



123 Robert S. Kerr Ave.
Oklahoma City, OK 73102

Survey JAMES 3318 1-13H

Step #1 - Create a Deviation Survey

Step

#2 - Attach the survey "Description" to the Wellbore - Deviation Survey

Wellbores - Step #2

Actual Deviation Survey Survey, Proposed? No	Wellbore Name Original Hole
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Deviation Surveys - Step #1

Description Survey	Date 8/16/2012	VS Dir (°) 359.24	Comment
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Tie-in Data

Azimuth North Type Grid	Convergence (°) 0.44	Declination (°) 5.33	MD Tie In (ftKB) 0.00	Azimuth Tie In (°) 0.00	Inclination Tie In (°) 0.00	TVDTie In (ftKB) 0.00	NSTie In (ft) 0.00	EWTie In (ft) 0.00
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Survey Data

MD (ftKB)	Incl (°)	Azim (°)	Survey Company	Method	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
				MWD	0	0	0.00	0.00	0.00
248	1.6			Magn SS					
490	2.1			Magn SS					
764	0.9			Magn SS					
858	1.0	325.10		MWD	858	6	6.14	-4.28	0.12
1,041	0.9	352.30		MWD	1,041	9	8.87	-5.39	0.25
1,231	1.0	346.10		MWD	1,231	12	11.96	-5.99	0.08
1,571	0.6	226.40		MWD	1,571	14	13.62	-7.99	0.41
1,803	0.3	189.60		MWD	1,803	12	12.18	-8.97	0.17
2,278	0.3	198.20		MWD	2,278	10	9.77	-9.57	0.01
2,753	0.2	266.70		MWD	2,753	9	8.54	-10.78	0.06
3,229	1.0	281.80		MWD	3,229	10	9.34	-15.68	0.17
3,706	0.7	298.80		MWD	3,706	12	11.60	-22.31	0.08
3,801	0.8	311.90		MWD	3,801	13	12.32	-23.31	0.21
3,896	0.8	289.10		MWD	3,896	13	12.98	-24.43	0.33
3,991	0.5	318.00		MWD	3,991	14	13.51	-25.33	0.46
4,087	0.8	295.50		MWD	4,087	14	14.11	-26.22	0.40
4,184	0.8	232.20		MWD	4,184	14	13.98	-27.36	0.87
4,215	0.9	312.90		MWD	4,215	14	14.02	-27.71	3.56
4,247	1.7	342.60		MWD	4,247	15	14.64	-28.04	3.19
4,279	3.7	358.00		MWD	4,279	16	16.12	-28.22	6.59
4,311	6.2	5.10		MWD	4,311	19	18.88	-28.10	8.03
4,342	8.5	7.20		MWD	4,341	23	22.82	-27.66	7.47
4,374	10.8	5.60		MWD	4,373	29	28.15	-27.08	7.24
4,406	13.4	3.90		MWD	4,404	35	34.83	-26.53	8.20
4,438	15.0	2.20		MWD	4,435	43	42.67	-26.12	5.17
4,470	16.5	2.50		MWD	4,466	52	51.35	-25.76	4.69
4,501	18.5	2.40		MWD	4,496	61	60.66	-25.36	6.45
4,533	21.0	2.50		MWD	4,526	72	71.47	-24.90	7.81
4,565	22.9	2.40		MWD	4,555	84	83.42	-24.39	5.94
4,597	24.8	2.70		MWD	4,585	97	96.34	-23.81	5.95
4,628	26.9	2.30		MWD	4,612	110	109.84	-23.23	6.80
4,660	28.2	3.00		MWD	4,641	125	124.63	-22.54	4.19
4,692	29.9	3.30		MWD	4,669	140	140.14	-21.68	5.33
4,724	31.5	3.60		MWD	4,696	157	156.45	-20.70	5.02
4,755	32.8	3.50		MWD	4,723	173	172.91	-19.68	4.20
4,787	34.7	4.20		MWD	4,749	191	190.65	-18.48	6.06
4,819	37.0	4.40		MWD	4,775	210	209.34	-17.08	7.20
4,851	38.5	4.60		MWD	4,800	229	228.87	-15.54	4.70
4,882	40.0	4.10		MWD	4,824	249	248.43	-14.05	4.95
4,914	42.1	4.30		MWD	4,849	270	269.38	-12.51	6.58
4,946	45.8	4.70		MWD	4,872	292	291.52	-10.77	11.59
4,978	48.2	4.80		MWD	4,893	315	314.84	-8.83	7.50
5,009	49.0	5.00		MWD	4,914	338	338.01	-6.84	2.63
5,041	49.2	4.20		MWD	4,935	362	362.12	-4.90	1.99



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Survey Data

MD (ftKB)	Incl (°)	Azm (°)	Survey Company	Method	TVD (ftKB)	VS (ft)	NS (ft)	EW (ft)	DLS (°/100ft)
5,073	48.5	4.40		MWD	4,956	386	386.14	-3.10	2.24
5,105	48.0	3.80		MWD	4,977	410	409.96	-1.39	2.10
5,136	49.2	2.80		MWD	4,998	433	433.17	-0.05	4.56
5,168	48.9	1.80		MWD	5,019	457	457.32	0.92	2.54
5,200	50.8	2.40		MWD	5,039	482	481.76	1.81	6.11
5,232	54.3	2.30		MWD	5,059	507	507.14	2.86	10.94
5,263	56.8	1.40		MWD	5,076	533	532.69	3.68	8.41
5,295	59.7	1.20		MWD	5,093	560	559.89	4.29	9.08
5,327	61.8	0.90		MWD	5,109	588	587.80	4.81	6.61
5,358	65.0	0.50		MWD	5,123	615	615.52	5.14	10.39
5,390	67.6	0.60		MWD	5,136	645	644.81	5.42	8.13
5,422	72.2	0.20		MWD	5,147	675	674.86	5.63	14.42
5,454	77.0	0.40		MWD	5,155	706	705.70	5.79	15.01
5,485	80.0	0.70		MWD	5,161	736	736.07	6.09	9.72
5,517	82.6	0.70		MWD	5,166	768	767.70	6.47	8.12
5,567	85.5	1.50		MWD	5,171	817	817.41	7.43	6.01
5,664	88.8	1.10		MWD	5,176	914	914.25	9.63	3.43
5,757	90.3	1.10		MWD	5,177	1,007	1,007.23	11.41	1.61
5,849	92.3	359.50		MWD	5,175	1,099	1,099.20	11.89	2.78
5,941	91.6	359.40		MWD	5,172	1,191	1,191.14	11.01	0.77
6,032	90.4	359.10		MWD	5,170	1,282	1,282.12	9.82	1.36
6,125	89.3	359.00		MWD	5,170	1,375	1,375.10	8.28	1.19
6,216	90.0	359.70		MWD	5,171	1,466	1,466.09	7.25	1.09
6,308	92.9	359.30		MWD	5,168	1,558	1,558.05	6.44	3.18
6,400	92.4	359.10		MWD	5,164	1,650	1,649.94	5.16	0.59
6,492	92.3	359.40		MWD	5,160	1,742	1,741.86	3.96	0.34
6,584	91.3	359.20		MWD	5,158	1,834	1,833.80	2.83	1.11
6,675	90.9	359.30		MWD	5,156	1,925	1,924.78	1.64	0.45
6,771	91.4	359.00		MWD	5,154	2,021	2,020.75	0.22	0.61
6,867	91.0	358.80		MWD	5,152	2,117	2,116.71	-1.62	0.47
6,963	90.3	358.20		MWD	5,151	2,213	2,212.67	-4.14	0.96
7,058	90.0	358.20		MWD	5,151	2,308	2,307.62	-7.12	0.32
7,154	89.1	357.90		MWD	5,151	2,403	2,403.56	-10.39	0.99
7,250	89.4	357.90		MWD	5,153	2,499	2,499.49	-13.91	0.31
7,345	90.0	359.30		MWD	5,153	2,594	2,594.46	-16.23	1.60
7,441	89.4	359.80		MWD	5,154	2,690	2,690.45	-16.98	0.81
7,537	88.8	359.00		MWD	5,155	2,786	2,786.44	-17.99	1.04
7,632	89.1	359.00		MWD	5,157	2,881	2,881.40	-19.64	0.32
7,728	90.0	359.00		MWD	5,158	2,977	2,977.39	-21.32	0.94
7,824	91.1	0.10		MWD	5,157	3,073	3,073.38	-22.07	1.62
7,920	90.9	0.20		MWD	5,155	3,169	3,169.36	-21.82	0.23
8,016	90.1	359.90		MWD	5,154	3,265	3,265.36	-21.74	0.89
8,111	89.7	359.70		MWD	5,154	3,360	3,360.36	-22.07	0.47
8,207	90.7	359.40		MWD	5,154	3,456	3,456.35	-22.82	1.09
8,303	90.6	358.80		MWD	5,153	3,552	3,552.33	-24.33	0.63
8,398	91.3	359.60		MWD	5,151	3,647	3,647.31	-25.66	1.12
8,494	90.5	359.00		MWD	5,150	3,743	3,743.29	-26.83	1.04
8,589	90.6	359.40		MWD	5,149	3,838	3,838.27	-28.16	0.43
8,685	90.8	359.80		MWD	5,148	3,934	3,934.26	-28.83	0.47
8,780	89.3	359.40		MWD	5,148	4,029	4,029.26	-29.49	1.63
8,876	88.9	359.60		MWD	5,149	4,125	4,125.24	-30.33	0.47
8,971	88.7	359.90		MWD	5,151	4,220	4,220.22	-30.74	0.38



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9,067	90.2	359.50		MWD	5,152	4,316	4,316.21	-31.24	1.62
9,163	89.5	359.50		MWD	5,152	4,412	4,412.21	-32.08	0.73
9,259	89.5	359.60		MWD	5,153	4,508	4,508.20	-32.84	0.10
9,354	89.7	0.10		MWD	5,154	4,603	4,603.20	-33.08	0.57
9,450	89.7	0.40		MWD	5,154	4,699	4,699.20	-32.67	0.31
9,500	88.7	0.10		MWD	5,155	4,749	4,749.19	-32.45	2.09
9,550	88.7	0.10		MWD	5,156	4,799	4,799.18	-32.36	0.00