



Directional Survey

30-025-42381

Well Name: THISTLE UNIT 66H

Sub-Division DELAWARE BASIN EAST		Region BASIN EAST		Field Name JOHNSON RANCH		County LEA		State/Province NM						
Surface Legal Location Sec 34 23S33E		API/UWI 3002542381		Latitude (°) 32° 15' 15.579" N		Longitude (°) 103° 33' 46.88" W		Orig KB Elevation (ft) 3,656.00		Ground Elev MSL (ft) 3,633.00		KB - GL (ft) 23.00		
Wellbores														
Wellbore Name OH		Parent Wellbore OH			SAP Well ID 38187			Vertical Section Direction (°) 359.56					HOBBS OCD	
Kick Offs & Key Depths														
Date 4/13/2015				Type Kick Off				Top Depth (ftKB) 9,085.0					OCT 01 2015	
Actual Deviation Survey EXTREME, Proposed? No				Definitive? Yes		Proposed? No		Proposed Deviation Survey						
Deviation Survey													RECEIVED	
Date 3/31/2015		Description EXTREME												
MD Tie In (ftKB) 0.00		TVD Tie In (ftKB) 0.00		Inclination Tie In (°) 0.00		Azimuth Tie In (°) 0.00		NSTie In (ft) 0.00		EWTie In (ft) 0.00				
Survey Data														
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company				
3/31/2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	MS	EXTREME				
3/31/2015	89.00	0.98	30.52	89.00	0.65	0.66	0.39	1.10	MS	EXTREME				
3/31/2015	203.00	1.01	32.93	202.98	2.33	2.34	1.43	0.05	MS	EXTREME				
3/31/2015	397.00	0.92	34.74	396.95	5.03	5.05	3.24	0.05	MS	EXTREME				
3/31/2015	504.00	0.79	36.09	503.94	6.32	6.36	4.17	0.12	MS	EXTREME				
3/31/2015	628.00	0.83	54.50	627.93	7.53	7.57	5.40	0.21	MS	EXTREME				
3/31/2015	810.00	0.98	66.41	809.90	8.90	8.96	7.90	0.13	MS	EXTREME				
3/31/2015	1,004.00	1.10	90.00	1,003.87	9.53	9.62	11.29	0.23	MS	EXTREME				
3/31/2015	1,086.00	1.08	92.30	1,085.86	9.49	9.59	12.84	0.06	MS	EXTREME				
3/31/2015	1,255.00	1.01	94.80	1,254.83	9.28	9.40	15.92	0.05	MS	EXTREME				
3/31/2015	1,331.00	0.70	206.11	1,330.83	8.80	8.93	16.38	1.87	MS	EXTREME				
3/31/2015	1,417.00	0.62	111.72	1,416.82	8.16	8.28	16.58	1.13	MS	EXTREME				
3/31/2015	1,508.00	0.59	356.63	1,507.82	8.44	8.57	17.01	1.12	MS	EXTREME				
3/31/2015	1,599.00	0.36	320.11	1,598.82	9.13	9.26	16.80	0.41	MS	EXTREME				
3/31/2015	1,691.00	0.27	296.82	1,690.81	9.45	9.58	16.42	0.17	MS	EXTREME				
3/31/2015	1,794.00	0.14	157.29	1,793.81	9.44	9.57	16.26	0.38	MS	EXTREME				
3/31/2015	1,885.00	0.09	278.71	1,884.81	9.35	9.48	16.23	0.22	MS	EXTREME				
3/31/2015	1,977.00	0.12	198.60	1,976.81	9.27	9.40	16.13	0.15	MS	EXTREME				
3/31/2015	2,072.00	0.23	76.30	2,071.81	9.22	9.35	16.28	0.33	MS	EXTREME				
3/31/2015	2,167.00	0.25	191.13	2,166.81	9.06	9.19	16.43	0.43	MS	EXTREME				
3/31/2015	2,262.00	0.29	85.62	2,261.81	8.88	9.01	16.63	0.45	MS	EXTREME				
3/31/2015	2,357.00	0.29	203.13	2,356.81	8.67	8.80	16.77	0.52	MS	EXTREME				
3/31/2015	2,452.00	0.31	79.42	2,451.81	8.50	8.63	16.93	0.56	MS	EXTREME				
3/31/2015	2,547.00	0.31	202.03	2,546.81	8.31	8.44	17.09	0.57	MS	EXTREME				
3/31/2015	2,651.00	0.09	55.43	2,650.81	8.09	8.22	17.05	0.37	MS	EXTREME				
3/31/2015	2,735.00	0.32	142.61	2,734.81	7.94	8.07	17.24	0.39	MS	EXTREME				
3/31/2015	2,829.00	0.31	321.43	2,828.81	7.93	8.06	17.24	0.67	MS	EXTREME				
3/31/2015	2,922.00	0.26	330.70	2,921.81	8.31	8.44	16.98	0.07	MS	EXTREME				
3/31/2015	3,018.00	0.16	220.31	3,017.81	8.40	8.53	16.79	0.36	MS	EXTREME				
3/31/2015	3,111.00	0.09	68.92	3,110.81	8.33	8.46	16.78	0.26	MS	EXTREME				
3/31/2015	3,204.00	0.04	255.60	3,203.81	8.35	8.48	16.81	0.14	MS	EXTREME				
3/31/2015	3,298.00	0.04	310.31	3,297.81	8.36	8.49	16.76	0.04	MS	EXTREME				
3/31/2015	3,339.00	0.16	59.42	3,338.81	8.40	8.53	16.79	0.43	MS	EXTREME				
3/31/2015	3,485.00	0.31	6.03	3,484.81	8.90	9.03	17.01	0.17	MS	EXTREME				
3/31/2015	3,579.00	0.31	320.51	3,578.81	9.35	9.48	16.88	0.26	MS	EXTREME				
3/31/2015	3,682.00	0.09	320.33	3,681.80	9.62	9.75	16.65	0.21	MS	EXTREME				
3/31/2015	3,777.00	0.22	200.40	3,776.80	9.51	9.64	16.54	0.29	MS	EXTREME				
3/31/2015	3,873.00	0.09	104.03	3,872.80	9.32	9.45	16.54	0.26	MS	EXTREME				
3/31/2015	3,967.00	0.22	205.81	3,966.80	9.14	9.27	16.54	0.27	MS	EXTREME				
3/31/2015	4,044.00	0.17	153.99	4,043.80	8.90	9.03	16.52	0.23	MS	EXTREME				
3/31/2015	4,139.00	0.13	228.39	4,138.80	8.71	8.83	16.50	0.19	MS	EXTREME				
3/31/2015	4,233.00	0.09	164.81	4,232.80	8.57	8.69	16.44	0.13	MS	EXTREME				
3/31/2015	4,328.00	0.15	214.90	4,327.80	8.39	8.52	16.39	0.12	MS	EXTREME				
3/31/2015	4,423.00	0.28	52.22	4,422.80	8.43	8.56	16.50	0.45	MS	EXTREME				
3/31/2015	4,515.00	0.31	40.79	4,514.80	8.75	8.88	16.85	0.07	MS	EXTREME				
3/31/2015	4,609.00	0.09	313.52	4,608.80	9.00	9.13	16.96	0.34	MS	EXTREME				
3/31/2015	4,704.00	0.40	34.20	4,703.80	9.32	9.45	17.09	0.42	MS	EXTREME				
3/31/2015	4,795.00	0.40	2.52	4,794.80	9.90	10.03	17.28	0.24	MS	EXTREME				
3/31/2015	4,889.00	0.31	60.61	4,888.80	10.35	10.49	17.52	0.38	MS	EXTREME				
3/31/2015	4,918.00	0.31	18.86	4,917.80	10.46	10.60	17.61	0.76	MS	EXTREME				
3/31/2015	5,014.00	1.00	323.30	5,013.79	11.38	11.52	17.20	0.90	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,108.00	0.60	308.40	5,107.78	12.35	12.48	16.32	0.48	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,202.00	0.50	328.40	5,201.78	13.01	13.13	15.72	0.23	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,297.00	0.40	323.70	5,296.77	13.64	13.75	15.31	0.11	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,391.00	0.40	302.20	5,390.77	14.08	14.19	14.83	0.16	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,485.00	0.40	323.30	5,484.77	14.52	14.63	14.36	0.16	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,580.00	0.40	308.00	5,579.77	14.99	15.10	13.90	0.11	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,674.00	0.40	295.50	5,673.76	15.34	15.45	13.35	0.09	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,768.00	0.40	291.50	5,767.76	15.61	15.71	12.74	0.03	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,863.00	0.40	282.90	5,862.76	15.81	15.90	12.11	0.06	MS	LEAM DRILLING SYSTEMS				
3/31/2015	5,956.00	0.40	300.80	5,955.76	16.05	16.14	11.52	0.13	MS	LEAM DRILLING SYSTEMS				
3/31/2015	6,051.00	0.53	300.82	6,050.75	16.45	16.54	10.85	0.14	MS	LEAM DRILLING SYSTEMS				
3/31/2015	6,145.00	0.35	280.60	6,144.75	16.73	16.81	10.20	0.25	MS	LEAM DRILLING SYSTEMS				
3/31/2015	6,240.00	0.53	273.04	6,239.75	16.81	16.89	9.48	0.20	MS	LEAM DRILLING SYSTEMS				
3/31/2015	6,335.00	0.62	247.73	6,334.74	16.65	16.72	8.56	0.28	MS	LEAM DRILLING SYSTEMS				
3/31/2015	6,429.00	0.44	246.68	6,428.74	16.32	16.38	7.76	0.19	MS	LEAM DRILLING SYSTEMS				

OCT 22 2015



Directional Survey

Well Name: THISTLE UNIT 66H

Sub-Division		Region		Field Name			County		State/Province		
DELAWARE BASIN EAST		BASIN EAST		JOHNSON RANCH			LEA		NM		
Surface Legal Location		API/UWI		Latitude (°)		Longitude (°)		Orig KB Elevation (ft)		Ground Elev MSL (ft)	
Sec 34 23S33E		3002542381		32° 15' 15.579" N		103° 33' 46.88" W		3,656.00		3,633.00	
KB - GL (ft)										23.00	
Survey Data											
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company	
3/31/2015	6,523.00	0.35	265.31	6,522.74	16.16	16.21	7.14	0.17	MS	LEAM DRILLING SYSTEMS	
3/31/2015	6,618.00	0.35	284.47	6,617.74	16.21	16.26	6.57	0.12	MS	LEAM DRILLING SYSTEMS	
3/31/2015	6,713.00	0.18	287.63	6,712.74	16.33	16.38	6.15	0.18	MS	LEAM DRILLING SYSTEMS	
3/31/2015	6,808.00	0.18	272.16	6,807.73	16.39	16.43	5.86	0.05	MS	LEAM DRILLING SYSTEMS	
3/31/2015	6,902.00	0.35	303.63	6,901.73	16.55	16.60	5.47	0.23	MS	LEAM DRILLING SYSTEMS	
3/31/2015	6,997.00	0.26	283.77	6,996.73	16.77	16.81	5.02	0.14	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,091.00	0.44	290.45	7,090.73	16.95	16.99	4.47	0.20	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,185.00	0.26	269.35	7,184.73	17.08	17.11	3.92	0.23	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,279.00	0.44	287.11	7,278.73	17.19	17.21	3.36	0.22	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,374.00	0.35	285.35	7,373.72	17.38	17.40	2.74	0.10	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,469.00	0.70	267.24	7,468.72	17.43	17.45	1.88	0.40	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,562.00	0.88	227.19	7,561.71	16.93	16.93	0.78	0.61	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,657.00	0.79	253.00	7,656.70	16.25	16.25	-0.38	0.40	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,751.00	0.70	252.83	7,750.69	15.90	15.89	-1.55	0.10	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,846.00	0.62	244.57	7,845.69	15.51	15.49	-2.56	0.13	MS	LEAM DRILLING SYSTEMS	
3/31/2015	7,941.00	0.62	248.61	7,940.68	15.11	15.09	-3.51	0.05	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,036.00	0.53	232.96	8,035.68	14.67	14.63	-4.34	0.19	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,131.00	0.44	222.95	8,130.67	14.14	14.10	-4.93	0.13	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,225.00	0.53	244.92	8,224.67	13.70	13.65	-5.57	0.22	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,321.00	0.53	243.51	8,320.67	13.32	13.27	-6.37	0.01	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,415.00	0.62	236.10	8,414.66	12.85	12.79	-7.19	0.12	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,509.00	0.62	225.76	8,508.66	12.21	12.15	-7.97	0.12	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,604.00	0.44	230.33	8,603.65	11.63	11.56	-8.62	0.19	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,699.00	0.53	201.32	8,698.65	10.99	10.92	-9.06	0.27	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,793.00	0.62	202.20	8,792.65	10.11	10.04	-9.41	0.10	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,888.00	0.53	209.06	8,887.64	9.26	9.18	-9.82	0.12	MS	LEAM DRILLING SYSTEMS	
3/31/2015	8,982.00	0.70	178.65	8,981.64	8.31	8.23	-10.02	0.39	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,029.00	0.79	180.23	9,028.63	7.69	7.62	-10.01	0.20	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,073.00	0.18	167.75	9,072.63	7.32	7.25	-10.00	1.40	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,104.00	2.02	354.43	9,103.62	7.82	7.74	-10.04	7.09	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,136.00	5.19	351.97	9,135.56	9.82	9.74	-10.30	9.92	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,167.00	8.35	352.50	9,166.34	13.44	13.36	-10.79	10.20	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,199.00	11.17	352.50	9,197.87	18.82	18.74	-11.50	8.81	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,231.00	13.81	352.67	9,229.11	25.69	25.60	-12.39	8.25	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,262.00	16.27	351.79	9,259.05	33.67	33.57	-13.48	7.97	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,294.00	18.20	351.97	9,289.61	43.07	42.95	-14.82	6.03	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,326.00	20.40	351.40	9,319.81	53.54	53.42	-16.35	6.90	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,357.00	22.86	351.97	9,348.62	64.86	64.72	-18.00	7.96	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,389.00	25.94	352.14	9,377.76	77.96	77.82	-19.83	9.63	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,420.00	28.67	351.79	9,405.30	92.06	91.89	-21.82	8.82	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,451.00	31.13	351.44	9,432.18	107.36	107.18	-24.07	7.96	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,483.00	34.29	351.09	9,459.10	124.47	124.27	-26.70	9.89	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,515.00	36.84	351.27	9,485.13	142.88	142.66	-29.55	7.98	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,546.00	39.31	351.09	9,509.53	161.80	161.55	-32.48	7.98	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,578.00	40.98	352.85	9,533.99	182.24	181.98	-35.36	6.31	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,610.00	43.35	353.20	9,557.71	203.58	203.30	-37.97	7.44	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,641.00	46.60	353.73	9,579.63	225.37	225.06	-40.46	10.55	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,672.00	50.65	353.90	9,600.12	248.51	248.19	-42.96	13.07	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,704.00	54.69	353.55	9,619.52	273.82	273.47	-45.74	12.65	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,735.00	58.56	353.55	9,636.57	299.56	299.19	-48.65	12.48	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,767.00	63.58	353.55	9,652.04	327.40	327.01	-51.80	15.69	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,798.00	68.06	353.73	9,664.74	355.52	355.11	-54.93	14.46	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,830.00	72.37	353.73	9,675.57	385.47	385.04	-58.22	13.47	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,861.00	77.21	354.78	9,683.70	415.25	414.79	-61.21	15.95	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,893.00	81.87	355.48	9,689.51	446.61	446.14	-63.87	14.72	MS	LEAM DRILLING SYSTEMS	
3/31/2015	9,919.00	85.82	355.31	9,692.29	472.39	471.90	-65.95	15.21	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,013.00	89.25	355.84	9,696.34	566.06	565.52	-73.19	3.69	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,107.00	90.22	355.66	9,696.77	659.85	659.26	-80.16	1.05	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,202.00	90.84	356.01	9,695.89	754.65	754.00	-87.06	0.75	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,296.00	92.07	358.12	9,693.51	848.52	847.84	-91.87	2.60	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,390.00	92.33	359.00	9,689.90	942.44	941.74	-94.23	0.98	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,485.00	92.68	0.23	9,685.75	1,037.34	1,036.64	-94.87	1.34	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,579.00	91.28	1.46	9,682.50	1,131.26	1,130.57	-93.48	1.98	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,673.00	89.96	1.11	9,681.48	1,225.21	1,224.54	-91.38	1.45	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,768.00	90.04	1.29	9,681.48	1,320.17	1,319.52	-89.39	0.21	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,861.00	90.48	1.81	9,681.06	1,413.11	1,412.49	-86.87	0.73	MS	LEAM DRILLING SYSTEMS	
3/31/2015	10,956.00	90.04	1.81	9,680.63	1,508.04	1,507.44	-83.87	0.46	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,050.00	90.57	2.34	9,680.13	1,601.94	1,601.37	-80.47	0.80	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,145.00	90.48	1.99	9,679.26	1,696.84	1,696.30	-76.88	0.38	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,240.00	90.22	1.11	9,678.68	1,791.78	1,791.26	-74.31	0.97	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,334.00	89.87	1.46	9,678.60	1,885.74	1,885.24	-72.20	0.53	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,428.00	89.43	0.93	9,679.18	1,979.70	1,979.22	-70.24	0.73	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,523.00	89.78	1.11	9,679.83	2,074.67	2,074.20	-68.55	0.41	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,618.00	90.04	1.46	9,679.98	2,169.62	2,169.18	-66.42	0.46	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,713.00	90.66	1.29	9,679.40	2,264.57	2,264.15	-64.14	0.68	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,807.00	90.13	1.29	9,678.75	2,358.53	2,358.12	-62.02	0.56	MS	LEAM DRILLING SYSTEMS	
3/31/2015	11,902.00	89.34	1.11	9,679.19	2,453.49	2,453.10	-60.03	0.85	MS	LEAM DRILLING SYSTEMS	
Page 2/3											
Report Printed: 9/28/2015											



Directional Survey

Well Name: THISTLE UNIT 66H

Sub-Division DELAWARE BASIN EAST		Region BASIN EAST		Field Name JOHNSON RANCH				County LEA		State/Province NM			
Surface Legal Location Sec 34 23S33E		API/UWI 3002542381		Latitude (") 32° 15' 15.579" N		Longitude (") 103° 33' 46.88" W		Orig KB Elevation (ft) 3,656.00		Ground Elev MSL (ft) 3,633.00		KB - GL (ft) 23.00	
Survey Data													
Date	MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company			
3/31/2015	11,996.00	89.52	0.76	9,680.13	2,547.45	2,547.08	-58.50	0.42	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,090.00	89.96	0.41	9,680.55	2,641.44	2,641.07	-57.54	0.60	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,184.00	89.34	0.58	9,681.13	2,735.42	2,735.07	-56.73	0.68	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,279.00	89.96	0.05	9,681.71	2,830.41	2,830.06	-56.21	0.86	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,374.00	90.04	359.53	9,681.71	2,925.41	2,925.06	-56.55	0.55	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,467.00	89.43	359.53	9,682.14	3,018.41	3,018.06	-57.32	0.66	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,562.00	89.96	359.35	9,682.64	3,113.41	3,113.05	-58.25	0.59	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,681.00	90.84	359.53	9,681.81	3,232.40	3,232.04	-59.41	0.75	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,775.00	90.66	359.88	9,680.58	3,326.39	3,326.03	-59.89	0.42	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,869.00	90.92	0.58	9,679.29	3,420.38	3,420.02	-59.51	0.79	MS	LEAM DRILLING SYSTEMS			
3/31/2015	12,964.00	90.92	0.76	9,677.76	3,515.35	3,515.00	-58.40	0.19	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,059.00	91.36	0.41	9,675.87	3,610.31	3,609.98	-57.43	0.59	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,153.00	89.87	359.70	9,674.86	3,704.30	3,703.97	-57.34	1.76	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,248.00	89.25	359.53	9,675.59	3,799.30	3,798.97	-57.98	0.68	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,342.00	88.29	359.18	9,677.61	3,893.28	3,892.94	-59.04	1.09	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,437.00	87.94	359.00	9,680.73	3,988.22	3,987.87	-60.55	0.41	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,532.00	87.93	358.47	9,684.16	4,083.15	4,082.79	-62.64	0.56	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,626.00	88.02	358.65	9,687.48	4,177.08	4,176.70	-65.01	0.21	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,721.00	88.55	359.18	9,690.32	4,272.03	4,271.64	-66.80	0.79	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,816.00	87.05	359.35	9,693.97	4,366.95	4,366.56	-68.02	1.59	MS	LEAM DRILLING SYSTEMS			
3/31/2015	13,909.00	87.58	359.35	9,698.33	4,459.85	4,459.45	-69.07	0.57	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,003.00	88.46	359.35	9,701.57	4,553.79	4,553.39	-70.14	0.94	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,107.00	88.29	359.70	9,704.52	4,657.75	4,657.34	-71.00	0.37	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,193.00	88.20	359.18	9,707.16	4,743.71	4,743.30	-71.84	0.61	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,287.00	87.85	359.88	9,710.40	4,837.65	4,837.24	-72.61	0.83	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,381.00	88.37	0.76	9,713.50	4,931.59	4,931.18	-72.09	1.09	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,475.00	88.90	1.64	9,715.74	5,025.52	5,025.13	-70.12	1.09	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,570.00	89.69	1.46	9,716.90	5,120.46	5,120.09	-67.55	0.85	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,665.00	91.98	1.64	9,715.52	5,215.39	5,215.04	-64.98	2.42	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,760.00	92.68	1.11	9,711.66	5,310.26	5,309.93	-62.70	0.92	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,855.00	93.65	1.81	9,706.41	5,405.06	5,404.76	-60.29	1.26	MS	LEAM DRILLING SYSTEMS			
3/31/2015	14,949.00	93.21	1.64	9,700.79	5,498.82	5,498.55	-57.46	0.50	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,045.00	94.53	1.64	9,694.31	5,594.54	5,594.28	-54.72	1.37	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,139.00	94.44	0.05	9,686.96	5,688.23	5,687.98	-53.34	1.69	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,233.00	93.83	359.18	9,680.18	5,781.98	5,781.74	-53.97	1.13	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,328.00	91.01	357.95	9,676.17	5,876.87	5,876.61	-56.35	3.24	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,423.00	91.54	357.42	9,674.06	5,971.79	5,971.51	-60.18	0.79	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,517.00	91.28	357.77	9,671.74	6,065.71	6,065.40	-64.13	0.46	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,612.00	90.22	358.47	9,670.50	6,160.67	6,160.34	-67.24	1.34	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,706.00	91.01	358.65	9,669.49	6,254.65	6,254.30	-69.61	0.86	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,801.00	92.24	358.82	9,666.80	6,349.60	6,349.24	-71.70	1.31	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,895.00	92.33	0.05	9,663.05	6,443.52	6,443.16	-72.63	1.31	MS	LEAM DRILLING SYSTEMS			
3/31/2015	15,989.00	91.71	359.53	9,659.73	6,537.46	6,537.10	-72.97	0.86	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,084.00	92.68	359.88	9,656.10	6,632.39	6,632.02	-73.46	1.09	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,179.00	92.33	0.41	9,651.94	6,727.30	6,726.93	-73.22	0.67	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,273.00	91.19	0.23	9,649.06	6,821.24	6,820.88	-72.70	1.23	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,369.00	91.01	0.41	9,647.21	6,917.22	6,916.86	-72.16	0.27	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,464.00	87.67	357.70	9,648.31	7,012.18	7,011.82	-73.73	4.53	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,559.00	88.90	359.70	9,651.15	7,107.12	7,106.75	-75.88	2.47	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,654.00	87.67	0.05	9,653.99	7,202.08	7,201.70	-76.09	1.35	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,749.00	87.14	0.76	9,658.30	7,296.97	7,296.60	-75.42	0.93	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,844.00	88.64	0.93	9,661.79	7,391.88	7,391.53	-74.02	1.59	MS	LEAM DRILLING SYSTEMS			
3/31/2015	16,938.00	89.69	0.76	9,663.16	7,485.84	7,485.51	-72.63	1.13	MS	LEAM DRILLING SYSTEMS			
3/31/2015	17,033.00	91.89	1.64	9,661.85	7,580.79	7,580.47	-70.64	2.49	MS	LEAM DRILLING SYSTEMS			
3/31/2015	17,048.00	92.15	1.81	9,661.32	7,595.77	7,595.45	-70.19	2.07	MS	LEAM DRILLING SYSTEMS			
3/31/2015	17,110.00	92.15	1.81	9,659.00	7,657.68	7,657.38	-68.23	0.00	BIT	LEAM DRILLING SYSTEMS			

Page 3/3

Report Printed: 9/28/2015