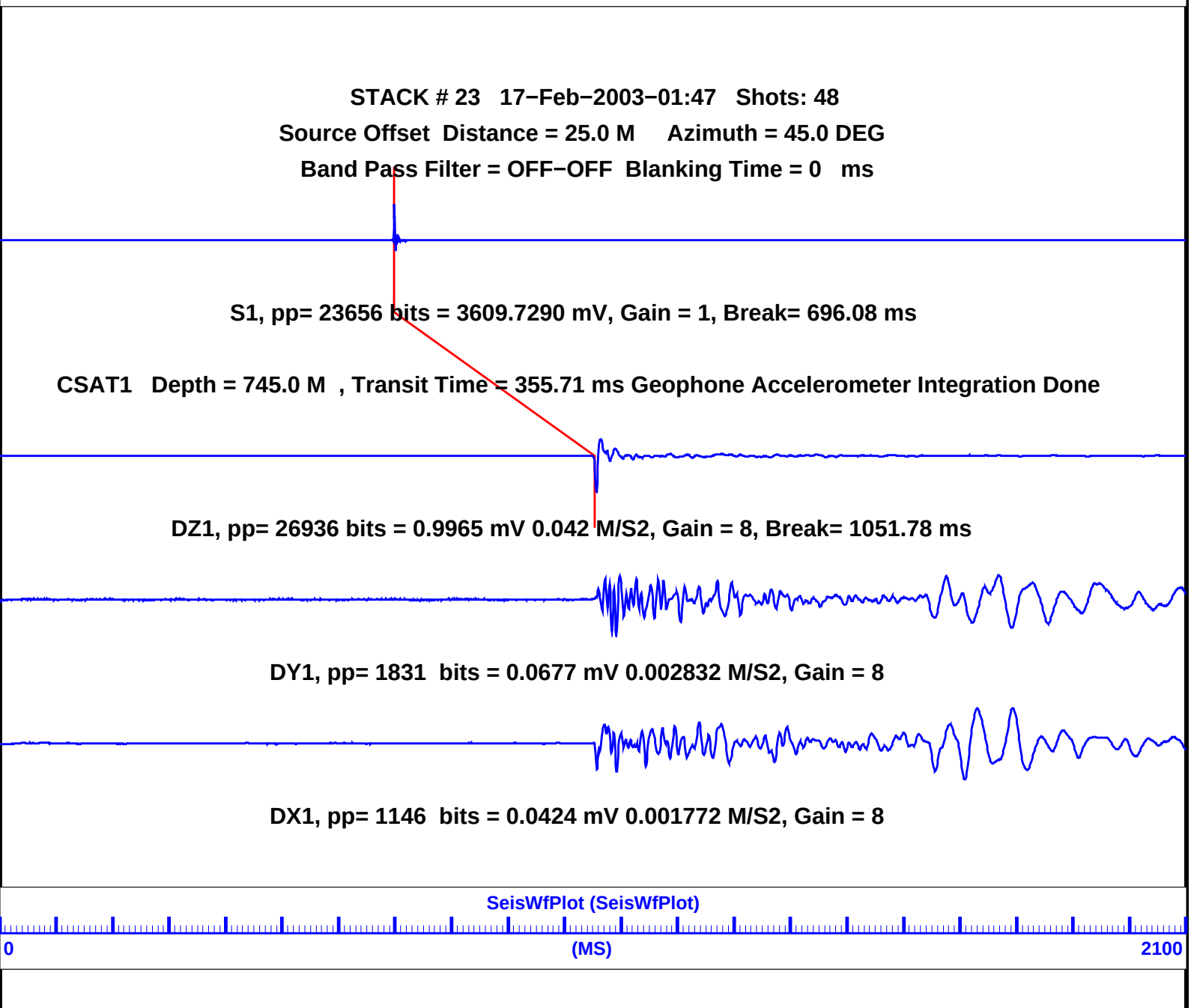
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

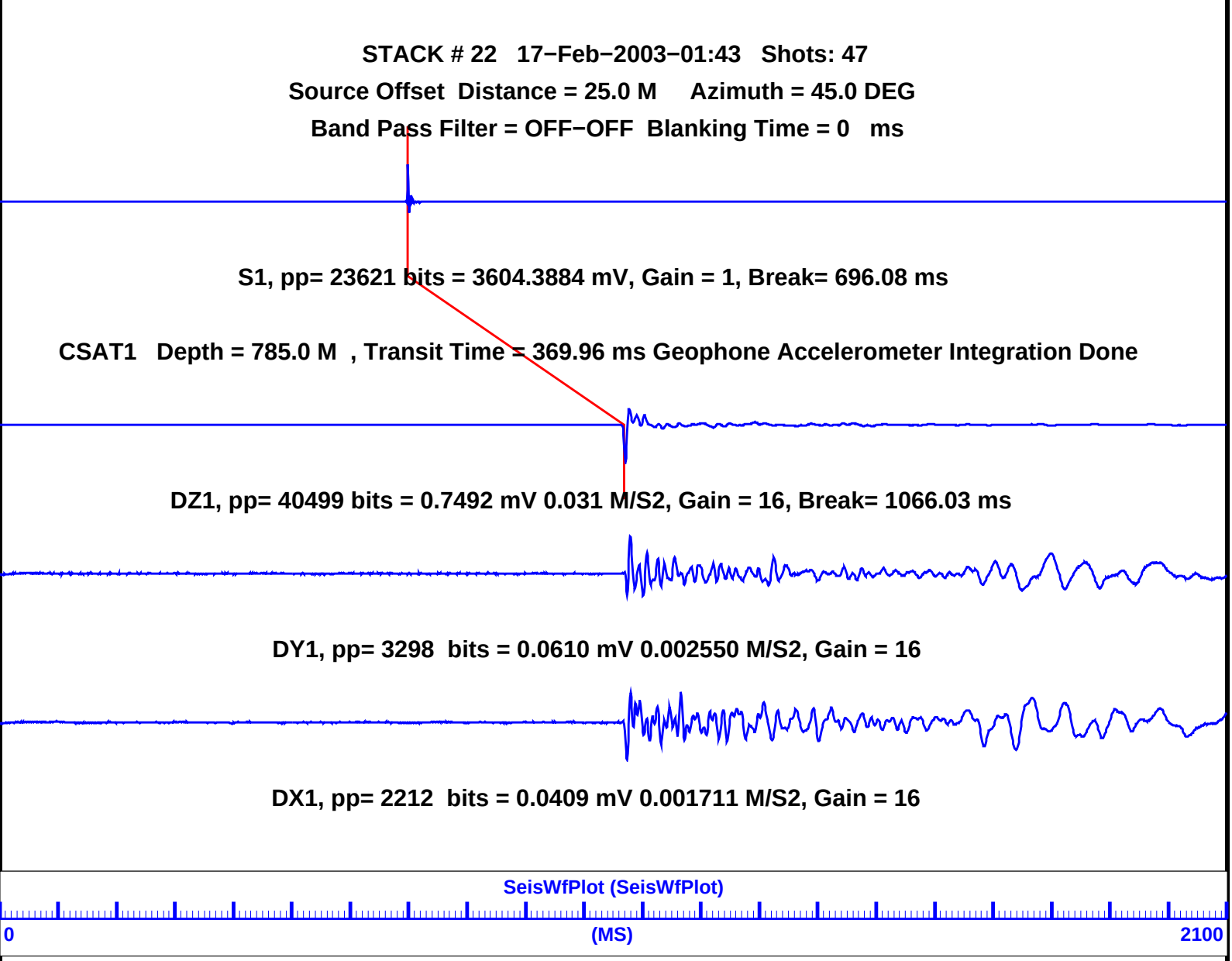
Band Pass Filter = OFF−OFF Blanking Time = 0 ms

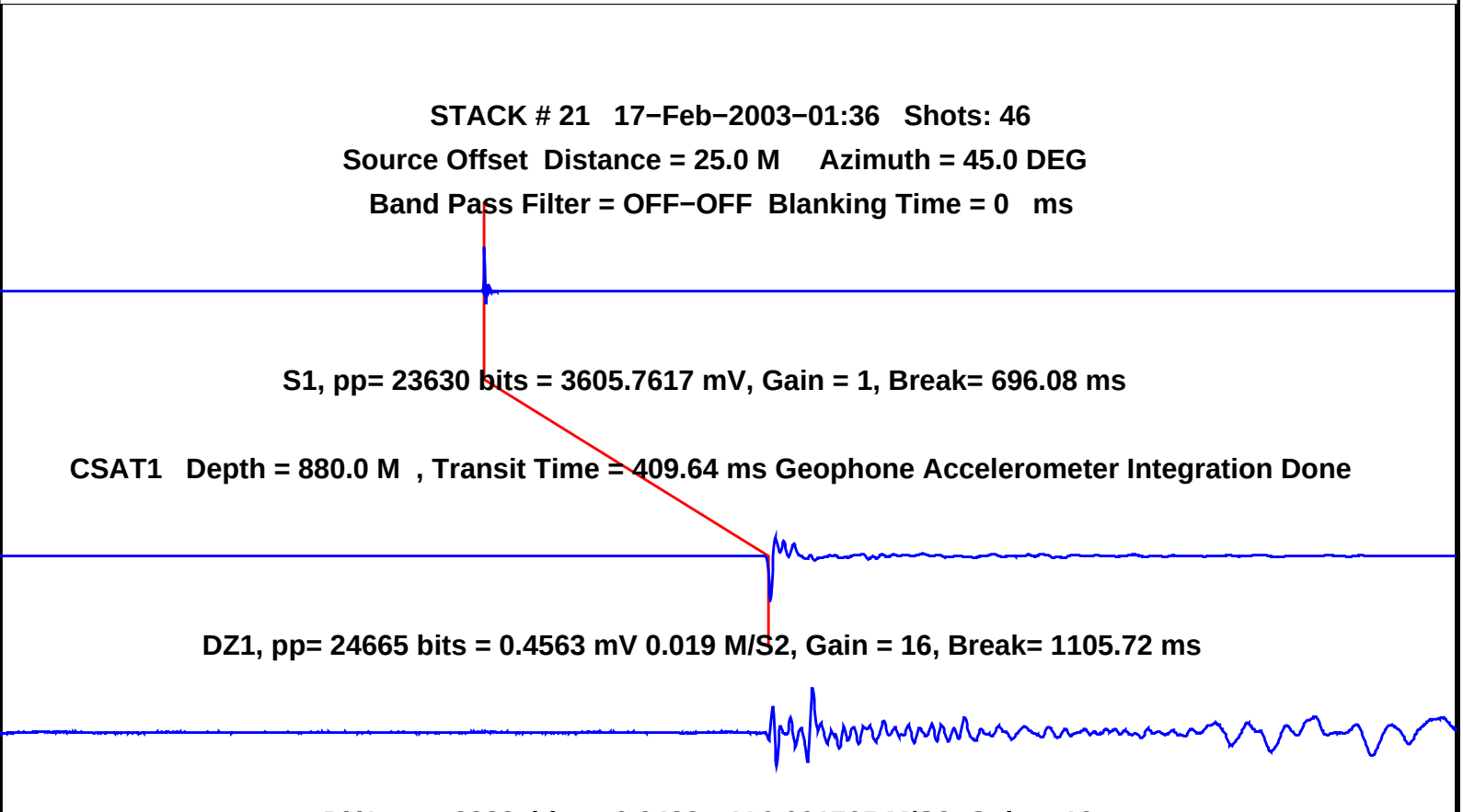


CSAT1 Depth = 684.9 M , Transit Time = 329.92 ms Geophone Accelerometer Integration Done


DZ1, pp= 33330 bits = 1.2331 mV 0.052 M/S2, Gain = 8, Break= 1026.00 ms
DY1, pp= 1959 bits = 0.0725 mV 0.003030 M/S2, Gain = 8
DX1, pp= 1507 bits = 0.0558 mV 0.002331 M/S2, Gain = 8
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 23 17−Feb−2003−01:47 Shots: 48
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23656 bits = 3609.7290 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 745.0 M , Transit Time = 355.71 ms Geophone Accelerometer Integration Done
DZ1, pp= 26936 bits = 0.9965 mV 0.042 M/S2, Gain = 8, Break= 1051.78 ms
DY1, pp= 1831 bits = 0.0677 mV 0.002832 M/S2, Gain = 8
DX1, pp= 1146 bits = 0.0424 mV 0.001772 M/S2, Gain = 8
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 22 17−Feb−2003−01:43 Shots: 47
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23621 bits = 3604.3884 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 785.0 M , Transit Time = 369.96 ms Geophone Accelerometer Integration Done
DZ1, pp= 40499 bits = 0.7492 mV 0.031 M/S2, Gain = 16, Break= 1066.03 ms
DY1, pp= 3298 bits = 0.0610 mV 0.002550 M/S2, Gain = 16
DX1, pp= 2212 bits = 0.0409 mV 0.001711 M/S2, Gain = 16
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 21 17−Feb−2003−01:36 Shots: 46
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23630 bits = 3605.7617 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 880.0 M , Transit Time = 409.64 ms Geophone Accelerometer Integration Done
DZ1, pp= 24665 bits = 0.4563 mV 0.019 M/S2, Gain = 16, Break= 1105.72 ms

DY1, pp= 2282 bits = 0.0422 mV 0.001765 M/S2, Gain = 16

DX1, pp= 1230 bits = 0.0228 mV 0.000951 M/S2, Gain = 16

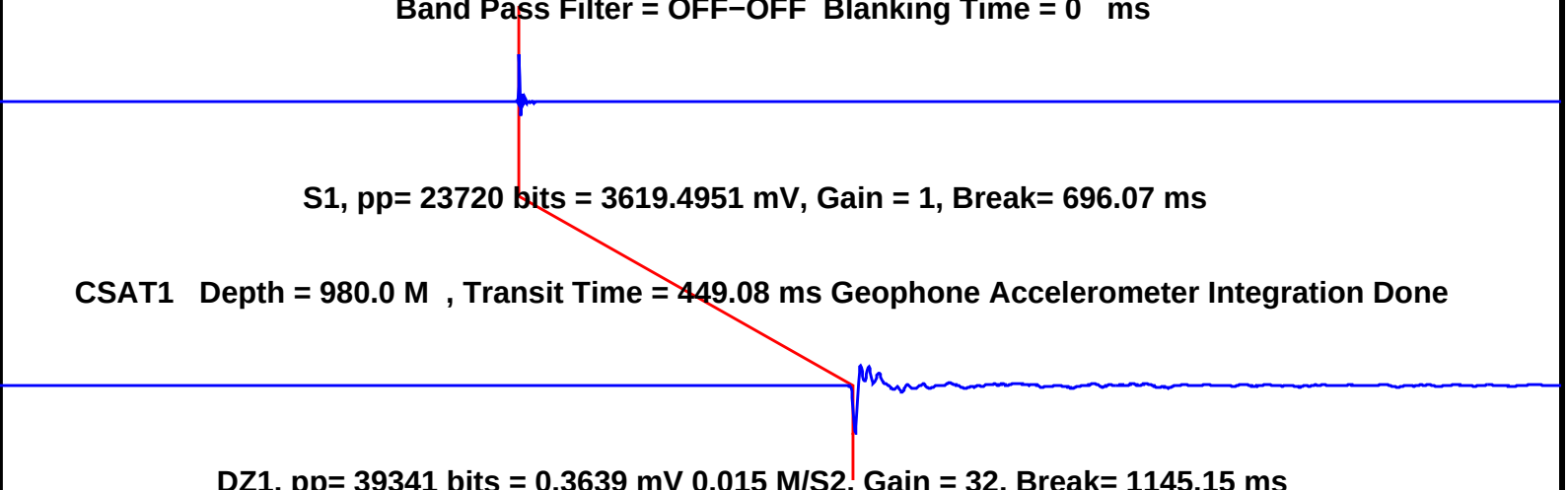
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 20 17−Feb−2003−01:23 Shots: 43

Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



S1, pp= 23720 bits = 3619.4951 mV, Gain = 1, Break= 696.07 ms

CSAT1 Depth = 980.0 M , Transit Time = 449.08 ms Geophone Accelerometer Integration Done

DZ1, pp= 39341 bits = 0.3639 mV 0.015 M/S2, Gain = 32, Break= 1145.15 ms

DY1, pp= 3101 bits = 0.0287 mV 0.001199 M/S2, Gain = 32

DX1, pp= 1665 bits = 0.0154 mV 0.000644 M/S2, Gain = 32

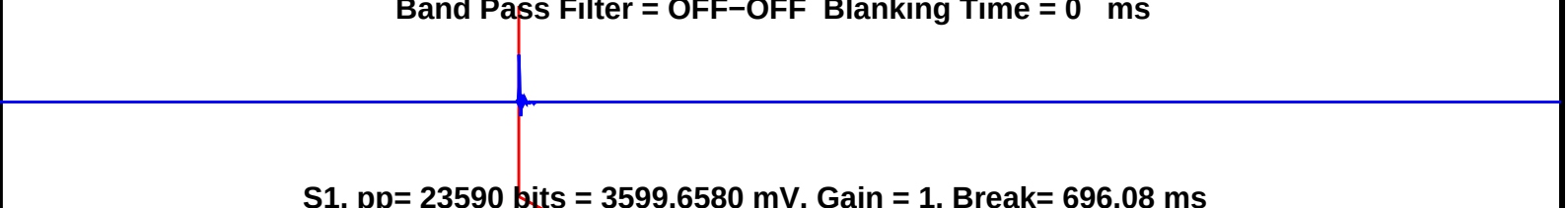
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

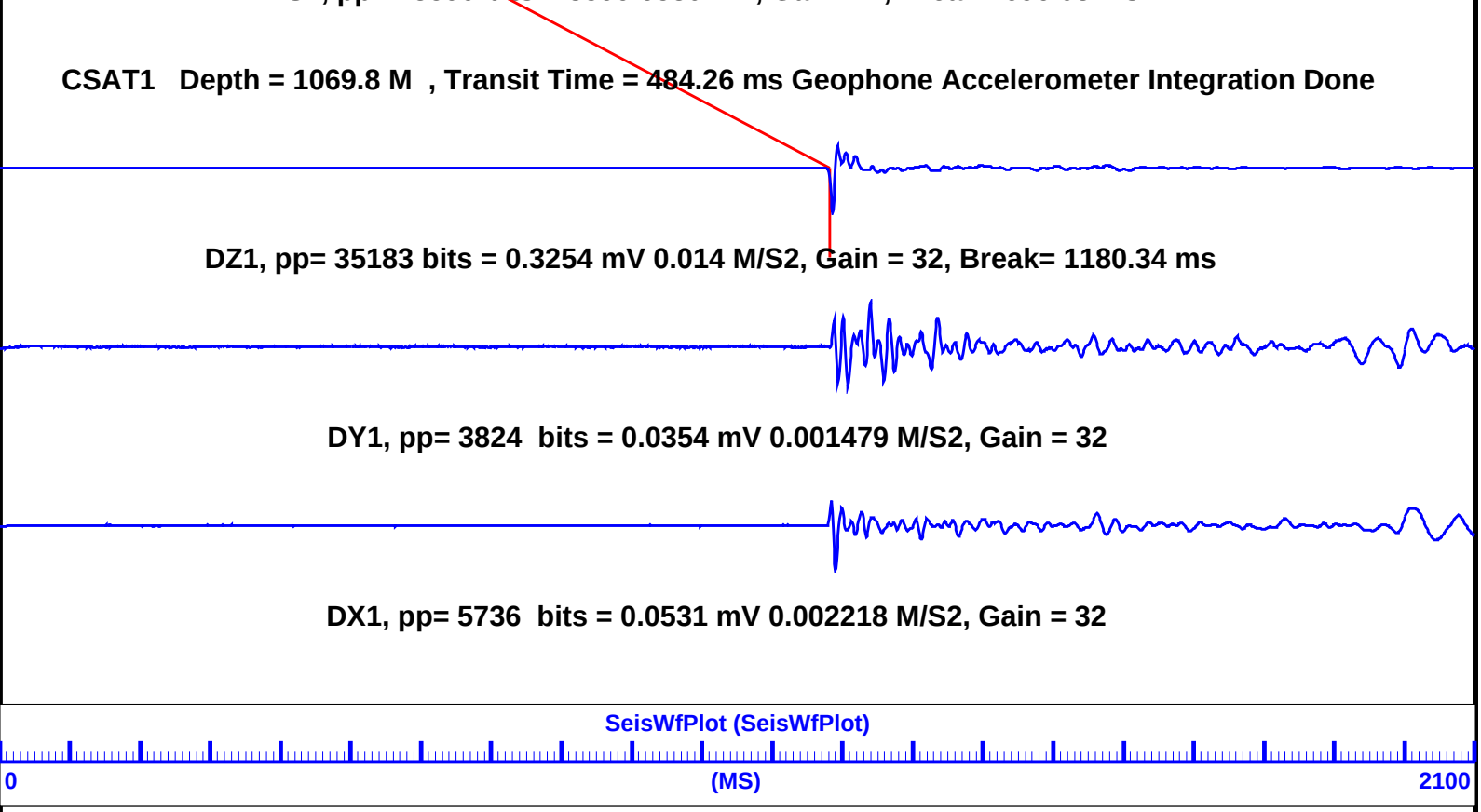
STACK # 19 17−Feb−2003−01:16 Shots: 42

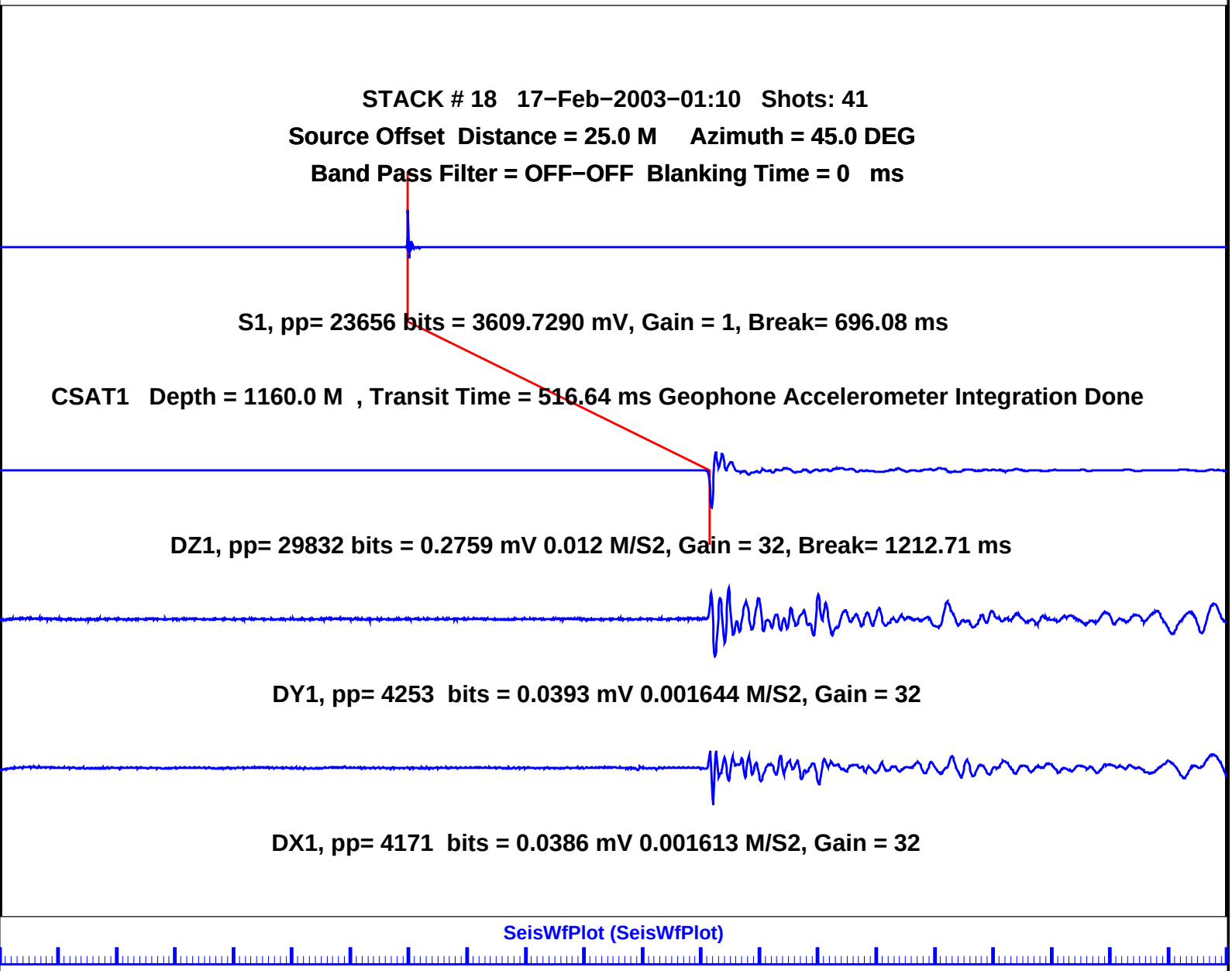
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

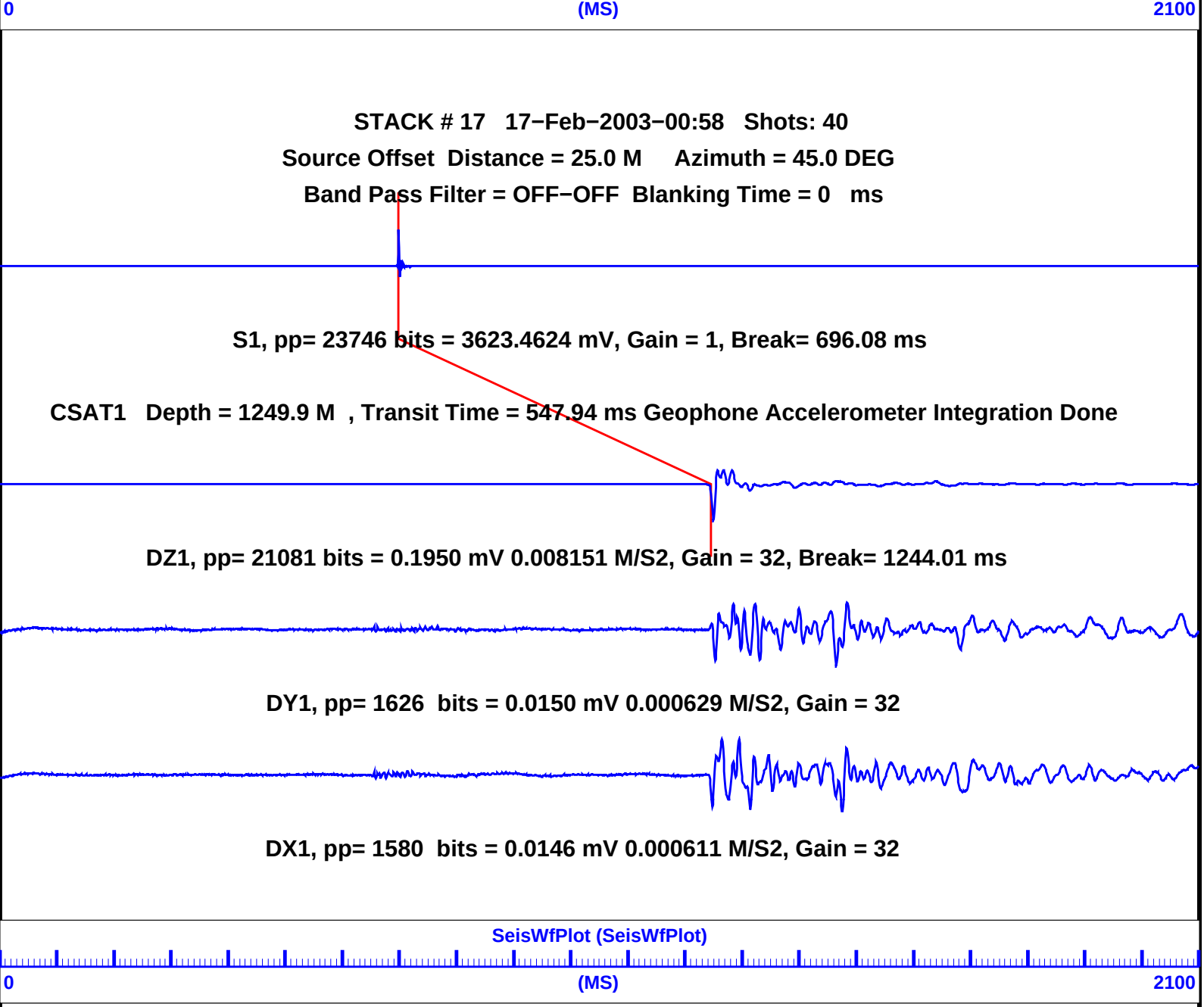
Band Pass Filter = OFF−OFF Blanking Time = 0 ms

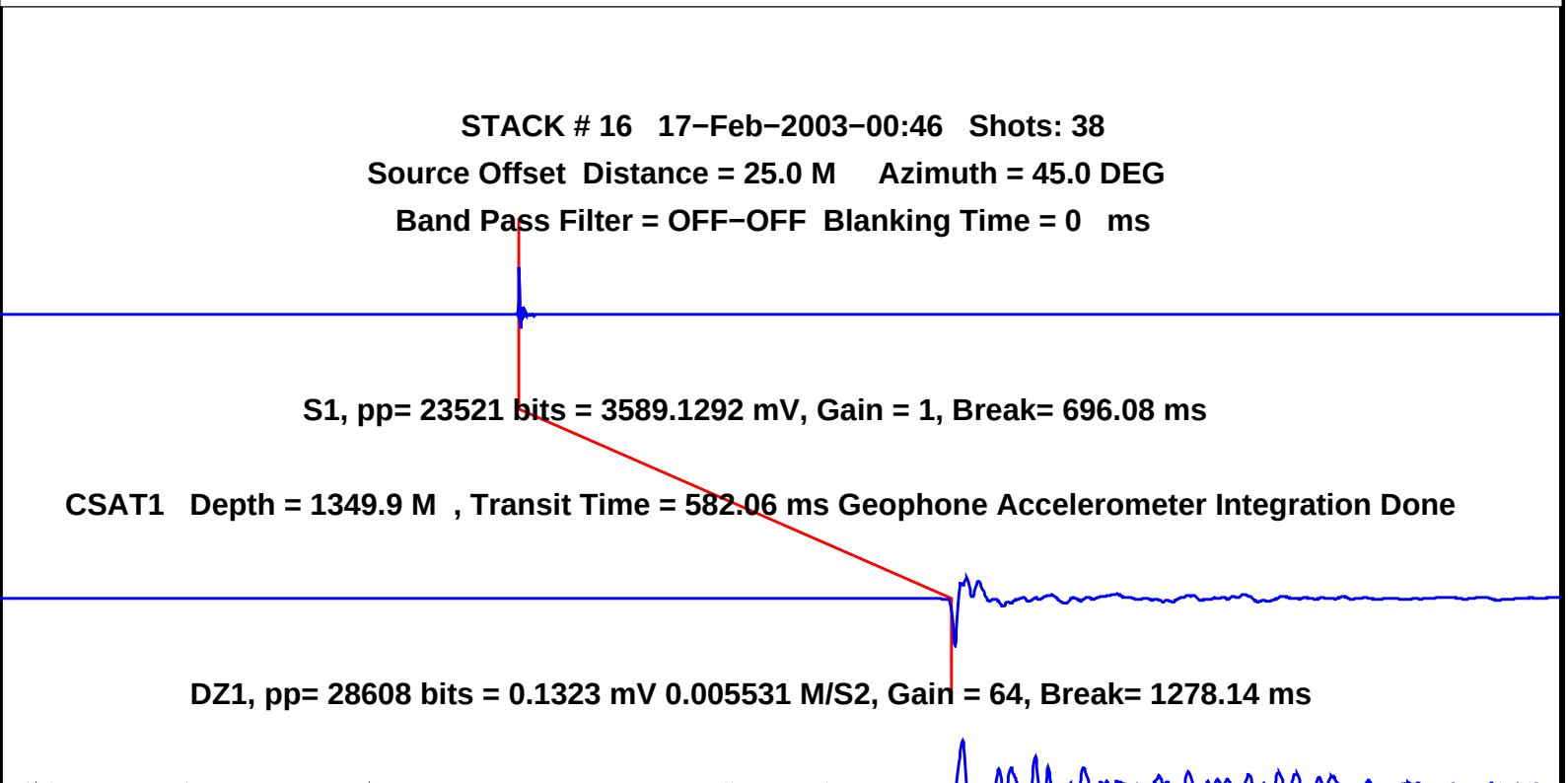


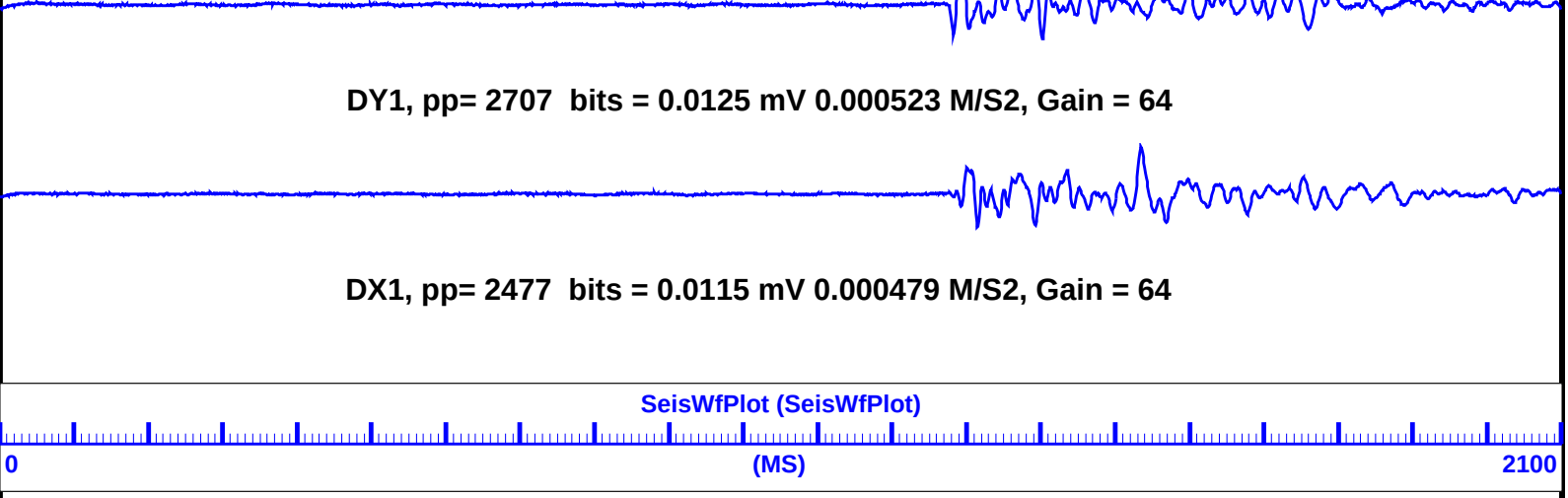
S1, pp= 23590 bits = 3599.6580 mV, Gain = 1, Break= 696.08 ms

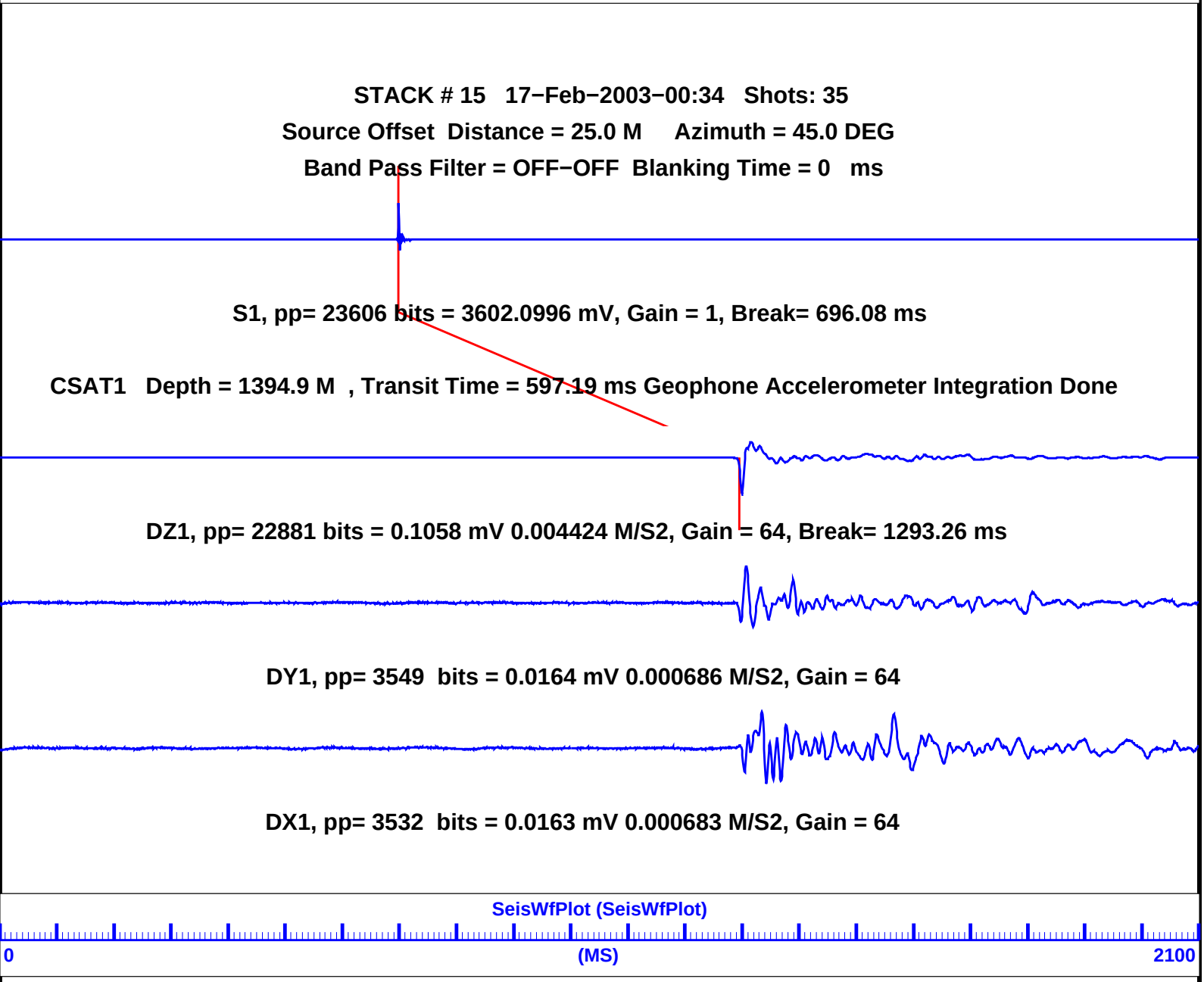

CSAT1 Depth = 1069.8 M , Transit Time = 484.26 ms Geophone Accelerometer Integration Done
DZ1, pp= 35183 bits = 0.3254 mV 0.014 M/S2, Gain = 32, Break= 1180.34 ms
DY1, pp= 3824 bits = 0.0354 mV 0.001479 M/S2, Gain = 32
DX1, pp= 5736 bits = 0.0531 mV 0.002218 M/S2, Gain = 32
SeisWfPlot (SeisWfPlot)
0
(MS)
2100

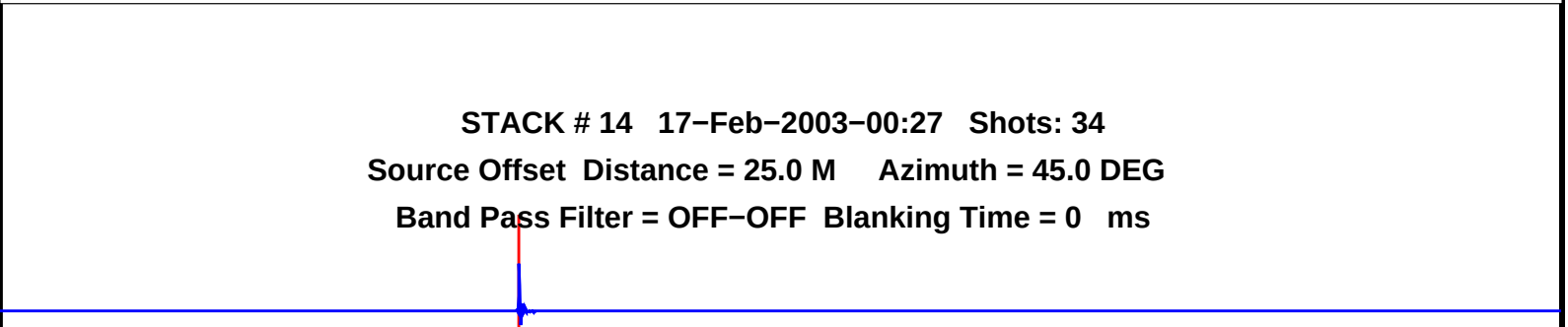

STACK # 18 17−Feb−2003−01:10 Shots: 41
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23656 bits = 3609.7290 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 1160.0 M , Transit Time = 516.64 ms Geophone Accelerometer Integration Done
DZ1, pp= 29832 bits = 0.2759 mV 0.012 M/S2, Gain = 32, Break= 1212.71 ms
DY1, pp= 4253 bits = 0.0393 mV 0.001644 M/S2, Gain = 32
DX1, pp= 4171 bits = 0.0386 mV 0.001613 M/S2, Gain = 32
SeisWfPlot (SeisWfPlot)


0
(MS)
2100
STACK # 17 17−Feb−2003−00:58 Shots: 40
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23746 bits = 3623.4624 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 1249.9 M , Transit Time = 547.94 ms Geophone Accelerometer Integration Done
DZ1, pp= 21081 bits = 0.1950 mV 0.008151 M/S2, Gain = 32, Break= 1244.01 ms
DY1, pp= 1626 bits = 0.0150 mV 0.000629 M/S2, Gain = 32
DX1, pp= 1580 bits = 0.0146 mV 0.000611 M/S2, Gain = 32
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 16 17−Feb−2003−00:46 Shots: 38
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23521 bits = 3589.1292 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 1349.9 M , Transit Time = 582.06 ms Geophone Accelerometer Integration Done
DZ1, pp= 28608 bits = 0.1323 mV 0.005531 M/S2, Gain = 64, Break= 1278.14 ms

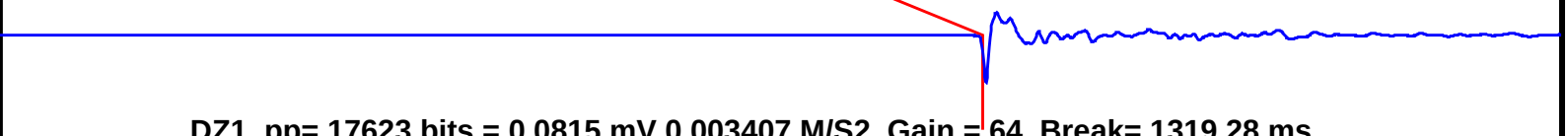

DY1, pp= 2707 bits = 0.0125 mV 0.000523 M/S2, Gain = 64
DX1, pp= 2477 bits = 0.0115 mV 0.000479 M/S2, Gain = 64
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 15 17−Feb−2003−00:34 Shots: 35
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23606 bits = 3602.0996 mV, Gain = 1, Break= 696.08 ms
CSAT1 Depth = 1394.9 M , Transit Time = 597.19 ms Geophone Accelerometer Integration Done
DZ1, pp= 22881 bits = 0.1058 mV 0.004424 M/S2, Gain = 64, Break= 1293.26 ms
DY1, pp= 3549 bits = 0.0164 mV 0.000686 M/S2, Gain = 64
DX1, pp= 3532 bits = 0.0163 mV 0.000683 M/S2, Gain = 64
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 14 17−Feb−2003−00:27 Shots: 34
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms

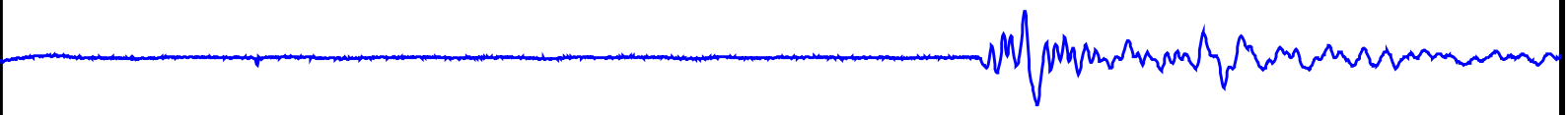
S1, pp= 23686 bits = 3614.3069 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 1469.8 M , Transit Time = 623.20 ms Geophone Accelerometer Integration Done



DZ1, pp= 17623 bits = 0.0815 mV 0.003407 M/S2, Gain = 64, Break= 1319.28 ms

DY1, pp= 3475 bits = 0.0161 mV 0.000672 M/S2, Gain = 64



DX1, pp= 2109 bits = 0.0098 mV 0.000408 M/S2, Gain = 64

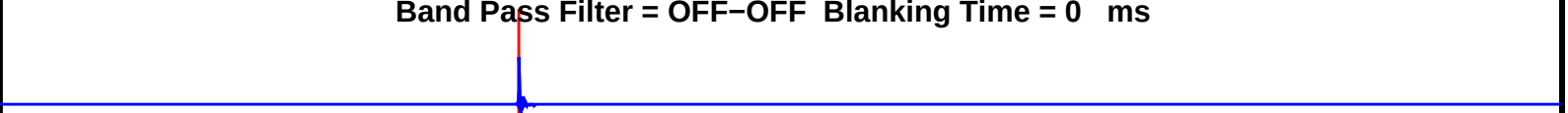
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 13 17−Feb−2003−00:20 Shots: 33

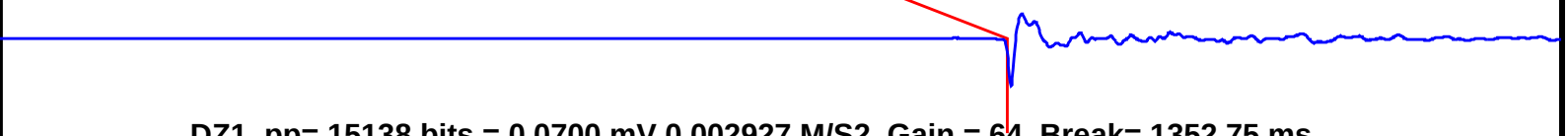
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



S1, pp= 23709 bits = 3617.8164 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 1569.9 M , Transit Time = 656.67 ms Geophone Accelerometer Integration Done



DZ1, pp= 15138 bits = 0.0700 mV 0.002927 M/S2, Gain = 64, Break= 1352.75 ms

DY1, pp= 3127 bits = 0.0145 mV 0.000605 M/S2, Gain = 64

DX1, pp= 1841 bits = 0.0085 mV 0.000356 M/S2, Gain = 64

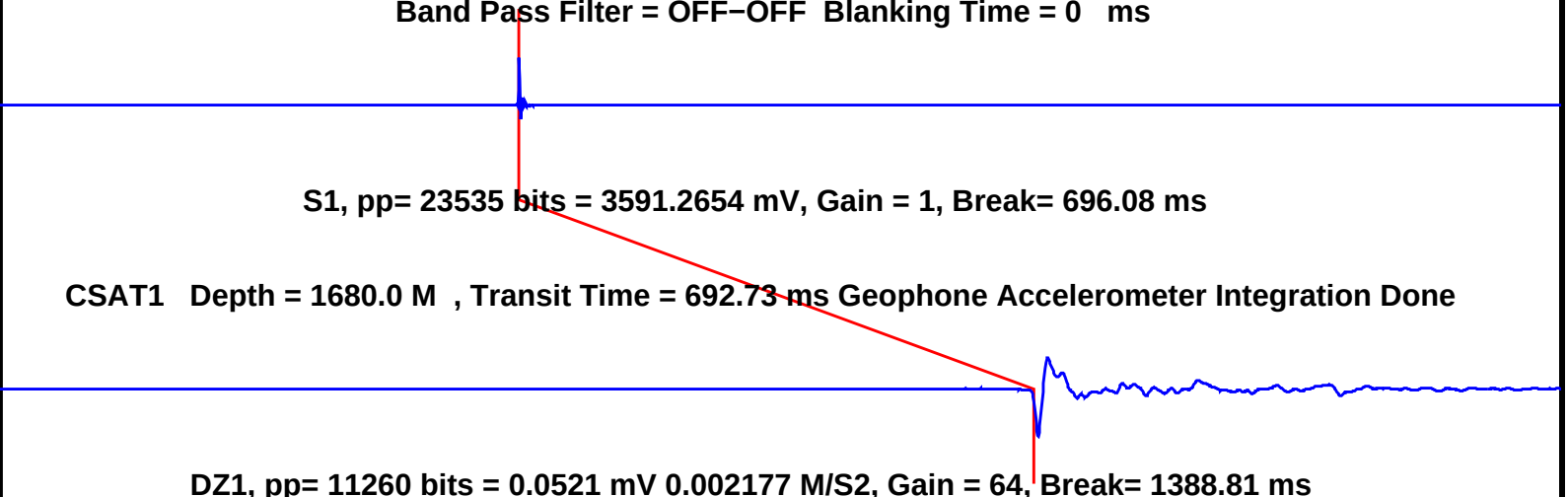
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 12 17−Feb−2003−00:10 Shots: 31

Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



S1, pp= 23535 bits = 3591.2654 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 1680.0 M , Transit Time = 692.73 ms Geophone Accelerometer Integration Done

DZ1, pp= 11260 bits = 0.0521 mV 0.002177 M/S2, Gain = 64, Break= 1388.81 ms

DY1, pp= 2241 bits = 0.0104 mV 0.000433 M/S2, Gain = 64

DX1, pp= 1697 bits = 0.0078 mV 0.000328 M/S2, Gain = 64

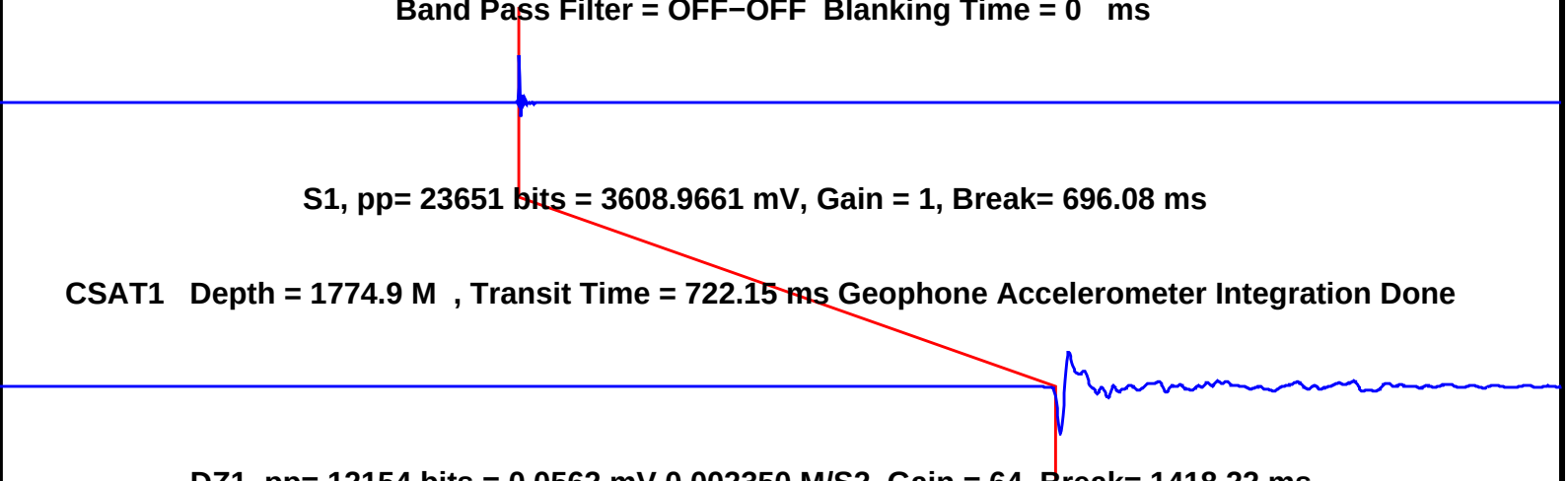
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 11 17−Feb−2003−00:01 Shots: 30

Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms

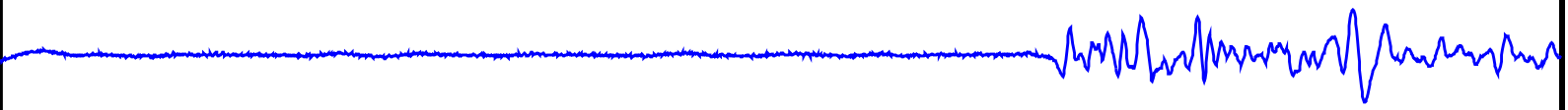


S1, pp= 23651 bits = 3608.9661 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 1774.9 M , Transit Time = 722.15 ms Geophone Accelerometer Integration Done

DZ1, pp= 12154 bits = 0.0562 mV 0.002350 M/S2, Gain = 64, Break= 1418.22 ms

DY1, pp= 2571 bits = 0.0119 mV 0.000497 M/S2, Gain = 64



DX1, pp= 1169 bits = 0.0054 mV 0.000226 M/S2, Gain = 64

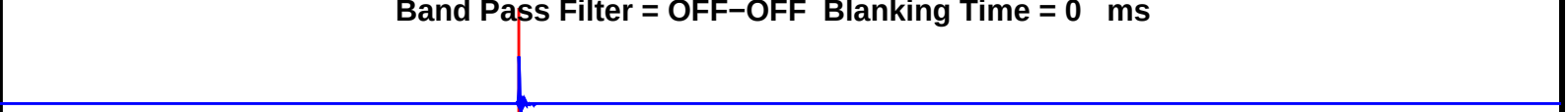
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 10 16−Feb−2003−23:54 Shots: 29

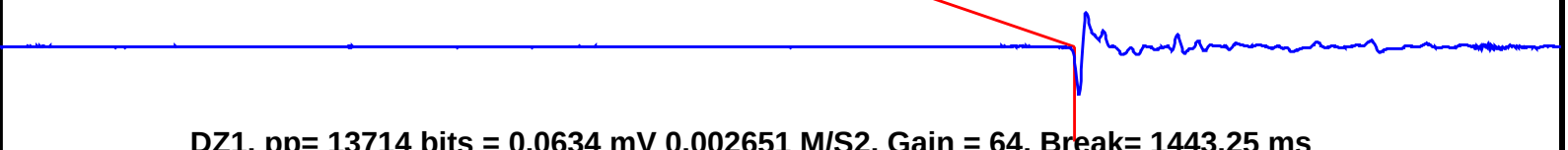
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms

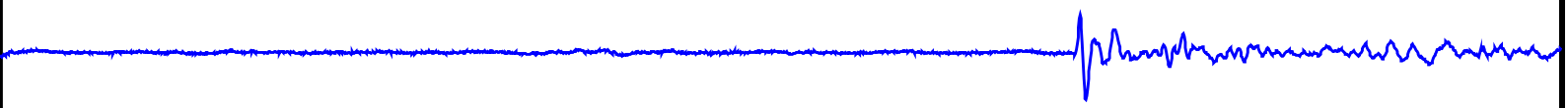


S1, pp= 23669 bits = 3611.7129 mV, Gain = 1, Break= 696.08 ms

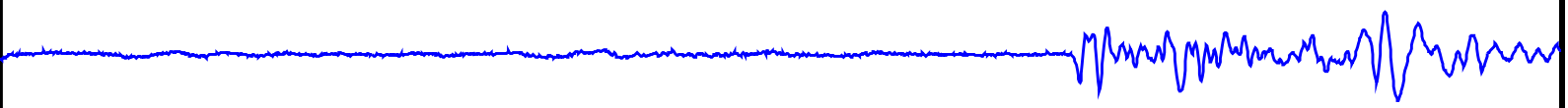
CSAT1 Depth = 1859.9 M , Transit Time = 747.17 ms Geophone Accelerometer Integration Done



DZ1, pp= 13714 bits = 0.0634 mV 0.002651 M/S2, Gain = 64, Break= 1443.25 ms



DY1, pp= 2911 bits = 0.0135 mV 0.000563 M/S2, Gain = 64



DX1, pp= 1058 bits = 0.0049 mV 0.000205 M/S2, Gain = 64

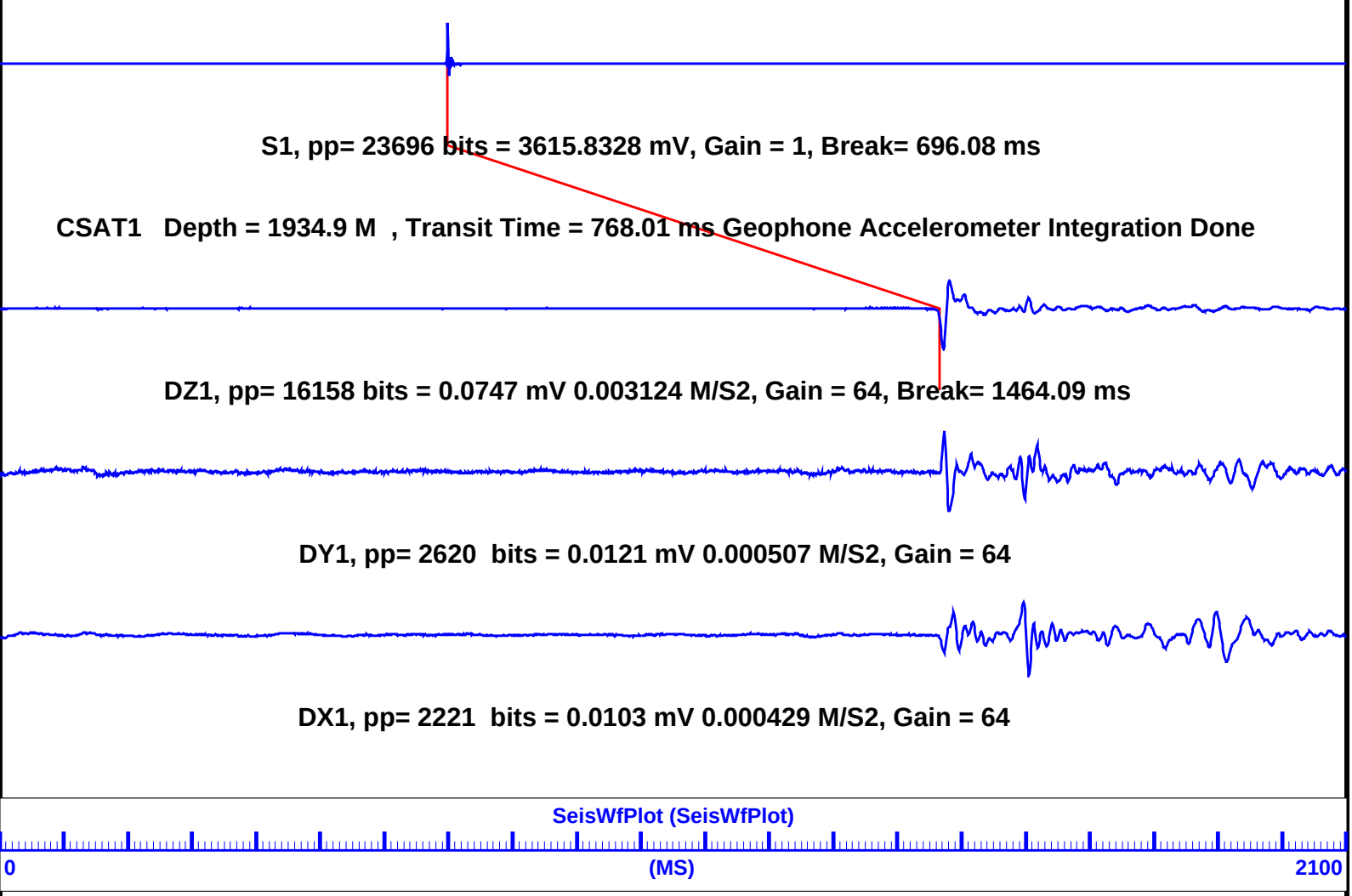
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 9 16−Feb−2003−23:48 Shots: 28

Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



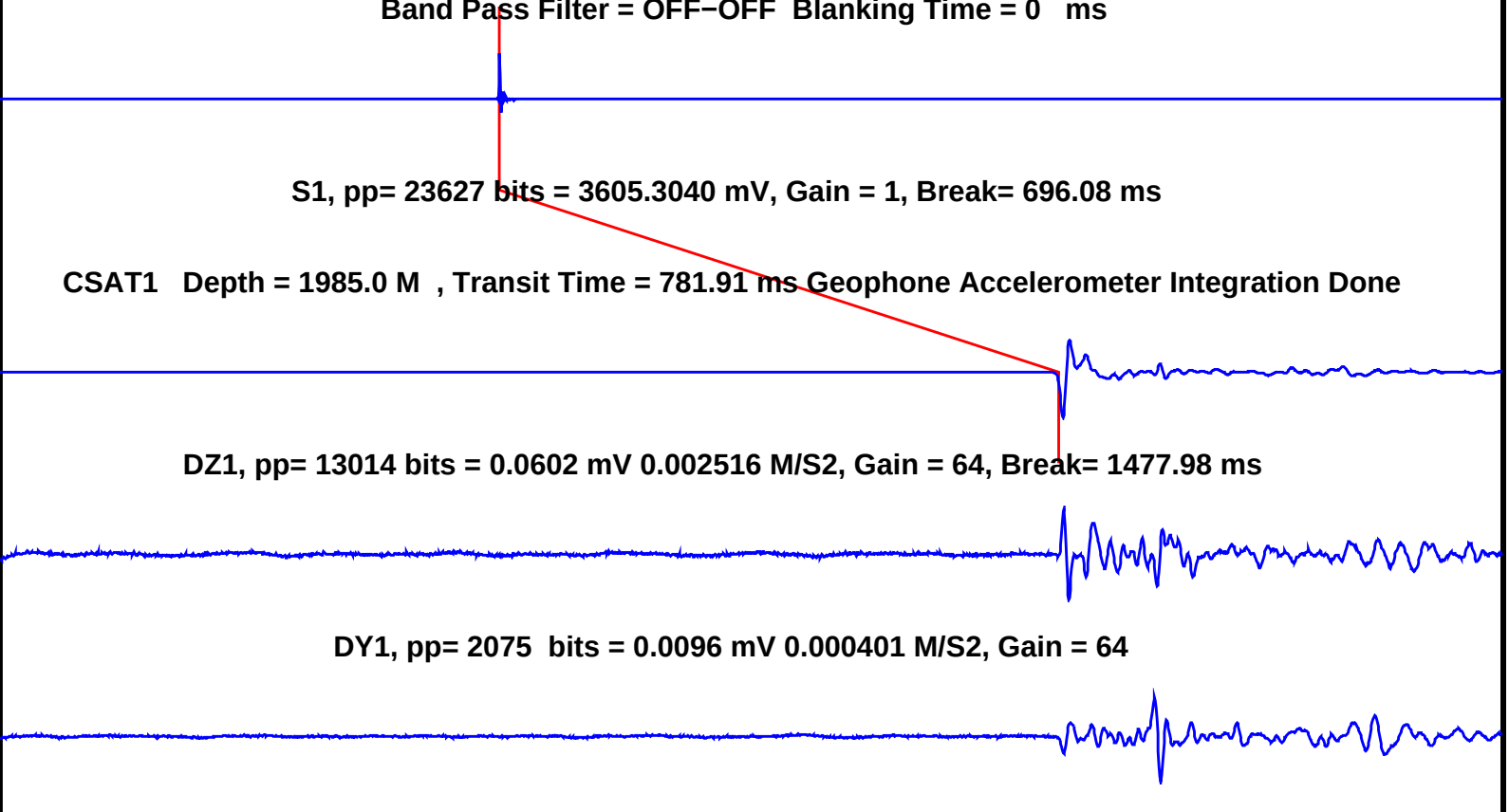
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 8 16−Feb−2003−23:43 Shots: 27

Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



DX1, pp= 2628 bits = 0.0122 mV 0.000508 M/S2, Gain = 64

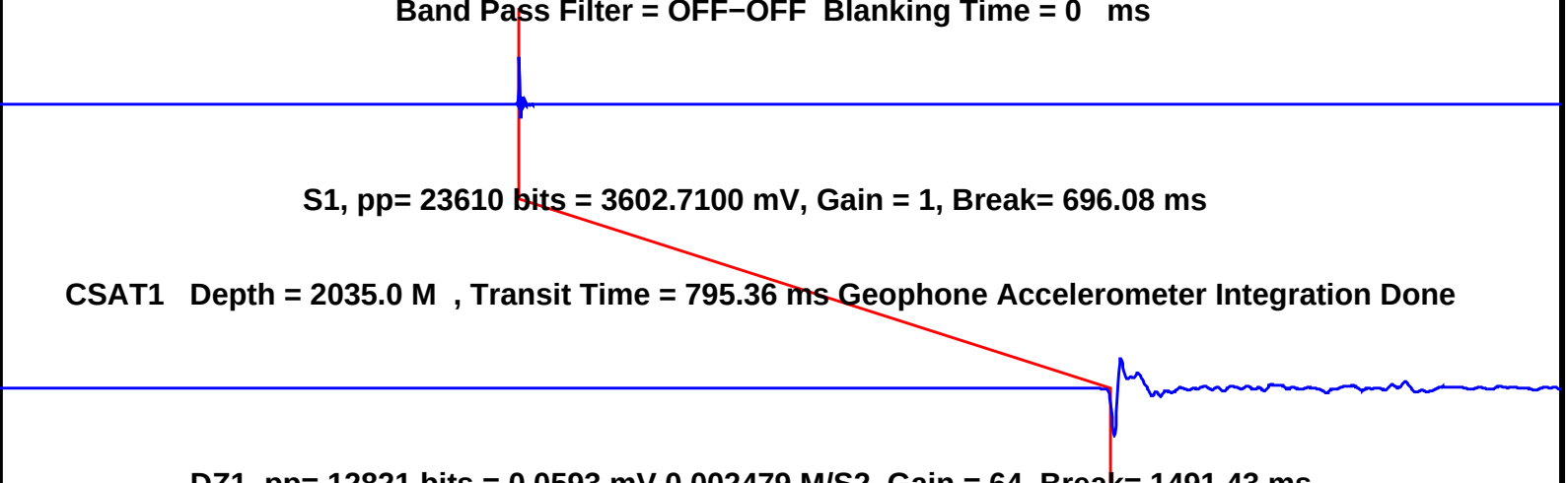
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 7 16−Feb−2003−23:37 Shots: 26

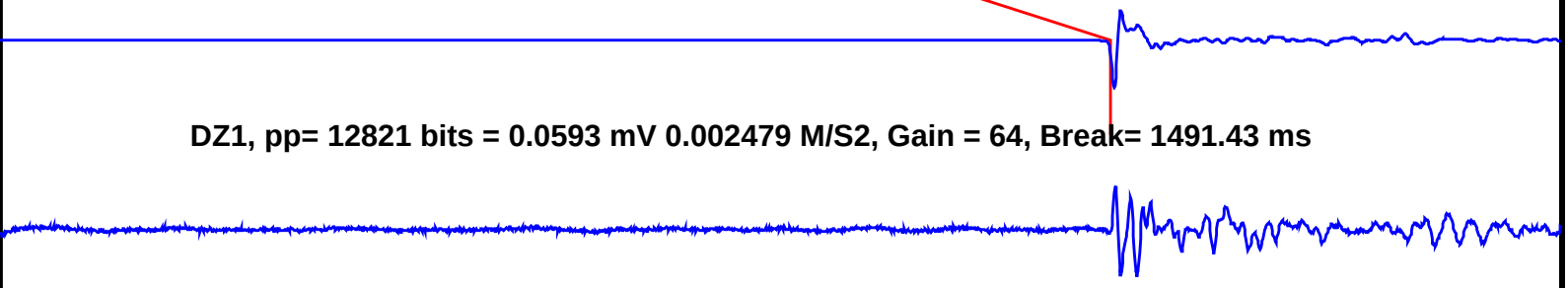
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

Band Pass Filter = OFF−OFF Blanking Time = 0 ms



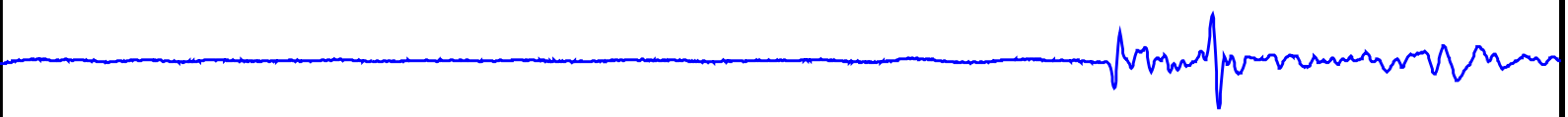
S1, pp= 23610 bits = 3602.7100 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 2035.0 M , Transit Time = 795.36 ms Geophone Accelerometer Integration Done



DZ1, pp= 12821 bits = 0.0593 mV 0.002479 M/S2, Gain = 64, Break= 1491.43 ms

DY1, pp= 2114 bits = 0.0098 mV 0.000409 M/S2, Gain = 64



DX1, pp= 2536 bits = 0.0117 mV 0.000490 M/S2, Gain = 64

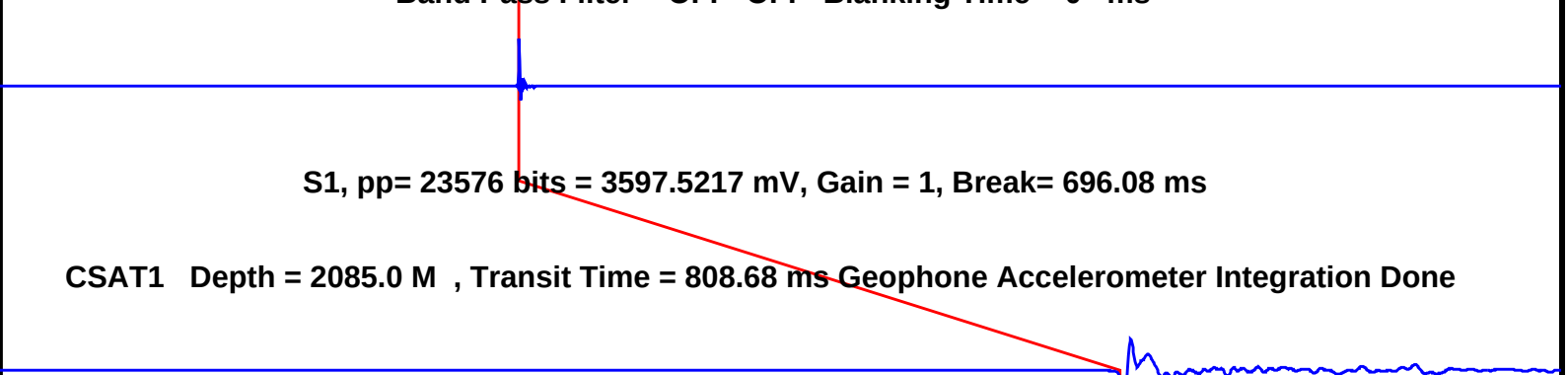
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

STACK # 6 16−Feb−2003−23:29 Shots: 24

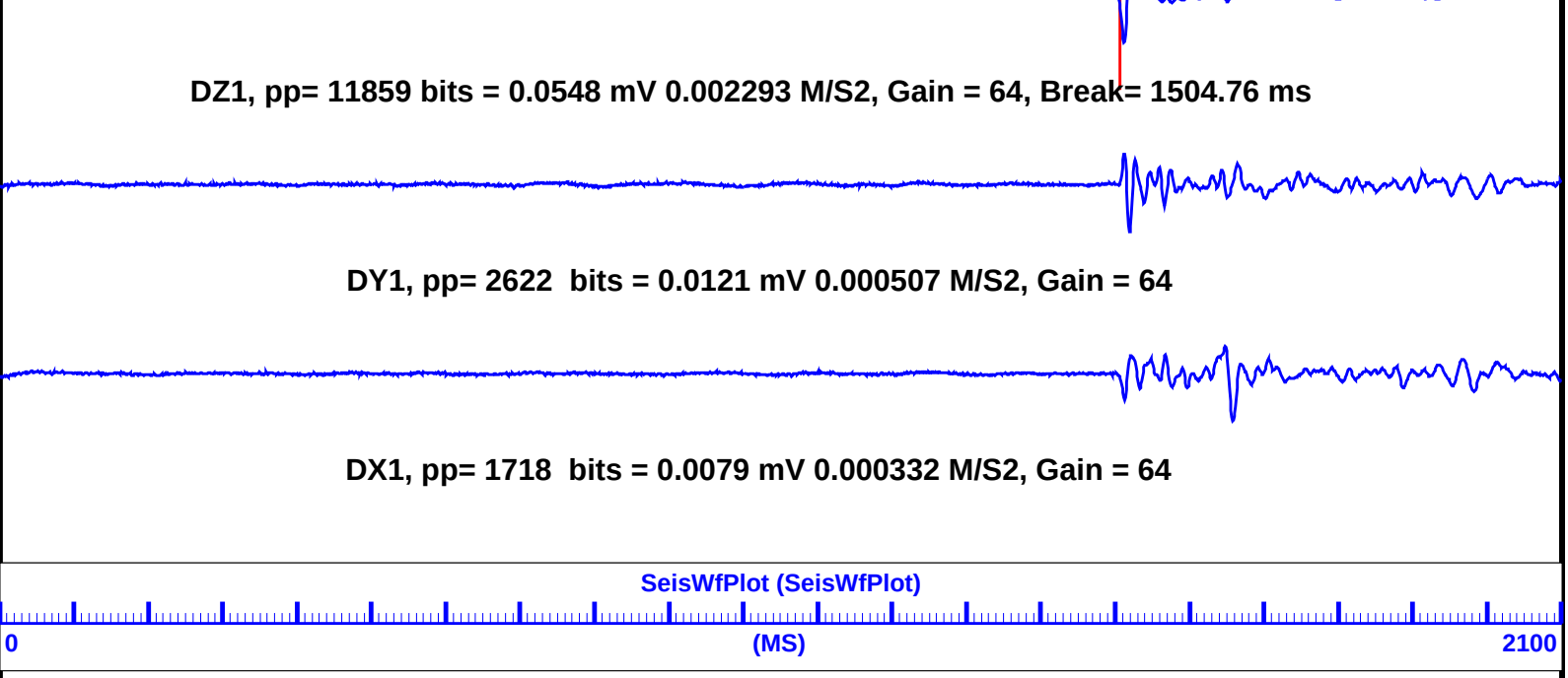
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG

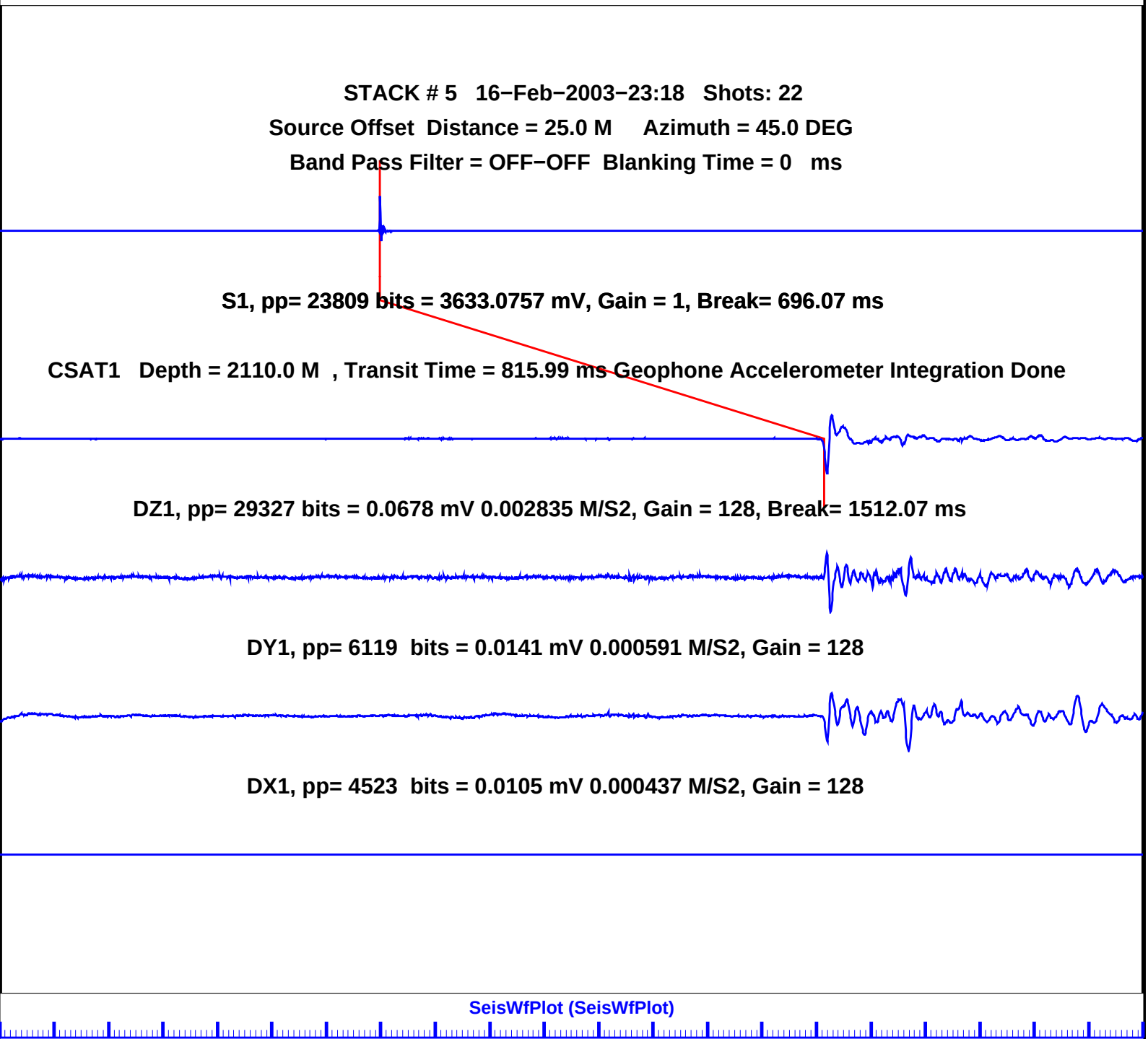
Band Pass Filter = OFF−OFF Blanking Time = 0 ms



S1, pp= 23576 bits = 3597.5217 mV, Gain = 1, Break= 696.08 ms

CSAT1 Depth = 2085.0 M , Transit Time = 808.68 ms Geophone Accelerometer Integration Done


DZ1, pp= 11859 bits = 0.0548 mV 0.002293 M/S2, Gain = 64, Break= 1504.76 ms
DY1, pp= 2622 bits = 0.0121 mV 0.000507 M/S2, Gain = 64
DX1, pp= 1718 bits = 0.0079 mV 0.000332 M/S2, Gain = 64
SeisWfPlot (SeisWfPlot)
0
(MS)
2100


STACK # 5 16−Feb−2003−23:18 Shots: 22
Source Offset Distance = 25.0 M Azimuth = 45.0 DEG
Band Pass Filter = OFF−OFF Blanking Time = 0 ms
S1, pp= 23809 bits = 3633.0757 mV, Gain = 1, Break= 696.07 ms
CSAT1 Depth = 2110.0 M , Transit Time = 815.99 ms Geophone Accelerometer Integration Done
DZ1, pp= 29327 bits = 0.0678 mV 0.002835 M/S2, Gain = 128, Break= 1512.07 ms
DY1, pp= 6119 bits = 0.0141 mV 0.000591 M/S2, Gain = 128
DX1, pp= 4523 bits = 0.0105 mV 0.000437 M/S2, Gain = 128
SeisWfPlot (SeisWfPlot)

0 (MS) 2100

Format: SeisAxisWfPlotCsat Vertical Scale: 0.5" per 1SAMPLES Graphics File Created: 21−Feb−2003 08:26

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		

Output DLIS Files

DEFAULT	SEIS_CSI_018PNP	FN:13	PRODUCER	21−Feb−2003 08:26		

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Correlations

MAXIS Field Log

Output DLIS Files

DEFAULT	CSI_059LUP	FN:69	PRODUCER	17−Feb−2003 02:03	588.0 M	532.0 M

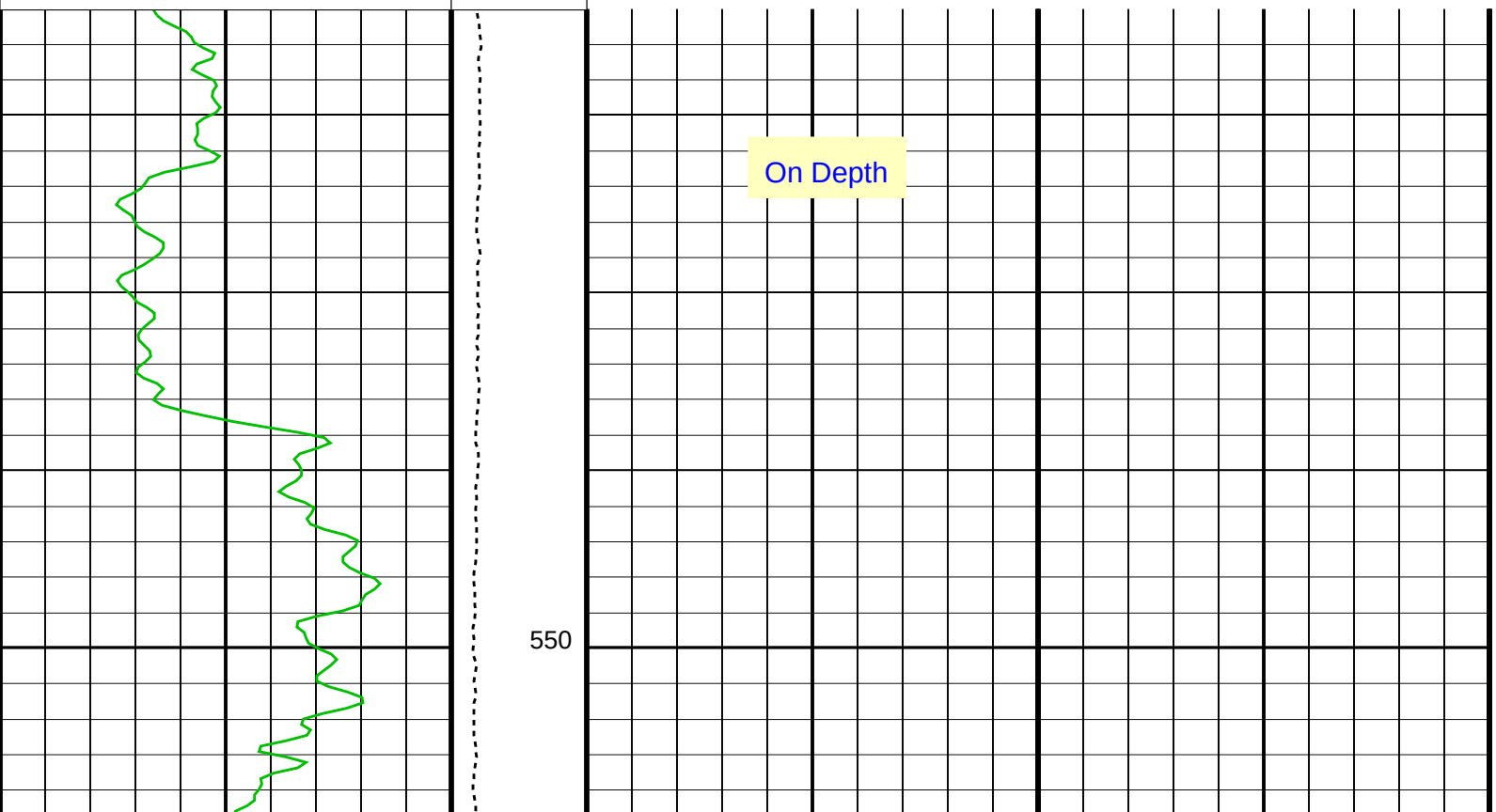
OP System Version: 10C0−306

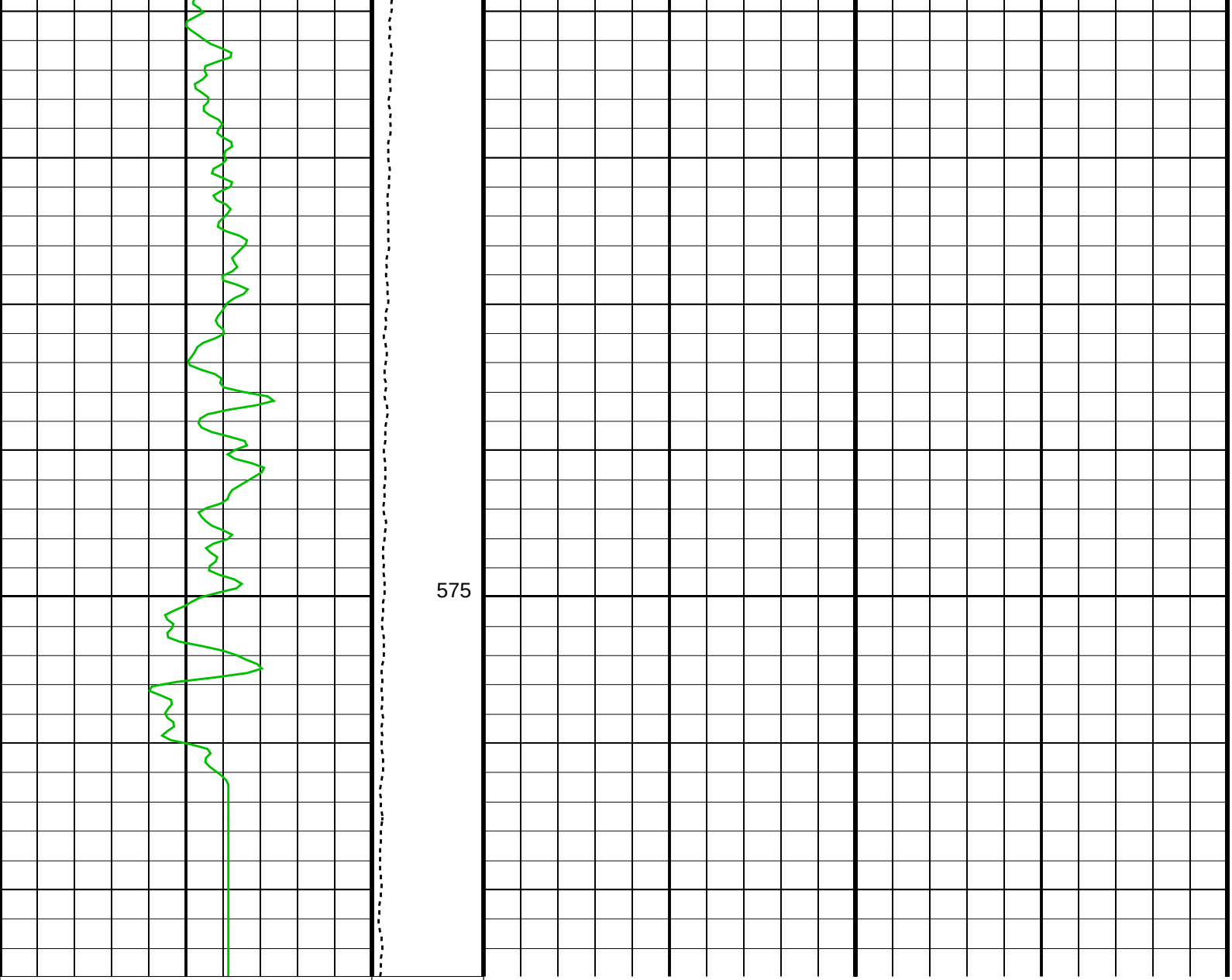
MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		

Gamma Ray (GR)
0 (GAPI) 200

Tension (TENS) (LBF)
1000 0





Format: CORRELATION **Vertical Scale: 1:200** **Graphics File Created: 17−Feb−2003 02:03**

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		

Output DLIS Files

DEFAULT	CSI_059LUP	FN:69	PRODUCER	17−Feb−2003 02:03

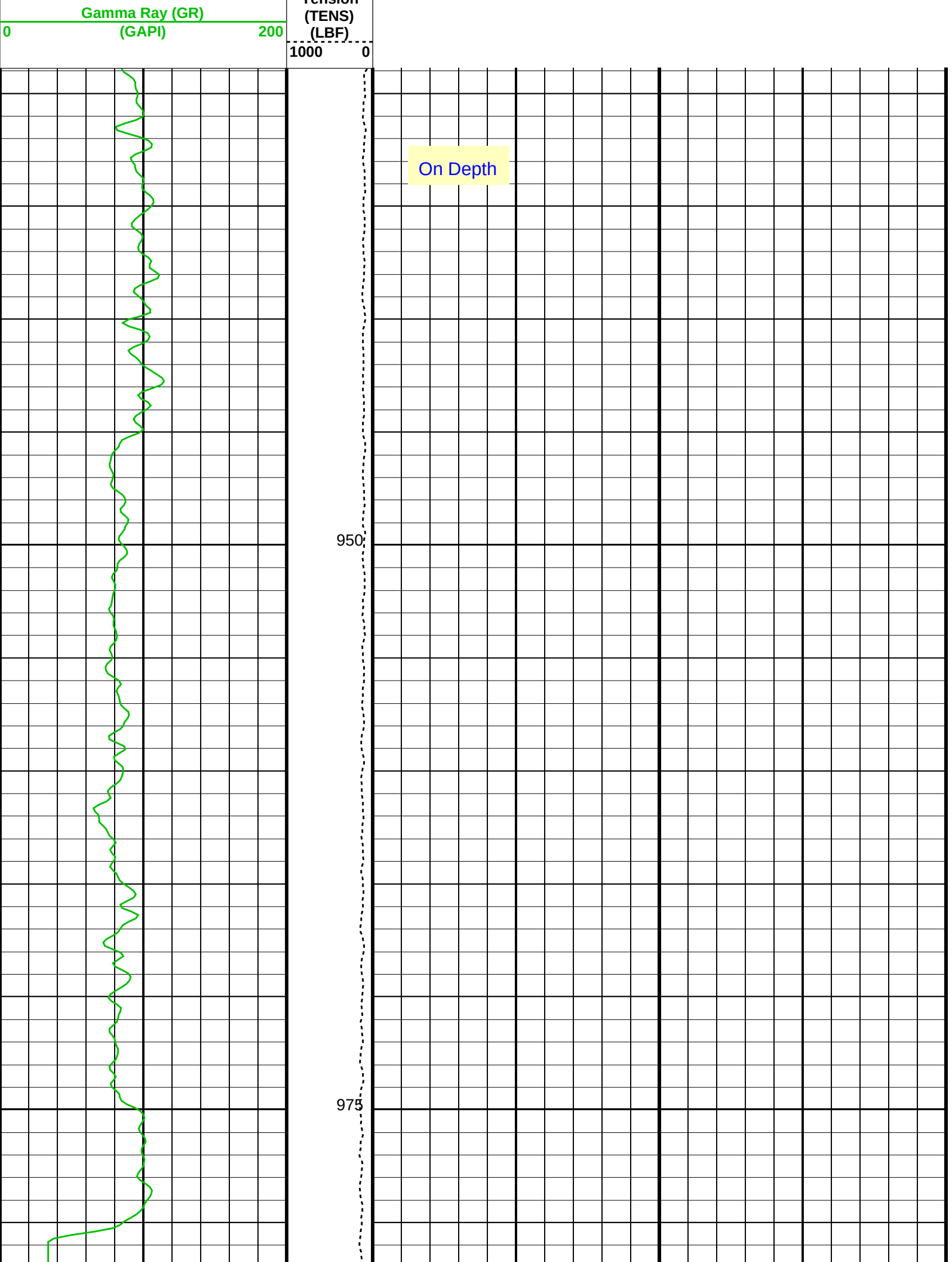
Output DLIS Files

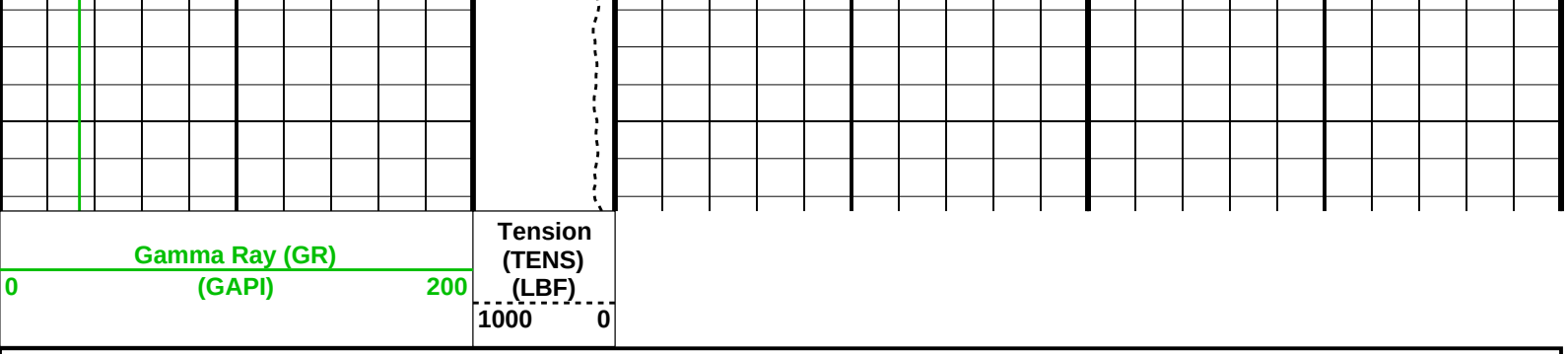
DEFAULT	CSI_052LUP	FN:59	PRODUCER	16−Feb−2003 21:50	987.4 M	928.9 M

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		


Gamma Ray (GR)
0
(GAPI)
200
Tension
(TENS)
(LBF)
1000
0
On Depth
950
975



Format: CORRELATION Vertical Scale: 1:200 Graphics File Created: 16−Feb−2003 21:50

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		

Output DLIS Files

DEFAULT	CSI_052LUP	FN:59	PRODUCER	16−Feb−2003 21:50		

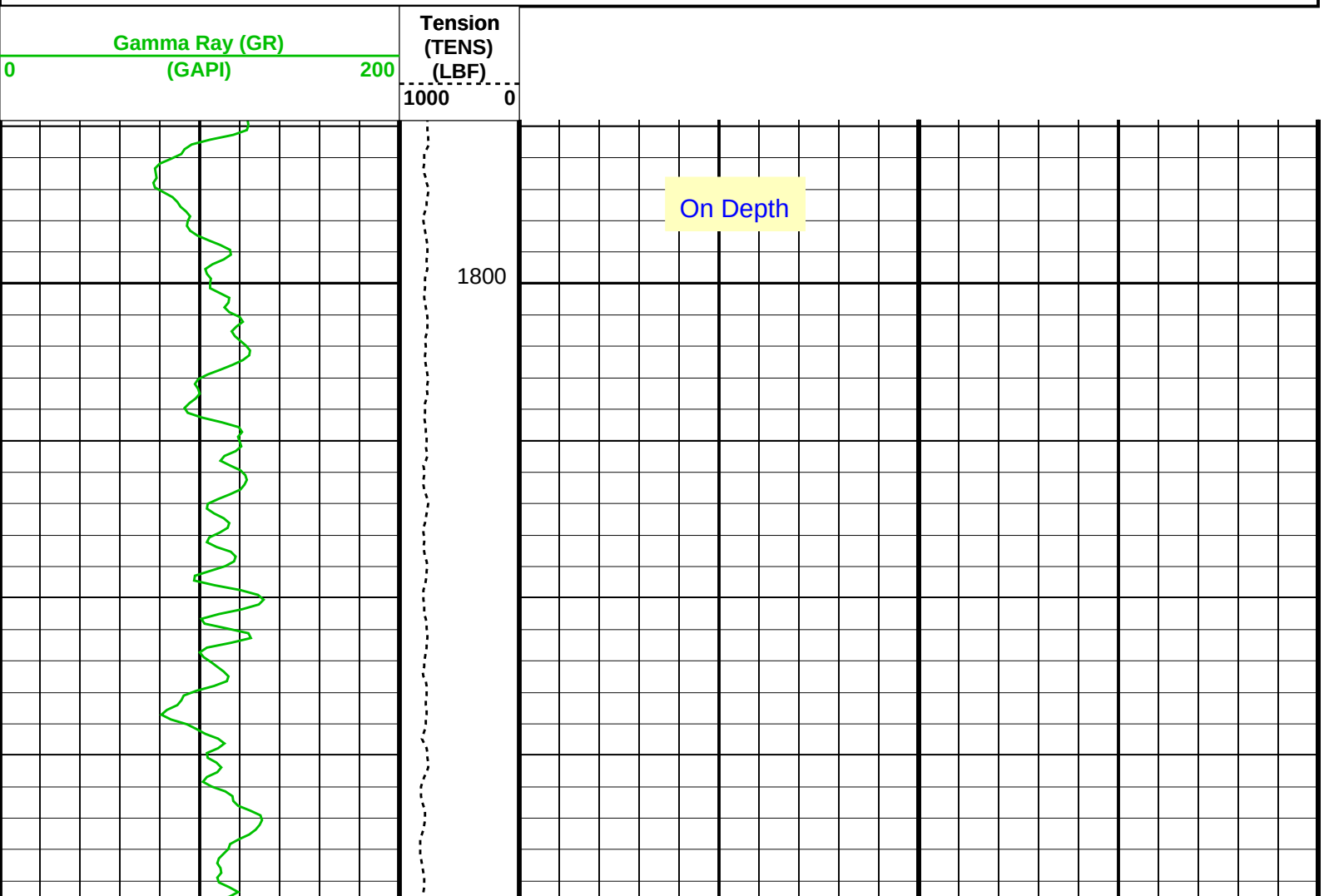
Output DLIS Files

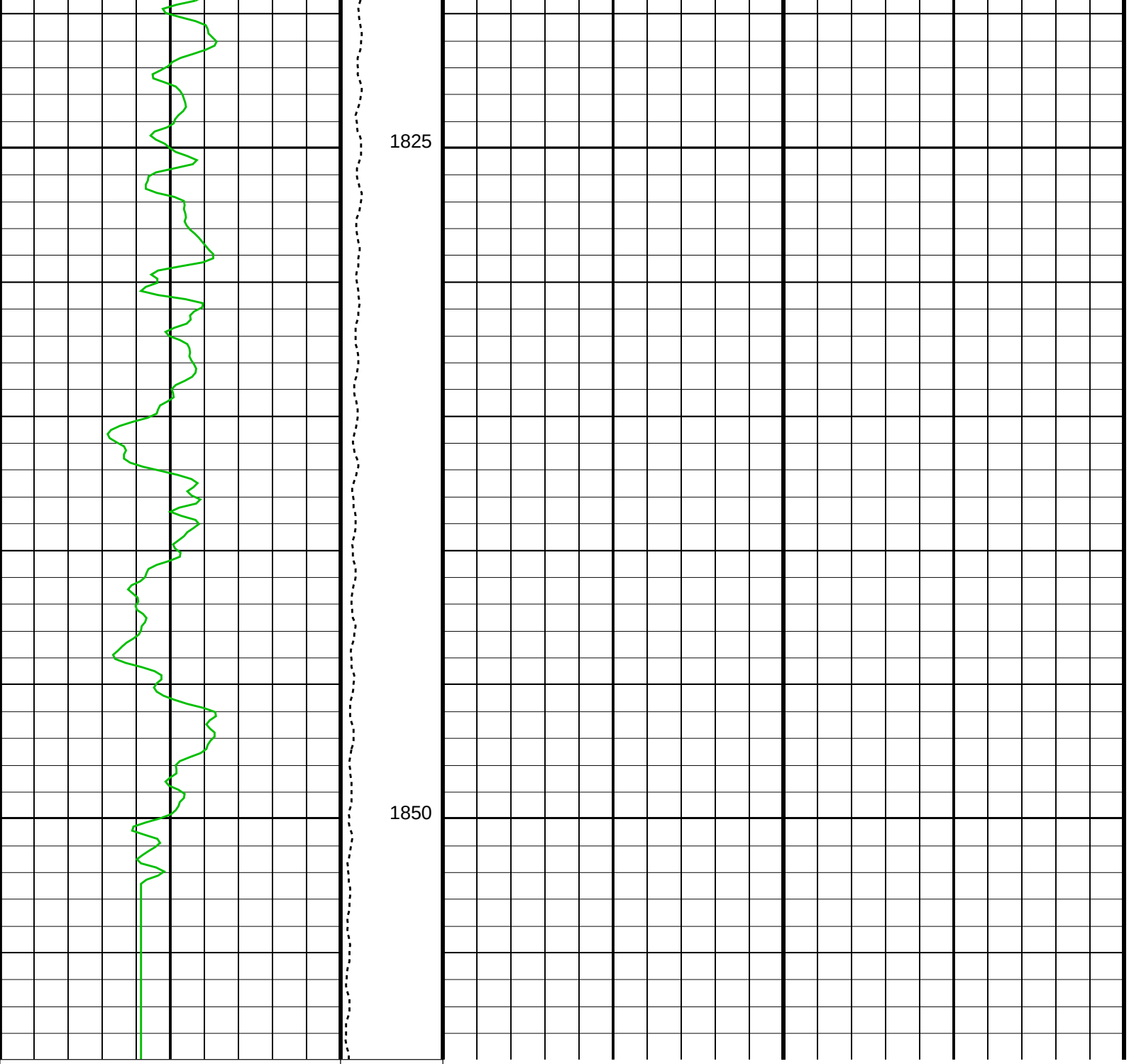
DEFAULT	CSI_056LUP	FN:65	PRODUCER	16−Feb−2003 23:55	1859.0 M	1794.7 M

OP System Version: 10C0−306

MCM

CSAT−B1	10C0−306	SGT−L	10C0−306
TCC−BF	10C0−306		





Format: CORRELATION **Vertical Scale: 1:200** **Graphics File Created: 16−Feb−2003 23:55**

OP System Version: 10C0−306

MCM

CSAT−B1	**10C0−306**	**SGT−L**	**10C0−306**
TCC−BF	**10C0−306**		

Output DLIS Files

DEFAULT	**CSI_056LUP**	**FN:65**	**PRODUCER**	**16−Feb−2003 23:55**

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Combined Seismic Acquisition Tool 1 with GACs Wellsite Calibration − CSAT_1 CALIPER Calibration							
Before: 16−Feb−2003 19:15							
CSAT_1 CALIPER Zero	13.67	N/A	16.54	N/A	N/A	N/A	DEG
CSAT_1 CALIPER Plus	27.65	N/A	28.80	N/A	N/A	N/A	DEG
Scintillation Gamma−Ray − L Wellsite Calibration − Detector Calibration							
Before: 16−Feb−2003 19:10							
Gamma Ray Background	30.00	N/A	14.13	N/A	N/A	N/A	GAPI
Gamma Ray (Jig − Bkg)	158.7	N/A	158.7	N/A	N/A	14.43	GAPI
Gamma Ray (Calibrated)	162.0	N/A	162.0	N/A	N/A	15.00	GAPI

Combined Seismic Acquisition Tool 1 with GACs / Equipment Identification

Primary Equipment:		
Combinable Seismic Acquisition Cartridge	CSAC − A	767
Combinable Seismic Acquisition Sonde	CSAS − A	709
Combinable Seismic Acquisition Detector	CSAD − B	
CSAT Shaker	Shak −	
Combinable Seismic Sonde Cartridge	CSSC − A	715
CSAT Upper Standoff	STAN − HI	
CSAT Lower Standoff	STAN − LO	
Auxiliary Equipment:		
CSAC Housing	CSAH − A	767
CSSC Housing	CSSH − A	

Combined Seismic Acquisition Tool 1 with GACs Wellsite Calibration

CSAT_1 CALIPER Calibration

Phase	CSAT_1 CALIPER Zero DEG	Value	Phase	CSAT_1 CALIPER Plus DEG	Value
Before		16.54	Before		28.80
	9.670 (Minimum) / 13.67 (Nominal) / 17.67 (Maximum)			23.65 (Minimum) / 27.65 (Nominal) / 31.65 (Maximum)	

Before: 16−Feb−2003 19:15

Scintillation Gamma−Ray − L / Equipment Identification

Primary Equipment:		
Scintillation Gamma Cartridge	SGC − SA	367
Scintillation Gamma Detector	SGD − TAA	
Auxiliary Equipment:		
Scintillation Gamma Housing	SGH − K	508
Gamma Source Radioactive	GSR − U/Y	3144

Scintillation Gamma−Ray − L Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig − Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		14.13	Before		158.7	Before		162.0
	0 (Minimum) / 30.00 (Nominal) / 120.0 (Maximum)			144.3 (Minimum) / 158.7 (Nominal) / 173.1 (Maximum)			147.0 (Minimum) / 162.0 (Nominal) / 177.0 (Maximum)	

Before: 16−Feb−2003 19:10

Company:	**Origin Energy**
Well:	**Banganna 1**
Field:	**Exploration, Licence PEP 159**
Rig:	**Century Rig 11**
Country:	**Australia**

Schlumberger

Seismic Checkshot Velocity Survey
CSAT−GR
6.75" Open Hole

FORMATION EVALUATION LOG
WELL : BANGANNA-1

Origin energy

Geoservices logging

COMPANY	ORIGIN	SPUD DATE	05-02-2003
RIG	CENTURY-11	TD DATE	15-02-2003
AREA	OTWAY BASIN/PEP-159	TD DRILLER	2125.0m
STATE/COUNTRY	VICTORIA / AUSTRALIA	TD WIRELINE	2125.0m
LOCATION	38° 12' 27.66" S 142° 10' 50.62" E	LOGGED FROM	SPUD
RT HEIGHT	68.9m	LOGGED TO	2125.0m
GROUND LVL	63.7m	STATUS	PLUGGED & ABANDONED
DEPTH REF	ROTARY TABLE		

WELL CONFIGURATION

BIT SIZE (mm)	HOLE DEPTH (m)	CASING SIZE (mm)	CASING DEPTH (m)
9.875"	520.0m	7.625"	518.0m
6.75"	2125.0m		

LOGGING ENGINEERS

JOHN HOBDAY
DANIEL DENNIS

SCALE 1/ 500

SYMBOLS

- NEW BIT RUN
- NEW CORE BIT RUN
- CASING SHOE
- LINER HANGER
- MUD LOSS / MUD GAIN
- Recovered SIDEWALL CORES
- Not Recovered
- CORED INTERVAL (1)
- DST INTERVAL (1)
- FLUORESCENCE: NO SHOW, WEAK SHOW, FAIR SHOW, GOOD SHOW

ABBREVIATIONS

NB NEW BIT	DS DIRECTIONAL SURVEY
NCB NEW CORE BIT	WT WIPER TRIP
RRB RE-RUN BIT	POOH PULL OUT OF HOLE
CS CASING SHOE	RIH RUN IN HOLE
SWC SIDE WALL CORE	AZI AZIMUTH
EL ELECTRIC LOG	INCL INCLINATION
WOB WEIGHT ON BIT	LCM LOST CIRCULATION MATERIAL
RPM REVOLUTIONS/MINUTE	DC DEPTH CORRECTION
SPP STAND PIPE PRESSURE	DST DRILL STEM TEST
SPM STROKES/MINUTE	RMG REAMING
CR CIRCULATED RETURNS	ML MUD LOSSES
PR POOR RETURNS	FR FLOW RATE
NR NO RETURNS	FC FLOW CHECK
TG TRIP GAS	BR BIT RUN
CG CONNECTION GAS	MMCFD Million Cubic Feet/Day
WTG WIPER TRIP GAS	U UNITS OF GAS
SG SWAB GAS	FLUOR FLUORESCENCE

MUD DATA

MW MUD WEIGHT	sg(kg/l)
MG MUD GRADIENT	KPA/mt
FV FLUID VISCOSITY	sec
PV PLASTIC VISCOSITY	Cp
YP YIELD POINT	lb/cf2
GEL GEL STRENGTH	lb/cf2
pH ACIDITY	
F FILTRATE	cm3/30
Ck CAKE THICKNESS	cm/32
S SALINITY	kg/m3
SD SAND CONTENT	%
O OIL CONTENT	%
WL WATER LOSS	cm3/30
Sol SOLIDS CONTENT	%
Cl CHLORIDES	
Ca CALCIUM CONTENT	
GYP GYPSUM CONTENT	lb/bbl

CLAYSTONE, SILTSTONE, CONGLOMERATE, COARSE SST, MEDIUM SST, FINE SANDSTONE, VF SANDSTONE, BRECCIA, LIMESTONE, DOLOMITIC LIMEST, DOLOMITE, COAL, GYPSUM, HALITE, CEMENT, CALCARENITE, TUFF, VOLCANIC ROCK, IGNEOUS ROCK, METAMORPHICS, FERRUGINOUS, FORAMINIFERA, BRYOZOA, FELDSPAR, CALCAREOUS, DOLOMITIC, CARBONACEOUS, CHERTY, GLAUCONITE, MICACEOUS, PYRITE, BROKEN FOSSILS, MICROFOSSILS, FOSSILS, LITHICS, SIDERITE

0 ROP min/m 20
20 ROP min/m 40
0 RPM 300
0 WOB (klbs) 50

DEPTH (mdRT) (m): 0, 25

SIDEWALL CORES

CUTTINGS 0 % 100

LITH

OIL SHOWS G F W

TOTAL GAS units 0 100
TOTAL GAS units 100 1100
0 CO2 % 100

CHROMATOLOG(ppm)
C1 _____ iC4 _ _ _
C2 _ _ nC4 _ _ _
C3 _ _ _ iC5 _ _ _
nC5 _ _ _
100 1K 10K

BITS
SHOES
CORED INTERVALS
DST INTERVALS

GEOLOGICAL DESCRIPTIONS
COMMENTS

MW 8.6
FV 38
PV 4
YP 16
Gel 10/18
Ck 3

BANGANNA-1 SPUDDED @ 22:00 HRS ON 05-02-2003

BIT #1: VAREL CH1GMS
SIZE: 9.875" JETS: 3x16
IN: SPUD OUT: 520m
RUN: 520m HRS: 10.2
COND: 2-2-WT-A-E-I-NO-TD

SANDSTONE:clr-trnsl,frstd,

Sol 1.9
WI 0
pH 9.0
Cl 1k

50

75

WOB 1-10 klbs
RPM 80-100
SPP 400 psi
FLOW 152 gpm

100

125

WOB 10-15 klbs
RPM 110-120
SPP 300 psi
FLOW 275-300 gpm

150

175

NO RETURNS

NO RETURNS

Nil Gas
Due to No Returns

Nil Gas
Due to No Returns

Nil Gas

yel/rd-brn,f-med,pred med,rr crs grns,mod wl srt,sbrnd-sbang,nil cmt,nil mtx,lse,gd por,no fluor

LIMESTONE:wh,micr,arg,micxln,mod hd-hd.

NO SAMPLE COLLECTED
DUE TO LOSSES
IN CIRCULATION

Survey @ 129m: 0.75° Totco

NO SAMPLE COLLECTED
DUE TO LOSSES
IN CIRCULATION

NO SAMPLE COLLECTED
DUE TO LOSSES
IN CIRCULATION

Due to No Returns

200

MW 8.7
FV 43
PV 7
YP 20
Gel 14/21
Ck 3
Sol 2.7
WI 0
pH 9.5
Cl 1k

225

Nil Gas
Due to No Returns

250

MARL:med gry,lt gry-wh,vf,tr SLTST,abdt f-crs calc aggs & foss frags,tr v qtz,v sft,stky, blky,v por vis por,no fluor.

WOB 8-15 klbs
RPM 110-120
SPP 1300 psi
FLOW 480 gpm

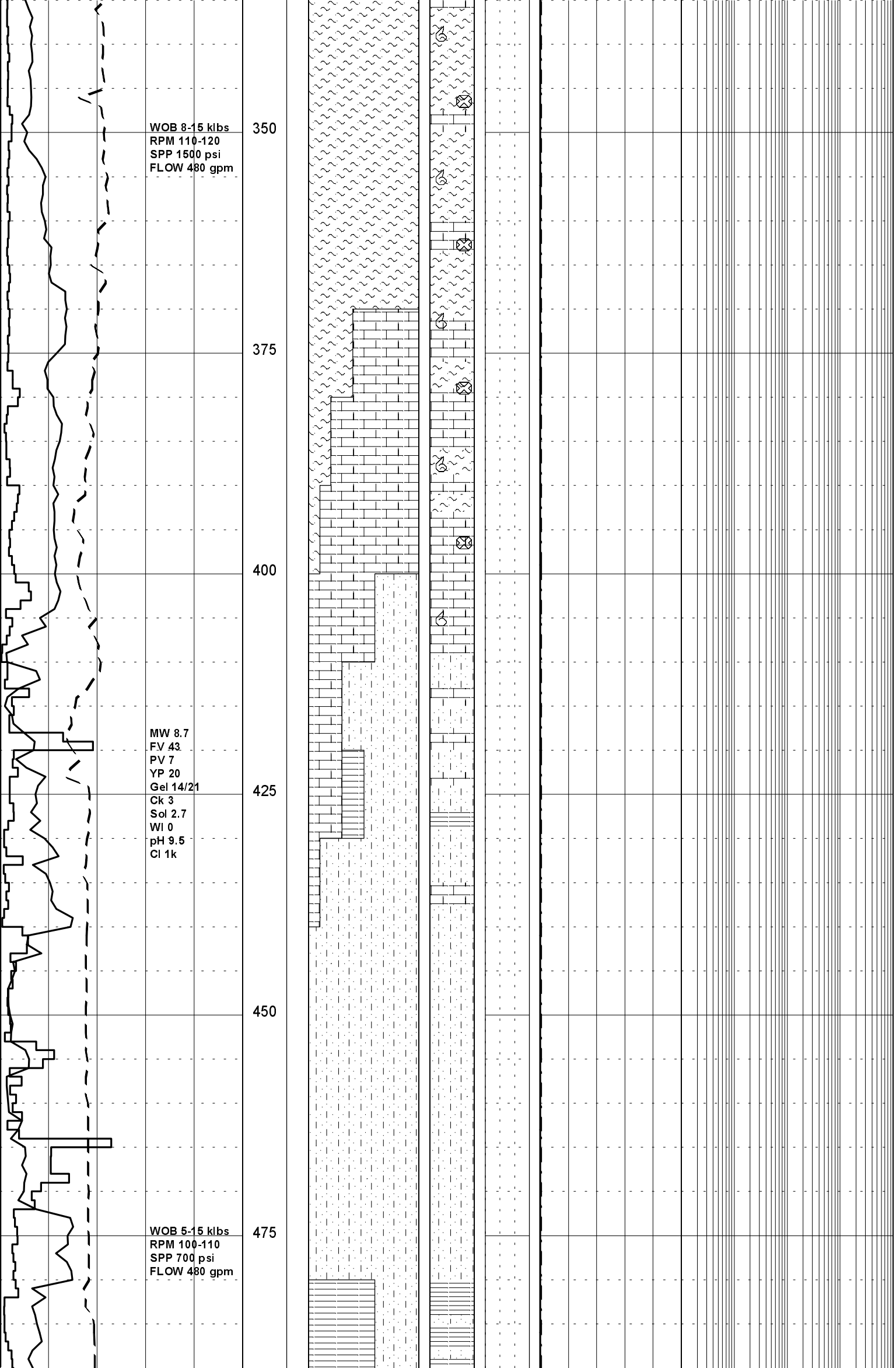
275

Survey @ 275m: 0.75°

300

325

MARL:lt gry-wh,vf,f i/p,abdt v crs calcite grns,abdt foss & shell frags,g/t LMST i/p,tr f



qtz,v sft,calcite grns frm-hd,
pr vis por no fluor.

Survey @ 372m: 0.75°

LIMESTONE:wh-pl yel/org,f-med,
tr crs-v crs grns,abdt foss,com
xln & micxln carb cmt,fe stng,
frm-hd,mnr gry arg mtx,slty i/p,
tr f-crs qtz,fr inf por,gd i/p,
no fluor.

SANDSTONE:trnsl-trnsp,lt brn,
org,f-med,tr crs,ang-sbrnd,mod
srt,pred lse,mnr mod aggs,tr
calc cmt,rr liths & mica,tr fe
stng,gd inf por,no fluor.

CLAYSTONE:lt-med gry,slty i/p,
carb spks,sft,amorph-sbfiss.

SANDSTONE:trnsl-trnsp,wh-lt gry,
f-v crs,pred f-med,mod srt,sbang
-sbrnd,rr mica,tr pyr,lse,gd inf
por,no fluor.

441m-471m: USING ONE PUMP DUE TO REPAIRS

SANDSTONE:trnsl-trnsp,wh-lt gry,
f-v crs,pred f-med,mod srt,sbang
-sbrnd,rr pyr & mica,lse,gd inf
por,no fluor.

500

525

550

WOB 5-10 klbs
RPM 120-125
SPP 650 psi
FLOW 300 gpm

575

600

625

NO GAS

NO GAS

CLAYSTONE:med-dk gry,brn i/p,
arg,mnr carb i/p,mnr mica & pyr,
sft-hd,amorph,g/t SLTST i/p.

**7.625" CASING SHOE
SET @ 518.0m**

**BIT #2: HYCALOG DS185GNVW
SIZE: 6.75" JETS: 4x13
IN: 520.0 OUT: 2125m
RUN: 1605m HRS: 45.1
COND: 2-1-WT-N-X-I-NO-TD**

CLAYSTONE:med-dk brn,dk grn,aren
slty i/p,tr med-crs lse qtz,tr
calc spks,glauc,v sft-sft,amorph
-disp.

SANDSTONE:trnsl-trsnp,wh-lt gry,
f-crs,mod srt,sbrnd-sbang,arg,
lse,fr inf por,no fluor.

CLAYSTONE:med-dk brn,brn-grn,mnr
slty,tr arg,tr pyr,tr carb spks,
tr crs lse qtz grns,sft-frm,tr
mod hd,amorph,mnr sbblky.

SANDSTONE:trnsl-trnsp,off wh-lt
gry,f-v crs,pred med-crs,mod srt
sbang-sbrnd,arg,tr pyr,lse,fr
inf por,no fluor.

CLAYSTONE:dk gry,gry brn,aren,
com g/t STLST,mnr carb,sft,frm
i/p,tr hd,amorph,tr sbblky,pred
disp.

WOB 5-10 klbs
RPM 125
SPP 700 psi
FLOW 315 gpm

650

675

700

725

WOB 5-10 klbs
RPM 100-125
SPP 900 psi
FLOW 340 gpm

750

775

800

100 % C1

100 % C1

SANDSTONE:trnsl-wh,vf-f aggs,f-med lse,tr crs,pr srt,sbang-sbrnd,tr wh arg mtx,mnr calc cmt tr carb spks,frm aggs,lse,vpr vis por,pr inf por,no fluor.

Survey @ 681m: 0.25°

SANDSTONE:trnsl-trnsp,lt gry-off wh,f-crs,gen med,sbang,rnd i/p, tr wh arg mtx,mnr calc grns & cmt,rr pyr,tr carb mat,gen lse, mnr vf aggs,vpr-pr vis por,pr inf por,no fluor.

CLAYSTONE:dk brn-brn gry,vf aren tr med-crs lse qtz grns,tr pyr, tr carb spks & frags,tr mica,tr calcite,sft,amorph,disp.

SANDSTONE:trnsl,lt gry,off wh,v-v crs,pred med,sbang-sbrnd,tr wh arg mtx,mnr vf aggs,mnr calc grns,rr pyr,tr carb,v pr-pr inf por,no fluor.

CLAYSTONE:dk brn-brn gry,vf aren tr pyr,tr carb spks & frags,tr mica,sft,amorph-disp.

SILTSTONE:med-dk gry,slty i/p, tr aren,rr carb spks,tr mica & pyr,tr calc frags,sft,amorph-disp.

CLAYSTONE:med-dk brn,dk grn/brn, arg,tr lse med qtz grns & liths, tr carb,frm-mod hd,sbblky.

825

850

875

900

925

950

WOB 5-10 klbs
RPM 90-110
SPP 1050 psi
FLOW 355 gpm

100 % C1

100 % C1

100 % C1

WOB 5-10 klbs
RPM 90-100
SPP 1050 psi
FLOW 355 gpm

SANDSTONE:lt gry-off wh,vf-f,tr med,abang-rnd,wl srt,tr calc cmt,mnr wh srg mtx,tr carb spks, sft-frm aggs,pr vis por,no fluor.

Survey @ 837m: 0.50°

SANDSTONE:lt gry-off wh,vf-f,tr med,sbrnd-rnd,tr calc cmt,tr sil cmt,mnr wh arg mtx,tr carc spks, sft-frm aggs,pr vis por,no fluor.

CLAYSTONE:lt-med gry,tr-rr carb spks,tr mica,sft-frm amorph-sbblky,mnr disp,occ g/t vf aren SLTST.

975

1000

1025

WOB 8-13 klbs
RPM 100-105
SPP 1250 psi
FLOW 365 gpm

1050

1075

1100

100 % C1

90 / 10

96 / 4

Survey @ 982m: 0.75°

Carbide Lag Check @ 994m
Theoretical Strokes: 2672
Actual Strokes: 2698
Hole O.G.: <1 %

SANDSTONE:wh-lt gry,vf-f,tr med, mod wl srt,sbang-sbrnd,mnr wh arg mtx,tr carb spks,tr calc grns,sft-frm aggs,pr vis por,no fluor.

CLAYSTONE:lt-med gry,tr vf aren, g/t SLTST i/p,tr med qtz grns, mnr carb spks,tr mica,sft-frm, amorph-sbblky.

1125

1150

1175

1200

1225

1250

WOB 8-13 klbs
RPM 100-105
SPP 1250 psi
FLOW 365 gpm

WOB 8-13 klbs
RPM 105-120
SPP 1250 psi
FLOW 345 gpm

100 / Tr

100 / Tr

100 / Tr

CLAYSTONE:lt-med gry,tr vf aren, mnr carb spks,tr mica,tr pyr,sft -frm,amorph-sbbkly.

Survey @ 1137m: 0.75°

SANDSTONE:off wh-lt gry,vf-f,tr med,mod-wl srt,sbang-sbrnd,mnr wh arg mtx,tr carb spks,tr calc grns,sft-frm aggs,pr vis por,no fluor.

CLAYSTONE:lt-med gry,vf aren g/t vf SST i/p,tr-rr carb spks,sft-frm,amorph-sbblky.

SANDSTONE:off wh-lt gry,vf-f,tr

1275

1300

1325

1350

1375

1400

100 / Tr

100 / Tr

100 % C1

WOB 8-10 klbs
RPM 100-115
SPP 1300 psi
FLOW 350 gpm

med,mod wl srt,sbang-sbrnd,mnr
off wh arg mtx,sft-frm,pr vis
por,no fluor.

Survey @ 1281m: 1.00°

COAL(Tr):blk,sbvit,brit-frm,
sbfiss.

CLAYSTONE:lt-med gry,vf aren,tr
carb spks & flks,sft-frm,sbblky

SANDSTONE:off wh-lt gry,vf-f,tr
med,mod-wl srt,sbang-sbrnd,tr
calc cmt,mnr carb spks,tr mica,
sft,tr frm,pr vis por,no fluor.

CLAYSTONE:med gry,dk gry i/p,
com vf aren g/t vf SST i/p,tr
carb spks,tr mica,sft-frm,amorph
sbblky i/p.

Carbide Lag Check @ 1400m
Theoretical Strokes: 3066
Actual Strokes: 3164
Hole O.G.: 3 %

1425

98 / 2

Survey @ 1435m: 0.75°

1450

WOB 7-10 klbs
RPM 100-115
SPP 1300 psi
FLOW 350 gpm

SANDSTONE:pl gry-gry/brn,vf-f, sbang-sbrnd,mod srt,tr carb mat, v arg occ g/t SLTST,liths,tr mica,tr calc,sft,v pr por.

1475

CLAYSTONE:pl-mod gry,gry/brn, occ dk gry,vf aren w/ com carb spks,sft amorph.

CLAYSTONE:lt-mod gry,gry/brn,occ pl gry/grn,sft,amorph,com aren, carb spks.

1500

SANDSTONE:off wh-lt gry/brn,vf-f,sbang-sbrnd,mod srt,tr carb mat,v arg,liths,feld,calc,tr mica,sft,v pr por.

1525

99 / 1

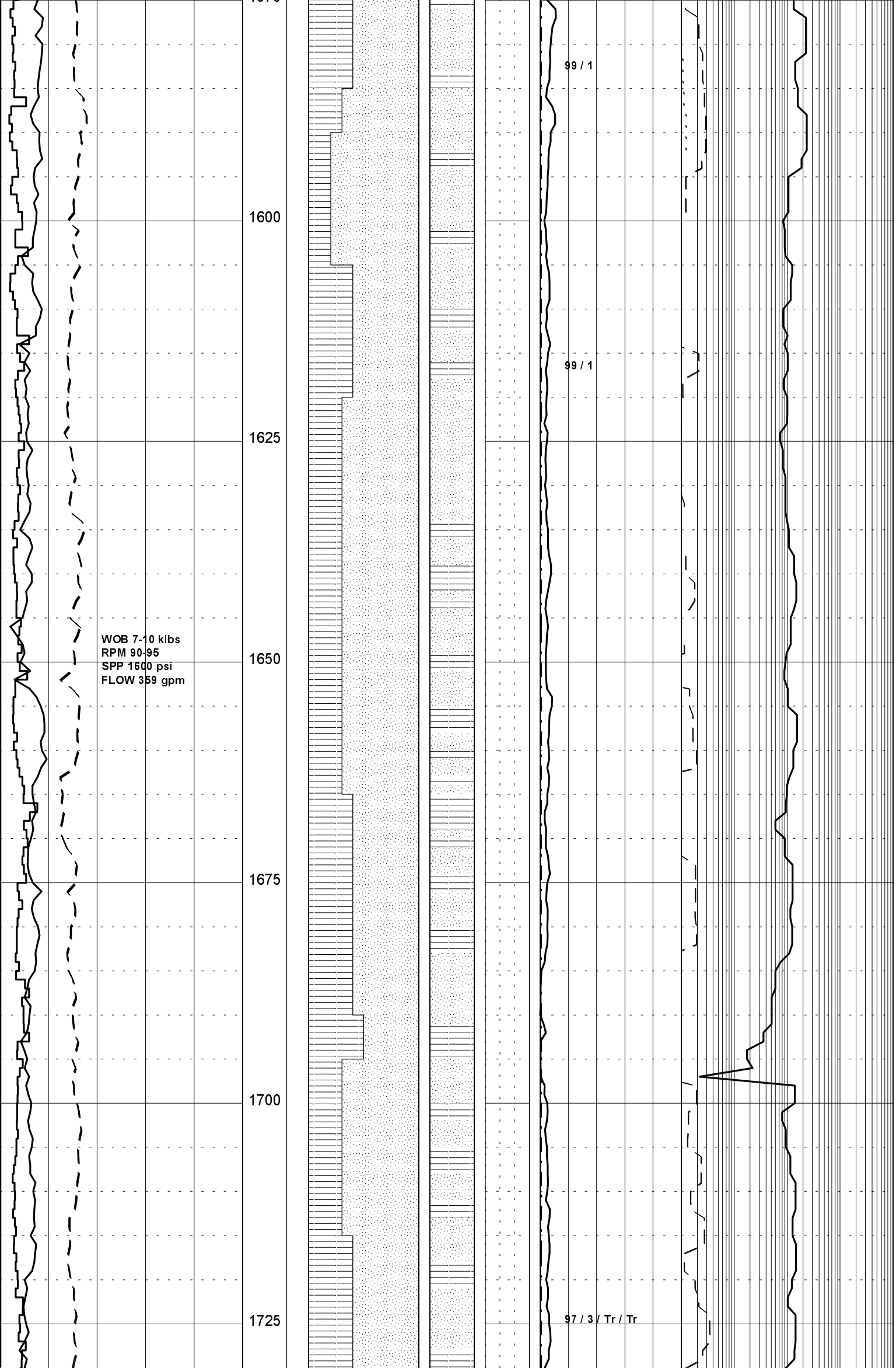
CLAYSTONE:lt-mod gry,gry/brn, occ pl gry/grn,sft,smorph,com aren,carb spks.

WOB 7-10 klbs
RPM 90-95
SPP 1250 psi
FLOW 359 gpm

1550

CLAYSTONE:lt-mod gry,gry/brn, occ mod brn,dk &grn/gry,sft-frm, tr carb mat,amorph-sbblky,g/t SLTST i/p.

1575



Survey @ 1581m: 1.00°

SANDSTONE:off wh-lt gry,gry/brn, vf-f,sbang-sbrnd,mod srt,tr carbmat,liths,feld,calc,tr mica, sft,v pr por,no fluor.

CLAYSTONE:lt-mod gry,gry/brn, occ pl gry/grn,sft,amorph,com aren,carb spks.

SANDSTONE:lt-med gry,off wh,vf-f wl srt,sbrnd,arg mtx,sli calc,tr carb spks & frags,tr mica & feld fri-frm,vpr vis por,no fluor.

CLAYSTONE:med gyr,dk gry i/p,tr carb spks & mica,sft-frm,amorph-sbblky,g/t SLTST.

WOB 7-10 klbs
RPM 85-105
SPP 1700 psi
FLOW 350 gpm

1750

1775

1800

1825

WOB 5-8 klbs
RPM 95-105
SPP 1850 psi
FLOW 340 gpm

1850

1875

97 / 3

98 / 2

99 / 1

Survey @ 1736m: 1.00°

SANDSTONE:lt-med gry,off wh,vf-f wl srt,sbrnd,com calc cmt,arg mtx,tr carb spks & frags,tr mica & feld,fri-frm,vpr vis por,no fluor.

Carbide Lag Check @ 1758m
Theoretical Strokes: 3854
Actual Strokes: 3929
Hole O.G.: 2.0 %

CLAYSTONE:med gry,dk gry i/p,tr carb spks,sft-frm,amorph-sbblky, g/t SLTST.

COAL:dk brn,blk,sbvit,brit-frm, sbfiss.

WIPER TRIP TO CASING SHOE SET @ 1806m

TG: 30 Units

SANDSTONE:wh-off hw,vf,sbrnd,mod wl srt,abdnt clay mtx,calc,feld, fri-mod hd,vpr vis por,no fluor

SILTSTONE:lt-med brn,lt-med gry, gry brn,sft-frm,mnr carb spks & lams,g/t vf SST i/p.

SANDSTONE:wh-crm,f-crs,sbang-sbrnd,mod srt,rr pnk garnet,tr dk grn-blk glauc nods,wk sil cmt,mod clay mtx,mod calc,fri, fr por,no fluor.

Survey @ 1881m: 2.25°

1900

1925

1950

1975

2000

2025

98 / 2 / Tr / Tr

98 / 2 / Tr

99 / 1

99 / 1

WOB 8 klbs
RPM 95-105
SPP 1850 psi
FLOW 340 gpm

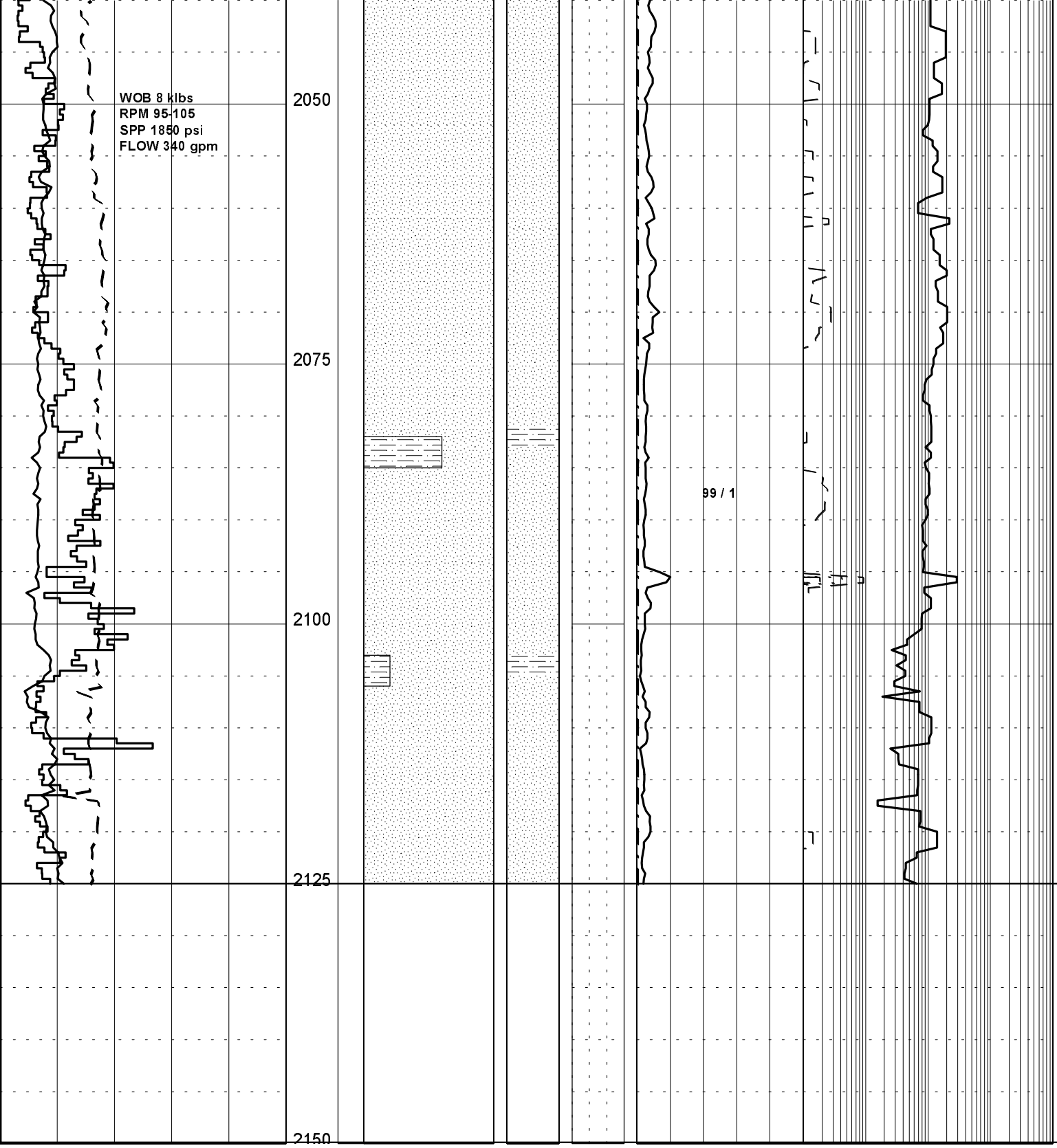
SANDSTONE:wh-crm,f-crs,sbang-sbrnd,mod srt,rr pnk garnet,tr dk grn-blk glauc nods,wk sil cmt,mod clay mtx,mod calc,fri, fr por,no fluor.

SANDSTONE:off wh,vf-v crs,dom f, pr srt,sbang-sbrnd,tr calc cmt, rr-mnr arg mtx,tr glauc & carb spks,tr feld,sft/fri-frm,pr-fr vis por,no fluor.

SANDSTONE:off wh-crm,vf-v crs, pred med,mod srt,sbang-sbrnd,tr calc cmt,tr wh arg mtx,tr carb spks,mica,feld,fri,sft-frm,com lse grns,fr por,no fluor.

SANDSTONE:off wh,crm,vf-crs,pred f-med,pr-mod srt,sbrnd-sbang,tr wk calc cmt,tr mnr arg mtx,tr carb spks & mica,lse,com fri aggs,fr inf por,no fluor.

Survey @ 2025m: 2.00°



SANDSTONE:wh-off wh,vf-f,ang-sbrnd,mod srt,abdnt clay mtx,tr carb mat,calc,sft-fri,mod hd,pr vis por,no fluor.

SILTSTONE:lt-med gry-gry brn, aren i/p,tr carb mat,rr glauc, sft,sbfiss-sbblky.

SANDSTONE:off wh,crm,vf-crs,pred med,pr-mod srt,ang-sbrnd,tr mnr clay mtx,tr calc cmt,tr carb spks,tr feld,lse,mnr sft aggs, fr-gd inf por,no fluor.

Survey @ 2113m: 2.50°

BANGANNA-1 REACHED TD @ 21:30 HRS ON 15-02-2003

DRILLER'S TD: 2125.0m
LOGGER'S TD: 2125.0m

ELECTRIC LOGS RUN @ TD
RUN #1: PEX-DSI-NGT-GR
RUN #2: CSAT-GR