Company	Reliance Energy
Field	Hartford
Well	Bottenberg
County	Grundy
State	Illinois
Date	10/22/2019
Comments	Holyrood KS, North to T Ave From Stop Sign of Sth Rd and Ave T 2mi east to Th Rd 1 1/4 mi South. East into Location Thanks for using Gemini Wireline LLC 785-625-1182

GEMINI WIRELINE LLC

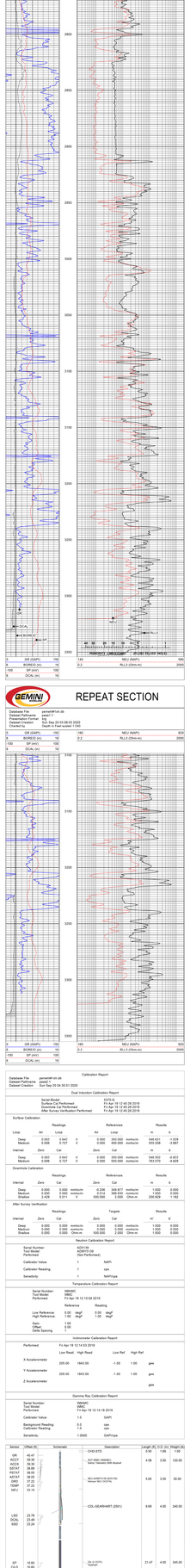
PRELIMINARY LOG

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 interpretations, and we shall not 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 standard terms and conditions as set forth in our current Price Schedule.

MAIN PASS

Database File: pennel#1uh.db
Dataset Pathname: pass1
Presentation Format: log
Dataset Creation: Sat Sep 26 04:30:01 2020
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	150	140 NEU (NAPI) 590
6	BORE3D (in)	16	0.2 RLL3 (Ohm-m) 2000
100	SP (mV)	100	
0	DCAL (in)	10	



0	GR (GAPI)	150	140 NEU (NAPI) 590
6	BORE3D (in)	16	0.2 RLL3 (Ohm-m) 2000
100	SP (mV)	100	
0	DCAL (in)	10	

REPEAT SECTION

Database File: pennel#1uh.db
Dataset Pathname: pass3
Presentation Format: log
Dataset Creation: Sun Sep 26 03:08:03 2020
Charted by: Depth in Feet scaled 1:240

0	GR (GAPI)	150	140 NEU (NAPI) 630
6	BORE3D (in)	16	0.2 RLL3 (Ohm-m) 2000
100	SP (mV)	100	
0	DCAL (in)	10	

0	GR (GAPI)	150	140 NEU (NAPI) 630
6	BORE3D (in)	16	0.2 RLL3 (Ohm-m) 2000
100	SP (mV)	100	
0	DCAL (in)	10	

Calibration Report

Database File pennel#1uh.db
Dataset Pathname pass3
Dataset Creation Sun Sep 26 04:30:01 2020

Dual Induction Calibration Report

Serial Number	5375-D
Surface Cal Performed	Fri Apr 19 12:45:28 2019
Downhole Cal Performed	Fri Apr 19 12:45:28 2019
After Survey Verification Performed	Fri Apr 19 12:45:28 2019

Surface Calibration

	Readings			References			Results		
Loop	Air	Loop		Air	Loop		m	n	
Deep	0.000	0.642	V	0.000	350.000	mmho/m	546.031	-1.036	
Medium	0.206	0.727	V	0.000	400.000	mmho/m	555.208	-3.897	
Internal	Zero	Cal		Zero	Cal		m	b	
Deep	0.000	0.642	V	0.000	350.000	mmho/m	546.502	-0.823	
Medium	0.000	0.727	V	0.000	350.000	Ohm-m	763.578	-4.839	

Downhole Calibration

	Readings			References			Results		
Internal	Zero	Cal		Zero	Cal		m	b	
Deep	0.000	0.000	mmho/m	0.000	388.877	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	0.014	388.600	mmho/m	1.000	0.000	
Shallow	0.000	0.011	V	500.000	2.000	Ohm-m	200.929	-1.182	

After Survey Verification

	Readings			Targets			Results		
Internal	Zero	Cal		Zero	Cal		m'	b'	
Deep	0.000	0.000	mmho/m	0.000	0.000	mmho/m	1.000	0.000	
Medium	0.000	0.000	mmho/m	0.000	0.000	mmho/m	1.000	0.000	
Shallow	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000	

Neutron Calibration Report

Serial Number	425C138
Tool Model	ACRN172-TB
Performed	(Not Performed)
Calibration Value	1 NAPI
Calibration Reading	124 cps
Sensitivity	1 NAPI/cps

Temperature Calibration Report

Serial Number	9880MC
Tool Model	280C
Performed	Fri Apr 19 12:10:04 2019

	Reference	Reading
Low Reference	0.00 degF	0.00 degF
High Reference	1.00 degF	1.00 degF
Gain	1.00	
Offset	0.00	
Delta Spacing	1.00	

Indicomaster Calibration Report

Performed Fri Apr 19 12:14:03 2019

	Low Read	High Read	Low Ref	High Ref	
X Accelerometer	205.00	1843.00	-1.00	1.00	gee
Y Accelerometer	205.00	1843.00	-1.00	1.00	gee
Z Accelerometer					gee

Gamma Ray Calibration Report

Serial Number	9880MC
Tool Model	280C
Performed	Fri Apr 19 12:14:18 2019
Calibration Value	1.0 GAPI
Background Reading	0.0 cps
Calibration Reading	1.0 cps
Sensitivity	1.0000 GAPI/cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-STC	0.50	1.66	1.00
GR	38.00					
ACCY	36.50		ACT-RWD (9880MC) Indicomaster Vibration Sub-Assembly	4.58	3.50	120.00
ACCX	36.50					
SDTAT	34.88					
SDTAT	34.88					
ACTAT	34.00		NEU-ACRN172-HC (425C138) Hydroscan NEU CNS(TNL)	5.65	3.50	50.00
GRD	31.22					
GRD	31.22					
NEU	32.15		CDL-GEARWART (2501)	9.69	4.00	240.00
LSD	25.78					
DCAL	23.49					
SSD	23.24					
SP	10.60		DIL-D-DSTC Gearhart	21.47	4.00	345.00
CILD	10.60					
CILM	6.89					
RLL3	1.70					

Dataset: pennel#1uh.db: field/euf/curl/pass3.1
Total length: 41.89 ft
Max depth: 3357.00 ft
Min depth: 3315.11 ft