



HOBBS OCD

APR 04 2016

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McElvain Energy, Inc.

Sec. 30 T18S R34E

EK 30 WCD Federal Com

EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H

Wellbore #1

Plan: Design #1 29Jul15 kjs

Standard Planning Report - Geographic

13 August, 2015

APR 14 2016



Planning Report - Geographic

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30-BS2 4H
Company:	McElvain Energy, Inc.	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Project:	Sec. 30 T18S R34E	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site:	EK 30 WCD Federal Com	North Reference:	Grid
Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 29Jul15 kjs		

Project:	Sec. 30 T18S R34E, Lea County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	EK 30 WCD Federal Com		
Site Position:		Northing:	626,476.83 usft
From:	Map	Easting:	765,038.76 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 43' 12.413 N
		Longitude:	103° 36' 21.436 W
		Grid Convergence:	0.39 °

Well:	EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H		
Well Position	+N/-S	0.0 usft	Northing: 623,408.10 usft
	+E/-W	0.0 usft	Easting: 765,540.60 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level: 3,863.0 usft
		Latitude:	32° 42' 42.016 N
		Longitude:	103° 36' 15.809 W

Wellbore:	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	07/29/15	7.13
			Dip Angle
			60.53
			Field Strength
			48,489

Design:	Design #1 29Jul15 kjs		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			357.65

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,038.8	2.08	255.71	2,038.7	-0.6	-2.4	1.50	1.50	0.00	255.71	
9,455.0	2.08	255.71	9,450.0	-67.1	-263.5	0.00	0.00	0.00	0.00	
10,067.0	73.00	357.65	9,910.1	270.0	-290.0	12.00	11.59	16.66	102.55	
10,222.0	91.60	357.65	9,930.8	422.8	-296.3	12.00	12.00	0.00	0.00	
14,673.9	91.60	357.65	9,806.5	4,869.2	-478.9	0.00	0.00	0.00	0.00	TD / PBHL 30 BS2 4H
14,773.9	91.60	357.65	9,803.7	4,969.1	-483.0	0.00	0.00	0.00	0.00	



Planning Report - Geographic

Database: EDM 5000.1 Single User Db

Local Co-ordinate Reference:

Well EK 30 BS2 Federal Com 4H - Slot 30
BS2 4H

Company: McElvain Energy, Inc.

TVD Reference:

WELL @ 3883.0usft (Original Well Elev)

Project: Sec. 30 T18S R34E

MD Reference:

WELL @ 3883.0usft (Original Well Elev)

Site: EK 30 WCD Federal Com

North Reference:

Grid

Well: EK 30 BS2 Federal Com 4H

Survey Calculation Method:

Minimum Curvature

Wellbore: Wellbore #1

Design: Design #1 29Jul15 kjs

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
200.0	0.00	0.00	200.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
400.0	0.00	0.00	400.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
600.0	0.00	0.00	600.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
800.0	0.00	0.00	800.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
1,683.0	0.00	0.00	1,683.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
Rustler									
1,743.0	0.00	0.00	1,743.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
Salt									
1,800.0	0.00	0.00	1,800.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
13 3/8"									
1,900.0	0.00	0.00	1,900.0	0.0	0.0	623,408.10	765,540.60	32° 42' 42.016 N	103° 36' 15.809 W
Start Build 1.50									
2,000.0	1.50	255.71	2,000.0	-0.3	-1.3	623,407.78	765,539.33	32° 42' 42.013 N	103° 36' 15.824 W
2,038.8	2.08	255.71	2,038.7	-0.6	-2.4	623,407.48	765,538.15	32° 42' 42.010 N	103° 36' 15.837 W
Hold 2.08 Inc, 255.71 Az									
2,200.0	2.08	255.71	2,199.9	-2.1	-8.1	623,406.04	765,532.48	32° 42' 41.996 N	103° 36' 15.904 W
2,400.0	2.08	255.71	2,399.7	-3.9	-15.2	623,404.24	765,525.44	32° 42' 41.979 N	103° 36' 15.987 W
2,600.0	2.08	255.71	2,599.6	-5.7	-22.2	623,402.45	765,518.40	32° 42' 41.961 N	103° 36' 16.069 W
2,800.0	2.08	255.71	2,799.5	-7.4	-29.2	623,400.66	765,511.36	32° 42' 41.944 N	103° 36' 16.152 W
3,000.0	2.08	255.71	2,999.3	-9.2	-36.3	623,398.86	765,504.32	32° 42' 41.927 N	103° 36' 16.234 W
3,200.0	2.08	255.71	3,199.2	-11.0	-43.3	623,397.07	765,497.28	32° 42' 41.910 N	103° 36' 16.317 W
3,259.1	2.08	255.71	3,258.3	-11.6	-45.4	623,396.54	765,495.20	32° 42' 41.904 N	103° 36' 16.341 W
Yates									
3,400.0	2.08	255.71	3,399.1	-12.8	-50.4	623,395.28	765,490.24	32° 42' 41.892 N	103° 36' 16.399 W
3,400.9	2.08	255.71	3,400.0	-12.8	-50.4	623,395.27	765,490.21	32° 42' 41.892 N	103° 36' 16.400 W
9 5/8"									
3,600.0	2.08	255.71	3,598.9	-14.6	-57.4	623,393.48	765,483.20	32° 42' 41.875 N	103° 36' 16.482 W
3,734.5	2.08	255.71	3,733.4	-15.8	-62.1	623,392.28	765,478.46	32° 42' 41.863 N	103° 36' 16.537 W
Seven Rivers									
3,800.0	2.08	255.71	3,798.8	-16.4	-64.4	623,391.69	765,476.16	32° 42' 41.858 N	103° 36' 16.564 W
4,000.0	2.08	255.71	3,998.7	-18.2	-71.5	623,389.90	765,469.12	32° 42' 41.841 N	103° 36' 16.647 W
4,200.0	2.08	255.71	4,198.5	-20.0	-78.5	623,388.10	765,462.08	32° 42' 41.823 N	103° 36' 16.729 W
4,400.0	2.08	255.71	4,398.4	-21.8	-85.6	623,386.31	765,455.04	32° 42' 41.806 N	103° 36' 16.812 W
4,435.1	2.08	255.71	4,433.5	-22.1	-86.8	623,385.99	765,453.80	32° 42' 41.803 N	103° 36' 16.826 W
Queen									
4,600.0	2.08	255.71	4,598.3	-23.6	-92.6	623,384.52	765,448.00	32° 42' 41.789 N	103° 36' 16.894 W
4,710.4	2.08	255.71	4,708.6	-24.6	-96.5	623,383.53	765,444.11	32° 42' 41.779 N	103° 36' 16.940 W
Penrose									
4,800.0	2.08	255.71	4,798.1	-25.4	-99.6	623,382.72	765,440.96	32° 42' 41.771 N	103° 36' 16.977 W
5,000.0	2.08	255.71	4,998.0	-27.2	-106.7	623,380.93	765,433.92	32° 42' 41.754 N	103° 36' 17.060 W
5,200.0	2.08	255.71	5,197.9	-29.0	-113.7	623,379.14	765,426.88	32° 42' 41.737 N	103° 36' 17.142 W
5,260.8	2.08	255.71	5,258.7	-29.5	-115.9	623,378.59	765,424.74	32° 42' 41.732 N	103° 36' 17.167 W
San Andres									
5,400.0	2.08	255.71	5,397.8	-30.8	-120.8	623,377.34	765,419.84	32° 42' 41.720 N	103° 36' 17.225 W
5,411.0	2.08	255.71	5,408.7	-30.9	-121.1	623,377.24	765,419.45	32° 42' 41.719 N	103° 36' 17.229 W
Delaware									



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 Site: EK 30 WCD Federal Com
 Well: EK 30 BS2 Federal Com 4H
 Wellbore: Wellbore #1
 Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
 TVD Reference: WELL @ 3883.0usft (Original Well Elev)
 MD Reference: WELL @ 3883.0usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,451.0	2.08	255.71	5,448.7	-31.2	-122.6	623,376.88	765,418.04	32° 42' 41.715 N	103° 36' 17.246 W
1st Delaware Sand									
5,600.0	2.08	255.71	5,597.6	-32.6	-127.8	623,375.55	765,412.80	32° 42' 41.702 N	103° 36' 17.307 W
5,736.3	2.08	255.71	5,733.8	-33.8	-132.6	623,374.33	765,408.00	32° 42' 41.691 N	103° 36' 17.363 W
2nd Delaware Sand									
5,800.0	2.08	255.71	5,797.5	-34.3	-134.8	623,373.76	765,405.76	32° 42' 41.685 N	103° 36' 17.390 W
6,000.0	2.08	255.71	5,997.4	-36.1	-141.9	623,371.96	765,398.72	32° 42' 41.668 N	103° 36' 17.472 W
6,200.0	2.08	255.71	6,197.2	-37.9	-148.9	623,370.17	765,391.68	32° 42' 41.651 N	103° 36' 17.555 W
6,400.0	2.08	255.71	6,397.1	-39.7	-156.0	623,368.38	765,384.64	32° 42' 41.633 N	103° 36' 17.637 W
6,600.0	2.08	255.71	6,597.0	-41.5	-163.0	623,366.58	765,377.60	32° 42' 41.616 N	103° 36' 17.720 W
6,800.0	2.08	255.71	6,796.8	-43.3	-170.0	623,364.79	765,370.56	32° 42' 41.599 N	103° 36' 17.802 W
7,000.0	2.08	255.71	6,996.7	-45.1	-177.1	623,363.00	765,363.52	32° 42' 41.582 N	103° 36' 17.885 W
7,200.0	2.08	255.71	7,196.6	-46.9	-184.1	623,361.20	765,356.48	32° 42' 41.564 N	103° 36' 17.967 W
7,400.0	2.08	255.71	7,396.4	-48.7	-191.2	623,359.41	765,349.44	32° 42' 41.547 N	103° 36' 18.050 W
7,600.0	2.08	255.71	7,596.3	-50.5	-198.2	623,357.62	765,342.40	32° 42' 41.530 N	103° 36' 18.133 W
7,627.9	2.08	255.71	7,624.2	-50.7	-199.2	623,357.37	765,341.41	32° 42' 41.527 N	103° 36' 18.144 W
Bone Spring									
7,800.0	2.08	255.71	7,796.2	-52.3	-205.2	623,355.82	765,335.36	32° 42' 41.512 N	103° 36' 18.215 W
8,000.0	2.08	255.71	7,996.0	-54.1	-212.3	623,354.03	765,328.32	32° 42' 41.495 N	103° 36' 18.298 W
8,200.0	2.08	255.71	8,195.9	-55.9	-219.3	623,352.24	765,321.28	32° 42' 41.478 N	103° 36' 18.380 W
8,400.0	2.08	255.71	8,395.8	-57.7	-226.4	623,350.44	765,314.24	32° 42' 41.461 N	103° 36' 18.463 W
8,600.0	2.08	255.71	8,595.6	-59.5	-233.4	623,348.65	765,307.20	32° 42' 41.443 N	103° 36' 18.545 W
8,800.0	2.08	255.71	8,795.5	-61.2	-240.4	623,346.86	765,300.16	32° 42' 41.426 N	103° 36' 18.628 W
8,964.1	2.08	255.71	8,959.5	-62.7	-246.2	623,345.38	765,294.38	32° 42' 41.412 N	103° 36' 18.695 W
1st Bone Spring Sand									
9,000.0	2.08	255.71	8,995.4	-63.0	-247.5	623,345.06	765,293.12	32° 42' 41.409 N	103° 36' 18.710 W
9,200.0	2.08	255.71	9,195.2	-64.8	-254.5	623,343.27	765,286.08	32° 42' 41.392 N	103° 36' 18.793 W
9,400.0	2.08	255.71	9,395.1	-66.6	-261.6	623,341.48	765,279.04	32° 42' 41.374 N	103° 36' 18.875 W
9,455.0	2.08	255.71	9,450.0	-67.1	-263.5	623,340.98	765,277.10	32° 42' 41.370 N	103° 36' 18.898 W
KOP 12/100									
9,514.6	7.00	341.47	9,509.5	-63.9	-265.7	623,344.16	765,274.89	32° 42' 41.401 N	103° 36' 18.924 W
2nd Bone Spring Sand									
9,600.0	17.07	351.64	9,592.9	-46.6	-269.2	623,361.55	765,271.41	32° 42' 41.574 N	103° 36' 18.963 W
9,800.0	40.99	355.93	9,766.6	49.3	-278.2	623,457.43	765,262.35	32° 42' 42.523 N	103° 36' 19.061 W
10,000.0	64.97	357.32	9,886.1	207.6	-287.3	623,615.69	765,253.33	32° 42' 44.089 N	103° 36' 19.154 W
10,066.6	72.95	357.65	9,910.0	269.6	-290.0	623,677.72	765,250.61	32° 42' 44.703 N	103° 36' 19.181 W
POP 30 BS2 4H									
10,067.0	73.00	357.65	9,910.1	270.0	-290.0	623,678.10	765,250.59	32° 42' 44.707 N	103° 36' 19.181 W
POP									
10,067.1	73.00	357.65	9,910.1	270.1	-290.0	623,678.20	765,250.59	32° 42' 44.708 N	103° 36' 19.181 W
TOP TARGET WINDOW									
10,200.0	88.96	357.65	9,930.9	400.8	-295.4	623,808.94	765,245.22	32° 42' 46.002 N	103° 36' 19.234 W
10,222.0	91.60	357.65	9,930.8	422.8	-296.3	623,830.89	765,244.32	32° 42' 46.219 N	103° 36' 19.242 W
Landing Pt 91.6 Inc, 357.65 Az									
10,400.0	91.60	357.65	9,925.8	600.6	-303.6	624,008.70	765,237.02	32° 42' 47.979 N	103° 36' 19.314 W
10,600.0	91.60	357.65	9,920.2	800.4	-311.8	624,208.45	765,228.81	32° 42' 49.956 N	103° 36' 19.394 W
10,800.0	91.60	357.65	9,914.6	1,000.1	-320.0	624,408.21	765,220.61	32° 42' 51.933 N	103° 36' 19.473 W
11,000.0	91.60	357.65	9,909.1	1,199.9	-328.2	624,607.96	765,212.40	32° 42' 53.910 N	103° 36' 19.553 W
11,200.0	91.60	357.65	9,903.5	1,399.6	-336.4	624,807.72	765,204.20	32° 42' 55.887 N	103° 36' 19.633 W
11,400.0	91.60	357.65	9,897.9	1,599.4	-344.6	625,007.47	765,196.00	32° 42' 57.864 N	103° 36' 19.713 W
11,600.0	91.60	357.65	9,892.3	1,799.1	-352.8	625,207.22	765,187.79	32° 42' 59.841 N	103° 36' 19.793 W
11,800.0	91.60	357.65	9,886.7	1,998.9	-361.0	625,406.98	765,179.59	32° 43' 1.818 N	103° 36' 19.873 W



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Wellbore: Wellbore #1
Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,000.0	91.60	357.65	9,881.2	2,198.6	-369.2	625,606.73	765,171.38	32° 43' 3.795 N	103° 36' 19.953 W
12,200.0	91.60	357.65	9,875.6	2,398.4	-377.4	625,806.48	765,163.18	32° 43' 5.772 N	103° 36' 20.033 W
12,400.0	91.60	357.65	9,870.0	2,598.1	-385.6	626,006.24	765,154.97	32° 43' 7.749 N	103° 36' 20.113 W
12,600.0	91.60	357.65	9,864.4	2,797.9	-393.8	626,205.99	765,146.77	32° 43' 9.726 N	103° 36' 20.193 W
12,800.0	91.60	357.65	9,858.8	2,997.6	-402.0	626,405.75	765,138.57	32° 43' 11.703 N	103° 36' 20.273 W
13,000.0	91.60	357.65	9,853.2	3,197.4	-410.2	626,605.50	765,130.36	32° 43' 13.680 N	103° 36' 20.353 W
13,200.0	91.60	357.65	9,847.7	3,397.1	-418.4	626,805.25	765,122.16	32° 43' 15.657 N	103° 36' 20.433 W
13,400.0	91.60	357.65	9,842.1	3,596.9	-426.6	627,005.01	765,113.95	32° 43' 17.634 N	103° 36' 20.513 W
13,600.0	91.60	357.65	9,836.5	3,796.7	-434.8	627,204.76	765,105.75	32° 43' 19.611 N	103° 36' 20.593 W
13,800.0	91.60	357.65	9,830.9	3,996.4	-443.1	627,404.51	765,097.54	32° 43' 21.588 N	103° 36' 20.673 W
14,000.0	91.60	357.65	9,825.3	4,196.2	-451.3	627,604.27	765,089.34	32° 43' 23.565 N	103° 36' 20.753 W
14,200.0	91.60	357.65	9,819.8	4,395.9	-459.5	627,804.02	765,081.14	32° 43' 25.542 N	103° 36' 20.833 W
14,400.0	91.60	357.65	9,814.2	4,595.7	-467.7	628,003.77	765,072.93	32° 43' 27.519 N	103° 36' 20.913 W
14,600.0	91.60	357.65	9,808.6	4,795.4	-475.9	628,203.53	765,064.73	32° 43' 29.496 N	103° 36' 20.993 W
14,673.9	91.60	357.65	9,806.5	4,869.2	-478.9	628,277.30	765,061.70	32° 43' 30.227 N	103° 36' 21.023 W
Start 100.0 hold at 14673.9 MD - TD / PBHL 30 BS2 4H									
14,773.9	91.60	357.65	9,803.7	4,969.1	-483.0	628,377.18	765,057.59	32° 43' 31.215 N	103° 36' 21.063 W
TD at 14773.9									

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TD / PBHL 30 BS2 4H		0.00	359.61	9,806.5	4,869.2	-478.9	628,277.30	765,061.70	32° 43' 30.227 N	103° 36' 21.023 W
- plan hits target center										
- Point										
POP 30 BS2 4H		0.00	0.00	9,910.7	270.0	-275.0	623,678.10	765,265.60	32° 42' 44.706 N	103° 36' 19.006 W
- plan misses target center by 15.0usft at 10066.6usft MD (9910.0 TVD, 269.6 N, -290.0 E)										
- Point										

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,800.0	1,800.0	13 3/8"	13-3/8	17-1/2
3,400.9	3,400.0	9 5/8"	9-5/8	12-1/4



Planning Report - Geographic

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Company:	McElvain Energy, Inc.	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Project:	Sec. 30 T18S R34E	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site:	EK 30 WCD Federal Com	North Reference:	Grid
Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 29Jul15 kjs		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,683.0	1,683.0	Rustler		-1.60	357.65	
1,743.0	1,743.0	Salt		-1.60	357.65	
3,259.1	3,258.3	Yates		-1.60	357.65	
3,734.5	3,733.4	Seven Rivers		-1.60	357.65	
4,435.1	4,433.5	Queen		-1.60	357.65	
4,710.4	4,708.6	Penrose		-1.60	357.65	
5,260.8	5,258.7	San Andres		-1.60	357.65	
5,411.0	5,408.7	Delaware		-1.60	357.65	
5,451.0	5,448.7	1st Delaware Sand		-1.60	357.65	
5,736.3	5,733.8	2nd Delaware Sand		-1.60	357.65	
7,627.9	7,624.2	Bone Spring		-1.60	357.65	
8,964.1	8,959.5	1st Bone Spring Sand		-1.60	357.65	
9,514.6	9,509.5	2nd Bone Spring Sand		-1.60	357.65	
10,067.1	9,910.1	TOP TARGET WINDOW		-1.60	357.65	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,900.0	1,900.0	0.0	0.0	Start Build 1.50.	
2,038.8	2,038.7	-0.6	-2.4	Hold 2.08 Inc, 255.71 Az	
9,455.0	9,450.0	-67.1	-263.5	KOP 12/100	
10,067.0	9,910.1	270.0	-290.0	POP	
10,222.0	9,930.8	422.8	-296.3	Landing Pt 91.6 Inc, 357.65 Az	
14,673.9	9,806.5	4,869.2	-478.9	Start 100.0 hold at 14673.9 MD	
14,773.9	9,803.7	4,969.1	-483.0	TD at 14773.9	



McElvain Energy, Inc.

Sec. 30 T18S R34E

EK 30 WCD Federal Com

EK 30 BS2 Federal Com 4H

Wellbore #1

Design #1 29Jul15 kjs

Anticollision Report

13 August, 2015

Extd

HOBBS OCD

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Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Reference: Design #1 29Jul15 kjs

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,521.4 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
	08/12/15	0.0	14,773.8	Design #1 29Jul15 kjs (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
EK 30 WCD Federal Com						
EK 30 BS2 Federal Com 3H - Wellbore #1 - Design #1 2	1,900.0	1,900.0	161.8	153.6	19.567	CC, ES
EK 30 BS2 Federal Com 3H - Wellbore #1 - Design #1 2	14,774.5	14,798.4	1,322.2	1,134.8	7.056	SF
EK 30 WCD Federal Com 3H - Wellbore #1 - Plan #2 03	1,866.3	1,867.3	79.9	71.8	9.837	CC
EK 30 WCD Federal Com 3H - Wellbore #1 - Plan #2 03	1,900.0	1,900.0	79.9	71.6	9.661	ES
EK 30 WCD Federal Com 3H - Wellbore #1 - Plan #2 03	2,000.0	1,998.9	82.5	73.8	9.498	SF
EK 30 WCD Federal Com 4H - Wellbore #1 - Design #1	2,006.4	2,002.5	83.8	75.1	9.627	CC
EK 30 WCD Federal Com 4H - Wellbore #1 - Design #1	2,100.0	2,094.9	84.0	75.0	9.277	ES
EK 30 WCD Federal Com 4H - Wellbore #1 - Design #1	9,600.0	9,592.5	129.3	87.3	3.078	SF
EK 31 BS2 Federal Com 3H - Wellbore #1 - Design #1 2	1,866.3	1,867.3	215.6	207.5	26.543	CC
EK 31 BS2 Federal Com 3H - Wellbore #1 - Design #1 2	1,900.0	1,901.0	215.6	207.3	26.058	ES
EK 31 BS2 Federal Com 3H - Wellbore #1 - Design #1 2	4,000.0	3,985.5	332.7	315.4	19.233	SF
EK 31 BS2 Federal Com 4H - Wellbore #1 - Design #1 2	7,608.8	7,606.4	172.3	138.7	5.129	CC
EK 31 BS2 Federal Com 4H - Wellbore #1 - Design #1 2	8,500.0	8,497.2	174.3	136.7	4.642	ES
EK 31 BS2 Federal Com 4H - Wellbore #1 - Design #1 2	9,500.0	9,495.2	181.5	139.5	4.324	SF
EK 31 WCD Federal Com 3H - Wellbore #1 - Plan #2 03	1,866.3	1,867.3	276.2	268.1	34.004	CC
EK 31 WCD Federal Com 3H - Wellbore #1 - Plan #2 03	1,900.0	1,900.0	276.2	267.9	33.392	ES
EK 31 WCD Federal Com 3H - Wellbore #1 - Plan #2 03	5,900.0	5,863.5	624.8	599.1	24.273	SF
EK 31 WCD Federal Com 4H - Wellbore #1 - Design #1	9,400.0	9,401.6	68.0	26.0	1.621	CC, ES
EK 31 WCD Federal Com 4H - Wellbore #1 - Design #1	9,500.0	9,501.5	68.4	26.1	1.615	SF
EK 'B' 8701 JV-P #1 - Wellbore #1 - Wellbore #1	12,982.8	9,894.1	192.5	108.9	2.304	CC, ES, SF
EK Penrose Sand Unit #401 - Wellbore #1 - Wellbore #1	11,792.1	9,925.3	960.4	897.2	15.189	CC
EK Penrose Sand Unit #401 - Wellbore #1 - Wellbore #1	11,800.0	9,925.2	960.4	897.1	15.160	ES
EK Penrose Sand Unit #401 - Wellbore #1 - Wellbore #1	12,000.0	9,922.1	982.6	916.0	14.761	SF
EK Penrose Sand Unit #402 - Wellbore #1 - Wellbore #1	10,629.4	9,700.0	949.8	903.9	20.684	CC, ES
EK Penrose Sand Unit #402 - Wellbore #1 - Wellbore #1	10,900.0	9,700.0	987.6	938.6	20.155	SF
McElvain #1 - Wellbore #1 - Wellbore #1	12,993.8	9,901.9	1,146.0	1,062.1	13.650	CC
McElvain #1 - Wellbore #1 - Wellbore #1	13,000.0	9,901.7	1,146.0	1,062.0	13.633	ES
McElvain #1 - Wellbore #1 - Wellbore #1	13,300.0	9,895.3	1,186.2	1,096.9	13.288	SF
McElvain #10 - Wellbore #1 - Wellbore #1						Out of range
McElvain #11 Unit D - Wellbore #1 - Wellbore #1	9,400.0	9,401.7	835.9	795.2	20.565	CC, ES
McElvain #11 Unit D - Wellbore #1 - Wellbore #1	9,500.0	9,507.9	836.6	795.5	20.398	SF
McElvain #3 - Wellbore #1 - Wellbore #1	10,579.0	9,953.2	137.4	89.9	2.897	CC, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 BS2 Federal Com 3H - Wellbore #1 - Design #1 29Jul15 kjs												Offset Site Error:
Survey Program: 0-MWD												0.0 usft
Reference	Offset	Semi Major Axis		Distance		Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	N-S (usft)	E-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	
0.0	0.0	0.0	0.0	0.0	0.0	81.11	25.0	159.9	161.8			
100.0	100.0	100.0	100.0	0.1	0.1	81.11	25.0	159.9	161.8	161.7	0.18	900.060
200.0	200.0	200.0	200.0	0.3	0.3	81.11	25.0	159.9	161.8	161.2	0.63	257.160
300.0	300.0	300.0	300.0	0.5	0.5	81.11	25.0	159.9	161.8	160.8	1.08	150.010
400.0	400.0	400.0	400.0	0.8	0.8	81.11	25.0	159.9	161.8	160.3	1.53	105.890
500.0	500.0	500.0	500.0	1.0	1.0	81.11	25.0	159.9	161.8	159.9	1.98	81.824
600.0	600.0	600.0	600.0	1.2	1.2	81.11	25.0	159.9	161.8	159.4	2.43	66.671
700.0	700.0	700.0	700.0	1.4	1.4	81.11	25.0	159.9	161.8	159.0	2.88	56.254
800.0	800.0	800.0	800.0	1.7	1.7	81.11	25.0	159.9	161.8	158.5	3.33	48.652
900.0	900.0	900.0	900.0	1.9	1.9	81.11	25.0	159.9	161.8	158.1	3.78	42.860
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	81.11	25.0	159.9	161.8	157.6	4.23	38.300
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	81.11	25.0	159.9	161.8	157.2	4.68	34.618
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	81.11	25.0	159.9	161.8	156.7	5.12	31.581
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	81.11	25.0	159.9	161.8	156.3	5.57	29.034
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	81.11	25.0	159.9	161.8	155.8	6.02	26.867
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	81.11	25.0	159.9	161.8	155.4	6.47	25.002
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	81.11	25.0	159.9	161.8	154.9	6.92	23.378
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	81.11	25.0	159.9	161.8	154.5	7.37	21.953
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	81.11	25.0	159.9	161.8	154.0	7.82	20.691
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	81.11	25.0	159.9	161.8	153.6	8.27	19.567 CC, ES
2,000.0	2,000.0	1,996.0	1,996.0	4.3	4.3	-174.51	24.8	161.1	164.4	155.7	8.68	18.942
2,100.0	2,099.9	2,091.8	2,091.7	4.5	4.5	-174.27	24.4	164.7	171.4	162.3	9.05	18.929
2,200.0	2,199.9	2,187.1	2,186.8	4.7	4.7	-173.85	23.6	170.6	181.0	171.6	9.44	19.178
2,300.0	2,299.8	2,283.9	2,283.3	4.9	4.9	-173.29	22.5	178.7	192.8	182.9	9.83	19.610
2,400.0	2,399.7	2,383.2	2,382.2	5.1	5.1	-172.75	21.3	187.5	204.9	194.7	10.23	20.030
2,500.0	2,499.7	2,482.4	2,481.0	5.3	5.4	-172.28	20.1	196.2	217.1	206.4	10.63	20.412
2,600.0	2,599.6	2,581.7	2,579.9	5.6	5.6	-171.85	18.9	204.9	229.2	218.2	11.04	20.758
2,700.0	2,699.5	2,680.9	2,678.7	5.8	5.8	-171.47	17.7	213.6	241.4	230.0	11.46	21.074
2,800.0	2,799.5	2,780.2	2,777.6	6.0	6.0	-171.13	16.6	222.3	253.6	241.7	11.87	21.362
2,900.0	2,899.4	2,879.4	2,876.4	6.2	6.3	-170.82	15.4	231.0	265.8	253.5	12.29	21.626
3,000.0	2,999.3	2,978.7	2,975.3	6.4	6.5	-170.53	14.2	239.7	278.0	265.3	12.71	21.869
3,100.0	3,099.3	3,077.9	3,074.2	6.6	6.8	-170.27	13.0	248.4	290.2	277.1	13.14	22.092
3,200.0	3,199.2	3,177.1	3,173.0	6.8	7.0	-170.03	11.9	257.1	302.5	288.9	13.56	22.298
3,300.0	3,299.1	3,276.4	3,271.9	7.1	7.3	-169.81	10.7	265.8	314.7	300.7	13.99	22.489
3,400.0	3,399.1	3,375.6	3,370.7	7.3	7.5	-169.60	9.5	274.5	326.9	312.5	14.42	22.665
3,500.0	3,499.0	3,474.9	3,469.6	7.5	7.8	-169.41	8.3	283.3	339.1	324.3	14.85	22.829
3,600.0	3,598.9	3,574.1	3,568.4	7.7	8.0	-169.23	7.1	292.0	351.4	336.1	15.29	22.982
3,700.0	3,698.9	3,673.4	3,667.3	7.9	8.3	-169.07	6.0	300.7	363.6	347.9	15.72	23.124
3,800.0	3,798.8	3,772.6	3,766.1	8.2	8.5	-168.91	4.8	309.4	375.8	359.7	16.16	23.257
3,900.0	3,898.7	3,871.8	3,865.0	8.4	8.8	-168.77	3.6	318.1	388.1	371.5	16.60	23.382
4,000.0	3,998.7	3,971.1	3,963.8	8.6	9.0	-168.63	2.4	326.8	400.3	383.3	17.04	23.498
4,100.0	4,098.6	4,070.3	4,062.7	8.8	9.3	-168.50	1.3	335.5	412.6	395.1	17.48	23.608
4,200.0	4,198.5	4,169.6	4,161.5	9.1	9.5	-168.38	0.1	344.2	424.8	406.9	17.92	23.711
4,300.0	4,298.5	4,268.8	4,260.4	9.3	9.8	-168.27	-1.1	352.9	437.1	418.7	18.36	23.807
4,400.0	4,398.4	4,368.1	4,359.2	9.5	10.1	-168.16	-2.3	361.6	449.3	430.5	18.80	23.899
4,500.0	4,498.3	4,467.3	4,458.1	9.7	10.3	-168.06	-3.5	370.3	461.6	442.3	19.24	23.985
4,600.0	4,598.3	4,566.5	4,557.0	10.0	10.6	-167.96	-4.6	379.1	473.8	454.2	19.69	24.067
4,700.0	4,698.2	4,665.8	4,655.8	10.2	10.8	-167.87	-5.8	387.8	486.1	466.0	20.13	24.144
4,800.0	4,798.1	4,765.0	4,754.7	10.4	11.1	-167.79	-7.0	396.5	498.4	477.8	20.58	24.217
4,900.0	4,898.1	4,864.3	4,853.5	10.7	11.4	-167.70	-8.2	405.2	510.6	489.6	21.02	24.287
5,000.0	4,998.0	4,963.5	4,952.4	10.9	11.6	-167.62	-9.3	413.9	522.9	501.4	21.47	24.353

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
Project: Sec. 30 T18S R34E
Reference Site: EK 30 WCD Federal Com
Site Error: 0.0 usft
Reference Well: EK 30 BS2 Federal Com 4H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset/TVD Reference: Offset Datum

EK 30 WCD Federal Com - EK 30 BS2 Federal Com 3H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Reference															
Offset															
Semi-Major Axis															
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,100.0	5,097.9	5,062.8	5,051.2	11.1	11.9	-167.55	-10.5	422.6	535.1	513.2	21.92	24.415			
5,200.0	5,197.9	5,162.0	5,150.1	11.3	12.2	-167.48	-11.7	431.3	547.4	525.0	22.37	24.475			
5,300.0	5,297.8	5,261.2	5,248.9	11.6	12.4	-167.41	-12.9	440.0	559.7	536.8	22.81	24.532			
5,400.0	5,397.8	5,360.5	5,347.8	11.8	12.7	-167.34	-14.1	448.7	571.9	548.7	23.26	24.586			
5,500.0	5,497.7	5,459.7	5,446.6	12.0	13.0	-167.28	-15.2	457.4	584.2	560.5	23.71	24.638			
5,600.0	5,597.6	5,559.0	5,545.5	12.3	13.2	-167.22	-16.4	466.1	596.4	572.3	24.16	24.688			
5,700.0	5,697.6	5,658.2	5,644.3	12.5	13.5	-167.16	-17.6	474.9	608.7	584.1	24.61	24.735			
5,800.0	5,797.5	5,757.5	5,743.2	12.7	13.8	-167.10	-18.8	483.6	621.0	595.9	25.06	24.780			
5,900.0	5,897.4	5,856.7	5,842.0	12.9	14.0	-167.05	-19.9	492.3	633.2	607.7	25.51	24.824			
6,000.0	5,997.4	5,955.9	5,940.9	13.2	14.3	-167.00	-21.1	501.0	645.5	619.6	25.96	24.865			
6,100.0	6,097.3	6,055.2	6,039.7	13.4	14.6	-166.95	-22.3	509.7	657.8	631.4	26.41	24.905			
6,200.0	6,197.2	6,154.4	6,138.6	13.6	14.8	-166.90	-23.5	518.4	670.0	643.2	26.86	24.944			
6,300.0	6,297.2	6,253.7	6,237.5	13.9	15.1	-166.85	-24.7	527.1	682.3	655.0	27.31	24.981			
6,400.0	6,397.1	6,352.9	6,336.3	14.1	15.4	-166.81	-25.8	535.8	694.6	666.8	27.77	25.016			
6,500.0	6,497.0	6,452.2	6,435.2	14.3	15.6	-166.77	-27.0	544.5	706.9	678.6	28.22	25.050			
6,600.0	6,597.0	6,551.4	6,534.0	14.6	15.9	-166.72	-28.2	553.2	719.1	690.5	28.67	25.083			
6,700.0	6,696.9	6,650.6	6,632.9	14.8	16.2	-166.68	-29.4	561.9	731.4	702.3	29.12	25.114			
6,800.0	6,796.8	6,749.9	6,731.7	15.0	16.4	-166.65	-30.5	570.7	743.7	714.1	29.58	25.145			
6,900.0	6,896.8	6,849.1	6,830.6	15.3	16.7	-166.61	-31.7	579.4	755.9	725.9	30.03	25.174			
7,000.0	6,996.7	6,948.4	6,929.4	15.5	17.0	-166.57	-32.9	588.1	768.2	737.7	30.48	25.202			
7,100.0	7,096.6	7,047.6	7,028.3	15.7	17.3	-166.54	-34.1	596.8	780.5	749.5	30.93	25.230			
7,200.0	7,196.6	7,146.9	7,127.1	16.0	17.5	-166.50	-35.3	605.5	792.7	761.4	31.39	25.256			
7,300.0	7,296.5	7,246.1	7,226.0	16.2	17.8	-166.47	-36.4	614.2	805.0	773.2	31.84	25.282			
7,400.0	7,396.4	7,345.3	7,324.8	16.4	18.1	-166.44	-37.6	622.9	817.3	785.0	32.30	25.306			
7,500.0	7,496.4	7,444.6	7,423.7	16.6	18.3	-166.41	-38.8	631.6	829.6	796.8	32.75	25.330			
7,600.0	7,596.3	7,543.8	7,522.5	16.9	18.6	-166.38	-40.0	640.3	841.8	808.6	33.20	25.353			
7,700.0	7,696.2	7,643.1	7,621.4	17.1	18.9	-166.35	-41.1	649.0	854.1	820.4	33.66	25.375			
7,800.0	7,796.2	7,742.3	7,720.3	17.3	19.1	-166.32	-42.3	657.7	866.4	832.3	34.11	25.397			
7,900.0	7,896.1	7,841.6	7,819.1	17.6	19.4	-166.29	-43.5	666.5	878.7	844.1	34.57	25.418			
8,000.0	7,996.0	7,940.8	7,918.0	17.8	19.7	-166.26	-44.7	675.2	890.9	855.9	35.02	25.438			
8,100.0	8,096.0	8,040.0	8,016.8	18.0	20.0	-166.24	-45.9	683.9	903.2	867.7	35.48	25.458			
8,200.0	8,195.9	8,139.3	8,115.7	18.3	20.2	-166.21	-47.0	692.6	915.5	879.5	35.93	25.477			
8,300.0	8,295.8	8,238.5	8,214.5	18.5	20.5	-166.19	-48.2	701.3	927.7	891.4	36.39	25.496			
8,400.0	8,395.8	8,337.8	8,313.4	18.7	20.8	-166.16	-49.4	710.0	940.0	903.2	36.84	25.514			
8,500.0	8,495.7	8,437.0	8,412.2	19.0	21.0	-166.14	-50.6	718.7	952.3	915.0	37.30	25.531			
8,600.0	8,595.6	8,536.3	8,511.1	19.2	21.3	-166.12	-51.7	727.4	964.6	926.8	37.76	25.548			
8,700.0	8,695.6	8,635.5	8,609.9	19.4	21.6	-166.09	-52.9	736.1	976.8	938.6	38.21	25.564			
8,800.0	8,795.5	8,734.8	8,708.8	19.7	21.8	-166.07	-54.1	744.8	989.1	950.5	38.67	25.580			
8,900.0	8,895.4	8,834.0	8,807.6	19.9	22.1	-166.05	-55.3	753.6	1,001.4	962.3	39.12	25.596			
9,000.0	8,995.4	8,933.2	8,906.5	20.1	22.4	-166.03	-56.5	762.3	1,013.7	974.1	39.58	25.611			
9,100.0	9,095.3	9,032.5	9,005.3	20.4	22.7	-166.01	-57.6	771.0	1,025.9	985.9	40.04	25.626			
9,200.0	9,195.2	9,131.7	9,104.2	20.6	22.9	-165.99	-58.8	779.7	1,038.2	997.7	40.49	25.640			
9,300.0	9,295.2	9,231.0	9,203.1	20.8	23.2	-165.97	-60.0	788.4	1,050.5	1,009.5	40.95	25.654			
9,400.0	9,395.1	9,330.2	9,301.9	21.1	23.5	-165.95	-61.2	797.1	1,062.8	1,021.4	41.41	25.667			
9,500.0	9,495.0	9,429.4	9,400.7	21.3	23.8	113.30	-62.3	805.8	1,075.1	1,033.2	41.86	25.685			
9,600.0	9,592.9	9,530.0	9,500.9	21.5	24.0	97.29	-60.5	814.6	1,087.8	1,045.5	42.27	25.733			
9,700.0	9,684.8	9,636.8	9,604.6	21.7	24.2	94.08	-38.0	823.3	1,100.3	1,057.6	42.65	25.798			
9,800.0	9,766.6	9,748.7	9,705.3	21.8	24.4	92.55	9.7	831.4	1,112.0	1,069.0	43.04	25.840			
9,900.0	9,834.6	9,865.8	9,795.7	22.0	24.6	91.58	83.2	838.1	1,122.4	1,078.9	43.50	25.802			
10,000.0	9,886.1	9,987.4	9,868.0	22.2	24.8	90.88	180.5	842.9	1,130.6	1,086.5	44.14	25.616			
10,100.0	9,918.7	10,107.5	9,913.1	22.6	25.1	90.38	291.4	845.1	1,136.4	1,091.4	45.01	25.246			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
Project: Sec. 30 T18S R34E
Reference Site: EK 30 WCD Federal Com
Site Error: 0.0 usft
Reference Well: EK 30 BS2 Federal Com 4H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 BS2 Federal Com 3H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Site Error 0.0 usft	
Survey Program: 0-MWD														Offset Well Error 0.0 usft	
Reference		Offset		Semi-Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)				Between Centres (usft)	Between Ellipses (usft)		
10,200.0	9,930.9	10,206.5	9,928.6	23.2	25.4	89.94	389.0	846.1	1,141.5	1,095.5	46.04	24.794			
10,300.0	9,928.6	10,306.2	9,927.4	23.9	25.9	89.86	488.7	847.1	1,146.7	1,099.4	47.30	24.244			
10,400.0	9,925.8	10,406.0	9,924.6	24.7	26.5	89.86	588.5	848.2	1,151.8	1,103.0	48.79	23.607			
10,500.0	9,923.0	10,505.9	9,921.8	25.6	27.2	89.86	688.3	849.2	1,157.0	1,106.5	50.51	22.906			
10,600.0	9,920.2	10,605.8	9,919.0	26.6	28.1	89.86	788.1	850.3	1,162.1	1,109.7	52.43	22.166			
10,700.0	9,917.4	10,705.6	9,916.2	27.7	29.1	89.86	888.0	851.3	1,167.3	1,112.7	54.52	21.408			
10,800.0	9,914.6	10,805.5	9,913.5	28.9	30.1	89.86	987.8	852.4	1,172.4	1,115.6	56.78	20.648			
10,900.0	9,911.9	10,905.4	9,910.7	30.1	31.2	89.86	1,087.6	853.4	1,177.6	1,118.4	59.18	19.899			
11,000.0	9,909.1	11,005.2	9,907.9	31.4	32.4	89.86	1,187.4	854.5	1,182.7	1,121.0	61.70	19.169			
11,100.0	9,906.3	11,105.1	9,905.1	32.7	33.6	89.86	1,287.3	855.5	1,187.9	1,123.5	64.33	18.465			
11,200.0	9,903.5	11,205.0	9,902.3	34.1	34.9	89.86	1,387.1	856.5	1,193.0	1,125.9	67.06	17.791			
11,300.0	9,900.7	11,304.8	9,899.6	35.6	36.3	89.86	1,486.9	857.6	1,198.2	1,128.3	69.87	17.148			
11,400.0	9,897.9	11,404.7	9,896.8	37.0	37.6	89.86	1,586.7	858.6	1,203.3	1,130.5	72.76	16.537			
11,500.0	9,895.1	11,504.6	9,894.0	38.5	39.1	89.86	1,686.6	859.7	1,208.4	1,132.7	75.72	15.960			
11,600.0	9,892.3	11,604.4	9,891.2	40.1	40.5	89.86	1,786.4	860.7	1,213.6	1,134.9	78.74	15.414			
11,700.0	9,889.5	11,704.3	9,888.4	41.6	42.0	89.87	1,886.2	861.8	1,218.7	1,136.9	81.81	14.898			
11,800.0	9,886.7	11,804.2	9,885.6	43.2	43.5	89.87	1,986.0	862.8	1,223.9	1,139.0	84.92	14.412			
11,900.0	9,883.9	11,904.0	9,882.9	44.8	45.0	89.87	2,085.8	863.9	1,229.0	1,141.0	88.08	13.954			
12,000.0	9,881.2	12,003.9	9,880.1	46.4	46.6	89.87	2,185.7	864.9	1,234.2	1,142.9	91.28	13.521			
12,100.0	9,878.4	12,103.8	9,877.3	48.1	48.1	89.87	2,285.5	866.0	1,239.3	1,144.8	94.51	13.114			
12,200.0	9,875.6	12,203.6	9,874.5	49.7	49.7	89.87	2,385.3	867.0	1,244.5	1,146.7	97.77	12.729			
12,300.0	9,872.8	12,303.5	9,871.7	51.4	51.3	89.87	2,485.1	868.0	1,249.6	1,148.6	101.06	12.365			
12,400.0	9,870.0	12,403.4	9,868.9	53.0	52.9	89.87	2,585.0	869.1	1,254.8	1,150.4	104.37	12.022			
12,500.0	9,867.2	12,503.2	9,866.2	54.7	54.6	89.87	2,684.8	870.1	1,259.9	1,152.2	107.71	11.697			
12,600.0	9,864.4	12,603.1	9,863.4	56.4	56.2	89.87	2,784.6	871.2	1,265.1	1,154.0	111.07	11.390			
12,700.0	9,861.6	12,703.0	9,860.6	58.1	57.8	89.87	2,884.4	872.2	1,270.2	1,155.8	114.44	11.099			
12,800.0	9,858.8	12,802.9	9,857.8	59.8	59.5	89.87	2,984.3	873.3	1,275.4	1,157.5	117.84	10.823			
12,900.0	9,856.0	12,902.7	9,855.0	61.6	61.2	89.87	3,084.1	874.3	1,280.5	1,159.3	121.25	10.561			
13,000.0	9,853.2	13,041.7	9,851.1	63.3	63.4	89.87	3,223.0	874.2	1,284.7	1,159.4	125.24	10.258			
13,100.0	9,850.5	13,141.7	9,848.4	65.0	65.1	89.87	3,322.9	872.2	1,286.8	1,158.1	128.64	10.003			
13,200.0	9,847.7	13,241.6	9,845.6	66.8	66.7	89.87	3,422.8	870.2	1,288.9	1,156.8	132.10	9.757			
13,300.0	9,844.9	13,341.6	9,842.8	68.5	68.5	89.87	3,522.7	868.2	1,291.0	1,155.4	135.58	9.522			
13,400.0	9,842.1	13,441.6	9,840.0	70.2	70.2	89.87	3,622.7	866.2	1,293.1	1,154.0	139.06	9.299			
13,500.0	9,839.3	13,541.6	9,837.2	72.0	71.9	89.87	3,722.6	864.2	1,295.2	1,152.6	142.55	9.086			
13,600.0	9,836.5	13,641.6	9,834.4	73.8	73.6	89.88	3,822.5	862.2	1,297.3	1,151.2	146.06	8.882			
13,700.0	9,833.7	13,741.5	9,831.7	75.5	75.3	89.88	3,922.4	860.2	1,299.4	1,149.8	149.57	8.688			
13,800.0	9,830.9	13,841.5	9,828.9	77.3	77.1	89.88	4,022.3	858.2	1,301.5	1,148.4	153.09	8.502			
13,900.0	9,828.1	13,941.5	9,826.1	79.1	78.8	89.88	4,122.3	856.2	1,303.6	1,147.0	156.61	8.324			
14,000.0	9,825.3	14,041.5	9,823.3	80.8	80.5	89.88	4,222.2	854.2	1,305.7	1,145.6	160.15	8.153			
14,100.0	9,822.5	14,141.4	9,820.5	82.6	82.3	89.88	4,322.1	852.2	1,307.8	1,144.2	163.68	7.990			
14,200.0	9,819.8	14,241.4	9,817.7	84.4	84.0	89.88	4,422.0	850.2	1,309.9	1,142.7	167.23	7.833			
14,300.0	9,817.0	14,341.4	9,814.9	86.2	85.8	89.88	4,521.9	848.2	1,312.1	1,141.3	170.78	7.683			
14,400.0	9,814.2	14,441.4	9,812.2	87.9	87.5	89.88	4,621.9	846.2	1,314.2	1,139.8	174.34	7.538			
14,500.0	9,811.4	14,541.4	9,809.4	89.7	89.3	89.88	4,721.8	844.2	1,316.3	1,138.4	177.90	7.399			
14,600.0	9,808.6	14,641.3	9,806.6	91.5	91.1	89.88	4,821.7	842.2	1,318.4	1,136.9	181.46	7.265			
14,700.0	9,805.8	14,741.3	9,803.8	93.3	92.8	89.88	4,921.6	840.2	1,320.5	1,135.4	185.03	7.136			
14,774.5	9,803.7	14,798.4	9,802.2	94.7	93.8	89.88	4,978.6	839.1	1,322.2	1,134.8	187.38	7.056 SF			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
Project: Sec. 30 T18S R34E
Reference Site: EK 30 WCD Federal Com
Site Error: 0.0 usft
Reference Well: EK 30 BS2 Federal Com 4H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design: EK 30 WCD Federal Com - EK 30 WCD Federal Com 3H - Wellbore #1 - Plan #2 03Aug15 kjs														Offset Site Error: 0.0 usft
Survey Program: 0:MWD														Offset Well Error: 0.0 usft
Reference														
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.00		0.0	79.9	79.9				
100.0	100.0	101.0	101.0	0.1	0.1	90.00		0.0	79.9	79.9	79.7	0.18	438.865	
200.0	200.0	201.0	201.0	0.3	0.3	90.00		0.0	79.9	79.9	79.3	0.63	126.506	
300.0	300.0	301.0	301.0	0.5	0.5	90.00		0.0	79.9	79.9	78.8	1.08	73.905	
400.0	400.0	401.0	401.0	0.8	0.8	90.00		0.0	79.9	79.9	78.4	1.53	52.200	
500.0	500.0	501.0	501.0	1.0	1.0	90.00		0.0	79.9	79.9	77.9	1.98	40.350	
600.0	600.0	601.0	601.0	1.2	1.2	90.00		0.0	79.9	79.9	77.5	2.43	32.884	
700.0	700.0	701.0	701.0	1.4	1.4	90.00		0.0	79.9	79.9	77.0	2.88	27.750	
800.0	800.0	801.0	801.0	1.7	1.7	90.00		0.0	79.9	79.9	76.6	3.33	24.003	
900.0	900.0	901.0	901.0	1.9	1.9	90.00		0.0	79.9	79.9	76.1	3.78	21.147	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	90.00		0.0	79.9	79.9	75.7	4.23	18.898	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	90.00		0.0	79.9	79.9	75.2	4.68	17.082	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	90.00		0.0	79.9	79.9	74.8	5.13	15.584	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	90.00		0.0	79.9	79.9	74.3	5.58	14.328	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	90.00		0.0	79.9	79.9	73.9	6.03	13.259	
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	90.00		0.0	79.9	79.9	73.4	6.48	12.339	
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	90.00		0.0	79.9	79.9	73.0	6.93	11.538	
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	90.00		0.0	79.9	79.9	72.5	7.37	10.835	
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	90.00		0.0	79.9	79.9	72.1	7.82	10.212	
1,866.3	1,866.3	1,867.3	1,867.3	4.1	4.1	90.00		0.0	79.9	79.9	71.8	8.12	9.837 CC	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	90.00		0.0	79.9	79.9	71.6	8.27	9.661 ES	
2,000.0	2,000.0	1,998.9	1,998.9	4.3	4.3	-165.85		-0.1	81.2	82.5	73.8	8.68	9.498 SF	
2,100.0	2,099.9	2,096.4	2,096.3	4.5	4.5	-166.16		-0.4	84.9	89.7	80.6	9.07	9.889	
2,200.0	2,199.9	2,193.5	2,193.3	4.7	4.7	-166.32		-0.9	91.1	99.6	90.1	9.45	10.530	
2,300.0	2,299.8	2,292.4	2,291.7	4.9	4.9	-166.37		-1.6	99.1	111.2	101.3	9.85	11.285	
2,400.0	2,399.7	2,391.7	2,390.7	5.1	5.2	-166.41		-2.3	107.3	122.8	112.6	10.25	11.982	
2,500.0	2,499.7	2,491.0	2,489.7	5.3	5.4	-166.44		-2.9	115.4	134.5	123.8	10.66	12.621	
2,600.0	2,599.6	2,590.3	2,588.7	5.6	5.6	-166.47		-3.6	123.5	146.2	135.1	11.07	13.209	
2,700.0	2,699.5	2,689.6	2,687.7	5.8	5.8	-166.49		-4.3	131.6	157.8	146.3	11.48	13.750	
2,800.0	2,799.5	2,788.9	2,786.7	6.0	6.1	-166.51		-4.9	139.7	169.5	157.6	11.89	14.250	
2,900.0	2,899.4	2,888.3	2,885.6	6.2	6.3	-166.53		-5.6	147.8	181.1	168.8	12.31	14.713	
3,000.0	2,999.3	2,987.6	2,984.6	6.4	6.5	-166.54		-6.3	155.9	192.8	180.1	12.73	15.142	
3,100.0	3,099.3	3,086.9	3,083.6	6.6	6.8	-166.56		-7.0	164.0	204.5	191.3	13.16	15.540	
3,200.0	3,199.2	3,186.2	3,182.6	6.8	7.0	-166.57		-7.6	172.1	216.1	202.6	13.58	15.911	
3,300.0	3,299.1	3,285.5	3,281.6	7.1	7.3	-166.58		-8.3	180.2	227.8	213.8	14.01	16.258	
3,400.0	3,399.1	3,384.8	3,380.6	7.3	7.5	-166.59		-9.0	188.3	239.5	225.0	14.44	16.582	
3,500.0	3,499.0	3,484.2	3,479.5	7.5	7.7	-166.60		-9.6	196.4	251.1	236.3	14.87	16.885	
3,600.0	3,598.9	3,583.5	3,578.5	7.7	8.0	-166.60		-10.3	204.5	262.8	247.5	15.31	17.169	
3,700.0	3,698.9	3,682.8	3,677.5	7.9	8.2	-166.61		-11.0	212.6	274.5	258.7	15.74	17.436	
3,800.0	3,798.8	3,782.1	3,776.5	8.2	8.5	-166.62		-11.6	220.7	286.1	270.0	16.18	17.688	
3,900.0	3,898.7	3,881.4	3,875.5	8.4	8.7	-166.62		-12.3	228.8	297.8	281.2	16.61	17.925	
4,000.0	3,998.7	3,980.7	3,974.5	8.6	9.0	-166.63		-13.0	236.9	309.5	292.4	17.05	18.149	
4,100.0	4,098.6	4,080.1	4,073.4	8.8	9.2	-166.64		-13.7	245.0	321.1	303.6	17.49	18.360	
4,200.0	4,198.5	4,179.4	4,172.4	9.1	9.5	-166.64		-14.3	253.1	332.8	314.9	17.93	18.560	
4,300.0	4,298.5	4,278.7	4,271.4	9.3	9.7	-166.65		-15.0	261.2	344.4	326.1	18.37	18.750	
4,400.0	4,398.4	4,378.0	4,370.4	9.5	10.0	-166.65		-15.7	269.3	356.1	337.3	18.81	18.930	
4,500.0	4,498.3	4,477.3	4,469.4	9.7	10.3	-166.65		-16.3	277.4	367.8	348.5	19.25	19.101	
4,600.0	4,598.3	4,576.7	4,568.4	10.0	10.5	-166.66		-17.0	285.5	379.4	359.7	19.70	19.264	
4,700.0	4,698.2	4,676.0	4,667.4	10.2	10.8	-166.66		-17.7	293.6	391.1	371.0	20.14	19.419	
4,800.0	4,798.1	4,775.3	4,766.3	10.4	11.0	-166.66		-18.4	301.7	402.8	382.2	20.59	19.566	
4,900.0	4,898.1	4,874.6	4,865.3	10.7	11.3	-166.67		-19.0	309.8	414.4	393.4	21.03	19.707	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
 Project: Sec. 30 T18S R34E
 Reference Site: EK 30 WCD Federal Com
 Site Error: 0.0 usft
 Reference Well: EK 30 BS2 Federal Com 4H
 Well Error: 0.0 usft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
 TVD Reference: WELL @ 3883.0usft (Original Well Elev)
 MD Reference: WELL @ 3883.0usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 WCD Federal Com 3H - Wellbore #1 - Plan #2 03Aug15 kjs														Offset Site Error
Survey Program: 0-MWD														Offset Well Error
Reference	Offset	Semi Major Axis		Reference	Offset	Highside	Offset Wellbore Centre	Distance	Between	Between	Minimum	Separation	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	N-S (usft)	E-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
5,000.0	4,998.0	4,973.9	4,964.3	10.9	11.5	-166.67	-19.7	317.9	426.1	404.6	21.48	19.841		
5,100.0	5,097.9	5,073.2	5,063.3	11.1	11.8	-166.67	-20.4	326.0	437.8	415.8	21.92	19.970		
5,200.0	5,197.9	5,172.6	5,162.3	11.3	12.1	-166.68	-21.0	334.1	449.4	427.1	22.37	20.093		
5,300.0	5,297.8	5,271.9	5,261.3	11.6	12.3	-166.68	-21.7	342.2	461.1	438.3	22.81	20.211		
5,400.0	5,397.8	5,371.2	5,360.2	11.8	12.6	-166.68	-22.4	350.4	472.8	449.5	23.26	20.324		
5,500.0	5,497.7	5,470.5	5,459.2	12.0	12.8	-166.68	-23.0	358.5	484.4	460.7	23.71	20.432		
5,600.0	5,597.6	5,569.8	5,558.2	12.3	13.1	-166.69	-23.7	366.6	496.1	471.9	24.16	20.536		
5,700.0	5,697.6	5,669.1	5,657.2	12.5	13.4	-166.69	-24.4	374.7	507.8	483.1	24.61	20.636		
5,800.0	5,797.5	5,768.5	5,756.2	12.7	13.6	-166.69	-25.1	382.8	519.4	494.4	25.05	20.731		
5,900.0	5,897.4	5,867.8	5,855.2	12.9	13.9	-166.69	-25.7	390.9	531.1	505.6	25.50	20.824		
6,000.0	5,997.4	5,967.1	5,954.1	13.2	14.1	-166.69	-26.4	399.0	542.7	516.8	25.95	20.913		
6,100.0	6,097.3	6,066.4	6,053.1	13.4	14.4	-166.69	-27.1	407.1	554.4	528.0	26.40	20.998		
6,200.0	6,197.2	6,165.7	6,152.1	13.6	14.7	-166.70	-27.7	415.2	566.1	539.2	26.85	21.081		
6,300.0	6,297.2	6,265.0	6,251.1	13.9	14.9	-166.70	-28.4	423.3	577.7	550.4	27.30	21.160		
6,400.0	6,397.1	6,364.4	6,350.1	14.1	15.2	-166.70	-29.1	431.4	589.4	561.6	27.75	21.237		
6,500.0	6,497.0	6,463.7	6,449.1	14.3	15.5	-166.70	-29.8	439.5	601.1	572.9	28.20	21.311		
6,600.0	6,597.0	6,563.0	6,548.0	14.6	15.7	-166.70	-30.4	447.6	612.7	584.1	28.66	21.383		
6,700.0	6,696.9	6,662.3	6,647.0	14.8	16.0	-166.70	-31.1	455.7	624.4	595.3	29.11	21.452		
6,800.0	6,796.8	6,761.6	6,746.0	15.0	16.2	-166.71	-31.8	463.8	636.1	606.5	29.56	21.519		
6,900.0	6,896.8	6,861.0	6,845.0	15.3	16.5	-166.71	-32.4	471.9	647.7	617.7	30.01	21.584		
7,000.0	6,996.7	6,960.3	6,944.0	15.5	16.8	-166.71	-33.1	480.0	659.4	628.9	30.46	21.647		
7,100.0	7,096.6	7,059.6	7,043.0	15.7	17.0	-166.71	-33.8	488.1	671.1	640.1	30.91	21.707		
7,200.0	7,196.6	7,158.9	7,142.0	16.0	17.3	-166.71	-34.4	496.2	682.7	651.4	31.37	21.766		
7,300.0	7,296.5	7,258.2	7,240.9	16.2	17.6	-166.71	-35.1	504.3	694.4	662.6	31.82	21.823		
7,400.0	7,396.4	7,357.5	7,339.9	16.4	17.8	-166.71	-35.8	512.4	706.0	673.8	32.27	21.879		
7,500.0	7,496.4	7,456.9	7,438.9	16.6	18.1	-166.71	-36.5	520.5	717.7	685.0	32.72	21.933		
7,600.0	7,596.3	7,556.2	7,537.9	16.9	18.3	-166.71	-37.1	528.6	729.4	696.2	33.18	21.985		
7,700.0	7,696.2	7,655.5	7,636.9	17.1	18.6	-166.72	-37.8	536.7	741.0	707.4	33.63	22.035		
7,800.0	7,796.2	7,754.8	7,735.9	17.3	18.9	-166.72	-38.5	544.8	752.7	718.6	34.08	22.085		
7,900.0	7,896.1	7,854.1	7,834.8	17.6	19.1	-166.72	-39.1	552.9	764.4	729.8	34.54	22.132		
8,000.0	7,996.0	7,953.4	7,933.8	17.8	19.4	-166.72	-39.8	561.0	776.0	741.0	34.99	22.179		
8,100.0	8,096.0	8,052.8	8,032.8	18.0	19.7	-166.72	-40.5	569.1	787.7	752.3	35.44	22.224		
8,200.0	8,195.9	8,152.1	8,131.8	18.3	19.9	-166.72	-41.1	577.2	799.4	763.5	35.90	22.268		
8,300.0	8,295.8	8,251.4	8,230.8	18.5	20.2	-166.72	-41.8	585.4	811.0	774.7	36.35	22.311		
8,400.0	8,395.8	8,350.7	8,329.8	18.7	20.5	-166.72	-42.5	593.5	822.7	785.9	36.81	22.352		
8,500.0	8,495.7	8,450.0	8,428.7	19.0	20.7	-166.72	-43.2	601.6	834.4	797.1	37.26	22.393		
8,600.0	8,595.6	8,549.3	8,527.7	19.2	21.0	-166.72	-43.8	609.7	846.0	808.3	37.71	22.433		
8,700.0	8,695.6	8,648.7	8,626.7	19.4	21.2	-166.72	-44.5	617.8	857.7	819.5	38.17	22.471		
8,800.0	8,795.5	8,748.0	8,725.7	19.7	21.5	-166.72	-45.2	625.9	869.3	830.7	38.62	22.509		
8,900.0	8,895.4	8,847.3	8,824.7	19.9	21.8	-166.73	-45.8	634.0	881.0	841.9	39.08	22.545		
9,000.0	8,995.4	8,946.6	8,923.7	20.1	22.0	-166.73	-46.5	642.1	892.7	853.1	39.53	22.581		
9,100.0	9,095.3	9,045.9	9,022.6	20.4	22.3	-166.73	-47.2	650.2	904.3	864.4	39.99	22.616		
9,200.0	9,195.2	9,145.3	9,121.6	20.6	22.6	-166.73	-47.9	658.3	916.0	875.6	40.44	22.650		
9,300.0	9,295.2	9,244.6	9,220.6	20.8	22.8	-166.73	-48.5	666.4	927.7	886.8	40.90	22.683		
9,400.0	9,395.1	9,343.9	9,319.6	21.1	23.1	-166.73	-49.2	674.5	939.3	898.0	41.35	22.715		
9,500.0	9,495.0	9,443.1	9,418.5	21.3	23.4	-112.55	-49.9	682.6	951.0	909.2	41.80	22.751		
9,600.0	9,592.9	9,540.3	9,515.3	21.5	23.6	-96.86	-50.5	690.5	962.9	920.7	42.21	22.810		
9,700.0	9,684.8	9,631.2	9,606.0	21.7	23.9	94.69	-51.1	697.9	975.8	933.2	42.59	22.911		
9,800.0	9,766.6	9,711.9	9,686.4	21.8	24.1	94.43	-51.7	704.5	991.3	948.3	42.95	23.081		
9,900.0	9,834.6	9,778.9	9,753.2	22.0	24.3	94.25	-52.1	710.0	1,011.4	968.1	43.34	23.338		
10,000.0	9,886.1	9,829.3	9,803.4	22.2	24.4	93.12	-52.5	714.1	1,038.0	994.1	43.82	23.686		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
Project: Sec. 30 T18S R34E
Reference Site: EK 30 WCD Federal Com
Site Error: 0.0 usft
Reference Well: EK 30 BS2 Federal Com 4H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset.TVD Reference: Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 WCD Federal Com 3H - Wellbore #1 - Plan #2 03Aug15 kjs													Offset Site Error: 0.0 usft
Survey Program: 0:MWD													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	9,918.7	9,860.8	9,834.7	22.6	24.5	90.38	-52.7	716.7	1,071.9	1,027.5	44.41	24.134	
10,200.0	9,930.9	9,871.9	9,845.9	23.2	24.5	85.57	-52.8	717.6	1,113.2	1,068.2	44.95	24.766	
10,300.0	9,928.6	9,868.7	9,842.6	23.9	24.5	84.05	-52.7	717.3	1,160.9	1,115.4	45.55	25.487	
10,400.0	9,925.8	9,864.9	9,838.8	24.7	24.5	83.83	-52.7	717.0	1,215.0	1,168.6	46.33	26.226	
10,500.0	9,923.0	9,861.1	9,835.1	25.6	24.5	83.61	-52.7	716.7	1,274.6	1,227.3	47.21	26.997	
10,600.0	9,920.2	9,857.3	9,831.3	26.6	24.5	83.40	-52.7	716.4	1,339.0	1,290.8	48.19	27.784	
10,700.0	9,917.4	9,853.5	9,827.5	27.7	24.5	83.18	-52.6	716.1	1,407.5	1,358.3	49.26	28.575	
10,800.0	9,914.6	9,849.7	9,823.7	28.9	24.5	82.96	-52.6	715.8	1,479.7	1,429.3	50.40	29.360	

CC - Min, centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 WCD Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs													Offset Site Error:
Survey Program: 0-MWD													0.0 usft
Reference	Offset	Semi Major Axis		Distance		Between Centres		Between Ellipses		Minimum Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-72.65	25.0	-80.0	83.8				
100.0	100.0	98.0	98.0	0.1	0.1	-72.65	25.0	-80.0	83.8	83.6	0.18	470.833	
200.0	200.0	198.0	198.0	0.3	0.3	-72.65	25.0	-80.0	83.8	83.2	0.62	134.137	
300.0	300.0	298.0	298.0	0.5	0.5	-72.65	25.0	-80.0	83.8	82.7	1.07	78.013	
400.0	400.0	398.0	398.0	0.8	0.8	-72.65	25.0	-80.0	83.8	82.3	1.52	55.000	
500.0	500.0	498.0	498.0	1.0	1.0	-72.65	25.0	-80.0	83.8	81.8	1.97	42.472	
600.0	600.0	598.0	598.0	1.2	1.2	-72.65	25.0	-80.0	83.8	81.4	2.42	34.592	
700.0	700.0	698.0	698.0	1.4	1.4	-72.65	25.0	-80.0	83.8	80.9	2.87	29.178	
800.0	800.0	798.0	798.0	1.7	1.7	-72.65	25.0	-80.0	83.8	80.5	3.32	25.230	
900.0	900.0	898.0	898.0	1.9	1.9	-72.65	25.0	-80.0	83.8	80.0	3.77	22.223	
1,000.0	1,000.0	998.0	998.0	2.1	2.1	-72.65	25.0	-80.0	83.8	79.6	4.22	19.856	
1,100.0	1,100.0	1,098.0	1,098.0	2.3	2.3	-72.65	25.0	-80.0	83.8	79.1	4.67	17.945	
1,200.0	1,200.0	1,198.0	1,198.0	2.6	2.6	-72.65	25.0	-80.0	83.8	78.7	5.12	16.370	
1,300.0	1,300.0	1,298.0	1,298.0	2.8	2.8	-72.65	25.0	-80.0	83.8	78.2	5.57	15.048	
1,400.0	1,400.0	1,398.0	1,398.0	3.0	3.0	-72.65	25.0	-80.0	83.8	77.8	6.02	13.925	
1,500.0	1,500.0	1,498.0	1,498.0	3.2	3.2	-72.65	25.0	-80.0	83.8	77.3	6.47	12.957	
1,600.0	1,600.0	1,598.0	1,598.0	3.5	3.5	-72.65	25.0	-80.0	83.8	76.9	6.92	12.115	
1,700.0	1,700.0	1,698.0	1,698.0	3.7	3.7	-72.65	25.0	-80.0	83.8	76.4	7.37	11.376	
1,800.0	1,800.0	1,798.0	1,798.0	3.9	3.9	-72.65	25.0	-80.0	83.8	76.0	7.82	10.722	
1,900.0	1,900.0	1,898.0	1,898.0	4.1	4.1	-72.65	25.0	-80.0	83.8	75.5	8.27	10.139	
2,000.0	2,000.0	1,996.2	1,996.2	4.3	4.3	31.69	24.7	-81.2	83.8	75.1	8.68	9.655	
2,006.4	2,006.4	2,002.5	2,002.5	4.4	4.3	31.69	24.7	-81.3	83.8	75.1	8.70	9.627 CC	
2,100.0	2,099.9	2,094.9	2,094.8	4.5	4.5	31.64	23.9	-84.7	84.0	75.0	9.06	9.277 ES	
2,200.0	2,199.9	2,194.9	2,194.7	4.7	4.7	31.45	22.9	-88.9	84.6	75.2	9.45	8.958	
2,300.0	2,299.8	2,294.9	2,294.6	4.9	4.9	31.26	21.9	-93.1	85.2	75.4	9.84	8.660	
2,400.0	2,399.7	2,394.9	2,394.5	5.1	5.1	31.07	20.9	-97.3	85.8	75.6	10.24	8.380	
2,500.0	2,499.7	2,494.9	2,494.4	5.3	5.3	30.89	19.9	-101.4	86.4	75.8	10.65	8.118	
2,600.0	2,599.6	2,594.9	2,594.3	5.6	5.5	30.71	19.0	-105.6	87.1	76.0	11.06	7.872	
2,700.0	2,699.5	2,694.9	2,694.3	5.8	5.8	30.53	18.0	-109.8	87.7	76.2	11.47	7.641	
2,800.0	2,799.5	2,794.9	2,794.2	6.0	6.0	30.35	17.0	-114.0	88.3	76.4	11.89	7.425	
2,900.0	2,899.4	2,894.9	2,894.1	6.2	6.2	30.18	16.0	-118.2	88.9	76.6	12.31	7.221	
3,000.0	2,999.3	2,994.9	2,994.0	6.4	6.4	30.01	15.0	-122.4	89.5	76.8	12.73	7.029	
3,100.0	3,099.3	3,094.9	3,093.9	6.6	6.6	29.84	14.0	-126.5	90.1	77.0	13.16	6.849	
3,200.0	3,199.2	3,194.9	3,193.8	6.8	6.8	29.68	13.1	-130.7	90.7	77.1	13.58	6.679	
3,300.0	3,299.1	3,294.9	3,293.7	7.1	7.1	29.51	12.1	-134.9	91.3	77.3	14.01	6.518	
3,400.0	3,399.1	3,394.9	3,393.6	7.3	7.3	29.35	11.1	-139.1	92.0	77.5	14.45	6.367	
3,500.0	3,499.0	3,494.9	3,493.5	7.5	7.5	29.19	10.1	-143.3	92.6	77.7	14.88	6.223	
3,600.0	3,598.9	3,594.9	3,593.4	7.7	7.7	29.03	9.1	-147.5	93.2	77.9	15.31	6.087	
3,700.0	3,698.9	3,694.9	3,693.3	7.9	8.0	28.88	8.1	-151.6	93.8	78.1	15.75	5.958	
3,800.0	3,798.8	3,794.9	3,793.2	8.2	8.2	28.73	7.1	-155.8	94.4	78.3	16.18	5.835	
3,900.0	3,898.7	3,894.9	3,893.1	8.4	8.4	28.57	6.2	-160.0	95.1	78.4	16.62	5.719	
4,000.0	3,998.7	3,994.9	3,993.0	8.6	8.6	28.43	5.2	-164.2	95.7	78.6	17.06	5.608	
4,100.0	4,098.6	4,094.9	4,092.9	8.8	8.9	28.28	4.2	-168.4	96.3	78.8	17.50	5.503	
4,200.0	4,198.5	4,194.9	4,192.8	9.1	9.1	28.13	3.2	-172.6	96.9	79.0	17.94	5.403	
4,300.0	4,298.5	4,294.9	4,292.7	9.3	9.3	27.99	2.2	-176.7	97.6	79.2	18.38	5.307	
4,400.0	4,398.4	4,394.8	4,392.6	9.5	9.6	27.85	1.2	-180.9	98.2	79.4	18.82	5.215	
4,500.0	4,498.3	4,494.8	4,492.6	9.7	9.8	27.71	0.3	-185.1	98.8	79.5	19.27	5.128	
4,600.0	4,598.3	4,594.8	4,592.5	10.0	10.0	27.57	-0.7	-189.3	99.4	79.7	19.71	5.044	
4,700.0	4,698.2	4,694.8	4,692.4	10.2	10.3	27.43	-1.7	-193.5	100.0	79.9	20.16	4.964	
4,800.0	4,798.1	4,794.8	4,792.3	10.4	10.5	27.30	-2.7	-197.7	100.7	80.1	20.60	4.887	
4,900.0	4,898.1	4,894.8	4,892.2	10.7	10.7	27.16	-3.7	-201.8	101.3	80.3	21.04	4.814	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 WCD Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs													Offset Site Error
Survey Program: 0-MWD													Offset Well Error
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside (usft)	Offset Wellbore Centre (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
						Toolface (°)	+N-S (usft)	+E-W (usft)					
5,000.0	4,998.0	4,994.8	4,992.1	10.9	10.9	27.03	-4.7	-206.0	101.9	80.4	21.49	4.743	
5,100.0	5,097.9	5,094.8	5,092.0	11.1	11.2	26.90	-5.7	-210.2	102.6	80.6	21.94	4.675	
5,200.0	5,197.9	5,194.8	5,191.9	11.3	11.4	26.77	-6.6	-214.4	103.2	80.8	22.38	4.610	
5,300.0	5,297.8	5,294.8	5,291.8	11.6	11.6	26.65	-7.6	-218.6	103.8	81.0	22.83	4.547	
5,400.0	5,397.8	5,394.8	5,391.7	11.8	11.9	26.52	-8.6	-222.7	104.4	81.2	23.28	4.487	
5,500.0	5,497.7	5,494.8	5,491.6	12.0	12.1	26.40	-9.6	-226.9	105.1	81.3	23.72	4.429	
5,600.0	5,597.6	5,594.8	5,591.5	12.3	12.3	26.28	-10.6	-231.1	105.7	81.5	24.17	4.373	
5,700.0	5,697.6	5,694.8	5,691.4	12.5	12.6	26.16	-11.6	-235.3	106.3	81.7	24.62	4.319	
5,800.0	5,797.5	5,794.8	5,791.3	12.7	12.8	26.04	-12.6	-239.5	107.0	81.9	25.07	4.267	
5,900.0	5,897.4	5,894.8	5,891.2	12.9	13.0	25.92	-13.5	-243.7	107.6	82.1	25.52	4.216	
6,000.0	5,997.4	5,994.8	5,991.1	13.2	13.3	25.80	-14.5	-247.8	108.2	82.3	25.97	4.168	
6,100.0	6,097.3	6,094.8	6,091.0	13.4	13.5	25.69	-15.5	-252.0	108.9	82.4	26.42	4.121	
6,200.0	6,197.2	6,194.8	6,190.9	13.6	13.7	25.57	-16.5	-256.2	109.5	82.6	26.87	4.076	
6,300.0	6,297.2	6,294.8	6,290.8	13.9	14.0	25.46	-17.5	-260.4	110.1	82.8	27.32	4.032	
6,400.0	6,397.1	6,394.8	6,390.8	14.1	14.2	25.35	-18.5	-264.6	110.8	83.0	27.76	3.989	
6,500.0	6,497.0	6,494.8	6,490.7	14.3	14.5	25.24	-19.4	-268.8	111.4	83.2	28.21	3.948	
6,600.0	6,597.0	6,594.8	6,590.6	14.6	14.7	25.13	-20.4	-272.9	112.0	83.4	28.67	3.908	
6,700.0	6,696.9	6,694.8	6,690.5	14.8	14.9	25.02	-21.4	-277.1	112.7	83.5	29.12	3.870	
6,800.0	6,796.8	6,794.8	6,790.4	15.0	15.2	24.92	-22.4	-281.3	113.3	83.7	29.57	3.832	
6,900.0	6,896.8	6,894.8	6,890.3	15.3	15.4	24.81	-23.4	-285.5	113.9	83.9	30.02	3.796	
7,000.0	6,996.7	6,994.8	6,990.2	15.5	15.6	24.71	-24.4	-289.7	114.6	84.1	30.47	3.760	
7,100.0	7,096.6	7,094.8	7,090.1	15.7	15.9	24.60	-25.4	-293.9	115.2	84.3	30.92	3.726	
7,200.0	7,196.6	7,194.8	7,190.0	16.0	16.1	24.50	-26.3	-298.0	115.8	84.5	31.37	3.693	
7,300.0	7,296.5	7,294.8	7,289.9	16.2	16.3	24.40	-27.3	-302.2	116.5	84.7	31.82	3.661	
7,400.0	7,396.4	7,394.8	7,389.8	16.4	16.6	24.30	-28.3	-306.4	117.1	84.8	32.27	3.629	
7,500.0	7,496.4	7,494.8	7,489.7	16.6	16.8	24.20	-29.3	-310.6	117.8	85.0	32.72	3.599	
7,600.0	7,596.3	7,594.8	7,589.6	16.9	17.0	24.11	-30.3	-314.8	118.4	85.2	33.17	3.569	
7,700.0	7,696.2	7,694.8	7,689.5	17.1	17.3	24.01	-31.3	-318.9	119.0	85.4	33.63	3.540	
7,800.0	7,796.2	7,794.8	7,789.4	17.3	17.5	23.91	-32.3	-323.1	119.7	85.6	34.08	3.512	
7,900.0	7,896.1	7,894.8	7,889.3	17.6	17.7	23.82	-33.2	-327.3	120.3	85.8	34.53	3.484	
8,000.0	7,996.0	7,994.8	7,989.2	17.8	18.0	23.73	-34.2	-331.5	121.0	86.0	34.98	3.458	
8,100.0	8,096.0	8,094.8	8,089.1	18.0	18.2	23.63	-35.2	-335.7	121.6	86.2	35.43	3.432	
8,200.0	8,195.9	8,194.8	8,189.1	18.3	18.5	23.54	-36.2	-339.9	122.2	86.3	35.88	3.406	
8,300.0	8,295.8	8,294.8	8,289.0	18.5	18.7	23.45	-37.2	-344.0	122.9	86.5	36.34	3.381	
8,400.0	8,395.8	8,394.8	8,388.9	18.7	18.9	23.36	-38.2	-348.2	123.5	86.7	36.79	3.357	
8,500.0	8,495.7	8,494.8	8,488.8	19.0	19.2	23.27	-39.1	-352.4	124.2	86.9	37.24	3.334	
8,600.0	8,595.6	8,594.8	8,588.7	19.2	19.4	23.19	-40.1	-356.6	124.8	87.1	37.69	3.311	
8,700.0	8,695.6	8,694.8	8,688.6	19.4	19.6	23.10	-41.1	-360.8	125.4	87.3	38.15	3.288	
8,800.0	8,795.5	8,794.8	8,788.5	19.7	19.9	23.01	-42.1	-365.0	126.1	87.5	38.60	3.266	
8,900.0	8,895.4	8,894.7	8,888.4	19.9	20.1	22.93	-43.1	-369.1	126.7	87.7	39.05	3.245	
9,000.0	8,995.4	8,994.7	8,988.3	20.1	20.3	22.85	-44.1	-373.3	127.4	87.9	39.50	3.224	
9,100.0	9,095.3	9,094.7	9,088.2	20.4	20.6	22.76	-45.1	-377.5	128.0	88.1	39.96	3.204	
9,200.0	9,195.2	9,194.7	9,188.1	20.6	20.8	22.68	-46.0	-381.7	128.7	88.2	40.41	3.184	
9,300.0	9,295.2	9,294.7	9,288.0	20.8	21.1	22.60	-47.0	-385.9	129.3	88.4	40.86	3.164	
9,400.0	9,395.1	9,394.7	9,387.9	21.1	21.3	22.52	-48.0	-390.1	129.9	88.6	41.31	3.145	
9,500.0	9,495.0	9,494.7	9,487.8	21.3	21.5	-58.70	-49.0	-394.2	130.2	88.5	41.73	3.121	
9,591.6	9,584.9	9,584.5	9,577.5	21.5	21.7	-81.29	-49.9	-398.0	129.3	87.3	41.99	3.079	
9,600.0	9,592.9	9,592.5	9,585.5	21.5	21.8	-82.74	-50.0	-398.3	129.3	87.3	42.01	3.078 SF	
9,700.0	9,684.8	9,684.1	9,677.0	21.7	22.0	-100.37	-50.9	-402.2	135.7	93.5	42.15	3.219	
9,800.0	9,766.6	9,765.4	9,758.2	21.8	22.2	-115.87	-51.7	-405.6	162.6	121.1	41.52	3.917	
9,900.0	9,834.6	9,832.9	9,825.7	22.0	22.3	-125.09	-52.3	-408.4	215.1	174.9	40.15	5.356	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset-TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 30 WCD Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,000.0	9,886.1	9,883.6	9,876.4	22.2	22.5	-126.65	-52.8	-410.5	288.2	248.9	39.35	7.325		
10,100.0	9,918.7	9,915.4	9,908.1	22.6	22.5	-117.60	-53.1	-411.8	375.0	333.9	41.04	9.137		
10,200.0	9,930.9	9,926.8	9,919.5	23.2	22.6	-89.48	-53.3	-412.3	469.0	424.3	44.75	10.481		
10,300.0	9,928.6	9,923.7	9,916.4	23.9	22.5	-79.33	-53.2	-412.2	565.4	520.2	45.14	12.525		
10,400.0	9,925.8	9,920.1	9,912.8	24.7	22.5	-77.86	-53.2	-412.0	662.8	617.0	45.82	14.466		
10,500.0	9,923.0	9,916.5	9,909.2	25.6	22.5	-76.39	-53.1	-411.9	760.9	714.3	46.57	16.337		
10,600.0	9,920.2	9,912.9	9,905.6	26.6	22.5	-74.95	-53.1	-411.7	859.4	812.0	47.40	18.132		
10,700.0	9,917.4	9,909.3	9,902.0	27.7	22.5	-73.51	-53.1	-411.6	958.2	909.9	48.27	19.849		
10,800.0	9,914.6	9,905.7	9,898.4	28.9	22.5	-72.10	-53.0	-411.4	1,057.2	1,008.0	49.19	21.491		
10,900.0	9,911.9	9,902.1	9,894.8	30.1	22.5	-70.71	-53.0	-411.3	1,156.4	1,106.2	50.14	23.061		
11,000.0	9,909.1	9,898.5	9,891.2	31.4	22.5	-69.33	-53.0	-411.1	1,255.7	1,204.6	51.12	24.564		
11,100.0	9,906.3	9,894.9	9,887.6	32.7	22.5	-67.98	-52.9	-411.0	1,355.1	1,303.0	52.11	26.006		
11,200.0	9,903.5	9,891.3	9,884.0	34.1	22.5	-66.65	-52.9	-410.8	1,454.5	1,401.4	53.10	27.391		



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 BS2 Federal Com 3H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Site Error: 0.0 usft	
Survey Program: 0-MWD														Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.0	0.0	1.0	1.0	0.0	0.0	158.22	-200.2	80.0	215.6						
100.0	100.0	101.0	101.0	0.1	0.1	158.22	-200.2	80.0	215.6	215.4	0.18	1,184.178			
200.0	200.0	201.0	201.0	0.3	0.3	158.22	-200.2	80.0	215.6	215.0	0.63	341.347			
300.0	300.0	301.0	301.0	0.5	0.5	158.22	-200.2	80.0	215.6	214.5	1.08	199.415			
400.0	400.0	401.0	401.0	0.8	0.8	158.22	-200.2	80.0	215.6	214.1	1.53	140.850			
500.0	500.0	501.0	501.0	1.0	1.0	158.22	-200.2	80.0	215.6	213.6	1.98	108.875			
600.0	600.0	601.0	601.0	1.2	1.2	158.22	-200.2	80.0	215.6	213.2	2.43	88.731			
700.0	700.0	701.0	701.0	1.4	1.4	158.22	-200.2	80.0	215.6	212.7	2.88	74.878			
800.0	800.0	801.0	801.0	1.7	1.7	158.22	-200.2	80.0	215.6	212.3	3.33	64.766			
900.0	900.0	901.0	901.0	1.9	1.9	158.22	-200.2	80.0	215.6	211.8	3.78	57.060			
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	158.22	-200.2	80.0	215.6	211.4	4.23	50.993			
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	158.22	-200.2	80.0	215.6	210.9	4.68	46.093			
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	158.22	-200.2	80.0	215.6	210.5	5.13	42.051			
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	158.22	-200.2	80.0	215.6	210.0	5.58	38.661			
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	158.22	-200.2	80.0	215.6	209.6	6.03	35.777			
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	158.22	-200.2	80.0	215.6	209.1	6.48	33.293			
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	158.22	-200.2	80.0	215.6	208.7	6.93	31.132			
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	158.22	-200.2	80.0	215.6	208.2	7.37	29.235			
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	158.22	-200.2	80.0	215.6	207.8	7.82	27.555			
1,866.3	1,866.3	1,867.3	1,867.3	4.1	4.1	158.22	-200.2	80.0	215.6	207.5	8.12	26.543 CC			
1,900.0	1,900.0	1,901.0	1,901.0	4.1	4.1	158.22	-200.2	80.0	215.6	207.3	8.27	26.058 ES			
2,000.0	2,000.0	2,000.0	2,000.0	4.3	4.3	-98.17	-199.9	81.3	216.0	207.3	8.69	24.852			
2,100.0	2,099.9	2,098.5	2,098.4	4.5	4.6	-100.04	-199.2	85.1	217.4	208.3	9.09	23.922			
2,200.0	2,199.9	2,196.7	2,196.4	4.7	4.8	-102.57	-197.9	91.3	219.7	210.2	9.49	23.150			
2,300.0	2,299.8	2,296.1	2,295.5	4.9	5.0	-105.32	-196.5	98.6	222.8	212.9	9.90	22.496			
2,400.0	2,399.7	2,395.5	2,394.6	5.1	5.2	-108.00	-195.0	105.9	226.4	216.0	10.32	21.931			
2,500.0	2,499.7	2,494.8	2,493.7	5.3	5.4	-110.58	-193.6	113.3	230.4	219.7	10.74	21.446			
2,600.0	2,599.6	2,594.2	2,592.8	5.6	5.6	-113.08	-192.1	120.6	235.0	223.8	11.17	21.032			
2,700.0	2,699.5	2,693.6	2,691.9	5.8	5.9	-115.47	-190.6	127.9	239.9	228.3	11.60	20.680			
2,800.0	2,799.5	2,793.0	2,791.0	6.0	6.1	-117.77	-189.2	135.2	245.3	233.2	12.03	20.382			
2,900.0	2,899.4	2,892.4	2,890.1	6.2	6.3	-119.96	-187.7	142.5	251.0	238.5	12.47	20.133			
3,000.0	2,999.3	2,991.7	2,989.2	6.4	6.6	-122.06	-186.2	149.9	257.1	244.2	12.90	19.925			
3,100.0	3,099.3	3,091.1	3,088.3	6.6	6.8	-124.06	-184.8	157.2	263.5	250.2	13.34	19.754			
3,200.0	3,199.2	3,190.5	3,187.4	6.8	7.0	-125.96	-183.3	164.5	270.3	256.5	13.78	19.615			
3,300.0	3,299.1	3,289.9	3,286.5	7.1	7.3	-127.76	-181.8	171.8	277.3	263.1	14.22	19.503			
3,400.0	3,399.1	3,389.3	3,385.6	7.3	7.5	-129.48	-180.4	179.2	284.5	269.9	14.66	19.415			
3,500.0	3,499.0	3,488.6	3,484.7	7.5	7.8	-131.11	-178.9	186.5	292.1	277.0	15.10	19.348			
3,600.0	3,598.9	3,588.0	3,583.8	7.7	8.0	-132.66	-177.5	193.8	299.8	284.3	15.54	19.298			
3,700.0	3,698.9	3,687.4	3,682.9	7.9	8.3	-134.12	-176.0	201.1	307.8	291.8	15.98	19.264			
3,800.0	3,798.8	3,786.8	3,782.0	8.2	8.5	-135.52	-174.5	208.5	315.9	299.5	16.42	19.243			
3,900.0	3,898.7	3,886.1	3,881.1	8.4	8.8	-136.84	-173.1	215.8	324.2	307.4	16.86	19.233			
4,000.0	3,998.7	3,985.5	3,980.2	8.6	9.0	-138.10	-171.6	223.1	332.7	315.4	17.30	19.233 SF			
4,100.0	4,098.6	4,084.9	4,079.3	8.8	9.2	-139.30	-170.1	230.4	341.3	323.6	17.74	19.241			
4,200.0	4,198.5	4,184.3	4,178.4	9.1	9.5	-140.43	-168.7	237.7	350.1	331.9	18.18	19.257			
4,300.0	4,298.5	4,283.7	4,277.5	9.3	9.7	-141.51	-167.2	245.1	359.0	340.4	18.62	19.278			
4,400.0	4,398.4	4,383.0	4,376.6	9.5	10.0	-142.54	-165.7	252.4	368.0	349.0	19.07	19.304			
4,500.0	4,498.3	4,482.4	4,475.7	9.7	10.2	-143.52	-164.3	259.7	377.2	357.7	19.51	19.335			
4,600.0	4,598.3	4,581.8	4,574.8	10.0	10.5	-144.45	-162.8	267.0	386.4	366.5	19.95	19.369			
4,700.0	4,698.2	4,681.2	4,673.9	10.2	10.7	-145.34	-161.4	274.4	395.8	375.4	20.39	19.407			
4,800.0	4,798.1	4,780.6	4,773.0	10.4	11.0	-146.19	-159.9	281.7	405.2	384.4	20.84	19.447			
4,900.0	4,898.1	4,879.9	4,872.1	10.7	11.3	-146.99	-158.4	289.0	414.7	393.4	21.28	19.488			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 BS2 Federal Com 3H - Wellbore #1 - Design #1 29Jul15 kjs													Offset Site Error
Survey Program: 0-MWD													0.0 usft
Reference													Offset Well Error
Offset													0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Semi-Major Axis	Highside Toolface	Offset Wellbore Centre	Distance	Between Centres	Between Ellipses	Minimum Separation	Warning
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	
5,000.0	4,998.0	4,979.3	4,971.1	10.9	11.5	-147.77	-157.0	296.3	424.3	402.6	21.72	19.532	
5,100.0	5,097.9	5,078.7	5,070.2	11.1	11.8	-148.51	-155.5	303.7	434.0	411.8	22.17	19.577	
5,200.0	5,197.9	5,178.1	5,169.3	11.3	12.0	-149.21	-154.0	311.0	443.7	421.1	22.61	19.623	
5,300.0	5,297.8	5,277.5	5,268.4	11.6	12.3	-149.89	-152.6	318.3	453.5	430.5	23.06	19.669	
5,400.0	5,397.8	5,376.8	5,367.5	11.8	12.5	-150.53	-151.1	325.6	463.4	439.9	23.50	19.717	
5,500.0	5,497.7	5,476.2	5,466.6	12.0	12.8	-151.15	-149.6	333.0	473.3	449.3	23.95	19.764	
5,600.0	5,597.6	5,575.6	5,565.7	12.3	13.0	-151.75	-148.2	340.3	483.3	458.9	24.39	19.812	
5,700.0	5,697.6	5,675.0	5,664.8	12.5	13.3	-152.32	-146.7	347.6	493.3	468.4	24.84	19.860	
5,800.0	5,797.5	5,774.3	5,763.9	12.7	13.5	-152.87	-145.3	354.9	503.3	478.1	25.28	19.908	
5,900.0	5,897.4	5,873.7	5,863.0	12.9	13.8	-153.39	-143.8	362.2	513.5	487.7	25.73	19.956	
6,000.0	5,997.4	5,973.1	5,962.1	13.2	14.0	-153.90	-142.3	369.6	523.6	497.4	26.18	20.004	
6,100.0	6,097.3	6,072.5	6,061.2	13.4	14.3	-154.39	-140.9	376.9	533.8	507.2	26.62	20.051	
6,200.0	6,197.2	6,171.9	6,160.3	13.6	14.6	-154.86	-139.4	384.2	544.0	517.0	27.07	20.098	
6,300.0	6,297.2	6,271.2	6,259.4	13.9	14.8	-155.31	-137.9	391.5	554.3	526.8	27.52	20.144	
6,400.0	6,397.1	6,370.6	6,358.5	14.1	15.1	-155.74	-136.5	398.9	564.6	536.6	27.96	20.191	
6,500.0	6,497.0	6,470.0	6,457.6	14.3	15.3	-156.16	-135.0	406.2	574.9	546.5	28.41	20.236	
6,600.0	6,597.0	6,569.4	6,556.7	14.6	15.6	-156.57	-133.6	413.5	585.3	556.4	28.86	20.281	
6,700.0	6,696.9	6,668.8	6,655.8	14.8	15.8	-156.96	-132.1	420.8	595.6	566.3	29.31	20.326	
6,800.0	6,796.8	6,768.1	6,754.9	15.0	16.1	-157.33	-130.6	428.2	606.1	576.3	29.75	20.369	
6,900.0	6,896.8	6,867.5	6,854.0	15.3	16.3	-157.70	-129.2	435.5	616.5	586.3	30.20	20.413	
7,000.0	6,996.7	6,966.9	6,953.1	15.5	16.6	-158.05	-127.7	442.8	626.9	596.3	30.65	20.455	
7,100.0	7,096.6	7,066.3	7,052.2	15.7	16.9	-158.39	-126.2	450.1	637.4	606.3	31.10	20.497	
7,200.0	7,196.6	7,165.6	7,151.3	16.0	17.1	-158.72	-124.8	457.4	647.9	616.4	31.55	20.539	
7,300.0	7,296.5	7,265.0	7,250.4	16.2	17.4	-159.04	-123.3	464.8	658.5	626.5	32.00	20.580	
7,400.0	7,396.4	7,364.4	7,349.5	16.4	17.6	-159.35	-121.8	472.1	669.0	636.6	32.44	20.620	
7,500.0	7,496.4	7,463.8	7,448.6	16.6	17.9	-159.65	-120.4	479.4	679.6	646.7	32.89	20.659	
7,600.0	7,596.3	7,563.2	7,547.7	16.9	18.1	-159.94	-118.9	486.7	690.1	656.8	33.34	20.698	
7,700.0	7,696.2	7,662.5	7,646.8	17.1	18.4	-160.22	-117.5	494.1	700.7	666.9	33.79	20.736	
7,800.0	7,796.2	7,761.9	7,745.9	17.3	18.7	-160.50	-116.0	501.4	711.3	677.1	34.24	20.774	
7,900.0	7,896.1	7,861.3	7,845.0	17.6	18.9	-160.76	-114.5	508.7	722.0	687.3	34.69	20.811	
8,000.0	7,996.0	7,960.7	7,944.1	17.8	19.2	-161.02	-113.1	516.0	732.6	697.5	35.14	20.848	
8,100.0	8,096.0	8,060.1	8,043.2	18.0	19.4	-161.27	-111.6	523.4	743.3	707.7	35.59	20.883	
8,200.0	8,195.9	8,159.4	8,142.3	18.3	19.7	-161.51	-110.1	530.7	753.9	717.9	36.04	20.919	
8,300.0	8,295.8	8,258.8	8,241.4	18.5	19.9	-161.75	-108.7	538.0	764.6	728.1	36.49	20.953	
8,400.0	8,395.8	8,358.2	8,340.5	18.7	20.2	-161.98	-107.2	545.3	775.3	738.4	36.94	20.987	
8,500.0	8,495.7	8,457.6	8,439.6	19.0	20.5	-162.20	-105.7	552.6	786.0	748.6	37.39	21.021	
8,600.0	8,595.6	8,557.0	8,538.7	19.2	20.7	-162.42	-104.3	560.0	796.8	758.9	37.84	21.054	
8,700.0	8,695.6	8,656.3	8,637.8	19.4	21.0	-162.63	-102.8	567.3	807.5	769.2	38.29	21.086	
8,800.0	8,795.5	8,755.7	8,736.9	19.7	21.2	-162.84	-101.4	574.6	818.2	779.5	38.75	21.118	
8,900.0	8,895.4	8,855.1	8,836.0	19.9	21.5	-163.04	-99.9	581.9	829.0	789.8	39.20	21.149	
9,000.0	8,995.4	8,954.5	8,935.1	20.1	21.7	-163.23	-98.4	589.3	839.7	800.1	39.65	21.180	
9,100.0	9,095.3	9,053.8	9,034.2	20.4	22.0	-163.42	-97.0	596.6	850.5	810.4	40.10	21.210	
9,200.0	9,195.2	9,153.2	9,133.3	20.6	22.3	-163.61	-95.5	603.9	861.3	820.7	40.55	21.240	
9,300.0	9,295.2	9,252.6	9,232.4	20.8	22.5	-163.79	-94.0	611.2	872.1	831.1	41.00	21.269	
9,400.0	9,395.1	9,352.0	9,331.5	21.1	22.8	-163.97	-92.6	618.6	882.9	841.4	41.45	21.298	
9,500.0	9,495.0	9,451.3	9,430.5	21.3	23.0	-164.19	-91.1	625.9	893.8	851.9	41.88	21.341	
9,600.0	9,592.9	9,540.7	9,519.6	21.5	23.3	-164.47	-89.2	632.6	906.0	863.8	42.23	21.455	
9,700.0	9,684.8	9,609.7	9,587.2	21.7	23.4	-164.71	-87.1	637.9	922.0	879.5	42.50	21.696	
9,800.0	9,766.6	9,655.0	9,630.4	21.8	23.5	-164.90	-85.0	641.4	944.9	902.1	42.74	22.106	
9,900.0	9,834.6	9,675.0	9,649.0	22.0	23.5	-165.19	-82.9	643.0	976.5	933.4	43.06	22.674	
10,000.0	9,886.1	9,686.9	9,659.9	22.2	23.5	-165.40	-80.8	643.9	1,016.3	972.9	43.44	23.396	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 usft
EK 30 WCD Federal Com - EK 31 BS2 Federal Com 3H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Well Error:	0.0 usft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis		Distance		Warning							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	*N-S (usft)	*E-W (usft)	(usft)	(usft)	(usft)				
10,100.0	9,918.7	9,682.8	9,656.2	22.6	23.5	80.65	-128.6	643.6	1,062.5	1,018.8	43.61	24.362			
10,200.0	9,930.9	9,675.0	9,649.0	23.2	23.5	73.43	-125.6	643.0	1,112.5	1,069.2	43.37	25.652			
10,300.0	9,928.6	9,650.0	9,625.7	23.9	23.5	70.59	-116.8	641.0	1,165.5	1,121.9	43.54	26.766			
10,400.0	9,925.8	9,640.5	9,616.7	24.7	23.5	70.09	-113.8	640.3	1,223.7	1,179.5	44.19	27.694			
10,500.0	9,923.0	9,625.0	9,601.9	25.6	23.4	69.26	-109.3	639.1	1,286.8	1,241.9	44.86	28.685			
10,600.0	9,920.2	9,625.0	9,601.9	26.6	23.4	69.26	-109.3	639.1	1,354.1	1,308.3	45.79	29.570			
10,700.0	9,917.4	9,609.1	9,586.6	27.7	23.4	68.41	-105.1	637.8	1,424.9	1,378.3	46.61	30.569			
10,800.0	9,914.6	9,600.0	9,577.8	28.9	23.4	67.92	-103.0	637.1	1,499.0	1,451.4	47.58	31.505			



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 BS2 Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Site Error	0.0 usft
Survey Program: 0:MWD														Offset Well Error	0.0 usft
Reference	Offset	Semi Major Axis		Reference		Highside Topface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	(°)	N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	(usft)				
0.0	0.0	0.0	0.0	0.0	0.0	-160.45	-225.3	-80.0	239.1						
100.0	100.0	100.0	100.0	0.1	0.1	-160.45	-225.3	-80.0	239.1	238.9	0.18	1,329.613			
200.0	200.0	200.0	200.0	0.3	0.3	-160.45	-225.3	-80.0	239.1	238.5	0.63	379.890			
300.0	300.0	300.0	300.0	0.5	0.5	-160.45	-225.3	-80.0	239.1	238.0	1.08	221.602			
400.0	400.0	400.0	400.0	0.8	0.8	-160.45	-225.3	-80.0	239.1	237.6	1.53	156.425			
500.0	500.0	500.0	500.0	1.0	1.0	-160.45	-225.3	-80.0	239.1	237.1	1.98	120.874			
600.0	600.0	600.0	600.0	1.2	1.2	-160.45	-225.3	-80.0	239.1	236.7	2.43	98.490			
700.0	700.0	700.0	700.0	1.4	1.4	-160.45	-225.3	-80.0	239.1	236.2	2.88	83.101			
800.0	800.0	800.0	800.0	1.7	1.7	-160.45	-225.3	-80.0	239.1	235.8	3.33	71.871			
900.0	900.0	900.0	900.0	1.9	1.9	-160.45	-225.3	-80.0	239.1	235.3	3.78	63.315			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-160.45	-225.3	-80.0	239.1	234.9	4.23	56.579			
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-160.45	-225.3	-80.0	239.1	234.4	4.68	51.139			
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-160.45	-225.3	-80.0	239.1	234.0	5.12	46.653			
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-160.45	-225.3	-80.0	239.1	233.5	5.57	42.891			
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-160.45	-225.3	-80.0	239.1	233.1	6.02	39.690			
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-160.45	-225.3	-80.0	239.1	232.6	6.47	36.934			
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-160.45	-225.3	-80.0	239.1	232.2	6.92	34.535			
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-160.45	-225.3	-80.0	239.1	231.7	7.37	32.430			
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-160.45	-225.3	-80.0	239.1	231.3	7.82	30.566			
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-160.45	-225.3	-80.0	239.1	230.8	8.27	28.905			
2,000.0	2,000.0	2,000.0	2,000.0	4.3	4.4	-56.12	-224.9	-81.2	238.4	229.7	8.69	27.416			
2,100.0	2,099.9	2,100.0	2,099.9	4.5	4.6	-55.86	-223.5	-84.9	236.4	227.3	9.10	25.996			
2,200.0	2,199.9	2,199.9	2,199.7	4.7	4.8	-55.34	-221.8	-89.8	234.4	224.9	9.50	24.667			
2,300.0	2,299.8	2,299.9	2,299.5	4.9	5.0	-54.81	-220.1	-94.6	232.5	222.5	9.92	23.436			
2,400.0	2,399.7	2,399.8	2,399.3	5.1	5.2	-54.27	-218.4	-99.5	230.5	220.2	10.34	22.295			
2,500.0	2,499.7	2,499.8	2,499.2	5.3	5.4	-53.72	-216.7	-104.3	228.6	217.8	10.76	21.236			
2,600.0	2,599.6	2,599.7	2,599.0	5.6	5.6	-53.16	-214.9	-109.2	226.6	215.4	11.19	20.253			
2,700.0	2,699.5	2,699.7	2,698.8	5.8	5.9	-52.59	-213.2	-114.0	224.7	213.1	11.62	19.338			
2,800.0	2,799.5	2,799.7	2,798.6	6.0	6.1	-52.01	-211.5	-118.9	222.9	210.8	12.06	18.486			
2,900.0	2,899.4	2,899.6	2,898.5	6.2	6.3	-51.42	-209.8	-123.7	221.0	208.5	12.49	17.692			
3,000.0	2,999.3	2,999.6	2,998.3	6.4	6.6	-50.82	-208.0	-128.6	219.2	206.2	12.93	16.950			
3,100.0	3,099.3	3,099.5	3,098.1	6.6	6.8	-50.21	-206.3	-133.4	217.4	204.0	13.37	16.256			
3,200.0	3,199.2	3,199.5	3,197.9	6.8	7.0	-49.59	-204.6	-138.3	215.6	201.8	13.81	15.606			
3,300.0	3,299.1	3,299.4	3,297.8	7.1	7.2	-48.96	-202.9	-143.1	213.8	199.6	14.26	14.997			
3,400.0	3,399.1	3,399.4	3,397.6	7.3	7.5	-48.32	-201.1	-148.0	212.1	197.4	14.70	14.425			
3,500.0	3,499.0	3,499.4	3,497.4	7.5	7.7	-47.67	-199.4	-152.8	210.4	195.3	15.15	13.887			
3,600.0	3,598.9	3,599.3	3,597.2	7.7	7.9	-47.01	-197.7	-157.6	208.7	193.1	15.60	13.381			
3,700.0	3,698.9	3,699.3	3,697.1	7.9	8.2	-46.34	-196.0	-162.5	207.1	191.0	16.05	12.905			
3,800.0	3,798.8	3,799.2	3,796.9	8.2	8.4	-45.66	-194.3	-167.3	205.5	189.0	16.50	12.455			
3,900.0	3,898.7	3,899.2	3,896.7	8.4	8.6	-44.97	-192.5	-172.2	203.9	186.9	16.95	12.030			
4,000.0	3,998.7	3,999.1	3,996.5	8.6	8.9	-44.26	-190.8	-177.0	202.3	184.9	17.40	11.629			
4,100.0	4,098.6	4,099.1	4,096.4	8.8	9.1	-43.55	-189.1	-181.9	200.8	183.0	17.85	11.250			
4,200.0	4,198.5	4,199.1	4,196.2	9.1	9.3	-42.82	-187.4	-186.7	199.3	181.0	18.30	10.890			
4,300.0	4,298.5	4,299.0	4,296.0	9.3	9.6	-42.09	-185.6	-191.6	197.9	179.1	18.75	10.550			
4,400.0	4,398.4	4,399.0	4,395.8	9.5	9.8	-41.34	-183.9	-196.4	196.4	177.2	19.21	10.227			
4,500.0	4,498.3	4,498.9	4,495.6	9.7	10.0	-40.58	-182.2	-201.3	195.0	175.4	19.66	9.921			
4,600.0	4,598.3	4,598.9	4,595.5	10.0	10.3	-39.82	-180.5	-206.1	193.7	173.6	20.11	9.630			
4,700.0	4,698.2	4,698.8	4,695.3	10.2	10.5	-39.04	-178.7	-211.0	192.3	171.8	20.56	9.354			
4,800.0	4,798.1	4,798.8	4,795.1	10.4	10.8	-38.25	-177.0	-215.8	191.1	170.0	21.02	9.091			
4,900.0	4,898.1	4,898.7	4,894.9	10.7	11.0	-37.45	-175.3	-220.7	189.8	168.3	21.47	8.841			
5,000.0	4,998.0	4,998.7	4,994.8	10.9	11.2	-36.64	-173.6	-225.5	188.6	166.7	21.92	8.603			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
Project: Sec. 30 T18S R34E
Reference Site: EK 30 WCD Federal Com
Site Error: 0.0 usft
Reference Well: EK 30 BS2 Federal Com 4H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 BS2 Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs													Offset Site Error: 0.0 usft
Survey Program: 0-MWD													Offset Well Error: 0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,097.9	5,098.7	5,094.6	11.1	11.5	-35.82	-171.9	-230.4	187.4	165.0	22.37	8.377	
5,200.0	5,197.9	5,198.6	5,194.4	11.3	11.7	-34.99	-170.1	-235.2	186.3	163.5	22.82	8.161	
5,300.0	5,297.8	5,298.6	5,294.2	11.6	11.9	-34.14	-168.4	-240.1	185.2	161.9	23.28	7.956	
5,400.0	5,397.8	5,398.5	5,394.1	11.8	12.2	-33.29	-166.7	-244.9	184.1	160.4	23.73	7.760	
5,500.0	5,497.7	5,498.5	5,493.9	12.0	12.4	-32.43	-165.0	-249.8	183.1	158.9	24.18	7.573	
5,600.0	5,597.6	5,598.4	5,593.7	12.3	12.7	-31.56	-163.2	-254.6	182.1	157.5	24.63	7.395	
5,700.0	5,697.6	5,698.4	5,693.5	12.5	12.9	-30.68	-161.5	-259.5	181.2	156.1	25.08	7.225	
5,800.0	5,797.5	5,798.4	5,793.4	12.7	13.1	-29.80	-159.8	-264.3	180.3	154.8	25.53	7.063	
5,900.0	5,897.4	5,898.3	5,893.2	12.9	13.4	-28.90	-158.1	-269.2	179.5	153.5	25.98	6.908	
6,000.0	5,997.4	5,998.3	5,993.0	13.2	13.6	-28.00	-156.3	-274.0	178.7	152.2	26.43	6.761	
6,100.0	6,097.3	6,098.2	6,092.8	13.4	13.9	-27.08	-154.6	-278.8	177.9	151.0	26.88	6.620	
6,200.0	6,197.2	6,198.2	6,192.7	13.6	14.1	-26.16	-152.9	-283.7	177.2	149.9	27.32	6.485	
6,300.0	6,297.2	6,298.1	6,292.5	13.9	14.3	-25.24	-151.2	-288.5	176.5	148.8	27.77	6.357	
6,400.0	6,397.1	6,398.1	6,392.3	14.1	14.6	-24.30	-149.4	-293.4	175.9	147.7	28.22	6.234	
6,500.0	6,497.0	6,498.1	6,492.1	14.3	14.8	-23.36	-147.7	-298.2	175.4	146.7	28.67	6.117	
6,600.0	6,597.0	6,598.0	6,592.0	14.6	15.1	-22.42	-146.0	-303.1	174.8	145.7	29.11	6.005	
6,700.0	6,696.9	6,698.0	6,691.8	14.8	15.3	-21.46	-144.3	-307.9	174.4	144.8	29.56	5.899	
6,800.0	6,796.8	6,797.9	6,791.6	15.0	15.5	-20.51	-142.6	-312.8	173.9	143.9	30.00	5.797	
6,900.0	6,896.8	6,897.9	6,891.4	15.3	15.8	-19.55	-140.8	-317.6	173.6	143.1	30.45	5.700	
7,000.0	6,996.7	6,997.8	6,991.3	15.5	16.0	-18.58	-139.1	-322.5	173.2	142.3	30.89	5.607	
7,100.0	7,096.6	7,097.8	7,091.1	15.7	16.3	-17.61	-137.4	-327.3	172.9	141.6	31.34	5.519	
7,200.0	7,196.6	7,197.8	7,190.9	16.0	16.5	-16.64	-135.7	-332.2	172.7	140.9	31.78	5.434	
7,300.0	7,296.5	7,297.7	7,290.7	16.2	16.7	-15.67	-133.9	-337.0	172.5	140.3	32.23	5.354	
7,400.0	7,396.4	7,397.7	7,390.6	16.4	17.0	-14.69	-132.2	-341.9	172.4	139.7	32.67	5.277	
7,500.0	7,496.4	7,497.6	7,490.4	16.6	17.2	-13.72	-130.5	-346.7	172.3	139.2	33.11	5.204	
7,600.0	7,596.3	7,597.6	7,590.2	16.9	17.5	-12.74	-128.8	-351.6	172.3	138.7	33.56	5.135	
7,608.8	7,605.1	7,606.4	7,599.0	16.9	17.5	-12.66	-128.6	-352.0	172.3	138.7	33.60	5.129 CC	
7,700.0	7,696.2	7,697.5	7,690.0	17.1	17.7	-11.76	-127.0	-356.4	172.3	138.3	34.00	5.068	
7,800.0	7,796.2	7,797.5	7,789.9	17.3	17.9	-10.79	-125.3	-361.3	172.4	137.9	34.44	5.005	
7,900.0	7,896.1	7,897.5	7,889.7	17.6	18.2	-9.81	-123.6	-366.1	172.5	137.6	34.88	4.945	
8,000.0	7,996.0	7,997.4	7,989.5	17.8	18.4	-8.84	-121.9	-371.0	172.7	137.4	35.33	4.888	
8,100.0	8,096.0	8,097.4	8,089.3	18.0	18.7	-7.87	-120.2	-375.8	172.9	137.1	35.77	4.834	
8,200.0	8,195.9	8,197.3	8,189.1	18.3	18.9	-6.90	-118.4	-380.7	173.2	137.0	36.21	4.782	
8,300.0	8,295.8	8,297.3	8,289.0	18.5	19.1	-5.93	-116.7	-385.5	173.5	136.8	36.65	4.733	
8,400.0	8,395.8	8,397.2	8,388.8	18.7	19.4	-4.97	-115.0	-390.4	173.9	136.8	37.10	4.687	
8,500.0	8,495.7	8,497.2	8,488.6	19.0	19.6	-4.01	-113.3	-395.2	174.3	136.7	37.54	4.642 ES	
8,600.0	8,595.6	8,597.1	8,588.4	19.2	19.9	-3.06	-111.5	-400.0	174.7	136.8	37.98	4.601	
8,700.0	8,695.6	8,697.1	8,688.3	19.4	20.1	-2.12	-109.8	-404.9	175.3	136.8	38.43	4.561	
8,800.0	8,795.5	8,797.1	8,788.1	19.7	20.4	-1.17	-108.1	-409.7	175.8	137.0	38.87	4.523	
8,900.0	8,895.4	8,897.0	8,887.9	19.9	20.6	-0.24	-106.4	-414.6	176.4	137.1	39.31	4.488	
9,000.0	8,995.4	8,997.0	8,987.7	20.1	20.8	0.69	-104.6	-419.4	177.1	137.3	39.76	4.454	
9,100.0	9,095.3	9,096.9	9,087.6	20.4	21.1	1.61	-102.9	-424.3	177.8	137.6	40.20	4.422	
9,200.0	9,195.2	9,196.9	9,187.4	20.6	21.3	2.52	-101.2	-429.1	178.5	137.9	40.65	4.392	
9,300.0	9,295.2	9,296.8	9,287.2	20.8	21.6	3.43	-99.5	-434.0	179.3	138.2	41.09	4.364	
9,400.0	9,395.1	9,396.8	9,387.0	21.1	21.8	4.33	-97.8	-438.8	180.2	138.6	41.54	4.338	
9,500.0	9,495.0	9,495.2	9,485.3	21.3	22.0	-75.81	-96.9	-443.6	181.5	139.5	41.96	4.324 SF	
9,600.0	9,592.9	9,582.3	9,571.4	21.5	22.2	-98.43	-108.5	-447.4	189.9	147.6	42.31	4.488	
9,700.0	9,684.8	9,647.0	9,633.3	21.7	22.3	-109.05	-127.1	-449.8	219.0	176.7	42.30	5.176	
9,800.0	9,766.6	9,686.5	9,669.6	21.8	22.3	-111.05	-142.5	-451.1	275.8	233.8	42.07	6.556	
9,900.0	9,834.6	9,705.1	9,686.3	22.0	22.4	-102.23	-150.9	-451.7	353.6	311.0	42.59	8.303	
10,000.0	9,886.1	9,708.5	9,689.2	22.2	22.4	-80.75	-152.4	-451.8	442.1	398.9	43.16	10.242	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design: EK 30 WCD Federal Com - EK 31 BS2 Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs											Offset Site Error: 0.0 usft		
Survey Program: 0-MWD											Offset Well Error: 0.0 usft		
Reference		Offset		Semi-Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	9,918.7	9,700.0	9,681.7	22.6	22.4	-53.77	-148.5	-451.5	533.5	493.9	39.61	13.468	
10,200.0	9,930.9	9,685.7	9,668.9	23.2	22.3	-35.19	-142.2	-451.1	622.7	587.9	34.82	17.885	
10,300.0	9,928.6	9,667.4	9,652.2	23.9	22.3	-31.06	-134.7	-450.5	709.2	675.2	34.01	20.854	
10,400.0	9,925.8	9,650.0	9,636.1	24.7	22.3	-29.62	-128.2	-449.9	797.8	763.8	33.98	23.478	
10,500.0	9,923.0	9,637.9	9,624.8	25.6	22.3	-28.67	-124.0	-449.5	888.2	854.0	34.14	26.011	
10,600.0	9,920.2	9,625.0	9,612.5	26.6	22.3	-27.70	-119.8	-449.0	979.9	945.6	34.33	28.544	
10,700.0	9,917.4	9,615.6	9,603.6	27.7	22.2	-27.02	-117.0	-448.7	1,072.8	1,038.2	34.64	30.969	
10,800.0	9,914.6	9,600.0	9,588.6	28.9	22.2	-25.95	-112.7	-448.1	1,166.7	1,131.9	34.83	33.497	
10,900.0	9,911.9	9,600.0	9,588.6	30.1	22.2	-25.95	-112.7	-448.1	1,261.2	1,225.7	35.44	35.585	
11,000.0	9,909.1	9,600.0	9,588.6	31.4	22.2	-25.95	-112.7	-448.1	1,356.5	1,320.4	36.09	37.588	
11,100.0	9,906.3	9,575.0	9,564.3	32.7	22.2	-24.35	-106.9	-447.1	1,452.2	1,416.1	36.09	40.234	



Anticollision Report

Company: McElvain Energy, Inc.
 Project: Sec. 30 T18S R34E
 Reference Site: EK 30 WCD Federal Com
 Site Error: 0.0 usft
 Reference Well: EK 30 BS2 Federal Com 4H
 Well Error: 0.0 usft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
 TVD Reference: WELL @ 3883.0usft (Original Well Elev)
 MD Reference: WELL @ 3883.0usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design: EK 30 WCD Federal Com - EK 31 WCD Federal Com 3H - Wellbore #1 - Plan #2 03Aug15 kjs													Offset Site Error: 0.0 usft
Survey Program: 0-MWD													Offset Well Error: 0.0 usft
Reference	Vertical	Offset	Semi Major Axis	Reference	Offset	Highside	Offset Wellbore Centro	Distance	Between	Between	Minimum	Separation	Warning
Depth	Depth	Measured	Depth	Reference	Offset	Toolface	EN-S	EN-W	Centros	Ellipses	Separation	Factor	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
0.0	0.0	1.0	1.0	0.0	0.0	144.62	-225.2	159.9	276.2				
100.0	100.0	101.0	101.0	0.1	0.1	144.62	-225.2	159.9	276.2	276.0	0.18	1,517.043	
200.0	200.0	201.0	201.0	0.3	0.3	144.62	-225.2	159.9	276.2	275.6	0.63	437.297	
300.0	300.0	301.0	301.0	0.5	0.5	144.62	-225.2	159.9	276.2	275.1	1.08	255.469	
400.0	400.0	401.0	401.0	0.8	0.8	144.62	-225.2	159.9	276.2	274.7	1.53	180.441	
500.0	500.0	501.0	501.0	1.0	1.0	144.62	-225.2	159.9	276.2	274.2	1.98	139.479	
600.0	600.0	601.0	601.0	1.2	1.2	144.62	-225.2	159.9	276.2	273.8	2.43	113.673	
700.0	700.0	701.0	701.0	1.4	1.4	144.62	-225.2	159.9	276.2	273.3	2.88	95.926	
800.0	800.0	801.0	801.0	1.7	1.7	144.62	-225.2	159.9	276.2	272.9	3.33	82.971	
900.0	900.0	901.0	901.0	1.9	1.9	144.62	-225.2	159.9	276.2	272.4	3.78	73.100	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	144.62	-225.2	159.9	276.2	272.0	4.23	65.327	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	144.62	-225.2	159.9	276.2	271.5	4.68	59.049	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	144.62	-225.2	159.9	276.2	271.1	5.13	53.871	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	144.62	-225.2	159.9	276.2	270.6	5.58	49.529	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	144.62	-225.2	159.9	276.2	270.2	6.03	45.834	
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	144.62	-225.2	159.9	276.2	269.7	6.48	42.652	
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	144.62	-225.2	159.9	276.2	269.3	6.93	39.883	
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	144.62	-225.2	159.9	276.2	268.8	7.37	37.452	
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	144.62	-225.2	159.9	276.2	268.4	7.82	35.300	
1,866.3	1,866.3	1,867.3	1,867.3	4.1	4.1	144.62	-225.2	159.9	276.2	268.1	8.12	34.004 CC	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	144.62	-225.2	159.9	276.2	267.9	8.27	33.392 ES	
2,000.0	2,000.0	1,997.9	1,997.9	4.3	4.3	-111.55	-225.0	161.1	277.2	268.5	8.69	31.912	
2,100.0	2,099.9	2,094.5	2,094.4	4.5	4.5	-112.85	-224.3	164.8	280.2	271.1	9.08	30.871	
2,200.0	2,199.9	2,190.7	2,190.4	4.7	4.7	-114.59	-223.2	170.8	284.7	275.2	9.47	30.047	
2,300.0	2,299.8	2,289.1	2,288.5	4.9	5.0	-116.63	-221.8	178.7	290.3	280.4	9.88	29.376	
2,400.0	2,399.7	2,388.4	2,387.4	5.1	5.2	-118.62	-220.4	186.8	296.4	286.1	10.30	28.778	
2,500.0	2,499.7	2,487.6	2,486.4	5.3	5.4	-120.53	-218.9	194.9	302.8	292.1	10.72	28.245	
2,600.0	2,599.6	2,586.9	2,585.3	5.6	5.6	-122.36	-217.4	203.0	309.5	298.4	11.14	27.772	
2,700.0	2,699.5	2,686.2	2,684.3	5.8	5.9	-124.11	-216.0	211.1	316.5	305.0	11.57	27.352	
2,800.0	2,799.5	2,785.5	2,783.2	6.0	6.1	-125.78	-214.5	219.2	323.9	311.9	12.00	26.980	
2,900.0	2,899.4	2,884.8	2,882.2	6.2	6.3	-127.38	-213.1	227.3	331.4	319.0	12.44	26.650	
3,000.0	2,999.3	2,984.1	2,981.1	6.4	6.6	-128.91	-211.6	235.4	339.3	326.4	12.87	26.358	
3,100.0	3,099.3	3,083.4	3,080.1	6.6	6.8	-130.37	-210.2	243.4	347.3	334.0	13.31	26.099	
3,200.0	3,199.2	3,182.7	3,179.0	6.8	7.1	-131.76	-208.7	251.5	355.6	341.9	13.75	25.870	
3,300.0	3,299.1	3,282.0	3,278.0	7.1	7.3	-133.09	-207.2	259.6	364.1	349.9	14.18	25.668	
3,400.0	3,399.1	3,381.3	3,376.9	7.3	7.5	-134.35	-205.8	267.7	372.8	358.1	14.62	25.488	
3,500.0	3,499.0	3,480.6	3,475.9	7.5	7.8	-135.56	-204.3	275.8	381.6	366.5	15.06	25.330	
3,600.0	3,598.9	3,579.8	3,574.8	7.7	8.0	-136.72	-202.9	283.9	390.6	375.1	15.51	25.190	
3,700.0	3,698.9	3,679.1	3,673.8	7.9	8.3	-137.82	-201.4	292.0	399.7	383.8	15.95	25.066	
3,800.0	3,798.8	3,778.4	3,772.7	8.2	8.5	-138.87	-200.0	300.1	409.0	392.6	16.39	24.957	
3,900.0	3,898.7	3,877.7	3,871.7	8.4	8.8	-139.88	-198.5	308.2	418.4	401.6	16.83	24.861	
4,000.0	3,998.7	3,977.0	3,970.6	8.6	9.1	-140.84	-197.1	316.3	428.0	410.7	17.27	24.776	
4,100.0	4,098.6	4,076.3	4,069.6	8.8	9.3	-141.76	-195.6	324.4	437.7	419.9	17.72	24.701	
4,200.0	4,198.5	4,175.6	4,168.5	9.1	9.6	-142.64	-194.1	332.4	447.4	429.3	18.16	24.636	
4,300.0	4,298.5	4,274.9	4,267.4	9.3	9.8	-143.48	-192.7	340.5	457.3	438.7	18.61	24.578	
4,400.0	4,398.4	4,374.2	4,366.4	9.5	10.1	-144.29	-191.2	348.6	467.2	448.2	19.05	24.528	
4,500.0	4,498.3	4,473.5	4,465.3	9.7	10.3	-145.06	-189.8	356.7	477.3	457.8	19.49	24.484	
4,600.0	4,598.3	4,572.8	4,564.3	10.0	10.6	-145.80	-188.3	364.8	487.4	467.5	19.94	24.446	
4,700.0	4,698.2	4,672.0	4,663.2	10.2	10.8	-146.51	-186.9	372.9	497.6	477.3	20.38	24.414	
4,800.0	4,798.1	4,771.3	4,762.2	10.4	11.1	-147.20	-185.4	381.0	507.9	487.1	20.83	24.386	
4,900.0	4,898.1	4,870.6	4,861.1	10.7	11.4	-147.85	-183.9	389.1	518.3	497.0	21.27	24.362	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error
EK 30 WCD Federal Com - EK 31 WCD Federal Com 3H - Wellbore #1 - Plan #2 03Aug15 kjs													0.0 usft
Survey Program: 0-MWD													Offset Well Error
													0.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Between	Between	Minimum	Separation	Warning	
Depth	Depth	Depth	Depth	(usft)	(usft)	Toolface	(N-S)	(E-W)	Centros	Ellipses	Separation	Factor	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
5,000.0	4,998.0	4,969.9	4,960.1	10.9	11.6	-148.48	-182.5	397.2	528.7	507.0	21.72	24.341	
5,100.0	5,097.9	5,069.2	5,059.0	11.1	11.9	-149.09	-181.0	405.3	539.2	517.0	22.17	24.324	
5,200.0	5,197.9	5,168.5	5,158.0	11.3	12.1	-149.67	-179.6	413.4	549.7	527.1	22.61	24.310	
5,300.0	5,297.8	5,267.8	5,256.9	11.6	12.4	-150.23	-178.1	421.5	560.3	537.2	23.06	24.299	
5,400.0	5,397.8	5,367.1	5,355.9	11.8	12.7	-150.77	-176.7	429.5	570.9	547.4	23.50	24.290	
5,500.0	5,497.7	5,466.4	5,454.8	12.0	12.9	-151.29	-175.2	437.6	581.6	557.7	23.95	24.283	
5,600.0	5,597.6	5,565.7	5,553.8	12.3	13.2	-151.79	-173.7	445.7	592.4	568.0	24.40	24.278	
5,700.0	5,697.6	5,665.0	5,652.7	12.5	13.4	-152.27	-172.3	453.8	603.1	578.3	24.85	24.275	
5,800.0	5,797.5	5,764.2	5,751.7	12.7	13.7	-152.74	-170.8	461.9	613.9	588.7	25.29	24.273	
5,900.0	5,897.4	5,863.5	5,850.6	12.9	14.0	-153.19	-169.4	470.0	624.8	599.1	25.74	24.273 SF	
6,000.0	5,997.4	5,962.8	5,949.6	13.2	14.2	-153.62	-167.9	478.1	635.7	609.5	26.19	24.274	
6,100.0	6,097.3	6,062.1	6,048.5	13.4	14.5	-154.04	-166.5	486.2	646.6	620.0	26.64	24.276	
6,200.0	6,197.2	6,161.4	6,147.5	13.6	14.7	-154.45	-165.0	494.3	657.6	630.5	27.08	24.279	
6,300.0	6,297.2	6,260.7	6,246.4	13.9	15.0	-154.84	-163.6	502.4	668.6	641.1	27.53	24.283	
6,400.0	6,397.1	6,360.0	6,345.4	14.1	15.3	-155.22	-162.1	510.5	679.6	651.6	27.98	24.288	
6,500.0	6,497.0	6,459.3	6,444.3	14.3	15.5	-155.59	-160.6	518.6	690.7	662.2	28.43	24.293	
6,600.0	6,597.0	6,558.6	6,543.3	14.6	15.8	-155.95	-159.2	526.6	701.7	672.9	28.88	24.299	
6,700.0	6,696.9	6,657.9	6,642.2	14.8	16.1	-156.29	-157.7	534.7	712.8	683.5	29.33	24.306	
6,800.0	6,796.8	6,757.2	6,741.2	15.0	16.3	-156.63	-156.3	542.8	724.0	694.2	29.78	24.313	
6,900.0	6,896.8	6,856.4	6,840.1	15.3	16.6	-156.95	-154.8	550.9	735.1	704.9	30.23	24.320	
7,000.0	6,996.7	6,955.7	6,939.1	15.5	16.8	-157.27	-153.4	559.0	746.3	715.6	30.68	24.328	
7,100.0	7,096.6	7,055.0	7,038.0	15.7	17.1	-157.57	-151.9	567.1	757.5	726.4	31.13	24.337	
7,200.0	7,196.6	7,154.3	7,137.0	16.0	17.4	-157.87	-150.4	575.2	768.7	737.2	31.58	24.345	
7,300.0	7,296.5	7,253.6	7,236.9	16.2	17.6	-158.16	-149.0	583.3	780.0	747.9	32.03	24.354	
7,400.0	7,396.4	7,352.9	7,334.9	16.4	17.9	-158.44	-147.5	591.4	791.2	758.8	32.48	24.363	
7,500.0	7,496.4	7,452.2	7,433.8	16.6	18.2	-158.71	-146.1	599.5	802.5	769.6	32.93	24.373	
7,600.0	7,596.3	7,551.5	7,532.8	16.9	18.4	-158.97	-144.6	607.6	813.8	780.4	33.38	24.382	
7,700.0	7,696.2	7,650.8	7,631.7	17.1	18.7	-159.23	-143.2	615.7	825.1	791.3	33.83	24.392	
7,800.0	7,796.2	7,750.1	7,730.7	17.3	19.0	-159.48	-141.7	623.7	836.4	802.2	34.28	24.401	
7,900.0	7,896.1	7,849.3	7,829.6	17.6	19.2	-159.73	-140.2	631.8	847.8	813.1	34.73	24.411	
8,000.0	7,996.0	7,948.6	7,928.6	17.8	19.5	-159.96	-138.8	639.9	859.1	824.0	35.18	24.421	
8,100.0	8,096.0	8,047.9	8,027.5	18.0	19.7	-160.19	-137.3	648.0	870.5	834.9	35.63	24.431	
8,200.0	8,195.9	8,147.2	8,126.5	18.3	20.0	-160.42	-135.9	656.1	881.9	845.8	36.08	24.441	
8,300.0	8,295.8	8,246.5	8,225.4	18.5	20.3	-160.64	-134.4	664.2	893.3	856.8	36.53	24.451	
8,400.0	8,395.8	8,345.8	8,324.4	18.7	20.5	-160.85	-133.0	672.3	904.7	867.7	36.99	24.461	
8,500.0	8,495.7	8,445.1	8,423.3	19.0	20.8	-161.06	-131.5	680.4	916.1	878.7	37.44	24.471	
8,600.0	8,595.6	8,544.4	8,522.3	19.2	21.1	-161.26	-130.1	688.5	927.6	889.7	37.89	24.481	
8,700.0	8,695.6	8,643.7	8,621.2	19.4	21.3	-161.46	-128.6	696.6	939.0	900.7	38.34	24.491	
8,800.0	8,795.5	8,743.0	8,720.2	19.7	21.6	-161.66	-127.1	704.7	950.5	911.7	38.79	24.501	
8,900.0	8,895.4	8,842.3	8,819.1	19.9	21.9	-161.85	-125.7	712.8	961.9	922.7	39.25	24.511	
9,000.0	8,995.4	8,941.5	8,918.1	20.1	22.1	-162.03	-124.2	720.8	973.4	933.7	39.70	24.521	
9,100.0	9,095.3	9,040.8	9,017.0	20.4	22.4	-162.21	-122.8	728.9	984.9	944.7	40.15	24.531	
9,200.0	9,195.2	9,140.1	9,116.0	20.6	22.7	-162.39	-121.3	737.0	996.4	955.8	40.60	24.540	
9,300.0	9,295.2	9,239.4	9,214.9	20.8	22.9	-162.56	-119.9	745.1	1,007.9	966.8	41.05	24.550	
9,400.0	9,395.1	9,338.7	9,313.9	21.1	23.2	-162.73	-118.4	753.2	1,019.4	977.9	41.51	24.560	
9,500.0	9,495.0	9,438.0	9,412.8	21.3	23.5	-162.87	-116.9	761.3	1,031.1	989.2	41.93	24.569	
9,600.0	9,592.9	9,535.5	9,510.0	21.5	23.7	-162.99	-115.5	769.2	1,044.1	1,001.8	42.30	24.581	
9,700.0	9,684.8	9,627.3	9,601.5	21.7	24.0	-163.09	-114.2	776.7	1,059.1	1,016.4	42.66	24.595	
9,800.0	9,776.6	9,719.2	9,693.1	21.8	24.2	-163.17	-113.0	783.4	1,073.3	1,034.3	43.01	25.048	
9,900.0	9,868.4	9,810.8	9,784.4	22.0	24.4	-163.24	-112.0	789.0	1,087.3	1,050.0	43.39	25.359	
10,000.0	9,960.1	9,902.1	9,875.4	22.2	24.5	-163.29	-111.2	793.2	1,101.7	1,065.8	43.87	25.747	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 WCD Federal Com 3H - Wellbore #1 - Plan #2 03Aug15 kjs														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
10,100.0	9,918.7	9,863.4	9,836.8	22.6	24.6	91.20	-110.7	796.0	1,165.9	1,121.4	44.47	26.214			
10,200.0	9,930.9	9,876.7	9,850.1	23.2	24.6	86.17	-110.5	797.1	1,209.0	1,163.9	45.04	26.843			
10,300.0	9,928.6	9,875.6	9,848.9	23.9	24.6	84.72	-110.5	797.0	1,257.9	1,212.2	45.66	27.548			
10,400.0	9,925.8	9,874.0	9,847.3	24.7	24.6	84.63	-110.5	796.8	1,312.6	1,266.2	46.45	28.257			
10,500.0	9,923.0	9,872.3	9,845.6	25.6	24.6	84.54	-110.6	796.7	1,372.4	1,325.1	47.35	28.983			
10,600.0	9,920.2	9,870.6	9,844.0	26.6	24.6	84.46	-110.6	796.6	1,436.7	1,388.4	48.35	29.716			
10,700.0	9,917.4	9,869.0	9,842.4	27.7	24.6	84.37	-110.6	796.4	1,504.9	1,455.5	49.43	30.445			



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 WCD Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs													Offset Site Error
Survey Program: 0-MWD													0.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning		Offset Well Error		Offset TVD Reference		Offset Datum	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	180.00	-200.2	0.0	200.2				
100.0	100.0	101.0	101.0	0.1	0.1	180.00	-200.2	0.0	200.2	200.0	0.18	1,099.633	
200.0	200.0	201.0	201.0	0.3	0.3	180.00	-200.2	0.0	200.2	199.6	0.63	316.976	
300.0	300.0	301.0	301.0	0.5	0.5	180.00	-200.2	0.0	200.2	199.1	1.08	185.178	
400.0	400.0	401.0	401.0	0.8	0.8	180.00	-200.2	0.0	200.2	198.7	1.53	130.794	
500.0	500.0	501.0	501.0	1.0	1.0	180.00	-200.2	0.0	200.2	198.2	1.98	101.101	
600.0	600.0	601.0	601.0	1.2	1.2	180.00	-200.2	0.0	200.2	197.8	2.43	82.396	
700.0	700.0	701.0	701.0	1.4	1.4	180.00	-200.2	0.0	200.2	197.3	2.88	69.532	
800.0	800.0	801.0	801.0	1.7	1.7	180.00	-200.2	0.0	200.2	196.9	3.33	60.142	
900.0	900.0	901.0	901.0	1.9	1.9	180.00	-200.2	0.0	200.2	196.4	3.78	52.987	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	180.00	-200.2	0.0	200.2	196.0	4.23	47.353	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	180.00	-200.2	0.0	200.2	195.5	4.68	42.802	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	180.00	-200.2	0.0	200.2	195.1	5.13	39.049	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	180.00	-200.2	0.0	200.2	194.6	5.58	35.901	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	180.00	-200.2	0.0	200.2	194.2	6.03	33.223	
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	180.00	-200.2	0.0	200.2	193.7	6.48	30.916	
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	180.00	-200.2	0.0	200.2	193.3	6.93	28.910	
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	180.00	-200.2	0.0	200.2	192.8	7.37	27.147	
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	180.00	-200.2	0.0	200.2	192.4	7.82	25.588	
1,900.0	1,900.0	1,901.0	1,901.0	4.1	4.1	180.00	-200.2	0.0	200.2	191.9	8.27	24.198	
2,000.0	2,000.0	2,002.4	2,002.4	4.3	4.4	-75.71	-199.8	-1.3	199.5	190.8	8.70	22.939	
2,100.0	2,099.9	2,103.2	2,103.1	4.5	4.6	-75.62	-198.9	-5.0	197.7	188.6	9.10	21.725	
2,200.0	2,199.9	2,203.1	2,203.0	4.7	4.8	-75.45	-197.8	-9.1	195.7	186.2	9.51	20.586	
2,300.0	2,299.8	2,303.1	2,302.8	4.9	5.0	-75.27	-196.7	-13.2	193.7	183.8	9.92	19.529	
2,400.0	2,399.7	2,403.1	2,402.7	5.1	5.2	-75.09	-195.6	-17.3	191.8	181.4	10.34	18.548	
2,500.0	2,499.7	2,503.1	2,502.6	5.3	5.4	-74.91	-194.5	-21.4	189.8	179.0	10.76	17.637	
2,600.0	2,599.6	2,603.0	2,602.5	5.6	5.6	-74.72	-193.4	-25.5	187.8	176.6	11.19	16.788	
2,700.0	2,699.5	2,703.0	2,702.4	5.8	5.9	-74.53	-192.3	-29.6	185.8	174.2	11.62	15.998	
2,800.0	2,799.5	2,803.0	2,802.3	6.0	6.1	-74.34	-191.2	-33.7	183.9	171.8	12.05	15.259	
2,900.0	2,899.4	2,903.0	2,902.2	6.2	6.3	-74.14	-190.1	-37.8	181.9	169.4	12.48	14.570	
3,000.0	2,999.3	3,003.0	3,002.1	6.4	6.5	-73.94	-189.1	-41.9	179.9	167.0	12.92	13.924	
3,100.0	3,099.3	3,102.9	3,102.0	6.6	6.7	-73.73	-188.0	-46.0	177.9	164.6	13.36	13.318	
3,200.0	3,199.2	3,202.9	3,201.8	6.8	7.0	-73.52	-186.9	-50.1	176.0	162.2	13.80	12.749	
3,300.0	3,299.1	3,302.9	3,301.7	7.1	7.2	-73.30	-185.8	-54.2	174.0	159.8	14.25	12.214	
3,400.0	3,399.1	3,402.9	3,401.6	7.3	7.4	-73.08	-184.7	-58.3	172.1	157.4	14.69	11.711	
3,500.0	3,499.0	3,502.9	3,501.5	7.5	7.7	-72.85	-183.6	-62.4	170.1	155.0	15.14	11.236	
3,600.0	3,598.9	3,602.8	3,601.4	7.7	7.9	-72.62	-182.5	-66.6	168.2	152.6	15.59	10.787	
3,700.0	3,698.9	3,702.8	3,701.3	7.9	8.1	-72.38	-181.4	-70.7	166.2	150.2	16.04	10.363	
3,800.0	3,798.8	3,802.8	3,801.2	8.2	8.3	-72.13	-180.3	-74.8	164.3	147.8	16.49	9.962	
3,900.0	3,898.7	3,902.8	3,901.1	8.4	8.6	-71.88	-179.2	-78.9	162.3	145.4	16.94	9.582	
4,000.0	3,998.7	4,002.7	4,000.9	8.6	8.8	-71.63	-178.2	-83.0	160.4	143.0	17.39	9.221	
4,100.0	4,098.6	4,102.7	4,100.8	8.8	9.0	-71.37	-177.1	-87.1	158.4	140.6	17.85	8.878	
4,200.0	4,198.5	4,202.7	4,200.7	9.1	9.3	-71.10	-176.0	-91.2	156.5	138.2	18.30	8.551	
4,300.0	4,298.5	4,302.7	4,300.6	9.3	9.5	-70.82	-174.9	-95.3	154.6	135.8	18.75	8.241	
4,400.0	4,398.4	4,402.7	4,400.5	9.5	9.7	-70.54	-173.8	-99.4	152.6	133.4	19.21	7.945	
4,500.0	4,498.3	4,502.6	4,500.4	9.7	10.0	-70.25	-172.7	-103.5	150.7	131.0	19.67	7.663	
4,600.0	4,598.3	4,602.6	4,600.3	10.0	10.2	-69.95	-171.6	-107.6	148.8	128.7	20.12	7.394	
4,700.0	4,698.2	4,702.6	4,700.2	10.2	10.4	-69.65	-170.5	-111.7	146.9	126.3	20.58	7.136	
4,800.0	4,798.1	4,802.6	4,800.1	10.4	10.6	-69.34	-169.4	-115.8	145.0	123.9	21.04	6.890	
4,900.0	4,898.1	4,902.6	4,899.9	10.7	10.9	-69.02	-168.3	-119.9	143.1	121.6	21.50	6.654	
5,000.0	4,998.0	5,002.5	4,999.8	10.9	11.1	-68.69	-167.3	-124.0	141.1	119.2	21.96	6.429	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company: McElvain Energy, Inc.
 Project: Sec. 30 T18S R34E
 Reference Site: EK 30 WCD Federal Com
 Site Error: 0.0 usft
 Reference Well: EK 30 BS2 Federal Com 4H
 Well Error: 0.0 usft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
 TVD Reference: WELL @ 3883.0usft (Original Well Elev)
 MD Reference: WELL @ 3883.0usft (Original Well Elev)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: EDM 5000.1 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 WCD Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Site Error: 0.0 usft
Survey Program: 0-MWD														Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.0	5,097.9	5,102.5	5,099.7	11.1	11.3	-68.35	-166.2	-128.1	139.2	116.8	22.41	6.212		
5,200.0	5,197.9	5,202.5	5,199.6	11.3	11.6	-68.00	-165.1	-132.2	137.4	114.5	22.87	6.005		
5,300.0	5,297.8	5,302.5	5,299.5	11.6	11.8	-67.64	-164.0	-136.3	135.5	112.1	23.33	5.806		
5,400.0	5,397.8	5,402.4	5,399.4	11.8	12.0	-67.28	-162.9	-140.4	133.6	109.8	23.79	5.614		
5,500.0	5,497.7	5,502.4	5,499.3	12.0	12.3	-66.90	-161.8	-144.5	131.7	107.5	24.25	5.431		
5,600.0	5,597.6	5,602.4	5,599.2	12.3	12.5	-66.51	-160.7	-148.6	129.8	105.1	24.71	5.254		
5,700.0	5,697.6	5,702.4	5,699.1	12.5	12.7	-66.11	-159.6	-152.7	128.0	102.8	25.17	5.084		
5,800.0	5,797.5	5,802.4	5,798.9	12.7	13.0	-65.69	-158.5	-156.8	126.1	100.5	25.63	4.920		
5,900.0	5,897.4	5,902.3	5,898.8	12.9	13.2	-65.27	-157.4	-160.9	124.3	98.2	26.09	4.762		
6,000.0	5,997.4	6,002.3	5,998.7	13.2	13.4	-64.83	-156.4	-165.0	122.4	95.9	26.55	4.610		
6,100.0	6,097.3	6,102.3	6,098.6	13.4	13.7	-64.38	-155.3	-169.1	120.6	93.6	27.02	4.463		
6,200.0	6,197.2	6,202.3	6,198.5	13.6	13.9	-63.92	-154.2	-173.2	118.8	91.3	27.48	4.322		
6,300.0	6,297.2	6,302.3	6,298.4	13.9	14.1	-63.44	-153.1	-177.3	116.9	89.0	27.94	4.186		
6,400.0	6,397.1	6,402.2	6,398.3	14.1	14.4	-62.94	-152.0	-181.4	115.1	86.7	28.40	4.054		
6,500.0	6,497.0	6,502.2	6,498.2	14.3	14.6	-62.43	-150.9	-185.5	113.3	84.5	28.86	3.927		
6,600.0	6,597.0	6,602.2	6,598.0	14.6	14.9	-61.91	-149.8	-189.6	111.5	82.2	29.32	3.804		
6,700.0	6,696.9	6,702.2	6,697.9	14.8	15.1	-61.36	-148.7	-193.7	109.7	80.0	29.78	3.685		
6,800.0	6,796.8	6,802.1	6,797.8	15.0	15.3	-60.80	-147.6	-197.8	108.0	77.7	30.24	3.570		
6,900.0	6,896.8	6,902.1	6,897.7	15.3	15.6	-60.22	-146.5	-201.9	106.2	75.5	30.70	3.459		
7,000.0	6,996.7	7,002.1	6,997.6	15.5	15.8	-59.62	-145.5	-206.1	104.4	73.3	31.16	3.352		
7,100.0	7,096.6	7,102.1	7,097.5	15.7	16.0	-59.00	-144.4	-210.2	102.7	71.1	31.61	3.249		
7,200.0	7,196.6	7,202.1	7,197.4	16.0	16.3	-58.36	-143.3	-214.3	101.0	68.9	32.07	3.148		
7,300.0	7,296.5	7,302.0	7,297.3	16.2	16.5	-57.69	-142.2	-218.4	99.3	66.7	32.53	3.051		
7,400.0	7,396.4	7,402.0	7,397.2	16.4	16.7	-57.01	-141.1	-222.5	97.6	64.6	32.99	2.957		
7,500.0	7,496.4	7,502.0	7,497.0	16.6	17.0	-56.29	-140.0	-226.6	95.9	62.4	33.45	2.866		
7,600.0	7,596.3	7,602.0	7,596.9	16.9	17.2	-55.56	-138.9	-230.7	94.2	60.3	33.90	2.778		
7,700.0	7,696.2	7,702.0	7,696.8	17.1	17.4	-54.79	-137.8	-234.8	92.5	58.2	34.36	2.693		
7,800.0	7,796.2	7,801.9	7,796.7	17.3	17.7	-54.00	-136.7	-238.9	90.9	56.1	34.81	2.611		
7,900.0	7,896.1	7,901.9	7,896.6	17.6	17.9	-53.18	-135.6	-243.0	89.3	54.0	35.27	2.532		
8,000.0	7,996.0	8,001.9	7,996.5	17.8	18.1	-52.33	-134.6	-247.1	87.7	52.0	35.72	2.455		
8,100.0	8,096.0	8,101.9	8,096.4	18.0	18.4	-51.45	-133.5	-251.2	86.1	49.9	36.17	2.380		
8,200.0	8,195.9	8,201.8	8,196.3	18.3	18.6	-50.54	-132.4	-255.3	84.5	47.9	36.62	2.308		
8,300.0	8,295.8	8,301.8	8,296.1	18.5	18.9	-49.59	-131.3	-259.4	83.0	45.9	37.08	2.239		
8,400.0	8,395.8	8,401.8	8,396.0	18.7	19.1	-48.60	-130.2	-263.5	81.5	44.0	37.52	2.171		
8,500.0	8,495.7	8,501.8	8,495.9	19.0	19.3	-47.58	-129.1	-267.6	80.0	42.0	37.97	2.107		
8,600.0	8,595.6	8,601.8	8,595.8	19.2	19.6	-46.52	-128.0	-271.7	78.5	40.1	38.42	2.044		
8,700.0	8,695.6	8,701.7	8,695.7	19.4	19.8	-45.42	-126.9	-275.8	77.1	38.2	38.86	1.984		
8,800.0	8,795.5	8,801.7	8,795.6	19.7	20.0	-44.28	-125.8	-279.9	75.7	36.4	39.31	1.925		
8,900.0	8,895.4	8,901.7	8,895.5	19.9	20.3	-43.10	-124.7	-284.0	74.3	34.6	39.75	1.869		
9,000.0	8,995.4	9,001.7	8,995.4	20.1	20.5	-41.87	-123.6	-288.1	73.0	32.8	40.19	1.816		
9,100.0	9,095.3	9,101.7	9,095.3	20.4	20.7	-40.60	-122.6	-292.2	71.7	31.0	40.63	1.764		
9,200.0	9,195.2	9,201.6	9,195.1	20.6	21.0	-39.28	-121.5	-296.3	70.4	29.3	41.07	1.714		
9,300.0	9,295.2	9,301.6	9,295.0	20.8	21.2	-37.91	-120.4	-300.4	69.2	27.7	41.50	1.666		
9,400.0	9,395.1	9,401.6	9,394.9	21.1	21.4	-36.50	-119.3	-304.5	68.0	26.0	41.94	1.621 CC, ES		
9,451.3	9,446.3	9,452.9	9,446.1	21.2	21.6	-97.73	-118.7	-306.6	68.3	26.1	42.17	1.620		
9,500.0	9,495.0	9,501.5	9,494.8	21.3	21.7	-116.36	-118.2	-308.6	68.4	26.1	42.34	1.615 SF		
9,600.0	9,592.9	9,599.8	9,592.9	21.5	21.9	-138.59	-117.1	-312.7	82.9	40.7	42.21	1.964		
9,700.0	9,684.8	9,692.1	9,685.2	21.7	22.1	-149.74	-116.1	-316.4	116.5	75.6	40.97	2.844		
9,800.0	9,766.6	9,774.6	9,767.6	21.8	22.3	-156.41	-115.2	-319.8	169.7	131.1	38.66	4.390		
9,900.0	9,834.6	9,843.7	9,836.6	22.0	22.5	-159.41	-114.5	-322.7	240.0	204.1	35.85	6.692		
10,000.0	9,886.1	9,896.2	9,889.1	22.2	22.6	-159.01	-113.9	-324.8	323.7	290.3	33.35	9.704		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK 31 WCD Federal Com 4H - Wellbore #1 - Design #1 29Jul15 kjs														Offset Site Error:	0.0 usft
Survey Program: 0:MWD														Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning		Warning		Warning		Warning		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,100.0	9,918.7	9,929.9	9,922.8	22.6	22.7	-151.68	-113.5	-326.2	416.9	383.8	33.01	12.627			
10,200.0	9,930.9	9,943.4	9,936.2	23.2	22.7	-104.54	-113.4	-326.8	515.2	471.3	43.87	11.742			
10,300.0	9,928.6	9,942.3	9,935.2	23.9	22.7	-77.61	-113.4	-326.7	614.7	569.5	45.23	13.591			
10,400.0	9,925.8	9,940.8	9,933.7	24.7	22.7	-76.01	-113.4	-326.6	714.4	668.5	45.87	15.574			
10,500.0	9,923.0	9,939.3	9,932.1	25.6	22.7	-74.43	-113.4	-326.6	814.2	767.6	46.59	17.475			
10,600.0	9,920.2	9,937.7	9,930.6	26.6	22.7	-72.87	-113.4	-326.5	914.0	866.6	47.37	19.295			
10,700.0	9,917.4	9,936.2	9,929.1	27.7	22.7	-71.33	-113.5	-326.5	1,013.8	965.6	48.19	21.036			
10,800.0	9,914.6	9,934.7	9,927.5	28.9	22.7	-69.81	-113.5	-326.4	1,113.7	1,064.6	49.06	22.701			
10,900.0	9,911.9	9,933.2	9,926.0	30.1	22.7	-68.32	-113.5	-326.3	1,213.5	1,163.6	49.95	24.297			
11,000.0	9,909.1	9,931.6	9,924.5	31.4	22.7	-66.85	-113.5	-326.3	1,313.4	1,262.6	50.85	25.828			
11,100.0	9,906.3	9,930.1	9,922.9	32.7	22.7	-65.42	-113.5	-326.2	1,413.4	1,361.6	51.77	27.300			
11,200.0	9,903.5	9,928.6	9,921.4	34.1	22.7	-64.01	-113.5	-326.1	1,513.3	1,460.6	52.69	28.719			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error
EK 30 WCD Federal Com - EK 'B' 8701 JV-P #1 - Wellbore #1 - Wellbore #1													0.0 usft
Survey Program:	214-MWD												Offset Well Error
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centro	Between	Between	Minimum	Separation		
Depth	Depth	Depth	Depth			Toolface	+N-S	Centros	Ellipses	Separation	Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)			
11,500.0	9,895.1	9,900.0	9,898.8	38.5	20.7	-90.92	3,172.3	-601.9	1,495.2	1,436.2	59.03	25.329	
11,600.0	9,892.3	9,900.0	9,898.8	40.1	20.7	-90.92	3,172.3	-601.9	1,396.1	1,335.5	60.57	23.050	
11,700.0	9,889.5	9,900.0	9,898.8	41.6	20.7	-90.92	3,172.3	-601.9	1,297.1	1,235.0	62.13	20.878	
11,800.0	9,886.7	9,900.0	9,898.8	43.2	20.7	-90.92	3,172.3	-601.9	1,198.3	1,134.6	63.71	18.808	
11,900.0	9,883.9	9,900.0	9,898.8	44.8	20.7	-90.92	3,172.3	-601.9	1,099.7	1,034.4	65.32	16.837	
12,000.0	9,881.2	9,900.0	9,898.8	46.4	20.7	-90.92	3,172.3	-601.9	1,001.4	934.5	66.94	14.960	
12,100.0	9,878.4	9,900.0	9,898.8	48.1	20.7	-90.92	3,172.3	-601.9	903.5	834.9	68.58	13.175	
12,200.0	9,875.6	9,900.0	9,898.8	49.7	20.7	-90.92	3,172.3	-601.9	806.1	735.9	70.23	11.478	
12,300.0	9,872.8	9,902.1	9,900.9	51.4	20.7	-91.55	3,172.4	-601.9	709.4	637.5	71.87	9.870	
12,400.0	9,870.0	9,900.9	9,899.7	53.0	20.7	-91.19	3,172.4	-601.9	613.7	540.2	73.56	8.343	
12,500.0	9,867.2	9,899.7	9,898.5	54.7	20.7	-90.83	3,172.3	-601.9	519.7	444.5	75.26	6.906	
12,600.0	9,864.4	9,898.5	9,897.3	56.4	20.7	-90.48	3,172.3	-601.9	428.5	351.5	76.97	5.567	
12,700.0	9,861.6	9,897.3	9,896.2	58.1	20.7	-90.13	3,172.3	-601.9	342.1	263.4	78.68	4.348	
12,800.0	9,858.8	9,896.2	9,895.0	59.8	20.7	-89.78	3,172.3	-601.8	265.4	185.1	80.40	3.302	
12,900.0	9,856.0	9,895.0	9,893.8	61.6	20.7	-89.44	3,172.3	-601.8	209.5	127.4	82.12	2.552	
12,982.8	9,853.7	9,894.1	9,892.9	63.0	20.7	-89.16	3,172.3	-601.8	192.5	108.9	83.55	2.304 CC, ES, SF	
13,000.0	9,853.2	9,893.9	9,892.7	63.3	20.7	-89.10	3,172.3	-601.8	193.2	109.4	83.85	2.305	
13,100.0	9,850.5	9,892.7	9,891.6	65.0	20.7	-88.76	3,172.2	-601.8	225.3	139.8	85.58	2.633	
13,200.0	9,847.7	9,891.6	9,890.4	66.8	20.7	-88.42	3,172.2	-601.8	290.2	202.9	87.31	3.323	
13,300.0	9,844.9	9,890.5	9,889.3	68.5	20.7	-88.09	3,172.2	-601.8	371.0	281.9	89.05	4.166	
13,400.0	9,842.1	9,889.4	9,888.2	70.2	20.7	-87.76	3,172.2	-601.7	459.4	368.6	90.79	5.060	
13,500.0	9,839.3	9,888.3	9,887.1	72.0	20.7	-87.44	3,172.2	-601.7	551.8	459.3	92.53	5.963	
13,600.0	9,836.5	9,887.2	9,886.0	73.8	20.7	-87.12	3,172.1	-601.7	646.5	552.2	94.28	6.857	
13,700.0	9,833.7	9,886.2	9,885.0	75.5	20.7	-86.80	3,172.1	-601.7	742.5	646.5	96.02	7.733	
13,800.0	9,830.9	9,885.1	9,883.9	77.3	20.7	-86.48	3,172.1	-601.7	839.5	741.7	97.76	8.587	
13,900.0	9,828.1	9,884.0	9,882.9	79.1	20.7	-86.17	3,172.1	-601.7	937.1	837.6	99.51	9.417	
14,000.0	9,825.3	9,883.0	9,881.8	80.8	20.7	-85.86	3,172.1	-601.6	1,035.2	933.9	101.25	10.224	
14,100.0	9,822.5	9,882.0	9,880.8	82.6	20.7	-85.55	3,172.1	-601.6	1,133.6	1,030.6	103.00	11.006	
14,200.0	9,819.8	9,880.9	9,879.7	84.4	20.7	-85.25	3,172.0	-601.6	1,232.2	1,127.5	104.74	11.764	
14,300.0	9,817.0	9,879.9	9,878.7	86.2	20.7	-84.95	3,172.0	-601.6	1,331.1	1,224.6	106.49	12.500	
14,400.0	9,814.2	9,878.9	9,877.7	87.9	20.7	-84.65	3,172.0	-601.6	1,430.1	1,321.9	108.23	13.214	



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK Penrose Sand Unit #401 - Wellbore #1 - Wellbore #1														Offset Site Error:	0.0 usft
Survey Program: 833:MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,700.0	9,917.4	9,942.1	9,940.5	27.7	20.4	91.64		2,030.9	598.6	1,454.2	1,406.4	47.80	30.421		
10,800.0	9,914.6	9,940.5	9,938.9	28.9	20.4	91.55		2,030.9	598.6	1,380.7	1,331.8	48.98	28.191		
10,900.0	9,911.9	9,939.0	9,937.4	30.1	20.4	91.46		2,030.9	598.7	1,310.7	1,260.5	50.22	26.102		
11,000.0	9,909.1	9,937.4	9,935.8	31.4	20.4	91.37		2,030.9	598.7	1,244.9	1,193.3	51.52	24.164		
11,100.0	9,906.3	9,935.9	9,934.3	32.7	20.4	91.27		2,030.9	598.7	1,183.8	1,130.9	52.87	22.391		
11,200.0	9,903.5	9,934.4	9,932.8	34.1	20.4	91.18		2,030.8	598.7	1,128.2	1,074.0	54.27	20.791		
11,300.0	9,900.7	9,932.8	9,931.2	35.6	20.4	91.09		2,030.8	598.7	1,079.1	1,023.4	55.70	19.373		
11,400.0	9,897.9	9,931.3	9,929.7	37.0	20.4	91.00		2,030.8	598.7	1,037.3	980.2	57.18	18.143		
11,500.0	9,895.1	9,929.8	9,928.2	38.5	20.4	90.91		2,030.8	598.8	1,003.8	945.1	58.68	17.106		
11,600.0	9,892.3	9,928.2	9,926.6	40.1	20.4	90.82		2,030.8	598.8	979.4	919.2	60.21	16.265		
11,700.0	9,889.5	9,926.7	9,925.1	41.6	20.4	90.72		2,030.7	598.8	964.8	903.0	61.77	15.618		
11,792.1	9,887.0	9,925.3	9,923.7	43.1	20.4	90.64		2,030.7	598.8	960.4	897.2	63.23	15.189 CC		
11,800.0	9,886.7	9,925.2	9,923.6	43.2	20.4	90.63		2,030.7	598.8	960.4	897.1	63.35	15.160 ES		
11,900.0	9,883.9	9,923.7	9,922.0	44.8	20.4	90.54		2,030.7	598.8	966.4	901.5	64.95	14.879		
12,000.0	9,881.2	9,922.1	9,920.5	46.4	20.4	90.45		2,030.7	598.9	982.6	916.0	66.57	14.761 SF		
12,100.0	9,878.4	9,920.6	9,919.0	48.1	20.4	90.36		2,030.7	598.9	1,008.5	940.3	68.20	14.787		
12,200.0	9,875.6	9,919.1	9,917.5	49.7	20.4	90.27		2,030.6	598.9	1,043.4	973.5	69.85	14.937		
12,300.0	9,872.8	9,917.6	9,915.9	51.4	20.4	90.18		2,030.6	598.9	1,086.4	1,014.9	71.51	15.191		
12,400.0	9,870.0	9,916.0	9,914.4	53.0	20.4	90.09		2,030.6	598.9	1,136.6	1,063.4	73.19	15.530		
12,500.0	9,867.2	9,914.5	9,912.9	54.7	20.3	90.00		2,030.6	598.9	1,193.0	1,118.2	74.87	15.935		
12,600.0	9,864.4	9,913.0	9,911.4	56.4	20.3	89.91		2,030.6	599.0	1,254.9	1,178.4	76.56	16.391		
12,700.0	9,861.6	9,911.5	9,909.9	58.1	20.3	89.82		2,030.6	599.0	1,321.5	1,243.2	78.26	16.885		
12,800.0	9,858.8	9,910.0	9,908.4	59.8	20.3	89.73		2,030.5	599.0	1,392.1	1,312.1	79.97	17.407		
12,900.0	9,856.0	9,908.5	9,906.9	61.6	20.3	89.64		2,030.5	599.0	1,466.1	1,384.4	81.69	17.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - EK Penrose Sand Unit #402 - Wellbore #1 - Wellbore #1													Offset Site Error
Survey Program 182-MWD													Offset Well Error
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	14.0	14.0	0.0	0.0	44.38	739.6	723.8	1,034.8				
100.0	100.0	113.8	113.8	0.1	0.1	44.36	739.8	723.6	1,034.9	1,034.6	0.21	4,974.812	
200.0	200.0	213.8	213.8	0.3	0.3	44.32	740.4	723.1	1,034.9	1,034.3	0.57	1,821.577	
300.0	300.0	313.8	313.8	0.5	0.5	44.29	740.8	722.6	1,034.9	1,033.9	1.00	1,037.779	
400.0	400.0	413.8	413.8	0.8	0.7	44.26	741.2	722.3	1,034.9	1,033.5	1.43	724.142	
500.0	500.0	513.8	513.8	1.0	0.9	44.22	741.6	721.8	1,034.9	1,033.1	1.86	555.593	
600.0	600.0	613.7	613.7	1.2	1.1	44.18	742.2	721.3	1,035.0	1,032.7	2.30	450.700	
700.0	700.0	713.7	713.6	1.4	1.3	44.13	742.9	720.6	1,035.0	1,032.3	2.73	379.130	
800.0	800.0	813.6	813.6	1.7	1.5	44.06	743.8	719.8	1,035.0	1,031.9	3.16	327.182	
900.0	900.0	913.6	913.5	1.9	1.7	43.99	744.7	718.9	1,035.1	1,031.5	3.60	287.721	
1,000.0	1,000.0	1,013.6	1,013.6	2.1	1.9	43.92	745.5	718.1	1,035.1	1,031.1	4.03	256.738	
1,100.0	1,100.0	1,113.6	1,113.6	2.3	2.1	43.86	746.3	717.3	1,035.2	1,030.7	4.47	231.781	
1,200.0	1,200.0	1,213.7	1,213.6	2.6	2.3	43.81	747.1	716.6	1,035.2	1,030.3	4.90	211.247	
1,300.0	1,300.0	1,313.7	1,313.6	2.8	2.6	43.76	747.7	716.0	1,035.2	1,029.9	5.33	194.056	
1,400.0	1,400.0	1,413.7	1,413.6	3.0	2.8	43.71	748.4	715.3	1,035.3	1,029.5	5.77	179.456	
1,500.0	1,500.0	1,513.6	1,513.6	3.2	3.0	43.65	749.1	714.6	1,035.3	1,029.1	6.20	166.901	
1,600.0	1,600.0	1,613.6	1,613.5	3.5	3.2	43.59	749.9	713.9	1,035.4	1,028.7	6.64	155.989	
1,700.0	1,700.0	1,713.5	1,713.4	3.7	3.4	43.52	750.8	713.0	1,035.4	1,028.3	7.07	146.419	
1,800.0	1,800.0	1,813.5	1,813.4	3.9	3.6	43.45	751.7	712.1	1,035.5	1,028.0	7.51	137.940	
1,900.0	1,900.0	1,913.5	1,913.4	4.1	3.8	43.38	752.6	711.2	1,035.5	1,027.6	7.95	130.322	
2,000.0	2,000.0	2,013.5	2,013.4	4.3	4.0	43.31	753.6	710.3	1,036.7	1,028.3	8.38	123.762	
2,100.0	2,099.9	2,113.4	2,113.3	4.5	4.3	43.24	754.5	709.4	1,039.6	1,030.9	8.78	118.381	
2,200.0	2,199.9	2,213.4	2,213.2	4.7	4.5	43.17	755.5	708.5	1,042.8	1,033.6	9.19	113.437	
2,300.0	2,299.8	2,313.3	2,313.2	4.9	4.7	43.10	756.4	707.6	1,045.9	1,036.3	9.61	108.876	
2,400.0	2,399.7	2,413.2	2,413.1	5.1	4.9	43.03	757.4	706.6	1,049.0	1,039.0	10.03	104.629	
2,500.0	2,499.7	2,513.1	2,513.0	5.3	5.1	42.96	758.4	705.6	1,052.2	1,041.7	10.45	100.703	
2,600.0	2,599.6	2,613.0	2,612.9	5.6	5.3	42.89	759.5	704.6	1,055.3	1,044.4	10.87	97.065	
2,700.0	2,699.5	2,712.9	2,712.8	5.8	5.6	42.82	760.7	703.4	1,058.5	1,047.2	11.30	93.685	
2,800.0	2,799.5	2,812.9	2,812.7	6.0	5.8	42.75	761.9	702.2	1,061.6	1,049.9	11.73	90.536	
2,900.0	2,899.4	2,912.8	2,912.6	6.2	6.0	42.68	763.2	701.0	1,064.8	1,052.6	12.16	87.575	
3,000.0	2,999.3	3,012.7	3,012.4	6.4	6.2	42.61	764.6	699.7	1,067.9	1,055.3	12.59	84.810	
3,100.0	3,099.3	3,112.6	3,112.3	6.6	6.4	42.54	766.1	698.3	1,071.1	1,058.1	13.03	82.222	
3,200.0	3,199.2	3,212.5	3,212.2	6.8	6.7	42.47	767.6	696.8	1,074.2	1,060.8	13.46	79.795	
3,300.0	3,299.1	3,312.4	3,312.1	7.1	6.9	42.40	769.2	695.3	1,077.4	1,063.5	13.90	77.515	
3,400.0	3,399.1	3,412.3	3,412.0	7.3	7.1	42.33	770.8	693.7	1,080.6	1,066.3	14.34	75.370	
3,500.0	3,499.0	3,512.2	3,511.8	7.5	7.3	42.26	772.6	692.0	1,083.8	1,069.0	14.78	73.349	
3,600.0	3,598.9	3,612.1	3,611.7	7.7	7.6	42.19	774.4	690.2	1,087.0	1,071.7	15.21	71.440	
3,700.0	3,698.9	3,712.0	3,711.5	7.9	7.8	42.12	776.3	688.4	1,090.1	1,074.5	15.66	69.629	
3,800.0	3,798.8	3,811.8	3,811.4	8.2	8.0	42.05	778.3	686.5	1,093.3	1,077.2	16.10	67.909	
3,900.0	3,898.7	3,911.7	3,911.2	8.4	8.2	41.98	780.4	684.4	1,096.5	1,080.0	16.54	66.280	
4,000.0	3,998.7	4,011.5	4,011.0	8.6	8.5	41.91	782.7	682.2	1,099.8	1,082.8	16.99	64.733	
4,100.0	4,098.6	4,111.3	4,110.7	8.8	8.7	41.84	785.1	679.9	1,103.0	1,085.6	17.43	63.265	
4,200.0	4,198.5	4,211.4	4,210.7	9.1	8.9	41.77	787.5	677.5	1,106.2	1,088.3	17.87	61.914	
4,300.0	4,298.5	4,311.5	4,310.8	9.3	9.1	41.70	789.7	675.4	1,109.4	1,091.1	18.30	60.638	
4,400.0	4,398.4	4,411.7	4,410.9	9.5	9.3	41.63	791.7	673.5	1,112.6	1,093.9	18.73	59.418	
4,500.0	4,498.3	4,511.8	4,511.1	9.7	9.5	41.56	793.4	671.9	1,115.8	1,096.7	19.16	58.251	
4,600.0	4,598.3	4,612.0	4,611.2	10.0	9.7	41.49	794.8	670.5	1,119.0	1,099.4	19.59	57.134	
4,700.0	4,698.2	4,711.8	4,710.9	10.2	9.9	41.42	796.2	669.2	1,122.1	1,102.1	20.01	56.066	
4,800.0	4,798.1	4,811.4	4,810.6	10.4	10.2	41.35	797.9	667.5	1,125.3	1,104.9	20.45	55.039	
4,900.0	4,898.1	4,911.3	4,910.4	10.7	10.4	41.28	799.8	665.6	1,128.5	1,107.6	20.89	54.012	
5,000.0	4,998.0	5,011.2	5,010.3	10.9	10.6	41.21	801.8	663.7	1,131.7	1,110.4	21.34	53.028	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

EK 30 WCD Federal Com - EK Penrose Sand Unit #402 - Wellbore #1 - Wellbore #1													Offset Site Error	0.0 usft
Survey Program: 182-MWD													Offset Well Error	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.0	5,097.9	5,111.1	5,110.1	11.1	10.8	147.13	803.9	661.7	1,134.9	1,113.1	21.79	52.084		
5,200.0	5,197.9	5,211.0	5,210.0	11.3	11.1	147.08	806.0	659.7	1,138.1	1,115.9	22.24	51.178		
5,300.0	5,297.8	5,310.9	5,309.8	11.6	11.3	147.03	808.2	657.6	1,141.3	1,118.7	22.69	50.307		
5,400.0	5,397.8	5,410.8	5,409.7	11.8	11.5	146.98	810.4	655.5	1,144.6	1,121.4	23.14	49.468		
5,500.0	5,497.7	5,510.8	5,509.6	12.0	11.7	146.92	812.5	653.4	1,147.8	1,124.2	23.59	48.680		
5,600.0	5,597.6	5,610.7	5,609.5	12.3	12.0	146.87	814.7	651.2	1,151.0	1,127.0	24.04	47.881		
5,700.0	5,697.6	5,710.7	5,709.4	12.5	12.2	146.82	816.9	649.1	1,154.2	1,129.7	24.49	47.130		
5,800.0	5,797.5	5,810.6	5,809.3	12.7	12.4	146.76	819.1	647.0	1,157.5	1,132.5	24.94	46.407		
5,900.0	5,897.4	5,910.5	5,909.2	12.9	12.7	146.71	821.3	644.9	1,160.7	1,135.3	25.39	45.709		
6,000.0	5,997.4	6,010.5	6,009.1	13.2	12.9	146.66	823.5	642.8	1,163.9	1,138.1	25.84	45.034		
6,100.0	6,097.3	6,110.6	6,109.2	13.4	13.1	146.61	825.7	640.7	1,167.1	1,140.9	26.28	44.406		
6,200.0	6,197.2	6,210.9	6,209.4	13.6	13.3	146.58	827.5	638.9	1,170.3	1,143.6	26.72	43.807		
6,300.0	6,297.2	6,311.1	6,309.6	13.9	13.5	146.57	829.1	637.4	1,173.5	1,146.4	27.15	43.226		
6,400.0	6,397.1	6,411.4	6,409.9	14.1	13.7	146.58	830.4	636.1	1,176.7	1,149.1	27.58	42.663		
6,500.0	6,497.0	6,511.5	6,510.1	14.3	13.9	146.61	831.4	635.1	1,179.8	1,151.8	28.01	42.121		
6,600.0	6,597.0	6,611.6	6,610.1	14.6	14.1	146.65	832.3	634.3	1,182.9	1,154.5	28.43	41.613		
6,700.0	6,696.9	6,711.6	6,710.1	14.8	14.3	146.69	833.2	633.5	1,186.0	1,157.2	28.84	41.119		
6,800.0	6,796.8	6,811.6	6,810.1	15.0	14.5	146.73	833.9	632.7	1,189.1	1,159.8	29.26	40.640		
6,900.0	6,896.8	6,911.6	6,910.1	15.3	14.7	146.78	834.6	632.0	1,192.2	1,162.5	29.68	40.173		
7,000.0	6,996.7	7,011.6	7,010.1	15.5	14.9	146.84	835.3	631.4	1,195.3	1,165.2	30.09	39.719		
7,100.0	7,096.6	7,111.6	7,110.1	15.7	15.1	146.89	835.9	630.9	1,198.4	1,167.9	30.51	39.278		
7,200.0	7,196.6	7,211.6	7,210.1	16.0	15.3	146.95	836.4	630.4	1,201.5	1,170.5	30.93	38.848		
7,300.0	7,296.5	7,311.6	7,310.1	16.2	15.5	147.02	836.8	629.9	1,204.6	1,173.2	31.34	38.429		
7,400.0	7,396.4	7,411.6	7,410.1	16.4	15.7	147.09	837.2	629.6	1,207.6	1,175.9	31.76	38.022		
7,500.0	7,496.4	7,511.6	7,510.0	16.6	15.8	147.16	837.5	629.2	1,210.7	1,178.5	32.18	37.618		
7,600.0	7,596.3	7,611.3	7,609.8	16.9	16.1	147.22	838.0	628.8	1,213.8	1,181.2	32.62	37.214		
7,700.0	7,696.2	7,711.1	7,709.6	17.1	16.3	147.27	838.7	628.1	1,216.9	1,183.9	33.05	36.820		
7,800.0	7,796.2	7,810.9	7,809.3	17.3	16.5	147.30	839.5	627.3	1,220.0	1,186.5	33.48	36.437		
7,900.0	7,896.1	7,910.7	7,909.1	17.6	16.7	147.33	840.6	626.3	1,223.2	1,189.2	33.92	36.064		
8,000.0	7,996.0	8,010.5	8,008.9	17.8	16.9	147.34	841.8	625.1	1,226.3	1,192.0	34.35	35.695		
8,100.0	8,096.0	8,110.3	8,108.7	18.0	17.1	147.34	843.2	623.8	1,229.5	1,194.7	34.80	35.328		
8,200.0	8,195.9	8,210.2	8,208.6	18.3	17.3	147.33	844.7	622.3	1,232.6	1,197.4	35.24	34.975		
8,300.0	8,295.8	8,310.4	8,308.8	18.5	17.5	147.34	846.1	621.0	1,235.8	1,200.1	35.68	34.637		
8,400.0	8,395.8	8,410.6	8,408.9	18.7	17.7	147.36	847.2	619.9	1,238.9	1,202.8	36.11	34.306		
8,500.0	8,495.7	8,510.8	8,509.1	19.0	18.0	147.40	848.0	619.1	1,242.0	1,205.5	36.55	33.983		
8,600.0	8,595.6	8,610.9	8,609.3	19.2	18.2	147.45	848.6	618.6	1,245.1	1,208.2	36.98	33.668		
8,700.0	8,695.6	8,710.8	8,709.1	19.4	18.4	147.51	849.0	618.2	1,248.2	1,210.8	37.42	33.360		
8,800.0	8,795.5	8,810.4	8,808.7	19.7	18.6	147.56	849.7	617.5	1,251.3	1,213.5	37.85	33.059		
8,900.0	8,895.4	8,910.0	8,908.3	19.9	18.8	147.57	850.9	616.4	1,254.5	1,216.2	38.29	32.767		
9,000.0	8,995.4	9,009.8	9,008.1	20.1	19.0	147.56	852.4	614.9	1,257.7	1,218.9	38.72	32.480		
9,100.0	9,095.3	9,109.8	9,108.1	20.4	19.2	147.56	853.9	613.5	1,260.8	1,221.7	39.16	32.199		
9,200.0	9,195.2	9,209.9	9,208.1	20.6	19.4	147.56	855.3	612.1	1,264.0	1,224.4	39.59	31.923		
9,300.0	9,295.2	9,309.9	9,308.1	20.8	19.6	147.56	856.6	610.8	1,267.1	1,227.1	40.03	31.654		
9,400.0	9,395.1	9,409.9	9,408.1	21.1	19.8	147.58	857.8	609.7	1,270.3	1,229.8	40.47	31.390		
9,500.0	9,495.0	9,509.9	9,508.1	21.3	20.0	67.46	858.9	608.6	1,271.9	1,231.0	40.87	31.118		
9,600.0	9,592.9	9,608.1	9,606.3	21.5	20.3	53.64	860.0	607.6	1,261.1	1,220.3	40.88	30.850		
9,700.0	9,684.8	9,700.0	9,698.2	21.7	20.4	54.47	860.9	606.7	1,236.7	1,196.1	40.61	30.455		
9,800.0	9,766.6	9,700.0	9,698.2	21.8	20.4	56.70	860.9	606.7	1,203.5	1,163.4	40.13	29.988		
9,900.0	9,834.6	9,700.0	9,698.2	22.0	20.4	60.15	860.9	606.7	1,166.0	1,126.1	39.97	29.176		
10,000.0	9,886.1	9,700.0	9,698.2	22.2	20.4	64.45	860.9	606.7	1,125.5	1,085.2	40.29	27.933		
10,100.0	9,918.7	9,700.0	9,698.2	22.6	20.4	69.39	860.9	606.7	1,083.5	1,042.3	41.11	26.354		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design: EK 30 WCD Federal Com - EK Penrose Sand Unit #402 - Wellbore #1 - Wellbore #1													Offset Site Error:
Survey Program: 182-MWD													0.0 usft
Reference:													Offset Well Error:
Offset:													0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	9,930.9	9,700.0	9,698.2	23.2	20.4	74.55	860.9	606.7	1,042.2	1,000.0	42.22	24.686	
10,300.0	9,928.6	9,700.0	9,698.2	23.9	20.4	75.66	860.9	606.7	1,005.3	962.3	42.99	23.382	
10,400.0	9,925.8	9,700.0	9,698.2	24.7	20.4	75.66	860.9	606.7	977.1	933.3	43.76	22.328	
10,500.0	9,923.0	9,700.0	9,698.2	25.6	20.4	75.66	860.9	606.7	958.6	913.9	44.64	21.474	
10,600.0	9,920.2	9,700.0	9,698.2	26.6	20.4	75.66	860.9	606.7	950.2	904.6	45.61	20.835	
10,629.4	9,919.4	9,700.0	9,698.2	26.9	20.4	75.66	860.9	606.7	949.8	903.9	45.92	20.684 CC, ES	
10,700.0	9,917.4	9,700.0	9,698.2	27.7	20.4	75.66	860.9	606.7	952.4	905.7	46.67	20.409	
10,800.0	9,914.6	9,700.0	9,698.2	28.9	20.4	75.66	860.9	606.7	965.0	917.2	47.80	20.188	
10,900.0	9,911.9	9,700.0	9,698.2	30.1	20.4	75.66	860.9	606.7	987.6	938.6	49.00	20.155 SF	
11,000.0	9,909.1	9,700.0	9,698.2	31.4	20.4	75.66	860.9	606.7	1,019.5	969.3	50.26	20.286	
11,100.0	9,906.3	9,700.0	9,698.2	32.7	20.4	75.66	860.9	606.7	1,060.0	1,008.4	51.57	20.555	
11,200.0	9,903.5	9,700.0	9,698.2	34.1	20.4	75.66	860.9	606.7	1,108.0	1,055.1	52.92	20.936	
11,300.0	9,900.7	9,700.0	9,698.2	35.6	20.4	75.66	860.9	606.7	1,162.7	1,108.4	54.32	21.404	
11,400.0	9,897.9	9,700.0	9,698.2	37.0	20.4	75.66	860.9	606.7	1,223.1	1,167.3	55.75	21.937	
11,500.0	9,895.1	9,700.0	9,698.2	38.5	20.4	75.66	860.9	606.7	1,288.4	1,231.2	57.22	22.518	
11,600.0	9,892.3	9,700.0	9,698.2	40.1	20.4	75.66	860.9	606.7	1,358.0	1,299.3	58.71	23.131	
11,700.0	9,889.5	9,700.0	9,698.2	41.6	20.4	75.66	860.9	606.7	1,431.2	1,371.0	60.23	23.764	
11,800.0	9,886.7	9,700.0	9,698.2	43.2	20.4	75.66	860.9	606.7	1,507.5	1,445.7	61.76	24.407	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error		0.0 usft
EK 30 WCD Federal Com - McElvain #1 - Wellbore #1 - Wellbore #1														Offset Well Error		0.0 usft
Survey Program: 360-MWD																
Reference		Offset		Semi-Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
12,000.0	9,881.2	9,923.1	9,921.3	46.4	21.0	91.39	3,238.5	734.9	1,516.8	1,449.5	67.23	22.562				
12,100.0	9,878.4	9,921.0	9,919.2	48.1	21.0	91.29	3,238.5	734.9	1,453.2	1,384.4	68.86	21.104				
12,200.0	9,875.6	9,918.8	9,917.0	49.7	21.0	91.18	3,238.5	734.9	1,394.0	1,323.5	70.51	19.771				
12,300.0	9,872.8	9,916.7	9,914.9	51.4	21.0	91.07	3,238.5	735.0	1,339.6	1,267.4	72.17	18.562				
12,400.0	9,870.0	9,914.6	9,912.8	53.0	21.0	90.97	3,238.5	735.0	1,290.7	1,216.8	73.84	17.479				
12,500.0	9,867.2	9,912.4	9,910.6	54.7	21.0	90.86	3,238.5	735.0	1,247.8	1,172.3	75.52	16.523				
12,600.0	9,864.4	9,910.3	9,908.5	56.4	21.0	90.75	3,238.5	735.0	1,211.8	1,134.5	77.21	15.694				
12,700.0	9,861.6	9,908.1	9,906.3	58.1	21.0	90.65	3,238.5	735.0	1,183.1	1,104.1	78.92	14.992				
12,800.0	9,858.8	9,906.0	9,904.2	59.8	21.0	90.54	3,238.4	735.0	1,162.3	1,081.7	80.62	14.416				
12,900.0	9,856.0	9,903.9	9,902.1	61.6	21.0	90.43	3,238.4	735.0	1,149.8	1,067.5	82.34	13.964				
12,993.8	9,853.4	9,901.9	9,900.1	63.2	21.0	90.33	3,238.4	735.0	1,146.0	1,062.1	83.96	13.650 CC				
13,000.0	9,853.2	9,901.7	9,899.9	63.3	21.0	90.33	3,238.4	735.0	1,146.0	1,062.0	84.06	13.633 ES				
13,100.0	9,850.5	9,899.6	9,897.8	65.0	21.0	90.22	3,238.4	735.1	1,150.9	1,065.1	85.79	13.415				
13,200.0	9,847.7	9,897.4	9,895.7	66.8	21.0	90.11	3,238.4	735.1	1,164.4	1,076.9	87.53	13.303				
13,300.0	9,844.9	9,895.3	9,893.5	68.5	21.0	90.00	3,238.4	735.1	1,186.2	1,096.9	89.27	13.288 SF				
13,400.0	9,842.1	9,893.2	9,891.4	70.2	21.0	89.90	3,238.4	735.1	1,215.8	1,124.8	91.01	13.359				
13,500.0	9,839.3	9,891.0	9,889.2	72.0	21.0	89.79	3,238.3	735.1	1,252.8	1,160.0	92.76	13.505				
13,600.0	9,836.5	9,888.9	9,887.1	73.8	21.0	89.68	3,238.3	735.1	1,296.4	1,201.9	94.51	13.716				
13,700.0	9,833.7	9,886.7	9,885.0	75.5	20.9	89.58	3,238.3	735.1	1,346.1	1,249.8	96.27	13.982				
13,800.0	9,830.9	9,884.6	9,882.8	77.3	20.9	89.47	3,238.3	735.2	1,401.1	1,303.1	98.03	14.292				
13,900.0	9,828.1	9,882.5	9,880.7	79.1	20.9	89.36	3,238.3	735.2	1,460.9	1,361.1	99.80	14.639				

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - McElvain #11 Unit D - Wellbore #1 - Wellbore #1													Offset Site Error:
Survey Program: 238-MWD													0.0 usft
Reference													Offset Well Error:
Measured Vertical Measured Vertical Semi-Major Axis Distance													0.0 usft
Depth	Depth	Depth	Depth	Reference	Offset	Highside	Offset Wellbore Centro	Between	Between	Minimum	Separation	Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(")	+N/S	Centros	Ellipses	Separation	Factor		
							(usft)	(usft)	(usft)	(usft)			
0.0	0.0	0.0	0.0	0.0	0.0	175.93	-982.9	70.0	985.4				
100.0	100.0	98.2	98.2	0.1	0.1	175.93	-982.8	69.9	985.3	985.1	0.19	5,133.692	
200.0	200.0	201.1	201.1	0.3	0.2	175.95	-982.4	69.5	984.8	984.3	0.52	1,881.242	
300.0	300.0	302.1	302.1	0.5	0.4	175.99	-981.8	68.9	984.2	983.3	0.93	1,057.688	
400.0	400.0	402.1	402.1	0.8	0.6	176.02	-981.1	68.3	983.5	982.1	1.38	712.748	
500.0	500.0	502.9	502.8	1.0	0.8	176.05	-980.5	67.7	982.8	981.0	1.83	536.756	
600.0	600.0	605.6	605.6	1.2	1.1	176.10	-979.6	66.8	982.0	979.7	2.29	429.379	
700.0	700.0	708.3	708.3	1.4	1.3	176.16	-978.5	65.7	980.8	978.0	2.74	357.596	
800.0	800.0	809.7	809.6	1.7	1.5	176.23	-977.2	64.5	979.4	976.2	3.20	306.468	
900.0	900.0	910.9	910.8	1.9	1.8	176.30	-975.7	63.1	977.9	974.3	3.65	268.029	
1,000.0	1,000.0	1,012.3	1,012.2	2.1	2.0	176.38	-974.2	61.6	976.3	972.2	4.10	238.018	
1,100.0	1,100.0	1,114.3	1,114.2	2.3	2.2	176.48	-972.4	59.9	974.5	969.9	4.56	213.854	
1,200.0	1,200.0	1,217.8	1,217.7	2.6	2.5	176.58	-970.4	57.9	972.4	967.4	5.02	193.884	
1,300.0	1,300.0	1,320.5	1,320.3	2.8	2.7	176.71	-968.0	55.6	969.9	964.4	5.47	177.367	
1,400.0	1,400.0	1,414.8	1,414.5	3.0	2.9	176.82	-966.0	53.6	967.6	961.8	5.88	164.547	
1,500.0	1,500.0	1,510.6	1,510.3	3.2	3.1	176.91	-964.4	52.1	965.9	959.6	6.29	153.614	
1,600.0	1,600.0	1,608.1	1,607.8	3.5	3.2	176.98	-963.1	50.9	964.5	957.8	6.69	144.181	
1,700.0	1,700.0	1,705.7	1,705.4	3.7	3.4	177.03	-962.0	49.8	963.4	956.3	7.09	135.853	
1,800.0	1,800.0	1,806.1	1,805.8	3.9	3.6	177.09	-961.0	48.9	962.3	954.8	7.52	127.983	
1,900.0	1,900.0	1,907.0	1,906.7	4.1	3.8	177.15	-960.0	47.9	961.2	953.3	7.95	120.881	
2,000.0	2,000.0	2,007.9	2,007.6	4.3	4.0	-78.60	-958.8	46.7	959.8	951.4	8.37	114.612	
2,100.0	2,099.9	2,107.9	2,107.6	4.5	4.3	-78.74	-957.6	45.5	957.8	949.0	8.77	109.168	
2,200.0	2,199.9	2,206.9	2,206.5	4.7	4.5	-78.89	-956.4	44.4	955.9	946.7	9.18	104.177	
2,300.0	2,299.8	2,305.8	2,305.4	4.9	4.7	-79.05	-955.4	43.4	954.1	944.5	9.58	99.583	
2,400.0	2,399.7	2,405.5	2,405.1	5.1	4.9	-79.21	-954.4	42.5	952.4	942.4	9.99	95.324	
2,500.0	2,499.7	2,506.5	2,506.1	5.3	5.1	-79.37	-953.4	41.5	950.6	940.2	10.41	91.347	
2,600.0	2,599.6	2,607.5	2,607.1	5.6	5.3	-79.52	-952.2	40.4	948.7	937.9	10.82	87.648	
2,700.0	2,699.5	2,709.5	2,709.1	5.8	5.5	-79.67	-950.9	39.1	946.7	935.5	11.25	84.144	
2,800.0	2,799.5	2,813.6	2,813.2	6.0	5.7	-79.81	-949.3	37.5	944.4	932.7	11.69	80.757	
2,900.0	2,899.4	2,917.7	2,917.3	6.2	6.0	-79.92	-947.2	35.5	941.6	929.4	12.14	77.571	
3,000.0	2,999.3	3,019.6	3,019.0	6.4	6.2	-80.01	-944.7	33.1	938.4	925.8	12.58	74.621	
3,100.0	3,099.3	3,116.3	3,115.7	6.6	6.4	-80.11	-942.6	31.0	935.3	922.3	12.99	71.984	
3,200.0	3,199.2	3,213.1	3,212.4	6.8	6.6	-80.22	-940.7	29.2	932.6	919.2	13.41	69.530	
3,300.0	3,299.1	3,310.7	3,310.0	7.1	6.8	-80.35	-939.1	27.7	930.3	916.4	13.83	67.254	
3,400.0	3,399.1	3,409.8	3,409.1	7.3	7.0	-80.48	-937.6	26.3	928.1	913.8	14.25	65.133	
3,500.0	3,499.0	3,508.8	3,508.1	7.5	7.2	-80.63	-936.2	24.9	926.0	911.3	14.67	63.135	
3,600.0	3,598.9	3,607.9	3,607.2	7.7	7.4	-80.78	-934.9	23.7	923.9	908.9	15.08	61.251	
3,700.0	3,698.9	3,707.6	3,706.9	7.9	7.6	-80.93	-933.7	22.4	922.0	906.5	15.51	59.437	
3,800.0	3,798.8	3,807.6	3,806.8	8.2	7.8	-81.09	-932.4	21.2	920.1	904.1	15.94	57.705	
3,900.0	3,898.7	3,907.5	3,906.8	8.4	8.0	-81.24	-931.1	20.0	918.1	901.8	16.38	56.063	
4,000.0	3,998.7	4,007.5	4,006.7	8.6	8.3	-81.40	-929.9	18.8	916.2	899.4	16.81	54.504	
4,100.0	4,098.6	4,106.5	4,105.7	8.8	8.5	-81.56	-928.7	17.6	914.3	897.1	17.24	53.031	
4,200.0	4,198.5	4,204.9	4,204.1	9.1	8.7	-81.72	-927.6	16.6	912.6	895.0	17.67	51.641	
4,300.0	4,298.5	4,303.4	4,302.6	9.3	8.9	-81.89	-926.7	15.7	911.1	893.0	18.10	50.326	
4,400.0	4,398.4	4,401.8	4,401.0	9.5	9.1	-82.07	-925.9	15.0	909.7	891.2	18.54	49.079	
4,500.0	4,498.3	4,503.2	4,502.4	9.7	9.3	-82.27	-925.2	14.3	908.5	889.5	18.97	47.877	
4,600.0	4,598.3	4,608.1	4,607.3	10.0	9.5	-82.44	-924.0	13.2	906.8	887.3	19.42	46.687	
4,700.0	4,698.2	4,713.0	4,712.2	10.2	9.7	-82.59	-922.4	11.5	904.5	884.6	19.87	45.522	
4,800.0	4,798.1	4,817.9	4,817.0	10.4	10.0	-82.72	-920.2	9.4	901.7	881.4	20.32	44.381	
4,900.0	4,898.1	4,916.4	4,915.4	10.7	10.2	-82.82	-917.8	7.2	898.6	877.9	20.75	43.302	
5,000.0	4,998.0	5,011.4	5,010.4	10.9	10.4	-82.94	-916.0	5.4	896.0	874.8	21.18	42.304	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design EK 30 WCD Federal Com - McElvain #11 Unit D - Wellbore #1 - Wellbore #1														Offset Site Error:
Survey Program: 238-MWD														0.0 usft
Reference:	Offset:	Semi Major Axis:		Reference:		Offset:	Highside	Offset Wellbore Centre	Distance		Minimum	Separation	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
5,100.0	5,097.9	5,106.4	5,105.3	11.1	10.6	-83.09	-914.6	4.1	894.0	872.4	21.61	41.371		
5,200.0	5,197.9	5,201.3	5,200.3	11.3	10.8	-83.26	-913.7	3.2	892.5	870.4	22.04	40.500		
5,300.0	5,297.8	5,301.9	5,300.9	11.6	11.0	-83.45	-913.0	2.5	891.3	868.8	22.48	39.655		
5,400.0	5,397.8	5,403.4	5,402.4	11.8	11.2	-83.64	-912.2	1.7	889.9	867.0	22.92	38.832		
5,500.0	5,497.7	5,504.9	5,503.9	12.0	11.4	-83.83	-911.2	0.7	888.4	865.1	23.36	38.033		
5,600.0	5,597.6	5,606.4	5,605.3	12.3	11.6	-84.00	-910.0	-0.4	886.8	863.0	23.80	37.256		
5,700.0	5,697.6	5,706.7	5,705.6	12.5	11.8	-84.17	-908.8	-1.6	885.0	860.7	24.25	36.499		
5,800.0	5,797.5	5,806.6	5,805.6	12.7	12.1	-84.34	-907.5	-2.8	883.2	858.5	24.69	35.768		
5,900.0	5,897.4	5,906.6	5,905.5	12.9	12.3	-84.51	-906.3	-4.0	881.4	856.3	25.14	35.063		
6,000.0	5,997.4	6,006.5	6,005.4	13.2	12.5	-84.68	-905.0	-5.2	879.6	854.0	25.58	34.383		
6,100.0	6,097.3	6,105.3	6,104.1	13.4	12.7	-84.85	-903.8	-6.4	877.9	851.9	26.02	33.738		
6,200.0	6,197.2	6,203.6	6,202.5	13.6	12.9	-85.03	-902.8	-7.4	876.4	849.9	26.46	33.124		
6,300.0	6,297.2	6,302.0	6,300.8	13.9	13.1	-85.22	-901.9	-8.2	875.1	848.2	26.89	32.537		
6,400.0	6,397.1	6,400.4	6,399.2	14.1	13.3	-85.41	-901.2	-8.9	873.9	846.6	27.33	31.976		
6,500.0	6,497.0	6,500.6	6,499.4	14.3	13.5	-85.62	-900.5	-9.6	872.9	845.1	27.77	31.431		
6,600.0	6,597.0	6,601.3	6,600.2	14.6	13.7	-85.82	-899.8	-10.3	871.8	843.6	28.21	30.900		
6,700.0	6,696.9	6,702.0	6,700.9	14.8	14.0	-86.02	-899.0	-11.1	870.6	841.9	28.65	30.383		
6,800.0	6,796.8	6,802.8	6,801.6	15.0	14.2	-86.21	-898.1	-11.9	869.3	840.2	29.10	29.878		
6,900.0	6,896.8	6,903.5	6,902.3	15.3	14.4	-86.41	-897.1	-12.8	868.0	838.4	29.54	29.380		
7,000.0	6,996.7	7,004.3	7,003.1	15.5	14.6	-86.60	-896.1	-13.8	866.5	836.6	29.99	28.892		
7,100.0	7,096.6	7,105.0	7,103.8	15.7	14.8	-86.78	-894.9	-14.9	865.0	834.6	30.44	28.416		
7,200.0	7,196.6	7,205.8	7,204.6	16.0	15.0	-86.96	-893.7	-16.1	863.4	832.5	30.89	27.951		
7,300.0	7,296.5	7,304.0	7,302.8	16.2	15.2	-87.14	-892.6	-17.2	861.9	830.5	31.33	27.510		
7,400.0	7,396.4	7,401.7	7,400.4	16.4	15.4	-87.33	-891.6	-18.1	860.6	828.8	31.77	27.092		
7,500.0	7,496.4	7,499.3	7,498.0	16.6	15.6	-87.53	-890.9	-18.8	859.6	827.4	32.20	26.693		
7,600.0	7,596.3	7,596.9	7,595.6	16.9	15.9	-87.74	-890.5	-19.3	858.8	826.2	32.64	26.314		
7,700.0	7,696.2	7,696.8	7,695.5	17.1	16.1	-87.97	-890.1	-19.6	858.3	825.2	33.08	25.948		
7,800.0	7,796.2	7,797.6	7,796.3	17.3	16.3	-88.19	-889.7	-20.0	857.7	824.1	33.52	25.587		
7,900.0	7,896.1	7,898.4	7,897.1	17.6	16.5	-88.41	-889.2	-20.5	857.0	823.0	33.96	25.233		
8,000.0	7,996.0	7,999.2	7,997.9	17.8	16.7	-88.63	-888.6	-21.1	856.2	821.8	34.40	24.886		
8,100.0	8,096.0	8,099.1	8,097.9	18.0	16.9	-88.84	-888.0	-21.7	855.4	820.5	34.85	24.542		
8,200.0	8,195.9	8,199.1	8,197.8	18.3	17.1	-89.06	-887.4	-22.3	854.5	819.2	35.30	24.207		
8,300.0	8,295.8	8,299.0	8,297.8	18.5	17.3	-89.27	-886.7	-22.9	853.7	818.0	35.75	23.881		
8,400.0	8,395.8	8,399.0	8,397.7	18.7	17.6	-89.49	-886.1	-23.5	852.9	816.7	36.20	23.563		
8,500.0	8,495.7	8,502.3	8,501.0	19.0	17.8	-89.70	-885.3	-24.2	852.0	815.3	36.66	23.243		
8,600.0	8,595.6	8,606.3	8,605.0	19.2	18.0	-89.90	-884.1	-25.4	850.6	813.5	37.11	22.918		
8,700.0	8,695.6	8,710.3	8,709.0	19.4	18.2	-90.08	-882.5	-27.0	848.7	811.1	37.57	22.588		
8,800.0	8,795.5	8,814.4	8,813.0	19.7	18.5	-90.24	-880.5	-28.9	846.4	808.3	38.03	22.253		
8,900.0	8,895.4	8,913.3	8,911.9	19.9	18.7	-90.39	-878.4	-31.0	843.8	805.3	38.47	21.931		
9,000.0	8,995.4	9,011.6	9,010.2	20.1	18.9	-90.54	-876.4	-32.8	841.4	802.5	38.91	21.623		
9,100.0	9,095.3	9,106.9	9,105.5	20.4	19.1	-90.70	-874.8	-34.4	839.4	800.1	39.34	21.339		
9,200.0	9,195.2	9,206.0	9,204.5	20.6	19.3	-90.89	-873.6	-35.5	838.0	798.3	39.77	21.072		
9,300.0	9,295.2	9,301.8	9,300.3	20.8	19.5	-91.09	-872.7	-36.4	836.9	796.7	40.20	20.818		
9,400.0	9,395.1	9,401.7	9,400.2	21.1	19.7	-91.30	-871.8	-37.3	835.9	795.2	40.64	20.565 CC, ES		
9,450.4	9,445.4	9,454.6	9,453.1	21.2	19.8	-152.07	-871.3	-37.8	836.4	795.6	40.85	20.474		
9,500.0	9,495.0	9,507.9	9,506.4	21.3	19.9	-171.71	-870.5	-38.5	836.6	795.5	41.01	20.398 SF		
9,600.0	9,592.9	9,613.5	9,611.9	21.5	20.2	172.55	-868.5	-40.5	833.5	813.0	40.53	21.061		
9,700.0	9,684.8	9,713.5	9,711.9	21.7	20.4	169.21	-865.9	-43.0	889.2	850.1	39.13	22.726		
9,800.0	9,766.6	9,746.0	9,744.4	21.8	20.4	166.23	-864.9	-43.9	944.0	907.0	36.96	25.539		
9,900.0	9,834.6	9,746.0	9,744.4	22.0	20.4	161.11	-864.9	-43.9	1,019.2	984.5	34.76	29.324		
10,000.0	9,886.1	9,746.0	9,744.4	22.2	20.4	149.97	-864.9	-43.9	1,108.3	1,074.0	34.29	32.321		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error	0.0 usft
EK 30 WCD Federal Com - McElvain #11 Unit D - Wellbore #1 - Wellbore #1														Offset Well Error	0.0 usft
Survey Program: 238-MWD															
Reference		Offset		Semi Major Axis		Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)				
10,100.0	9,918.7	9,746.0	9,744.4	22.6	20.4	116.61	-864.9	-43.9	1,204.8	1,164.2	40.54	29.720			
10,200.0	9,930.9	9,746.0	9,744.4	23.2	20.4	51.44	-864.9	-43.9	1,303.3	1,265.6	37.72	34.553			
10,300.0	9,928.6	9,746.0	9,744.4	23.9	20.4	42.43	-864.9	-43.9	1,400.9	1,365.2	35.76	39.180			
10,400.0	9,925.8	9,746.0	9,744.4	24.7	20.4	42.43	-864.9	-43.9	1,498.8	1,462.6	36.26	41.337			



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design: EK 30 WCD Federal Com - McElvain #3 - Wellbore #1 - Wellbore #1														Offset Site Error	0.0 usft
Survey Program: 8350-MWD														Offset Well Error	0.0 usft
Reference	Offset	Semi Major Axis		Reference	Offset	Highside	Offset Wellbore Centre		Distance		Minimum	Separation	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor			
0.0	0.0	29.6	29.6	0.0	0.0	-6.63	688.1	-80.0	692.7						
100.0	100.0	128.2	128.2	0.1	0.1	-6.64	688.2	-80.1	692.9	692.7	0.23	3,050.538			
200.0	200.0	226.9	226.9	0.3	0.2	-6.66	688.5	-80.4	693.2	692.7	0.56	1,243.561			
300.0	300.0	325.5	325.5	0.5	0.3	-6.70	689.0	-80.9	693.8	692.9	0.89	781.479			
400.0	400.0	425.2	425.2	0.8	0.5	-6.74	689.7	-81.5	694.5	693.2	1.31	531.073			
500.0	500.0	525.2	525.2	1.0	0.8	-6.78	690.3	-82.1	695.2	693.4	1.76	395.621			
600.0	600.0	625.2	625.2	1.2	1.0	-6.83	690.9	-82.7	695.9	693.7	2.21	315.354			
700.0	700.0	725.2	725.2	1.4	1.2	-6.87	691.5	-83.3	696.6	693.9	2.66	262.253			
800.0	800.0	825.2	825.1	1.7	1.4	-6.91	692.2	-83.9	697.2	694.1	3.11	224.522			
900.0	900.0	925.2	925.1	1.9	1.7	-6.96	692.8	-84.5	697.9	694.4	3.55	196.330			
1,000.0	1,000.0	1,025.2	1,025.1	2.1	1.9	-7.00	693.4	-85.2	698.6	694.6	4.00	174.466			
1,100.0	1,100.0	1,125.2	1,125.1	2.3	2.1	-7.04	694.0	-85.8	699.3	694.9	4.45	157.015			
1,200.0	1,200.0	1,225.2	1,225.1	2.6	2.3	-7.09	694.7	-86.4	700.0	695.1	4.90	142.764			
1,300.0	1,300.0	1,325.1	1,325.1	2.8	2.6	-7.13	695.3	-87.0	700.7	695.4	5.35	130.906			
1,400.0	1,400.0	1,425.8	1,425.7	3.0	2.8	-7.17	695.9	-87.5	701.4	695.6	5.78	121.342			
1,500.0	1,500.0	1,526.5	1,526.5	3.2	3.0	-7.20	696.4	-88.0	701.9	695.7	6.20	113.127			
1,600.0	1,600.0	1,627.2	1,627.2	3.5	3.2	-7.23	696.8	-88.4	702.4	695.8	6.63	105.949			
1,700.0	1,700.0	1,727.6	1,727.5	3.7	3.4	-7.25	697.1	-88.7	702.8	695.7	7.06	99.600			
1,800.0	1,800.0	1,827.6	1,827.5	3.9	3.6	-7.28	697.4	-89.0	703.1	695.6	7.48	93.956			
1,900.0	1,900.0	1,927.6	1,927.5	4.1	3.8	-7.30	697.8	-89.3	703.5	695.5	7.91	88.922			
2,000.0	2,000.0	2,027.6	2,027.5	4.3	4.0	97.07	698.1	-89.6	704.0	695.6	8.32	84.574			
2,100.0	2,099.9	2,127.5	2,127.5	4.5	4.2	97.32	698.4	-90.0	704.7	696.0	8.72	80.824			
2,200.0	2,199.9	2,227.5	2,227.4	4.7	4.4	97.59	698.7	-90.3	705.6	696.4	9.13	77.268			
2,300.0	2,299.8	2,327.4	2,327.4	4.9	4.6	97.86	699.0	-90.6	706.4	696.8	9.55	73.934			
2,400.0	2,399.7	2,427.4	2,427.3	5.1	4.8	98.13	699.3	-90.9	707.3	697.3	9.98	70.864			
2,500.0	2,499.7	2,527.3	2,527.2	5.3	5.1	98.40	699.6	-91.2	708.1	697.7	10.41	68.029			
2,600.0	2,599.6	2,627.2	2,627.2	5.6	5.3	98.67	700.0	-91.5	709.0	698.2	10.84	65.407			
2,700.0	2,699.5	2,726.3	2,726.2	5.8	5.5	98.93	700.3	-91.8	709.9	698.7	11.27	62.988			
2,800.0	2,799.5	2,824.9	2,824.9	6.0	5.7	99.18	700.8	-92.3	711.1	699.4	11.70	60.756			
2,900.0	2,899.4	2,923.6	2,923.5	6.2	6.0	99.42	701.5	-92.9	712.4	700.3	12.14	58.692			
3,000.0	2,999.3	3,022.3	3,022.2	6.4	6.2	99.65	702.3	-93.8	713.9	701.3	12.57	56.778			
3,100.0	3,099.3	3,121.3	3,121.2	6.6	6.4	99.86	703.3	-94.7	715.6	702.6	13.01	54.996			
3,200.0	3,199.2	3,220.3	3,220.2	6.8	6.6	100.07	704.4	-95.8	717.4	704.0	13.45	53.334			
3,300.0	3,299.1	3,319.6	3,319.5	7.1	6.8	100.26	705.6	-97.0	719.4	705.5	13.89	51.780			
3,400.0	3,399.1	3,419.6	3,419.5	7.3	7.1	100.46	706.9	-98.2	721.4	707.0	14.34	50.315			
3,500.0	3,499.0	3,519.5	3,519.4	7.5	7.3	100.65	708.1	-99.4	723.4	708.6	14.78	48.936			
3,600.0	3,598.9	3,619.5	3,619.3	7.7	7.5	100.84	709.4	-100.6	725.4	710.1	15.23	47.635			
3,700.0	3,698.9	3,719.5	3,719.3	7.9	7.7	101.04	710.7	-101.8	727.4	711.7	15.67	46.413			
3,800.0	3,798.8	3,819.9	3,819.7	8.2	7.9	101.23	711.9	-103.0	729.4	713.3	16.10	45.308			
3,900.0	3,898.7	3,920.3	3,920.1	8.4	8.1	101.43	713.0	-104.1	731.3	714.8	16.52	44.256			
4,000.0	3,998.7	4,020.8	4,020.6	8.6	8.4	101.63	714.1	-105.2	733.2	716.2	16.95	43.251			
4,100.0	4,098.6	4,121.2	4,121.0	8.8	8.6	101.83	715.2	-106.2	735.0	717.6	17.38	42.292			
4,200.0	4,198.5	4,221.6	4,221.4	9.1	8.8	102.04	716.1	-107.1	736.7	718.9	17.81	41.374			
4,300.0	4,298.5	4,321.5	4,321.3	9.3	9.0	102.25	717.1	-108.0	738.5	720.2	18.24	40.496			
4,400.0	4,398.4	4,421.5	4,421.2	9.5	9.2	102.46	718.0	-108.9	740.2	721.6	18.66	39.659			
4,500.0	4,498.3	4,521.4	4,521.2	9.7	9.4	102.66	719.0	-109.8	742.0	722.9	19.09	38.859			
4,600.0	4,598.3	4,621.4	4,621.1	10.0	9.6	102.87	719.9	-110.7	743.7	724.2	19.52	38.094			
4,700.0	4,698.2	4,721.3	4,721.1	10.2	9.8	103.07	720.8	-111.6	745.5	725.6	19.96	37.353			
4,800.0	4,798.1	4,821.3	4,821.0	10.4	10.0	103.27	721.8	-112.5	747.3	726.9	20.41	36.617			
4,900.0	4,898.1	4,921.2	4,920.9	10.7	10.2	103.48	722.7	-113.5	749.1	728.2	20.86	35.913			
5,000.0	4,998.0	5,021.2	5,020.9	10.9	10.5	103.68	723.7	-114.4	750.9	729.6	21.31	35.239			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design: EK 30 WCD Federal Com - McElvain #3 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 350-MWD													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	Offset Wellbore Centre E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.0	5,097.9	5,121.1	5,120.8	11.1	10.7	103.88	724.6	-115.3	752.7	731.0	21.76	34.592		
5,200.0	5,197.9	5,221.1	5,220.8	11.3	10.9	104.08	725.5	-116.2	754.6	732.3	22.21	33.972		
5,300.0	5,297.8	5,321.0	5,320.7	11.6	11.1	104.27	726.5	-117.1	756.4	733.7	22.66	33.376		
5,400.0	5,397.8	5,421.0	5,420.6	11.8	11.4	104.47	727.4	-118.0	758.2	735.1	23.11	32.803		
5,500.0	5,497.7	5,520.9	5,520.6	12.0	11.6	104.67	728.4	-118.9	760.1	736.5	23.57	32.252		
5,600.0	5,597.6	5,620.9	5,620.5	12.3	11.8	104.86	729.3	-119.8	761.9	737.9	24.02	31.723		
5,700.0	5,697.6	5,720.7	5,720.3	12.5	12.0	105.06	730.3	-120.7	763.8	739.3	24.47	31.213		
5,800.0	5,797.5	5,820.1	5,819.8	12.7	12.2	105.25	731.2	-121.7	765.7	740.8	24.92	30.725		
5,900.0	5,897.4	5,919.6	5,919.2	12.9	12.5	105.43	732.3	-122.7	767.7	742.4	25.37	30.257		
6,000.0	5,997.4	6,019.1	6,018.7	13.2	12.7	105.61	733.4	-123.8	769.8	744.0	25.83	29.807		
6,100.0	6,097.3	6,118.5	6,118.1	13.4	12.9	105.78	734.6	-124.9	772.0	745.7	26.28	29.376		
6,200.0	6,197.2	6,218.2	6,217.8	13.6	13.1	105.94	735.8	-126.1	774.2	747.4	26.73	28.960		
6,300.0	6,297.2	6,318.2	6,317.7	13.9	13.4	106.11	737.1	-127.3	776.4	749.2	27.19	28.558		
6,400.0	6,397.1	6,418.1	6,417.7	14.1	13.6	106.28	738.3	-128.5	778.6	751.0	27.64	28.170		
6,500.0	6,497.0	6,518.1	6,517.6	14.3	13.8	106.44	739.6	-129.8	780.8	752.8	28.09	27.794		
6,600.0	6,597.0	6,618.0	6,617.5	14.6	14.0	106.60	740.9	-131.0	783.1	754.5	28.55	27.430		
6,700.0	6,696.9	6,718.0	6,717.5	14.8	14.3	106.76	742.1	-132.2	785.3	756.3	29.00	27.078		
6,800.0	6,796.8	6,817.9	6,817.4	15.0	14.5	106.92	743.4	-133.4	787.6	758.1	29.46	26.736		
6,900.0	6,896.8	6,917.9	6,917.3	15.3	14.7	107.08	744.6	-134.6	789.8	759.9	29.91	26.405		
7,000.0	6,996.7	7,017.8	7,017.3	15.5	14.9	107.24	745.9	-135.8	792.1	761.7	30.37	26.085		
7,100.0	7,096.6	7,117.8	7,117.2	15.7	15.2	107.40	747.1	-137.0	794.4	763.6	30.82	25.773		
7,200.0	7,196.6	7,217.4	7,216.8	16.0	15.4	107.56	748.4	-138.3	796.7	765.4	31.28	25.472		
7,300.0	7,296.5	7,317.0	7,316.4	16.2	15.6	107.71	749.7	-139.5	799.0	767.3	31.73	25.181		
7,400.0	7,396.4	7,416.5	7,415.9	16.4	15.8	107.85	751.1	-140.8	801.4	769.2	32.19	24.900		
7,500.0	7,496.4	7,516.1	7,515.5	16.6	16.1	108.00	752.5	-142.2	803.9	771.2	32.64	24.628		
7,600.0	7,596.3	7,615.7	7,615.1	16.9	16.3	108.13	754.0	-143.6	806.4	773.3	33.10	24.365		
7,700.0	7,696.2	7,715.3	7,714.6	17.1	16.5	108.27	755.5	-145.1	808.9	775.4	33.55	24.111		
7,800.0	7,796.2	7,815.0	7,814.4	17.3	16.7	108.40	757.0	-146.6	811.5	777.5	34.01	23.864		
7,900.0	7,896.1	7,915.0	7,914.3	17.6	17.0	108.52	758.6	-148.1	814.1	779.7	34.46	23.624		
8,000.0	7,996.0	8,014.9	8,014.2	17.8	17.2	108.65	760.2	-149.6	816.7	781.8	34.92	23.390		
8,100.0	8,096.0	8,114.9	8,114.1	18.0	17.4	108.78	761.7	-151.1	819.3	784.0	35.37	23.162		
8,200.0	8,195.9	8,214.8	8,214.1	18.3	17.6	108.90	763.3	-152.6	822.0	786.1	35.83	22.940		
8,300.0	8,295.8	8,314.8	8,314.0	18.5	17.9	109.03	764.9	-154.2	824.6	788.3	36.29	22.724		
8,400.0	8,395.8	8,414.7	8,413.9	18.7	18.1	109.15	766.4	-155.7	827.2	790.5	36.74	22.513		
8,500.0	8,495.7	8,514.7	8,513.8	19.0	18.3	109.28	768.0	-157.2	829.8	792.6	37.20	22.307		
8,600.0	8,595.6	8,614.6	8,613.8	19.2	18.6	109.40	769.6	-158.7	832.5	794.8	37.66	22.107		
8,700.0	8,695.6	8,714.6	8,713.7	19.4	18.8	109.52	771.1	-160.2	835.1	797.0	38.11	21.911		
8,800.0	8,795.5	8,815.0	8,814.1	19.7	19.0	109.65	772.7	-161.7	837.7	799.2	38.56	21.728		
8,900.0	8,895.4	8,915.7	8,914.8	19.9	19.2	109.77	774.2	-163.1	840.3	801.3	38.99	21.551		
9,000.0	8,995.4	9,016.4	9,015.5	20.1	19.4	109.91	775.5	-164.5	842.7	803.3	39.42	21.376		
9,100.0	9,095.3	9,117.1	9,116.1	20.4	19.6	110.05	776.8	-165.7	845.1	805.2	39.86	21.203		
9,200.0	9,195.2	9,217.8	9,216.8	20.6	19.8	110.20	778.0	-166.8	847.4	807.1	40.29	21.031		
9,300.0	9,295.2	9,318.5	9,317.5	20.8	20.0	110.36	779.0	-167.8	849.6	808.9	40.73	20.861		
9,400.0	9,395.1	9,419.0	9,418.0	21.1	20.2	110.52	780.0	-168.8	851.7	810.6	41.16	20.693		
9,500.0	9,495.0	9,518.9	9,517.9	21.3	20.4	110.67	780.9	-169.7	851.7	810.2	41.50	20.522		
9,600.0	9,592.9	9,617.1	9,616.0	21.5	20.6	110.82	781.9	-170.6	854.3	813.3	41.97	20.366		
9,700.0	9,694.8	9,709.3	9,708.3	21.7	20.8	110.97	782.7	-171.4	857.1	816.6	42.47	20.218		
9,800.0	9,796.6	9,811.7	9,810.6	21.8	21.0	111.12	783.5	-172.2	859.9	819.9	42.97	20.076		
9,900.0	9,898.4	9,914.0	9,912.9	22.0	21.1	111.27	784.2	-172.8	862.7	823.2	43.47	19.938		
10,000.0	9,999.2	9,916.2	9,915.1	22.2	21.2	111.42	784.9	-173.3	865.5	826.5	43.97	19.804		
10,100.0	10,099.0	9,918.4	9,917.3	22.4	21.3	111.57	785.6	-173.6	868.3	829.8	44.47	19.674		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Offset Design. EK 30 WCD Federal Com - McElvain #3 - Wellbore #1 - Wellbore #1													Offset Site Error	0.0 usft
Survey Program: 350-MWD													Offset Well Error	0.0 usft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.0	9,930.9	9,959.0	9,958.0	23.2	21.3	85.93	785.1	-173.7	403.1	359.0	44.11	9.139		
10,300.0	9,928.6	9,957.9	9,956.8	23.9	21.3	92.51	785.1	-173.7	311.0	266.1	44.91	6.924		
10,400.0	9,925.8	9,956.2	9,955.2	24.7	21.3	91.82	785.1	-173.7	225.6	179.9	45.72	4.935		
10,500.0	9,923.0	9,954.6	9,953.5	25.6	21.3	91.12	785.1	-173.7	158.5	111.8	46.63	3.399		
10,579.0	9,920.8	9,953.2	9,952.2	26.4	21.3	90.57	785.1	-173.7	137.4	89.9	47.42	2.897	CC, ES, SF	
10,600.0	9,920.2	9,952.9	9,951.8	26.6	21.3	90.43	785.1	-173.7	139.0	91.3	47.63	2.917		
10,700.0	9,917.4	9,951.2	9,950.2	27.7	21.3	89.73	785.1	-173.7	183.0	134.3	48.72	3.757		
10,800.0	9,914.6	9,949.5	9,948.5	28.9	21.3	89.03	785.0	-173.6	260.2	210.3	49.87	5.216		
10,900.0	9,911.9	9,947.8	9,946.8	30.1	21.3	88.32	785.0	-173.6	349.1	298.0	51.09	6.833		
11,000.0	9,909.1	9,946.2	9,945.1	31.4	21.3	87.62	785.0	-173.6	442.8	390.4	52.36	8.456		
11,100.0	9,906.3	9,944.5	9,943.4	32.7	21.3	86.91	785.0	-173.6	538.7	485.0	53.68	10.036		
11,200.0	9,903.5	9,942.7	9,941.7	34.1	21.3	86.20	785.0	-173.6	635.9	580.9	55.03	11.555		
11,300.0	9,900.7	9,941.0	9,940.0	35.6	21.3	85.49	785.0	-173.6	733.8	677.4	56.42	13.007		
11,400.0	9,897.9	9,939.3	9,938.2	37.0	21.3	84.78	784.9	-173.5	832.3	774.4	57.83	14.390		
11,500.0	9,895.1	9,937.6	9,936.5	38.5	21.3	84.07	784.9	-173.5	931.0	871.8	59.27	15.708		
11,600.0	9,892.3	9,935.8	9,934.8	40.1	21.3	83.35	784.9	-173.5	1,030.0	969.3	60.73	16.962		
11,700.0	9,889.5	9,934.1	9,933.0	41.6	21.3	82.64	784.9	-173.5	1,129.2	1,067.0	62.19	18.156		
11,800.0	9,886.7	9,932.4	9,931.3	43.2	21.3	81.92	784.9	-173.5	1,228.5	1,164.8	63.67	19.294		
11,900.0	9,883.9	9,930.6	9,929.5	44.8	21.3	81.21	784.8	-173.4	1,327.9	1,262.7	65.16	20.379		
12,000.0	9,881.2	9,928.8	9,927.8	46.4	21.3	80.50	784.8	-173.4	1,427.4	1,360.7	66.65	21.415		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



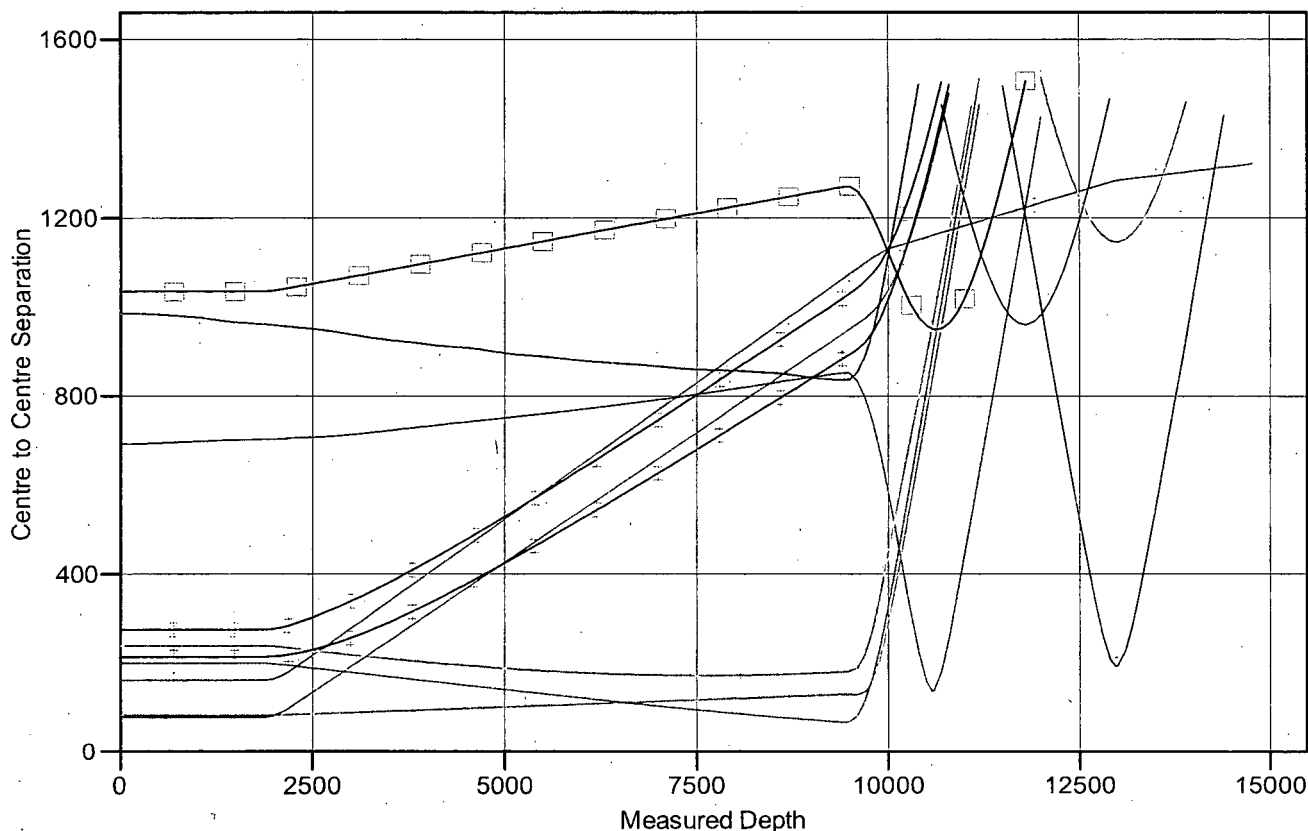
Anticollision Report

Company:	McElvain Energy, Inc.	Local Co-ordinate Reference:	Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Project:	Sec. 30 T18S R34E	TVD Reference:	WELL @ 3883.0usft (Original Well Elev)
Reference Site:	EK 30 WCD Federal Com	MD Reference:	WELL @ 3883.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	EK 30 BS2 Federal Com 4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1 29Jul15 kjs	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 3883.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.39°

Ladder Plot



LEGEND

om 3H, Wellbore #1, Design #1 29Jul15 kjs V0	◆ EK 30 WCD Federal Com 3H, Wellbore #1, Plan #2 03Aug15 kjs V0	▲ EK 31 WCD Federal Com 4H, Wellbore #1, Plan #2 03Aug15 kjs V0
om 3H, Wellbore #1 V0	■ EK 30 WCD Federal Com 4H, Wellbore #1, Design #1 29Jul15 kjs V0	● EK 31 BS2 Federal Com 3H, Wellbore #1, Plan #2 03Aug15 kjs V0
t #401, Wellbore #1, Wellbore #1 V0	◆ EK 31 WCD Federal Com 3H, Wellbore #1, Plan #2 03Aug15 kjs V0	○ EK 'B' 8701 J-V-P #1, Wellbore #1, Wellbore #1 V0
om 3H, Wellbore #1 V0	✕ McElvain #11 Unit D, Wellbore #1, Wellbore #1 V0	
om 4H, Wellbore #1, Design #1 29Jul15 kjs V0	■ EK Penrose Sand Unit #402, Wellbore #1, Wellbore #1 V0	



Anticollision Report

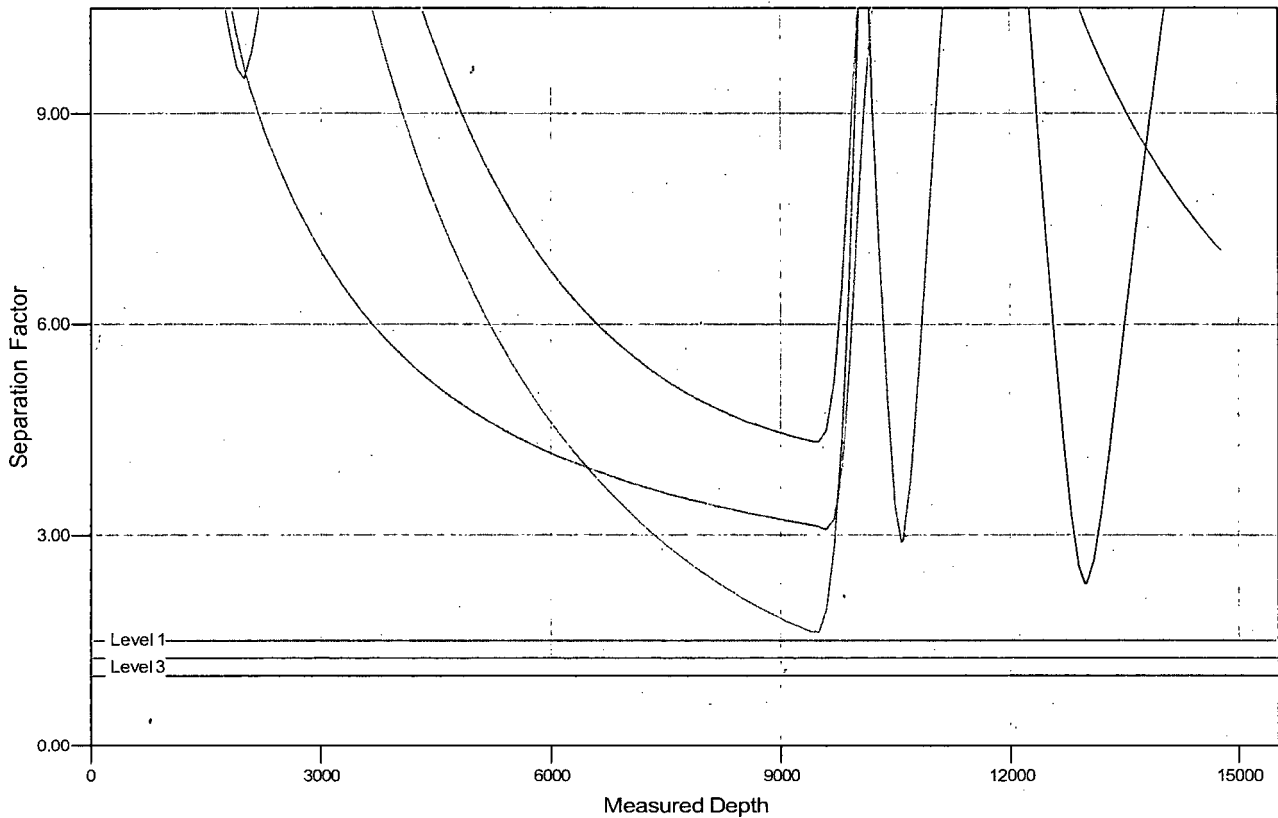
Company: McElvain Energy, Inc.
Project: Sec. 30 T18S R34E
Reference Site: EK 30 WCD Federal Com
Site Error: 0.0 usft
Reference Well: EK 30 BS2 Federal Com 4H
Well Error: 0.0 usft
Reference Wellbore: Wellbore #1
Reference Design: Design #1 29Jul15 kjs

Local Co-ordinate Reference: Well EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
TVD Reference: WELL @ 3883.0usft (Original Well Elev)
MD Reference: WELL @ 3883.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset: TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 3883.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: EK 30 BS2 Federal Com 4H - Slot 30 BS2 4H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.39°

Separation Factor Plot



LEGEND

om 3H, Wellbore #1, Design #1 29Jul15 kjs V0	◆ EK 30 WCD Federal Com 3H, Wellbore #1, Plan #2 03Aug15 kjs V0	▲ EK 31 WCD Federal Com 4H, Wellbore #
: #1, Wellbore #1 V0	■ EK 30 WCD Federal Com 4H, Wellbore #1, Design #1 29Jul15 kjs V0	◆ EK 31 BS2 Federal Com 3H, Wellbore #
t #401, Wellbore #1, Wellbore #1 V0	◆ EK 31 WCD Federal Com 3H, Wellbore #1, Plan #2 03Aug15 kjs V0	● EK 'B' 8701 JVP #1, Wellbore #1, Wellb
: #1, Wellbore #1 V0	✱ McElvain #11 Unit D, Wellbore #1, Wellbore #1 V0	
om 4H, Wellbore #1, Design #1 29Jul15 kjs V0	■ EK Penrose Sand Unit #402, Wellbore #1, Wellbore #1 V0	



Surface Location: EK 30 WCD Federal Com
North American Datum 1983 , US State Plane 1983 New Mexico Eastern Zone
Ground Elevation: 3864.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	623207.90	765540.60	32° 42' 40.035 N	103° 36' 15.825 W	30 BS2 3H

WELL @ 3884.0usft (Original Well Elev)

EXTRA
COPY

