

Survey Report

MIN. CURVATURE CALCULATIONS (SPE-3362)

OPERATOR: Synergy Operating, LLC
WELL: Bois D' Arc Encino 15 #1
LOCATION: Mckinley Co. N.M.

START: 11/19/01
FINISH: 12/1/01

PROPOSED DIREC	0.00
Magnetic to True:	10.8

STATIONSURVEY							VERT.	DLS/
NUMBER DEPTH	INC	AZMTH	TVD	N-S	E-W	SECTION	100	
TIE IN	0	0.00	0.00	0.00	0.00	0.0	0.0	
1	499	11.1	67.4	495.9	18.5	44.5	18.5	2.2
2	655	9.8	65.6	649.3	29.8	70.4	29.8	0.9
3	811	8.0	67.7	803.4	39.4	92.6	39.4	1.2
4	968	5.6	69.0	959.3	46.3	109.8	46.3	1.5
5	1125	4.1	65.3	1115.7	51.4	122.1	51.4	1.0
6	1283	2.7	70.8	1273.4	54.9	130.7	54.9	0.9
7	1352	2.1	70.3	1342.4	55.9	133.5	55.9	0.9
8	1406	2.0	69.4	1396.4	56.6	135.3	56.6	0.2
9	1500	2.4	67.7	1490.3	57.9	138.6	57.9	0.4
10	1532	2.0	74.0	1522.3	58.3	139.8	58.3	1.5
11	1594	2.4	69.6	1584.2	59.1	142.0	59.1	0.7
12	1686	0.9	50.0	1676.2	60.2	144.4	60.2	1.7
13	1778	1.0	57.0	1768.2	61.1	145.6	61.1	0.2
14	1872	0.9	49.0	1862.1	62.0	146.9	62.0	0.2
15	1967	0.8	45.4	1957.1	63.0	147.9	63.0	0.1
16	2467	0.5	45.0	2457.1	67.0	151.9	67.0	0.1
17	2983	0.8	45.0	2973.1	71.0	155.9	71.0	0.0
18	3480	0.8	45.0	3470.0	75.6	160.5	75.6	0.0
19	3977	0.8	45.0	3967.0	80.2	165.1	80.2	0.0
20	4475	1.5	45.0	4464.9	87.1	172.0	87.1	0.2
21	4975	1.0	45.0	4964.8	94.8	179.7	94.8	0.1
22	5298	1.0	45.0	5287.7	98.8	183.7	98.8	0.0

BHL 151' FNL, 136.8' FEL
208.5' → 62' from S.H.L. 12-5-2001

Bois d' Arc Encino 15 # 1

5-1/2" 15.5# J-55 ST&C Production Casing Tally

Item		Footage	Cumulative Footage	Top Depth	Btm Depth		
Shoe		0.75	0.75	5,288.46	5,289.21		
	1	44.40	45.15	5,244.06	5,244.81		
Float Collar		0.60	45.75	5,243.45	5,244.20		
	2	44.38	90.13	5,199.07	5,199.82	Centralizer	1
	3	44.48	134.61	5,154.59	5,155.34		
	4	44.38	178.99	5,110.21	5,110.96	Centralizer	2
	5	44.32	223.31	5,065.89	5,066.64		
	6	44.42	267.73	5,021.47	5,022.22	Centralizer	3
	7	44.40	312.13	4,977.07	4,977.82		
	8	44.32	356.45	4,932.75	4,933.50	Centralizer	4
	9	44.40	400.85	4,888.35	4,889.10		
	10	44.32	445.17	4,844.03	4,844.78		
	11	44.34	489.51	4,799.69	4,800.44		
	12	44.32	533.83	4,755.37	4,756.12	Centralizer	5
	13	44.33	578.16	4,711.04	4,711.79		
	14	44.36	622.52	4,666.68	4,667.43		
	15	44.32	666.84	4,622.36	4,623.11		
	16	44.28	711.12	4,578.08	4,578.83	Centralizer	6
	17	43.32	754.44	4,534.76	4,535.51		
	18	44.38	798.82	4,490.38	4,491.13		
	19	44.38	843.20	4,446.00	4,446.75		
	20	44.40	887.60	4,401.60	4,402.35	Centralizer	7
	21	44.00	931.60	4,357.60	4,358.35		
	22	44.37	975.97	4,313.23	4,313.98		
	23	44.39	1,020.36	4,268.84	4,269.59		
	24	44.35	1,064.71	4,224.49	4,225.24	Centralizer	8
	25	44.39	1,109.10	4,180.10	4,180.85		
	26	44.35	1,153.45	4,135.75	4,136.50		
	27	44.38	1,197.83	4,091.37	4,092.12		
	28	44.32	1,242.15	4,047.05	4,047.80	Centralizer	9
	29	44.35	1,286.50	4,002.70	4,003.45		
	30	44.39	1,330.89	3,958.31	3,959.06		
	31	44.37	1,375.26	3,913.94	3,914.69		
	32	44.36	1,419.62	3,869.58	3,870.33	Centralizer	10
	33	44.32	1,463.94	3,825.26	3,826.01		
	34	44.40	1,508.34	3,780.86	3,781.61		
	35	44.38	1,552.72	3,736.48	3,737.23		
	36	44.37	1,597.09	3,692.11	3,692.86	Centralizer	11
	37	44.37	1,641.46	3,647.74	3,648.49		
	38	44.39	1,685.85	3,603.35	3,604.10		
	39	44.38	1,730.23	3,558.97	3,559.72		
	40	44.36	1,774.59	3,514.61	3,515.36	Centralizer	12
	41	44.40	1,818.99	3,470.21	3,470.96		
	42	44.35	1,863.34	3,425.86	3,426.61		
	43	44.36	1,907.70	3,381.50	3,382.25		
	44	44.35	1,952.05	3,337.15	3,337.90	Centralizer	13
	45	44.36	1,996.41	3,292.79	3,293.54		
	46	44.36	2,040.77	3,248.43	3,249.18		
	47	44.37	2,085.14	3,204.06	3,204.81		
	48	44.36	2,129.50	3,159.70	3,160.45	Centralizer	14
	49	44.35	2,173.85	3,115.35	3,116.10		

Bois d' Arc Encino 15 # 1

5-1/2" 15.5# J-55 ST&C Production Casing Tally

Item	Footage	Cumulative Footage	Top Depth	Btm Depth		
	50	44.32	2,218.17	3,071.03	3,071.78	
	51	44.35	2,262.52	3,026.68	3,027.43	Cement Basket
Stage Tool		2.08	2,264.61	3,024.60	3,025.35	
	52	44.36	2,308.97	2,980.24	2,980.99	Centralizer 15
	53	44.36	2,353.33	2,935.88	2,936.63	
	54	44.40	2,397.73	2,891.48	2,892.23	
	55	44.38	2,442.11	2,847.10	2,847.85	Centralizer 16
	56	44.39	2,486.50	2,802.71	2,803.46	
	57	44.37	2,530.87	2,758.34	2,759.09	Centralizer 17
	58	44.38	2,575.25	2,713.96	2,714.71	
	59	44.38	2,619.63	2,669.58	2,670.33	
	60	44.38	2,664.01	2,625.20	2,625.95	
	61	44.42	2,708.43	2,580.78	2,581.53	Centralizer 18
	62	44.41	2,752.84	2,536.37	2,537.12	
	63	44.32	2,797.16	2,492.05	2,492.80	Centralizer 19
	64	44.34	2,841.50	2,447.71	2,448.46	
	65	44.35	2,885.85	2,403.36	2,404.11	Centralizer 20
	66	44.34	2,930.19	2,359.02	2,359.77	
	67	44.32	2,974.51	2,314.70	2,315.45	Centralizer 21
	68	44.40	3,018.91	2,270.30	2,271.05	
	69	44.36	3,063.27	2,225.94	2,226.69	Centralizer 22
	70	44.32	3,107.59	2,181.62	2,182.37	
	71	44.42	3,152.01	2,137.20	2,137.95	
	72	44.41	3,196.42	2,092.79	2,093.54	
	73	44.38	3,240.80	2,048.41	2,049.16	Centralizer 23
	74	44.35	3,285.15	2,004.06	2,004.81	
	75	44.37	3,329.52	1,959.69	1,960.44	
	76	44.31	3,373.83	1,915.38	1,916.13	
	77	44.32	3,418.15	1,871.06	1,871.81	Centralizer 24
	78	44.27	3,462.42	1,826.79	1,827.54	
	79	44.36	3,506.78	1,782.43	1,783.18	
	80	44.34	3,551.12	1,738.09	1,738.84	
	81	44.37	3,595.49	1,693.72	1,694.47	Centralizer 25
	82	44.32	3,639.81	1,649.40	1,650.15	
	83	44.31	3,684.12	1,605.09	1,605.84	
	84	44.38	3,728.50	1,560.71	1,561.46	
	85	44.33	3,772.83	1,516.38	1,517.13	Centralizer 26
	86	44.35	3,817.18	1,472.03	1,472.78	
	87	44.35	3,861.53	1,427.68	1,428.43	
	88	44.37	3,905.90	1,383.31	1,384.06	
	89	44.37	3,950.27	1,338.94	1,339.69	Centralizer 27
	90	44.40	3,994.67	1,294.54	1,295.29	
	91	44.30	4,038.97	1,250.24	1,250.99	
	92	44.36	4,083.33	1,205.88	1,206.63	
	93	44.31	4,127.64	1,161.57	1,162.32	Centralizer 28
	94	44.33	4,171.97	1,117.24	1,117.99	
	95	44.48	4,216.45	1,072.76	1,073.51	
	96	44.36	4,260.81	1,028.40	1,029.15	
	97	44.35	4,305.16	984.05	984.80	Centralizer 29
	98	44.35	4,349.51	939.70	940.45	
	99	44.37	4,393.88	895.33	896.08	

Bois d' Arc Encino 15 # 1
5-1/2" 15.5# J-55 ST&C Production Casing Tally

Item	Footage	Cumulative Footage	Top Depth	Btm Depth		
100	44.32	4,438.20	851.01	851.76		
101	44.36	4,482.56	806.65	807.40	Centralizer	30
102	44.31	4,526.87	762.34	763.09		
103	44.35	4,571.22	717.99	718.74		
104	44.32	4,615.54	673.67	674.42		
105	44.32	4,659.86	629.35	630.10	Turbolizer	1
106	44.00	4,703.86	585.35	586.10		
107	44.36	4,748.22	540.99	541.74		
108	44.32	4,792.54	496.67	497.42		
109	44.36	4,836.90	452.31	453.06	Centralizer	31
110	44.39	4,881.29	407.92	408.67		
111	44.27	4,925.56	363.65	364.40	Centralizer	32
112	44.36	4,969.92	319.29	320.04	Turbolizer	2
113	44.09	5,014.01	275.20	275.95	Centralizer	33
114	44.36	5,058.37	230.84	231.59		
115	44.39	5,102.76	186.45	187.20	Centralizer	34
116	44.33	5,147.09	142.12	142.87		
117	44.33	5,191.42	97.79	98.54	Centralizer	35
118	44.35	5,235.77	53.44	54.19		
119	44.28	5,280.05	9.16	9.91		

Landing Sub 15.15 5,295.20 (5.99) (5.24)

Stick-up above KB -5.99 5,289.21

Screw On Wellhead, 18" above 8-5/8" Casing Head, reason for distance off of TD.

Total Depth of the Hole	5298	
Shoe Distance off of hole TD when landed		8.79 feet
Centralizers Run	35	
Turbolizers Run	2	
Cement Baskets Run	1	
Shoe Depth	5,289.21	
Float Collar Depth	5,243.45	
Stage Tool Depth	3,024.60	

Joints to return to Stock

1	44.30
2	44.30
3	44.33
4	44.36
5	44.35

Short Jt. (6) 5.20
Landing Jt. (7) 15.15

By Thomas E. Mullins
Synergy Operating, LLC
December 2, 2001

Aztec Rig # 507
San Juan Casing Crew