

WELL COMPLETION REPORT

MARLIN A-23A

GIPPSLAND BASIN, VICTORIA

Author: Phil Lock
Compiler: Sheryl Sazenis
December 2004

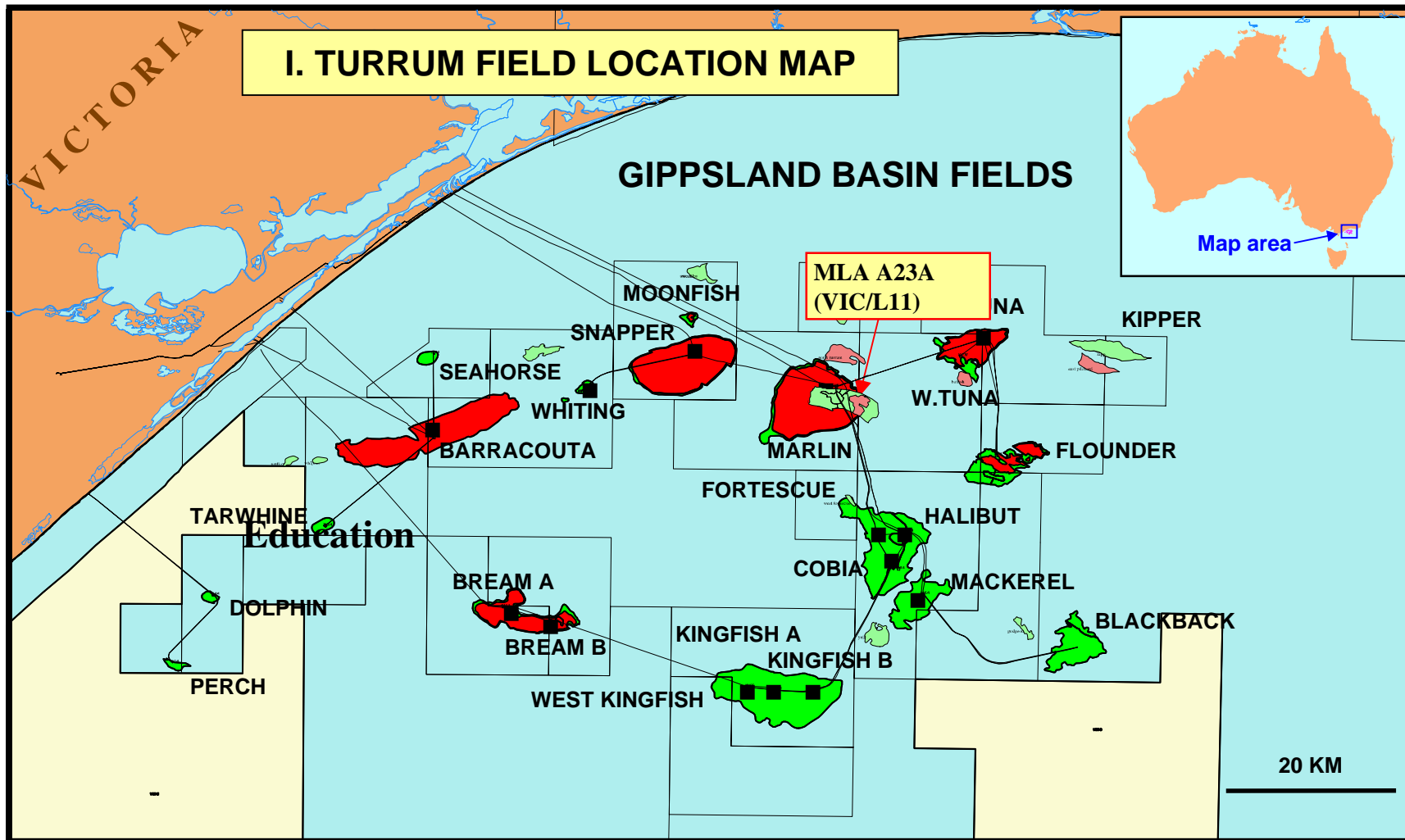
CONTENTS

I. TURRUM FIELD LOCATION MAP	1
II. WELL DATA RECORD	2
LOCATION MAP -TOP L500T DEPTH STRUCTURE MAP	2
TOP L500T DEPTH STRUCTURE MAP-ZOOM IN	3
SEISMIC TRAVERSE ALONG WELLPATH MAP	4
LOCATION	5
ELEVATIONS & DEPTHS	5
MISCELLANEOUS	5
WELL CLASSIFICATION	5
CASING RECORD	6
CEMENTING RECORD	6
DRILLING PERFORMANCE	7
GENERAL	7
TIME ANALYSIS	7
COSTS (based on projected)	7
CASING (all depths herein are based on Rig453 elevations: RT-MSL=27.91m)	7
COMPLETION	7
ADDITIONAL	<i>Error! Bookmark not defined.</i>
COMPLETION SCHEMATIC	8
III. SAMPLES	9
CUTTINGS	9
CONVENTIONAL CORING	9
SIDEWALL CORING	9
MDT's	9
IV. LOGS AND SURVEYS	10
V. FORMATION RESERVOIR TOPS	11
VI. GEOLOGICAL ANALYSIS - MARLIN A-23A	12
OBJECTIVES	12
RESULTS	12
VI. GEOLOGICAL ANALYSIS - MARLIN A-23A	13

CONTENTS

VII. APPENDICES

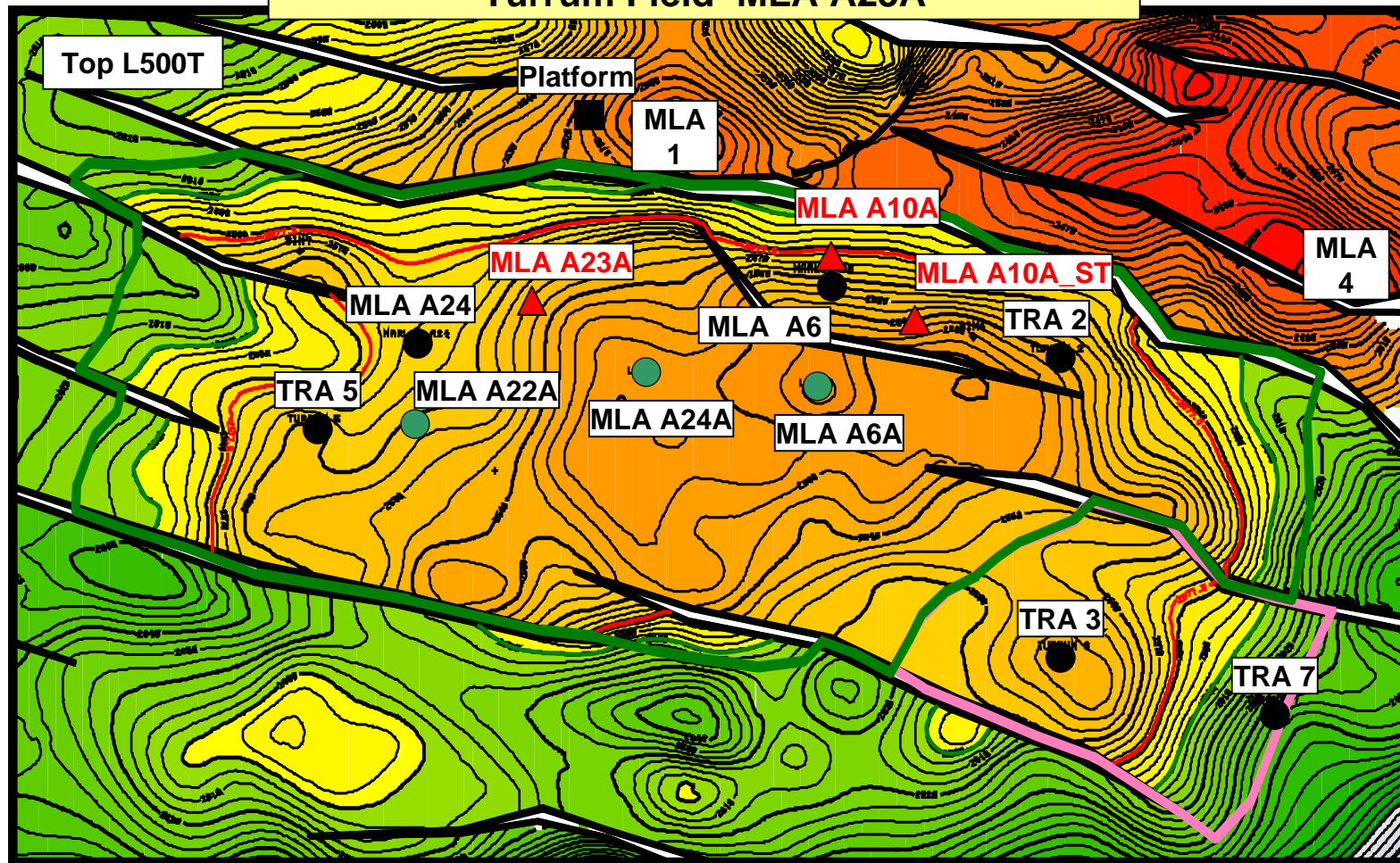
- 1. Survey Data & Listing**
 - 1a. Survey Data**
 - 1b. MD-TVD Survey Data Listing**
- 2. Petrophysics**
 - 2a. Petrophysics Evaluation Summary**
- 3. Sample Descriptions**
 - 3a. Lithology/Show Descriptions**
- 4. Logs**
 - 4a. Mud Log**
 - 4b. Well Completion Log**
- 5. Reservoir Evaluation**
 - 5a. Open Hole MDT Data**



- Commercial Gas Fields
- Commercial Oil Fields
- Static Gas Fields
- Static Oil Fields

Top L500T Depth Structure Map

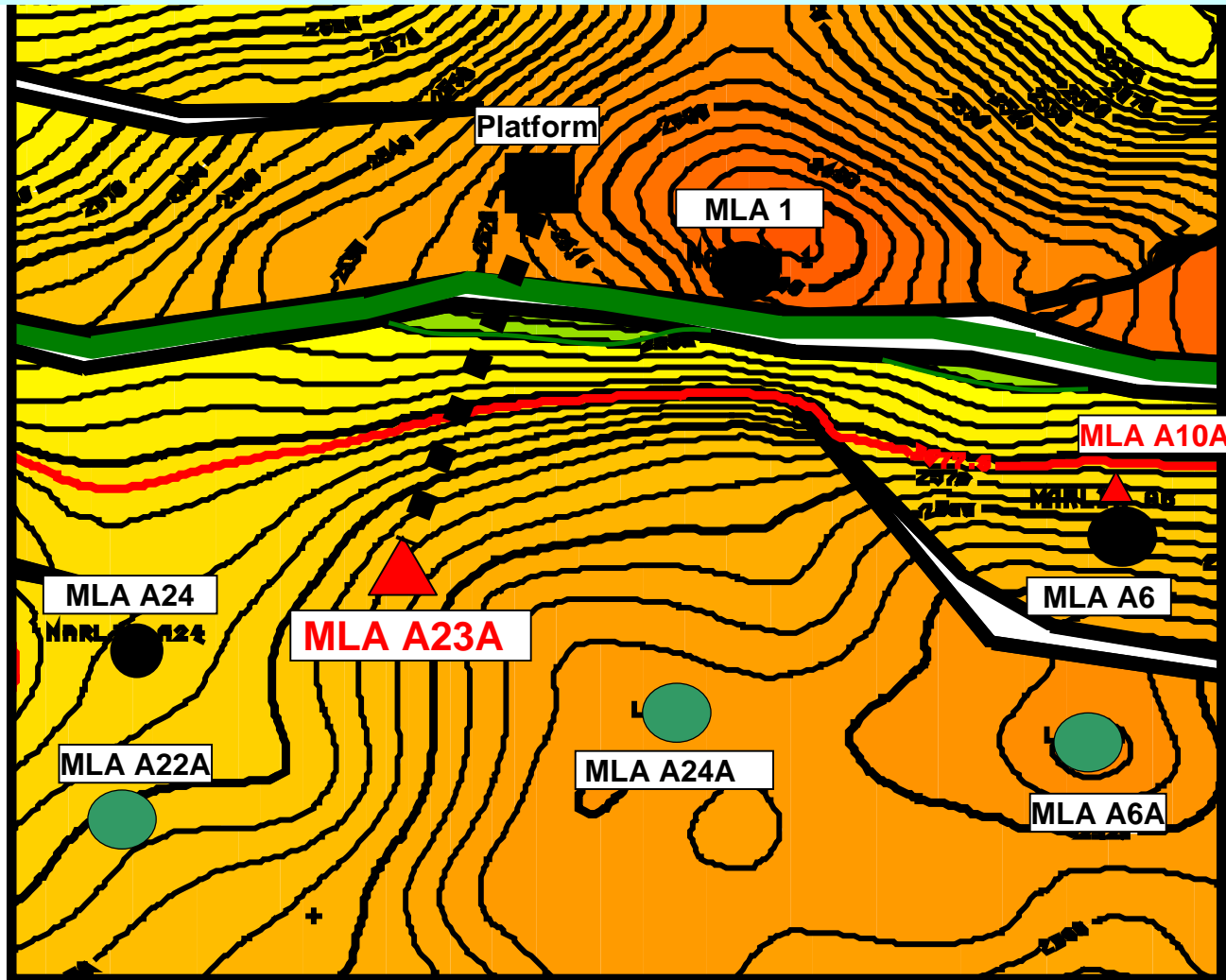
II. WELL DATA RECORD: Location Map Turrum Field MLA A23A



- | | | |
|--|---|--|
|  GOC 2577.5 m |  Marlin Platform |  2004 Drilled Wells |
|  OWC 2600 m |  P&A'd / Appraisal / Expl. Wells |  Planned Wells |

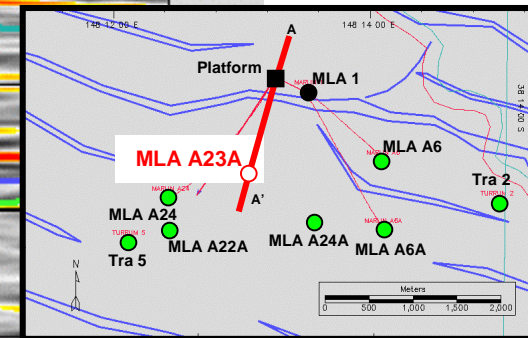
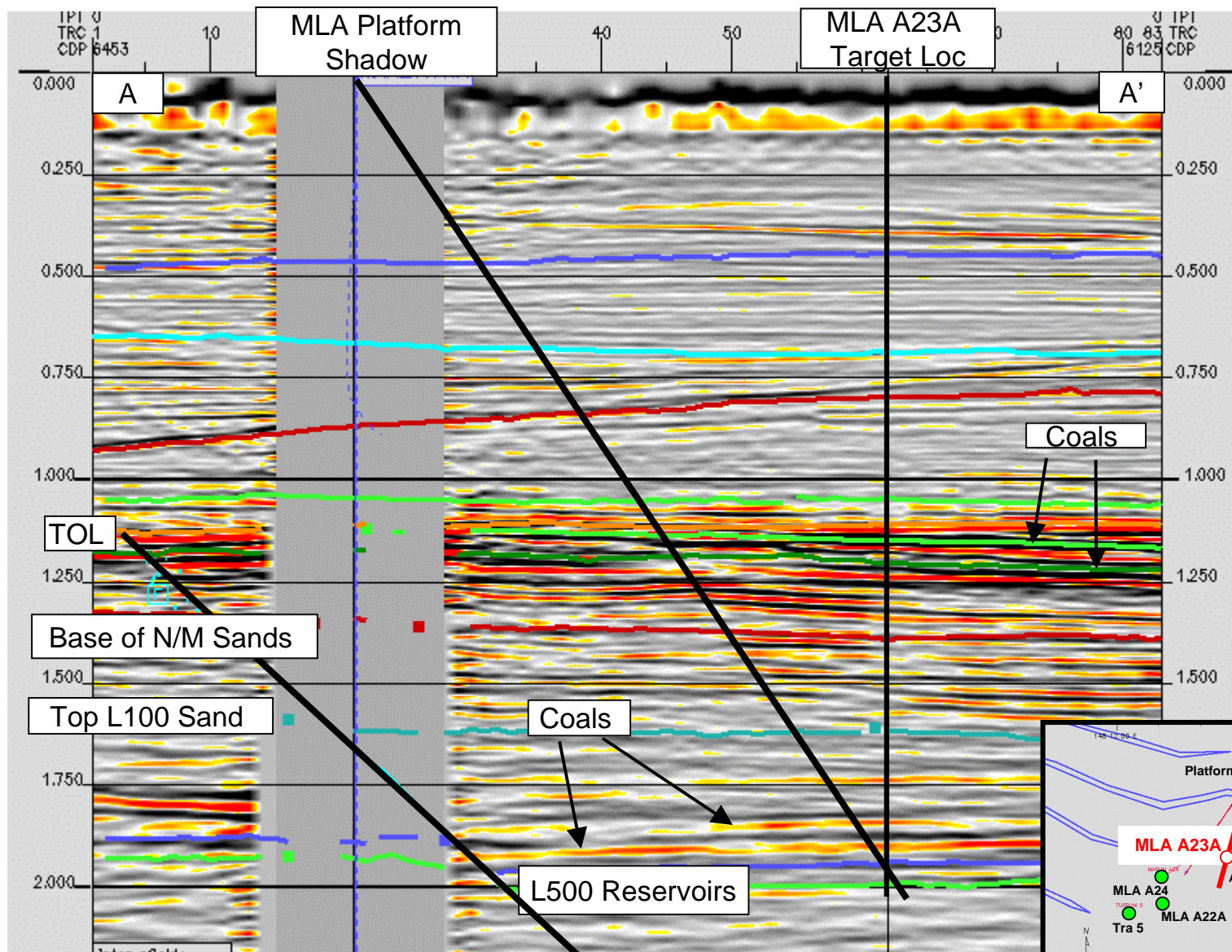
Top L500T Depth Structure Map

A23A (L500 Depth Map Zoom-in with seismic well path)



- GOC 2577.5 m
- OWC 2600 m
- Marlin Platform
- P&A'd / Appraisal / Expl. Wells
- 2004 Drilled Wells
- ▲ Planned Wells

Seismic Traverse along Wellpath



Seismic Line (MLA Platform - MLA A23A well path)

II. WELL DATA RECORD (cont.)

LOCATION

Field	Turrum/Marlin	Conductor #8 Surface Coordinates	
Well Name	A23a (Loc 6)	(GDA94) X	606,863.03mE
Conductor Number	Slot 8	(MGA94) Y	5,767,924.00mN
State	Victoria	Latitude	38°13'49.195"S
Permit/Licence	Vic/L11	Longitude	148°13'15.466"E
Geological Basin	Gippsland	Perforations (driller)	N/A
Top of Latrobe	1442.4 m MDRT		
	1388.4m TVDRT		
MGA94 X	606747.09m E	Datum	GDA94 (GRS80)
MGA94 Y	5767678.17m N	Projection	MGA94/UTM Zone 55 (S)
Top of L500	2896.1m MDRT		
	2583.9m TVDRT		
MGA94 X	606535.54 m E		
MGA94 Y	5766884.04 m N		

ELEVATIONS & DEPTHS

Water Depth	59.0m
Top Wellhead to MSL	16.36 m
Main Deck Rel to MSL	14.48 m
RT Relative to MSL	27.91m
Average Well Angle	35.5°
Total Depth	3051.0m MDRT
	2732.0m TVDRT
Plug Back Depth	3012.2m MDRT

DATES

Skid Rig	04/07/2004
Kicked Off	11/07/2004
Development Rig	21.67
Days	
NPT Days	1.70
Rig Released	02/08/04
I.P. Established	Not completed

MISCELLANEOUS

Operator	Esso Australia Pty Ltd	Contractor	International Sea Drilling Ltd
Esso Interest	50%	Rig Name	Nabors Rig 453
Permittee/Licensee	Esso/BHPP	Equipment Type	Platform
Other Interest	50% J.V. Interest	Completion Type	Not completed
Overriding Royalty	2.5%	Completion Size	Not completed
Drilling AFE No.	L0531E205		

WELL CLASSIFICATION

Before Drilling	Oil Development	After Drilling	Cased and Abandoned
------------------------	-----------------	-----------------------	---------------------

II. WELL DATA RECORD (cont.)

CASING RECORD

Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Surface	13 ³ / ₈	54.5	J-55	BTC	610.5
Intermediate	9 ⁵ / ₈	36/47	K-55/N-80	LTC	1375.0
Production	7	26	L-80	LTC	3050.0

CEMENTING RECORD

Casing Details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Volume (bbls)	Slurry Density (ppg)	Cement To / From (mMDRT)	Casing Pressure Test (psi)
7"	HTB	635	HALAD 413L 30 gal / 10 bbl Gascon 60 gal / 10 bbl CFR-3L 2 gal / 10 bbl	67	92	L:13.0	1554 m 3050 m	2500 psi
			SCR-100L 7 gal / 10 bbl HALAD 413L 30 gal / 10 bbl Gascon 15 gal / 10 bbl CFR-3L 5 gal / 10 bbl SCR-100L 2 gal / 10 bbl	49	81	T:15.0		

II. WELL DATA RECORD (cont.)

DRILLING PERFORMANCE

MLA A23A - Final Well Report

GENERAL

Platform:	Marlin	Rig:	453	Reservoir:	L500 Sands
Well:	A23A	Well Slot:	#8	RT-MSL (Rig453)	27.91m
Drilling Complexity Index	2.9	Completion Complexity Index	NA		

DEPTH		PERFORMANCE		MUD	
m MDRT	3,051.00	20" Cond. Hole	N/A	Max Wt (ppg)	9.6
m TVDRT	2,732.00	12-1/4" Surf. Hole	N/A	Type (Surf. Hole)	N/A
Vert. Section (m)	1,135.65	8-1/2" Prod. Hole	272 m/day	Type (Inter. Hole)	N/A
INCLINATION		6" Liner Hole	N/A	Type (Prod. Hole)	KCI/PHPA/Poly/Glycol
Max (deg) / Ave (deg)	38.8/ 35.5 (Tang)	* time to drill interval, incl's Connections & NPT.		Type (Liner Hole)	N/A

Comments: New hole drilled: 1,367m to 3,051mMDRT (1,684m MDRT drilled).

TIME ANALYSIS

Start Date:	11/07/2004, 2000hrs	Finish Date:	02/08/2004, 1200hrs		
Target Days (P10):	24.8	Total Days:	21.67	% Under Target:	12.6% (under)
AFE Days (P50):	27.6	NPT Days:	1.70	% of Total Days:	7.8%
Supplementary AFE Days (P50):	N/A				

COSTS (based on projected)

AFE No.:	L0531E205	Revisions:	--	\$ per m	A \$2.95 k / metre (new hole)
\$ per day:	A\$ 230 k/day	\$ per day (excl. T + L) * Equipment, LWD & Reeves	A\$ 184 k/day		A\$ 1.63 k / metre* * based on TD not new hole

	Equipment	Materials	Contracts	Allocations	Contingency	Total
AFE (Original)	235,000	795,000	3,826,000	1,069,000	275,000	A\$6,200,000
AFE (Supplement)	--	--	--	--	--	--
Projected	211,000	707,000	3,053,000	788,000	216,000	A\$4,975,000

CASING (all depths herein are based on Rig453 elevations: RT-MSL=27.91m)

	Size / Weight / Grade / Thread	m MDRT	m TVDRT	PIT (ppg)
Conductor Casing *	20"	310	310	N/A
Surface Casing *	13-3/8", 54.5 ppf, J55, BTC	610.5	610	N/A
Intermediate Casing *	9-5/8", 36.0-47.0 ppf, K55/N80, LTC	1,375	1,330	14.0 PIT
Prod Casing	7", 26.0ppf, L80, LTC	3,050	2,732	N/A
Prod Liner	--	--	--	--

Comments: * Pre-existing casing strings.

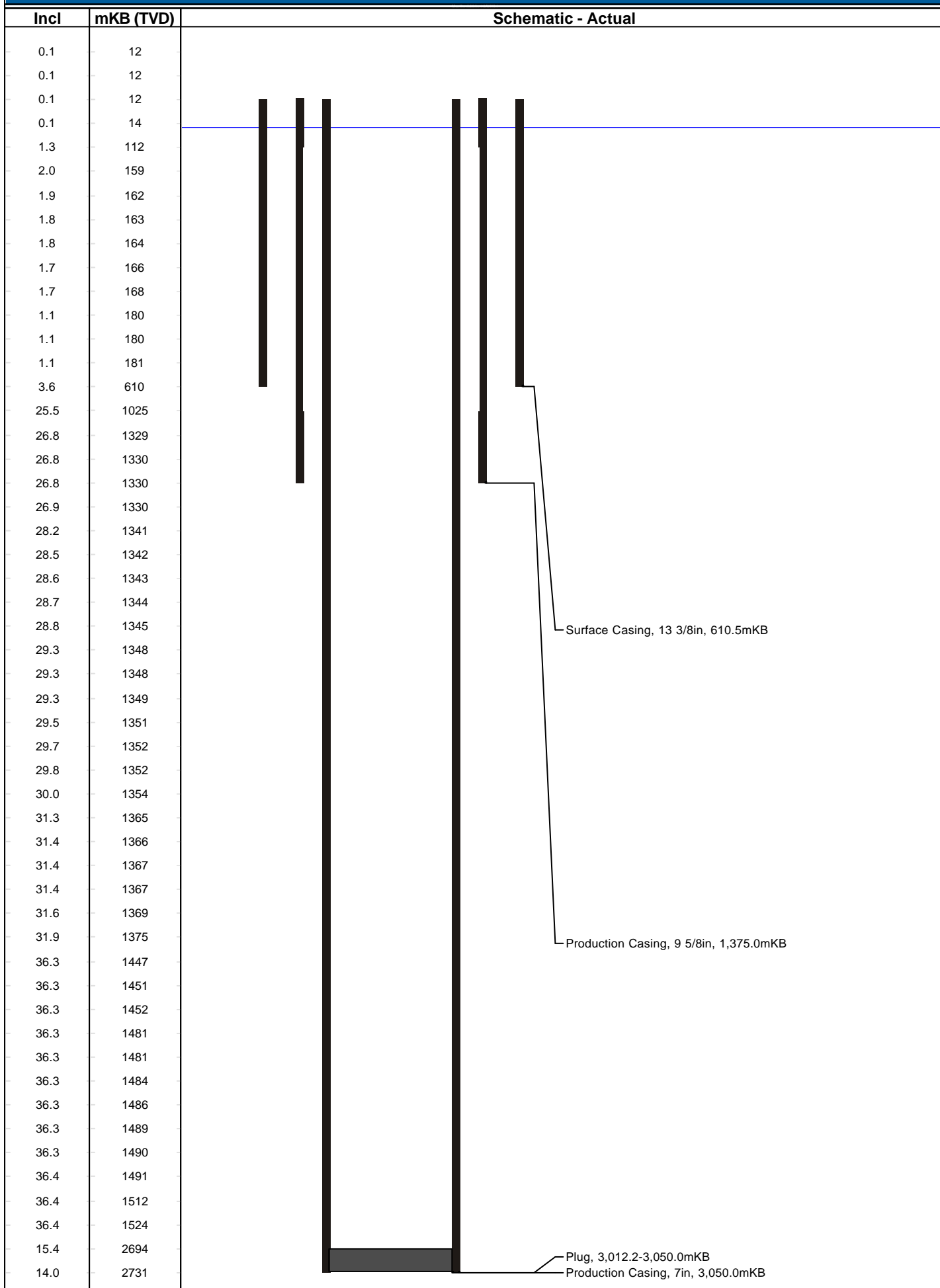
COMPLETION

	Size / Weight / Grade / Thread	MMDRT	MTVDRT	Type
Completion	NA	NA	NA	NA

	Upper Interval [m MDRT]	Upper Interval [m TVDRT]	Lower Interval [mMDRT]	Lower Interval [mTVDRT]	Gun Type
Perforation Interval:	NA	NA	NA	NA	NA

Comments: Well to be completed in January 2005 with Rig 22.

Marlin A23A: Existing Schematic



III. SAMPLES

CUTTINGS

The cuttings sampling programme for Marlin A23A are detailed in the following table:

Interval	Formation	Sampling Details
Window to Total Depth (TD)	Latrobe Group	5 m sampling interval
1360 m – 3051 m (TD)		Three sets of washed and dried cuttings.

Detailed cuttings descriptions for the interval 1490mMDRT to 3051m (TD) are contained in Appendix 3a.

CONVENTIONAL CORING

No conventional cores were cut in Marlin A23A.

SIDEWALL CORING

No sidewall core samples were shot in Marlin A23A.

MDT's

Open Hole MDT data is contained in Appendix 5a.

IV. LOGS AND SURVEYS

Survey/Log	Company	Top (m MDRT)	Bottom (m MDRT)
MWD Run 1, Powerpulse (Directional & GR)	Schlumberger/Anadrill	1354.0	3030.18
Run 1: Compact Logging MCG-MDN-MPD-MSS-MDL	Reeves Compact run on Wellshuttle system	1368	3034.5 (Miss run)
Run 2: Compact Logging MCG-MDN-MPD-MSS-MDL	Reeves Compact run on Wellshuttle system	1368	3034.5
Run 3: Open hole MDT (on drillpipe)	Schlumberger Wireline	1450.5	2996.8
Run 4: Cased hole MDT (on wireline)	Schlumberger Wireline	2921.0	2921.0
Run 5: Cased hole MDT (on wireline)	Schlumberger Wireline	2933.5	2959.5
Run 6: Cased hole MDT (on wireline)	Schlumberger Wireline	-	2933.0

V. FORMATION RESERVOIR TOPS

Zone	m TVDSS			m MDRT	m TVT Gross HC Column	
	Predicted	Actual	Diff.		Predicted	Actual
Top Lakes Entrance	-1296.9	NA	NA	Above kick-off point	48.0m HC column	48m HC column
Top Latrobe Group (TOL)	-1362.5	-1360.3	2.2m high	1442.4		
Top N1.5 Coal	-1483.6	-1484.3	0.7m high	1594.9		
Base N/M Sands	-1708.6	-1704.8	3.8m high	1866.0		
Top L100 Sand	-2115.2	-2116.6	1.4m low	2376.7		
Top L500 Sand	-2552.0	-2555.9	3.9m low	2896.1		
Current GOC	-2577.5	-2577.5	-	2918.9		
Current OWC	-2600.0	-2600.0	-	2942.7		
Near Top Cretaceous Shale	-2636.6	-2643.2	6.6m low	2988.0		
Total Depth (TD)	-2684.9	-2704.0	19.1m low	3051.0		

VI. GEOLOGICAL ANALYSIS - MARLIN A-23A

Objectives

Marlin A23A (pre-drill Location 1) is the fourth well in a series of 5 wells to be drilled on the Turrum field during 2004 using rig "Rig 453". This well was designed to test two targets, the primary L-500 reservoir target and the secondary target of the higher L100 to L400 reservoirs.

Within the L500 reservoirs there were several objectives:

- a) To confirm the expected field-wide GOC of -2577.5m TVDSS & OWC of -2600m TVDSS; and,
- b) To confirm the number of hydraulic systems within the L500 reservoirs;

In the higher L100 to L400 reservoirs the objective was:

- a) To confirm the number and continuity of the previously identified sand and gas systems of the L100 to L400 reservoirs.

One additional objective was identified for the Marlin field:

The Marlin A23A well location was also crestally located for the overlying Marlin Gas field which allowed additional pressure data to be collected to identify the current GWC for the Marlin field.

Results

Marlin A23A was drilled below surface casing (of the original Marlin A23 conductor). At the completion of drilling the A23A well, logging was conducted via Reeves Shuttle on drillpipe in 6" hole and a total of 88 MDT pressure points collected. Of the 88 MDT points tested, 65 MDT points were collected within the Turrum reservoirs and 23 in the Marlin reservoirs.

The A23A well intersected the top of L500 at 2896.07m MDRT (-2555.92m TVDSS), 3.92m TVD low to prognosis, as shown on the attached L500 well data and well log section.

Log character indicated that hydrocarbons were present over the entire L100 to L500 column and also identified the current GWC's of the overlying Marlin reservoirs. After MDT pressures were taken casing was set and a Cased Hole Dynamic Tester (CHDT) tool was used to take pressures and collect fluid samples at 4 selected points within the L500 sands. Unfortunately, due to operational conditions only 2 CHDT points were successful.

VI. GEOLOGICAL ANALYSIS - MARLIN A-23A

These points were:

- a) CHDT point #1 (2921.0m MD (-2579.53m TVDSS)); (successful)
- b) CHDT point #2 (2959.5m MD (-2616.05m TVDSS)); (successful)
- c) CHDT point #3 (2933.5m MD (-2591.34m TVDSS)); and,
- d) CHDT point #4 (2933.0m MD (-2590.87m TVDSS)).

The CHDT tool indicated that the L500 reservoir did have oil in the upper L500 reservoir.

In the secondary target a total of 67 metres TVT gross HC column was encountered in the upper reservoirs of the L100 group (31m TVT), L200 group (21m TVT), L300 group (15m TVT) & L400 group (0m TVT) sands.

In the primary target a total of 48m TVT gross gas and oil column was encountered in the L500 sands. (The 48m total is from 44m in the L500 reservoir and a deeper but isolated gas contact in the L510 reservoir (4m TVT gross gas column)).

○ Actual MLA A23A [SSTVD]

0.00	GR	180.00	SSTVD	0.20	LLD	2000.00	MD	0.45	NPHI	-0.15
500.00	DT	100.00		0.20	LLS	2000.00		1.85	RHOB	2.85
6.00	CALI	25.00						0.45	NPHI30	-0.15
0.00	MWD	180.00						0.45	NPHI15	-0.15
0.00	G80	180.00						1.85	rhob23	2.85
0.00	G100	180.00								

TL500 ⊕

BL500 ⊕

TL510 ⊕

BL510 ⊕

TL520 ⊕

ORBL ⊕

TL500 ⊕ TL500

BL500 ⊕ BL500

TL510 ⊕ TL510

BL510 ⊕ BL510

TL520 ⊕ TL520

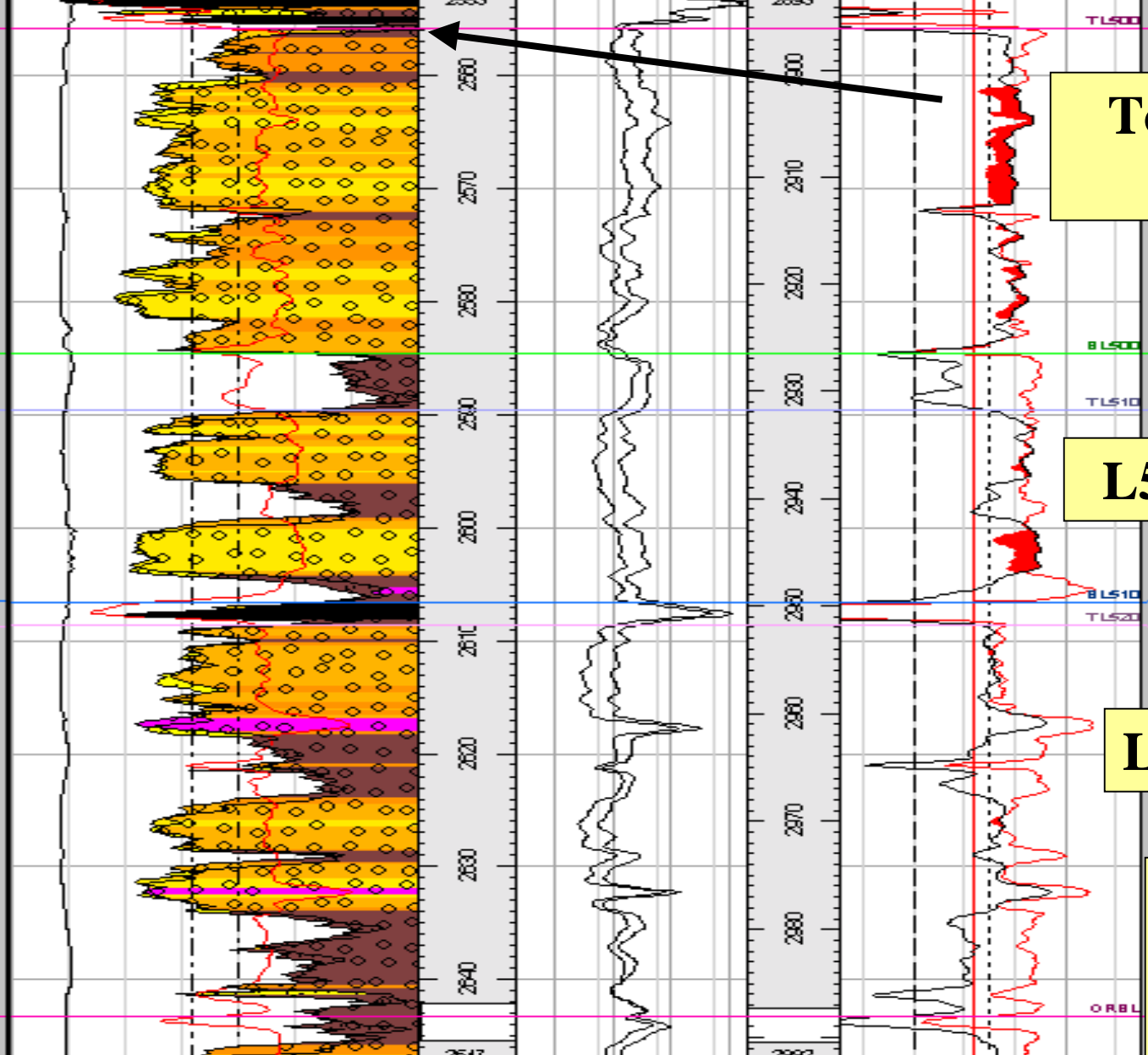
ORBL ⊕ ORBL

Top L500 Sand

L510 Sand

L520 Sand

Geological Analysis:
MLA A23A
well log L500
Sands



Actual MLA A23A [SSTVD]

0.00	GR	180.00	SSTVD	0.20	LLD	2000.00	MD	0.45	NPHI	-0.15
500.00	DT	100.00		0.20	LLS	2000.00		1.85	RHOB	2.85
6.00	CAL	25.00						0.45	NPHI30	-0.15
0.00	MWD	180.00						0.45	NPHI15	-0.15
0.00	G80	180.00						1.85	rhob23	2.85
0.00	G100	180.00								

p L100_Res ⊕

L105 ⊕

L110 ⊕

L120 ⊕

L130 ⊕

L140 ⊕

L200 ⊕

L210 ⊕

L220 ⊕

L230 ⊕

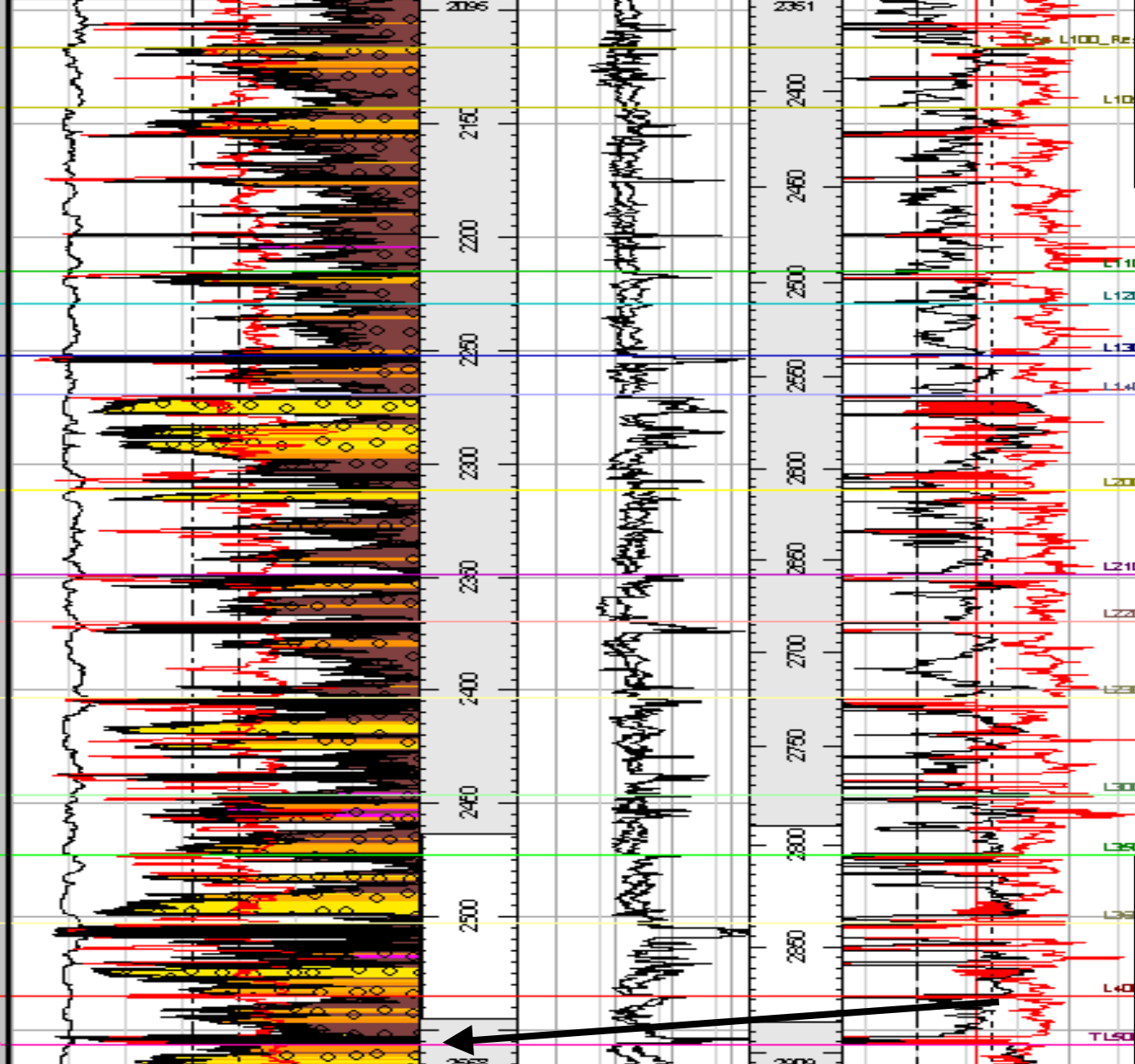
L300 ⊕

L350 ⊕

L360 ⊕

L400 ⊕

TL500 ⊕



**Geological
Analysis:
MLA A23A
well log
L100 - L400
Sands**

⊕ L110

⊕ L120

⊕ L130

⊕ L140

⊕ L200

⊕ L210

⊕ L220

⊕ L230

⊕ L300

⊕ L350

⊕ L360

⊕ L400

⊕ TL500

**Top
L500
Sand**

APPENDIX 1a

MARLIN A-23A

Survey Data



MLA A-23A Final Geodetic Survey

Report Date: July 23, 2004	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: Esso Australia Pty Ltd	Vertical Section Azimuth: 197.610°
Field: Marlin GDA 94	Vertical Section Origin: S 2.900 m, E 22.440 m
Structure / Slot: Marlin / 8	TVD Reference Datum: RKB
Well: A-23	TVD Reference Elevation: 27.9 m relative to MSL
Borehole: MLA A-23A	Sea Bed / Ground Level Elevation: 0.000 m relative to MSL
UWI/API#:	Magnetic Declination: 13.135°
Survey Name / Date: MLA A-23A Final / July 14, 2004	Total Field Strength: 59981.195 nT
Tort / AHD / DDI / ERD ratio: 128.816° / 1149.24 m / 5.734 / 0.421	Magnetic Dip: -68.729°
Grid Coordinate System: GDA94/MGA94 Zone 55	Declination Date: July 14, 2004
Location Lat/Long: S 38 13 49.195, E 148 13 15.466	Magnetic Declination Model: BGGM 2003
Location Grid N/E Y/X: N 5767924.000 m, E 606863.030 m	North Reference: Grid North
Grid Convergence Angle: -0.75563292°	Total Corr Mag North -> Grid North: +13.891°
Grid Scale Factor: 0.99974064	Local Coordinates Referenced To: Structure Reference Point

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	DLS (deg/30 m)	Northing (m)	Easting (m)	Latitude	Longitude
Tie-In	0.00	0.00	0.00	0.00	0.00	-2.90	22.44	0.00	5767924.00	606863.03	S 38 13 49.195	E 148 13 15.466
	5.00	0.04	121.24	5.00	0.00	-2.90	22.44	0.24	5767924.00	606863.03	S 38 13 49.195	E 148 13 15.466
	10.00	0.07	121.24	10.00	0.00	-2.90	22.44	0.18	5767924.00	606863.04	S 38 13 49.195	E 148 13 15.466
	15.00	0.11	121.24	15.00	0.01	-2.91	22.45	0.24	5767923.99	606863.04	S 38 13 49.195	E 148 13 15.466
	20.00	0.14	121.24	20.00	0.01	-2.91	22.46	0.18	5767923.99	606863.05	S 38 13 49.196	E 148 13 15.467
	25.00	0.18	121.24	25.00	0.01	-2.92	22.47	0.24	5767923.98	606863.06	S 38 13 49.196	E 148 13 15.467
	30.00	0.22	121.24	30.00	0.02	-2.93	22.48	0.24	5767923.97	606863.08	S 38 13 49.196	E 148 13 15.468
	35.00	0.25	121.24	35.00	0.02	-2.94	22.50	0.18	5767923.96	606863.10	S 38 13 49.196	E 148 13 15.469
	40.00	0.29	121.24	40.00	0.03	-2.95	22.52	0.24	5767923.95	606863.12	S 38 13 49.197	E 148 13 15.469
	45.00	0.33	121.13	45.00	0.03	-2.97	22.55	0.24	5767923.93	606863.14	S 38 13 49.197	E 148 13 15.470
	50.00	0.39	120.04	50.00	0.04	-2.98	22.57	0.36	5767923.92	606863.17	S 38 13 49.198	E 148 13 15.472
	55.00	0.25	124.14	55.00	0.05	-3.00	22.60	0.85	5767923.90	606863.19	S 38 13 49.198	E 148 13 15.473
	60.00	0.26	124.30	60.00	0.05	-3.01	22.61	0.06	5767923.89	606863.21	S 38 13 49.199	E 148 13 15.473
	65.00	0.36	122.93	65.00	0.06	-3.03	22.64	0.60	5767923.88	606863.23	S 38 13 49.199	E 148 13 15.474
	70.00	0.34	123.30	70.00	0.07	-3.04	22.66	0.12	5767923.86	606863.26	S 38 13 49.200	E 148 13 15.475
	75.00	0.31	125.25	75.00	0.08	-3.06	22.69	0.19	5767923.84	606863.28	S 38 13 49.200	E 148 13 15.476
	80.00	0.29	126.77	80.00	0.08	-3.07	22.71	0.13	5767923.83	606863.30	S 38 13 49.201	E 148 13 15.477
	85.00	0.49	127.48	85.00	0.10	-3.09	22.73	1.20	5767923.81	606863.33	S 38 13 49.201	E 148 13 15.478
	90.00	0.66	131.47	90.00	0.11	-3.13	22.77	1.05	5767923.78	606863.37	S 38 13 49.202	E 148 13 15.480
	95.00	0.77	134.73	95.00	0.14	-3.17	22.82	0.70	5767923.73	606863.41	S 38 13 49.204	E 148 13 15.482
	100.00	0.85	137.20	100.00	0.18	-3.22	22.87	0.52	5767923.68	606863.46	S 38 13 49.205	E 148 13 15.484
	105.00	1.13	146.10	105.00	0.22	-3.29	22.92	1.91	5767923.61	606863.51	S 38 13 49.208	E 148 13 15.486
	110.00	1.32	152.01	110.00	0.30	-3.38	22.97	1.37	5767923.52	606863.57	S 38 13 49.211	E 148 13 15.488
	115.00	1.43	156.21	114.99	0.38	-3.49	23.03	0.89	5767923.41	606863.62	S 38 13 49.214	E 148 13 15.491
	120.00	1.74	163.56	119.99	0.49	-3.62	23.07	2.22	5767923.28	606863.67	S 38 13 49.218	E 148 13 15.493
	125.00	2.00	168.15	124.99	0.63	-3.78	23.11	1.80	5767923.13	606863.71	S 38 13 49.223	E 148 13 15.494
	130.00	2.25	172.00	129.99	0.80	-3.96	23.14	1.73	5767922.94	606863.74	S 38 13 49.229	E 148 13 15.496
	135.00	2.19	170.36	134.98	0.97	-4.15	23.17	0.52	5767922.75	606863.77	S 38 13 49.235	E 148 13 15.497
	140.00	2.26	171.37	139.98	1.14	-4.34	23.20	0.48	5767922.56	606863.80	S 38 13 49.242	E 148 13 15.498
	145.00	2.19	170.74	144.98	1.32	-4.53	23.23	0.44	5767922.37	606863.83	S 38 13 49.248	E 148 13 15.500
	150.00	2.20	170.19	149.97	1.49	-4.72	23.27	0.14	5767922.18	606863.86	S 38 13 49.254	E 148 13 15.501
	155.00	2.13	168.71	154.97	1.65	-4.91	23.30	0.54	5767921.99	606863.90	S 38 13 49.260	E 148 13 15.503
	160.00	1.92	164.77	159.96	1.80	-5.08	23.34	1.51	5767921.82	606863.94	S 38 13 49.265	E 148 13 15.504
	165.00	1.76	161.05	164.96	1.94	-5.23	23.39	1.20	5767921.67	606863.98	S 38 13 49.270	E 148 13 15.506
	170.00	1.54	156.62	169.96	2.05	-5.37	23.44	1.52	5767921.53	606864.03	S 38 13 49.275	E 148 13 15.509
	175.00	1.19	147.16	174.96	2.13	-5.47	23.49	2.49	5767921.43	606864.09	S 38 13 49.278	E 148 13 15.511
	180.00	1.12	143.59	179.96	2.19	-5.56	23.55	0.60	5767921.35	606864.15	S 38 13 49.281	E 148 13 15.513
	185.00	0.97	139.44	184.96	2.25	-5.63	23.61	1.01	5767921.27	606864.20	S 38 13 49.283	E 148 13 15.516
	190.00	1.00	138.98	189.96	2.29	-5.69	23.66	0.19	5767921.21	606864.26	S 38 13 49.285	E 148 13 15.518
	195.00	0.92	136.89	194.96	2.33	-5.75	23.72	0.52	5767921.15	606864.31	S 38 13 49.287	E 148 13 15.520
	200.00	0.94	137.84	199.95	2.37	-5.81	23.78	0.15	5767921.09	606864.37	S 38 13 49.289	E 148 13 15.523
	205.00	1.00	139.05	204.95	2.42	-5.88	23.83	0.38	5767921.02	606864.43	S 38 13 49.291	E 148 13 15.525
	210.00	1.11	140.90	209.95	2.47	-5.95	23.89	0.69	5767920.95	606864.48	S 38 13 49.293	E 148 13 15.527
	215.00	1.07	140.03	214.95	2.52	-6.02	23.95	0.26	5767920.88	606864.55	S 38 13 49.296	E 148 13 15.530
	220.00	1.12	141.32	219.95	2.57	-6.09	24.01	0.33	5767920.81	606864.61	S 38 13 49.298	E 148 13 15.532
	225.00	0.86	148.75	224.95	2.62	-6.16	24.06	1.74	5767920.74	606864.66	S 38 13 49.300	E 148 13 15.535
	230.00	0.93	150.34	229.95	2.67	-6.23	24.10	0.45	5767920.67	606864.70	S 38 13 49.303	E 148 13 15.536
	235.00	1.01	152.03	234.95	2.73	-6.31	24.14	0.51	5767920.60	606864.74	S 38 13 49.305	E 148 13 15.538
	240.00	1.08	155.52	239.95	2.80	-6.39	24.18	0.57	5767920.51	606864.78	S 38 13 49.308	E 148 13 15.540
	245.00	1.10	159.35	244.95	2.87	-6.48	24.22	0.45	5767920.43	606864.81	S 38 13 49.310	E 148 13 15.541
	250.00	1.11	153.27	249.95	2.94	-6.56	24.26	0.71	5767920.34	606864.85	S 38 13 49.313	E 148 13 15.543
	255.00	1.04	158.84	254.95	3.01	-6.65	24.30	0.75	5767920.25	606864.89	S 38 13 49.316	E 148 13 15.544

260.00	1.15	154.62	259.95	3.08	-6.74	24.33	0.82	5767920.16	606864.93	S 38 13 49.319	E 148 13 15.546
265.00	1.24	155.16	264.94	3.16	-6.83	24.38	0.54	5767920.07	606864.97	S 38 13 49.322	E 148 13 15.548
270.00	1.26	154.03	269.94	3.24	-6.93	24.42	0.19	5767919.97	606865.02	S 38 13 49.325	E 148 13 15.550
275.00	1.23	150.27	274.94	3.32	-7.03	24.48	0.52	5767919.88	606865.07	S 38 13 49.328	E 148 13 15.552
280.00	1.32	147.47	279.94	3.39	-7.12	24.53	0.66	5767919.78	606865.13	S 38 13 49.331	E 148 13 15.554
285.00	1.42	148.25	284.94	3.47	-7.22	24.60	0.61	5767919.68	606865.19	S 38 13 49.334	E 148 13 15.557
290.00	1.40	145.02	289.94	3.55	-7.33	24.66	0.49	5767919.58	606865.26	S 38 13 49.338	E 148 13 15.560
295.00	1.38	149.88	294.94	3.62	-7.43	24.73	0.72	5767919.47	606865.32	S 38 13 49.341	E 148 13 15.563
300.00	1.35	146.86	299.93	3.70	-7.53	24.79	0.47	5767919.37	606865.39	S 38 13 49.344	E 148 13 15.565
305.00	1.34	145.86	304.93	3.77	-7.63	24.86	0.15	5767919.28	606865.45	S 38 13 49.347	E 148 13 15.568
310.00	1.29	149.50	309.93	3.85	-7.72	24.92	0.58	5767919.18	606865.51	S 38 13 49.351	E 148 13 15.571
315.00	1.30	151.62	314.93	3.92	-7.82	24.97	0.29	5767919.08	606865.57	S 38 13 49.354	E 148 13 15.573
320.00	1.32	152.01	319.93	4.00	-7.92	25.03	0.13	5767918.98	606865.62	S 38 13 49.357	E 148 13 15.575
325.00	1.31	157.47	324.93	4.09	-8.03	25.08	0.75	5767918.88	606865.67	S 38 13 49.360	E 148 13 15.577
330.00	1.32	162.26	329.93	4.18	-8.13	25.12	0.66	5767918.77	606865.71	S 38 13 49.364	E 148 13 15.579
335.00	1.32	169.04	334.93	4.28	-8.25	25.14	0.94	5767918.66	606865.74	S 38 13 49.367	E 148 13 15.580
340.00	1.31	176.60	339.92	4.38	-8.36	25.16	1.04	5767918.54	606865.75	S 38 13 49.371	E 148 13 15.581
345.00	1.26	198.74	344.92	4.49	-8.47	25.14	2.98	5767918.43	606865.74	S 38 13 49.375	E 148 13 15.580
350.00	1.51	207.89	349.92	4.61	-8.58	25.10	2.00	5767918.32	606865.69	S 38 13 49.378	E 148 13 15.578
355.00	1.36	216.67	354.92	4.73	-8.68	25.03	1.59	5767918.22	606865.62	S 38 13 49.382	E 148 13 15.576
360.00	1.52	225.08	359.92	4.84	-8.78	24.95	1.59	5767918.12	606865.54	S 38 13 49.385	E 148 13 15.572
365.00	1.66	233.42	364.92	4.96	-8.87	24.84	1.62	5767918.03	606865.44	S 38 13 49.388	E 148 13 15.568
370.00	1.67	235.88	369.91	5.08	-8.95	24.72	0.43	5767917.95	606865.32	S 38 13 49.391	E 148 13 15.563
375.00	1.80	240.71	374.91	5.19	-9.03	24.60	1.17	5767917.87	606865.19	S 38 13 49.393	E 148 13 15.558
380.00	1.86	240.70	379.91	5.31	-9.11	24.46	0.36	5767917.79	606865.05	S 38 13 49.396	E 148 13 15.552
385.00	1.79	239.98	384.91	5.43	-9.19	24.32	0.44	5767917.71	606864.91	S 38 13 49.398	E 148 13 15.547
390.00	1.83	241.09	389.90	5.54	-9.27	24.18	0.32	5767917.64	606864.77	S 38 13 49.401	E 148 13 15.541
395.00	1.84	243.16	394.90	5.66	-9.34	24.04	0.40	5767917.56	606864.63	S 38 13 49.403	E 148 13 15.535
400.00	1.85	242.94	399.90	5.77	-9.41	23.89	0.07	5767917.49	606864.49	S 38 13 49.406	E 148 13 15.529
405.00	1.88	243.44	404.90	5.88	-9.49	23.75	0.20	5767917.41	606864.34	S 38 13 49.408	E 148 13 15.524
410.00	1.81	240.96	409.89	6.00	-9.56	23.61	0.64	5767917.34	606864.20	S 38 13 49.411	E 148 13 15.518
415.00	1.86	244.41	414.89	6.11	-9.64	23.47	0.73	5767917.27	606864.06	S 38 13 49.413	E 148 13 15.512
420.00	2.00	241.65	419.89	6.23	-9.71	23.32	1.01	5767917.19	606863.91	S 38 13 49.416	E 148 13 15.506
425.00	2.01	237.98	424.89	6.36	-9.80	23.16	0.77	5767917.10	606863.76	S 38 13 49.419	E 148 13 15.500
430.00	2.00	237.89	429.88	6.49	-9.89	23.02	0.06	5767917.01	606863.61	S 38 13 49.422	E 148 13 15.494
435.00	2.00	236.90	434.88	6.63	-9.99	22.87	0.21	5767916.92	606863.46	S 38 13 49.425	E 148 13 15.488
440.00	1.97	236.27	439.88	6.76	-10.08	22.72	0.22	5767916.82	606863.32	S 38 13 49.428	E 148 13 15.482
445.00	1.92	237.41	444.87	6.89	-10.18	22.58	0.38	5767916.73	606863.18	S 38 13 49.431	E 148 13 15.476
450.00	1.92	235.98	449.87	7.02	-10.27	22.44	0.29	5767916.63	606863.04	S 38 13 49.434	E 148 13 15.470
455.00	1.94	238.90	454.87	7.15	-10.36	22.30	0.60	5767916.54	606862.89	S 38 13 49.437	E 148 13 15.464
460.00	1.92	238.89	459.86	7.28	-10.45	22.16	0.12	5767916.46	606862.75	S 38 13 49.440	E 148 13 15.459
465.00	1.87	240.97	464.86	7.40	-10.53	22.01	0.51	5767916.37	606862.61	S 38 13 49.443	E 148 13 15.453
470.00	1.82	240.23	469.86	7.52	-10.61	21.87	0.33	5767916.30	606862.47	S 38 13 49.445	E 148 13 15.447
475.00	1.92	243.85	474.86	7.63	-10.68	21.73	0.93	5767916.22	606862.32	S 38 13 49.448	E 148 13 15.441
480.00	1.83	240.76	479.85	7.75	-10.76	21.58	0.81	5767916.14	606862.18	S 38 13 49.450	E 148 13 15.435
485.00	1.98	250.25	484.85	7.86	-10.83	21.43	2.09	5767916.08	606862.03	S 38 13 49.453	E 148 13 15.429
490.00	2.17	255.73	489.85	7.96	-10.88	21.26	1.65	5767916.02	606861.85	S 38 13 49.454	E 148 13 15.422
495.00	2.27	251.93	494.84	8.07	-10.93	21.07	1.07	5767915.97	606861.67	S 38 13 49.456	E 148 13 15.414
500.00	2.26	251.27	499.84	8.19	-11.00	20.89	0.17	5767915.91	606861.48	S 38 13 49.458	E 148 13 15.407
505.00	2.29	249.49	504.84	8.31	-11.06	20.70	0.46	5767915.84	606861.29	S 38 13 49.461	E 148 13 15.399
510.00	2.16	248.43	509.83	8.43	-11.13	20.52	0.82	5767915.77	606861.11	S 38 13 49.463	E 148 13 15.392
515.00	2.36	249.86	514.83	8.55	-11.20	20.33	1.25	5767915.70	606860.93	S 38 13 49.465	E 148 13 15.384
520.00	2.27	251.86	519.82	8.67	-11.27	20.14	0.73	5767915.63	606860.74	S 38 13 49.468	E 148 13 15.376
525.00	2.35	253.80	524.82	8.79	-11.33	19.95	0.67	5767915.57	606860.55	S 38 13 49.470	E 148 13 15.368
530.00	2.30	255.80	529.82	8.90	-11.38	19.76	0.57	5767915.52	606860.35	S 38 13 49.471	E 148 13 15.360
535.00	2.33	256.85	534.81	9.00	-11.43	19.56	0.31	5767915.47	606860.15	S 38 13 49.473	E 148 13 15.352
540.00	2.35	256.14	539.81	9.11	-11.48	19.36	0.21	5767915.43	606859.96	S 38 13 49.475	E 148 13 15.344
545.00	2.40	257.30	544.80	9.21	-11.52	19.16	0.42	5767915.38	606859.75	S 38 13 49.476	E 148 13 15.336
550.00	2.42	259.94	549.80	9.32	-11.57	18.95	0.68	5767915.34	606859.55	S 38 13 49.478	E 148 13 15.327
555.00	2.49	262.84	554.80	9.41	-11.60	18.74	0.86	5767915.30	606859.34	S 38 13 49.479	E 148 13 15.319
560.00	2.64	264.42	559.79	9.50	-11.62	18.52	0.99	5767915.28	606859.11	S 38 13 49.480	E 148 13 15.310
565.00	2.71	266.57	564.78	9.59	-11.64	18.29	0.73	5767915.26	606858.88	S 38 13 49.480	E 148 13 15.300
570.00	2.79	266.45	569.78	9.67	-11.66	18.05	0.48	5767915.25	606858.64	S 38 13 49.481	E 148 13 15.290
575.00	2.85	269.15	574.77	9.76	-11.67	17.80	0.87	5767915.24	606858.40	S 38 13 49.481	E 148 13 15.280
580.00	2.89	267.86	579.77	9.84	-11.67	17.55	0.46	5767915.23	606858.15	S 38 13 49.482	E 148 13 15.270
585.00	2.95	268.10	584.76	9.93	-11.68	17.30	0.37	5767915.22	606857.89	S 38 13 49.482	E 148 13 15.259
590.00	2.98	268.40	589.75	10.01	-11.69	17.04	0.20	5767915.21	606857.63	S 38 13 49.483	E 148 13 15.249
595.00	2.96	269.97	594.75	10.09	-11.69	16.78	0.50	5767915.21	606857.37	S 38 13 49.483	E 148 13 15.238
600.00	3.14	270.50	599.74	10.17	-11.69	16.51	1.09	5767915.21	606857.11	S 38 13 49.483	E 148 13 15.227
605.00	3.37	273.69	604.73	10.25	-11.68	16.23	1.76	5767915.22	606856.82	S 38 13 49.483	E 148 13 15.215
610.00	3.62	273.63	609.72	10.32	-11.66	15.92	1.50	5767915.24	606856.52	S 38 13 49.482	E 148 13 15.203
615.00	3.57	271.84	614.71	10.40	-11.65	15.61	0.74	5767915.26	606856.21	S 38 13 49.482	E 148 13 15.190
620.00	3.66	271.81	619.70	10.49	-11.64	15.30	0.54	5767915.27	606855.89	S 38 13 49.482	E 148 13 15.177

625.00	3.68	271.98	624.69	10.57	-11.63	14.98	0.14	5767915.28	606855.57	S 38 13 49.481	E 148 13 15.164
630.00	3.69	271.81	629.68	10.66	-11.61	14.66	0.09	5767915.29	606855.25	S 38 13 49.481	E 148 13 15.151
635.00	3.70	273.00	634.67	10.75	-11.60	14.33	0.46	5767915.30	606854.93	S 38 13 49.481	E 148 13 15.138
640.00	3.73	273.35	639.66	10.83	-11.58	14.01	0.23	5767915.32	606854.61	S 38 13 49.480	E 148 13 15.124
645.00	3.82	273.24	644.65	10.91	-11.56	13.68	0.54	5767915.34	606854.28	S 38 13 49.480	E 148 13 15.111
650.00	3.76	273.88	649.64	10.99	-11.54	13.35	0.44	5767915.36	606853.95	S 38 13 49.479	E 148 13 15.097
655.00	3.84	273.58	654.63	11.07	-11.52	13.02	0.49	5767915.38	606853.62	S 38 13 49.479	E 148 13 15.084
660.00	3.98	273.33	659.62	11.15	-11.50	12.68	0.85	5767915.40	606853.28	S 38 13 49.478	E 148 13 15.070
665.00	3.95	272.51	664.60	11.24	-11.48	12.34	0.38	5767915.42	606852.93	S 38 13 49.478	E 148 13 15.055
670.00	3.72	267.79	669.59	11.34	-11.48	12.00	2.34	5767915.42	606852.60	S 38 13 49.478	E 148 13 15.042
675.00	3.56	262.74	674.58	11.46	-11.51	11.69	2.15	5767915.39	606852.28	S 38 13 49.479	E 148 13 15.029
680.00	3.40	253.78	679.57	11.61	-11.57	11.39	3.40	5767915.33	606851.99	S 38 13 49.481	E 148 13 15.016
685.00	3.35	243.57	684.57	11.79	-11.68	11.12	3.61	5767915.23	606851.71	S 38 13 49.485	E 148 13 15.005
690.00	3.34	235.96	689.56	12.01	-11.82	10.86	2.66	5767915.08	606851.46	S 38 13 49.490	E 148 13 14.995
695.00	3.43	228.90	694.55	12.25	-12.00	10.63	2.56	5767914.90	606851.23	S 38 13 49.495	E 148 13 14.986
700.00	3.28	225.63	699.54	12.50	-12.20	10.42	1.46	5767914.70	606851.01	S 38 13 49.502	E 148 13 14.977
705.00	3.51	220.22	704.53	12.77	-12.42	10.21	2.36	5767914.49	606850.81	S 38 13 49.509	E 148 13 14.969
710.00	3.58	214.94	709.52	13.06	-12.66	10.03	2.00	5767914.24	606850.62	S 38 13 49.517	E 148 13 14.961
715.00	3.65	211.21	714.51	13.36	-12.93	9.85	1.47	5767913.98	606850.45	S 38 13 49.526	E 148 13 14.954
720.00	3.95	206.30	719.50	13.69	-13.22	9.70	2.65	5767913.69	606850.29	S 38 13 49.535	E 148 13 14.948
725.00	4.20	201.58	724.49	14.04	-13.54	9.55	2.51	5767913.36	606850.15	S 38 13 49.546	E 148 13 14.942
730.00	4.34	198.99	729.47	14.41	-13.89	9.42	1.43	5767913.01	606850.02	S 38 13 49.557	E 148 13 14.937
735.00	4.66	198.85	734.46	14.81	-14.26	9.30	1.92	5767912.64	606849.89	S 38 13 49.569	E 148 13 14.932
740.00	4.89	200.59	739.44	15.22	-14.65	9.16	1.63	5767912.25	606849.75	S 38 13 49.582	E 148 13 14.926
745.00	5.32	200.04	744.42	15.67	-15.07	9.00	2.60	5767911.83	606849.60	S 38 13 49.596	E 148 13 14.920
750.00	5.62	200.38	749.40	16.14	-15.52	8.84	1.81	5767911.39	606849.43	S 38 13 49.610	E 148 13 14.914
755.00	5.94	201.12	754.37	16.65	-15.99	8.66	1.97	5767910.91	606849.26	S 38 13 49.626	E 148 13 14.907
760.00	6.25	200.50	759.34	17.18	-16.49	8.47	1.90	5767910.42	606849.07	S 38 13 49.642	E 148 13 14.899
765.00	6.72	200.84	764.31	17.74	-17.01	8.27	2.83	5767909.89	606848.87	S 38 13 49.659	E 148 13 14.891
770.00	7.11	201.46	769.28	18.34	-17.58	8.05	2.38	5767909.33	606848.65	S 38 13 49.677	E 148 13 14.883
775.00	7.59	200.88	774.24	18.98	-18.17	7.82	2.91	5767908.73	606848.42	S 38 13 49.697	E 148 13 14.873
780.00	8.10	200.38	779.19	19.66	-18.81	7.58	3.09	5767908.09	606848.18	S 38 13 49.718	E 148 13 14.864
785.00	8.38	200.56	784.14	20.38	-19.48	7.33	1.69	5767907.42	606847.93	S 38 13 49.739	E 148 13 14.854
790.00	8.82	200.35	789.08	21.12	-20.18	7.07	2.65	5767906.72	606847.67	S 38 13 49.762	E 148 13 14.844
795.00	9.12	199.29	794.02	21.90	-20.92	6.81	2.06	5767905.99	606847.40	S 38 13 49.786	E 148 13 14.833
800.00	9.59	198.10	798.95	22.71	-21.69	6.54	3.05	5767905.22	606847.14	S 38 13 49.811	E 148 13 14.823
805.00	9.78	197.14	803.88	23.56	-22.49	6.29	1.50	5767904.42	606846.89	S 38 13 49.837	E 148 13 14.813
810.00	10.36	195.79	808.80	24.43	-23.33	6.04	3.76	5767903.58	606846.64	S 38 13 49.865	E 148 13 14.803
815.00	10.63	194.72	813.72	25.34	-24.20	5.80	2.00	5767902.70	606846.40	S 38 13 49.893	E 148 13 14.794
820.00	11.06	194.29	818.63	26.28	-25.12	5.57	2.63	5767901.79	606846.17	S 38 13 49.923	E 148 13 14.784
825.00	11.47	193.38	823.54	27.25	-26.06	5.33	2.68	5767900.84	606845.93	S 38 13 49.954	E 148 13 14.775
830.00	11.94	192.68	828.43	28.26	-27.05	5.11	2.95	5767899.85	606845.70	S 38 13 49.986	E 148 13 14.767
835.00	12.17	193.05	833.32	29.31	-28.07	4.87	1.46	5767898.84	606845.47	S 38 13 50.019	E 148 13 14.758
840.00	12.38	192.75	838.21	30.36	-29.11	4.64	1.32	5767897.80	606845.23	S 38 13 50.053	E 148 13 14.748
845.00	12.70	192.92	843.09	31.45	-30.16	4.39	1.93	5767896.74	606844.99	S 38 13 50.087	E 148 13 14.739
850.00	13.07	192.98	847.96	32.56	-31.25	4.14	2.22	5767895.66	606844.74	S 38 13 50.122	E 148 13 14.729
855.00	13.41	193.50	852.83	33.70	-32.37	3.88	2.16	5767894.54	606844.48	S 38 13 50.159	E 148 13 14.719
860.00	13.77	193.79	857.69	34.87	-33.51	3.61	2.20	5767893.40	606844.20	S 38 13 50.196	E 148 13 14.708
865.00	14.13	194.57	862.54	36.07	-34.68	3.31	2.44	5767892.23	606843.91	S 38 13 50.234	E 148 13 14.697
870.00	14.48	195.05	867.39	37.31	-35.87	2.99	2.22	5767891.04	606843.59	S 38 13 50.273	E 148 13 14.684
875.00	14.78	195.60	872.22	38.57	-37.09	2.66	1.98	5767889.82	606843.26	S 38 13 50.312	E 148 13 14.671
880.00	15.21	196.27	877.05	39.86	-38.33	2.31	2.78	5767888.58	606842.90	S 38 13 50.353	E 148 13 14.657
885.00	15.64	196.78	881.87	41.19	-39.61	1.93	2.71	5767887.30	606842.53	S 38 13 50.394	E 148 13 14.643
890.00	15.99	197.23	886.68	42.56	-40.91	1.53	2.23	5767886.00	606842.13	S 38 13 50.437	E 148 13 14.627
895.00	16.34	197.89	891.49	43.95	-42.24	1.11	2.37	5767884.67	606841.71	S 38 13 50.480	E 148 13 14.610
900.00	16.68	198.24	896.28	45.37	-43.59	0.67	2.13	5767883.32	606841.27	S 38 13 50.524	E 148 13 14.593
905.00	17.12	198.40	901.06	46.82	-44.97	0.21	2.65	5767881.94	606840.81	S 38 13 50.569	E 148 13 14.575
910.00	17.55	199.10	905.84	48.31	-46.38	-0.27	2.87	5767880.53	606840.33	S 38 13 50.615	E 148 13 14.556
915.00	17.85	199.42	910.60	49.83	-47.81	-0.77	1.89	5767879.10	606839.83	S 38 13 50.662	E 148 13 14.536
920.00	18.23	199.96	915.36	51.38	-49.27	-1.29	2.49	5767877.64	606839.31	S 38 13 50.709	E 148 13 14.516
925.00	18.72	200.50	920.10	52.96	-50.76	-1.84	3.11	5767876.15	606838.76	S 38 13 50.758	E 148 13 14.494
930.00	18.89	200.80	924.83	54.57	-52.27	-2.41	1.17	5767874.65	606838.19	S 38 13 50.807	E 148 13 14.471
935.00	19.34	201.00	929.55	56.21	-53.80	-2.99	2.73	5767873.12	606837.61	S 38 13 50.857	E 148 13 14.448
940.00	19.55	201.84	934.27	57.87	-55.35	-3.60	2.10	5767871.57	606837.00	S 38 13 50.907	E 148 13 14.424
945.00	19.93	201.81	938.98	59.55	-56.91	-4.23	2.28	5767870.00	606836.37	S 38 13 50.958	E 148 13 14.399
950.00	20.28	202.10	943.67	61.26	-58.51	-4.87	2.18	5767868.41	606835.73	S 38 13 51.010	E 148 13 14.373
955.00	20.53	202.38	948.36	63.00	-60.12	-5.53	1.61	5767866.79	606835.07	S 38 13 51.063	E 148 13 14.347
960.00	20.88	202.98	953.03	64.76	-61.75	-6.21	2.46	5767865.16	606834.39	S 38 13 51.116	E 148 13 14.320
965.00	21.31	203.54	957.70	66.55	-63.41	-6.92	2.85	5767863.51	606833.68	S 38 13 51.170	E 148 13 14.292
970.00	21.72	203.98	962.35	68.38	-65.08	-7.66	2.64	5767861.83	606832.94	S 38 13 51.225	E 148 13 14.262
975.00	22.05	204.28	966.99	70.23	-66.78	-8.42	2.09	5767860.13	606832.18	S 38 13 51.280	E 148 13 14.232
980.00	22.51	204.54	971.62	72.11	-68.51	-9.21	2.82	5767858.41	606831.40	S 38 13 51.336	E 148 13 14.201

985.00	22.95	204.80	976.23	74.03	-70.27	-10.01	2.71	5767856.65	606830.59	S 38 13 51.394	E 148 13 14.168
990.00	23.63	205.09	980.82	75.99	-72.06	-10.85	4.14	5767854.86	606829.76	S 38 13 51.452	E 148 13 14.135
995.00	23.80	205.55	985.40	77.98	-73.88	-11.71	1.51	5767853.04	606828.90	S 38 13 51.512	E 148 13 14.101
1000.00	24.33	205.71	989.96	80.00	-75.71	-12.59	3.20	5767851.21	606828.01	S 38 13 51.572	E 148 13 14.065
1005.00	24.53	205.80	994.52	82.05	-77.58	-13.49	1.22	5767849.34	606827.12	S 38 13 51.632	E 148 13 14.029
1010.00	24.88	205.62	999.06	84.12	-79.46	-14.39	2.15	5767847.46	606826.21	S 38 13 51.694	E 148 13 13.993
1015.00	25.03	205.88	1003.59	86.20	-81.36	-15.31	1.12	5767845.56	606825.29	S 38 13 51.756	E 148 13 13.957
1020.00	25.31	205.80	1008.12	88.31	-83.27	-16.24	1.69	5767843.65	606824.37	S 38 13 51.818	E 148 13 13.920
1025.00	25.17	206.03	1012.64	90.42	-85.19	-17.17	1.03	5767841.73	606823.43	S 38 13 51.881	E 148 13 13.882
1030.00	25.57	205.99	1017.16	92.54	-87.12	-18.11	2.40	5767839.81	606822.50	S 38 13 51.944	E 148 13 13.845
1035.00	25.38	206.15	1021.67	94.67	-89.05	-19.05	1.21	5767837.87	606821.55	S 38 13 52.007	E 148 13 13.807
1040.00	25.52	206.06	1026.19	96.79	-90.98	-20.00	0.87	5767835.95	606820.61	S 38 13 52.070	E 148 13 13.769
1045.00	25.35	206.19	1030.70	98.91	-92.91	-20.95	1.07	5767834.02	606819.66	S 38 13 52.133	E 148 13 13.731
1050.00	25.50	206.14	1035.22	101.04	-94.83	-21.89	0.91	5767832.09	606818.71	S 38 13 52.195	E 148 13 13.693
1055.00	25.51	206.36	1039.73	103.17	-96.76	-22.84	0.57	5767830.16	606817.76	S 38 13 52.258	E 148 13 13.655
1060.00	25.51	206.16	1044.24	105.29	-98.69	-23.80	0.52	5767828.23	606816.81	S 38 13 52.322	E 148 13 13.617
1065.00	25.53	206.43	1048.76	107.42	-100.63	-24.75	0.71	5767826.30	606815.86	S 38 13 52.385	E 148 13 13.579
1070.00	25.50	206.23	1053.27	109.55	-102.56	-25.71	0.55	5767824.37	606814.90	S 38 13 52.448	E 148 13 13.541
1075.00	25.50	206.33	1057.78	111.68	-104.49	-26.66	0.26	5767822.44	606813.95	S 38 13 52.511	E 148 13 13.503
1080.00	25.40	206.18	1062.30	113.80	-106.41	-27.61	0.71	5767820.51	606813.00	S 38 13 52.573	E 148 13 13.465
1085.00	25.45	206.25	1066.81	115.93	-108.34	-28.56	0.35	5767818.59	606812.05	S 38 13 52.636	E 148 13 13.427
1090.00	25.30	206.20	1071.33	118.05	-110.26	-29.50	0.91	5767816.67	606811.10	S 38 13 52.699	E 148 13 13.389
1095.00	25.38	206.26	1075.85	120.16	-112.18	-30.45	0.50	5767814.75	606810.16	S 38 13 52.762	E 148 13 13.351
1100.00	25.29	206.12	1080.37	122.28	-114.10	-31.39	0.65	5767812.83	606809.21	S 38 13 52.824	E 148 13 13.313
1105.00	25.31	206.31	1084.89	124.39	-116.02	-32.34	0.50	5767810.91	606808.27	S 38 13 52.887	E 148 13 13.275
1110.00	25.13	206.00	1089.41	126.50	-117.93	-33.28	1.34	5767809.00	606807.33	S 38 13 52.949	E 148 13 13.238
1115.00	25.20	205.94	1093.94	128.60	-119.84	-34.21	0.45	5767807.09	606806.40	S 38 13 53.012	E 148 13 13.200
1120.00	25.10	205.98	1098.46	130.70	-121.75	-35.14	0.61	5767805.18	606805.47	S 38 13 53.074	E 148 13 13.163
1125.00	25.18	206.21	1102.99	132.80	-123.66	-36.07	0.76	5767803.27	606804.54	S 38 13 53.136	E 148 13 13.126
1130.00	25.12	206.18	1107.51	134.90	-125.57	-37.01	0.37	5767801.37	606803.60	S 38 13 53.199	E 148 13 13.088
1135.00	25.19	206.14	1112.04	137.01	-127.47	-37.95	0.43	5767799.46	606802.66	S 38 13 53.261	E 148 13 13.051
1140.00	25.01	206.33	1116.57	139.10	-129.38	-38.89	1.18	5767797.56	606801.72	S 38 13 53.323	E 148 13 13.013
1145.00	25.12	206.28	1121.10	141.20	-131.28	-39.82	0.67	5767795.66	606800.79	S 38 13 53.385	E 148 13 12.976
1150.00	25.05	206.25	1125.63	143.29	-133.18	-40.76	0.43	5767793.76	606799.85	S 38 13 53.447	E 148 13 12.938
1155.00	25.07	206.49	1130.16	145.39	-135.07	-41.70	0.62	5767791.86	606798.91	S 38 13 53.509	E 148 13 12.901
1160.00	25.00	206.51	1134.69	147.48	-136.97	-42.65	0.42	5767789.97	606797.96	S 38 13 53.571	E 148 13 12.863
1165.00	25.06	206.55	1139.22	149.57	-138.86	-43.59	0.37	5767788.08	606797.02	S 38 13 53.633	E 148 13 12.825
1170.00	25.07	206.64	1143.74	151.66	-140.75	-44.54	0.24	5767786.18	606796.07	S 38 13 53.694	E 148 13 12.787
1175.00	24.94	206.75	1148.28	153.75	-142.64	-45.49	0.83	5767784.29	606795.12	S 38 13 53.756	E 148 13 12.749
1180.00	24.87	206.69	1152.81	155.82	-144.52	-46.44	0.45	5767782.41	606794.18	S 38 13 53.817	E 148 13 12.711
1185.00	25.00	206.78	1157.35	157.91	-146.41	-47.39	0.81	5767780.53	606793.23	S 38 13 53.879	E 148 13 12.673
1190.00	24.84	206.74	1161.88	159.99	-148.29	-48.33	0.97	5767778.65	606792.28	S 38 13 53.940	E 148 13 12.635
1195.00	24.68	206.89	1166.42	162.05	-150.16	-49.28	1.03	5767776.78	606791.33	S 38 13 54.001	E 148 13 12.597
1200.00	24.73	206.93	1170.96	164.11	-152.02	-50.22	0.32	5767774.92	606790.39	S 38 13 54.062	E 148 13 12.559
1205.00	24.64	206.91	1175.51	166.18	-153.88	-51.17	0.54	5767773.06	606789.44	S 38 13 54.123	E 148 13 12.522
1210.00	24.62	207.03	1180.05	168.23	-155.74	-52.11	0.32	5767771.20	606788.50	S 38 13 54.184	E 148 13 12.484
1215.00	24.61	206.99	1184.60	170.29	-157.59	-53.06	0.12	5767769.35	606787.55	S 38 13 54.244	E 148 13 12.446
1220.00	24.52	207.11	1189.14	172.34	-159.45	-54.01	0.62	5767767.50	606786.61	S 38 13 54.305	E 148 13 12.408
1225.00	24.43	207.03	1193.69	174.38	-161.29	-54.95	0.58	5767765.65	606785.67	S 38 13 54.365	E 148 13 12.370
1230.00	24.42	206.98	1198.25	176.42	-163.13	-55.89	0.14	5767763.81	606784.73	S 38 13 54.425	E 148 13 12.333
1235.00	24.37	207.10	1202.80	178.46	-164.97	-56.83	0.42	5767761.97	606783.79	S 38 13 54.485	E 148 13 12.295
1240.00	24.24	207.20	1207.36	180.49	-166.80	-57.77	0.82	5767760.14	606782.85	S 38 13 54.545	E 148 13 12.257
1245.00	24.39	207.24	1211.91	182.52	-168.63	-58.71	0.91	5767758.31	606781.91	S 38 13 54.605	E 148 13 12.220
1250.00	24.44	207.19	1216.47	184.55	-170.47	-59.65	0.32	5767756.47	606780.96	S 38 13 54.665	E 148 13 12.182
1255.00	24.40	207.11	1221.02	186.59	-172.31	-60.60	0.31	5767754.63	606780.02	S 38 13 54.725	E 148 13 12.144
1260.00	24.46	207.20	1225.57	188.63	-174.15	-61.54	0.42	5767752.79	606779.08	S 38 13 54.785	E 148 13 12.106
1265.00	24.39	207.24	1230.12	190.67	-175.99	-62.48	0.43	5767750.96	606778.13	S 38 13 54.845	E 148 13 12.068
1270.00	24.29	207.17	1234.68	192.70	-177.82	-63.43	0.62	5767749.12	606777.19	S 38 13 54.905	E 148 13 12.031
1275.00	24.42	207.36	1239.23	194.74	-179.65	-64.37	0.91	5767747.29	606776.25	S 38 13 54.964	E 148 13 11.993
1280.00	24.55	207.34	1243.79	196.78	-181.50	-65.32	0.78	5767745.45	606775.29	S 38 13 55.024	E 148 13 11.955
1285.00	24.47	207.51	1248.33	198.82	-183.34	-66.28	0.64	5767743.61	606774.34	S 38 13 55.085	E 148 13 11.916
1290.00	24.34	207.47	1252.89	200.86	-185.17	-67.23	0.79	5767741.78	606773.38	S 38 13 55.144	E 148 13 11.878
1295.00	24.21	207.61	1257.45	202.88	-186.99	-68.18	0.85	5767739.96	606772.43	S 38 13 55.204	E 148 13 11.840
1300.00	24.29	207.69	1262.00	204.90	-188.81	-69.14	0.52	5767738.14	606771.48	S 38 13 55.263	E 148 13 11.802
1305.00	24.28	207.73	1266.56	206.93	-190.63	-70.09	0.12	5767736.32	606770.53	S 38 13 55.323	E 148 13 11.764
1310.00	24.32	207.78	1271.12	208.95	-192.45	-71.05	0.27	5767734.50	606769.57	S 38 13 55.382	E 148 13 11.725
1315.00	24.27	207.81	1275.68	210.98	-194.27	-72.01	0.31	5767732.68	606768.61	S 38 13 55.442	E 148 13 11.687
1320.00	24.24	207.92	1280.24	213.00	-196.09	-72.97	0.33	5767730.86	606767.65	S 38 13 55.501	E 148 13 11.648
1325.00	24.19	207.90	1284.80	215.02	-197.90	-73.93	0.30	5767729.05	606766.69	S 38 13 55.560	E 148 13 11.610
1330.00	24.32	208.17	1289.35	217.04	-199.71	-74.90	1.03	5767727.24	606765.72	S 38 13 55.619	E 148 13 11.571
1335.00	24.15	208.17	1293.91	219.05	-201.52	-75.86	1.02	5767725.43	606764.76	S 38 13 55.678	E 148 13 11.532
1340.00	24.13	208.14	1298.48	221.07	-203.33	-76.83	0.14	5767723.63	606763.79	S 38 13 55.737	E 148 13 11.493
1345.00	24.21	208.12	1303.04	223.08	-205.13	-77.79	0.48	5767721.82	606762.83	S 38 13 55.796	E 148 13 11.455

1350.00	24.16	208.10	1307.60	225.09	-206.94	-78.76	0.30	5767720.02	606761.86	S 38 13 55.855	E 148 13 11.416
1354.00	24.45	208.76	1311.24	226.71	-208.39	-79.54	2.98	5767718.57	606761.08	S 38 13 55.903	E 148 13 11.385
1412.62	31.19	197.32	1363.10	253.84	-233.56	-89.92	4.39	5767693.40	606750.71	S 38 13 56.723	E 148 13 10.972
1435.36	32.38	191.97	1382.43	265.79	-245.14	-92.93	4.03	5767681.83	606747.69	S 38 13 57.100	E 148 13 10.854
1469.69	34.54	188.94	1411.07	284.56	-263.75	-96.35	2.39	5767663.22	606744.27	S 38 13 57.705	E 148 13 10.723
1498.10	36.38	190.02	1434.21	300.88	-280.00	-99.07	2.05	5767646.97	606741.55	S 38 13 58.233	E 148 13 10.621
1526.48	36.23	193.92	1457.08	317.59	-296.43	-102.55	2.45	5767630.54	606738.07	S 38 13 58.768	E 148 13 10.486
1554.83	36.28	198.02	1479.95	334.34	-312.54	-107.17	2.57	5767614.44	606733.46	S 38 13 59.292	E 148 13 10.305
1583.38	36.43	198.33	1502.94	351.27	-328.62	-112.44	0.25	5767598.36	606728.18	S 38 13 59.816	E 148 13 10.097
1612.18	36.36	198.70	1526.12	368.35	-344.83	-117.87	0.24	5767582.16	606722.76	S 38 14 0.344	E 148 13 9.883
1641.00	35.79	196.73	1549.42	385.32	-360.99	-123.04	1.35	5767566.00	606717.60	S 38 14 0.870	E 148 13 9.679
1669.93	35.39	195.62	1572.94	402.15	-377.16	-127.73	0.79	5767549.84	606712.91	S 38 14 1.396	E 148 13 9.495
1698.85	35.72	196.59	1596.47	418.96	-393.32	-132.39	0.68	5767533.69	606708.24	S 38 14 1.922	E 148 13 9.312
1727.94	35.67	196.77	1620.10	435.93	-409.58	-137.26	0.12	5767517.43	606703.37	S 38 14 2.452	E 148 13 9.120
1756.54	35.98	196.69	1643.29	452.67	-425.61	-142.08	0.33	5767501.40	606698.55	S 38 14 2.974	E 148 13 8.931
1785.30	35.60	195.45	1666.62	469.48	-441.77	-146.74	0.85	5767485.25	606693.90	S 38 14 3.500	E 148 13 8.748
1814.24	34.92	195.65	1690.25	486.18	-457.86	-151.22	0.71	5767469.16	606689.42	S 38 14 4.024	E 148 13 8.573
1843.05	34.84	195.98	1713.88	502.65	-473.71	-155.71	0.21	5767453.31	606684.93	S 38 14 4.540	E 148 13 8.397
1871.63	35.07	196.19	1737.31	519.02	-489.45	-160.24	0.27	5767437.58	606680.40	S 38 14 5.052	E 148 13 8.219
1900.02	34.38	196.89	1760.64	535.18	-504.95	-164.85	0.84	5767422.08	606675.80	S 38 14 5.556	E 148 13 8.038
1928.81	35.24	196.20	1784.28	551.62	-520.71	-169.53	0.99	5767406.33	606671.12	S 38 14 6.069	E 148 13 7.854
1957.63	34.51	196.38	1807.92	568.09	-536.52	-174.15	0.77	5767390.52	606666.50	S 38 14 6.584	E 148 13 7.673
1986.33	35.36	194.30	1831.45	584.51	-552.37	-178.49	1.53	5767374.67	606662.15	S 38 14 7.100	E 148 13 7.503
2014.67	37.19	193.47	1854.30	601.24	-568.65	-182.51	2.01	5767358.40	606658.13	S 38 14 7.630	E 148 13 7.346
2043.39	38.82	193.79	1876.93	618.88	-585.83	-186.68	1.72	5767341.22	606653.97	S 38 14 8.189	E 148 13 7.184
2071.57	38.36	194.51	1898.95	636.43	-602.88	-190.98	0.68	5767324.18	606649.67	S 38 14 8.743	E 148 13 7.017
2100.21	37.30	194.78	1921.57	653.97	-619.87	-195.42	1.12	5767307.19	606645.23	S 38 14 9.296	E 148 13 6.843
2128.93	38.54	196.06	1944.23	671.60	-636.88	-200.11	1.53	5767290.18	606640.54	S 38 14 9.850	E 148 13 6.659
2157.62	38.41	196.37	1966.69	689.45	-654.02	-205.10	0.24	5767273.05	606635.56	S 38 14 10.408	E 148 13 6.464
2186.68	37.18	196.59	1989.65	707.25	-671.10	-210.15	1.28	5767255.97	606630.50	S 38 14 10.964	E 148 13 6.265
2215.32	35.98	196.99	2012.65	724.32	-687.44	-215.08	1.28	5767239.64	606625.58	S 38 14 11.496	E 148 13 6.071
2243.97	35.90	196.43	2035.85	741.13	-703.55	-219.91	0.35	5767223.54	606620.74	S 38 14 12.020	E 148 13 5.881
2272.58	35.07	196.27	2059.14	757.74	-719.48	-224.59	0.88	5767207.60	606616.07	S 38 14 12.539	E 148 13 5.698
2301.12	35.16	196.01	2082.49	774.15	-735.25	-229.15	0.18	5767191.84	606611.51	S 38 14 13.052	E 148 13 5.519
2329.00	35.16	197.00	2105.28	790.20	-750.65	-233.71	0.61	5767176.45	606606.95	S 38 14 13.554	E 148 13 5.340
2329.93	35.22	195.85	2106.04	790.74	-751.16	-233.87	21.47	5767175.94	606606.80	S 38 14 13.570	E 148 13 5.334
2358.20	34.43	195.49	2129.25	806.87	-766.70	-238.23	0.87	5767160.40	606602.44	S 38 14 14.076	E 148 13 5.163
2386.44	34.46	194.07	2152.54	822.82	-782.15	-242.30	0.85	5767144.96	606598.36	S 38 14 14.579	E 148 13 5.003
2416.23	32.78	193.88	2177.34	839.28	-798.15	-246.28	1.70	5767128.95	606594.38	S 38 14 15.100	E 148 13 4.848
2444.90	31.57	192.94	2201.61	854.51	-813.00	-249.83	1.37	5767114.11	606590.84	S 38 14 15.583	E 148 13 4.711
2473.21	32.10	193.08	2225.66	869.39	-827.55	-253.19	0.57	5767099.56	606587.48	S 38 14 16.056	E 148 13 4.580
2501.92	33.94	195.27	2249.73	885.01	-842.72	-257.03	2.29	5767084.40	606583.64	S 38 14 16.549	E 148 13 4.431
2530.34	33.35	195.78	2273.39	900.74	-857.89	-261.24	0.69	5767069.24	606579.43	S 38 14 17.043	E 148 13 4.266
2559.17	34.43	194.57	2297.33	916.80	-873.40	-265.45	1.33	5767053.73	606575.22	S 38 14 17.548	E 148 13 4.101
2587.94	36.59	193.41	2320.74	933.48	-889.62	-269.48	2.36	5767037.51	606571.19	S 38 14 18.076	E 148 13 3.944
2616.48	37.45	193.70	2343.53	950.62	-906.32	-273.51	0.92	5767020.81	606567.16	S 38 14 18.619	E 148 13 3.787
2644.94	36.30	193.73	2366.30	967.66	-922.91	-277.56	1.21	5767004.23	606563.11	S 38 14 19.159	E 148 13 3.630
2674.27	35.62	193.93	2390.04	984.84	-939.64	-281.68	0.71	5766987.51	606559.00	S 38 14 19.703	E 148 13 3.470
2702.63	34.95	193.40	2413.19	1001.19	-955.55	-285.55	0.78	5766971.59	606555.13	S 38 14 20.221	E 148 13 3.319
2731.20	33.06	193.28	2436.87	1017.12	-971.10	-289.23	1.99	5766956.05	606551.44	S 38 14 20.726	E 148 13 3.176
2759.64	31.42	192.91	2460.92	1032.24	-985.88	-292.67	1.74	5766941.28	606548.00	S 38 14 21.207	E 148 13 3.043
2788.87	28.98	192.53	2486.19	1046.89	-1000.22	-295.91	2.51	5766926.94	606544.77	S 38 14 21.674	E 148 13 2.917
2817.54	26.43	192.98	2511.57	1060.17	-1013.22	-298.85	2.68	5766913.95	606541.83	S 38 14 22.096	E 148 13 2.803
2845.85	23.56	192.40	2537.22	1072.09	-1024.88	-301.48	3.05	5766902.28	606539.20	S 38 14 22.476	E 148 13 2.701
2874.69	21.48	191.96	2563.86	1083.09	-1035.68	-303.81	2.17	5766891.49	606536.87	S 38 14 22.827	E 148 13 2.611
2903.24	19.54	190.65	2590.60	1093.03	-1045.49	-305.78	2.09	5766881.68	606534.90	S 38 14 23.146	E 148 13 2.536
2932.26	18.69	191.29	2618.02	1102.47	-1054.82	-307.59	0.91	5766872.36	606533.09	S 38 14 23.449	E 148 13 2.467
2960.99	17.56	192.44	2645.32	1111.36	-1063.56	-309.42	1.24	5766863.61	606531.26	S 38 14 23.734	E 148 13 2.396
2990.06	16.45	192.44	2673.12	1119.83	-1071.87	-311.25	1.15	5766855.31	606529.43	S 38 14 24.004	E 148 13 2.325
3018.84	15.08	193.63	2700.82	1127.62	-1079.48	-313.01	1.47	5766847.70	606527.67	S 38 14 24.251	E 148 13 2.257
3030.18	14.67	193.43	2711.78	1130.52	-1082.31	-313.69	1.09	5766844.87	606526.99	S 38 14 24.343	E 148 13 2.230
3051.00	13.94	193.05	2731.95	1135.65	-1087.32	-314.87	1.06	5766839.86	606525.81	S 38 14 24.506	E 148 13 2.185

Projected to TD

Survey Type: Definitive Survey

Survey Error Model: SLB ISCWSA version 16 *** 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (m)

0.00

1354.00

MD To (m)

1354.00

3051.00

EOU Freq

Act-Stns

Act-Stns

Survey Tool Type

SLB_CNSG+DPIPE

SLB_MWD-STD

APPENDIX 1b

MARLIN A-23A

MD-TVD Survey Data Listing

Report Date:	26 November 2004
Well:	MARLIN A23A
Structure / Slot:	Marlin Rig 453 / 8
TVD Reference Datum:	Drillsite Elevation
TVD Reference Elevation:	27.91 m relative to MSL
Sea Bed / Ground Level Elevation:	-59.00 m relative to MSL
Grid Coordinate System:	GDA94/MGA94 Zone 55
Location Lat/Long:	S 38 13 49.195, E 148 13 15.466
Location Grid N/E:	N 5767924.00 m, E 606863.03 m
Survey Azimuth Reference:	Grid North

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
0	0.00	0.00	0.00	27.91	0.00	0.00	5767924.00	606863.03
5	0.04	108.87	5.00	22.91	0.00	0.00	5767924.00	606863.03
10	0.07	121.24	10.00	17.91	0.00	0.01	5767924.00	606863.04
15	0.11	121.24	15.00	12.91	-0.01	0.01	5767923.99	606863.04
20	0.14	121.24	20.00	7.91	-0.01	0.02	5767923.99	606863.05
25	0.18	121.24	25.00	2.91	-0.02	0.03	5767923.98	606863.06
30	0.22	121.24	30.00	-2.09	-0.03	0.05	5767923.97	606863.08
35	0.25	121.24	35.00	-7.09	-0.04	0.06	5767923.96	606863.10
40	0.29	121.24	40.00	-12.09	-0.05	0.08	5767923.95	606863.12
45	0.33	121.14	45.00	-17.09	-0.06	0.11	5767923.94	606863.14
50	0.38	120.15	50.00	-22.09	-0.08	0.13	5767923.92	606863.16
55	0.26	123.72	55.00	-27.09	-0.10	0.16	5767923.91	606863.19
60	0.26	124.28	60.00	-32.09	-0.11	0.18	5767923.89	606863.21
65	0.35	123.07	65.00	-37.09	-0.12	0.20	5767923.88	606863.23
70	0.34	123.26	70.00	-42.09	-0.14	0.22	5767923.86	606863.26
75	0.31	125.05	75.00	-47.09	-0.16	0.25	5767923.85	606863.28
80	0.29	126.61	80.00	-52.09	-0.17	0.27	5767923.83	606863.30
85	0.47	127.41	85.00	-57.09	-0.19	0.30	5767923.81	606863.33
90	0.64	131.06	90.00	-62.09	-0.22	0.33	5767923.78	606863.36
95	0.76	134.40	95.00	-67.09	-0.26	0.38	5767923.74	606863.41
100	0.84	136.95	100.00	-72.09	-0.31	0.43	5767923.69	606863.46
105	1.10	145.19	105.00	-77.09	-0.38	0.48	5767923.62	606863.51
110	1.30	151.41	110.00	-82.09	-0.47	0.53	5767923.53	606863.56
115	1.42	155.78	115.00	-87.09	-0.58	0.59	5767923.43	606863.62
120	1.71	162.81	119.99	-92.08	-0.70	0.63	5767923.30	606863.66
125	1.97	167.68	124.99	-97.08	-0.86	0.67	5767923.14	606863.70
130	2.22	171.61	129.99	-102.08	-1.04	0.70	5767922.96	606863.74
135	2.20	170.53	134.98	-107.07	-1.23	0.74	5767922.77	606863.77
140	2.25	171.27	139.98	-112.07	-1.42	0.77	5767922.58	606863.80
145	2.20	170.80	144.98	-117.07	-1.61	0.80	5767922.39	606863.83
150	2.20	170.25	149.97	-122.06	-1.80	0.83	5767922.20	606863.86
155	2.14	168.86	154.97	-127.06	-1.99	0.86	5767922.01	606863.89
160	1.94	165.17	159.97	-132.06	-2.16	0.90	5767921.84	606863.93
165	1.78	161.43	164.96	-137.05	-2.32	0.95	5767921.69	606863.98
170	1.56	157.07	169.96	-142.05	-2.45	1.00	5767921.55	606864.03
175	1.23	148.12	174.96	-147.05	-2.56	1.05	5767921.44	606864.09
180	1.13	143.95	179.96	-152.05	-2.65	1.11	5767921.36	606864.14
185	0.99	139.86	184.96	-157.05	-2.72	1.17	5767921.28	606864.20
190	1.00	139.03	189.96	-162.05	-2.78	1.22	5767921.22	606864.25
195	0.93	137.10	194.96	-167.05	-2.85	1.28	5767921.15	606864.31
200	0.94	137.74	199.96	-172.05	-2.91	1.33	5767921.09	606864.37
205	0.99	138.93	204.95	-177.04	-2.97	1.39	5767921.03	606864.42
210	1.10	140.71	209.95	-182.04	-3.04	1.45	5767920.96	606864.48
215	1.07	140.12	214.95	-187.04	-3.11	1.51	5767920.89	606864.54
220	1.11	141.19	219.95	-192.04	-3.19	1.57	5767920.82	606864.60
225	0.89	147.99	224.95	-197.04	-3.26	1.62	5767920.74	606864.65
230	0.92	150.18	229.95	-202.04	-3.32	1.66	5767920.68	606864.69
235	1.00	151.86	234.95	-207.04	-3.40	1.70	5767920.60	606864.73
240	1.07	155.16	239.95	-212.04	-3.48	1.74	5767920.52	606864.77
245	1.10	158.96	244.95	-217.04	-3.57	1.78	5767920.43	606864.81
250	1.11	153.89	249.95	-222.04	-3.65	1.82	5767920.35	606864.85
255	1.05	158.27	254.95	-227.04	-3.74	1.86	5767920.26	606864.89
260	1.14	155.05	259.95	-232.04	-3.83	1.89	5767920.17	606864.93

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
265	1.23	155.10	264.94	-237.03	-3.92	1.94	5767920.08	606864.97
270	1.26	154.15	269.94	-242.03	-4.02	1.98	5767919.98	606865.02
275	1.23	150.65	274.94	-247.03	-4.12	2.03	5767919.89	606865.07
280	1.31	147.76	279.94	-252.03	-4.21	2.09	5767919.79	606865.12
285	1.41	148.17	284.94	-257.03	-4.31	2.15	5767919.69	606865.19
290	1.40	145.35	289.94	-262.03	-4.41	2.22	5767919.59	606865.25
295	1.38	149.38	294.94	-267.03	-4.52	2.29	5767919.49	606865.32
300	1.35	147.17	299.93	-272.02	-4.62	2.35	5767919.38	606865.38
305	1.34	145.96	304.93	-277.02	-4.72	2.41	5767919.29	606865.45
310	1.30	149.13	309.93	-282.02	-4.81	2.48	5767919.19	606865.51
315	1.30	151.40	314.93	-287.02	-4.91	2.53	5767919.09	606865.56
320	1.32	151.97	319.93	-292.02	-5.01	2.59	5767918.99	606865.62
325	1.31	156.91	324.93	-297.02	-5.11	2.64	5767918.89	606865.67
330	1.32	161.77	329.93	-302.02	-5.22	2.68	5767918.78	606865.71
335	1.32	168.35	334.93	-307.02	-5.33	2.71	5767918.67	606865.74
340	1.31	175.83	339.92	-312.01	-5.45	2.72	5767918.55	606865.75
345	1.27	196.48	344.92	-317.01	-5.56	2.71	5767918.45	606865.74
350	1.48	206.96	349.92	-322.01	-5.67	2.67	5767918.34	606865.70
355	1.38	215.77	354.92	-327.01	-5.77	2.60	5767918.23	606865.63
360	1.50	224.22	359.92	-332.01	-5.87	2.52	5767918.13	606865.55
365	1.65	232.57	364.92	-337.01	-5.96	2.42	5767918.04	606865.45
370	1.67	235.63	369.91	-342.00	-6.04	2.30	5767917.96	606865.33
375	1.79	240.22	374.91	-347.00	-6.12	2.17	5767917.88	606865.20
380	1.85	240.70	379.91	-352.00	-6.20	2.03	5767917.80	606865.07
385	1.80	240.05	384.91	-357.00	-6.28	1.90	5767917.72	606864.93
390	1.83	240.98	389.90	-361.99	-6.36	1.76	5767917.64	606864.79
395	1.84	242.95	394.90	-366.99	-6.43	1.62	5767917.57	606864.65
400	1.85	242.96	399.90	-371.99	-6.51	1.47	5767917.50	606864.51
405	1.88	243.39	404.90	-376.99	-6.58	1.33	5767917.42	606864.36
410	1.82	241.21	409.89	-381.98	-6.65	1.19	5767917.35	606864.22
415	1.85	244.06	414.89	-386.98	-6.73	1.04	5767917.27	606864.08
420	1.99	241.93	419.89	-391.98	-6.80	0.89	5767917.20	606863.93
425	2.01	238.35	424.89	-396.98	-6.89	0.74	5767917.11	606863.77
430	2.00	237.90	429.88	-401.97	-6.98	0.59	5767917.02	606863.63
435	2.00	237.00	434.88	-406.97	-7.08	0.45	5767916.92	606863.48
440	1.97	236.33	439.88	-411.97	-7.17	0.30	5767916.83	606863.33
445	1.93	237.29	444.87	-416.96	-7.27	0.16	5767916.74	606863.19
450	1.92	236.13	449.87	-421.96	-7.36	0.02	5767916.64	606863.05
455	1.94	238.60	454.87	-426.96	-7.45	-0.12	5767916.55	606862.91
460	1.92	238.89	459.87	-431.96	-7.54	-0.26	5767916.47	606862.77
465	1.88	240.76	464.86	-436.95	-7.62	-0.41	5767916.38	606862.62
470	1.83	240.31	469.86	-441.95	-7.70	-0.55	5767916.30	606862.48
475	1.91	243.48	474.86	-446.95	-7.77	-0.69	5767916.23	606862.34
480	1.84	241.08	479.85	-451.94	-7.85	-0.84	5767916.15	606862.19
485	1.96	249.28	484.85	-456.94	-7.92	-0.99	5767916.08	606862.04
490	2.15	255.17	489.85	-461.94	-7.97	-1.16	5767916.03	606861.87
495	2.26	252.32	494.84	-466.93	-8.03	-1.34	5767915.97	606861.69
500	2.26	251.34	499.84	-471.93	-8.09	-1.53	5767915.91	606861.50
505	2.29	249.67	504.84	-476.93	-8.16	-1.72	5767915.85	606861.31
510	2.17	248.54	509.83	-481.92	-8.23	-1.90	5767915.78	606861.13
515	2.34	249.71	514.83	-486.92	-8.29	-2.08	5767915.71	606860.95
520	2.28	251.66	519.83	-491.92	-8.36	-2.27	5767915.64	606860.76
525	2.34	253.60	524.82	-496.91	-8.42	-2.47	5767915.58	606860.57
530	2.31	255.60	529.82	-501.91	-8.48	-2.66	5767915.53	606860.37
535	2.33	256.74	534.81	-506.90	-8.52	-2.86	5767915.48	606860.17
540	2.35	256.21	539.81	-511.90	-8.57	-3.06	5767915.43	606859.98
545	2.39	257.18	544.80	-516.89	-8.62	-3.26	5767915.38	606859.77
550	2.42	259.67	549.80	-521.89	-8.66	-3.46	5767915.34	606859.57
555	2.48	262.54	554.80	-526.89	-8.69	-3.67	5767915.31	606859.36
560	2.62	264.26	559.79	-531.88	-8.72	-3.89	5767915.28	606859.14
565	2.70	266.35	564.79	-536.88	-8.74	-4.13	5767915.26	606858.91
570	2.78	266.46	569.78	-541.87	-8.75	-4.36	5767915.25	606858.67
575	2.84	268.87	574.77	-546.86	-8.76	-4.61	5767915.24	606858.42
580	2.89	267.99	579.77	-551.86	-8.77	-4.86	5767915.23	606858.17
585	2.94	268.08	584.76	-556.85	-8.78	-5.11	5767915.22	606857.92
590	2.98	268.37	589.75	-561.84	-8.79	-5.37	5767915.21	606857.66

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
595	2.96	269.81	594.75	-566.84	-8.79	-5.63	5767915.21	606857.40
600	3.12	270.45	599.74	-571.83	-8.79	-5.90	5767915.21	606857.14
605	3.35	273.36	604.73	-576.82	-8.78	-6.18	5767915.22	606856.85
610	3.59	273.64	609.72	-581.81	-8.76	-6.48	5767915.24	606856.55
615	3.58	272.02	614.71	-586.80	-8.75	-6.79	5767915.25	606856.24
620	3.65	271.81	619.70	-591.79	-8.74	-7.11	5767915.27	606855.92
625	3.68	271.96	624.69	-596.78	-8.73	-7.43	5767915.28	606855.60
630	3.69	271.83	629.68	-601.77	-8.72	-7.75	5767915.29	606855.28
635	3.70	272.88	634.67	-606.76	-8.70	-8.07	5767915.30	606854.96
640	3.73	273.31	639.66	-611.75	-8.68	-8.39	5767915.32	606854.64
645	3.81	273.25	644.65	-616.74	-8.67	-8.72	5767915.34	606854.31
650	3.77	273.81	649.64	-621.73	-8.65	-9.05	5767915.36	606853.98
655	3.83	273.61	654.63	-626.72	-8.62	-9.38	5767915.38	606853.65
660	3.97	273.36	659.62	-631.71	-8.60	-9.72	5767915.40	606853.31
665	3.95	272.59	664.61	-636.70	-8.59	-10.07	5767915.42	606852.97
670	3.74	268.27	669.59	-641.68	-8.58	-10.40	5767915.42	606852.63
675	3.58	263.26	674.58	-646.67	-8.61	-10.72	5767915.40	606852.31
680	3.42	254.69	679.57	-651.66	-8.66	-11.02	5767915.34	606852.01
685	3.36	244.61	684.57	-656.66	-8.76	-11.29	5767915.24	606851.74
690	3.34	236.74	689.56	-661.65	-8.91	-11.55	5767915.09	606851.49
695	3.42	229.62	694.55	-666.64	-9.08	-11.78	5767914.92	606851.25
700	3.30	225.96	699.54	-671.63	-9.28	-12.00	5767914.72	606851.03
705	3.49	220.77	704.53	-676.62	-9.50	-12.20	5767914.51	606850.83
710	3.57	215.48	709.52	-681.61	-9.74	-12.39	5767914.26	606850.64
715	3.64	211.59	714.51	-686.60	-10.00	-12.56	5767914.00	606850.47
720	3.92	206.80	719.50	-691.59	-10.29	-12.72	5767913.71	606850.31
725	4.17	202.06	724.49	-696.58	-10.61	-12.87	5767913.39	606850.16
730	4.33	199.25	729.48	-701.57	-10.95	-13.00	5767913.05	606850.03
735	4.63	198.86	734.46	-706.55	-11.32	-13.13	5767912.68	606849.90
740	4.87	200.41	739.44	-711.53	-11.71	-13.27	5767912.29	606849.77
745	5.28	200.10	744.42	-716.51	-12.13	-13.42	5767911.87	606849.61
750	5.59	200.35	749.40	-721.49	-12.57	-13.58	5767911.43	606849.45
755	5.91	201.04	754.38	-726.47	-13.04	-13.76	5767910.96	606849.27
760	6.22	200.56	759.35	-731.44	-13.53	-13.95	5767910.47	606849.08
765	6.67	200.81	764.32	-736.41	-14.06	-14.15	5767909.94	606848.89
770	7.07	201.40	769.28	-741.37	-14.62	-14.36	5767909.38	606848.67
775	7.54	200.94	774.24	-746.33	-15.21	-14.59	5767908.79	606848.44
780	8.05	200.43	779.19	-751.28	-15.84	-14.83	5767908.16	606848.20
785	8.35	200.54	784.14	-756.23	-16.51	-15.08	5767907.49	606847.95
790	8.78	200.37	789.09	-761.18	-17.21	-15.34	5767906.79	606847.69
795	9.09	199.40	794.03	-766.12	-17.94	-15.60	5767906.06	606847.43
800	9.54	198.22	798.96	-771.05	-18.71	-15.86	5767905.30	606847.17
805	9.76	197.24	803.89	-775.98	-19.51	-16.12	5767904.50	606846.91
810	10.30	195.93	808.81	-780.90	-20.34	-16.37	5767903.66	606846.66
815	10.60	194.83	813.73	-785.82	-21.21	-16.61	5767902.79	606846.42
820	11.02	194.33	818.64	-790.73	-22.12	-16.84	5767901.88	606846.19
825	11.43	193.47	823.55	-795.64	-23.07	-17.08	5767900.94	606845.95
830	11.89	192.75	828.44	-800.53	-24.05	-17.31	5767899.95	606845.72
835	12.15	193.01	833.33	-805.42	-25.07	-17.54	5767898.94	606845.49
840	12.36	192.78	838.22	-810.31	-26.10	-17.78	5767897.90	606845.26
845	12.67	192.90	843.10	-815.19	-27.16	-18.02	5767896.85	606845.01
850	13.03	192.97	847.97	-820.06	-28.24	-18.27	5767895.76	606844.77
855	13.38	193.45	852.84	-824.93	-29.35	-18.53	5767894.65	606844.51
860	13.73	193.76	857.70	-829.79	-30.49	-18.80	5767893.51	606844.23
865	14.09	194.49	862.56	-834.65	-31.66	-19.10	5767892.35	606843.94
870	14.44	195.00	867.40	-839.49	-32.85	-19.41	5767891.15	606843.62
875	14.75	195.54	872.24	-844.33	-34.06	-19.74	5767889.94	606843.29
880	15.17	196.20	877.07	-849.16	-35.30	-20.09	5767888.70	606842.94
885	15.60	196.73	881.89	-853.98	-36.58	-20.47	5767887.43	606842.56
890	15.95	197.18	886.70	-858.79	-37.88	-20.87	5767886.13	606842.16
895	16.30	197.82	891.51	-863.60	-39.20	-21.28	5767884.80	606841.75
900	16.65	198.20	896.30	-868.39	-40.55	-21.72	5767883.45	606841.31
905	17.08	198.38	901.09	-873.18	-41.93	-22.18	5767882.07	606840.85
910	17.51	199.03	905.86	-877.95	-43.33	-22.66	5767880.67	606840.38
915	17.82	199.39	910.63	-882.72	-44.77	-23.15	5767879.24	606839.88
920	18.19	199.90	915.38	-887.47	-46.22	-23.67	5767877.78	606839.36

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
925	18.67	200.44	920.12	-892.21	-47.71	-24.22	5767876.30	606838.81
930	18.87	200.77	924.86	-896.95	-49.21	-24.79	5767874.79	606838.25
935	19.29	200.98	929.58	-901.67	-50.74	-25.37	5767873.26	606837.66
940	19.53	201.75	934.30	-906.39	-52.29	-25.97	5767871.71	606837.06
945	19.89	201.81	939.01	-911.10	-53.85	-26.60	5767870.15	606836.43
950	20.24	202.07	943.70	-915.79	-55.44	-27.24	5767868.56	606835.79
955	20.50	202.35	948.39	-920.48	-57.06	-27.90	5767866.95	606835.13
960	20.84	202.92	953.07	-925.16	-58.68	-28.58	5767865.32	606834.45
965	21.27	203.48	957.73	-929.82	-60.34	-29.29	5767863.67	606833.75
970	21.68	203.94	962.39	-934.48	-62.01	-30.02	5767861.99	606833.01
975	22.02	204.25	967.03	-939.12	-63.71	-30.78	5767860.29	606832.25
980	22.46	204.51	971.66	-943.75	-65.43	-31.56	5767858.57	606831.47
985	22.91	204.77	976.27	-948.36	-67.19	-32.37	5767856.81	606830.66
990	23.56	205.06	980.86	-952.95	-68.98	-33.20	5767855.03	606829.83
995	23.78	205.50	985.44	-957.53	-70.79	-34.06	5767853.21	606828.98
1000	24.28	205.69	990.01	-962.10	-72.63	-34.94	5767851.38	606828.10
1005	24.51	205.79	994.56	-966.65	-74.49	-35.83	5767849.51	606827.20
1010	24.84	205.64	999.11	-971.20	-76.37	-36.74	5767847.63	606826.29
1015	25.01	205.85	1003.64	-975.73	-78.27	-37.65	5767845.74	606825.38
1020	25.28	205.81	1008.17	-980.26	-80.18	-38.58	5767843.82	606824.45
1025	25.18	206.01	1012.69	-984.78	-82.10	-39.51	5767841.91	606823.52
1030	25.53	205.99	1017.21	-989.30	-84.02	-40.45	5767839.98	606822.58
1035	25.40	206.13	1021.72	-993.81	-85.95	-41.39	5767838.05	606821.64
1040	25.51	206.07	1026.24	-998.33	-87.88	-42.34	5767836.12	606820.69
1045	25.37	206.18	1030.75	-1002.84	-89.81	-43.28	5767834.19	606819.75
1050	25.48	206.15	1035.27	-1007.36	-91.74	-44.23	5767832.27	606818.80
1055	25.51	206.34	1039.78	-1011.87	-93.67	-45.18	5767830.34	606817.85
1060	25.51	206.18	1044.29	-1016.38	-95.60	-46.14	5767828.40	606816.90
1065	25.53	206.40	1048.81	-1020.90	-97.53	-47.09	5767826.47	606815.94
1070	25.50	206.25	1053.32	-1025.41	-99.46	-48.04	5767824.54	606814.99
1075	25.50	206.32	1057.83	-1029.92	-101.39	-49.00	5767822.61	606814.03
1080	25.41	206.20	1062.35	-1034.44	-103.32	-49.95	5767820.69	606813.08
1085	25.44	206.24	1066.86	-1038.95	-105.24	-50.90	5767818.76	606812.13
1090	25.32	206.21	1071.38	-1043.47	-107.16	-51.84	5767816.84	606811.19
1095	25.37	206.25	1075.90	-1047.99	-109.08	-52.79	5767814.92	606810.24
1100	25.30	206.13	1080.42	-1052.51	-111.00	-53.73	5767813.00	606809.30
1105	25.31	206.29	1084.94	-1057.03	-112.92	-54.68	5767811.08	606808.35
1110	25.15	206.03	1089.46	-1061.55	-114.83	-55.62	5767809.17	606807.41
1115	25.19	205.95	1093.98	-1066.07	-116.75	-56.55	5767807.26	606806.48
1120	25.11	205.98	1098.51	-1070.60	-118.66	-57.48	5767805.35	606805.55
1125	25.17	206.19	1103.04	-1075.13	-120.56	-58.41	5767803.44	606804.62
1130	25.13	206.18	1107.56	-1079.65	-122.47	-59.35	5767801.53	606803.68
1135	25.18	206.14	1112.09	-1084.18	-124.38	-60.29	5767799.62	606802.74
1140	25.03	206.31	1116.62	-1088.71	-126.28	-61.23	5767797.72	606801.80
1145	25.11	206.29	1121.15	-1093.24	-128.18	-62.16	5767795.82	606800.87
1150	25.06	206.25	1125.67	-1097.76	-130.08	-63.10	5767793.92	606799.93
1155	25.07	206.47	1130.20	-1102.29	-131.98	-64.04	5767792.02	606798.99
1160	25.01	206.51	1134.73	-1106.82	-133.87	-64.99	5767790.13	606798.04
1165	25.05	206.55	1139.26	-1111.35	-135.77	-65.93	5767788.24	606797.10
1170	25.07	206.63	1143.79	-1115.88	-137.66	-66.88	5767786.34	606796.15
1175	24.95	206.74	1148.32	-1120.41	-139.55	-67.83	5767784.45	606795.20
1180	24.88	206.70	1152.86	-1124.95	-141.43	-68.78	5767782.57	606794.26
1185	24.99	206.77	1157.39	-1129.48	-143.31	-69.72	5767780.69	606793.31
1190	24.86	206.74	1161.93	-1134.02	-145.19	-70.67	5767778.81	606792.36
1195	24.70	206.87	1166.47	-1138.56	-147.06	-71.62	5767776.94	606791.41
1200	24.72	206.93	1171.01	-1143.10	-148.93	-72.56	5767775.07	606790.47
1205	24.65	206.91	1175.55	-1147.64	-150.79	-73.51	5767773.21	606789.52
1210	24.62	207.02	1180.10	-1152.19	-152.65	-74.45	5767771.35	606788.58
1215	24.61	206.99	1184.64	-1156.73	-154.50	-75.40	5767769.50	606787.63
1220	24.53	207.10	1189.19	-1161.28	-156.36	-76.35	5767767.65	606786.69
1225	24.44	207.04	1193.74	-1165.83	-158.20	-77.29	5767765.80	606785.74
1230	24.42	206.99	1198.29	-1170.38	-160.04	-78.23	5767763.96	606784.80
1235	24.38	207.09	1202.85	-1174.94	-161.88	-79.17	5767762.12	606783.87
1240	24.25	207.19	1207.40	-1179.49	-163.71	-80.11	5767760.29	606782.93
1245	24.37	207.24	1211.96	-1184.05	-165.55	-81.05	5767758.46	606781.98
1250	24.43	207.20	1216.51	-1188.60	-167.38	-81.99	5767756.62	606781.04

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1255	24.40	207.12	1221.06	-1193.15	-169.22	-82.94	5767754.78	606780.10
1260	24.45	207.19	1225.62	-1197.71	-171.06	-83.88	5767752.94	606779.15
1265	24.40	207.24	1230.17	-1202.26	-172.90	-84.82	5767751.10	606778.21
1270	24.30	207.18	1234.73	-1206.82	-174.73	-85.77	5767749.27	606777.26
1275	24.41	207.34	1239.28	-1211.37	-176.57	-86.71	5767747.44	606776.32
1280	24.54	207.34	1243.83	-1215.92	-178.41	-87.66	5767745.60	606775.37
1285	24.48	207.49	1248.38	-1220.47	-180.25	-88.62	5767743.75	606774.41
1290	24.35	207.47	1252.93	-1225.02	-182.08	-89.57	5767741.92	606773.46
1295	24.22	207.60	1257.49	-1229.58	-183.91	-90.52	5767740.10	606772.51
1300	24.28	207.68	1262.05	-1234.14	-185.72	-91.47	5767738.28	606771.56
1305	24.28	207.73	1266.61	-1238.70	-187.54	-92.43	5767736.46	606770.60
1310	24.32	207.77	1271.16	-1243.25	-189.37	-93.39	5767734.64	606769.64
1315	24.28	207.81	1275.72	-1247.81	-191.19	-94.35	5767732.82	606768.68
1320	24.24	207.91	1280.28	-1252.37	-193.00	-95.31	5767731.00	606767.72
1325	24.20	207.90	1284.84	-1256.93	-194.81	-96.27	5767729.19	606766.76
1330	24.31	208.14	1289.40	-1261.49	-196.63	-97.23	5767727.37	606765.80
1335	24.17	208.17	1293.96	-1266.05	-198.44	-98.20	5767725.57	606764.83
1340	24.13	208.14	1298.52	-1270.61	-200.24	-99.17	5767723.76	606763.87
1345	24.20	208.12	1303.08	-1275.17	-202.05	-100.13	5767721.96	606762.90
1350	24.17	208.10	1307.64	-1279.73	-203.85	-101.10	5767720.15	606761.93
1355	24.53	208.49	1312.17	-1284.26	-205.73	-102.05	5767718.27	606760.98
1360	25.10	207.52	1316.60	-1288.69	-207.88	-102.94	5767716.13	606760.09
1365	25.68	206.55	1321.02	-1293.11	-210.02	-103.82	5767713.98	606759.21
1370	26.26	205.58	1325.44	-1297.53	-212.17	-104.70	5767711.83	606758.33
1375	26.84	204.61	1329.87	-1301.96	-214.31	-105.59	5767709.69	606757.45
1380	27.42	203.64	1334.29	-1306.38	-216.46	-106.47	5767707.54	606756.56
1385	28.00	202.67	1338.72	-1310.81	-218.61	-107.35	5767705.39	606755.68
1390	28.57	201.70	1343.14	-1315.23	-220.75	-108.23	5767703.25	606754.80
1395	29.15	200.73	1347.56	-1319.65	-222.90	-109.12	5767701.10	606753.91
1400	29.73	199.77	1351.99	-1324.08	-225.05	-110.00	5767698.96	606753.03
1405	30.31	198.80	1356.41	-1328.50	-227.19	-110.88	5767696.81	606752.15
1410	30.89	197.83	1360.83	-1332.92	-229.34	-111.77	5767694.66	606751.27
1415	31.31	196.76	1365.17	-1337.26	-231.68	-112.54	5767692.33	606750.49
1420	31.58	195.58	1369.42	-1341.51	-234.22	-113.21	5767689.78	606749.82
1425	31.84	194.41	1373.68	-1345.77	-236.77	-113.87	5767687.23	606749.16
1430	32.10	193.23	1377.93	-1350.02	-239.31	-114.53	5767684.69	606748.50
1435	32.36	192.05	1382.18	-1354.27	-241.86	-115.20	5767682.14	606747.83
1440	32.67	191.56	1386.35	-1358.44	-244.56	-115.71	5767679.44	606747.32
1444	32.92	191.21	1389.69	-1361.78	-246.73	-116.11	5767677.27	606746.93
1445	32.99	191.12	1390.53	-1362.62	-247.27	-116.21	5767676.73	606746.83
1446	33.05	191.03	1391.36	-1363.45	-247.81	-116.31	5767676.19	606746.73
1447	33.11	190.94	1392.19	-1364.28	-248.35	-116.41	5767675.65	606746.63
1448	33.18	190.85	1393.03	-1365.12	-248.90	-116.50	5767675.11	606746.53
1449	33.24	190.77	1393.86	-1365.95	-249.44	-116.60	5767674.56	606746.43
1450	33.30	190.68	1394.70	-1366.79	-249.98	-116.70	5767674.02	606746.33
1451	33.36	190.59	1395.53	-1367.62	-250.52	-116.80	5767673.48	606746.23
1452	33.43	190.50	1396.37	-1368.46	-251.06	-116.90	5767672.94	606746.13
1453	33.49	190.41	1397.20	-1369.29	-251.61	-117.00	5767672.39	606746.03
1454	33.55	190.32	1398.03	-1370.12	-252.15	-117.10	5767671.85	606745.93
1455	33.62	190.24	1398.87	-1370.96	-252.69	-117.20	5767671.31	606745.83
1456	33.68	190.15	1399.70	-1371.79	-253.23	-117.30	5767670.77	606745.73
1457	33.74	190.06	1400.54	-1372.63	-253.78	-117.40	5767670.23	606745.63
1458	33.80	189.97	1401.37	-1373.46	-254.32	-117.50	5767669.68	606745.53
1459	33.87	189.88	1402.21	-1374.30	-254.86	-117.60	5767669.14	606745.43
1460	33.93	189.80	1403.04	-1375.13	-255.40	-117.70	5767668.60	606745.33
1461	33.99	189.71	1403.87	-1375.96	-255.94	-117.80	5767668.06	606745.23
1462	34.06	189.62	1404.71	-1376.80	-256.49	-117.90	5767667.52	606745.13
1463	34.12	189.53	1405.54	-1377.63	-257.03	-118.00	5767666.97	606745.03
1464	34.18	189.44	1406.38	-1378.47	-257.57	-118.10	5767666.43	606744.93
1465	34.24	189.35	1407.21	-1379.30	-258.11	-118.20	5767665.89	606744.83
1466	34.31	189.27	1408.05	-1380.14	-258.65	-118.30	5767665.35	606744.73
1467	34.37	189.18	1408.88	-1380.97	-259.20	-118.40	5767664.81	606744.63
1468	34.43	189.09	1409.71	-1381.80	-259.74	-118.50	5767664.26	606744.54
1469	34.50	189.00	1410.55	-1382.64	-260.28	-118.60	5767663.72	606744.44
1470	34.56	188.95	1411.38	-1383.47	-260.83	-118.69	5767663.17	606744.34
1471	34.62	188.99	1412.19	-1384.28	-261.40	-118.79	5767662.60	606744.24

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1472	34.69	189.03	1413.01	-1385.10	-261.98	-118.89	5767662.03	606744.15
1473	34.75	189.07	1413.82	-1385.91	-262.55	-118.98	5767661.45	606744.05
1474	34.82	189.10	1414.63	-1386.72	-263.12	-119.08	5767660.88	606743.95
1475	34.88	189.14	1415.45	-1387.54	-263.69	-119.17	5767660.31	606743.86
1476	34.95	189.18	1416.26	-1388.35	-264.27	-119.27	5767659.74	606743.76
1477	35.01	189.22	1417.08	-1389.17	-264.84	-119.36	5767659.16	606743.67
1478	35.08	189.26	1417.89	-1389.98	-265.41	-119.46	5767658.59	606743.57
1479	35.14	189.29	1418.71	-1390.80	-265.98	-119.56	5767658.02	606743.48
1480	35.21	189.33	1419.52	-1391.61	-266.55	-119.65	5767657.45	606743.38
1481	35.27	189.37	1420.34	-1392.43	-267.13	-119.75	5767656.88	606743.28
1482	35.34	189.41	1421.15	-1393.24	-267.70	-119.84	5767656.30	606743.19
1483	35.40	189.45	1421.97	-1394.06	-268.27	-119.94	5767655.73	606743.09
1484	35.47	189.48	1422.78	-1394.87	-268.84	-120.03	5767655.16	606743.00
1485	35.53	189.52	1423.59	-1395.68	-269.41	-120.13	5767654.59	606742.90
1486	35.60	189.56	1424.41	-1396.50	-269.99	-120.23	5767654.02	606742.81
1487	35.66	189.60	1425.22	-1397.31	-270.56	-120.32	5767653.44	606742.71
1488	35.73	189.64	1426.04	-1398.13	-271.13	-120.42	5767652.87	606742.61
1489	35.79	189.67	1426.85	-1398.94	-271.70	-120.51	5767652.30	606742.52
1490	35.86	189.71	1427.67	-1399.76	-272.28	-120.61	5767651.73	606742.42
1491	35.92	189.75	1428.48	-1400.57	-272.85	-120.70	5767651.15	606742.33
1492	35.98	189.79	1429.30	-1401.39	-273.42	-120.80	5767650.58	606742.23
1493	36.05	189.83	1430.11	-1402.20	-273.99	-120.90	5767650.01	606742.14
1494	36.11	189.86	1430.92	-1403.01	-274.56	-120.99	5767649.44	606742.04
1495	36.18	189.90	1431.74	-1403.83	-275.14	-121.09	5767648.87	606741.94
1496	36.24	189.94	1432.55	-1404.64	-275.71	-121.18	5767648.29	606741.85
1497	36.31	189.98	1433.37	-1405.46	-276.28	-121.28	5767647.72	606741.75
1498	36.37	190.02	1434.18	-1406.27	-276.85	-121.37	5767647.15	606741.66
1499	36.38	190.14	1434.99	-1407.08	-277.43	-121.49	5767646.57	606741.54
1500	36.37	190.28	1435.80	-1407.89	-278.01	-121.62	5767645.99	606741.42
1501	36.36	190.42	1436.60	-1408.69	-278.59	-121.74	5767645.41	606741.29
1502	36.36	190.56	1437.41	-1409.50	-279.17	-121.86	5767644.83	606741.17
1503	36.35	190.69	1438.21	-1410.30	-279.75	-121.98	5767644.26	606741.05
1504	36.35	190.83	1439.02	-1411.11	-280.33	-122.11	5767643.68	606740.92
1505	36.34	190.97	1439.83	-1411.92	-280.90	-122.23	5767643.10	606740.80
1506	36.34	191.11	1440.63	-1412.72	-281.48	-122.35	5767642.52	606740.68
1507	36.33	191.24	1441.44	-1413.53	-282.06	-122.48	5767641.94	606740.56
1508	36.33	191.38	1442.24	-1414.33	-282.64	-122.60	5767641.36	606740.43
1509	36.32	191.52	1443.05	-1415.14	-283.22	-122.72	5767640.78	606740.31
1510	36.32	191.66	1443.86	-1415.95	-283.80	-122.84	5767640.20	606740.19
1511	36.31	191.79	1444.66	-1416.75	-284.38	-122.97	5767639.62	606740.07
1512	36.31	191.93	1445.47	-1417.56	-284.96	-123.09	5767639.04	606739.94
1513	36.30	192.07	1446.27	-1418.36	-285.54	-123.21	5767638.47	606739.82
1514	36.30	192.20	1447.08	-1419.17	-286.11	-123.33	5767637.89	606739.70
1515	36.29	192.34	1447.89	-1419.98	-286.69	-123.46	5767637.31	606739.57
1516	36.29	192.48	1448.69	-1420.78	-287.27	-123.58	5767636.73	606739.45
1517	36.28	192.62	1449.50	-1421.59	-287.85	-123.70	5767636.15	606739.33
1518	36.27	192.75	1450.30	-1422.39	-288.43	-123.82	5767635.57	606739.21
1519	36.27	192.89	1451.11	-1423.20	-289.01	-123.95	5767634.99	606739.08
1520	36.26	193.03	1451.92	-1424.01	-289.59	-124.07	5767634.41	606738.96
1521	36.26	193.17	1452.72	-1424.81	-290.17	-124.19	5767633.83	606738.84
1522	36.25	193.30	1453.53	-1425.62	-290.75	-124.32	5767633.26	606738.72
1523	36.25	193.44	1454.33	-1426.42	-291.33	-124.44	5767632.68	606738.59
1524	36.24	193.58	1455.14	-1427.23	-291.90	-124.56	5767632.10	606738.47
1525	36.24	193.72	1455.95	-1428.04	-292.48	-124.68	5767631.52	606738.35
1526	36.23	193.85	1456.75	-1428.84	-293.06	-124.81	5767630.94	606738.23
1527	36.23	194.00	1457.56	-1429.65	-293.64	-124.95	5767630.37	606738.08
1528	36.23	194.14	1458.36	-1430.45	-294.20	-125.11	5767629.80	606737.92
1529	36.23	194.28	1459.17	-1431.26	-294.77	-125.27	5767629.23	606737.76
1530	36.24	194.43	1459.98	-1432.07	-295.34	-125.44	5767628.66	606737.59
1531	36.24	194.57	1460.78	-1432.87	-295.91	-125.60	5767628.09	606737.43
1532	36.24	194.72	1461.59	-1433.68	-296.48	-125.76	5767627.52	606737.27
1533	36.24	194.86	1462.40	-1434.49	-297.05	-125.93	5767626.96	606737.11
1534	36.24	195.01	1463.20	-1435.29	-297.61	-126.09	5767626.39	606736.94
1535	36.25	195.15	1464.01	-1436.10	-298.18	-126.25	5767625.82	606736.78
1536	36.25	195.30	1464.82	-1436.91	-298.75	-126.41	5767625.25	606736.62
1537	36.25	195.44	1465.62	-1437.71	-299.32	-126.58	5767624.68	606736.46

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1538	36.25	195.59	1466.43	-1438.52	-299.89	-126.74	5767624.12	606736.29
1539	36.25	195.73	1467.24	-1439.33	-300.45	-126.90	5767623.55	606736.13
1540	36.25	195.88	1468.04	-1440.13	-301.02	-127.06	5767622.98	606735.97
1541	36.26	196.02	1468.85	-1440.94	-301.59	-127.23	5767622.41	606735.80
1542	36.26	196.16	1469.66	-1441.75	-302.16	-127.39	5767621.84	606735.64
1543	36.26	196.31	1470.46	-1442.55	-302.73	-127.55	5767621.27	606735.48
1544	36.26	196.45	1471.27	-1443.36	-303.30	-127.71	5767620.71	606735.32
1545	36.26	196.60	1472.07	-1444.16	-303.86	-127.88	5767620.14	606735.15
1546	36.26	196.74	1472.88	-1444.97	-304.43	-128.04	5767619.57	606734.99
1547	36.27	196.89	1473.69	-1445.78	-305.00	-128.20	5767619.00	606734.83
1548	36.27	197.03	1474.49	-1446.58	-305.57	-128.37	5767618.43	606734.67
1549	36.27	197.18	1475.30	-1447.39	-306.14	-128.53	5767617.86	606734.50
1550	36.27	197.32	1476.11	-1448.20	-306.71	-128.69	5767617.30	606734.34
1551	36.27	197.47	1476.91	-1449.00	-307.27	-128.85	5767616.73	606734.18
1552	36.28	197.61	1477.72	-1449.81	-307.84	-129.02	5767616.16	606734.02
1553	36.28	197.76	1478.53	-1450.62	-308.41	-129.18	5767615.59	606733.85
1554	36.28	197.90	1479.33	-1451.42	-308.98	-129.34	5767615.02	606733.69
1555	36.28	198.02	1480.14	-1452.23	-309.55	-129.51	5767614.46	606733.52
1556	36.29	198.03	1480.95	-1453.04	-310.11	-129.69	5767613.89	606733.34
1557	36.29	198.04	1481.75	-1453.84	-310.67	-129.88	5767613.33	606733.15
1558	36.30	198.05	1482.56	-1454.65	-311.24	-130.06	5767612.77	606732.97
1559	36.30	198.07	1483.36	-1455.45	-311.80	-130.25	5767612.20	606732.78
1560	36.31	198.08	1484.17	-1456.26	-312.36	-130.43	5767611.64	606732.60
1561	36.31	198.09	1484.97	-1457.06	-312.93	-130.62	5767611.08	606732.41
1562	36.32	198.10	1485.78	-1457.87	-313.49	-130.80	5767610.51	606732.23
1563	36.32	198.11	1486.58	-1458.67	-314.05	-130.99	5767609.95	606732.04
1564	36.33	198.12	1487.39	-1459.48	-314.62	-131.17	5767609.39	606731.86
1565	36.33	198.13	1488.19	-1460.28	-315.18	-131.36	5767608.82	606731.67
1566	36.34	198.14	1489.00	-1461.09	-315.74	-131.54	5767608.26	606731.49
1567	36.34	198.15	1489.80	-1461.89	-316.30	-131.73	5767607.70	606731.30
1568	36.35	198.16	1490.61	-1462.70	-316.87	-131.91	5767607.13	606731.12
1569	36.35	198.17	1491.41	-1463.50	-317.43	-132.10	5767606.57	606730.94
1570	36.36	198.18	1492.22	-1464.31	-317.99	-132.28	5767606.01	606730.75
1571	36.36	198.20	1493.03	-1465.12	-318.56	-132.47	5767605.44	606730.57
1572	36.37	198.21	1493.83	-1465.92	-319.12	-132.65	5767604.88	606730.38
1573	36.38	198.22	1494.64	-1466.73	-319.68	-132.84	5767604.32	606730.20
1574	36.38	198.23	1495.44	-1467.53	-320.25	-133.02	5767603.75	606730.01
1575	36.39	198.24	1496.25	-1468.34	-320.81	-133.21	5767603.19	606729.83
1576	36.39	198.25	1497.05	-1469.14	-321.37	-133.39	5767602.63	606729.64
1577	36.40	198.26	1497.86	-1469.95	-321.94	-133.58	5767602.06	606729.46
1578	36.40	198.27	1498.66	-1470.75	-322.50	-133.76	5767601.50	606729.27
1579	36.41	198.28	1499.47	-1471.56	-323.06	-133.95	5767600.94	606729.09
1580	36.41	198.29	1500.27	-1472.36	-323.63	-134.13	5767600.38	606728.90
1581	36.42	198.30	1501.08	-1473.17	-324.19	-134.32	5767599.81	606728.72
1582	36.42	198.32	1501.88	-1473.97	-324.75	-134.50	5767599.25	606728.53
1583	36.43	198.33	1502.69	-1474.78	-325.32	-134.69	5767598.69	606728.35
1584	36.43	198.34	1503.50	-1475.59	-325.88	-134.87	5767598.12	606728.16
1585	36.43	198.35	1504.30	-1476.39	-326.44	-135.06	5767597.56	606727.97
1586	36.42	198.36	1505.10	-1477.19	-327.00	-135.25	5767597.00	606727.78
1587	36.42	198.38	1505.91	-1478.00	-327.57	-135.44	5767596.43	606727.59
1588	36.42	198.39	1506.71	-1478.80	-328.13	-135.63	5767595.87	606727.41
1589	36.42	198.40	1507.52	-1479.61	-328.69	-135.81	5767595.31	606727.22
1590	36.41	198.42	1508.32	-1480.41	-329.25	-136.00	5767594.75	606727.03
1591	36.41	198.43	1509.13	-1481.22	-329.82	-136.19	5767594.18	606726.84
1592	36.41	198.44	1509.93	-1482.02	-330.38	-136.38	5767593.62	606726.65
1593	36.41	198.45	1510.74	-1482.83	-330.94	-136.57	5767593.06	606726.46
1594	36.40	198.47	1511.54	-1483.63	-331.51	-136.76	5767592.50	606726.28
1595	36.40	198.48	1512.35	-1484.44	-332.07	-136.94	5767591.93	606726.09
1596	36.40	198.49	1513.15	-1485.24	-332.63	-137.13	5767591.37	606725.90
1597	36.40	198.50	1513.96	-1486.05	-333.19	-137.32	5767590.81	606725.71
1598	36.39	198.52	1514.76	-1486.85	-333.76	-137.51	5767590.25	606725.52
1599	36.39	198.53	1515.57	-1487.66	-334.32	-137.70	5767589.68	606725.33
1600	36.39	198.54	1516.37	-1488.46	-334.88	-137.89	5767589.12	606725.14
1601	36.39	198.56	1517.18	-1489.27	-335.44	-138.08	5767588.56	606724.96
1602	36.38	198.57	1517.98	-1490.07	-336.01	-138.26	5767588.00	606724.77
1603	36.38	198.58	1518.79	-1490.88	-336.57	-138.45	5767587.43	606724.58

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1604	36.38	198.59	1519.59	-1491.68	-337.13	-138.64	5767586.87	606724.39
1605	36.38	198.61	1520.40	-1492.49	-337.69	-138.83	5767586.31	606724.20
1606	36.38	198.62	1521.20	-1493.29	-338.26	-139.02	5767585.74	606724.01
1607	36.37	198.63	1522.01	-1494.10	-338.82	-139.21	5767585.18	606723.83
1608	36.37	198.65	1522.81	-1494.90	-339.38	-139.39	5767584.62	606723.64
1609	36.37	198.66	1523.62	-1495.71	-339.94	-139.58	5767584.06	606723.45
1610	36.37	198.67	1524.42	-1496.51	-340.51	-139.77	5767583.49	606723.26
1611	36.36	198.68	1525.23	-1497.32	-341.07	-139.96	5767582.93	606723.07
1612	36.36	198.70	1526.03	-1498.12	-341.63	-140.15	5767582.37	606722.88
1613	36.34	198.64	1526.84	-1498.93	-342.19	-140.33	5767581.81	606722.70
1614	36.32	198.58	1527.65	-1499.74	-342.75	-140.51	5767581.25	606722.52
1615	36.30	198.51	1528.46	-1500.55	-343.32	-140.69	5767580.69	606722.34
1616	36.28	198.44	1529.27	-1501.36	-343.88	-140.87	5767580.13	606722.17
1617	36.26	198.37	1530.07	-1502.16	-344.44	-141.05	5767579.56	606721.99
1618	36.24	198.30	1530.88	-1502.97	-345.00	-141.22	5767579.00	606721.81
1619	36.23	198.23	1531.69	-1503.78	-345.56	-141.40	5767578.44	606721.63
1620	36.21	198.17	1532.50	-1504.59	-346.12	-141.58	5767577.88	606721.45
1621	36.19	198.10	1533.31	-1505.40	-346.68	-141.76	5767577.32	606721.27
1622	36.17	198.03	1534.12	-1506.21	-347.24	-141.94	5767576.76	606721.09
1623	36.15	197.96	1534.92	-1507.01	-347.80	-142.12	5767576.20	606720.91
1624	36.13	197.89	1535.73	-1507.82	-348.36	-142.30	5767575.64	606720.73
1625	36.11	197.82	1536.54	-1508.63	-348.92	-142.48	5767575.08	606720.55
1626	36.09	197.76	1537.35	-1509.44	-349.48	-142.66	5767574.52	606720.37
1627	36.07	197.69	1538.16	-1510.25	-350.05	-142.84	5767573.96	606720.19
1628	36.05	197.62	1538.96	-1511.05	-350.61	-143.02	5767573.40	606720.01
1629	36.03	197.55	1539.77	-1511.86	-351.17	-143.20	5767572.83	606719.84
1630	36.01	197.48	1540.58	-1512.67	-351.73	-143.38	5767572.27	606719.66
1631	35.99	197.41	1541.39	-1513.48	-352.29	-143.55	5767571.71	606719.48
1632	35.97	197.35	1542.20	-1514.29	-352.85	-143.73	5767571.15	606719.30
1633	35.95	197.28	1543.01	-1515.10	-353.41	-143.91	5767570.59	606719.12
1634	35.93	197.21	1543.81	-1515.90	-353.97	-144.09	5767570.03	606718.94
1635	35.91	197.14	1544.62	-1516.71	-354.53	-144.27	5767569.47	606718.76
1636	35.89	197.07	1545.43	-1517.52	-355.09	-144.45	5767568.91	606718.58
1637	35.87	197.00	1546.24	-1518.33	-355.65	-144.63	5767568.35	606718.40
1638	35.85	196.94	1547.05	-1519.14	-356.21	-144.81	5767567.79	606718.22
1639	35.83	196.87	1547.86	-1519.95	-356.78	-144.99	5767567.23	606718.04
1640	35.81	196.80	1548.66	-1520.75	-357.34	-145.17	5767566.67	606717.86
1641	35.79	196.73	1549.47	-1521.56	-357.90	-145.35	5767566.10	606717.69
1642	35.78	196.69	1550.29	-1522.38	-358.46	-145.51	5767565.55	606717.52
1643	35.76	196.65	1551.10	-1523.19	-359.02	-145.67	5767564.99	606717.36
1644	35.75	196.61	1551.91	-1524.00	-359.57	-145.83	5767564.43	606717.20
1645	35.73	196.58	1552.72	-1524.81	-360.13	-145.99	5767563.87	606717.04
1646	35.72	196.54	1553.54	-1525.63	-360.69	-146.16	5767563.31	606716.87
1647	35.71	196.50	1554.35	-1526.44	-361.25	-146.32	5767562.75	606716.71
1648	35.69	196.46	1555.16	-1527.25	-361.81	-146.48	5767562.19	606716.55
1649	35.68	196.42	1555.98	-1528.07	-362.37	-146.64	5767561.63	606716.39
1650	35.67	196.38	1556.79	-1528.88	-362.93	-146.81	5767561.07	606716.23
1651	35.65	196.35	1557.60	-1529.69	-363.49	-146.97	5767560.52	606716.06
1652	35.64	196.31	1558.42	-1530.51	-364.05	-147.13	5767559.96	606715.90
1653	35.62	196.27	1559.23	-1531.32	-364.60	-147.29	5767559.40	606715.74
1654	35.61	196.23	1560.04	-1532.13	-365.16	-147.45	5767558.84	606715.58
1655	35.60	196.19	1560.86	-1532.95	-365.72	-147.62	5767558.28	606715.41
1656	35.58	196.15	1561.67	-1533.76	-366.28	-147.78	5767557.72	606715.25
1657	35.57	196.12	1562.48	-1534.57	-366.84	-147.94	5767557.16	606715.09
1658	35.55	196.08	1563.30	-1535.39	-367.40	-148.10	5767556.60	606714.93
1659	35.54	196.04	1564.11	-1536.20	-367.96	-148.27	5767556.04	606714.77
1660	35.53	196.00	1564.92	-1537.01	-368.52	-148.43	5767555.48	606714.60
1661	35.51	195.96	1565.74	-1537.83	-369.08	-148.59	5767554.93	606714.44
1662	35.50	195.92	1566.55	-1538.64	-369.63	-148.75	5767554.37	606714.28
1663	35.49	195.89	1567.36	-1539.45	-370.19	-148.91	5767553.81	606714.12
1664	35.47	195.85	1568.18	-1540.27	-370.75	-149.08	5767553.25	606713.96
1665	35.46	195.81	1568.99	-1541.08	-371.31	-149.24	5767552.69	606713.79
1666	35.44	195.77	1569.80	-1541.89	-371.87	-149.40	5767552.13	606713.63
1667	35.43	195.73	1570.62	-1542.71	-372.43	-149.56	5767551.57	606713.47
1668	35.42	195.69	1571.43	-1543.52	-372.99	-149.72	5767551.01	606713.31
1669	35.40	195.66	1572.24	-1544.33	-373.55	-149.89	5767550.45	606713.14

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1670	35.39	195.62	1573.06	-1545.15	-374.11	-150.05	5767549.90	606712.98
1671	35.40	195.66	1573.87	-1545.96	-374.66	-150.21	5767549.34	606712.82
1672	35.41	195.69	1574.68	-1546.77	-375.22	-150.37	5767548.78	606712.66
1673	35.43	195.72	1575.50	-1547.59	-375.78	-150.53	5767548.22	606712.50
1674	35.44	195.76	1576.31	-1548.40	-376.34	-150.69	5767547.66	606712.34
1675	35.45	195.79	1577.12	-1549.21	-376.90	-150.86	5767547.10	606712.18
1676	35.46	195.82	1577.94	-1550.03	-377.46	-151.02	5767546.54	606712.01
1677	35.47	195.86	1578.75	-1550.84	-378.02	-151.18	5767545.99	606711.85
1678	35.48	195.89	1579.56	-1551.65	-378.58	-151.34	5767545.43	606711.69
1679	35.49	195.92	1580.38	-1552.47	-379.13	-151.50	5767544.87	606711.53
1680	35.50	195.96	1581.19	-1553.28	-379.69	-151.66	5767544.31	606711.37
1681	35.52	195.99	1582.01	-1554.10	-380.25	-151.82	5767543.75	606711.21
1682	35.53	196.02	1582.82	-1554.91	-380.81	-151.98	5767543.19	606711.05
1683	35.54	196.06	1583.63	-1555.72	-381.37	-152.15	5767542.63	606710.89
1684	35.55	196.09	1584.45	-1556.54	-381.93	-152.31	5767542.07	606710.72
1685	35.56	196.13	1585.26	-1557.35	-382.49	-152.47	5767541.52	606710.56
1686	35.57	196.16	1586.07	-1558.16	-383.04	-152.63	5767540.96	606710.40
1687	35.58	196.19	1586.89	-1558.98	-383.60	-152.79	5767540.40	606710.24
1688	35.60	196.23	1587.70	-1559.79	-384.16	-152.95	5767539.84	606710.08
1689	35.61	196.26	1588.51	-1560.60	-384.72	-153.11	5767539.28	606709.92
1690	35.62	196.29	1589.33	-1561.42	-385.28	-153.27	5767538.72	606709.76
1691	35.63	196.33	1590.14	-1562.23	-385.84	-153.44	5767538.16	606709.60
1692	35.64	196.36	1590.95	-1563.04	-386.40	-153.60	5767537.61	606709.43
1693	35.65	196.39	1591.77	-1563.86	-386.95	-153.76	5767537.05	606709.27
1694	35.66	196.43	1592.58	-1564.67	-387.51	-153.92	5767536.49	606709.11
1695	35.68	196.46	1593.39	-1565.48	-388.07	-154.08	5767535.93	606708.95
1696	35.69	196.49	1594.21	-1566.30	-388.63	-154.24	5767535.37	606708.79
1697	35.70	196.53	1595.02	-1567.11	-389.19	-154.40	5767534.81	606708.63
1698	35.71	196.56	1595.84	-1567.93	-389.75	-154.57	5767534.25	606708.47
1699	35.72	196.59	1596.65	-1568.74	-390.31	-154.73	5767533.69	606708.30
1700	35.72	196.60	1597.46	-1569.55	-390.87	-154.89	5767533.14	606708.14
1701	35.72	196.60	1598.27	-1570.36	-391.42	-155.06	5767532.58	606707.97
1702	35.71	196.61	1599.09	-1571.18	-391.98	-155.23	5767532.02	606707.80
1703	35.71	196.62	1599.90	-1571.99	-392.54	-155.40	5767531.46	606707.63
1704	35.71	196.62	1600.71	-1572.80	-393.10	-155.56	5767530.90	606707.47
1705	35.71	196.63	1601.52	-1573.61	-393.66	-155.73	5767530.34	606707.30
1706	35.71	196.63	1602.33	-1574.42	-394.22	-155.90	5767529.78	606707.13
1707	35.71	196.64	1603.15	-1575.24	-394.78	-156.07	5767529.22	606706.96
1708	35.70	196.65	1603.96	-1576.05	-395.34	-156.23	5767528.66	606706.80
1709	35.70	196.65	1604.77	-1576.86	-395.90	-156.40	5767528.11	606706.63
1710	35.70	196.66	1605.58	-1577.67	-396.45	-156.57	5767527.55	606706.46
1711	35.70	196.67	1606.39	-1578.48	-397.01	-156.74	5767526.99	606706.29
1712	35.70	196.67	1607.21	-1579.30	-397.57	-156.90	5767526.43	606706.13
1713	35.70	196.68	1608.02	-1580.11	-398.13	-157.07	5767525.87	606705.96
1714	35.69	196.68	1608.83	-1580.92	-398.69	-157.24	5767525.31	606705.79
1715	35.69	196.69	1609.64	-1581.73	-399.25	-157.41	5767524.75	606705.62
1716	35.69	196.70	1610.46	-1582.55	-399.81	-157.57	5767524.19	606705.46
1717	35.69	196.70	1611.27	-1583.36	-400.37	-157.74	5767523.63	606705.29
1718	35.69	196.71	1612.08	-1584.17	-400.93	-157.91	5767523.08	606705.12
1719	35.69	196.71	1612.89	-1584.98	-401.49	-158.08	5767522.52	606704.95
1720	35.68	196.72	1613.70	-1585.79	-402.04	-158.24	5767521.96	606704.79
1721	35.68	196.73	1614.52	-1586.61	-402.60	-158.41	5767521.40	606704.62
1722	35.68	196.73	1615.33	-1587.42	-403.16	-158.58	5767520.84	606704.45
1723	35.68	196.74	1616.14	-1588.23	-403.72	-158.75	5767520.28	606704.28
1724	35.68	196.75	1616.95	-1589.04	-404.28	-158.91	5767519.72	606704.12
1725	35.68	196.75	1617.76	-1589.85	-404.84	-159.08	5767519.16	606703.95
1726	35.67	196.76	1618.58	-1590.67	-405.40	-159.25	5767518.60	606703.78
1727	35.67	196.76	1619.39	-1591.48	-405.96	-159.42	5767518.05	606703.61
1728	35.67	196.77	1620.20	-1592.29	-406.52	-159.58	5767517.49	606703.45
1729	35.68	196.77	1621.01	-1593.10	-407.08	-159.75	5767516.93	606703.28
1730	35.69	196.76	1621.82	-1593.91	-407.64	-159.92	5767516.36	606703.11
1731	35.70	196.76	1622.63	-1594.72	-408.20	-160.09	5767515.80	606702.94
1732	35.71	196.76	1623.44	-1595.53	-408.76	-160.26	5767515.24	606702.77
1733	35.72	196.76	1624.25	-1596.34	-409.32	-160.43	5767514.68	606702.60
1734	35.74	196.75	1625.07	-1597.16	-409.88	-160.60	5767514.12	606702.44
1735	35.75	196.75	1625.88	-1597.97	-410.44	-160.76	5767513.56	606702.27

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1736	35.76	196.75	1626.69	-1598.78	-411.00	-160.93	5767513.00	606702.10
1737	35.77	196.74	1627.50	-1599.59	-411.56	-161.10	5767512.44	606701.93
1738	35.78	196.74	1628.31	-1600.40	-412.12	-161.27	5767511.88	606701.76
1739	35.79	196.74	1629.12	-1601.21	-412.68	-161.44	5767511.32	606701.59
1740	35.80	196.74	1629.93	-1602.02	-413.24	-161.61	5767510.76	606701.43
1741	35.81	196.73	1630.74	-1602.83	-413.80	-161.77	5767510.20	606701.26
1742	35.82	196.73	1631.55	-1603.64	-414.36	-161.94	5767509.64	606701.09
1743	35.83	196.73	1632.36	-1604.45	-414.92	-162.11	5767509.08	606700.92
1744	35.84	196.73	1633.17	-1605.26	-415.48	-162.28	5767508.52	606700.75
1745	35.85	196.72	1633.98	-1606.07	-416.04	-162.45	5767507.96	606700.58
1746	35.87	196.72	1634.80	-1606.89	-416.61	-162.62	5767507.40	606700.41
1747	35.88	196.72	1635.61	-1607.70	-417.17	-162.79	5767506.84	606700.25
1748	35.89	196.71	1636.42	-1608.51	-417.73	-162.95	5767506.28	606700.08
1749	35.90	196.71	1637.23	-1609.32	-418.29	-163.12	5767505.72	606699.91
1750	35.91	196.71	1638.04	-1610.13	-418.85	-163.29	5767505.15	606699.74
1751	35.92	196.71	1638.85	-1610.94	-419.41	-163.46	5767504.59	606699.57
1752	35.93	196.70	1639.66	-1611.75	-419.97	-163.63	5767504.03	606699.40
1753	35.94	196.70	1640.47	-1612.56	-420.53	-163.80	5767503.47	606699.23
1754	35.95	196.70	1641.28	-1613.37	-421.09	-163.97	5767502.91	606699.07
1755	35.96	196.69	1642.09	-1614.18	-421.65	-164.13	5767502.35	606698.90
1756	35.97	196.69	1642.90	-1614.99	-422.21	-164.30	5767501.79	606698.73
1757	35.97	196.67	1643.71	-1615.80	-422.77	-164.47	5767501.23	606698.56
1758	35.96	196.63	1644.53	-1616.62	-423.33	-164.63	5767500.67	606698.40
1759	35.95	196.58	1645.34	-1617.43	-423.90	-164.79	5767500.11	606698.24
1760	35.93	196.54	1646.15	-1618.24	-424.46	-164.95	5767499.54	606698.08
1761	35.92	196.50	1646.96	-1619.05	-425.02	-165.12	5767498.98	606697.92
1762	35.91	196.45	1647.77	-1619.86	-425.58	-165.28	5767498.42	606697.75
1763	35.89	196.41	1648.58	-1620.67	-426.14	-165.44	5767497.86	606697.59
1764	35.88	196.37	1649.39	-1621.48	-426.70	-165.60	5767497.30	606697.43
1765	35.87	196.33	1650.20	-1622.29	-427.27	-165.76	5767496.73	606697.27
1766	35.86	196.28	1651.01	-1623.10	-427.83	-165.92	5767496.17	606697.11
1767	35.84	196.24	1651.83	-1623.92	-428.39	-166.09	5767495.61	606696.94
1768	35.83	196.20	1652.64	-1624.73	-428.95	-166.25	5767495.05	606696.78
1769	35.82	196.15	1653.45	-1625.54	-429.51	-166.41	5767494.49	606696.62
1770	35.80	196.11	1654.26	-1626.35	-430.08	-166.57	5767493.93	606696.46
1771	35.79	196.07	1655.07	-1627.16	-430.64	-166.73	5767493.36	606696.30
1772	35.78	196.02	1655.88	-1627.97	-431.20	-166.90	5767492.80	606696.14
1773	35.76	195.98	1656.69	-1628.78	-431.76	-167.06	5767492.24	606695.97
1774	35.75	195.94	1657.50	-1629.59	-432.32	-167.22	5767491.68	606695.81
1775	35.74	195.89	1658.32	-1630.41	-432.89	-167.38	5767491.12	606695.65
1776	35.72	195.85	1659.13	-1631.22	-433.45	-167.54	5767490.55	606695.49
1777	35.71	195.81	1659.94	-1632.03	-434.01	-167.71	5767489.99	606695.33
1778	35.70	195.76	1660.75	-1632.84	-434.57	-167.87	5767489.43	606695.16
1779	35.68	195.72	1661.56	-1633.65	-435.13	-168.03	5767488.87	606695.00
1780	35.67	195.68	1662.37	-1634.46	-435.70	-168.19	5767488.31	606694.84
1781	35.66	195.64	1663.18	-1635.27	-436.26	-168.35	5767487.74	606694.68
1782	35.64	195.59	1663.99	-1636.08	-436.82	-168.52	5767487.18	606694.52
1783	35.63	195.55	1664.80	-1636.89	-437.38	-168.68	5767486.62	606694.35
1784	35.62	195.51	1665.62	-1637.71	-437.94	-168.84	5767486.06	606694.19
1785	35.60	195.46	1666.43	-1638.52	-438.51	-169.00	5767485.50	606694.03
1786	35.58	195.45	1667.24	-1639.33	-439.06	-169.16	5767484.94	606693.87
1787	35.56	195.46	1668.06	-1640.15	-439.62	-169.31	5767484.38	606693.72
1788	35.54	195.47	1668.87	-1640.96	-440.18	-169.47	5767483.83	606693.56
1789	35.51	195.48	1669.69	-1641.78	-440.73	-169.62	5767483.27	606693.41
1790	35.49	195.48	1670.51	-1642.60	-441.29	-169.78	5767482.71	606693.25
1791	35.47	195.49	1671.32	-1643.41	-441.84	-169.93	5767482.16	606693.10
1792	35.44	195.50	1672.14	-1644.23	-442.40	-170.09	5767481.60	606692.95
1793	35.42	195.50	1672.96	-1645.05	-442.96	-170.24	5767481.05	606692.79
1794	35.40	195.51	1673.77	-1645.86	-443.51	-170.40	5767480.49	606692.64
1795	35.37	195.52	1674.59	-1646.68	-444.07	-170.55	5767479.93	606692.48
1796	35.35	195.52	1675.41	-1647.50	-444.62	-170.71	5767479.38	606692.33
1797	35.33	195.53	1676.22	-1648.31	-445.18	-170.86	5767478.82	606692.17
1798	35.30	195.54	1677.04	-1649.13	-445.74	-171.01	5767478.26	606692.02
1799	35.28	195.54	1677.86	-1649.95	-446.29	-171.17	5767477.71	606691.86
1800	35.25	195.55	1678.67	-1650.76	-446.85	-171.32	5767477.15	606691.71
1801	35.23	195.56	1679.49	-1651.58	-447.41	-171.48	5767476.60	606691.55

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1802	35.21	195.57	1680.31	-1652.40	-447.96	-171.63	5767476.04	606691.40
1803	35.18	195.57	1681.12	-1653.21	-448.52	-171.79	5767475.48	606691.24
1804	35.16	195.58	1681.94	-1654.03	-449.07	-171.94	5767474.93	606691.09
1805	35.14	195.59	1682.76	-1654.85	-449.63	-172.10	5767474.37	606690.93
1806	35.11	195.59	1683.57	-1655.66	-450.19	-172.25	5767473.82	606690.78
1807	35.09	195.60	1684.39	-1656.48	-450.74	-172.41	5767473.26	606690.62
1808	35.07	195.61	1685.21	-1657.30	-451.30	-172.56	5767472.70	606690.47
1809	35.04	195.61	1686.02	-1658.11	-451.85	-172.72	5767472.15	606690.31
1810	35.02	195.62	1686.84	-1658.93	-452.41	-172.87	5767471.59	606690.16
1811	35.00	195.63	1687.66	-1659.75	-452.97	-173.03	5767471.03	606690.00
1812	34.97	195.63	1688.47	-1660.56	-453.52	-173.18	5767470.48	606689.85
1813	34.95	195.64	1689.29	-1661.38	-454.08	-173.34	5767469.92	606689.70
1814	34.93	195.65	1690.11	-1662.20	-454.64	-173.49	5767469.37	606689.54
1815	34.92	195.66	1690.92	-1663.01	-455.19	-173.65	5767468.81	606689.38
1816	34.92	195.67	1691.74	-1663.83	-455.74	-173.80	5767468.26	606689.23
1817	34.91	195.68	1692.57	-1664.66	-456.29	-173.96	5767467.71	606689.07
1818	34.91	195.69	1693.39	-1665.48	-456.84	-174.11	5767467.16	606688.92
1819	34.91	195.70	1694.21	-1666.30	-457.39	-174.27	5767466.61	606688.76
1820	34.90	195.72	1695.03	-1667.12	-457.94	-174.43	5767466.06	606688.61
1821	34.90	195.73	1695.85	-1667.94	-458.49	-174.58	5767465.51	606688.45
1822	34.90	195.74	1696.67	-1668.76	-459.04	-174.74	5767464.96	606688.29
1823	34.90	195.75	1697.49	-1669.58	-459.59	-174.89	5767464.41	606688.14
1824	34.89	195.76	1698.31	-1670.40	-460.14	-175.05	5767463.86	606687.98
1825	34.89	195.77	1699.13	-1671.22	-460.69	-175.20	5767463.31	606687.83
1826	34.89	195.78	1699.95	-1672.04	-461.24	-175.36	5767462.76	606687.67
1827	34.88	195.80	1700.77	-1672.86	-461.79	-175.52	5767462.21	606687.51
1828	34.88	195.81	1701.59	-1673.68	-462.34	-175.67	5767461.66	606687.36
1829	34.88	195.82	1702.41	-1674.50	-462.89	-175.83	5767461.11	606687.20
1830	34.88	195.83	1703.23	-1675.32	-463.44	-175.98	5767460.56	606687.05
1831	34.87	195.84	1704.05	-1676.14	-463.99	-176.14	5767460.01	606686.89
1832	34.87	195.85	1704.87	-1676.96	-464.54	-176.30	5767459.46	606686.74
1833	34.87	195.86	1705.69	-1677.78	-465.09	-176.45	5767458.91	606686.58
1834	34.87	195.88	1706.51	-1678.60	-465.64	-176.61	5767458.36	606686.42
1835	34.86	195.89	1707.33	-1679.42	-466.19	-176.76	5767457.81	606686.27
1836	34.86	195.90	1708.15	-1680.24	-466.74	-176.92	5767457.26	606686.11
1837	34.86	195.91	1708.97	-1681.06	-467.29	-177.07	5767456.71	606685.96
1838	34.85	195.92	1709.79	-1681.88	-467.84	-177.23	5767456.16	606685.80
1839	34.85	195.93	1710.61	-1682.70	-468.39	-177.39	5767455.61	606685.64
1840	34.85	195.95	1711.43	-1683.52	-468.94	-177.54	5767455.06	606685.49
1841	34.85	195.96	1712.25	-1684.34	-469.49	-177.70	5767454.51	606685.33
1842	34.84	195.97	1713.07	-1685.16	-470.04	-177.85	5767453.96	606685.18
1843	34.84	195.98	1713.89	-1685.98	-470.59	-178.01	5767453.41	606685.02
1844	34.85	195.99	1714.71	-1686.80	-471.14	-178.17	5767452.86	606684.86
1845	34.86	195.99	1715.53	-1687.62	-471.69	-178.33	5767452.31	606684.70
1846	34.86	196.00	1716.35	-1688.44	-472.24	-178.49	5767451.76	606684.55
1847	34.87	196.01	1717.17	-1689.26	-472.79	-178.64	5767451.21	606684.39
1848	34.88	196.02	1717.99	-1690.08	-473.35	-178.80	5767450.66	606684.23
1849	34.89	196.02	1718.81	-1690.90	-473.90	-178.96	5767450.11	606684.07
1850	34.90	196.03	1719.63	-1691.72	-474.45	-179.12	5767449.56	606683.91
1851	34.90	196.04	1720.45	-1692.54	-475.00	-179.28	5767449.00	606683.75
1852	34.91	196.05	1721.27	-1693.36	-475.55	-179.44	5767448.45	606683.59
1853	34.92	196.05	1722.09	-1694.18	-476.10	-179.60	5767447.90	606683.43
1854	34.93	196.06	1722.91	-1695.00	-476.65	-179.76	5767447.35	606683.28
1855	34.94	196.07	1723.73	-1695.82	-477.20	-179.91	5767446.80	606683.12
1856	34.94	196.08	1724.55	-1696.64	-477.75	-180.07	5767446.25	606682.96
1857	34.95	196.08	1725.37	-1697.46	-478.30	-180.23	5767445.70	606682.80
1858	34.96	196.09	1726.19	-1698.28	-478.85	-180.39	5767445.15	606682.64
1859	34.97	196.10	1727.01	-1699.10	-479.40	-180.55	5767444.60	606682.48
1860	34.98	196.10	1727.83	-1699.92	-479.95	-180.71	5767444.05	606682.32
1861	34.98	196.11	1728.65	-1700.74	-480.50	-180.87	5767443.50	606682.16
1862	34.99	196.12	1729.47	-1701.56	-481.05	-181.03	5767442.95	606682.01
1863	35.00	196.13	1730.29	-1702.38	-481.60	-181.18	5767442.40	606681.85
1864	35.01	196.13	1731.11	-1703.20	-482.15	-181.34	5767441.85	606681.69
1865	35.02	196.14	1731.93	-1704.02	-482.70	-181.50	5767441.30	606681.53
1866	35.02	196.15	1732.74	-1704.83	-483.25	-181.66	5767440.75	606681.37
1867	35.03	196.16	1733.56	-1705.65	-483.81	-181.82	5767440.20	606681.21

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1868	35.04	196.16	1734.38	-1706.47	-484.36	-181.98	5767439.65	606681.05
1869	35.05	196.17	1735.20	-1707.29	-484.91	-182.14	5767439.10	606680.89
1870	35.06	196.18	1736.02	-1708.11	-485.46	-182.30	5767438.55	606680.74
1871	35.06	196.19	1736.84	-1708.93	-486.01	-182.45	5767437.99	606680.58
1872	35.06	196.20	1737.66	-1709.75	-486.56	-182.61	5767437.45	606680.42
1873	35.04	196.22	1738.49	-1710.58	-487.10	-182.78	5767436.90	606680.25
1874	35.01	196.25	1739.31	-1711.40	-487.65	-182.94	5767436.35	606680.09
1875	34.99	196.27	1740.13	-1712.22	-488.19	-183.10	5767435.81	606679.93
1876	34.96	196.30	1740.95	-1713.04	-488.74	-183.26	5767435.26	606679.77
1877	34.94	196.32	1741.77	-1713.86	-489.29	-183.43	5767434.72	606679.61
1878	34.92	196.35	1742.59	-1714.68	-489.83	-183.59	5767434.17	606679.44
1879	34.89	196.37	1743.42	-1715.51	-490.38	-183.75	5767433.62	606679.28
1880	34.87	196.40	1744.24	-1716.33	-490.92	-183.91	5767433.08	606679.12
1881	34.84	196.42	1745.06	-1717.15	-491.47	-184.07	5767432.53	606678.96
1882	34.82	196.45	1745.88	-1717.97	-492.02	-184.24	5767431.99	606678.80
1883	34.79	196.47	1746.70	-1718.79	-492.56	-184.40	5767431.44	606678.63
1884	34.77	196.50	1747.53	-1719.62	-493.11	-184.56	5767430.89	606678.47
1885	34.75	196.52	1748.35	-1720.44	-493.65	-184.72	5767430.35	606678.31
1886	34.72	196.54	1749.17	-1721.26	-494.20	-184.88	5767429.80	606678.15
1887	34.70	196.57	1749.99	-1722.08	-494.75	-185.05	5767429.25	606677.98
1888	34.67	196.59	1750.81	-1722.90	-495.29	-185.21	5767428.71	606677.82
1889	34.65	196.62	1751.64	-1723.73	-495.84	-185.37	5767428.16	606677.66
1890	34.62	196.64	1752.46	-1724.55	-496.39	-185.53	5767427.62	606677.50
1891	34.60	196.67	1753.28	-1725.37	-496.93	-185.70	5767427.07	606677.34
1892	34.57	196.69	1754.10	-1726.19	-497.48	-185.86	5767426.52	606677.17
1893	34.55	196.72	1754.92	-1727.01	-498.02	-186.02	5767425.98	606677.01
1894	34.53	196.74	1755.75	-1727.84	-498.57	-186.18	5767425.43	606676.85
1895	34.50	196.77	1756.57	-1728.66	-499.12	-186.34	5767424.89	606676.69
1896	34.48	196.79	1757.39	-1729.48	-499.66	-186.51	5767424.34	606676.53
1897	34.45	196.82	1758.21	-1730.30	-500.21	-186.67	5767423.79	606676.36
1898	34.43	196.84	1759.03	-1731.12	-500.75	-186.83	5767423.25	606676.20
1899	34.40	196.86	1759.85	-1731.94	-501.30	-186.99	5767422.70	606676.04
1900	34.38	196.89	1760.68	-1732.77	-501.85	-187.16	5767422.16	606675.88
1901	34.41	196.87	1761.50	-1733.59	-502.39	-187.32	5767421.61	606675.71
1902	34.44	196.84	1762.32	-1734.41	-502.94	-187.48	5767421.06	606675.55
1903	34.47	196.82	1763.14	-1735.23	-503.49	-187.64	5767420.51	606675.39
1904	34.50	196.79	1763.96	-1736.05	-504.03	-187.81	5767419.97	606675.23
1905	34.53	196.77	1764.78	-1736.87	-504.58	-187.97	5767419.42	606675.06
1906	34.56	196.75	1765.60	-1737.69	-505.13	-188.13	5767418.87	606674.90
1907	34.59	196.72	1766.42	-1738.51	-505.68	-188.29	5767418.33	606674.74
1908	34.62	196.70	1767.24	-1739.33	-506.22	-188.45	5767417.78	606674.58
1909	34.65	196.67	1768.07	-1740.16	-506.77	-188.62	5767417.23	606674.41
1910	34.68	196.65	1768.89	-1740.98	-507.32	-188.78	5767416.68	606674.25
1911	34.71	196.63	1769.71	-1741.80	-507.87	-188.94	5767416.14	606674.09
1912	34.74	196.60	1770.53	-1742.62	-508.41	-189.10	5767415.59	606673.93
1913	34.77	196.58	1771.35	-1743.44	-508.96	-189.27	5767415.04	606673.76
1914	34.80	196.55	1772.17	-1744.26	-509.51	-189.43	5767414.49	606673.60
1915	34.83	196.53	1772.99	-1745.08	-510.05	-189.59	5767413.95	606673.44
1916	34.86	196.51	1773.81	-1745.90	-510.60	-189.75	5767413.40	606673.28
1917	34.89	196.48	1774.63	-1746.72	-511.15	-189.92	5767412.85	606673.11
1918	34.92	196.46	1775.46	-1747.55	-511.70	-190.08	5767412.31	606672.95
1919	34.95	196.44	1776.28	-1748.37	-512.24	-190.24	5767411.76	606672.79
1920	34.98	196.41	1777.10	-1749.19	-512.79	-190.40	5767411.21	606672.63
1921	35.01	196.39	1777.92	-1750.01	-513.34	-190.57	5767410.66	606672.46
1922	35.04	196.36	1778.74	-1750.83	-513.88	-190.73	5767410.12	606672.30
1923	35.07	196.34	1779.56	-1751.65	-514.43	-190.89	5767409.57	606672.14
1924	35.10	196.32	1780.38	-1752.47	-514.98	-191.05	5767409.02	606671.98
1925	35.13	196.29	1781.20	-1753.29	-515.53	-191.22	5767408.48	606671.81
1926	35.16	196.27	1782.02	-1754.11	-516.07	-191.38	5767407.93	606671.65
1927	35.19	196.24	1782.84	-1754.93	-516.62	-191.54	5767407.38	606671.49
1928	35.22	196.22	1783.67	-1755.76	-517.17	-191.70	5767406.83	606671.33
1929	35.24	196.20	1784.49	-1756.58	-517.72	-191.87	5767406.29	606671.16
1930	35.21	196.21	1785.31	-1757.40	-518.26	-192.03	5767405.74	606671.00
1931	35.18	196.21	1786.13	-1758.22	-518.81	-192.19	5767405.19	606670.84
1932	35.16	196.22	1786.95	-1759.04	-519.36	-192.35	5767404.64	606670.68
1933	35.13	196.23	1787.77	-1759.86	-519.91	-192.51	5767404.09	606670.52

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1934	35.11	196.23	1788.59	-1760.68	-520.46	-192.67	5767403.54	606670.36
1935	35.08	196.24	1789.41	-1761.50	-521.01	-192.83	5767402.99	606670.20
1936	35.06	196.24	1790.23	-1762.32	-521.56	-192.99	5767402.44	606670.04
1937	35.03	196.25	1791.05	-1763.14	-522.11	-193.15	5767401.90	606669.88
1938	35.01	196.26	1791.87	-1763.96	-522.66	-193.31	5767401.35	606669.72
1939	34.98	196.26	1792.69	-1764.78	-523.20	-193.47	5767400.80	606669.56
1940	34.96	196.27	1793.51	-1765.60	-523.75	-193.63	5767400.25	606669.40
1941	34.93	196.28	1794.33	-1766.42	-524.30	-193.79	5767399.70	606669.24
1942	34.91	196.28	1795.15	-1767.24	-524.85	-193.95	5767399.15	606669.08
1943	34.88	196.29	1795.97	-1768.06	-525.40	-194.11	5767398.60	606668.92
1944	34.86	196.29	1796.79	-1768.88	-525.95	-194.27	5767398.05	606668.76
1945	34.83	196.30	1797.61	-1769.70	-526.50	-194.43	5767397.50	606668.60
1946	34.80	196.31	1798.43	-1770.52	-527.05	-194.59	5767396.96	606668.44
1947	34.78	196.31	1799.25	-1771.34	-527.59	-194.75	5767396.41	606668.28
1948	34.75	196.32	1800.07	-1772.16	-528.14	-194.91	5767395.86	606668.12
1949	34.73	196.33	1800.89	-1772.98	-528.69	-195.07	5767395.31	606667.96
1950	34.70	196.33	1801.72	-1773.81	-529.24	-195.23	5767394.76	606667.80
1951	34.68	196.34	1802.54	-1774.63	-529.79	-195.40	5767394.21	606667.64
1952	34.65	196.34	1803.36	-1775.45	-530.34	-195.56	5767393.66	606667.48
1953	34.63	196.35	1804.18	-1776.27	-530.89	-195.72	5767393.11	606667.32
1954	34.60	196.36	1805.00	-1777.09	-531.44	-195.88	5767392.57	606667.16
1955	34.58	196.36	1805.82	-1777.91	-531.99	-196.04	5767392.02	606666.99
1956	34.55	196.37	1806.64	-1778.73	-532.53	-196.20	5767391.47	606666.83
1957	34.53	196.38	1807.46	-1779.55	-533.08	-196.36	5767390.92	606666.67
1958	34.52	196.35	1808.28	-1780.37	-533.63	-196.51	5767390.37	606666.52
1959	34.55	196.28	1809.10	-1781.19	-534.19	-196.67	5767389.82	606666.37
1960	34.58	196.21	1809.92	-1782.01	-534.74	-196.82	5767389.26	606666.21
1961	34.61	196.14	1810.74	-1782.83	-535.29	-196.97	5767388.71	606666.06
1962	34.64	196.06	1811.56	-1783.65	-535.84	-197.12	5767388.16	606665.91
1963	34.67	195.99	1812.38	-1784.47	-536.39	-197.27	5767387.61	606665.76
1964	34.70	195.92	1813.20	-1785.29	-536.95	-197.42	5767387.06	606665.61
1965	34.73	195.85	1814.02	-1786.11	-537.50	-197.57	5767386.50	606665.46
1966	34.76	195.77	1814.84	-1786.93	-538.05	-197.73	5767385.95	606665.31
1967	34.79	195.70	1815.66	-1787.75	-538.60	-197.88	5767385.40	606665.15
1968	34.82	195.63	1816.48	-1788.57	-539.15	-198.03	5767384.85	606665.00
1969	34.85	195.56	1817.30	-1789.39	-539.71	-198.18	5767384.29	606664.85
1970	34.88	195.48	1818.12	-1790.21	-540.26	-198.33	5767383.74	606664.70
1971	34.91	195.41	1818.94	-1791.03	-540.81	-198.48	5767383.19	606664.55
1972	34.94	195.34	1819.76	-1791.85	-541.36	-198.63	5767382.64	606664.40
1973	34.97	195.27	1820.58	-1792.67	-541.92	-198.79	5767382.09	606664.25
1974	34.99	195.19	1821.40	-1793.49	-542.47	-198.94	5767381.53	606664.10
1975	35.02	195.12	1822.22	-1794.31	-543.02	-199.09	5767380.98	606663.94
1976	35.05	195.05	1823.04	-1795.13	-543.57	-199.24	5767380.43	606663.79
1977	35.08	194.98	1823.86	-1795.95	-544.12	-199.39	5767379.88	606663.64
1978	35.11	194.90	1824.67	-1796.76	-544.68	-199.54	5767379.32	606663.49
1979	35.14	194.83	1825.49	-1797.58	-545.23	-199.69	5767378.77	606663.34
1980	35.17	194.76	1826.31	-1798.40	-545.78	-199.84	5767378.22	606663.19
1981	35.20	194.69	1827.13	-1799.22	-546.33	-200.00	5767377.67	606663.04
1982	35.23	194.61	1827.95	-1800.04	-546.89	-200.15	5767377.12	606662.88
1983	35.26	194.54	1828.77	-1800.86	-547.44	-200.30	5767376.56	606662.73
1984	35.29	194.47	1829.59	-1801.68	-547.99	-200.45	5767376.01	606662.58
1985	35.32	194.40	1830.41	-1802.50	-548.54	-200.60	5767375.46	606662.43
1986	35.35	194.32	1831.23	-1803.32	-549.09	-200.75	5767374.91	606662.28
1987	35.40	194.28	1832.04	-1804.13	-549.66	-200.90	5767374.34	606662.13
1988	35.47	194.25	1832.85	-1804.94	-550.24	-201.04	5767373.77	606661.99
1989	35.53	194.22	1833.66	-1805.75	-550.81	-201.18	5767373.19	606661.85
1990	35.60	194.19	1834.46	-1806.55	-551.38	-201.32	5767372.62	606661.71
1991	35.66	194.16	1835.27	-1807.36	-551.96	-201.47	5767372.04	606661.57
1992	35.73	194.13	1836.07	-1808.16	-552.53	-201.61	5767371.47	606661.42
1993	35.79	194.10	1836.88	-1808.97	-553.11	-201.75	5767370.89	606661.28
1994	35.86	194.08	1837.69	-1809.78	-553.68	-201.89	5767370.32	606661.14
1995	35.92	194.05	1838.49	-1810.58	-554.26	-202.03	5767369.75	606661.00
1996	35.98	194.02	1839.30	-1811.39	-554.83	-202.17	5767369.17	606660.86
1997	36.05	193.99	1840.11	-1812.20	-555.41	-202.32	5767368.60	606660.71
1998	36.11	193.96	1840.91	-1813.00	-555.98	-202.46	5767368.02	606660.57
1999	36.18	193.93	1841.72	-1813.81	-556.55	-202.60	5767367.45	606660.43

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2000	36.24	193.90	1842.52	-1814.61	-557.13	-202.74	5767366.87	606660.29
2001	36.31	193.87	1843.33	-1815.42	-557.70	-202.88	5767366.30	606660.15
2002	36.37	193.84	1844.14	-1816.23	-558.28	-203.03	5767365.72	606660.01
2003	36.44	193.81	1844.94	-1817.03	-558.85	-203.17	5767365.15	606659.86
2004	36.50	193.78	1845.75	-1817.84	-559.43	-203.31	5767364.58	606659.72
2005	36.57	193.75	1846.55	-1818.64	-560.00	-203.45	5767364.00	606659.58
2006	36.63	193.72	1847.36	-1819.45	-560.57	-203.59	5767363.43	606659.44
2007	36.69	193.69	1848.17	-1820.26	-561.15	-203.74	5767362.85	606659.30
2008	36.76	193.67	1848.97	-1821.06	-561.72	-203.88	5767362.28	606659.15
2009	36.82	193.64	1849.78	-1821.87	-562.30	-204.02	5767361.70	606659.01
2010	36.89	193.61	1850.59	-1822.68	-562.87	-204.16	5767361.13	606658.87
2011	36.95	193.58	1851.39	-1823.48	-563.45	-204.30	5767360.56	606658.73
2012	37.02	193.55	1852.20	-1824.29	-564.02	-204.44	5767359.98	606658.59
2013	37.08	193.52	1853.00	-1825.09	-564.59	-204.59	5767359.41	606658.44
2014	37.15	193.49	1853.81	-1825.90	-565.17	-204.73	5767358.83	606658.30
2015	37.21	193.47	1854.61	-1826.70	-565.75	-204.87	5767358.25	606658.16
2016	37.27	193.48	1855.40	-1827.49	-566.35	-205.02	5767357.65	606658.01
2017	37.32	193.50	1856.19	-1828.28	-566.95	-205.16	5767357.05	606657.87
2018	37.38	193.51	1856.97	-1829.06	-567.55	-205.31	5767356.46	606657.72
2019	37.44	193.52	1857.76	-1829.85	-568.14	-205.45	5767355.86	606657.58
2020	37.49	193.53	1858.55	-1830.64	-568.74	-205.60	5767355.26	606657.43
2021	37.55	193.54	1859.34	-1831.43	-569.34	-205.74	5767354.66	606657.29
2022	37.61	193.55	1860.13	-1832.22	-569.94	-205.89	5767354.06	606657.14
2023	37.66	193.56	1860.91	-1833.00	-570.54	-206.03	5767353.46	606657.00
2024	37.72	193.57	1861.70	-1833.79	-571.14	-206.18	5767352.86	606656.85
2025	37.78	193.59	1862.49	-1834.58	-571.74	-206.32	5767352.27	606656.71
2026	37.83	193.60	1863.28	-1835.37	-572.33	-206.47	5767351.67	606656.56
2027	37.89	193.61	1864.07	-1836.16	-572.93	-206.61	5767351.07	606656.42
2028	37.95	193.62	1864.85	-1836.94	-573.53	-206.76	5767350.47	606656.27
2029	38.00	193.63	1865.64	-1837.73	-574.13	-206.90	5767349.87	606656.13
2030	38.06	193.64	1866.43	-1838.52	-574.73	-207.05	5767349.27	606655.98
2031	38.12	193.65	1867.22	-1839.31	-575.33	-207.19	5767348.68	606655.84
2032	38.17	193.66	1868.01	-1840.10	-575.92	-207.34	5767348.08	606655.69
2033	38.23	193.67	1868.79	-1840.88	-576.52	-207.48	5767347.48	606655.55
2034	38.29	193.69	1869.58	-1841.67	-577.12	-207.63	5767346.88	606655.40
2035	38.34	193.70	1870.37	-1842.46	-577.72	-207.77	5767346.28	606655.26
2036	38.40	193.71	1871.16	-1843.25	-578.32	-207.92	5767345.68	606655.11
2037	38.46	193.72	1871.94	-1844.03	-578.92	-208.06	5767345.09	606654.97
2038	38.51	193.73	1872.73	-1844.82	-579.51	-208.21	5767344.49	606654.82
2039	38.57	193.74	1873.52	-1845.61	-580.11	-208.35	5767343.89	606654.68
2040	38.63	193.75	1874.31	-1846.40	-580.71	-208.50	5767343.29	606654.53
2041	38.68	193.76	1875.10	-1847.19	-581.31	-208.64	5767342.69	606654.39
2042	38.74	193.77	1875.88	-1847.97	-581.91	-208.79	5767342.09	606654.24
2043	38.80	193.79	1876.67	-1848.76	-582.51	-208.94	5767341.50	606654.10
2044	38.81	193.81	1877.46	-1849.55	-583.11	-209.08	5767340.89	606653.95
2045	38.79	193.83	1878.24	-1850.33	-583.71	-209.24	5767340.29	606653.79
2046	38.78	193.86	1879.02	-1851.11	-584.32	-209.39	5767339.68	606653.64
2047	38.76	193.88	1879.80	-1851.89	-584.92	-209.54	5767339.08	606653.49
2048	38.74	193.91	1880.58	-1852.67	-585.53	-209.69	5767338.47	606653.34
2049	38.73	193.93	1881.36	-1853.45	-586.13	-209.85	5767337.87	606653.18
2050	38.71	193.96	1882.15	-1854.24	-586.74	-210.00	5767337.27	606653.03
2051	38.70	193.98	1882.93	-1855.02	-587.34	-210.15	5767336.66	606652.88
2052	38.68	194.01	1883.71	-1855.80	-587.95	-210.30	5767336.06	606652.73
2053	38.66	194.04	1884.49	-1856.58	-588.55	-210.46	5767335.45	606652.57
2054	38.65	194.06	1885.27	-1857.36	-589.16	-210.61	5767334.85	606652.42
2055	38.63	194.09	1886.05	-1858.14	-589.76	-210.76	5767334.24	606652.27
2056	38.61	194.11	1886.84	-1858.93	-590.37	-210.91	5767333.64	606652.12
2057	38.60	194.14	1887.62	-1859.71	-590.97	-211.07	5767333.03	606651.96
2058	38.58	194.16	1888.40	-1860.49	-591.58	-211.22	5767332.43	606651.81
2059	38.57	194.19	1889.18	-1861.27	-592.18	-211.37	5767331.82	606651.66
2060	38.55	194.21	1889.96	-1862.05	-592.78	-211.52	5767331.22	606651.51
2061	38.53	194.24	1890.74	-1862.83	-593.39	-211.68	5767330.61	606651.35
2062	38.52	194.27	1891.53	-1863.62	-593.99	-211.83	5767330.01	606651.20
2063	38.50	194.29	1892.31	-1864.40	-594.60	-211.98	5767329.40	606651.05
2064	38.48	194.32	1893.09	-1865.18	-595.20	-212.13	5767328.80	606650.90
2065	38.47	194.34	1893.87	-1865.96	-595.81	-212.29	5767328.19	606650.75

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2066	38.45	194.37	1894.65	-1866.74	-596.41	-212.44	5767327.59	606650.59
2067	38.43	194.39	1895.43	-1867.52	-597.02	-212.59	5767326.98	606650.44
2068	38.42	194.42	1896.22	-1868.31	-597.62	-212.74	5767326.38	606650.29
2069	38.40	194.44	1897.00	-1869.09	-598.23	-212.90	5767325.77	606650.14
2070	38.39	194.47	1897.78	-1869.87	-598.83	-213.05	5767325.17	606649.98
2071	38.37	194.50	1898.56	-1870.65	-599.44	-213.20	5767324.56	606649.83
2072	38.34	194.51	1899.35	-1871.44	-600.04	-213.35	5767323.96	606649.68
2073	38.31	194.52	1900.14	-1872.23	-600.63	-213.51	5767323.37	606649.52
2074	38.27	194.53	1900.93	-1873.02	-601.22	-213.66	5767322.78	606649.37
2075	38.23	194.54	1901.72	-1873.81	-601.82	-213.82	5767322.18	606649.21
2076	38.20	194.55	1902.50	-1874.59	-602.41	-213.97	5767321.59	606649.06
2077	38.16	194.56	1903.29	-1875.38	-603.00	-214.13	5767321.00	606648.90
2078	38.12	194.57	1904.08	-1876.17	-603.60	-214.28	5767320.40	606648.75
2079	38.09	194.58	1904.87	-1876.96	-604.19	-214.44	5767319.81	606648.59
2080	38.05	194.59	1905.66	-1877.75	-604.78	-214.59	5767319.22	606648.44
2081	38.01	194.60	1906.45	-1878.54	-605.38	-214.75	5767318.62	606648.28
2082	37.97	194.61	1907.24	-1879.33	-605.97	-214.91	5767318.03	606648.13
2083	37.94	194.62	1908.03	-1880.12	-606.57	-215.06	5767317.44	606647.97
2084	37.90	194.63	1908.82	-1880.91	-607.16	-215.22	5767316.84	606647.82
2085	37.86	194.64	1909.61	-1881.70	-607.75	-215.37	5767316.25	606647.66
2086	37.83	194.65	1910.40	-1882.49	-608.35	-215.53	5767315.66	606647.51
2087	37.79	194.66	1911.19	-1883.28	-608.94	-215.68	5767315.06	606647.35
2088	37.75	194.66	1911.98	-1884.07	-609.53	-215.84	5767314.47	606647.20
2089	37.71	194.67	1912.77	-1884.86	-610.13	-215.99	5767313.88	606647.04
2090	37.68	194.68	1913.56	-1885.65	-610.72	-216.15	5767313.28	606646.89
2091	37.64	194.69	1914.35	-1886.44	-611.31	-216.30	5767312.69	606646.73
2092	37.60	194.70	1915.14	-1887.23	-611.91	-216.46	5767312.10	606646.58
2093	37.57	194.71	1915.93	-1888.02	-612.50	-216.61	5767311.50	606646.42
2094	37.53	194.72	1916.72	-1888.81	-613.09	-216.77	5767310.91	606646.27
2095	37.49	194.73	1917.51	-1889.60	-613.69	-216.92	5767310.32	606646.11
2096	37.46	194.74	1918.30	-1890.39	-614.28	-217.08	5767309.72	606645.96
2097	37.42	194.75	1919.09	-1891.18	-614.87	-217.23	5767309.13	606645.80
2098	37.38	194.76	1919.88	-1891.97	-615.47	-217.39	5767308.54	606645.65
2099	37.34	194.77	1920.67	-1892.76	-616.06	-217.54	5767307.94	606645.49
2100	37.31	194.78	1921.46	-1893.55	-616.65	-217.70	5767307.35	606645.34
2101	37.33	194.82	1922.25	-1894.34	-617.25	-217.86	5767306.76	606645.17
2102	37.38	194.86	1923.04	-1895.13	-617.84	-218.02	5767306.16	606645.01
2103	37.42	194.90	1923.83	-1895.92	-618.43	-218.18	5767305.57	606644.85
2104	37.46	194.95	1924.62	-1896.71	-619.02	-218.35	5767304.98	606644.68
2105	37.51	194.99	1925.40	-1897.49	-619.61	-218.51	5767304.39	606644.52
2106	37.55	195.04	1926.19	-1898.28	-620.21	-218.68	5767303.79	606644.36
2107	37.59	195.08	1926.98	-1899.07	-620.80	-218.84	5767303.20	606644.19
2108	37.64	195.13	1927.77	-1899.86	-621.39	-219.00	5767302.61	606644.03
2109	37.68	195.17	1928.56	-1900.65	-621.98	-219.17	5767302.02	606643.87
2110	37.72	195.22	1929.35	-1901.44	-622.58	-219.33	5767301.43	606643.70
2111	37.77	195.26	1930.14	-1902.23	-623.17	-219.49	5767300.83	606643.54
2112	37.81	195.31	1930.93	-1903.02	-623.76	-219.66	5767300.24	606643.38
2113	37.85	195.35	1931.72	-1903.81	-624.35	-219.82	5767299.65	606643.21
2114	37.90	195.39	1932.50	-1904.59	-624.95	-219.98	5767299.06	606643.05
2115	37.94	195.44	1933.29	-1905.38	-625.54	-220.15	5767298.46	606642.88
2116	37.98	195.48	1934.08	-1906.17	-626.13	-220.31	5767297.87	606642.72
2117	38.02	195.53	1934.87	-1906.96	-626.72	-220.47	5767297.28	606642.56
2118	38.07	195.57	1935.66	-1907.75	-627.32	-220.64	5767296.69	606642.39
2119	38.11	195.62	1936.45	-1908.54	-627.91	-220.80	5767296.09	606642.23
2120	38.15	195.66	1937.24	-1909.33	-628.50	-220.96	5767295.50	606642.07
2121	38.20	195.71	1938.03	-1910.12	-629.09	-221.13	5767294.91	606641.90
2122	38.24	195.75	1938.82	-1910.91	-629.68	-221.29	5767294.32	606641.74
2123	38.28	195.80	1939.60	-1911.69	-630.28	-221.45	5767293.72	606641.58
2124	38.33	195.84	1940.39	-1912.48	-630.87	-221.62	5767293.13	606641.41
2125	38.37	195.88	1941.18	-1913.27	-631.46	-221.78	5767292.54	606641.25
2126	38.41	195.93	1941.97	-1914.06	-632.05	-221.95	5767291.95	606641.09
2127	38.46	195.97	1942.76	-1914.85	-632.65	-222.11	5767291.35	606640.92
2128	38.50	196.02	1943.55	-1915.64	-633.24	-222.27	5767290.76	606640.76
2129	38.54	196.06	1944.34	-1916.43	-633.83	-222.44	5767290.17	606640.60
2130	38.54	196.07	1945.12	-1917.21	-634.43	-222.61	5767289.57	606640.42
2131	38.53	196.08	1945.90	-1917.99	-635.03	-222.78	5767288.98	606640.25

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2132	38.53	196.09	1946.69	-1918.78	-635.62	-222.96	5767288.38	606640.07
2133	38.52	196.10	1947.47	-1919.56	-636.22	-223.13	5767287.78	606639.90
2134	38.52	196.11	1948.25	-1920.34	-636.82	-223.30	5767287.18	606639.73
2135	38.51	196.13	1949.04	-1921.13	-637.42	-223.48	5767286.59	606639.55
2136	38.51	196.14	1949.82	-1921.91	-638.01	-223.65	5767285.99	606639.38
2137	38.50	196.15	1950.60	-1922.69	-638.61	-223.83	5767285.39	606639.21
2138	38.50	196.16	1951.38	-1923.47	-639.21	-224.00	5767284.79	606639.03
2139	38.49	196.17	1952.17	-1924.26	-639.81	-224.17	5767284.20	606638.86
2140	38.49	196.18	1952.95	-1925.04	-640.40	-224.35	5767283.60	606638.68
2141	38.49	196.19	1953.73	-1925.82	-641.00	-224.52	5767283.00	606638.51
2142	38.48	196.20	1954.52	-1926.61	-641.60	-224.69	5767282.40	606638.34
2143	38.48	196.21	1955.30	-1927.39	-642.20	-224.87	5767281.81	606638.16
2144	38.47	196.22	1956.08	-1928.17	-642.79	-225.04	5767281.21	606637.99
2145	38.47	196.23	1956.86	-1928.95	-643.39	-225.22	5767280.61	606637.82
2146	38.46	196.24	1957.65	-1929.74	-643.99	-225.39	5767280.01	606637.64
2147	38.46	196.26	1958.43	-1930.52	-644.59	-225.56	5767279.42	606637.47
2148	38.45	196.27	1959.21	-1931.30	-645.18	-225.74	5767278.82	606637.29
2149	38.45	196.28	1960.00	-1932.09	-645.78	-225.91	5767278.22	606637.12
2150	38.44	196.29	1960.78	-1932.87	-646.38	-226.08	5767277.62	606636.95
2151	38.44	196.30	1961.56	-1933.65	-646.97	-226.26	5767277.03	606636.77
2152	38.44	196.31	1962.34	-1934.43	-647.57	-226.43	5767276.43	606636.60
2153	38.43	196.32	1963.13	-1935.22	-648.17	-226.61	5767275.83	606636.43
2154	38.43	196.33	1963.91	-1936.00	-648.77	-226.78	5767275.23	606636.25
2155	38.42	196.34	1964.69	-1936.78	-649.36	-226.95	5767274.64	606636.08
2156	38.42	196.35	1965.48	-1937.57	-649.96	-227.13	5767274.04	606635.90
2157	38.41	196.36	1966.26	-1938.35	-650.56	-227.30	5767273.44	606635.73
2158	38.39	196.37	1967.04	-1939.13	-651.15	-227.47	5767272.85	606635.56
2159	38.35	196.38	1967.83	-1939.92	-651.74	-227.65	5767272.26	606635.38
2160	38.31	196.39	1968.62	-1940.71	-652.33	-227.82	5767271.67	606635.21
2161	38.27	196.40	1969.41	-1941.50	-652.92	-228.00	5767271.09	606635.04
2162	38.22	196.40	1970.21	-1942.30	-653.50	-228.17	5767270.50	606634.86
2163	38.18	196.41	1971.00	-1943.09	-654.09	-228.34	5767269.91	606634.69
2164	38.14	196.42	1971.79	-1943.88	-654.68	-228.52	5767269.32	606634.51
2165	38.10	196.43	1972.58	-1944.67	-655.27	-228.69	5767268.73	606634.34
2166	38.06	196.43	1973.37	-1945.46	-655.85	-228.87	5767268.15	606634.17
2167	38.01	196.44	1974.16	-1946.25	-656.44	-229.04	5767267.56	606633.99
2168	37.97	196.45	1974.95	-1947.04	-657.03	-229.21	5767266.97	606633.82
2169	37.93	196.46	1975.74	-1947.83	-657.62	-229.39	5767266.38	606633.64
2170	37.89	196.46	1976.53	-1948.62	-658.21	-229.56	5767265.80	606633.47
2171	37.84	196.47	1977.32	-1949.41	-658.79	-229.73	5767265.21	606633.30
2172	37.80	196.48	1978.11	-1950.20	-659.38	-229.91	5767264.62	606633.12
2173	37.76	196.49	1978.90	-1950.99	-659.97	-230.08	5767264.03	606632.95
2174	37.72	196.49	1979.69	-1951.78	-660.56	-230.26	5767263.45	606632.78
2175	37.67	196.50	1980.48	-1952.57	-661.14	-230.43	5767262.86	606632.60
2176	37.63	196.51	1981.27	-1953.36	-661.73	-230.60	5767262.27	606632.43
2177	37.59	196.52	1982.06	-1954.15	-662.32	-230.78	5767261.68	606632.25
2178	37.55	196.52	1982.85	-1954.94	-662.91	-230.95	5767261.10	606632.08
2179	37.51	196.53	1983.64	-1955.73	-663.49	-231.13	5767260.51	606631.91
2180	37.46	196.54	1984.43	-1956.52	-664.08	-231.30	5767259.92	606631.73
2181	37.42	196.55	1985.22	-1957.31	-664.67	-231.47	5767259.33	606631.56
2182	37.38	196.55	1986.01	-1958.10	-665.26	-231.65	5767258.74	606631.38
2183	37.34	196.56	1986.80	-1958.89	-665.84	-231.82	5767258.16	606631.21
2184	37.29	196.57	1987.59	-1959.68	-666.43	-231.99	5767257.57	606631.04
2185	37.25	196.58	1988.38	-1960.47	-667.02	-232.17	5767256.98	606630.86
2186	37.21	196.58	1989.17	-1961.26	-667.61	-232.34	5767256.39	606630.69
2187	37.17	196.59	1989.96	-1962.05	-668.19	-232.52	5767255.81	606630.52
2188	37.12	196.61	1990.77	-1962.86	-668.76	-232.69	5767255.24	606630.34
2189	37.08	196.62	1991.57	-1963.66	-669.33	-232.86	5767254.67	606630.17
2190	37.04	196.64	1992.37	-1964.46	-669.90	-233.03	5767254.10	606630.00
2191	37.00	196.65	1993.18	-1965.27	-670.47	-233.20	5767253.53	606629.83
2192	36.96	196.66	1993.98	-1966.07	-671.04	-233.38	5767252.96	606629.66
2193	36.92	196.68	1994.78	-1966.87	-671.61	-233.55	5767252.39	606629.48
2194	36.87	196.69	1995.58	-1967.67	-672.18	-233.72	5767251.82	606629.31
2195	36.83	196.71	1996.39	-1968.48	-672.75	-233.89	5767251.25	606629.14
2196	36.79	196.72	1997.19	-1969.28	-673.33	-234.06	5767250.68	606628.97
2197	36.75	196.73	1997.99	-1970.08	-673.90	-234.24	5767250.11	606628.80

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2198	36.71	196.75	1998.80	-1970.89	-674.47	-234.41	5767249.54	606628.62
2199	36.66	196.76	1999.60	-1971.69	-675.04	-234.58	5767248.96	606628.45
2200	36.62	196.78	2000.40	-1972.49	-675.61	-234.75	5767248.39	606628.28
2201	36.58	196.79	2001.21	-1973.30	-676.18	-234.92	5767247.82	606628.11
2202	36.54	196.80	2002.01	-1974.10	-676.75	-235.10	5767247.25	606627.93
2203	36.50	196.82	2002.81	-1974.90	-677.32	-235.27	5767246.68	606627.76
2204	36.45	196.83	2003.62	-1975.71	-677.89	-235.44	5767246.11	606627.59
2205	36.41	196.85	2004.42	-1976.51	-678.46	-235.61	5767245.54	606627.42
2206	36.37	196.86	2005.22	-1977.31	-679.03	-235.79	5767244.97	606627.25
2207	36.33	196.87	2006.02	-1978.11	-679.60	-235.96	5767244.40	606627.07
2208	36.29	196.89	2006.83	-1978.92	-680.17	-236.13	5767243.83	606626.90
2209	36.24	196.90	2007.63	-1979.72	-680.74	-236.30	5767243.26	606626.73
2210	36.20	196.92	2008.43	-1980.52	-681.31	-236.47	5767242.69	606626.56
2211	36.16	196.93	2009.24	-1981.33	-681.88	-236.65	5767242.12	606626.39
2212	36.12	196.94	2010.04	-1982.13	-682.45	-236.82	5767241.55	606626.21
2213	36.08	196.96	2010.84	-1982.93	-683.02	-236.99	5767240.98	606626.04
2214	36.04	196.97	2011.65	-1983.74	-683.59	-237.16	5767240.41	606625.87
2215	35.99	196.99	2012.45	-1984.54	-684.17	-237.33	5767239.84	606625.70
2216	35.98	196.98	2013.26	-1985.35	-684.73	-237.50	5767239.27	606625.53
2217	35.98	196.96	2014.07	-1986.16	-685.29	-237.67	5767238.71	606625.36
2218	35.97	196.94	2014.87	-1986.96	-685.85	-237.84	5767238.15	606625.19
2219	35.97	196.92	2015.68	-1987.77	-686.42	-238.01	5767237.59	606625.02
2220	35.97	196.90	2016.49	-1988.58	-686.98	-238.18	5767237.02	606624.85
2221	35.96	196.88	2017.30	-1989.39	-687.54	-238.35	5767236.46	606624.68
2222	35.96	196.86	2018.11	-1990.20	-688.10	-238.52	5767235.90	606624.51
2223	35.96	196.84	2018.92	-1991.01	-688.67	-238.69	5767235.34	606624.35
2224	35.96	196.82	2019.73	-1991.82	-689.23	-238.85	5767234.77	606624.18
2225	35.95	196.80	2020.54	-1992.63	-689.79	-239.02	5767234.21	606624.01
2226	35.95	196.78	2021.35	-1993.44	-690.35	-239.19	5767233.65	606623.84
2227	35.95	196.76	2022.16	-1994.25	-690.91	-239.36	5767233.09	606623.67
2228	35.94	196.74	2022.97	-1995.06	-691.48	-239.53	5767232.53	606623.50
2229	35.94	196.72	2023.78	-1995.87	-692.04	-239.70	5767231.96	606623.33
2230	35.94	196.70	2024.59	-1996.68	-692.60	-239.87	5767231.40	606623.16
2231	35.94	196.68	2025.40	-1997.49	-693.16	-240.04	5767230.84	606623.00
2232	35.93	196.66	2026.21	-1998.30	-693.72	-240.20	5767230.28	606622.83
2233	35.93	196.64	2027.02	-1999.11	-694.29	-240.37	5767229.72	606622.66
2234	35.93	196.62	2027.83	-1999.92	-694.85	-240.54	5767229.15	606622.49
2235	35.93	196.61	2028.64	-2000.73	-695.41	-240.71	5767228.59	606622.32
2236	35.92	196.59	2029.45	-2001.54	-695.97	-240.88	5767228.03	606622.15
2237	35.92	196.57	2030.26	-2002.35	-696.53	-241.05	5767227.47	606621.98
2238	35.92	196.55	2031.07	-2003.16	-697.10	-241.22	5767226.90	606621.81
2239	35.91	196.53	2031.88	-2003.97	-697.66	-241.39	5767226.34	606621.65
2240	35.91	196.51	2032.69	-2004.78	-698.22	-241.55	5767225.78	606621.48
2241	35.91	196.49	2033.50	-2005.59	-698.78	-241.72	5767225.22	606621.31
2242	35.91	196.47	2034.31	-2006.40	-699.35	-241.89	5767224.66	606621.14
2243	35.90	196.45	2035.12	-2007.21	-699.91	-242.06	5767224.09	606620.97
2244	35.90	196.43	2035.93	-2008.02	-700.47	-242.23	5767223.53	606620.80
2245	35.87	196.42	2036.74	-2008.83	-701.03	-242.39	5767222.98	606620.64
2246	35.84	196.42	2037.55	-2009.64	-701.58	-242.56	5767222.42	606620.47
2247	35.81	196.41	2038.37	-2010.46	-702.14	-242.72	5767221.86	606620.31
2248	35.78	196.41	2039.18	-2011.27	-702.70	-242.88	5767221.30	606620.15
2249	35.75	196.40	2040.00	-2012.09	-703.25	-243.05	5767220.75	606619.98
2250	35.73	196.40	2040.81	-2012.90	-703.81	-243.21	5767220.19	606619.82
2251	35.70	196.39	2041.63	-2013.72	-704.37	-243.37	5767219.63	606619.66
2252	35.67	196.39	2042.44	-2014.53	-704.93	-243.54	5767219.08	606619.49
2253	35.64	196.38	2043.25	-2015.34	-705.48	-243.70	5767218.52	606619.33
2254	35.61	196.37	2044.07	-2016.16	-706.04	-243.86	5767217.96	606619.17
2255	35.58	196.37	2044.88	-2016.97	-706.60	-244.03	5767217.40	606619.00
2256	35.55	196.36	2045.70	-2017.79	-707.15	-244.19	5767216.85	606618.84
2257	35.52	196.36	2046.51	-2018.60	-707.71	-244.35	5767216.29	606618.68
2258	35.49	196.35	2047.33	-2019.42	-708.27	-244.52	5767215.73	606618.51
2259	35.46	196.35	2048.14	-2020.23	-708.82	-244.68	5767215.18	606618.35
2260	35.43	196.34	2048.95	-2021.04	-709.38	-244.84	5767214.62	606618.19
2261	35.41	196.33	2049.77	-2021.86	-709.94	-245.01	5767214.06	606618.02
2262	35.38	196.33	2050.58	-2022.67	-710.50	-245.17	5767213.51	606617.86
2263	35.35	196.32	2051.40	-2023.49	-711.05	-245.33	5767212.95	606617.70

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2264	35.32	196.32	2052.21	-2024.30	-711.61	-245.50	5767212.39	606617.53
2265	35.29	196.31	2053.02	-2025.11	-712.17	-245.66	5767211.83	606617.37
2266	35.26	196.31	2053.84	-2025.93	-712.72	-245.82	5767211.28	606617.21
2267	35.23	196.30	2054.65	-2026.74	-713.28	-245.99	5767210.72	606617.04
2268	35.20	196.30	2055.47	-2027.56	-713.84	-246.15	5767210.16	606616.88
2269	35.17	196.29	2056.28	-2028.37	-714.40	-246.31	5767209.61	606616.72
2270	35.14	196.28	2057.10	-2029.19	-714.95	-246.48	5767209.05	606616.55
2271	35.12	196.28	2057.91	-2030.00	-715.51	-246.64	5767208.49	606616.39
2272	35.09	196.27	2058.72	-2030.81	-716.07	-246.80	5767207.94	606616.23
2273	35.07	196.27	2059.54	-2031.63	-716.62	-246.97	5767207.38	606616.06
2274	35.07	196.26	2060.36	-2032.45	-717.17	-247.13	5767206.83	606615.90
2275	35.08	196.25	2061.18	-2033.27	-717.73	-247.29	5767206.28	606615.74
2276	35.08	196.24	2061.99	-2034.08	-718.28	-247.45	5767205.72	606615.58
2277	35.08	196.23	2062.81	-2034.90	-718.83	-247.61	5767205.17	606615.42
2278	35.09	196.22	2063.63	-2035.72	-719.38	-247.77	5767204.62	606615.27
2279	35.09	196.21	2064.45	-2036.54	-719.94	-247.93	5767204.07	606615.11
2280	35.09	196.20	2065.27	-2037.36	-720.49	-248.09	5767203.51	606614.95
2281	35.10	196.19	2066.08	-2038.17	-721.04	-248.25	5767202.96	606614.79
2282	35.10	196.18	2066.90	-2038.99	-721.59	-248.41	5767202.41	606614.63
2283	35.10	196.18	2067.72	-2039.81	-722.15	-248.57	5767201.85	606614.47
2284	35.11	196.17	2068.54	-2040.63	-722.70	-248.73	5767201.30	606614.31
2285	35.11	196.16	2069.36	-2041.45	-723.25	-248.89	5767200.75	606614.15
2286	35.11	196.15	2070.17	-2042.26	-723.80	-249.05	5767200.20	606613.99
2287	35.12	196.14	2070.99	-2043.08	-724.36	-249.21	5767199.64	606613.83
2288	35.12	196.13	2071.81	-2043.90	-724.91	-249.37	5767199.09	606613.67
2289	35.12	196.12	2072.63	-2044.72	-725.46	-249.53	5767198.54	606613.51
2290	35.12	196.11	2073.45	-2045.54	-726.01	-249.69	5767197.99	606613.35
2291	35.13	196.10	2074.26	-2046.35	-726.57	-249.85	5767197.43	606613.19
2292	35.13	196.09	2075.08	-2047.17	-727.12	-250.01	5767196.88	606613.03
2293	35.13	196.08	2075.90	-2047.99	-727.67	-250.17	5767196.33	606612.87
2294	35.14	196.07	2076.72	-2048.81	-728.22	-250.33	5767195.78	606612.71
2295	35.14	196.07	2077.54	-2049.63	-728.78	-250.49	5767195.22	606612.55
2296	35.14	196.06	2078.35	-2050.44	-729.33	-250.65	5767194.67	606612.39
2297	35.15	196.05	2079.17	-2051.26	-729.88	-250.80	5767194.12	606612.23
2298	35.15	196.04	2079.99	-2052.08	-730.43	-250.96	5767193.57	606612.07
2299	35.15	196.03	2080.81	-2052.90	-730.99	-251.12	5767193.01	606611.91
2300	35.16	196.02	2081.63	-2053.72	-731.54	-251.28	5767192.46	606611.75
2301	35.16	196.01	2082.44	-2054.53	-732.09	-251.44	5767191.91	606611.59
2302	35.16	196.02	2083.26	-2055.35	-732.65	-251.60	5767191.36	606611.43
2303	35.16	196.03	2084.08	-2056.17	-733.20	-251.76	5767190.80	606611.27
2304	35.16	196.03	2084.90	-2056.99	-733.75	-251.92	5767190.25	606611.11
2305	35.16	196.04	2085.72	-2057.81	-734.31	-252.08	5767189.70	606610.95
2306	35.16	196.05	2086.53	-2058.62	-734.86	-252.24	5767189.14	606610.79
2307	35.16	196.06	2087.35	-2059.44	-735.41	-252.40	5767188.59	606610.63
2308	35.16	196.07	2088.17	-2060.26	-735.96	-252.56	5767188.04	606610.47
2309	35.16	196.08	2088.99	-2061.08	-736.52	-252.72	5767187.48	606610.31
2310	35.16	196.08	2089.80	-2061.89	-737.07	-252.88	5767186.93	606610.15
2311	35.16	196.09	2090.62	-2062.71	-737.62	-253.04	5767186.38	606609.99
2312	35.16	196.10	2091.44	-2063.53	-738.18	-253.20	5767185.82	606609.83
2313	35.16	196.11	2092.26	-2064.35	-738.73	-253.36	5767185.27	606609.67
2314	35.16	196.12	2093.07	-2065.16	-739.28	-253.52	5767184.72	606609.51
2315	35.16	196.13	2093.89	-2065.98	-739.84	-253.68	5767184.16	606609.35
2316	35.16	196.14	2094.71	-2066.80	-740.39	-253.84	5767183.61	606609.19
2317	35.16	196.14	2095.53	-2067.62	-740.94	-254.00	5767183.06	606609.03
2318	35.16	196.15	2096.34	-2068.43	-741.50	-254.16	5767182.50	606608.87
2319	35.16	196.16	2097.16	-2069.25	-742.05	-254.32	5767181.95	606608.71
2320	35.16	196.17	2097.98	-2070.07	-742.60	-254.48	5767181.40	606608.55
2321	35.16	196.18	2098.80	-2070.89	-743.16	-254.64	5767180.85	606608.39
2322	35.16	196.19	2099.61	-2071.70	-743.71	-254.80	5767180.29	606608.23
2323	35.16	196.19	2100.43	-2072.52	-744.26	-254.96	5767179.74	606608.07
2324	35.16	196.20	2101.25	-2073.34	-744.82	-255.12	5767179.19	606607.91
2325	35.16	196.21	2102.07	-2074.16	-745.37	-255.28	5767178.63	606607.75
2326	35.16	196.22	2102.88	-2074.97	-745.92	-255.44	5767178.08	606607.59
2327	35.16	196.23	2103.70	-2075.79	-746.48	-255.60	5767177.53	606607.43
2328	35.16	196.24	2104.52	-2076.61	-747.03	-255.76	5767176.97	606607.27
2329	35.16	196.24	2105.34	-2077.43	-747.58	-255.92	5767176.42	606607.11

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2330	35.22	195.85	2106.15	-2078.24	-748.14	-256.08	5767175.87	606606.95
2331	35.19	195.84	2106.97	-2079.06	-748.69	-256.24	5767175.32	606606.79
2332	35.16	195.82	2107.80	-2079.89	-749.24	-256.39	5767174.77	606606.64
2333	35.13	195.81	2108.62	-2080.71	-749.79	-256.54	5767174.22	606606.49
2334	35.11	195.80	2109.44	-2081.53	-750.34	-256.70	5767173.67	606606.33
2335	35.08	195.79	2110.26	-2082.35	-750.88	-256.85	5767173.12	606606.18
2336	35.05	195.77	2111.08	-2083.17	-751.43	-257.01	5767172.57	606606.02
2337	35.02	195.76	2111.90	-2083.99	-751.98	-257.16	5767172.02	606605.87
2338	34.99	195.75	2112.72	-2084.81	-752.53	-257.32	5767171.47	606605.72
2339	34.97	195.73	2113.54	-2085.63	-753.08	-257.47	5767170.92	606605.56
2340	34.94	195.72	2114.36	-2086.45	-753.63	-257.62	5767170.37	606605.41
2341	34.91	195.71	2115.18	-2087.27	-754.18	-257.78	5767169.82	606605.25
2342	34.88	195.70	2116.00	-2088.09	-754.73	-257.93	5767169.27	606605.10
2343	34.85	195.68	2116.83	-2088.92	-755.28	-258.09	5767168.72	606604.94
2344	34.83	195.67	2117.65	-2089.74	-755.83	-258.24	5767168.17	606604.79
2345	34.80	195.66	2118.47	-2090.56	-756.38	-258.40	5767167.62	606604.64
2346	34.77	195.65	2119.29	-2091.38	-756.93	-258.55	5767167.07	606604.48
2347	34.74	195.63	2120.11	-2092.20	-757.48	-258.70	5767166.52	606604.33
2348	34.72	195.62	2120.93	-2093.02	-758.03	-258.86	5767165.97	606604.17
2349	34.69	195.61	2121.75	-2093.84	-758.58	-259.01	5767165.42	606604.02
2350	34.66	195.59	2122.57	-2094.66	-759.13	-259.17	5767164.87	606603.86
2351	34.63	195.58	2123.39	-2095.48	-759.68	-259.32	5767164.32	606603.71
2352	34.60	195.57	2124.21	-2096.30	-760.23	-259.48	5767163.77	606603.56
2353	34.58	195.56	2125.03	-2097.12	-760.78	-259.63	5767163.22	606603.40
2354	34.55	195.54	2125.86	-2097.95	-761.33	-259.78	5767162.67	606603.25
2355	34.52	195.53	2126.68	-2098.77	-761.88	-259.94	5767162.12	606603.09
2356	34.49	195.52	2127.50	-2099.59	-762.43	-260.09	5767161.57	606602.94
2357	34.46	195.51	2128.32	-2100.41	-762.98	-260.25	5767161.02	606602.78
2358	34.44	195.49	2129.14	-2101.23	-763.53	-260.40	5767160.47	606602.63
2359	34.43	195.45	2129.96	-2102.05	-764.08	-260.55	5767159.92	606602.48
2360	34.43	195.40	2130.79	-2102.88	-764.63	-260.69	5767159.38	606602.34
2361	34.43	195.35	2131.61	-2103.70	-765.17	-260.84	5767158.83	606602.20
2362	34.43	195.30	2132.44	-2104.53	-765.72	-260.98	5767158.28	606602.05
2363	34.44	195.25	2133.26	-2105.35	-766.27	-261.12	5767157.74	606601.91
2364	34.44	195.20	2134.09	-2106.18	-766.81	-261.27	5767157.19	606601.76
2365	34.44	195.15	2134.91	-2107.00	-767.36	-261.41	5767156.64	606601.62
2366	34.44	195.10	2135.74	-2107.83	-767.91	-261.56	5767156.10	606601.47
2367	34.44	195.05	2136.56	-2108.65	-768.45	-261.70	5767155.55	606601.33
2368	34.44	195.00	2137.38	-2109.47	-769.00	-261.85	5767155.00	606601.19
2369	34.44	194.95	2138.21	-2110.30	-769.55	-261.99	5767154.45	606601.04
2370	34.44	194.90	2139.03	-2111.12	-770.09	-262.13	5767153.91	606600.90
2371	34.44	194.85	2139.86	-2111.95	-770.64	-262.28	5767153.36	606600.75
2372	34.44	194.80	2140.68	-2112.77	-771.19	-262.42	5767152.81	606600.61
2373	34.45	194.75	2141.51	-2113.60	-771.73	-262.57	5767152.27	606600.46
2374	34.45	194.70	2142.33	-2114.42	-772.28	-262.71	5767151.72	606600.32
2375	34.45	194.65	2143.16	-2115.25	-772.83	-262.86	5767151.17	606600.18
2376	34.45	194.59	2143.98	-2116.07	-773.38	-263.00	5767150.63	606600.03
2377	34.45	194.54	2144.81	-2116.90	-773.92	-263.14	5767150.08	606599.89
2378	34.45	194.49	2145.63	-2117.72	-774.47	-263.29	5767149.53	606599.74
2379	34.45	194.44	2146.46	-2118.55	-775.02	-263.43	5767148.99	606599.60
2380	34.45	194.39	2147.28	-2119.37	-775.56	-263.58	5767148.44	606599.45
2381	34.45	194.34	2148.11	-2120.20	-776.11	-263.72	5767147.89	606599.31
2382	34.46	194.29	2148.93	-2121.02	-776.66	-263.87	5767147.35	606599.17
2383	34.46	194.24	2149.76	-2121.85	-777.20	-264.01	5767146.80	606599.02
2384	34.46	194.19	2150.58	-2122.67	-777.75	-264.15	5767146.25	606598.88
2385	34.46	194.14	2151.40	-2123.49	-778.30	-264.30	5767145.70	606598.73
2386	34.46	194.09	2152.23	-2124.32	-778.84	-264.44	5767145.16	606598.59
2387	34.43	194.07	2153.06	-2125.15	-779.39	-264.58	5767144.62	606598.45
2388	34.37	194.06	2153.89	-2125.98	-779.92	-264.72	5767144.08	606598.32
2389	34.32	194.05	2154.72	-2126.81	-780.46	-264.85	5767143.54	606598.18
2390	34.26	194.05	2155.56	-2127.65	-781.00	-264.98	5767143.00	606598.05
2391	34.20	194.04	2156.39	-2128.48	-781.53	-265.12	5767142.47	606597.91
2392	34.15	194.03	2157.22	-2129.31	-782.07	-265.25	5767141.93	606597.78
2393	34.09	194.03	2158.05	-2130.14	-782.61	-265.38	5767141.39	606597.65
2394	34.03	194.02	2158.89	-2130.98	-783.15	-265.52	5767140.86	606597.51
2395	33.98	194.02	2159.72	-2131.81	-783.68	-265.65	5767140.32	606597.38

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2396	33.92	194.01	2160.55	-2132.64	-784.22	-265.79	5767139.78	606597.25
2397	33.86	194.00	2161.39	-2133.48	-784.76	-265.92	5767139.24	606597.11
2398	33.81	194.00	2162.22	-2134.31	-785.30	-266.05	5767138.71	606596.98
2399	33.75	193.99	2163.05	-2135.14	-785.83	-266.19	5767138.17	606596.85
2400	33.70	193.98	2163.88	-2135.97	-786.37	-266.32	5767137.63	606596.71
2401	33.64	193.98	2164.72	-2136.81	-786.91	-266.45	5767137.09	606596.58
2402	33.58	193.97	2165.55	-2137.64	-787.44	-266.59	5767136.56	606596.44
2403	33.53	193.96	2166.38	-2138.47	-787.98	-266.72	5767136.02	606596.31
2404	33.47	193.96	2167.21	-2139.30	-788.52	-266.85	5767135.48	606596.18
2405	33.41	193.95	2168.05	-2140.14	-789.06	-266.99	5767134.95	606596.04
2406	33.36	193.95	2168.88	-2140.97	-789.59	-267.12	5767134.41	606595.91
2407	33.30	193.94	2169.71	-2141.80	-790.13	-267.26	5767133.87	606595.78
2408	33.24	193.93	2170.54	-2142.63	-790.67	-267.39	5767133.33	606595.64
2409	33.19	193.93	2171.38	-2143.47	-791.21	-267.52	5767132.80	606595.51
2410	33.13	193.92	2172.21	-2144.30	-791.74	-267.66	5767132.26	606595.37
2411	33.07	193.91	2173.04	-2145.13	-792.28	-267.79	5767131.72	606595.24
2412	33.02	193.91	2173.88	-2145.97	-792.82	-267.92	5767131.18	606595.11
2413	32.96	193.90	2174.71	-2146.80	-793.35	-268.06	5767130.65	606594.97
2414	32.91	193.89	2175.54	-2147.63	-793.89	-268.19	5767130.11	606594.84
2415	32.85	193.89	2176.37	-2148.46	-794.43	-268.33	5767129.57	606594.71
2416	32.79	193.88	2177.21	-2149.30	-794.97	-268.46	5767129.04	606594.57
2417	32.75	193.85	2178.05	-2150.14	-795.49	-268.59	5767128.51	606594.45
2418	32.71	193.82	2178.90	-2150.99	-796.01	-268.71	5767128.00	606594.32
2419	32.66	193.79	2179.74	-2151.83	-796.52	-268.83	5767127.48	606594.20
2420	32.62	193.76	2180.59	-2152.68	-797.04	-268.96	5767126.96	606594.08
2421	32.58	193.72	2181.44	-2153.53	-797.56	-269.08	5767126.44	606593.95
2422	32.54	193.69	2182.28	-2154.37	-798.08	-269.20	5767125.92	606593.83
2423	32.49	193.66	2183.13	-2155.22	-798.60	-269.33	5767125.41	606593.70
2424	32.45	193.63	2183.97	-2156.06	-799.11	-269.45	5767124.89	606593.58
2425	32.41	193.59	2184.82	-2156.91	-799.63	-269.57	5767124.37	606593.46
2426	32.37	193.56	2185.67	-2157.76	-800.15	-269.70	5767123.85	606593.33
2427	32.33	193.53	2186.51	-2158.60	-800.67	-269.82	5767123.33	606593.21
2428	32.28	193.49	2187.36	-2159.45	-801.19	-269.94	5767122.82	606593.09
2429	32.24	193.46	2188.21	-2160.30	-801.70	-270.07	5767122.30	606592.96
2430	32.20	193.43	2189.05	-2161.14	-802.22	-270.19	5767121.78	606592.84
2431	32.16	193.40	2189.90	-2161.99	-802.74	-270.32	5767121.26	606592.72
2432	32.11	193.36	2190.75	-2162.84	-803.26	-270.44	5767120.74	606592.59
2433	32.07	193.33	2191.59	-2163.68	-803.78	-270.56	5767120.23	606592.47
2434	32.03	193.30	2192.44	-2164.53	-804.29	-270.69	5767119.71	606592.35
2435	31.99	193.26	2193.28	-2165.37	-804.81	-270.81	5767119.19	606592.22
2436	31.95	193.23	2194.13	-2166.22	-805.33	-270.93	5767118.67	606592.10
2437	31.90	193.20	2194.98	-2167.07	-805.85	-271.06	5767118.15	606591.97
2438	31.86	193.17	2195.82	-2167.91	-806.37	-271.18	5767117.64	606591.85
2439	31.82	193.13	2196.67	-2168.76	-806.88	-271.30	5767117.12	606591.73
2440	31.78	193.10	2197.52	-2169.61	-807.40	-271.43	5767116.60	606591.60
2441	31.73	193.07	2198.36	-2170.45	-807.92	-271.55	5767116.08	606591.48
2442	31.69	193.04	2199.21	-2171.30	-808.44	-271.67	5767115.56	606591.36
2443	31.65	193.00	2200.06	-2172.15	-808.96	-271.80	5767115.05	606591.23
2444	31.61	192.97	2200.90	-2172.99	-809.47	-271.92	5767114.53	606591.11
2445	31.57	192.94	2201.75	-2173.84	-809.99	-272.05	5767114.01	606590.99
2446	31.53	192.91	2202.60	-2174.69	-810.50	-272.16	5767113.50	606590.87
2447	31.49	192.88	2203.45	-2175.54	-811.02	-272.28	5767112.98	606590.75
2448	31.45	192.85	2204.30	-2176.39	-811.53	-272.40	5767112.47	606590.63
2449	31.41	192.82	2205.15	-2177.24	-812.05	-272.52	5767111.96	606590.51
2450	31.37	192.79	2206.00	-2178.09	-812.56	-272.64	5767111.44	606590.39
2451	31.33	192.76	2206.85	-2178.94	-813.07	-272.76	5767110.93	606590.27
2452	31.29	192.73	2207.70	-2179.79	-813.59	-272.88	5767110.41	606590.16
2453	31.25	192.70	2208.55	-2180.64	-814.10	-273.00	5767109.90	606590.04
2454	31.21	192.67	2209.40	-2181.49	-814.62	-273.11	5767109.39	606589.92
2455	31.17	192.64	2210.24	-2182.33	-815.13	-273.23	5767108.87	606589.80
2456	31.13	192.61	2211.09	-2183.18	-815.64	-273.35	5767108.36	606589.68
2457	31.09	192.58	2211.94	-2184.03	-816.16	-273.47	5767107.84	606589.56
2458	31.05	192.55	2212.79	-2184.88	-816.67	-273.59	5767107.33	606589.44
2459	31.01	192.52	2213.64	-2185.73	-817.19	-273.71	5767106.82	606589.32
2460	30.97	192.49	2214.49	-2186.58	-817.70	-273.83	5767106.30	606589.21
2461	30.93	192.46	2215.34	-2187.43	-818.21	-273.94	5767105.79	606589.09

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2462	31.89	193.02	2216.19	-2188.28	-818.73	-274.06	5767105.27	606588.97
2463	31.91	193.03	2217.04	-2189.13	-819.24	-274.18	5767104.76	606588.85
2464	31.93	193.03	2217.89	-2189.98	-819.76	-274.30	5767104.25	606588.73
2465	31.95	193.04	2218.74	-2190.83	-820.27	-274.42	5767103.73	606588.61
2466	31.97	193.04	2219.59	-2191.68	-820.78	-274.54	5767103.22	606588.49
2467	31.98	193.05	2220.44	-2192.53	-821.30	-274.66	5767102.70	606588.37
2468	32.00	193.05	2221.29	-2193.38	-821.81	-274.78	5767102.19	606588.26
2469	32.02	193.06	2222.14	-2194.23	-822.33	-274.89	5767101.68	606588.14
2470	32.04	193.06	2222.99	-2195.08	-822.84	-275.01	5767101.16	606588.02
2471	32.06	193.07	2223.84	-2195.93	-823.35	-275.13	5767100.65	606587.90
2472	32.08	193.07	2224.69	-2196.78	-823.87	-275.25	5767100.13	606587.78
2473	32.10	193.08	2225.54	-2197.63	-824.38	-275.37	5767099.62	606587.66
2474	32.15	193.14	2226.38	-2198.47	-824.91	-275.50	5767099.10	606587.53
2475	32.21	193.22	2227.22	-2199.31	-825.43	-275.63	5767098.57	606587.40
2476	32.28	193.29	2228.06	-2200.15	-825.96	-275.77	5767098.04	606587.26
2477	32.34	193.37	2228.89	-2200.98	-826.49	-275.90	5767097.51	606587.13
2478	32.41	193.45	2229.73	-2201.82	-827.02	-276.03	5767096.98	606587.00
2479	32.47	193.52	2230.57	-2202.66	-827.55	-276.17	5767096.45	606586.86
2480	32.54	193.60	2231.41	-2203.50	-828.08	-276.30	5767095.93	606586.73
2481	32.60	193.67	2232.25	-2204.34	-828.60	-276.44	5767095.40	606586.60
2482	32.66	193.75	2233.09	-2205.18	-829.13	-276.57	5767094.87	606586.46
2483	32.73	193.83	2233.92	-2206.01	-829.66	-276.70	5767094.34	606586.33
2484	32.79	193.90	2234.76	-2206.85	-830.19	-276.84	5767093.81	606586.19
2485	32.86	193.98	2235.60	-2207.69	-830.72	-276.97	5767093.29	606586.06
2486	32.92	194.06	2236.44	-2208.53	-831.24	-277.10	5767092.76	606585.93
2487	32.98	194.13	2237.28	-2209.37	-831.77	-277.24	5767092.23	606585.79
2488	33.05	194.21	2238.12	-2210.21	-832.30	-277.37	5767091.70	606585.66
2489	33.11	194.28	2238.96	-2211.05	-832.83	-277.51	5767091.17	606585.53
2490	33.18	194.36	2239.79	-2211.88	-833.36	-277.64	5767090.64	606585.39
2491	33.24	194.44	2240.63	-2212.72	-833.89	-277.77	5767090.12	606585.26
2492	33.30	194.51	2241.47	-2213.56	-834.41	-277.91	5767089.59	606585.12
2493	33.37	194.59	2242.31	-2214.40	-834.94	-278.04	5767089.06	606584.99
2494	33.43	194.67	2243.15	-2215.24	-835.47	-278.17	5767088.53	606584.86
2495	33.50	194.74	2243.99	-2216.08	-836.00	-278.31	5767088.00	606584.72
2496	33.56	194.82	2244.82	-2216.91	-836.53	-278.44	5767087.48	606584.59
2497	33.62	194.89	2245.66	-2217.75	-837.05	-278.58	5767086.95	606584.46
2498	33.69	194.97	2246.50	-2218.59	-837.58	-278.71	5767086.42	606584.32
2499	33.75	195.05	2247.34	-2219.43	-838.11	-278.84	5767085.89	606584.19
2500	33.82	195.12	2248.18	-2220.27	-838.64	-278.98	5767085.36	606584.06
2501	33.88	195.20	2249.02	-2221.11	-839.17	-279.11	5767084.83	606583.92
2502	33.94	195.27	2249.85	-2221.94	-839.70	-279.24	5767084.31	606583.79
2503	33.92	195.29	2250.69	-2222.78	-840.23	-279.39	5767083.77	606583.64
2504	33.90	195.31	2251.52	-2223.61	-840.76	-279.54	5767083.24	606583.49
2505	33.88	195.33	2252.35	-2224.44	-841.30	-279.69	5767082.70	606583.34
2506	33.86	195.34	2253.18	-2225.27	-841.83	-279.84	5767082.17	606583.19
2507	33.83	195.36	2254.02	-2226.11	-842.36	-279.99	5767081.64	606583.05
2508	33.81	195.38	2254.85	-2226.94	-842.90	-280.13	5767081.10	606582.90
2509	33.79	195.40	2255.68	-2227.77	-843.43	-280.28	5767080.57	606582.75
2510	33.77	195.41	2256.51	-2228.60	-843.97	-280.43	5767080.04	606582.60
2511	33.75	195.43	2257.35	-2229.44	-844.50	-280.58	5767079.50	606582.45
2512	33.73	195.45	2258.18	-2230.27	-845.03	-280.73	5767078.97	606582.30
2513	33.71	195.47	2259.01	-2231.10	-845.57	-280.88	5767078.43	606582.16
2514	33.69	195.49	2259.84	-2231.93	-846.10	-281.02	5767077.90	606582.01
2515	33.67	195.50	2260.68	-2232.77	-846.64	-281.17	5767077.37	606581.86
2516	33.65	195.52	2261.51	-2233.60	-847.17	-281.32	5767076.83	606581.71
2517	33.63	195.54	2262.34	-2234.43	-847.70	-281.47	5767076.30	606581.56
2518	33.61	195.56	2263.17	-2235.26	-848.24	-281.62	5767075.76	606581.41
2519	33.59	195.58	2264.01	-2236.10	-848.77	-281.77	5767075.23	606581.27
2520	33.56	195.59	2264.84	-2236.93	-849.30	-281.91	5767074.70	606581.12
2521	33.54	195.61	2265.67	-2237.76	-849.84	-282.06	5767074.16	606580.97
2522	33.52	195.63	2266.50	-2238.59	-850.37	-282.21	5767073.63	606580.82
2523	33.50	195.65	2267.34	-2239.43	-850.91	-282.36	5767073.10	606580.67
2524	33.48	195.67	2268.17	-2240.26	-851.44	-282.51	5767072.56	606580.53
2525	33.46	195.68	2269.00	-2241.09	-851.97	-282.65	5767072.03	606580.38
2526	33.44	195.70	2269.83	-2241.92	-852.51	-282.80	5767071.49	606580.23
2527	33.42	195.72	2270.67	-2242.76	-853.04	-282.95	5767070.96	606580.08

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2528	33.40	195.74	2271.50	-2243.59	-853.58	-283.10	5767070.43	606579.93
2529	33.38	195.76	2272.33	-2244.42	-854.11	-283.25	5767069.89	606579.78
2530	33.36	195.77	2273.16	-2245.25	-854.64	-283.40	5767069.36	606579.64
2531	33.37	195.75	2273.99	-2246.08	-855.18	-283.54	5767068.82	606579.49
2532	33.41	195.71	2274.82	-2246.91	-855.72	-283.69	5767068.28	606579.34
2533	33.45	195.67	2275.66	-2247.75	-856.26	-283.83	5767067.75	606579.20
2534	33.49	195.63	2276.49	-2248.58	-856.79	-283.98	5767067.21	606579.05
2535	33.52	195.58	2277.32	-2249.41	-857.33	-284.13	5767066.67	606578.91
2536	33.56	195.54	2278.15	-2250.24	-857.87	-284.27	5767066.13	606578.76
2537	33.60	195.50	2278.98	-2251.07	-858.41	-284.42	5767065.59	606578.61
2538	33.64	195.46	2279.81	-2251.90	-858.95	-284.56	5767065.06	606578.47
2539	33.67	195.42	2280.64	-2252.73	-859.48	-284.71	5767064.52	606578.32
2540	33.71	195.37	2281.47	-2253.56	-860.02	-284.86	5767063.98	606578.18
2541	33.75	195.33	2282.30	-2254.39	-860.56	-285.00	5767063.44	606578.03
2542	33.79	195.29	2283.13	-2255.22	-861.10	-285.15	5767062.90	606577.88
2543	33.82	195.25	2283.96	-2256.05	-861.64	-285.29	5767062.36	606577.74
2544	33.86	195.21	2284.79	-2256.88	-862.18	-285.44	5767061.83	606577.59
2545	33.90	195.16	2285.62	-2257.71	-862.71	-285.58	5767061.29	606577.45
2546	33.94	195.12	2286.45	-2258.54	-863.25	-285.73	5767060.75	606577.30
2547	33.97	195.08	2287.28	-2259.37	-863.79	-285.88	5767060.21	606577.15
2548	34.01	195.04	2288.11	-2260.20	-864.33	-286.02	5767059.67	606577.01
2549	34.05	195.00	2288.94	-2261.03	-864.87	-286.17	5767059.14	606576.86
2550	34.09	194.95	2289.77	-2261.86	-865.40	-286.31	5767058.60	606576.72
2551	34.12	194.91	2290.60	-2262.69	-865.94	-286.46	5767058.06	606576.57
2552	34.16	194.87	2291.43	-2263.52	-866.48	-286.61	5767057.52	606576.43
2553	34.20	194.83	2292.26	-2264.35	-867.02	-286.75	5767056.98	606576.28
2554	34.24	194.79	2293.09	-2265.18	-867.56	-286.90	5767056.45	606576.13
2555	34.27	194.75	2293.92	-2266.01	-868.09	-287.04	5767055.91	606575.99
2556	34.31	194.70	2294.75	-2266.84	-868.63	-287.19	5767055.37	606575.84
2557	34.35	194.66	2295.58	-2267.67	-869.17	-287.34	5767054.83	606575.70
2558	34.39	194.62	2296.41	-2268.50	-869.71	-287.48	5767054.29	606575.55
2559	34.42	194.58	2297.24	-2269.33	-870.25	-287.63	5767053.75	606575.40
2560	34.49	194.54	2298.05	-2270.14	-870.81	-287.77	5767053.20	606575.26
2561	34.57	194.50	2298.87	-2270.96	-871.37	-287.91	5767052.63	606575.12
2562	34.64	194.46	2299.68	-2271.77	-871.93	-288.05	5767052.07	606574.98
2563	34.72	194.42	2300.50	-2272.59	-872.50	-288.19	5767051.50	606574.84
2564	34.79	194.38	2301.31	-2273.40	-873.06	-288.33	5767050.94	606574.70
2565	34.87	194.33	2302.12	-2274.21	-873.62	-288.47	5767050.38	606574.56
2566	34.94	194.29	2302.94	-2275.03	-874.19	-288.61	5767049.81	606574.42
2567	35.02	194.25	2303.75	-2275.84	-874.75	-288.75	5767049.25	606574.28
2568	35.09	194.21	2304.57	-2276.66	-875.32	-288.89	5767048.69	606574.14
2569	35.17	194.17	2305.38	-2277.47	-875.88	-289.03	5767048.12	606574.00
2570	35.24	194.13	2306.19	-2278.28	-876.44	-289.17	5767047.56	606573.86
2571	35.32	194.09	2307.01	-2279.10	-877.01	-289.31	5767047.00	606573.72
2572	35.39	194.05	2307.82	-2279.91	-877.57	-289.45	5767046.43	606573.58
2573	35.47	194.01	2308.64	-2280.73	-878.13	-289.59	5767045.87	606573.44
2574	35.54	193.97	2309.45	-2281.54	-878.70	-289.73	5767045.30	606573.30
2575	35.62	193.93	2310.26	-2282.35	-879.26	-289.87	5767044.74	606573.16
2576	35.69	193.89	2311.08	-2283.17	-879.82	-290.01	5767044.18	606573.02
2577	35.77	193.85	2311.89	-2283.98	-880.39	-290.15	5767043.61	606572.88
2578	35.84	193.81	2312.71	-2284.80	-880.95	-290.29	5767043.05	606572.74
2579	35.92	193.77	2313.52	-2285.61	-881.51	-290.43	5767042.49	606572.60
2580	35.99	193.73	2314.33	-2286.42	-882.08	-290.57	5767041.92	606572.46
2581	36.07	193.69	2315.15	-2287.24	-882.64	-290.71	5767041.36	606572.32
2582	36.14	193.65	2315.96	-2288.05	-883.21	-290.85	5767040.80	606572.18
2583	36.22	193.61	2316.78	-2288.87	-883.77	-290.99	5767040.23	606572.04
2584	36.29	193.57	2317.59	-2289.68	-884.33	-291.13	5767039.67	606571.90
2585	36.37	193.53	2318.40	-2290.49	-884.90	-291.28	5767039.11	606571.76
2586	36.44	193.49	2319.22	-2291.31	-885.46	-291.42	5767038.54	606571.62
2587	36.52	193.45	2320.03	-2292.12	-886.02	-291.56	5767037.98	606571.48
2588	36.59	193.41	2320.84	-2292.93	-886.59	-291.70	5767037.41	606571.34
2589	36.62	193.42	2321.64	-2293.73	-887.17	-291.84	5767036.83	606571.19
2590	36.65	193.43	2322.44	-2294.53	-887.76	-291.98	5767036.24	606571.05
2591	36.68	193.44	2323.24	-2295.33	-888.34	-292.12	5767035.66	606570.91
2592	36.71	193.45	2324.04	-2296.13	-888.93	-292.26	5767035.07	606570.77
2593	36.74	193.46	2324.84	-2296.93	-889.52	-292.40	5767034.49	606570.63

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2594	36.77	193.47	2325.64	-2297.73	-890.10	-292.54	5767033.90	606570.49
2595	36.80	193.48	2326.43	-2298.52	-890.69	-292.68	5767033.32	606570.35
2596	36.83	193.49	2327.23	-2299.32	-891.27	-292.82	5767032.73	606570.21
2597	36.86	193.50	2328.03	-2300.12	-891.86	-292.97	5767032.15	606570.07
2598	36.89	193.51	2328.83	-2300.92	-892.44	-293.11	5767031.56	606569.92
2599	36.92	193.52	2329.63	-2301.72	-893.03	-293.25	5767030.97	606569.78
2600	36.95	193.53	2330.43	-2302.52	-893.61	-293.39	5767030.39	606569.64
2601	36.98	193.54	2331.22	-2303.31	-894.20	-293.53	5767029.80	606569.50
2602	37.01	193.55	2332.02	-2304.11	-894.78	-293.67	5767029.22	606569.36
2603	37.04	193.56	2332.82	-2304.91	-895.37	-293.81	5767028.63	606569.22
2604	37.07	193.57	2333.62	-2305.71	-895.95	-293.95	5767028.05	606569.08
2605	37.10	193.58	2334.42	-2306.51	-896.54	-294.09	5767027.46	606568.94
2606	37.13	193.59	2335.22	-2307.31	-897.12	-294.24	5767026.88	606568.80
2607	37.16	193.60	2336.01	-2308.10	-897.71	-294.38	5767026.29	606568.65
2608	37.19	193.61	2336.81	-2308.90	-898.29	-294.52	5767025.71	606568.51
2609	37.22	193.62	2337.61	-2309.70	-898.88	-294.66	5767025.12	606568.37
2610	37.25	193.63	2338.41	-2310.50	-899.47	-294.80	5767024.54	606568.23
2611	37.28	193.64	2339.21	-2311.30	-900.05	-294.94	5767023.95	606568.09
2612	37.32	193.65	2340.01	-2312.10	-900.64	-295.08	5767023.37	606567.95
2613	37.35	193.66	2340.81	-2312.90	-901.22	-295.22	5767022.78	606567.81
2614	37.38	193.67	2341.60	-2313.69	-901.81	-295.37	5767022.20	606567.67
2615	37.41	193.68	2342.40	-2314.49	-902.39	-295.51	5767021.61	606567.53
2616	37.44	193.70	2343.20	-2315.29	-902.98	-295.65	5767021.02	606567.38
2617	37.43	193.70	2344.00	-2316.09	-903.56	-295.79	5767020.44	606567.24
2618	37.39	193.70	2344.80	-2316.89	-904.14	-295.93	5767019.86	606567.10
2619	37.35	193.70	2345.60	-2317.69	-904.73	-296.07	5767019.27	606566.96
2620	37.31	193.70	2346.40	-2318.49	-905.31	-296.22	5767018.69	606566.82
2621	37.27	193.70	2347.20	-2319.29	-905.89	-296.36	5767018.11	606566.67
2622	37.23	193.71	2348.00	-2320.09	-906.48	-296.50	5767017.53	606566.53
2623	37.19	193.71	2348.80	-2320.89	-907.06	-296.64	5767016.94	606566.39
2624	37.15	193.71	2349.60	-2321.69	-907.64	-296.78	5767016.36	606566.25
2625	37.11	193.71	2350.40	-2322.49	-908.22	-296.93	5767015.78	606566.10
2626	37.07	193.71	2351.20	-2323.29	-908.81	-297.07	5767015.19	606565.96
2627	37.02	193.71	2352.00	-2324.09	-909.39	-297.21	5767014.61	606565.82
2628	36.98	193.71	2352.80	-2324.89	-909.97	-297.35	5767014.03	606565.68
2629	36.94	193.71	2353.60	-2325.69	-910.56	-297.50	5767013.45	606565.54
2630	36.90	193.71	2354.40	-2326.49	-911.14	-297.64	5767012.86	606565.39
2631	36.86	193.72	2355.20	-2327.29	-911.72	-297.78	5767012.28	606565.25
2632	36.82	193.72	2356.00	-2328.09	-912.31	-297.92	5767011.70	606565.11
2633	36.78	193.72	2356.80	-2328.89	-912.89	-298.07	5767011.11	606564.97
2634	36.74	193.72	2357.60	-2329.69	-913.47	-298.21	5767010.53	606564.82
2635	36.70	193.72	2358.40	-2330.49	-914.05	-298.35	5767009.95	606564.68
2636	36.66	193.72	2359.20	-2331.29	-914.64	-298.49	5767009.36	606564.54
2637	36.62	193.72	2360.00	-2332.09	-915.22	-298.63	5767008.78	606564.40
2638	36.58	193.72	2360.80	-2332.89	-915.80	-298.78	5767008.20	606564.25
2639	36.54	193.72	2361.60	-2333.69	-916.39	-298.92	5767007.62	606564.11
2640	36.50	193.72	2362.40	-2334.49	-916.97	-299.06	5767007.03	606563.97
2641	36.46	193.73	2363.20	-2335.29	-917.55	-299.20	5767006.45	606563.83
2642	36.42	193.73	2364.00	-2336.09	-918.14	-299.35	5767005.87	606563.69
2643	36.38	193.73	2364.80	-2336.89	-918.72	-299.49	5767005.28	606563.54
2644	36.34	193.73	2365.60	-2337.69	-919.30	-299.63	5767004.70	606563.40
2645	36.30	193.73	2366.40	-2338.49	-919.88	-299.77	5767004.12	606563.26
2646	36.28	193.74	2367.21	-2339.30	-920.45	-299.91	5767003.55	606563.12
2647	36.25	193.74	2368.02	-2340.11	-921.02	-300.05	5767002.98	606562.98
2648	36.23	193.75	2368.83	-2340.92	-921.59	-300.19	5767002.41	606562.84
2649	36.21	193.76	2369.64	-2341.73	-922.16	-300.33	5767001.84	606562.70
2650	36.18	193.76	2370.45	-2342.54	-922.73	-300.47	5767001.27	606562.56
2651	36.16	193.77	2371.26	-2343.35	-923.30	-300.61	5767000.70	606562.42
2652	36.14	193.78	2372.06	-2344.15	-923.87	-300.76	5767000.13	606562.28
2653	36.11	193.78	2372.87	-2344.96	-924.44	-300.90	5766999.56	606562.14
2654	36.09	193.79	2373.68	-2345.77	-925.02	-301.04	5766998.99	606562.00
2655	36.07	193.80	2374.49	-2346.58	-925.59	-301.18	5766998.42	606561.86
2656	36.04	193.81	2375.30	-2347.39	-926.16	-301.32	5766997.85	606561.71
2657	36.02	193.81	2376.11	-2348.20	-926.73	-301.46	5766997.28	606561.57
2658	36.00	193.82	2376.92	-2349.01	-927.30	-301.60	5766996.71	606561.43
2659	35.97	193.83	2377.73	-2349.82	-927.87	-301.74	5766996.14	606561.29

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2660	35.95	193.83	2378.54	-2350.63	-928.44	-301.88	5766995.57	606561.15
2661	35.93	193.84	2379.35	-2351.44	-929.01	-302.02	5766995.00	606561.01
2662	35.90	193.85	2380.16	-2352.25	-929.58	-302.16	5766994.42	606560.87
2663	35.88	193.85	2380.97	-2353.06	-930.15	-302.30	5766993.85	606560.73
2664	35.86	193.86	2381.78	-2353.87	-930.72	-302.44	5766993.28	606560.59
2665	35.83	193.87	2382.59	-2354.68	-931.29	-302.58	5766992.71	606560.45
2666	35.81	193.87	2383.40	-2355.49	-931.86	-302.72	5766992.14	606560.31
2667	35.79	193.88	2384.21	-2356.30	-932.43	-302.86	5766991.57	606560.17
2668	35.77	193.89	2385.02	-2357.11	-933.00	-303.00	5766991.00	606560.03
2669	35.74	193.89	2385.83	-2357.92	-933.57	-303.14	5766990.43	606559.89
2670	35.72	193.90	2386.63	-2358.72	-934.14	-303.28	5766989.86	606559.75
2671	35.70	193.91	2387.44	-2359.53	-934.71	-303.42	5766989.29	606559.61
2672	35.67	193.91	2388.25	-2360.34	-935.28	-303.56	5766988.72	606559.47
2673	35.65	193.92	2389.06	-2361.15	-935.85	-303.70	5766988.15	606559.33
2674	35.63	193.93	2389.87	-2361.96	-936.42	-303.84	5766987.58	606559.19
2675	35.60	193.92	2390.69	-2362.78	-936.98	-303.98	5766987.02	606559.05
2676	35.58	193.90	2391.50	-2363.59	-937.54	-304.12	5766986.46	606558.91
2677	35.56	193.88	2392.32	-2364.41	-938.11	-304.25	5766985.90	606558.78
2678	35.53	193.86	2393.14	-2365.23	-938.67	-304.39	5766985.34	606558.64
2679	35.51	193.84	2393.95	-2366.04	-939.23	-304.53	5766984.77	606558.50
2680	35.48	193.82	2394.77	-2366.86	-939.79	-304.66	5766984.21	606558.37
2681	35.46	193.80	2395.58	-2367.67	-940.35	-304.80	5766983.65	606558.23
2682	35.44	193.79	2396.40	-2368.49	-940.91	-304.94	5766983.09	606558.10
2683	35.41	193.77	2397.22	-2369.31	-941.47	-305.07	5766982.53	606557.96
2684	35.39	193.75	2398.03	-2370.12	-942.03	-305.21	5766981.97	606557.82
2685	35.37	193.73	2398.85	-2370.94	-942.60	-305.35	5766981.41	606557.69
2686	35.34	193.71	2399.67	-2371.76	-943.16	-305.48	5766980.84	606557.55
2687	35.32	193.69	2400.48	-2372.57	-943.72	-305.62	5766980.28	606557.41
2688	35.30	193.67	2401.30	-2373.39	-944.28	-305.75	5766979.72	606557.28
2689	35.27	193.65	2402.11	-2374.20	-944.84	-305.89	5766979.16	606557.14
2690	35.25	193.64	2402.93	-2375.02	-945.40	-306.03	5766978.60	606557.00
2691	35.22	193.62	2403.75	-2375.84	-945.96	-306.16	5766978.04	606556.87
2692	35.20	193.60	2404.56	-2376.65	-946.52	-306.30	5766977.48	606556.73
2693	35.18	193.58	2405.38	-2377.47	-947.09	-306.44	5766976.92	606556.59
2694	35.15	193.56	2406.20	-2378.29	-947.65	-306.57	5766976.35	606556.46
2695	35.13	193.54	2407.01	-2379.10	-948.21	-306.71	5766975.79	606556.32
2696	35.11	193.52	2407.83	-2379.92	-948.77	-306.85	5766975.23	606556.18
2697	35.08	193.51	2408.65	-2380.74	-949.33	-306.98	5766974.67	606556.05
2698	35.06	193.49	2409.46	-2381.55	-949.89	-307.12	5766974.11	606555.91
2699	35.04	193.47	2410.28	-2382.37	-950.45	-307.26	5766973.55	606555.78
2700	35.01	193.45	2411.09	-2383.18	-951.01	-307.39	5766972.99	606555.64
2701	34.99	193.43	2411.91	-2384.00	-951.58	-307.53	5766972.43	606555.50
2702	34.96	193.41	2412.73	-2384.82	-952.14	-307.67	5766971.86	606555.37
2703	34.93	193.40	2413.55	-2385.64	-952.69	-307.80	5766971.31	606555.23
2704	34.86	193.39	2414.38	-2386.47	-953.24	-307.93	5766970.77	606555.10
2705	34.79	193.39	2415.21	-2387.30	-953.78	-308.06	5766970.22	606554.97
2706	34.73	193.39	2416.03	-2388.12	-954.32	-308.19	5766969.68	606554.85
2707	34.66	193.38	2416.86	-2388.95	-954.87	-308.32	5766969.13	606554.72
2708	34.59	193.38	2417.69	-2389.78	-955.41	-308.44	5766968.59	606554.59
2709	34.53	193.37	2418.52	-2390.61	-955.96	-308.57	5766968.04	606554.46
2710	34.46	193.37	2419.35	-2391.44	-956.50	-308.70	5766967.50	606554.33
2711	34.40	193.36	2420.18	-2392.27	-957.05	-308.83	5766966.96	606554.20
2712	34.33	193.36	2421.01	-2393.10	-957.59	-308.96	5766966.41	606554.07
2713	34.26	193.36	2421.84	-2393.93	-958.13	-309.09	5766965.87	606553.94
2714	34.20	193.35	2422.67	-2394.76	-958.68	-309.22	5766965.32	606553.81
2715	34.13	193.35	2423.50	-2395.59	-959.22	-309.35	5766964.78	606553.68
2716	34.07	193.34	2424.32	-2396.41	-959.77	-309.48	5766964.24	606553.55
2717	34.00	193.34	2425.15	-2397.24	-960.31	-309.61	5766963.69	606553.43
2718	33.93	193.34	2425.98	-2398.07	-960.85	-309.73	5766963.15	606553.30
2719	33.87	193.33	2426.81	-2398.90	-961.40	-309.86	5766962.60	606553.17
2720	33.80	193.33	2427.64	-2399.73	-961.94	-309.99	5766962.06	606553.04
2721	33.73	193.32	2428.47	-2400.56	-962.49	-310.12	5766961.51	606552.91
2722	33.67	193.32	2429.30	-2401.39	-963.03	-310.25	5766960.97	606552.78
2723	33.60	193.31	2430.13	-2402.22	-963.58	-310.38	5766960.43	606552.65
2724	33.54	193.31	2430.96	-2403.05	-964.12	-310.51	5766959.88	606552.52
2725	33.47	193.31	2431.78	-2403.87	-964.66	-310.64	5766959.34	606552.39

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2726	33.40	193.30	2432.61	-2404.70	-965.21	-310.77	5766958.79	606552.26
2727	33.34	193.30	2433.44	-2405.53	-965.75	-310.90	5766958.25	606552.13
2728	33.27	193.29	2434.27	-2406.36	-966.30	-311.03	5766957.71	606552.01
2729	33.21	193.29	2435.10	-2407.19	-966.84	-311.15	5766957.16	606551.88
2730	33.14	193.29	2435.93	-2408.02	-967.38	-311.28	5766956.62	606551.75
2731	33.07	193.28	2436.76	-2408.85	-967.93	-311.41	5766956.07	606551.62
2732	33.01	193.27	2437.60	-2409.69	-968.45	-311.54	5766955.55	606551.50
2733	32.96	193.26	2438.45	-2410.54	-968.97	-311.66	5766955.03	606551.38
2734	32.90	193.24	2439.29	-2411.38	-969.49	-311.78	5766954.51	606551.25
2735	32.84	193.23	2440.14	-2412.23	-970.01	-311.90	5766953.99	606551.13
2736	32.78	193.22	2440.98	-2413.07	-970.53	-312.02	5766953.47	606551.01
2737	32.73	193.20	2441.83	-2413.92	-971.05	-312.14	5766952.95	606550.89
2738	32.67	193.19	2442.68	-2414.77	-971.57	-312.26	5766952.43	606550.77
2739	32.61	193.18	2443.52	-2415.61	-972.09	-312.38	5766951.91	606550.65
2740	32.55	193.17	2444.37	-2416.46	-972.61	-312.50	5766951.39	606550.53
2741	32.49	193.15	2445.21	-2417.30	-973.13	-312.62	5766950.87	606550.41
2742	32.44	193.14	2446.06	-2418.15	-973.65	-312.74	5766950.35	606550.29
2743	32.38	193.13	2446.90	-2418.99	-974.17	-312.87	5766949.83	606550.17
2744	32.32	193.11	2447.75	-2419.84	-974.69	-312.99	5766949.31	606550.05
2745	32.26	193.10	2448.60	-2420.69	-975.21	-313.11	5766948.79	606549.92
2746	32.21	193.09	2449.44	-2421.53	-975.73	-313.23	5766948.28	606549.80
2747	32.15	193.07	2450.29	-2422.38	-976.25	-313.35	5766947.76	606549.68
2748	32.09	193.06	2451.13	-2423.22	-976.77	-313.47	5766947.24	606549.56
2749	32.03	193.05	2451.98	-2424.07	-977.29	-313.59	5766946.72	606549.44
2750	31.98	193.04	2452.82	-2424.91	-977.80	-313.71	5766946.20	606549.32
2751	31.92	193.02	2453.67	-2425.76	-978.32	-313.83	5766945.68	606549.20
2752	31.86	193.01	2454.52	-2426.61	-978.84	-313.95	5766945.16	606549.08
2753	31.80	193.00	2455.36	-2427.45	-979.36	-314.07	5766944.64	606548.96
2754	31.75	192.98	2456.21	-2428.30	-979.88	-314.19	5766944.12	606548.84
2755	31.69	192.97	2457.05	-2429.14	-980.40	-314.32	5766943.60	606548.72
2756	31.63	192.96	2457.90	-2429.99	-980.92	-314.44	5766943.08	606548.59
2757	31.57	192.94	2458.75	-2430.84	-981.44	-314.56	5766942.56	606548.47
2758	31.51	192.93	2459.59	-2431.68	-981.96	-314.68	5766942.04	606548.35
2759	31.46	192.92	2460.44	-2432.53	-982.48	-314.80	5766941.52	606548.23
2760	31.39	192.91	2461.29	-2433.38	-982.99	-314.92	5766941.01	606548.11
2761	31.31	192.89	2462.15	-2434.24	-983.48	-315.03	5766940.52	606548.00
2762	31.22	192.88	2463.02	-2435.11	-983.97	-315.14	5766940.03	606547.89
2763	31.14	192.87	2463.88	-2435.97	-984.46	-315.25	5766939.54	606547.78
2764	31.06	192.85	2464.75	-2436.84	-984.95	-315.36	5766939.05	606547.67
2765	30.97	192.84	2465.61	-2437.70	-985.44	-315.47	5766938.56	606547.56
2766	30.89	192.83	2466.47	-2438.56	-985.93	-315.58	5766938.07	606547.45
2767	30.81	192.81	2467.34	-2439.43	-986.42	-315.69	5766937.58	606547.34
2768	30.72	192.80	2468.20	-2440.29	-986.91	-315.80	5766937.09	606547.23
2769	30.64	192.79	2469.07	-2441.16	-987.41	-315.91	5766936.60	606547.12
2770	30.56	192.78	2469.93	-2442.02	-987.90	-316.02	5766936.11	606547.01
2771	30.47	192.76	2470.80	-2442.89	-988.39	-316.14	5766935.61	606546.90
2772	30.39	192.75	2471.66	-2443.75	-988.88	-316.25	5766935.12	606546.79
2773	30.30	192.74	2472.52	-2444.61	-989.37	-316.36	5766934.63	606546.67
2774	30.22	192.72	2473.39	-2445.48	-989.86	-316.47	5766934.14	606546.56
2775	30.14	192.71	2474.25	-2446.34	-990.35	-316.58	5766933.65	606546.45
2776	30.05	192.70	2475.12	-2447.21	-990.84	-316.69	5766933.16	606546.34
2777	29.97	192.68	2475.98	-2448.07	-991.33	-316.80	5766932.67	606546.23
2778	29.89	192.67	2476.84	-2448.93	-991.82	-316.91	5766932.18	606546.12
2779	29.80	192.66	2477.71	-2449.80	-992.31	-317.02	5766931.69	606546.01
2780	29.72	192.65	2478.57	-2450.66	-992.80	-317.13	5766931.20	606545.90
2781	29.64	192.63	2479.44	-2451.53	-993.29	-317.24	5766930.71	606545.79
2782	29.55	192.62	2480.30	-2452.39	-993.78	-317.35	5766930.22	606545.68
2783	29.47	192.61	2481.17	-2453.26	-994.27	-317.46	5766929.73	606545.57
2784	29.39	192.59	2482.03	-2454.12	-994.77	-317.58	5766929.24	606545.46
2785	29.30	192.58	2482.89	-2454.98	-995.26	-317.69	5766928.75	606545.34
2786	29.22	192.57	2483.76	-2455.85	-995.75	-317.80	5766928.26	606545.23
2787	29.14	192.55	2484.62	-2456.71	-996.24	-317.91	5766927.76	606545.12
2788	29.05	192.54	2485.49	-2457.58	-996.73	-318.02	5766927.27	606545.01
2789	28.97	192.53	2486.35	-2458.44	-997.21	-318.13	5766926.79	606544.90
2790	28.88	192.55	2487.24	-2459.33	-997.67	-318.23	5766926.33	606544.80
2791	28.79	192.56	2488.12	-2460.21	-998.12	-318.33	5766925.88	606544.70

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2792	28.70	192.58	2489.01	-2461.10	-998.57	-318.44	5766925.43	606544.60
2793	28.61	192.59	2489.90	-2461.99	-999.03	-318.54	5766924.97	606544.49
2794	28.52	192.61	2490.78	-2462.87	-999.48	-318.64	5766924.52	606544.39
2795	28.43	192.63	2491.67	-2463.76	-999.93	-318.74	5766924.07	606544.29
2796	28.35	192.64	2492.55	-2464.64	-1000.39	-318.85	5766923.61	606544.18
2797	28.26	192.66	2493.44	-2465.53	-1000.84	-318.95	5766923.16	606544.08
2798	28.17	192.67	2494.32	-2466.41	-1001.29	-319.05	5766922.71	606543.98
2799	28.08	192.69	2495.21	-2467.30	-1001.75	-319.15	5766922.25	606543.88
2800	27.99	192.70	2496.09	-2468.18	-1002.20	-319.26	5766921.80	606543.77
2801	27.90	192.72	2496.98	-2469.07	-1002.65	-319.36	5766921.35	606543.67
2802	27.81	192.74	2497.86	-2469.95	-1003.11	-319.46	5766920.89	606543.57
2803	27.72	192.75	2498.75	-2470.84	-1003.56	-319.56	5766920.44	606543.47
2804	27.63	192.77	2499.63	-2471.72	-1004.01	-319.67	5766919.99	606543.36
2805	27.55	192.78	2500.52	-2472.61	-1004.47	-319.77	5766919.53	606543.26
2806	27.46	192.80	2501.40	-2473.49	-1004.92	-319.87	5766919.08	606543.16
2807	27.37	192.81	2502.29	-2474.38	-1005.38	-319.97	5766918.63	606543.06
2808	27.28	192.83	2503.17	-2475.26	-1005.83	-320.08	5766918.17	606542.95
2809	27.19	192.85	2504.06	-2476.15	-1006.28	-320.18	5766917.72	606542.85
2810	27.10	192.86	2504.94	-2477.03	-1006.74	-320.28	5766917.27	606542.75
2811	27.01	192.88	2505.83	-2477.92	-1007.19	-320.39	5766916.81	606542.65
2812	26.92	192.89	2506.72	-2478.81	-1007.64	-320.49	5766916.36	606542.54
2813	26.83	192.91	2507.60	-2479.69	-1008.10	-320.59	5766915.91	606542.44
2814	26.74	192.92	2508.49	-2480.58	-1008.55	-320.69	5766915.45	606542.34
2815	26.66	192.94	2509.37	-2481.46	-1009.00	-320.80	5766915.00	606542.24
2816	26.57	192.96	2510.26	-2482.35	-1009.46	-320.90	5766914.55	606542.13
2817	26.48	192.97	2511.14	-2483.23	-1009.91	-321.00	5766914.09	606542.03
2818	26.38	192.97	2512.04	-2484.13	-1010.34	-321.10	5766913.66	606541.93
2819	26.28	192.95	2512.94	-2485.03	-1010.76	-321.19	5766913.25	606541.84
2820	26.18	192.93	2513.85	-2485.94	-1011.17	-321.28	5766912.83	606541.75
2821	26.08	192.91	2514.76	-2486.85	-1011.58	-321.38	5766912.42	606541.65
2822	25.98	192.89	2515.66	-2487.75	-1011.99	-321.47	5766912.01	606541.56
2823	25.88	192.87	2516.57	-2488.66	-1012.40	-321.56	5766911.60	606541.47
2824	25.78	192.85	2517.47	-2489.56	-1012.82	-321.66	5766911.19	606541.38
2825	25.67	192.83	2518.38	-2490.47	-1013.23	-321.75	5766910.77	606541.28
2826	25.57	192.81	2519.29	-2491.38	-1013.64	-321.84	5766910.36	606541.19
2827	25.47	192.79	2520.19	-2492.28	-1014.05	-321.94	5766909.95	606541.10
2828	25.37	192.77	2521.10	-2493.19	-1014.47	-322.03	5766909.54	606541.00
2829	25.27	192.75	2522.01	-2494.10	-1014.88	-322.12	5766909.12	606540.91
2830	25.17	192.72	2522.91	-2495.00	-1015.29	-322.21	5766908.71	606540.82
2831	25.07	192.70	2523.82	-2495.91	-1015.70	-322.31	5766908.30	606540.72
2832	24.96	192.68	2524.72	-2496.81	-1016.11	-322.40	5766907.89	606540.63
2833	24.86	192.66	2525.63	-2497.72	-1016.53	-322.49	5766907.48	606540.54
2834	24.76	192.64	2526.54	-2498.63	-1016.94	-322.59	5766907.06	606540.45
2835	24.66	192.62	2527.44	-2499.53	-1017.35	-322.68	5766906.65	606540.35
2836	24.56	192.60	2528.35	-2500.44	-1017.76	-322.77	5766906.24	606540.26
2837	24.46	192.58	2529.26	-2501.35	-1018.17	-322.86	5766905.83	606540.17
2838	24.36	192.56	2530.16	-2502.25	-1018.59	-322.96	5766905.41	606540.07
2839	24.25	192.54	2531.07	-2503.16	-1019.00	-323.05	5766905.00	606539.98
2840	24.15	192.52	2531.97	-2504.06	-1019.41	-323.14	5766904.59	606539.89
2841	24.05	192.50	2532.88	-2504.97	-1019.82	-323.24	5766904.18	606539.80
2842	23.95	192.48	2533.79	-2505.88	-1020.24	-323.33	5766903.77	606539.70
2843	23.85	192.46	2534.69	-2506.78	-1020.65	-323.42	5766903.35	606539.61
2844	23.75	192.44	2535.60	-2507.69	-1021.06	-323.52	5766902.94	606539.52
2845	23.65	192.42	2536.51	-2508.60	-1021.47	-323.61	5766902.53	606539.42
2846	23.55	192.40	2537.41	-2509.50	-1021.88	-323.70	5766902.12	606539.33
2847	23.48	192.38	2538.34	-2510.43	-1022.25	-323.78	5766901.75	606539.25
2848	23.40	192.37	2539.26	-2511.35	-1022.63	-323.86	5766901.37	606539.17
2849	23.33	192.35	2540.19	-2512.28	-1023.00	-323.94	5766901.00	606539.09
2850	23.26	192.34	2541.11	-2513.20	-1023.38	-324.02	5766900.63	606539.01
2851	23.19	192.32	2542.03	-2514.12	-1023.75	-324.10	5766900.25	606538.93
2852	23.12	192.31	2542.96	-2515.05	-1024.12	-324.18	5766899.88	606538.85
2853	23.04	192.29	2543.88	-2515.97	-1024.50	-324.27	5766899.50	606538.77
2854	22.97	192.28	2544.80	-2516.89	-1024.87	-324.35	5766899.13	606538.69
2855	22.90	192.26	2545.73	-2517.82	-1025.25	-324.43	5766898.75	606538.60
2856	22.83	192.25	2546.65	-2518.74	-1025.62	-324.51	5766898.38	606538.52
2857	22.76	192.23	2547.58	-2519.67	-1026.00	-324.59	5766898.01	606538.44

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2858	22.68	192.21	2548.50	-2520.59	-1026.37	-324.67	5766897.63	606538.36
2859	22.61	192.20	2549.42	-2521.51	-1026.75	-324.75	5766897.26	606538.28
2860	22.54	192.18	2550.35	-2522.44	-1027.12	-324.83	5766896.88	606538.20
2861	22.47	192.17	2551.27	-2523.36	-1027.49	-324.91	5766896.51	606538.12
2862	22.40	192.15	2552.19	-2524.28	-1027.87	-324.99	5766896.13	606538.04
2863	22.32	192.14	2553.12	-2525.21	-1028.24	-325.07	5766895.76	606537.96
2864	22.25	192.12	2554.04	-2526.13	-1028.62	-325.15	5766895.38	606537.88
2865	22.18	192.11	2554.96	-2527.05	-1028.99	-325.24	5766895.01	606537.80
2866	22.11	192.09	2555.89	-2527.98	-1029.37	-325.32	5766894.64	606537.72
2867	22.03	192.08	2556.81	-2528.90	-1029.74	-325.40	5766894.26	606537.63
2868	21.96	192.06	2557.74	-2529.83	-1030.11	-325.48	5766893.89	606537.55
2869	21.89	192.05	2558.66	-2530.75	-1030.49	-325.56	5766893.51	606537.47
2870	21.82	192.03	2559.58	-2531.67	-1030.86	-325.64	5766893.14	606537.39
2871	21.75	192.02	2560.51	-2532.60	-1031.24	-325.72	5766892.76	606537.31
2872	21.67	192.00	2561.43	-2533.52	-1031.61	-325.80	5766892.39	606537.23
2873	21.60	191.99	2562.35	-2534.44	-1031.99	-325.88	5766892.02	606537.15
2874	21.53	191.97	2563.28	-2535.37	-1032.36	-325.96	5766891.64	606537.07
2875	21.46	191.95	2564.21	-2536.30	-1032.73	-326.04	5766891.28	606536.99
2876	21.39	191.90	2565.14	-2537.23	-1033.07	-326.11	5766890.93	606536.92
2877	21.32	191.85	2566.08	-2538.17	-1033.41	-326.18	5766890.59	606536.85
2878	21.26	191.81	2567.02	-2539.11	-1033.76	-326.25	5766890.25	606536.78
2879	21.19	191.76	2567.95	-2540.04	-1034.10	-326.32	5766889.90	606536.72
2880	21.12	191.72	2568.89	-2540.98	-1034.44	-326.38	5766889.56	606536.65
2881	21.05	191.67	2569.82	-2541.91	-1034.79	-326.45	5766889.22	606536.58
2882	20.98	191.62	2570.76	-2542.85	-1035.13	-326.52	5766888.87	606536.51
2883	20.92	191.58	2571.70	-2543.79	-1035.47	-326.59	5766888.53	606536.44
2884	20.85	191.53	2572.63	-2544.72	-1035.82	-326.66	5766888.19	606536.37
2885	20.78	191.49	2573.57	-2545.66	-1036.16	-326.73	5766887.84	606536.30
2886	20.71	191.44	2574.51	-2546.60	-1036.50	-326.80	5766887.50	606536.23
2887	20.64	191.40	2575.44	-2547.53	-1036.85	-326.87	5766887.15	606536.16
2888	20.58	191.35	2576.38	-2548.47	-1037.19	-326.94	5766886.81	606536.10
2889	20.51	191.30	2577.32	-2549.41	-1037.53	-327.00	5766886.47	606536.03
2890	20.44	191.26	2578.25	-2550.34	-1037.88	-327.07	5766886.12	606535.96
2891	20.37	191.21	2579.19	-2551.28	-1038.22	-327.14	5766885.78	606535.89
2892	20.30	191.17	2580.13	-2552.22	-1038.56	-327.21	5766885.44	606535.82
2893	20.24	191.12	2581.06	-2553.15	-1038.91	-327.28	5766885.09	606535.75
2894	20.17	191.07	2582.00	-2554.09	-1039.25	-327.35	5766884.75	606535.68
2895	20.10	191.03	2582.94	-2555.03	-1039.60	-327.42	5766884.41	606535.61
2896	20.03	190.98	2583.87	-2555.96	-1039.94	-327.49	5766884.06	606535.55
2897	19.96	190.94	2584.81	-2556.90	-1040.28	-327.56	5766883.72	606535.48
2898	19.90	190.89	2585.75	-2557.84	-1040.63	-327.62	5766883.38	606535.41
2899	19.83	190.84	2586.68	-2558.77	-1040.97	-327.69	5766883.03	606535.34
2900	19.76	190.80	2587.62	-2559.71	-1041.31	-327.76	5766882.69	606535.27
2901	19.69	190.75	2588.56	-2560.65	-1041.66	-327.83	5766882.35	606535.20
2902	19.62	190.71	2589.49	-2561.58	-1042.00	-327.90	5766882.00	606535.13
2903	19.56	190.66	2590.43	-2562.52	-1042.34	-327.97	5766881.66	606535.06
2904	19.52	190.67	2591.37	-2563.46	-1042.67	-328.03	5766881.33	606535.00
2905	19.49	190.69	2592.32	-2564.41	-1042.99	-328.09	5766881.01	606534.94
2906	19.46	190.71	2593.26	-2565.35	-1043.31	-328.16	5766880.69	606534.87
2907	19.43	190.73	2594.21	-2566.30	-1043.63	-328.22	5766880.37	606534.81
2908	19.40	190.75	2595.15	-2567.24	-1043.96	-328.28	5766880.05	606534.75
2909	19.37	190.78	2596.10	-2568.19	-1044.28	-328.34	5766879.72	606534.69
2910	19.34	190.80	2597.04	-2569.13	-1044.60	-328.41	5766879.40	606534.63
2911	19.31	190.82	2597.99	-2570.08	-1044.92	-328.47	5766879.08	606534.56
2912	19.28	190.84	2598.93	-2571.02	-1045.24	-328.53	5766878.76	606534.50
2913	19.25	190.87	2599.88	-2571.97	-1045.56	-328.59	5766878.44	606534.44
2914	19.22	190.89	2600.82	-2572.91	-1045.88	-328.66	5766878.12	606534.38
2915	19.20	190.91	2601.77	-2573.86	-1046.21	-328.72	5766877.80	606534.31
2916	19.17	190.93	2602.71	-2574.80	-1046.53	-328.78	5766877.47	606534.25
2917	19.14	190.95	2603.66	-2575.75	-1046.85	-328.84	5766877.15	606534.19
2918	19.11	190.98	2604.60	-2576.69	-1047.17	-328.90	5766876.83	606534.13
2919	19.08	191.00	2605.55	-2577.64	-1047.49	-328.97	5766876.51	606534.06
2920	19.05	191.02	2606.49	-2578.58	-1047.81	-329.03	5766876.19	606534.00
2921	19.02	191.04	2607.44	-2579.53	-1048.13	-329.09	5766875.87	606533.94
2922	18.99	191.06	2608.38	-2580.47	-1048.46	-329.15	5766875.55	606533.88
2923	18.96	191.09	2609.32	-2581.41	-1048.78	-329.22	5766875.22	606533.82

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2924	18.93	191.11	2610.27	-2582.36	-1049.10	-329.28	5766874.90	606533.75
2925	18.90	191.13	2611.21	-2583.30	-1049.42	-329.34	5766874.58	606533.69
2926	18.87	191.15	2612.16	-2584.25	-1049.74	-329.40	5766874.26	606533.63
2927	18.84	191.17	2613.10	-2585.19	-1050.06	-329.46	5766873.94	606533.57
2928	18.81	191.20	2614.05	-2586.14	-1050.39	-329.53	5766873.62	606533.50
2929	18.79	191.22	2614.99	-2587.08	-1050.71	-329.59	5766873.30	606533.44
2930	18.76	191.24	2615.94	-2588.03	-1051.03	-329.65	5766872.97	606533.38
2931	18.73	191.26	2616.88	-2588.97	-1051.35	-329.71	5766872.65	606533.32
2932	18.70	191.28	2617.83	-2589.92	-1051.67	-329.78	5766872.33	606533.26
2933	18.66	191.32	2618.78	-2590.87	-1051.98	-329.84	5766872.02	606533.19
2934	18.62	191.36	2619.73	-2591.82	-1052.28	-329.90	5766871.72	606533.13
2935	18.58	191.40	2620.68	-2592.77	-1052.59	-329.97	5766871.41	606533.06
2936	18.54	191.44	2621.63	-2593.72	-1052.89	-330.03	5766871.11	606533.00
2937	18.50	191.48	2622.58	-2594.67	-1053.20	-330.09	5766870.80	606532.94
2938	18.46	191.52	2623.53	-2595.62	-1053.50	-330.16	5766870.50	606532.87
2939	18.42	191.56	2624.48	-2596.57	-1053.81	-330.22	5766870.20	606532.81
2940	18.39	191.60	2625.43	-2597.52	-1054.11	-330.29	5766869.89	606532.74
2941	18.35	191.64	2626.38	-2598.47	-1054.42	-330.35	5766869.59	606532.68
2942	18.31	191.68	2627.33	-2599.42	-1054.72	-330.41	5766869.28	606532.62
2943	18.27	191.72	2628.28	-2600.37	-1055.02	-330.48	5766868.98	606532.55
2944	18.23	191.76	2629.23	-2601.32	-1055.33	-330.54	5766868.67	606532.49
2945	18.19	191.80	2630.18	-2602.27	-1055.63	-330.61	5766868.37	606532.43
2946	18.15	191.84	2631.13	-2603.22	-1055.94	-330.67	5766868.06	606532.36
2947	18.11	191.88	2632.08	-2604.17	-1056.24	-330.73	5766867.76	606532.30
2948	18.07	191.92	2633.03	-2605.12	-1056.55	-330.80	5766867.46	606532.23
2949	18.03	191.96	2633.98	-2606.07	-1056.85	-330.86	5766867.15	606532.17
2950	17.99	192.00	2634.93	-2607.02	-1057.16	-330.92	5766866.85	606532.11
2951	17.95	192.04	2635.88	-2607.97	-1057.46	-330.99	5766866.54	606532.04
2952	17.91	192.08	2636.83	-2608.92	-1057.76	-331.05	5766866.24	606531.98
2953	17.87	192.12	2637.78	-2609.87	-1058.07	-331.12	5766865.93	606531.91
2954	17.83	192.16	2638.73	-2610.82	-1058.37	-331.18	5766865.63	606531.85
2955	17.80	192.20	2639.69	-2611.78	-1058.68	-331.24	5766865.32	606531.79
2956	17.76	192.24	2640.64	-2612.73	-1058.98	-331.31	5766865.02	606531.72
2957	17.72	192.28	2641.59	-2613.68	-1059.29	-331.37	5766864.72	606531.66
2958	17.68	192.32	2642.54	-2614.63	-1059.59	-331.44	5766864.41	606531.60
2959	17.64	192.36	2643.49	-2615.58	-1059.90	-331.50	5766864.11	606531.53
2960	17.60	192.40	2644.44	-2616.53	-1060.20	-331.56	5766863.80	606531.47
2961	17.56	192.44	2645.39	-2617.48	-1060.50	-331.63	5766863.50	606531.40
2962	17.52	192.44	2646.34	-2618.43	-1060.79	-331.69	5766863.21	606531.34
2963	17.48	192.44	2647.30	-2619.39	-1061.08	-331.75	5766862.93	606531.28
2964	17.45	192.44	2648.26	-2620.35	-1061.36	-331.82	5766862.64	606531.22
2965	17.41	192.44	2649.21	-2621.30	-1061.65	-331.88	5766862.36	606531.15
2966	17.37	192.44	2650.17	-2622.26	-1061.93	-331.94	5766862.07	606531.09
2967	17.33	192.44	2651.13	-2623.22	-1062.22	-332.01	5766861.78	606531.03
2968	17.29	192.44	2652.08	-2624.17	-1062.50	-332.07	5766861.50	606530.96
2969	17.25	192.44	2653.04	-2625.13	-1062.79	-332.13	5766861.21	606530.90
2970	17.22	192.44	2653.99	-2626.08	-1063.07	-332.19	5766860.93	606530.84
2971	17.18	192.44	2654.95	-2627.04	-1063.36	-332.26	5766860.64	606530.77
2972	17.14	192.44	2655.91	-2628.00	-1063.65	-332.32	5766860.36	606530.71
2973	17.10	192.44	2656.86	-2628.95	-1063.93	-332.38	5766860.07	606530.65
2974	17.06	192.44	2657.82	-2629.91	-1064.22	-332.45	5766859.79	606530.58
2975	17.03	192.44	2658.78	-2630.87	-1064.50	-332.51	5766859.50	606530.52
2976	16.99	192.44	2659.73	-2631.82	-1064.79	-332.57	5766859.21	606530.46
2977	16.95	192.44	2660.69	-2632.78	-1065.07	-332.64	5766858.93	606530.40
2978	16.91	192.44	2661.64	-2633.73	-1065.36	-332.70	5766858.64	606530.33
2979	16.87	192.44	2662.60	-2634.69	-1065.64	-332.76	5766858.36	606530.27
2980	16.83	192.44	2663.56	-2635.65	-1065.93	-332.82	5766858.07	606530.21
2981	16.80	192.44	2664.51	-2636.60	-1066.22	-332.89	5766857.79	606530.14
2982	16.76	192.44	2665.47	-2637.56	-1066.50	-332.95	5766857.50	606530.08
2983	16.72	192.44	2666.43	-2638.52	-1066.79	-333.01	5766857.22	606530.02
2984	16.68	192.44	2667.38	-2639.47	-1067.07	-333.08	5766856.93	606529.95
2985	16.64	192.44	2668.34	-2640.43	-1067.36	-333.14	5766856.64	606529.89
2986	16.61	192.44	2669.29	-2641.38	-1067.64	-333.20	5766856.36	606529.83
2987	16.57	192.44	2670.25	-2642.34	-1067.93	-333.27	5766856.07	606529.77
2988	16.53	192.44	2671.21	-2643.30	-1068.21	-333.33	5766855.79	606529.70
2989	16.49	192.44	2672.16	-2644.25	-1068.50	-333.39	5766855.50	606529.64

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2990	16.45	192.44	2673.12	-2645.21	-1068.79	-333.45	5766855.22	606529.58
2991	16.41	192.48	2674.08	-2646.17	-1069.05	-333.52	5766854.95	606529.52
2992	16.36	192.52	2675.04	-2647.13	-1069.32	-333.58	5766854.69	606529.45
2993	16.31	192.56	2676.01	-2648.10	-1069.58	-333.64	5766854.42	606529.39
2994	16.26	192.60	2676.97	-2649.06	-1069.85	-333.70	5766854.16	606529.33
2995	16.21	192.64	2677.93	-2650.02	-1070.11	-333.76	5766853.89	606529.27
2996	16.17	192.69	2678.89	-2650.98	-1070.38	-333.82	5766853.63	606529.21
2997	16.12	192.73	2679.86	-2651.95	-1070.64	-333.88	5766853.36	606529.15
2998	16.07	192.77	2680.82	-2652.91	-1070.90	-333.94	5766853.10	606529.09
2999	16.02	192.81	2681.78	-2653.87	-1071.17	-334.00	5766852.83	606529.03
3000	15.98	192.85	2682.74	-2654.83	-1071.43	-334.07	5766852.57	606528.97
3001	15.93	192.89	2683.71	-2655.80	-1071.70	-334.13	5766852.30	606528.90
3002	15.88	192.93	2684.67	-2656.76	-1071.96	-334.19	5766852.04	606528.84
3003	15.83	192.98	2685.63	-2657.72	-1072.23	-334.25	5766851.77	606528.78
3004	15.79	193.02	2686.59	-2658.68	-1072.49	-334.31	5766851.51	606528.72
3005	15.74	193.06	2687.55	-2659.64	-1072.76	-334.37	5766851.24	606528.66
3006	15.69	193.10	2688.52	-2660.61	-1073.02	-334.43	5766850.98	606528.60
3007	15.64	193.14	2689.48	-2661.57	-1073.29	-334.49	5766850.71	606528.54
3008	15.60	193.18	2690.44	-2662.53	-1073.55	-334.56	5766850.45	606528.48
3009	15.55	193.22	2691.40	-2663.49	-1073.82	-334.62	5766850.19	606528.42
3010	15.50	193.26	2692.37	-2664.46	-1074.08	-334.68	5766849.92	606528.35
3011	15.45	193.31	2693.33	-2665.42	-1074.35	-334.74	5766849.66	606528.29
3012	15.41	193.35	2694.29	-2666.38	-1074.61	-334.80	5766849.39	606528.23
3013	15.36	193.39	2695.25	-2667.34	-1074.88	-334.86	5766849.13	606528.17
3014	15.31	193.43	2696.22	-2668.31	-1075.14	-334.92	5766848.86	606528.11
3015	15.26	193.47	2697.18	-2669.27	-1075.40	-334.98	5766848.60	606528.05
3016	15.22	193.51	2698.14	-2670.23	-1075.67	-335.04	5766848.33	606527.99
3017	15.17	193.55	2699.10	-2671.19	-1075.93	-335.11	5766848.07	606527.93
3018	15.12	193.60	2700.07	-2672.16	-1076.20	-335.17	5766847.80	606527.86
3019	15.07	193.63	2701.03	-2673.12	-1076.46	-335.23	5766847.54	606527.80
3020	15.04	193.61	2702.00	-2674.09	-1076.71	-335.29	5766847.29	606527.74
3021	15.00	193.59	2702.96	-2675.05	-1076.96	-335.35	5766847.04	606527.68
3022	14.97	193.57	2703.93	-2676.02	-1077.21	-335.41	5766846.79	606527.62
3023	14.93	193.56	2704.89	-2676.98	-1077.46	-335.47	5766846.54	606527.56
3024	14.89	193.54	2705.86	-2677.95	-1077.71	-335.53	5766846.29	606527.50
3025	14.86	193.52	2706.83	-2678.92	-1077.96	-335.59	5766846.04	606527.44
3026	14.82	193.50	2707.79	-2679.88	-1078.21	-335.65	5766845.79	606527.38
3027	14.78	193.49	2708.76	-2680.85	-1078.46	-335.71	5766845.54	606527.32
3028	14.75	193.47	2709.73	-2681.82	-1078.71	-335.77	5766845.29	606527.26
3029	14.71	193.45	2710.69	-2682.78	-1078.96	-335.83	5766845.04	606527.20
3030	14.68	193.43	2711.66	-2683.75	-1079.21	-335.89	5766844.80	606527.14
3031	14.64	193.42	2712.63	-2684.72	-1079.45	-335.95	5766844.55	606527.09
3032	14.61	193.40	2713.60	-2685.69	-1079.69	-336.00	5766844.31	606527.03
3033	14.57	193.38	2714.57	-2686.66	-1079.93	-336.06	5766844.07	606526.97
3034	14.54	193.36	2715.54	-2687.63	-1080.17	-336.12	5766843.83	606526.92
3035	14.50	193.34	2716.50	-2688.59	-1080.41	-336.17	5766843.59	606526.86
3036	14.47	193.32	2717.47	-2689.56	-1080.65	-336.23	5766843.35	606526.80
3037	14.43	193.31	2718.44	-2690.53	-1080.89	-336.29	5766843.11	606526.75
3038	14.40	193.29	2719.41	-2691.50	-1081.13	-336.34	5766842.87	606526.69
3039	14.36	193.27	2720.38	-2692.47	-1081.37	-336.40	5766842.63	606526.63
3040	14.33	193.25	2721.35	-2693.44	-1081.61	-336.46	5766842.39	606526.58
3041	14.29	193.23	2722.32	-2694.41	-1081.85	-336.51	5766842.15	606526.52
3042	14.26	193.21	2723.29	-2695.38	-1082.09	-336.57	5766841.91	606526.46
3043	14.22	193.20	2724.26	-2696.35	-1082.33	-336.62	5766841.67	606526.41
3044	14.19	193.18	2725.23	-2697.32	-1082.58	-336.68	5766841.43	606526.35
3045	14.15	193.16	2726.19	-2698.28	-1082.82	-336.74	5766841.19	606526.29
3046	14.12	193.14	2727.16	-2699.25	-1083.06	-336.79	5766840.95	606526.24
3047	14.08	193.12	2728.13	-2700.22	-1083.30	-336.85	5766840.70	606526.18
3048	14.05	193.10	2729.10	-2701.19	-1083.54	-336.91	5766840.46	606526.12
3049	14.01	193.09	2730.07	-2702.16	-1083.78	-336.96	5766840.22	606526.07
3050	13.98	193.07	2731.04	-2703.13	-1084.02	-337.02	5766839.98	606526.01
3051	13.94	193.05	2732.01	-2704.10	-1084.26	-337.08	5766839.74	606525.95

APPENDIX 2a

MARLIN A-23A

Petrophysics Evaluation Summary

Esso Australia Pty Ltd.
Exploration Department

Marlin A23A
Formation Evaluation
Log Interpretation Report

Petrophysicists: A. Miller, K. Kuttan

December 2004

Marlin A23A Log Interpretation

Marlin A23A was drilled as a directional well designed to develop the L500 reservoir in the Turrum Field.

The well spudded on the 15th of July 2004 through the Marlin A23 well and was drilled to a total depth of 3051m MDRT in an 8½" production hole and suspended.

The 8½" open-hole was logged with Reeves Shuttle Logging System. The Reeves gamma ray, resistivity, density-neutron and sonic logs were run on the shuttle from 3039m to 1368m. On recovering the shuttle at the surface, it was found that no data had been recorded. The Reeves logs were re-run on the shuttle and logs were successfully acquired from the same depth interval as the first run. The Reeves data have been analysed for porosity, water saturation and net pay over the interval 1400.0 -2987.0 mMDRT.

Formation pressure testing was conducted with Schlumberger's MDT run on drill pipe. A total of 88 pressures were taken. After running casing, formation fluid samples were taken using Schlumberger's cased hole MDT (CHDT). An evaluation and interpretation of the pressure and sample data is the subject of another report and will not be covered in this report.

Note that all depths quoted in this report are logged mMDRT unless otherwise specified.

DATA

Data from the following logging surveys were used in this interpretation:

Survey/Log	Company	Top (m MDRT)	Bottom (m MDRT)
<i>Suite 1 (drill pipe):</i>			
MCG-MDN-MPD-MSS-MDL	Reeves	1368.0	3039.0
<i>Suite 2 (drill pipe):</i>			
TLC MDT-GR-LEHQT	Schlumberger	1450.5	2996.8
<i>Suite 3 (wireline):</i>			
CHDT-LFA-GR	Schlumberger	2921.0	2959.5

Deviation

The well angle over the target zones ranged from 35.54° at 1469.69m (Marlin Reservoir) to 19.54° at 2903.24m (Turrum Reservoir).

Mud Data

Run 1: Mud Type :	KCl/Glycol/PHPA
Mud Weight:	9.5 ppg
Rm:	0.129 ohm-m @ 25 °C
Rmf:	0.105 ohm-m @ 25 °C
Rmc:	0.191 ohm-m @ 25 °C
BHT:	122.8 °C

Hole Size

1367 - 3051 m	8.5 inches
---------------	------------

Data Acquisition & Log Quality

The deep and shallow resistivity (DDL and DSL), Bulk Density (DEN), Thermal Neutron Porosity (NPRL), and the 3-5" Compensated Sonic (DT35) were depth aligned to the environmentally corrected Gamma Ray (GGCE).

Data Processing

No processing was undertaken in this analysis.

INTERPRETATION**Logs Used**

The primary logs used in the interpretation were GGCE (GR), DDL (RESDEEP), DEN (RHOB), NPRL (NPHI).

Formation Water Salinity

Rwa analysis using $a = 1$, $m = 2$ and $n = 2$ indicates the water zones below the freshwater wedge have an apparent formation water salinity of 25,000 ppm NaCl equivalent. The water sands within the freshwater wedge have an apparent water salinity of 10,000 ppm NaCl equivalent. For all hydrocarbon-bearing sands within the freshwater wedge and all the sands below, a formation water salinity of 25,000 ppm NaCl equivalent was used.

Interval (m)	NaCl equivalent salinity (ppm)
1435 - 1569.5	25,000
1569.5 - 1596	10,000
1596 - 1677	25,000
1677 - 2050	10,000
2050 - 2989.3	25,000

Hydrocarbon Type

Hydrocarbon type and presence was determined on the basis of density-neutron log character, mud log shows, MDT pressure data and CHDT sample recoveries.

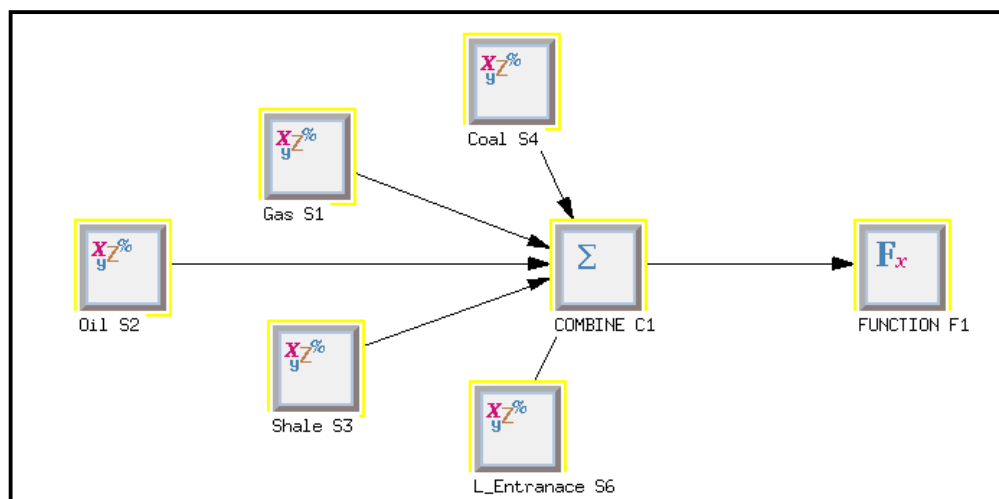
Interval (m)	Hydrocarbon type
1435 - 1697	Gas
1683 - 1694	Oil
2084 - 2918	Gas
2918 - 2925	Oil
2931 - 2947	Gas

Shale Volume, Porosity and Water Saturation

The Schlumberger Geoframe ELAN+ module was used to determine mineral and rock volumes of quartz, illite and feldspar; total porosity, effective porosity and effective water saturation. Details of the model are presented in the following figures and tables.

ELAN MODEL

Processes



ELAN Input Channels

	Compound Name Spec	MARLIN A23A
TEMP_CH	TEMP;*	TEMP@ELAN_inputs;3 [A1205557]
RHOB_IFAC_CH	IFRH;*	
NPHI_IFAC_CH	INPH;*	
RHOB_CH	DEN:BPB;*	DEN@ELAN_inputs;9 [A1205156]
NPHI_CH	NPRL:BPB;*	NPRL@ELAN_inputs;11 [A1205164]
CUDC_CH/RT_CH	DDLL:BPB;*	DDLL@ELAN_inputs;9 [A1205160]
GR_CH	GGCE:BPB;*	GGCE@ELAN_inputs;5 [A1205166]
PRB1_CH	FLAG_RHOH;*	FLAG_RHOH@ELAN_inputs;3 [A1234621]
PRB2_CH	PRB2;*	
PRB3_CH	PRB3;*	
PRB4_CH	FLAG_COAL;*	FLAG_COAL@ELAN_inputs;15 [A1234613]
PRB6_CH	PRB6;*	

ELAN Global Parameters

Reference Index	MD
Processing Interval	1400.0000 (m) To 2987.0000 (m)
Sampling Rate	0.1528 (m)
Uncertainty Channel	FALSE
Clay Input	DRY
Special Fluids	IMMOVABLE_HYDROCARBON

ELAN Zone Definition

Name	Bottom To Top
Turrun	2989.3000 (m) To 2050.0000 (m)
10K_2	2050.0000 (m) To 1676.9999 (m)
25K_1	1676.9999 (m) To 1596.0001 (m)
10K_1	1596.0001 (m) To 1569.5000 (m)
Marlin	1569.5000 (m) To 1435.0000 (m)
Lakes Ent	1435.0000 (m) To 1400.0000 (m)

ELAN Process Definition

Process	SOLVE1 "Gas"						
Equations	RHOB	NPHI	CUDC_DWA	GR	CT1	CT3	
Volumes	QUAR	ORTH	ILLI	XWAT	UWAT	XGAS	UGAS
User Constraints	constraint(maxDolomite, DOLO<0)						
Constraint Zones	Bottom		Top				
UNDEFINED	2989.3000 (m)		1400.0000 (m)				
Constraints Applied							
UNDEFINED	- IrreducibleXWater						
UNDEFINED	- IrreducibleUWater						
UNDEFINED	- WaterBaseMud_SXO_gt_SW						
Process	SOLVE2 "Oil"						
Equations	RHOB	NPHI	CUDC_DWA	GR	CT2	CT3	
Volumes	QUAR	ORTH	ILLI	XWAT	UWAT	XOIL	UOIL
User Constraints	constraint(maxDolomite, DOLO<0)						
Constraint Zones	Bottom		Top				
UNDEFINED	2989.3000 (m)		1400.0000 (m)				
Constraints Applied							
UNDEFINED	- IrreducibleXWater						
UNDEFINED	- IrreducibleUWater						
UNDEFINED	- WaterBaseMud_SXO_gt_SW						
Process	SOLVE3 "Shale"						
Equations	RHOB		CUDC_DWA	GR		CT3	
Volumes	QUAR		ILLI	XWAT		UWAT	
Constraint Zones	Bottom			Top			
UNDEFINED	2989.3000 (m)			1400.0000 (m)			
Process	SOLVE4 "Coal"						
Equations	RHOB						
Volumes	COAL						
Constraint Zones	Bottom			Top			
UNDEFINED	2989.3000 (m)			1400.0000 (m)			

Process	SOLVE6 "L_Entranace"
Equations	RHOB
Volumes	CALC
Constraint Zones	Bottom Top
UNDEFINED	2989.3000 (m) 1400.0000 (m)
Process	COMBINE 1 "COMBINE"
Order	SOL.2 SOL.1 SOL.3 SOL.4 SOL.6
Combine Method	"UNDEFINED " 9807.4150 (m) Internal Average
	"Lakes Entran" 4708.0054 (m) Sol.6
Probability Functions	probability(SOL.6, 0)
	probability(SOL.4, PRB4_CH)
	prob3 = linear(ILLI_VOL.SOL.3, 0.3, 0, 0.5, 1)
	probability(SOL.3, prob3)
	prob1 = if (PRB1_CH <=0.25, 1, 0)
	probability(SOL.1, prob1)
Process	FUNCTION 1 "FUNCTION"
Outputs	VCL SXWI SWT SUWI PIGN PHIT
User-defined Function/n	swt_cmp=if((PRB4_CH > 0),1,(UWAT_VOL + XBWA_VOL)/(UWAT_VOL + XBWA_VOL + UOIL_VOL + UGAS_VOL))
output(SWT, swt_cmp)	

ELAN Probability Expressions

```
probability(SOL.6, 0)

probability(SOL.4, PRB4_CH)

prob3 = linear(ILLI_VOL.SOL.3, 0.3, 0, 0.5, 1)
probability(SOL.3, prob3)

prob1 = if (PRB1_CH <=0.25, 1, 0)
probability(SOL.1, prob1)
```

ELAN Model Constraints

Model 1: Constraint Zones
Name Boundary Temperature
UNDEFINED 9807.4150 -999.25
constraints
UNDEFINED - IrreducibleXWater
UNDEFINED - IrreducibleUWater
UNDEFINED - WaterBaseMud_SXO_gt_SW
Model 2: Constraint Zones
Name Boundary Temperature
UNDEFINED 9807.4150 -999.25
constraints
UNDEFINED - IrreducibleXWater
UNDEFINED - IrreducibleUWater
UNDEFINED - WaterBaseMud_SXO_gt_SW
Model 3: Constraint Zones
Name Boundary Temperature
UNDEFINED 9807.4150 -999.25
constraints
Model 4: Constraint Zones
Name Boundary Temperature
UNDEFINED 9807.4150 -999.25
constraints

Model 6: Constraint Zones		
Name	Boundary	Temperature
UNDEFINED	9807.4150	-999.25
constraints		

ELAN Different Parameters

Parameters	Turrum	10K_2	25K_1	10K_1
n*****	*****	*****	*****	*****
RHOB_XWAT (g/cm3)	0.993	0.975	0.979	0.993
RHOB_UWAT (g/cm3)	0.982	0.975	0.979	0.993
CXDC_XWAT (mS/m)	20.038	21.619	21.615	16.917
CXDC_XBWA (mS/m)	11.445	11.819	11.816	9.624
CUDC_UWAT (mS/m)	12.308	4.066	8.499	3.526
CUDC_UBWA (mS/m)	2.843	2.064	1.755	1.688
RW (ohm.m)	0.458	1.053	0.430	1.007
CUDC_UNC_ZP (mS/m)	0.055	0.032	0.046	0.030
Parameters	Marlin	Lakes Ent		
n*****	*****	*****	*****	*****
RHOB_XWAT (g/cm3)	0.993	0.994		
RHOB_UWAT (g/cm3)	0.993	0.993		
CXDC_XWAT (mS/m)	15.752	12.443		
CXDC_XBWA (mS/m)	8.935	6.875		
CUDC_UWAT (mS/m)	7.615	7.552		
CUDC_UBWA (mS/m)	1.666	1.554		
RW (ohm.m)	0.458	0.434		
CUDC_UNC_ZP (mS/m)	0.043	0.043		

ELAN Same Parameters

Parameter	Value	Parameter	Value
RHOB_QUAR	2.650 (g/cm3)	RHOB_CALC	2.710 (g/cm3)
RHOB_DOLO	2.847 (g/cm3)	RHOB_ORTH	2.570 (g/cm3)
RHOB_ILLI	2.780 (g/cm3)	RHOB_KAOL	2.620 (g/cm3)
RHOB_COAL	1.200 (g/cm3)	RHOB_IGNE	3.000 (g/cm3)
RHOB_XOIL	0.700 (g/cm3)	RHOB_UOIL	0.700 (g/cm3)
RHOB_XGAS	0.011 (g/cm3)	RHOB_UGAS	0.011 (g/cm3)
RHOB_XBWA	1.000 (g/cm3)	NPHI_QUAR	-0.059 (m3/m3)
NPHI_CALC	0.000 (m3/m3)	NPHI_DOLO	0.032 (m3/m3)
NPHI_ORTH	-0.010 (m3/m3)	NPHI_ILLI	0.247 (m3/m3)
NPHI_KAOL	0.450 (m3/m3)	NPHI_COAL	0.450 (m3/m3)
NPHI_XWAT	1.000 (m3/m3)	NPHI_UWAT	1.000 (m3/m3)
NPHI_XOIL	1.000 (m3/m3)	NPHI_UOIL	1.000 (m3/m3)
NPHI_XGAS	0.143 (m3/m3)	NPHI_UGAS	0.143 (m3/m3)
NPHI_XBWA	1.000 (m3/m3)	DT_QUAR	55.500 (us/m)
DT_CALC	47.800 (us/m)	DT_DOLO	43.500 (us/m)
DT_ORTH	60.000 (us/m)	DT_ILLI	60.000 (us/m)
DT_KAOL	91.318 (us/m)	DT_COAL	121.920 (us/m)
DT_IGNE	16.916 (us/m)	DT_XWAT	0.000 (us/m)
DT_UWAT	220.000 (us/m)	DT_XOIL	0.000 (us/m)
DT_UOIL	240.000 (us/m)	DT_XGAS	0.000 (us/m)
DT_UGAS	289.865 (us/m)	DT_XBWA	189.000 (us/m)
U_QUAR	5.000	U_CALC	14.100
U_DOLO	9.100	U_ILLI	9.900
U_KAOL	5.100	U_COAL	1.000
U_XWAT	0.692	U_UWAT	0.000

U_XOIL	0.136	U_UOIL	0.000
U_XGAS	0.012	U_UGAS	0.000
U_XBWA	0.398	CXDC_ILLI	-999.250 (mS/m)
CXDC_KAOL	-999.250 (mS/m)	CUDC_ILLI	-999.250 (mS/m)
CUDC_KAOL	-999.250 (mS/m)	GR_QUAR	60.000 (gAPI)
GR_CALC	11.000 (gAPI)	GR_DOLO	3.000 (gAPI)
GR_ORTH	200.000 (gAPI)	GR_ILLI	235.000 (gAPI)
GR_KAOL	98.000 (gAPI)	GR_COAL	40.000 (gAPI)
GR_IGNE	40.000 (gAPI)	GR_XWAT	0.000 (gAPI)
GR_UWAT	0.000 (gAPI)	GR_XOIL	0.000 (gAPI)
GR_UOIL	0.000 (gAPI)	GR_XGAS	0.000 (gAPI)
GR_UGAS	0.000 (gAPI)	GR_XBWA	0.000 (gAPI)
CT1_QUAR	0.000	CT1_CALC	0.000
CT1_DOLO	0.000	CT1_ORTH	0.000
CT1_ILLI	0.000	CT1_KAOL	0.000
CT1_COAL	0.000	CT1_IGNE	0.000
CT1_XWAT	0.000	CT1_UWAT	0.000
CT1_XOIL	0.000	CT1_UOIL	0.000
CT1_XGAS	1.000	CT1_UGAS	-0.200
CT1_XBWA	0.000	CT2_QUAR	0.000
CT2_CALC	0.000	CT2_DOLO	0.000
CT2_ORTH	0.000	CT2_ILLI	0.000
CT2_KAOL	0.000	CT2_COAL	0.000
CT2_IGNE	0.000	CT2_XWAT	0.000
CT2_UWAT	0.000	CT2_XOIL	1.000
CT2_UOIL	-0.200	CT2_XGAS	0.000
CT2_UGAS	0.000	CT2_XBWA	0.000
CT3_QUAR	-0.050	CT3_CALC	0.000
CT3_ORTH	1.000	CT3_ILLI	0.000
CT3_KAOL	0.000	CT3_COAL	0.000
CT3_XWAT	0.000	CT3_UWAT	0.000
CT3_XOIL	0.000	CT3_UOIL	0.000
CT3_XGAS	0.000	CT3_UGAS	0.000
CT3_XBWA	0.000	ARHOB_ILLI	2.780 (g/cm3)
ARHOB_KAOL	2.620 (g/cm3)	WCLP_ILLI	0.154 (m3/m3)
WCLP_KAOL	0.058 (m3/m3)	CBWA_ILLI	-999.250 (mS/m)
CBWA_KAOL	-999.250 (mS/m)	CECA_ILLI	0.200 (meq/g)
CECA_KAOL	0.090 (meq/g)	RMF	0.160 (ohm.m)
MST	61.880 (degC)	RWT	-999.250 (degC)
SALIN_ISOL	-999.250 (ppk)	SALIN_PARA	-999.250 (ppk)
SALIN_XWAT	12.924 (ppk)	SALIN_UWAT	30.000 (ppk)
SALIN_XIWA	-999.250 (ppk)	SALIN_UIWA	-999.250 (ppk)
SALIN_XOIL	0.000 (ppk)	SALIN_UOIL	0.000 (ppk)
SALIN_XGAS	0.000 (ppk)	SALIN_UGAS	0.000 (ppk)
SALIN_XSFL	-999.250 (ppk)	SALIN_USFL	-999.250 (ppk)
CT1_ZP	0.000	CT2_ZP	0.000
CT3_ZP	0.000	RHOB_UNC_ZP	0.027 (g/cm3)
NPHI_UNC_ZP	0.015 (m3/m3)	DT_UNC_ZP	2.250 (us/m)
U_UNC_ZP	0.225	CXDC_UNC_ZP	0.072 (mS/m)
GR_UNC_ZP	2.250 (gAPI)	CT1_UNC_ZP	0.015
CT2_UNC_ZP	0.015	CT3_UNC_ZP	0.015
VOLS_UNC_ZP	0.015 (m3/m3)	RHOB_UNC_WM	1.000
NPHI_UNC_WM	1.000	DT_UNC_WM	0.300
U_UNC_WM	0.400	CXDC_UNC_WM	0.500
CUDC_UNC_WM	0.700	GR_UNC_WM	0.300
CT1_UNC_WM	0.200	CT2_UNC_WM	0.200
CT3_UNC_WM	0.100	VOLS_UNC_WM	1.000
RHOB_IFAC_ZP	0.500	NPHI_IFAC_ZP	0.400
A_ZP	1.000	N_ZP	2.000
C_DWA	0.000	M_DWA	2.000
BVIRR	0.010 (m3/m3)		

Results and Discussion

Graphical displays of the interpretation results across the main intervals of interest are presented in Figures 1 and 2 below.

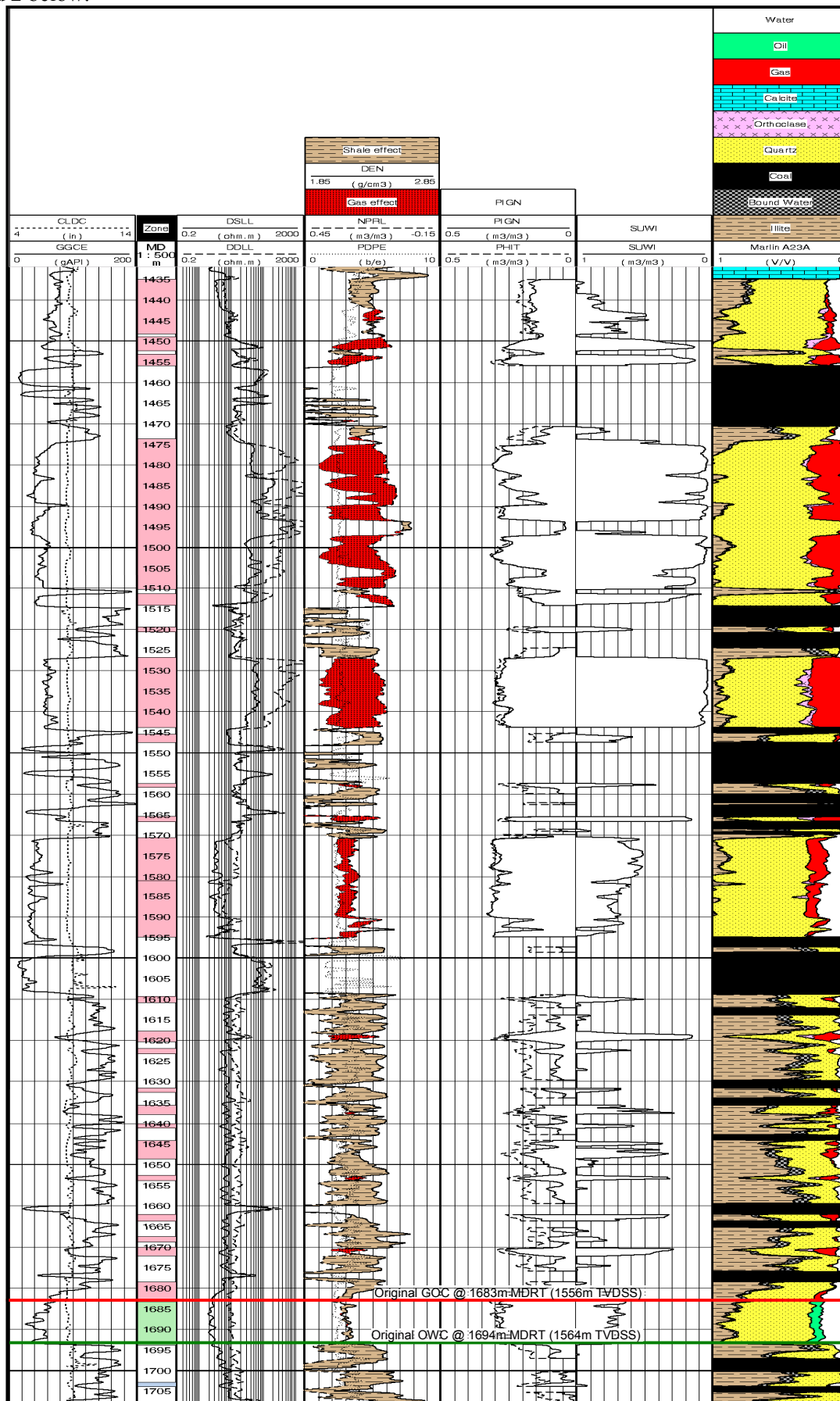


Figure 1.

Marlin gas reservoirs (see Figure 1)**1435m - 1456m MD**

The sand in this interval is clearly gas-bearing as indicated by the density-neutron crossover gas effect and calculated gas saturation over the interval 1450 - 1455m MD. However, in the interval 1435 - 1449m MD (upper part of the sand) the calculated effective water saturation is high. Shaliness alone cannot account for the abnormally high effective water saturation. It is postulated that the observed high effective water saturation is probably due to the presence of conductive minerals such as pyrite. The calculated effective water saturation should not be used in any volumetric calculations.

1571m - 1694m MD

This zone has two thick sands, one between 1571 - 1595 m MD and the other from 1680 - 1694m MD straddling a very low net-to-gross interval of thin sands, shales and coals. The two thick sands are clearly swept as indicated by the diminished gas effect on the density-neutron logs and the high effective water saturations. In the upper sand, the upper half of the sand (1571 - 1581m MD), the residual gas saturation (approximately 42%) is higher than the lower half (approximate residual gas saturation of 24%). This unusual difference could be due to the poorer sweep or partial sweep in the upper half of the sand.

The residual hydrocarbon saturation (27%) in the lower sand comprises residual oil between 1683 - 1694m MD and residual oil and gas in the interval 1678 - 1683m MD with a hydrocarbon saturation of 20%. The oil leg has migrated and smeared into the gas cap due to gas production from other wells in the field. All indications are that all the thin sands in the low net-to-gross interval are still gas-bearing, suggesting no sweep.

No current GWC is present in the Marlin reservoirs.

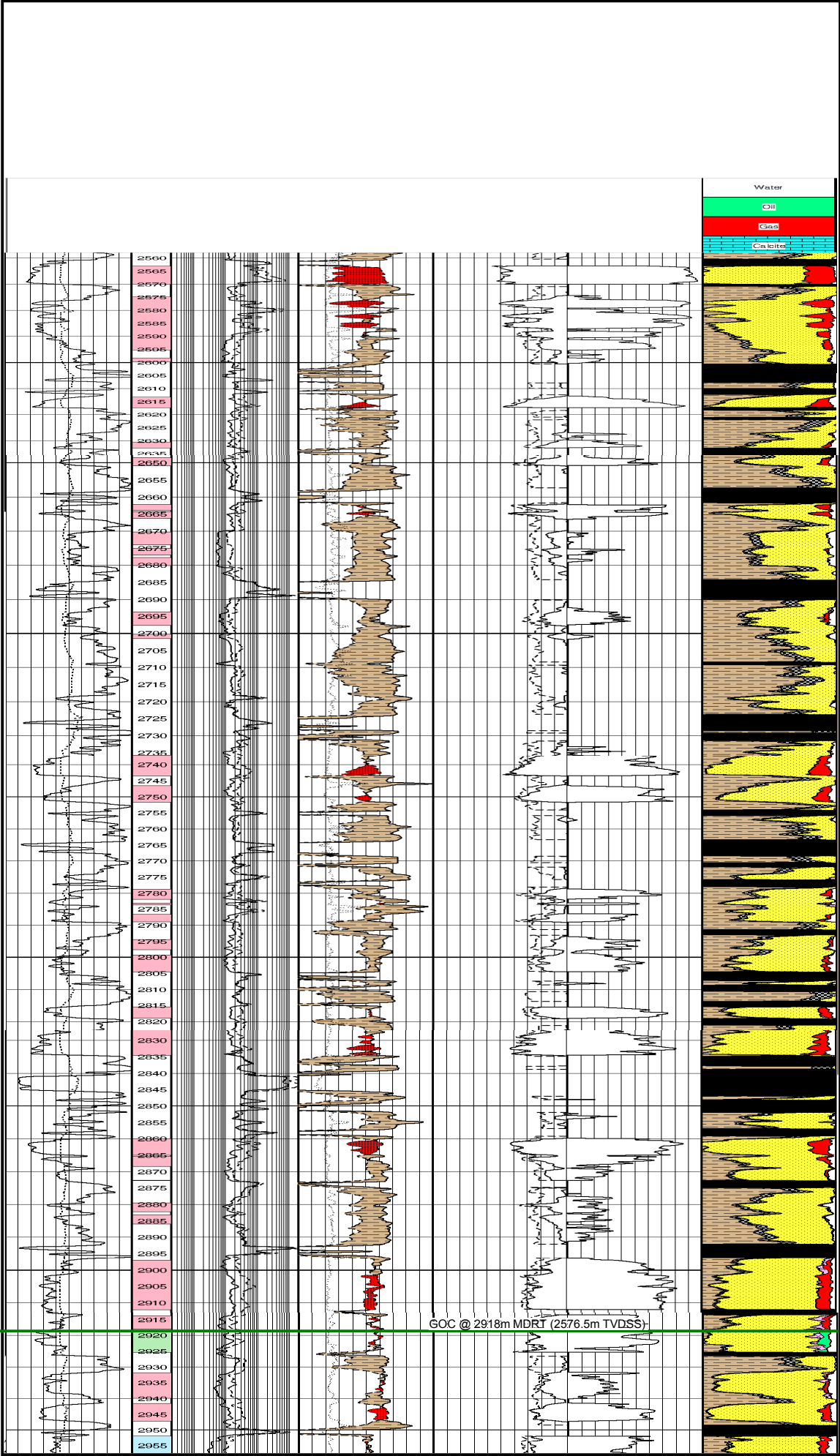


Figure 2.

Turrum oil and gas reservoirs (see Figure 2)**2375m - TD**

The Turrum reservoirs extend from 2375m MD to TD. The sands are interpreted to be hydrocarbon bearing as least down to 2925.5m MD.

Almost all the sands in this interval are gas bearing. The only oil zone is found in the L500 Upper, which extends from 2927 - 2925.4m MD. The GOC in the L500 Upper is interpreted to be at 2918m MD (2577.5m TVDSS). It is based on a combination of pressure data and the established field GOC for the sand. The overall PHIE for the L500 Upper gas zone (2927 - 2918m MD) is 10% and the overall effective water saturation is 51%. The oil zone has a true vertical net (>10% PHIE) thickness of 6.3m, with an average PHIE and effective water saturation of 13% and 45% respectively.

Below 2925.5m, the determination of the presence or absence of hydrocarbon is enigmatic. Petrophysical analysis indicates that in at least two of the zones the hydrocarbon saturation is significant enough to be included as pay though MDT data suggests otherwise. The hydrocarbon type, either reservoired or relict, is interpreted to be gas. This is based on a lack of any visible shows in cuttings.

The interval 2931.8 - 2939.9m MD is interpreted to be water bearing as indicated by the high effective water saturation and the pressure data which indicates that it is water bearing.

The sand from 2941.6 - 2947.2m MD is interpreted to be gas-bearing, based purely on the presence of gas effect on the density-neutron logs. It was not possible to obtain pressure data to confirm the interpretation.

On the strength of the petrophysical analysis, the sand in the interval 2951.9 - 2960.3m MD could be interpreted to be gas-bearing. However a cased-hole MDT "pump-out" indicated that it is water-bearing. All sands below 2965 are water-bearing as indicated by the high effective water saturation and the pressure data.

Reservoir Statistics

The quantitative summary of the interpreted reservoir parameters as presented in Table 1 below was based on PHIE cut-off of 8% for gas and 10% for oil (from MDT results).

Net Pay was determined using a SWE cutoff of <65%.

Net Reservoir Thickness is based on a PHIE Cut-off:

0.08 volume per volume for GAS

0.10 volume per volume for OIL

Depth Reference

M MDKB

Mean PHIE, Mean VCL, Mean SWE is of Net Reservoir Thickness Interval
Curves - PIGN, VCL, SUWI (2004 ELAN Model)

Top depth (m)	Bottom depth (m)	Gross thickness (m)	Net thickness (m)	Net/Gross ratio	Mean VCL (m3/m3)	Mean PHIE (m3/m3)	Mean SWE (m3/m3)	Comments	Net pay thickness (m)
1435.05	1448.31	13.26	13.21	0.996	0.207	0.162	0.801	Gas	13.21
1448.95	1452.38	3.43	3.43	1.000	0.078	0.212	0.356	Gas	3.43
1453.21	1456.01	2.80	2.80	1.000	0.240	0.231	0.288	Gas	2.80
1473.69	1510.36	36.67	33.47	0.913	0.059	0.233	0.109	Gas	33.47
1511.43	1514.20	2.77	2.77	1.000	0.057	0.163	0.345	Gas	2.77
1519.53	1520.73	1.20	1.20	1.000	0.505	0.162	0.695	Gas	
1526.93	1543.92	16.99	16.99	1.000	0.091	0.269	0.056	Gas	16.99
1545.49	1547.50	2.01	1.60	0.796	0.416	0.097	0.684	Gas	
1557.46	1558.47	1.01	1.01	1.000	0.469	0.188	0.644	Gas	1.01
1565.51	1566.70	1.19	1.19	1.000	0.157	0.224	0.208	Gas	1.19
1570.59	1581.00	10.41	10.41	1.000	0.081	0.287	0.581	Residual gas	
1581.00	1595.02	14.02	14.02	1.000	0.017	0.279	0.751	Residual gas	
1609.35	1610.97	1.62	1.40	0.864	0.518	0.145	0.679	Gas	
1617.83	1620.47	2.64	2.64	1.000	0.390	0.202	0.396	Gas	2.64
1622.05	1623.29	1.24	1.24	1.000	0.517	0.138	0.778	Gas	
1631.70	1632.51	0.81	0.71	0.876	0.528	0.106	0.782	Gas	
1635.66	1637.92	2.26	2.26	1.000	0.425	0.155	0.581	Gas	2.26
1640.06	1641.20	1.14	1.00	0.877	0.462	0.131	0.684	Gas	
1644.15	1648.64	4.49	4.04	0.900	0.491	0.151	0.550	Gas	4.04
1652.60	1653.95	1.35	1.35	1.000	0.411	0.169	0.540	Gas	1.35
1662.13	1663.78	1.65	1.57	0.952	0.409	0.164	0.461	Gas	1.57
1667.51	1668.81	1.30	1.10	0.846	0.496	0.099	0.823	Gas	
1670.16	1672.26	2.10	2.10	1.000	0.340	0.201	0.434	Gas	2.10
1678.49	1683.33	4.84	4.73	0.977	0.344	0.184	0.798	Residual gas & oil	
1683.33	1693.88	10.55	10.550	1.000	0.154	0.268	0.729	Residual oil	
1702.95	1703.99	1.04	0.80	0.769	0.439	0.132	0.958	Water	
1709.96	1711.46	1.50	1.24	0.827	0.541	0.113	1.000	Water	
1724.44	1740.11	15.67	15.61	0.996	0.117	0.259	0.935	Water	
1746.41	1748.03	1.62	1.62	1.000	0.343	0.185	0.961	Water	
1755.12	1756.95	1.83	1.83	1.000	0.408	0.129	0.999	Water	
1762.03	1763.86	1.83	1.77	0.967	0.373	0.178	0.981	Water	
1767.11	1768.05	0.94	0.94	1.000	0.375	0.161	0.953	Water	
1770.03	1772.32	2.29	2.29	1.000	0.389	0.190	0.926	Water	
1773.79	1785.35	11.56	10.96	0.948	0.184	0.239	0.823	Residual gas	
1805.51	1807.98	2.47	2.39	0.968	0.362	0.172	0.992	Water	
1809.50	1810.57	1.07	1.07	1.000	0.430	0.172	0.966	Water	

Top depth (m)	Bottom depth (m)	Gross thickness (m)	Net thickness (m)	Net/Gross ratio	Mean VCL (m3/m3)	Mean PHIE (m3/m3)	Mean SWE (m3/m3)	Comments	Net pay thickness (m)
1811.61	1812.52	0.91	0.91	1.000	0.525	0.141	0.987	Water	
1815.55	1817.55	2.00	1.95	0.975	0.480	0.152	1.000	Water	
1836.27	1850.12	13.85	13.85	1.000	0.191	0.229	0.991	Water	
1854.36	1866.24	11.88	10.28	0.865	0.284	0.176	0.997	Water	
1878.23	1879.63	1.40	1.10	0.786	0.462	0.140	1.000	Water	
1887.07	1888.98	1.91	1.91	1.000	0.425	0.146	1.000	Water	
1894.62	1895.91	1.29	1.18	0.915	0.321	0.167	0.991	Water	
1921.72	1923.24	1.52	1.52	1.000	0.307	0.177	1.000	Water	
1928.75	1930.56	1.81	1.70	0.939	0.426	0.140	1.000	Water	
1961.65	1962.41	0.76	0.65	0.855	0.311	0.158	1.000	Water	
1965.63	1967.26	1.63	1.46	0.896	0.352	0.158	0.999	Water	
1969.11	1972.14	3.03	3.03	1.000	0.285	0.179	1.000	Water	
1992.41	1993.55	1.14	1.14	1.000	0.302	0.155	1.000	Water	
1997.84	2000.56	2.72	2.40	0.882	0.332	0.204	0.986	Water	
2001.73	2002.31	0.58	0.30	0.517	0.572	0.105	0.981	Water	
2004.24	2006.25	2.01	1.70	0.846	0.511	0.089	1.000	Water	
2008.54	2011.84	3.30	2.46	0.745	0.495	0.117	1.000	Water	
2014.33	2018.67	4.34	3.87	0.892	0.609	0.114	1.000	Water	
2029.24	2032.18	2.94	1.90	0.646	0.428	0.112	1.000	Water	
2080.49	2082.75	2.26	2.26	1.000	0.488	0.113	0.922	Water	
2084.33	2085.90	1.57	1.57	1.000	0.389	0.146	0.656	Gas	1.57
2087.20	2089.79	2.59	2.49	0.961	0.388	0.139	0.634	Gas	2.49
2090.98	2091.90	0.92	0.82	0.891	0.375	0.132	0.784	Gas	
2121.46	2122.89	1.43	1.43	1.000	0.436	0.130	0.709	Gas	
2132.61	2135.36	2.75	2.66	0.967	0.396	0.125	0.859	Gas	
2155.02	2159.92	4.90	4.90	1.000	0.371	0.152	0.985	Water	
2179.50	2180.44	0.94	0.70	0.745	0.283	0.134	0.691	Gas	
2215.67	2217.91	2.24	1.90	0.848	0.446	0.102	0.806	Gas	
2224.97	2228.07	3.10	3.10	1.000	0.289	0.139	0.670	Gas	
2232.36	2233.22	0.86	0.86	1.000	0.354	0.111	0.774	Gas	
2243.46	2246.63	3.17	3.03	0.956	0.389	0.115	0.700	Gas	
2253.26	2256.52	3.26	3.04	0.933	0.399	0.110	0.498	Gas	3.04
2257.73	2260.12	2.39	1.30	0.544	0.412	0.091	0.749	Gas	
2261.06	2261.95	0.89	0.89	1.000	0.380	0.127	0.510	Gas	0.89
2263.25	2265.43	2.18	2.13	0.977	0.331	0.143	0.417	Gas	2.13
2266.45	2267.11	0.66	0.61	0.924	0.362	0.120	0.605	Gas	0.61
2272.54	2277.34	4.80	4.10	0.854	0.337	0.129	0.535	Gas	4.10
2284.58	2286.00	1.42	1.00	0.704	0.379	0.103	0.736	Gas	
2289.71	2290.37	0.66	0.47	0.712	0.479	0.096	0.773	Gas	
2291.19	2291.72	0.53	0.53	1.000	0.397	0.098	0.760	Gas	
2293.17	2296.80	3.63	2.73	0.752	0.355	0.126	0.598	Gas	2.73
2298.93	2304.72	5.79	4.62	0.798	0.315	0.115	0.683	Gas	
2312.90	2314.88	1.98	1.10	0.556	0.400	0.120	0.598	Gas	1.10
2320.29	2322.20	1.91	1.61	0.843	0.431	0.098	0.692	Gas	
2328.40	2330.96	2.56	2.36	0.922	0.349	0.114	0.520	Gas	2.36
2331.55	2332.97	1.42	1.27	0.894	0.408	0.118	0.548	Gas	1.27
2338.58	2340.72	2.14	1.30	0.608	0.375	0.096	0.711	Gas	
2344.45	2345.31	0.86	0.81	0.942	0.412	0.105	0.678	Gas	
2368.25	2369.06	0.81	0.55	0.679	0.400	0.095	0.742	Gas	
2374.96	2376.63	1.67	0.70	0.419	0.386	0.106	0.579	Gas	0.70
2377.55	2381.15	3.60	3.55	0.986	0.213	0.165	0.351	Gas	3.55

Top depth (m)	Bottom depth (m)	Gross thickness (m)	Net thickness (m)	Net/Gross ratio	Mean VCL (m3/m3)	Mean PHIE (m3/m3)	Mean SWE (m3/m3)	Comments	Net pay thickness (m)
2385.55	2387.68	2.13	1.85	0.869	0.289	0.119	0.670	Gas	
2388.60	2389.41	0.81	0.51	0.630	0.372	0.086	0.737	Gas	
2408.64	2410.29	1.65	1.49	0.903	0.354	0.131	0.474	Gas	1.49
2412.37	2420.52	8.15	6.02	0.739	0.281	0.131	0.439	Gas	6.02
2423.85	2424.89	1.04	0.80	0.769	0.392	0.110	0.509	Gas	0.80
2437.11	2438.79	1.68	1.59	0.946	0.328	0.127	0.522	Gas	1.59
2439.73	2441.78	2.05	0.60	0.293	0.443	0.083	0.705	Gas	
2448.11	2449.58	1.47	1.10	0.748	0.378	0.089	0.590	Gas	1.10
2459.56	2460.35	0.79	0.50	0.633	0.436	0.090	0.754	Gas	
2464.01	2465.38	1.37	1.10	0.803	0.334	0.099	0.808	Gas	
2498.25	2502.82	4.57	3.30	0.722	0.284	0.147	0.373	Gas	3.30
2517.50	2519.91	2.41	1.10	0.456	0.355	0.093	0.738	Gas	
2535.18	2537.82	2.64	2.64	1.000	0.372	0.107	0.569	Gas	2.64
2546.08	2552.48	6.40	2.00	0.313	0.348	0.088	0.533	Gas	2.00
2563.07	2570.10	7.03	7.03	1.000	0.025	0.230	0.110	Gas	7.03
2575.64	2595.30	19.66	16.00	0.814	0.200	0.150	0.278	Gas	16.00
2613.39	2617.40	4.01	3.50	0.873	0.148	0.171	0.302	Gas	3.50
2630.76	2632.69	1.93	1.09	0.565	0.344	0.102	0.542	Gas	1.09
2648.74	2650.75	2.01	1.95	0.970	0.337	0.116	0.480	Gas	1.95
2662.31	2663.91	1.60	1.49	0.931	0.300	0.136	0.357	Gas	1.49
2664.46	2665.79	1.33	1.14	0.857	0.183	0.155	0.319	Gas	1.14
2693.85	2697.48	3.63	2.48	0.683	0.349	0.092	0.642	Gas	2.48
2736.09	2743.56	7.47	6.40	0.857	0.145	0.160	0.350	Gas	6.40
2746.71	2751.71	5.00	4.60	0.920	0.235	0.137	0.363	Gas	4.60
2778.82	2781.94	3.12	1.20	0.385	0.400	0.101	0.392	Gas	1.20
2783.11	2783.69	0.58	0.30	0.517	0.146	0.089	0.485	Gas	0.30
2786.69	2788.87	2.18	1.17	0.537	0.305	0.111	0.602	Gas	1.17
2794.51	2797.66	3.15	0.70	0.222	0.276	0.090	0.656	Gas	
2799.34	2804.57	5.23	4.30	0.822	0.258	0.098	0.590	Gas	4.30
2815.54	2819.07	3.53	3.10	0.878	0.216	0.122	0.409	Gas	3.10
2824.08	2834.62	10.54	9.30	0.882	0.139	0.141	0.430	Gas	9.30
2860.04	2864.97	4.93	4.87	0.988	0.077	0.168	0.267	Gas	4.87
2865.46	2867.87	2.41	1.50	0.622	0.224	0.119	0.459	Gas	1.50
2869.26	2872.82	3.56	0.90	0.253	0.238	0.082	0.727	Gas	
2897.03	2912.17	15.14	12.00	0.793	0.149	0.128	0.302	Gas	12.00
2913.77	2918.00	4.23	3.90	0.922	0.206	0.107	0.514	Gas	3.90
2918.00	2925.37	7.37	6.300	0.855	0.062	0.128	0.453	Oil	6.30
2931.83	2939.17	7.34	5.10	0.695	0.113	0.094	0.725	Relict gas	
2941.63	2947.17	5.54	4.70	0.848	0.073	0.111	0.454	Gas	4.70
2951.94	2960.07	8.13	8.07	0.993	0.238	0.125	0.566	Water	
2967.74	2972.82	5.08	4.80	0.945	0.176	0.122	0.748	Water	
2973.91	2976.20	2.29	2.20	0.961	0.146	0.125	0.754	Water	
2977.62	2978.71	1.09	0.90	0.826	0.225	0.112	0.760	Water	
2984.99	2985.62	0.63	0.63	1.000	0.412	0.104	0.716	Water	

Table 1. MLA A23A reservoir statistics

APPENDIX 3a

MARLIN A-23A

Lithology/Show Descriptions

Marlin A23A Lithology / Show Descriptions

Interval (m)		%	Lithology / Show Description
From	To		
Geologist on board (15/07/04) from 1490m to TD 8.5” Hole section.			
1490	1495	100	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse, trace fine to medium, moderately well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, trace pyrite cement in finer grained aggregates, nil to trace argillaceous matrix, predominantly loose with trace fine grained aggregates, fair inferred porosity, no hydrocarbon fluor.
		Tr	CLAYSTONE: light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky.) *Sample contains common bit generated rock flour and Baracarb
1495	1500	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
1500	1505	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
1505	1510	100	SANDSTONE: generally as above, predominantly coarse grained, well sorted
		Tr	CLAYSTONE: as above.
1510	1515	75	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse, trace fine to medium, moderately well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, trace pyrite cement in finer grained aggregates, nil to trace argillaceous matrix, predominantly loose with trace fine grained aggregates, fair inferred porosity, no hydrocarbon fluor.
		20	CLAYSTONE: light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky.)
		5	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1515	1520	50	SANDSTONE: as above.
		50	CLAYSTONE: as above.
		Tr	COAL: as above.
1520	1525	10	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		20	COAL: as above.
1525	1530	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1530	1535	80	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse, trace fine to medium, moderately well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, trace pyrite cement in finer grained aggregates, nil to trace argillaceous matrix, trace nodular pyrite, predominantly loose, fair inferred porosity, no hydrocarbon fluor.
		20	CLAYSTONE: light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky.)
1535	1540	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1540	1545	70	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse, trace fine to medium, moderately well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, trace pyrite cement in finer grained aggregates, nil to trace argillaceous matrix, trace nodular pyrite, predominantly loose, fair inferred porosity, no hydrocarbon fluor.
		30	CLAYSTONE: light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky.)
		Tr	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1545	1550	60	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		30	COAL: brownish black to black, earthy to sub vitreous lustre, firm, sub fissile in part, sub blocky to predominantly blocky, angular fracture, occasionally sub conchoidal, trace disseminated pyrite, lignitic.
1550	1555	20	SANDSTONE: as above.
		20	CLAYSTONE: as above.
		60	COAL: as above.
1555	1560	80	SANDSTONE: as above.
		20	CLAYSTONE: as above.
1560	1565	10	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		20	COAL: as above.
1565	1570	40	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse, trace medium, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, trace pyrite cement in finer grained aggregates, nil to trace argillaceous matrix, trace nodular pyrite, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		50	CLAYSTONE: light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, trace carbonaceous laminae, nil to trace disseminated pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky.)
		10	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1570	1575	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		Tr	COAL: as above.
1575	1580	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		Tr	COAL: as above.
1580	1585	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
1585	1590	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
1590	1595	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1595	1600	40	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse, predominantly coarse, trace to rare medium, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace argillaceous matrix, trace nodular pyrite, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		40	CLAYSTONE: light brownish grey to predominantly moderate brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		20	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1600	1605	30	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		40	COAL: as above.
1605	1610	50	SANDSTONE: generally as above, becoming predominantly medium to coarse grained.
		45	CLAYSTONE: as above.
		5	COAL: as above.
1610	1615	40	SANDSTONE: generally as above, becoming predominantly medium to coarse grained.
		60	CLAYSTONE: as above.
		Tr	COAL: as above.
1615	1620	30	SANDSTONE: white to very light grey, clear to translucent grains, medium to coarse, trace very coarse, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		70	CLAYSTONE: light brownish grey to brownish grey, moderate brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
1620	1625	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
1625	1630	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
1630	1635	30	SANDSTONE: as above.
		70	CLAYSTONE: as above.
1635	1640	30	SANDSTONE: as above.
		70	CLAYSTONE: as above.
1640	1645	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
1645	1650	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
1650	1655	10	SANDSTONE: generally as above, becoming predominantly medium grained.
		90	CLAYSTONE: as above.
1655	1660	10	SANDSTONE: as above.
		80	CLAYSTONE: as above.
		10	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1660	1665	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1665	1670	10	SANDSTONE: white to very light grey, clear to translucent grains, medium to coarse, trace very coarse, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		90	CLAYSTONE: light brownish grey to brownish grey, moderate brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1670	1675	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
1675	1680	40	SANDSTONE: as above.
		60	CLAYSTONE: as above.
1680	1685	60	SANDSTONE: white to very light grey, clear to translucent grains, predominantly medium to coarse, trace very coarse, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		40	CLAYSTONE: as above.
		60	SANDSTONE: as above.
1685	1690	40	CLAYSTONE: as above.
		40	CLAYSTONE: as above.
1690	1695	80	SANDSTONE: generally as above, trace pyrite cemented aggregates.
		20	CLAYSTONE: as above.
1695	1700	90	SANDSTONE: generally as above, trace pyrite cemented aggregates, trace very coarse.
		10	CLAYSTONE: as above.
			*Sample dominantly rock flour
1700	1705	60	SANDSTONE: as above, medium to coarse grained.
		20	CLAYSTONE: as above.
		20	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1705	1710	40	SANDSTONE: as above.
		40	CLAYSTONE: as above.
		20	COAL: as above.
1710	1715	60	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		10	COAL: as above.
1715	1720	40	SANDSTONE: as above.
		60	CLAYSTONE: as above.
		Tr	COAL: as above.
1720	1725	30	SANDSTONE: as above.
		60	CLAYSTONE: as above.
		10	COAL: as above.
1725	1730	80	SANDSTONE: white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		20	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1730	1735	90	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		10	CLAYSTONE: light brownish grey to brownish grey, moderate brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
1735	1740	95	SANDSTONE: as above.
		5	CLAYSTONE: as above.
1740	1745	70	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		Tr	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1745	1750	10	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		80	COAL: brownish black to black, predominantly earthy lustre, minor sub vitreous, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1750	1755	50	SANDSTONE: as above.
		50	CLAYSTONE: as above.
		Tr	COAL: as above. *Sample predominantly bit generated texture
1755	1760	50	SANDSTONE: as above.
		40	CLAYSTONE: as above.
		10	COAL: as above.
1760	1765	90	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly light grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		10	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
1765	1770	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
1770	1775	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
1775	1780	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1780	1785	70	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		20	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly light grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		10	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, lignitic.
1785	1790	20	SANDSTONE: as above.
		50	CLAYSTONE: as above.
		30	COAL: as above.
1790	1795	20	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		10	COAL: as above.
1795	1800	20	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		10	COAL: as above.
1800	1805	20	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		10	COAL: as above.
1805	1810	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1810	1815	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1815	1820	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1820	1825	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1825	1830	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1830	1835	10	SANDSTONE: generally as above, trace very coarse.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1835	1840	20	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		80	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly light grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
1840	1845	40	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		60	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, very soft to moderately firm (Predominantly light grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
1845	1850	70	SANDSTONE: generally as above, increasing inter granular pyrite cement.
		30	CLAYSTONE: as above.
1850	1855	50	SANDSTONE: as above.
		50	CLAYSTONE: as above.
1855	1860	70	SANDSTONE: as above.
		30	CLAYSTONE: as above.
1860	1865	70	SANDSTONE: as above.
		30	CLAYSTONE: as above.
1865	1870	50	SANDSTONE: as above.
		50	CLAYSTONE: as above.
1870	1875	20	SANDSTONE: generally as above, trace glauconite.
		80	CLAYSTONE: as above.
1875	1880	20	SANDSTONE: generally as above, trace glauconite.
		80	CLAYSTONE: as above.
1880	1885	10	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		70	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		20	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
1885	1890	10	SANDSTONE: as above.
		60	CLAYSTONE: as above.
		30	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1890	1895	20	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		10	COAL: as above.
1895	1900	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1900	1905	10	SANDSTONE: as above.
		80	CLAYSTONE: as above.
		10	COAL: as above.
1905	1910	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		Tr	COAL: as above.
1910	1915	10	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		90	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
1915	1920	5	SANDSTONE: as above.
		85	CLAYSTONE: as above.
		10	COAL: as above.
1920	1925	5	SANDSTONE: as above.
		95	CLAYSTONE: as above.
		Tr	COAL: as above.
1925	1930	5	SANDSTONE: as above.
		95	CLAYSTONE: as above.
		Tr	COAL: as above.
1930	1935	5	SANDSTONE: as above.
		85	CLAYSTONE: as above.
		10	COAL: as above.
1935	1940	5	SANDSTONE: as above.
		95	CLAYSTONE: as above.
		Tr	COAL: as above.
1940	1945	5	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		5	COAL: as above.
1945	1950	5	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		5	COAL: as above.
1950	1955	5	SANDSTONE: as above.
		95	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
1955	1960	10	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		20	COAL: as above.
1960	1965	5	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		5	COAL: as above.
1965	1970	5	SANDSTONE: as above.
		90	CLAYSTONE: as above.
		5	COAL: generally as above, trace nodular pyrite.
1970	1975	Tr	SANDSTONE: as above.
		100	CLAYSTONE: as above.
		Tr	COAL: as above.
1975	1980	Tr	SANDSTONE: as above.
		80	CLAYSTONE: as above.
		20	COAL: as above.
1980	1985	100	CLAYSTONE: light brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, predominantly medium to minor coarse, minor fine, well sorted, angular to sub rounded, minor to common rounded, trace silica cement in part, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, predominantly loose, fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		Tr	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
1985	1990	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		Tr	COAL: as above.
1990	1995	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		Tr	COAL: as above.
1995	2000	100	CLAYSTONE: generally as above, common carbonaceous material.
		Tr	SANDSTONE: as above.
		Tr	COAL: as above.
2000	2005	95	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		5	COAL: as above.
2005	2010	80	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		20	COAL: as above.
2010	2015	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2015	2020	100	CLAYSTONE: pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2020	2025	100	CLAYSTONE: as above.
2025	2030	100	CLAYSTONE: as above.
2030	2035	100	CLAYSTONE: as above.
2035	2040	100	CLAYSTONE: generally as above, trace very coarse quartz float.
2040	2045	100	CLAYSTONE: as above.
2045	2050	100	CLAYSTONE: as above.
2050	2055	100	CLAYSTONE: as above.
2055	2060	100	CLAYSTONE: as above.
2060	2065	100	CLAYSTONE: as above.
2065	2070	100	CLAYSTONE: as above.
2070	2075	100	CLAYSTONE: as above.
2075	2080	95	CLAYSTONE: as above.
		5	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
2080	2085	98	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		2	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
2085	2090	95	CLAYSTONE: as above.
		5	SANDSTONE: white to very light grey, clear to translucent grains, fine grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
			COAL: as above.
		Tr	
2090	2095	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2095	2100	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2100	2105	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2105	2110	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2110	2115	90	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	SANDSTONE: white to very light grey, clear to translucent grains, fine grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples) COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
2115	2120	10	
		98	CLAYSTONE: as above.
2120	2125	Tr	SANDSTONE: as above.
		2	COAL: as above.
2120	2125	98	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2125	2130	2	COAL: as above.
		95	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2130	2135	5	SANDSTONE: white to very light grey, clear to translucent grains, fine to medium grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		60	CLAYSTONE: as above.
2135	2140	40	SANDSTONE: as above.
		90	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2140	2145	10	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to minor medium grained, trace very coarse, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		70	CLAYSTONE: as above.
2145	2150	30	SANDSTONE: as above.
		60	CLAYSTONE: as above.
2150	2155	40	SANDSTONE: as above.
		80	CLAYSTONE: as above.
2155	2160	15	SANDSTONE: as above.
		5	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty in part, lignitic.
2160	2165	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
2160	2165	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2165	2170	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2170	2175	100	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to minor medium grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2175	2180	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
2180	2185	50	CLAYSTONE: as above.
		50	SANDSTONE: as above.
2185	2190	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2190	2195	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2195	2200	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2200	2205	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2205	2210	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2210	2215	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
2215	2220	80	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		20	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to minor medium grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2220	2225	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2225	2230	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
2230	2235	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2235	2240	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2240	2245	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2245	2250	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2250	2255	80	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		20	SANDSTONE: white to very light grey, clear to translucent grains, fine to medium grained, trace coarse, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2255	2260	50	CLAYSTONE: as above.
		50	SANDSTONE: as above.
2260	2265	50	CLAYSTONE: as above.
		50	SANDSTONE: as above.
2265	2270	20	CLAYSTONE: as above.
		80	SANDSTONE: as above.
2270	2275	20	CLAYSTONE: as above.
		80	SANDSTONE: as above.
2275	2280	30	CLAYSTONE: as above.
		70	SANDSTONE: as above.
2280	2285	40	CLAYSTONE: as above.
		60	SANDSTONE: generally as above, trace very coarse.
2285	2290	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2290	2295	40	CLAYSTONE: generally as above, increasing nodular pyrite.
		60	SANDSTONE: as above.
2295	2300	40	CLAYSTONE: as above.
		60	SANDSTONE: as above.
2300	2305	80	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		20	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, trace coarse, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2305	2310	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2310	2315	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
2315	2320	70	CLAYSTONE: as above.
		30	SANDSTONE: generally as above, trace aggregates with common argillaceous matrix, poor visual porosity.
2320	2325	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
2325	2330	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2330	2335	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2335	2340	50	CLAYSTONE: as above.
		50	SANDSTONE: as above.
2340	2345	50	CLAYSTONE: as above.
		50	SANDSTONE: as above.
2345	2350	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2350	2355	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2355	2360	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2360	2365	90	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		10	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, trace coarse, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, generally returned loose, poor inferred porosity, trace aggregates with common argillaceous matrix, poor visual porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2365	2370	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2370	2375	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2375	2380	60	CLAYSTONE: generally as above, pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		40	SANDSTONE: white to very light grey, clear to translucent grains, fine to medium grained, trace coarse, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, generally returned loose, poor inferred porosity, trace aggregates no hydrocarbon fluor. (Common bit generated rock flour in samples)
2380	2385	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2385	2390	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2390	2395	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2395	2400	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2400	2405	100	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2405	2410	90	CLAYSTONE: pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace to rare carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		10	SANDSTONE: white to very light grey, clear to translucent grains, very fine to fine grained, trace medium, well sorted, sub angular to sub rounded, trace argillaceous matrix, minor carbonaceous laminations, poor inferred porosity, common moderately firm aggregates, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2410	2415	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
2415	2420	40	CLAYSTONE: as above.
		40	SANDSTONE: white to very light grey, clear to translucent grains, fine to medium grained, trace very fine, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, generally returned loose, poor inferred porosity, nil to trace aggregates, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2420	2425	20	COAL: brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, minor silty laminae in part, lignitic.
		10	CLAYSTONE: as above.
		60	SANDSTONE: as above.
		30	COAL: as above.
2425	2430	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2430	2435	Tr	COAL: as above.
		80	CLAYSTONE: as above.
		20	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, trace very fine, well sorted, sub angular to sub rounded, minor rounded, trace inter granular pyrite cement, trace argillaceous matrix, generally returned loose, poor inferred porosity, nil to trace aggregates, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2435	2440	Tr	COAL: as above.
		75	CLAYSTONE: pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace to rare carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		20	SANDSTONE: white to very light grey, clear to translucent grains, fine to medium grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2440	2445	5	COAL: brownish black to black, earthy lustre, sub vitreous in part, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silt, lignitic.
		50	CLAYSTONE: as above.
		20	SANDSTONE: as above.
2445	2450	30	COAL: as above.
		20	CLAYSTONE: as above.
		70	SANDSTONE: as above.
		10	COAL: generally as above, trace nodular pyrite.

Interval (m)		%	Lithology / Show Description
From	To		
2450	2455	90	CLAYSTONE: as above.
		5	SANDSTONE: as above.
		5	COAL: as above.
2455	2460	95	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		5	COAL: as above.
2460	2465	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.
2465	2470	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.
2470	2475	50	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		40	COAL: as above.
2475	2480	80	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		20	COAL: as above.
2480	2485	80	CLAYSTONE: pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace to rare carbonaceous laminae, nil to trace disseminated and nodular pyrite, generally very soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		15	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace argillaceous matrix, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		5	COAL: brownish black to black, earthy lustre, sub vitreous in part, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silt, lignitic.
2485	2490	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.
2490	2495	30	CLAYSTONE: pale brownish grey to brownish grey, moderate yellowish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace to rare carbonaceous laminae, nil to trace disseminated and nodular pyrite, trace mica, generally soft to moderately firm (Predominantly light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, well sorted, sub angular to sub rounded, minor rounded, nil to trace inter granular pyrite cement, nil to trace argillaceous matrix, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		70	COAL: brownish black to black, earthy lustre, sub vitreous in part, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silt, lignitic.
2495	2500	60	CLAYSTONE: as above.
		30	SANDSTONE: as above.
		10	COAL: as above.
2500	2505	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2505	2510	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2510	2515	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2515	2520	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2520	2525	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2525	2530	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
2530	2535	95	CLAYSTONE: as above.
		5	SANDSTONE: as above.
		Tr	COAL: as above.
2535	2540	10	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		90	COAL: brownish black to black, earthy lustre, sub vitreous in part, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silt, lignitic.
2540	2545	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.
2545	2550	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.
2550	2555	60	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		30	COAL: as above.
2555	2560	80	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		10	COAL: as above.
2560	2565	60	CLAYSTONE: dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		40	SANDSTONE: white to very light grey, clear to translucent grains, fine to predominantly medium grained, well sorted, sub angular to sub rounded, trace to minor angular, nil to trace dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
			COAL: brownish black to black, earthy lustre, sub vitreous in part, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silt, lignitic.
2565	2570	Tr	
		20	CLAYSTONE: as above.
		40	SANDSTONE: as above.
		40	COAL: as above.
2570	2575	40	CLAYSTONE: as above.
		60	SANDSTONE: as above.
		Tr	COAL: as above.
2575	2580	30	CLAYSTONE: as above.
		70	SANDSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2580	2585	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
		Tr	COAL: as above.
2585	2590	10	CLAYSTONE: as above.
		80	SANDSTONE: as above.
		10	COAL: as above.
2590	2595	10	CLAYSTONE: as above.
		80	SANDSTONE: white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse grains, well sorted, sub angular to sub rounded, trace to minor angular, nil to trace dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		10	COAL: as above.
2595	2600	50	CLAYSTONE: as above.
		50	SANDSTONE: as above.
			COAL: as above.
2600	2605	50	CLAYSTONE: as above.
		40	SANDSTONE: as above.
		10	COAL: as above.
2605	2610	80	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		10	COAL: as above.
2610	2615	20	CLAYSTONE: as above.
		70	SANDSTONE: as above.
		10	COAL: as above.
2615	2620	20	CLAYSTONE: dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		80	SANDSTONE: white to very light grey, clear to translucent grains, fine to medium grained, minor coarse to very coarse, poorly sorted, sub angular to sub rounded, trace to minor angular, very coarse grains commonly bit fractured, nil to trace dolomitic cement, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2620	2625	40	CLAYSTONE: as above.
		60	SANDSTONE: as above.
2625	2630	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
2630	2635	50	CLAYSTONE: as above.
		30	SANDSTONE: as above.
		20	COAL: brownish black to black, earthy lustre, sub vitreous in part, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silt, lignitic.
2635	2640	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
		10	COAL: as above.
2640	2645	70	CLAYSTONE: as above.
		20	SANDSTONE: as above.
		10	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2645	2650	40	CLAYSTONE: as above.
		50	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, well sorted, sub angular to sub rounded, trace to minor angular, nil to trace dolomitic cement, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		10	COAL: as above.
2650	2655	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
		Tr	COAL: as above.
2655	2660	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		Tr	COAL: as above.
2660	2665	60	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		30	COAL: as above.
2665	2670	70	CLAYSTONE: as above.
		25	SANDSTONE: as above.
		5	COAL: as above.
2670	2675	10	CLAYSTONE: generally as above, dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		90	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, well sorted, sub angular to sub rounded, trace to minor angular, nil to trace siliceous and dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		10	CLAYSTONE: generally as above, dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2675	2680	90	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, well sorted, sub angular to sub rounded, trace to minor angular, nil to trace siliceous and dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		10	CLAYSTONE: generally as above, dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		90	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, well sorted, sub angular to sub rounded, trace to minor angular, nil to trace siliceous and dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
2680	2685	90	COAL: brownish black to black, earthy to sub vitreous lustre, firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, trace silt, lignitic to sub bituminous.
		10	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2685	2690	60	COAL: as above.
		30	CLAYSTONE: as above.
		10	SANDSTONE: as above.
2690	2695	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
		Tr	COAL: as above.
2695	2700	40	CLAYSTONE: as above.
		50	SANDSTONE: as above.
		10	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2700	2705	60	SANDSTONE: white to very light grey, clear to translucent grains, predominantly very fine to fine grained, trace medium and coarse, well sorted, sub angular to sub rounded, trace angular, nil to trace siliceous and dolomitic cement, nil to trace pyrite cement, common argillaceous matrix in aggregates, generally returned loose, poor inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		40	CLAYSTONE: generally as above, dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2705	2710	30	SANDSTONE: as above.
		70	CLAYSTONE: as above.
2710	2715	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
2715	2720	60	SANDSTONE: as above.
		40	CLAYSTONE: as above.
2720	2725	10	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		80	COAL: brownish black to black, earthy lustre, rare sub vitreous, firm, sub fissile to fissile, sub blocky to blocky in part, hackly to angular fracture, trace to minor silt, lignitic.
2725	2730	10	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		60	COAL: as above.
2730	2735	10	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		60	COAL: as above.
2735	2740	90	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, minor very fine, moderately sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous and dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		5	CLAYSTONE: generally as above, dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated and nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		5	COAL: brownish black to black, earthy lustre, rare sub vitreous, firm, sub fissile to fissile, sub blocky to blocky in part, hackly to angular fracture, trace to minor silt, lignitic.
		70	SANDSTONE: as above.
		30	CLAYSTONE: as above.
2745	2750	Tr	COAL: as above.
		80	SANDSTONE: as above.
		20	CLAYSTONE: as above.
2750	2755	Tr	COAL: as above.
		50	SANDSTONE: as above.
		30	CLAYSTONE: as above.
2755	2760	20	COAL: as above.
		50	SANDSTONE: as above.
		50	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2760	2765	10	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		80	COAL: brownish black to black, earthy lustre, rare sub vitreous, firm, sub fissile to fissile, sub blocky to blocky in part, hackly to angular fracture, trace to minor silt, lignitic.
2765	2770	30	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		40	COAL: as above.
2770	2775	40	SANDSTONE: as above.
		50	CLAYSTONE: as above.
		10	COAL: as above.
2775	2780	20	SANDSTONE: as above.
		70	CLAYSTONE: as above.
		10	COAL: as above.
2780	2785	90	CLAYSTONE: medium dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, minor disseminated and nil to trace nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		10	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, minor very fine, moderately sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous and dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		Tr	COAL: as above.
		80	CLAYSTONE: as above.
2785	2790	20	SANDSTONE: as above.
		Tr	COAL: as above.
		30	CLAYSTONE: medium dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, minor disseminated and nil to trace nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2790	2795	70	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, minor very fine, moderately sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous and dolomitic cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		Tr	COAL: brownish black to black, earthy lustre, rare sub vitreous, firm, sub fissile to fissile, sub blocky to blocky in part, hackly to angular fracture, trace to minor silt, lignitic.
		10	CLAYSTONE: as above.
2795	2800	90	SANDSTONE: as above.
		Tr	COAL: as above.
		10	CLAYSTONE: as above.
2800	2805	90	SANDSTONE: as above.
		Tr	COAL: as above.
		10	CLAYSTONE: as above.
2805	2810	90	SANDSTONE: as above.
		Tr	COAL: as above.
		60	CLAYSTONE: as above.
2810	2815	40	SANDSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2815	2820	20	CLAYSTONE: as above.
		60	SANDSTONE: as above.
		20	COAL: as above.
2820	2825	30	CLAYSTONE: as above.
		60	SANDSTONE: as above.
		10	COAL: as above.
2825	2830	10	CLAYSTONE: as above.
		90	SANDSTONE: white to very light grey, clear to translucent grains, predominantly fine to medium grained, minor very fine, moderately well sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous cement, trace pyrite cement, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		Tr	COAL: as above.
2830	2835	70	CLAYSTONE: as above.
		20	SANDSTONE: as above.
		10	COAL: as above.
2835	2840	10	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		80	COAL: as above.
2840	2845	50	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		40	COAL: as above.
2845	2850	30	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		70	COAL: as above.
2850	2855	10	CLAYSTONE: as above.
		70	SANDSTONE: as above.
		20	COAL: as above.
2855	2860	90	SANDSTONE: white to very light grey, clear to translucent grains, fine to predominantly medium grained, minor very fine, trace coarse moderately sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous cement, trace pyrite cement in part, common argillaceous matrix in aggregates, generally returned loose, poor to fair inferred porosity, no hydrocarbon fluor. (Common bit generated rock flour in samples)
		10	CLAYSTONE: medium dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, minor disseminated and nil to trace nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		Tr	COAL: brownish black to black, earthy lustre, rare sub vitreous, firm, sub fissile to fissile, sub blocky to blocky in part, hackly to angular fracture, trace to minor silt, lignitic.
2860	2865	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		Tr	COAL: as above.
2865	2870	70	SANDSTONE: as above.
		20	CLAYSTONE: as above.
		10	COAL: as above.
2870	2875	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
		Tr	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2875	2880	50	SANDSTONE: as above.
		50	CLAYSTONE: as above.
		Tr	COAL: as above.
2880	2885	40	SANDSTONE: as above.
		60	CLAYSTONE: generally as above, trace nodular pyrite.
		Tr	COAL: as above.
2885	2890	30	SANDSTONE: as above.
		70	CLAYSTONE: as above.
2890	2895	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
2895	2900	90	SANDSTONE: white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous cement, trace argillaceous matrix, nil to trace nodular pyrite, generally returned loose, poor to fair inferred porosity. (Sample commonly bit generated rock flour).
			FLUOR: Tr-5% dim to dull yellow white, pinpoint, slow yellow white cut, thin moderately bright residue ring (Probably Glycol affect, usually associated with bit generated rock flour)
		10	CLAYSTONE: as above.
2900	2905	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
2905	2910	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
2910	2915	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
2915	2920	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
2920	2925	80	SANDSTONE: white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace to rare coarse, nil to trace very coarse, moderately well sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous cement, trace argillaceous matrix, nil to trace nodular pyrite, generally returned loose, occasional aggregates are well cemented with trace argillaceous matrix, poor to fair inferred porosity. (Sample commonly bit generated rock flour).
			FLUOR: Tr-5% dim to dull yellow white, pinpoint, slow yellow white cut, thin moderately bright residue ring (Probably Glycol affect, usually associated with bit generated rock flour)
		20	CLAYSTONE: medium dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace disseminated and nil to trace nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
2925	2930	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
2930	2935	10	SANDSTONE: as above.
		90	CLAYSTONE: generally as above, trace nodular pyrite.
2935	2940	90	SANDSTONE: as above, trace angular, very coarse, bit fractured grains.
		10	CLAYSTONE: as above.
2940	2945	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
2945	2950	80	COAL: brownish black to black, dull to earthy lustre, soft to firm, sub blocky to blocky, hackly to angular fracture, trace to minor silt, lignitic.
		10	SANDSTONE: as above.
		10	CLAYSTONE: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2950	2955	90	SANDSTONE: as above.
		5	CLAYSTONE: as above.
		5	COAL: as above.
2955	2960	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
2960	2965	20	SANDSTONE: as above.
		75	CLAYSTONE: as above.
		5	COAL: brownish black to black, dull to earthy lustre, soft to firm, sub blocky to blocky, hackly to angular fracture, trace to minor silt, lignitic.
2965	2970	90	SANDSTONE: white to very light grey, clear to translucent grains, coarse to very coarse grained, rare medium, trace fine, poorly sorted, sub angular to sub rounded, trace angular and rounded, minor bit fractured grains, nil to trace siliceous cement, trace argillaceous matrix, nil to trace nodular pyrite, generally returned loose, occasional aggregates are well cemented with trace argillaceous matrix, poor to fair inferred porosity. (Sample commonly bit generated rock flour).
			FLUOR: Tr-5% dim to dull yellow white, pinpoint, slow yellow white cut, thin moderately bright residue ring (Probably Glycol affect, usually associated with bit generated rock flour)
2970	2975	10	CLAYSTONE: medium dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace disseminated and nil to trace nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		80	SANDSTONE: as above.
		20	CLAYSTONE: as above.
2975	2980	10	SANDSTONE: as above.
		80	CLAYSTONE: as above.
		10	COAL: as above.
2980	2985	15	SANDSTONE: white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace to rare coarse, nil to trace very coarse, moderately well sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous cement, trace argillaceous matrix, nil to trace nodular pyrite, generally returned loose, occasional aggregates are well cemented with trace argillaceous matrix, poor to fair inferred porosity. (Sample commonly bit generated rock flour).
			FLUOR: Tr-5% dim to dull yellow white, pinpoint, slow yellow white cut, thin moderately bright residue ring (Probably Glycol affect, usually associated with bit generated rock flour)
2985	2990	80	CLAYSTONE: medium dark grey to brownish grey, nil to weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, trace disseminated and nil to trace nodular pyrite, nil to trace mica, moderately firm (Predominantly medium light grey to brownish grey bit generated texture, dispersive, amorphous to rarely sub blocky, sub fissile in part.)
		5	COAL: brownish black to black, dull to earthy lustre, soft to firm, sub blocky to blocky, hackly to angular fracture, trace to minor silt, lignitic.
		10	SANDSTONE: as above.
2990	2995	80	CLAYSTONE: as above.
		10	COAL: as above.
		10	SANDSTONE: as above.
		80	CLAYSTONE: as above.
2990	2995	10	COAL: as above.

Interval (m)		%	Lithology / Show Description
From	To		
2995	3000	50	SANDSTONE: white to very light grey, clear to translucent grains, very fine to predominantly fine grained, trace to rare medium, nil to trace coarse, moderately well sorted, sub angular to sub rounded, trace angular and rounded, nil to trace siliceous cement, trace argillaceous matrix, generally returned loose, occasional aggregates are well cemented with trace argillaceous matrix, poor to fair inferred porosity. (Sample commonly bit generated rock flour).
		50	CLAYSTONE: as above.
3000	3005	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
3005	3010	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
3010	3015	10	SANDSTONE: as above.
		90	CLAYSTONE: as above.
3015	3020	40	SANDSTONE: as above.
		60	CLAYSTONE: as above.
3020	3025	40	SANDSTONE: as above.
		60	CLAYSTONE: as above.
3025	3030	55	SANDSTONE: as above.
		40	CLAYSTONE: as above.
		5	COAL: as above.
3030	3035	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
3035	3040	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
3040	3045	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.
3045	3051	20	SANDSTONE: as above.
		80	CLAYSTONE: as above.

TD 3051mMDRT (2732mTVDRT) reached 14:30hrs July 21st 2004.

APPENDIX 4a

MARLIN A-23A

Mud Log



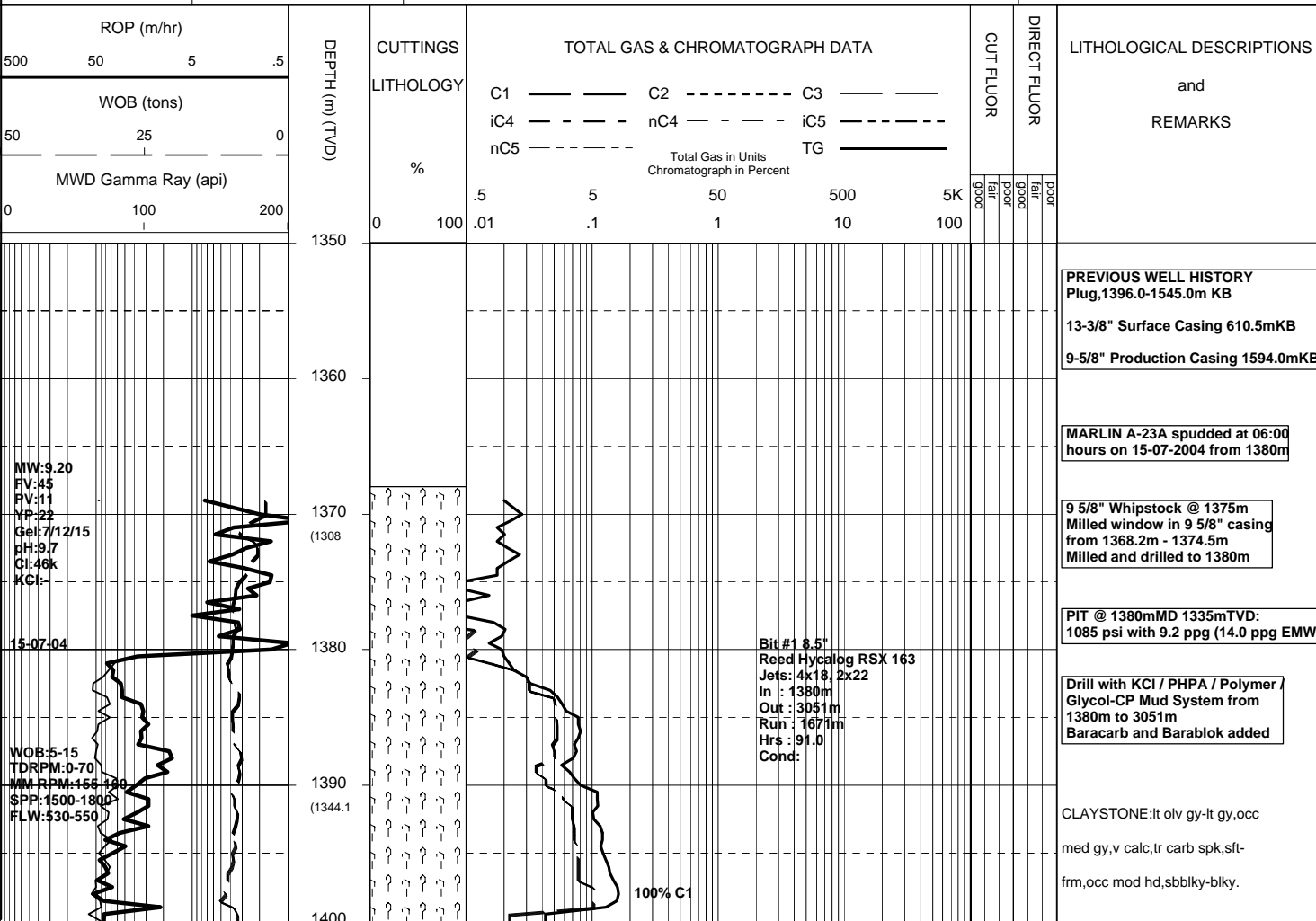
MASTERLOG

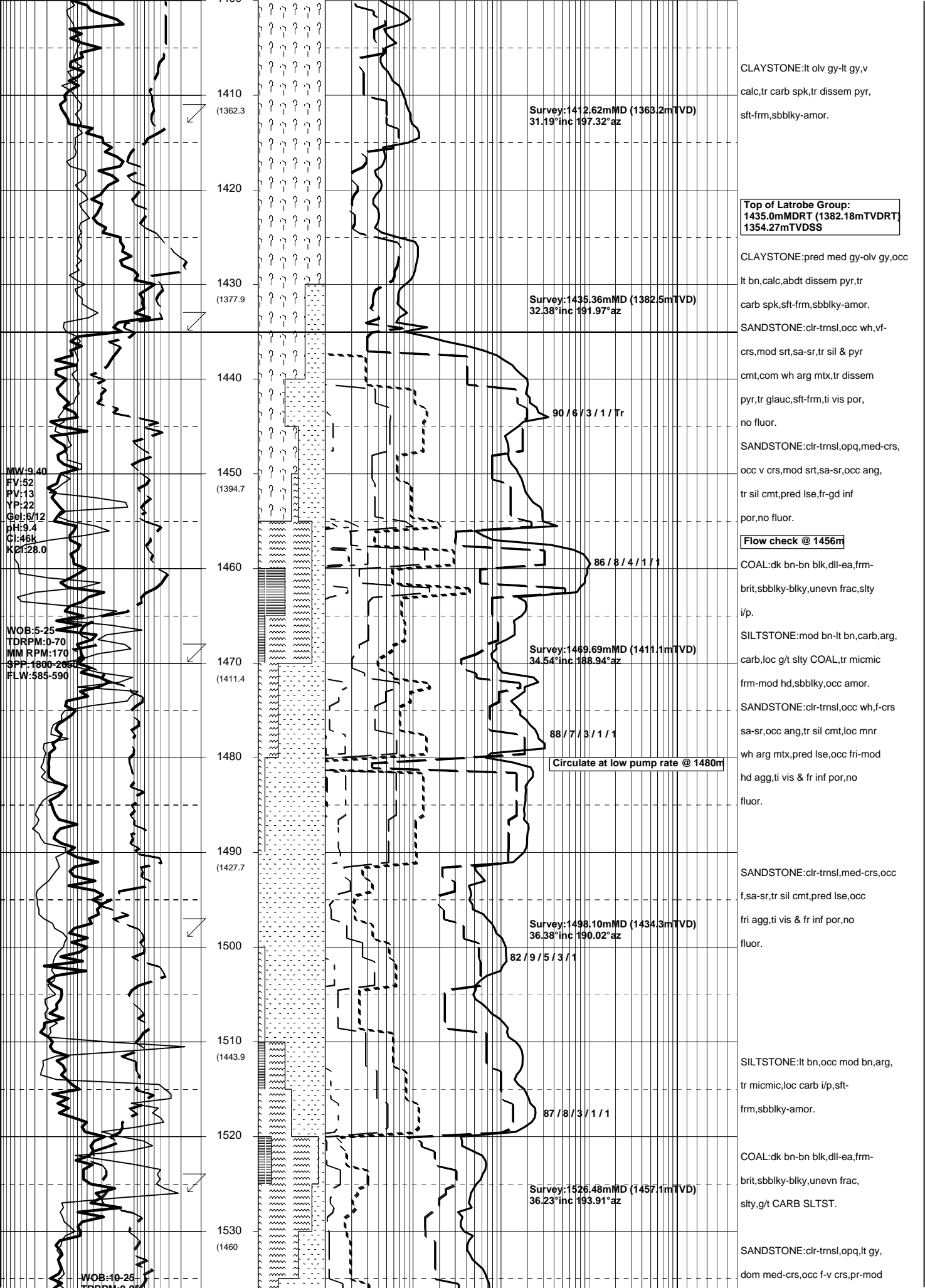
MLA A-23A

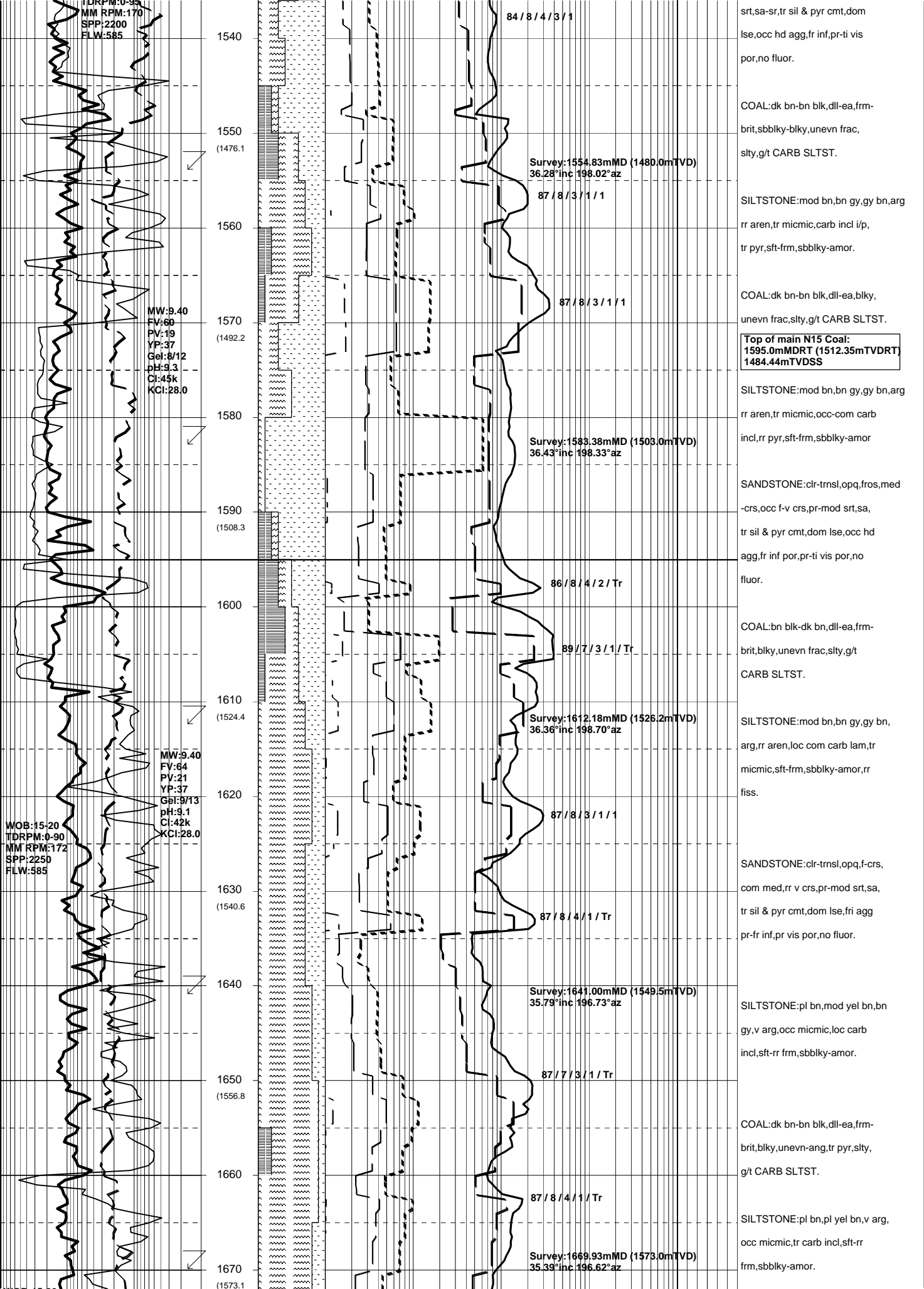


GENERAL	POSITION	HOLE / CASING INFO	DATE / DEPTH	ENGINEERS
Country : AUSTRALIA	Local Co-ord X : -22.43 mE	8-1/2" Hole to 3051.0 m	Kick Off Date : 15-07-2004	Rohan Pereira
Permit : VIC L11	Local Co-ord Y : 2.90 mN		Total Depth Date : 21-07-2004	Mark Smith
Field : TURRUM	AMG Co-ord X : 606863.03 mE	20" Conductor Shoe at 163.0 m	Total Depth : 3051.0 m	Greg Fawns
Basin : GIPPSLAND	AMG Co-ord Y : 5767924.00 mN	13-3/8" Surface Casing at 611.0 m	True Vertical Depth : 2732.01 m	Steve Oades
Well Type : DEVELOPMENT	RT to MSL : 27.91 m	9-5/8" Intermediate Casing at 1374.5 m	Log Scale : 1/ 500	
Rig Name : NABORS 453	RT to Sea Bed : 86.91 m	7" Production Casing at		
		4-1/2" Liner Set at		

ABBREVIATIONS	LITHOLOGY LEGEND	ENGINEERING LEGEND
MW Mud Weight FV Funnel Viscosity PV Plastic Viscosity YP Yield Point Gel Gel Strength WL Water Loss KCl Potassium Chloride Cl Chlorides Incl Inclination Az Azimuth	WOB Weight on Bit (klbs) RPM Rotations Per Min FLW Flow Rate (gpm) SPP Pump Pressure (psi) RR Re-Run Bit TG Trip Gas CG Connection Gas BG Background Gas DGP Drilled Gas Peak MM Mud Motor	CLAYSTONE SILTSTONE SST: F - V FINE SST: MEDIUM SST: COARSE SHALE MARL LIMESTONE DOLOMITE CHERT CONGLOMERATE COAL BRYOZOA RADIOLARITES ECHINOIDES CORALS FORAMINIFERA LITHIC FRAGMENT CARB FRAGMENT QUARTZITE INTRUSIVES GLAUCONITE PYRITE CEMENT
		CASING SHOE LINER HANGER BIT CHANGE DEVI. SURVEY SWC UNRECOV SIDEWALL CORE WIRELINE LOGS MDT POINTS: PRESSURE ONLY SAMPLE SEAL FAILURE TIGHT CORE







WOB:15-20
TDRPM:0-90
MM RPM:172
SPP:2150
FLW:590

16-07-04

WOB:15-20
TDRPM:0-90
MM RPM:170
SPP:2150
FLW:585

WOB:10-20
TDRPM:0-95
MM RPM:170
SPP:2250
FLW:590

1680
1690
(1589.3)
1700
1710
(1605.6)
1720
1730
(1621.8)
1740
1750
(1638)
1760
1770
(1654.3)
1780
1790
(1670.5)
1800

Survey:1698.85mMD (1596.5mTVD)
35.72°inc 196.59°az

91 / 6 / 2 / 1 / Tr

Survey:1727.94mMD (1620.2mTVD)
35.67°inc 196.77°az

93 / 5 / 1 / Tr

Survey:1756.54mMD (1643.3mTVD)
35.98°inc 196.69°az

94 / 5 / 1 / Tr

Survey:1785.30mMD (1666.7mTVD)
35.60°inc 195.45°az

92 / 6 / 2

92 / 6 / 2

SANDSTONE:clr,trnsl,f,occ med-
crs,mod srt,sa,tr sil cmt,abdt
v pl org arg mtx,lse,pr-v pr
inf por,no fluor.

SANDSTONE:clr,trnsl,opq,f-v crs,
pr srt,sa-ang,tr sil cmt,occ pyr
cmt,abdt v lt gy arg mtx,dom lse
fri agg,v pr inf por,nil vis
por,no fluor.

COAL:dk bn,bn blk,dll-ea,sft,
sbbiky-sbfiss,unevn-spltry,v
silty,com g/t CARB SLTST.

SILTSTONE:pl yel bn,lt bn gy,v
arg,micmic i/p,rr carb lam,sft-
frm,amor,sbbiky-sbfiss.

SANDSTONE:clr,trnsl,opq,f-crs,
pr-mod srt,sa-sr i/p,tr sil cmt,
occ pyr cmt,com-abdt v lt gy arg
mtx,dom lse,fri-mod hd agg,pr
inf por,nil vis por,no fluor.

COAL:dk bn,bn blk,dll-ea,sft-frm
sbbiky-sbfiss,unevn,tr pyr,silty,
g/t CARB SLTST.

SANDSTONE:clr-trnsl,f-rr med,mod
srt,sa-sr,tr sil cmt,abdt v lt
gy arg mtx,lse,v pr-nil inf por,
no fluor.

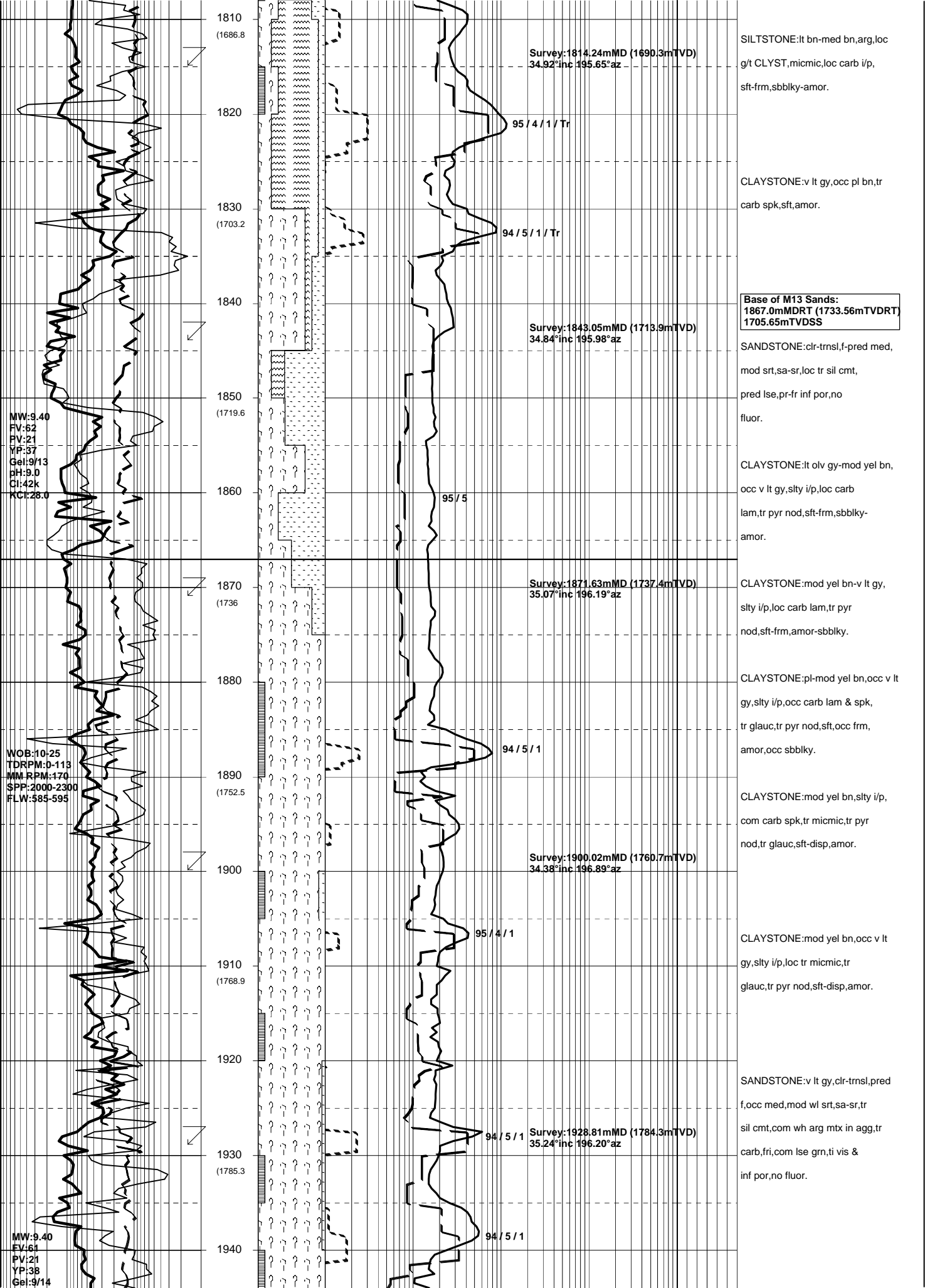
COAL:blk,bn blk,dll,sft-frm,
sbbiky-blky,unevn-ang,lig.

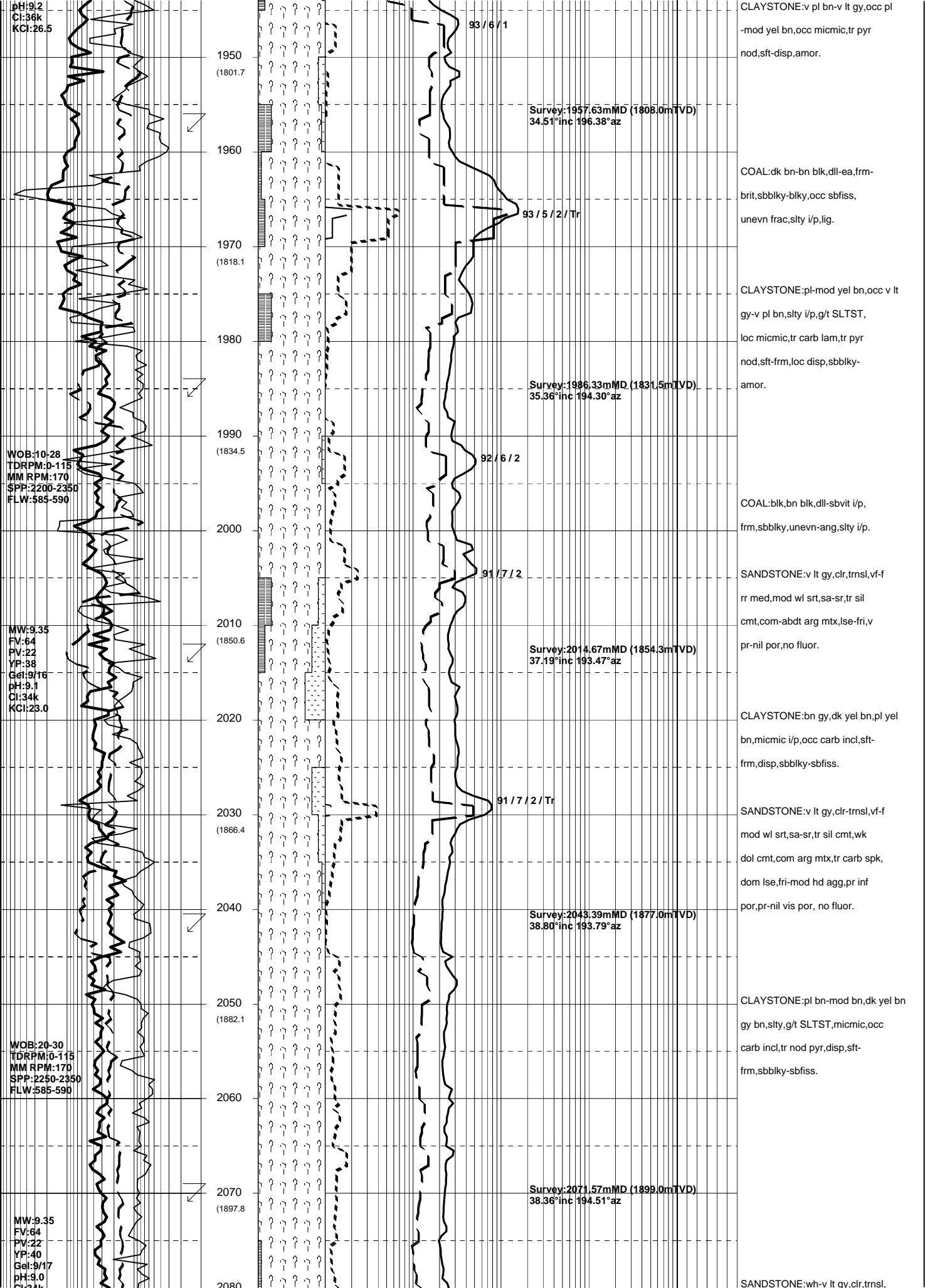
SILTSTONE:dk yel bn,bn gy,v arg,
micmic i/p,carb incl,sft-frm,
amor,sbbiky-sbfiss i/p.

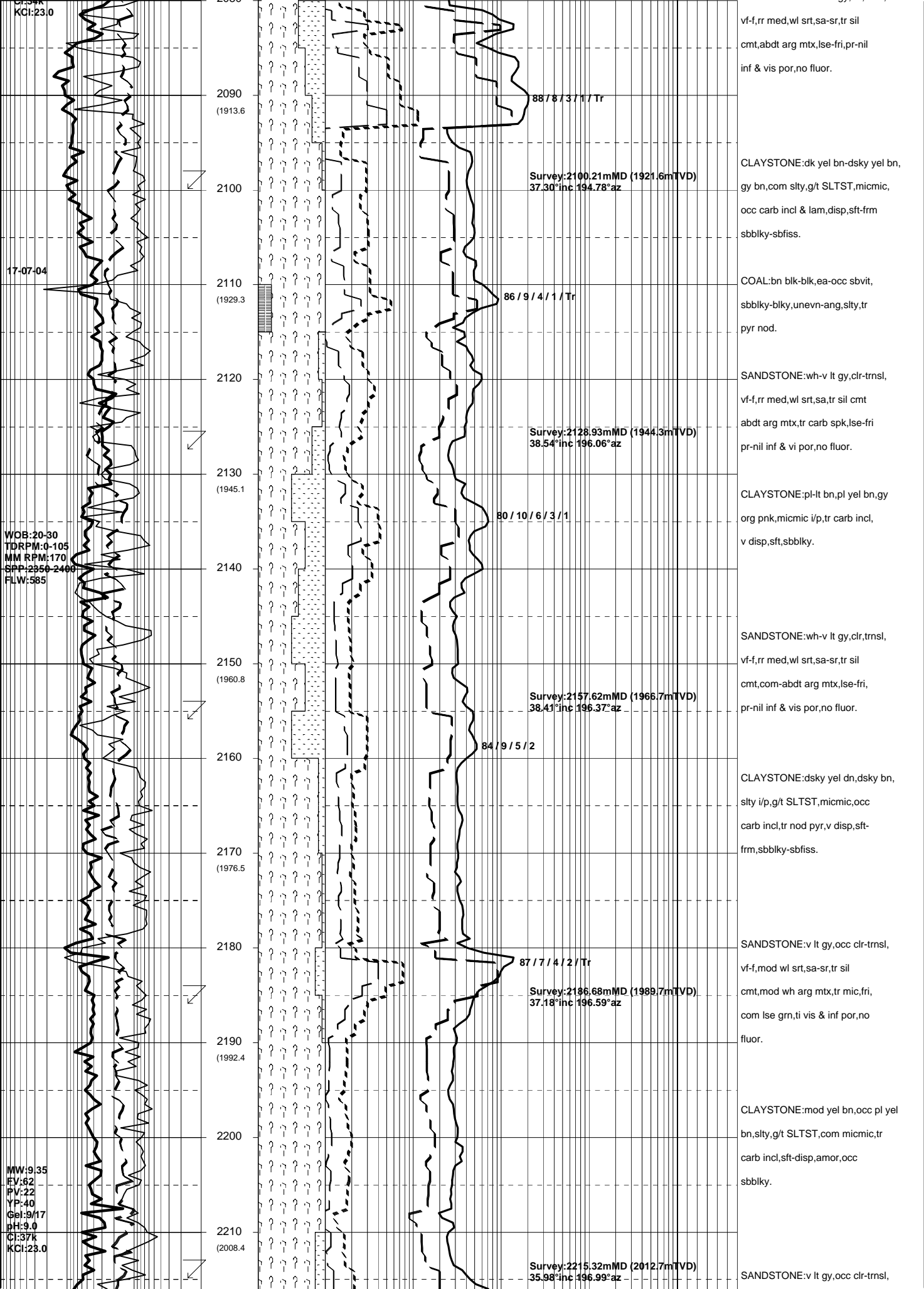
SANDSTONE:clr-trnsl,f-med,mod
srt,sa-sr,tr sil cmt,loc com wh
arg mtx,pred lse,ti vis & pr inf
por,no fluor.

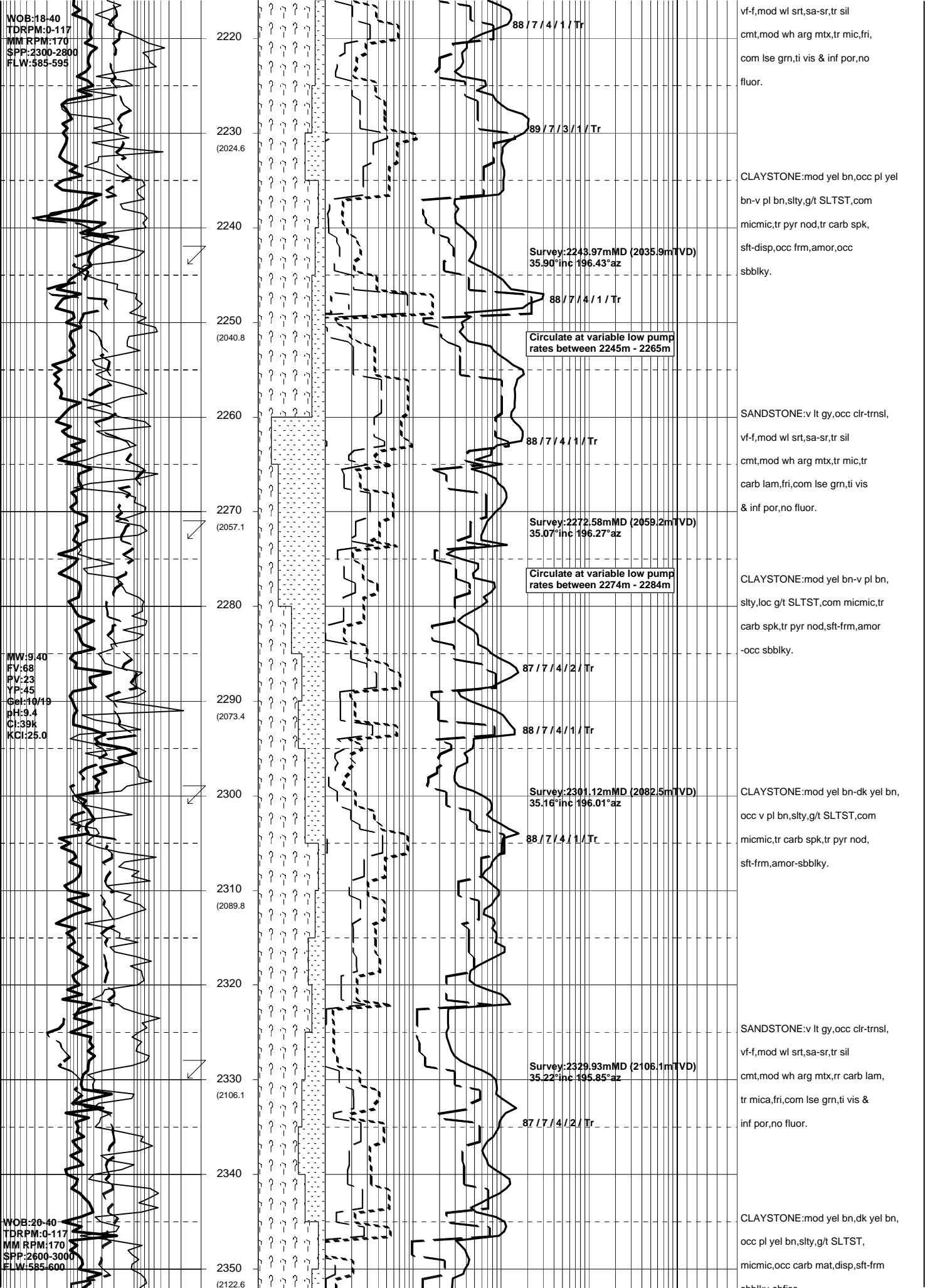
COAL:dk bn,bn blk,dll-ea,frm,
sbbiky-blky,occ sbfiss,unevn-ang
frac,silty i/p,lig.

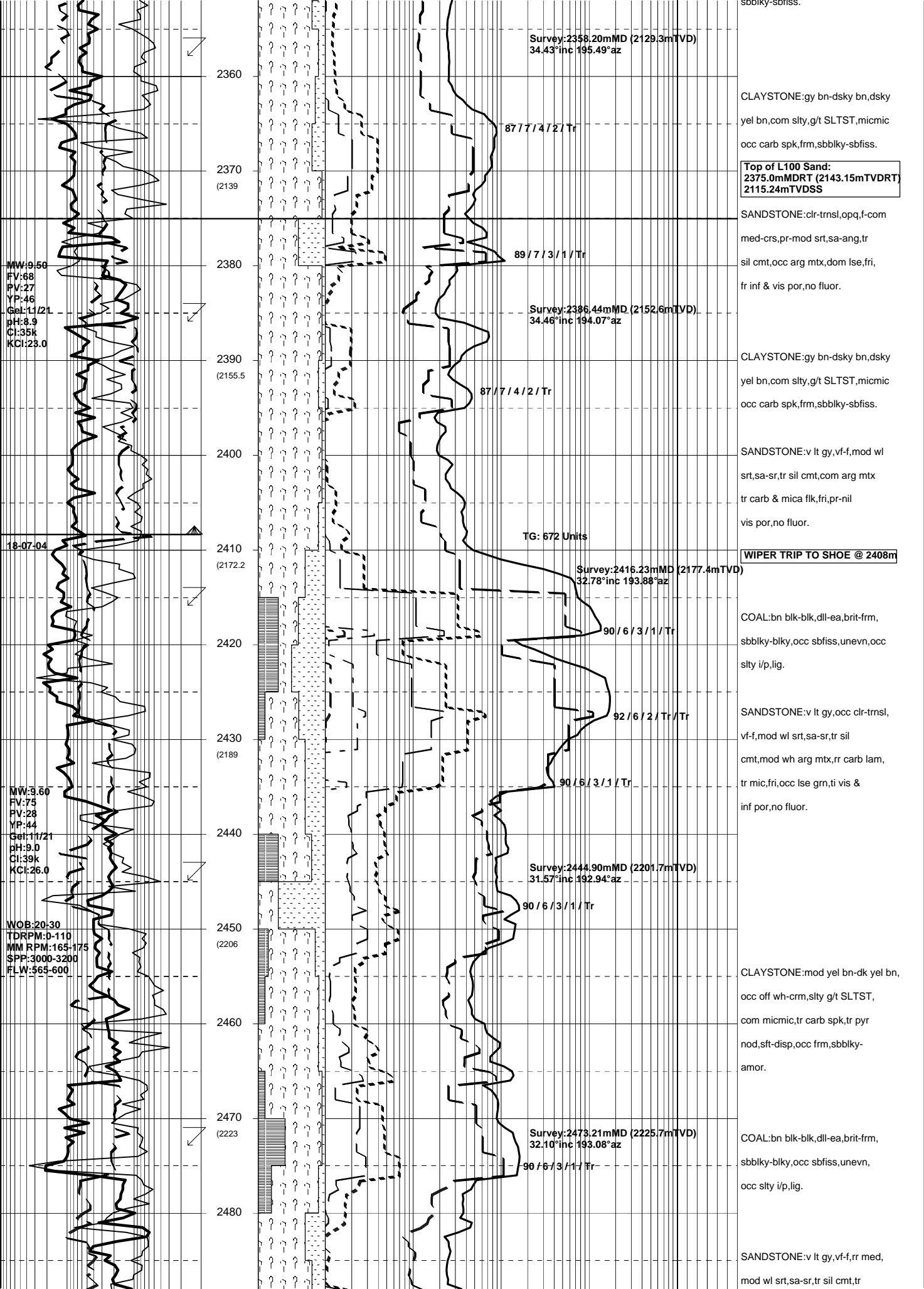
CLAYSTONE:v lt gy,occ pl crm,
tr carb spk,sft-frm,amor.

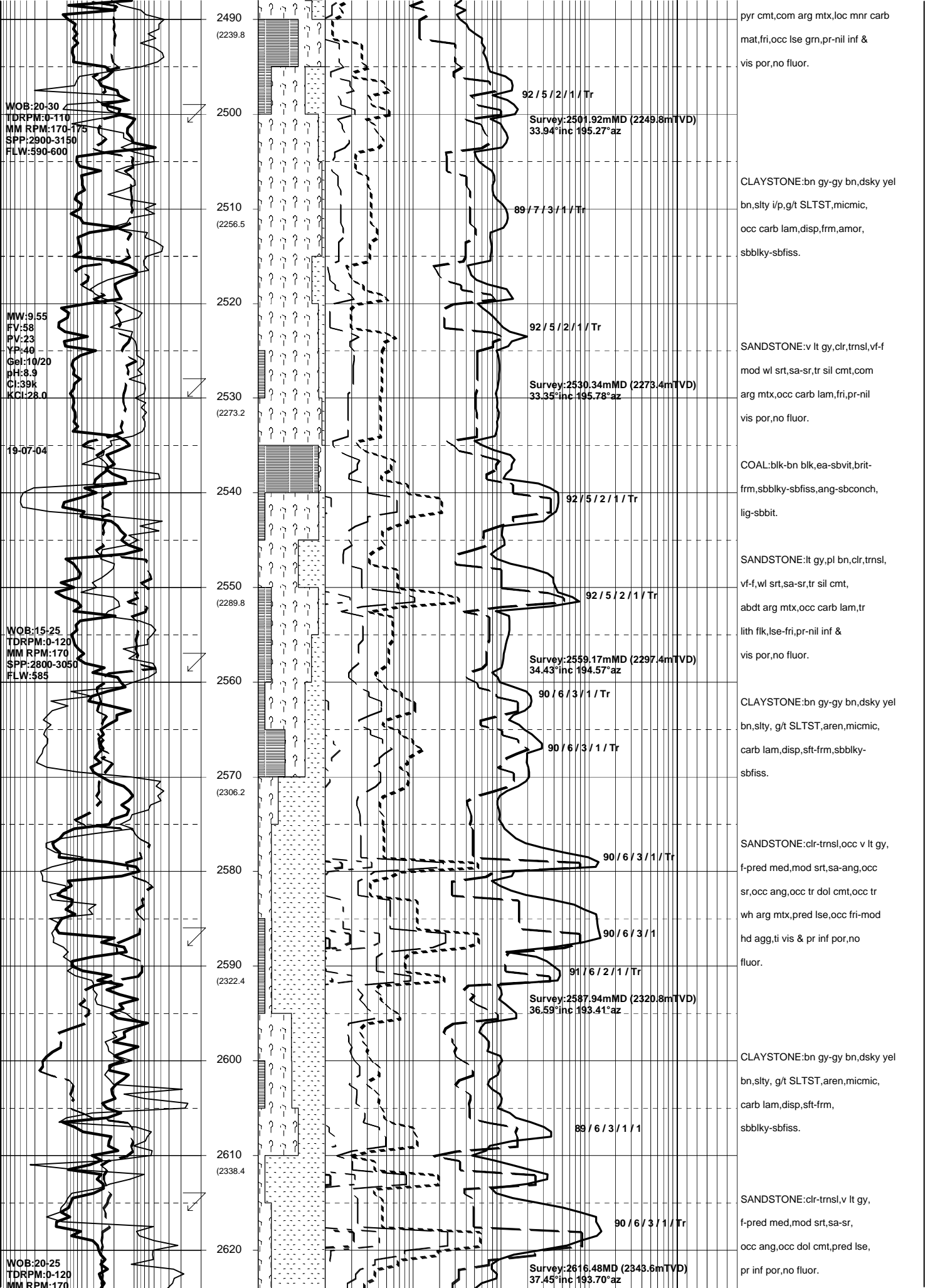


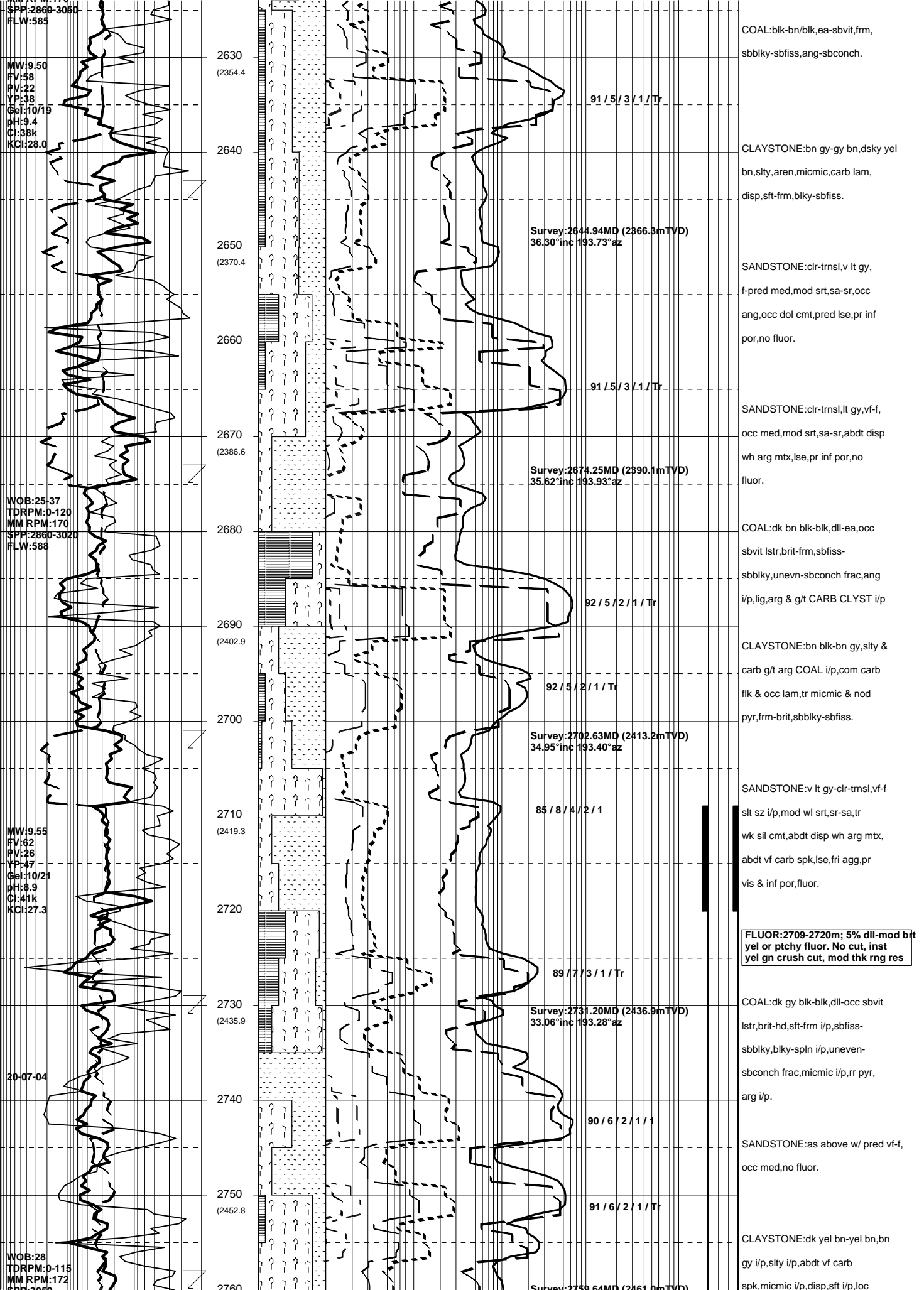






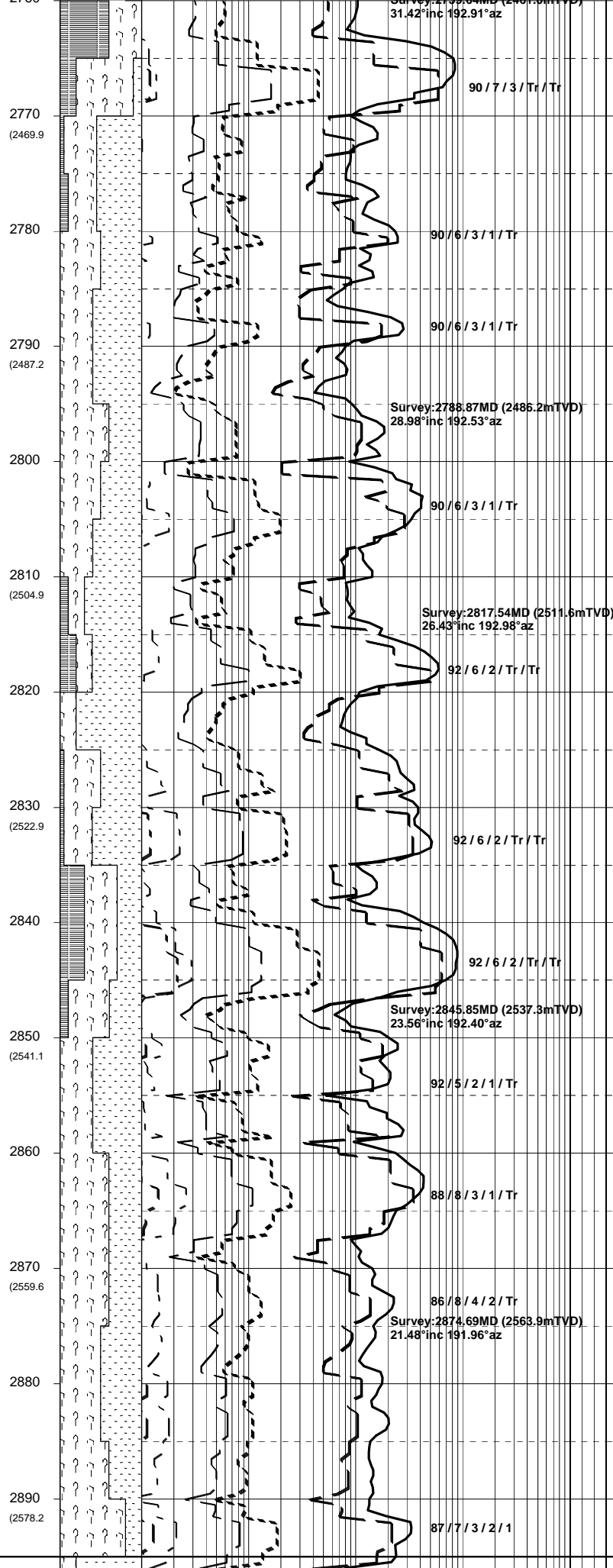






MW:9.50
FV:65
PV:25
YP:46
Gel:11/21
pH:9.0
Cl:41k
KCl:28.0

WOB:28
TDRPM:0-115
MM RPM:172
SPP:3055
FLW:595



frm,amor,sbbiky i/p.

SANDSTONE:v lt gy,clr-trnsl,vf-f,occ med,mod-mod wl srt,sr-sa, tr wk sil cmt,abdt wh disp arg mtb,abdt vf carb spk,lse-fri,pr vis & inf por.

CLAYSTONE:dk yel,bn-yel,bn gy, slty i/p,abdt vf carb spk, micmic i/p,disp,sft i/p,loc frm, amor,sbbiky i/p.

SANDSTONE:v lt gy,clr-trnsl, vf-f,occ med,mod wl srt,sr-sa, tr wk sil cmt,com arg mtb,abdt vf carb spk,lse-fri,pr vis por, pr inf por,no fluor.

COAL:blk,v dk bn,brit,hd,sbbiky

SANDSTONE:v lt gy,clr-trnsl, vf-f,occ med,mod wl srt,sr-sa, tr wk sil cmt,com arg mtb,abdt vf carb spk,lse-fri,pr vis por, pr inf por,no fluor.

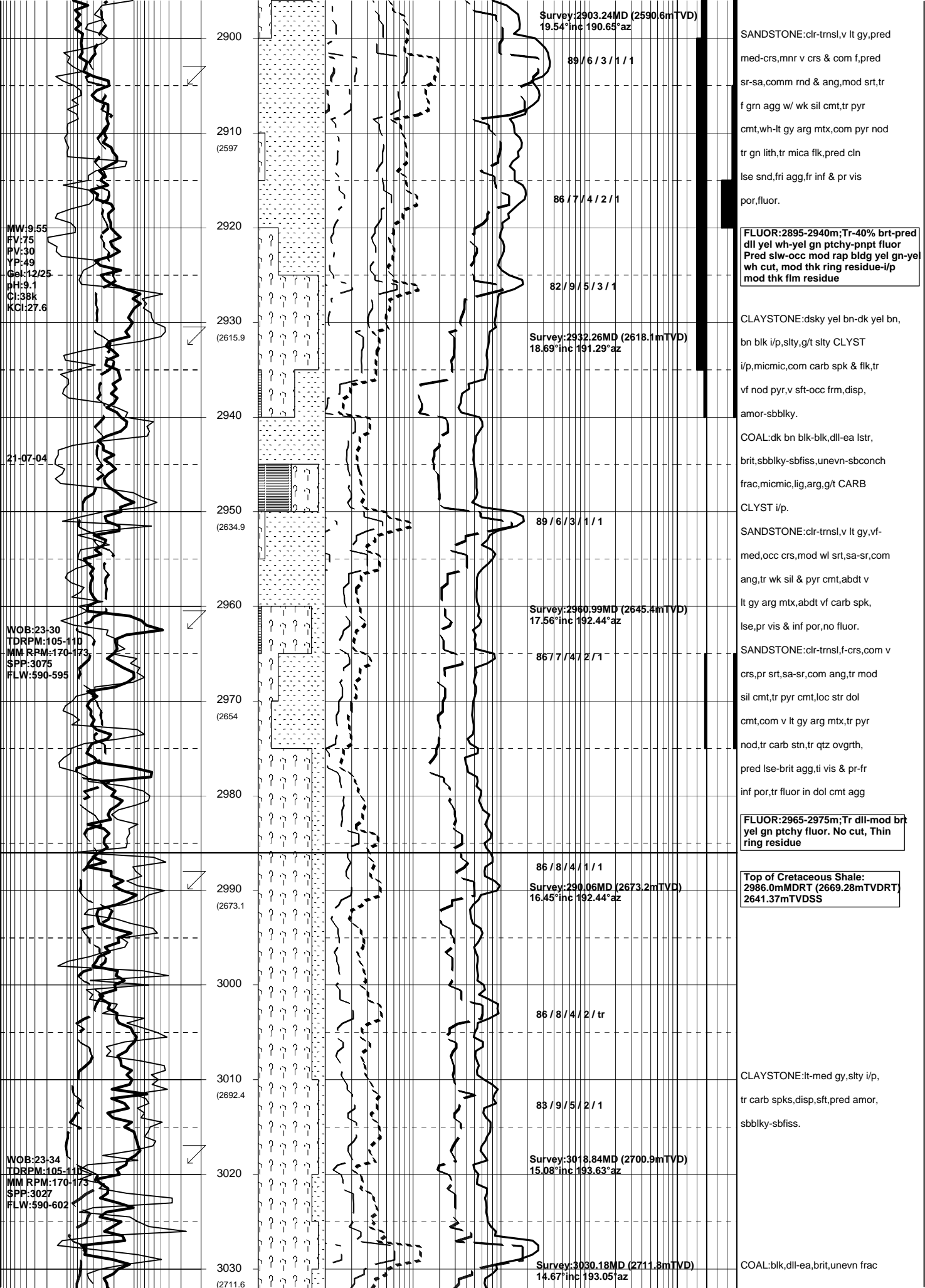
COAL:v dk gy,blk,dll-sbvit, brit-hd,sbfiss-sbbiky.

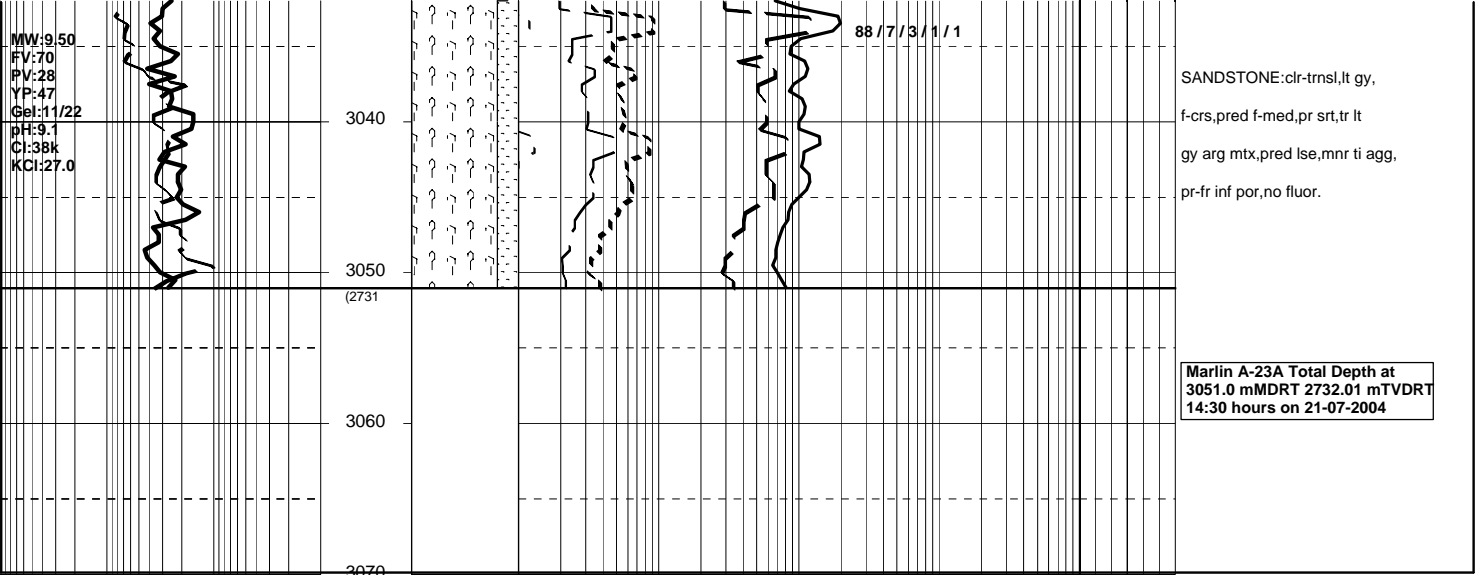
CLAYSTONE:lt bn,bn gy,slty i/p, micmic,tr carb spks,disp, amor-sbbiky.

SANDSTONE:v lt gy,clr-trnsl, vf-med,mod wl srt,sr-sa,tr wk sil cmt,com arg mtb,com arg mtb, tr mic,lse-fri,pr vis por,pr inf por,no fluor.

CLAYSTONE:lt bn,bn gy,slty i/p, micmic,tr carb spks,disp, amor-sbbiky.

Top of L500 sands:
2895.0mMDRT(2582.93mTVDRT)
2555.02mTVDSS





APPENDIX 4b
MARLIN A-23A
Well Completion Log

WELL COMPLETION LOG

Scale – 1:200

MARLIN A-23A

Gippsland Basin, Victoria
Concession: VIC/L11

POST-DRILL LOCATION: (Top of Latrobe)	Latitude:	38° 13' 57.219" S	COMPILED BY:	Sheryl Sazenis
	Longitude:	148° 13' 10.831" E	DRAFTED BY:	Andrew Hodgson
(Top of L500 Sand)	MGA X:	606747.09 mE	DRILLED BY:	Nabors Rig 453
	MGA Y:	5767678.17 mN	ELEVATION:	G.L.: -59.00 m R.T.: 27.91 m above MSL Water Depth: 59.00 m
	Depth:	1442.4m MDRT (-1360.5m TVDSS)	TOTAL DEPTH:	3051.0m MDRT
			PLUGGED BACK T.D.:	3012.2 MDRT
	Datum:	GDA94 (GRS80)	CLASSIFICATION:	Development
	Projection:	MGA/ UTM Zone 55 (S)	STATUS:	Cased and Suspended
DATES:	Spudded:	11/07/2004	PRODUCTION TESTING:	n/a
	Rig Released:	02/08/2004	DIVERS:	n/a
SERVICE COMPANIES:			MUD LOGGING:	Geoservices Overseas S.A.
DRILLING CONTRACTOR:	ISDL Rig 453		PRESSURE RECORDING:	n/a
MWD (GR and Direct):	Schlumberger Anadrill		WELL VELOCITY SURVEY:	n/a
GYRO SURVEYING:	SDI		MUD ENGINEERING:	Halliburton-Baroid
CORING:	n/a		LINER:	n/a
LOGGING:	Reeves (Compact Shuttle Logging System)			
CEMENTING:	Halliburton			
CASING:	Weatherford			
	Reeves (Shuttle) Schlumberger (MDT-TLC & CHDT)			

LEGEND

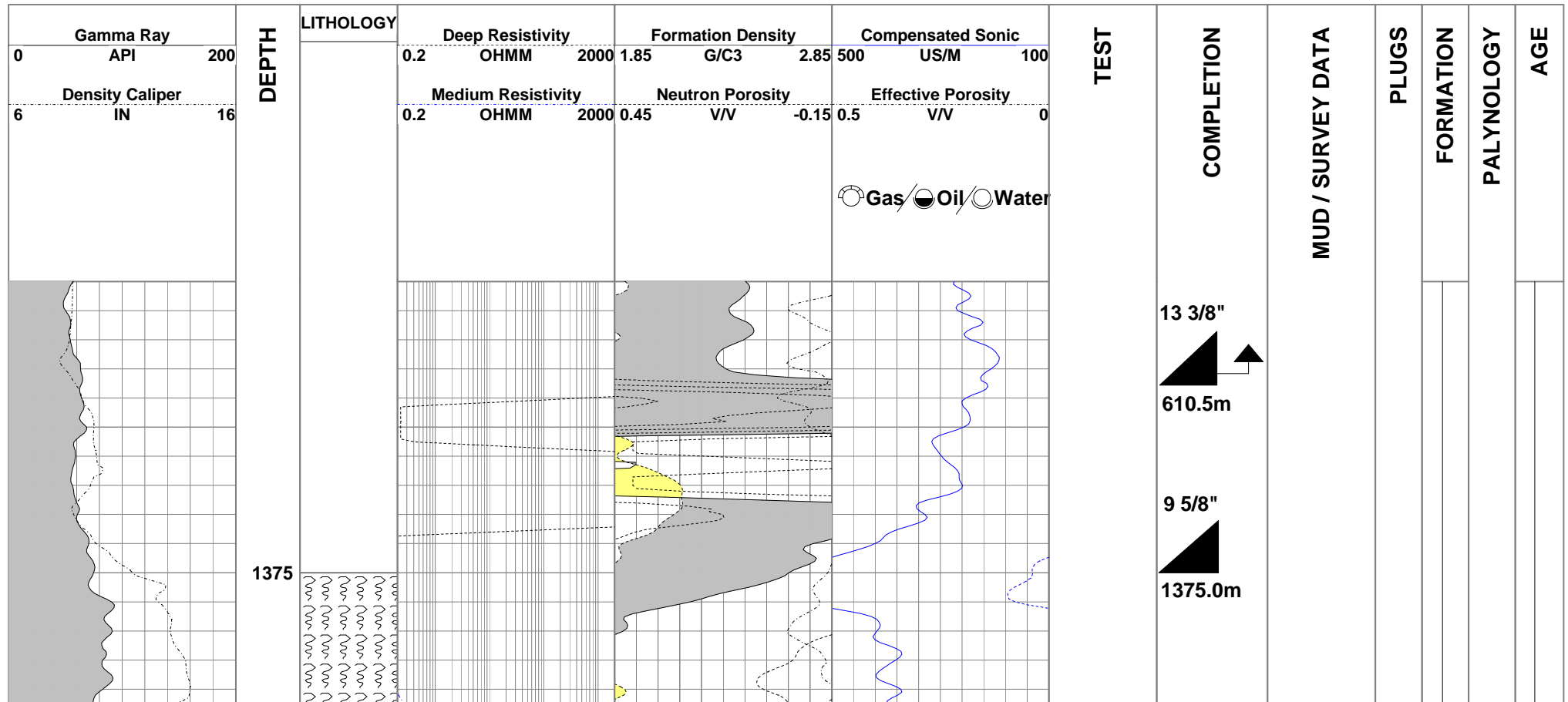
<div>2.7m NOS Ø = 17% Sw = 32%</div>		LOG ANALYSIS DATA NS - Net Sand NOS - Net Oil Sand NGS - Net Gas Sand Sw - Water Saturation	SHOW OR STAIN
<div><div>No Rec.</div><div>CORE</div><div>Rec.</div></div>		MUD DATA Ø - Porosity Snd - Sand MW - Mud Weight FV - Funnel Velocity PV - Plastic Velocity YP - Yield Point Gel - Gel Strength pH - Acidity/Alkalinity WL - Water Loss Cl - Chloride Ca - Calcium Sol - Solids H2O - Water Oil -Oil	HYDROCARBON CUT
PERFORATED INTERVAL			FLUORESCENCE
PLUG			GAS SHOW
←SST		RECOVERED SIDE WALL CORE LITHOLOGY SST - Sandstone SLST - Siltstone MST - Mudstone SH - Shale	OIL PRODUCTIVE
		CLST - Claystone LMST - Limestone ML - Marl COAL - Coal	GAS PRODUCTIVE
←		SIDE WALL CORE - NO RECOVERY	INTERPRETED OIL PRODUCTION
←		FIT	INTERPRETED GAS PRODUCTION
←P2/11		MDT/RFT PRETEST RUN/SEAT NUMBER	INTERPRETED WATER PRODUCTION
←S11/2		MDT/RFT SAMPLE RUN/SAMPLE NUMBER	WATER PRODUCTIVE
←P2/40		MDT VERTICAL/HORIZONTAL PERMEABILITY TEST	CONDENSATE PRODUCTION
+		PACKER	INTEPRETED CONDENSATE BEARING
□		BRIDGE PLUG	DSTG DST WITH GAS RECOVERED
			DSTO DST WITH OIL RECOVERED
			▲ SURVEY POINT
			13-3/8" CASING SHOE
			↓ MUD

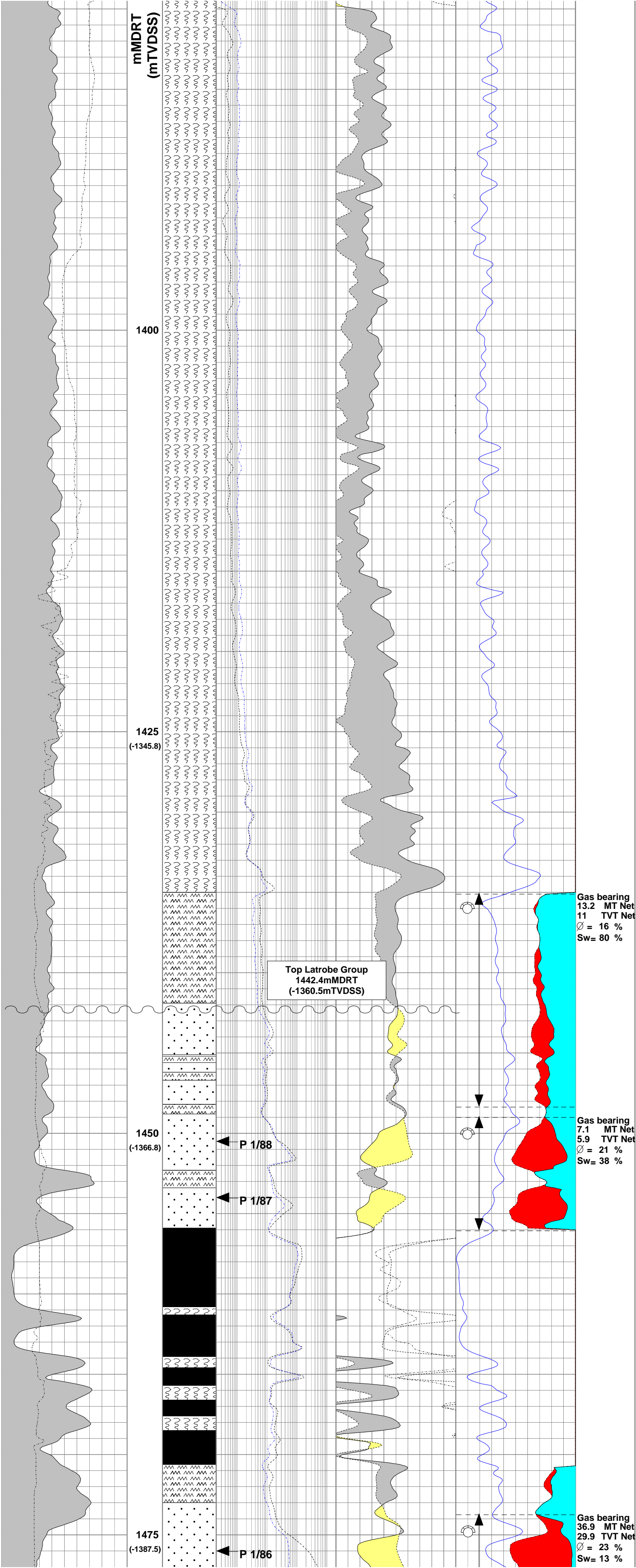
LITHOLOGICAL SYMBOLS

	Sandstone		Dolomite		Mica		Pelecypods
	Siltstone		Marl		Chert		Echinoids
	Mudstone		Anhydrite		Carbonaceous Matter		Fish Remains
	Claystone		Volcanics		Calcareous		Plant Remains
	Shale		Basement		Glauconite		Spores
	Coal		Granule		Corals		Leaves
	Limestone		Oolites		Bryozoans		Foram
	Micritic		Dolomitic		Brachiopods		Fossils

LOGGING AND SURVEYING				
Anadrill Schlumberger		Interval (mMDRT)	Reeves	Interval (mMDRT)
MWD (Directional & GR) - 1Runs		1354.0m - 3030.18m	MCG-MDN-MPD-MSS-MDL	1368m - 3034.5m
Wireline MDT – open hole and cased hole		1450.5.0m – 2996.8m		
WELL DATA				
Date	15 July 2004 - 22 July 2004	22 July 2004 - 23 July 2004	23 July 2004 - 24 July 2004	24 July 2004 - 27 July 2004
Run	MWD #1	Wireline Run #1 on shuttle	Wireline Run #2 on shuttle	Wireline Run #3 (Suite 1)
Log	Powerpulse Directional & GR	MCG-MDN-MPD-MSS-MDL	MCG-MDN-MPD-MSS-MDL	MDT on drill pipe
Depth Driller	3051 m MDRT	3051 m MDRT	3051 m MDRT	3051 m MDRT
Depth Logger	3051 m MDRT	3051 m MDRT	3051 m MDRT	----
Bottom Log Interval	3030.18 m MDRT	No data recorded	3034.5 m MDRT	2996.8 m MDRT
Top Log Interval	1354 m MDRT	No data recorded	1368 m MDRT	1450.5 m MDRT
Casing Driller	1368 m MDRT (Window)	1368 m MDRT (Window)	1368 m MDRT (Window)	1368 m MDRT (Window)
Casing Logger	----	----	----	----
Casing Size	9 5/8"	9 5/8"	9 5/8"	9 5/8"
Casing Weight	47.0ppf	47.0ppf	47.0ppf	47.0ppf
Bit Size	8.5"	8.5"	8.5"	8.5"
Type of Fluid in Hole	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL
Density	9.5 ppg	9.5 ppg	9.5 ppg	9.5 ppg
Rm @ Measured Temp.	N/A	0.129 ohmm @ 25°C	0.129 ohmm @ 25°C	0.129 ohmm @ 25°C
Rmf @ Measured Temp.	N/A	0.105 ohmm @ 25°C	0.105 ohmm @ 25°C	0.105 ohmm @ 25°C
Rmc @ Measured Temp.	N/A	0.191 ohmm @ 25°C	0.191 ohmm @ 25°C	0.191 ohmm @ 25°C
Max. Recorded Temp.	88.4°C	111.5 °C	111.5 °C	123.2°C @2944m
Equipment / Location	Sale	Sale	Sale	Sale
Recorded By	J. Dolan/R. Borjas/L. Johnston	G. McManus/R. Tench	G. McManus/R. Tench	J. Bell/K. Hermansen
Witnessed By	C. Menhennitt	C. Menhennitt/A. Ribeiro	C. Menhennitt/A. Ribeiro	C. Menhennitt/A. Ribeiro
WELL DATA (Cont.)				
Date	31 July 2004 - 02 Aug 2004			
Run	Wireline Runs #4, 5 (Suite 2)			
Log	CHDT on wireline			
Depth Driller	3051 m MDRT			
Depth Logger	----			
Bottom Log Interval	2959.5 m MDRT			
Top Log Interval	2921.0 m MDRT			
Casing Driller	1368 m MDRT (Window)			
Casing Logger	----			
Casing Size	9 5/8"			
Casing Weight	47.0ppf			
Bit Size	8.5"			
Type of Fluid in Hole	KCI/PHPA/GLYCOL			
Density	9.5 ppg			
Rm @ Measured Temp.	0.129 ohmm @ 25°C			
Rmf @ Measured Temp.	0.105 ohmm @ 25°C			
Rmc @ Measured Temp.	0.191 ohmm @ 25°C			
Max. Recorded Temp.	129.68°C @2959.5m			
Equipment / Location	Sale			
Recorded By	J. Bell/Y. Yang			
Witnessed By	C. Menhennitt			

CASING				PLUGS		
Size	Set @ (mMDRT)	Sx Cmt	Formation	From (mMDRT)	To (mMDRT)	Sx Cmt
13.375"	610.5	---	Gippsland Limestone			
9.625"	1375.0	---				
7"	3050.0	116	Latrobe Group	3012.2	3050.0	



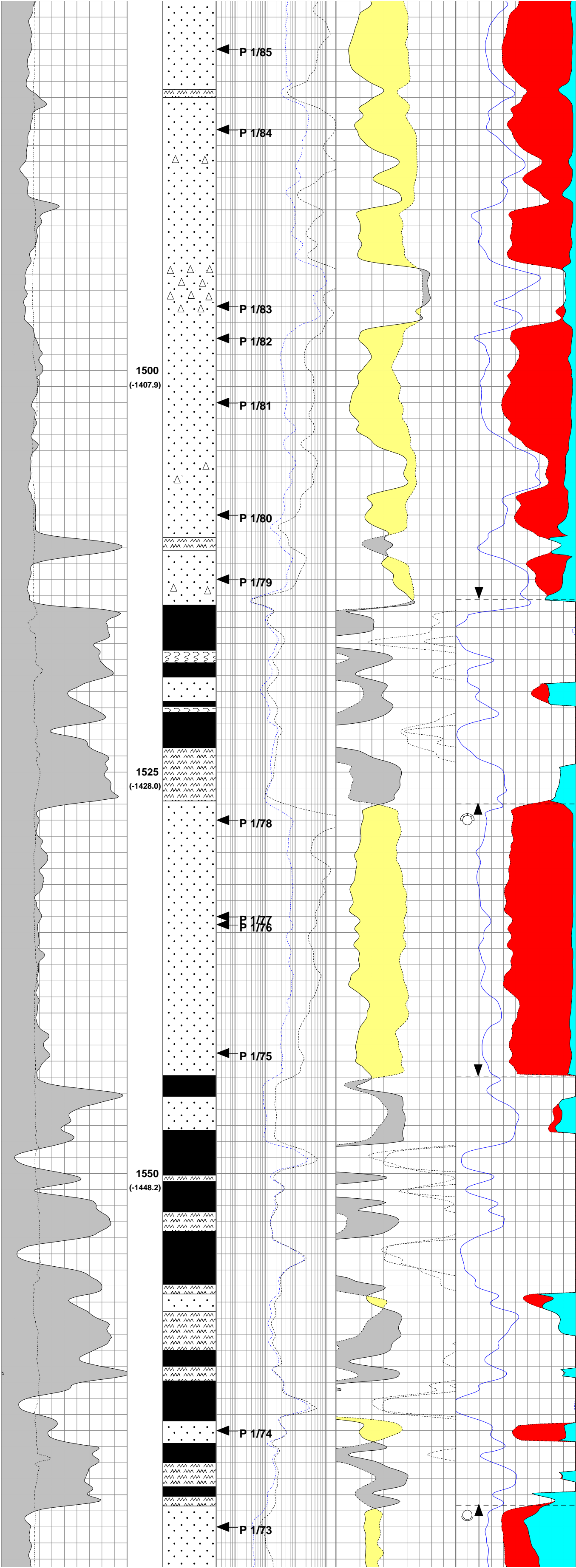


1450
MW 9.4ppg
FV 52sec/qt
PV 13cP
YP 22
pH 9.4

1469.7
ANG 34.6
DIR 189.0
(-1383.2)

LAKES ENTRANCE FM

OLIGOCENE - MIOCENE

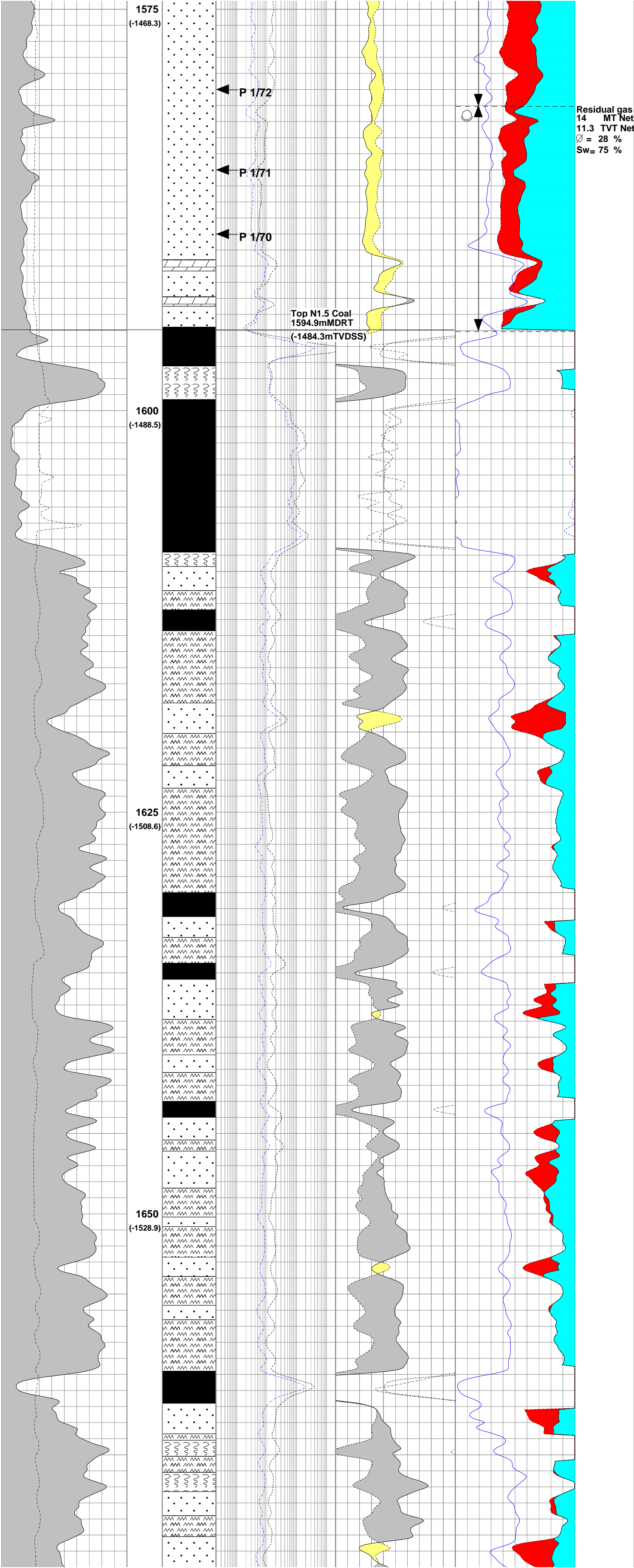


Gas bearing
17 MT Net
13.7 TVT Net
Ø = 27 %
Sw= 6 %

1554.9
ANG 36.3
DIR 198.1
(-1452.1)

Residual gas
10.4 MT Net
8.4 TVT Net
Ø = 29 %
Sw= 58 %

1570
MW 9.4ppq
FV 60sec/qt
PV 19cP
YP 37
a 2

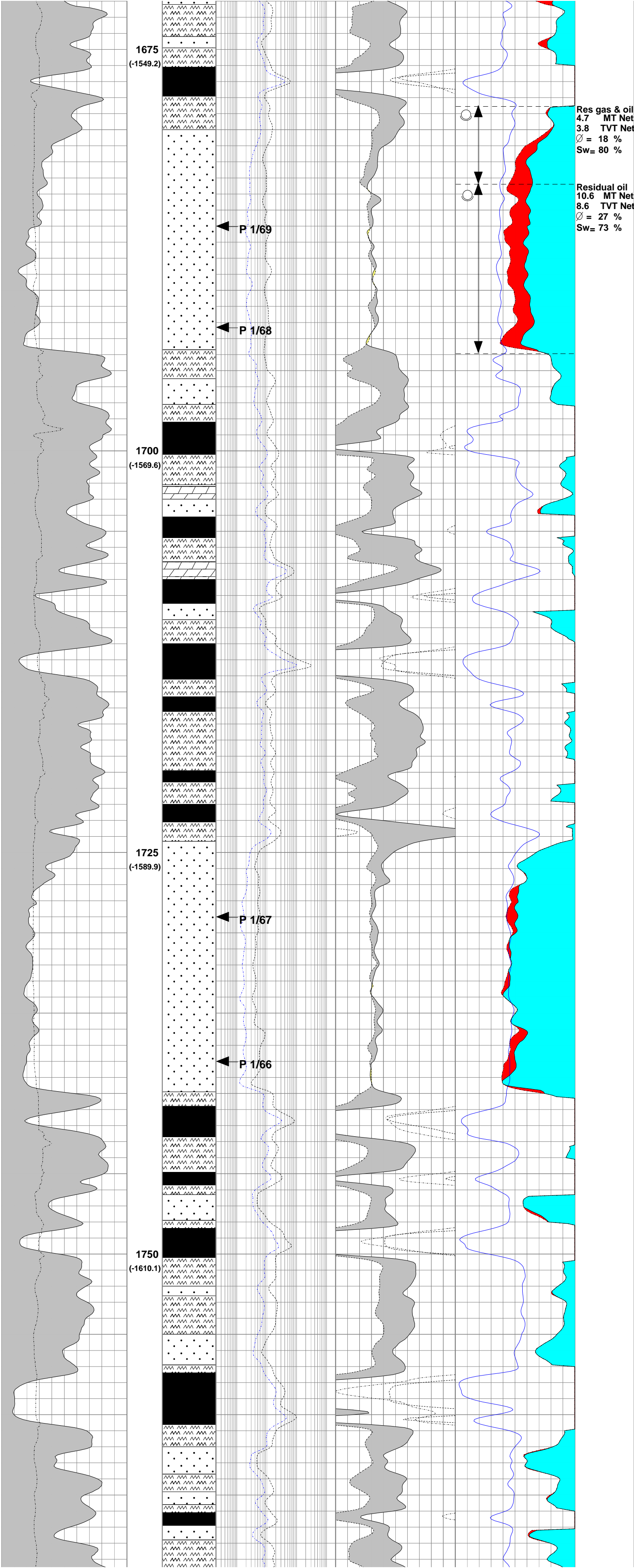


Residual gas
14 MT Net
11.3 TVT Net
Ø = 28 %
Sw= 75 %

pH 9.3

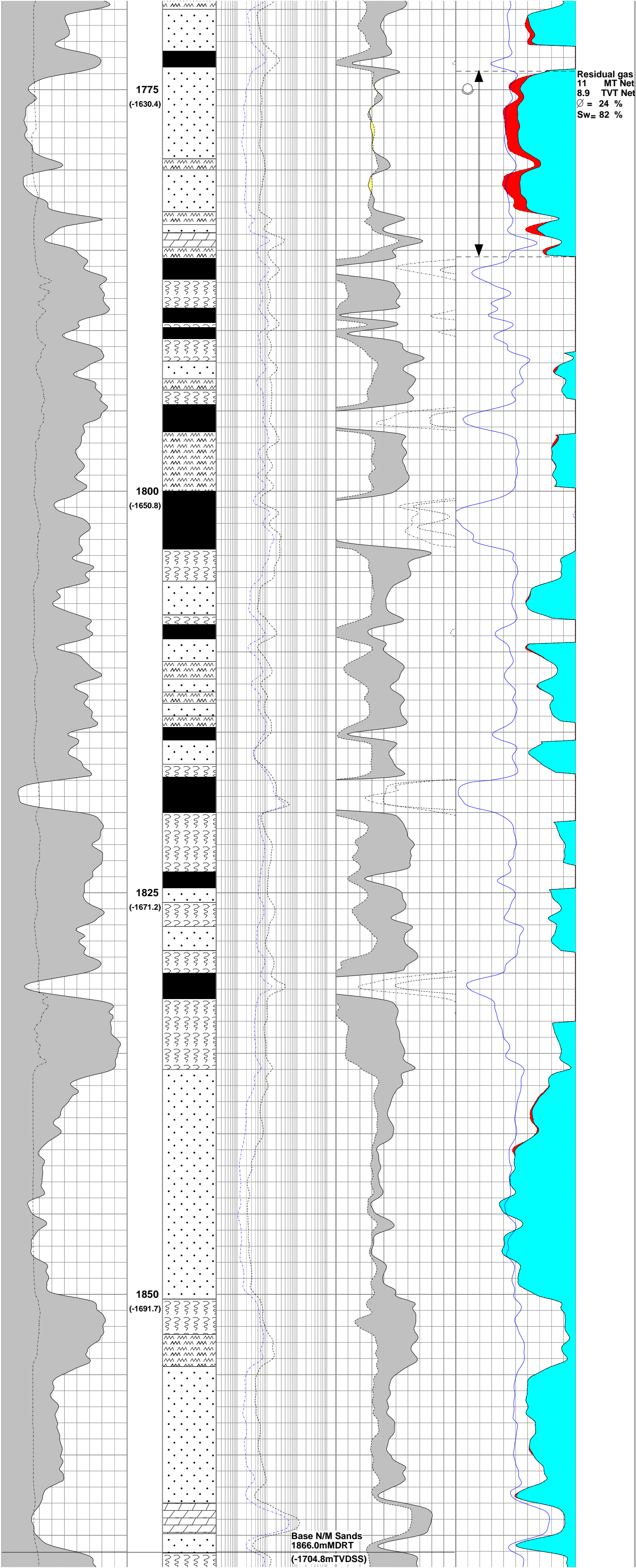
1615
MW 9.4ppg
FV 64sec/qt
PV 21cP
YP 37
pH 9.1

1641.0
ANG 35.8
DIR 196.8
(-1521.5)



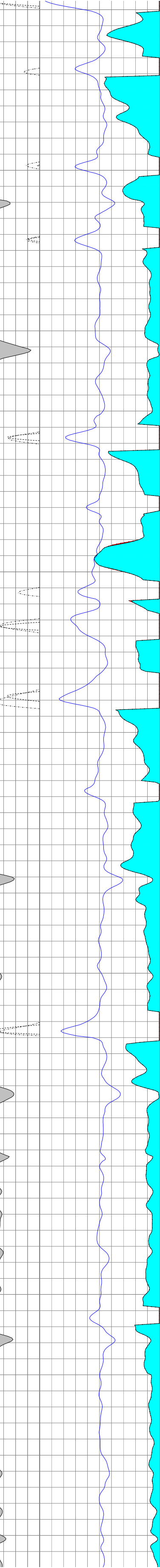
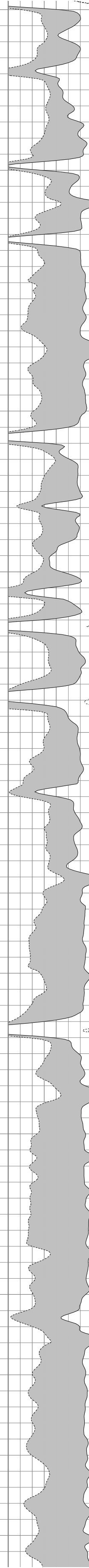
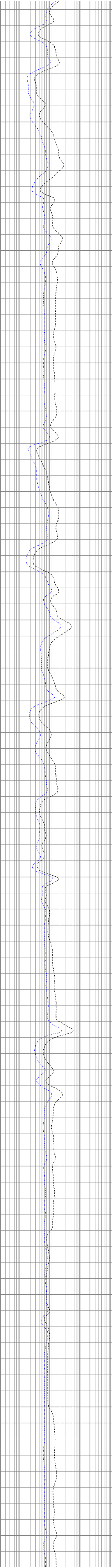
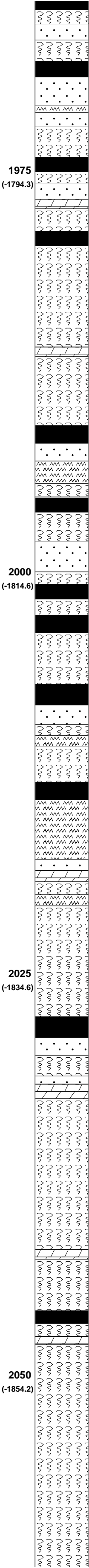
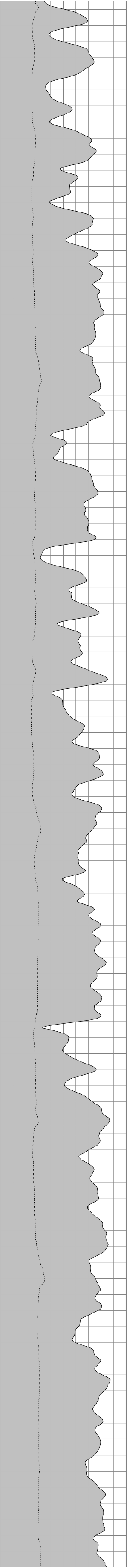
1728.0
ANG 35.7
DIR 196.8
(-1592.2)

EOCENE

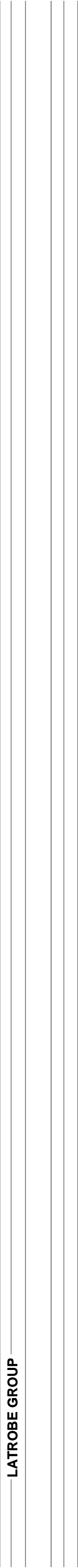
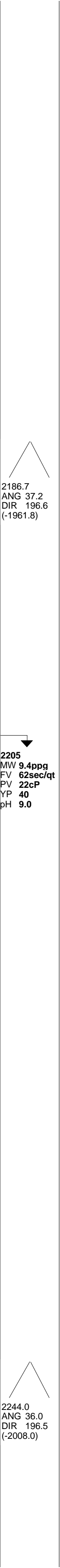
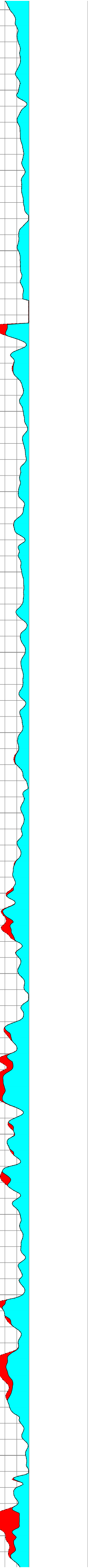
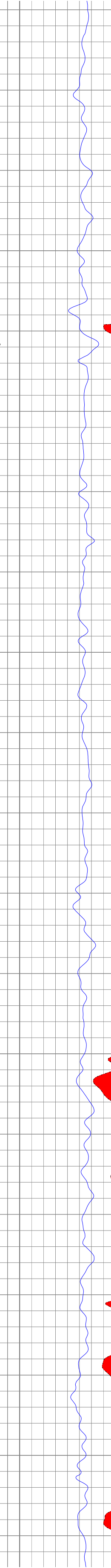
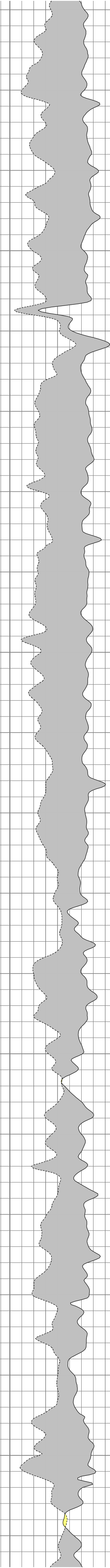
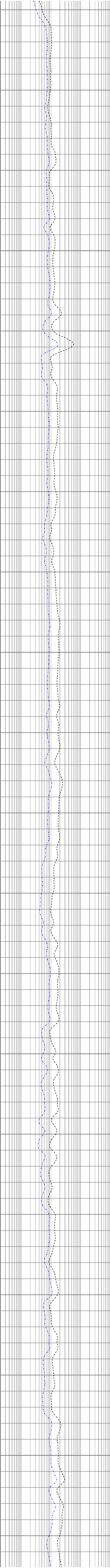
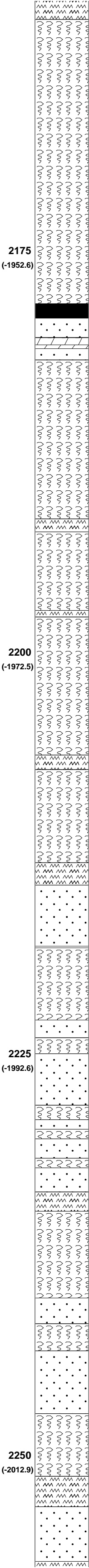
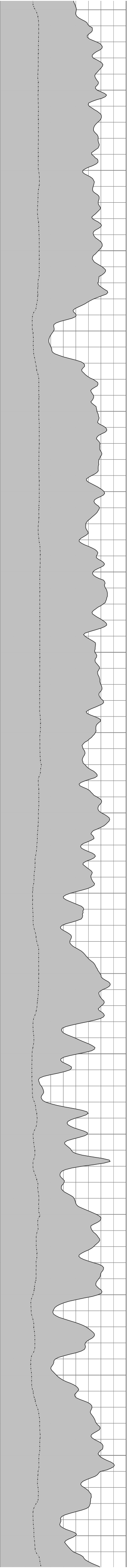


1843.1
ANG 34.9
DIR 196.0
(-1686.0)

1852
MW 9.4ppg
FV 62sec/qt
PV 21cP
YP 37
pH 9.0



2010
MW 9.4ppg
FV 64sec/qt
PV 22cP
YP 38
pH 9.1



2175
(-1952.6)

2200
(-1972.5)

2225
(-1992.6)

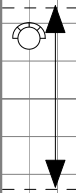
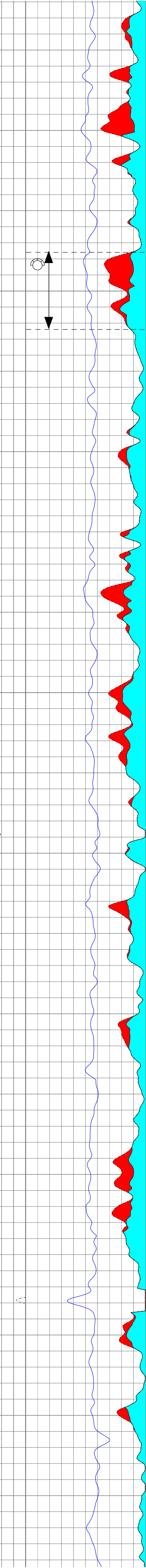
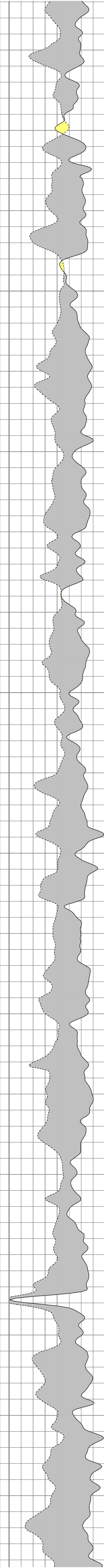
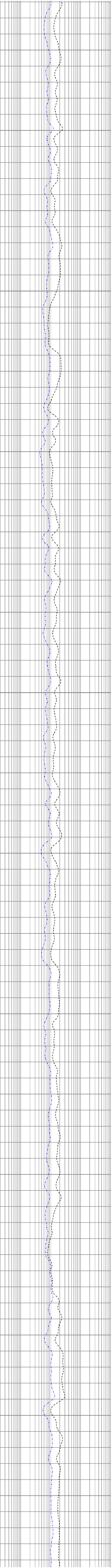
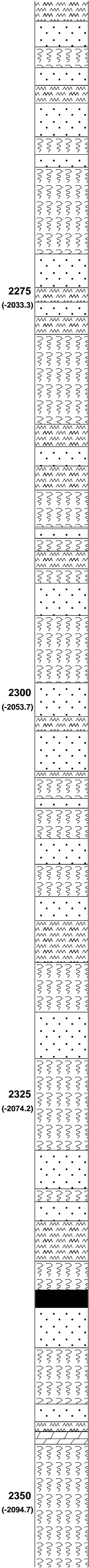
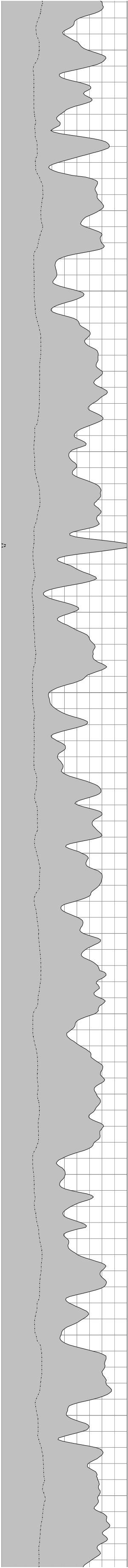
2250
(-2012.9)

2186.7
ANG 37.2
DIR 196.6
(-1961.8)

2205
MW 9.4ppg
FV 62sec/qt
PV 22cP
YP 40
pH 9.0

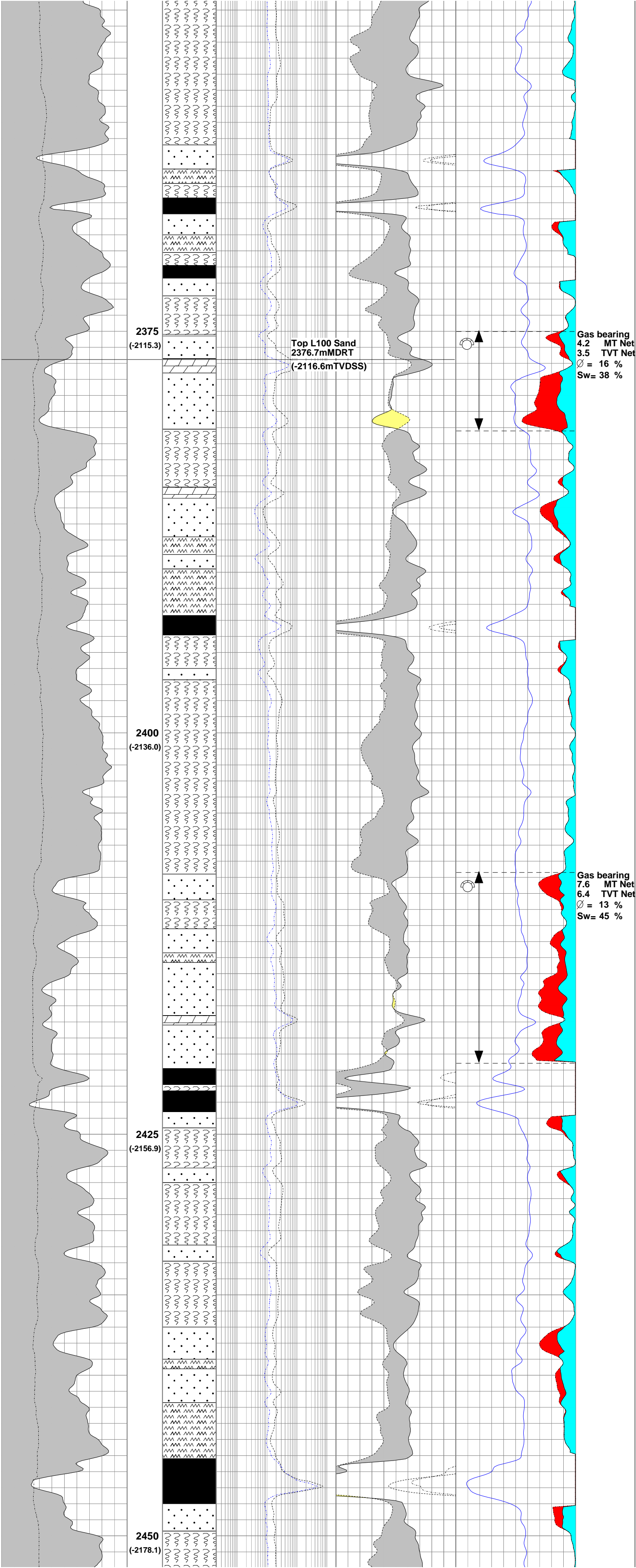
2244.0
ANG 36.0
DIR 196.5
(-2008.0)

LATROBE GROUP

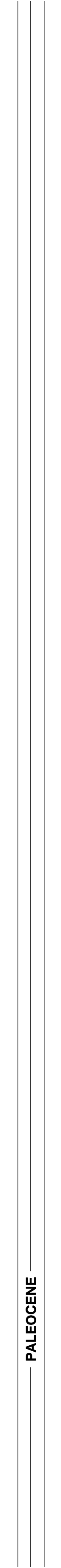
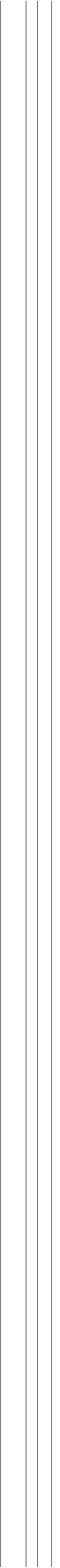
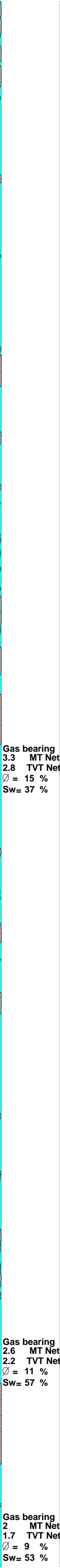
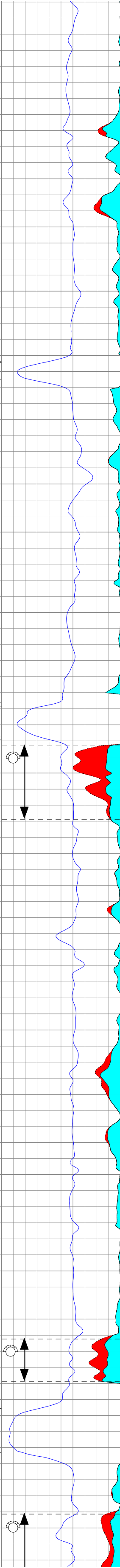
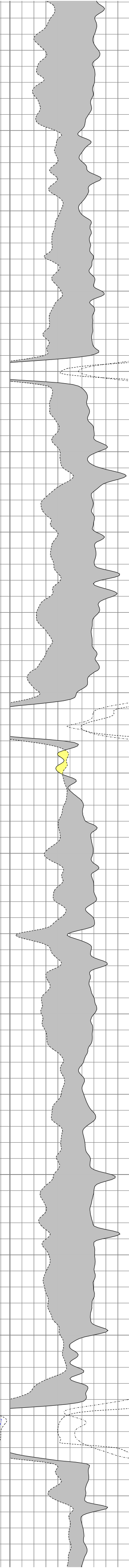
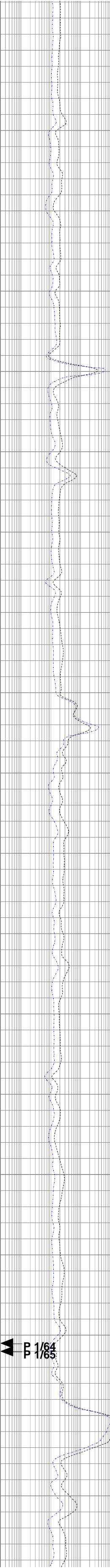
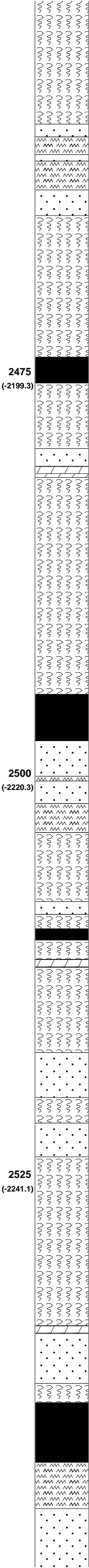
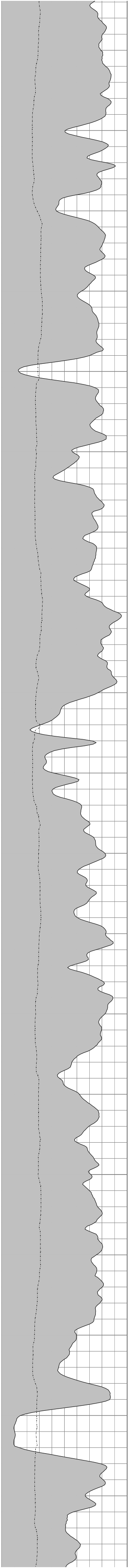


Gas bearing
4.1 MT Net
3.4 TVT Net
Ø = 13 %
Sw= 54 %

2285
MW 9.4ppg
FV 68sec/qt
PV 23cP
YP 45
pH 9.4



<div>2358.2 ANG 34.5 DIR 195.5 (-2101.4)</div> <div>2380 MW 9.5ppg FV 68sec/qt PV 27cP YP 46 pH 8.9</div>	
<div>2435 MW 9.6ppg FV 75sec/qt PV 28cP YP 44 pH 9.0</div> <div>2444.9 ANG 31.6 DIR 193.0 (-2173.7)</div>	



Gas bearing
3.3 MT Net
2.8 TVT Net
Ø = 15 %
Sw= 37 %

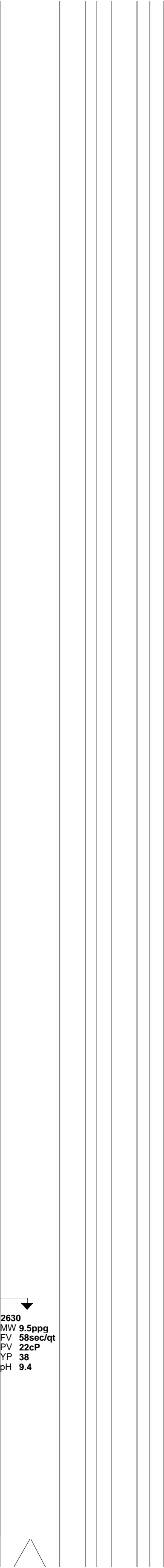
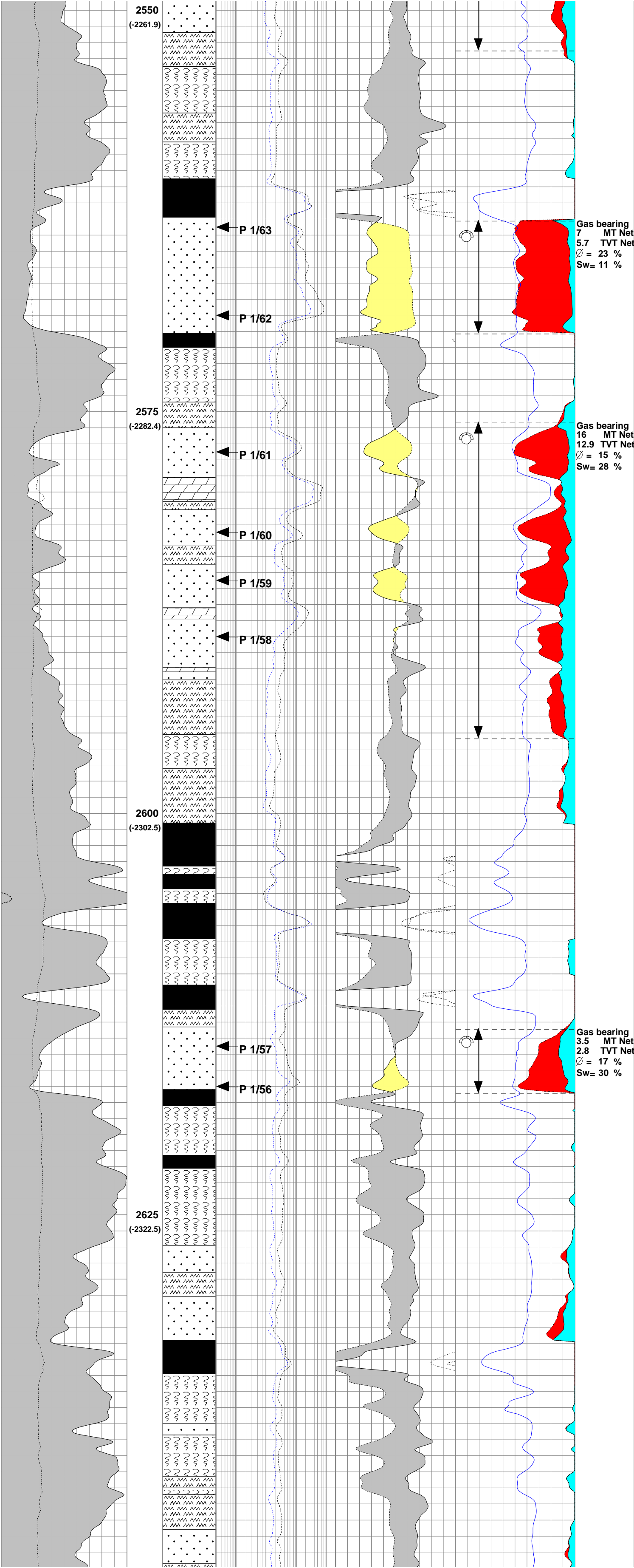
Gas bearing
2.6 MT Net
2.2 TVT Net
Ø = 11 %
Sw= 57 %

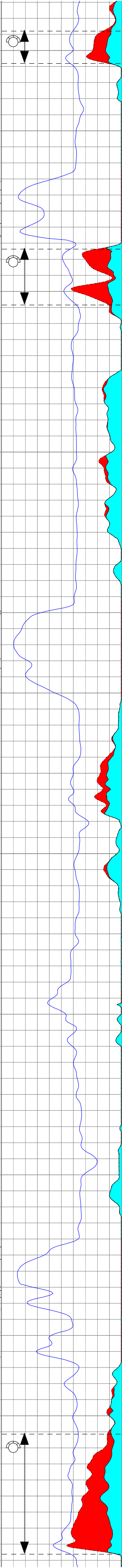
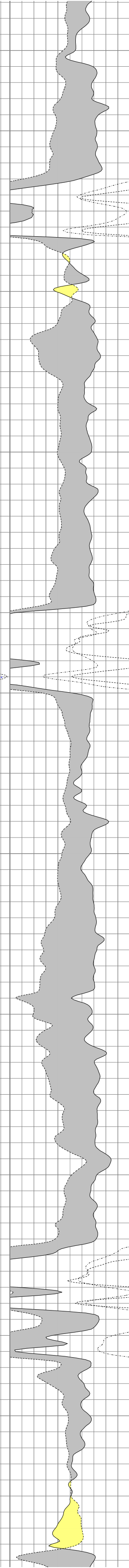
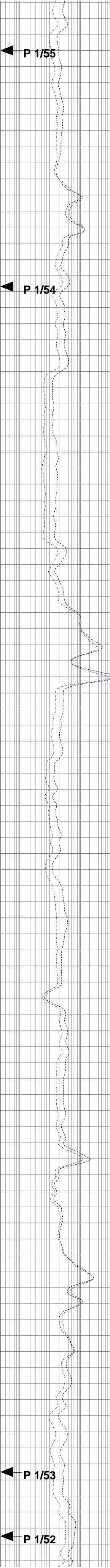
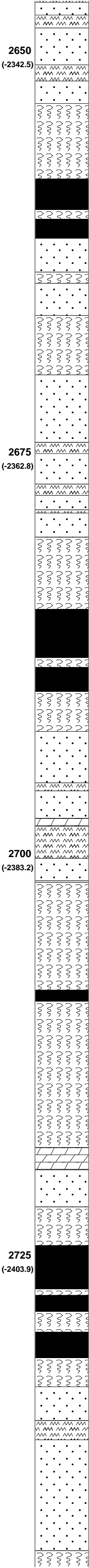
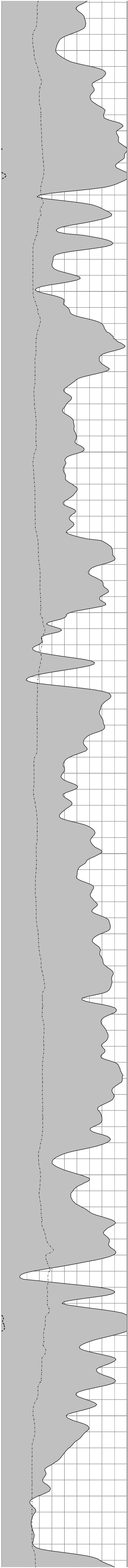
Gas bearing
2 MT Net
1.7 TVT Net
Ø = 9 %
Sw= 53 %

2520
MW 9.6ppg
FV 58sec/qt
PV 23cP
YP 40
pH 8.9

2530.4
ANG 33.4
DIR 195.8
(-2245.5)

PALEOCENE





2650
(-2342.5) ← P 1/55

← P 1/54

2675
(-2362.8)

2700
(-2383.2)

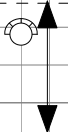
2725
(-2403.9)

← P 1/53

← P 1/52



Gas bearing
1.9 MT Net
1.6 TVT Net
Ø = 12 %
Sw= 48 %



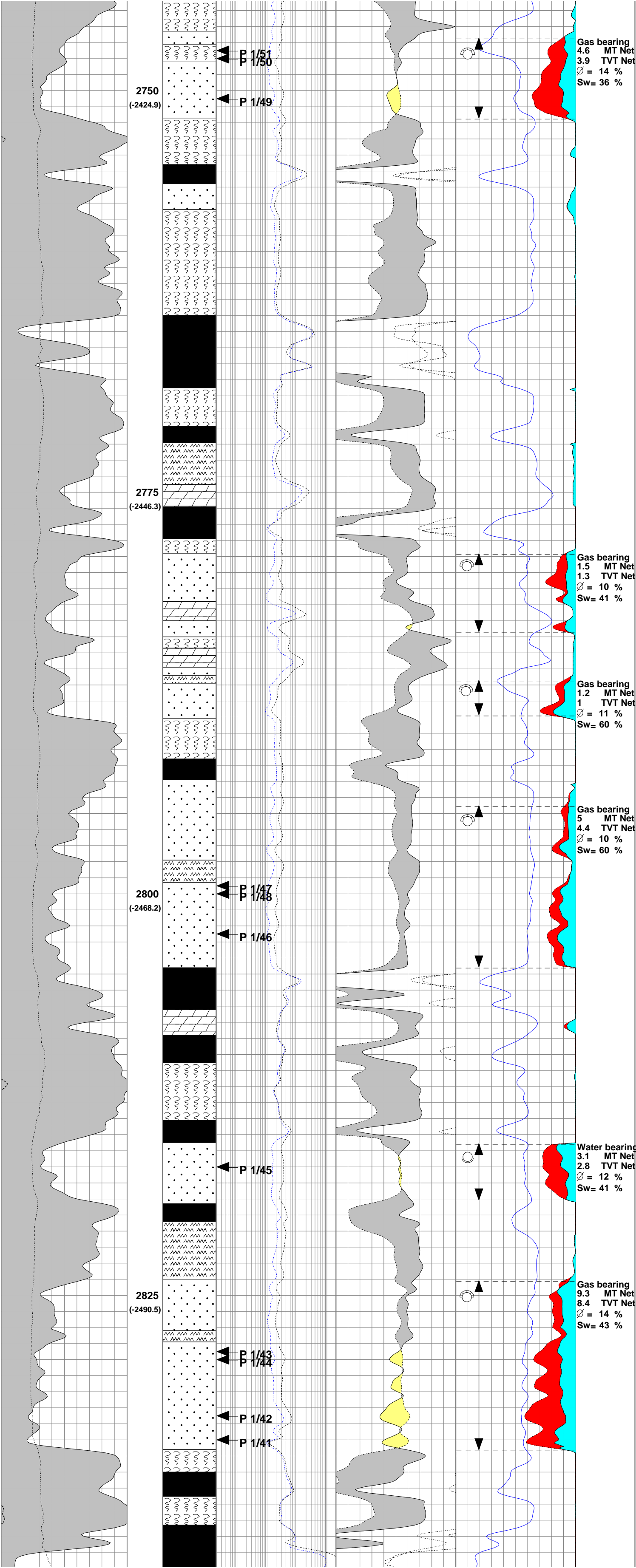
Gas bearing
2.7 MT Net
2.2 TVT Net
Ø = 14 %
Sw= 34 %

2645.0
ANG 36.3
DIR 193.8
(-2338.4)

2710
MW 9.6ppq
FV 62sec/qt
PV 26cP
YP 47
pH 8.9



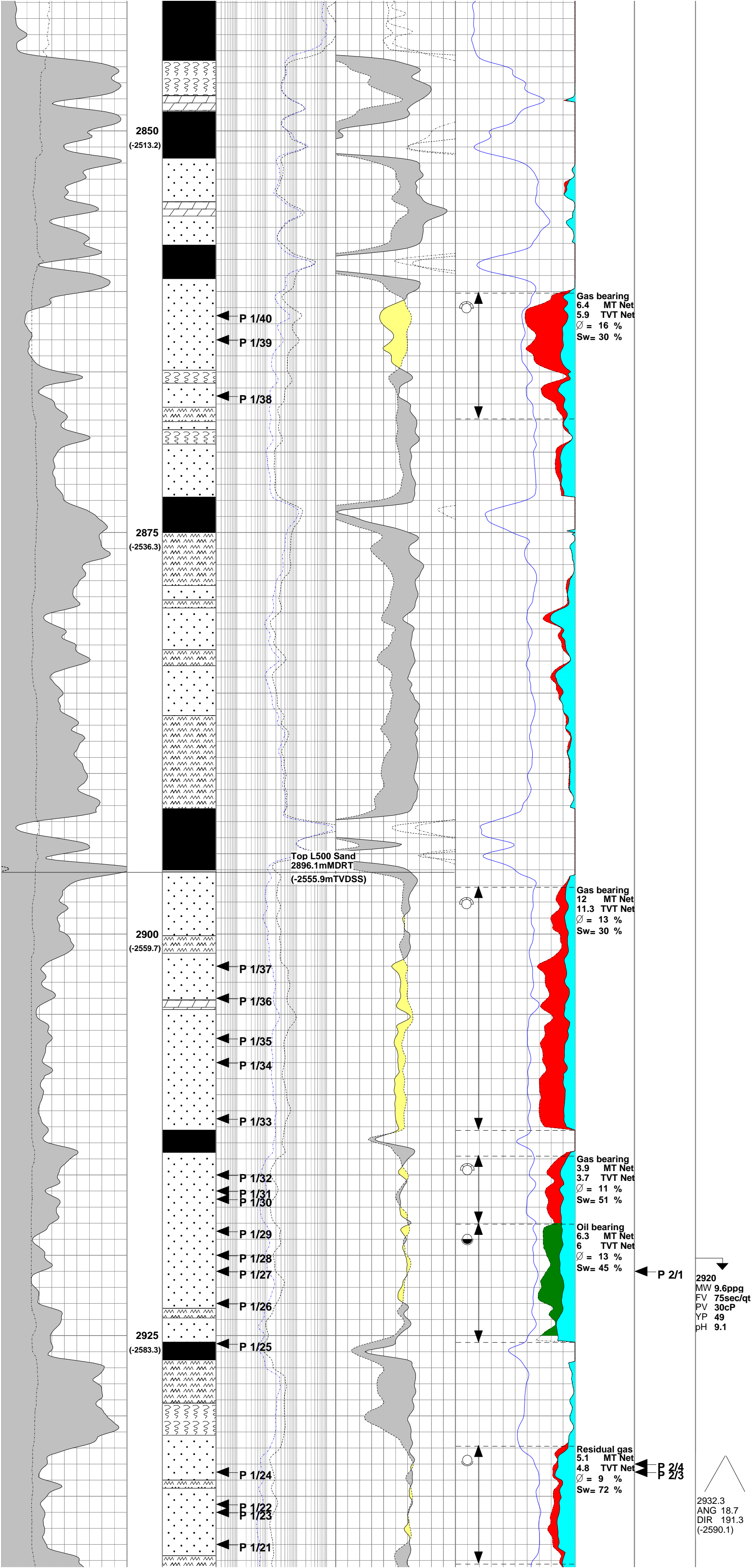
Gas bearing
6.4 MT Net
5.4 TVT Net
Ø = 16 %
Sw= 35 %

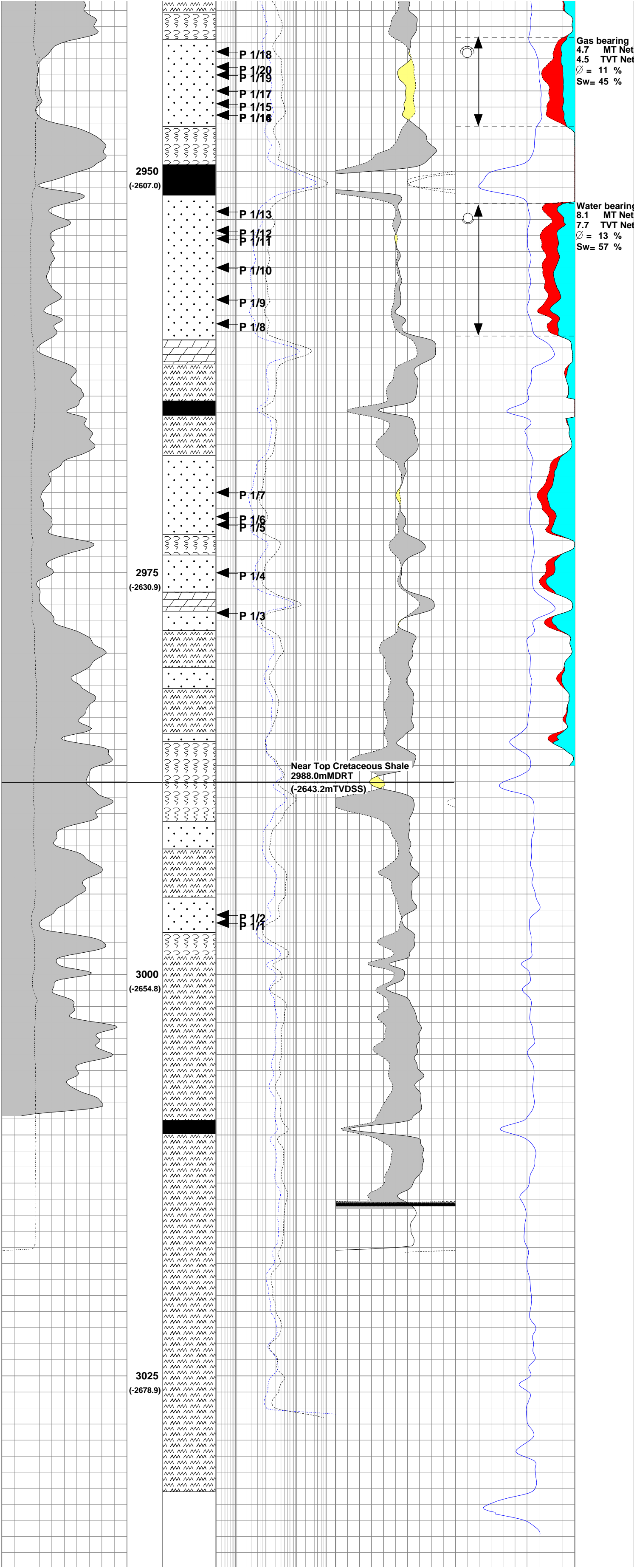


2759.7
ANG 31.5
DIR 193.0
(-2433.0)

2805
MW 9.5ppg
FV 65sec/qt
PV 25cP
YP 46
pH 9

2817.6
ANG 26.5
DIR 193.0
(-2483.7)



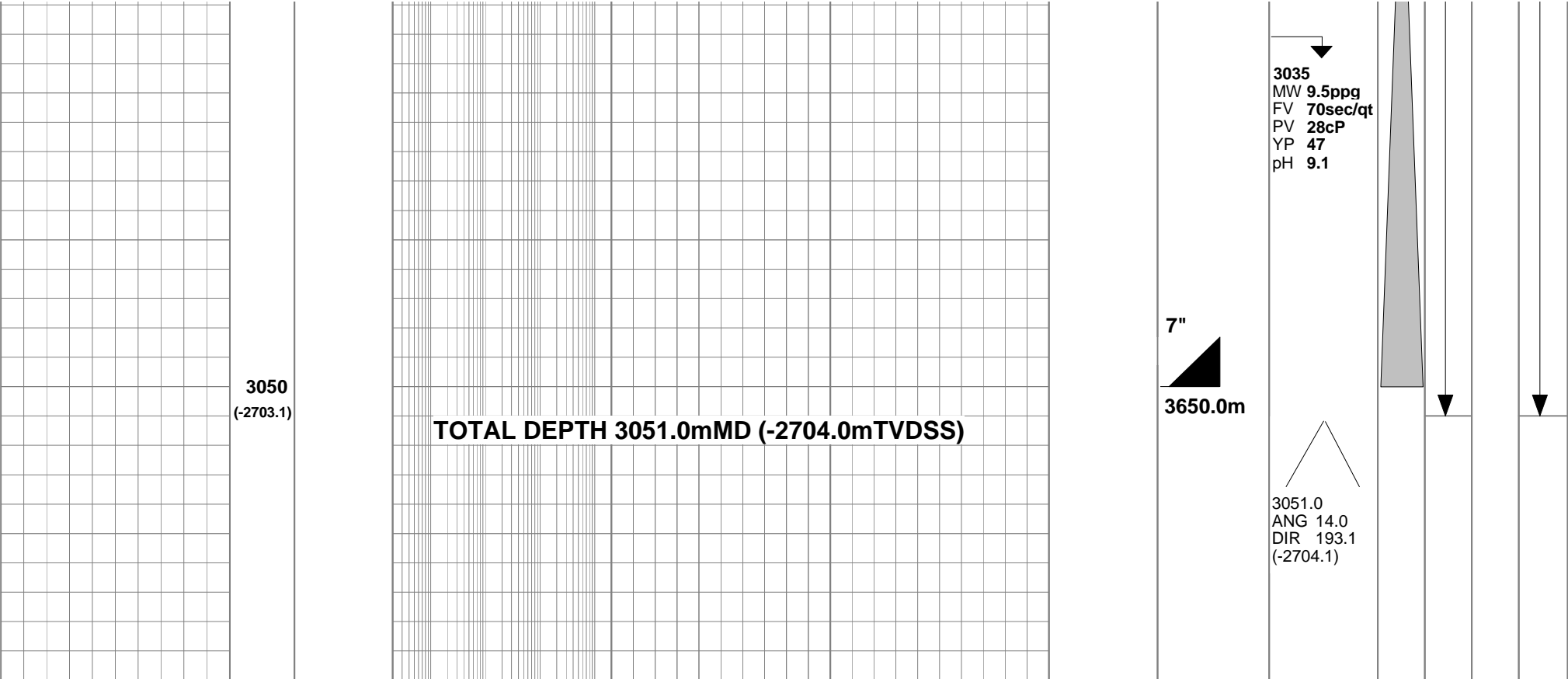


2990.1
ANG 16.5
DIR 192.5
(-2645.2)

3018.9
ANG 15.1
DIR 193.7
(-2672.9)

3030.2
ANG 14.7
DIR 193.5
(-2683.9)

LATE CRETACEOUS



GRGC
CLDC
DDLL
DSLL
DEN
NPRL
DT35
PHIE

Gamma Ray
Density Caliper
Deep Resistivity
Medium Resistivity
Formation Density
Neutron Porosity
Compensated Sonic
Effective Porosity

Marlin A23a
Plugged and Suspended
2/08/2004

APPENDIX 5a
MARLIN A-23A
OPEN HOLE DATA



Company : Esso
Well : MLA A 23A

Page : 1 of 1
File : E - 24040

TRANSFER DETAILS OF WIRELINE RESERVOIR SAMPLES

**Transferred on August 18 /19, 2004
@ 5000 psig & 16 °C**

Sample Number	MPSR Chambe Number	Date Sampled	Depth Sampled	Opening Pressure	Sample Volume Transferred (ccs)	Transferred into Petrolab Cylinder Number
			(mMD)	(psig)		
1	1760		2921	2400	400	L - 136
2	256		2921	2500	405	L - 196
3	464		2921.0	2300	395	L - 331
4	1178		2921	2400	350	L - 256
5	231		2921	2450	410	L - 031
6	186		2921	2500	370	L - 112

Well:				MARLIN A23A					
A. Sample Identification									
Run/seat number	##	1							
Sample depth m (TVDSS)	md m rkb	2921 (2579.33)	1/1						
Pretest volume	cc	20 ccs							
Chamber size	cc/litre/gallon	2.75 gal	1 gal	450cc	450cc	450cc	450cc	450cc	450cc
Chamber serial number	#	34	21	186	494	1760	231	1178	256
Probe type		Large							
Choke size		n/a							
B. Sampling History									
Date	dd/mm/yy	31/07/04	07/31/04	07/31/04	07/31/04	07/31/04	07/31/04	07/31/04	07/31/04
Initial hydrostatic	psia	4389.2							
Tool Set	hh:mm	17:50							
Pretest start	hh:mm	18:52							
Initial formation pressure (pretest)	psia	3689.68							
Pretest end	hh:mm	19:14							
Pretest duration	hh:mm	0:22							
Pumpout start	hh:mm	19:49							
Pumpout end	hh:mm	21:42							
Pumpout duration	hh:mm	1:53							
Pumpout volume	litres	131							
OFA indication	colour	blue/green	blue/green	blue/green	blue/green	blue/green	blue/green	blue/green	blue/green
Interpreted fluid at OFA	-	Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil
Maximum resistivity at probe	ohm-m								
Chamber open	hh:mm	21:42	22:06	22:18	22:22	22:26	22:30	22:34	22:38
Minimum sampling pressure	psia	3590	3590.0	3590.0	3590.0	3590.0	3590.0	3590.0	3590.0
Final formation pressure	psia	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Seal chamber	hh:mm	22:04	22:15	22:21	22:25	22:29	22:33	22:37	22:41
Chamber fill time	hh:mm	0:22	0:09	0:03	0:03	0:03	0:03	0:03	0:03
Tool retract	hh:mm	0:12							
Final hydrostatic	psia	3689.68							
Total time	hh:mm	13:45							
C. Sample Downhole Temperature And Resistivity									
At sample depth (AMS)	degC	125.32							
Rm@sample depth (AMS)	ohm-m	0.039							
D. Sample Recovery At Surface									
Surface opening pressure	psig	2000	2000						
Volume gas	cuft	meter failed	72.9						
Volume oil/condensate	litres	9.75	4						
Volume water/filtrate	litres	not measured	0.25						
E. Sample Properties Measured On-Site									
Gas via ch	C1	Mole %	8.593	0	0	0	0	0	0
	C2	Mole %	1.811	0	0	0	0	0	0
	C3	Mole %	0.978	0	0	0	0	0	0
	iC4	Mole %	0.196	0	0	0	0	0	0
	nC4	Mole %	0.113	0	0	0	0	0	0
	iC5	Mole %	0.008						
	nC5	Mole %	0.001	0	0	0	0	0	0
	H2S	Mole %	0	0	0	0	0	0	0
Oil/Conder	API @ degC	degrees	0	0	0	0	0	0	0
	Colour		yellow	yellow					
	Fluorescence								
	GOR or CGR	cuft/bbl or mmscf/bbl	0	0	0	0	0	0	0
	Pour point	degC	0	0	0	0	0	0	0
Water/Filtrate	R mud @ degC	ohm-m@degC	0	0	0	0	0	0	0
	K+ ion calculated from titration	ppm	0	0	0	0	0	0	0
	Chlorides titrated	ppm	30,000	0	0	0	0	0	0
	Tritium	DPM							
	pH		6.7	0	0	0	0	0	0
	Type								
F. Mud Filtrate Properties									
R mud @ degC	ohm-m@degC	0.12 @ 15	0	0	0	0	0	0	0
K+ ion calculated from KCL%	ppm		0	0	0	0	0	0	0
Chlorides titrated	ppm	38,000	0	0	0	0	0	0	0
pH			0	0	0	0	0	0	0
Tritium	DPM								
G. General Calibration									
Reported mud weight	ppg	9.5	0	0	0	0			