

Job Number: 82-8888

State/Country: NEW MEXICO, USA

Company: NORTHSTAR

Declination: 10.93

Lease/Well: FEDERAL STRAT TEST C-1C

Grid: TRUE NORTH

Location: 25 MI. S. OF BLOOMFIELD N.M.

File name: C:\WINSERVE\NS-EM.SVY

Rig Name: LAYNE

Date/Time: 08-Jan-04 / 19:00

RKB: 0'

Curve Name: □

G.L. or M.S.L.: 3


INTERNATIONAL DIRECTIONAL SERVICES
 13030 S. Ruppel Rd. Chandler, AZ 85249 tel: (480) 824-7101 fax: (480) 824-2016
API NUMBER 30-045-31558

WINSERVE PROPOSAL REPORT
Minimum Curvature Method
Vertical Section Plane .00
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
360.00	1.90	337.30	359.93	5.51	-2.30	5.51	5.97	337.30	.53
465.00	1.80	19.30	464.88	8.67	-2.43	8.67	9.00	344.34	1.27
565.00	1.90	8.30	564.83	11.79	-1.67	11.79	11.91	351.93	.37
665.00	1.70	19.00	664.78	14.83	-.95	14.83	14.86	356.34	.39
765.00	1.40	9.80	764.75	17.44	-.26	17.44	17.44	359.15	.39
865.00	.60	32.20	864.73	19.09	.23	19.09	19.09	.69	.88
965.00	.80	60.10	964.72	19.88	1.11	19.88	19.91	3.20	.39
1065.00	.40	14.20	1064.72	20.56	1.80	20.56	20.64	5.01	.60
1165.00	.70	335.60	1164.71	21.46	1.64	21.46	21.52	4.36	.46
1265.00	.40	86.90	1264.71	22.03	1.73	22.03	22.10	4.50	.92
1365.00	.50	226.50	1364.71	21.75	1.77	21.75	21.82	4.64	.85
1400.00	1.30	202.80	1399.71	21.28	1.50	21.28	21.33	4.03	2.47
1416.00	1.20	220.70	1415.70	20.99	1.32	20.99	21.03	3.60	2.51
1441.00	1.00	220.90	1440.70	20.62	1.01	20.62	20.65	2.80	.80
1466.00	1.00	229.50	1465.69	20.32	.70	20.32	20.33	1.97	.60
1491.00	1.10	231.40	1490.69	20.03	.35	20.03	20.03	.99	.42