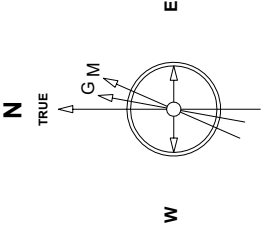


Great Western Operating Company, LLC

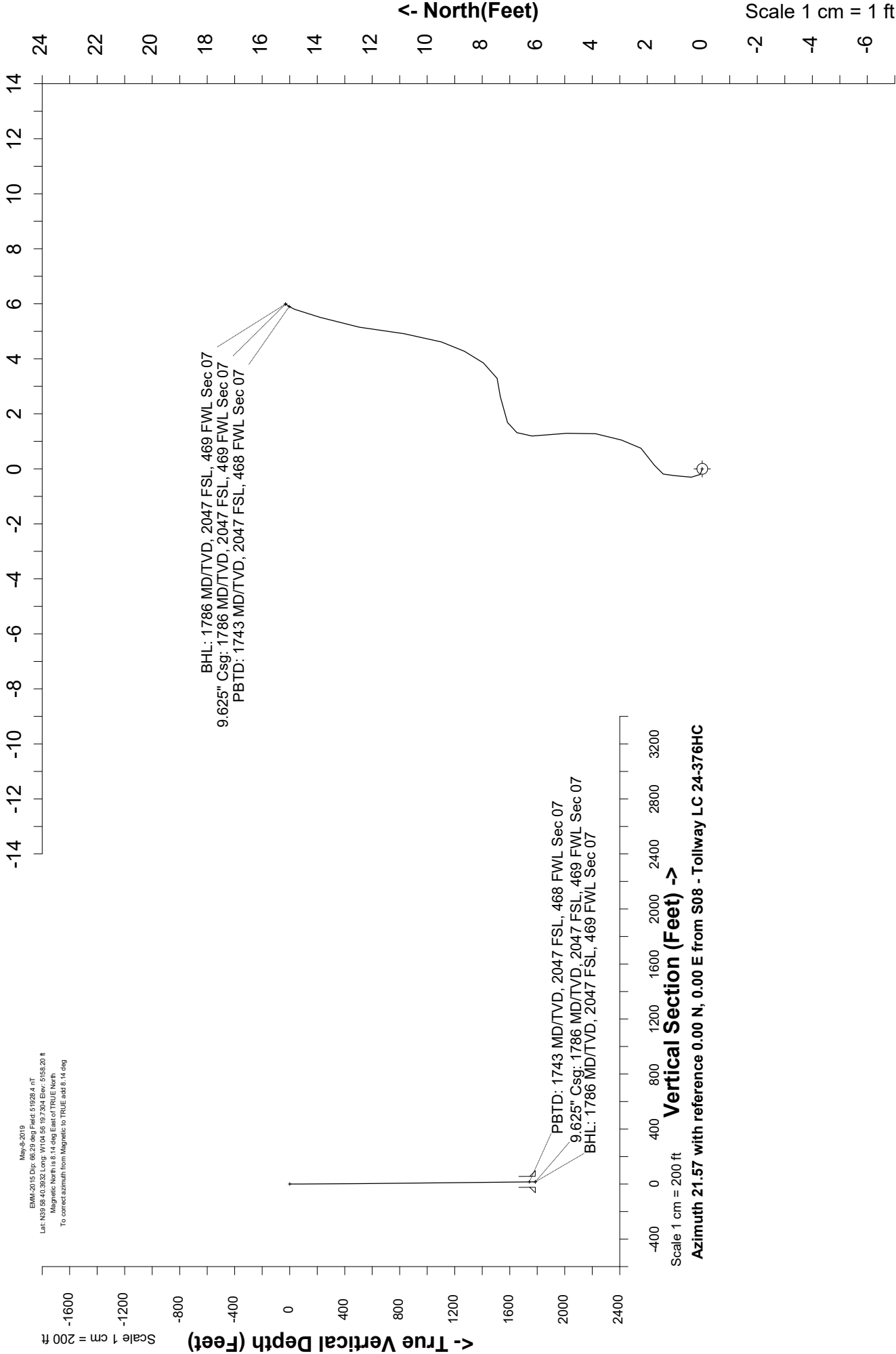
Created by mmount	
Date plotted	17-Sep-2019
Plot reference is Tollway LC 24-376HC (AWB).	
Ref wellpath is Tollway LC 24-376HC (AWP#1).	
Coordinates are in Feet reference S08 - Tollway LC 24-376HC.	
True Vertical Depths are reference Rig Datum.	
Measured Depths are reference Rig Datum.	
Rig Datum: Actual Datum #1	
Rig Datum to Mean Sea Level: 5164.20 ft	
Plot North is aligned to TRUE North.	

Location	Colorado	Slot	S08 - Tollway LC 24-376HC
Field	Wattenburg	Well	Tollway LC 24-376HC
Installation	Tollway	Wellbore	Tollway LC 24-376HC (AWB)



May-5-2019
EMA-2015 Dir: 66.20 deg Field: 51928.4 nT
Lat: N39 58.40.3032 Long: W104 56 19.7304 Elev: 5155.20 ft
Magnetic North is 8.14 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 8.14 deg

Scale 1 cm = 1 ft <- West (Feet) : East (Feet) ->



Great Western Operating Co, LLC
Directional Survey Report
Wellpath: Tollway LC 24-376HC
MDs and TVDs are from Rig Floor 5164.2ft above Mean Sea Level

Wellbore Information

Date Created	Date Revised	API #	RKB above GL	Well Name
Sep-17-2019	Sep-17-2019	05-001-10426	6.00	Tollway LC 24-376HC

Slot Coordinates

Latitude	Longitude
39.97751400	-104.93863200

Pad Information

Pad Name	Ground Elev.
Tollway	5158.20

Field

Name
Wattenburg

Wellpath Report

MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	DLS [deg/100ft]	Vertical Section[ft]	Lat - NAD 83	Long - NAD 83
0.00	0.00	0.00	0.00	0.00	0.00		0.00	39.97751400	-104.93863200
81.00	0.31	290.17	81.00	0.08	-0.21	0.38	-0.01	39.97751421	-104.93863273
171.00	0.35	28.43	171.00	0.40	-0.30	0.56	0.26	39.97751510	-104.93863308
258.00	0.53	350.11	258.00	1.03	-0.25	0.39	0.87	39.97751683	-104.93863288
351.00	0.66	57.43	350.99	1.74	0.13	0.72	1.67	39.97751879	-104.93863153
441.00	0.35	41.26	440.99	2.23	0.75	0.38	2.35	39.97752012	-104.93862933
531.00	0.66	12.79	530.99	2.94	1.05	0.43	3.12	39.97752207	-104.93862827
621.00	0.57	14.72	620.98	3.88	1.27	0.10	4.08	39.97752465	-104.93862745
711.00	0.79	351.16	710.97	4.93	1.29	0.39	5.06	39.97752752	-104.93862739
801.00	0.83	359.78	800.96	6.19	1.19	0.14	6.20	39.97753099	-104.93862774
891.00	0.70	64.20	890.96	7.08	1.69	0.91	7.21	39.97753344	-104.93862598
980.00	0.57	87.23	979.95	7.34	2.62	0.32	7.79	39.97753415	-104.93862266
1070.00	0.31	65.96	1069.95	7.46	3.29	0.34	8.15	39.97753448	-104.93862027
1160.00	0.66	40.47	1159.95	7.95	3.85	0.45	8.81	39.97753584	-104.93861827
1250.00	0.40	16.65	1249.94	8.65	4.27	0.37	9.61	39.97753774	-104.93861675
1340.00	0.75	25.18	1339.94	9.48	4.61	0.40	10.52	39.97754003	-104.93861554
1430.00	1.05	3.29	1429.93	10.84	4.91	0.50	11.89	39.97754376	-104.93861447
1520.00	1.05	13.23	1519.91	12.47	5.15	0.20	13.49	39.97754822	-104.93861363
1610.00	0.83	15.07	1609.90	13.90	5.51	0.25	14.95	39.97755215	-104.93861235
1700.00	0.40	22.72	1699.89	14.82	5.80	0.49	15.91	39.97755467	-104.93861131
1736.00	0.22	33.62	1735.89	14.99	5.88	0.52	16.10	39.97755515	-104.93861100
1743.38	0.22	33.62	1743.27	15.01	5.90	0.00	16.13	39.97755522	-104.93861095
1786.00	0.22	33.62	1785.89	15.15	5.99	0.00	16.29	39.97755559	-104.93861063

Comments

MD[ft]	TVD[ft]	North[ft]	East[ft]	Lat - NAD 83	Long - NAD 83	Comment
0.00	0.00	0.00	0.00	39.97751400	-104.93863200	Surface Location
1743.38	1743.27	15.01	5.90	39.97755522	-104.93861095	PBTD: 1743 MD/TVD, 2047 FSL, 468 FWL Sec 07
1786.00	1785.89	15.15	5.99	39.97755559	-104.93861063	9.625" Csg: 1786 MD/TVD, 2047 FSL, 469 FWL Sec 07
1786.00	1785.89	15.15	5.99	39.97755559	-104.93861063	BHL: 1786 MD/TVD, 2047 FSL, 469 FWL Sec 07

Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
13.500	0.00	0.00	0.00	0.00	1786.00	1785.89	15.15	5.99

Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Casing	0.00	0.00	0.00	0.00	1786.00	1785.89	15.15	5.99

Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool
616961	As Drilled - Surface	1786.00	1785.89	MWD

Coordinates are from Slot
MD's and TVD's are from Rig Floor 5164.2ft above Mean Sea Level
Vertical Section is from Wellhead on azimuth 21.57 degrees
Bottom hole distance is 16.29 Feet on azimuth 21.57 degrees from Wellhead
Survey calculation uses Minimum Curvature method