

W1008

WCR VOL 1

TRUMPETER - 1

W1008

PETROLEUM DIVISION

WELL COMPLETION REPORT

RB
TRUMPETER-1

VOLUME 1 14 FEB 1990

BASIC DATA

GIPPSLAND BASIN
VICTORIA

ESSO AUSTRALIA LIMITED

COMPILED BY:
M.J. MOORE

NOVEMBER 1989

TRUMPETER -1
WELL COMPLETION REPORT
VOLUME 1: BASIC DATA

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1. WELL DATA RECORD

TRUMPETER-1

LOCATION : Latitude : 38⁰ 24' 48.53" South
Longitude : 148⁰ 20' 57.41" East
X = 617798
Y = 5747430
Map Projection: UTM Zone 55
Geographical Location: Bass Strait,
Victoria
Field: Trumpeter

PERMIT : Vic/L5

ELEVATION : 21m

WATER DEPTH : 85m

TOTAL DEPTH : 3465.8m (Driller) 3468m (Logger)

PLUG BACK TYPE : Cement Plug (140m - 220m)

REASONS FOR
PLUGGING BACK : Plug and Abandon

MOVE IN : 06/09/89 1400 hours

SPUDDED : 08/09/89 0800 hours

REACHED T.D. : 05/10/89 1730 hours

RIG RELEASED : 12/10/89 1615 hours

OPERATOR : Esso Exploration and Production
Australia Inc.

PERMITTEE OR LICENCEE : Esso Exploration and Production Aust. Inc.
BHP Petroleum (Australia) Pty. Ltd.

ESSO INTEREST : 50%

OTHER INTEREST : BHP Petroleum (Australia) Pty. Ltd.: 50%

CONTRACTOR : South Seas Drilling Company

RIG NAME : Southern Cross

EQUIPMENT TYPE : Semisubmersible

TOTAL RIG DAYS : 36.5

DRILLING AFE NO. : 05-239007

TYPE COMPLETION : Plug and Abandon

WELL CLASSIFICATION : Before Drilling: New Field Wildcat
After Drilling: Dry Hole

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TRUMPETER-1 FINAL WELL REPORT
Operations Summary

1. MOVING/MOORING

After bolstering the No. 1 anchor at the Tarwhine location, the Southern Cross was towed by the MV Lady Caroline to the Trumpeter-1 location. The rig arrived in the proximity of the location at 1400 hours September 6, 1989, thus completing the 43nm tow in 10 hours at an average speed of 4.3kts. At this time, however, 16.50 hours were spent waiting on weather (40kt winds, 5m seas) prior to coming onto location and initiating the anchor running operation.

By 0630 hours September 7, 1989, the weather had abated and the rig was towed onto the Trumpeter-1 location. Anchor No. 1 was dropped by the rig, without a pendant or buoy fitted, then the remaining anchors were run by the MV's Torungen Supplier and Lady Caroline in 8.50 hours. No downtime was experienced during this operation. To attempt to alleviate the problems experienced on previous wells with the large 9MT SSDC marker buoys pulling the pendant lines around the anchors and causing fouling problems, a + 3 MT Esso owned marker buoy was fitted on anchor No. 7 for a trial.

Because the location was situated + 900m northeast of a 100m Fuel Gas pipeline, the RCV 225 was installed on the MV Canning Tide and used to monitor the pipeline while running the anchors. Additionally, to ensure that no anchors were placed in the 200m restricted zone surrounding the pipeline, the anchor pattern was modified with a 70o spread between anchors Nos. 4 and 5. The minimum amount of wire (+ 100m) was also run on these two mooring legs instead of the standard amount (+ 300m).

The rig was moved towards the called location and all anchors were load tested to 200 kips. After ballasting down and pretensioning all mooring lines to 100 kips, the TGB was run and landed at a seafloor depth of 106m RKB. The rig position was determined to be 8m on a bearing of 229o from the called location.

2. DRILLING OPERATIONS

a) 26" Hole/20" Casing

After setting the TGB, the 26" bit/26" hole opener BHA was made up and stabbed into the TGB, thus spudding the Trumpeter-1 well at 0800 hours September 8, 1989. The initial 26" hole was then drilled from 106m to 157m, at an average ROP of 12.8 mph, using seawater and high viscosity gel slugs to clean the hole. However, an unstable rock section at 148-157m could not be kept open; therefore, the bit and TGB were picked up above the seafloor, the rig was moved 18m on a bearing of 090o and the TGB was set back down. The Trumpeter-1 well was then respudded at 1800 hours September 8 and the 26" hole was redrilled from 106m to 227m, at an average ROP of 11.3 mph. At + 120m in the redrilled hole, a slightly unstable section was encountered. However, after increasing the RPM's from 120 to 170 and pumping high viscosity gel sweeps, the hole was drilled to TD without incident. After sweeping the hole with 100 bbls of high viscosity mud, an additional 100 bbl pill was spotted on bottom, a Totco was dropped and the bit was pulled to the seafloor. The Totco was recovered and the bit was RIH. No drag fill was encountered, 200 bbls of high viscosity mud was spotted in the hole at TD, then the drillstring was POOH to 120m, where an additional 100 bbls of high viscosity mud was spotted. The drillstring was then POOH to run casing.

- F1 -

Eight joints of 20", 94 ppf, X-56, LS casing, plus a crossover joint (129 ppf, LS x ALT-2) and the 24" pile joint/183/4" Vetco SG-5 wellhead were then run, with the 20" shoe at 222m. The casing was cemented in place, using a drillpipe stinger, with a lead slurry of 750sx of Class "G" cement plus 2.2% prehydrated gel and a tail slurry of 500sx of Class "G" neat cement. Slurry volume was designed to provide 200% excess above gauge hole volume, with the TOC at the seafloor.

The BOP stack was run and landed and the shear rams, wellhead connector and casing were tested to 500 psi.

b) 171/2" Hole/133/8" Casing

A 171/2" bit and pendulum BHA were then picked up and RIH to the TOC at 217m. The cement and 20" casing shoe were drilled and the 171/2" hole was drilled from 227m to 830m, at an average ROP of 24.6 mph, using a seawater/gel mud system. After dropping a Totco, a wiper trip was made to the 20" casing shoe, encountering a maximum of 45 kips overpull. The Totco was recovered and the bit was RIH. The hole was then circulated clean and a 100 bbl high viscosity gel pill was circulated conventionally while also pumping an additional 100 bbl pill through the kill line. This was designed to remove any debris from the wellhead landing shoulder and was implemented due to problems attempting to energize the 133/8" packoffs on the Mulloway-1 and Sweetlips-1 wells. The drillstring was then POOH and the BHC/GR/CAL log was run.

The wearbushing was then pulled and 58 joints of 133/8", 68 ppf, K-55, BTC casing, plus the float shoe/float collar joints (54.5 ppf) and the casing hanger pup joint (68 ppf) were run and landed with the shoe at 816m. The casing was cemented in place with 1000sx of Class "G" neat cement. The estimated TOC was calculated to be at 316m based on gauge hole diameter as per the caliper log. The top plug was bumped and the pressure was increased to 1500 psi to test the casing. Prior to attempting to energize the packoff, the annular was closed and 10 bbls of high viscosity mud was bullheaded into the annulus to help clean the wellhead sealing area. The packoff was then successfully energized, using a cementing kelly, and tested to 200/2000 psi. The BOP stack also tested to 200/2000 psi and the choke manifold was tested to 200/5000 psi.

c) 121/4" Hole

An S11J bit and pendulum BHA (stabilizers @ \pm 60ft and 90ft) were then RIH to the TOC at 786m. The cement plugs, float collar and cement were drilled to 809m, where a Phase I PIT was conducted to 1500 psi. The float shoe was drilled out and 6m of new hole was drilled to 836m, where a Phase II PIT was conducted to leakoff at 800 psi (15.2 ppg EMW).

The 121/4" hole was then drilled from 836m to 1165m, at an average ROP of 24.6 mph, where the bit was pulled due a decrease in ROP. Drag of up to 80 kips was experienced while pulling the first few stands.

Per the program, after making one rock bit run to drill out the casing shoe, it was planned to pick up a PDC bit and mud motor to drill the long section of Gippsland Limestone (base prognosed @ \pm 2100m) predicted in the well.

- F2 -

However, based on further economic evaluation necessitated by an increase in the previously quoted price of the motor, it was decided to run the PDC bit on a rotary assembly. After laying down the top stabilizer in the BHA, a Hycalog DS40 bit, which had previously been run for development drilling on EAL's Bream platform (718m drilled in 35.75 hours over two runs = 20.1 mph), was RIH. The bit was then used to drill the interval 1165-2468m at an average ROP of 15.0 mph. By drilling this 1303m interval, the bit established records for the most footage drilled by one bit and also the most hours run on one bit (86.75) for all wells drilled (44) in Bass Strait by the Southern Cross. As compared to the nearest offset well, the DS40 exhibited slightly improved ROP (15.0 mph vs. 13.5 mph) and replaced 3-4 conventional rock bit runs, resulting in an estimated cost savings of A\$ 100k. While drilling this section, drilling detergent was added to the mud system to help control "gumbo" related problems seen on offset wells in the Lakes Entrance formation and the mud system was converted to a 9.3 ppg \pm 6% KCL system at 2295m by diluting with a 20% KCL premix. Although the conversion to a KCL system was not included in the drilling program, which had been prepared prior to the Conger-1 and Blackback-1 wells, it was decided to build a KCL mud system on Trumpeter-1 to attempt to limit dispersion and strength degradation of the Lakes Entrance formation. This was deemed important due to the depth of the well and, consequently, the amount of time (\pm 20 days) the formation was programmed to be exposed. High torque and rotary stalling were experienced while drilling at about 1828m and at 1930-1937m associated with hard dolomitic streaks within the Gippsland Limestone and, after a drill break, the Top of Coarse Clastics was picked at 2443m (or about 42m low to prognosis). As predicted, the Latrobe was swept and the bit continued to drill 100% sandstone to 2468m, where the ROP declined sharply. The bit was then POOH and found to be 100% worn.

While drilling with the DS40 bit at 1337m, it was necessary to hang off and wait on weather for 12 hours (45kt winds, 8m seas). During this time, significant movement of the wellhead was noted and an inspection with the RCV 150 revealed that the PGB was located 1-11/2 ft above its landed position on the TGB. A crater was also noted around the TGB and it was evident that the pile joint was not cemented to the seafloor. After increasing the working tensions on the anchors from 100 kips to \pm 115 kips and increasing the riser tension from 180 kips to \pm 220 kips, the rig was repositioned to line up the wellhead and ball joint angles. Operations then proceeded as normal until the bit run was terminated, at which time a BOP stack test was due. At this time, in order to determine if the movement of the wellhead had imparted a sufficient load on the casing to cause the casing to part, a 133/8" RTTS packer was RIH to test the BOP stack and check for a casing leak. The packer was set at 394m (i.e., \pm 78m below the annular TOC) and the casing and BOP's were successfully tested to 200/1500 psi. The wearbushing was then pulled and inspected for damage. No damage was discovered; therefore, the wearbushing was rerun so that drilling operations could resume.

An Eastman Christensen R435 PDC bit, which has a slightly lower cutter density than the R437 bits used on the Blackback-1 well, was then picked up along with the MWD tool and RIH. After troubleshooting surface equipment problems with the MWD tool, which resulted in 2.75 hours of NPT (see EFR No.1), the assembly was RIH and four hours were spent logging the interval 2345-2468m.

After drilling the interval 2468-2680m, at an average ROP of 8.7 mph, however, the ROP dropped to below 6 mph while attempting to drill a dolomiticly cemented sandstone stringer. Because this failed to match the performance achieved on the nearest offset well with a conventional rock bit (J22), the R435 was POOH. The bit was graded as 65% worn and 1/16" undergauge after being run for 24.50 hours. An HP51A bit was then RIH to continue drilling. However, after drilling only 26m in 6.75 hours (ROP = 3.9 mph), the bit was POOH due to high torque which caused intermittent rotary stalling. Upon POOH, the bit was found to be 3/16" undergauge.

In an attempt to obtain longer bit life and to reduce torque associated with bits wearing on the gauge, a Smith F27DL bit, with diamond enhanced gauge protection, was picked up. A full gauge 121/4" stabilizer was also laid down and replaced with a 123/16" stabilizer. The bit and BHA were RIH and, after reaming undergauge hole at 2653-2662m and 2705-2706m, drilled the interval 2706-2890m at an average ROP of 4.2 mph. While drilling at 2745m, it was necessary to hang off and wait on weather for 12 hours (50kt winds, 11m seas). Prior to suspending drilling operations, movement of the wellhead was again noted and the anchor tensions were increased to + 120 kips, while the riser tension was increased to + 240 kips to attempt to reduce the motion. After the weather abated and, while drilling operations were underway, a string of 23/8" tubing was run through the mousehole to the seafloor. The bottom joint of tubing, which had been purposely bent on the surface, was then stabbed into the crater below the TGB, using RCV assistance, and the pile joint was grouted with a densified, accelerated cement slurry composed of 200sx of Class "G" cement with 2.4% CFR-2L friction reducer and 2% CaCl₂. Operations were then suspended for 4.50 hours to allow the cement to set while the pile joint was stationary. During this time, an RCV inspection revealed cement to be within 6" of the seafloor. Drilling operations then progressed to 2890m. At this time, the bit had been run for 43.50 hours and it was decided to POOH so that the bit could be retrieved to surface prior to the arrival of a forecast storm. The bit was POOH and graded 3-4-I.

After POOH, the weather was not as severe as forecast (35kt winds, 3m seas); therefore, the 133/8" RTTS packer was run for a scheduled BOP test and the casing and BOP's were successfully tested. During this time, no movement of the wellhead was observed.

After completing the BOP test, an HP51A bit was RIH to drill to the first objective (i.e., the T-1.1 sand) predicted at 3031m. One more F27DL bit was available in stock; however, it was decided to save the bit for deeper drilling where the chances of terminating the run to core was less. The HP51A then drilled the interval 2890-3037m in 29.50 hours, at an average ROP of 5.0 mph. The T-1.1 sand was picked at 3012m; however, no shows were observed and no cores were cut. After drilling to 3037m, the bit was POOH due to a torque increase and found to be 3/16" undergauge.

Because the next objective (i.e., the T-8 sand) was not predicted until 3311m, the second F27DL bit was RIH. After reaming undergauge hole at 3006-3037m, the bit drilled the interval 3037-3276m at an average ROP of 3.2 mph. Minor shows were observed while drilling this section and a sample was circulated up for geological analysis at 3149m. Maximum gas recorded in this interval was 25 units from a coal peak at 3273m. The bit run was terminated at 3276m due to decrease in ROP after a 74.50 hour run and the bit was POOH and graded 4-4-1/16".

Two runs with IADC type 5-3-7 bits were then required to deepen the 12 1/4" hole to 3393m. The first run, made with an ATJ33, drilled the interval 3276-3356m at an average ROP of 3.0 mph. This bit run penetrated the T-8 sand, which was picked at 3293-3346m; however, no shows were observed and no cores were cut. The bit was POOH due a torque increase and found to be 1/16" undergauge after being run for 26.50 hours. After reaming undergauge hole, an HP53A was used to drill to 3393m, where the bit was POOH due to a torque increase. After drilling only 37m in 12 hours (ROP=3.1 mph), the bit was POOH and found to be 1/4" undergauge. While drilling below the T-8 sand, parameters were monitored closely for any signs of abnormal pressure. However, since gas was negligible (maximum gas = 12.5 units from a coal peak at 3417m) and no other abnormal pressure parameters were observed, it was not deemed necessary to set 95/8" casing. Also, no hole problems were encountered, although the Lakes Entrance formation had been open for about 17 days while exposed to the relatively low degree of support provided by the 9.5 ppg mud weight.

Because of the lack of shows, the Exploration Department revised the TD from 3500m programmed to the first dull bit below 3450m. No new F27DL bits were available; however, it was decided to rerun the first F27DL, which had been run previously for 43.50 hours. Therefore, after reaming undergauge hole at 3353-3393m, the bit was used to drill to the TD of the well at 3465m. The rerun F27DL drilled this final 72m in 34 hours at an average ROP of 2.1 mph. The bit was POOH due to a decrease in ROP and was graded 6-4-1/8" after being run for a total of 77.50 hours.

After rigging up Schlumberger, electric logs were run as follows:

Run No. 1 = DLL/MSFL/LDL/CNL/BHC/SP/GR/CAL
Run No. 2 = RFT/GR (16 pressure pretests, 1 sample)
Run No. 3 = SHDT/GR
Run No. 4 = SAT
Run No. 5 = CST/GR (90 cores shot, 52 recovered)

Due to encouraging indications on the first log and on the RFT pretests, an RFT sample was taken at 3282.3m. The formation was tight and the RFT tool took over 90 minutes to fill; however, no indications of sticking were observed, despite the + 700 psi overbalance that existed at the time. A mixture of filtrate and formation water was recovered in both chambers of the RFT tool; therefore, the decision was made to permanently abandon the well as a dry hole.

3. PLUG AND ABANDONMENT

After completing final logs, open-ended drillpipe was RIH to abandon the well. Although hydrocarbons had not been recovered in the RFT, it was decided to set a cement plug across the zone that had been sampled because of the possible hydrocarbon indications on the logs. Therefore, the pipe was RIH to 3325m and a 100m balanced cement plug (P & A Plug No. 1) was set using 234sx of Class "G" cement with 1.0% HR6L retarder mixed in freshwater. The pipe was then pulled up to 2493m and 100m balanced cement plug (P & A Plug No. 2) was set across the Top of Latrobe using 234sx of Class "G" with 0.7% HR6L retarder mixed in freshwater. Plug No. 2 was later tagged with 15 kips at 2402m. A 100m balanced cement plug (P & A Plug No. 3) was then set at 866m, across the 133/8" casing shoe, using 276sx of Class "G" neat cement mixed in seawater. The plug was tagged at 762m with 15 kips and pressure tested to 1500 psi.

Schlumberger was rigged up and the 133/8" casing was cut at 192m using a Pengo explosive cutter. Schlumberger was rigged down, the wearbushing was retrieved and a spear was run. Seven joints of casing and a stub were then pulled and laid down.

Open-ended drillpipe was RIH and a 80m balanced cement plug (P & A Plug No. 4) was set across the 133/8" casing stub, from 220m to 140m, using 375sx of Class "G" neat cement mixed in seawater. After circulating the hole clean with seawater and laying down drillpipe, Plug No. 4 was pressure tested to 500 psi.

After pinning the inner barrel of the slip joint closed, 1.50 hours were spent waiting on weather (40kt winds, 3m seas) prior to pulling the BOP and riser. A mechanical cutter was then RIH and the 20" casing was cut at 118m or + 4m below the pile joint assembly ALT-2 connector. An 183/4" wellhead running tool and bumper sub were then RIH to attempt to engage and pull the wellhead. However, due to weather (55kt winds, 6m seas), the guide ropes parted while RIH and it was not possible to make up the running tool in the wellhead. A spear assembly was then run, the wellhead was engaged and the wellhead, PGB and TGB were retrieved and laid down. While POOH, 6 hours were spent waiting on weather (50 kt winds, 6m seas) to pull the wellhead assembly through the splash zone.

4. PULLING ANCHORS

After the rig was deballasted from drilling draft (48 ft) to transit draft (21 ft), the MV's Torungen Supplier and Lady Caroline retrieved the eight anchors in 13.75 hours. Included in this time was 2 hours of NPT which resulted when the winch shaft bearing cap bolts sheared while pulling anchor No. 6. Although all the pendants were fouled to some degree, including No. 7 where the small buoy was fitted, no downtime was charged because the pendants were able to be untangled out of the critical path. Under tow by the Lady Caroline, the rig departed for the Shell Judith-1 well at 1615 hours, October 12, 1989.

While deballasting/pulling anchors, a seabed survey of the location was conducted using the RCV 150 vehicle.

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TRUMPETER-1 FINAL WELL REPORT
CASING DATA

OD (In.)	WEIGHT (LB/FT)	GRADE	CONNECTION	LENGTH (M)	SHOE DEPTH (M-RKB)	CENTRALIZER POSITION	REMARKS
20	94	X-56	LS	12.40	222	NONE	FLOAT SHOE JOINT
20	94	X-56	LS	83.22		NONE	7 INTERMEDIATE JOINTS
20	129	X-56	LS x ALT-2	11.71		NONE	CROSSOVER JOINT
24	670	---	ALT-2	10.90 =====		NONE	WELLHEAD: VETCO SG-5, S/N 853070-1 (REFURBED AFTER USE ON CONGER-1)
13-3/8	54.5	K-55	BTC	11.56	816	1 W/ STOP RING	FLOAT SHOE JOINT
	68	K-55	BTC	11.65		1 ACROSS COLLAR	FLOAT JOINT
	54.5	K-55	BTC	11.98		1 W/ STOP RING	FLOAT COLLAR JOINT
	68	K-55	BTC	672.46		1 ACROSS FIRST THREE COLLARS	57 INTERMEDIATE JOINTS
	68	K-55	BTC	3.22 =====		NONE	CASING HANGER PUP JOINT -CSG HANGER: SG-5, TYPE T, S/N 291520-1 (LOCK RING REMOVED) -PACKOFF ASSY: SG-5, S/N 253520-4
				710.87			

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TRUMPETER-1 FINAL WELL REPORT
CEMENT DATA

DATE (1989)	TYPE JOB	INTERVAL (M-RKB)	TYPE CEMENT	VOLUME (SX)	SLURRY WEIGHT (PPG)	ADDITIVES	MIX WATER	REMARKS
09-Sep	20" PRIMARY LEAD		CLASS "G"	750	13.2	2.2% PHG	FW	CEMENT THROUGH DP STINGER. CMT VOLUME AS PER PROGRAM TO PROVIDE 200% EXCESS ABOVE GAUGE HOLE VOLUME W/ TOC @ SEAFLOOR.
09-Sep	20" PRIMARY TAIL	222-106	CLASS "G"	500	15.8	----	SW	
12-Sep	13-3/8" PRIMARY	816-316	CLASS "G"	1000	15.8	----	SW	CMT VOLUME BASED ON GAUGE HOLE DIAMETER PER THE CALIPER LOG. BUMPED PLUG WITH 1500 PSI.
24-Sep	20" WELLHEAD GROUT	---	CLASS "G"	255	16.5	2% CaCl ₂ 2.4% CFR-2L	FW	GROUT 26" x 20" ANNULUS THROUGH 2-3/8" TUBING WITH ACCELERATED, DENSIFIED SLURRY TO FILL UP VOID BELOW TGB.
08-Oct	P & A PLUG No.1	3325-3225	CLASS "G"	234	15.8	1.0% HR6L	FW	SET TO COVER POTENTIAL HYDRO - CARBON ZONE @ +/- 3282m.
08-Oct	P & A PLUG No.2	2493-2402	CLASS "G"	234	15.8	0.7% HR6L	FW	SET TO COVER THE TOP OF LATROBE PICKED @ 2443m. TAGGED WITH 15 KIPS.
08-Oct	P & A PLUG No.3	866-762	CLASS "G"	276	15.8	----	SW	SET ACROSS 13-3/8" CASING SHOE @ 816m. TAGGED W/ 15 KIPS, TESTED TO 1500 PSI.

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DATE (1989)	TYPE JOB	INTERVAL (M-RKB)	TYPE CEMENT	VOLUME (SX)	SLURRY WEIGHT (PPG)	ADDITIVES	MIX WATER	REMARKS
09-Oct	P & A PLUG No.4	220-140	CLASS "G"	375	15.8	---	SW	SET ACROSS 13-3/8" CASING STUB @ 192m. TESTED TO 500 PSI.

5. SAMPLES, SIDEWALL CORES

TRUMPETER-1

INTERVAL (m)

TYPE

830 - 3465

Cutting samples - 3 sets of washed and oven dried and
1 set of bagged air dried cuttings.

Samples from 830 - 2300 at 30m intervals.
Samples from 2300 - 3465 at 5m intervals.

830 - 3465

Unwashed composite tinned samples for geochemistry
collected at 30m/15m intervals.

2444 - 3468

Sidewall Cores, Shot 90.
Rec: 56, Bought: 53.

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6. WIRELINE LOGS AND SURVEYS
TRUMPETER-1

<u>TYPE AND SCALE</u>		<u>FROM(m)</u>	<u>TO(m)</u>
	<u>SUITE 1</u>		
BHC-CAL-GR	1:200 1:500	830.0	90.0
	<u>SUITE 2</u>		
DLL-MSFL-GR-SP-AMS	1:200 1:500	3463.5	814.5
BHC-GR-CAL	1:200 1:500	3440.5	814.5
LDL-CNL-GR	1:200 1:500	3458.0	2400.0
RFT (HP GAUGE PRETESTS)	(16 pretests/1 sample run)	3310.0	3282.0
SHDT-GR	1:200	3467.5	2400.0
VSP	(76 Levels)	3460.0	1750.0
CST-GR (SIDEWALL CORES)	(90 Shots)	3454.0	2444.0

7. SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - TRUMPETER-1

<u>TEST & SEAT NO.</u>	<u>DEPTH (METRES) K.B.</u>	<u>CHAMBER</u>	<u>RECOVERY (LITRES)</u>				<u>FORMATION WATER</u>	<u>MUD FILTRATE</u>	<u>HEWLETT-PACKARD FORMATION PRESSURE</u>		<u>HEWLETT-PACKARD HYDROSTATIC PRESSURE</u>		<u>REMARKS</u>
			<u>OIL</u>	<u>COND.</u>	<u>GAS</u>				<u>MPaa</u>	<u>Psia</u>	<u>MPaa</u>	<u>Psia</u>	
		Litres	Litres	Litres	m ³	Litres	Litres						
1/1	3285.0	Pretest						-	-	37.32	5412.1	Unable to seat	
1/2	3285.0	Pretest						-	-	37.33	5414.6	Tight	
1/3	3282.0	Pretest						32.58	4724.6	37.28	5407.2	Mod good/tight	
1/4	3284.5	Pretest						-	-	37.33	5413.7	Tight	
1/5	3298.0	Pretest						32.09	4653.5	37.47	5434.2	Good	
1/6	3305.0	Pretest						32.15	4662.7	37.54	5444.5	Good	
1/7	3310.0	Pretest						32.20	4669.6	37.59	5452.3	Good	
1/8	3284.0	Pretest						32.66	4737.1	37.30	5409.6	Tight, telemetry problem	
1/9	3284.0	Pretest						-	-	37.30	5409.9	Telemetry fault	
1/10	3282.0	Pretest						-	-	37.32	5412.5	Tight	
1/11	3282.2	Pretest						-	-	37.28	5407.3	Tight Dry	
1/12	3282.5	Pretest						32.53	4717.2	37.29	5408.2	Good/anomalous	
1/13	3283.0	Pretest						-	-	-	-	Telemetry problem	
1/14	3282.5	Pretest						-	-	37.30	5409.5	Tight	
1/15	3283.0	Pretest						-	-	37.28	5407.2	Telemetry problem	
1/16	3283.0	Pretest						-	-	37.31	5410.8	Plugged	
2/17	3282.3	22.7 10.4			0.002 0.0008	10 0.5		32.63	4731.9	37.27	5405.8	Mod tight	

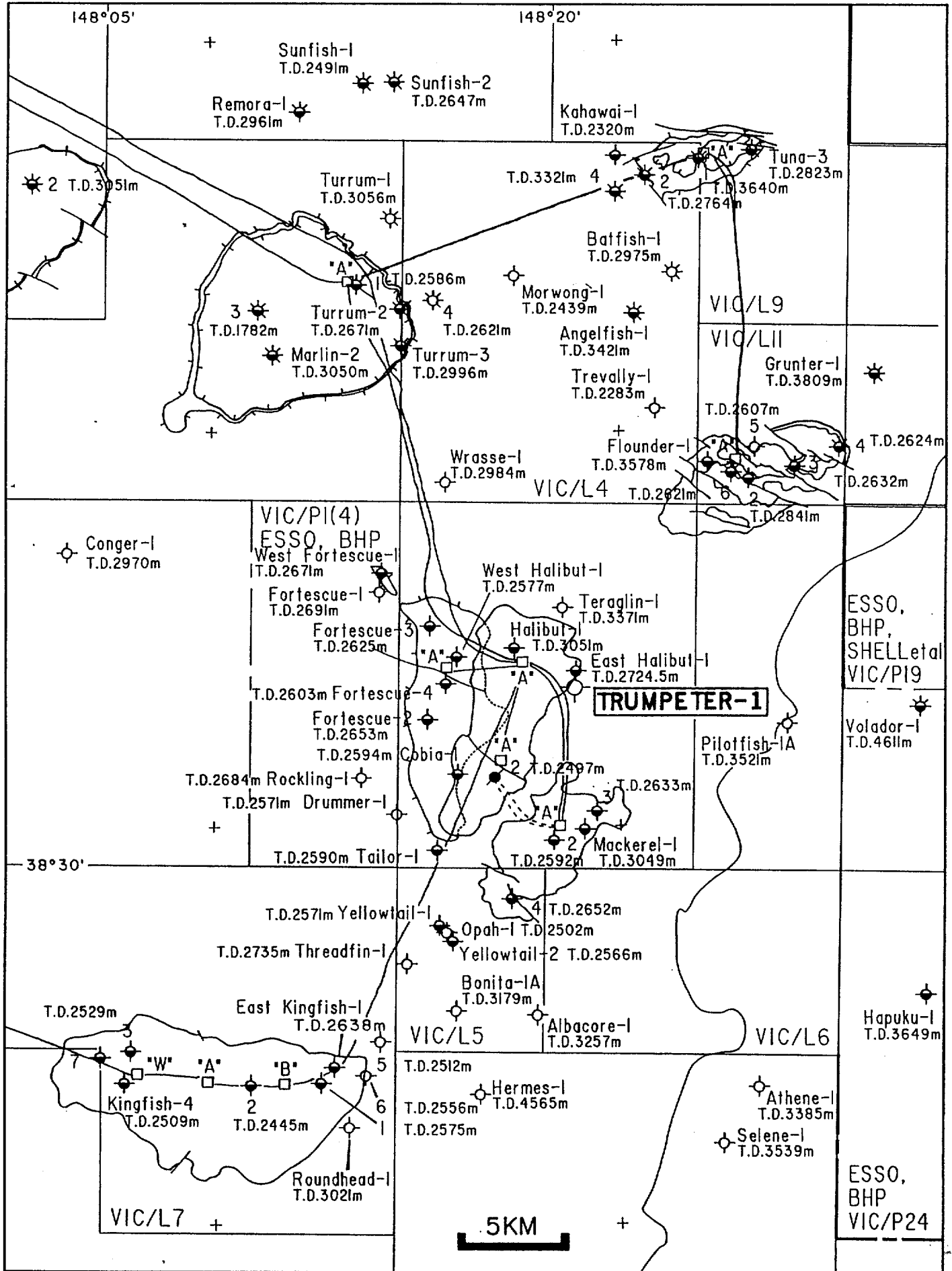
02890124

8. TEMPERATURE RECORD - TRUMPETER-1

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C°)	CIRCULATION TIME (t _k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER TEMPERATURE (C°)	GEOHERMAL GRADIENT (C°/km)
<u>Suite 1</u>						
BHC-CAL-GR	813.2	35.9	2H 15M(2.25)	7H (7.0)		
<u>Suite 2</u>						
DLL-MSFL-LDL-CNL-BHC-GR-SP	3432.5	95 } 96 } 102 } 95 }				
SHDT-GR	3457.1					
RFT-HP-GR	3301.1		2H 30M(2.5)			
VSP	3460.0					
CST's	No Thermometers Run				110.5°C	29.70°C/Km

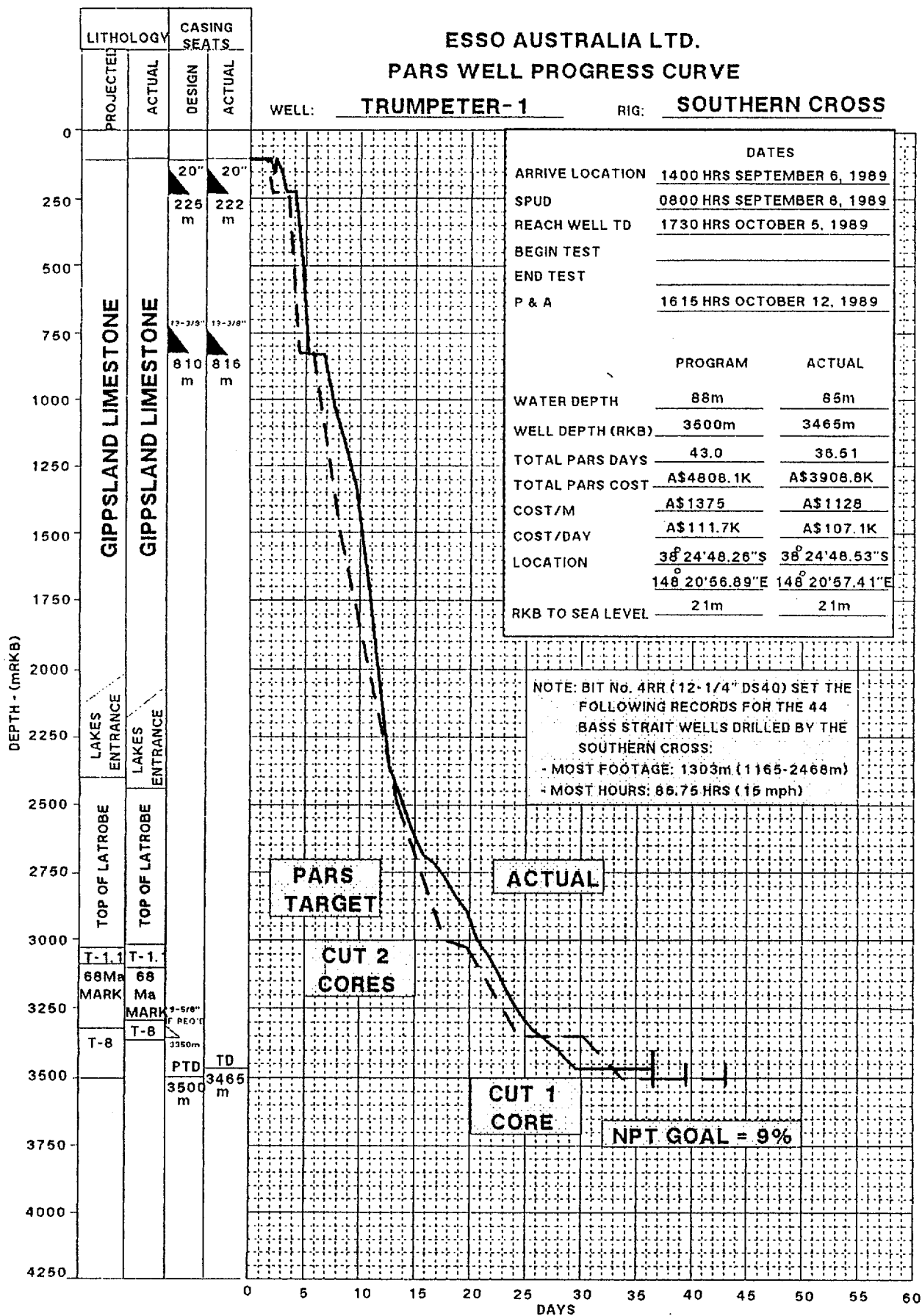
FIGURES

TRUMPETER-1 LOCATION MAP



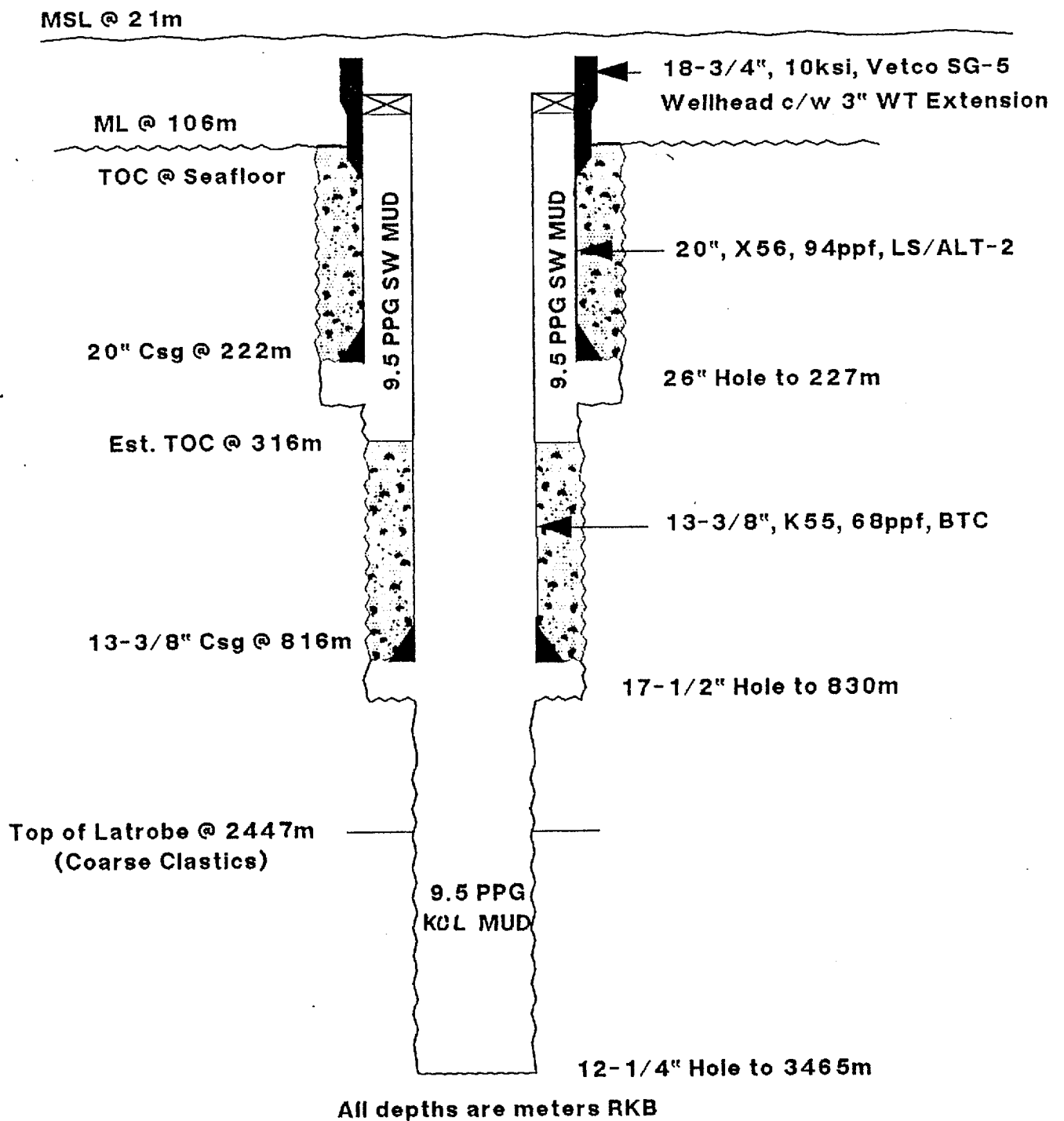
**ESSO AUSTRALIA LTD.
PARS WELL PROGRESS CURVE**

WELL: TRUMPETER-1 RIG: SOUTHERN CROSS



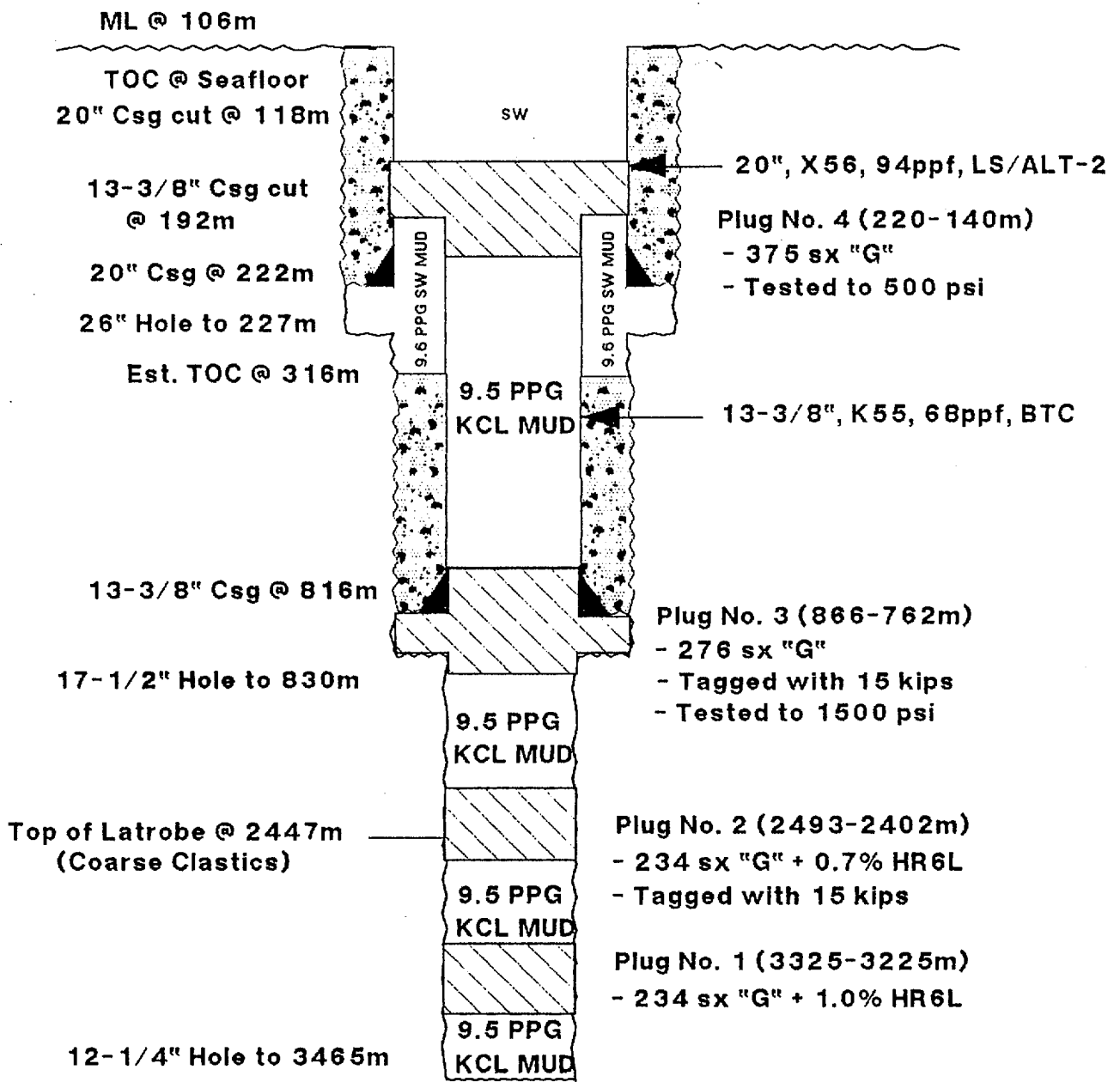
ESSO AUSTRALIA LTD.
TRUMPETER-1 FINAL WELL REPORT
WELLBORE SCHEMATIC

RKB



ESSO AUSTRALIA LTD.
TRUMPETER-1 FINAL WELL REPORT
WELLBORE ABANDONMENT SCHEMATIC

MSL @ 21m

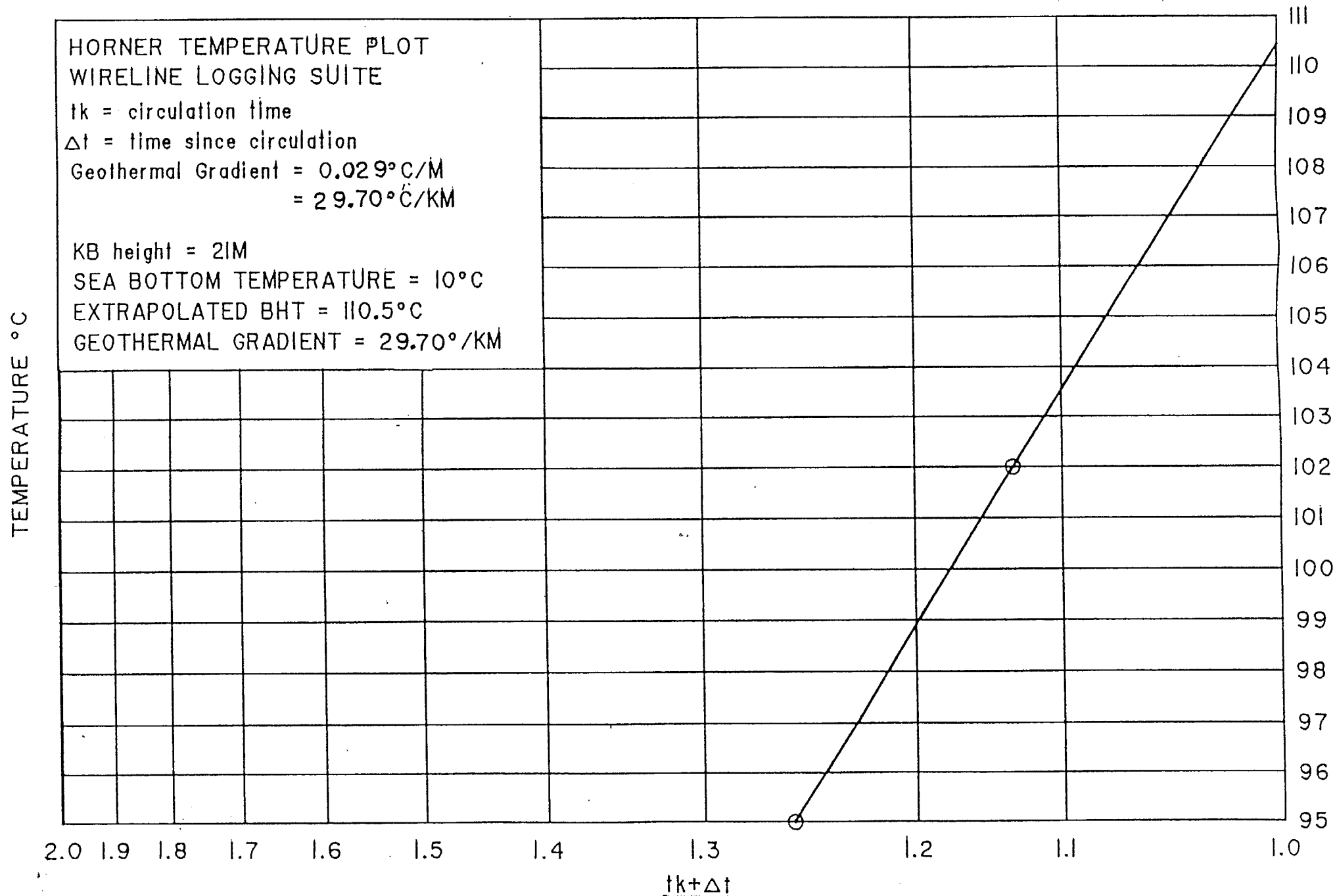


All depths are meters RKB

Primary Cement

P & A Cement

TRUMPETER-1



APPENDIX 1

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
1370	100	<u>LIMESTONE</u> : Light to medium grey, occasionally grey/brown, calcareous limestone, calcisiltite to occasionally calcarenite (very fine to fine, moderately sorted, subangular, common argillaceous matrix, common to abundant calcite cement), (Wackestone to occasional Packstone), trace forams, rare fleck very fine glauconite, very rare calcite, firm, moderately brittle, no fluorescence.
1370 - 1400	100	<u>LIMESTONE</u> : As above, predominantly calcarenite (as above, Packstone), trace crystalline calcite, trace very fine glauconite (black to very dark green), firm, brittle, no fluorescence.
1400 - 1430	100	<u>LIMESTONE</u> : As above, predominantly calcarenite (as above, Packstone), firm, brittle, no fluorescence.
1430 - 1460	100	<u>LIMESTONE</u> : As above, rare pyrite, no fluorescence.
1460 - 1490	100	<u>LIMESTONE</u> : As above, no fluorescence.
1490 - 1520	100	<u>LIMESTONE</u> : As above, predominantly calcarenite (as above, Packstone), very rare

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		quartz grains (very fine, moderately sorted, subrounded), trace dolomite, firm, brittle, no fluorescence.
1520 - 1550	100	<u>LIMESTONE</u> : As above, light grey to medium grey, occasionally dark grey, as above, no fluorescence.
1550 - 1580	100	<u>LIMESTONE</u> : As above, predominantly medium grey, firm, brittle.
1580 - 1610	100	<u>LIMESTONE</u> : As above, rare flecky very fine glauconite, firm, brittle.
1610 - 1640	100	<u>LIMESTONE</u> : As above, predominantly calcisiltite (Wackestone), occasionally medium to fine calcareous grains, trace to rare glauconite, firm, brittle.
1640 - 1670	100	<u>LIMESTONE</u> : As above, strong swelling argillaceous matrix, moderately firm, no fluorescence.
1670 - 1700	100	<u>LIMESTONE</u> : As above, calcisiltite to calcarenite (as above), trace peletal glauconite, firm, brittle.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
1700 - 1730	100	<u>LIMESTONE</u> : Occasionally mottled light and dark grey, predominantly medium grey, as above.
1730 - 1760	100	<u>LIMESTONE</u> : As above, predominantly calcarenite (as above = Packstone), trace forams and fossil fragments.
1760 - 1790	100	<u>LIMESTONE</u> : Light to medium grey, predominantly medium, calcareous limestone, calcisiltite to calcarenite, predominantly calcarenite (fine, occasionally medium, moderately sorted, subrounded to subangular, abundant argillaceous matrix and weak calcite cement), Packstone, trace forams, rare glauconite, trace fossil fragments, firm, slightly brittle, no fluorescence.
1790 - 1820	100	<u>LIMESTONE</u> : As above, predominantly calcarenite, trace to occasional common forams, firm, slightly brittle.
1820 - 1850	100	<u>LIMESTONE</u> : As above.
	Tr	<u>CLAYSTONE</u> : Light to medium grey, predominantly calcareous claystone, trace forams, trace fossil fragments, firm, brittle.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
1850 - 1880	100	<u>LIMESTONE</u> : Predominantly light grey, as above.
	Tr	<u>CLAYSTONE</u> : As above, grading in part to calcisiltite.
1880 - 1910	100	<u>LIMESTONE</u> : As above, common to occasionally abundant forams and fossil fragments, trace glauconite (peletal).
	Tr	<u>CLAYSTONE</u> : As above.
1910 - 1940	100	<u>LIMESTONE</u> : As above, common forams, trace glauconite, very rare subangular quartz grains, firm.
	Tr	<u>CLAYSTONE</u> : As above.
1940 - 1970	90	<u>LIMESTONE</u> : As above, common forams, rare petal glauconite, firm, no fluorescence.
	10	<u>CLAYSTONE</u> : As above, trace to common forams, moderately firm.
1970 - 2000	90	<u>LIMESTONE</u> : As above, firm, moderately brittle, no fluorescence.
	10	<u>CLAYSTONE</u> : As above, common to occasional abundant forams, very rare pyrite, firm.
2000 - 2030	95	<u>LIMESTONE</u> : As above, common forams, very rare glauconite, firm.
	5	<u>CLAYSTONE</u> : As above, common forams, firm.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2030 - 2060	95	<u>LIMESTONE</u> : As above, calcisiltite to calcilutite, predominantly mudstone, common forams.
	5	<u>CLAYSTONE</u> : As above, very calcareous, grading in part to calcisiltite, common forams.
2060 - 2090	80	<u>LIMESTONE</u> : As above, calcisiltite to calcilutite, predominantly mudstone, common forams.
	20	<u>CLAYSTONE</u> : As above, calcilutite, common to abundant forams, trace to occasional common pyrite.
2090 - 2120	60	<u>LIMESTONE</u> : Medium to predominantly light grey, calcareous limestone, calcisiltite to calcilutite, rare calcarenite (cavings), predominantly mudstone, common to occasional abundant forams, trace fossil fragments, very rare glauconite, moderately firm, occasionally soft, no fluorescence.
	40	<u>CLAYSTONE</u> : Light to medium grey, predominantly calcilutite, grading in part to calcisiltite, common forams, common to trace fossil fragments, trace to occasional common (in some grains) pyrite (very fine and disseminated), soft, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2120 - 2150	50	<u>LIMESTONE</u> : As above, common forams.
	50	<u>CLAYSTONE</u> : As above, trace disseminated fine pyrite, common forams, trace sponge spicules, soft.
2150 - 2180	50	<u>LIMESTONE</u> : As above, rare calcarenite, predominantly mudstone, common forams, firm.
	50	<u>CLAYSTONE</u> : As above, common forams, soft, trace pyrite.
2180 - 2210	40	<u>LIMESTONE</u> : As above, predominantly calcilutite (mudstone), common forams, firm to slightly soft.
	60	<u>CLAYSTONE</u> : As above, common forams, trace pyrite, trace fossil fragments, soft.
2210 - 2240	60	<u>CLAYSTONE</u> : As above, rare flecky disseminated fine glauconite, common forams.
	40	<u>LIMESTONE</u> : As above, common forams, trace pyrite, very rare coarse Fe-stained quartz grains.
2240 - 2270	60	<u>CLAYSTONE</u> : As above, common forams, trace to occasional common pyrite (fine and disseminated), trace very fine laminae.
	40	<u>LIMESTONE</u> : As above, trace sponge spicules, common forams, trace pyrite, soft.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2270 - 2300	70	<u>CLAYSTONE</u> : As above, common forams, trace pyrite, trace very fine laminae, soft.
	30	<u>LIMESTONE</u> : As above, common forams, soft.
2300 - 2305	80	<u>CLAYSTONE</u> : As above, common forams, very rare flecky glauconite, soft.
	20	<u>LIMESTONE</u> : As above, (cavings).
2305 - 2310	100	<u>CLAYSTONE</u> : As above, common to occasional abundant forams, trace to rare flecky fine glauconite, soft.
	Tr	<u>LIMESTONE</u> : As above.
2310 - 2315	100	<u>CLAYSTONE</u> : As above, common forams, soft.
2315 - 2320	100	<u>CLAYSTONE</u> : Light to medium grey, occasionally medium grey/green, very calcareous lutite, occasionally grading to calcisiltite, common to abundant fine forams, trace fossil fragments, echinoid spines, trace pyrite (very fine and disseminated), soft to occasionally firm, no fluorescence.
2320 - 2325	100	<u>CLAYSTONE</u> : As above, trace to common disseminated medium calcarenite grains in claystone.
2325 - 2330	100	<u>CLAYSTONE</u> : As above, decreased abundance of forams.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2330 - 2335	100	<u>CLAYSTONE</u> : As above, occasionally medium grey/grey, common forams, soft.
2335 - 2340	100	<u>CLAYSTONE</u> : As above, trace to common forams, trace pyrite.
2340 - 2345	100	<u>CLAYSTONE</u> : As above, common very fine forams, rare pyrite.
2345 - 2350	100	<u>CLAYSTONE</u> : As above, rare forams, very rare pyrite, rare flecky pale green glauconite, soft.
2350 - 2355	100	<u>CLAYSTONE</u> : As above, soft, no fluorescence.
2355 - 2360	100	<u>CLAYSTONE</u> : As above.
2360 - 2365	100	<u>CLAYSTONE</u> : As above, rare forams, rare pyrite, trace to rare fossil fragments, soft, no fluorescence.
2365 - 2370	100	<u>CLAYSTONE</u> : As above, trace flecky pale green glauconite.
2370 - 2375	100	<u>CLAYSTONE</u> : As above, rare medium to coarse light green peletal glauconite.
2375 - 2380	100	<u>CLAYSTONE</u> : As above, soft, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2380 - 2385	100	<u>CLAYSTONE</u> : As above, no fluorescence.
2385 - 2390	100	<u>CLAYSTONE</u> : As above.
	Tr	<u>SILTSTONE</u> : Medium brown, predominantly calcareous, argillaceous, calcareous cement, trace forams, trace brown argillaceous clasts, moderately hard, brittle, no fluorescence.
2390 - 2395	100	<u>CLAYSTONE</u> : As above.
2395 - 2400	100	<u>CLAYSTONE</u> : Light to medium grey, occasionally pale grey/brown, very rare carbonaceous flecks, very rare petal glauconite, trace to common forams, trace to rare disseminated pyrite, soft.
	Tr	<u>SILTSTONE</u> : Light grey to medium grey/brown, calcisiltite to calcilutite, trace forams, very rare carbonaceous flecks, firm to moderately hard, brittle.
2400 - 2405	100	<u>CLAYSTONE</u> : As above, trace to common forams.
2405 - 2410	100	<u>CLAYSTONE</u> : As above, common forams, trace to rare carbonaceous flecks.
2410 - 2415	100	<u>CLAYSTONE</u> : As above, very rare subrounded fine quartz grains, trace to common forams, soft.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2415 - 2420	100	<u>CLAYSTONE</u> : As above, trace peletal, pale to medium green, very rare quartz grains.
2420 - 2425	100	<u>CLAYSTONE</u> : As above.
2425 - 2430	100	<u>CLAYSTONE</u> : As above, very rare glauconite, trace forams, soft.
2430 - 2435	100	<u>CLAYSTONE</u> : As above, trace carbonaceous flecks, trace forams.
2435 - 2440	95	<u>CLAYSTONE</u> : As above, soft.
	5	<u>SILTSTONE</u> : As above, common disseminated coarse calcareous clastic fragments, moderately hard, brittle.
2440 - 2445	70	<u>CLAYSTONE</u> : As above, soft (cavings).
	20	<u>SANDSTONE</u> : Off white to predominantly clear, clear to buff (oxidised iron staining), generally loose, very coarse to coarse grained, moderate to poorly sorted, well rounded, trace to common pyritic cement, common argillaceous matrix, common peletal (medium to dark green) glauconite, common pyrite, moderate inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	10	<u>SILTSTONE</u> : Medium to light brown, predominantly arenaceous, trace to common calcareous cement, common to abundant argillaceous matrix, common peletal glauconite, common pyrite (disseminated), moderately hard, blocky, brittle, no fluorescence.
2445 - 2450	100	<u>SANDSTONE</u> : Off white to clear, predominantly white, clear to white, generally loose, very coarse to occasionally medium, predominantly very coarse grained, occasionally conglomeratic, poorly sorted, subrounded to rounded, common bit fractured grains, no observable matrix, trace silica cement, trace to common pyrite, trace peletal, medium green to black glauconite, excellent inferred porosity, no fluorescence.
2450 - 2455	100	<u>SANDSTONE</u> : White to off white, clear to predominantly white, generally loose and clean, very coarse to medium grained, predominantly very coarse to conglomeratic, moderate to poorly sorted, well rounded, trace to common bit fractured grains, trace silica cement, trace pyrite, trace peletal glauconite, trace well rounded coarse lithic fragments, excellent inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2455 - 2460	100	<u>SANDSTONE</u> : As above, trace pyrite, trace peletal glauconite, trace feldspars, excellent inferred porosity, no fluorescence.
2460 - 2465	100	<u>SANDSTONE</u> : As above, common frosted well rounded grains, trace bit fractured grains, trace silica cement, trace pyrite associated with pitting on some grains, rare glauconite, excellent inferred porosity, no fluorescence.
2465 - 2470	60	<u>CALCAREOUS SILTSTONE</u> : Light to medium grey, predominantly calcareous siltstone, common calcareous cement, trace glauconite, trace pyrite, moderately hard to firm, friable to brittle (cavings).
	40	<u>SANDSTONE</u> : (i) As above, trace glauconite, trace pyrite, excellent inferred porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) Clear to white, fine to medium, predominantly fine, moderately sorted, subangular to subrounded, trace to common silica cement, trace to common dolomitic cement, common glauconite, trace coal fragments, trace to common pyrite (disseminated), poor porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	Tr	<u>SILTSTONE</u> : Medium brown, arenaceous to argillaceous, trace silica cement, common argillaceous matrix, trace pyrite, trace fine disseminated quartz grains, trace glauconite, trace coal clasts, moderately hard, brittle, no fluorescence.
2470 - 2475	50	<u>CALCAREOUS SILTSTONE</u> : As above, cavings.
	20	<u>SANDSTONE</u> : (i) As above, common frosted well rounded grains, excellent inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) White to buff, clear to off white, as above, common pyrite, common glauconite, common argillaceous matrix, poor inferred porosity, trace dull orange mineral fluorescence.
	10	<u>SILTSTONE</u> : Medium brown to grey/brown, as above, common disseminated well cemented quartz aggregates (fine, subangular, moderately sorted grains), trace dull orange mineral fluorescence.
2475 - 2480	90	<u>SANDSTONE</u> : (i) As above, common bit fractured grains, excellent inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, common argillaceous matrix, common dolomitic/silica cement, moderately hard to hard, trace pyrite, trace

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		muscovite mica, poor inferred porosity, trace dull orange dolomitic mineral fluorescence.
	5	<u>CLAYSTONE</u> : As above, cavings.
2480 - 2485	60	<u>SANDSTONE</u> : (i) White to off white to clear, loose and clean, very coarse to medium, predominantly very coarse grained, common fracturing and pitting on grains, moderate to poorly sorted, subrounded to rounded, rare pyrite, excellent inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) Off white to buff to clear well consolidated, medium to very fine, predominantly fine, moderately sorted, subangular to subrounded, common dolomitic cement, trace siliceous cement, common argillaceous matrix, hard, trace to common pyrite, trace glauconite, poor visual porosity, trace dull orange mineral fluorescence ("dolomite").
	10	<u>SILTSTONE</u> : Medium brown, arenaceous to argillaceous, trace dolomitic cement, trace siliceous cement, common argillaceous matrix, common pyrite, trace carbonaceous flecks, hard, blocky.
	10	<u>COAL</u> : Black to dark brown, dull to subvitreous, common dark brown silty laminae, grading in part to carbonaceous siltstone, occasionally woody fragments, hard, blocky.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	10	<u>CLAYSTONE</u> : As above, cavings.
2485 - 2490	80	<u>SANDSTONE</u> : (i) As above, common frosted well rounded grains, excellent inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, very poor porosity, rare dull orange mineral fluorescence.
	10	<u>SILTSTONE</u> : As above, common carbonaceous flecks and grading in part to carbonaceous siltstone, hard, blocky.
	5	<u>CLAYSTONE</u> : As above, cavings.
2490 - 2495	70	<u>SANDSTONE</u> : (i) As above, trace pyrite on pitted faces, excellent inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) As above, common to abundant dolomitic cement, trace silica cement, very poor visual porosity, no fluorescence.
	10	<u>SILTSTONE</u> : As above, grading in part to carbonaceous siltstone, hard, blocky.
	10	<u>CLAYSTONE</u> : As above, cavings.
2495 - 2500	60	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	25	<u>SANDSTONE</u> : (ii) As above, abundant dolomitic/silica cement, very poor visual porosity, no fluorescence.
	10	<u>SILTSTONE</u> : As above, grading in part to carbonaceous siltstone and occasionally to

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		very fine sandstone, common interlaminae of sandstone (ii) and carbonaceous laminae, abundant carbonaceous flecks, common muscovite mica, hard, blocky.
	5	<u>CLAYSTONE</u> : As above, cavings.
2500 - 2505	50	<u>SANDSTONE</u> : (i) Clear to off white to white, generally loose and clean, very coarse to fine, predominantly very coarse grained, moderate to poorly sorted, commonly well rounded, common bit fractured grains, trace silica cement and quartz overgrowths, very rare pyrite, excellent inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) Off white to light brown, clear to buff grains, well consolidated, medium to very fine, predominantly fine grained, moderately sorted, subangular to subrounded, common disaggregated by bit, common abundant dolomite and silica cement, common argillaceous and arenaceous matrix, very hard to hard, trace pyrite, trace muscovite mica, very poor visual porosity, no fluorescence.
	30	<u>SILTSTONE</u> : Medium to dark brown, arenaceous to argillaceous, trace dolomite cement, common to abundant argillaceous matrix, trace pyrite, trace to common muscovite mica,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		common carbonaceous flecks, grading in part to carbonaceous siltstone, blocky, hard.
	Tr	<u>CLAYSTONE</u> : (cavings).
2505 - 2510	40	<u>SANDSTONE</u> : (i) As above, common bit fractured grains, excellent inferred porosity, no fluorescence.
	30	<u>SANDSTONE</u> : (ii) As above, abundant dolomite and silica cement, very poor visual porosity, trace dull orange and dull yellow/green fluorescence (mineral).
	25	<u>SILTSTONE</u> : As above.
	5	<u>COAL</u> : Black to dark brown, dull to subvitreous, brittle, uneven fracture, grading in part to carbonaceous siltstone, hard, blocky.
2510 - 2515	40	<u>SANDSTONE</u> : (ii) As above, moderate to poor inferred porosity, no fluorescence.
	40	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	15	<u>SILTSTONE</u> : As above.
	5	<u>CLAYSTONE</u> : As above, (cavings).
	Tr	<u>COAL</u> : As above.
2515 - 2520	80	<u>SANDSTONE</u> : (ii) As above, moderate to occasionally good inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	10	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above, abundant carbonaceous flecks, blocky, hard.
	5	<u>CLAYSTONE</u> : As above, cavings.
	Tr	<u>COAL</u> : As above.
2520 - 2525	80	<u>SANDSTONE</u> : (ii) As above, moderate inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above.
	10	<u>CLAYSTONE</u> : As above.
	Tr	<u>COAL</u> : As above.
2525 - 2530	80	<u>SANDSTONE</u> : (ii) Clear, white to light brown, very fine to fine grained, well consolidated, occasional aggregates, subangular to subrounded, moderate to well sorted, common silica cement, common to minor argillaceous matrix, trace mica, poor visual porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) Clear to frosted, white, medium to very coarse, predominantly very coarse grained, subrounded to rounded, occasionally bit fractured, minor silica cement and quartz overgrowths, good to excellent inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SILTSTONE</u> : Grey to grey/brown, arenaceous to argillaceous, dolomite in parts, micromica in parts, occasional carbonaceous flecks, blocky, hard.
	5	<u>CLAYSTONE</u> : Light grey to buff, argillaceous.
2530 - 2535	10	<u>SANDSTONE</u> : (ii) As above, no fluorescence.
	5	<u>SANDSTONE</u> : (i) As above, no fluorescence.
	80	<u>SILTSTONE</u> : Grey to grey brown, arenaceous to argillaceous, strongly calcareous, micromica in part, occasional carbonaceous flecks, subfissile to blocky, hard.
	5	<u>CLAYSTONE</u> : As above.
2535 - 2540	90	<u>SANDSTONE</u> : (i) Clear, white, medium to very coarse, predominantly coarse grained, subangular to subrounded, common bit fractured grains, common silica cement, quartz overgrowths, fair visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) Clear, white to light grey, medium to fine, predominantly fine grained, subangular to subrounded, fair visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above.
2540 - 2545	90	<u>SANDSTONE</u> : (i) As above, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SILTSTONE</u> : As above, minor pyrite.
2545 - 2550	95	<u>SANDSTONE</u> : (i) As above, good to excellent visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
2550 - 2555	95	<u>SANDSTONE</u> : (i) As above, good to excellent visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, good to excellent visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
2555 - 2560	100	<u>SANDSTONE</u> : Clear, white, fine to very coarse, predominantly coarse grained, subrounded to rounded, moderately well sorted, occasional bit fractured grains, silica cement, quartz overgrowths, excellent visual porosity, no fluorescence.
2560 - 2565	100	<u>SANDSTONE</u> : As above, becoming coarse to very coarse, predominantly coarse grained, common quartz overgrowths, trace pyrite, good visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
2565 - 2570	100	<u>SANDSTONE</u> : As above, subrounded to rounded, good to excellent visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	Tr	<u>SILTSTONE</u> : As above.
2570 - 2575	100	<u>SANDSTONE</u> : As above, no fluorescence.
2575 - 2580	100	<u>SANDSTONE</u> : As above, medium to very coarse, predominantly coarse grained, clear, white to very light grey, good to excellent visual porosity, no fluorescence.
2580 - 2585	100	<u>SANDSTONE</u> : Clear to off white, predominantly white grains, loose and clean, fine to very coarse, predominantly very coarse grained, moderately sorted, subangular to predominantly rounded, common bit fractured grains, silica cement and common quartz overgrowths, trace pyrite, minor very hard aggregates, good to excellent inferred porosity, no fluorescence.
2585 - 2590	100	<u>SANDSTONE</u> : As above, excellent inferred porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
	Tr	<u>CLAYSTONE</u> : As above, (cavings).
2590 - 2595	95	<u>SANDSTONE</u> : As above, excellent inferred porosity, no fluorescence.
	5	<u>CLAYSTONE</u> : As above, cavings.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2595 - 2600	95	<u>SANDSTONE</u> : As above, excellent inferred porosity, no fluorescence.
	5	<u>CLAYSTONE</u> : As above, cavings.
2600 - 2605	100	<u>SANDSTONE</u> : As above, excellent inferred porosity, no fluorescence.
	Tr	<u>CLAYSTONE</u> : As above, cavings.
2605 - 2610	100	<u>SANDSTONE</u> : As above, trace pyrite, common quartz overgrowths, excellent inferred porosity, no fluorescence.
	Tr	<u>CLAYSTONE</u> ; As above, cavings.
2610 - 2615	95	<u>SANDSTONE</u> : As above, trace pyrite, rare coarse muscovite mica, excellent inferred porosity, no fluorescence.
	5	<u>CLAYSTONE</u> : As above, cavings.
2615 - 2620	85	<u>SANDSTONE</u> : Clear to off white to white, generally loose and clean, fine to very coarse, predominantly coarse grained, moderate to poorly sorted, subangular to predominantly subrounded, trace silica cement, trace quartz overgrowths, rare aggregates, very hard, trace pyrite, moderate to occasionally very good porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SILTSTONE</u> : Buff to light brown, predominantly arenaceous, trace dolomite and silica cement, common argillaceous matrix, trace pyrite, trace micromica, grading in part to very fine silty sandstone, hard, blocky.
	10	<u>CLAYSTONE</u> : Light to medium grey, calcareous argillaceous, (cavings).
2620 - 2625	90	<u>SANDSTONE</u> : As above, common bit fractured grains, moderate to good inferred porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above, hard, blocky.
	5	<u>CLAYSTONE</u> : As above, cavings.
2625 - 2630	100	<u>SANDSTONE</u> : As above, abundant bit fractured grains, good to excellent inferred porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
	Tr	<u>CLAYSTONE</u> : As above.
2630 - 2635	95	<u>SANDSTONE</u> : As above, fair to good visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above.
	Tr	<u>CLAYSTONE</u> : As above.
2635 - 2640	95	<u>SANDSTONE</u> : As above, fine to very coarse, medium to coarse grained, subrounded to rounded, good visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SILTSTONE</u> : As above.
2640 - 2645	100	<u>SANDSTONE</u> : Fine to very coarse, predominantly medium grained, subrounded to rounded, good to excellent visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
2645 - 2650	70	<u>SILTSTONE</u> : Grey brown to dark grey, arenaceous to argillaceous, predominantly arenaceous, micromica, carbonaceous flecks and minor laminae, blocky to subfissile, moderately hard to hard.
	30	<u>CLAYSTONE</u> : Dark grey brown, argillaceous, calcareous, blocky, firm, (washing out of sample).
	Tr	<u>SANDSTONE</u> : Medium to coarse grained, clear, subrounded to rounded, minor bit fractured grains, quartz overgrowths, fair visual porosity, no fluorescence.
2650 - 2655	40	<u>SILTSTONE</u> : As above, blocky, hard.
	30	<u>CLAYSTONE</u> : As above, firm to moderately hard.
	20	<u>SANDSTONE</u> : (i) As above, good to excellent visual porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) Off white to light brown, clear to buff, well consolidated, fine to very fine grained, moderately sorted,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		subangular to subrounded, common dolomite and silica cement, trace to common argillaceous matrix, moderately hard to hard, trace pyrite, trace micromica, poor visual porosity, no fluorescence.
2655 - 2660	60	<u>SANDSTONE</u> : Clear to off white to white, generally clean and moderately loose, very coarse to fine, predominantly coarse grained, poorly sorted, subangular to subrounded, common bit fractured grains, trace quartz overgrowths, very rare pyrite, good to excellent inferred porosity, no fluorescence.
	30	<u>SILTSTONE</u> : Medium to dark brown, arenaceous to argillaceous, trace to rare dolomite cement, common argillaceous matrix, trace pyrite, trace to common micromica, hard, blocky.
	10	<u>CLAYSTONE</u> : Light to medium grey, calcareous argillaceous, (cavings).
2660 - 2665	90	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) Light to occasionally medium brown, clear to buff, well consolidated, fine to very fine, moderately to well sorted, subrounded, common silica and dolomite

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		cement, trace buff argillaceous matrix, trace carbonaceous flecks, very rare pyrite, poor visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above, hard, blocky.
	Tr	<u>CLAYSTONE</u> : As above, cavings.
2665 - 2670	40	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	20	<u>SILTSTONE</u> : As above, common carbonaceous flecks, grading in part to carbonaceous siltstone, hard, blocky.
	10	<u>COAL</u> : Black to very dark brown, predominantly subvitreous to vitreous, occasionally waxy, uneven to subconchoidal, blocky, brittle, hard, trace pyrite, trace siderite.
	10	<u>CLAYSTONE</u> : As above, cavings.
2670 - 2675	90	<u>SANDSTONE</u> : (i) As above, excellent inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> (ii) As above, grading in part to siltstone (as above), common carbonaceous flecks, very poor visual porosity, no fluorescence.
	Tr	<u>COAL</u> : As above, cavings.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2675 - 2680	60	<u>SANDSTONE</u> : (i) As above, good to excellent inferred porosity, no fluorescence.
	30	<u>CLAYSTONE</u> : Cavings.
	5	<u>COAL</u> : As above.
	5	<u>SILTSTONE</u> : As above, grading in part to carbonaceous siltstone, hard blocky.
2680 - 2685	95	<u>SANDSTONE</u> : (i) As above, good to excellent inferred porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above, hard, blocky.
	Tr	<u>CLAYSTONE</u> : Cavings.
	Tr	<u>COAL</u> : As above.
2685 - 2690	100	<u>SANDSTONE</u> : (i) clear to off white, very clean and generally loose, very coarse to medium, predominantly very coarse, moderately sorted, subangular to subrounded, predominantly subrounded, trace silica cement, trace to rare quartz overgrowths, moderate to good inferred porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : Medium brown to occasionally dark brown, arenaceous to argillaceous, abundant argillaceous matrix, grading in part to claystone, trace micromica, trace carbonaceous flecks, moderately hard, blocky.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2690 - 2695	100	<u>SANDSTONE</u> : (i) As above, good to excellent inferred porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) Buff to light brown to clear, well consolidated, fine to very fine grained, moderately sorted, subangular, trace to common silica cement, trace dolomitic cement, common argillaceous matrix, hard aggregates, trace mica, trace pyrite, poor visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above, grading in part to sandstone (ii) , hard, blocky.
2695 - 2700	85	<u>SANDSTONE</u> : (i) As above, good to excellent inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above, grading in part to carbonaceous siltstone.
	5	<u>CLAYSTONE</u> : As above, cavings.
2700 - 2705	60	<u>SANDSTONE</u> : (i) As above, good inferred porosity, no fluorescence.
	15	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	15	<u>COAL</u> : Black to occasionally dark brown, slightly waxy, predominantly vitreous, predominantly conchoidal to occasionally uneven fracture, brittle, blocky, hard.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SILTSTONE</u> : As above.
	5	<u>CLAYSTONE</u> : As above.
2705 - 2710	5	<u>SILTSTONE</u> : As above.
	95	<u>COAL</u> : As above.
2710 - 2715	60	<u>SILTSTONE</u> : Light brown to grey brown, arenaceous, micromica, grading to very fine sandstone in part, common carbonaceous flecks, blocky, moderately hard.
	30	<u>CLAYSTONE</u> : As above.
	10	<u>SANDSTONE</u> : Very fine to fine grained, grades to arenaceous siltstone in part, very poor visual porosity, no fluorescence.
	Tr	<u>COAL</u> : As above.
2715 - 2720	70	<u>SANDSTONE</u> : Buff to light grey brown, very fine to fine grained, grades to arenaceous siltstone in parts, subangular to subrounded, moderately well sorted, common aggregates, silica cement, common argillaceous matrix, trace pyrite, firm to moderately hard, poor visual porosity, no fluorescence.
	30	<u>SILTSTONE</u> : As above.
2720 - 2725	85	<u>SANDSTONE</u> : White to light grey, clear, fine to very coarse grained, predominantly coarse, subangular to subrounded, poorly sorted,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		occasionally very fine aggregates, minor argillaceous matrix, silica cement, quartz overgrowths, occasional bit fractured grains, minor carbonaceous flecks, rare pyrite, fair to good visual porosity, no fluorescence.
	15	<u>SILTSTONE</u> : Light grey to light grey brown, as above.
2725 - 2730	95	<u>SANDSTONE</u> : As above, predominantly coarse to very coarse grained, good visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above.
2730 - 2735	80	<u>SANDSTONE</u> : White to light grey, clear, occasionally frosted, very fine to very coarse, predominantly coarse grained, subrounded to rounded, poorly sorted, occasionally bit fractured grains, minor fine grained aggregates, silica cement, quartz overgrowths, minor argillaceous matrix, trace pyrite, fair to good visual porosity, no fluorescence.
	15	<u>SILTSTONE</u> : Medium grey to dark grey, arenaceous to argillaceous, grading to very fine sandstone in part, micromica, carbonaceous flecks, grading to carbonaceous siltstone in part, blocky, moderately hard.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>COAL</u> : Black, subvitreous to vitreous lustre, subconchoidal to conchoidal fracture, blocky, firm to brittle.
2735 - 2740	5	<u>SANDSTONE</u> : (i) As above, poor visual porosity, no fluorescence.
	40	<u>SANDSTONE</u> : (ii) white, very fine to fine grained, grading to arenaceous siltstone, predominantly very fine, common argillaceous matrix, common carbonaceous flecks, firm aggregates, very poor visual porosity, no fluorescence.
	35	<u>SILTSTONE</u> : White to light grey, grading to very fine sandstone, arenaceous, common carbonaceous flecks, minor pyrite, soft to firm.
	20	<u>COAL</u> : As above.
2740 - 2745	5	<u>SANDSTONE</u> : (i) As above.
	40	<u>SANDSTONE</u> : (ii) Grades to arenaceous siltstone, as above.
	45	<u>SILTSTONE</u> : White to light grey to buff, as above.
	10	<u>COAL</u> : As above.
2745 - 2750	80	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SILTSTONE</u> : As above, very rare pyrite.
	Tr	<u>COAL</u> : Black, waxy to subvitreous, occasionally dull, brittle, uneven to occasionally subconchoidal, blocky, hard.
	Tr	<u>CLAYSTONE</u> : Dark brown, argillaceous, trace very fine quartz grains, grading in part to siltstone (as above), trace micromica, firm, blocky.
2765 - 2770	100	<u>SANDSTONE</u> : (i) As above, good to excellent inferred porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
	Tr	<u>COAL</u> : As above.
2770 - 2775	95	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.
	5	<u>CLAYSTONE</u> : Off white to light grey, argillaceous, common to abundant disseminated carbonaceous flecks, trace micromica, firm to occasionally soft, blocky.
2775 - 2780	70	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.
	25	<u>COAL</u> : As above, trace to occasionally common pyrite, blocky, very hard.
	5	<u>CLAYSTONE</u> : Off white to light grey, as above.
2780 - 2785	80	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	10	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, rare dull yellow mineral fluorescence.
	5	<u>SILTSTONE</u> : As above.
	5	<u>CLAYSTONE</u> : (cavings).
2750 - 2755	90	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, rare dull yellow mineral fluorescence.
	5	<u>CLAYSTONE</u> : (cavings).
2755 - 2760	100	<u>SANDSTONE</u> : (i) White to off white to clear, fine to very coarse, predominantly coarse, subangular to subrounded, poorly sorted, trace silica cement, trace quartz overgrowths, common bit fractured grains, rare buff argillaceous matrix, good inferred porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : Predominantly medium brown, arenaceous, common to abundant argillaceous matrix, grading in part to very fine sandstone, trace micromica, trace disseminated very fine sandstone grains, moderately hard, blocky.
2760 - 2765	95	<u>SANDSTONE</u> : (i) As above, good to occasionally excellent inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	15	<u>SILTSTONE</u> : As above, grading in part to very fine sandstone, blocky, hard.
	5	<u>COAL</u> : As above, grading in part to carbonaceous siltstone, blocky, hard.
2785 - 2790	95	<u>SANDSTONE</u> : (i) as above, good inferred porosity, no fluorescence.
	5	<u>SILTSTONE</u> : as above.
2790 - 2795	100	<u>SANDSTONE</u> : (i) White to off white, clear to off white, fine to very coarse, predominantly coarse grained, subrounded, common bit fractured grains, poorly sorted, trace silica cement, very rare pyrite, good to very good inferred porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) White to buff, off white to buff grains, very fine to fine grained, subangular, poorly sorted, trace silica and dolomitic cement, rare sideritic cement, common argillaceous matrix, very poor visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : Medium to dark brown, arenaceous, abundant argillaceous matrix, grading in part to very fine sandstone (i), grading in part to carbonaceous siltstone, common to abundant carbonaceous flecks, trace micromica, moderately hard, blocky.
2795 - 2800	50	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	50	<u>SILTSTONE</u> : As above, grading to carbonaceous siltstone, common carbonaceous flecks, trace to common disseminated very fine quartz grains, blocky, hard.
	Tr	<u>COAL</u> : Black to very dark brown, waxy to subvitreous, uneven to subconchoidal, blocky, hard.
2800 - 2805	100	<u>SILTSTONE</u> : As above, abundant carbonaceous flecks, hard, blocky.
	Tr	<u>COAL</u> : As above.
	Tr	<u>SANDSTONE</u> : (i) As above, good inferred porosity, no fluorescence.
2805 - 2810	50	<u>SILTSTONE</u> : As above, abundant carbonaceous flecks, hard, blocky.
	20	<u>SANDSTONE</u> : (i) As above, good inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	5	<u>CLAYSTONE</u> : Medium brown, argillaceous, common carbonaceous flecks, trace micromica, trace pyrite, blocky.
	5	<u>COAL</u> : As above.
2810 - 2815	60	<u>SILTSTONE</u> : As above, abundant carbonaceous flecks, hard, blocky.
	10	<u>SANDSTONE</u> : (i) As above, good to very good inferred porosity.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	30	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity.
	Tr	<u>COAL</u> : As above.
2815 - 2820	30	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.
	40	<u>SANDSTONE</u> : (ii) As above, grading in part to carbonaceous siltstone, very poor visual porosity, no fluorescence.
	30	<u>SILTSTONE</u> : As above.
	Tr	<u>COAL</u> : As above, trace pyrite, trace siderite, hard, blocky.
2820 - 2825	70	<u>SILTSTONE</u> : Medium brown, arenaceous in part, argillaceous, trace silica cement, common to abundant micromica, common to abundant pyrite, abundant carbonaceous flecks, grading in part to very fine sandstone, blocky, hard.
	5	<u>SANDSTONE</u> : (i) Clear to off white, clear to off white grains, loose and clean, coarse grained, moderately sorted, subrounded, trace silica cement, trace quartz overgrowths, trace to rare pyrite, very good inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) Off white to predominantly medium brown, well consolidated, very fine to fine grained, moderately sorted, subangular,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		common silica cement, abundant argillaceous matrix, hard, common mica and pyrite, very poor visual porosity, no fluorescence.
	5	<u>COAL</u> : Black, waxy lustre, to subvitreous, uneven to subconchoidal, trace silty laminae, blocky, hard.
2825 - 2830	40	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	40	<u>SILTSTONE</u> : As above, hard, blocky.
	Tr	<u>COAL</u> : As above.
2830 - 2835	40	<u>SANDSTONE</u> : (i) As above, excellent to very good inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) As above, trace to common carbonaceous flecks, very poor visual porosity, no fluorescence.
	40	<u>SILTSTONE</u> : As above, common disseminated fine pyrite, common carbonaceous flecks, hard, blocky.
	Tr	<u>COAL</u> : As above, trace pyrite, blocky, hard.
2835 - 2840	30	<u>SANDSTONE</u> : As above, good inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	50	<u>SILTSTONE</u> : As above, hard, blocky.
	Tr	<u>COAL</u> : As above, cavings.
2840 - 2845	50	<u>SANDSTONE</u> : (i) As above, very good inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	40	<u>SILTSTONE</u> : As above, common pyrite, common carbonaceous flecks, hard, blocky.
2845 - 2850	95	<u>SANDSTONE</u> : (i) As above, very rare pyrite, very good inferred porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above.
2850 - 2855	95	<u>SANDSTONE</u> : (i) As above, common angular bit fractured grains, quartz overgrowths, fair to good visual porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) As above, minor aggregates, very poor visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : As above.
2855 - 2860	100	<u>SANDSTONE</u> : (i) As above, pyrite in parts, common carbonaceous stained grains, fair to good visual porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2860 - 2865	100	<u>SANDSTONE</u> : (i) Clear, white to light grey, occasionally light brown, as above, good visual porosity, no fluorescence.
	Tr	<u>SANDSTONE</u> : (ii) Minor aggregates, as above, very poor visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
2865 - 2870	100	<u>SANDSTONE</u> : (i) as above, pyrite in parts, fair visual porosity, no fluorescence.
	Tr	<u>SILTSTONE</u> : As above.
2870 - 2875	100	<u>SANDSTONE</u> : (i) As above, common pyrite in part, fair visual porosity, no fluorescence.
2875 - 2880	95	<u>SANDSTONE</u> : (i) Clear, white to light grey, medium to coarse, occasionally very coarse, predominantly coarse, fair to good visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) Clear, white, very fine to fine, well consolidated aggregates, argillaceous matrix, calcareous cement, subangular to subrounded, moderately well sorted, moderately hard to hard, very poor visual porosity. <u>FLUOR</u> : Trace yellow/green, moderately bright, patchy, no cut, very weak crush cut, trace residue (mineral fluorescence)
2880 - 2885	95	<u>SANDSTONE</u> : (i) As above, good inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	5	<u>SANDSTONE</u> : (ii) As above, very poor, visual porosity, trace yellow/green mineral fluorescence (calcite/dolomite).
	TR	<u>SILSSTONE</u> : As above.
2885 - 2890	90	<u>SANDSTONE</u> : (i) As above, very rare pyrite, good inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, trace dull yellow mineral fluorescence.
	5	<u>SILTSTONE</u> : As above, blocky, hard.
2890 - 2895	100	<u>SANDSTONE</u> : (i) As above, good inferred porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity, no fluorescence.
	TR	<u>SILTSTONE</u> : As above, common carbonaceous flecks, hard, blocky.
2895 - 2900	80	<u>SANDSTONE</u> : (i) white off white, clear to off white grains, general loose and clean, coarse to very coarse, moderate sorted, subangular-subrounded, common bit fracture grains, rare silica and rare quartz overgrowths, trace pyrite, good inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> (ii) clear-buff, clear-off white grains, very fine-fine, well consolidated, moderate-well sorted, subangular,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		common-abundant calcium/dolomitic cement, rare silica cement, trace-abundant argillaceous matrix, hard, trace pyrite, trace micromica, rare carbonaceous flecks, very poor visible porosity, no fluorescence.
	TR	<u>SILTSTONE</u> : medium brown, arenaceous, argillaceous matrix, trace disseminated pyrite, trace-common carbonaceous flecks, moderate hard, blocky.
2900 - 2905	50	<u>SANDSTONE</u> : (ii) As above, very poor visual porosity.
	20	<u>SANDSTONE</u> : (i) As above, good inferred porosity, no fluorescence.
	30	<u>SILTSTONE</u> : As above, hard, blocky.
2905 - 2910	70	<u>SANDSTONE</u> : (ii) Light grey-grey, very fine grades to arenaceous siltstone, common cemented aggregates, subangular-subrounded, well sorted, argillaceous matrix, calcite and silica cement, minor mica, common carbonaceous flecks, friable to firm, very poor visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (i) clear, white-light grey, coarse-very coarse, predominantly coarse, subangular-subrounded, common bit fractured grains, minor pyrite, moderately sorted, silica cement, quartz overgrowths, fair-good visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	25	<u>SILTSTONE</u> : grey-grey brown, arenaceous, grades to very fine sandstone, calcareous, common carbonaceous flecks, moderate-common mica, minor pyrite, fair-moderate hard, blocky.
2910 - 2915	65	<u>SANDSTONE</u> : (ii) As above, very fine, grades to arenaceous siltstone, very poor visual porosity, no fluorescence.
	TR	<u>SANDSTONE</u> ; (i) As above.
	35	<u>SILTSTONE</u> : As above, common micromica, common carbonaceous flecks.
2915 - 2920	40	<u>SANDSTONE</u> ; (ii) As above.
	TR	<u>SANDSTONE</u> : (i) As above.
	60	<u>SILTSTONE</u> : As above, calcareous, common pyrite in part.
2920 - 2925	90	<u>SILTSTONE</u> : grey-dark grey, arenaceous, calcareous in part, micromica, common carbonaceous flecks, pyrite in part, soft-firm, blocky.
	10	<u>SANDSTONE</u> : (ii) As above, grades to arenaceous siltstone.
	TR	<u>SANDSTONE</u> : (i) As above.
2925 - 2930	40	<u>SANDSTONE</u> : (i) white-light grey, clear, frosted in part, as above, fair-good visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	50	<u>SANDSTONE</u> : (ii) grey brown, very fine-fine, as above, very poor-tight visual porosity, Fluorescence: trace to 5%, yellow/orange, bright, patchy, no cut-no crushcut, no residue (? mineral fluorescence).
	10	<u>SILTSTONE</u> : grey brown-light grey brown, as above.
2930 - 2935	30	<u>SANDSTONE</u> : (i) clear, white-light grey, coarse-very coarse, predominantly coarse, subangular-subrounded, poorly sorted, bit fractured grains, silica cement, as above, fair-good visual porosity, no fluorescence.
	35	<u>SANDSTONE</u> : (ii) grey-grey brown, fine-medium, predominantly fine, subangular-subrounded, moderately well sorted, calcareous cement, pyrite in part, as above, very poor-poor visual porosity, Fluourescence: trace-5% (as above).
	35	<u>SILTSTONE</u> : As above.
2935 - 2940	20	<u>SANDSTONE</u> : (i) As above, fair-good visual porosity.
	20	<u>SANDSTONE</u> : (ii) As above, very poor-poor visual porosity, Fluorescence: trace, as above.
	60	<u>SILTSTONE</u> : As above, grading to very fine sandstone.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2940 - 2945	10	<u>SANDSTONE</u> : (i) As above.
	10	<u>SANDSTONE</u> : (ii) As above, no fluorescence.
	80	<u>SILTSTONE</u> : grey brown-dark grey, arenaceous, micromica, common carbonaceous flecks, weakly calcareous in part, minor pyrite, blocky, firm-moderate hard.
2945 - 2950	10	<u>SANDSTONE</u> : (i) As above.
	5	<u>SANDSTONE</u> : (ii) As above.
	85	<u>SILTSTONE</u> : As above, arenaceous, grading to very fine sandstone.
2950 - 2955	20	<u>SANDSTONE</u> : (i) As above, medium-coarse, predominantly coarse, fair-good visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) As above, no fluorescence.
	75	<u>SILTSTONE</u> : dark grey brown, as above.
2955 - 2960	10	<u>SANDSTONE</u> : (i) As above, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) As above, no fluorescence.
	90	<u>SILTSTONE</u> : as above, common micromica, common carbonaceous flecks, pyrite in part, firm-moderately hard.
2960 - 2965	15	<u>SANDSTONE</u> : (i) As above, common bit fractured grains, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) As above, grading to arenaceous siltstone.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	75	<u>SILTSTONE</u> : light grey-dark grey brown, as above.
2965 - 2970	TR	<u>SANDSTONE</u> : (i) clear, white, medium-very coarse, predominantly coarse, subangular-subrounded, occasional bit fractured grains, silica cement, quartz overgrowths, fair visual porosity, no fluorescence.
	100	<u>SANDSTONE</u> : (ii) light grey-grey brown, very fine, grading into arenaceous siltstone, micromica, common carbonaceous flecks, common pyrite in part, carbonaceous laminae in part, argillaceous in part, blocky, firm-moderate, visual porosity, hard, no fluorescence.
2970 - 2975	100	<u>SANDSTONE</u> : (ii) as above, light grey-grey brown, occasional white-light grey, tight visual porosity, no fluorescence.
2975 - 2980	100	<u>SILTSTONE</u> : very arenaceous grading to very fine sandstone (ii), common carbonaceous flecks, common micromica, common pyrite in part, well cemented, orange siderite cement, trace glauconite, tight visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
2980 - 2985	100	<u>SILTSTONE</u> : as above, becoming sandy, common glauconite in part, calcareous in part, tight visual porosity, no fluorescence.
2985 - 2990	60	<u>SILTSTONE</u> : medium brown/grey, arenaceous, abundant argillaceous matrix, trace-common calcareous cement, common micromica, trace pyrite, common disseminated very fine quartz grains (grading in part to very fine sandstone (ii)), hard-firm, blocky, no fluorescence.
	40	<u>SANDSTONE</u> : (ii) light brown-buff, off white-buff grains, well consolidated, very fine-fine (grading in part to siltstone), well sorted, subangular-subrounded, trace calcareous cement, common dolomite and siderite cement, trace pyrite, trace glauconite (flecky), very poor visual porosity, no fluorescence.
	TR	<u>CLAYSTONE</u> : green/grey, argillaceous, common-abundant calcareous cement, abundant glauconite (flecky and rare peletal), trace pyrite, soft-firm, blocky.
2990 - 2995	70	<u>SILTSTONE</u> : as above.
	30	<u>SANDSTONE</u> : (ii) as above, tight-very poor visual porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	TR	<u>CLAYSTONE</u> : as above.
2995 - 3000	100	<u>SILTSTONE</u> : grey brown-dark grey, arenaceous, abundant argillaceous matrix, as above, firm-soft, blocky.
	TR	<u>SANDSTONE</u> : (i) as above, tight visual porosity, no fluorescence.
	TR	<u>CLAYSTONE</u> : as above.
3000 - 3005	90	<u>SILTSTONE</u> : as above, common pyrite, trace glauconite, blocky, hard.
	10	<u>SANDSTONE</u> : (ii) as above, common weathered biotite, trace glauconite, blocky, hard, very poor porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (i) as above, moderate inferred porosity, no fluorescence.
	TR	<u>CLAYSTONE</u> : as above, firm.
3005 - 3010	60	<u>SILTSTONE</u> : medium brown-brown/grey, arenaceous, abundant argillaceous matrix, trace calcareous cement, abundant very fine disseminated quartz grains (grading in part to very fine sandstone (ii)), trace pyrite, trace micromica, hard, blocky.
	40	<u>SANDSTONE</u> : (ii) very pale buff-brown, clear-buff, well consolidated, very fine-fine, moderate-well sorted, subangular-subrounded, abundant argillaceous matrix, common silica and dolomite cement,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		trace siderite cement, trace carbonaceous flecks, trace-occasional common pyrite, trace glauconite, very poor inferred porosity, no fluorescence.
	TR	<u>CLAYSTONE</u> : medium grey/green, argillaceous, trace pyrite, common to occasional abundant glauconite flecks, blocky, firm to occasionally soft.
3010 - 3015	80	<u>SILTSTONE</u> : as above, hard, blocky.
	10	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) as above, moderate inferred porosity, no fluorescence.
3015 - 3020	60	<u>SILTSTONE</u> : as above, common pyrite, hard, blocky.
	30	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) clear-off white, clear-off white grains, generally clean and moderately loose, very coarse, moderately sorted, rounded, trace silica and very rare dolomite cement, trace quartz overgrowths, very rare pyrite, moderate inferred porosity, no hydrocarbon fluorescence, rare dull orange/yellow mineral fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3020 - 3025	90	<u>SANDSTONE</u> : (i) as above, moderate-good inferred porosity.
	5	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity.
	5	<u>SILTSTONE</u> : as above, rare glauconite, hard, blocky.
	TR	<u>CLAYSTONE</u> : as above, soft.
3025 - 3030	85	<u>SANDSTONE</u> : (i) as above, very rare pyrite, trace quartz overgrowths, moderate inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, trace mica, trace pyrite, very poor visual porosity, trace mineral fluorescence.
	5	<u>SILTSTONE</u> : as above, hard, blocky.
3030 - 3035	95	<u>SANDSTONE</u> : (i) as above, very rare pyrite and very rare carbonaceous flecks, moderate inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no hydrocarbon fluorescence, trace dull orange/yellow mineral fluorescence.
3035 - 3040	80	<u>SANDSTONE</u> : (i) clear-off white, clear-off white grains, generally clean and moderately loose, medium-very coarse, predominantly coarse, moderately sorted, subangular-subrounded, common bit fractured grains, very rare quartz overgrowths, rare pyrite, very rare peletal

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		glauconite, moderate-good inferred porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) buff-light brown, clear-buff grains, well consolidated, very fine-fine, moderately sorted, subangular, abundant argillaceous matrix, common dolomite and silica cement, hard, common pyrite, common glauconite, trace mica, very poor visual porosity, no fluorescence.
	10	<u>SILTSTONE</u> : medium grey-brown-light brown, arenaceous, argillaceous matrix, trace silica and dolomite cement, rare siderite cement, hard, trace-common micromica, trace-common glauconite, blocky.
	5	<u>CLAYSTONE</u> : medium grey-grey/brown, occasional green/grey, argillaceous, trace pyrite, firm, blocky.
3040 - 3045	90	<u>SANDSTONE</u> : (i) as above, good visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no fluorescence.
	5	<u>SILTSTONE</u> : as above.
3045 - 3050	100	<u>SANDSTONE</u> : (i) as above, good inferred porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no fluorescence.
	TR	<u>SILTSTONE</u> : as above, (cavings).

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3050 - 3055	TR	<u>CLAYSTONE</u> : as above, (cavings).
	100	<u>SANDSTONE</u> : (i) as above, very rare pyrite, good inferred porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) as above, very poor inferred porosity, no fluorescence.
3055 - 3060	TR	<u>SILTSTONE</u> : as above.
	100	<u>SANDSTONE</u> : (i) as above, good inferred porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) as above, very poor inferred porosity, no fluorescence.
	TR	<u>SILTSTONE</u> : as above.
3060 - 3065	TR	<u>CLAYSTONE</u> : as above.
	90	<u>SANDSTONE</u> : (i) as above, medium-very coarse, predominantly coarse, very good visual porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no fluorescence.
	10	<u>SILTSTONE</u> : grey brown-light brown, occasional buff-white, common pyrite in part.
3065 - 3070	70	<u>SANDSTONE</u> : (i) good visual porosity, as above, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, poor visual porosity, no fluorescence.
	20	<u>SILTSTONE</u> : light grey-buff, medium grey brown in part, as above.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3070 - 3075	50	<u>SANDSTONE</u> : (i) clear, white-light grey, medium-coarse, predominantly coarse, subangular-subrounded, common bit fractured grains, moderately well sorted, pyrite in part, silica cement and quartz overgrowths, fair visual porosity, no fluorescence.
	50	<u>SILTSTONE</u> : light grey-grey brown-dark grey, arenaceous in part, micromica, common carbonaceous flecks, common pyrite in part, blocky, firm.
3075 - 3080	10	<u>SANDSTONE</u> : (i) as above, fair visual porosity, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) light grey, clear, very fine-fine, aggregates, argillaceous matrix, silica and siderite? cement, well sorted, firm-friable, very poor visual porosity, no fluorescence.
	90	<u>SILTSTONE</u> : dark grey brown, micromica, common carbonaceous flecks, blocky-subfissile, moderately hard.
3080 - 3085	5	<u>SANDSTONE</u> : (i) as above.
	TR	<u>SANDSTONE</u> : (ii) as above.
	95	<u>SILTSTONE</u> : as above, dark grey brown, occasional light grey-buff, micromica, common carbonaceous flecks and laminae, trace

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		pyrite, blocky-subfissile, firm-moderately hard.
3085 - 3090	70	<u>SILTSTONE</u> : as above.
	20	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) as above, moderate-good inferred porosity, no fluorescence.
3090 - 3095	TR	<u>SANDSTONE</u> : (i) as above.
	10	<u>SANDSTONE</u> : (ii) as above, well cemented, common argillaceous matrix, very poor visual porosity, no fluorescence.
	90	<u>SILTSTONE</u> : light brown grey-brown grey, arenaceous in part, grading to sandstone (ii), as above.
3095 - 3100	5	<u>SANDSTONE</u> : (i) as above.
	25	<u>SANDSTONE</u> : (ii) as above.
	70	<u>SILTSTONE</u> : as above, brown, arenaceous in part.
3100 - 3105	100	<u>SILTSTONE</u> : buff-light grey brown-grey brown, very finely arenaceous in part, as above.
3105 - 3110	60	<u>SANDSTONE</u> : buff-light grey brown, very fine-fine, predominantly very fine, well cemented aggregates, white argillaceous

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		matrix, calcareous cement, minor carbonaceous flecks, subangular-subrounded, well sorted, moderate hard-hard, very poor-tight visual porosity, Fluorescence: trace-40%, yellow/green, patchy-solid, moderate bright, very weak crushcut-no cut, trace residue.
	40	<u>SILTSTONE</u> : light grey-dark grey brown, calcareous in part, as above.
3110 - 3115	30	<u>SANDSTONE</u> : buff-light grey brown, very fine-fine, subangular-subrounded, well sorted, well cemented aggregates, white argillaceous matrix, calcareous cement, firm-moderately hard, tight-very poor visual porosity. Fluorescence: trace-20% yellow/green, moderately bright, patchy-solid, very weak crushcut in part, trace residue.
	70	<u>SILTSTONE</u> : light grey brown-grey brown, occasional buff, arenaceous, micromica, common carbonaceous flecks and laminae in part, calcareous in part, firm-moderately hard blocky-occasional subfissile.
3115 - 3120	80	<u>SANDSTONE</u> : as above, friable-loose, poor-fair visual porosity, Fluorescence: trace yellow/green, dull-moderately bright, patchy, no cut, no residue

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	20	<u>SILTSTONE</u> : as above, grading to very fine sandstone in part.
3120 - 3125	40	<u>SANDSTONE</u> : as above, white-light grey, common white argillaceous matrix, firm-moderately hard, poor visual porosity, Fluorescence: trace, as above, no cut, no residue
	60	<u>SILTSTONE</u> : dark grey brown, predominantly buff-light brown, as above.
3125 - 3126	40	<u>SANDSTONE</u> : as above, trace fluorescence, as above.
	30	<u>SILTSTONE</u> : as above.
	30	<u>COAL</u> : dark brown-black, silty, subvitreous, in part, fissile-subconchoidal fracture, blocky-fissile, moderately hard-hard.
3126 - 3130	50	<u>SANDSTONE</u> : as above, trace fluorescence, as above.
	40	<u>SILTSTONE</u> : as above.
	10	<u>COAL</u> : as above.
3130 - 3135	80	<u>SILTSTONE</u> : grey brown-dark grey brown, as above.
	20	<u>SANDSTONE</u> ; as above, very poor visual porosity, no fluorescence.
3135 - 3140	10	<u>SANDSTONE</u> : as above, very poor visual porosity, no fluorescence.

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Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	90	<u>SILTSTONE</u> : as above.
3140 - 3145	20	<u>SANDSTONE</u> : as above, common calcareous cement, well sorted, very poor visual porosity, Fluorescence: 10% dull, yellow/orange, patchy, weak crush cut, trace residue.
	30	<u>SILTSTONE</u> : as above, blocky-subfissile, moderately hard-hard.
	50	<u>COAL</u> : black, subvitreous-vitreous, subconchoidal fracture, as above.
3145 - 3150	70	<u>SANDSTONE</u> : light grey-buff, very fine-fine, occasional loose grains, well cemented aggregates, subangular-subrounded, moderately well sorted, argillaceous matrix, silica cement, moderately hard-hard, very poor-tight visual porosity, Fluorescence: 20%, dull yellow/orange, patchy, very weak crushcut, trace residue.
	30	<u>SILTSTONE</u> : as above.
3150 - 3155	50	<u>SANDSTONE</u> : (ii) as above, very poor visual porosity. Fluorescence: 30%, yellow/orange, dull, patchy, very weak crushcut, trace residue.
	5	<u>SANDSTONE</u> : (i) light brown grey, moderate-very coarse, predominantly coarse,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		subangular-subrounded, occasional rounded, well sorted, silica cement and quartz overgrowths in part, friable-loose, fair visual porosity, no fluorescence.
	40	<u>SILTSTONE</u> : dark grey brown, arenaceous in part, common carbonaceous flecks, micro-mica, blocky, moderately hard.
	5	<u>COAL</u> : as above.
3155 - 3160	70	<u>SANDSTONE</u> : (ii) as above, occasionally loose, friable, poor visual porosity, Fluorescence: 30%, as above.
	TR	<u>SANDSTONE</u> : as above.
	30	<u>SILTSTONE</u> : as above.
3160 - 3165	20	<u>SANDSTONE</u> : (ii) light brown, off white, very fine-fine, rare medium, subangular-subrounded, moderately well sorted, common white silica cement, trace-common argillaceous matrix, trace carbonaceous flecks, friable-occasional moderately hard, loose in part, poor visual porosity, Fluorescence: 20% as above, in tight aggregates.
	10	<u>SANDSTONE</u> : (i) coarse-very coarse, moderately sorted, angular-subangular, dominantly loose, silica cement, quartz overgrowths in part, fair inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	70	<u>SILTSTONE</u> : as above, trace pyrite, very arenaceous grading to sandstone in part.
	TR	<u>COAL</u> : black, subvitreous-vitreous, dull in part, subconchoidal-dominantly straight fracture, brittle, moderately hard.
3165 - 3170	20	<u>SANDSTONE</u> : (ii) as above, 20% fluorescence as above.
	20	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	60	<u>SILTSTONE</u> : as above, very carbonaceous in part.
	TR	<u>COAL</u> : as above.
3170 - 3175	50	<u>SANDSTONE</u> : (ii) as above, common-abundant argillaceous matrix, rare loose grains, very poor visual porosity, 10% fluorescence as above.
	10	<u>SANDSTONE</u> : (i) as above.
	40	<u>SILTSTONE</u> : as above, very carbonaceous in part.
3175 - 3180	50	<u>SANDSTONE</u> : (ii) as above, common carbonaceous specks, tight visual porosity, fluorescence: 10% as above.
	TR	<u>SANDSTONE</u> : (i) as above.
	50	<u>SILTSTONE</u> : as above.
3180 - 3185	50	<u>SANDSTONE</u> : (ii) dominantly as above, grading to siltstone in part, tight visual porosity, Fluorescence: 5% as above.

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Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	TR	<u>SANDSTONE</u> : (i) as above.
	50	<u>SILTSTONE</u> : as above.
3185 - 3190	60	<u>SANDSTONE</u> : light brown grey-off white, very fine-medium, dominantly fine, subangular-subrounded, well sorted, weak-occasional moderate silica cement in part, occasional weak dolomitic cement, abundant argillaceous matrix in aggregates, trace carbonaceous specks, moderately hard in aggregates, dominantly loose, poor visual porosity, poor-rare fair inferred porosity, Fluorescence: 5% moderately bright-bright yellow green to cream patchy fluorescence in tight aggregates, trace cut, weak slow crush cut, thin residue ring.
	40	<u>SILTSTONE</u> : as above.
3190 - 3195	60	<u>SANDSTONE</u> : light brown grey-off white, very fine-coarse, rare very coarse, dominantly fine-medium, subangular-subrounded, moderately sorted, weak silica cement in part, common argillaceous matrix, friable, 30% loose, very poor-poor visual porosity, rare fair inferred porosity, Fluorescence: 10% bright yellow green-orange patchy-solid, weak cut, trace residue.
	40	<u>SILTSTONE</u> : medium-dark brown grey, arenaceous, micromica, trace-common carbonaceous specks and laminae, slightly

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		calcareous, trace pyrite, firm-occasional moderate hard, sub-fissil to sub-blocky.
3195 - 3200	60	<u>SANDSTONE</u> : dominantly as above, matrix washing off, dominantly loose, poor visual porosity. Trace fluorescence as above.
	40	<u>SILTSTONE</u> : as above.
3200 - 3205	20	<u>SANDSTONE</u> : (i) light brown, to off white, very fine-occasional medium, dominantly fine, moderately well sorted, subangular-subrounded, weak-moderate silica cement, trace-common argillaceous matrix, trace carbonaceous specks, friable, poor visual porosity. Trace fluorescence as above.
	55	<u>SANDSTONE</u> : (ii) medium-very coarse, poorly sorted, angular-subangular, occasional subrounded, trace silica cement, trace matrix, dominantly loose, fair inferred porosity, no fluorescence.
	20	<u>SILTSTONE</u> : as above.
	5	<u>COAL</u> : black, dull to subvitreous, silty, uneven fracture, firm-moderately hard, brittle.
3205 - 3210	40	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	50	<u>SILTSTONE</u> : as above.
	TR	<u>COAL</u> : as above.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3210 - 3215	30	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) as above, dominantly medium-rare very coarse, no fluorescence.
	50	<u>SILTSTONE</u> : as above.
3215 - 3220	35	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	15	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	50	<u>SILTSTONE</u> : as above, common pyrite.
	TR	<u>COAL</u> : as above.
3220 - 3225	30	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	65	<u>SILTSTONE</u> : as above.
	5	<u>COAL</u> : as above.
3225 - 3230	60	<u>SANDSTONE</u> : clear, white-light grey, very fine-fine, predominantly very fine, generally loose and friable, occasional well cemented aggregates, subrounded-rounded, generally well sorted, common calcareous cement, argillaceous matrix, minor siliceous cement, friable-moderately hard aggregates, poor-fair visual porosity, Fluorescence: trace-5%, dull-moderately bright, yellow/green, patchy, moderate crush cut-weak cut, thin-thick residue. (fluorescence associated with well cemented, very poor porosity aggregates).

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	40	<u>SANDSTONE</u> : dark grey-grey brown, argillaceous, common carbonaceous flecks and laminae, grading to carbonaceous siltstone in part, micromica, moderately hard-hard, blocky-subfissile, occasional fissile.
3230 - 3235	80	<u>SANDSTONE</u> : as above, poor-fair visual porosity, Fluorescence: 40%, yellow/green - yellow/orange, dull-moderately bright, patchy-occasional solid, very weak cut - moderate crush cut, thin residue.
	20	<u>SILTSTONE</u> : as above.
3235 - 3240	95	<u>SILTSTONE</u> : light grey-grey brown, arenaceous in part, common carbonaceous flecks and laminae, micromica in part, moderately hard-hard, blocky-subfissile.
	5	<u>SANDSTONE</u> : as above, Fluorescence: trace-5%, as above, no cut, no residue.
3240 - 3245	100	<u>SILTSTONE</u> : grey to grey brown to dark grey, argillaceous, arenaceous in part, micromica, common carbonaceous flecks and laminae, firm-moderately hard, blocky, occasional subfissile.
3245 - 3250	85	<u>SILTSTONE</u> : as above, subfissile-fissile.
	5	<u>SANDSTONE</u> : as above, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	10	<u>COAL</u> : black, subvitreous-vitreous, subconchoidal fracture, moderately hard.
3250 - 3255	95	<u>SILTSTONE</u> : as above.
	5	<u>SANDSTONE</u> : as above.
3255 - 3260	40	<u>SANDSTONE</u> : clear, white-light grey-light green, very fine-fine, predominantly fine, occasional subangular-subrounded, moderately well sorted, common well cemented aggregates, common calcareous cement, occasional loose grains, moderate hard-hard, poor-tight visual porosity, Fluorescence: 40%, yellow/green, dull-moderately bright, patchy, weak crush cut, thin-trace residue.
	60	<u>SILTSTONE</u> : dark grey brown, argillaceous arenaceous in part, common carbonaceous flecks, micromica in part, trace pyrite moderately hard-hard, subfissile-blocky.
3260 - 3265	35	<u>SANDSTONE</u> : (i) buff, light brown, grey, very fine-fine, occasional medium, subrounded, well sorted, common weak dolomite cement, common-abundant argillaceous matrix, trace carbonaceous specks, friable-occasional moderately hard, very poor visual porosity, 10% fluorescence as above.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	10	<u>SANDSTONE</u> : (ii) light brown-buff, coarse-very coarse, subrounded-angular (bit fractured in part), inferred moderate silica cement in part, generally loose, poor-rare fair inferred porosity, no fluorescence.
	50	<u>SILTSTONE</u> : as above, common pyrite.
	5	<u>COAL</u> : black, subvitreous-vitreous, subconchoidal fracture, straight fracture in part, moderately hard, brittle.
3265 - 3270	50	<u>SANDSTONE</u> : (i) as above, trace fluorescence as above.
	TR	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	50	<u>SILTSTONE</u> : as above, common pyrite.
	TR	<u>COAL</u> : as above.
3270 - 3275	40	<u>SANDSTONE</u> : (i) dominantly as above, abundant argillaceous matrix, no fluorescence.
	TR	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	50	<u>SILTSTONE</u> : as above.
	10	<u>COAL</u> : black, subvitreous-occasional vitreous lustre, dominantly conchoidal fracture, silty in part, moderately hard, brittle.
3275 - 3280	20	<u>SANDSTONE</u> : white-light grey, very fine-fine, occasional medium, subangular-subrounded, well sorted, common well cemented aggregates,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		common calcareous cement, minor argillaceous matrix, minor carbonaceous flecks, trace pyrite, moderately hard-hard, very poor visual porosity, no fluorescence.
	75	<u>SILTSTONE</u> : medium grey brown-dark grey brown, arenaceous, occasionally argillaceous, micromica, common carbonaceous flecks and laminae, moderately hard-hard, sub-fissile.
	5	<u>COAL</u> : black, subvitreous-vitreous lustre, subconchoidal-conchoidal fracture, occasionally silty, brittle, moderately hard-hard.
3280 - 3285	80	<u>SANDSTONE</u> : as above, fine-medium, common pyrite in part, poor visual porosity, no fluorescence.
	20	<u>SILTSTONE</u> : as above, occasional light brown.
	TR	<u>COAL</u> : as above.
3285 - 3290	90	<u>SANDSTONE</u> : as above, very poor visual porosity, no fluorescence.
	10	<u>SILTSTONE</u> : dark grey brown, common carbonaceous flecks, grading to carbonaceous siltstone.
3290 - 3295	50	<u>SANDSTONE</u> : (i) white-light grey, clear-occasional frosted, medium-very coarse, predominantly very coarse, subangular-subrounded, occasionally rounded,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		poorly sorted, common bit fractured grains, silica cement and quartz overgrowths, trace pyrite, generally loose, fair-good visual porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (ii) white-light grey brown, very fine-fine, predominantly fine, subangular-subrounded, moderately well sorted, minor argillaceous matrix, generally loose, occasional well cemented aggregates, poor visual porosity, no fluorescence.
	TR	<u>COAL</u> : as above.
	30	<u>SILTSTONE</u> : light grey brown-grey brown, argillaceous, occasionally arenaceous, micromica, common carbonaceous flecks and laminae, moderately hard, blocky-subfissile, occasionally fissile.
3295 - 3300	80	<u>SANDSTONE</u> : (i) white-light grey, as above, medium-very coarse, predominantly very coarse, good visual porosity, no fluorescence.
	5	<u>SANDSTONE</u> : (ii) as above, fair visual porosity, no fluorescence.
	15	<u>SILTSTONE</u> : light grey-grey, argillaceous, carbonaceous flecks, blocky, firm-moderately hard.
3300 - 3305	100	<u>SANDSTONE</u> : (i) clear, white, occasional

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		frosted, medium-very coarse, predominantly very coarse, subangular-subrounded, poorly sorted, common bit fractured grains, pyrite in part, silica cement, common quartz overgrowths, good visual porosity, no fluorescence.
	TR	<u>SILTSTONE</u> : as above.
3305 - 3310	100	<u>SANDSTONE</u> : (i) as above, fair-good visual porosity, no fluorescence, common pyrite.
	TR	<u>SILTSTONE</u> : as above.
3310 - 3315	100	<u>SANDSTONE</u> : (i) clear, white-light grey, medium-very coarse, predominantly very coarse, subangular, poorly sorted, common bit fractured grains, silica cement, common quartz overgrowths, minor pyrite, poor visual porosity, no fluorescence.
	TR	<u>SILTSTONE</u> ; grey-dark grey brown, arenaceous, micromica, common carbonaceous flecks, moderately hard-hard, blocky-subfissile.
3315 - 3320	100	<u>SANDSTONE</u> : (i) as above, predominantly coarse, poor-fair visual porosity, no fluorescence.
	TR	<u>SILTSTONE</u> : as above.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3320 - 3325	100	<u>SANDSTONE</u> : (i) as above, medium-coarse, predominantly coarse, no fluorescence.
3325 - 3330	100	<u>SANDSTONE</u> : (i) as above, medium, fair visual porosity, Fluorescence: 30%, dull-dim yellow/green, patchy, no cut, no residue.
3330 - 3335	100	<u>SANDSTONE</u> : (i) as above, Fluorescence: as above.
3335 - 3340	100	<u>SANDSTONE</u> : clear, translucent, off white, medium-dominantly coarse to granular, subangular-occasional subrounded, common bit fractured grains, common quartz overgrowths, common disseminated pyrite, trace matrix, dominantly loose, poor visual porosity, fair inferred porosity, trace disseminated yellow green-orange mineral fluorescence.
	TR	<u>SILTSTONE</u> : as above.
3340 - 3345	90	<u>SANDSTONE</u> : as above, trace mineral fluorescence as above.
	10	<u>SILTSTONE</u> : as above.
3345 - 3350	90	<u>SANDSTONE</u> : as above, very coarse to granular, trace mineral fluorescence as above.
	10	<u>SILTSTONE</u> : as above.

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Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3350 - 3352	80	<u>SANDSTONE</u> : as above, trace mineral fluorescence as above, abundant disseminated pyrite.
	20	<u>SILTSTONE</u> : as above.
3352 - 3355	20	<u>SANDSTONE</u> : (i) light-medium grey, fine-medium, moderately well sorted, subangular-subrounded, moderately strong silica cement in part, common light grey argillaceous matrix, trace dolomite cement, loose in part, moderately hard aggregates, very poor visual porosity, trace dim yellow green mineral fluorescence.
	70	<u>SANDSTONE</u> : (ii) clear, translucent, coarse-very coarse and granular, subrounded-subangular, bit fractured in part, strong silica cement, common silica overgrowths, trace-common pyrite, very poor inferred porosity, no fluorescence.
	10	<u>SILTSTONE</u> : dark grey-grey brown, arenaceous, micromica in part, very dolomitic, moderately hard, slightly blocky, common pyrite.
3355 - 3360	5	<u>SANDSTONE</u> : (i) as above, trace-common pyrite, trace mineral fluorescence as above.
	50	<u>SANDSTONE</u> : (ii) as above.
	45	<u>SILTSTONE</u> : as above.

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Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3360 - 3365	10	<u>SANDSTONE</u> : (i) as above, moderately strong dolomite cement, dull even orange mineral fluorescence, no cut, no crush cut.
	70	<u>SANDSTONE</u> : (ii) as above.
	20	<u>SILTSTONE</u> : as above.
3365 - 3370	50	<u>SANDSTONE</u> : (i) as above, dull mineral fluorescence as above.
	10	<u>SANDSTONE</u> : (ii) as above.
	40	<u>SILTSTONE</u> : as above.
3370 - 3375	10	<u>SANDSTONE</u> : (i) as above, commonly loose.
	80	<u>SANDSTONE</u> : (ii) as above, dominantly bit fractured.
	10	<u>SILTSTONE</u> : as above.
3375 - 3380	10	<u>SANDSTONE</u> : (i) as above, trace-common matrix, poor visual porosity, trace dim yellow green mineral fluorescence.
	50	<u>SANDSTONE</u> : (ii) as above, abundant pyrite coating in part, no fluorescence.
	40	<u>SILTSTONE</u> : dark black brown, slightly arenaceous in part, very micromicaceous, mica flecks in part, very carbonaceous, common disseminated pyrite, firm-moderately hard, blocky-subfissile, schistose sheen.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3380 - 3385	10	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	80	<u>SILTSTONE</u> : dominantly as above, medium-dark brown black.
3385 - 3390	10	<u>SANDSTONE</u> : (i) as above no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	80	<u>SILTSTONE</u> : as above.
3390 - 3395	10	<u>SANDSTONE</u> : (i) as above, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, no fluorescence.
	80	<u>SILTSTONE</u> : dominantly as above, medium grey and very dolomitic in part.
3395 - 3400	20	<u>SANDSTONE</u> : (i) off white, light grey, fine-medium, moderately well sorted, subangular-subrounded, moderate silica cement in part, common-abundant argillaceous matrix, common lithics, common mica, friable-moderately hard, occasional loose, very poor-tight visual porosity, trace dull orange mineral fluorescence.
	20	<u>SANDSTONE</u> : (ii) clear, translucent, coarse-granular, subangular-angular, predominantly bit fractured, moderately sorted, inferred strong silica cement, trace pyrite, trace matrix, poor inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
	60	<u>SILTSTONE</u> : as above.
3400 - 3405	100	<u>COAL</u> : black, subvitreous, subconchoidal fracture, silty, moderately hard-hard, brittle, subfissile.
3405 - 3410	60	<u>SILTSTONE</u> : as above, hard, blocky.
	20	<u>SANDSTONE</u> : (ii) as above, moderate-poor visual porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) as above, very poor visual porosity, no fluorescence.
	10	<u>COAL</u> : as above.
3410 - 3415	80	<u>SILTSTONE</u> : as above.
	10	<u>SANDSTONE</u> : (ii) as above, moderate inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) as above, very poor visual porosity, no fluorescence.
	TR	<u>COAL</u> : as above.
3415 - 3420	70	<u>SILTSTONE</u> : as above.
	20	<u>SANDSTONE</u> : (ii) as above, moderate-poor inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (i) as above, very poor inferred porosity, no fluorescence.
	TR	<u>COAL</u> : as above.
3420 - 3425	60	<u>SANDSTONE</u> : (i) off white-buff to clear, well consolidated, very fine-medium,

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		predominantly fine, moderately well sorted, subangular-subrounded, common silica and dolomite cement, rare siderite cement, trace-occasional common argillaceous matrix (white-buff), common carbonaceous flecks, trace-common pyrite, hard, very poor visual porosity, trace dull orange mineral fluorescence.
	20	<u>SANDSTONE</u> : (ii) off white-light brown, clear-off white, well consolidated, medium-very coarse, moderately sorted, subrounded, trace-common silica cement and trace siderite cement, rare dolomite cement, trace argillaceous matrix, trace carbonaceous flecks, trace pyrite, hard, poor visual porosity, no fluorescence.
	20	<u>SILTSTONE</u> : brown, arenaceous, common argillaceous matrix, common carbonaceous flecks, common pyrite, common micromica, hard, blocky.
	TR	<u>COAL</u> : black, subvitreous-occasional dull, blocky-subconchoidal, hard, brittle.
3425 - 3430	60	<u>SILTSTONE</u> : as above, hard, blocky.
	20	<u>SANDSTONE</u> : (i) as above, very poor visual porosity, trace dull orange mineral fluorescence.
	20	<u>SANDSTONE</u> : (ii) as above, moderate inferred porosity, no fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3430 - 3435	70	<u>SILTSTONE</u> : as above, hard, blocky.
	20	<u>SANDSTONE</u> : (i) as above, very poor visual porosity, trace orange mineral fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, moderate inferred porosity, no fluorescence.
3435 - 3440	60	<u>SILTSTONE</u> : as above, hard, blocky.
	30	<u>SANDSTONE</u> : (i) as above, poor inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, poor inferred porosity, no fluorescence.
3440 - 3445	60	<u>SILTSTONE</u> : as above, hard, blocky.
	30	<u>SANDSTONE</u> : (i) as above, poor inferred porosity, no fluorescence.
	10	<u>SANDSTONE</u> : (ii) as above, poor visual porosity, trace dull orange mineral fluorescence.
3445 - 3450	60	<u>SILTSTONE</u> : as above, trace-common pyrite, hard, blocky.
	20	<u>SANDSTONE</u> : (ii) as above, poor inferred porosity, trace dull orange mineral fluorescence.
	20	<u>SANDSTONE</u> : (i) as above, moderate-poor inferred porosity, no hydrocarbon fluorescence, trace dull orange mineral fluorescence.

TRUMPETER-1

Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
3450 - 3455	60	<u>SILTSTONE</u> : as above, common pyrite, hard, blocky.
	20	<u>SANDSTONE</u> : (ii) as above, poor inferred porosity, no fluorescence.
	20	<u>SANDSTONE</u> : (i) as above, nil-very poor visual porosity, trace dull orange and dull green-yellow mineral fluorescence (dolomite and calcareous).
3455 - 3460	40	<u>SILTSTONE</u> : off white-brown, arenaceous, common argillaceous matrix, grading in part to very fine sandstone, common carbonaceous flecks, common pyrite, trace micromica, trace-common very fine disseminated quartz grains, hard, blocky.
	40	<u>SANDSTONE</u> : (i) off white-light brown, clear-buff, well consolidated, very fine-medium, predominantly fine, moderately sorted, subangular, common silica, dolomite and trace siderite cement, common argillaceous matrix, trace carbonaceous flecks, hard, very poor visual porosity, 10-20% dull-moderate bright yellow/orange fluorescence, no cut, no crush cut, no residue (dolomitic mineral fluorescence.).
	10	<u>SANDSTONE</u> : (ii) off white-light brown, clear-off white, well consolidated, medium-very coarse, moderately sorted,

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Lithology Descriptions

<u>Depth</u>	<u>%</u>	<u>Description</u>
		subangular-subrounded, trace-common silica and dolomitic cement, trace carbonaceous flecks, trace-rare pyrite, hard, moderate-poor inferred porosity, trace dull yellow/green mineral fluorescence (calcite/dolomite).
	10	<u>COAL</u> : black-dark brown, dull to predominantly subvitreous, uneven to subconchoidal fracture, brittle, trace pyrite, trace silty laminae, hard, blocky.
3460 - 3465	40	<u>SILTSTONE</u> : as above, common pyrite, hard, blocky.
	40	<u>SANDSTONE</u> : (i) as above, very poor visual porosity, 10-20% dull orange/yellow mineral fluorescence.
	20	<u>SANDSTONE</u> : (ii) as above, poor visual porosity, no fluorescence.
	TR	<u>COAL</u> : as above, trace pyrite, hard, brittle, blocky.

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APPENDIX 2

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
1	3454	-	R	-	Empty/Broken
2	3451	-	R	-	Empty/Broken
3	3443	5mm	R	-	Empty/Broken: very small amount recovered: SILTSTONE: medium-dark grey/brown, argillaceous & minor arenaceous, grading in part to very fine dark grey sandstone (trace), abundant very fine disseminated pyrite, trace micro-micaceous, very hard, blocky. (Gas: .0485/.0129/.0048/.0008/-)=(73/19/7/1/-)
4	3432.5	-	R	-	Empty/Broken
5	3407.2	10mm	B	P	SILTSTONE: medium-dark brown, argillaceous and arenaceous, predominately argillaceous, common light and dark very fine discontinuous laminae, trace very fine disseminated sand grains and associated with laminae, abundant disseminated micromica, common-abundant carbonaceous flecks and laminae, extremely hard, blocky, brittle. (Gas: .0793/.0201/.0072/.0014/-)=(73/19/7/1/-)
6	3384	-	R	-	Empty and broken
7	3367.5	15mm	B	P	SILTSTONE: dark brown, argillaceous (grading in part to claystone), trace-common pyrite, trace micromica, trace carbonaceous flecks, moderate swelling clays, trace-very rare dolomitic cement, firm-moderate hard, blocky. (GAS: .0088/.0024/.0012/TR/TR)=(71/19/10/-/-)
8	3344	5mm	R	-	Broken: trace of sample. SANDSTONE: medium grey/brown, clear-buff grains, well consolidated, very fine-fine, moderately sorted, subangular-subrounded, trace-common silica cement, trace-common dolomite cement, trace siderite cement, common argillaceous

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
					matrix, very hard, trace-common pyrite, trace carbonaceous flecks, trace mica, trace-common very fine discontinuous laminae, very poor-no porosity, no fluorescence. (GAS: .0033/.0014/.0012/-/-)=(56/24/20/-/-)
9	3292	20	B	-	<u>SANDSTONE</u> : off white - light grey to clear, moderate-well consolidated, very fine-very coarse, predominately very coarse, moderately sorted, subrounded, abundant argillaceous matrix (grading in part to siltstone with disseminated coarse sand grains), firm, common carbonaceous flecks, trace pyrite, trace micromica, poor visible porosity, no fluorescence. (Gas: .0022/.0014/.0012/-/-)=(46/29/25/-/-)
10	3291	20	B	P	<u>SANDSTONE</u> : very dark brown-brown/black, argillaceous, slight arenaceous, common micromica, common-abundant disseminated carbonaceous flecks, rare pyrite, firm-moderate hard, blocky. (Gas: .0309/.0201/.0156/.0019/-)=(45/29/23/3/-)
11	3283.5	10	B	-	<u>SANDSTONE</u> : white-off white/grey, clear-off white, moderately consolidated, fine, moderate-well sorted, subrounded, trace-common white-grey argillaceous matrix, firm, trace carbonaceous flecks, trace mica, very rare pyrite, moderate-good porosity, trace spotty dull orange dolomitic mineral fluorescence. (Gas: .0022/.0010/.008/-/-)=(20/9-71/-/-)
12	3281.5	10	B	-	<u>SANDSTONE</u> : white-buff, clear-off white, predominately fine, occasional medium, moderately sorted, subrounded, trace dolomite cement, common white-buff argillaceous matrix, firm, very rare pyrite, common carbonaceous flecks,

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
					<p>common micromica, moderate visible porosity, trace-5% dull spotty orange dolomitic mineral fluorescence. (Gas: .0011/TR/TR/-/-/)= (100/-/-/-/-)</p>
13	3277.5	5	B	P	<p><u>SILTSTONE</u>: dark brown-brown/black, argillaceous and minor arenaceous (very rare patches grading to very fine sandstone), common fine discontinuous laminae, common carbonaceous flecks, trace pyrite, trace micromica, moderately hard, blocky. (Gas: .0088/.0036/.0030/-/-)= (57/23/20/-/-)</p>
14	3269	15	B	-	<p><u>SANDSTONE</u>: off white-light grey, well consolidated, very fine, well sorted, subrounded, common silty matrix (grading in part to siltstone), hard, abundant coaly laminae (discontinuous), abundant carbonaceous flecks, trace micromica, poor visible porosity, trace spotty dull orange/yellow mineral fluorescence. (Gas: .0022/.0014/.0012/-/-)= (46/29/25/-/-)</p>
15	3244	10	B	P	<p><u>SILTSTONE</u>: medium-dark brown, /grey, argillaceous, slight arenaceous, trace dolomite cement, common fine laminae, abundant carbonaceous laminae and flecks, trace micromica, hard-firm, blocky. (Gas: .022/.0173/.012/.0026/TR)= (41/32/22/5/-)</p>
16	3224	-	R	-	<p>Empty and broken.</p>
17	3200.7	15	B	-	<p><u>SANDSTONE</u>: white-off white, clear off white, fine, moderately sorted, subrounded, trace dolomite cement, common argillaceous matrix, trace mica, trace pyrite, trace common carbonaceous flecks, hard, moderate visible porosity, trace dull orange dolomite mineral fluorescence. (Gas: .0011/TR/TR/-/-/)= (100/-/-/-/-)</p>

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
18	3197	20	B	-	<u>SANDSTONE</u> : as above, medium-fine, abundant disseminated very fine carbonaceous flecks, trace mica, blocky, firm-hard, moderate-good visible porosity, trace spotty dull yellow/orange mineral fluorescence. (Gas: TR/-/-/-/-)=(TR/-/-/-/-)
19	3191	-	R	-	Empty
20	3172	-	R	-	Empty and broken
21	3166.5	-	R	-	Empty
22	3140	-	R	-	Empty and broken
23	3114	-	R	-	Missing
24	3084	-	R	-	Missing
25	3076.5	-	R	-	Empty
26	3059.2	-	R	-	Missing
27	3076.5	30	B	P	<u>SANDSTONE</u> : medium grey, clear-off white grains, well consolidated, very fine-fine, moderate-well sorted, subangular-subrounded, abundant argillaceous matrix, weak silica cement, moderately hard, trace micromica, trace pyrite, very rare carbonaceous flecks, very poor visible porosity, no fluorescence. (Gas: .0011/TR/TR/-/-/-)=(100/-/-/-/-)
28	3018	25	B	P	<u>SILTSTONE/CLAYSTONE</u> : dark brown, argillaceous, moderate swelling clays, extremely abundant very fine disseminated pyrite (reducing environment), trace micromica, firm-moderately hard, blocky, carbonaceous. (Gas: .0463/.0144/.0072/.0020/-)=(66/21/10/3)
29	3011.5	-	R	-	Missing
30	3006.5	-	R	-	Missing

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
31	3001	15	B	P	<u>SILTSTONE</u> : as above, trace disseminated very fine pyrite, abundant disseminated very fine carbonaceous flecks, trace micromica, moderately hard, blocky. (Gas: .0099/.0036/.0012/TR/-)=(67/24/9/-)
32	2994	-	R	-	Missing
33	2982	-	R	-	Missing
34	2968	-	R	-	Missing
35	2954	10	B	P	<u>SANDSTONE</u> : dark brown, clear-pale brown, moderately well consolidated, fine to occasional coarse, moderately sorted, subangular, trace silica cement, abundant dark brown argillaceous matrix (grading in part to siltstone with disseminated quartz grains), moderately hard, trace pyrite, trace biotite, trace-common carbonaceous flecks, rare muscovite mica, very poor visible porosity, no fluorescence. (Gas: .0055/.0024/.002/TR/-)=(56/24/20/TR)
36	2938.5	-	R	-	Missing
37	2925	20	B	P	<u>SANDSTONE</u> : medium brown/grey, clear-off white, well consolidated, fine, moderately-well sorted, subangular-subrounded, trace-common calcite and dolomite cement, abundant brown argillaceous matrix (strong swelling clays), firm-moderately hard, trace carbonaceous flecks, trace mica, very poor visible porosity, no fluorescence. (Gas: .0099/.0036/.0012/TR/-)=(67/25/8/-/-)

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
38	2914.5	25	B	P	<u>SANDSTONE</u> : medium grey/brown, clear-grey, well consolidated, fine, well sorted, subangular-subrounded, trace silica cement, abundant argillaceous matrix, moderately hard, trace carbonaceous flecks and very fine discontinuous laminae, trace coarse disseminated quartz grains, trace mica, very poor visible porosity, no fluorescence. (Gas: .0022/.0007/.0006/-/-)=(63/20/17/-/-)
39	2893	-	R	-	Missing
40	2826.5	30	B	-	<u>SANDSTONE</u> : as above, common carbonaceous laminae, very poor visible porosity, no fluorescence. (Gas: .011/.0043/.0018/TR/TR)=(64/25/11/-/-)
41	2824	30	B	-	<u>MUD</u> : (Gas: .0044/-/TR/-/-)=(100/-/-/-/-)
42	2803	-	R	-	Empty
43	2785	-	R	-	Missing
44	2759	-	R	-	Empty
45	2740	20	B	-	<u>SILTSTONE/CLAYSTONE</u> : off white-pale grey, argillaceous, slight arenaceous, carbonaceous, abundant carbonaceous flecks and laminae, trace micromica, very rare pyrite, firm, blocky. (Gas: .0088/.0072/.0011/-/-)=(41/34/20/5/-)
46	2721	20	B	-	<u>INTERBEDDED SANDSTONE & SILTSTONE(FLASER?)</u> <u>SANDSTONE</u> : white-off white to clear, well consolidated, very fine-fine, moderately sorted, subangular-subrounded, common white argillaceous matrix, trace silica and dolomite cement, moderately hard, trace pyrite, very rare carbonaceous flecks, trace silty interlaminae, very poor visible porosity, no fluorescence.

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
					<u>SILTSTONE</u> : medium-dark brown, argillaceous slightly arenaceous, trace-common carbonaceous flecks, trace micromica, common interlaminae with sandstone, hard, blocky. (Gas: .0033/.005/.0042/.0011/-)=(24/37/31/8/-)
47	2711	25	B	P	<u>SILTSTONE</u> : as above, trace carbonaceous/coaly laminae, common micromica, hard, blocky. (Gas: .0022/.005/.0042/.0013/-)=(18/39/33/10/-)
48	2676.5	-	R	-	Empty/Mud
49	2664.5	-	R	-	Missing
50	2651.7	20	B	-	<u>SANDSTONE</u> : White-pale grey, clear-off white, moderately consolidated to occasional loose, medium-coarse, moderate-poorly sorted, subangular-subrounded, weak silica cement, trace argillaceous matrix, firm, trace pyrite, trace carbonaceous flecks, trace micromica, moderate-good visible porosity, no fluorescence. (Gas: TR/-/-/-/-)=(-/-/-/-/-)
51	2597	20	B	-	<u>SANDSTONE</u> : off white-pale grey, clear-off white, very fine - very coarse, predominately fine, moderately sorted, subrounded, trace white-pale grey argillaceous matrix, common silica cement, trace dolomite cement, moderately hard, trace pyrite, trace carbonaceous flecks, trace mica, very poor visible porosity, no fluorescence. (Gas: .0011/.0014/.0012/-/-)=(30/39/31/-)
52	2552	30	B	P	<u>SANDSTONE</u> : as above, predominately well sorted, subangular-subrounded, trace-common argillaceous matrix, common silica and calcite cement (associated with matrix), firm-moderately hard,

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
					trace pyrite, trace carbonaceous flecks, poor visible porosity, no fluorescence. (Gas: .0088/.005/.0024/.0008/-)=(52/29/14/5)
53	2549	20	B	-	<u>SANDSTONE</u> : very pale grey/brown, moderately loose, coarse, moderately well sorted, subangular, trace calcite and silica cement, trace argillaceous matrix, soft and friable, trace carbonaceous flecks, trace mica, trace pyrite, very good visible porosity, no fluorescence. (Gas: TR/-/-/-/-)=(-/-/-/-/-)
54	2502	-	R	-	Empty
55	2488	30	B	P	<u>SANDSTONE</u> : pale-medium brown, clear-off white, poorly consolidated, very fine-very coarse, poorly sorted, subrounded-subangular, trace silica and dolomite cement, abundant brown argillaceous matrix, moderately hard, trace carbonaceous flecks and grains, abundant disseminated very coarse quartz grains, trace mica, very poor-no visible porosity, no fluorescence. (Gas: TR/.0029/.0054/TR/-)=(TR/35/65/TR)
56	2480	20	B	P	<u>SANDSTONE</u> : as above, predominately medium, moderately well sorted, subangular, trace silica cement, abundant brown argillaceous matrix, moderately hard, trace-common carbonaceous flecks, trace mica, very poor visible porosity, no fluorescence. (Gas: .0001/TR/TR/-/-)=(100/-/-/-/-)
57	2468	15	B	-	<u>SANDSTONE</u> : white-off white, clear-off white, fine-very fine, moderately well sorted, subangular-subrounded, trace silica and dolomite cement, trace white argillaceous matrix,

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 1 & 2

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
					firm-moderately hard, trace mica, very rare pyrite, moderate visible porosity, no fluorescence. (Gas: Nil)
58	2447.5	40	B	P	<u>CLAYSTONE</u> : off white-buff/grey, argillaceous, abundant fleck and peletal glauconite, common pyrite, common muscovite mica, rare biotite mica, <u>common medium-coarse disseminated quartz grains (grading in part to silty sandstone), moderately hard, blocky.</u> (Gas: .0011/TR/.0012/-/-/)=(48/-/52/-/-)
59	2446	40	B	P	<u>SANDSTONE</u> : medium brown, clear-pale brown, well consolidated, very fine-fine, well sorted, subrounded, abundant brown argillaceous matrix, moderately hard, common flaky and peletal glauconite, trace-common mica, trace nodular pyrite, trace carbonaceous flecks, very poor visible porosity, no fluorescence. (Gas: .0011/.0014/.0024/.0028/-)=(14/18/31/37/-)
60	2444	25	B	P	<u>SANDSTONE</u> : as above, abundant calcite cement, strong swelling clays, trace-rare glauconite, trace muscovite mica, very rare pyrite, very poor visible porosity, no fluorescence. (Gas: Nil)
<u>Gun 2</u>					
61	3454	-	R	-	Empty
62	3451	-	R	-	Empty
63	3443	-	R	-	Missing
64	3432.5	15	B	P	<u>SILTSTONE</u> : medium-dark brown, argillaceous and arenaceous, strong swelling clays, trace-common carbonaceous flecks,

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 2

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
					trace-common very fine disseminated quartz grains (grading in part to silty sandstone), firm-moderately hard, blocky, no fluorescence. (Gas: .0347/.0288/.0168/.0031/TR)=(42/35/20/3/-)
65	3384	20	B	P	<u>SILTSTONE</u> : as above, abundant carbonaceous flecks and laminae, blocky, hard. (Gas: .1984/.1164/.0602/.0104/.0010)=(51/30/16/3/-)
66	3367.5	20	B	P	<u>SANDSTONE</u> : medium brown, clear-off white, moderately well consolidated, fine, well sorted, subangular, abundant argillaceous matrix, common carbonaceous flecks, common mica, rare pyrite, firm, moderate visible porosity, trace dull yellow patchy fluorescence, no cut, no crushcut, no residue. (Gas: .0264/.0216/.012/.0003/-)=(44/36/20/TR/-)
67	3344	30	B	P	<u>SILTSTONE</u> : as above, abundant carbonaceous flecks, grading in part to very fine silty sandstone, blocky, hard, trace dull yellow mineral fluorescence. (Gas: .0176/.0086/.0036/TR/-)=(59/29/12/-/-)
68	3224	20	B	-	<u>SANDSTONE</u> : as above, abundant carbonaceous flecks and laminae, poor visible porosity, no fluorescence. (Gas: .0485/.0302/.0192/.0034/TR)=(48/30/19/3/-)
69	3191	20	B	P	<u>SILTSTONE</u> : as above, abundant carbonaceous flecks and discontinuous laminae, trace-common very fine disseminated quartz grains, firm-moderately hard, no fluorescence. (Gas: .0793/0.503/.0301/.0034/TR)=(49/31/18/2/-)

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 2

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
70	3172	30	B	-	<u>SANDSTONE</u> : off white-pale grey, clear-off white, moderately consolidated, very fine-fine, moderately-well sorted, subangular-subrounded, common calcite cement, trace silica cement, trace white argillaceous matrix, moderately hard, common carbonaceous flecks, trace mica, very rare pyrite, moderate-poor visible porosity, no fluorescence. (Gas: .0033/.005/.0042/-/-/)=(26/40/34/-/-)
71	3166.5	25	B	-	<u>SILTSTONE</u> : as above, abundant carbonaceous flecks, trace micromica, firm-moderately hard, blocky, no fluorescence. (Gas: .0463/.0374/.0301/.006/TR)=(39/31/25/5/-)
72	3140	30	B	-	<u>SILTSTONE</u> : dark-medium brown, argillaceous/arenaceous, grading in part to very fine silty sandstone, rare dolomite cement, abundant carbonaceous flecks, trace micromica, moderately hard, blocky. (Gas: .0771/.0302/.0132/.002/-)=(63/25/11/1/-)
73	3114	25	B	-	<u>SANDSTONE</u> : medium grey-grey/brown, clear-grey, well consolidated, very fine, well sorted, subrounded-subangular, trace-common calcite/dolomite cement, abundant argillaceous matrix, moderately hard, abundant carbonaceous flecks, trace mica, poor visible porosity, no fluorescence. (Gas: .0507/.023/.0084/TR/-)=(62/28/10/-/-)
74	3084	25	B	-	<u>SILTSTONE</u> : dark brown-brown/black, as above, abundant carbonaceous flecks (carbonaceous siltstone), moderately hard, blocky. (Gas: .0051/.0403/.0216/.0029/-)=(46/34/18/2/-)

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 2

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
75	3076.5	30	B	-	<u>SILTSTONE</u> : as above, trace very fine sandy interlaminae (very fine, well sorted, subrounded), moderately hard, blocky. (Gas: .0705/.0417/.0204/.0043/-)=(52/30/15/3/-)
76	3059.2	25	B	P	<u>SILTSTONE</u> : as above, trace very fine sandy interlaminae (as above,), moderately hard, blocky. (Gas: .0077/.0158/.012/.0028/-)=(20/41/31/8/-)
77	3011.5	25	B	P	<u>SANDSTONE</u> : dark brown-black/brown, as above, abundant carbonaceous-siltstone matrix, abundant carbonaceous flecks, trace mica, poor visible porosity, no fluorescence.
78	3006.5	30	B	P	<u>SANDSTONE</u> : light grey, clear, well consolidated, very fine, well sorted, subangular-subrounded, trace dolomite cement, abundant argillaceous matrix, moderately hard, trace calcareous claystone, clasts, trace glauconite, trace mica, trace carbonaceous flecks, poor visible porosity, no fluorescence. (Gas: .0176/.0158/.0084/.0029/-)=(39/35/19/7/-)
79	2994	25	B	P	<u>SILTSTONE</u> : as above, (As for 3140, # 72), trace sandy interlaminae, blocky, hard. (Gas: .0838/.0518/.0325/.0056/-)=(48/30/19/3/-)
80	2982	30	B	P	<u>SANDSTONE</u> : light grey-medium brown, clear-light grey, well consolidated, very fine, well sorted, subangular, trace calcite cement, abundant argillaceous and carbonaceous matrix, moderately hard, common mica, common carbonaceous flecks, poor visible porosity, no fluorescence. (Gas: TR/.0072/.0084/.0016/-)=(-/42/49/9/-)

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 2

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
81	2968	25	B	P	<u>SANDSTONE</u> : as above, poor visible porosity, no fluorescence. (Gas: .0132/.0201/.012/.002/-)=(28/43/25/4/-)
82	2938.5	20	B	P	<u>SANDSTONE</u> : as above, poor visible porosity, no fluorescence. (Gas: .0044/.0115/.0108/.0016/TR)=(16/41/38/5/-)
83	2893	10	R	-	EMPTY: some mud and sand in recovery. <u>SANDSTONE</u> : white-light grey, clear-off white, moderately well consolidated, very fine, well sorted, subangular-subrounded, trace silica cement, trace-common white argillaceous matrix, moderately hard, trace-common mica, common carbonaceous flecks, poor visible porosity, no fluorescence. (Gas: .0011/.0029/.0024/TR/-)=(17/45/38/-/-)
84	2824	-	R	-	Missing
85	2803	-	R	-	Missing
86	2785	-	R	-	Missing
87	2759	20	B	-	<u>SANDSTONE</u> : white-off white, clear-off white, moderately loose, fine-medium, moderately sorted, subangular-subrounded, trace silica and dolomite cement, trace white argillaceous matrix, firm, trace-rare pyrite, trace mica, moderately good visible porosity, trace dull yellow/green mineral fluorescence, no cut, no crushcut, no residual (Gas: Nil)
88	2676.5	-	R	-	Empty
89	2664.5	-	R	-	Missing

TRUMPETER-1

SIDEWALL CORE DESCRIPTIONS

RUN NO 2

<u>NO.</u>	<u>Depth</u> (m)	<u>Rec.</u> (mm)	<u>Bought</u> Reject	<u>Palyn</u> Eval.	<u>Description</u>
90	2502	20	B	-	<u>SANDSTONE</u> : clear-off white, white, moderately consolidated, medium, moderately well sorted, subangular, trace calcite and dolomite cement, generally clean, firm, trace carbonaceous flecks, very rare pyrite, very good visible porosity, no fluorescence. (Gas: .0022/.0022/.0018/TR/-)=(35/35/30/-/-)

APPENDIX 3

RFT PRESSURE DATA

WELL: TRUMPETER - 1

PAGE 1 OF 2

DATE: 6/10/89

GEOLOGIST-ENGINEER: A. CLARE / A. HERNAUDIANTO

RFT NO. RUN-SEAT	DEPTH		INITIAL HYDROSTATIC HP/RFT GAUGE		TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE		TEMP °C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE		COMMENTS (INCLUDE PROBE TYPES)	
	m MDKB	m TVD ss KB=	psia	psig			psia	psig			psi/cp	ppg		psia
1-1 PT	3285	3264	5412.1	5394.9	13:47	-	-	-	-	-	-	-	PROBLEM SETTING COULDN'T CONTINUE.	
1-2 PT	3285	3264	5412.2	5394.3	13:58	7.57	-	-	-	14:00	5414.6	5394.3	TIGHT	
1-3 PT	3282	3261	5407.1	5388.2	14:06	0	4724.6	4706.6	1.18 8.5	14:14	5407.2	5388.2	MODERATELY GOOD - ALTHOUGH TIGHT	
1-4 PT	3284.5	3263.5	5411.0	5392.5	14:21	0	-	-	100 98	14:23	5413.7	5392.0	TIGHT	
1-5 PT	3298.0	3277.0	5433.3	5414.3	14:30	4652.7	4653.5	4636.4	8.34	100.8	14:36	5434.2	5414.2	GOOD
1-6 PT	3305.0	3284.0	5444.3	5425.3	14:44	4593.5	4662.7	4645.8	8.33	101.6	14:48	5444.5	5425.1	GOOD
1-7 PT	3310.0	3289.0	5452.1	5433.8	14:56	4635.2	4669.6	4652.9	8.34	101.8	15:02	5452.3	5433.5	GOOD
1-8 PT	3284	3263.0	5409.6	5391.3	15:10	7.0	4737.1	4721.1	85	102.0	15:20	-	-	TIGHT & HADN'T FINISHED BUILDING TO HYDRO LINEU TELEMETRY PROBLEM
1-9 PT	3284	3263.0	5409.9	5390.9	15:26	8.4	-	-	-	-	15:32	-	-	TELEMETRY FAULT
1-10 PT	3282	3261.0	5407.1	5387.7	15:35	7.0	-	-	-	-	15:40	5412.9	5387.2	TIGHT

RFT PRESSURE DATA

WELL: TRUMPETER-1

PAGE 2 OF 2

DATE: 6/10/89

GEOLOGIST-ENGINEER: A. CLARE / A. HERNANDIANTO

RFT NO. RUN-SEAT	DEPTH		INITIAL HYDROSTATIC HP/RFT GAUGE			TIME SET	MINIMUM FLOWING PRESSURE psi (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE			TEMP °C	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE			COMMENTS (INCLUDE PROBE TYPES)
	RFT TYPE	m MDKB	m TVD ss KB=21	psia	psig			PPg	psia	psig			PPg	psia	psig	
1-11	PT	3282.2	3261.2	5407.2	5388.1	15:41	-	-	-	-	-	15:43	5407.3	5388.3	9.74	TIGHT
1-12	PT	3282.5	3261.5	5407.2	5388.2	16:01	3062	4717.2	4699.0	8.44	-	16:05	5408.2	5388.2	9.74	OK. - MODERATELY GOOD BUT ANOMALOUS? {POSSIBLE TELEMETRY PROBLEM}
1-13	PT	3283.0	3262.0	-	-	-	-	-	-	-	-	-	-	-	-	TELEMETRY PROBLEM.
1-14	PT	3282.5	3261.5	5406.5	5388.4	17:19	6.0	-	-	-	101.2	17:21	5409.5	5387.3	9.73	TIGHT
1-15	PT	3283.0	3262.0	5407.2	5388.4	-	-	-	-	-	101.3	-	-	-	9.73	TELEMETRY PROBLEM
1-16	PT	3283.0	3262.0	5407.2	5388.8	17:28	-	-	-	-	101.6	17:30	5410.8	5389.5	9.73	PLUGGED
2-17	SPT	3282.3	3262.3	5405.5	5386.6	17:35	-	4731.9	4713.9	8.5	101.8	19:55	5405.8	5386.7	9.73	OK - MOD TIGHT

RFT SAMPLE TEST REPORT

Well : TRUMPETER-1

OBSERVER : A. CLARE

DATE : 6/10/89

RUN NO. : 1

	CHAMBER 1 (22.7 lit.)	CHAMBER 2 (10.4 lit.)
SEAT NO.	2-17	2-17
DEPTH	3282.3 m KB	3282.3 m
A. RECORDING TIMES		
Tool Set	17:35 hrs	17:35 hrs
Chamber Open	17:43 hrs	19:42 hrs
Chamber Full	CLOSE CHAMBER 19:10 hrs	CLOSE CHAMBER 19:44 hrs
Fill Time	(INCOMPLETE) 87 mins	(INCOMPLETE) 4 mins
Finish Build Up	(") 19:40 hrs	(") 19:54 hrs
Build Up Time	(") 30 mins	(") 10 mins
Tool Retract	19:55 hrs	19:55 hrs
Total Time	140 mins	140 mins
B. SAMPLE PRESSURE		
Initial Hydrostatic	5405.5 psia	5405 psia
Initial Form'n Press.	4731.9 psia	4731.9 psia
Initial Flowing Press.	45.2 psia	46.03 psia
Final Flowing Press.	259.68 psia	61.89 psia
Final Formation Press.	(INCOMPLETE) 4697.88 psia	(INCOMPLETE) 4624.8 psia
Final Hydrostatic	5405.8 psia	5405.8 psia
C. TEMPERATURE		
Max. Tool Depth	3310 m	3310 m
Max. Rec. Temp	101.8 deg C	101.8 deg C
Length of Circ.	2 hrs 5 mins	2 hrs 6 mins
Time/Date Circ. Stopped	1930 hrs 5/10/89	1930 hrs 5/10/89
Time since Circ.	24 hrs 25 mins	24 hrs 25 mins
D. SAMPLE RECOVERY		
Surface Pressure	0 psia	1.5 psia
Amt Gas	.07 cu ft	.03 cu ft
Amt Oil	- lit	- lit
Amt Water (Total)	10 lit	0.5 lit
Amt Others	- lit	- lit
E. SAMPLE PROPERTIES		
Gas Composition		
C1	- ppm	83% .0551 ppm
C2	- ppm	8% .00504 ppm
C3	- ppm	6% .00375 ppm
C4	- ppm	3% .00297 ppm
C5	- ppm	TR TR ppm
C6+	- ppm	- ppm
CO2/H2S	- / - %/ppm	- / - %/ppm
Oil Properties		
Colour	- deg API@ - deg C	- deg API@ - deg C
Fluorescence	-	-
GOR	-	-
Pour Point	-	-
Water Properties		
Resistivity	0.171 ohm-m @ 22 deg C	0.161 ohm-m @ 16 deg C
NaCl Equivalent	44500 ppm	44500 ppm
Cl-titrated	27000 ppm	27000 ppm
Tritium	- DFM	- DFM
pH	7.0	7.0
Est. Water type	FILTRATE / FMT WATER MIX	FILTRATE / FMT WATER MIX.
F. MUD FILTRATE PROPERTIES		
Resistivity	0.143 ohm-m @ 18.3 deg C	0.143 ohm-m @ 18.3 deg C
NaCl Equivalent	49500 ppm	49500 ppm
Cl-titrated	30000 ppm	30000 ppm
pH	10.0	10.0
Tritium (in Mud)	- DFM	- DFM
G. GENERAL CALIBRATION		
Mud Weight	9.5 ppg	9.5 ppg
Calc. Hydrostatic	5310.3 psi	5310.3 psi
Serial No. (Preserved)	-	-
Choke Size/Probe Type	.02 / MARTINEAU	.02 / MARTINEAU
REMARKS	TIGHT	TIGHT