CRAIGOW-1

WELL COMPLETION REPORT
INTERPRETIVE REPORT

T/47P

BASS BASIN
Tasmania

TAP OIL Ltd
April 2011

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LOCATION:	Survey:	Labatt 3D
	InLine:	1894
	Xline:	4290

PERMIT:	T/47P	
BASIN:	Offshore Bass Basin	
PARTICIPANTS	Tap (Shelfal) Ltd	100%

SURFACE LOCATION:	Latitude:	39° 35' 31.686" S
	Longitude:	145° 38' 34.586" E
	Easting:	383 473.486 m
	Northing:	5 616 630.646 m
	Datum:	GDA94
	Spheroid:	GRS80
	Map Grid:	MGA 94
	Projection:	UTM Zone 55, CM 147

WELL DESIGNATION:	Exploration
STATUS:	Plugged and Abandoned
STRUCTURE TYPE:	Anticline
RIG NAME AND TYPE:	Kan Tan IV Semi Submersible, MODU.
RIG CONTRACTOR:	Maersk Drilling Pty Ltd

TOTAL DEPTH:	(mMD)	(mTVDSS)
Driller:	1800.0	
Logger:	1764.0	
ELEVATION:	Datum:	MSL
	RT-ASL (MSL):	26.0m
	WD (MSL):	74.0m
	RT-ML:	100.0m

HOLE SIZES:	Size	Interval (mMD)
	26" x 36"	100.0 - 159.0
	17 ½"	159.0 - 745.0
	12 ¼"	745.0 - 1800.0
CASING:	Size	Shoe (mMD)
	30" x 20"	157.0
	13 3/8"	735.0
SPUD DATE:	03:00hrs	24/12/2010
REACHED TD:	12:30hrs	31/12/2010
RIG RELEASED:	14:30hrs	07/01/2011

LWD LOGS

DATE	HOLE SIZE	RUN NUMBER	MEASUREMENT	INTERVAL
24-26/12/2010	17 ½"	1	DIR-GR	159.0 to 745.0m
28-30/12/2010	12 ¼"	2	DIR-GR-RES	745.0 to 1311.0m
30-31/12/2010	12 ¼"	3	DIR-GR-RES	1311.0 to 1800.0m

WIRELINE LOGS

LOG TYPE	SUITE/RUN	INTERVAL mRT	BHT/TIME
PPC-MSIP-HRLA-SP-PEX-GR	1/1	1745.5 to 734.5.0 GR recorded to seafloor	76.0 deg C / 13.17hrs

DRILL STEM TESTING - NIL

TEST	TEST INTERVAL	FLOW RATE	CHOKE	FWHP

CEMENT PLUGS

PLUG	INTERVAL	CEMENT TYPE	CEMENT VOLUME
1	1070 to 1220m	Abandonment	94 bbls / 15.8ppg
2	576 to 770m	Abandonment	94 bbls / 15.8 ppg
3	230 to 130m	Abandonment	50 bbls / 15.8 ppg

WELL INDEX SHEET	CRAIGOW-1	Page 2 of 2

FORMATION / TOP	SEISMIC MARKER	PREDICTED DEPTH		ACTUAL DEPTH		DIFF
		mMDRT	mTVDSS	mMDRT	mTVDSS	(m)
Sea Floor / Top Torquay Fm	Seafloor	100	-74	100.0	-74.0	0.0
	Z_0100	508	-482	506.0	-480.0	2.0
	Z_0150	788	-762	787.9	-761.9	0.1
	Z_0200	887	-861	869.6	-843.6	17.4
Demons Bluff Fm	Z_0300	1180	-1154	1174.1	-1148.1	5.9
Eastern View Coal Measures	Z_0350	1309	-1283	1308.0	-1281.9	1.0
	Z_450_50	1386	-1360	1384.0	-1357.9	2.0
	Z_450_40	N/P	N/P	1433.5	-1407.4	N/A
	Z_450_30	1471	-1445	1461.9	-1435.8	9.1
	Z_450_20	1506	-1480	1499.4	-1473.3	6.6
	Z_450_10	1536	-1510	1533.0	-1506.9	3.0
	Z_0450	1569	-1543	1566.2	-1540.1	2.8
	Z_0500_30	1669	-1643	1667.0	-1640.9	2.0
	Z_0500_20	N/P	N/P	1719.1	-1692.9	N/A
	Z_0500_10	1811	-1785	1778.8	-1752.6	32.2
Total Depth	N/A	1826	-1800	1800.0	-1774.0	26.0

1 WELL SUMMARY

Craigow-1 is located in the Bass Basin, approximately 140km from the north coast of Tasmania in 74m of water (Figure 1). The well was proposed to test a simple robust anticlinal structure located in the Cormorant Trough in the north-western part of the Bass Basin. The well was designed as a vertical oil test with a primary target at the 0450 seismic marker level within the Upper Eastern View Group. Good quality sandstones at this level are present at Cormorant-1 and King-1, where they are described as being fine to coarse grained.

The major risks were considered to be structure and charge. To date, no commercial hydrocarbons have been encountered in sands of the Upper Eastern View Group, and no commercial oil accumulations have been encountered in the basin. However, oil has been recovered at the 0450 seismic marker horizon in Cormorant 1, and near the 0350 horizon in Yolla-1 and Yolla-3. Gas has previously been considered to be the primary hydrocarbon target for the basin, particularly in the Middle Eastern View Group, and consequently few wells have been drilled in the basin testing closures at the Upper Eastern View Group. However Craigow represented one of the best opportunities for a commercial oil accumulation near the top of the Eastern View Group in the basin.

Details of the drilling operations and the well evaluation program can be found in the Craigow-1 Well Completion Report - Basic Data.

The semi-submersible rig Kan Tan IV came on contract to Tap Oil Ltd at 14:30 hrs, on the 22nd of December 2010, when the rig was on tight tow from Origin Energy's Silvereye-1 location in nearby T/44P. The rig completed the tow at 22:00 hrs on 22nd December 2010 and began anchor running operations which were completed at 15:30hrs on the 23 December 2010 when all eight anchors had been run and cross tensioned. An ROV seabed survey was conducted and the recorded water depth was 74.0m MSL. The Kan Tan IV rig elevation was measured at 26 m from Rotary Table to Sea Level.

The well was spudded with a 36" BHA at 03:00 hours, on the 24th of December 2010. The seabed was tagged at 100 mMDRT and drilling continued to section TD of 159 mMDRT, before the 30" x 20" conductor was run and cemented to 157 mMDRT. A 17 ½" BHA was then made up and run in the hole which drilled to 745 mMDRT where the 13 3/8" casing was run and cemented at 735 mMDRT. After the BOP stack and riser were run, landed and tested, a 12 ¼" BHA was made up, run in the hole and drilled to 748mMDRT where a LOT was performed. Drilling then continued to 1311 mMDRT where the BHA was pulled out due to slow ROP. A new bit and BHA was run in and continued drilling to final well TD of 1800 mMDRT at 12:30hrs on the 31st of December 2010.

A single run of wirelne logs were run at TD. There were no significant hydrocarbon indications and the well was plugged and abandoned as a dry hole. The rig was released at 14:30 hrs on the 7th of January 2011.

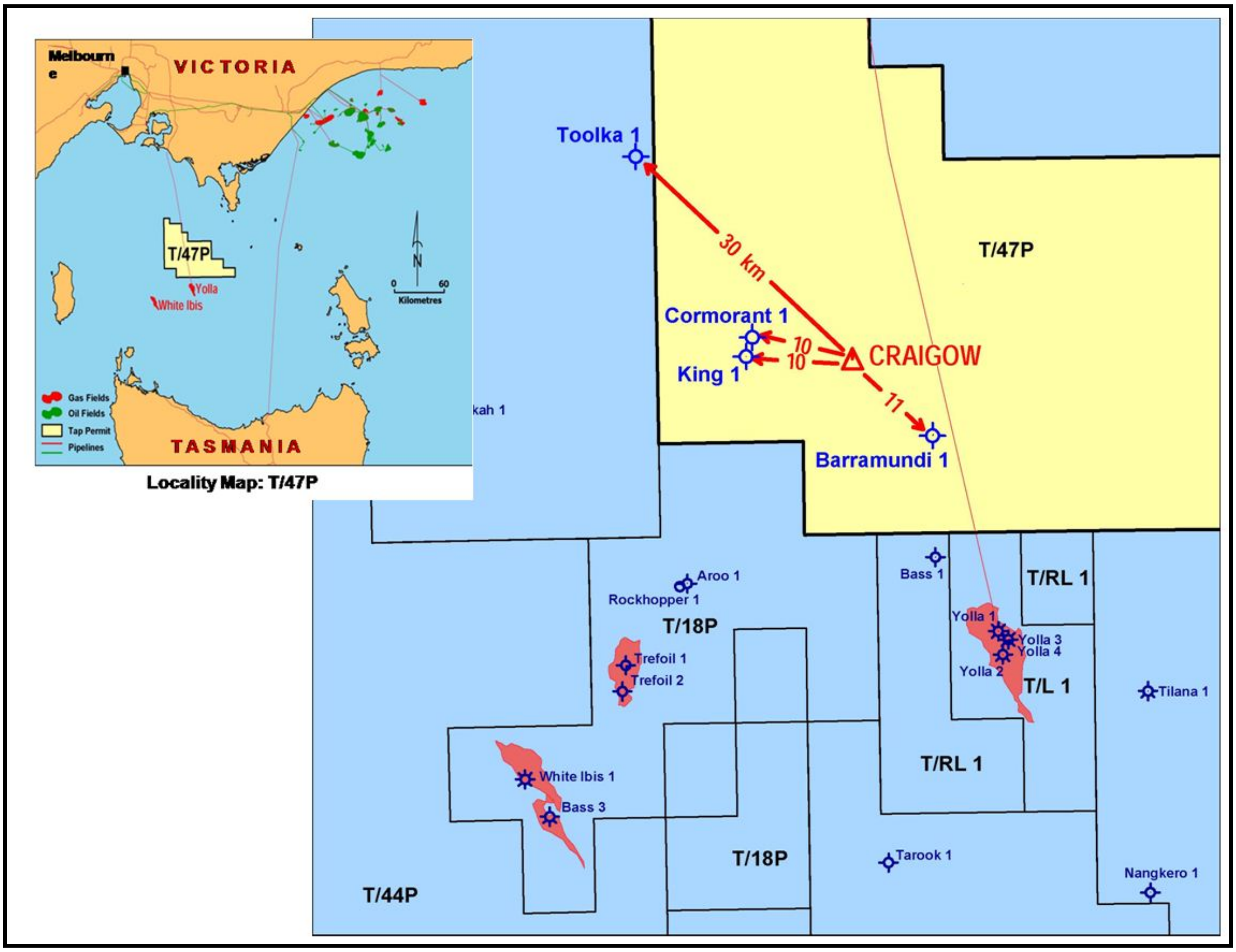

Figure 1: Craigow-1 Location Map

2 GEOLOGICAL DISCUSSION

2.1 Previous Exploration

The Bass Basin has been moderately explored with 36 wells drilled since 1965. Exploration drilling commenced in the early 1960’s when Hematite Petroleum Pty Ltd (BHP) and ESSO Exploration and Production Australia Ltd were awarded permits. ESSO drilled the first well in the Basin, Bass-1, in 1965, and from 1966 to 1974 drilled another 15 wells in the basin without commercial success. However, non commercial gas and condensate accumulations were discovered at Pelican-1 and Pelican-2, and numerous gas shows were recorded at Bass-3, Pelican-3, Poonboon-1, Toolka-1A and Aroo-1. Oil was also recovered from Cormorant-1.

Amoco Australia drilled Yolla-1 in 1985 which resulted in the first commercially significant hydrocarbon discovery in the Basin. The well encountered approximately 30 m of net gas pay over a 278 m gross interval within the Middle Eastern View Group. The well also penetrated a 31 m (wet gas cap of 20.4 m overlying a 10.1 metre light oil leg) gross hydrocarbon column in the Upper Eastern View Group.

In 1998, Boral Energy Resources Ltd drilled two wells in the central Bass Basin; Yolla-2 and White Ibis-1. Yolla 2 confirmed an economic gas resource within the Yolla structure and White Ibis 1, which was a crestal test over a large basement high up-dip of Bass 3, encountered a significant gas accumulation. Yolla 3 and 4 have subsequently been drilled as field development wells.

Trefoil-1, which was drilled in 2004, discovered a modest gas-condensate accumulation. Rockhopper-1, drilled in 2010, has been reported as an oil and gas discovery and Silvereye-1, drilled by Origin Energy in 2011, was reported as a dry hole. Details of the closest offset wells to Craigow-1 are listed in Table 1.

Well	Distance From Craigow-1	Direction
Cormorant-1	10.1km	WNW
King-1	10.5km	W
Barramundi-1	11.0km	SE
Bass-1	21.3km	SSE
Toolka-1	29.4km	NW

Table 1: Offset Wells

2.2 Structural History

The Bass Basin was initially formed as a failed arm of the Southern Margin Rift System that developed through the opening of the southern ocean through separation of Antarctica from Australia and the opening of the Tasman Sea (separation of the Lord Howe Rise Complex from Australia). The basin is underlain by a series of north-west to south-east half-grabens that have undergone varying amounts of extension.

Seven major tectonic events are recognised resulting in the present day geometry of the Bass Basin, the first occurring in the Late Jurassic - Early Cretaceous which was associated with the Southern Ocean rifting and the initial separation of Antarctica from Australia. In the Early Cretaceous, NE-SW extension occurred creating major NW-trending faults and resulting in the main rifting between the Bass and Otway Basins and onset of sedimentation in the Bass Basin. This period established the present-day underlying architecture of the Bass Basin.

This was followed by Mid Cretaceous inversion which caused extensive uplift of the Strzelecki and Otway Ranges and inversion in Gippsland and is likely to have also spread into the Bass Basin. Late Cretaceous extension terminated with break-up and seafloor spreading in the Tasman Sea and extensive volcanism at the main rift margin to the east of the Bass basin. This was associated with the onset of sea-floor spreading, oblique extension to the original basin fabric which resulted in minor rotation and tilting of the basement blocks.

A period of thermal sag occurred in the Late Cretaceous-Early Tertiary followed by a brief period of Miocene inversion before the Miocene to Recent platform sag phase that is still ongoing today. Up to 2000m of sedimentation was deposited in the Bass basin as a result of this.

2.3 Regional Stratigraphy

The Bass Basin contains sediments that range in age from Early Cretaceous - Latest Jurassic to Recent which rest unconformably on pre-rift Mesozoic and Palaeozoic rocks (Figure 2). Several stratigraphic nomenclature schemes have been used for the basin, and the stratigraphy of the basin still remains to be standardised amongst explorers in the basin. The discussion below follows the more commonly used lithostratigraphic nomenclature.

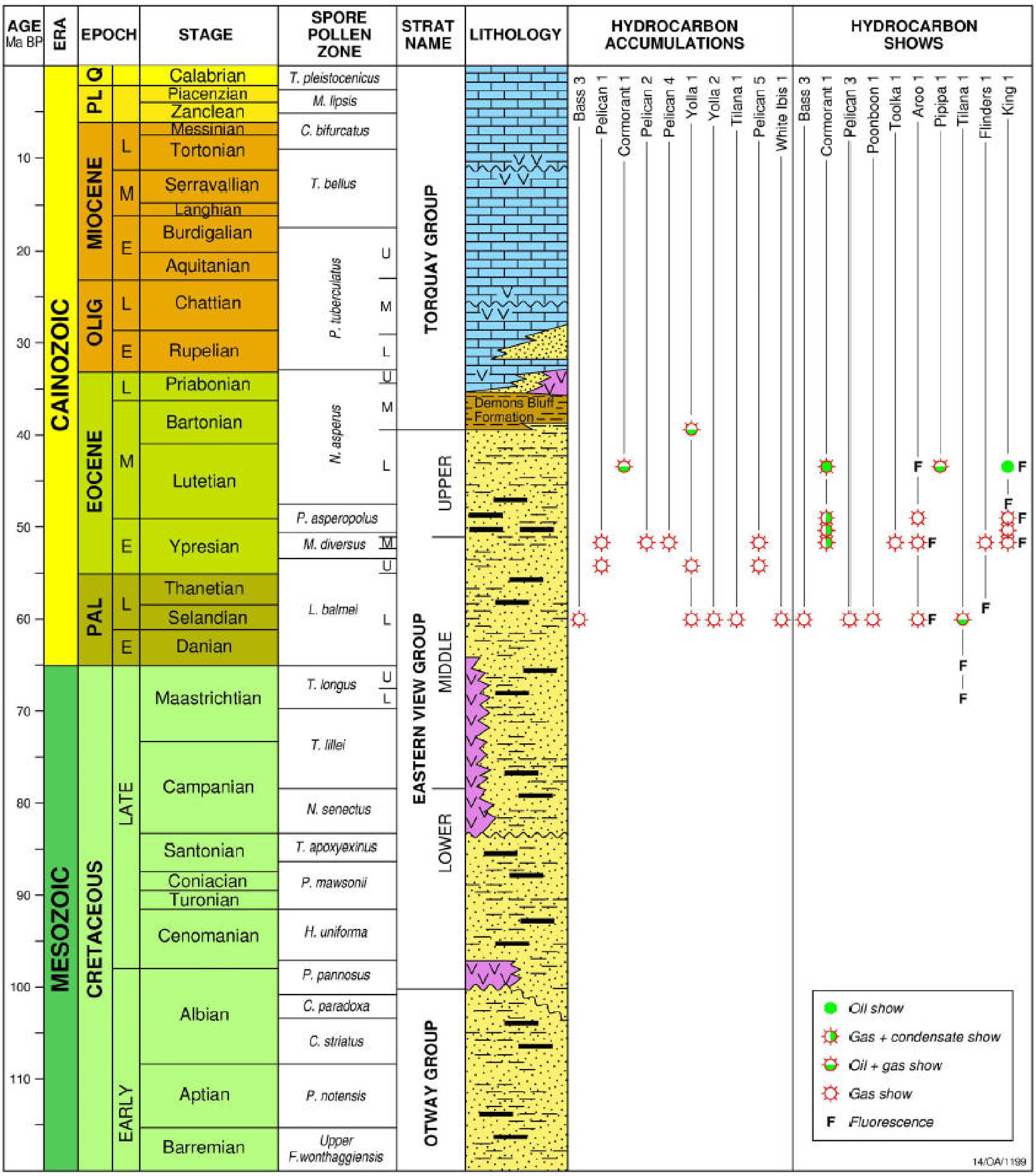

Figure 2: General Bass Basin Stratigraphy (From Blevin et al, 2003, Lennon et al, 1999)

2.3.1 Eastern View Group (Early Cretaceous – Middle Eocene

A threefold stratigraphic subdivision of the Eastern View Group (also referred to as the Eastern View Coal Measures) is recognized, the units being defined predominantly by a relative abundance of coal and age. The Eastern View Group is thickest in the centres of the main toughs, reaching a total thickness of in excess of 5500 metres, but thins markedly towards the basin margins. The Lower Eastern View remains largely unexplored and consequently is unknown due to its depth of burial.

The Eastern View Group comprises interbedded sandstones, siltstones, claystones and coals, the coals being sparse in the Eastern View Group but becoming more abundant towards and in the Eastern View Group M. diversus and L. balmei zones. The contact between the top of the Eastern View Group and the overlying Demons Bluff Formation is lithologically gradational with siltstone gradually becoming sandier with age and eventually grading into very fine to coarse-grained, moderately to well sorted, quartz sandstones. The top of the Eastern View may be picked from a change in the resistivity baseline and a small decrease in gamma ray response.

Sandstones of the upper Eastern View Group are proven petroleum-bearing units, having been tested by the Cormorant-1 and Yolla-1 wells where the unit comprises very fine to coarse-grained sandstones with minor clay matrix. Nevertheless, the unit has not been seen as a conventional reservoir target in the basin due to lack of structure at this level. Porosity in the Upper Eastern View Group sands ranges up to 30 percent; permeabilities in T/47P are expected to range from 100mD to in access of 1000mD depending on depositional environment.

The Middle Eastern View Group and in particular the L. balmei zone has been the primary reservoir target in the basin, hosting commercial volumes of liquids rich gas at the Yolla field, and the potentially commercial Trefoil field. There are significant but non commercial accumulations at White Ibis, Cormorant-1 and Pelican and abundant shows in several other wells including, Aroo-1 and Ponboon-1.

Where well developed, sandstones in both the Upper and Middle members reach 10- 50 metres in thickness and tend to be predominantly medium to coarse grained, with moderately good sphericity and sorting and are mainly siliceous and in places moderate calcareous cemented. Glauconite is often abundant, and thin dolomitic streaks and micropyrite seem to be inherent to the Group. The Eastern View sediments were deposited in a variety of terrestrial, paralic and shallow marine environments, receiving sediment input from both Tasmania and the Australian mainland.

2.3.2 Demons Bluff Formation (Middle – Late Eocene)

The Demons Bluff Formation is an overall transgressive-regressive succession that was deposited during a phase of thermal subsidence. The Demons Bluff Formation is an important regional seal for the underlying Upper Eastern View Group and is expected to be 103m thick at Craigow-1. At Flinders-1 and Pipipa-1, the Formation comprises argillaceous, dark brown, pyritic siltstones and shales that are slightly carbonaceous and occasionally calcareous. At Cormorant-1, the Demons Bluff formation consists of dark brown, micaceous, and fossiliferous claystone, with minor interbedded limestone, siltstones and silty sandstones. The boundary with the overlying Torquay Group across the Basin is gradational and indistinct as is the boundary with the underlying Eastern View Group.

2.3.3 Torquay Group (Middle Eocene to Recent)

The Torquay Group sequence consists of a lower interval of marine mudstones and marls which are up to 650 m thick, overlain by a calcarenite dominated succession up to 400 m thick (Cormorant-1). Volcanics are present however they are highly weathered and usually appear as claystones.

At Koorkah-1 and Aroo-1, the upper part of the Torquay Group is approximately 600 m thick and comprises predominantly largely unconsolidated skeletal limestone, interbedded with minor calcareous siltstones and marls. The limestone varies from white to grey, and is predominantly a calcarenite but occasionally grades to calcilutite, in particular towards the base of the interval. The unit consists mainly of bryozoan and foraminiferal fragments with occasional pelecypod and echinoid fragments and minor quartz. The calcilutite is grey-green and glauconitic. The marl is grey, very silty in part and friable.

2.4 Description of the Craigow Prospect

Craigow-1 is located in the Bass Basin, approximately 140km from the north coast of Tasmania in 74m of water. It was proposed to test a simple robust anticlinal structure located in the Cormorant Trough in the north-western part of the Bass Basin.

The well was designed as a vertical oil test with a primary target at the 0450_20 seismic marker level within the Upper Eastern View Group (Figure 3). Good quality sandstones at this level are present at Cormorant-1 and King-1, where they are described as being fine to coarse grained. Sands were expected down to the 500 seismic marker, decreasing in number with depth. Above the 500seismic marker the mapping shows there is no closure at this horizon.

The secondary objective to be tested was also an oil test at the 0350 seismic marker level near the top Eastern View Coal Measures. 3D modelling suggested it would be difficult to migrate hydrocarbons into this reservoir. The hydrocarbons were anticipated to be sourced from M diversus coals to the source of the permit.

Gas has previously been considered the primary hydrocarbon target for the basin, particularly in the Middle Eastern View Group and consequently few wells have been drilled in the basin testing closures at the Upper Eastern View Group. However Craigow was considered to represent one of the best opportunities for a commercial oil accumulation near the top of the Eastern View Group in the basin. The structure is also well placed in the Cormorant Trough, where it has access to a local drainage area where Eastern View Group sediments are mature and generating hydrocarbons.

2.5 Pre-Drill Mapping

The structural interpretation of the Craigow Prospect was based on the 525 km2 Labatt 3D seismic survey which was acquired by Tap Oil Ltd and processed in 2008. The 3D data are generally of good quality and tied to all the wells in the area.

In summary, the following depth conversion approach was taken:

1. Layer based depth conversion

   - Datum to 0100

   - 0100 to 0200

   - 0200 to 0350

   - 0350 to 0450

   - 0450 to 0500

2. Stacking velocities were used to generate smoothed interval velocities

- Vint calculated (Dix) from Vstk – line-based

- Vint then gridded and smoothed

3. Interval TWT and Interval Velocity grids for each interval arithmetically combined to create depth map

4. Vave grids backed out from Depth and TWT

5. Final Vave grids scaled and well tied

6. Final depth grids generated from TWT and final Vave grids

The well came in close to prediction and therefore the pre-drill maps are considered valid. No further seismic work has been carried out.

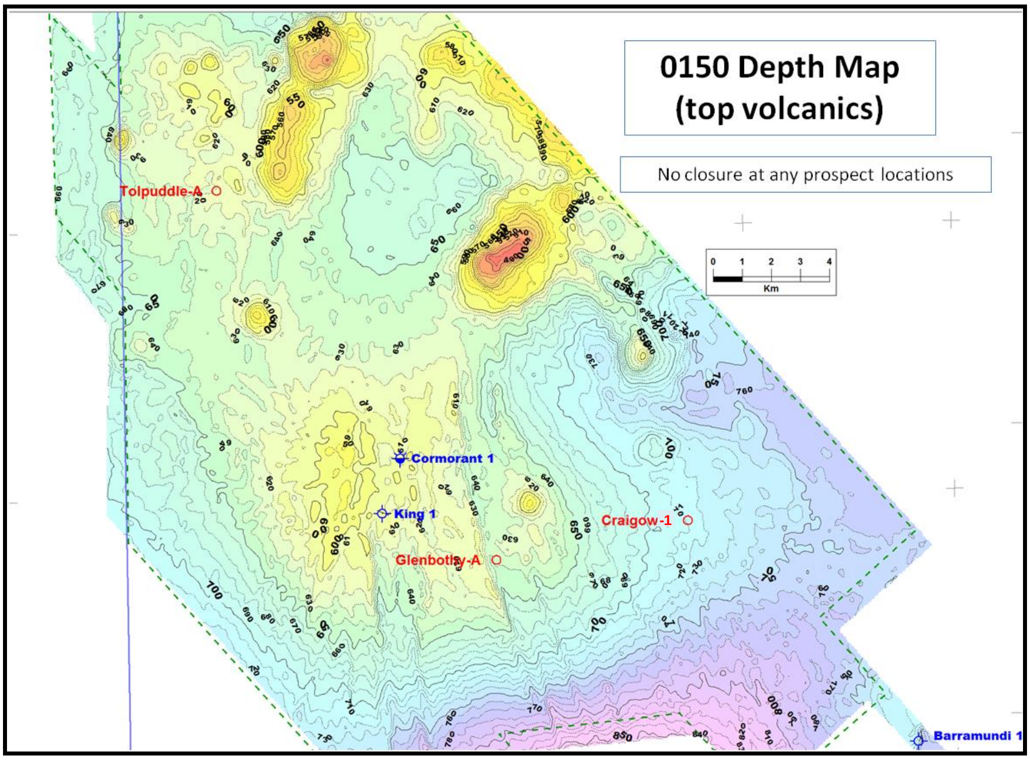

Figure 3: Top 0150 Top Volcanics Depth Structure Map

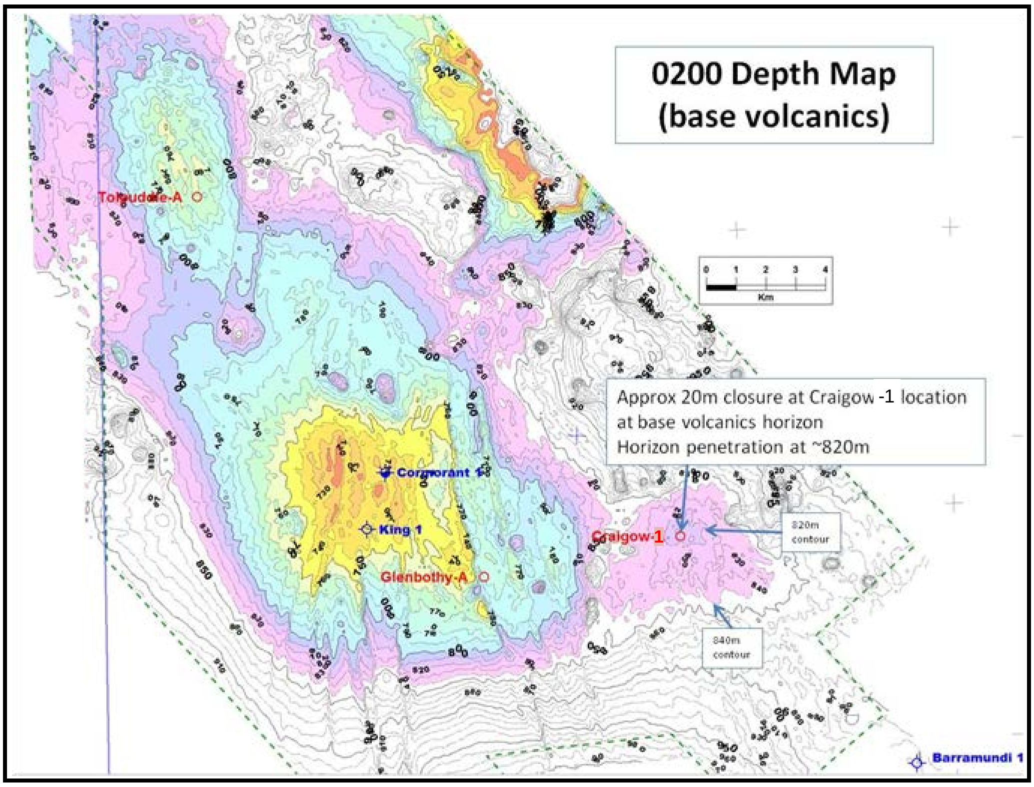

Figure 4: Top 0200 Base Volcanics Depth Structure Map

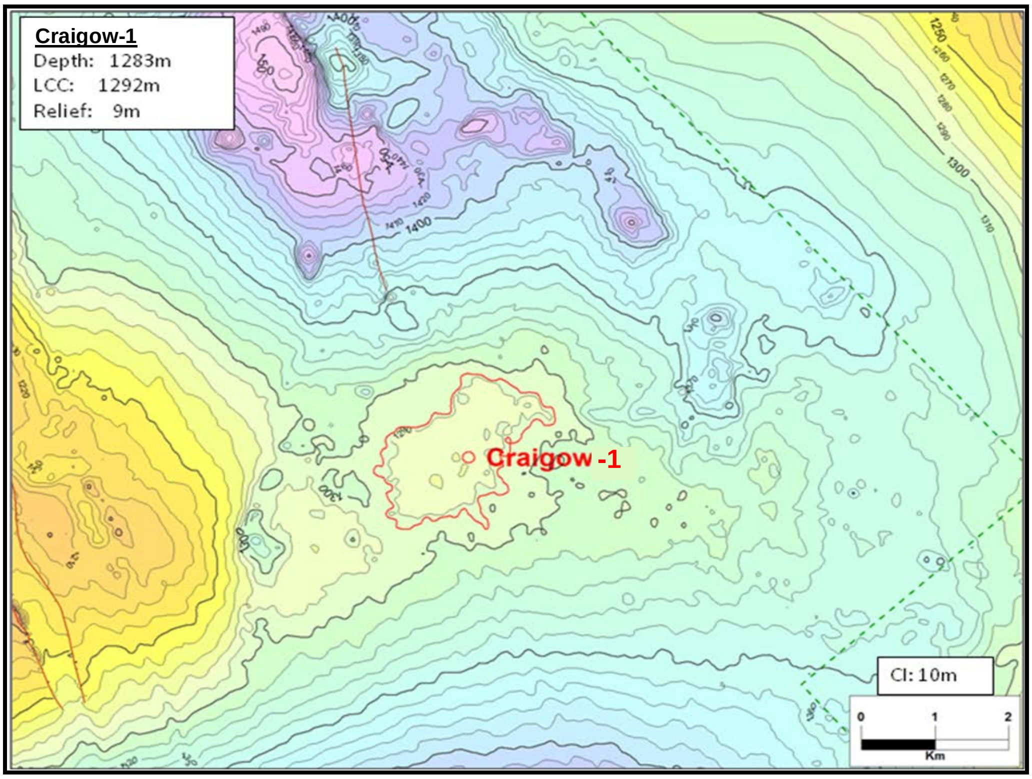

Figure 5: Top 0350 Primary Reservoir Depth Structure Map.

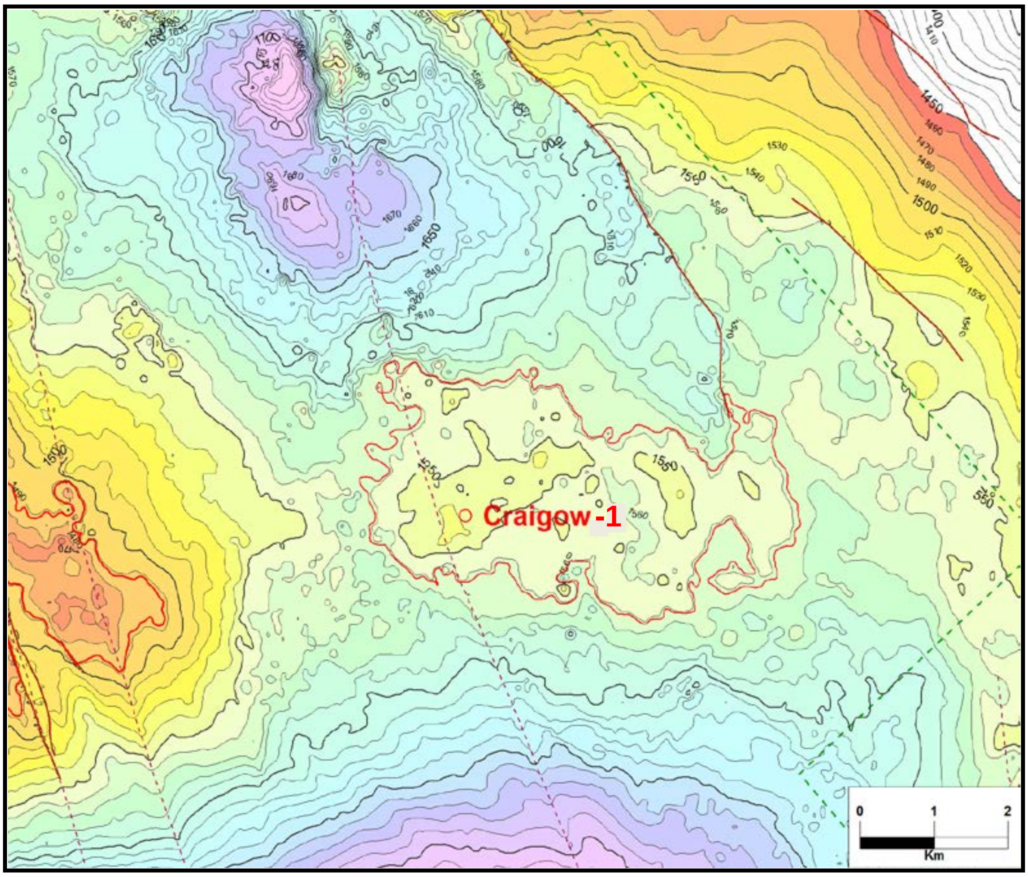

Figure 6: Top 0450 Primary Reservoir Depth Structure Map

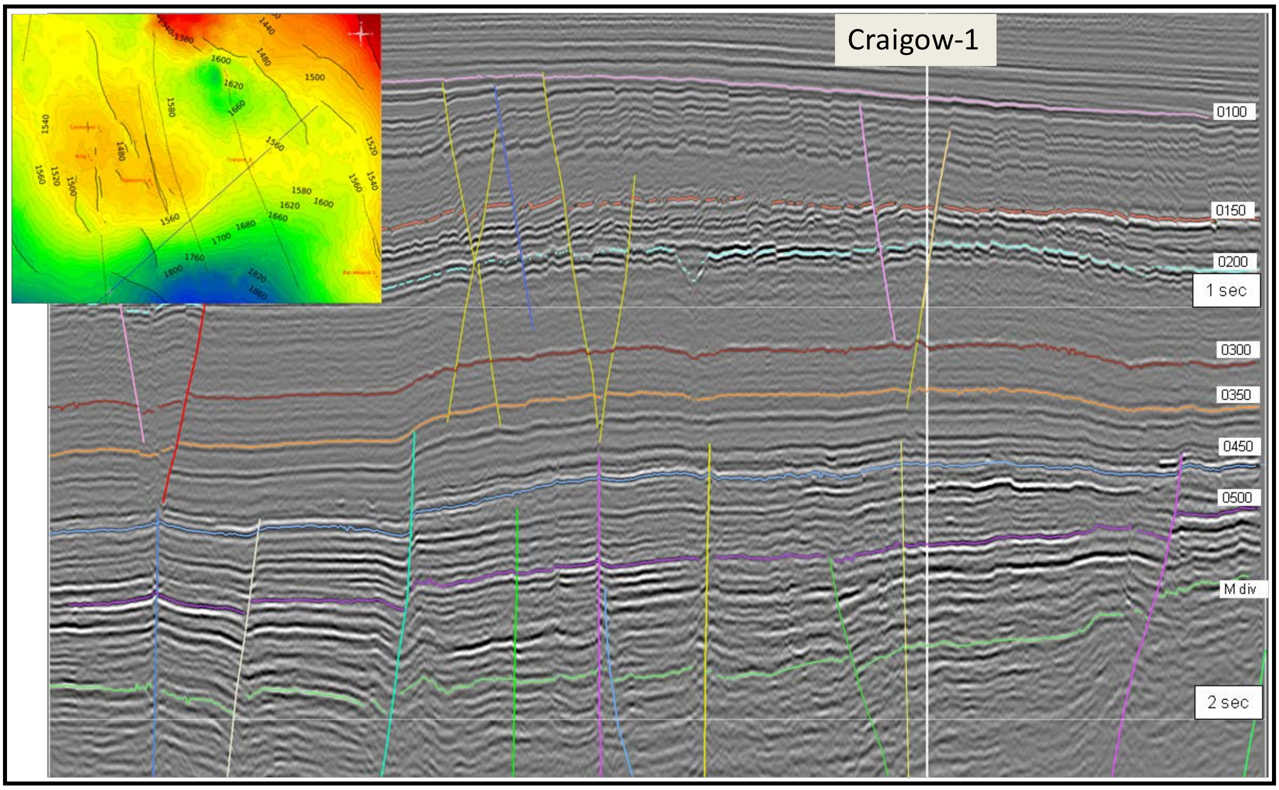

Figure 7: SW-NE Dip Line through Craigow-1

3 STRATIGRAPHY

3.1 Predicted vs Actual Formation Tops

ERA	PERIOD	FORMATION / TOP	SEISMIC MARKER	PREDICTED DEPTH		ACTUAL DEPTH		DIFF
				mMDRT	mTVDSS	mMDRT	mTVDSS	(m)
CAINOZOIC	OLIGOCENE TO RECENT		Seafloor	100	-74	100.0	-74.0	0.0
		SEA FLOOR / 100	Z_0100	508	-482	506.0	-480.0	2.0
		TORQUAY FM	Z_0150	788	-762	787.9	-761.9	0.1
			Z_0200	887	-861	869.6	-843.6	17.4
	EOC.	DEMONS BLUFF FM	Z_0300	1180	-1154	1174.1	-1148.1	5.9
	PALEOCENE TO EOCENE	EASTERN VIEW COAL MEASURES	Z_0350	1309	-1283	1308.0	-1281.9	1.0
			Z_450_50	1386	-1360	1384.0	-1357.9	2.0
			Z_450_40	N/P	N/P	1433.5	-1407.4	N/A
			Z_450_30	1471	-1445	1461.9	-1435.8	9.1
			Z_450_20	1506	-1480	1499.4	-1473.3	6.6
			Z_450_10	1536	-1510	1533.0	-1506.9	3.0
			Z_0450	1569	-1543	1566.2	-1540.1	2.8
			Z_0500_30	1669	-1643	1667.0	-1640.9	2.0
			Z_0500_20	N/P	N/P	1719.1	-1692.9	N/A
			Z_0500_10	1811	-1785	1778.8	-1752.6	32.2
		TOTAL DEPTH	N/A	1826	-1800	1800.0	-1774.0	26.0

Table 2: Craigow-1 Predicted Versus Actual Formation Tops.

3.2 Stratigraphic Summary

The stratigraphic section encountered in Craigow-1 is summarised below. Table 2 on the previous page summarizes predicted versus actual formation tops for Craigow-1 over the entire drilled interval. There were no returns above 745.0 mMDRT and formation picks above this depth are based on seismic and wireline log interpretation.

The detailed lithological description of the section encountered, including daily geological reports and the mudlog, is contained in the Craigow-1 Well Completion Report Basic Data Volume. For reference, the Bass Basin stratigraphic column is provided as Figure 2. The Craigow-1 Composite Log is contained in Enclosure 1.

All depths reported in this well completion report are measured depth relative to the rotary table (mMDRT) unless otherwise stated. Measured Depth (MD) is 26.0 m above Mean Sea Level (MSL). All TVDSS depths are referenced to MSL. The well was drilled with no returns to the 13 3/8" casing point of 745.0 mMDRT where lithological descriptions commence (within the Torquay Formation).

3.2.1 Torquay Formation

Depth:	100.0 to 1,174.1.0 mMDRT (-74.0 to -1,148.1 mTVDSS)
Thickness:	1,074.1 m (full section not logged)
Age:	Oligocene to Recent
Depositional Environment:	Shallow to open marine

The section from seafloor to 745.0 mMDRT was drilled riserless with all drilled cuttings returned to the seafloor. From offset wells the Torquay Group consists of a lower argillaceous succession of marine mudstones and marls up to 650 m thick, overlain by a calcarenite-dominated succession up to 400 m thick (Cormorant-1). Volcanics are present. However they are highly weathered and appear as claystones.

At nearby wells Koorkah-1-1 and Aroo-1, the upper part of the Torquay Group is approximately 600 m thick (compared with Cormorant-1, approximately 400m) and comprises predominantly skeletal limestone, largely unconsolidated, interbedded with minor calcareous siltstone and marl. The limestone varies from white to grey, and is predominantly a calcarenite but occasionally grades to calcilutite, in particular towards the base of the interval. The unit consists mainly of bryozoan and foraminiferal fragments with occasional pelecypod and echinoid fragments and minor quartz. The calcilutite is grey-green and glauconitic. The marl is grey, very silty in part and friable.

At Craigow-1 the interval from to 787.9 mMDRT (Top Z_150) was composed of Claystone with minor interbedded Sandstones. The Claystones were light to medium grey, pale green grey, soft to friable, blocky, silty, calcareous in part with mostly indeterminate fossil and shell fragments, forams, trace carbonaceous specks, trace cryptocrystalline pyrite aggregates, trace very fine sand grains and trace very fine peletal glauconite. The Sandstones were white to light grey, mottled white, translucent, friable, very fine to fine grained, subangular to subrounded, silty in part, argillaceous, with common fine calcareous fossil debris, trace carbonaceous specks, poor visible porosity and no shows.

The interval from 787.9 to 869.6 mMDRT (Z_0150 to Z_0200) was composed of interbedded Claystones, Siltstones and Sandstones with minor Limestone. The Claystones were similar to those described above while the Siltstones were light grey to light grey brown, soft to friable, argillaceous, calcareous, with trace sand, trace carbonaceous matter and trace fine fossil debris. The Sandstones were pale to light green grey to light grey, speckled grey, white, pale green grey, firm to friable, very fine to fine grained, subrounded, moderately well sorted, silty in part, with calcareous cement and fine fossil debris, poor visible porosity and no shows. The Limestones were white to light grey in colour, soft to firm, chalky to coarsely bioclastic, argillaceous in part with common fine to medium grained peletal glauconite, poor to fair visible porosity and no shows.

The interval from 869.6 to 1005.0 mMDRT (Z_0200) was composed of interbedded Limestone and Siltstone. The Limestone was white to light brownish grey, olive grey, soft to friable, blocky, with a chalky matrix and very fine sand grains, common glauconite (5%), trace carbonaceous flakes, argillaceous in part with no visible porosity and no shows. The Siltstone was light grey to light brown grey, soft, sub-blocky, argillaceous, calcareous and grading to very fine sandstone.

From 1005.0 to 1110.0 mMDRT the lithology changed to predominantly Calcareous Claystone with minor Limestone and trace Dolomite. The Calcareous Claystone was light grey to light brown grey, olive grey, soft, sub blocky to amorphous with common very fine sandy matrix. The Limestone was white to translucent, pale yellow, grey-white, mottled, soft to firm, crystalline in part, micritic, amorphous with common shell fragments and 3% glauconite matrix. The Dolomite was dark red brown in colour, hard with loose fragments.

The interval from 1110.0 to 1174.1 mMDRT (base Torquay Fm : Z_0300) was predominantly Claystone with minor Limestone and Sandstone towards the base. The Claystone was light grey to light brown grey, olive grey, soft, sub-blocky, amorphous with trace calcareous cement and common very fine sandy matrix. The Limestone was predominantly the same as described above and the Sandstone was clear, opaque, loose grains, very coarse, well sorted, sub-angular to sub-rounded with good visual porosity and no shows.

The base of the Torquay Formation is highlighted on wireline logs by an abrupt increase in gamma ray and decrease in density and neutron porosity which is reflected by a change from a dolomitic limestone base to more clean claystones at the top of the Demons Bluff Formation.

3.2.2 Demons Bluff Formation

Depth:	1,174.1 to 1,308.0 mMDRT (-1,148.1 to -1,281.9 mTVDSS)
Thickness:	133.9 m
Age:	Middle Eocene to Oligocene
Depositional Environment:	Shallow Marine.

The Demons Bluff Formation is an overall transgressive-regressive succession that was deposited during a phase of thermal subsidence.

The upper Demons Bluff Formation (Z_0300) from 1174.1 to 1265.0 mMDRT is an interbedded sequence of Claystone, Sandstones with minor Dolomite. The Claystone is light grey to light brown grey, olive grey, soft to sub-blocky and amorphous with trace calcareous cement and common very fine sandy matrix. The Sandstone is clear, opaque with loose fine to very coarse grains, well sorted, sub-rounded to rounded with good visual porosity and no shows. A second Sandstone type is described as buff to light orange brown, friable to brittle, medium to coarse, moderately sorted, sub-angular to sub-rounded, with dolmitic and calcareous cements and common mineral fluorescence. The Dolomite is buff, hard to very hard and massive.

From 1265.0 to 1308.0 mMDRT (Base Demons Bluff: Z_0350) the section is predominantly Claystone with minor interbedded Dolomite. The Claystone is dark grey to greyish black, grey brown, soft, sub-blocky, silty in part, trace calcareous with common very fine sand, trace shell fragments and forams and trace disseminated pyrite and trace carbonaceous flecks.

At Craigow-1 the base of the Demons Bluff Formation is indistinct on gamma ray but represented as a sharp increase in density and modest increase in sonic velocity. It also marks a change in borehole competency reflected in reduced caliper washout which is most likely indicative of more competent formation.

3.2.3 Eastern View Coal Measures

Depth:	1,308.0 to 1,800.0 mMDRT (-1,148.1 to -1,174.0 mTVDSS)
Thickness:	492.0 m
Age:	Middle Eocene to Lower Oligocene
Depositional Environment:	Terrestrial, Paralic and Shallow Marine

The section from 1308.0 to 1384.0 mMDRT (Z_0350 to Z_0450-50) is predominantly Claystone with very minor (5%) interbedded Sandstone with a Glauconitic Claystone at the base. The Claystone is dusky yell brown to pale green, soft to blocky, calcareous (pale green) to trace calcareous (dusky brown,) with 3% carbonaceous inclusions, rare glauconite

(1%), trace pyrite, rare dolomite, common shell fragments and rare forams. The Sandstone is clear, opaque, loose grains, med to v. coarse, well sorted, sub-rounded to rounded with good visual porosity and no shows. The basal 15 metres of the section is a Glauconitic Claystone which is dusky yellow brown to light brown, soft to blocky, non-calcareous with 15% glauconite inclusions, 3% carbonaceous and rare loose pyrite.

The section from 1384.0 to 1433.5 mMDRT (Z_0450_50 to Z_0450_40) is composed of Claystone with minor Dolomite and Sandstone interbeds. The Claystone is dusky yellow brown to light brown, soft to blocky, non-calcareous with 15% glauconite inclusions, 3% carbonaceous and rare loose pyrite. The Dolomite is buff to light brown, firm to mod hard and brittle. The Sandstone is clear to translucent white, pale to dark brown, firm to brittle, loose in part, medium to very coarse, poorly sorted, sub rounded to rounded with good inferred porosity and no shows.

From 1433.5 to 1461.9 mMDRT (Z_0450_40 to Z_0450_30) the drilled section was composed of Silty Claystone with minor (5-10%) Sandstone and trace Dolomite. The Silty Claystone was light grey brown to pale grey mottled white, soft, soluble, blocky, very silty, grading to siltstone with minor calcareous matrix, trace fossils, glauconite pellets, trace carbonaceous specks and flecks with coaly laminae and rare pyrite. The Sandstone was clear to translucent, white, occasionally light grey, loose, very coarse to granular, and moderately well sorted, subrounded to rounded, sub spherical, with broken grains (bit fractured pebbles), trace lithic grains, trace pyrite cement, trace kaolin coating and good inferred porosity with no shows.

The interval from 1461.9 to 1499.4 mMDRT (Z-450_30 to Z_450_20) marks the first onset of Coals and is made up of predominantly interbedded Siltstone and Sandstones with minor interbedded Coals. The Siltstone is light grey brown to mottled white to pale grey, soft, soluble, blocky, argillaceous, very sandy, grading in part to Sandstone, slightly calcareous with trace dolomite, trace to common kaolin, common coaly laminae and rare pyrite. The Sandstone is clear to translucent, white, occasional light grey, loose, very fine-granular, trace fine dolomitic/argillaceous matrix, poorly sorted, sub-angular to rounded, sub-spherical with trace lithic grains, trace pyrite cement, trace kaolin coating grains with good inferred porosity and no shows.

The section from 1499.4 to 1533.0 mMDRT (Z-450_20 to Z_450_10) consists of an interbedded sequence of Siltstone (decreasing with depth), Sandstone (increasing with depth) and minor interbedded Coals. The Siltstone is light grey brown to mottled white to pale grey, soft, soluble, blocky, argillaceous, very sandy, slightly calcareous with trace dolomite, trace to common kaolin, common coaly laminae and rare pyrite. The Sandstone is clear to translucent white, occasional light grey, loose, very fine-granular, trace fine dolomitic/argillaceous matrix, poorly sorted, sub-angular to rounded, sub-spherical with trace lithic grains, trace pyrite cement, trace kaolin coating grains, good inferred porosity and no shows. The Coals are dark brown to black, dull, earthy to bright vitreous, friable to hard, brittle, laminated to blocky and argillaceous in parts.

The section from 1533.0 to 1566.2 mMDRT (Z_450_10 to Z_450) is a slightly less sandy sequence of interbedded Siltstone, Sandstone and minor Coals. The Siltstone is white to pale grey, light grey brown, soft, blocky, argillaceous, very sandy, slightly calcareous, trace dolomitic, trace to common kaolin matrix with common coaly laminae and rare pyrite. The Sandstone is clear to translucent white, occasionally light grey, loose, med granular, trace fine dolomitic and argillaceous matrix, sub-rounded to rounded, sub-spherical, broken pebbly grains, trace lithic grains, trace pyrite cement, trace kaolin smears with good inferred porosity and no shows. The Coals are dark brown to black, dull, earthy to bright vitreous, friable to hard, brittle, laminated to blocky and argillaceous in parts.

The interval from 1566.2 to 1667.0 mMDRT (Z_450 to Z_0500_30) consists of an interbedded Siltstone and Sandstone sequence with minor Coals with weathered Volcanics towards the base. The Siltstone, Sandstone and Coals are similar to those described above while the Volcanics are white mottled dark brown, friable-firm containing fine grained weathered feldspar (kaolin) with dark micaceous mafic minerals, trace pyrite, trace spotty dull yellow mineral fluorescence and no cut.

The interval from 1667.0 to 1719.1 mMDRT (Z_0500_30 to Z_0500_20) is predominantly a Silty Claystone section with some coarse grained Sandstones at the top and base with minor Coals. The Silty Claystone is light grey to light grey brown, very soft, amorphous, silty, slightly calcareous with trace mica, trace carbonaceous specks and trace light brown hard cryptocrystalline dolomite. The Sandstones are clear to translucent white, occasionally light grey, loose, very fine to course, predominantly granular with common soft kaolin matrix, poorly sorted, sub-angular to rounded, sub spherical with trace lithic grains with good inferred porosity and no shows. The Coals are dark brown to black, dull, earthy to bright vitreous, friable to hard, brittle, laminated to blocky and argillaceous in parts.

The section from 1719.1 to 1778.8 mMDRT (Z_500_20 to Z_500_10) consists of Silty Claystone and Sandstones with very minor Coal. The Silty Claystone is light grey to light grey brown, very soft, amorphous, silty, slightly calcareous with trace mica and trace carbonaceous specks. The Sandstone is clear to translucent white, occasionally light grey, loose, medium to very coarse, predominantly granular with common soft kaolin matrix, poorly sorted, sub-angular to rounded, elongate to sub spherical with trace lithic grains, good inferred porosity and no shows. The Coal is dark brown to black, brittle to sub-fissile, blocky and lustrous in part.

The section from 1778.8 to 1800 mMDRT (Z_500_10 to TD) consists predominantly of Sandstone (60-100%) and Sandy Claystone (10-90%) and minor Carbonaceous Siltstone (0-20%). The Sandstone is clear to translucent white, occasional light grey, loose, very fine granular, trace fine dolomitic/argillaceous matrix, poorly sorted, sub-angular to rounded, sub-spherical with trace lithic grains, trace pyrite cement, trace kaolin coating grains, good inferred porosity and no shows. The Sandy Claystone is light grey to light grey brown, grades to white, very soft, amorphous, silty, slightly calcareous with trace mica, trace carbonaceous specks and trace light brown hard cryptocrystalline dolomite. The Carbonaceous Siltstone is pale brown to medium brown with common carbonaceous and coal interbeds and grades to coaly bands.

4 HYDROCARBONS

Hydrocarbon detection via gas chromatograph and cuttings descriptions commenced from the beginning of the 12 ¼" hole at 745.0 mMDRT using the Geoservices FLAIR and Reserval gas systems when samples were first brought to surface. In conjunction with the standard mudlogging service, Geoservices were also engaged to provide their FLAIR, geochemical and Isotope logging service (Appendix 2) for the 12 ¼" hole section.

Low levels of gas started showing from 780.0 mMDRT (below the Z_0150 within the Torquay Formation) and remained that way till TD. The highest gas (1.062%) was recorded at 1201.5 mMDRT and average gas values were between 0 and 0.28% throughout the well.

FLAIR and Isotope logging was employed on the Craigow-1 well with the objective of Quantitative gas acquisition in the C1-C5 range, recognition of any fluid variation and/or fluid contacts to better locate eventual pay zones within the investigated intervals, establish typical fluid signatures to correlate to offset wells and monitoring the presence of Ethene, if any, generated by drilling / bit artefact.

Due to a combination of technical issues and very low gas readings while drilling the well no conclusive interpretation was possible.

Petrophysical interpretation was carried out by SAROS using all the available wireline, LWD and mudlogging data. The results of this interpretation are contained in Appendix 1. Results indicate that within the Eastern View Coal Measures there are several reasonably thick sandstone intervals which are clean and show a porosity range from 25-30% and are all water saturated. Pay summary results are listed below:

HYDROCARBON VOLUME REPORT - Craigow-1_2inch - Measured Depth Results

Report Generated By Saros | Report Date 17/02/2011
Petrolog Version Version 10.6 (Beta) | Report Time 7:24 AM

Zone Method By Strata
Analysis Uncertainty P50 (Expected)
Cutoff Uncertainty P50 (Expected)
Min. Included Thickness 0.200 M

Net Reservoir	Vclay Cutoff	100.0 %
	PHIE Cutoff	5.0 %
Net	SWE Cutoff	100.0 %
Net Pay	SWE Cutoff	50.00%

Other Reservoir Conditions: 10 < K -CPX < 100000

FORMATION	FROM M	TO M	GROSS INTERVAL M	RESERVOIR INTERVAL M	RES AVE VCL %	RES AVE PHIE %	RES AVE PERM MD	NET AVE SWE %	NTG	PAY INTERVAL M	PAY AVE VCL %	PAY AVE PHIE %	PAY AVE PERM MD	PAY AVE SWE %
300	1174.1	1308.0	133.9	0.0					0%	0.0				
350	1308.0	1384.0	76.0	16.358	36.207	19.709	72.765	99.957	22%	0.0				
450_50	1384.0	1433.5	49.5	9.195	34.232	19.685	72.978	99.998	19%	0.0				
450_40	1433.5	1460.9	27.4	0.0					0%	0.0				
450_30	1460.9	1499.4	38.5	21.082	32.261	20.382	79.534	99.956	55%	0.0				
450_20	1499.4	1533.0	33.6	26.365	25.317	23.435	196.667	99.76	78%	0.0				
450_10	1533.0	1566.2	33.2	15.291	27.389	21.933	129.074	100.0	46%	0.0				
450	1566.2	1667.0	100.8	34.798	24.838	21.866	128.356	99.286	35%	0.0				
0500_30	1667.0	1799.996	132.996	20.98	25.373	21.453	96.063	99.894	16%	0.0				
	TOTAL		**625.896**	**144.069**	**28.251**	**21.499**	**119.24**	**99.757**	**23%**	**0.0**				

Table 3: Hydrocarbon Volume Report Using Permeability Cut-off for Net Pay

5 CRAIGOW-1 POST-WELL EVALUATION

Seismically the well came in close to prognosis and therefore a structure is interpreted to be present.

Good quality reservoirs were encountered. The overall depositional environment was as expected, moving up section from non-marine sands to shelf muds.

The major risks for Craigow-1 pre-drill was migration charge and structure. The picks appear to have come in close to prognosis. However below the 0300 seismic marker the seismic picks are difficult to determine on logs. The picks are thought to have come in close to prognosis, suggesting the velocity model is correct and a valid structure is likely to be present.

The most likely cause of failure for the Craigow structure is migration. The well had no shows at the primary target. An alternative interpretation would suggest charge is an issue. However most wells in the area have hydrocarbons or shows suggesting a valid source is present.

6 Contributions to Geological Concepts and Conclusions

6.1 Reservoir

The primary target sands were anticipated to be at the 0450_20 seismic horizon. However the first sands of the primary reservoir were encountered slightly higher at the 0450_30 seismic horizon. Net to gross was lower than predicted, at approximately 41% (using Vcl cutoff 40% clay) or 55% using a permeability cut-off of 10mD. Porosities were interpreted to be good, approximately 21% average and permeabilities interpreted to be greater than 100mD.

6.2 Source and Migration

The primary source rocks in the Bass Basin are interpreted to lie within the Palaeocene Middle Eastern View Group and consist of interbedded coals (up to 25 metres thick), and fluvio-deltaic and lacustrine shales. Geochemical analyses have shown that these source rocks have generated both gaseous and liquid hydrocarbons.

There were two periods of significant coal deposition in the Bass Basin: 1) Early to Late Eocene (Lower M. diversus to Middle N. asperus zones) and 2) Maastrichtian to mid-Late Palaeocene (mid-Lower F. longus to Lower L. balmei zones). (1) is considered the main source interval for T/47P and is dominantly oil prone. The biodegraded oil encountered in Cormorant-1 at approximately 1500mRT has been typed to coals in the M diversus at approximately 2700mMDKB (Cormorant-1). These coals are dominantly oil prone.

Deposition of coals during the Maastrichtian to mid-Late Palaeocene coincided with the occurrence of deep lakes across the central and western parts of the Bass Basin. Coals deposited during this time are interpreted to have accumulated in peat mires and lower delta plain environments that fringed the lakes and basin margin

Gases in the Bass Basin tend to be condensate rich and often have a high CO2 content, the CO2 being sourced from igneous intrusions which are recognised throughout the succession. Gaseous hydrocarbons have a similar source to oils, but are generated over a wider maturity range.

3D basin modelling shows oil is being expelled from a source kitchen to the south of T/47P from coals with the M diversus section. Migration started approximately 5MMya and has continued to the present day. The Craigow prospect is placed on one of the migration pathways from the south kitchen to the south.

The lack of discovered hydrocarbon accumulations to date within the Upper Eastern View Group is attributed largely to a lack of testing valid closure (and in particular four-way dip closure) at Upper Eastern View level. Oil at Cormorant-1 and Yolla-1/3 is present within well developed anticlinal closure at this level and provides evidence for hydrocarbon charge.

The Craigow-1 well had no oil shows. Considering oil has been recovered from Cormorant-1, Rockhopper-1 and Yolla-1/3, lack of charge is unlikely. Therefore the probable cause of failure is migration or lack of structure. Post mapping of the dyke which passes through the Craigow structure suggests the dyke has acted as a barrier to migration (Figure 8). The dyke does not extend in most places above the 300 seismic marker where there were some minor gas shows suggesting possible minor migrated, biodegraded hydrocarbons.

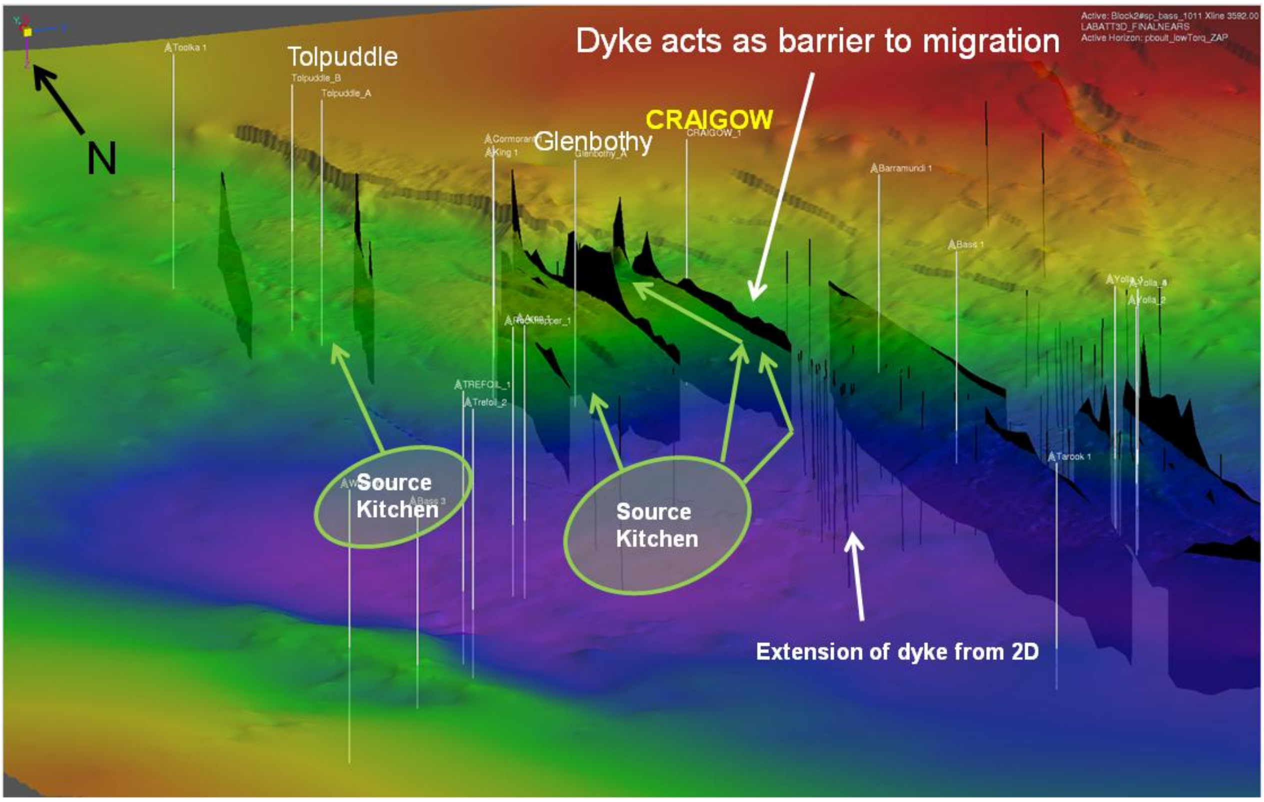

Figure 8: Possible migration barrier due to the presence of dykes.

6.3 Seal

The regional seal is provided by marine claystones which extend across the structure. Seal is not considered an issue.

7 References

"Bass basin SEEBASE^{TM} PROJECT. SRK PROJECT CODE: AG701. PREPARED FOR GEOSCIENCE AUSTRALIA JUNE-JULY 2001", SRK CONSULTING.

Appendices

Appendix 1: Petrophysical Report

Petrophysics Report

Craigow-1

Prepared for:

The Saros Group
Petroleum Services
1/949 Wellington Street
WEST PERTH, WA 6005

Michael Isherwood

February 2011

EXPERTISE, RESULTS

EXECUTIVE SUMMARY

This report summarises the available data, methodology and the interpretation results of a petrophysical evaluation of the Craigow-1 well through the Eastern View Coal Measures (1145.0m) through to TD. This well was interpreted after first running interpretation on the neighbouring wells King-1 and Barramundi-1.

The logging tools used in the analysis were recorded by Schlumberger open hole logging in a single suite over the 12 $^{1}/_{4}$" hole section from 1764-75m, see table 1. The PEX was not acquired above 1145m. Only Sonic-GR was acquired over the casing from 735m to seabed at 75m. The wireline data was loaded into Petrolog, and quality control, depth matching and environmental corrections were applied to the data as required. Craigow-1 was interpreted using the Petrolog CPX analysis module, utilising the Sand-Silt-Shale formation model. The borehole conditions and log quality were good with no quality issues noted.

The formation water was quite saline, exhibiting a Pickett plot derived salinity of approx 55,000ppm and freshening to 40,000ppm below 1584mMD. Using a standard analysis approach works fine in this well, the thinly laminated interval present in King-1 and Barramundi-1, at the top of the main sands, was not observed.

There are several reasonably thick sandstone intervals which are clean and show a porosity range from 25-30% and are water saturated. These sands were not as thick as those seen in King-1 or Barramundi-1. Formation water salinity is supported by King-1, no shows and the gas logs are not elevated over the sands.

Before examining the various cross-plots in this report it would be worth looking at the section titled *Data grouping and associated lithology*. This section looks at the various data clouds seen on the key cross-plots and what lithology they are best described as.

See Pay Summary Results section at the end of this report. This section contains several variations in NET cut-off, these are; VCL < 30%, VCL < 40% (results as shown below) and Permeability >10mD.

Unit	From (mMD)	To (mMD)	Gross int. (m)	Res. Int. (m)	VCL (%)	Phie (%)	Perm (md)	Swe (%)	NTG (%)
300	1174.1	1308.0	133.9	1.067	17.335	11.076	6.832	86.989	1%
350	1308.0	1384.0	76.0	8.026	26.648	21.397	124.24	99.956	11%
450_50	1384.0	1433.5	49.5	5.283	28.582	21.328	111.85	99.997	11%
450_40	1433.5	1460.9	27.4	0.0					0%
450_30	1460.9	1499.4	38.5	15.646	28.94	21.458	100.17	99.944	41%
450_20	1499.4	1533.0	33.6	21.946	21.895	24.718	232.15	99.718	65%
450_10	1533.0	1566.2	33.2	12.446	23.608	22.875	153.98	100.0	37%
450	1566.2	1667.0	100.8	30.734	21.955	22.338	144.08	98.774	30%
0500_30	1667.0	1799.99	132.996	18.745	23.351	22.041	105.78	99.898	14%

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Tables and Figures

INTRODUCTION

Craigow-1 well located offshore in the North-Western Bass basin in permit T/47P. The primary objective was the Top Aroo Formation, a series of high quality sands below thick sealing claystones.

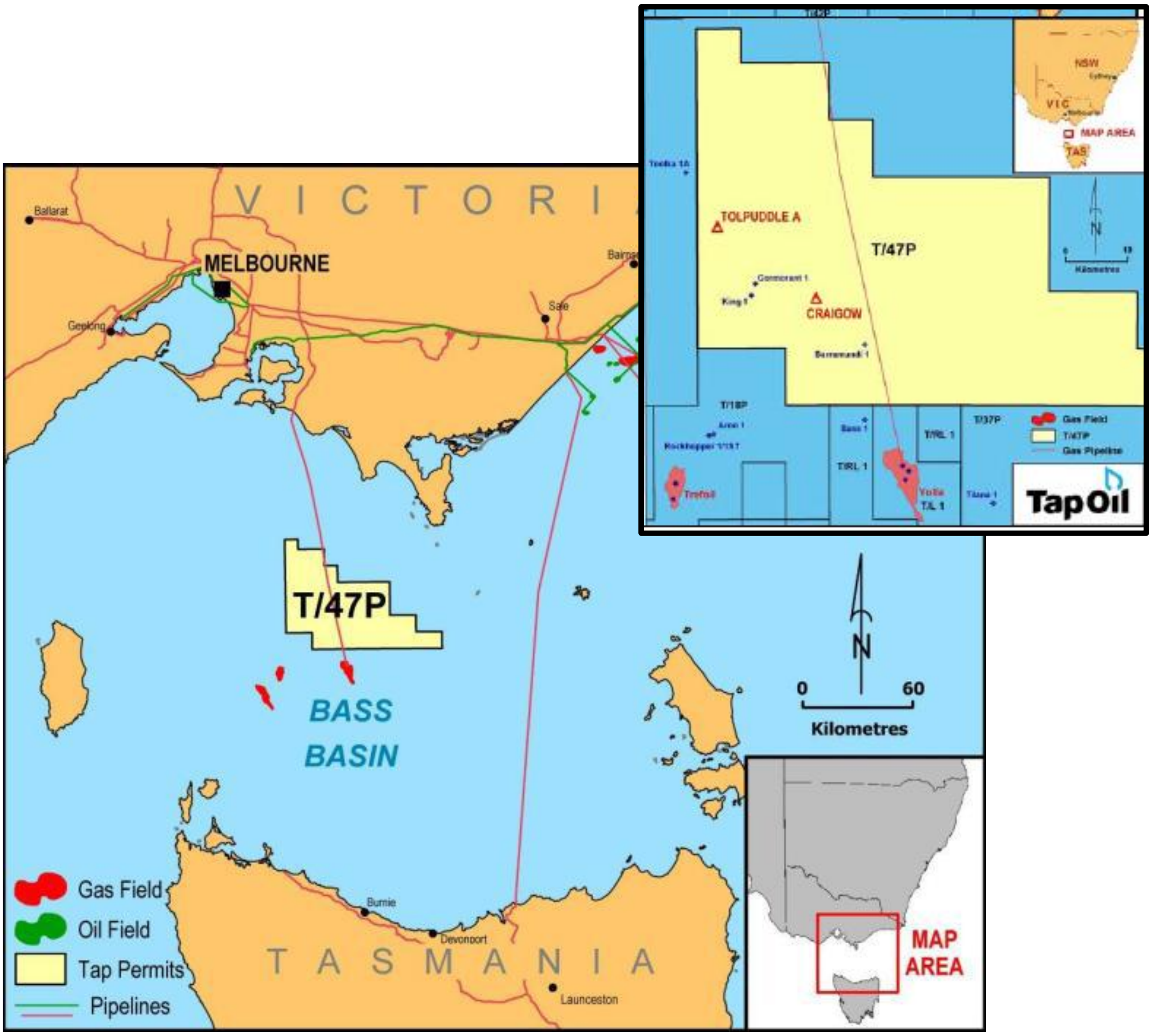


Figure 1: Well location map

DATA AVAILABILITY AND QUALITY

Mudlog & Drilling Data

Mudlog and drilling data was available in PDF format for the petrophysical interpretation. The following plot demonstrates the mud logs over a section of the target interval.

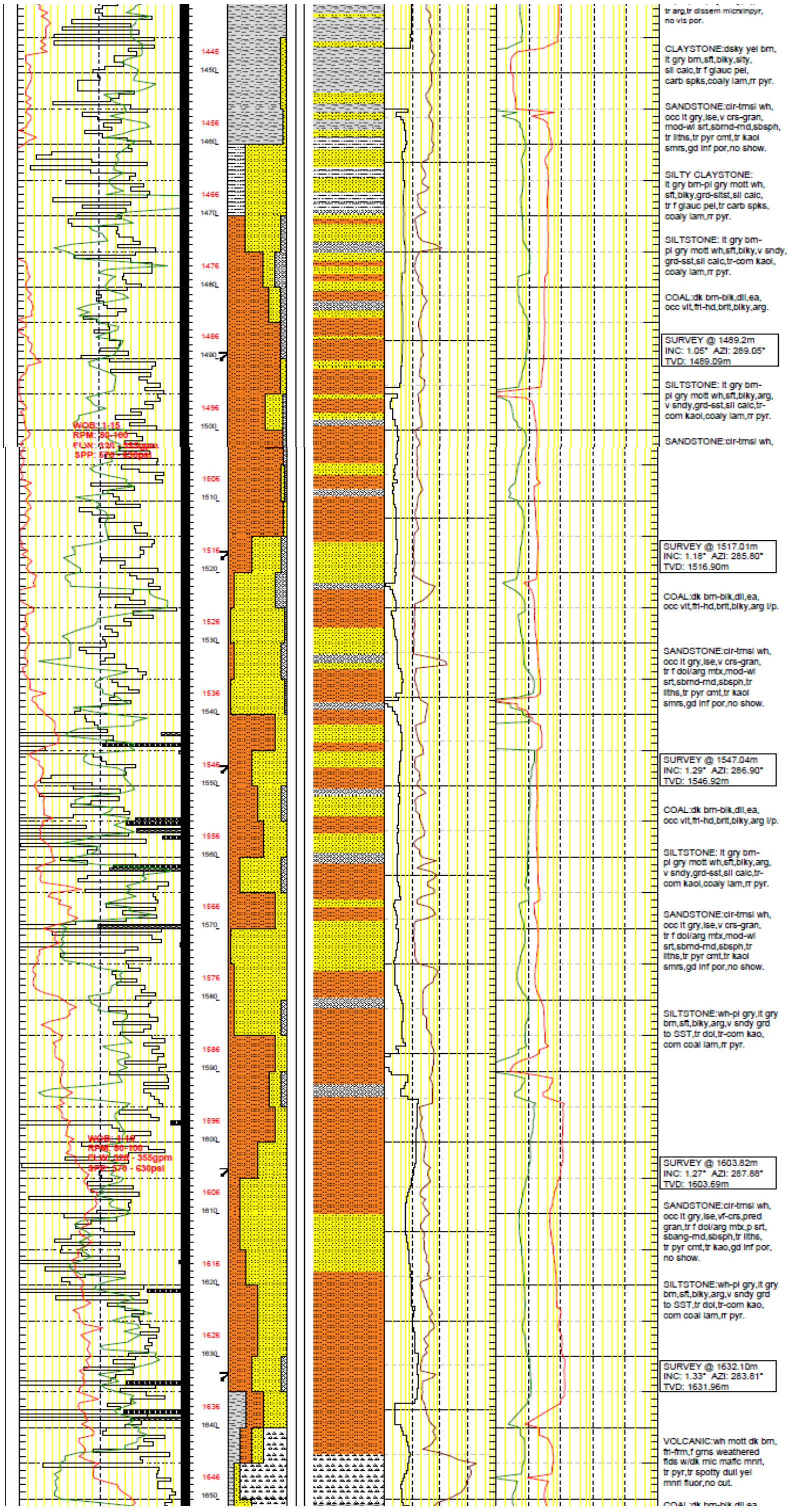


Figure 2: Mud log (Drill & Gas) data over zone of interest

Logging While Drilling Data

LWD-gamma ray - resistivity were run in the 12 1/4" hole to monitor formation penetrated to TD.

Wireline Log Data

Wireline PEX-HRAL-MSIP-SP was acquired. High resolution PEX data was recorded from 1145m-TD. HRAL-MSIP-SP recorded from 735m-TD with MSIP recorded in casing to seabed. High resolution Neutron was noisy and required filtering, the filter used was a Gaussian with 4 frames either side.

Suite/Run	Service Company	Tool String	Interval (mRT)
1/1	Schlumberger	PEX-HRAL-MSIP-SP-GR	75-1764

Table 1: Log Data Acquired

Core Data

Not acquired.

Formation Test Data

Not acquired.

BOREHOLE DATA

Hole Conditions

The borehole conditions over the reservoir section in Craigow-1 were good at the time of logging. Apart for several rugose intervals in the upper shales (the 300 interval), best highlighted by the DRHO and HCAL logs, the recorded log data reflects the formation response correctly.

Mud Properties

The $12^{1}/_{4}$" hole section was drilled using KCL/PHPA/CLAYSEAL mud with chloride concentration of 51000mg/L at mud weight of 1.21g/cc.

Bottom Hole Temperature

Formation temperature for the purposes of this analysis was calculated using the bottom hole temperature supplied. Maximum recorded was 75.5^{O}C in the 12 1/4" hole at from the wireline tool at TD.

RESERVOIR QUALITY

The Eastern View Coal Measures is a large unit and is best described as highly variable consisting of coal, sandstone, silt and shale layering. There are several reasonably thick sandstone intervals which are clean and show a porosity range from 25-30% and are water saturated. Both King-1 and Barramundi-1 which are located either sided of Craigow-1 showed thicker sand intervals. Cuttings descriptions report no shows throughout the sandstones and the gas logs do not vary far from the background level.

LOG ANALYSIS METHODOLOGY

Log Quality Control and data editing

Wireline log data was loaded from DLIS files into Petrolog software. The logs were checked for depth-matching and general acquisition quality. Where available the high resolution logs were used in the analysis. Compressional and shear logs were processed from the sonic full waveform data over both open and cased hole, this is detailed in the Craigow-1 sonic report.

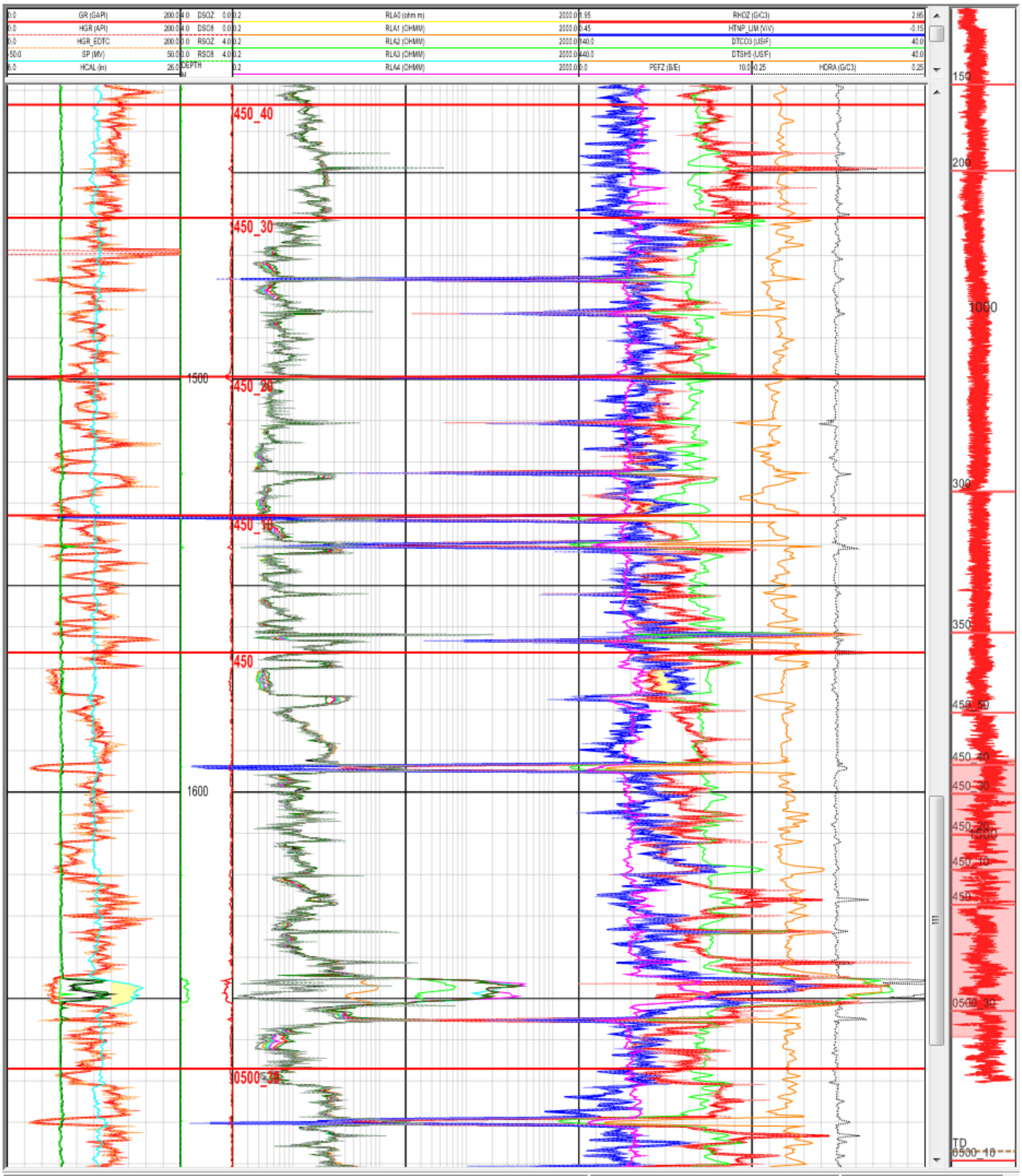


Figure 3: Recorded log data

Environmental Corrections

PEX data is typically field corrected.

Rt Determination

The HRLA resistivity data set can include a computed formation resistivity log (RT-HRLT) invaded zone resistivity (RXO-HRLT) which were both used for the analysis.

Interpretation Technique

Craigow-1 was interpreted using the Petrolog software. A deterministic approach was used for this analysis of the target formations. The following is a summary of the methodology utilised for this analysis:

- QC and depth match raw log data
- Utilise the CPX formation model
- Estimate volume of clay (minimum of D-N and GR - Linear)
- Estimate total and effective porosity (Density – Neutron)
- Estimate total and effective water saturation (Indonesia Equation)
- Estimate permeability (Coates equation).

Volume of Clay Determination

Volume of clay (Vclay) was estimated with the minimum value technique and the final Vclay log using the standard linear equation (red curve in figure 4). There was a close agreement between the GR (black VGR curve in figure 4) and Density-Neutron (orange VDN curve in figure 4) Vclay values over the full interval. Final parameters used are summarised in table 2 in the Porosity Determination section of the report.

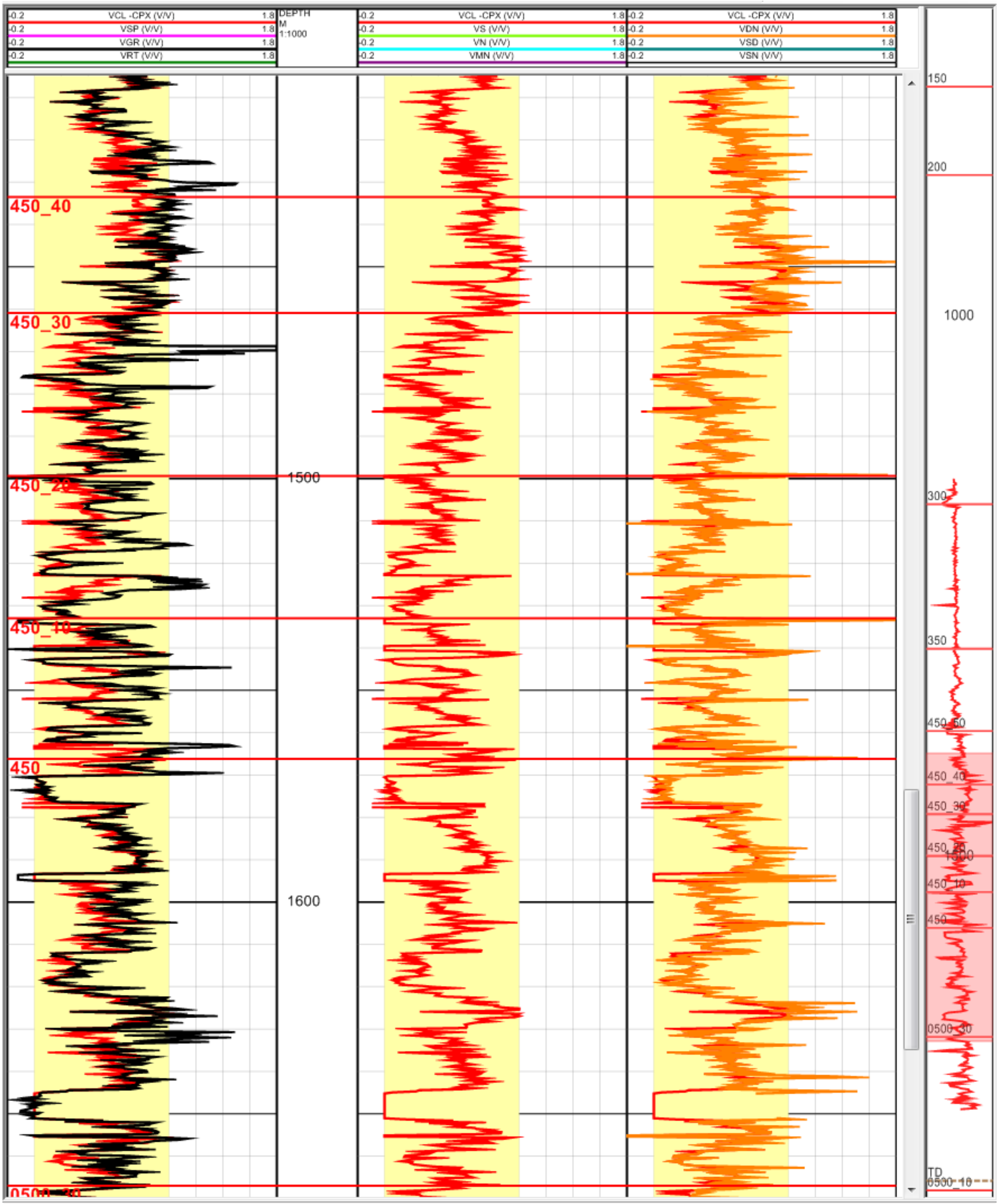


Figure 4: Volume of clay plot showing Vclay (red) from minimum of DN (orange) and GR (black)

Porosity Determination

A Silt-Sand-Shale (SSS) model was used over the processed interval to compute porosity. In good hole conditions RHOB is used to compute porosity using the equations:

PHIE = (RHOB - Vclay * (RHOBclay - RHOMA) - RHOMA) / (RHOF - RHOMA)

PHIT = (RHOB - Vclay * (RHOBdry - RHOMA) - RHOMA) / (RHOF - RHOMA)

The wet and dry clay points chosen are displayed on the figure 5 cross-plot. Note that the wet clay point can be defined from the log data, while a definitive dry clay point is not available from log data and must be calibrated against core porosity measurements.

Outputs from this equation were then quality controlled against porosity calculated from the sonic porosity (utilising the Raymer-Hunt-Gardiner transform), see figure 6. The key matrix, fluid and clay parameters used are summarised in Table 2.

Zone (Interval)	GR min	GR max	ρ_{ma} (g/cc)	ρ_{cl} (g/cc)	$NPHI_{ma}$ (v/v)	$NPHI_{cl}$ (v/v)	DT_{ma} (us/ft)	DT_{cl} (us/ft)
300 (1145-1308m)	0	70	2.65	2.15	-0.035	0.5	55.5	126
350 (1308-1395m)	15	84	2.65	2.26	-0.035	0.42	55.5	115
450_50 - 450 (1395-1584m)	15	105	2.65	2.43	-0.035	0.39	55.5	103
450 - 0500_30 (1584-1737m)	18	105	2.65	2.43	-0.035	0.39	55.5	103

Table 2: Analysis parameters for Vclay and porosity determination.

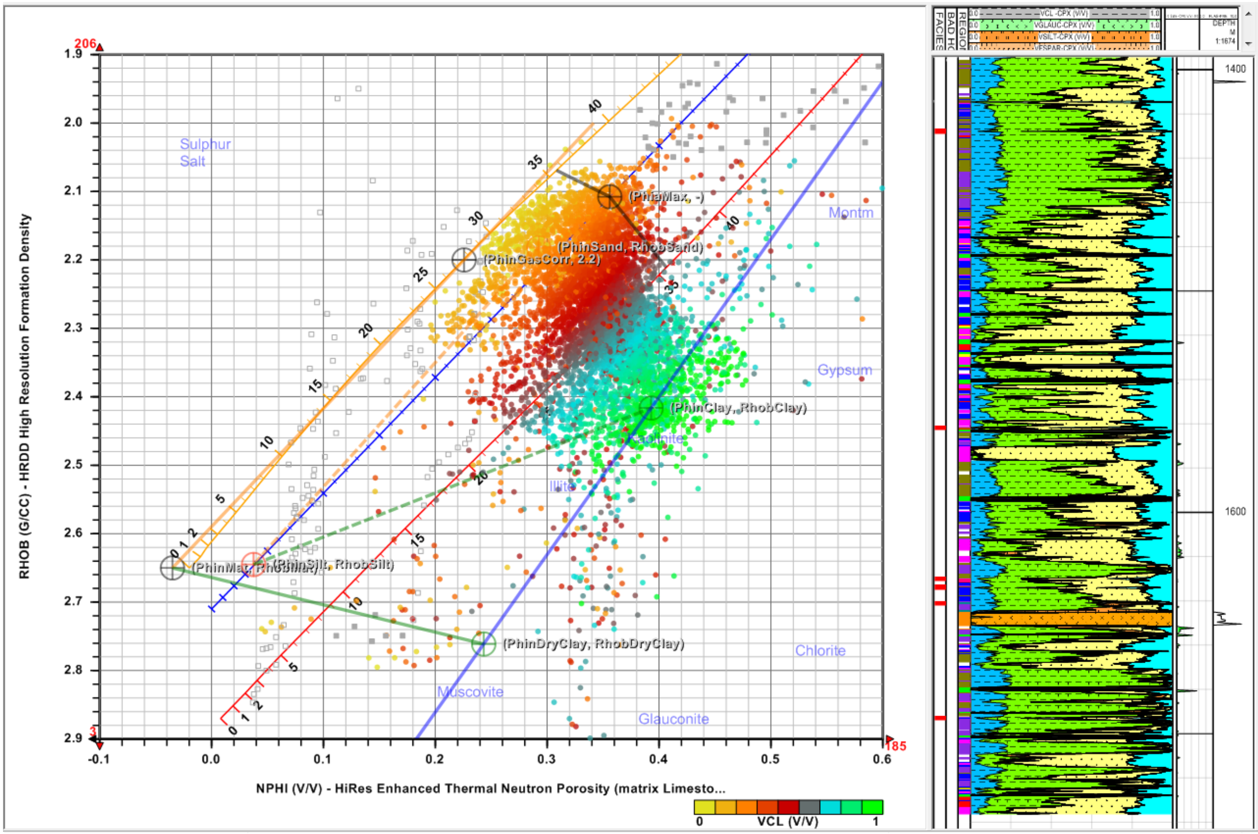


Figure 5: D-N cross-plot showing matrix and clay points for porosity determination below the 450_50 marker.

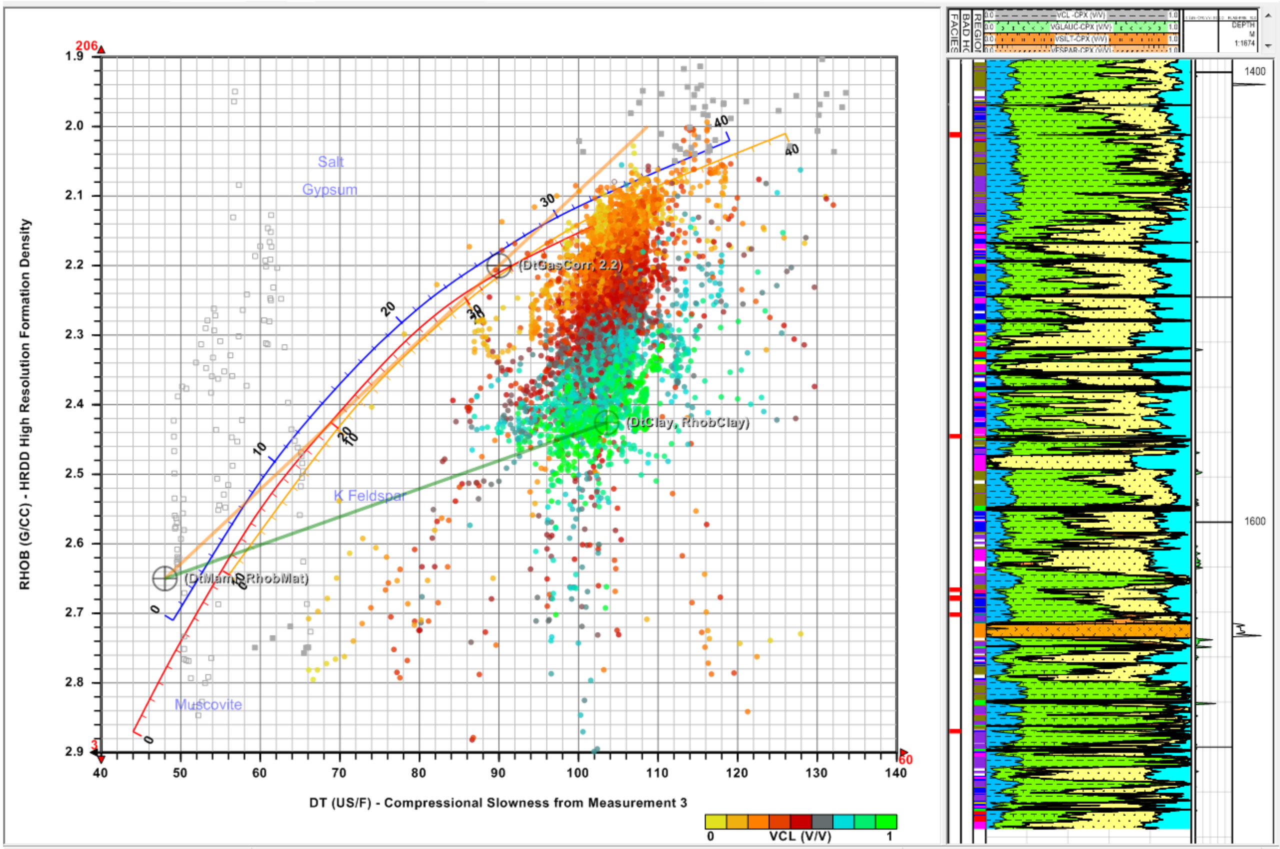


Figure 6: D-S cross-plot showing matrix and clay points for porosity determination below the 450_50 marker.

Permeability Determination

Permeability has been computed from the porosity using a Coates equation as defined below. Ideally a porosity-permeability relationship should be derived for core analysis, this can either be used to define a log-linear relationship or adjustments to the parameters in the Coates equation. With limited core in King-1 a reasonable Coates relationship was established and used in this well.

Coates permeability (k):

K = Gascoef * (Kcoef * PHIE ^ Exp) / (SWirr^2)

Where

Kcoef = the Coates Coefficient.

EXP = the Coates Exponent.

SWirr = Irreducible water saturation for a zone.

The value set for the above were

K=62500

EXP=6

Rw Determination

Various methods of determining the formation water were investigated as follows:

- **SP**

SP showed very little response, however this can be expected when the mud and formation water salinity are similar. Over the cleaner high porosity interval at 1570mMD the SP deflection is 0 which gives an Rw estimate of 0.084ohmm @ 68.8DegC (~40kppm). Lower in the section the SP deflection is closer to 5 which shows a lower formation water salinity.

- **Recovered Water Sample**

Not acquired.

- **Rwa Method**

The apparent water resistivity (Rwa) is calculated using the basic Archie equation assuming that Sw = 100%.

From the GR vs. Rwa cross-plot, using the Archie equation, a value of 0.063ohmm @ 68.8DegC or 55,000ppm NaCl equivalent was interpreted (figure 7). Lower in the well the apparent formation water salinity is less, a value of 0.078ohmm@73.6DegC or 40,000ppm NaCl equivalent was interpreted (figure 8). This variation with depth is looked at in more detail later in this report.

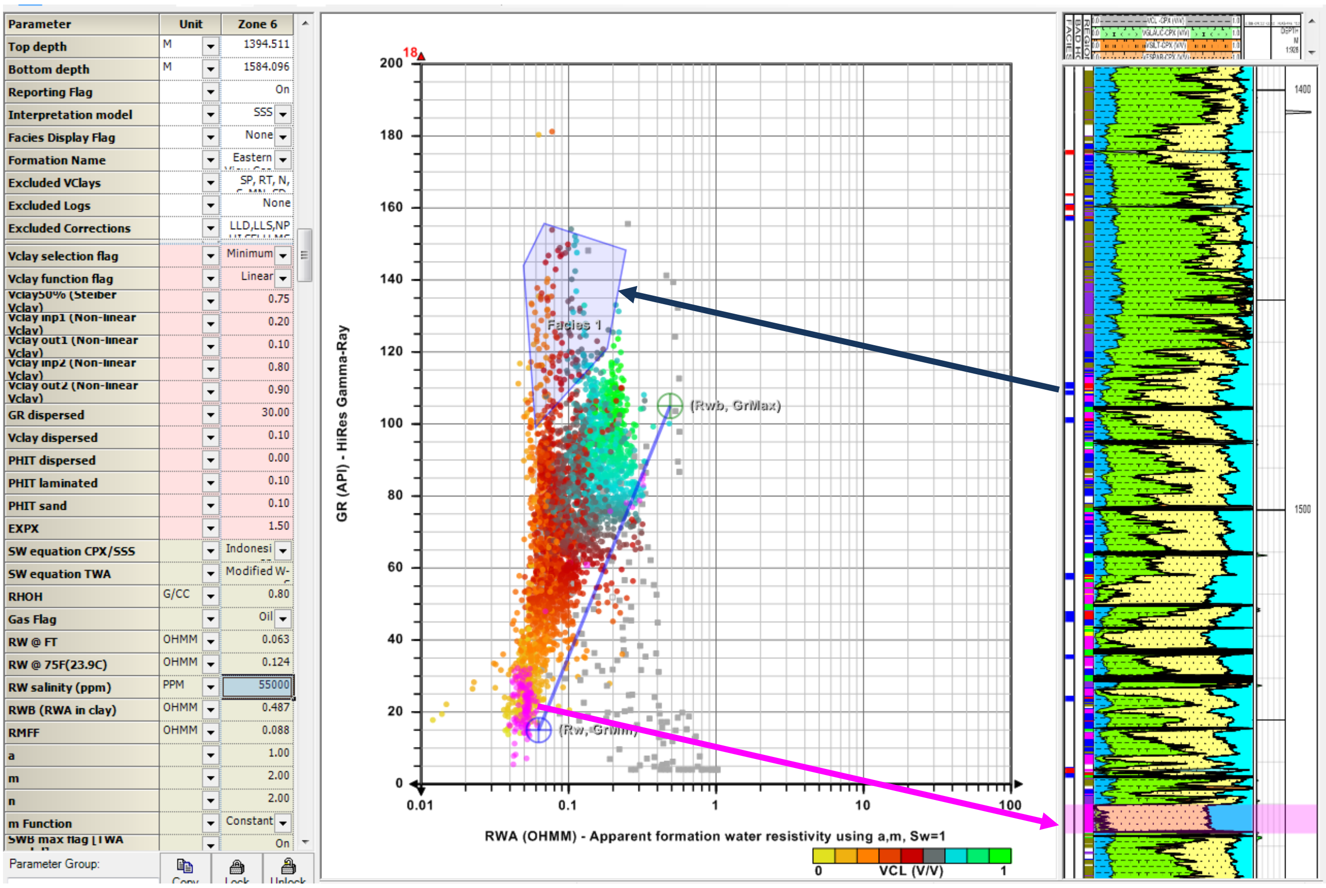


Figure 7: Rwa - GR cross-plot using 55,000ppm NaCl equivalent above ~Z_0450

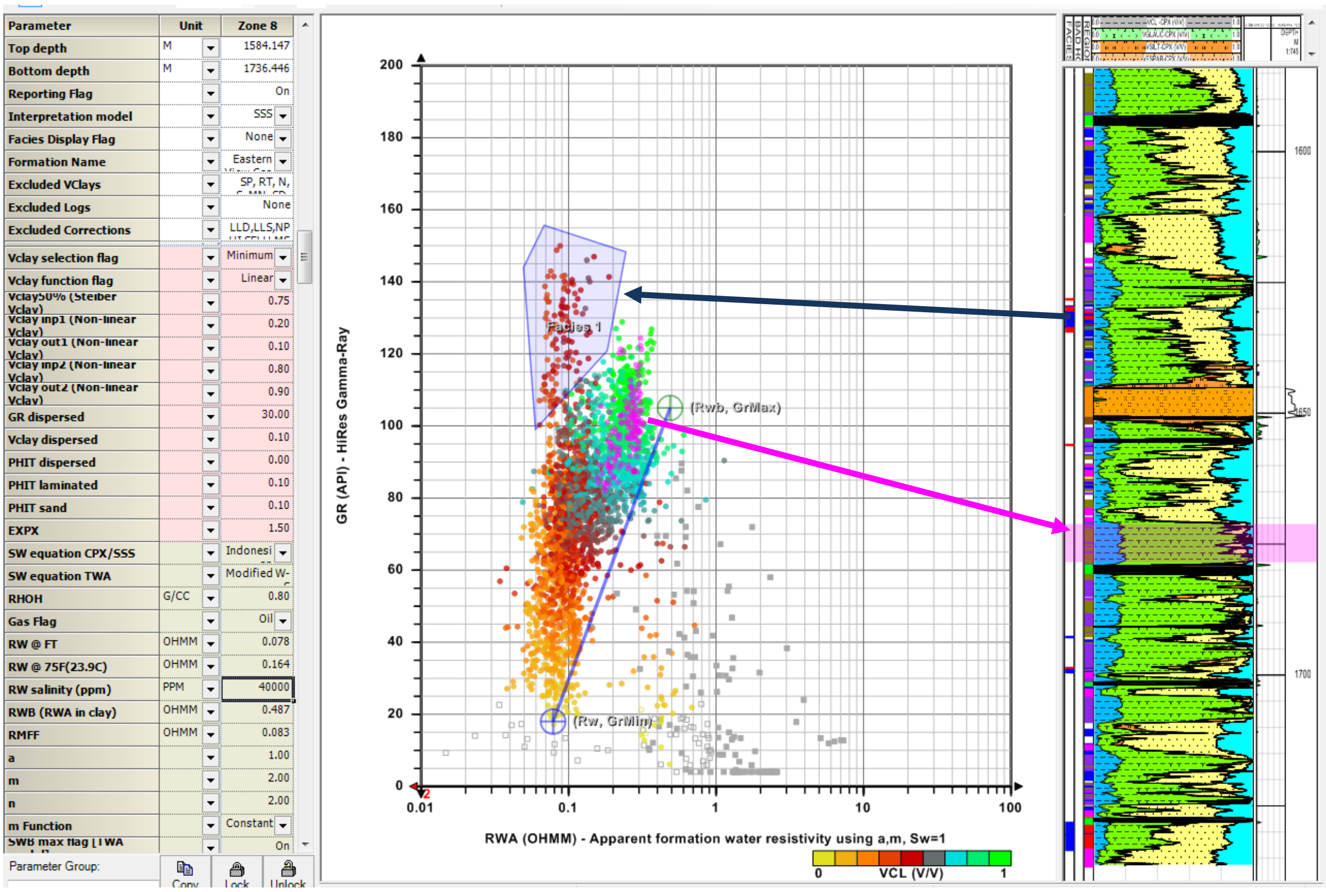


Figure 8: Rwa - GR cross-plot using 40,000ppm NaCl equivalent below ~Z_0450

Saturation Evaluation

Water saturation in this analysis was determined using an effective saturation model with the Indonesia equation clay corrections.

Archie Equation:

$$SW^n = \frac{FRw}{Rt}$$

Where

$$F = \frac{a}{PHIe^m}$$

S_W = Water saturation

a = 1.0

Rw = Formation water resistivity

RT = True formation resistivity

PHIe= Effective Porosity

m = 2.0 (Cementation factor)

n = 2.0 (Saturation exponent)

In both models the Indonesia equation to compensate for Vclay has been used as follows:

$$Sw = \left(\frac{1.0}{Y\sqrt{RT}}\right)^{2/n}$$

$$Y = \frac{Vcl^{(1-0.5Vcl)}}{\sqrt{RT}} + \frac{PHIe^{m/2}}{\sqrt{aRw}}$$

$$Sw = \left(\frac{1.0}{Y\sqrt{RT}}\right)^{2/n}$$

Saturation Equation Parameters:

In the absence of representative electrical properties information from core or otherwise, the m factor can be derived from a Pickett Rwa plot (figure 9, filtered of VCL<30%) when there is a significant variation in porosity for a constant water saturation. Default values listed above were used, note a variation in porosity from clay or silt volume increasing is not the variation we can use to define these parameters.

A mean Rclay value of 5-6ohmm was determined from the HRLA. Rclay used in the analysis for the Rwa vs. GR cross-plot (figure 8 & 9) is typically set to the high side of the shale resistivity cloud to reduce hydrocarbon computed in the shales.

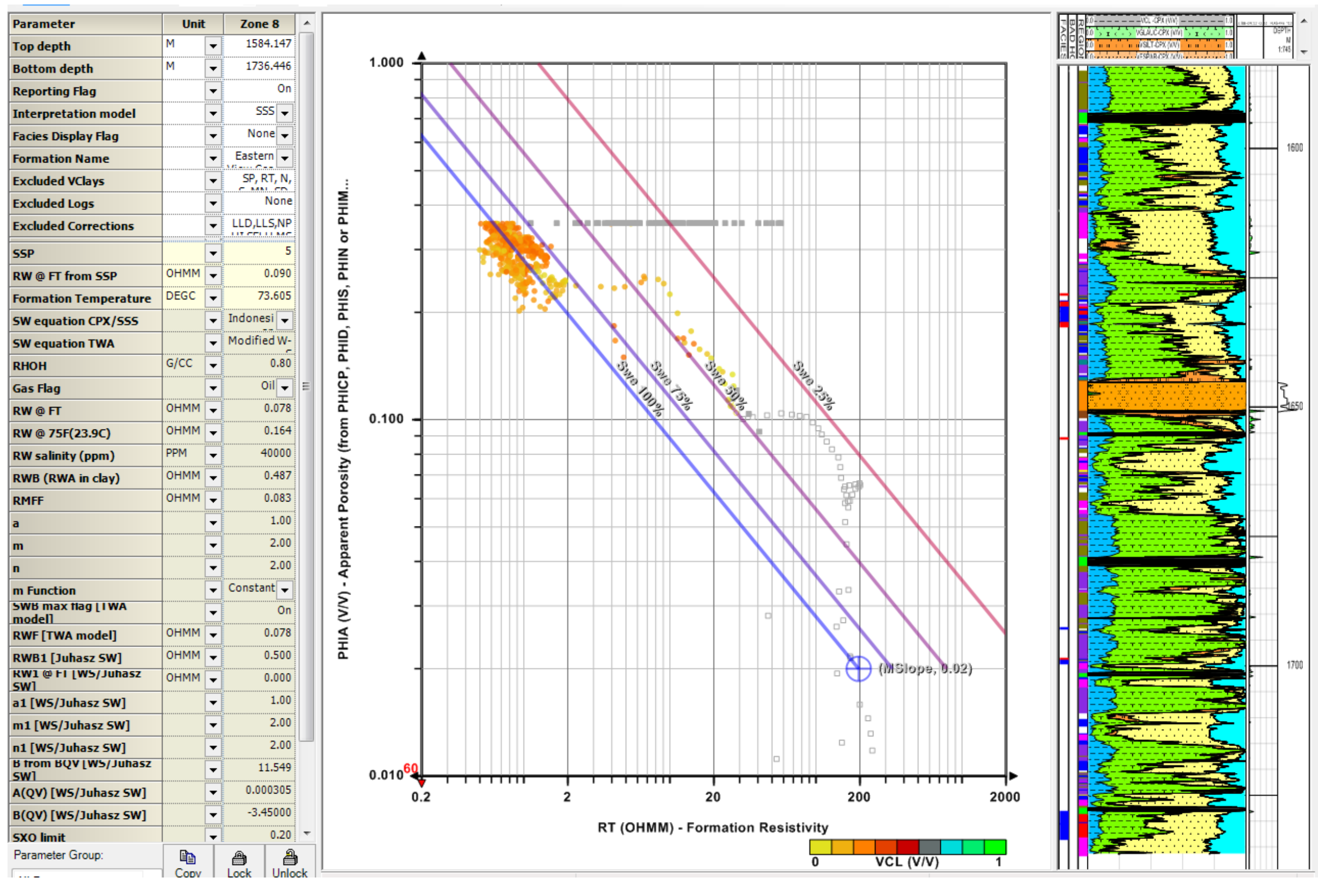


Figure 9: Pickett plot for the interval below ~Z_0450 (VCL<30%)

Formation water salinity variation with depth

There is a fairly clear change in formation water salinity over the processed interval. The salinity drops from 55,000ppm to 40,000ppm below 1584mMD. Figures 7 & 8 show RWA in the zone either side of this depth.

King-1 showed a similar change in formation water salinity at approximately 1530mMD. In this well the Salinity dropped from 55,000ppm to 40,000-45,000ppm also.

Barramundi-1 again showed a salinity change with depth. There was no easily definably split in this well, after several adjustments the final boundary was pick at 1680mMD, The salinity above was interpreted at 40,000ppm and 30,000ppm below, This is fresher than Craigow-1 and King-1.

PAY SUMMARY RESULTS

HYDROCARBON VOLUME REPORT - Craigow-1_2inch - Measured Depth Results

Report Generated By Saros
Petrolog Version Version 10.6 (Beta)
Report Date 13/02/2011
Report Time 2:03 PM

Zone Method By Strata
Analysis Uncertainty P50 (Expected)
Cutoff Uncertainty P50 (Expected)
Min. Included Thickness 0.200 M

Net Reservoir Vclay Cutoff 40.0 %
PHIE Cutoff 5.0 %
Net Pay SWE Cutoff 50.0 %

FORMATION	FROM	TO	GROSS INTERVAL	RESERVOIR INTERVAL	RES AVE VCL	RES AVE PHIE	RES AVE PERM	NET AVE SWE	NTG	PAY INTERVAL	PAY AVE VCL	PAY AVE PHIE	PAY AVE PERM	PAY AVE SWE
	M	M	M	M	%	%	MD	%	%	M	%	%	MD	%
300	1174.1	1308.0	133.9	1.067	17.335	11.076	6.832	86.99	1%	0.0				
350	1308.0	1384.0	76.0	8.026	26.648	21.397	124.246	99.96	11%	0.0				
450_50	1384.0	1433.5	49.5	5.283	28.582	21.328	111.859	100.00	11%	0.0				
450_40	1433.5	1460.9	27.4	0.0					0%	0.0				
450_30	1460.9	1499.4	38.5	15.646	28.94	21.458	100.171	99.94	41%	0.0				
450_20	1499.4	1533.0	33.6	21.946	21.895	24.718	232.153	99.72	65%	0.0				
450_10	1533.0	1566.2	33.2	12.446	23.608	22.875	153.981	100.00	37%	0.0				
450	1566.2	1667.0	100.8	30.734	21.955	22.338	144.081	98.77	30%	0.0				
0500_30	1667.0	1799.996	132.996	18.745	23.351	22.041	105.787	99.90	14%	0.0				
	TOTAL		**625.896**	**113.894**	**23.908**	**22.467**	**145.62**	**99.46**	**18%**	**0.0**				

VCL<40% (above) vs. VCL<30% (below)

HYDROCARBON VOLUME REPORT - Craigow-1_2inch - Measured Depth Results

Report Generated By Saros
Petrolog Version Version 10.6 (Beta)
Report Date 13/02/2011
Report Time 2:07 PM

Zone Method By Strata
Analysis Uncertainty P50 (Expected)
Cutoff Uncertainty P50 (Expected)
Min. Included Thickness 0.200 M

Net Reservoir Vclay Cutoff 30.0 %
PHIE Cutoff 5.0 %
Net Pay SWE Cutoff 50.0 %

FORMATION	FROM	TO	GROSS INTERVAL	RESERVOIR INTERVAL	RES AVE VCL	RES AVE PHIE	RES AVE PERM	NTG	PAY INTERVAL	PAY AVE VCL	PAY AVE PHIE	PAY AVE PERM	PAY AVE SWE
	M	M	M	M	%	%	MD	%	M	%	%	MD	%
300	1174.1	1308.0	133.9	0.965	15.594	10.802	6.972	1%	0.0				
350	1308.0	1384.0	76.0	3.912	18.826	22.97	196.375	5%	0.0				
450_50	1384.0	1433.5	49.5	2.083	19.524	25.656	227.615	4%	0.0				
450_40	1433.5	1460.9	27.4	0.0				0%	0.0				
450_30	1460.9	1499.4	38.5	5.944	21.237	24.552	190.144	15%	0.0				
450_20	1499.4	1533.0	33.6	14.63	16.194	26.821	314.957	44%	0.0				
450_10	1533.0	1566.2	33.2	7.518	16.238	25.363	229.421	23%	0.0				
450	1566.2	1667.0	100.8	19.456	14.772	24.516	204.345	19%	0.0				
0500_30	1667.0	1799.996	132.996	13.208	18.828	23.306	134.687	10%	0.0				
	TOTAL		**625.896**	**67.716**	**16.993**	**24.625**	**213.636**	**11%**	**0.0**				

Below shows the summary results using Permeability cut-off for NET instead of VCL

HYDROCARBON VOLUME REPORT - Craigow-1_2inch - Measured Depth Results

Report Generated By Saros
Petrolog Version Version 10.6 (Beta)
Report Date 17/02/2011
Report Time 7:24 AM

Zone Method By Strata
Analysis Uncertainty P50 (Expected)
Cutoff Uncertainty P50 (Expected)
Min. Included Thickness 0.200 M

Net Reservoir	Vclay Cutoff	100.0 %
	PHIE Cutoff	5.0 %
Net	SWE Cutoff	100.0 %
Net Pay	SWE Cutoff	50.00%
Other Reservoir Conditions:	10 < K -CPX < 100000	

FORMATION	FROM M	TO M	GROSS INTERVAL M	RESERVOIR INTERVAL M	RES AVE VCL %	RES AVE PHIE %	RES AVE PERM MD	NET AVE SWE %	NTG	PAY INTERVAL M	PAY AVE VCL %	PAY AVE PHIE %	PAY AVE PERM MD	PAY AVE SWE %
300	1174.1	1308.0	133.9	0.0					0%	0.0				
350	1308.0	1384.0	76.0	16.358	36.207	19.709	72.765	99.957	22%	0.0				
450_50	1384.0	1433.5	49.5	9.195	34.232	19.685	72.978	99.998	19%	0.0				
450_40	1433.5	1460.9	27.4	0.0					0%	0.0				
450_30	1460.9	1499.4	38.5	21.082	32.261	20.382	79.534	99.956	55%	0.0				
450_20	1499.4	1533.0	33.6	26.365	25.317	23.435	196.667	99.76	78%	0.0				
450_10	1533.0	1566.2	33.2	15.291	27.389	21.933	129.074	100.0	46%	0.0				
450	1566.2	1667.0	100.8	34.798	24.838	21.866	128.356	99.286	35%	0.0				
0500_30	1667.0	1799.996	132.996	20.98	25.373	21.453	96.063	99.894	16%	0.0				
	TOTAL		**625.896**	**144.069**	**28.251**	**21.499**	**119.24**	**99.757**	**23%**	**0.0**				

DATA GROUPING AND ASSOCIATED LITHOLOGY

The data appears to contain many repeating facies. This is an attempt to plot those and compare the recorded logs, interpretation and location on key cross-plots used in this report. Over the next two pages we show most of the interpreted interval vs. a 1-10 flag (colour bar on right in figures 10 &11) and Density-Neutron, Density-Sonic and GR-Resistivity cross-plots.

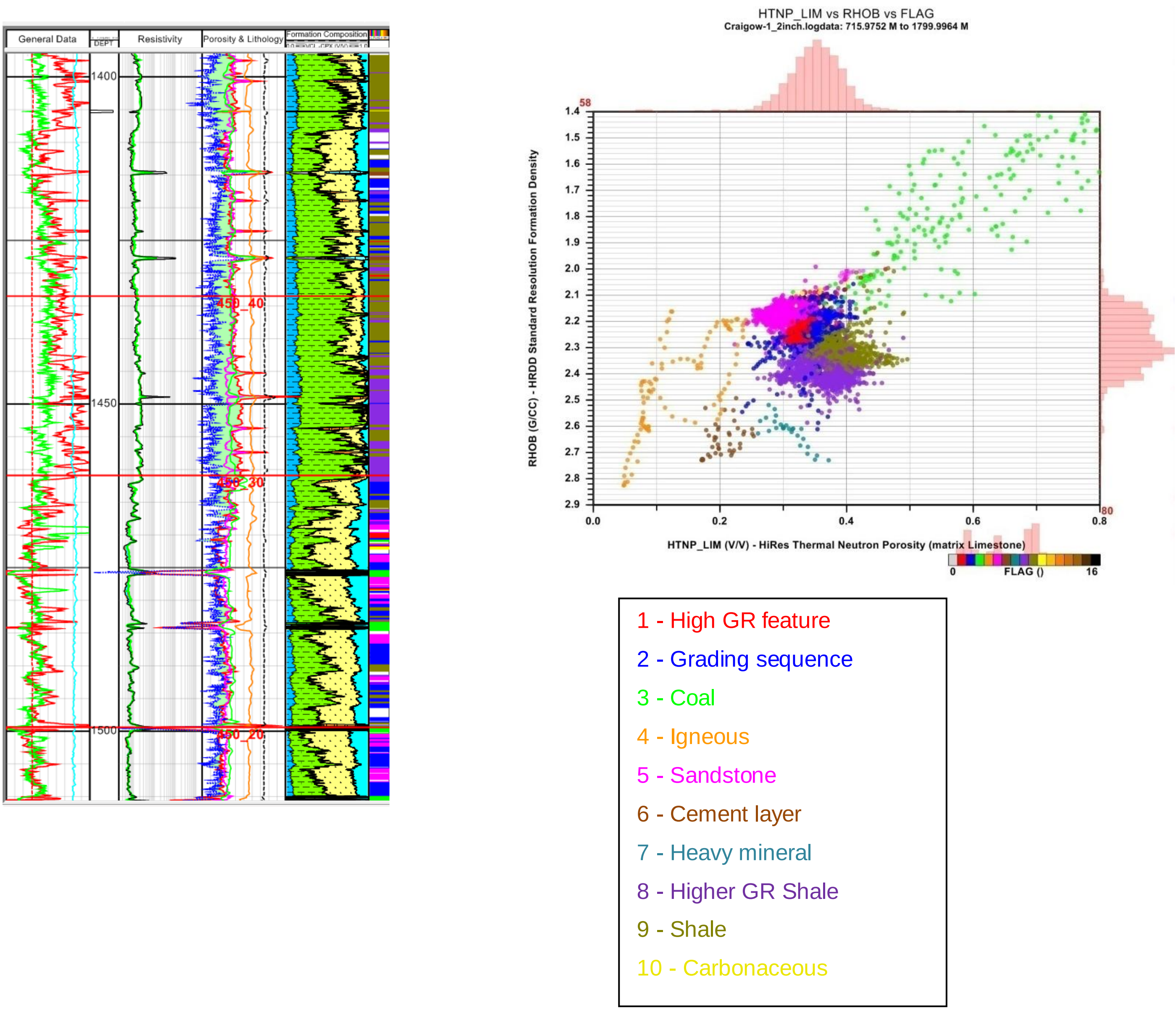


Figure 10: Data grouping

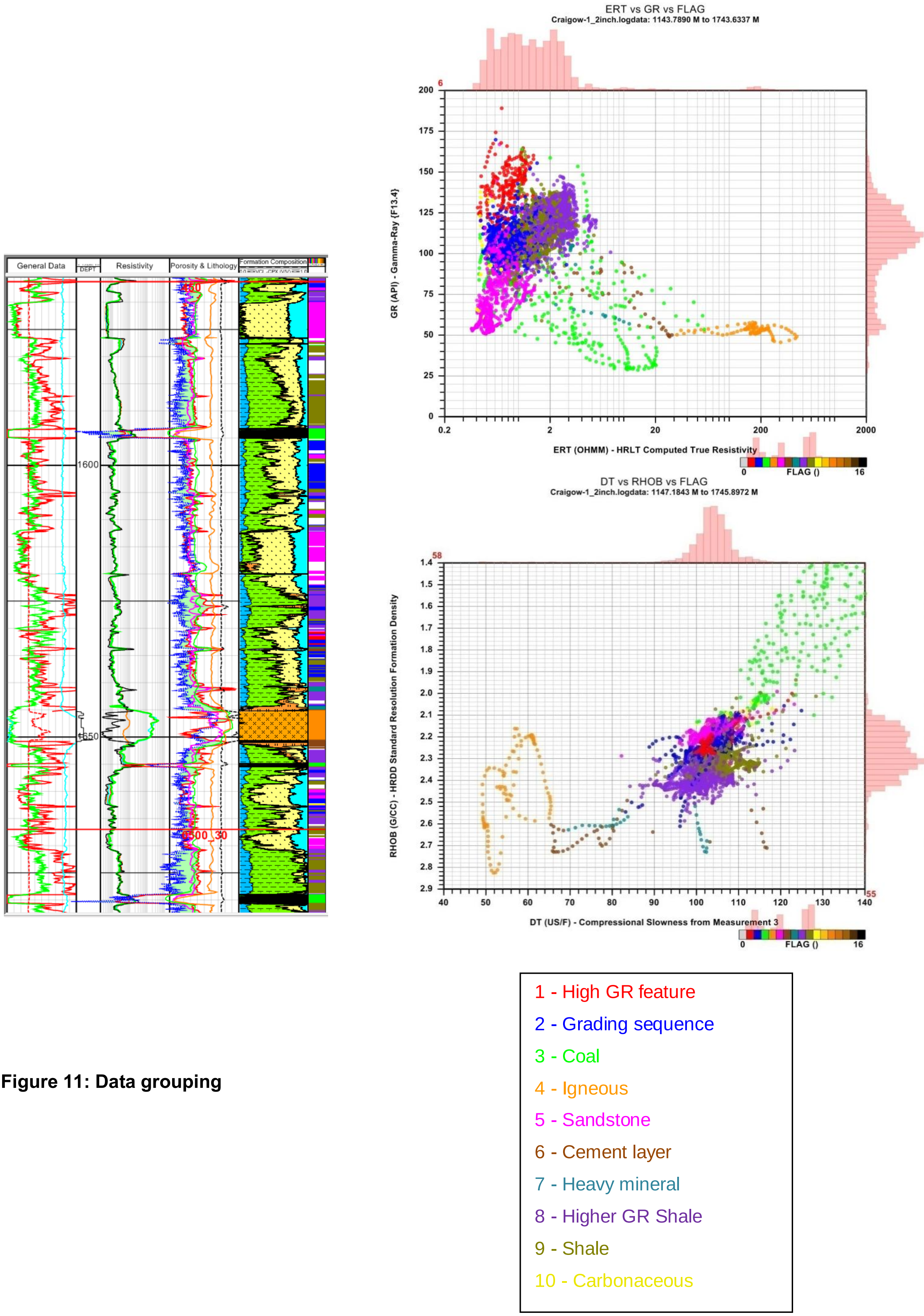
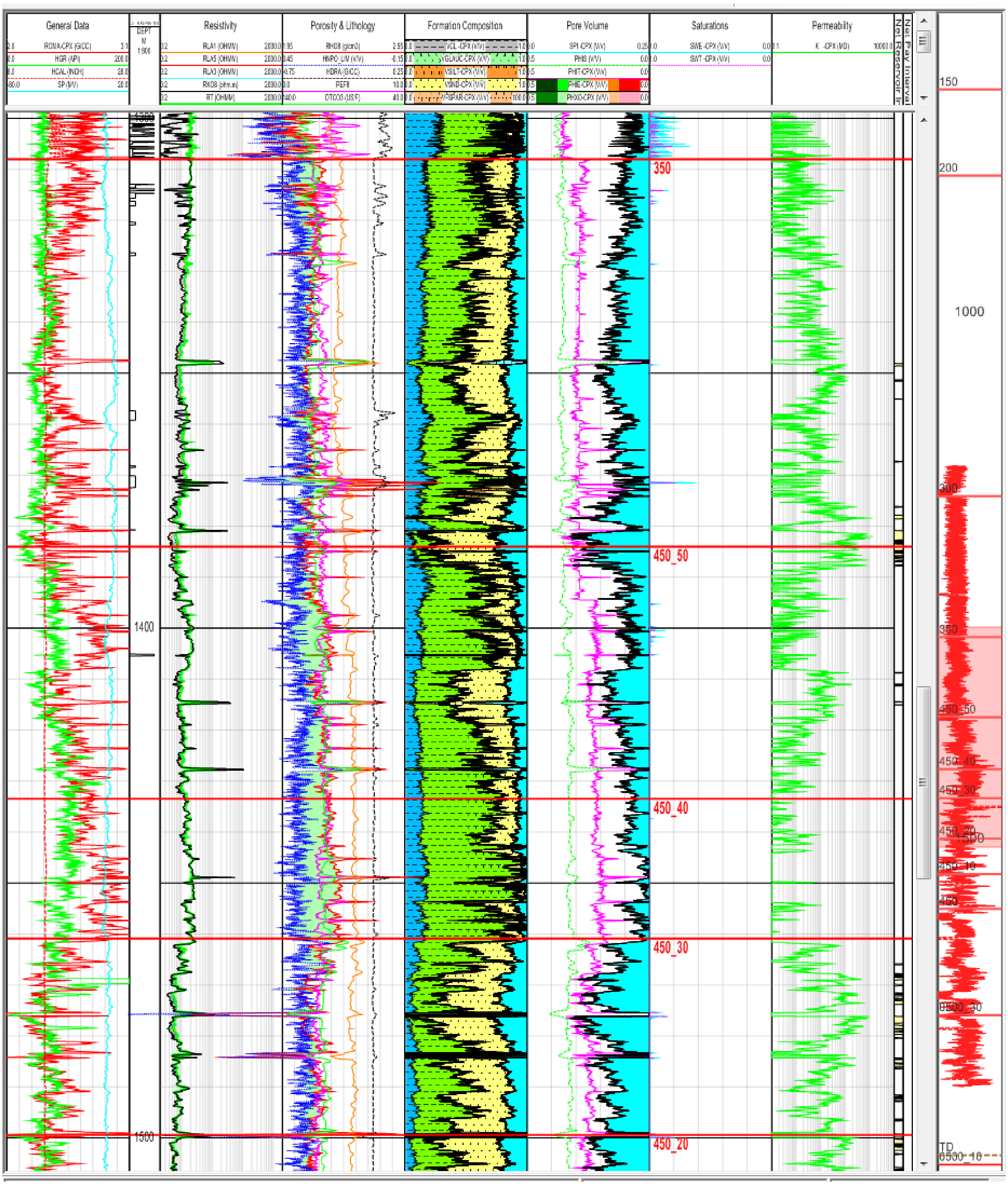


Figure 11: Data grouping

GRAPHICAL RESULTS



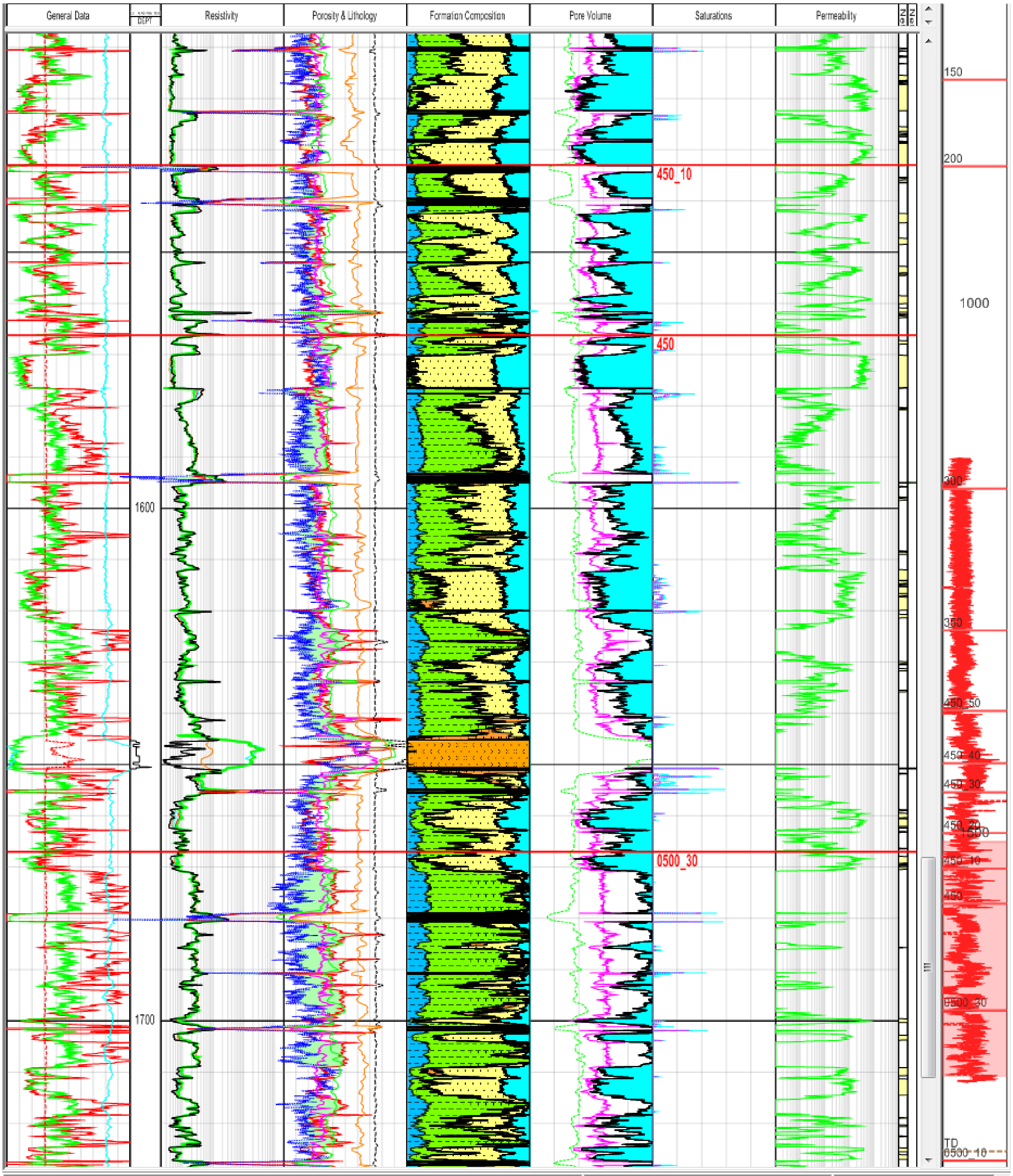


Figure 12: Complex lithology plot

Track 1-4 show the original input logs.
Track 5 displays the following from left to right

- *VBW: Clay bound water volume*
- *Vcl: Dispersed clay volume*
- *Vsand: Volume of sand*
- *PHIe: Effective porosity*

- *PHIe*Sw: Volume of hydrocarbon*
- *PHIe*Sxo: Moved hydrocarbons*

Track 4 displays the porosity (0.5-0).
Track 5 displays the formation water saturation.
Track 6 shows the permeability.
Track 7 is the net flag using the following cut-off: PHIe>5% and Vclay < 40%.
Track 8 is the pay flag using the additional cut-off: Sw<50%.

ENCLOSURE 1: COMPOSITE SUMMARY DEPTH PLOT (1:500)

saros

Craigow-1

CPX Composite Interpretation

Company	Tap Oil Limited
Well Name	Craigow-1
Field	Craigow
Nation	Australia
State	VIC
County or Rig name	Kan Tan IV
Field Location	GDA94
Field Loc. 1 / Northing	Easting: 383 472 m E
Field Loc. 2 / Easting	Northing: 5 616 629 m N
Latitude	039 00' 00.000" N DMS
Longitude	145 38' 34.520" E DMS
Perm. Datum	MSL
Elevation Perm. Datum	0.00 M
Elevation KB (wrt EPD)	26.00 M
Elevation DF (wrt EPD)	26.00 M
Elevation GL (wrt EPD)	75.62 M
Elev. Log Zero (wrt EPD)	26.00 M
Above Perm. Datum	26.00 M
Log measured from	RT
Drill measured from	RT
Other Services Ln 1	None
TD Date	1764 M
Date Plotted	Friday, 14 January 2011
Time Plotted	10:40:52 AM

PETROLOG SOFTWARE VERSION 10.6.22.1

Chlorides= 51000mg/L, FV= 51sec/qt, PV= 17cP, YP= 23bs100/Ft2, Tot.hardness = 100(Ca++)
Additional mud properties:
Maximum recorded temperatures taken from three head thermometers at 75.55 Deg C for all three
Maximum deviation provided by directional drillers: 1.48deg @ 1773.44m
LAT-MSL difference taken from client provided tide tables at 1.62m
RMF>RM and re-measured with same result
Log correlated at peak at 1680m giving DO = 0.5m. Tide correction of 0.12m applied.
Sonic Scanner main pass recorded in Standard mode from TD to top of cement
Sonic Scanner centrilized with one 2.5" standoffs and one LZME
Caliper check in casing reading: 12.415"
No Repeat interval was performed, as per client request
Rock matrix for neutron porosity correction is Limestone
Neutron corrected for borehole salinity, hole size, mud weight, pressure/temperature and standoff
PEX ecentralized with bow springs
HRLA centralized with four 2.5" standoffs
First run in hole. Toolstring run as per tool sketch. Pex data requested TD-1150m, HRLA TD-Casing, MSIP TD - Surface.
Craigow-1 is a vertical well located in Bass Strait. Bridged at 1746m and TD not tagged.

Computation Parameters

FORMATION	DEPTH INTERVAL	PPM	RW	RWT	GRMIN	GRMAX	RCLAY	RHOBC	PHINC	TCLAY	RHOH	COER	MXP
300	1145.489 - 1307.998	35000	0.101	142.427	0.00	69.86	2.95	2.15	0.497	126.33	0.80	1.00	2.00
300	1145.489 - 1307.998	35000	0.101	142.427	0.00	69.86	2.95	2.15	0.497	126.33	0.80	1.00	2.00
Eastern View Coal Measures-A	1308.049 - 1394.460	35000	0.097	148.763	15.00	83.49	8.66	2.26	0.423	114.44	0.80	1.00	2.00
Eastern View Coal Measures-A	1308.049 - 1394.460	35000	0.097	148.763	15.00	83.49	8.66	2.26	0.423	114.44	0.80	1.00	2.00
Eastern View Coal Measures-A	1394.511 - 1736.446	55000	0.061	159.664	15.00	105.03	5.63	2.42	0.393	108.28	0.80	1.00	2.00
Eastern View Coal Measures-A	1394.511 - 1736.446	55000	0.061	159.664	15.00	105.03	5.63	2.42	0.393	108.28	0.80	1.00	2.00

Lithology / Shading Legend

Water	Sandstone	Heavy Mineral	Dispersed Clay	Moved Oil
Claystone	Feldspars	Dirt	black	Volcanics
Glauconite	Limestone	Bound Water		Coal
Siltstone	Dolomite	Laminated Shale	Oil	

Log Description

FLAG-PRE	Preinterpretation Flag (Bad hole conditions)
ROMA-CPX	Apparent Matrix Density inclusive of clay (from gas corrected D-N)
HGR	HiRes Gamma-Ray
SPI -CPX	Secondary Porosity Indicator (PHIT-PHIS >=0)
NET -CPX	Net Reservoir Flag
PAY -CPX	Net Pay Flag
SWE -CPX	Effective Formation Water Saturation
SWT -CPX	Total Formation Water Saturation
PHIS	Sonic Log Porosity for given DTMA
PHIT-CPX	Total Porosity (corrected for Vclay amd Hydrocarbon effects)
PHIE-CPX	Effective Porosity (corrected for Vclay and Hydrocarbon effects)
PHXO-CPX	Bound Hydrocarbon Volume for plot (PHIE * SXO)
PHSW-CPX	Total Hydrocarbon Volume for plot (PHIE * SWE)
VCL -CPX	Volume of Clay
VGLAUC-CPX	Volume of Glauconite
VSILT-CPX	Volume of Silt (from SSS model)
VSND-CPX	Volume of Sand
VFSPAR-CPX	
VLS -CPX	Volume of Limestone
VDOL-CPX	Volume of Dolomite
VHMIN-CPX	Volume of Heavy Minerals (from Robert Elphic method)
VDIRT	Volume of Debris in special minerals processing
PHIE-CPX	Effective Porosity (corrected for Vclay and Hydrocarbon effects)
PHXO-CPX	Bound Hydrocarbon Volume for plot (PHIE * SXO)
PHSW-CPX	Total Hydrocarbon Volume for plot (PHIE * SWE)
VBW -CPX	Volume of bound water
VLAM-CPX	Volume of Laminated Shale (Thomas Stieber VLAM+VDIS+VBW=VCLAY)
VDIS-CPX	Volume of Dispersed clay (Thomas Stieber VLAM+VDIS+VBW=Vclay)
K -CPX	Permeability from CPX processing
HCAL	HRCC Cal. Caliper
SP	SP Shifted {F13.4}
RLA1	HRLT Borehole Corrected Resistivity 1
RLA5	HRLT Borehole Corrected Resistivity 5
RLA3	HRLT Borehole Corrected Resistivity 3
RXO8	MCFL High Resolution Invaded Zone Resistivity
RT	Formation Resistivity
RXO	Flushed Zone Resistivity
RHO8	HRDD High Resolution Formation Density
HNPO_LIM	HiRes Enhanced Thermal Neutron Porosity (matrix Limestone)
HDRA	HRDD Density Correction
PEF8	HRDD High Resolution Formation Photoelectric Factor
DTCO3	Compressional Slowness from Measurement 3
DTSH5	Shear Slowness from Measurement 5

Appendix 2: FLAIR Report

Fluid Logging & Analysis In Real time

TAPOIL LTD

CRAIGOW-1

DECEMBER 2010

OFFSHORE/ONSHORE, AUSTRALIA

DISCLAIMER

Reported by:	Approved by:	Date:
Michaël DERCQ	GEC	04 May 2011~~14 February 2011~~

TABLE OF CONTENTS

1. ABSTRACT

1.1. GENERAL INFORMATION

➢ Well Name:	Craigow-1	
➢ Country:	Australia	
➢ Block:	T/47P, offshore Bass Basin	
➢ Location	X: 383473.5 mE	Y: 5616630.6 mN
	Long: 145 38' 34.59'' E	Lat: 39 35' 31.69'' S
➢ Operator:	TapOil Ltd	
➢ Well Type:	Exploration	
➢ Deviation:	Vertical	
➢ Total Depth:	1800 mMD/RT	
➢ Rig:	KAN TAN IV	
➢ RT to MSL:	26.0 m	
➢ Water Depth:	74.0 m	
➢ Well Spud on:	24th December 2010	
➢ FLAIR Logging Interval:	745 mMD/RT – 1800 mMD/RT	
➢ FLAIR Logging dates:	29th – 31st December 2010	

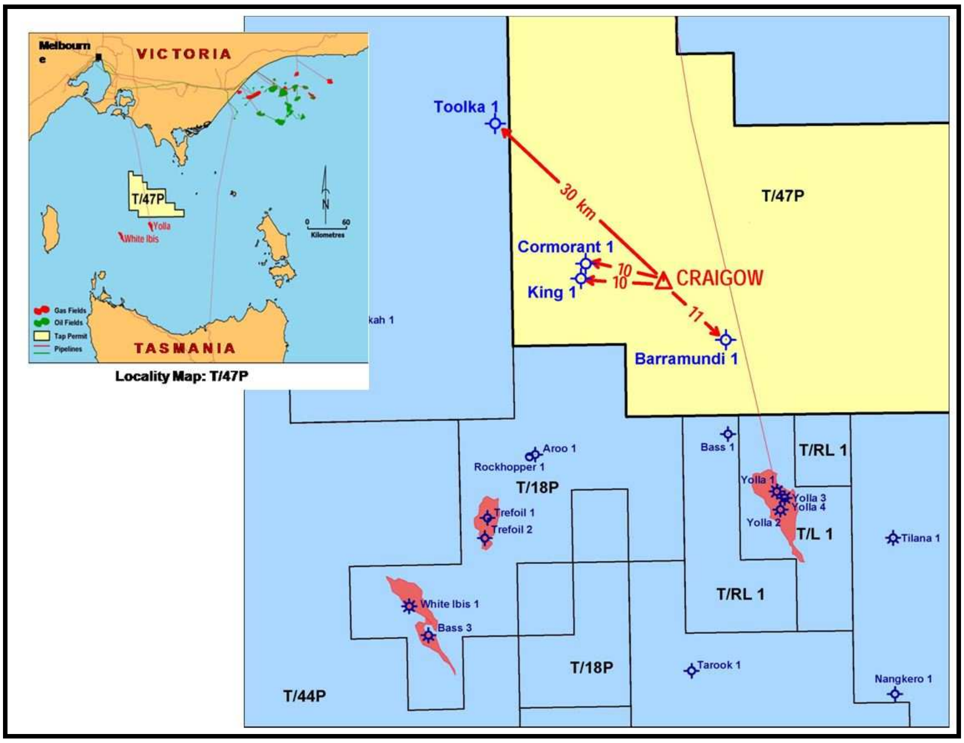


Fig. 1:Craigow-1 Location Map

1.2. FORMATION FLUID EVALUATION

The FLAIR logging of the well Craigow-1 permitted gas observations to be made in quasi real time. The principle aim of this study is to present the available FLEX/FLAIR gas data and to analyze various fluids encountered throughout the well.

Due to technical issues with the FLEXs, coupled with the very low gas levels detected in the well, no InFact study was performed.

The Isotope analysis performed in the second part of the logged section is not conclusive, since the quality of data acquisition is doubtful.

2. OBJECTIVES

2.1. FLAIR OBJECTIVES

The FLAIR service was employed on the Craigow-1 well with the following objectives:

1. Quantitative gas acquisition in the C1-C5 range, maintaining a strong and constant QC
2. Recognition of any fluid variation and/or fluid contacts to better locate eventual pay zones within the investigated intervals
3. Establish typical fluid signatures to correlate to offset wells.
4. Monitoring the presence of Ethene, if any, generated by drilling / bit artifact.

2.2. WELL OBJECTIVES

The primary target for the well was the EVCM - 0450 seismic marker, predicted at 1543mTVDSS. It was expected to be a low relief four-way dip closure at 0350 level with a HC contact interpreted at 1295mTVDSS maximum. The reservoir is well developed in Cormorant-1 and King with medium-grained shoreface sands.

The secondary target was the top of EVCM - 0350 seismic marker, predicted at 1283mTVDSS. It was expected to be a four way dip closure with the likelihood of two main sand/silt packages with gross thickness of 100 m (upper sand) with 25.6m net and 75m (lower sand) with 16m net. The expected HC contact was at maximum 1570mTVDSS.

In the Bass Basins, most discoveries have multiple hydrocarbon intervals with intra-formational seals. The potential hydrocarbon reservoirs expected at Craigow-1 are sandstones. The Eastern View Coal Measures are an inter-bedded claystone, siltstone and sandstone sequence with Ave Net: Gross = 35%; Ave Porosity = 20%.

At TD, the well was planned to be plugged and abandoned.

If a potential economic discovery was to be found, a sidetrack to cut core was planned. Up to 108 m of core was planned (2 runs) with the final length of core dependent on the size and location of intersected HC columns. Note multiple pay zones were probable.

3. INTRODUCTION

3.1. DATA ACQUISITION

The following components were monitored:

Family	Hydrocarbon		Mass	MS Channel
n-Alkanes	Methane	C1	15	mass 1
	Ethane (+ Ethene)	C2s	26	mass 2
	Ethane	C2	30	mass 3
	Propane	C3	43	mass 4
	i-Butane	iC4		
	n-Butane	nC4		
	i-Pentane	iC5		
	n-Pentane	nC5		
	n-Hexane	nC6		
	n-Heptane	nC7		
	n-Octane	nC8		
Aromatics	Benzene	C6H6	78	mass 5
Cyclo-Alkanes	Methylcyclohexane	C7H14	83	mass 6

Table 1 : Ions detected by the GCMS

The identification and measurement of the hydrocarbon species listed above was achieved using a Gas Chromatograph Mass Spectrometer (GCMS). The GCMS was configured for 6 ions (as outlined in the table), with a cycle analysis time of 90 seconds.

The gas was extracted using a FLEX (fluid extractor), placed in the Flow line to monitor gas coming out (Gas OUT) from the well. In normal logging condition, a second extractor is located in the suction pit to monitor gas going in to the well (Gas IN) in order to determine the level of gas recycling. In the case of Craigow-1, however, no FLEX IN was used due to a lack of proper equipment.

The FLEX extractor heats the mud to a constant temperature of 70°C in order to extract the heavier components from C6 to C8, as well as some other particular species (C6H6 and C7H14) improving the extraction efficiency of all the monitored components. This is further improved with constant volume of extraction and a constant partial vacuum maintained in the gas line.

In this well, the GC-MS configuration was modified for Ethene measurements. With standard GC-MS configuration, Ethene (if generated due to drilling artifact) is recorded in the same ion mass as Ethane, amplifying the actual C2 contribution from the formation.

3.2. REVIEW OF FLAIR CALIBRATION PROCEDURES

The calibration of the FLAIR system is achieved by performing six procedures. Descriptions of these procedures are given in Appendices, along with the corresponding reports.

1. GC-MS Calibration Check (appendix I)

Full calibration checks are performed prior to drilling each section logged using FLAIR, to ascertain the stability of the GCMS (reference: calibration reports in the annex).

The tests were successfully performed:

- Before the start of the 12 ¼ " phase, on 28th – 29th December, 2010

2. Leak Detection Test (appendix II)

Prior each section a LDT is performed to ascertain the integrity of the Flex filtration assembly, gas line and GC used on the FLAIR system. The test is performed to ensure that the system is Leak proof and the gas data acquired are not affected by a possible leak due to a damaged or faulty part for each FLEX used on FLAIR system.

The tests were successfully performed:

- Before the start of the 12 ¼ " phase, on 30th December, 2010

The test could not be performed with FLEX IN, as no filtration assembly was on board.

3. Ratio Integrity Test (appendix III)

This test is performed prior to drilling each phase, with an aim to check the integration process between the FLEX extractor and FLAIR analyzer over a wide range of concentrations. A jerry can is connected before the flow restrictor in the filtration assembly of the FLEX. This jerry can has a dilution port to displace the gas with air and to maintain a constant pressure during the test. It is ensured that the jerry can is uncontaminated by checking that the MS records almost 0 ppm of gas. A bottle of 10 % C1 mixture is connected to the jerry can entry and fully opened for five seconds. The response on the MS is recorded for linearity and good integration for each component until very low values are reached.

No Integrity test was performed, due to lack of time before the start of drilling the 12 ¼ " phase.

4. Gas Chain Comparison Test (appendix IV)

The Gas In and Out chains should exhibit the same efficiency so that correction of gas reading (i.e., subtraction of Gas IN from Gas OUT data) is valid and accurate. The test is conducted using mud from the active pit. The tests were done as per normal drilling conditions (90°C mud temperature and 280 mbar pressure maintained in the gas line) until stable readings were achieved.

No comparison was performed since the FLEX was not operational, and because of the mud system was fresh and without any HC contamination allowing gas readings.

5. Mud Background Check (appendix V)

As a standard procedure, FLAIR analysis of a fresh mud sample (Mud Background Analysis) is performed prior to drilling each phase. This helps to determine the contribution of the mud to the gas readings for all components recorded by FLAIR.

This test was not performed, due to lack of time before the start of drilling the 12 ¼ " phase.

6. Extraction Efficiency Calibration Test (appendix VI)

During extraction process, the sampled mud is not fully degassed inside the FLEX chamber. Moreover, all the components are not extracted in the same manner. Many factors influence the extraction process, among them: Mud chemistry, mud temperature, viscosity and solid content. This test allows the conversion from "gas in air mixture" results to "gas in mud" data. These later results are considered to be real hydrocarbons from the formation.

The EEC is obtained by analysing the same sample of mud several times, charged with a high quantity of gas. The mud is taken during a major gas peak, or a kick.

In Craigow-1, no EEC could be performed due to the lack of hydrocarbons in the mud.

4. RESULTS: GAS FROM FORMATION

4.1. QUALITY CONTROL ON THE DATA

The degassing process can be disturbed by many factors. In order to be able to determine the real contribution from the formation, the data has to be collected in the best conditions. Beside the QC control put in place to insure that the FLEX-GC-MS is operating within viable ranges, the drilling activity is also taken into account.

- Lack of operational FLEX IN

As the second filtration assembly was not on board, the FLEX IN could not be run. This made it impossible to correct the recycled gas.

- Unreliable data

The following table indicates all intervals that have been impacted by different events, such as malfunction of the FLEX, of loss of suction, or other, and that are not reliable in terms of data quality.

Depths		Comments
From	To	
1134.00	1138.00	Artifact: overheating
1175.00	1178.00	Artifact: overheating

Table 2 : Interval of unreliable data and associated event

- Correlation with MWD

No discrepancies can be identified between the MWD data and the FLAIR gas readings. Therefore, the depth intervals can be trusted, and the fluid can be related to lithology without any shifts.

4.2. SYNTHETIC FLUID FACIES

The fluid families are based on the comparison of the signatures from the delineated peaks encountered in the well. The fluids presented are characterised as following:

1. A number determined by the order of appearance in the well
2. A letter that determines the eventual sub-facies
3. A colour code to distinguish the different signatures on star diagrams
4. A quantitative composition in the C1-C5 range: the recycling effect is corrected and the EEC is applied.
5. Qualitative description of the spectrum nC6-nC8, C_7H_{14} & C_6H_6: gas data are corrected for recycling.

The same colour is attributed to peaks having the same signature (composition). They represent a specific fluid facies. Different colours indicate variations in the composition. As some variations indicate small heterogeneities in the fluids, sub-facies are created in the same manner (indicated by a letter appended to the fluid number).

In Craigow-1, no intervals have been delineated, as the general gas level remained extremely low.

For the same reason, there will be no InFact study, and no fluid composition.

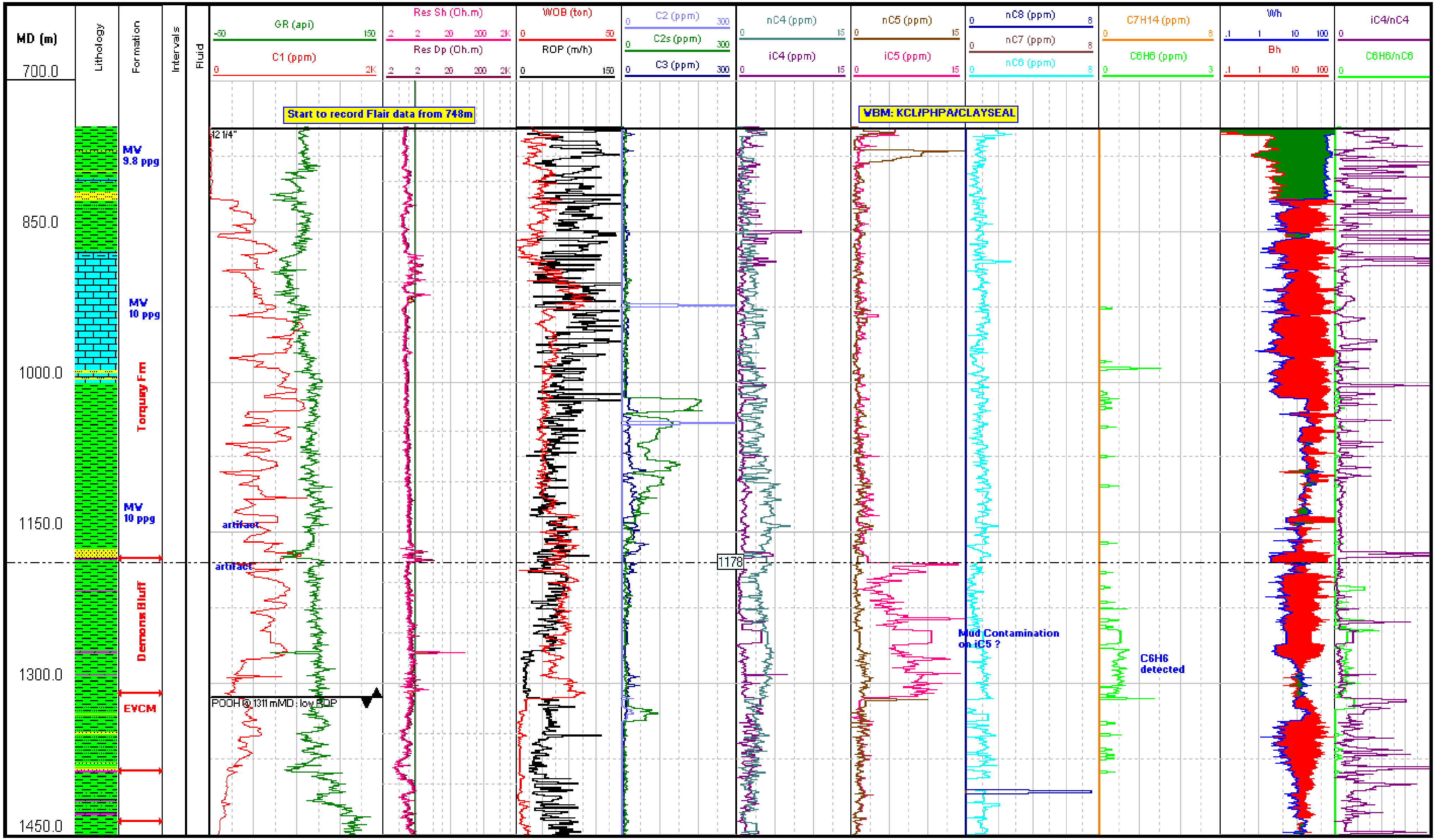


Fig. 2: Chromatolog of corrected Gas Data (748 mMD – 1450 mMD)

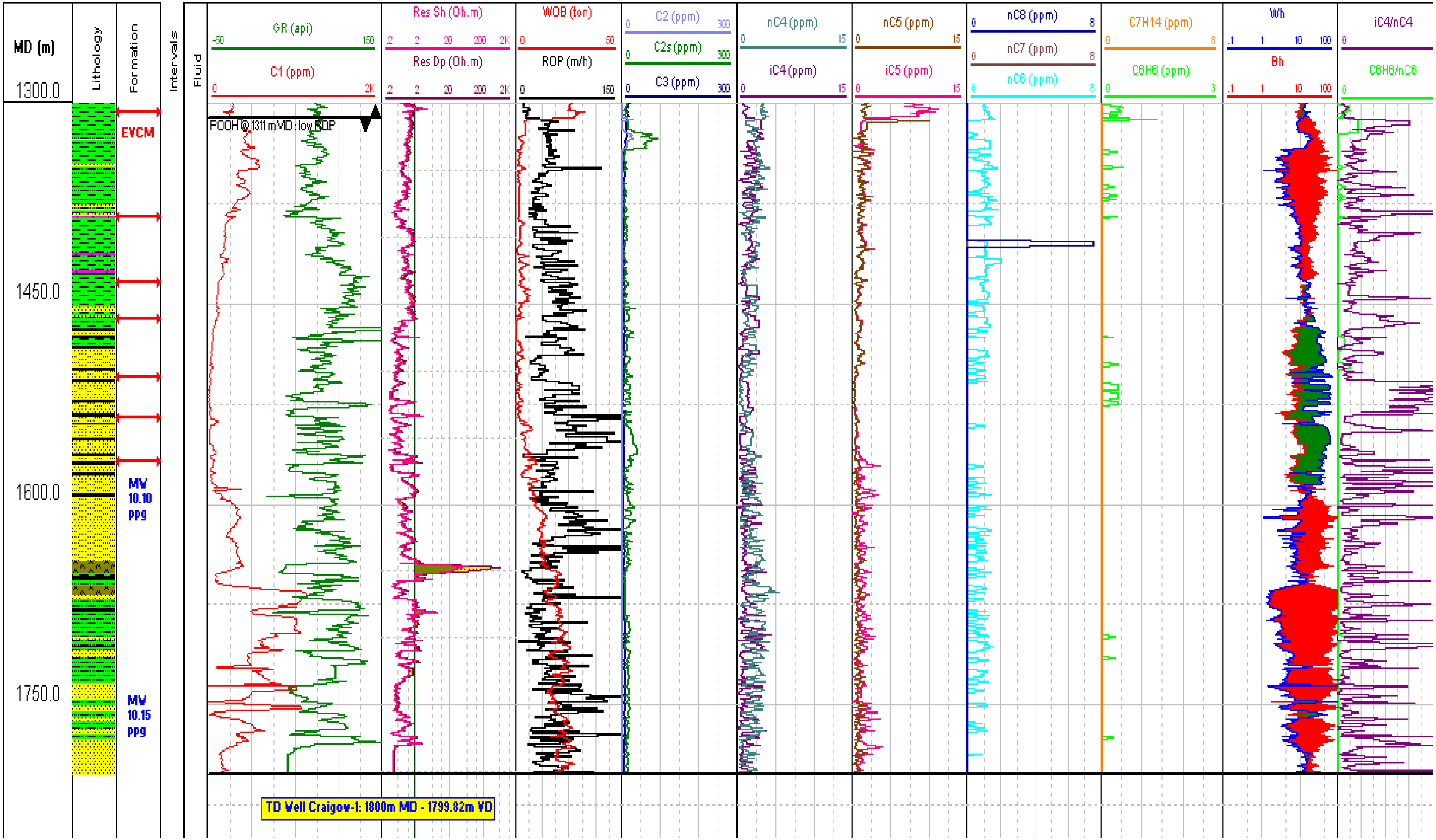


Fig. 3: Chromatolog of corrected Gas Data (1300 mMD – 1800 mMD)

4.3. FORMATION FLUID COMPOSITION (C1-C5, EEC CORRECTED)

Since the test to determine the EEC was not performed due to the very low level of gas, the readings cannot be corrected. The correlation between "gas in air" to "gas in mud" cannot be done and no conclusion can be given on quantitative contribution from the formations.

4.4. ETHENE WHILE DRILLING

Ethene (C_2H_4) is an artificial unsaturated hydrocarbon created during the drilling process. Even though the full processes (cracking process at bit, bit metamorphism etc) behind its creation remain unclear, it has been well defined as a contaminant from the point of view of the FLAIR analyses.

This molecule interferes in the readings of the ionic mass 26 by addition, which is created by ethane (C_2H_6) as well. To be able to evaluate this contamination, the FLAIR system is set to record the ionic mass 30, which records ethane only.

However, this presents some limitations, as this same mass 30 is unreliable below 300 ppm of ethane. In the results, mass 26 is presented as C2s (ethane + eventual ethene), and mass 30 as C2 (ethane only).

Finally, the assessment of the drilling artefacts, and the presence of ethene is done through two main observations:

- The level of the reading in the mass 30 that validates, or not, the use of these data
- The relative comparison between both readings of mass26 and mass30
  - If both masses are similar, no artefact is detected: C2s can be used to interpret ethane
  - If mass 26 (C2s) is higher than mass 30 (C2), ethene is detected: mass30 (C2 readings) is to be used to interpret ethane

While drilling Craigow-1, the readings recorded on mass 30 remained at a very low level, much lower than 300 ppm. As a conclusion, Ethene cannot be assessed and mass 26 (C2s) is interpreted to be un-contaminated.

5. LOCALISED EVENTS: 1167 – 1173 MMD SAND

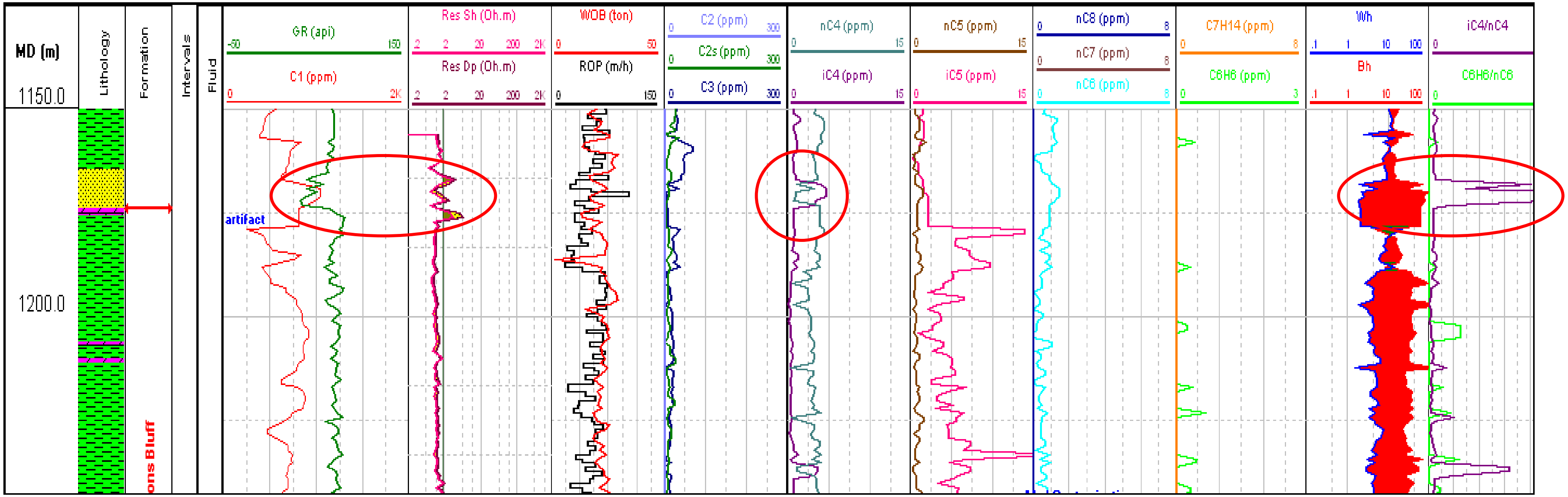


Fig. 4:Zoom on the sand. Some clue for traces fo HCs ?

The sand located here presents some noticeable characteristics:

- Increase of C1
- Noticeable increase of iC4 and drop of nC4
- Noticeable increase of iC4/nC4

This is interpreted as a possible presence of bio-degraded residual HC.

It has been seen in the wireline interpretation that the higher resistivity is due to the cement of the sand.

6. ISOTOPE

On Craigow-1, the Geoservices' Isotope logger was in use from 1311 mMD to 1800 mMD. However, due to organizational and technical issues, the data cannot be trusted.

The Isotope equipment was working fine, but several aspect of the quality control make it impossible to have a conclusive interpretation:

- Absence of calibration: the organizational issues made it impossible to start the Isotope equipment on time and in proper way. As a result, no calibration was performed.
- Inconsistencies between parameters emphasize the lack of proper calibration.
    - The Isotope logger is connected to the exhaust of the FLAIR gas chromatograph and the difference observed between the FLAIR gas readings and those from the isotope equipment cannot be explained other than by the lack of calibration.
    - The Ring down time (RDT), a parameter monitoring the behavior of the spectroscopic analyzer, is linked to the level of methane entering the module. This parameter correlates with the FLAIR gas level, but not with the Isotope (low level of gas implying low variations of RDT). This is another indication of the bad calibration.

Furthermore, the level of gas detected by FLAIR presents another issue in terms of interpretation. As a rule of thumb, the $\delta^{13}C$ is considered not valid below around 500 ppm of C1. The natural occurrence of ^{13}C being very low (^{12}C-98.93 %, ^{13}C-1.07 %), the precision of its detection drops dramatically if the concentration of gas diminishes.

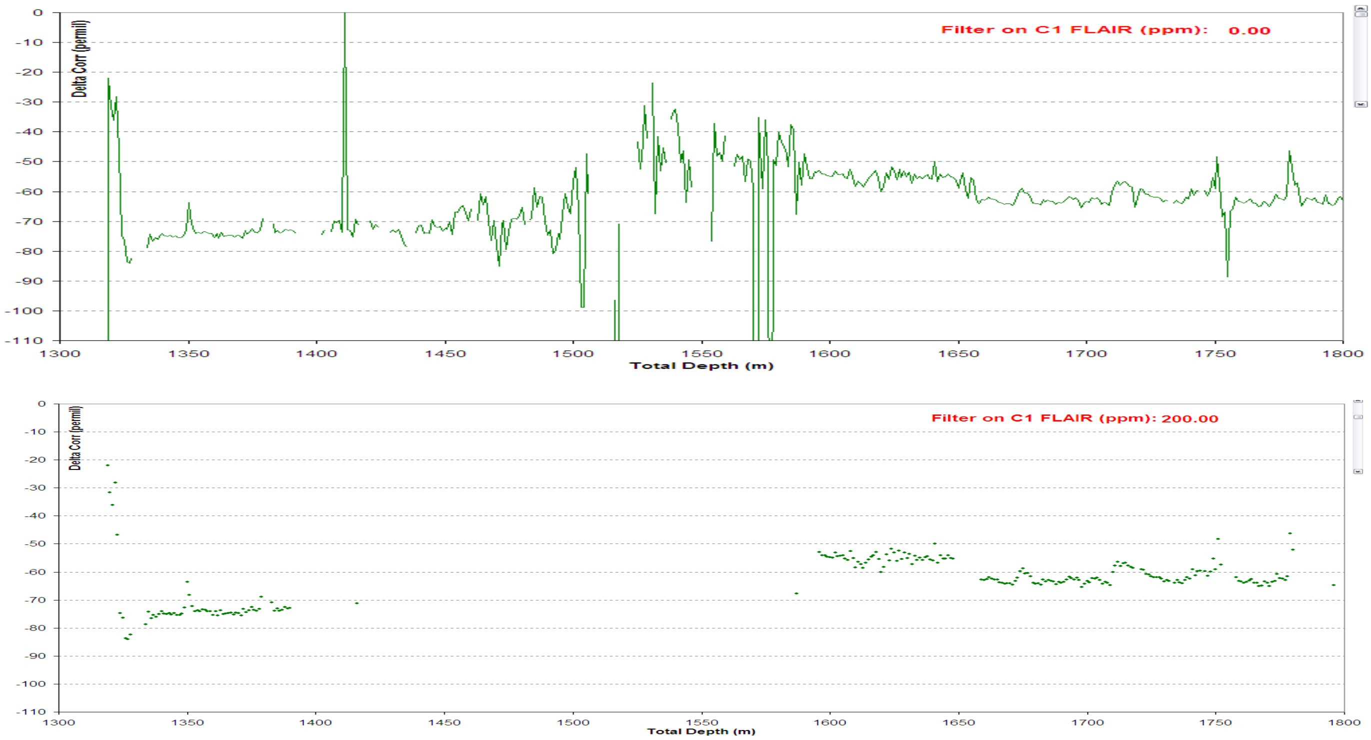


Fig. 5: $\delta^{13}C$ without any filter (top part), and filtered with a limit of 200 ppm on C1 (lower part). This limit is determined from the logged section 1400 mMD to 1600 mMD, where the gas level in FLAIR drops.

Unfortunately, with the unreliable calibration and the gas level being very low, the $\delta^{13}C$ cannot be interpreted with confidence at all.

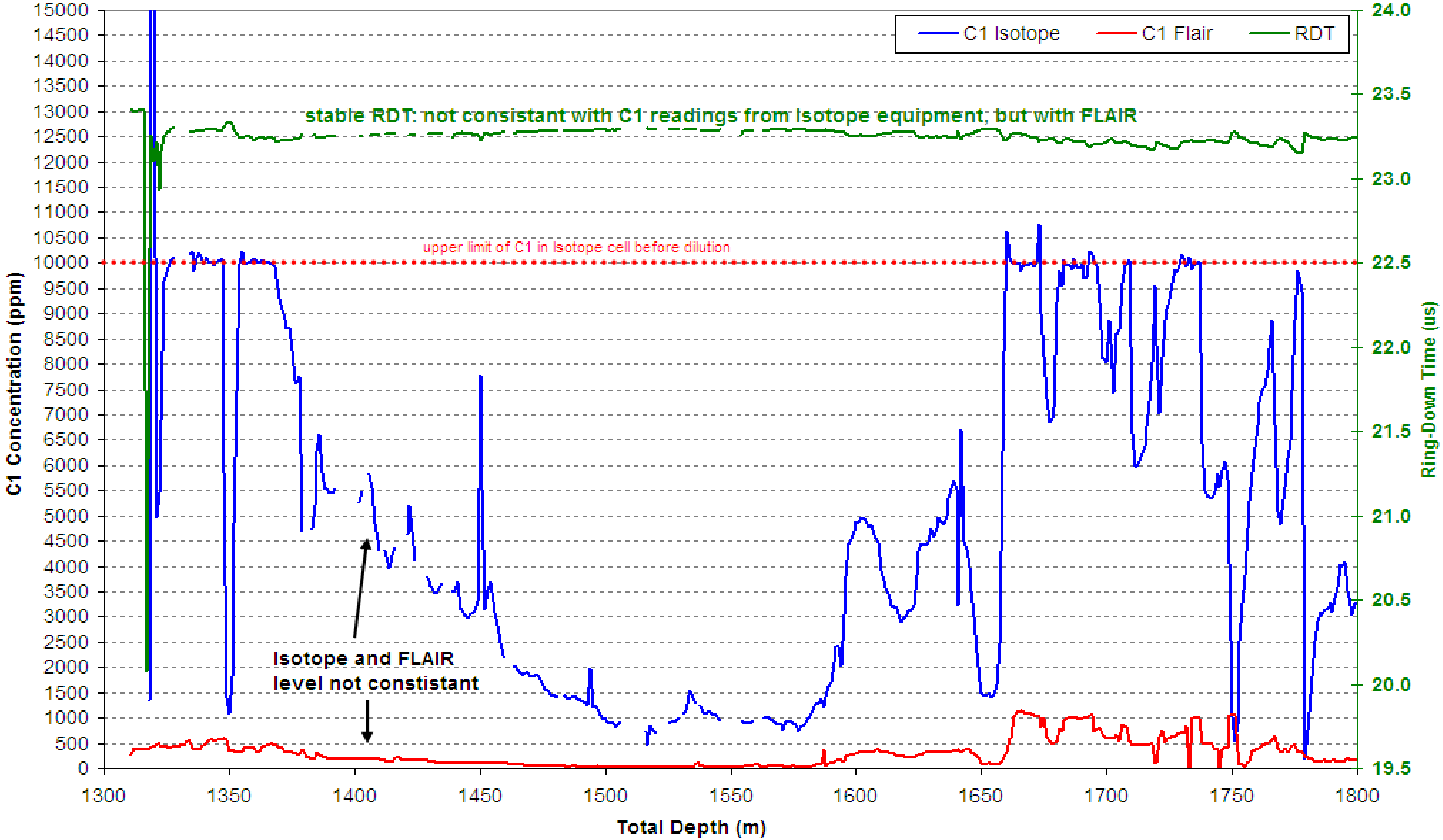


Fig. 6: Quality Control on Isotope data: inconsistency revealed in data set, proving issue with calibration

7. CONCLUSION

The FLAIR logging of the well Craigow-1 permitted gas observations to be made in quasi real-time. The principle aim of this study was to present the available FLEX/FLAIR gas data and to analyze various fluids encountered throughout the well.

However, the multiple issues encountered during the FLAIR logging, coupled with the lack of hydrocarbons in the well, could not allow any interpretation. The major issues are:

- FLEX IN: the lack of filtration assembly did not allows the FLEX to run. This made it impossible to correct the gas OUT reading of eventual readings.
- Extremely low level of gas: though this implied a negligible recycling of the gas, this leads to the absence of noticeable gas events that FLAIR could interpret.

The Isotope logging suffered some issues that lead to no interpretation as well:

- The Isotope logger was operational only from 1311 mMD to 1800 mMD, instead of the complete part of the section
- A lack of proper calibration made it impossible to interpret the data
- The very low gas level encountered in the well was another barrier to interpretation

APPENDICES

8.1. APPENDIX I: GCMS CALIBRATION

The calibration is done with the injection of a pre-calibrated bottle of gas mixtures. The resulting concentrations are recorded and then compared to the theoretical values. For each concentration mixtures, error and standard deviation are evaluated.

The error margin represents the accuracy of the measurement, comparing the measured (actual) value and the given (theoretical) value. It is calculated as follows:

$$= \frac{\text{Average of Actual Concentration - Theoretical Concentration}}{\text{Average of Actual Concentration}}$$

The standard deviation calculation represents the dispersion of the measurements, and the stability of the analyser, comparing a set of actual measurements. It is evaluated as follows:

$$\sqrt{\frac{\sum (Actual - Average)^2}{n-1}}$$

The calibration is then considered valid if:

1. For a 5 ppm concentration, error and standard deviation are within +/- 20 %
2. For a 10 ppm concentration, error and standard deviation are within +/- 10 %
3. For higher concentrations, error and standard deviation are within +/- 5 %

All calibrations performed during the drilling of Craigow-1 are shown in the following pages.

The tests were successfully performed:

- Before the start of the 12 ¼ " phase, on 28th – 29th December, 2010

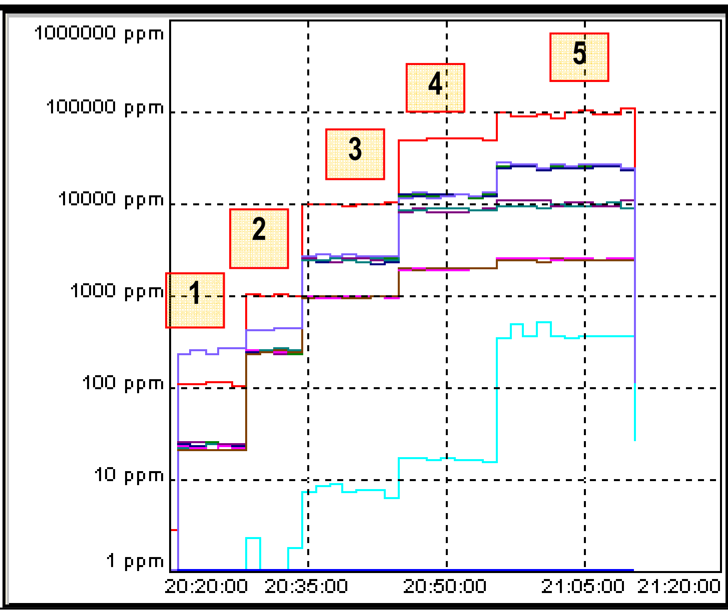
A. GENERAL INFORMATION

CLIENT	TAPOIL	DATE:	28-29 Dec 2010
WELL	CRAIGOW-1	GC/MS NUMBERS:	1264423/1264277
RIG NAME:	KAN TAN IV	CALIBRATION FILE:	
PHASE	12.1/4"	MS HRS (LAST REVISION)	0
FLAIR OPERATORS	C.Chiron/Nasrul	CURRENT MS HRS:	371

B. PROCEDURE INFORMATION

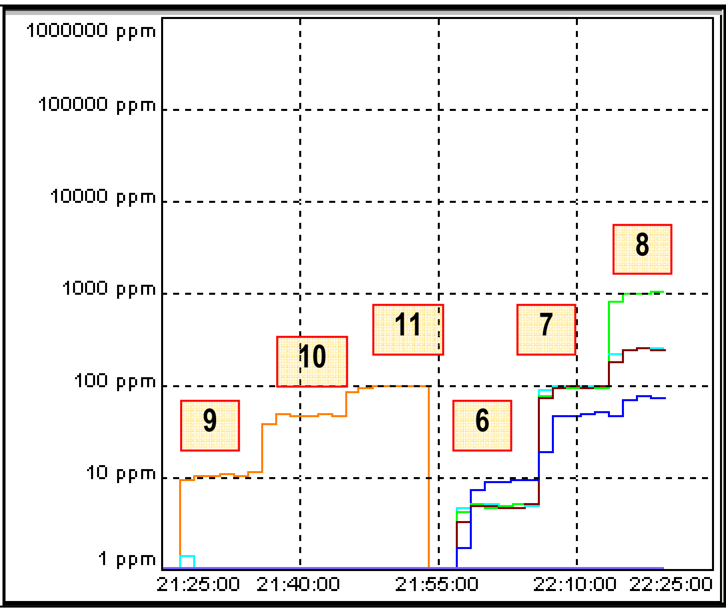
Prior to drilling Craigow-1, 12 ¼ " section, a calibration check has been performed.
An analysis cycle of 91 sec, oven temperature at 82°C and air vector at 4.0 bars were used to calibrate from C1 to nC8, C_6H_6 and C_7H_{14}.
The results have been recorded and screenshots of the real-time displays and chromatograms taken.

C. REAL-TIME PLOT



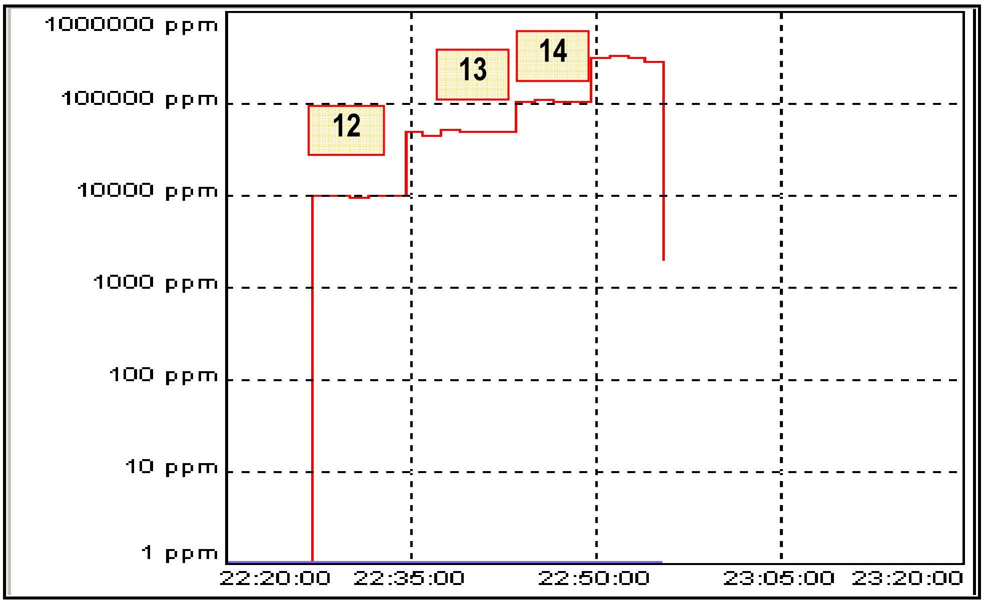
1. C1-C5 gas mixture, with 100 ppm of C1
2. C1-C5 gas mixture, with 1000 ppm of C1
3. C1-C5 gas mixture, with 1 % of C1
4. C1-C5 gas mixture, with 5 % of C1
5. C1-nC6 gas mixture, with 10% of C1

Fig A.1 Real time screenshot of C1 to C6 gas mixtures



6. C6H6 gas mixture, with 5 ppm of C6H6
7. C6H6 gas mixture, with 100 ppm of C6H6
8. C6H6 gas mixture, with 1000 ppm of C6H6

9. CO2 gas mixture with 100 ppm of CO2
10. CO2 gas mixture with 1 % of CO2
11. CO2 gas mixture with 10 % of CO2



12. C1-C5 gas mixture with 1 % of C1
13. C1-C5 gas mixture with 5 % of C1
14. C1-C5 gas mixture with 10 % of C1

D. RESULTS TABLE

* For 5ppm concentration, % Error margin and STD Deviation % are set at +/-20
**For 10ppm concentration, % Error margin and STD Deviation % are set at +/-10
For higher concentrations, % Error margin and STD Deviation % are set at +/- 5

100ppm C1-C5		Batch No: 591981				Validity date: Feb 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1	100	105.0	104.0	106.0	104.5	105	0.95	4.88%	0.81
C2s	25	24.0	26.0	25.5	26.0	25	0.99	1.50%	3.73
C3	25	23.0	24.0	25.0	24.0	24	1.04	-4.00%	3.40
iC4	25	26.7	26.1	24.6	24.9	26	0.98	2.30%	3.88
nC4	25	23.5	26.0	24.9	24.6	25	1.01	-1.39%	4.15
iC5	25	22.5	25.0	23.9	25.0	24	1.04	-3.60%	4.92
nC5	25	22.6	23.6	25.1	25.0	24	1.04	-3.70%	4.98

1000ppm C1-C5		Batch No: 101030				Validity date: Aug 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1	1000	1023	1025	1045	1053	1037	0.96	3.66%	1.42
C2s	250	249	248	240	237	244	1.03	-2.57%	2.47
C3	254	233	253	258	252	249	1.02	-1.93%	4.33
iC4	253	242	244	237	244	242	1.05	-4.50%	1.37
nC4	254	252	255	256	257	255	1.00	0.42%	0.79
iC5	253	248	249	247	254	250	1.01	-1.36%	1.23
nC5	254	246	258	259	265	257	0.99	1.21%	3.04

30

1% C1-C5		Batch No: 558678				Validity date: Dec 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1	10030	9986	9712	10004	9974	9919	1.01	-1.11%	1.40
C2s	2506	2368	2381	2591	2575	2479	1.01	-1.09%	4.87
C3	2504	2531	2342	2534	2456	2466	1.02	-1.53%	3.65
iC4	2499	2356	2422	2607	2558	2486	1.01	-0.53%	4.69
nC4	2517	2457	2512	2561	2416	2487	1.01	-1.21%	2.55
iC5	1021	1019	991	1013	1009	1008	1.01	-1.27%	1.20
nC5	1021	971	1016	1023	972	995	1.03	-2.51%	2.81

5% C1-C5		Batch No: 564487				Validity date: Feb 12			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1	50056	50848	50218	50402	51660	50782	0.99	1.45%	1.26

C2s	12503	11499	12639	12597	12687	12356	1.01	-1.18%	4.63
C3	12507	12386	12477	12901	12903	12667	0.99	1.28%	2.16
iC4	8530	8081	8081	8076	8458	8174	1.04	-4.17%	2.32
nC4	8524	8466	8353	8775	8546	8535	1.00	0.13%	2.09
iC5	2056	1956	2056	1938	1999	1987	1.03	-3.34%	2.64
nC5	2035	1974	2051	2028	2023	2019	1.01	-0.79%	1.60

10% C1-C6	Batch No: 104427					Validity date: July 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1	100005	99532	102559	97622	103501	100804	0.99	0.80%	2.69
C2s	25019	24470	24978	26224	25631	25326	0.99	1.23%	3.02
C3	25016	24483	24647	25140	26758	25257	0.99	0.96%	4.11
iC4	10009	9808	10472	10387	9786	10113	0.99	1.04%	3.63
nC4	10002	9936	9447	9958	10096	9859	1.01	-1.43%	2.88
iC5	2503	2436	2555	2566	2552	2527	0.99	0.97%	2.42
nC5	2502	2467	2436	2513	2518	2484	1.01	-0.74%	1.57
nC6	300	311	312	317	317	314	0.95	4.75%	1.02

1000ppm C1	Batch No:101030					Validity date: Feb 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1 M13	1000	960	972	973	961	966.5	1.03	-3.35%	0.72

1% C1	Batch No: 105533					Validity date: Nov 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1 M13	10010	9840	9672	9991	9872	9843.8	1.02	-1.66%	1.34

10% C1	Batch No: 96955					Validity date: Nov 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1 M13	100010	102238	104472	103828	104661	103799.8	0.96	3.79%	1.06

30% C1	Batch No: 94931A					Validity date: June 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C1 M13	300050	307172	311149	313232	294715	306567.0	0.98	2.17%	2.70

5ppm C6H6		Batch No: 94666A				Validity date: Apr 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C6H6 *	5.3	5.26	4.89	4.96	5.26	5	1.04	-3.92%	3.84
nC6 *	5.3	5.15	5.27	5.11	5.20	5	1.02	-2.22%	1.33
nC7 *	5.3	4.94	5.09	4.87	4.87	5	1.07	-6.75%	2.10
nC8 **	10.6	9.60	9.55	9.38	9.81	10	1.11	-9.58%	1.85
C7H8 **	10.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
He	15.2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

100ppm C6H6		Batch No: 94022A				Validity date: Mar 11			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C6H6	101.0	103	98	98	101	100	1.01	-0.99%	2.45
nC6	102.0	98	102	102	103	101	1.01	-0.74%	2.19
nC7	101.0	96	97	102	99	99	1.03	-2.48%	2.69
nC8	50.8	47	51	52	51	50	1.01	-0.94%	4.48
C7H8	101.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
He	100.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

1000ppm C6H6		Batch No: 96964				Validity date: May 12			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
C6H6	1010	987	1010	1027	1028	1013	1.00	0.30%	1.90
nC6	254	248	256	256	255	254	1.00	-0.10%	1.52
nC7	254	243	255	253	255	252	1.01	-0.98%	2.28
nC8	76	74	78	76	79	77	0.99	0.99%	2.89
C7H8	255	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
He	1000	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

100ppm CO2		Batch No: 611404				Validity date: Feb 12			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
CO2	100	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C7H14 *	10	10.40	10.60	10.50	10.40	10	0.94	6.89%	0.91

1% CO2		Batch No:611408				Validity date: May 12			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
CO2	9990	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C7H14	51	51	52	49	49	50	1.02	-1.67%	2.97

10% CO2		Batch No: 611509				Validity date: Nov 12			
	Theoretical	Actual				Average	Theo/Avge	% Error	Std Deviation %
		1	2	3	4				
CO2	100026	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
C7H14	103	98	101	101	100	100	1.03	-2.91%	1.41

8.2. APPENDIX II: LEAK DETECTION TEST

Before each section, a Leak Detection Test (LDT) is performed to ascertain the integrity of the FLEX filtration assembly, gas line, and GC used on the FLAIR system. This ensures that the system is leak-proof (no damaged or faulty parts) and that the acquired gas data are not affected by any dilution.

The test is performed in 2 steps:

1. 1st step is to ascertain the integrity of the GC, Gas Line and Flow restrictor only. This part is valid when the pressure build up does not exceed 50 mbar/h.
2. 2nd step is to ascertain the integrity of the Filtration Assembly. This part is valid when the pressure build up does not exceed 450 mbar/h.

The tests were successfully performed:

- Before the start of the 12 ¼ " phase, on 30th December, 2010

The test could not be performed with FLEX IN, as no filtration assembly was on board.

A. GENERAL INFORMATION

CLIENT	TAPOIL	**DATE:**	30-12-2010
WELL	CRAIGOW-1	**GC/MS NUMBERS:**	1264423 / 1264277
RIG NAME:	Kan Tan IV	**CALIBRATION FILE:**	
PHASE	12 ¼"'	**MS HRS (LAST REVISION)**	0
FLAIR OPERATORS	Cl Chiron	**CURRENT MS HRS:**	821

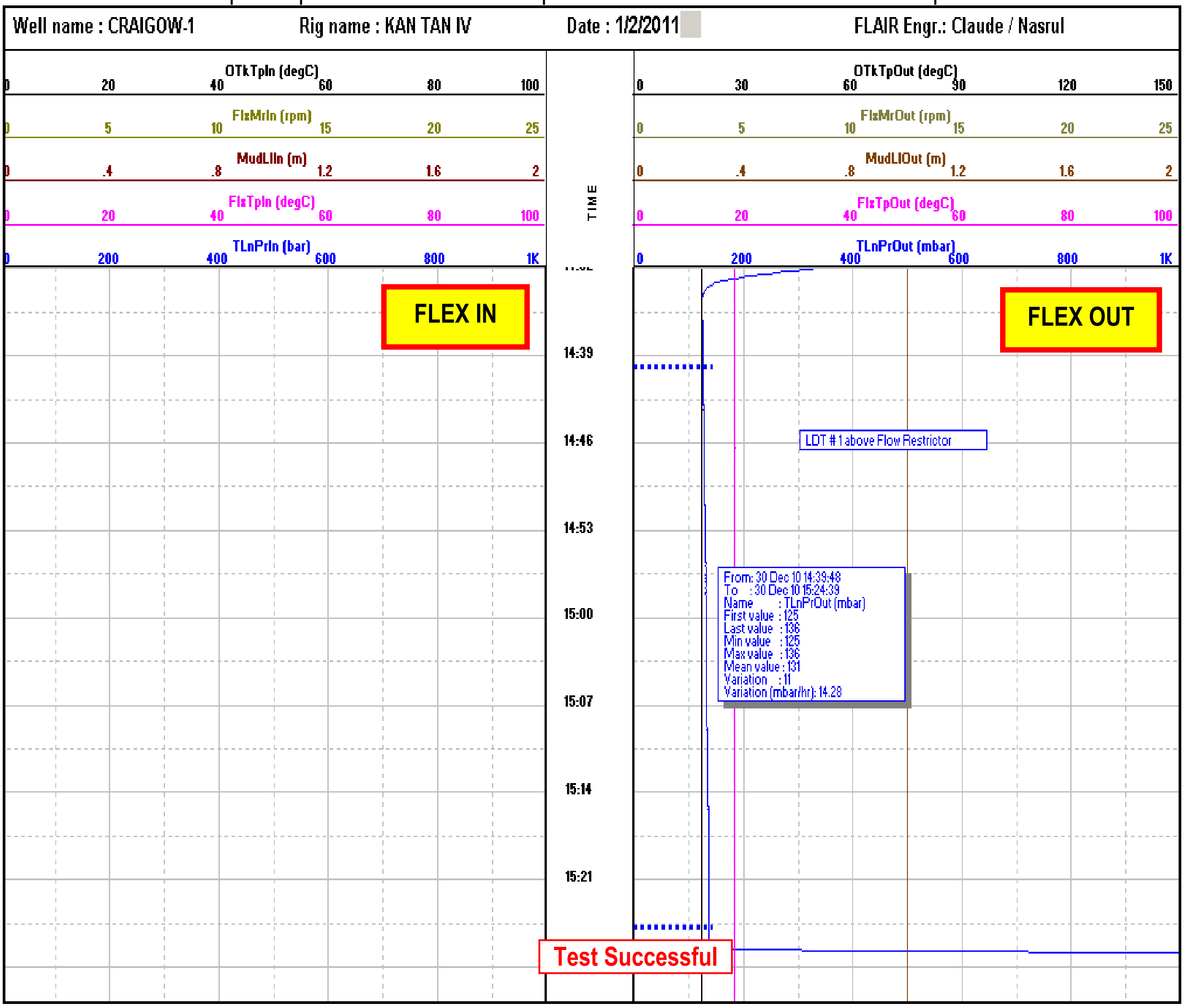
B. PROCEDURE INFORMATION

A leak detection test was performed on 30th Oct 2010 for the well Craigow-1 prior to continue drilling the 12 1/4" section.

The test is performed to ensure that the system is «leak proof» and the gas data acquired is not affected by an eventual leak due to a damaged or faulty part for each FLEX used on FLAIR system.

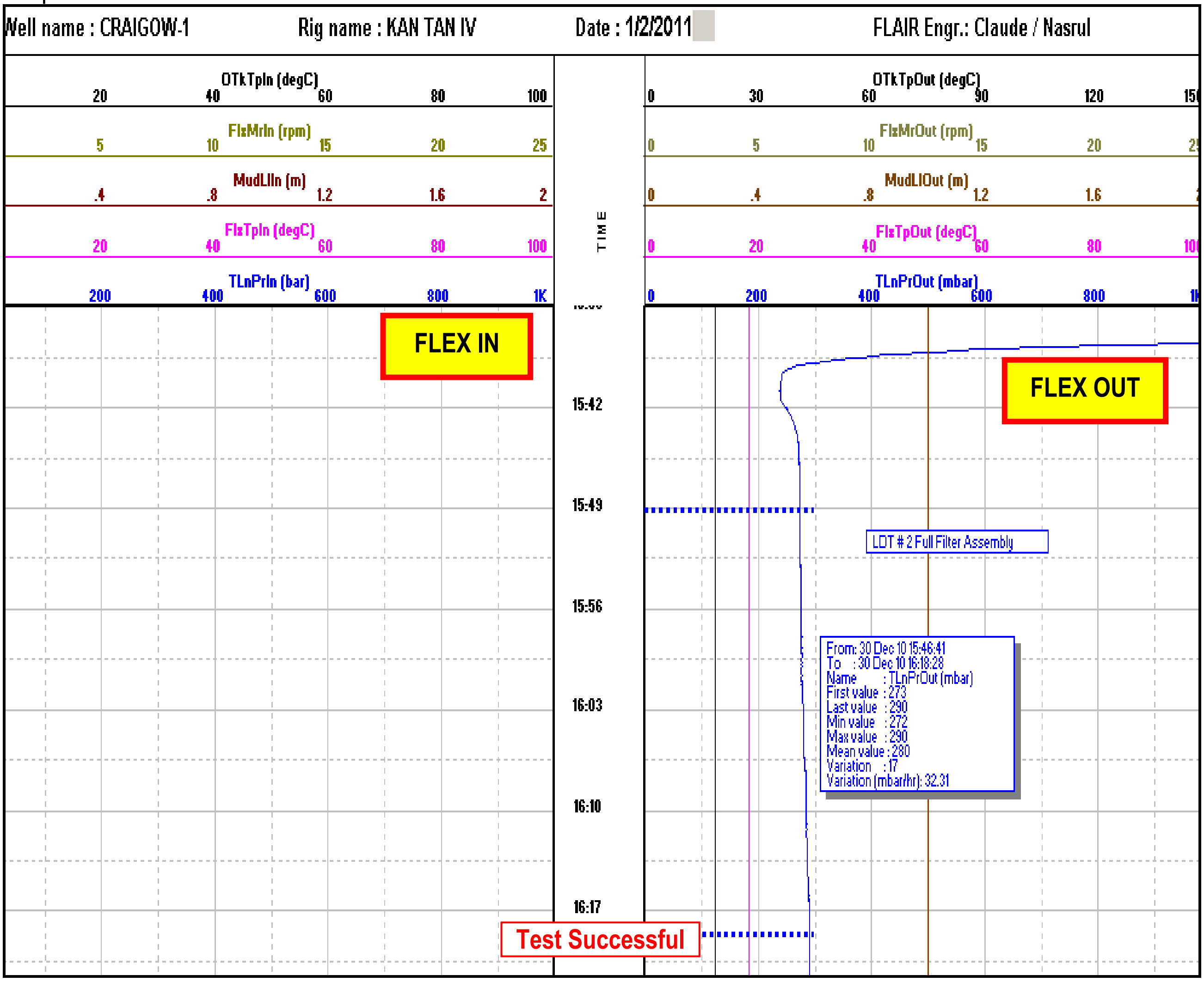
STEP#1

With the top of the Flow Restrictor plugged. i.e., Filtration assembly isolated. Vacuum test is done from the flow restrictor to the sample loop. This test is done as per the latest revision of the leak test procedures.



STEP#2

With the gas line at the end of Filtration assembly looped. i.e., leak test including the filtration assembly. Vacuum test is done from the filtration assembly to the sample loop. This test is done as per the latest revision of the leak test procedures.



STEP#3

Turn back the micrometric valves to achieve 260 mbar, 6.0 turns for Gas Out.
Flow at Exhaust 1 = 30 L/hr

8.3. APPENDIX III: RATIO INTEGRITY TEST REPORTS

This test is performed prior to drilling each phase, with the aim of checking the integration process between the FLEX and the FLAIR analyzer over a wide range of concentrations.

A jerrycan is connected before the flow restrictor at the filtration assembly of the FLEX. This jerrycan has a dilution port to displace the gas with air, and to maintain a constant pressure during the test. It is ensured first that the jerrycan is uncontaminated by checking that the MS records almost 0 ppm of gas. A bottle of gas mixture, with 10% of C1, is connected to the jerrycan entry and fully opened until the gas readings reach a maximum. The response of the MS is recorded for each component until very low values are reached.

This test insures the linearity of the calibration and the good integration of the gas peaks.

No Integrity test was performed, due to lack of time before the start of drilling the 12 ¼ " phase.

8.4. APPENDIX IV: GAS CHAIN COMPARISON TEST

The Gas IN and OUT chains should exhibit the same efficiency so that the correction of the recycling (i.e., subtraction of Gas IN from Gas OUT data) is valid and accurate.

A sample of mud is collected from the active pit, and analysed with the FLEX IN and FLEX OUT simultaneously. The test is performed as per normal drilling conditions (90°C-OBM, 70°C-WBM for the temperature and 280 mbar for the pressure maintained in the gas line) until stable readings were achieved.

No comparison was performed since the mud system was fresh and without any HC contamination allowing gas readings.

8.5. APPENDIX V: CONTRIBUTION OF WBM IN THE GAS READINGS

As a standard procedure, the analysis of a fresh mud sample (Mud Background Analysis) is performed prior to drilling each phase. This helps to determine the contribution in the gas readings of the chemicals found the mud (contamination from previous drilled section, components giving similar ionic masses in the MS, artificial hydrocarbons dues to chemical reactions etc).

This test was not performed, due to lack of time before the start of drilling the 12 ¼ " phase.

8.6. APPENDIX VI: EXTRACTION EFFICIENCY TEST

While drilling, the efficiency of the extraction process is not equal to 1. This means that the sampled mud is not fully degassed. Moreover, no components are extracted in the same manner. Many factors influence the extraction process, among them: hydrocarbon and mud chemistry, mud temperature, viscosity and shale content.

The aim of this procedure is to establish the extraction efficiency of the equipment and to correct the gas readings. This allows the operator to obtain the real composition of the gas in the mud.

EEC was not performed because of the very low level of gas monitored in the mud system.

8.7. APPENDIX VII: DAILY REPORTS WHILE DRILLING

This appendix is a compilation of the information sheet from FLAIR daily reports for drilling days only.

		REPORT No.	06

GENERAL INFORMATION

OPERATOR	:	TAPOIL	SPUD DATE	:	22nd December 2010
RIG NAME	:	Kan Tan IV	PHASE DIAMETER	:	12.1/4"
WELL NAME	:	Craigow-1	BIT TYPE	:	REED HYCALOG
FIELD/BLOCK	:	T/47P	DEPTH / TVD 24:00	:	1301 MD / 1301 TVD
LOCATION	:	offshore Bass Basin	HOLE ANGLE	:	no deviation
COUNTRY	:	Australia	REPORT BY	:	Claude / Nasrul
WATER DEPTH (m)	:	75.4	REPORT DATE	:	29th Dec 2010

HYDRAULIC INFORMATION (@ midnight Depth)

HOLE VOL	m3	120	SPP	psi	190-196
ANNULUS VOLUME	m3	389	BOTTOM UP TIME	min	24.5
INSIDE PIPE VOLUME	m3	44	TOTAL CIRCULATION TIME	min	29
PUMP CAPACITY	l/st	19.55	LAST LOT/FIT @DEPTH	-	14.9 ppg @ 748 m
FLOW RATE	l/min	3740-3780	CASING SHOE @DEPTH	-	13.3/8 Csg @ 738 m

MUD PROPERTIES

MUD TYPE	KCL / PHPA (WBM)		R6/R3	rpm	9-8
MUD WEIGHT	sg	9.8 - 10	MUD TEMP IN	°C	
PV	cP	60-57	MUD TEMP OUT	°C	50
YP	lb/100ft²	13-23 / 29-23	ECD	ppg	
Gels 10s / 10mn	lb/100ft²	10-13-14 / 9-11-13	BOTTOM HOLE TEMP	°C	
R600/300	rpm	63-43	OIL WATER RATIO	%/%	-
R200/100	rpm	35-24	CORRECTED SOLIDS	%	6.1

FLEX PROPERTIES

GC-MS CYCLE TIME	:	91 sec	FLEX TEMPERATURE	:	70 °C

COMMENTS & REMARKS

DRILLING SUMMARY & OPERATION REMARKS: (0000-2400 hrs)

- • Continue to drill out plugs and shoe track. Displace well to 9.8 ppg mud. Drill rat hole and 3m in formation to 748m. Perform LOT = 149 ppg EWG (640 psi). Drill 12.1/4" section to 1304 m

FLAIR UNIT ACTIVITY & TROUBLESHOOTING:

- • Continue to check calibrations, ok. Test all equipment OUT before drilling
- • Need to install probe into flow line, as gumbo box not efficient
- • Missing equipment: : Pressure Filter Assembly IN. Isotopes'connections
- • Gas OUT recorded without trouble

		REPORT No.	07

GENERAL INFORMATION

OPERATOR	:	TAPOIL	SPUD DATE	:	22nd December 2010
RIG NAME	:	Kan Tan IV	PHASE DIAMETER	:	12.1/4"
WELL NAME	:	Craigow-1	BIT TYPE	:	REED HYCALOG
FIELD/BLOCK	:	T/47P	DEPTH / TVD 24:00	:	1445 MD / 1444.9 TVD
LOCATION	:	offshore Bass Basin	HOLE ANGLE	:	1.2° @ 1401.2 m
COUNTRY	:	Australia	REPORT BY	:	Claude / Nasrul
WATER DEPTH (m)	:	75.4	REPORT DATE	:	29th Dec 2010

HYDRAULIC INFORMATION (@ midnight Depth)

HOLE VOL	m3	120	SPP	psi	190-196
ANNULUS VOLUME	m3	630	BOTTOM UP TIME	min	
INSIDE PIPE VOLUME	m3	84	TOTAL CIRCULATION TIME	min	
PUMP CAPACITY	l/st	19.55	LAST LOT/FIT @DEPTH	-	14.9 ppg @ 748 m
FLOW RATE	l/min	3740-3780	CASING SHOE @DEPTH	-	13.3/8 Csg @ 738 m

MUD PROPERTIES

MUD TYPE	KCL / PHPA (WBM)		R6/R3	rpm	8-7
MUD WEIGHT	sg	10 – 10.2	MUD TEMP IN	°C	30.5
FV	sec	50	MUD TEMP OUT	°C	40.5
PV - YP	cP - lb/100ft²	17-22 / 18-22	ECD	ppg	10.29 – 10.33
Gels 10s / 10mn	lb/100ft²	8-10-11 / 7-9-10	BOTTOM HOLE TEMP	°C	
R600/300	rpm	58-40	OIL WATER RATIO	%/%	-
R200/100	rpm	32-23	CORRECTED SOLIDS	%	5.8

FLEX PROPERTIES

GC-MS CYCLE TIME	:	91 sec	FLEX TEMPERATURE	:	70 °C

COMMENTS & REMARKS

DRILLING SUMMARY & OPERATION REMARKS: (0000-2400 hrs)

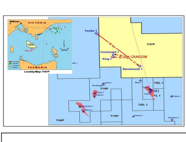
- Continue drill 12.25" hole to 1311m. Pump Hi-Vis pill, Circulate well clean. Flow check static. POOH. Break off bir, rig maintenance. M/U new bir, ressume RIH.. Slip & cur drill line. RIH, break circulation and wash down from 1277m to 1311m. Tool SCR's and drill 12.25" hole to 1445m

FLAIR UNIT ACTIVITY & TROUBLESHOOTING:

- Clean Flex Out during trip – Purge gas line.
- Perform Leak Detection Test during trip – ok.
- Perform background gad from active pit (no gas recorded, no contamination)
- Missing equipment: : Pressure Filter Assembly IN. Isotopes'connections
- Gas OUT recorded without trouble

Enclosures

Enclosure 1: Craigow-1 Composite Log



Tap Oil Ltd

Composite Well Log

Craigow-1

Scale 1:500

LOCATION :	Latitude : 39 deg 35' 31.69 S	PERMIT :	T/47P	WELL STATUS :	Plugged and Abandoned
	Longitude : 145 deg 38' 34.59 E	REGION :	Offshore Bass Basin, Tasmania	TOTAL DEPTH :	1800.0mMDRT - Drillers
	Easting : 383 473.49 mE			TOTAL DEPTH :	1764.0mMDRT - Loggers
	Northing : 5 616 630.45 mS				
ELEVATIONS :	RT-ASL (MSL) : 26.0m	DATE SPUDDED :	24-Dec-2010	WIRELINE :	Schlumberger
	WD (MSL) : 74.0m	DATE AT TOTAL DEPTH :	31-Dec-2010	MWD / LWD :	Sperry Sun
	RT-ML (MSL) : 100.0m	DATE RIG RELEASED :	07-Jan-2011	MUDLOGGING :	Geoservices
RIG :	Kan Tan IV, Semi Submersible MODU	PARTICIPANTS :	Tap (Shelfal) Ltd: 100% (Operator)		

WIRELINE LOG DATA

LOG SUITE NUMBER	SUITE 1 / RUN 1	
LOG TYPE / COMBINATION	PPC-MSIP-HRLA-SP-PEX-GR	
DATE	1st January 2011	
INTERVAL RECORDED	1745.5 to 734.5m	
MUD TYPE	KCl/PHPA/Clayseal	
MUD DENSITY G/CC	1.21 SG	
Rmf @ MEAS. TEMP	0.183 @ 22 deg C	
MEASURED BHT	76 deg C	

MWD / LWD LOG DATA

DATE	RUN NO.	HOLE SIZE	MEASUREMENT	INTERVAL
24-26/12/2010	1	17 1/2"	DIR-GR	157.0 - 745.0m
28-30/12/2010	2	12 1/4"	DIR-GR-RES	745.0 - 1311.0m
30-31/12/2010	3	12 1/4"	DIR-GR-RES	1311.0 - 1800.0m

CASING

SIZE	SHOE	INTERVAL
30" x 20"	157.0m	100.0 - 157m
13 3/8"	735.0m	100.0 - 735.0m

CEMENT PLUGS

	TOP	BASE
1	1070.0m	1220.0m
2	576.0m	770.0m
3	230.0m	130.0m

HOLE SIZES

SIZE	FROM	TO
36"	100.0m	159.0m
17 1/2"	159.0m	745.0m
12 1/4"	745.0m	1800.0m

CORING

	FROM	TO	CUT	RECD	FORMATION

TESTING

	INTV	FM	FLOW

74.0mLITHOLOGY SYMBOLS

Argillaceous sand	Calcarenite
Very Fine grained sand	Calcilutite
Fine grained sand	Argill Limestone
Medium grained sand	Volcanics
Coarse grained sand	Heavy Minerals
Conglomerate	Granite
Claystone	Coal
Silty Claystone	Water
Carb Claystone	Limestone
Siltstone	Dolomite
Calc Claystone	Silt

ENGINEERING SYMBOLS

Cored Interval
Perforated Interval
Cement Plug
DST Interval
Casing Shoe

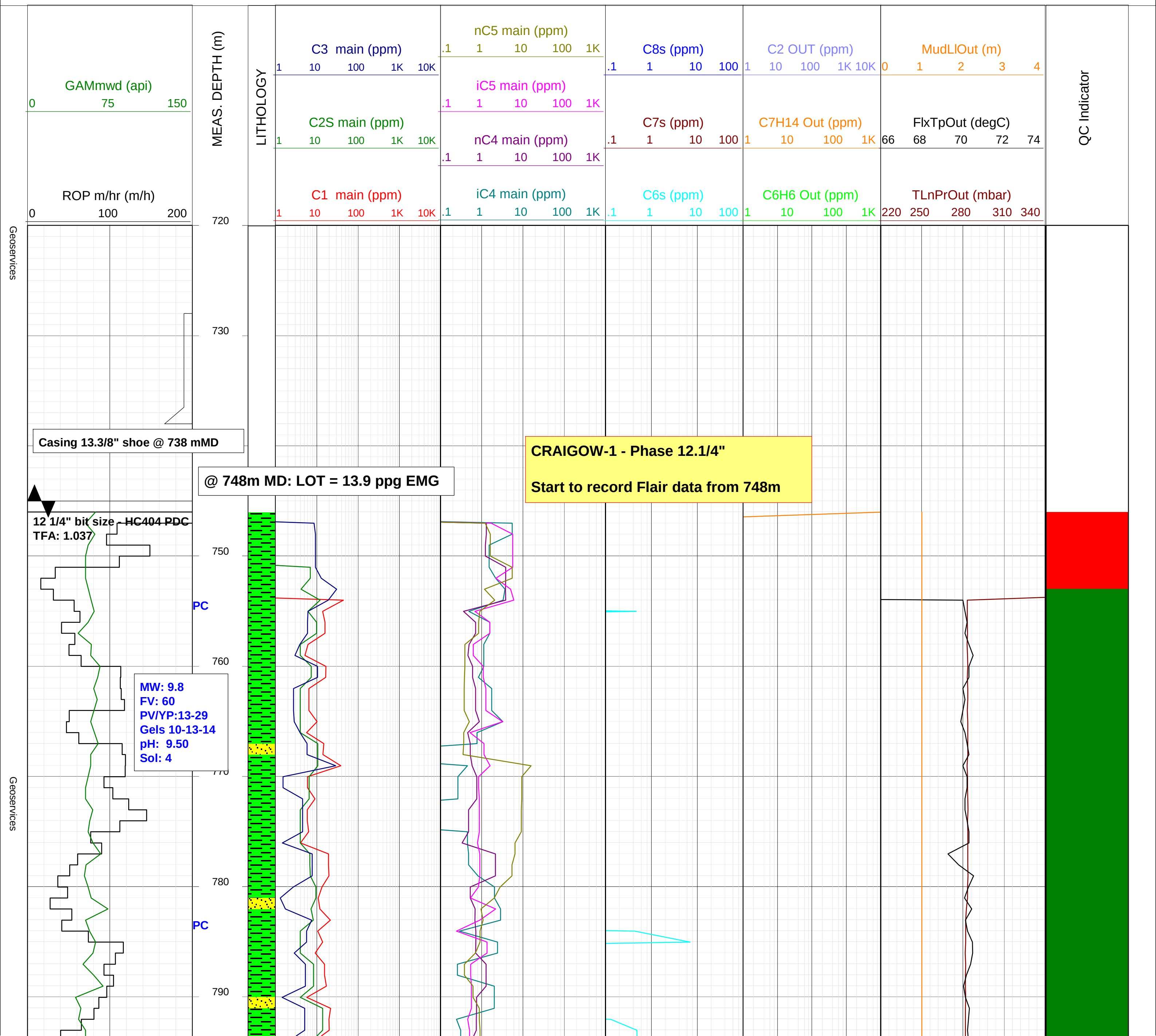
Enclosure 2: Craigow-1 FLAIR QC Log

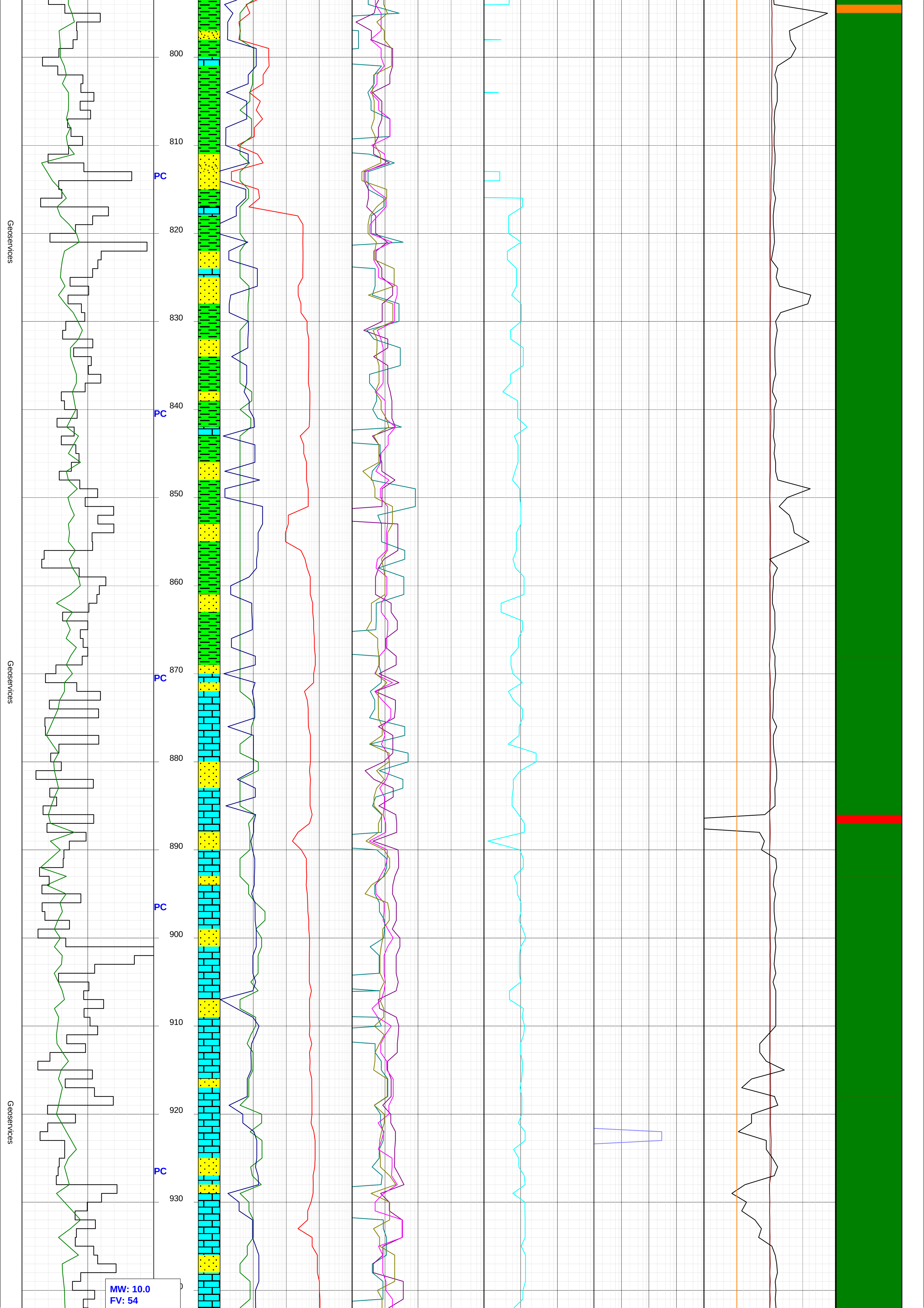
FLAIR QC LOG (WBM)

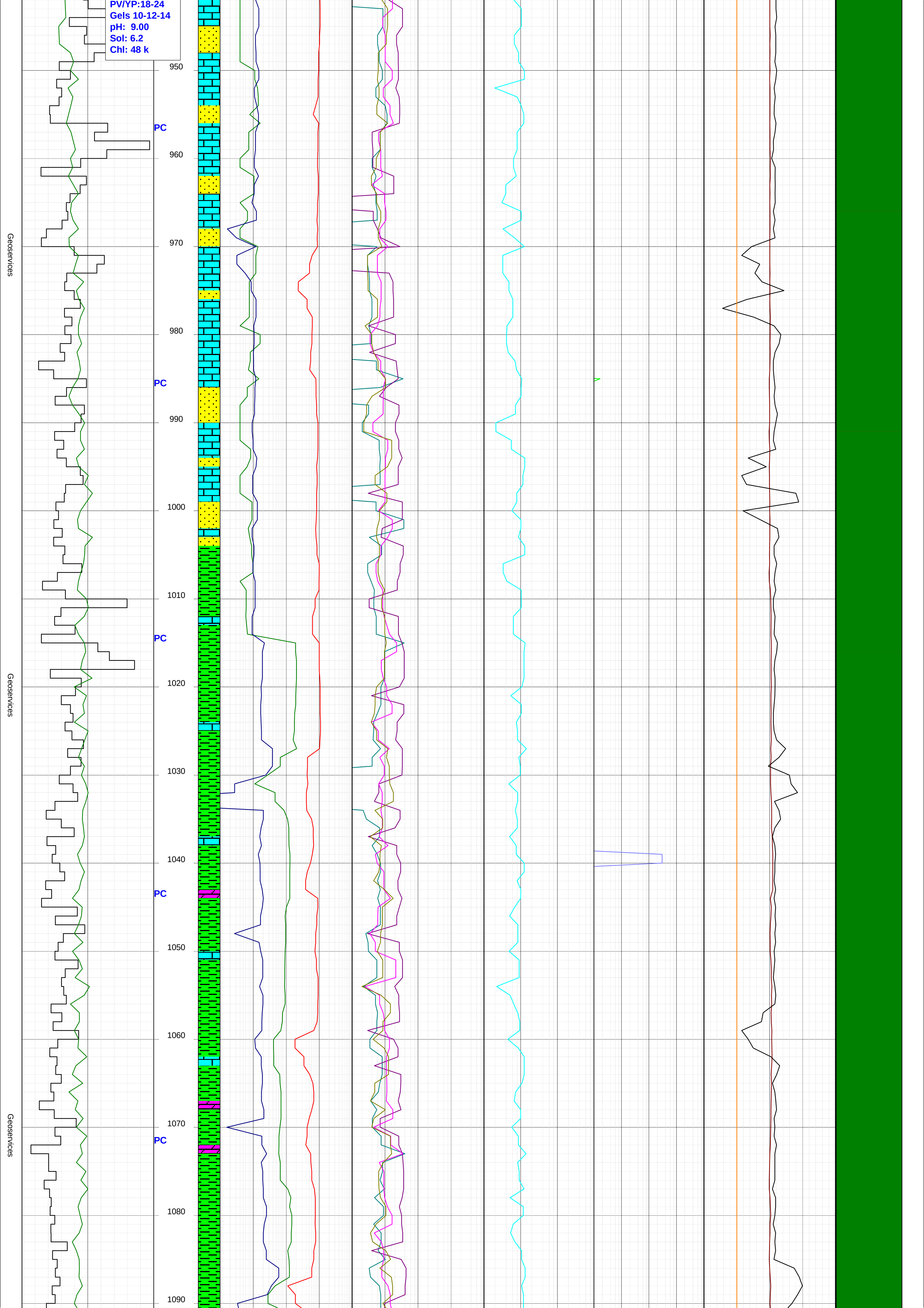
FROM (m) : 720 | TO (m) : 1811 | SCALE : 1/ 500

WELL NAME : CRAIGOW-1	COUNTRY : AUSTRALIA	FIELD : CRAIGOW
OPERATOR : TAPOIL	PERMIT : T/44P	LOCATION : BASS BASIN
SEA BED-MSL (m) : 74	FINAL TD (m) : 1800	RIG NAME : KAN TAN IV
MSL-RT (m) : 26	FINAL TVD (m) : 1799.8	RIG TYPE : Semi-Sub
LATITUDE : 039°35'31.69" S	X COORD (m) : 383473.5	SPUD DATE : 24 Dec 2010
LONGITUDE : 145°38'34.59" E	Y COORD (m) : 5616630.6	FINAL TD DATE : 31 Dec 2010
Sr. FLAIR ENGINEERS : Claude CHIRON	MUD LOGGING : GEOSERVICES	PRINTING DATE : 09 Mar 2011
Jr. FLAIR ENGINEERS : Mohammad NASRUL		

Clay-shale	Silty clay-shale	Slaty shale	Fine sand	Fine sandstone
Silt	Silstone	Limestone	Dolomite	Coal-lignite
Survey	Mud loss	Mud gain	Casing shoe	FIT or LOT




Geoservices
Geoservices
Geoservices
800
810
PC
820
830
840
PC
850
860
870
PC
880
890
PC
900
910
920
PC
930
MW: 10.0
FV: 54


PV/YP:18-24
Gels 10-12-14
pH: 9.00
Sol: 6.2
Chl: 48 k
950
PC
960
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990
1000
1010
PC
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1080
1090
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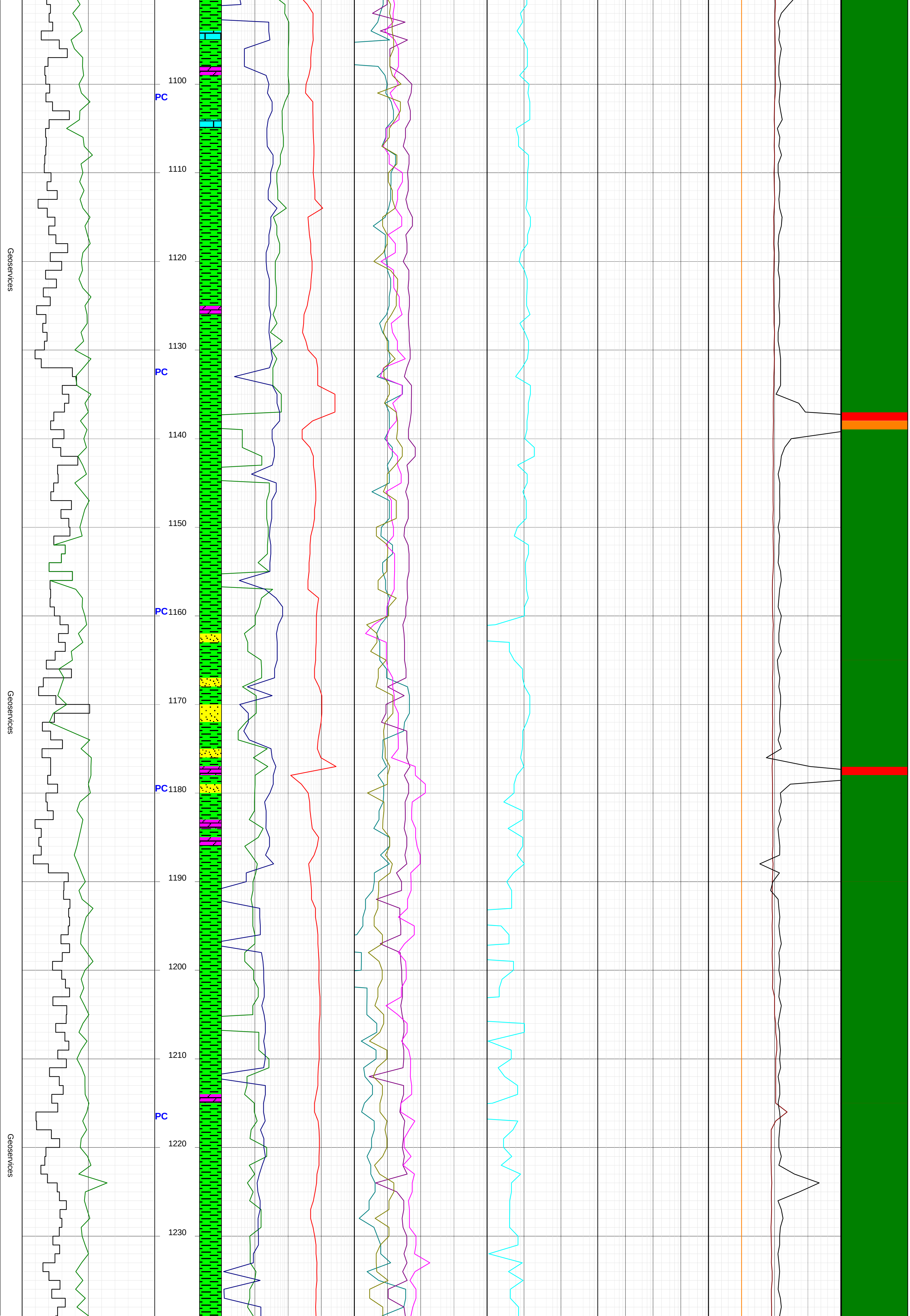
Geoservices
Geoservices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PC
1110
1120
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PC
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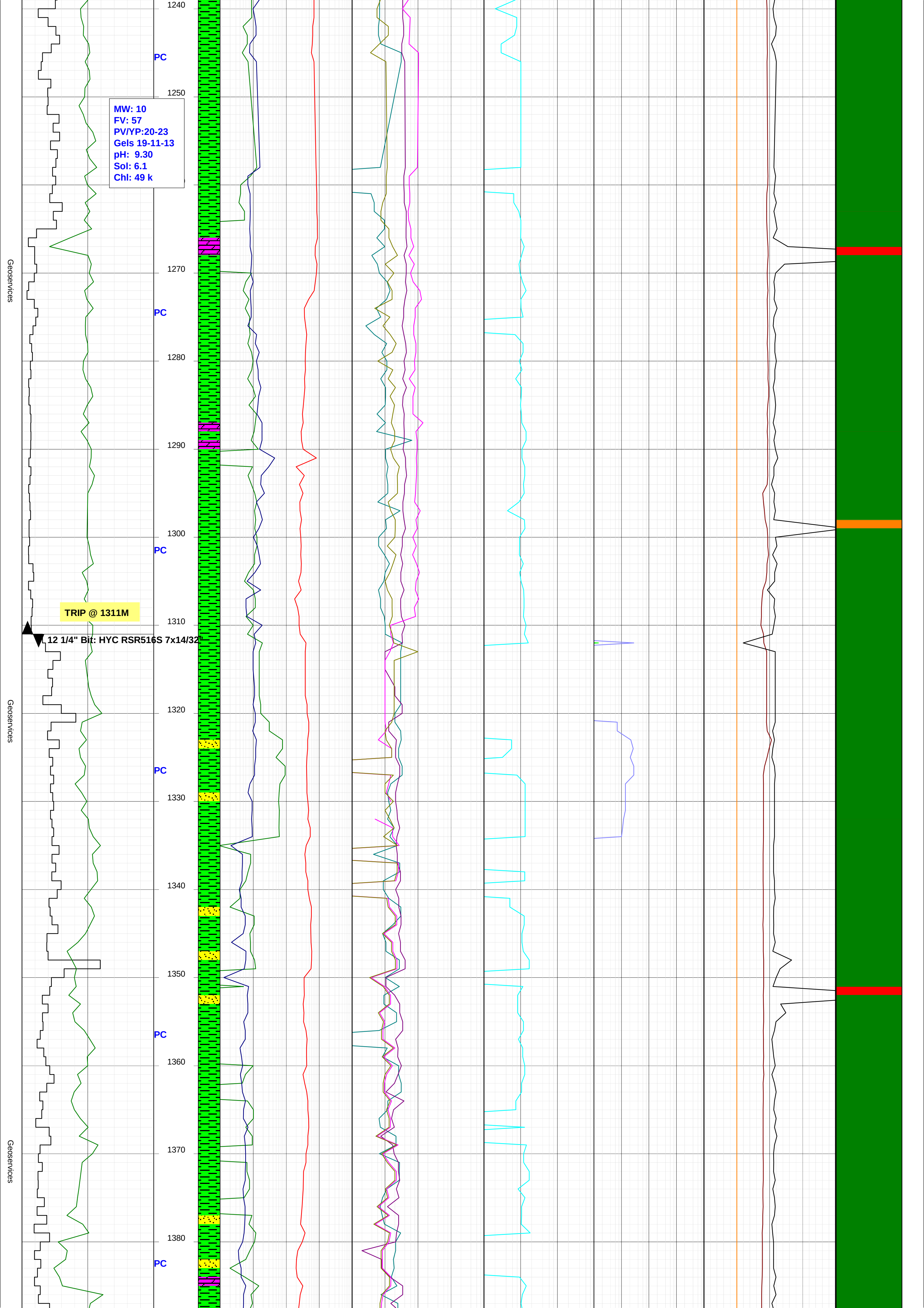
1190
1200
1210
PC
Geoservices
1220
1230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1240
PC
1250
MW: 10
FV: 57
PV/YP:20-23
Gels 19-11-13
pH: 9.30
Sol: 6.1
Chl: 49 k
1270
PC
1280
1290
1300
PC
TRIP @ 1311M
1310
12 1/4" Bit: HYC RSR516S 7x14/32"
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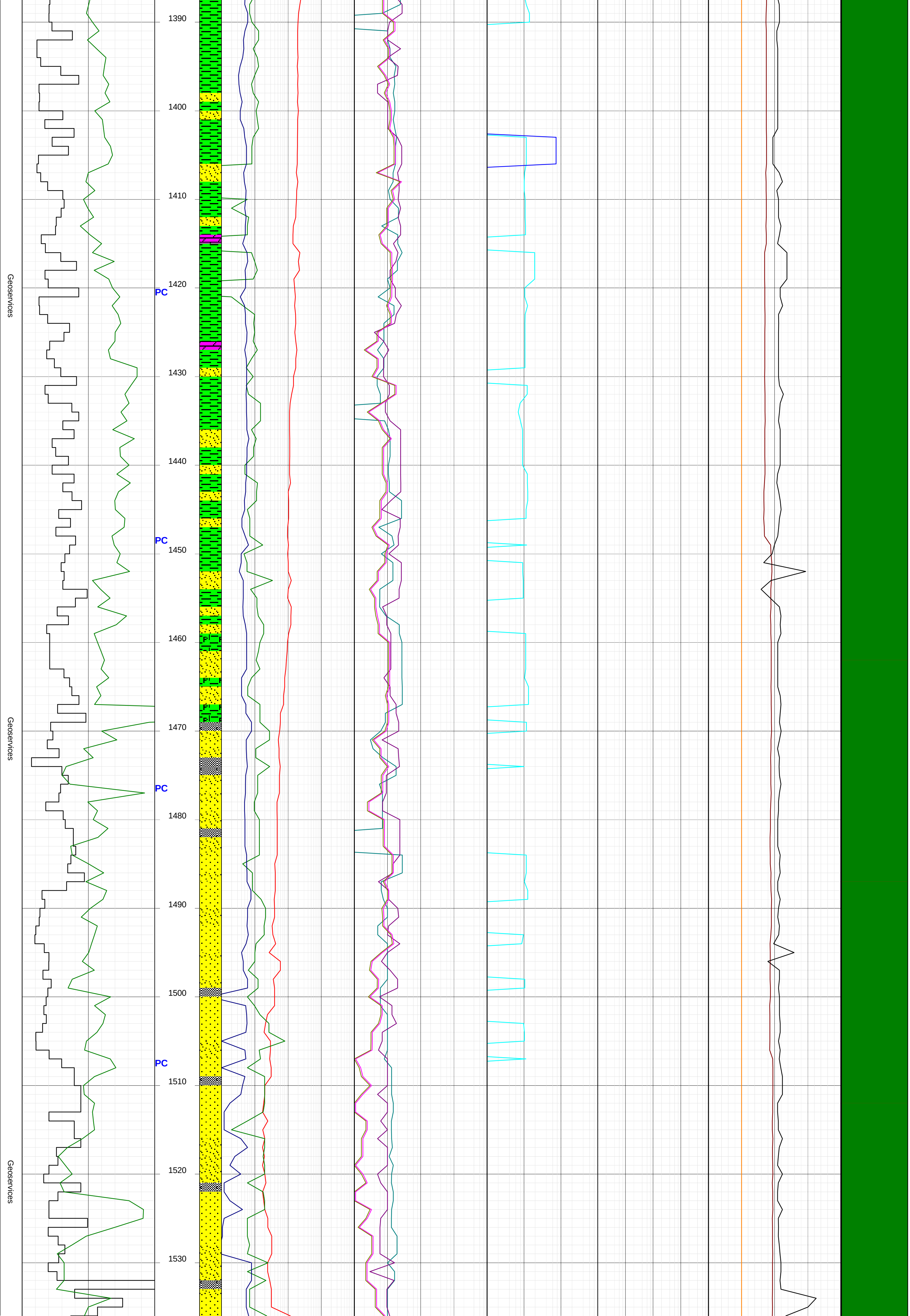
1370
1380
PC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Geoservices
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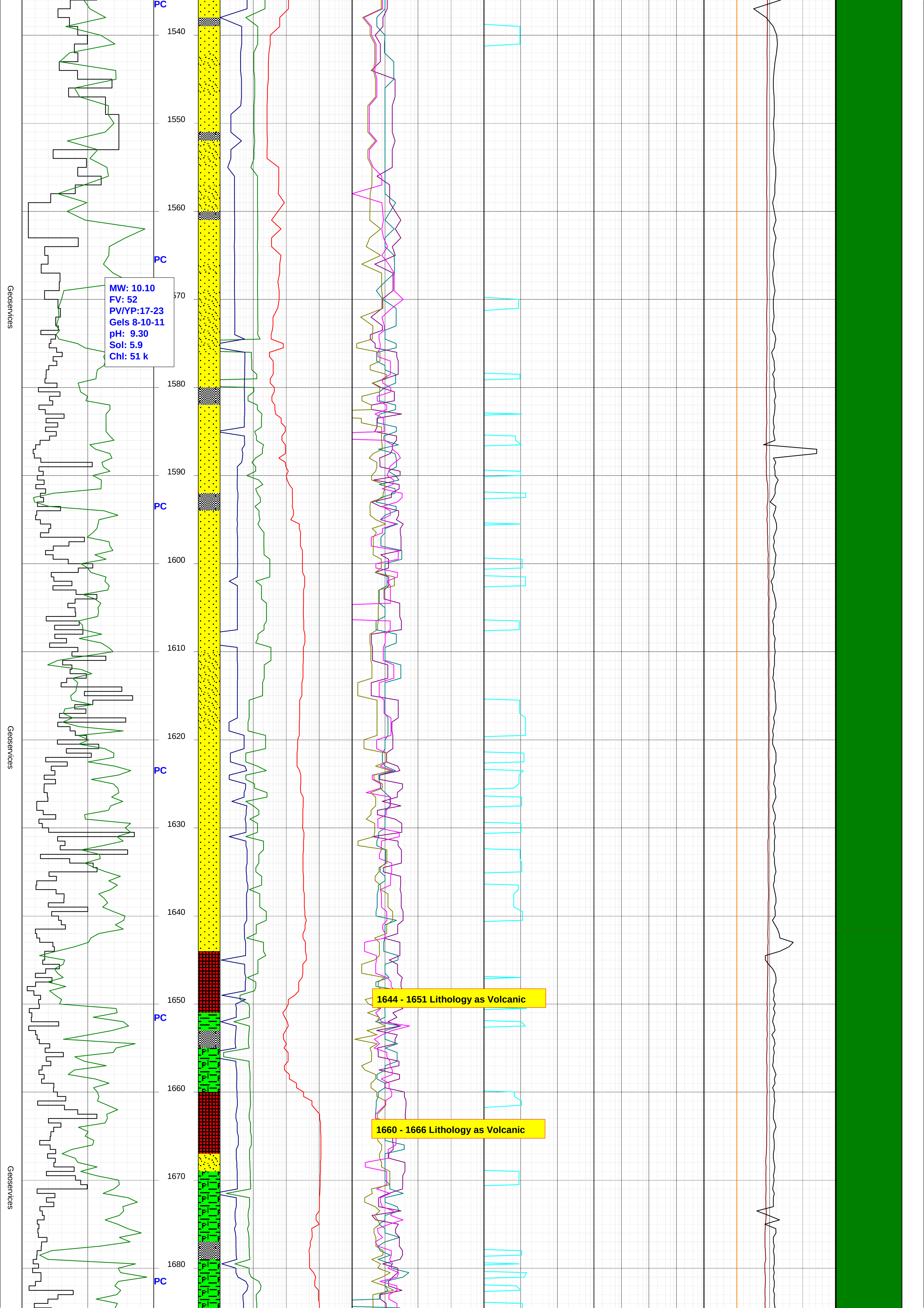
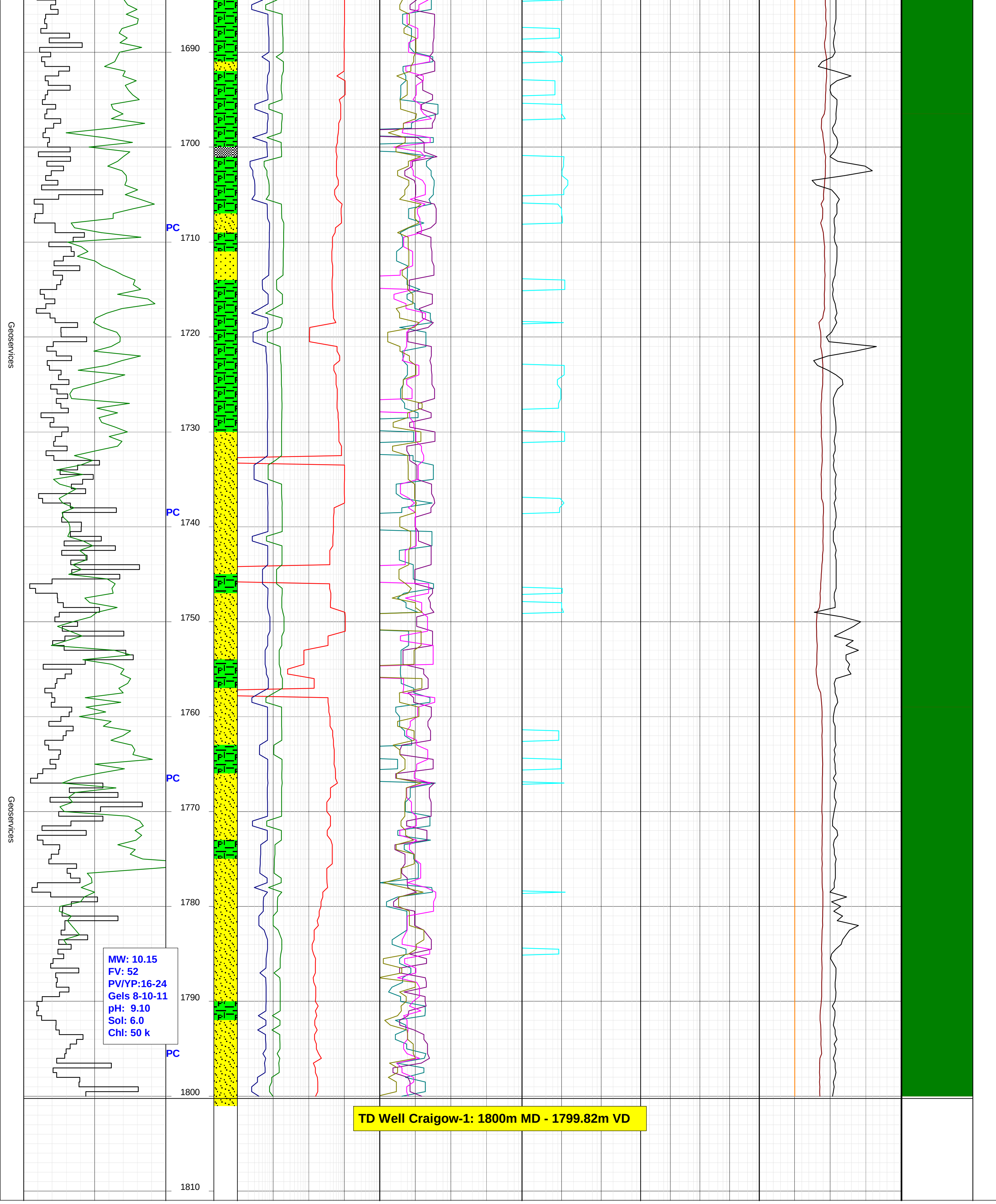


Geoservices
PC
1540
1550
1560
PC
MW: 10.10
FV: 52
PV/YP:17-23
Gels 8-10-11
pH: 9.30
Sol: 5.9
Chl: 51 k
1570
1580
1590
PC
1600
1610
Geoservices
1620
PC
1630
1640
1644 - 1651 Lithology as Volcanic
1650
PC
1660
1660 - 1666 Lithology as Volcanic
Geoservices
1670
1680
PC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1700
PC
1710
1720
1730
PC
1740
1750
1760
PC
1770
1780
MW: 10.15
FV: 52
PV/YP:16-24
Gels 8-10-11
pH: 9.10
Sol: 6.0
Chl: 50 k
1790
PC
1800
1810
Geoservices
Geoservices
TD Well Craigow-1: 1800m MD - 1799.82m VD