

BAKER HUGHES				LWD MEMORY LOG											
				Gamma Ray											
Scale:				Company: ConocoPhillips											
1:1200 MD				Well: GRANDE_4-65_20-19_3AH_ST1											
Depth Reference:				Field: Arapahoe County (NAD83/TN)											
Driller's Depth				County: Arapahoe State: United States											
Status:		Final Print		Surface Location:				Other Services:							
API No:		05005072710001		Latitude:				Directional							
Job ID:		8730960		Longitude:				UTM: N/A							
				UTM: N/A				SEC: 21							
Permanent Datum (P.D.):		Ground Level		Elevation:				KB: N/A							
Log Measured From:		Rig Floor		Above P.D.				DF: 5641.80 ft							
								GL: 5617.80 ft							
Dates				Interval Logged				Magnetic Field Reference							
Date From:		2017-09-01		Top: (ft)		2207.00		Azi Reference North:		True		Dip Angle: (deg)		66.38	
Date To:		2017-09-21		Bottom: (ft)		15796.00		Total Magnetic Field Strength: (nT)						51820	
Spud Date:		2017-08-29						Mag to Reference North Correction: (deg)						8.64 E	
Borehole Record				Casing Record											
Hole Size (in)		From (ft)		To (ft)		Size (in)		Weight (lb/ft)		From (ft)		To (ft)			
13.500		24.00		2207.00		9.625		36.00		24.00		2198.00			
8.500		2207.00		15975.00											
Mud Record				Deviation Record											
Type		From (ft)		To (ft)		Hole Size (in)		Interval (ft)		Inc Az (Start)		Inc Az (End)			
Oil Based Mud		2207.00		15795.00		8.500		13588.00		0.11 107.13		89.48 269.07			
Acquisition System				Software Version				Other							
Baker Hughes Cadence				RT4.1				Rig: H&P 448							
Plot Studio				4.1.7763.3				Contractor: Helmerich & Payne Drilling Co							
								District: RMA Unit: D&E							

- 2 A sliding indicator is shown on the left side of track 1 as a heavy line. This indicator has been shifted to the Gamma Ray sensor onset to correspond with Gamma Ray data acquired while sliding.
- 3 Baker Hughes LWD Runs 1 utilized a 6.75 inch NaviGamma Service (Directional and Gamma Ray) behind an 8.5 inch bit and Rotary Steerable Assembly from 2207 to 10575 feet MD (2207 to 7900 feet TVD).
- 4 Baker Hughes LWD run 4 utilized 6.750 inch NaviGamma services (Gamma Ray and Directional) behind a 8.50 inch bit and steerable assembly from 10575 to 10860 feet MD (7900 to 7928 feet TVD).

Remarks				
Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	15790.00	8.500	5	The interval from 15782 to 15795 feet MD (7944 to 7945 feet TVD) was not logged due to the sensor to bit offset at well TD.

Curve Mnemonics		
Presented Curves	Description	Units
TCDX	Downhole Temperature	degF
ROPA	Depth Averaged ROP 10 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	OnTrak - Gamma Ray - Apparent - Memory 3 ft Average	API
GRAX	OnTrak - Gamma Ray - Apparent - Real-Time	API
GRTX	OnTrak - Gamma Ray - Time Since Drilled - Real-Time	min
TCDM	Downhole Temperature	degF





















