

ms

Core No. 11326

< **BECFIELD SURVEY AND TARGET TRACKING PROGRAM** >

OPERATOR: TEXACO, INC.
WELL: JICARILLA "C" NO. 35
LOCATION: RIO ARRIBA COUNTY, NEW MEXICO

START: 11/27/95
FINISH: 12/17/95
BECFIELD DIR.COORD.
STEVE BLOUNT
ALAN PEDERSON
11.2 degs applied = TRUE

Survey number 0 is a Tie-In to a
GYRO survey run by SCIENTIFIC DRILLING

< **MINIMUM CURVATURE CALCULATIONS(SPE-3362)** **PROPOSED DIR.** >
90.00

SUR NUM	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
0	5950	1.07	210.68	5947.15	-123.24	-108.29	-108.29	0.18
1	5987	1.10	150.00	5984.14	-123.84	-108.29	-108.29	2.96
2	5990	1.00	146.30	5987.14	-123.89	-108.26	-108.26	4.03
3	5992	1.20	133.40	5989.14	-123.92	-108.23	-108.23	15.86
4	5994	1.70	117.60	5991.14	-123.95	-108.19	-108.19	31.79
5	5996	2.40	110.50	5993.14	-123.98	-108.13	-108.13	37.17
6	5998	3.10	106.00	5995.14	-124.01	-108.04	-108.04	36.60
7	6000	3.90	103.00	5997.14	-124.04	-107.92	-107.92	41.02
8	6002	4.80	101.30	5999.13	-124.07	-107.77	-107.77	45.45
9	6004	6.00	99.70	6001.12	-124.10	-107.58	-107.58	60.46
10	6006	7.10	99.20	6003.11	-124.14	-107.36	-107.36	55.07
11	6008	8.00	99.20	6005.09	-124.18	-107.10	-107.10	45.00
12	6010	8.90	98.80	6007.07	-124.23	-106.81	-106.81	45.10
13	6012	9.80	98.70	6009.04	-124.28	-106.49	-106.49	45.01
14	6014	10.60	98.70	6011.01	-124.33	-106.14	-106.14	40.00
15	6016	11.60	98.70	6012.97	-124.39	-105.76	-105.76	50.00
16	6018	12.50	98.70	6014.93	-124.45	-105.35	-105.35	45.00
17	6020	13.30	98.70	6016.88	-124.52	-104.90	-104.90	40.00
18	6022	14.10	98.70	6018.82	-124.59	-104.44	-104.44	40.00
19	6024	14.90	98.70	6020.76	-124.67	-103.94	-103.94	40.00
20	6026	15.70	98.70	6022.69	-124.75	-103.42	-103.42	40.00
21	6028	16.50	98.70	6024.61	-124.83	-102.87	-102.87	40.00
22	6030	17.40	98.70	6026.52	-124.92	-102.29	-102.29	45.00
23	6032	18.30	95.80	6028.43	-125.00	-101.69	-101.69	63.24
24	6034	19.00	94.00	6030.32	-125.05	-101.05	-101.05	45.31
25	6036	20.00	92.60	6032.21	-125.09	-100.38	-100.38	55.19
26	6038	21.00	92.10	6034.08	-125.12	-99.68	-99.68	50.76
27	6040	22.00	91.50	6035.94	-125.14	-98.95	-98.95	51.19
28	6042	23.10	91.00	6037.79	-125.16	-98.18	-98.18	55.83
29	6044	24.20	90.80	6039.62	-125.17	-97.38	-97.38	55.15
30	6046	25.40	90.60	6041.43	-125.18	-96.54	-96.54	60.15

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MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIR.

90.00

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SUR			TRUE					DLS/
NUM	MD	INC	AZM	TVD	N-S	E-W	SECT	100
31	6048	26.40	90.60	6043.23	-125.19	-95.67	-95.67	50.00
32	6050	27.60	90.40	6045.02	-125.20	-94.76	-94.76	60.17
33	6052	28.50	90.30	6046.78	-125.20	-93.82	-93.82	45.06
34	6054	29.50	90.10	6048.53	-125.21	-92.85	-92.85	50.23
35	6056	30.70	90.00	6050.26	-125.21	-91.85	-91.85	60.05
36	6058	31.70	89.70	6051.97	-125.20	-90.81	-90.81	50.60
37	6060	32.80	89.80	6053.66	-125.20	-89.75	-89.75	55.06
38	6062	34.00	89.60	6055.33	-125.19	-88.64	-88.64	60.25
39	6064	35.00	89.20	6056.98	-125.18	-87.51	-87.51	51.27
40	6066	36.30	89.10	6058.61	-125.16	-86.35	-86.35	65.07
41	6068	37.20	88.80	6060.21	-125.14	-85.15	-85.15	45.89
42	6070	38.30	88.70	6061.79	-125.12	-83.93	-83.93	55.09
43	6072	39.40	88.40	6063.35	-125.08	-82.67	-82.67	55.80
44	6074	40.50	88.20	6064.88	-125.05	-81.39	-81.39	55.37
45	6076	41.50	88.00	6066.39	-125.00	-80.08	-80.08	50.43
46	6078	42.60	87.80	6067.87	-124.95	-78.74	-78.74	55.41
47	6080	43.70	87.60	6069.33	-124.90	-77.37	-77.37	55.42
48	6085	47.30	87.60	6072.84	-124.75	-73.81	-73.81	72.00
49	6090	50.20	87.20	6076.13	-124.58	-70.05	-70.05	58.31
50	6095	53.40	87.20	6079.23	-124.39	-66.13	-66.13	64.00
51	6100	57.20	87.10	6082.07	-124.18	-62.02	-62.02	76.02
52	6105	61.50	87.30	6084.62	-123.97	-57.73	-57.73	86.07
53	6110	66.50	87.20	6086.81	-123.76	-53.24	-53.24	100.02
54	6115	71.50	84.80	6088.60	-123.43	-48.59	-48.59	109.57
55	6120	76.80	84.40	6089.97	-122.98	-43.80	-43.80	106.28
56	6125	81.10	83.50	6090.93	-122.46	-38.92	-38.92	87.79
57	6130	84.20	83.10	6091.57	-121.88	-34.00	-34.00	62.51
58	6135	85.80	82.50	6092.00	-121.26	-29.06	-29.06	34.16
59	6140	86.50	82.90	6092.34	-120.62	-24.11	-24.11	16.12
60	6145	86.60	82.80	6092.64	-120.00	-19.16	-19.16	2.83
61	6150	86.70	82.60	6092.93	-119.37	-14.20	-14.20	4.47

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SUR			TRUE					DLS/
NUM	MD	INC	AZM	TVD	N-S	E-W	SECT	100
62	6155	86.90	82.60	6093.21	-118.72	-9.25	-9.25	4.00
63	6160	87.10	82.70	6093.47	-118.08	-4.30	-4.30	4.47
64	6165	87.40	82.70	6093.71	-117.45	0.65	0.65	6.00
65	6170	87.60	82.80	6093.93	-116.82	5.61	5.61	4.47
66	6200	88.20	84.40	6095.03	-113.48	35.40	35.40	5.69
67	6231	89.40	85.80	6095.68	-110.83	66.28	66.28	5.95
68	6263	88.00	85.90	6096.40	-108.52	98.18	98.18	4.39
69	6294	86.50	86.00	6097.89	-106.33	129.07	129.07	4.85
70	6326	85.60	85.80	6100.09	-104.05	160.91	160.91	2.88
71	6358	84.60	86.30	6102.83	-101.85	192.72	192.72	3.49
72	6389	84.60	86.10	6105.75	-99.80	223.51	223.51	0.64
73	6420	84.30	87.10	6108.74	-97.98	254.31	254.31	3.35
74	6452	85.00	87.30	6111.73	-96.42	286.14	286.14	2.27
75	6483	86.10	87.50	6114.13	-95.02	317.01	317.01	3.61
76	6515	87.50	87.80	6115.92	-93.71	348.93	348.93	4.47
77	6545	87.90	87.90	6117.12	-92.58	378.89	378.89	1.37
78	6577	87.40	85.80	6118.43	-90.83	410.81	410.81	6.74
79	6606	86.80	87.10	6119.90	-89.03	439.72	439.72	4.93
80	6635	86.70	87.60	6121.55	-87.69	468.64	468.64	1.76
81	6665	87.10	88.10	6123.17	-86.57	498.57	498.57	2.13
82	6696	88.70	88.90	6124.30	-85.76	529.54	529.54	5.77
83	6727	89.30	89.00	6124.85	-85.19	560.53	560.53	1.96
84	6759	89.20	88.20	6125.26	-84.41	592.52	592.52	2.52
85	6789	88.80	87.80	6125.79	-83.36	622.50	622.50	1.89
86	6821	87.60	88.60	6126.79	-82.36	654.46	654.46	4.51
87	6852	87.50	87.80	6128.12	-81.38	685.42	685.42	2.60
88	6882	87.30	88.20	6129.48	-80.34	715.37	715.37	1.49
89	6913	86.80	89.20	6131.07	-79.64	746.32	746.32	3.60
90	6945	87.10	88.90	6132.78	-79.11	778.27	778.27	1.32
91	6974	87.60	89.10	6134.12	-78.60	807.24	807.24	1.86
92	7005	88.00	88.90	6135.31	-78.06	838.21	838.21	1.44

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NUM	MD	INC	AZM	TVD	N-S	E-W	SECT	100
93	7037	88.60	89.60	6136.26	-77.64	870.19	870.19	2.88
94	7068	89.40	88.70	6136.80	-77.18	901.18	901.18	3.88
95	7098	89.80	88.40	6137.01	-76.42	931.17	931.17	1.67
96	7130	89.20	88.70	6137.29	-75.61	963.16	963.16	2.10
97	7162	89.90	87.70	6137.54	-74.61	995.14	995.14	3.81
98	7192	89.00	86.90	6137.83	-73.19	1025.11	1025.11	4.01
99	7224	88.60	87.00	6138.50	-71.49	1057.06	1057.06	1.29
100	7262	88.90	90.10	6139.33	-70.53	1095.03	1095.03	8.19
101	7292	88.90	91.20	6139.90	-70.87	1125.02	1125.02	3.67
102	7322	89.90	91.40	6140.22	-71.55	1155.01	1155.01	3.40
103	7353	90.40	91.10	6140.13	-72.23	1186.00	1186.00	1.88
104	7385	90.70	90.90	6139.83	-72.79	1218.00	1218.00	1.13
105	7417	90.20	89.50	6139.58	-72.90	1250.00	1250.00	4.65
106	7446	89.90	89.90	6139.55	-72.75	1279.00	1279.00	1.72
107	7478	90.00	90.20	6139.58	-72.77	1310.99	1310.99	0.99
108	7509	89.70	90.40	6139.66	-72.94	1341.99	1341.99	1.16
109	7540	89.80	91.40	6139.80	-73.42	1372.99	1372.99	3.24
110	7572	88.90	91.60	6140.16	-74.26	1404.98	1404.98	2.88
111	7604	86.80	91.40	6141.36	-75.10	1436.94	1436.94	6.59
112	7635	86.00	91.50	6143.31	-75.88	1467.87	1467.87	2.60
113	7665	84.70	91.00	6145.74	-76.53	1497.76	1497.76	4.64
114	7700	84.50	90.20	6149.03	-76.90	1532.61	1532.61	2.35
115	7732	87.10	90.10	6151.37	-76.98	1564.52	1564.52	8.13
116	7762	88.50	89.80	6152.53	-76.96	1594.49	1594.49	4.77
117	7792	88.20	89.50	6153.39	-76.77	1624.48	1624.48	1.41
118	7823	86.40	89.90	6154.85	-76.61	1655.44	1655.44	5.95
119	7852	86.40	90.10	6156.67	-76.61	1684.39	1684.39	0.69
120	7884	86.50	90.20	6158.65	-76.69	1716.33	1716.33	0.44
121	7914	87.40	89.90	6160.25	-76.72	1746.28	1746.28	3.16
122	7945	87.90	90.00	6161.52	-76.69	1777.26	1777.26	1.64
123	7974	88.70	90.30	6162.38	-76.77	1806.24	1806.24	2.95

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PROPOSED DIR.

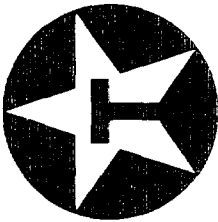
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90.00

SUR			TRUE					DLS/
NUM	MD	INC	AZM	TVD	N-S	E-W	SECT	100
124	8005	88.10	90.80	6163.25	-77.07	1837.23	1837.23	2.52
125	8037	87.60	90.70	6164.45	-77.49	1869.20	1869.20	1.59
126	8066	87.80	91.20	6165.61	-77.97	1898.18	1898.18	1.86
127	8079	87.90	91.50	6166.10	-78.27	1911.16	1911.16	2.43
128	8111	87.70	90.00	6167.33	-78.69	1943.14	1943.14	4.73
129	8141	87.60	88.90	6168.56	-78.40	1973.11	1973.11	3.68
130	8174	86.40	88.00	6170.28	-77.51	2006.05	2006.05	4.54
131	8206	86.60	87.00	6172.24	-76.12	2037.96	2037.96	3.18
132	8236	86.90	86.30	6173.94	-74.37	2067.86	2067.86	2.54
133	8266	86.90	85.80	6175.56	-72.30	2097.75	2097.75	1.66
134	8298	87.00	85.50	6177.26	-69.88	2129.61	2129.61	0.99
135	8330	88.30	86.60	6178.58	-67.68	2161.51	2161.51	5.32
136	8361	88.00	86.60	6179.58	-65.84	2192.43	2192.43	0.97
137	8392	89.20	86.60	6180.33	-64.00	2223.37	2223.37	3.87
138	8423	89.20	87.30	6180.77	-62.35	2254.32	2254.32	2.26
139	8452	90.30	87.50	6180.89	-61.04	2283.29	2283.29	3.86
140	8481	90.40	88.40	6180.72	-60.00	2312.27	2312.27	3.12
141	8512	89.60	87.50	6180.72	-58.89	2343.25	2343.25	3.88
142	8544	88.60	87.20	6181.22	-57.41	2375.21	2375.21	3.26
143	8574	87.60	87.30	6182.21	-55.97	2405.16	2405.16	3.35
144	8604	87.10	86.20	6183.60	-54.28	2435.08	2435.08	4.02
145	8635	86.70	86.60	6185.28	-52.33	2465.98	2465.98	1.82
146	8670	86.70	86.60	6187.29	-50.26	2500.86	2500.86	0.00

Survey No. 0 is a gyro run by Scientific Drilling
 1 thru 145 is an all angle tensor steering tool
 Steering tool surveys ran by Becfield Drlg. Services
 Survey No. 146 is a projection to total depth.
 Bottom Hole location from Surface Location.
 Horizontal Displacement = 2501.36 feet
 Displacement Bearing = South 1.15 East (True)

BECHFIELD
DRILLING SERVICES



TEXACO INC.
JICARILLA "C" NO. 35
RIO ARRIBA COUNTY, NM

Drawn By: BEB

Checked By: DBG

Date: 12/20/93

HORIZONTAL PROJECTION

The Surface Location on the drawing is represented by the coordinates U0

Unger Lines and Merid Lines are shown in relation to the Surface Location.



Magnetic Dec: 11.2° E

1100
1000
900
800
700
600
500
400
300
200
100
0
100
200
300
400
500
600
700
800
900

100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600

Actual Bottom Hole Location
From Surface Location
Displacement Bearing 90 Deg Azimuth
Horizontal Displacement: 2,500 Feet
True Vertical Depth: 6,187 Feet
Total Measured Depth: 8,670 Feet

5600
5700
5800
5900
6000
6100
6200

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500