

## LOG INTERVAL

DEPTH : 5.62 mMDRT TO 1335.5 mMDRT  
DATE : 10 JUN 2015 TO 19 JULY 2015  
SCALE : 1:500

## CASING DATA

346 mm (13.375") TO 23.27 mMDRT  
244 mm (9.625") TO 130.78 mMDRT  
177.8 mm (7") TO 587.13 mMDRT

## MUDLOG

COMPANY : Pangaea Resources  
WELL : Tarlee-1  
BLOCK LICENSE : EP-168,McArthur/Beetaloo  
REGION : Northern Territory  
COUNTRY : AUSTRALIA

## MUD TYPES

Bentonite Spud Mud TO - mMDRT  
KCL Polymer Mud TO 1335.5 mMDRT

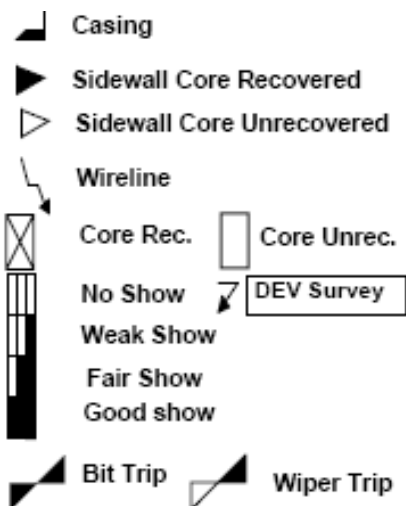
## HOLE DATA

311 mm (12.25") TO 133.78 mMDRT  
216 mm (8.50") TO 590.00 mMDRT  
155.58 mm (6.125") TO 1335.5 mMDRT

## ABBREVIATION

NB New Bit	CL ppm Chloride Ion
RRB Rerun Bit	RM Mud Resistivity
CB Core Bit	RMF Filtrate Resistivity
TG Trip Gas	LAT Lagged After Trip
FG Formation Gas	LAS Lagged After Svy
POG Pumps off Gas	NR No Returns
WTG Wiper Trip Gas	PR Poor Returns
SWG Swab Gas	LC Lost Circulate Out
WOB Weight On Bit	CO Circulate Out
RPM Rotary Rev/Min	SVY Survey
PP Pump Pressure	AZI Azimuth
SPM Strokes/Min	CSG Casing
MW Mud Weight	SOL Solids %
VIS Funnel Viscosity	SD Sand %
PV Plastic Viscosit	MB Methylene Blue
YP Yield Point	CA ppm Calcium
FL Fluid Loss	FC Filter Cake Thick

## SYMBOLS



COORDINATES : Lat 15° 57' 18.529" S  
Long 132° 50' 24.807" E  
Easting 268,823.912 m  
Northing 8,234,827.904 m  
ELEVATION : RT: 4.02 m GL:201.61 m AMSL

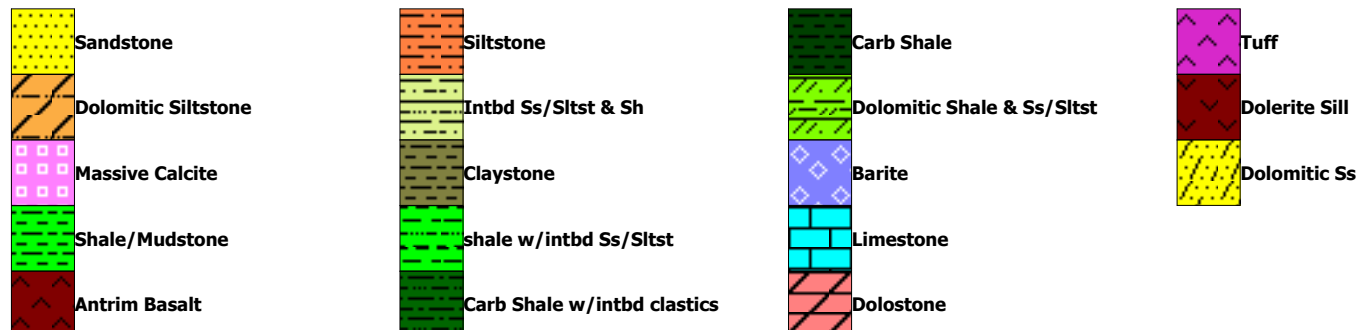
DATE ON SITE : 30 MAY 2015  
SPUD DATE : 10 JUN 2015 @ 17:00 hrs  
TD DATE : 19 JUL 2015 @ 09:30 hrs  
DATE RELEASED : xx JUL 2015  
TOTAL DEPTH : 1335.5 mMDRT / 1335.5 mTVDRT  
STATUS : NA  
CONTRACTOR : DDH1  
RIG/TYPE : Rig #33  
LOGGING UNIT : Blue Modex

COMPANY Rep. : Dryden Strange

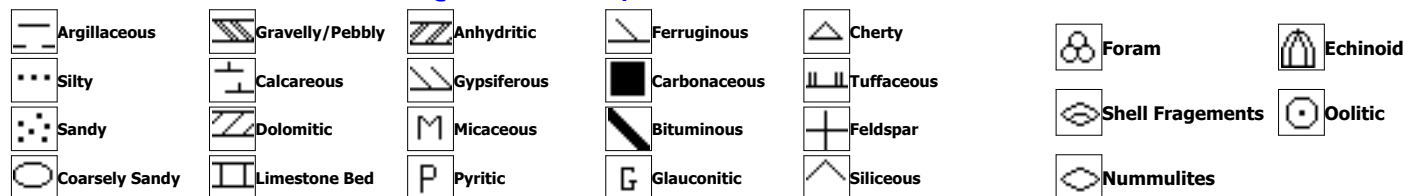
GEOLOGIST : Randy Laney

MUDLOGGERS : Potchara Aounlum  
Agus Iswahyudi  
Do Duy Quang  
Edfer Lim

## GEOLOGICAL SYMBOLS



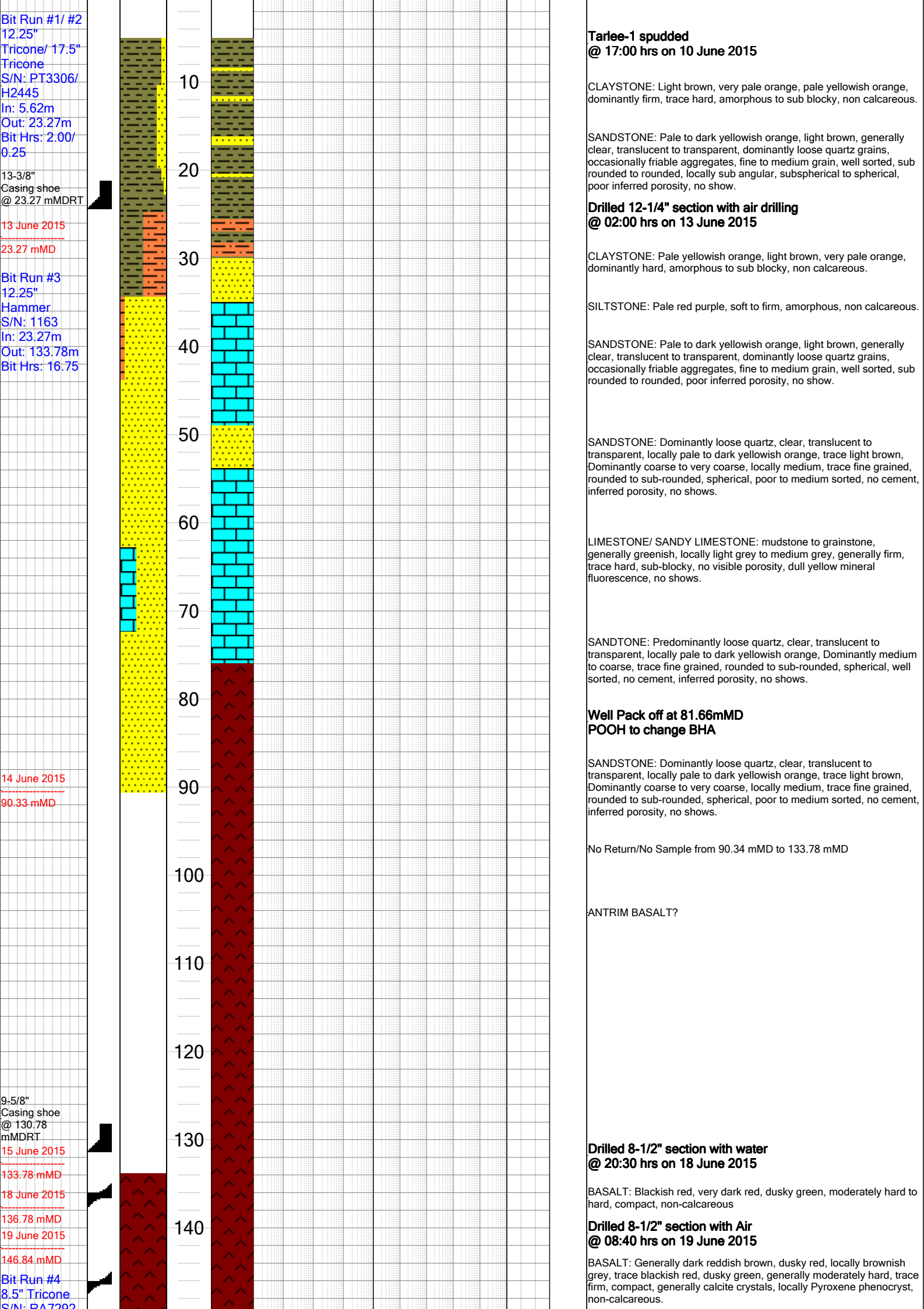
## QUALIFIERS, ACCESSORIES AND FOSSILS



## WEATHERFORD - SURFACE LOGGING SYSTEMS

Company: Pangaea Resources Well: Tarlee-1 Location: McArthur/Beetaloo Spud Date: 10 June 2015 Scale: 1:500

<div>ROP Average</div> <div>50m/hr0</div>			Percentage Lithology	Depth	Interpreted Lithology	<div>Total Gas Sensor</div> <div>1units10000</div>			<div>Methane Out</div> <div>1ppm100000</div>			OIL SHOW	CORING	Description/ Remarks
<div>ROP Average</div> <div>250m/hr50</div>						<div>Carbon Dioxide Out</div> <div>10ppm100000</div>			<div>Ethane Out</div> <div>1ppm100000</div>					
<div>WOB</div> <div>50Klb0</div>						<div>Propane Out</div> <div>1ppm100000</div>			<div>Iso-Butane Out</div> <div>1ppm100000</div>					
						<div>N-Butane Out</div> <div>1ppm100000</div>			<div>N-Butane Out</div> <div>1ppm100000</div>					
						<div>Iso-Pentane Out</div> <div>1ppm100000</div>			<div>Iso-Pentane Out</div> <div>1ppm100000</div>					
						<div>N-Pentane Out</div> <div>1ppm100000</div>			<div>N-Pentane Out</div> <div>1ppm100000</div>					



Bit Run #5  
8.5" Hammer  
S/N: -  
In: 136.78m  
Out: 146.84m  
Bit Hrs: 0.7

Bit Run #5RR1  
8.5" Hammer  
S/N: -  
In: 146.84m  
Out: 292.0m  
Bit Hrs: 14.00

21 June 2015  
245.00 mMD

Bit Run #6  
8.5" Tricone  
S/N: 5251054  
In: 292.0m  
Out: 590.0m  
Bit Hrs: 46.6

150  
160  
170  
180  
190  
200  
210  
220  
230  
240  
250  
260  
270  
280  
290

**Resume drilled 8-1/2" section with Air  
@ 13:00 hrs on 21 June 2015**

BASALT: Generally blackish red, dusky green, brownish black, locally dark reddish brown, dusky red, generally hard to very hard, trace firm, compact, generally Calcite crystals, Pyroxene phenocryst, trace Pyrite, non-calcareous.

BASALT: Generally blackish red, dusky green, brownish black, locally dark reddish brown, dusky red, generally hard to very hard, commonly Calcite crystals, Pyroxene phenocryst, trace Pyrite.

BASALT: Predominantly dusky green, blackish red, brownish black, locally dark reddish brown, dusky red, generally hard to very hard, commonly Calcite crystals, Pyroxene phenocryst, trace Pyrite.

BASALT: Generally blackish red, dusky green, brownish black, locally dark reddish brown, dusky red, generally hard to very hard, commonly Calcite crystals, Pyroxene phenocryst, trace Pyrite.

SANDSTONE: Commonly yellowish grey to pale yellowish brown, clear, commonly translucent to occasionally transparent, medium to coarse Quartz grained, sub rounded to rounded, well sorting, very commonly loose Quartz, commonly moderately hard to hard consolidated with calcareous matrix, friable, rarely silty in part, trace Limestone fragment, poorly infer porosity. No oil show.

SANDSTONE: Commonly light brown, occasionally yellowish grey to pale yellowish brown, clear, commonly translucent to occasionally transparent, medium to coarse Quartz grained, sub rounded to rounded, well sorting, very commonly loose Quartz, commonly moderately hard to hard consolidated with calcareous matrix, friable, rarely silty in part, trace Limestone fragment, poorly infer porosity. No oil show.

**Start record on database from 222.0 mMDRT  
except WOB parameter still missing**

CLAYSTONE: Generally dark blue, reddish marron, firm to moderately hard, occasionally hard, sub blocky to blocky, occasional platy, non to slightly calcareous, trace to very common of silty in part, trace to common micro Pyrite, trace of Pyroxene phenocryst.

SANDSTONE: Commonly moderate orange pink, light brown, occasionally yellowish grey to pale yellowish brown, clear, commonly translucent to occasionally transparent, medium to coarse Quartz grained, occasionally fine grained, sub rounded to rounded, moderately to well sorting, very commonly loose Quartz, commonly moderate hard to hard consolidated with calcareous matrix and rarely moderate hard argillaceous cement, friable, rarely to commonly silty in part, trace Limestone fragment, poorly infer porosity. No oil show.

CLAYSTONE: Generally dark blue, locally reddish maroon, firm to moderately hard, occasionally hard, sub blocky to blocky, occasional platy, non to slightly calcareous, trace to very common of silty in part.

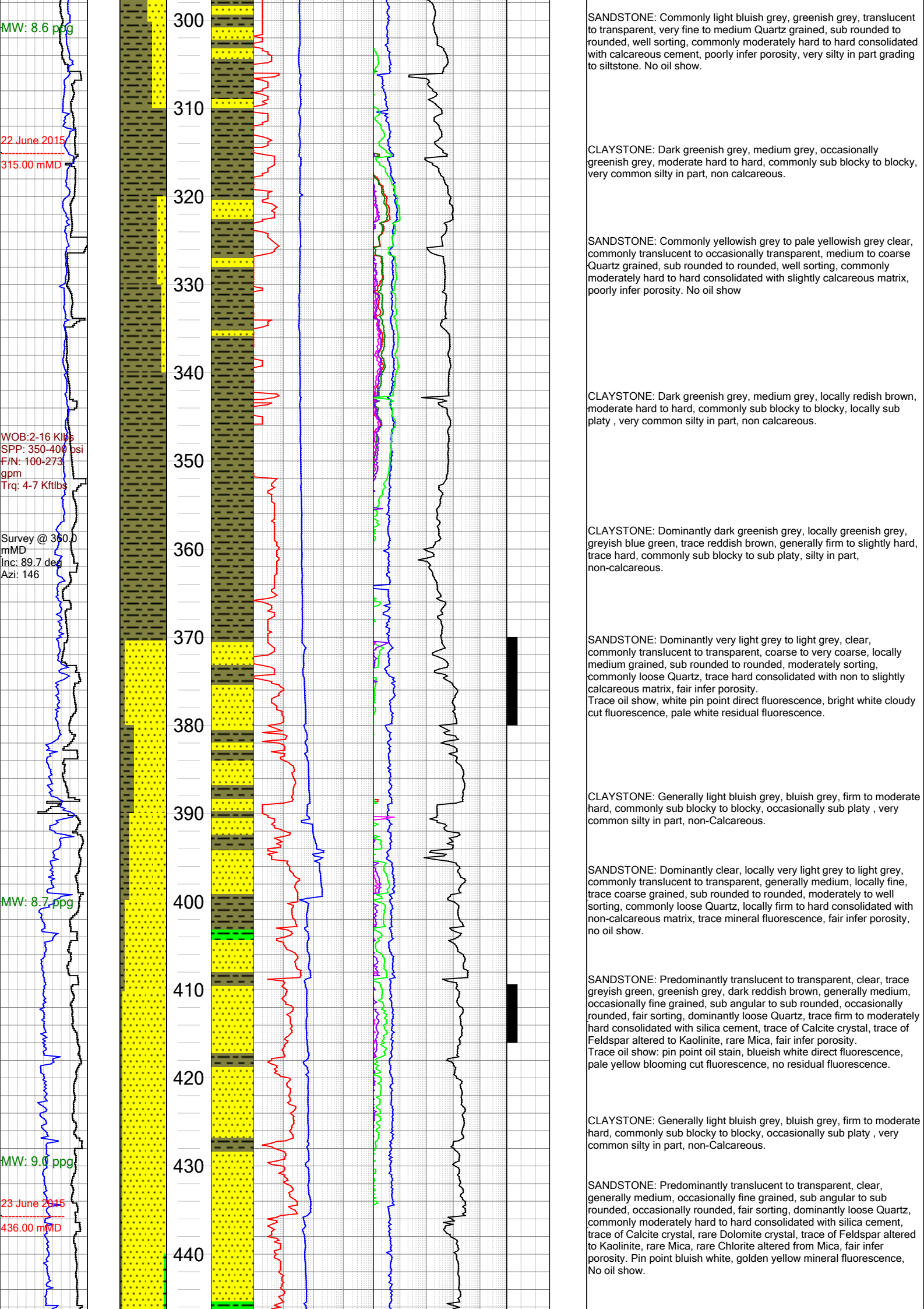
SANDSTONE: Commonly yellowish grey to pale yellowish brown, clear, commonly translucent to occasionally transparent, medium to coarse Quartz grained, sub rounded to rounded, well sorting, very commonly loose Quartz, commonly moderately hard to hard consolidated with calcareous matrix, friable, rarely silty in part, trace Limestone fragment, fair infer porosity.  
Trace oil show, white pin point direct fluorescence, bright white cloudy cut fluorescence, pale white residual fluorescence.

CLAYSTONE: Generally dark blue, locally reddish maroon, firm to moderately hard, occasionally hard, sub blocky to blocky, non to slightly calcareous, trace to very common of silty in part.

SANDSTONE: Commonly yellowish grey to pale yellowish brown, clear, commonly translucent to occasionally transparent, medium to coarse Quartz grained, sub rounded to rounded, well sorting, commonly moderately hard to hard consolidated with calcareous matrix, poorly infer porosity. No oil show.

**Resume drilled 8-1/2" section with Mud  
@ 19:30 hrs on 22 June 2015**





WOB: 6.28 Klbs  
SPP: 600-650 psi  
F/N: 220-290  
gpm  
Trq: 2-23 Kftlbs

MW: 9.0 ppg

Survey @ 483.0  
mMD  
Inc: 89.2 deg  
Azi: 205.4

MW: 9.1+ ppg

24 June 2015  
538.0 mMD

WOB: 45 Klbs  
SPP: 950-920 psi  
F/N: 295 gpm  
Trq: 7 Kftlbs

MW: 9.2+ ppg

7" Casing shoe  
@ 587.13  
mMDRT

Bit Run #7  
6.125" Core bit

450  
460  
470  
480  
490  
500  
510  
520  
530  
540  
550  
560  
570  
580  
590

FG: 220 Units  
@ 530.0m

C1: 7616 PPM  
C2: 1157 PPM  
C3: 1380 PPM  
iC4: 229 PPM  
nC4: 660 PPM  
iC5: 204 PPM  
nC5: 214 PPM

FG: 488 Units  
@ 540.5m

C1: 4569PPM  
C2: 709PPM  
C3: 864PPM  
iC4: 162PPM  
nC4: 474PPM  
iC5: 171PPM  
nC5: 181PPM

SHALE: Generally light bluish grey to bluish grey, generally firm to moderate hard, commonly sub blocky, locally sub platy to platy, trace silty in part, non-calcareous.

SANDSTONE: Predominantly translucent to transparent, clear, trace greyish green, greenish grey, dark reddish brown, generally medium, occasionally fine grained, sub angular to sub rounded, occasionally rounded, fair sorting, dominantly loose Quartz, trace moderately hard to hard consolidated with silica cement, trace of Calcite crystal, rare Dolomite crystal, trace of Feldspar altered to Kaolinite, rare Mica, fair infer porosity. Pin point bluish white, golden yellow mineral fluorescence, No oil show.

SHALE: Generally dark greenish grey, greenish grey, locally greyish green, trace reddish brown, generally firm to moderate hard, commonly sub blocky, occasionally sub platy, trace silty in part, non-calcareous.

SANDSTONE: Predominantly translucent to transparent, clear, trace greyish green, greenish grey, rare dark reddish brown, generally medium, occasionally very fine to fine grained, sub angular to sub rounded, occasionally rounded, moderate to well sorting, Predominantly loose Quartz, trace moderately hard consolidated with silica cement, trace Pyrite, trace Mica, fair infer porosity. Pin point bluish white, mineral fluorescence, No oil show.

SHALE: Dominantly olive black, dark greenish grey, locally medium bluish grey, medium grey, trace greenish grey, dark reddish brown, generally firm, locally slightly to moderate hard, commonly sub platy to platy, locally sub blocky, commonly silty in part, trace lithic fragments, non-calcareous.

SANDSTONE: Generally translucent to transparent, clear, trace greyish green, greenish grey, rare dark reddish brown, generally fine to medium, trace very fine, coarse grained, sub angular to sub rounded, locally rounded, poorly sorting, generally loose Quartz, trace moderately hard consolidated with silica cement, trace argillaceous matrix, trace Mica, fair infer porosity, trace mineral fluorescence, No oil show.

SHALE: Generally olive black, dark greenish grey, occasionally medium grey, medium bluish grey, trace greenish grey, dark reddish brown, generally firm, occasionally slightly to moderate hard, commonly sub platy to platy, occasionally sub blocky, commonly silty in part, trace lithic fragments, non calcareous.

SANDSTONE: Generally translucent to transparent, clear, trace greyish green, greenish grey, rare dark reddish brown, generally fine to medium, trace very fine, coarse grained, sub angular to sub rounded, occasionally rounded, poorly sorting, generally loose Quartz, trace moderately hard consolidated with silica cement, trace argillaceous matrix, trace Mica, fair infer porosity, trace mineral fluorescence.

Trace oil show: pin point oil stain, no oil smell, bright bluish white, bright golden yellow direct fluorescence, no cut fluorescence, light bluish milky white residual fluorescence.

SHALE: Generally olive black, dark greenish grey, occasionally medium grey, medium bluish grey, trace greenish grey, dark reddish brown, generally firm, occasionally slightly to moderate hard, commonly sub platy to platy, occasionally sub blocky, commonly silty in part, trace lithic fragments, non calcareous.

SANDSTONE: Generally translucent to transparent, clear, trace greyish green, greenish grey, rare dark reddish brown, generally fine to medium, trace very fine, coarse grained, sub angular to sub rounded, occasionally rounded, poorly sorting, generally loose Quartz, trace moderately hard consolidated with silica cement, trace argillaceous matrix, trace Mica, fair infer porosity, trace mineral fluorescence.

Trace oil show: pin point oil stain, no oil smell, bright bluish white, bright blue, bright golden yellow, dull yellow direct fluorescence, very slow streaming cut fluorescence (slow streaming from 535m-545m), light bluish milky white, yellowish white residual fluorescence.

*Noticeable amounts of Antrim Basalt cavings observed in the interval 575 to 588 mRT*

SHALE: Dominantly greenish grey to dark greenish grey, occasionally medium grey to medium dark grey, trace dark reddish brown, olive black, generally firm, locally slightly hard, commonly sub platy to platy, locally sub blocky, commonly silty in part, locally lithic fragments, non-calcareous.

**Drilled 6-1/8" section with Core bit  
After FIT 21 ppg EMW**



125 Core bit  
S/N: A167415  
In: 590.00m  
Out: 754.40m  
Bit Hrs: 31.7

MW: 8.8 ppg

MW: 8.9 ppg

29 June 2015

633.00 mMD

WOB: 1-8 Klbs  
SPP: 520-650 pps  
F/N: 196-210  
gpm  
Trq: 2.5-6.0 Klbs

MW: 8.8 ppg

30 June 2015

681.63 mMD

01 July 2015

697.22 mMD

MW: 8.75 ppg

02 July 2015

735.00 mMD

MW: 8.7 ppg

WOB: 3.8 Klbs

600

610

620

630

640

650

660

670

680

690

700

710

720

730

740

FG: 180 Units  
@ 624.6mMD

C1: 8592 PPM  
C2: 1820 PPM  
C3: 1936 PPM  
iC4: 194 PPM  
nC4: 567 PPM  
iC5: 118 PPM  
nC5: 125 PPM

FG: 275 Units  
@ 677.6mMD

C1: 9588 PPM  
C2: 3951 PPM  
C3: 2967 PPM  
iC4: 310 PPM  
nC4: 1155 PPM  
iC5: 241 PPM  
nC5: 341 PPM

FG: 486 Units  
@ 704.8mMD

C1: 17772 PPM  
C2: 9109 PPM  
C3: 4712 PPM  
iC4: 366 PPM  
nC4: 1316 PPM  
iC5: 212 PPM  
nC5: 304 PPM

FG: 326 Units  
@ 743.2mMD

C1: 10040 PPM

@ 10:00 hrs on 29 June 2015

SHALE: Dominantly greyish green, dark greenish grey, occasionally greyish black, medium dark grey, greenish grey, locally medium grey to dark grey, trace olive black, generally firm, locally slightly hard, trace hard, commonly sub platy to platy, locally sub blocky, commonly carbonaceous in part and fragments, locally silty in part, non-calcareous.

SANDSTONE: Generally translucent, clear, trace pale green, greenish grey, generally very fine to fine grained, sub angular to sub rounded, well sorting, generally moderately hard consolidated with silica cement, locally green lithic fragments, poorly infer porosity, no oil show.

Carb. SHALE: Predominantly dark grey, greyish black, black, locally olive black, trace greyish green, dark greenish grey, generally slightly hard, locally hard, trace firm, commonly sub platy to platy, locally sub elongate, sub blocky, commonly carbonaceous in part, locally silty in part, non-calcareous.

#### Start coring from 630.0mMD

Core 01

Carb. SHALE: Predominantly dark grey, greyish black, olive black, trace greyish green, dark greenish grey, generally moderately hard to hard, trace firm, commonly sub platy to platy, blocky, commonly carbonaceous in part, very silty in part, locally grading to siltstone, commonly micro mica, trace of micro pyrite, non calcareous.

Core 02

SANDSTONE: Generally off white, translucent, clear, occasionally greenish grey, generally fine to medium, sub angular to sub rounded, moderate sorting, generally firm to moderately hard consolidated with silica cement, poorly infer porosity  
Trace oil show: pin point bright bluish white, bright blue, light dull golden yellow, direct fluorescence, no cut fluorescence, light bluish milky white, residual fluorescence.

Core 03

Core 04

Carb. SHALE: Dominantly olive black, greyish black, locally dark grey, trace dark greenish grey, generally firm to moderately hard commonly sub platy to platy, blocky, commonly carbonaceous in part, very silty in part, locally grading to siltstone, commonly micro mica, non-calcareous.

Core 05

SANDSTONE: Generally off white, translucent, clear, locally greenish grey, generally fine to medium, sub angular to sub rounded, moderate to well sorting, generally firm to moderately hard, consolidated with silica cement, occasionally silty in part, poorly infer porosity  
Trace oil show: pin point pale white, dull golden yellow direct fluorescence, no cut fluorescence, light bluish milky white, residual fluorescence.

Core 06

#### Fixing and Re-calibrate Chromatograph detector

Carb. SHALE: Dominantly olive black, greyish black, locally dark grey, trace dark greenish grey, occasionally interbedded with thin layer of light brown, dark reddish brown and greenish grey mud stone at some curtain depths, generally firm to moderately hard, commonly sub platy to platy, blocky, commonly carbonaceous in part, very silty in part, locally grading to siltstone, commonly micro mica, non-calcareous.

Core 07

SANDSTONE: Generally off white, translucent, clear, occasionally greenish grey, generally fine to medium, sub angular to sub rounded, moderate sorting, generally firm to moderately hard consolidated with silica cement, poorly infer porosity.  
Trace oil show: pin point bright bluish white, bright blue, light dull golden yellow, direct fluorescence, no cut fluorescence, light bluish milky white, residual fluorescence.

Core 08

Core 09

Core 10

Carb. SHALE: Olive black, greyish black to brownish black, occasionally interbedded with thin layer of light brown, dark reddish brown and greenish grey mud stone, generally firm to moderately hard, commonly sub platy to platy, blocky, commonly carbonaceous in part, very silty in part, locally grading to siltstone, commonly micro mica, non-calcareous.

Core 11

Carb. SHALE: Olive black to dark greyish black, occasionally brownish black, occasionally interbedded with thin layer of light brown, dark reddish brown and greenish grey mud stone, generally firm to moderately hard, commonly sub platy to platy, blocky, common carbonaceous specks, very silty in part, locally grading to siltstone, commonly micro mica, occasional pyrite, non-calcareous.

Core 12

SANDSTONE: Generally off white, translucent, clear, occasionally greenish grey, dark greyish black, generally fine to medium, occasionally very fine, sub angular to sub rounded, moderate sorting, generally firm to moderately hard consolidated with silica cement, commonly dark color lithic, poorly infer porosity.  
Trace oil show: pin point bright bluish white, bright blue, light dull golden yellow, direct fluorescence, no cut fluorescence, light bluish milky white, residual fluorescence.

Core 13

Core 14

Core 15

Core 16

Core 17

Carb. SHALE: Dominantly olive black, greyish black, locally dark grey, trace dark greenish grey, occasionally interbedded with thin layer of light brown, dark reddish brown and greenish grey mud stone at some curtain depths, generally firm to moderately hard, commonly sub platy to platy, blocky, commonly carbonaceous in part, very silty in part, locally grading to siltstone, commonly micro mica, non-calcareous.

