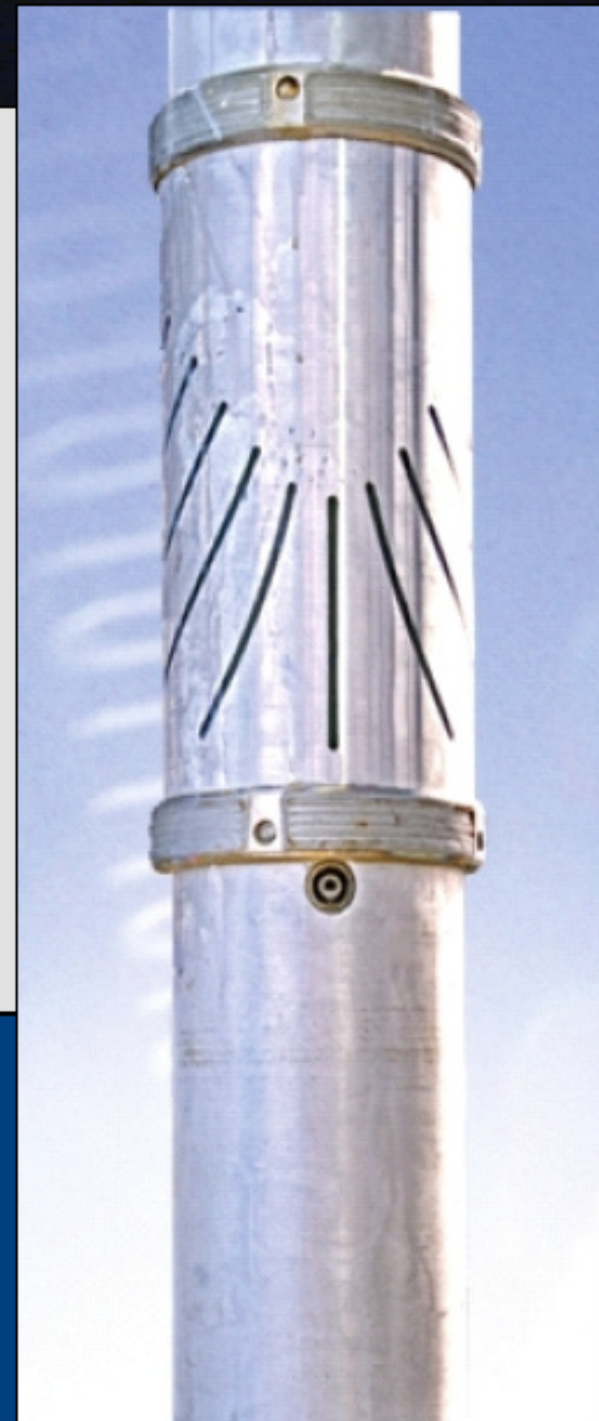




Schlumberger



Company: Northeast Energy
Field: Marcellus
Well: Boggess 9H
Rig Name: Patterson 334
Country: US
Report Date: Monday, 03 June 2019
(UTC-06:00) Central Time (US & Canada)
Prepared by: Amjad Khan / Francis Kalukal



Well Placement End of Well Report

Product Code:

Disclaimer

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Summary of Operations

Northeast Natural Energy - Patterson 334 - Bogges 9H lateral section reached to TD @ 20043ft MD.

Total lateral drilled (since entry into target): 20,043 - 9,615= 10,428 MD

In Zone: 9,138ft

Out of Zone: 1,290ft

- At TD bit is projected to be ~ 1 ft above the Target Base.
- Current formation dip is estimated to be at ~90.3° at TD.
- Survey projection at TD @ 20043' MD INC:90.22 AZI:327.94 TVD:8021.74 VSEC:11289.23 DLS:0
- **Projection straight line to the bit from last accepted survey @ 20043**
- At TD, RT trajectory is 15ft left of the plan.

Marker Tops Crossed (in lateral section):

- Target top logged at 9615' MD / 7,948' TVD
- Target top logged at 11,590' MD / 8,002' TVD (Exit from the top)
- Target top logged at 11,795' MD /8,007' TVD (re-entry from the top)
- Target base logged at 13,300' MD /8,031' TVD (exit from the bottom)
- Target base logged at 14,125' MD /8,035' TVD (re-entry from the bottom)
- Target top logged at 15,950' MD / 8,025' TVD (Exit from the top)
- Target top logged at 16,210' MD /8,024' TVD (re-entry from the top)

Marker Tops Crossed (in Landing section):

- UpperLog logged at 7,637' MD / 7,198 TVD
- Middlesex logged at 7,759' MD / 7,423' TVD
- Geneseo logged at 8,228' MD / 7,601' TVD
- Tully logged at 8,322' MD / 7,659' TVD
- Mahantango logged at 8,380' MD / 7,691' TVD
- Marcellus logged at 8,763' MD / 7,840' TVD
- Target top logged at 9615' MD / 7,948' TVD

No.	Time	MD	Inclination	Azimuth	Recommendation	Decision
47	06/02/2019 12:02:54	18708.68	90.25	327.89	90.3deg Inc	90.3deg Inc
46	06/02/2019 07:52:15	18478.78	89.00	328.98	90.4deg Inc	90.4deg Inc
45	06/02/2019 17:35:36	18079.00	88.82	328.69	88.5	Nudge down to 88.5deg
44	06/02/2019 15:01:34	17785.00	89.30	331.13	89	Nudge down to 89deg
43	06/02/2019 11:59:38	17600.00	90.10	332.37	89.5	Nudge Down to 89.5deg
42	06/02/2019 08:14:45	17250.00	90.57	330.41	90	Nudge Down to 90deg
41	06/01/2019 17:02:23	17112.00	91.00	330.20	90.9deg Inc	90.9deg Inc
40	05/31/2019 15:21:21	17069.53	90.70	330.01	91deg	91deg
39	05/31/2019 14:02:56	17021.00	87.62	330.01	90.7deg	90.7deg
38	05/31/2019 11:14:33	16921.19	90.56	330.60	91.2deg Inc	91.2deg Inc
37	05/31/2019 10:08:36	16825.48	90.22	330.46	90.7deg Inc	90.7deg Inc
36	05/31/2019 09:15:00	16800.00	90.22	330.07	90.5deg Inc	90.5deg Inc
35	05/31/2019 09:08:21	16747.16	90.22	330.07	90.2deg Inc	90.2deg Inc
34	05/31/2019 06:21:02	16532.59	90.79	330.51	90deg Inc	90deg Inc
33	05/31/2019 05:38:58	16323.37	90.22	330.07	90.5 deg incl.	90.5 deg incl.
32	05/31/2019 05:38:18	16156.13	90.28	329.23	90 deg incl.	90 deg incl.
31	05/31/2019 00:47:52	15991.74	90.85	329.86	90.5 deg incl.	90.5 deg incl.

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Company	Northeast Energy	CO REP		Bit MD(ft)	20043.10	Hole Size	8.5
Rig Name	Patterson 334	GEOLOGIST	Ben Welsh / Jeff Dereume	LSS MD(ft)	20043.00	RKB(ft)	1293.00
Start Date	24-May-19	WP ENG	Amjad Khan / Francis Kalukal	LSS TVD(ft)	8021.74	Mud Type	OBM
Job #	19NEB1008	MWD/LWD ENG	Mahammed Bomoza / Hosa Akam	LSS Inc (deg)	90.22	BHA	Bit+ RSS+XBolt
Run #	1	DD	David Jones / Joe Martinez	LSS Azi (deg)	327.94	Bit Type	PDC

* LSS: last static survey

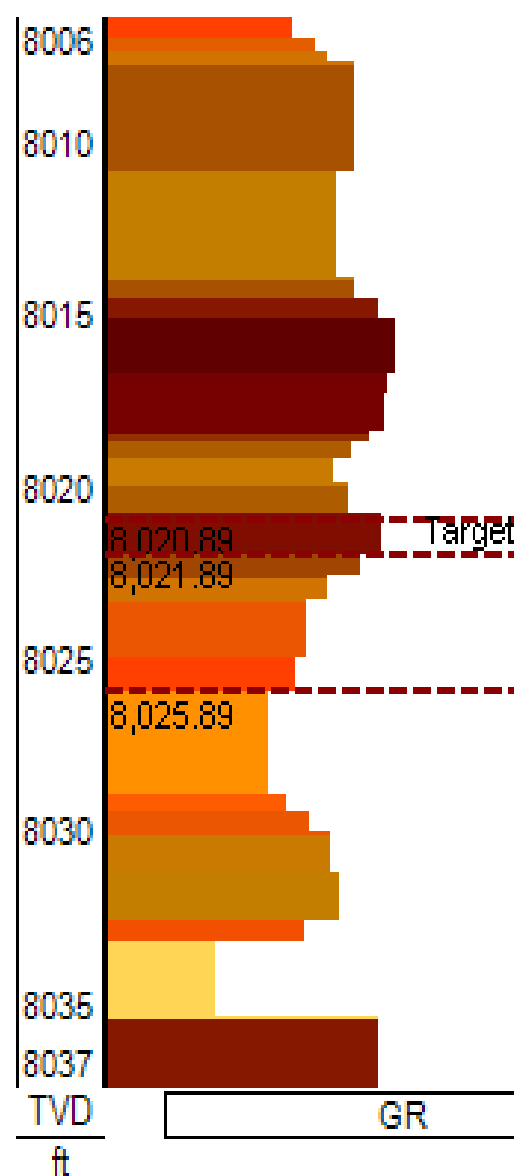
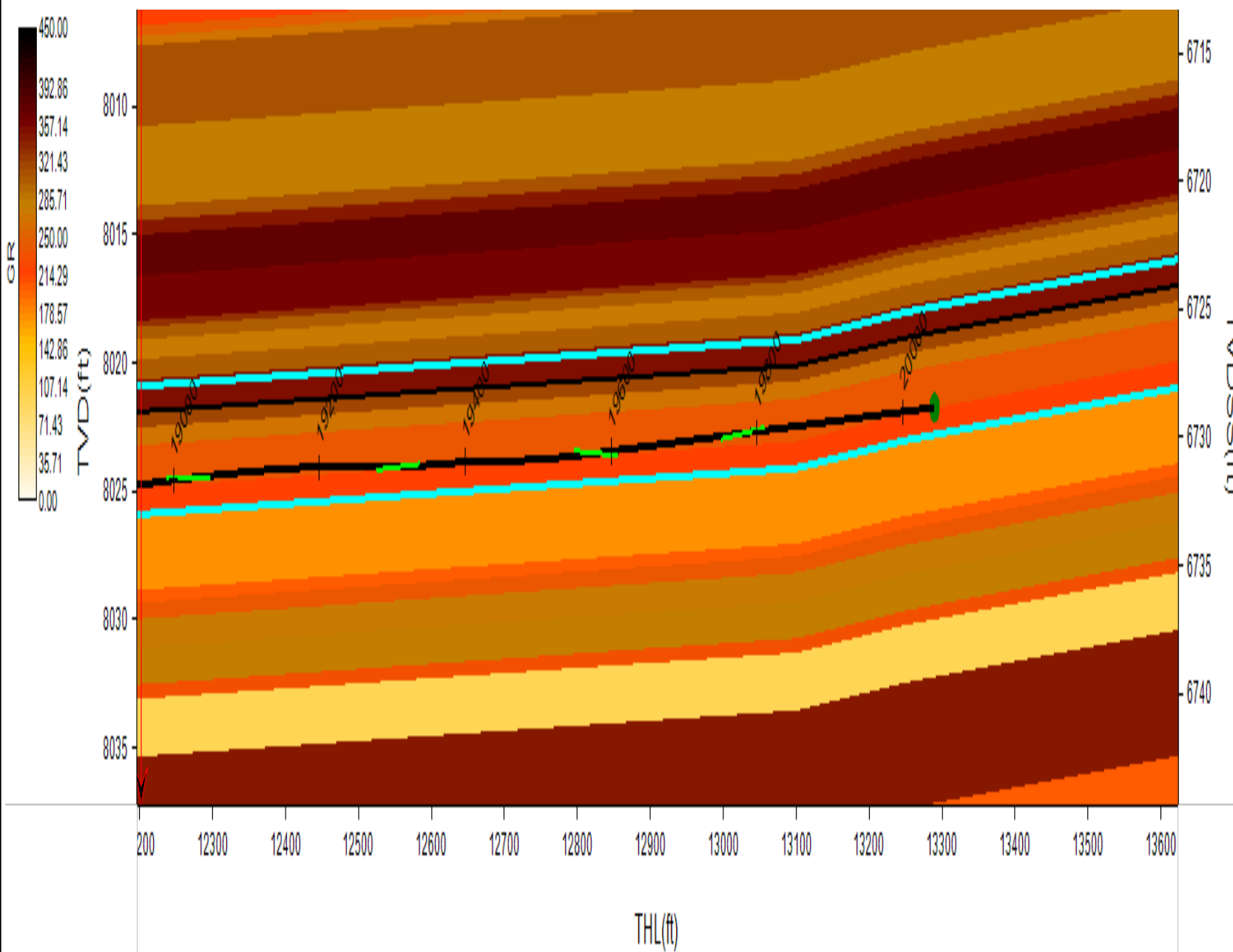
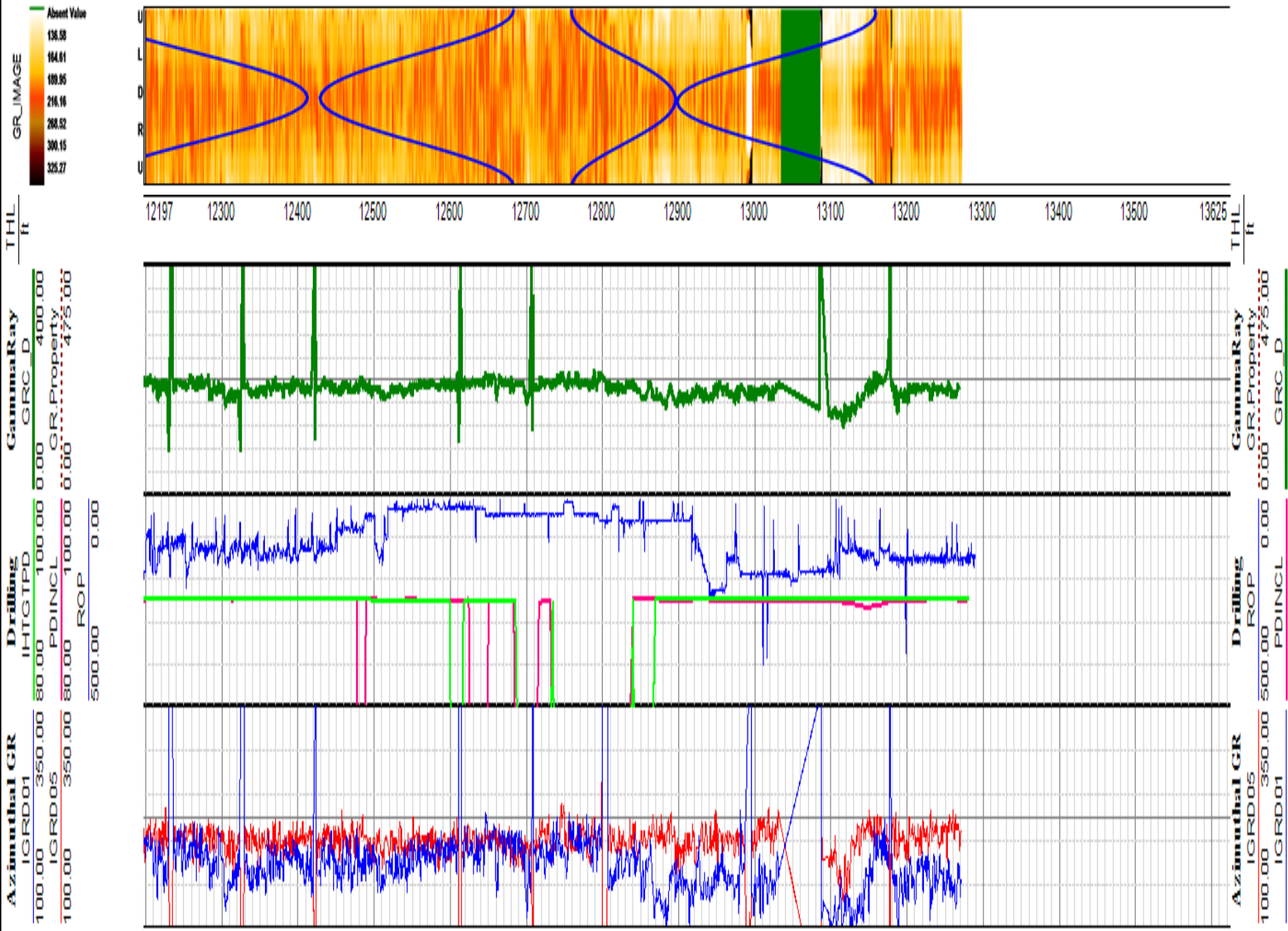
Report Well Path

Note

Schlumberger Well Placement Team:

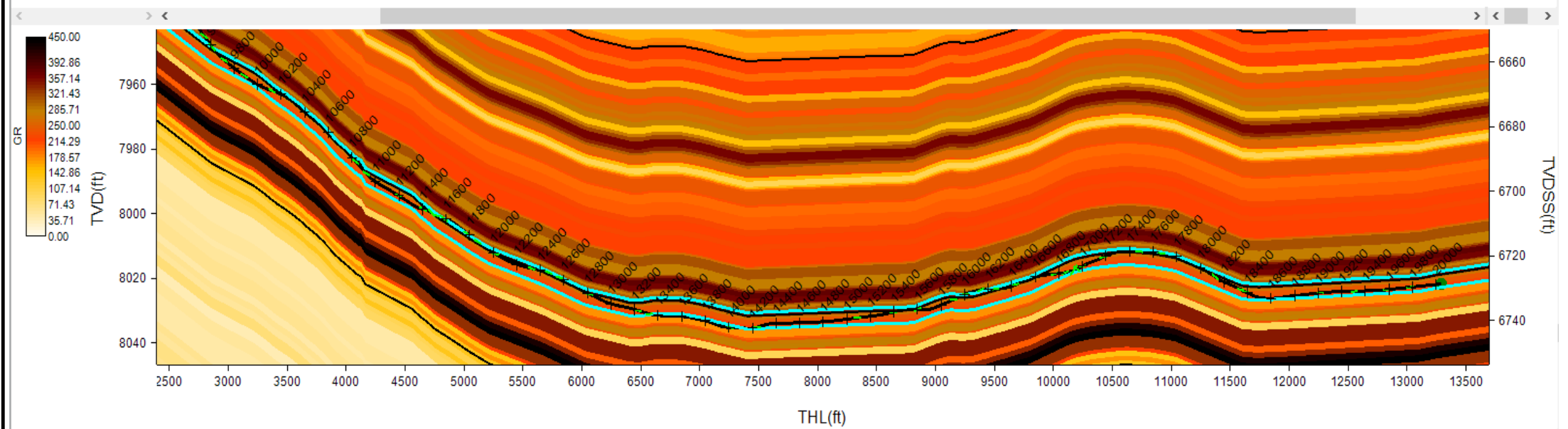
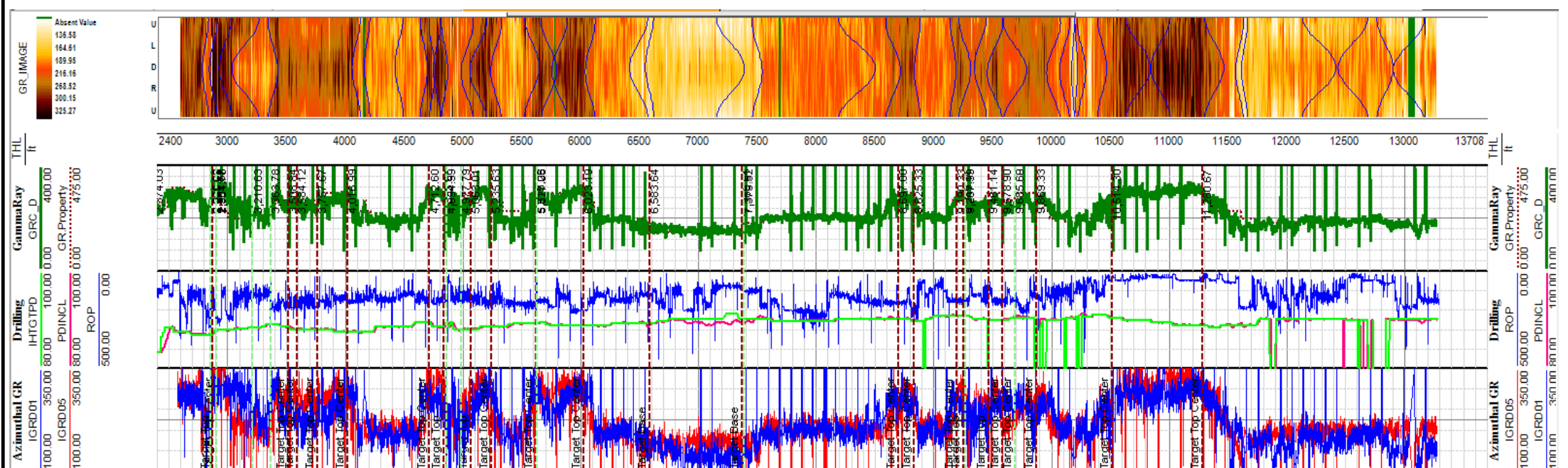
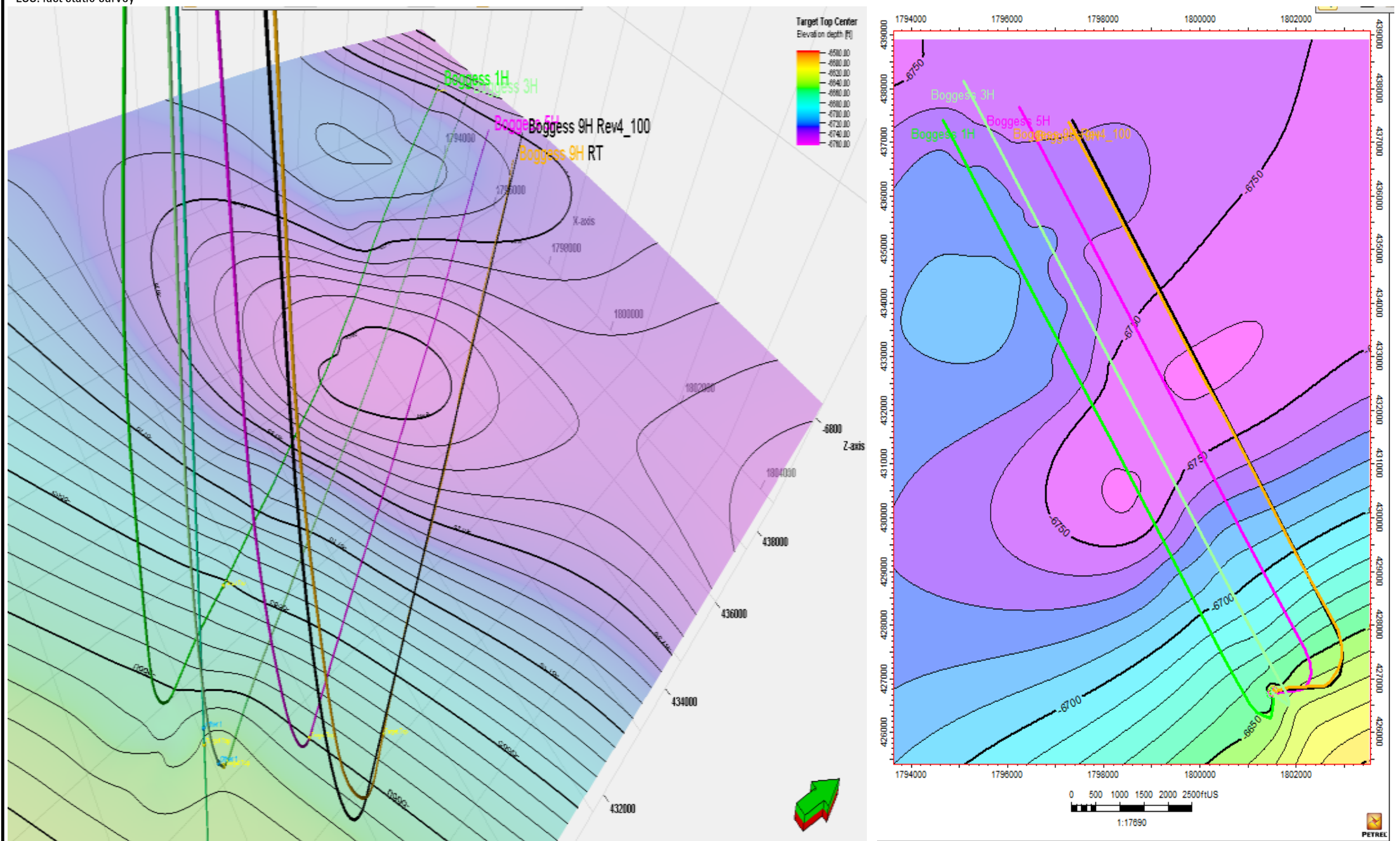
Amjad Khan - Days (7am - 7pm CST)
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