



Gyrodata Incorporated  
3811 S. Co. Rd. 1285  
Odessa, TX. 79765

915/561-8458  
Fax: 915/563-7982



SURVEY REPORT  
CONOCO  
SAN JUAN 28-7 #252M  
KEY #49  
RIO ARriba COUNTY, NEW MEXICO  
MD0801GME307

AUGUST 7, 2001

C-32-28N-7W

30-039-26754

Surface 820/N 1410/W

BHL 1438/N 814/W

**COPY**

A Gyrodata Directional Survey

for

Conoco Inc.

Location: KEY #49, RIO ARRIBA COUNTY, NEW MEXICO  
Well: SAN JUAN 28-7 #252M, 4-1/2" CASING

Job Number: MJD0801GME307

Run Date: 8/7/01 11:03:37 AM

Surveyor: Tom Morren

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 36.622590 deg. N

Azimuth Correction:

Gyro: Bearings are Relative to True North

Proposed Well Direction: 240.390 deg

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

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| MEASURED IN CL | AZIMUTH | VERTICAL | DOGLEG       | VERTICAL | CLOSURE       | HORIZONTAL  |
|----------------|---------|----------|--------------|----------|---------------|-------------|
| DEPTH          | deg.    | deg.     | SEVERITY     | DEPTH    | DIST. AZIMUTH | COORDINATES |
| feet           | deg.    | deg.     | deg./100 ft. | feet     | feet deg.     | feet        |

|        |       |        |        |      |        |              |                   |
|--------|-------|--------|--------|------|--------|--------------|-------------------|
| 3600.0 | 21.50 | 242.20 | 1065.2 | 0.00 | 3401.5 | 1065.2 240.5 | 524.00 S 927.43 W |
|--------|-------|--------|--------|------|--------|--------------|-------------------|

3700 - 7265 FT RATE GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 4-1/2" CASING  
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO KEY #49 R.K.B.  
TIE-IN AT 3600' TO LEAM DRILLING SYSTEMS, INC. SURVEY

|        |       |        |        |      |        |              |                    |
|--------|-------|--------|--------|------|--------|--------------|--------------------|
| 3700.0 | 18.32 | 243.60 | 1099.2 | 3.21 | 3495.5 | 1099.2 240.6 | 539.54 S 957.73 W  |
| 3800.0 | 15.84 | 244.50 | 1128.5 | 2.49 | 3591.1 | 1128.6 240.7 | 552.41 S 984.13 W  |
| 3900.0 | 13.20 | 244.49 | 1153.6 | 2.64 | 3687.9 | 1153.6 240.8 | 563.20 S 1006.75 W |
| 4000.0 | 10.53 | 244.85 | 1174.0 | 2.67 | 3785.7 | 1174.1 240.8 | 572.00 S 1025.33 W |
| 4100.0 | 8.10  | 245.54 | 1190.2 | 2.43 | 3884.4 | 1190.2 240.9 | 578.80 S 1040.01 W |
| 4200.0 | 6.14  | 247.18 | 1202.5 | 1.97 | 3983.6 | 1202.6 241.0 | 583.79 S 1051.35 W |
| 4300.0 | 4.19  | 250.47 | 1211.4 | 1.97 | 4083.2 | 1211.5 241.0 | 587.08 S 1059.72 W |
| 4400.0 | 3.10  | 248.45 | 1217.7 | 1.10 | 4183.0 | 1217.8 241.1 | 589.30 S 1065.69 W |
| 4500.0 | 2.38  | 251.81 | 1222.4 | 0.74 | 4282.9 | 1222.5 241.1 | 590.94 S 1070.18 W |
| 4600.0 | 2.24  | 259.08 | 1226.3 | 0.32 | 4382.8 | 1226.4 241.1 | 591.96 S 1074.07 W |
| 5100.0 | 1.11  | 231.89 | 1240.3 | 0.27 | 4882.6 | 1240.5 241.2 | 596.79 S 1087.46 W |
| 5600.0 | 0.57  | 204.50 | 1247.1 | 0.13 | 5382.6 | 1247.2 241.1 | 602.03 S 1092.29 W |
| 6100.0 | 0.52  | 201.42 | 1250.9 | 0.01 | 5882.5 | 1250.9 241.0 | 606.39 S 1094.14 W |
| 6600.0 | 0.34  | 121.01 | 1251.9 | 0.11 | 6382.5 | 1251.9 240.9 | 609.26 S 1093.69 W |
| 7100.0 | 1.18  | 207.76 | 1255.5 | 0.24 | 6882.5 | 1255.5 240.7 | 614.57 S 1094.81 W |
| 7265.0 | 1.05  | 185.61 | 1257.8 | 0.27 | 7047.5 | 1257.8 240.6 | 617.57 S 1095.74 W |

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**Location: KEY #49, RIO ARRIBA COUNTY, NEW MEXICO**

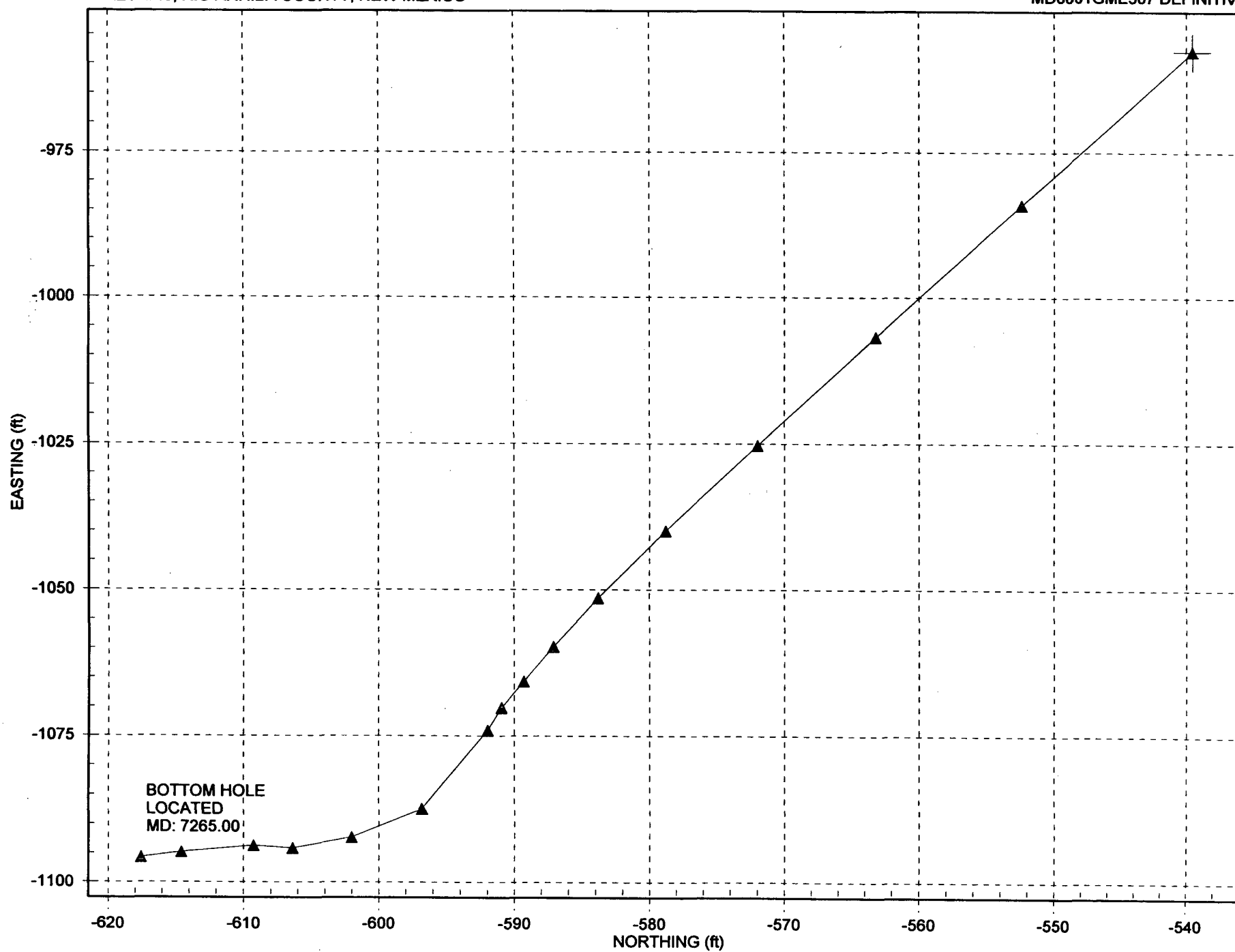
**Job Number: MD0801GME307**

| MEASURED IN C L<br>DEPTH | deg. | deg. | VERTICAL<br>SECTION | DOGLEG<br>SEVERITY | VERTICAL<br>DEPTH | CLOSURE<br>DIST. | deg. | HORIZONTAL<br>COORDINATES |
|--------------------------|------|------|---------------------|--------------------|-------------------|------------------|------|---------------------------|
| feet                     |      |      | feet                | deg./<br>100 ft.   | feet              | feet             |      | feet                      |

**Final Station Closure:** Distance: 1257.79 ft Az: 240.59 deg.

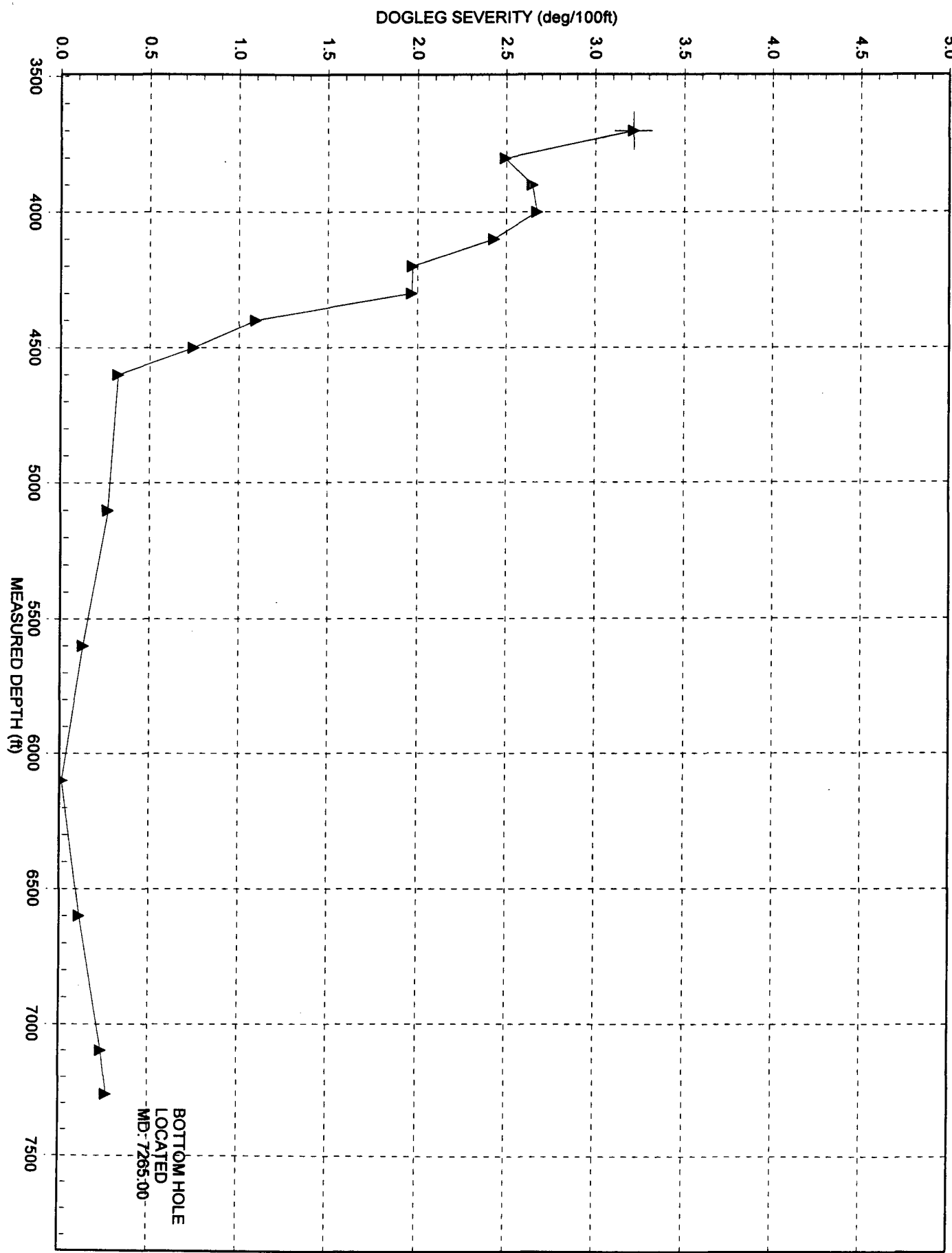
Conoco Inc.  
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Gyrodata, Inc.  
MD0801GME307 DEFINITIVE



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