



Multi-Arm Caliper
Electromagnetic Thickness
Gamma Ray / CCL
Log

Company Grynberg Petroleum
Well Schulte #1-13R
Field Granite Wash
County Lincoln State Colorado

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Well Schulte #1-13R
Field Granite Wash
County Lincoln
State Colorado

Location: API # : 05-073-05055
Section: 3, Township: 6S, Range: 52W
Lat: 39.550423, Long: -103.207815
SEC TWP RGE
Permanent Datum Ground Level Elevation 4915'
Log Measured From K.B.
Drilling Measured From K.B.
Other Services
MAC 60
EMIT
Elevation
K.B.
D.F.
G.L. 4915'

Date 9-16-2016

Run Number One
Depth Driller 237'
Depth Logger 247'
Bottom Logged Interval 247'
Top Log Interval Surface
Open Hole Size 10 3/4"
Type Fluid Water
Density / Viscosity 8.3
Max. Recorded Temp. -
Estimated Cement Top See Log
Time Well Ready 12:00 a.m.
Time Logger on Bottom See Log
Equipment Number W-060
Location Windsor, CO
Recorded By W. Richardson
Witnessed By G. Smith

Borehole Record
Run Number One
Bit 10 3/4"
From 0'
To 238'
Size
Weight
From
To

Casing Record
Surface String 8 5/8"
Prot. String 24#
Production String
Liner

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

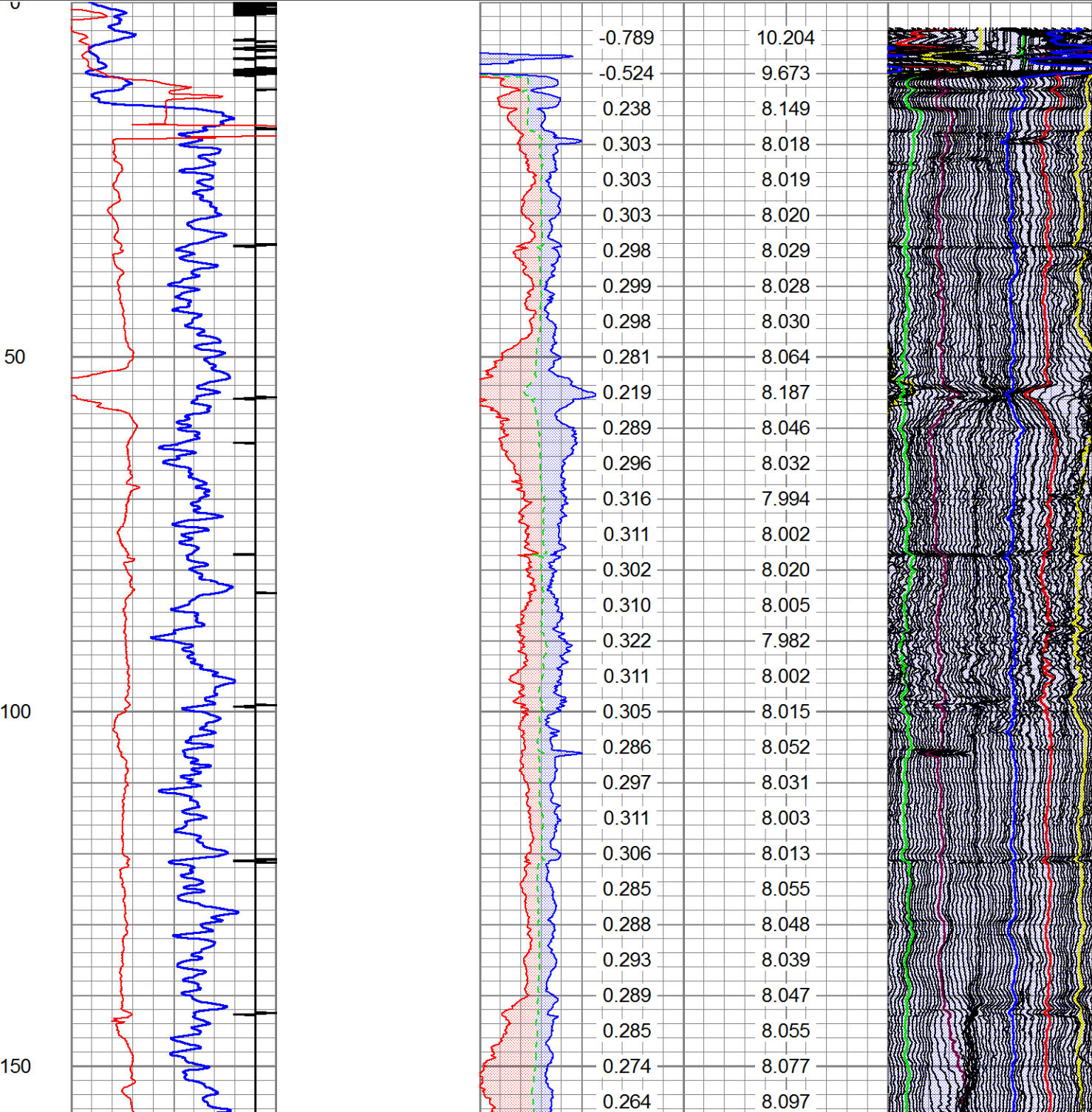
Comments

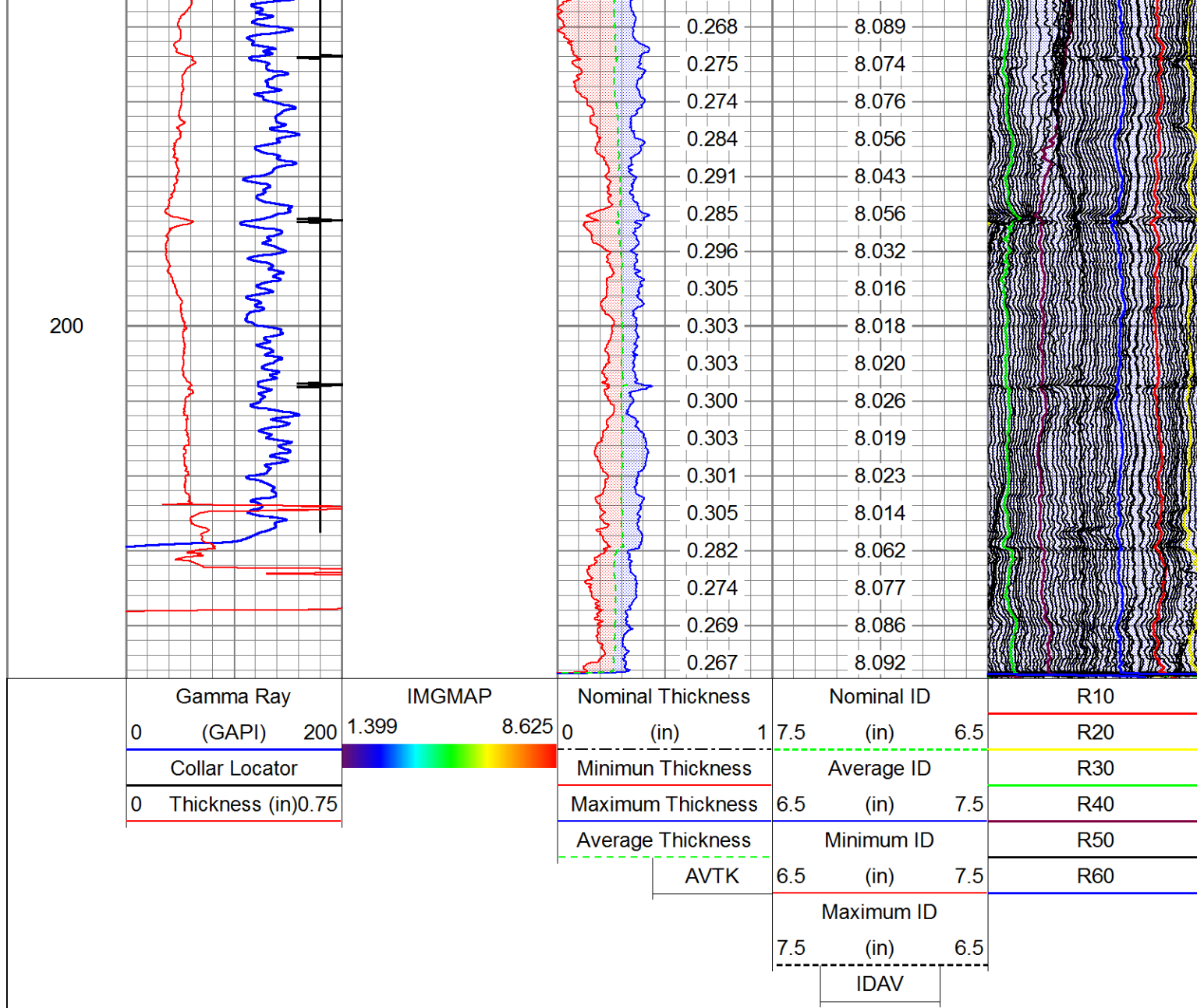
*****Thank You For Using Cutters Wireline*****
Log Ran as First Log In Well



Main Pass 5" = 100'

Gamma Ray			Nominal Thickness		Nominal ID		R10
0	(GAPI) 200		0	(in) 1	7.5	(in) 6.5	R20
Collar Locator			Minimum Thickness		Average ID		R30
0	Thickness (in)0.75		Maximum Thickness		6.5	(in) 7.5	R40
		Average Thickness		Minimum ID		R50	
		AVTK		6.5	(in) 7.5	R60	
				Maximum ID			
				7.5	(in) 6.5		
				IDAV			

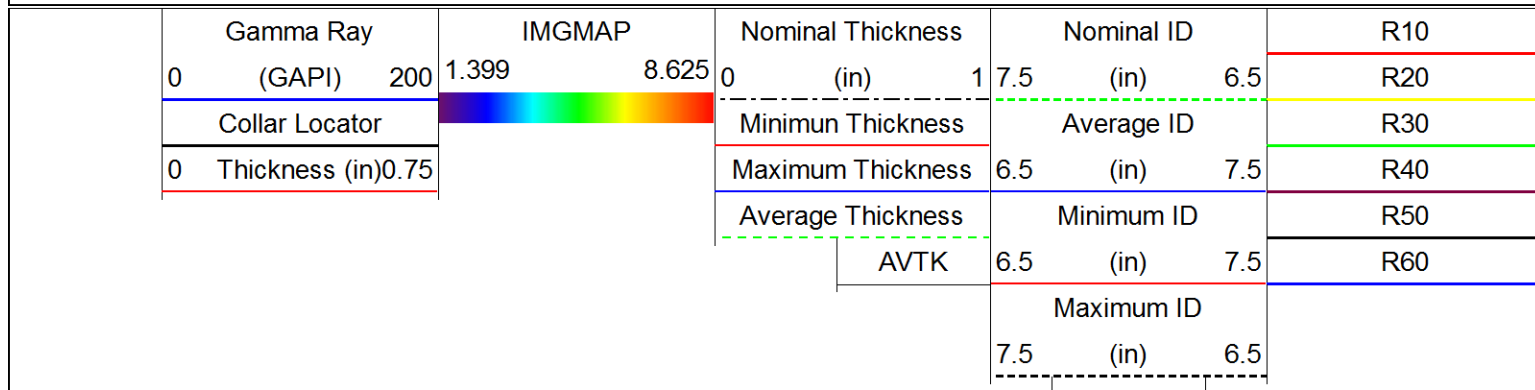


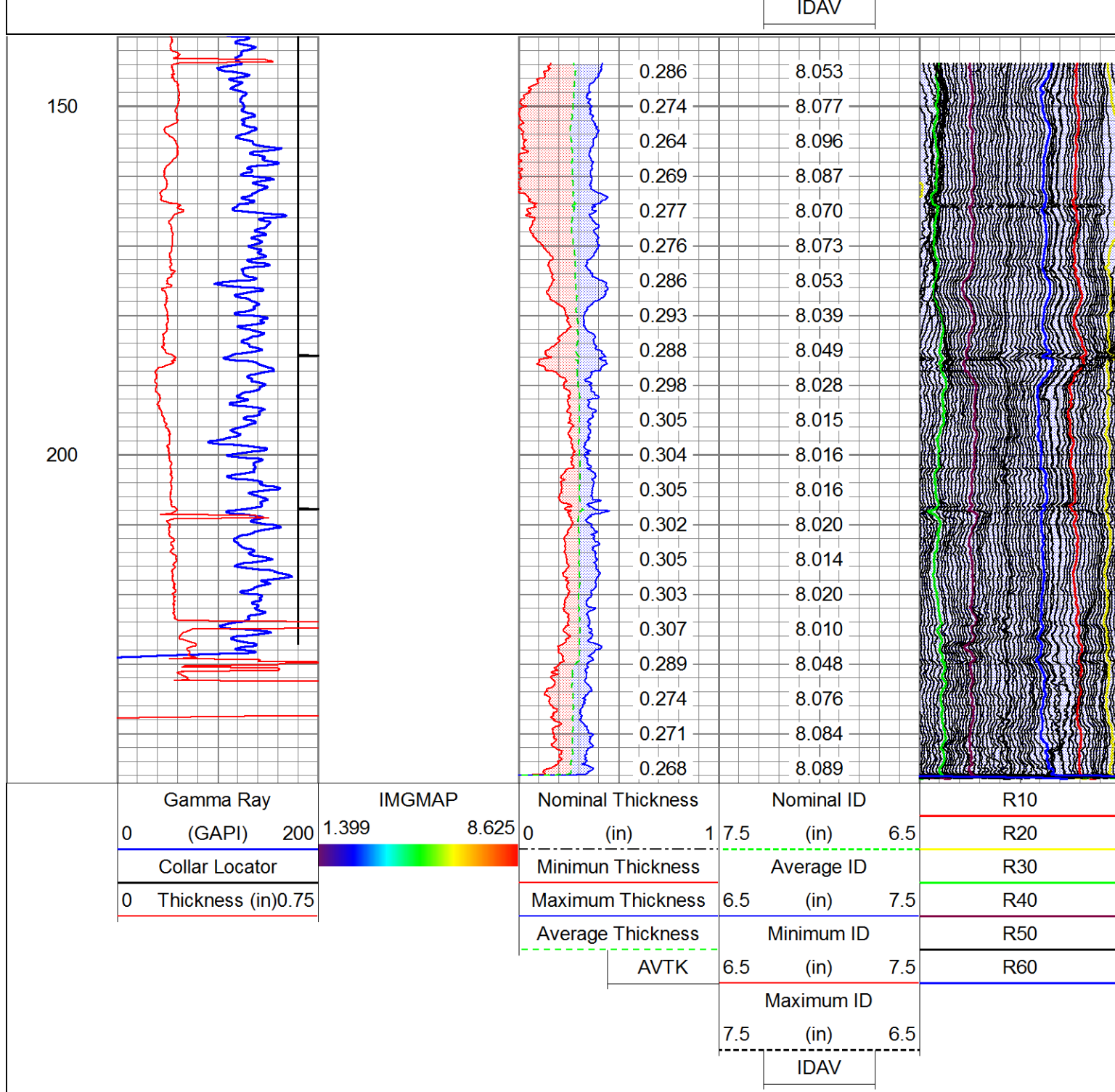


A Cased Hole Wireline Company

Repeat Pass 5" = 100'

Database File:	grynberg_schulte_1_13r.db
Dataset Pathname:	pass8
Presentation Format:	msc6075gr
Dataset Creation:	Fri Sep 16 04:31:54 2016 by Log 7.0 B1
Charted by:	Depth in Feet scaled 1:240





Log Variables

Database: C:\Warrior\Data\grynberg_schulte_1_13r.db
Dataset: field/well/run1/pass9.2

Top - Bottom

MinAPIWall in 0.264	CASEID in 5.012	XXXX 0	PPT usec 0	CASEWGHT lb/ft 24	MAXAMPL mV 52	MINAMPL mV 1	MINATTN db/ft 0.8
SRFTEMP degF 0	CASEOD in 8.625	PERFS 0	TDEPTH ft 0	BOTTEMP degF 100	BOREID in 10.75		

Calibration Report

Database File: grynberg_schulte_1_13r.db

60 Arm Multi Sensor Caliper Calibration Report

Serial Number: FW1211-34
Tool Model: 60
Performed: Fri Sep 16 04:15:33 2016

Ref ID:	5.00	6.00	7.00	8.00	9.00	10.00
Arm1	2.56	3.03	3.51	3.99	4.49	4.99
Arm2	2.75	3.21	3.67	4.13	4.66	5.20
Arm3	2.44	2.92	3.41	3.88	4.38	4.88
Arm4	2.96	3.45	3.95	4.44	4.93	5.34
Arm5	2.40	2.87	3.35	3.82	4.32	4.82
Arm6	1.93	2.41	2.90	3.38	3.87	4.39
Arm7	2.21	2.70	3.19	3.71	4.27	4.81
Arm8	2.55	3.02	3.51	4.00	4.48	4.95
Arm9	2.48	2.96	3.42	3.89	4.39	4.90
Arm10	2.23	2.71	3.19	3.67	4.18	4.70
Arm11	2.39	2.86	3.33	3.82	4.33	4.84
Arm12	2.43	2.91	3.42	3.93	4.42	4.81
Arm13	2.47	2.96	3.46	3.95	4.45	4.92
Arm14	2.76	3.23	3.70	4.18	4.66	5.14
Arm15	2.54	2.99	3.46	3.94	4.41	4.87
Arm16	2.30	2.78	3.28	3.81	4.32	4.78
Arm17	2.33	2.80	3.27	3.76	4.26	4.76
Arm18	2.59	3.00	3.43	3.87	4.30	4.73
Arm19	2.27	2.78	3.28	3.80	4.32	4.86
Arm20	2.31	2.80	3.28	3.79	4.29	4.80
Arm21	2.30	2.79	3.27	3.79	4.30	4.79
Arm22	2.42	2.90	3.38	3.88	4.35	4.83
Arm23	2.48	2.97	3.47	3.99	4.47	4.93
Arm24	2.39	2.89	3.38	3.89	4.38	4.85
Arm25	2.50	2.98	3.45	3.94	4.41	4.87
Arm26	2.51	3.02	3.54	4.07	4.55	5.03
Arm27	2.57	3.07	3.54	4.03	4.51	5.02
Arm28	2.79	3.26	3.70	4.14	4.57	5.04
Arm29	2.49	2.95	3.43	3.93	4.40	4.83
Arm30	2.29	2.78	3.26	3.78	4.27	4.76

* Bad

Ref ID:	5.00	6.00	7.00	8.00	9.00	10.00
Arm31	2.47	2.98	3.48	3.99	4.47	4.94
Arm32	2.35	2.84	3.33	3.86	4.35	4.81
Arm33	2.19	2.70	3.19	3.69	4.18	4.69
Arm34	2.17	2.68	3.19	3.73	4.24	4.73
Arm35	2.67	3.16	3.64	4.14	4.62	5.08
Arm36	2.31	2.79	3.27	3.77	4.26	4.74
Arm37	2.80	3.29	3.77	4.27	4.74	5.20
Arm38	2.28	2.77	3.23	3.70	4.18	4.67
Arm39	2.57	3.05	3.52	4.01	4.48	4.94
Arm40	2.43	2.93	3.43	3.95	4.43	4.90
Arm41	2.45	2.95	3.45	3.96	4.47	4.95
Arm42	2.31	2.82	3.36	3.90	4.40	4.85
Arm43	2.51	3.00	3.46	3.93	4.42	4.93
Arm44	2.37	2.87	3.38	3.90	4.37	4.84
Arm45	2.50	2.99	3.50	4.02	4.51	4.96
Arm46	3.15	3.61	4.05	4.50	4.97	5.44
Arm47	2.24	2.70	3.23	3.79	4.33	4.74
Arm48	1.94	2.40	2.86	3.34	3.86	4.37
Arm49	2.32	2.80	3.28	3.76	4.27	4.77
Arm50	2.35	2.80	3.30	3.79	4.31	4.78
Arm51	2.60	3.06	3.51	3.96	4.47	5.03
Arm52	2.36	2.84	3.35	3.87	4.40	4.90

Arm52	2.30	2.64	3.33	3.67	4.40	4.30
Arm53	2.31	2.77	3.26	3.75	4.26	4.73
Arm54	2.62	3.10	3.58	4.06	4.58	5.08
Arm55	2.20	2.69	3.20	3.69	4.23	4.75
Arm56	2.54	2.99	3.45	3.91	4.42	4.91
Arm57	2.19	2.64	3.13	3.61	4.13	4.63
Arm58	2.23	2.67	3.18	3.72	4.26	4.68
Arm59	2.73	3.20	3.67	4.13	4.62	5.12
Arm60	2.54	3.01	3.50	3.99	4.49	4.96

* Bad

PROBE verifications Calibration Report


Performed:	Pre Verification	Post Verification	Casing Check
Ref ID:	0.00	0.00	0.00 in
Min.	0.00	0.00	0.00 in
Max.	0.00	0.00	0.00 in
Avg.	0.00	0.00	0.00 in
Dia1	0.00	0.00	0.00 in
Dia2	0.00	0.00	0.00 in
Dia3	0.00	0.00	0.00 in
Dia4	0.00	0.00	0.00 in
Dia5	0.00	0.00	0.00 in
Dia6	0.00	0.00	0.00 in
Dia7	0.00	0.00	0.00 in
Dia8	0.00	0.00	0.00 in
Dia9	0.00	0.00	0.00 in
Dia10	0.00	0.00	0.00 in
Dia11	0.00	0.00	0.00 in
Dia12	0.00	0.00	0.00 in
Dia13	0.00	0.00	0.00 in
Dia14	0.00	0.00	0.00 in
Dia15	0.00	0.00	0.00 in
Dia16	0.00	0.00	0.00 in
Dia17	0.00	0.00	0.00 in
Dia18	0.00	0.00	0.00 in
Dia19	0.00	0.00	0.00 in
Dia20	0.00	0.00	0.00 in
Dia21	0.00	0.00	0.00 in
Dia22	0.00	0.00	0.00 in
Dia23	0.00	0.00	0.00 in
Dia24	0.00	0.00	0.00 in
Dia25	0.00	0.00	0.00 in
Dia26	0.00	0.00	0.00 in
Dia27	0.00	0.00	0.00 in
Dia28	0.00	0.00	0.00 in
Dia29	0.00	0.00	0.00 in
Dia30	0.00	0.00	0.00 in

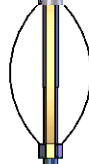
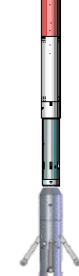


Inclinometer Calibration Report

Performed:	Tue Jul 23 13:14:29 2013				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-3600.47	3583.90	-1.00	1.00	gee
Y Accelerometer	-3593.83	3573.47	-1.00	1.00	gee
Z Accelerometer	5.33	3616.63	0.00	1.00	gee

EMIT Calibration Report				
Serial Number:		110828		
Tool Model:		Probe		
Performed:				
		Reference	Reading	
Thickness				
Reference 1:	0.000	in	5464.430	clock cycles
Reference 2:	0.264	in	9120.770	clock cycles
Reference 3:		in		clock cycles
Reference 4:		in		clock cycles
Reference 5:		in		clock cycles
MAGCAL				
Reference 1:		in		clock cycles
Reference 2:		in		clock cycles
Reference 3:		in		clock cycles
Reference 4:		in		clock cycles
Reference 5:		in		clock cycles
Low Reference:			clock cycle difference	
High Reference:			clock cycle difference	
Low Reference:			A/D conversion	
High Reference:			A/D conversion	

Gamma Ray Calibration Report				
Serial Number:		FW1304-53		
Tool Model:		GCT_C3		
Performed:		Fri Sep 16 04:19:49 2016		
Calibrator Value:		185.2	GAPI	
Background Reading:		4.8	cps	
Calibrator Reading:		200.0	cps	
Sensitivity:		0.9487	GAPI/cps	

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			Probe Probe 2 3/4 Centralizer	2.88	2.75	20.00
CCL DCCL	20.41 20.41					
GR	18.91		GR-GCT_C3 (FW1304-53)	4.77	2.75	50.00

GCT_HV	16.99		Probe Probe 2 3/4 Centralizer	2.88	2.75	20.00
DTHK Thickness MAGCAL	9.96		EMIT-Probe (110828)	5.87	3.50	90.00
	9.96					
	9.94					
ACCX ACCY ACCZ	5.00		Probe_MFCAL-60 (FW1211-34) Probe 60 Arm Caliper	7.75	3.63	135.00
	5.00					
	5.00					
Meas ETEMP	1.50					
	1.00					
Dataset: grynberg_schulte_1_13r.db: field/well/run1/pass9.2 Total Length: 24.14 ft Total Weight: 315.00 lb O.D. 3.63 in						



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