

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

NE SE SEC. 7 T4N R68W 6th P.M.

BERTHOUD FARMS 8E-10-9N

JOB # 2017-520-88

11 December, 2017

Survey: FINAL SURVEYS - SURFACE





Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE SE SEC. 7 T4N R68W 6th P.M.
Well: BERTHOUD FARMS 8E-10-9N
Wellbore: JOB # 2017-520-88
Design: SURFACE



ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
1463.99	1484.00	20.00	29.92	161.04	63.56	173.12	174.08	LAST SURVEY DEC 11, 2017
1510.98	1534.00	20.00	29.92	175.87	72.09	190.07	191.18	EXTRAPOLATION TO TD - SURFACE

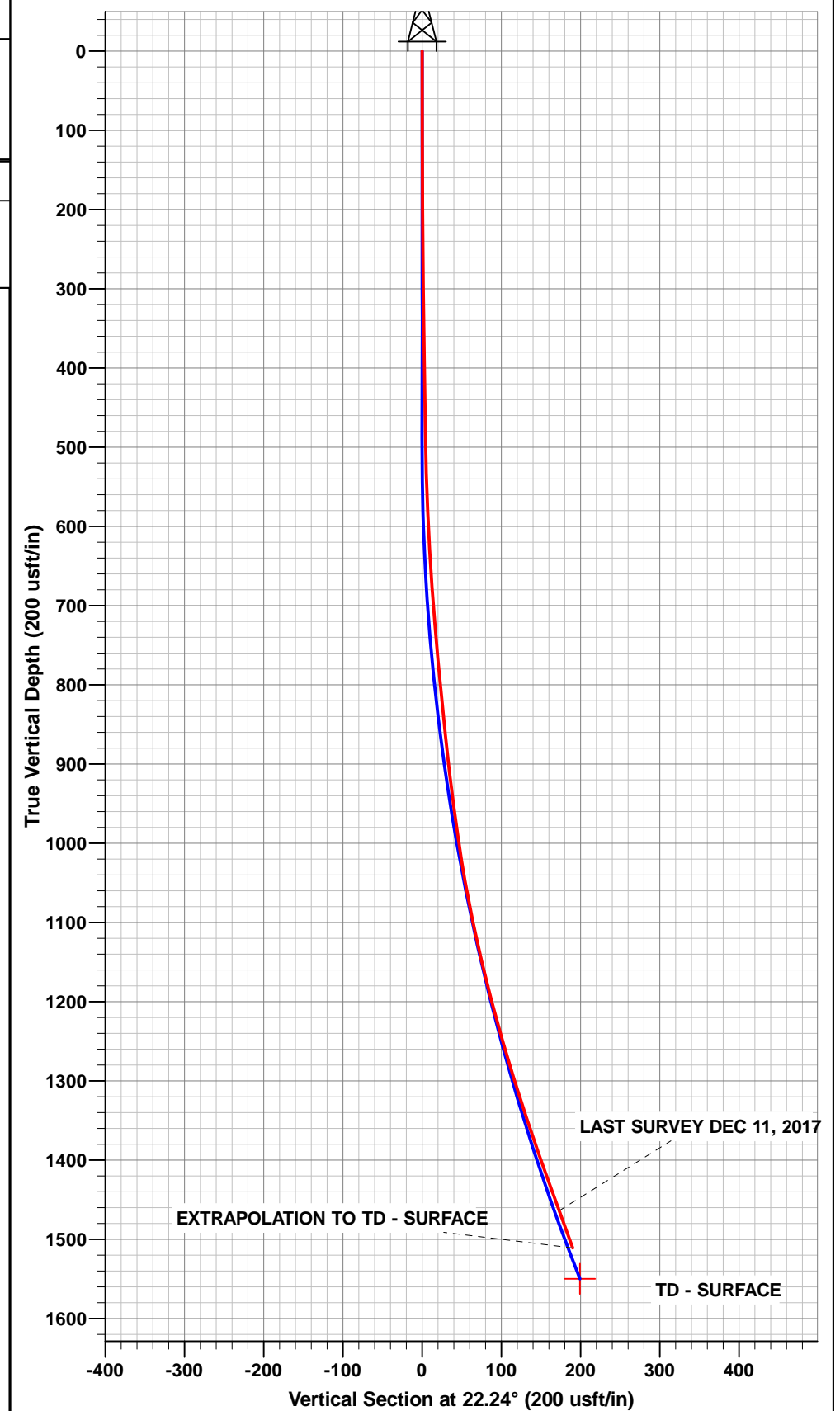
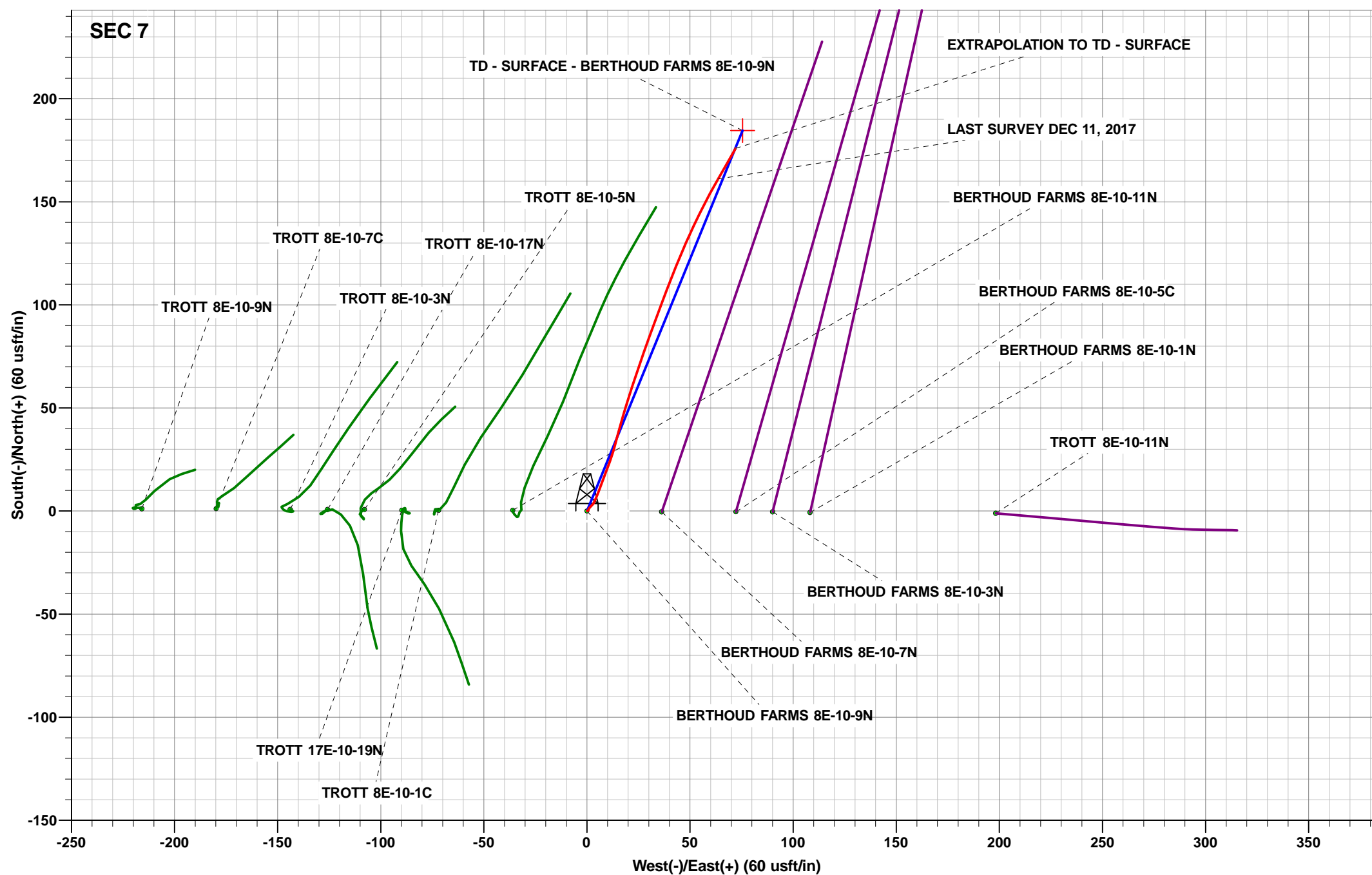
WELL DETAILS: BERTHOUD FARMS 8E-10-9N

		Ground Level:		5034.00	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1361363.19	3128155.79	40.324431	-105.040363

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
TD - SURFACE - BERTHOUD FARMS 8E-10-9N	1550.00	184.53	75.45	1361548.10	3128230.28

SEC 7



Survey Report



Company:	EXTRACTION OIL & GAS	Local Co-ordinate Reference:	Well BERTHOUD FARMS 8E-10-9N
Project:	WELD COUNTY, COLORADO (NAD 83)	TVD Reference:	KB (8') @ 5042.00usft (CARTEL 88)
Site:	NE SE SEC. 7 T4N R68W 6th P.M.	MD Reference:	KB (8') @ 5042.00usft (CARTEL 88)
Well:	BERTHOUD FARMS 8E-10-9N	North Reference:	True
Wellbore:	JOB # 2017-520-88	Survey Calculation Method:	Minimum Curvature
Design:	SURFACE	Database:	EDM 5000.1 Single User Db

Project	WELD COUNTY, COLORADO (NAD 83)		
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	NE SE SEC. 7 T4N R68W 6th P.M.				
Site Position:		Northing:	1,361,363.03 usft	Latitude:	40.324429
From:	Lat/Long	Easting:	3,128,263.97 usft	Longitude:	-105.039975
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.30 °

Well	BERTHOUD FARMS 8E-10-9N					
Well Position	+N/-S	0.00 usft	Northing:	1,361,363.19 usft	Latitude:	40.324431
	+E/-W	0.00 usft	Easting:	3,128,155.79 usft	Longitude:	-105.040363
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,034.00 usft

Wellbore	JOB # 2017-520-88				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	03/12/2017	8.30	66.74	52,269

Design	SURFACE				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	22.24	

Survey Program	Date	11/12/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
105.00	1,534.00	FINAL SURVEYS - SURFACE (JOB # 201	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	5,042.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	0.40	71.84	105.00	4,937.00	0.11	0.35	0.24	0.38	0.38	0.00
200.00	0.31	4.08	200.00	4,842.00	0.47	0.68	0.70	0.42	-0.09	-71.33
295.00	0.62	24.47	294.99	4,747.01	1.20	0.91	1.45	0.36	0.33	21.46
391.00	1.14	51.45	390.98	4,651.02	2.27	1.87	2.81	0.68	0.54	28.10
485.00	0.79	32.91	484.97	4,557.03	3.39	2.96	4.26	0.49	-0.37	-19.72
581.00	2.55	24.47	580.93	4,461.07	5.89	4.20	7.04	1.85	1.83	-8.79
676.00	4.13	19.29	675.76	4,366.24	11.05	6.21	12.57	1.69	1.66	-5.45
770.00	5.14	22.27	769.45	4,272.55	18.14	8.92	20.16	1.10	1.07	3.17
865.00	6.11	17.53	863.99	4,178.01	26.90	12.06	29.46	1.13	1.02	-4.99
960.00	7.47	14.54	958.33	4,083.67	37.70	15.13	40.62	1.48	1.43	-3.15
1,056.00	10.33	17.26	1,053.16	3,988.84	51.96	19.25	55.38	3.01	2.98	2.83
1,151.00	13.10	18.76	1,146.17	3,895.83	70.29	25.24	74.62	2.93	2.92	1.58

Survey Report



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Well:	BERTHOUD FARMS 8E-10-9N	North Reference:	True
Wellbore:	JOB # 2017-520-88	Survey Calculation Method:	Minimum Curvature
Design:	SURFACE	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,247.00	15.95	20.34	1,239.10	3,802.90	92.96	33.33	98.66	3.00	2.97	1.65
1,342.00	18.11	21.66	1,329.93	3,712.07	118.93	43.32	126.48	2.31	2.27	1.39
1,436.00	19.73	26.67	1,418.85	3,623.15	146.69	55.83	156.91	2.44	1.72	5.33
LAST SURVEY DEC 11, 2017										
1,484.00	20.00	29.92	1,463.99	3,578.01	161.04	63.56	173.12	2.37	0.56	6.77
EXTRAPOLATION TO TD - SURFACE										
1,534.00	20.00	29.92	1,510.98	3,531.02	175.87	72.09	190.07	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
TD - SURFACE - BERTHOUD	0.00	0.00	1,550.00	184.53	75.45	1,361,548.10	3,128,230.28	40.324937	-105.040092
- survey misses target center by 40.11usft at 1534.00usft MD (1510.98 TVD, 175.87 N, 72.09 E)									
- Point									

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,484.00	1,463.99	161.04	63.56	LAST SURVEY DEC 11, 2017	
1,534.00	1,510.98	175.87	72.09	EXTRAPOLATION TO TD - SURFACE	

Checked By: _____ Approved By: _____ Date: _____