

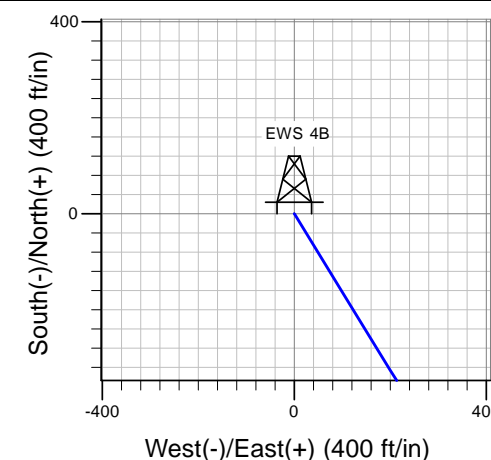
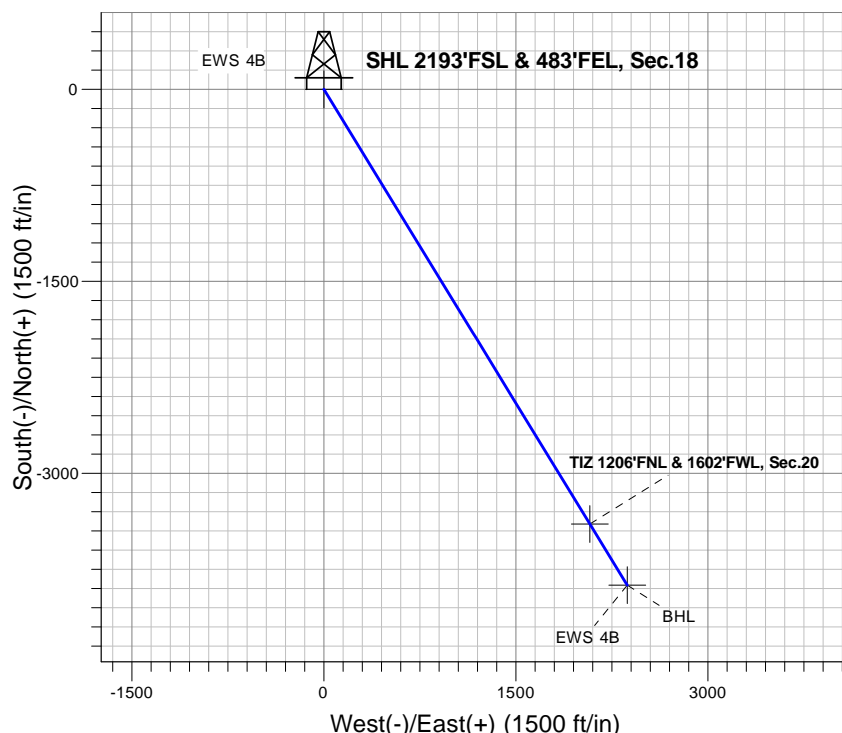
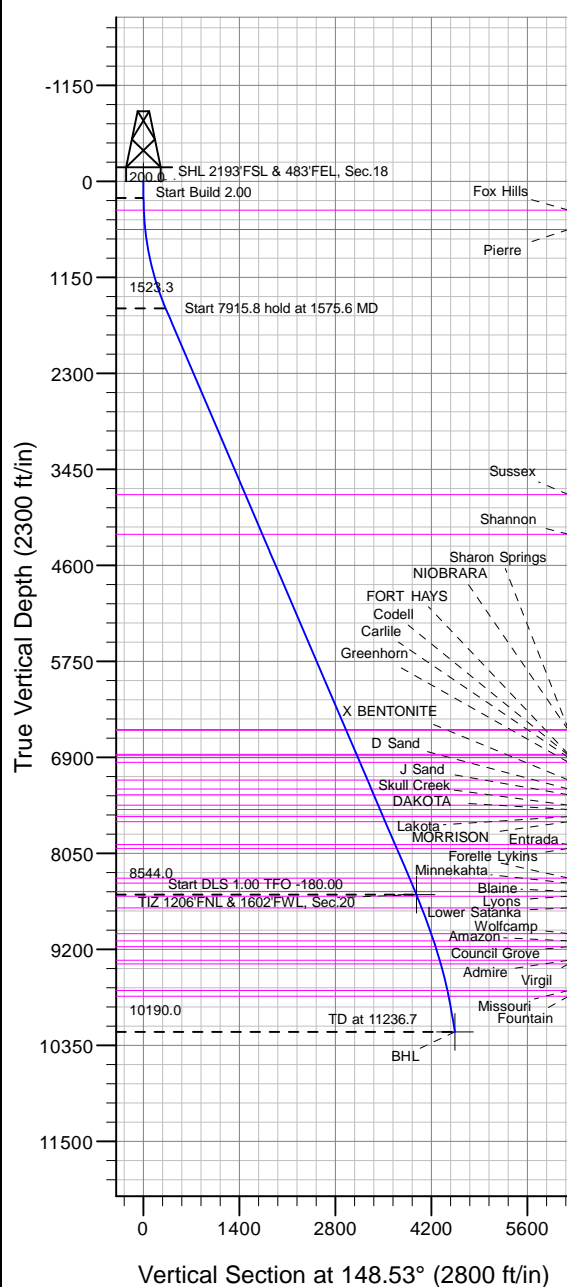
Well Name: EWS 4B

Surface Location: EWS 4B Pad Sec.18-T2N-R63W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4877.0

+N/-S+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0 0.0	1294471.45	3287247.32	40.137150	-104.472590	

Original Well Elev WELL @ 4890.0ft (Original Well Elev)

Expedition Water Solutions



EWS 4B
Plan #1 (8-24-18)
15:23, August 24 2018



Azimuths to True North
Magnetic North: 8.23°

Magnetic Field
Strength: 52215.9nT
Dip Angle: 66.58°
Date: 8/24/2018
Model: HDGM

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SHL 2193'FSL & 483'FEL, Sec.18	1.0	0.0	0.0	40.137150	-104.472590	
TIZ 1206'FNL & 1602'FWL, Sec.20	8544.0	-3395.1	2077.7	40.127830	-104.465160	Point
BHL	10190.0	-3872.7	2370.0	40.126519	-104.464115	Point

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1575.6	27.51	148.53	1523.3	-276.3	169.1	2.00	148.53	324.0	
4	9491.4	27.51	148.53	8544.0	-3395.1	2077.7	0.00	0.00	3980.4	TIZ 1206'FNL & 1602'FWL, Sec.20
5	11236.7	10.06	148.53	10190.0	-3872.7	2370.0	1.00	-180.00	4540.3	BHL



Expedition Water Solutions

SEC.18-T2N-R63W

EWS 4B Pad Sec.18-T2N-R63W

EWS 4B

Wellbore #1

Plan: Plan #1 (8-24-18)

Standard Planning Report

24 August, 2018

Database:	US_EDM	Local Co-ordinate Reference:	Well EWS 4B
Company:	Expedition Water Solutions	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.18-T2N-R63W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	EWS 4B Pad Sec.18-T2N-R63W	North Reference:	True
Well:	EWS 4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-24-18)		

Project	SEC.18-T2N-R63W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		EWS 4B Pad Sec.18-T2N-R63W			
Site Position:		Northing:	1,294,471.45 usft	Latitude:	40.137150
From:	Lat/Long	Easting:	3,287,247.32 usft	Longitude:	-104.472590
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.66 °

Well	EWS 4B					
Well Position	+N/-S	0.0 ft	Northing:	1,294,471.45 usft	Latitude:	40.137150
	+E/-W	0.0 ft	Easting:	3,287,247.32 usft	Longitude:	-104.472590
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,877.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/24/2018	8.23	66.58	52,216

Design	Plan #1 (8-24-18)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	148.53

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,575.6	27.51	148.53	1,523.3	-276.3	169.1	2.00	2.00	0.00	148.53	
9,491.4	27.51	148.53	8,544.0	-3,395.1	2,077.7	0.00	0.00	0.00	0.00	TIZ 1206'FNL & 1602'
11,236.7	10.06	148.53	10,190.0	-3,872.7	2,370.0	1.00	-1.00	0.00	-180.00	BHL

Database:	US_EDM	Local Co-ordinate Reference:	Well EWS 4B
Company:	Expedition Water Solutions	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.18-T2N-R63W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	EWS 4B Pad Sec.18-T2N-R63W	North Reference:	True
Well:	EWS 4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-24-18)		

Planned 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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 2193'FSL & 483'FEL, Sec.18									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	2.00	148.53	300.0	-1.5	0.9	1.7	2.00	2.00	0.00
346.1	2.92	148.53	346.0	-3.2	1.9	3.7	2.00	2.00	0.00
Fox Hills									
400.0	4.00	148.53	399.8	-6.0	3.6	7.0	2.00	2.00	0.00
500.0	6.00	148.53	499.5	-13.4	8.2	15.7	2.00	2.00	0.00
578.1	7.56	148.53	577.0	-21.3	13.0	24.9	2.00	2.00	0.00
Pierre									
600.0	8.00	148.53	598.7	-23.8	14.6	27.9	2.00	2.00	0.00
700.0	10.00	148.53	697.5	-37.1	22.7	43.5	2.00	2.00	0.00
800.0	12.00	148.53	795.6	-53.4	32.7	62.6	2.00	2.00	0.00
900.0	14.00	148.53	893.1	-72.6	44.4	85.1	2.00	2.00	0.00
1,000.0	16.00	148.53	989.6	-94.7	57.9	111.0	2.00	2.00	0.00
1,100.0	18.00	148.53	1,085.3	-119.6	73.2	140.2	2.00	2.00	0.00
1,200.0	20.00	148.53	1,179.8	-147.4	90.2	172.8	2.00	2.00	0.00
1,300.0	22.00	148.53	1,273.2	-177.9	108.9	208.6	2.00	2.00	0.00
1,400.0	24.00	148.53	1,365.2	-211.3	129.3	247.7	2.00	2.00	0.00
1,500.0	26.00	148.53	1,455.8	-247.3	151.3	289.9	2.00	2.00	0.00
1,575.6	27.51	148.53	1,523.3	-276.3	169.1	324.0	2.00	2.00	0.00
1,600.0	27.51	148.53	1,545.0	-285.9	175.0	335.2	0.00	0.00	0.00
1,700.0	27.51	148.53	1,633.7	-325.3	199.1	381.4	0.00	0.00	0.00
1,800.0	27.51	148.53	1,722.4	-364.7	223.2	427.6	0.00	0.00	0.00
1,900.0	27.51	148.53	1,811.1	-404.1	247.3	473.8	0.00	0.00	0.00
2,000.0	27.51	148.53	1,899.8	-443.5	271.4	520.0	0.00	0.00	0.00
2,100.0	27.51	148.53	1,988.4	-482.9	295.5	566.2	0.00	0.00	0.00
2,200.0	27.51	148.53	2,077.1	-522.3	319.7	612.4	0.00	0.00	0.00
2,300.0	27.51	148.53	2,165.8	-561.7	343.8	658.6	0.00	0.00	0.00
2,400.0	27.51	148.53	2,254.5	-601.1	367.9	704.8	0.00	0.00	0.00
2,500.0	27.51	148.53	2,343.2	-640.5	392.0	751.0	0.00	0.00	0.00
2,600.0	27.51	148.53	2,431.9	-679.9	416.1	797.2	0.00	0.00	0.00
2,700.0	27.51	148.53	2,520.6	-719.3	440.2	843.4	0.00	0.00	0.00
2,800.0	27.51	148.53	2,609.3	-758.7	464.3	889.5	0.00	0.00	0.00
2,900.0	27.51	148.53	2,698.0	-798.1	488.4	935.7	0.00	0.00	0.00
3,000.0	27.51	148.53	2,786.7	-837.5	512.6	981.9	0.00	0.00	0.00
3,100.0	27.51	148.53	2,875.4	-876.9	536.7	1,028.1	0.00	0.00	0.00
3,200.0	27.51	148.53	2,964.1	-916.3	560.8	1,074.3	0.00	0.00	0.00
3,300.0	27.51	148.53	3,052.7	-955.7	584.9	1,120.5	0.00	0.00	0.00
3,400.0	27.51	148.53	3,141.4	-995.1	609.0	1,166.7	0.00	0.00	0.00
3,500.0	27.51	148.53	3,230.1	-1,034.5	633.1	1,212.9	0.00	0.00	0.00
3,600.0	27.51	148.53	3,318.8	-1,073.9	657.2	1,259.1	0.00	0.00	0.00
3,700.0	27.51	148.53	3,407.5	-1,113.3	681.3	1,305.3	0.00	0.00	0.00
3,800.0	27.51	148.53	3,496.2	-1,152.7	705.4	1,351.5	0.00	0.00	0.00
3,900.0	27.51	148.53	3,584.9	-1,192.1	729.6	1,397.7	0.00	0.00	0.00
4,000.0	27.51	148.53	3,673.6	-1,231.5	753.7	1,443.9	0.00	0.00	0.00
4,090.7	27.51	148.53	3,754.0	-1,267.3	775.5	1,485.7	0.00	0.00	0.00
Sussex									
4,100.0	27.51	148.53	3,762.3	-1,270.9	777.8	1,490.0	0.00	0.00	0.00
4,200.0	27.51	148.53	3,851.0	-1,310.3	801.9	1,536.2	0.00	0.00	0.00
4,300.0	27.51	148.53	3,939.7	-1,349.7	826.0	1,582.4	0.00	0.00	0.00
4,400.0	27.51	148.53	4,028.4	-1,389.1	850.1	1,628.6	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well EWS 4B
Company:	Expedition Water Solutions	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.18-T2N-R63W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	EWS 4B Pad Sec.18-T2N-R63W	North Reference:	True
Well:	EWS 4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-24-18)		

Planned 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)
4,500.0	27.51	148.53	4,117.1	-1,428.5	874.2	1,674.8	0.00	0.00	0.00
4,600.0	27.51	148.53	4,205.7	-1,467.9	898.3	1,721.0	0.00	0.00	0.00
4,626.2	27.51	148.53	4,229.0	-1,478.3	904.7	1,733.1	0.00	0.00	0.00
Shannon									
4,700.0	27.51	148.53	4,294.4	-1,507.3	922.5	1,767.2	0.00	0.00	0.00
4,800.0	27.51	148.53	4,383.1	-1,546.7	946.6	1,813.4	0.00	0.00	0.00
4,900.0	27.51	148.53	4,471.8	-1,586.1	970.7	1,859.6	0.00	0.00	0.00
5,000.0	27.51	148.53	4,560.5	-1,625.5	994.8	1,905.8	0.00	0.00	0.00
5,100.0	27.51	148.53	4,649.2	-1,664.9	1,018.9	1,952.0	0.00	0.00	0.00
5,200.0	27.51	148.53	4,737.9	-1,704.3	1,043.0	1,998.2	0.00	0.00	0.00
5,300.0	27.51	148.53	4,826.6	-1,743.7	1,067.1	2,044.4	0.00	0.00	0.00
5,400.0	27.51	148.53	4,915.3	-1,783.1	1,091.2	2,090.5	0.00	0.00	0.00
5,500.0	27.51	148.53	5,004.0	-1,822.5	1,115.3	2,136.7	0.00	0.00	0.00
5,600.0	27.51	148.53	5,092.7	-1,861.9	1,139.5	2,182.9	0.00	0.00	0.00
5,700.0	27.51	148.53	5,181.4	-1,901.3	1,163.6	2,229.1	0.00	0.00	0.00
5,800.0	27.51	148.53	5,270.0	-1,940.7	1,187.7	2,275.3	0.00	0.00	0.00
5,900.0	27.51	148.53	5,358.7	-1,980.1	1,211.8	2,321.5	0.00	0.00	0.00
6,000.0	27.51	148.53	5,447.4	-2,019.5	1,235.9	2,367.7	0.00	0.00	0.00
6,100.0	27.51	148.53	5,536.1	-2,058.9	1,260.0	2,413.9	0.00	0.00	0.00
6,200.0	27.51	148.53	5,624.8	-2,098.3	1,284.1	2,460.1	0.00	0.00	0.00
6,300.0	27.51	148.53	5,713.5	-2,137.7	1,308.2	2,506.3	0.00	0.00	0.00
6,400.0	27.51	148.53	5,802.2	-2,177.1	1,332.3	2,552.5	0.00	0.00	0.00
6,500.0	27.51	148.53	5,890.9	-2,216.5	1,356.5	2,598.7	0.00	0.00	0.00
6,600.0	27.51	148.53	5,979.6	-2,255.9	1,380.6	2,644.9	0.00	0.00	0.00
6,700.0	27.51	148.53	6,068.3	-2,295.3	1,404.7	2,691.0	0.00	0.00	0.00
6,800.0	27.51	148.53	6,157.0	-2,334.7	1,428.8	2,737.2	0.00	0.00	0.00
6,900.0	27.51	148.53	6,245.7	-2,374.1	1,452.9	2,783.4	0.00	0.00	0.00
7,000.0	27.51	148.53	6,334.4	-2,413.5	1,477.0	2,829.6	0.00	0.00	0.00
7,100.0	27.51	148.53	6,423.0	-2,452.9	1,501.1	2,875.8	0.00	0.00	0.00
7,200.0	27.51	148.53	6,511.7	-2,492.3	1,525.2	2,922.0	0.00	0.00	0.00
7,261.2	27.51	148.53	6,566.0	-2,516.4	1,540.0	2,950.3	0.00	0.00	0.00
Sharon Springs									
7,272.5	27.51	148.53	6,576.0	-2,520.9	1,542.7	2,955.5	0.00	0.00	0.00
NIOBRARA									
7,300.0	27.51	148.53	6,600.4	-2,531.7	1,549.4	2,968.2	0.00	0.00	0.00
7,400.0	27.51	148.53	6,689.1	-2,571.1	1,573.5	3,014.4	0.00	0.00	0.00
7,500.0	27.51	148.53	6,777.8	-2,610.5	1,597.6	3,060.6	0.00	0.00	0.00
7,596.0	27.51	148.53	6,863.0	-2,648.4	1,620.7	3,105.0	0.00	0.00	0.00
FORT HAYS									
7,600.0	27.51	148.53	6,866.5	-2,649.9	1,621.7	3,106.8	0.00	0.00	0.00
7,610.7	27.51	148.53	6,876.0	-2,654.2	1,624.3	3,111.7	0.00	0.00	0.00
Codell									
7,644.5	27.51	148.53	6,906.0	-2,667.5	1,632.4	3,127.3	0.00	0.00	0.00
Carlile									
7,700.0	27.51	148.53	6,955.2	-2,689.3	1,645.8	3,153.0	0.00	0.00	0.00
7,706.5	27.51	148.53	6,961.0	-2,691.9	1,647.4	3,156.0	0.00	0.00	0.00
Greenhorn									
7,800.0	27.51	148.53	7,043.9	-2,728.7	1,669.9	3,199.2	0.00	0.00	0.00
7,900.0	27.51	148.53	7,132.6	-2,768.1	1,694.0	3,245.4	0.00	0.00	0.00
7,945.6	27.51	148.53	7,173.0	-2,786.1	1,705.0	3,266.4	0.00	0.00	0.00
X BENTONITE									
8,000.0	27.51	148.53	7,221.3	-2,807.5	1,718.1	3,291.5	0.00	0.00	0.00
8,066.2	27.51	148.53	7,280.0	-2,833.6	1,734.1	3,322.1	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well EWS 4B
Company:	Expedition Water Solutions	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.18-T2N-R63W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	EWS 4B Pad Sec.18-T2N-R63W	North Reference:	True
Well:	EWS 4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-24-18)		

Planned 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)
D Sand									
8,100.0	27.51	148.53	7,310.0	-2,846.9	1,742.2	3,337.7	0.00	0.00	0.00
8,142.9	27.51	148.53	7,348.0	-2,863.8	1,752.6	3,357.5	0.00	0.00	0.00
J Sand									
8,200.0	27.51	148.53	7,398.7	-2,886.3	1,766.4	3,383.9	0.00	0.00	0.00
8,284.9	27.51	148.53	7,474.0	-2,919.8	1,786.8	3,423.2	0.00	0.00	0.00
Skull Creek									
8,300.0	27.51	148.53	7,487.3	-2,925.7	1,790.5	3,430.1	0.00	0.00	0.00
8,344.7	27.51	148.53	7,527.0	-2,943.4	1,801.2	3,450.8	0.00	0.00	0.00
DAKOTA									
8,400.0	27.51	148.53	7,576.0	-2,965.1	1,814.6	3,476.3	0.00	0.00	0.00
8,437.2	27.51	148.53	7,609.0	-2,979.8	1,823.5	3,493.5	0.00	0.00	0.00
Lakota									
8,500.0	27.51	148.53	7,664.7	-3,004.5	1,838.7	3,522.5	0.00	0.00	0.00
8,505.9	27.51	148.53	7,670.0	-3,006.9	1,840.1	3,525.3	0.00	0.00	0.00
MORRISON									
8,600.0	27.51	148.53	7,753.4	-3,043.9	1,862.8	3,568.7	0.00	0.00	0.00
8,700.0	27.51	148.53	7,842.1	-3,083.3	1,886.9	3,614.9	0.00	0.00	0.00
8,800.0	27.51	148.53	7,930.8	-3,122.7	1,911.0	3,661.1	0.00	0.00	0.00
8,814.9	27.51	148.53	7,944.0	-3,128.6	1,914.6	3,668.0	0.00	0.00	0.00
Entrada									
8,866.7	27.51	148.53	7,990.0	-3,149.0	1,927.1	3,691.9	0.00	0.00	0.00
Lykins									
8,900.0	27.51	148.53	8,019.5	-3,162.1	1,935.1	3,707.3	0.00	0.00	0.00
9,000.0	27.51	148.53	8,108.2	-3,201.5	1,959.3	3,753.5	0.00	0.00	0.00
9,100.0	27.51	148.53	8,196.9	-3,240.9	1,983.4	3,799.7	0.00	0.00	0.00
9,200.0	27.51	148.53	8,285.6	-3,280.3	2,007.5	3,845.9	0.00	0.00	0.00
9,269.3	27.51	148.53	8,347.0	-3,307.6	2,024.2	3,877.8	0.00	0.00	0.00
Forelle									
9,300.0	27.51	148.53	8,374.3	-3,319.7	2,031.6	3,892.0	0.00	0.00	0.00
9,335.8	27.51	148.53	8,406.0	-3,333.8	2,040.2	3,908.6	0.00	0.00	0.00
Minnekahta									
9,400.0	27.51	148.53	8,463.0	-3,359.1	2,055.7	3,938.2	0.00	0.00	0.00
9,447.4	27.51	148.53	8,505.0	-3,377.8	2,067.1	3,960.1	0.00	0.00	0.00
Blaine									
9,491.4	27.51	148.53	8,544.0	-3,395.1	2,077.7	3,980.4	0.00	0.00	0.00
TIZ 1206'FNL & 1602'FWL, Sec.20									
9,500.0	27.42	148.53	8,551.7	-3,398.5	2,079.8	3,984.4	1.00	-1.00	0.00
9,513.9	27.29	148.53	8,564.0	-3,404.0	2,083.1	3,990.8	1.00	-1.00	0.00
Lyons									
9,600.0	26.42	148.53	8,640.8	-3,437.2	2,103.4	4,029.7	1.00	-1.00	0.00
9,669.2	25.73	148.53	8,703.0	-3,463.1	2,119.3	4,060.1	1.00	-1.00	0.00
Lower Satanka									
9,700.0	25.42	148.53	8,730.8	-3,474.4	2,126.3	4,073.4	1.00	-1.00	0.00
9,800.0	24.42	148.53	8,821.4	-3,510.4	2,148.3	4,115.6	1.00	-1.00	0.00
9,900.0	23.42	148.53	8,912.8	-3,545.0	2,169.4	4,156.1	1.00	-1.00	0.00
10,000.0	22.42	148.53	9,004.9	-3,578.2	2,189.8	4,195.1	1.00	-1.00	0.00
10,007.6	22.35	148.53	9,012.0	-3,580.7	2,191.3	4,198.0	1.00	-1.00	0.00
Wolfcamp									
10,100.0	21.42	148.53	9,097.7	-3,610.1	2,209.3	4,232.4	1.00	-1.00	0.00
10,102.5	21.40	148.53	9,100.0	-3,610.8	2,209.7	4,233.3	1.00	-1.00	0.00
Amazon									

Database:	US_EDM	Local Co-ordinate Reference:	Well EWS 4B
Company:	Expedition Water Solutions	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.18-T2N-R63W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	EWS 4B Pad Sec.18-T2N-R63W	North Reference:	True
Well:	EWS 4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-24-18)		

Planned 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)	
10,175.3	20.67	148.53	9,168.0	-3,633.1	2,223.4	4,259.5	1.00	-1.00	0.00	
Council Grove										
10,200.0	20.43	148.53	9,191.1	-3,640.5	2,227.9	4,268.1	1.00	-1.00	0.00	
10,300.0	19.43	148.53	9,285.1	-3,669.6	2,245.7	4,302.2	1.00	-1.00	0.00	
10,349.6	18.93	148.53	9,332.0	-3,683.5	2,254.2	4,318.5	1.00	-1.00	0.00	
Admire										
10,396.1	18.46	148.53	9,376.0	-3,696.2	2,262.0	4,333.4	1.00	-1.00	0.00	
Virgil										
10,400.0	18.43	148.53	9,379.7	-3,697.2	2,262.6	4,334.6	1.00	-1.00	0.00	
10,500.0	17.43	148.53	9,474.9	-3,723.5	2,278.7	4,365.4	1.00	-1.00	0.00	
10,600.0	16.43	148.53	9,570.5	-3,748.3	2,293.9	4,394.5	1.00	-1.00	0.00	
10,700.0	15.43	148.53	9,666.7	-3,771.7	2,308.2	4,422.0	1.00	-1.00	0.00	
10,727.3	15.15	148.53	9,693.0	-3,777.9	2,312.0	4,429.2	1.00	-1.00	0.00	
Missouri										
10,798.6	14.44	148.53	9,762.0	-3,793.4	2,321.5	4,447.4	1.00	-1.00	0.00	
Fountain										
10,800.0	14.43	148.53	9,763.3	-3,793.7	2,321.6	4,447.7	1.00	-1.00	0.00	
10,900.0	13.43	148.53	9,860.4	-3,814.2	2,334.2	4,471.8	1.00	-1.00	0.00	
11,000.0	12.43	148.53	9,957.8	-3,833.3	2,345.9	4,494.2	1.00	-1.00	0.00	
11,100.0	11.43	148.53	10,055.7	-3,850.9	2,356.7	4,514.8	1.00	-1.00	0.00	
11,200.0	10.43	148.53	10,153.9	-3,867.1	2,366.6	4,533.8	1.00	-1.00	0.00	
11,236.7	10.06	148.53	10,190.0	-3,872.7	2,370.0	4,540.3	1.00	-1.00	0.00	
BHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
SHL 2193'FSL & 483'FE	0.00	0.00	1.0	0.0	0.0	1,294,471.45	3,287,247.32	40.137150	-104.472590	
- plan hits target center										
- Point										
TIZ 1206'FNL & 1602'FV	0.00	0.00	8,544.0	-3,395.1	2,077.7	1,291,100.75	3,289,364.16	40.127830	-104.465160	
- plan hits target center										
- Point										
BHL	0.00	0.00	10,190.0	-3,872.7	2,370.0	1,290,626.63	3,289,661.93	40.126519	-104.464115	
- plan hits target center										
- Point										

Database:	US_EDM	Local Co-ordinate Reference:	Well EWS 4B
Company:	Expedition Water Solutions	TVD Reference:	WELL @ 4890.0ft (Original Well Elev)
Project:	SEC.18-T2N-R63W	MD Reference:	WELL @ 4890.0ft (Original Well Elev)
Site:	EWS 4B Pad Sec.18-T2N-R63W	North Reference:	True
Well:	EWS 4B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-24-18)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
346.1	346.0	Fox Hills				
578.1	577.0	Pierre				
4,090.7	3,754.0	Sussex				
4,626.2	4,229.0	Shannon				
7,261.2	6,566.0	Sharon Springs				
7,272.5	6,576.0	NIOBRARA				
7,596.0	6,863.0	FORT HAYS				
7,610.7	6,876.0	Codell				
7,644.5	6,906.0	Carlile				
7,706.5	6,961.0	Greenhorn				
7,945.6	7,173.0	X BENTONITE				
8,066.2	7,280.0	D Sand				
8,142.9	7,348.0	J Sand				
8,284.9	7,474.0	Skull Creek				
8,344.7	7,527.0	DAKOTA				
8,437.2	7,609.0	Lakota				
8,505.9	7,670.0	MORRISON				
8,814.9	7,944.0	Entrada				
8,866.7	7,990.0	Lykins				
9,269.3	8,347.0	Forelle				
9,335.8	8,406.0	Minnekahta				
9,447.4	8,505.0	Blaine				
9,513.9	8,564.0	Lyons				
9,669.2	8,703.0	Lower Satanka				
10,007.6	9,012.0	Wolfcamp				
10,102.5	9,100.0	Amazon				
10,175.3	9,168.0	Council Grove				
10,349.6	9,332.0	Admire				
10,396.1	9,376.0	Virgil				
10,727.3	9,693.0	Missouri				
10,798.6	9,762.0	Fountain				