

HALLIBURTON

HRSC-B CORE REPORT

COMPANY				CONOCO PHILLIPS COMPANY									
WELL				LITTLE RUSH 4-65 28 1V									
FIELD/BLOCK				WILDCAT									
COUNTY				ARAPAHOE									
STATE				COLORADO									
Permanent Datum		GL		API No.		050050727000							
Log measured from		KB		Location		SURFACE HOLE LOCATION: 1531' FSL & 422' FWL NW/SW							
Drilling measured from		KB		BOTTOM HOLE LOCATION: 1531' FSL & 500' FWL NW/SW		Other Services: RWCH CSNG DSNT/SDLT IDT/ICT WSTT ACRT MRIL							
Date	28-Jul-17			Sect.	28	Twp.	4S	Rge.	65W	Elev.	5698.0 ft	D.F.	5724.0 ft
Run No.	ONE												
Depth - Driller	8562.0 ft												
Depth - Logger	8564.0 ft												
Bottom - Logged Interval	8564.0 ft												
Top - Logged Interval	7555.0 ft												
Casing - Driller	9.625 in @ 2246.0 ft												
Casing - Logger	2239.0 ft												
Bit Size	8.500 in												
Type Fluid in Hole	Oil Based												
Density	F. Viscosity	9.7 ppg	53.00 s/qt										
Alkalinity	P. Viscosity		11.0 cP										
HTHP @ Meas. Temperature	3.8 cpim @ 250.00 degF												
Solids	Wgt. Material	8.7 %	BARITE										
Oil	Water Ratio	70	30										
Water Phase Salinity	62000.00 ppm Cl-												
Oil Type	Brine Type	DIESEL	CaCl										
Electrical Stability	424 V												
Time Since Circulation	11.54 hr												
Time on Bottom	28-Jul-17 16:54												
Max. Rec. Temperature	230.00 degF @ 8564.0 ft												
Equipment	Location	11335318	R.S. WY										
Recorded By	J. HEATHERLY												
Witnessed By	D. ALDRIDGE												

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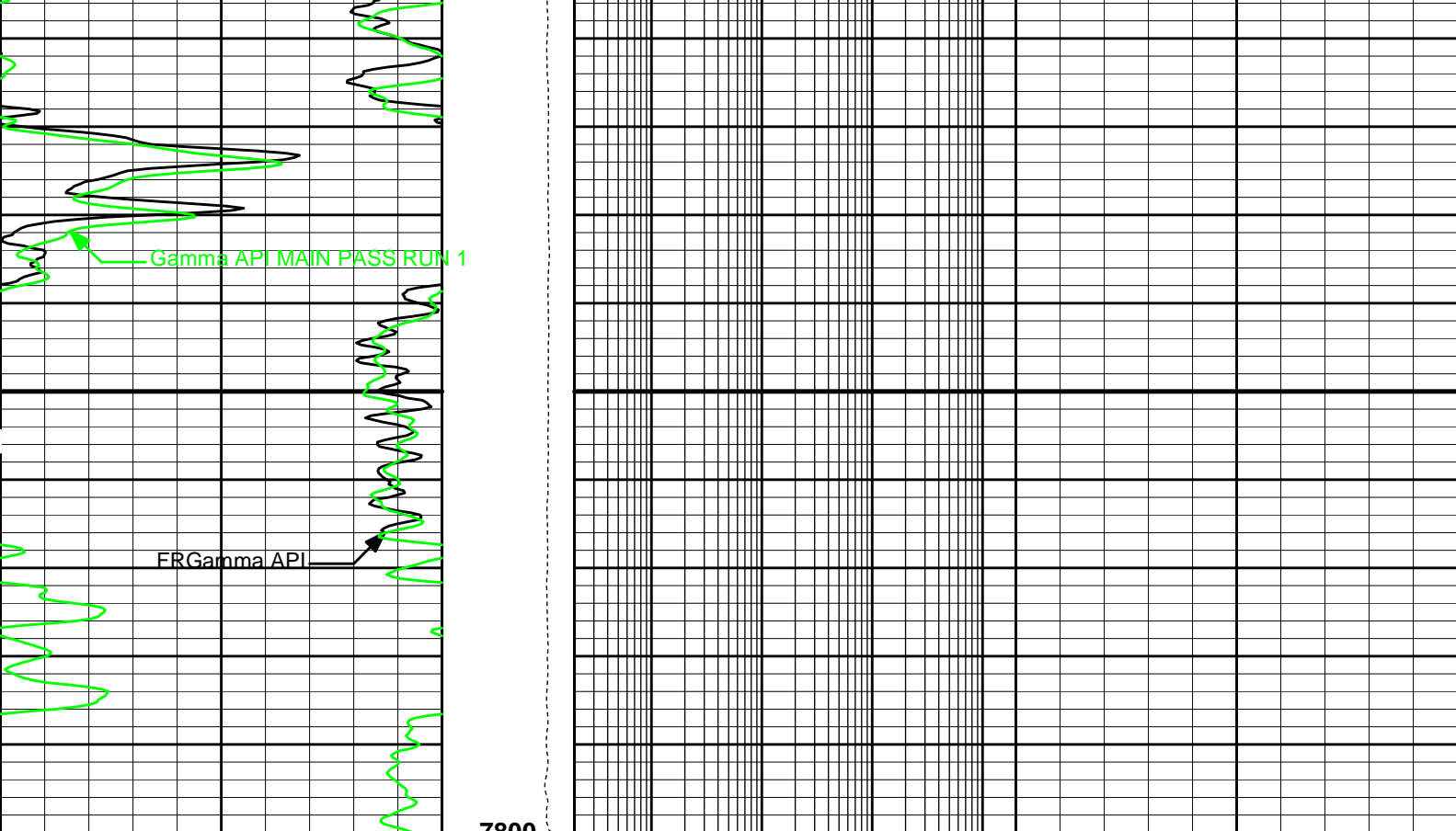
Service Ticket No.: 904186540				API No.: 050050727000				PGM Version: WL INSITE R5.0.5 (Build 8)							
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES									
Date	Sample No.					Type Log	Depth	Scale Up Hole	Scale Down Hole						
Depth-Driller															
Type Fluid in Hole															
Density	F. Viscosity														
Alkalinity	P. Viscosity														
HTHP @ Meas. Temp.		@				RESISTIVITY EQUIPMENT DATA									
Solids	Wgt. Mat.					Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other					
Oil	Water Ratio					ONE	ACRT	N/A	0.25 in S.O.	N/A					
Water Phase Salinity							I: 10988483								
Oil Type	Water Type						S: 10988480								
Electrical Stability															
EQUIPMENT DATA															
GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run No.	ONE			Run No.	ONE			Run No.	ONE			Run No.	ONE		
Serial No.	11294346			Serial No.	11000318			Serial No.	10746390			Serial No.	11020488		
Model No.	GTET			Model No.	WSTT			Model No.	SDLT			Model No.	DSNT		
Diameter	3.625 in			No. of Cent.	2			Diameter	4.5 in			Diameter	3.625 in		
Detector Model No.	GTET			Spacing	0.5 in			Log Type	GAMMA			Log Type	THERMAL		
Type	SCINT							Source Type	Cs137			Source Type	Am241Be		
Length	8 in			LSA [Y/N]	Y			Serial No.	5235GW			Serial No.	DSN-431		
Distance to Source	18 ft			FWDA [Y/N]	Y			Strength	1.78 Ci			Strength	15 Ci		

LOGGING DATA																
GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON				
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix		
No.	From	To	ft/min	L	R	L	R		L	R		L	R			
ONE	8564 ft	7200 ft	REC	0 api	150 api	30%	-10%	47.6 us/ft	30%	-10%	2.71 g/cc	30%	-10%	SAND		
DIRECTIONAL INFORMATION																
Maximum Deviation								@	KOP							@
Remarks: RWCH-GTET-CSNG-DSNT-SDLT-IDT-ICT-WSTT-ACRT RUN IN COMBINATION																
BOREHOLE RUGOSITY, TENSION PULLS, & WASHOUTS MAY EFFECT LOG QUALITY																
ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING SDLM S/N: 10935813																
CUSTOMER ACCEPTS WSTT RESPONSE BETWEEN 7300 FT AND 7200 FT																
GTET-CSNG-DSNT-SDLT-IDT-ICT-WSTT LOGGED BETWEEN 8564 FT AND 7200 FT AT CUSTOMER REQUEST																
LATITUDE: 39.671617°N																
LONGITUDE: 104.677108°W																
TODAY'S CREW: D. PIEGER, J. MAYNE								RIG: H&P 448								
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY (307)352-8600																
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.																
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CORE REPORT

Tool Mnemonic: HRSC-B Tool Name: Hostile Rotary Sidewall 1.5 inc Serial Number: 12040063 Length Units: in Temperature Units: degF											
Core Time	Depth	Core No.	Marker No.	Tube No.	Tube Loc.	Core Len.	Drilled Len.	Coring Time	Bore Temp.	Comment	
29-Jul-17 16:58:42.000	7555.00	1	1	1	1	1.72	2.20	3.92	223.4		
29-Jul-17 17:19:47.000	7821.00	2	2	1	2	1.64	2.20	7.43	231.5		
29-Jul-17 17:49:42.000	7854.00	3	3	1	3	1.69	2.21	4.20	235.1		
29-Jul-17 18:18:48.000	7837.00	4	4	1	4	1.68	2.20	4.23	236.0		
29-Jul-17 18:48:14.000	7872.00	5	5	1	5	2.32	2.20	8.53	237.1		
29-Jul-17 19:06:48.000	7890.01	6	0	1	6	2.36	2.20	8.30	238.0		
29-Jul-17 19:37:39.000	7927.00	7	6	1	7	2.38	2.21	10.25	238.9		
29-Jul-17 20:10:31.000	7941.00	8	0	1	8	2.31	2.20	11.52	240.1		
29-Jul-17 20:38:26.000	7947.00	9	0	1	9	2.17	2.20	8.83	241.0		
29-Jul-17 21:12:08.000	8022.00	10	0	1	10	2.42	2.20	8.02	241.9		
29-Jul-17 21:40:30.000	8034.00	11	0	1	11	2.37	2.20	10.95	242.5		
29-Jul-17 21:46:00.000	8303.99	12	0	1	12	2.37	2.20	6.20	245.9		



0	Gamma API	150	8K Tens 2K	0.2	RT90	2K	30	Density Porosity	-10
	api		pounds		Ohm-m			percent	
6	Caliper	16		0.2	RT60	2K	30	Neutron Porosity	-10
	inches				Ohm-m			percent	
0	Gamma API MAIN PASS RUN 1	150		0.2	RT30	2K			
	api				Ohm-m				
				0.2	RT20	2K			
					Ohm-m				
				0.2	RT10	2K			
					Ohm-m				

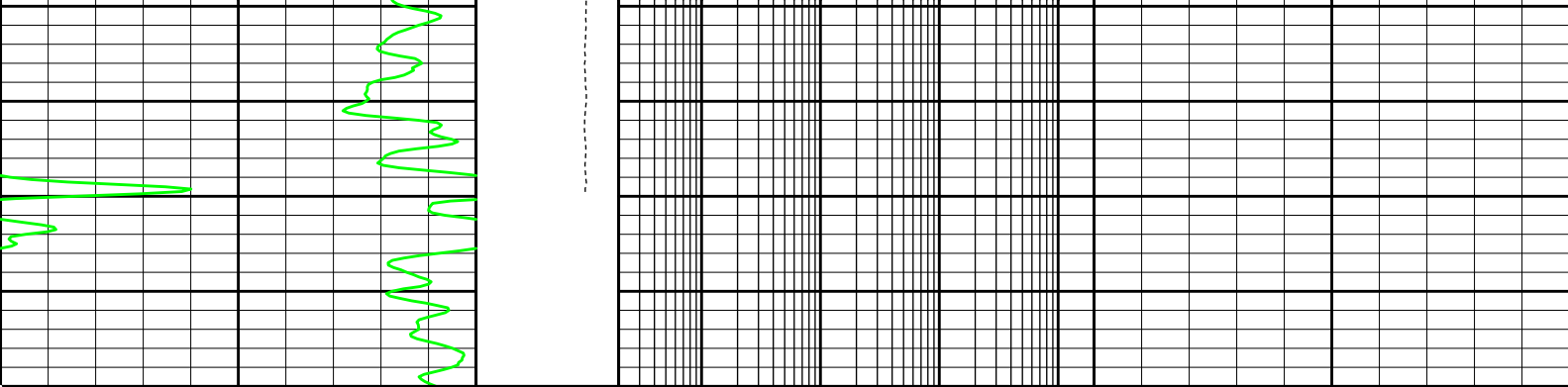
HALLIBURTON Plot Time: 01-Aug-18 08:03:37
Plot Range: 7600 ft to 7800 ft
Data: *Well Based*\
Plot File: \\CORE\CONOCO_COMPOSITE_MAIN

MAIN PASS 5" = 100'

HALLIBURTON Plot Time: 01-Aug-18 08:03:37
Plot Range: 8150 ft to 8350 ft
Data: *Well Based*\
Plot File: \\CORE\CONOCO_COMPOSITE_MAIN

MAIN PASS 5" = 100'

[illegible]



0	Gamma API	150	8K Tens 2K	0.2	RT90	2K	30	Density Porosity	-10
	api		pounds		Ohm-m			percent	
6	Caliper	16		0.2	RT60	2K	30	Neutron Porosity	-10
	inches				Ohm-m			percent	
0	Gamma API MAIN PASS RUN 1	150		0.2	RT30	2K			
	api				Ohm-m				
				0.2	RT20	2K			
					Ohm-m				
				0.2	RT10	2K			
					Ohm-m				

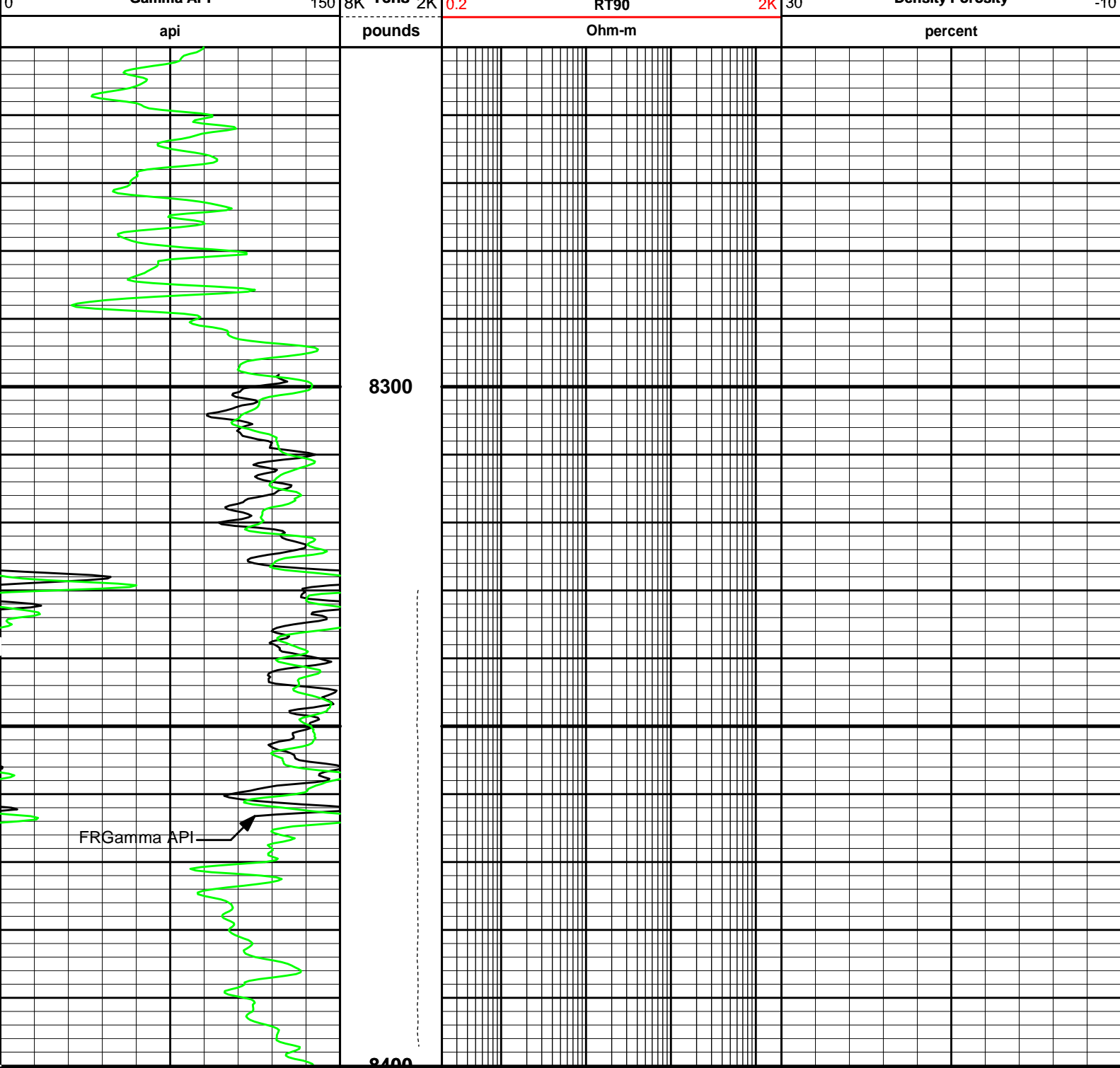
HALLIBURTON Plot Time: 01-Aug-18 08:03:40
Plot Range: 8150 ft to 8350 ft
Data: *\Well Based\
Plot File: \\CORE\CONOCO_COMPOSITE_MAIN

MAIN PASS 5" = 100'

HALLIBURTON Plot Time: 01-Aug-18 08:03:40
Plot Range: 8250 ft to 8400 ft
Data: *\Well Based\
Plot File: \\CORE\CONOCO_COMPOSITE_MAIN

MAIN PASS 5" = 100'

			0.2	RT10	2K				
				Ohm-m					
			0.2	RT20	2K				
				Ohm-m					
0	Gamma API MAIN PASS RUN 1	150	0.2	RT30	2K				
	api			Ohm-m					
6	Caliper	16	0.2	RT60	2K	30	Neutron Porosity	-10	
	inches			Ohm-m			percent		
0	Gamma API	150	0.2	RT90	2K	30	Density Porosity	-10	
	api			Ohm-m			percent		



0	Gamma API	150	8K Tens 2K	0.2	RT90	2K	30	Density Porosity	-10
	api		pounds		Ohm-m			percent	
6	Caliper	16		0.2	RT60	2K	30	Neutron Porosity	-10
	inches				Ohm-m			percent	
0	Gamma API MAIN PASS RUN 1	150		0.2	RT30	2K			
	api				Ohm-m				
				0.2	RT20	2K			
					Ohm-m				
				0.2	RT10	2K			
					Ohm-m				

HALLIBURTON

Plot Time: 01-Aug-18 08:03:43
Plot Range: 8250 ft to 8400 ft
Data: *Well Based**
Plot File: \\CORE\\CONOCO COMPOSITE MAIN

MAIN PASS 5" = 100'

HALLIBURTON

CALIBRATION REPORT

DITS 4 TELEMETRY GAMMA SHOP CALIBRATION

Tool Name: D4TG - 11042195

Engineer: J. HEATHERLY

Software Version: WL INSITE R5.4.5 (Build 2)

Reference Calibration Date: 29-Jul-17 12:22:15

Calibration Date: 29-Jul-17 12:24:49

Calibration Version: 1

Calibrator Source S/N: TB-689
Calibrator API Reference:243.00 api
Equivalent Calibrator API Reference:247.3 api

Measurement	Measured	Calibrated	Units
Background	30.6	30.5	api
Background + Calibrator	278.6	277.7	api
Calibrator	248.0	247.3	api

DITS 4 TELEMETRY GAMMA FIELD CALIBRATION

Tool Name: D4TG - 11042195

Engineer: J. HEATHERLY

Software Version: WL INSITE R5.4.5 (Build 2)

Reference Calibration Date: 29-Jul-17 12:24:49

Calibration Date: 29-Jul-17 12:27:49

Calibration Version: 1

Calibrator Source S/N: TB-689
Calibrator API Reference:243.00 api
Equivalent Calibrator API Reference:247.3 api

Field Verification	Shop	Field	Units
Background	30.5	30.6	api
Background + Calibrator	277.7	278.7	api
Calibrator	247.3	248.1	api

Shop	Field	Difference	Tolerance
247.3	248.1	-0.8	+/- 9.00

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
D4TG-11042195						
Gamma Ray Calibrator	247.3	248.1	-----	-0.8	+/- 9.00	api

Data: DENVER_CORES\0001 COPCORES\IDLE

Date: 01-Aug-18 07:45:18

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
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RWCH-11111111
135.00 lbs

Weak Point 10000 lbs-
11111111
0.01 lbs

PTMS-11683095
110.00 lbs

D4TG-11042195
110.00 lbs

HRSC-B-12040063
960.00 lbs

HRSC-B-T1-
11111111
25.00 lbs

HRSC-B-T2-
22222222
25.00 lbs

Ø 2.310 in →

Ø 3.625 in →

Ø 0.010 in* →

Ø 3.625 in →

Ø 3.625 in →

Ø 3.375 in →

Ø 6.000 in →

Ø 1.750 in →

Ø 3.375 in →

Ø 1.750 in →

← Fishing Neck @ 45.53 ft

← Load Cell @ 42.73 ft

← BH Temperature @ 42.16 ft

← GammaRay @ 32.77 ft

← Z-Accelerometer @ 28.25 ft

← Upper Backup Pad @ 2.66 ft

← Coring Bit @ 0.00 ft



TOOL ZERO @ 13.70 ft

COMPANY	CONOCO PHILLIPS COMPANY		
WELL	LITTLE RUSH 4-65 28 1V		
FIELD	WILDCAT		
COUNTY	ARAPAHOE	STATE	COLORADO
HALLIBURTON		HRSC-B CORE REPORT	