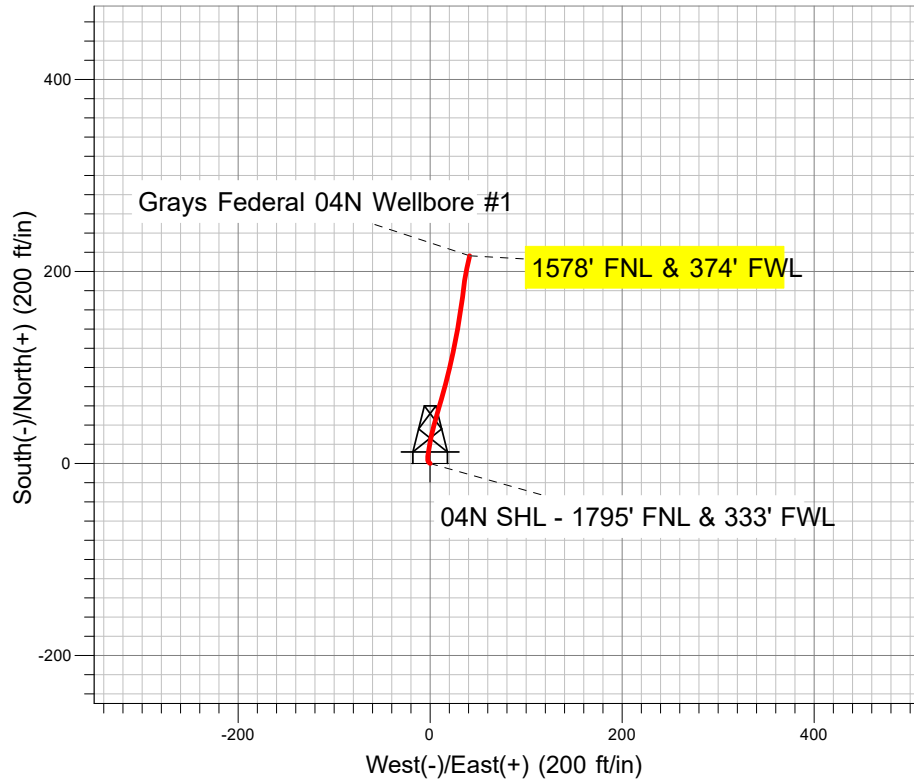
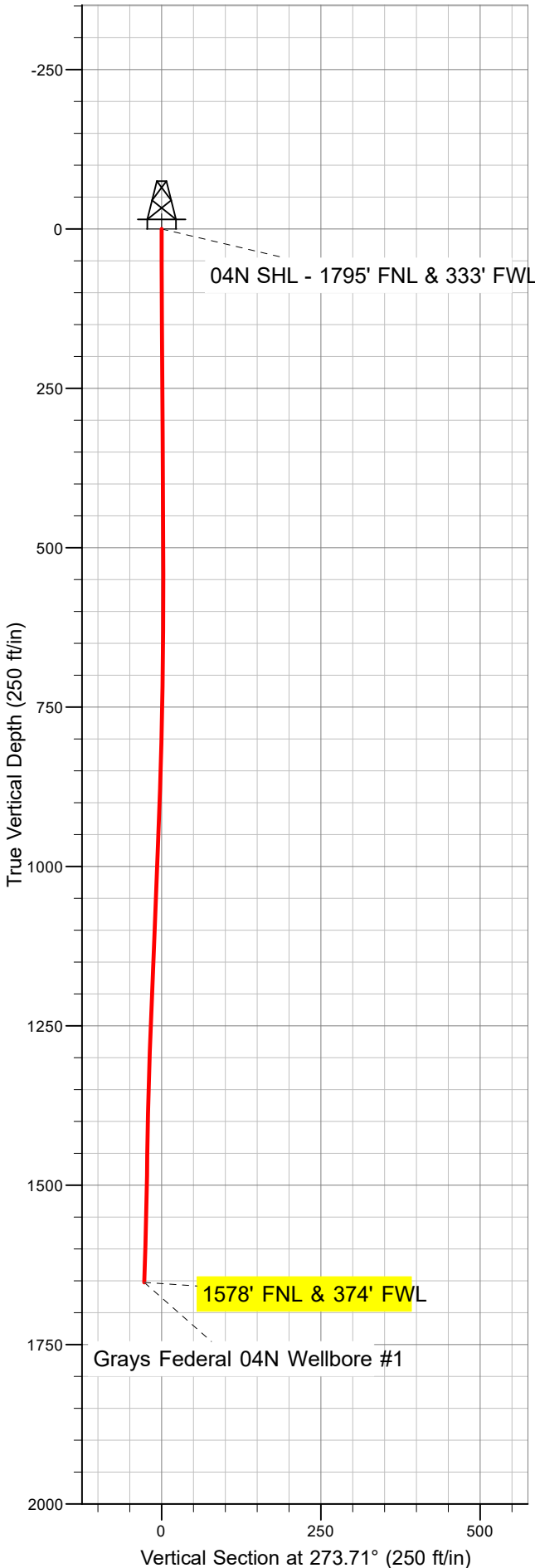




Well Name: Grays federal 04N
 Surface Location: GRAYS FEDERAL 05N65W27 1-10
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4656.0
 +N/-S +E/-W Northing Easting Latitude Longitude
 0.0 0.0 1379694.95 3234689.29 40.37260 -104.65767
 Ensign 122 RKB 13' Well @ 4669.0ft (Ensign 122 RKB 13')

PDC Energy Inc. DJ Basin

Final Survey Plot



Project: SEC.27-T5N-R65W
 Site: GRAYS FEDERAL 05N65W27 1-10
 Well: Grays federal 04N
 Plan: Grays Federal 04N Wellbore #1

T Azimuths to True North
M Magnetic North: 7.79°

Magnetic Field
 Strength: 51895.1nT
 Dip Angle: 66.67°
 Date: 02/16/2022
 Model: HRGM





PDC Energy Inc. DJ Basin

SEC.27-T5N-R65W

GRAYS FEDERAL 05N65W27 1-10

Grays federal 04N

Grays Federal 04N Wellbore #1

Design: Grays Federal 04N Wellbore #1

Standard Survey Report

25 February, 2022



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Grays federal 04N
Project:	SEC.27-T5N-R65W	TVD Reference:	Well @ 4669.0ft (Ensign 122 RKB 13')
Site:	GRAYS FEDERAL 05N65W27 1-10	MD Reference:	Well @ 4669.0ft (Ensign 122 RKB 13')
Well:	Grays federal 04N	North Reference:	True
Wellbore:	Grays Federal 04N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Grays Federal 04N Wellbore #1	Database:	US_EDM

Project	SEC.27-T5N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	GRAYS FEDERAL 05N65W27 1-10				
Site Position:		Northing:	1,379,739.99 usft	Latitude:	40.37273
From:	Lat/Long	Easting:	3,234,688.92 usft	Longitude:	-104.65767
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Grays federal 04N					
Well Position	+N/-S	0.0 ft	Northing:	1,379,694.95 usft	Latitude:	40.37261
	+E/-W	0.0 ft	Easting:	3,234,689.29 usft	Longitude:	-104.65767
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,656.0 ft

Wellbore	Grays Federal 04N Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	02/16/2022	7.79	66.67	51,895.11803354

Design	Grays Federal 04N Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	273.71	

Survey Program	Date	02/25/2022			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
54.0	1,675.0	Survey #1 (Grays Federal 04N Wellbore #	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
54.0	0.26	308.38	54.0	0.1	-0.1	0.1	0.48	0.48	0.00	
145.0	0.53	311.72	145.0	0.5	-0.6	0.6	0.30	0.30	3.67	
237.0	0.35	330.70	237.0	1.0	-1.0	1.1	0.25	-0.20	20.63	
328.0	0.44	291.68	328.0	1.4	-1.5	1.6	0.30	0.10	-42.88	
446.0	2.02	344.94	446.0	3.6	-2.4	2.7	1.52	1.34	45.14	
531.0	3.34	7.09	530.9	7.5	-2.5	3.0	1.95	1.55	26.06	
616.0	5.19	10.60	615.6	13.7	-1.5	2.4	2.20	2.18	4.13	
704.0	5.54	8.32	703.2	21.8	-0.2	1.6	0.47	0.40	-2.59	
793.0	7.30	13.94	791.7	31.6	1.8	0.2	2.10	1.98	6.31	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Grays federal 04N
Project:	SEC.27-T5N-R65W	TVD Reference:	Well @ 4669.0ft (Ensign 122 RKB 13')
Site:	GRAYS FEDERAL 05N65W27 1-10	MD Reference:	Well @ 4669.0ft (Ensign 122 RKB 13')
Well:	Grays federal 04N	North Reference:	True
Wellbore:	Grays Federal 04N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Grays Federal 04N Wellbore #1	Database:	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
882.0	9.41	16.75	879.7	44.0	5.3	-2.4	2.41	2.37	3.16	
972.0	9.76	14.65	968.5	58.4	9.3	-5.5	0.55	0.39	-2.33	
1,062.0	11.52	16.23	1,056.9	74.4	13.8	-8.9	1.98	1.96	1.76	
1,151.0	13.63	13.94	1,143.8	93.2	18.8	-12.7	2.44	2.37	-2.57	
1,241.0	13.98	12.01	1,231.2	114.1	23.6	-16.2	0.64	0.39	-2.14	
1,326.0	15.12	10.78	1,313.5	135.0	27.8	-19.0	1.39	1.34	-1.45	
1,416.0	14.51	8.14	1,400.5	157.7	31.6	-21.3	1.01	-0.68	-2.93	
1,503.0	12.84	6.38	1,485.0	178.1	34.2	-22.6	1.98	-1.92	-2.02	
1,615.0	13.28	12.18	1,594.1	203.1	38.3	-25.1	1.23	0.39	5.18	
1,675.0	13.28	12.18	1,652.5	216.5	41.2	-27.1	0.00	0.00	0.00	
1578' FNL & 374' FWL										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,675.0	1,652.5	216.5	41.2	1578' FNL & 374' FWL	

Checked By: _____	Approved By: _____	Date: _____
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