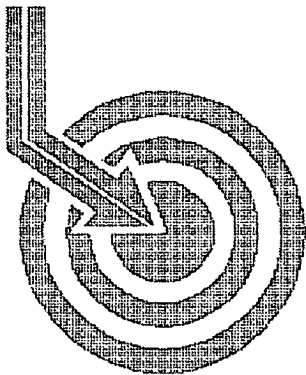


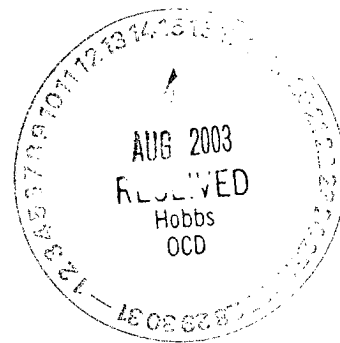


# Scientific Drilling

SUR: I - 1-18s-34e, 1980/S & 1220/E  
BHL: K- 1-18s-34e, 2113/S & 3020/E  
API # 30-025-32028

## CHEVRONTEXACO

Field: Grayburg San Andres  
Site: Lea County, NM  
Well: VGSAU #128  
Wellpath: HH - Job #32D0703360  
Survey: 07/17/03-07/23/03



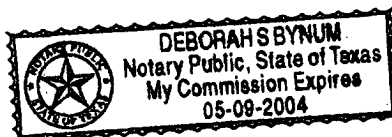
This survey is correct to the best of my knowledge  
and is supported by actual field data.

[Signature] Company Representative

Notorized this date 11<sup>th</sup> of August, 2003.

[Signature]

Notary Signature  
County of Midland  
State of Texas



# Scientific Drilling Survey Report

Company: CHEVRONTEXACO  
Field: Grayburg San Andres  
Site: Lea County, NM  
Well: VGSAU #128  
Wellpath: VH - Job #32K0703361

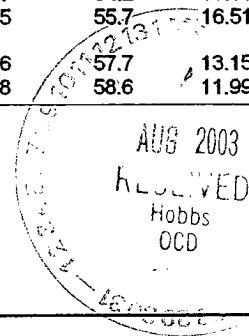
Date: 8/11/2003 Time: 18:17:03 Page: 1  
Co-ordinate(NE) Reference: Site: Lea County, NM, True North  
Vertical (TVD) Reference: SITE 0.0  
Section (VS) Reference: Well (0.00N,0.00E,11.99Azi)  
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 07/18/03  
KSRG 0'-4037'  
Company: Scientific Drilling  
Tool: Keeper, Keeper Gyro

Start Date: 7/18/2003  
Engineer: Cary Coffee  
Tied-to: From Surface

## Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | VS<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | ClsD<br>ft | ClsA<br>deg |
|----------|-------------|-------------|-----------|----------|-----------|-----------|------------------|------------|-------------|
| 0.0      | 0.00        | 0.00        | 0.0       | 0.0      | 0.0       | 0.0       | 0.00             | 0.0        | 0.00        |
| 100.0    | 0.24        | 340.78      | 100.0     | 0.2      | 0.2       | -0.1      | 0.24             | 0.2        | 340.78      |
| 200.0    | 0.37        | 334.23      | 200.0     | 0.6      | 0.7       | -0.3      | 0.13             | 0.7        | 337.93      |
| 300.0    | 0.45        | 312.05      | 300.0     | 1.1      | 1.2       | -0.7      | 0.18             | 1.4        | 330.20      |
| 400.0    | 0.46        | 307.73      | 400.0     | 1.4      | 1.7       | -1.3      | 0.04             | 2.2        | 322.97      |
| 500.0    | 0.34        | 331.04      | 500.0     | 1.8      | 2.3       | -1.8      | 0.20             | 2.9        | 321.69      |
| 600.0    | 0.54        | 22.80       | 600.0     | 2.5      | 2.9       | -1.7      | 0.42             | 3.4        | 329.43      |
| 700.0    | 0.57        | 23.13       | 700.0     | 3.5      | 3.8       | -1.4      | 0.03             | 4.1        | 340.45      |
| 800.0    | 0.61        | 37.57       | 800.0     | 4.4      | 4.7       | -0.8      | 0.15             | 4.8        | 349.87      |
| 900.0    | 0.49        | 31.54       | 900.0     | 5.3      | 5.5       | -0.3      | 0.13             | 5.5        | 356.93      |
| 1000.0   | 0.41        | 32.67       | 1000.0    | 6.1      | 6.2       | 0.1       | 0.08             | 6.2        | 1.13        |
| 1100.0   | 0.38        | 38.17       | 1100.0    | 6.7      | 6.7       | 0.5       | 0.05             | 6.8        | 4.41        |
| 1200.0   | 0.40        | 32.10       | 1200.0    | 7.3      | 7.3       | 0.9       | 0.05             | 7.3        | 7.12        |
| 1300.0   | 0.38        | 30.40       | 1300.0    | 8.0      | 7.9       | 1.3       | 0.02             | 8.0        | 9.12        |
| 1400.0   | 0.51        | 23.23       | 1400.0    | 8.7      | 8.6       | 1.6       | 0.14             | 8.7        | 10.62       |
| 1500.0   | 0.79        | 16.80       | 1500.0    | 9.8      | 9.6       | 2.0       | 0.29             | 9.8        | 11.62       |
| 1600.0   | 0.95        | 28.77       | 1599.9    | 11.3     | 11.0      | 2.6       | 0.24             | 11.3       | 13.17       |
| 1700.0   | 1.01        | 20.78       | 1699.9    | 13.0     | 12.6      | 3.3       | 0.15             | 13.0       | 14.67       |
| 1800.0   | 1.02        | 28.90       | 1799.9    | 14.7     | 14.2      | 4.0       | 0.14             | 14.7       | 15.89       |
| 1900.0   | 1.08        | 27.73       | 1899.9    | 16.5     | 15.8      | 4.9       | 0.06             | 16.5       | 17.25       |
| 2000.0   | 1.20        | 25.28       | 1999.9    | 18.4     | 17.6      | 5.8       | 0.13             | 18.5       | 18.23       |
| 2100.0   | 1.31        | 29.70       | 2099.9    | 20.5     | 19.5      | 6.8       | 0.15             | 20.7       | 19.22       |
| 2200.0   | 1.38        | 29.98       | 2199.8    | 22.7     | 21.5      | 8.0       | 0.07             | 23.0       | 20.30       |
| 2300.0   | 1.47        | 41.10       | 2299.8    | 25.0     | 23.6      | 9.4       | 0.29             | 25.4       | 21.79       |
| 2400.0   | 1.50        | 46.22       | 2399.8    | 27.2     | 25.4      | 11.2      | 0.14             | 27.8       | 23.78       |
| 2500.0   | 1.57        | 50.92       | 2499.7    | 29.3     | 27.2      | 13.2      | 0.14             | 30.2       | 25.91       |
| 2600.0   | 1.61        | 48.05       | 2599.7    | 31.5     | 29.0      | 15.3      | 0.09             | 32.8       | 27.85       |
| 2700.0   | 1.62        | 48.58       | 2699.6    | 33.8     | 30.9      | 17.4      | 0.02             | 35.5       | 29.44       |
| 2800.0   | 1.52        | 56.01       | 2799.6    | 35.9     | 32.6      | 19.6      | 0.23             | 38.0       | 31.03       |
| 2900.0   | 1.54        | 48.58       | 2899.6    | 37.9     | 34.2      | 21.7      | 0.20             | 40.5       | 32.40       |
| 3000.0   | 1.25        | 48.20       | 2999.5    | 39.9     | 35.8      | 23.5      | 0.29             | 42.8       | 33.30       |
| 3100.0   | 1.08        | 34.46       | 3099.5    | 41.7     | 37.3      | 24.9      | 0.33             | 44.8       | 33.68       |
| 3200.0   | 0.87        | 14.36       | 3199.5    | 43.3     | 38.8      | 25.6      | 0.40             | 46.5       | 33.39       |
| 3300.0   | 1.11        | 355.11      | 3299.5    | 45.0     | 40.5      | 25.7      | 0.41             | 48.0       | 32.37       |
| 3400.0   | 1.23        | 345.22      | 3399.5    | 46.9     | 42.5      | 25.3      | 0.23             | 49.5       | 30.78       |
| 3500.0   | 1.34        | 329.20      | 3499.4    | 48.7     | 44.6      | 24.5      | 0.37             | 50.8       | 28.76       |
| 3600.0   | 1.62        | 319.26      | 3599.4    | 50.4     | 46.6      | 22.9      | 0.38             | 52.0       | 26.19       |
| 3700.0   | 1.86        | 313.11      | 3699.4    | 52.1     | 48.8      | 20.8      | 0.30             | 53.1       | 23.11       |
| 3800.0   | 1.86        | 311.04      | 3799.3    | 53.7     | 51.0      | 18.4      | 0.07             | 54.2       | 19.86       |
| 3900.0   | 2.19        | 314.02      | 3899.3    | 55.5     | 53.4      | 15.8      | 0.35             | 55.7       | 16.51       |
| 4000.0   | 2.26        | 317.66      | 3999.2    | 57.7     | 56.2      | 13.1      | 0.16             | 57.7       | 13.15       |
| 4037.0   | 2.30        | 321.03      | 4036.1    | 58.6     | 57.3      | 12.2      | 0.38             | 58.6       | 11.99       |



# Scientific Drilling Survey Report

Company: CHEVRONTEXACO  
Field: Grayburg San Andres  
Site: Lea County, NM  
Well: VGSAU #128  
Wellpath: HH - Job #32D0703360

Date: 8/11/2003 Time: 18:23:21 Page: 1  
Co-ordinate(N/E) Reference: Site: Lea County, NM, True North  
Vertical (TVD) Reference: SITE 0.0  
Section (VS) Reference: Well (0.00N,0.00E,11.99Azi)  
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: 07/17/03-07/23/03  
MWD 4064'-6039'  
Company: Scientific Drilling  
Tool: Keeper, Keeper Gyro

Start Date: 7/17/2003  
Engineer: Lamb/Melendez/Hendrix  
Tied-to: From: Definitive Path

## Survey

| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | VS<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | ClsD<br>ft | ClsA<br>deg |
|----------|-------------|-------------|-----------|----------|-----------|-----------|------------------|------------|-------------|
| 4037.0   | 2.30        | 321.03      | 4036.1    | 58.6     | 57.3      | 12.2      | 0.00             | 58.6       | 11.99       |
| 4064.0   | 2.30        | 321.03      | 4063.1    | 59.2     | 58.1      | 11.5      | 0.00             | 59.2       | 11.17       |
| 4120.0   | 16.36       | 284.96      | 4118.3    | 60.4     | 61.1      | 3.1       | 26.00            | 61.1       | 2.91        |
| 4150.0   | 19.70       | 284.80      | 4146.8    | 60.8     | 63.4      | -5.9      | 11.13            | 63.7       | 354.72      |
| 4182.0   | 25.59       | 278.45      | 4176.3    | 60.7     | 65.8      | -17.9     | 19.90            | 68.2       | 344.77      |
| 4213.0   | 30.51       | 272.70      | 4203.7    | 59.0     | 67.2      | -32.4     | 18.09            | 74.6       | 334.24      |
| 4245.0   | 38.87       | 272.04      | 4230.0    | 55.9     | 67.9      | -50.6     | 26.15            | 84.7       | 323.32      |
| 4277.0   | 45.55       | 272.60      | 4253.6    | 52.3     | 68.8      | -72.1     | 20.91            | 99.6       | 313.67      |
| 4307.0   | 46.34       | 273.70      | 4274.5    | 49.0     | 70.0      | -93.6     | 3.73             | 116.9      | 306.79      |
| 4339.0   | 53.20       | 275.00      | 4295.2    | 45.8     | 71.9      | -117.9    | 21.66            | 138.1      | 301.35      |
| 4370.0   | 60.32       | 272.48      | 4312.1    | 42.1     | 73.5      | -143.8    | 23.95            | 161.5      | 297.08      |
| 4402.0   | 67.36       | 269.93      | 4326.2    | 36.7     | 74.1      | -172.5    | 23.13            | 187.7      | 293.25      |
| 4433.0   | 74.30       | 271.07      | 4336.4    | 30.8     | 74.4      | -201.8    | 22.65            | 215.0      | 290.23      |
| 4465.0   | 82.13       | 271.95      | 4343.0    | 25.2     | 75.2      | -233.0    | 24.62            | 244.9      | 287.88      |
| 4495.0   | 88.72       | 272.48      | 4345.3    | 20.1     | 76.4      | -262.9    | 22.04            | 273.8      | 286.19      |
| 4526.0   | 91.63       | 276.08      | 4345.2    | 15.9     | 78.7      | -293.8    | 14.93            | 304.2      | 284.99      |
| 4558.0   | 92.86       | 276.61      | 4344.0    | 12.8     | 82.2      | -325.6    | 4.18             | 335.8      | 284.17      |
| 4590.0   | 93.56       | 277.05      | 4342.2    | 9.9      | 86.0      | -357.3    | 2.58             | 367.5      | 283.53      |
| 4621.0   | 94.35       | 277.30      | 4340.1    | 7.3      | 89.9      | -388.0    | 2.67             | 398.3      | 283.04      |
| 4653.0   | 89.96       | 275.73      | 4338.9    | 4.3      | 93.5      | -419.8    | 14.57            | 430.0      | 282.56      |
| 4685.0   | 89.52       | 275.82      | 4339.0    | 0.8      | 96.7      | -451.6    | 1.40             | 461.8      | 282.09      |
| 4715.0   | 86.79       | 275.20      | 4340.0    | -2.6     | 99.6      | -481.4    | 9.33             | 491.6      | 281.69      |
| 4746.0   | 85.21       | 271.77      | 4342.1    | -7.1     | 101.5     | -512.3    | 12.16            | 522.3      | 281.20      |
| 4777.0   | 85.12       | 271.95      | 4344.7    | -12.6    | 102.5     | -543.2    | 0.65             | 552.8      | 280.68      |
| 4809.0   | 84.68       | 271.25      | 4347.6    | -18.3    | 103.4     | -575.0    | 2.58             | 584.3      | 280.19      |
| 4840.0   | 84.68       | 271.16      | 4350.5    | -24.1    | 104.0     | -605.9    | 0.29             | 614.8      | 279.74      |
| 4872.0   | 83.71       | 273.71      | 4353.7    | -29.4    | 105.4     | -637.7    | 8.49             | 646.3      | 279.38      |
| 4904.0   | 83.71       | 273.44      | 4357.2    | -34.0    | 107.3     | -669.4    | 0.84             | 678.0      | 279.11      |
| 4935.0   | 84.24       | 274.67      | 4360.5    | -38.3    | 109.5     | -700.2    | 4.30             | 708.7      | 278.89      |
| 4967.0   | 84.50       | 272.74      | 4363.6    | -42.9    | 111.6     | -732.0    | 6.06             | 740.4      | 278.67      |
| 4998.0   | 84.42       | 272.74      | 4366.6    | -47.8    | 113.1     | -762.8    | 0.26             | 771.1      | 278.43      |
| 5030.0   | 83.98       | 272.50      | 4369.8    | -53.0    | 114.5     | -794.6    | 1.56             | 802.8      | 278.20      |
| 5061.0   | 84.42       | 270.90      | 4373.0    | -58.5    | 115.4     | -825.4    | 5.33             | 833.5      | 277.96      |
| 5091.0   | 85.12       | 269.60      | 4375.7    | -64.6    | 115.6     | -855.3    | 4.91             | 863.1      | 277.69      |
| 5123.0   | 85.47       | 269.66      | 4378.3    | -71.4    | 115.4     | -887.2    | 1.11             | 894.7      | 277.41      |
| 5155.0   | 85.65       | 270.72      | 4380.8    | -77.9    | 115.5     | -919.1    | 3.35             | 926.3      | 277.16      |
| 5186.0   | 85.47       | 270.63      | 4383.2    | -84.0    | 115.8     | -950.0    | 0.65             | 957.0      | 276.95      |
| 5217.0   | 85.82       | 270.37      | 4385.6    | -90.1    | 116.1     | -980.9    | 1.41             | 987.8      | 276.75      |
| 5249.0   | 85.47       | 270.98      | 4388.0    | -96.4    | 116.5     | -1012.8   | 2.19             | 1019.5     | 276.56      |
| 5280.0   | 84.94       | 271.42      | 4390.6    | -102.2   | 117.1     | -1043.7   | 2.22             | 1050.2     | 276.40      |
| 5312.0   | 84.42       | 271.16      | 4393.5    | -108.1   | 117.8     | -1075.5   | 1.82             | 1082.0     | 276.25      |
| 5344.0   | 84.50       | 271.51      | 4396.6    | -114.0   | 118.6     | -1107.4   | 1.12             | 1113.7     | 276.11      |
| 5376.0   | 84.24       | 271.00      | 4399.8    | -119.9   | 119.3     | -1139.2   | 1.78             | 1145.5     | 275.98      |
| 5407.0   | 83.80       | 270.46      | 4403.0    | -125.9   | 119.7     | -1170.1   | 2.24             | 1178.2     | 275.84      |
| 5439.0   | 83.36       | 270.46      | 4406.6    | -132.3   | 119.9     | -1201.9   | 1.37             | 1207.8     | 275.70      |
| 5469.0   | 86.53       | 271.16      | 4409.2    | -138.1   | 120.3     | -1231.7   | 10.82            | 1237.6     | 275.58      |
| 5501.0   | 87.05       | 271.77      | 4411.0    | -143.9   | 121.2     | -1263.7   | 2.50             | 1269.5     | 275.48      |
| 5533.0   | 88.46       | 272.10      | 4412.3    | -149.5   | 122.2     | -1295.6   | 4.53             | 1301.4     | 275.39      |
| 5564.0   | 88.02       | 273.27      | 4413.2    | -154.5   | 123.7     | -1326.6   | 4.03             | 1332.3     | 275.33      |

# Scientific Drilling Survey Report

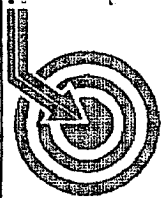
**Company:** CHEVRONTEXACO  
**Field:** Grayburg San Andres  
**Site:** Lea County, NM  
**Well:** VGSAU #128  
**Wellpath:** HH - Job #32D0703360

**Date:** 8/11/2003 **Time:** 18:23:21 **Page:** 2  
**Co-ordinate(NE) Reference:** Site: Lea County, NM, True North  
**Vertical (TVD) Reference:** SITE 0.0  
**Section (VS) Reference:** Well (0.00N,0.00E,11.99Azi)  
**Survey Calculation Method:** Minimum Curvature **Db:** Sybase

## Survey

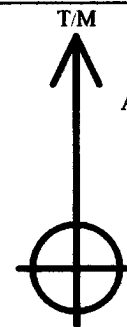
| MD<br>ft | Incl<br>deg | Azim<br>deg | TVD<br>ft | VS<br>ft | N/S<br>ft | E/W<br>ft | DLS<br>deg/100ft | ClsD<br>ft | ClsA<br>deg |
|----------|-------------|-------------|-----------|----------|-----------|-----------|------------------|------------|-------------|
| 5596.0   | 87.85       | 273.00      | 4414.4    | -159.4   | 125.4     | -1358.5   | 1.00             | 1364.3     | 275.28      |
| 5628.0   | 87.76       | 273.18      | 4415.6    | -164.4   | 127.2     | -1390.4   | 0.63             | 1396.2     | 275.23      |
| 5658.0   | 88.64       | 272.83      | 4416.5    | -169.0   | 128.7     | -1420.4   | 3.16             | 1426.2     | 275.18      |
| 5690.0   | 87.76       | 272.65      | 4417.5    | -174.2   | 130.3     | -1452.3   | 2.81             | 1458.2     | 275.13      |
| 5721.0   | 86.88       | 272.04      | 4419.0    | -179.4   | 131.5     | -1483.3   | 3.45             | 1489.1     | 275.07      |
| 5753.0   | 85.91       | 270.98      | 4421.0    | -185.2   | 132.4     | -1515.2   | 4.49             | 1521.0     | 274.99      |
| 5785.0   | 85.74       | 270.98      | 4423.3    | -191.3   | 132.9     | -1547.1   | 0.53             | 1552.8     | 274.91      |
| 5816.0   | 85.65       | 270.72      | 4425.7    | -197.2   | 133.4     | -1578.0   | 0.89             | 1583.6     | 274.83      |
| 5847.0   | 84.50       | 270.63      | 4428.3    | -203.3   | 133.7     | -1608.9   | 3.72             | 1614.4     | 274.75      |
| 5878.0   | 84.50       | 270.81      | 4431.3    | -209.3   | 134.1     | -1639.8   | 0.58             | 1645.2     | 274.68      |
| 5909.0   | 84.68       | 270.10      | 4434.2    | -215.5   | 134.4     | -1670.6   | 2.35             | 1676.0     | 274.60      |
| 5941.0   | 84.50       | 269.58      | 4437.2    | -222.2   | 134.3     | -1702.5   | 1.71             | 1707.8     | 274.51      |
| 5973.0   | 84.50       | 268.87      | 4440.3    | -229.2   | 133.9     | -1734.3   | 2.21             | 1739.5     | 274.41      |
| 6003.0   | 84.33       | 269.33      | 4443.2    | -235.9   | 133.4     | -1764.2   | 1.63             | 1769.2     | 274.32      |
| 6039.0   | 84.33       | 269.33      | 4446.8    | -243.7   | 133.0     | -1800.0   | 0.00             | 1804.9     | 274.22      |





**Scientific  
Drilling**

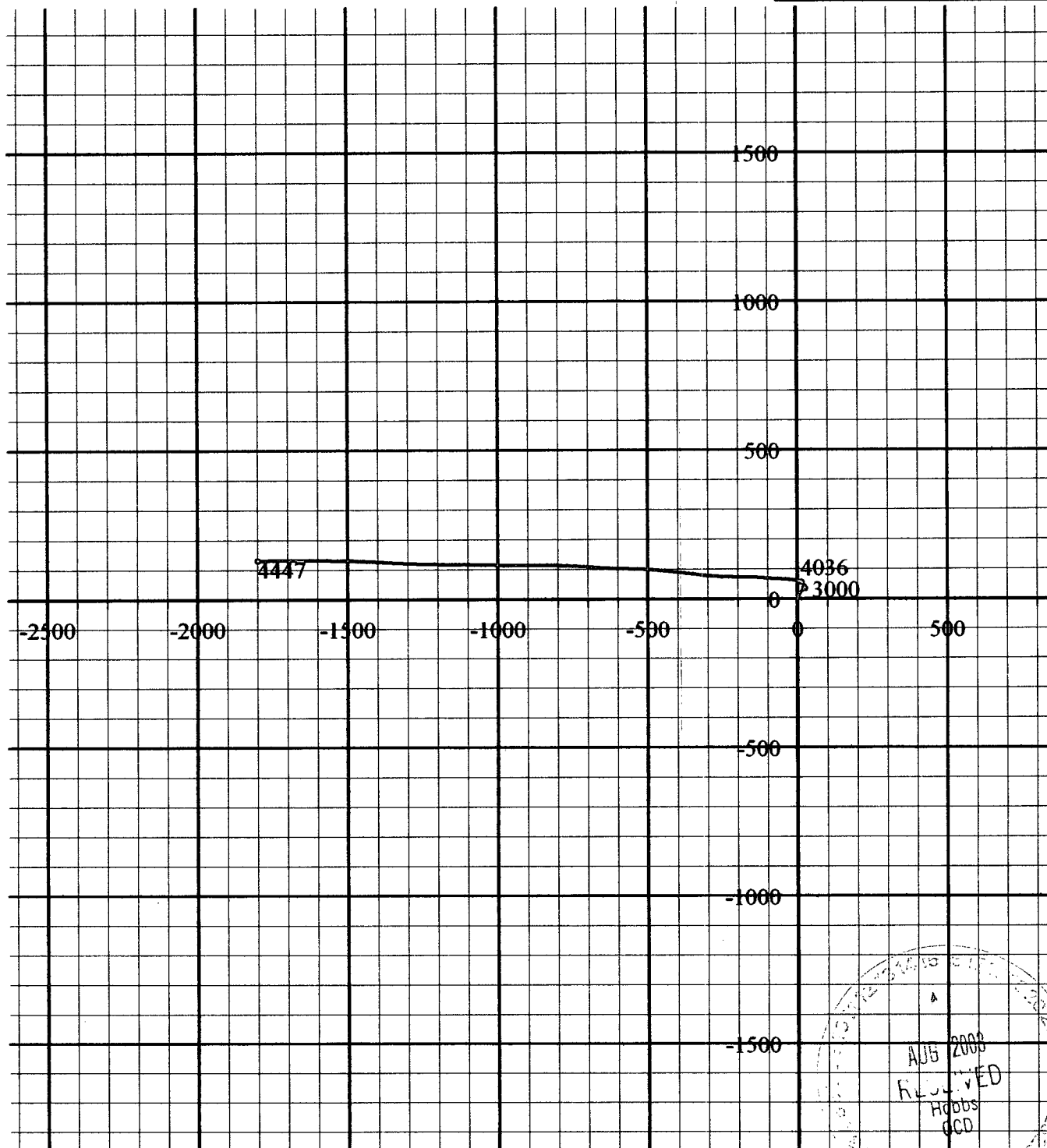
Field: Grayburg San Andres  
Site: Lea County, NM  
Well: VGSAU #128  
Wellpath: HH - Job #32D0703360  
Survey: 07/17/03-07/23/03



Azimuths to True North  
Magnetic North: 0.00°

Magnetic Field  
Strength: 0nT  
Dip Angle: 0.00°  
Date: 8/11/2003  
Model: Wmm\_95

South(-)/North(+) [500ft/in]



West(-)/East(+) [500ft/in]

