

|                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                       |                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Submit To Appropriate District Office<br>State Lease - 6 copies<br>Fee Lease - 5 copies<br><u>District I</u><br>1625 N. French Dr., Hobbs, NM 88240<br><u>District II</u><br>1301 W. Grand Avenue, Artesia, NM 88210<br><u>District III</u><br>1000 Rio Brazos Rd., Aztec, NM 87410<br><u>District IV</u><br>1220 S. St. Francis Dr., Santa Fe, NM 87505 | <b>State of New Mexico</b><br><b>Energy, Minerals and Natural Resources</b><br><br><b>Oil Conservation Division</b><br><b>1220 South St. Francis Dr.</b><br><b>Santa Fe, NM 87505</b> | <b>Form C-105</b><br>Revised June 10, 2003<br><br>WELL API NO.<br>30-015-33412<br><br>5. Indicate Type of Lease<br>STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/><br><br>State Oil & Gas Lease No. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>WELL COMPLETION OR RECOMPLETION REPORT AND LOG</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                     |
| 1a. Type of Well:<br>OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> OTHER _____<br><br>b. Type of Completion:<br>NEW <input checked="" type="checkbox"/> WORK <input type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG <input type="checkbox"/> DIFF.<br>WELL    OVER                      BACK    RESVR. <input type="checkbox"/> OTHER _____<br><br>2. Name of Operator<br><b>Chesapeake Operating, Inc.</b><br><br>3. Address of Operator<br><b>P. O. Box 11050 Midland, TX 79702-8050</b><br><br>4. Well Location<br><br>Unit Letter <b>N</b> <b>660</b> Feet From The <b>South</b> Line and <b>1530</b> Feet From The <b>West</b> Line<br><br>Section <b>4</b> Township <b>22S</b> Range <b>27E</b> NMPM                      Eddy                      County | 7. Lease Name or Unit Agreement Name<br><b>Esperanza 4</b><br><br><div style="text-align: center; border: 1px solid black; padding: 5px;"> <b>RECEIVED</b><br/><br/> <b>DEC 29 2004</b><br/><br/> <b>OGP-ARTESIA</b> </div> 8. Well No.<br><b>004</b><br><br>9. Pool name or Wildcat<br><b>Carlsbad;Morrow,South(Pro Gas) 73960</b> |

|                                                                                                    |                                            |                                                       |                                                          |                      |
|----------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|----------------------|
| 10. Date Spudded<br><b>06/18/2004</b>                                                              | 11. Date T.D. Reached<br><b>07/28/2004</b> | 12. Date Compl. (Ready to Prod.)<br><b>10/15/2004</b> | 13. Elevations (DF& RKB, RT, GR, etc.)<br><b>3134 GR</b> | 14. Elev. Casinghead |
| 15. Total Depth<br><b>12000</b>                                                                    | 16. Plug Back T.D.<br><b>11894</b>         | 17. If Multiple Compl. How Many Zones?<br>            | 18. Intervals Drilled By<br><b>0 - 12000</b>             | Rotary Tools<br>     |
| 19. Producing Interval(s), of this completion - Top, Bottom, Name<br><b>11,724 - 11,497 Morrow</b> |                                            |                                                       | 20. Was Directional Survey Made<br><b>Yes</b>            |                      |
| 21. Type Electric and Other Logs Run<br><b>DLL/SD/MG</b>                                           |                                            |                                                       | 22. Was Well Cored<br><b>No</b>                          |                      |

|                                                           |                |               |                |                                 |               |
|-----------------------------------------------------------|----------------|---------------|----------------|---------------------------------|---------------|
| <b>23. CASING RECORD (Report all strings set in well)</b> |                |               |                |                                 |               |
| CASING SIZE                                               | WEIGHT LB./FT. | DEPTH SET     | HOLE SIZE      | CEMENTING RECORD                | AMOUNT PULLED |
| <b>13 3/8"</b>                                            | <b>48#</b>     | <b>460'</b>   | <b>17 1/2"</b> | <b>500 sx Cl. C + additives</b> |               |
| <b>9 5/8"</b>                                             | <b>40#</b>     | <b>5310'</b>  | <b>12 1/4"</b> | <b>1300 sx C + additives</b>    |               |
| <b>5 1/2"</b>                                             | <b>17#</b>     | <b>11974'</b> | <b>8 3/4"</b>  | <b>1600 sx H</b>                |               |
|                                                           |                |               |                |                                 |               |
|                                                           |                |               |                |                                 |               |

|                         |     |        |              |                          |              |              |              |
|-------------------------|-----|--------|--------------|--------------------------|--------------|--------------|--------------|
| <b>24. LINER RECORD</b> |     |        |              | <b>25. TUBING RECORD</b> |              |              |              |
| SIZE                    | TOP | BOTTOM | SACKS CEMENT | SCREEN                   | SIZE         | DEPTH SET    | PACKER SET   |
|                         |     |        |              |                          | <b>2 7/8</b> | <b>11416</b> | <b>11417</b> |
|                         |     |        |              |                          |              |              |              |

|                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                               |                      |                                       |  |                                           |  |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------|----------------------|---------------------------------------|--|-------------------------------------------|--|--------------------------|
| 26. Perforation record (interval, size, and number)<br><b>11798 - 11833 4 spf - CIBP @ 11,750 + 2sx cmt.</b><br><b>11724 - 11613 4 spf &amp; 11497 - 11524 4 spf, 11497 - 11520 4 spf</b><br><b>11410 - 11430 4 spf (squeezed w/200 sx cmt)</b> | 27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.<br><table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">DEPTH INTERVAL</td> <td style="width:50%;">AMOUNT AND KIND MATERIAL USED</td> </tr> <tr> <td><b>11724 - 11497</b></td> <td><b>1300 gal 7.5 HCl + frac w/9611</b></td> </tr> <tr> <td> </td> <td><b>gal 40# binary fl &amp; 37884# 18/</b></td> </tr> <tr> <td> </td> <td><b>40 Versaprop sand</b></td> </tr> </table> | DEPTH INTERVAL | AMOUNT AND KIND MATERIAL USED | <b>11724 - 11497</b> | <b>1300 gal 7.5 HCl + frac w/9611</b> |  | <b>gal 40# binary fl &amp; 37884# 18/</b> |  | <b>40 Versaprop sand</b> |
| DEPTH INTERVAL                                                                                                                                                                                                                                  | AMOUNT AND KIND MATERIAL USED                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                               |                      |                                       |  |                                           |  |                          |
| <b>11724 - 11497</b>                                                                                                                                                                                                                            | <b>1300 gal 7.5 HCl + frac w/9611</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                               |                      |                                       |  |                                           |  |                          |
|                                                                                                                                                                                                                                                 | <b>gal 40# binary fl &amp; 37884# 18/</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                               |                      |                                       |  |                                           |  |                          |
|                                                                                                                                                                                                                                                 | <b>40 Versaprop sand</b>                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                               |                      |                                       |  |                                           |  |                          |

|                                            |                               |                                                                                                |                        |                         |                                                             |                             |                 |
|--------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------|------------------------|-------------------------|-------------------------------------------------------------|-----------------------------|-----------------|
| <b>28. PRODUCTION</b>                      |                               |                                                                                                |                        |                         |                                                             |                             |                 |
| Date First Production<br><b>10/17/2004</b> |                               | Production Method ( <i>Flowing, gas lift, pumping - Size and type pump</i> )<br><b>Flowing</b> |                        |                         | Well Status ( <i>Prod. or Shut-in</i> )<br><b>producing</b> |                             |                 |
| Date of Test<br><b>11/09/2004</b>          | Hours Tested<br><b>24 hrs</b> | Choke Size<br><b>20/64"</b>                                                                    | Prod'n For Test Period | Oil - Bbl<br><b>0</b>   | Gas - MCF<br><b>677</b>                                     | Water - Bbl.<br><b>10</b>   | Gas - Oil Ratio |
| Flow Tubing Press.<br><b>700</b>           | Casing Pressure<br><b>0</b>   | Calculated 24-Hour Rate                                                                        | Oil - Bbl.<br><b>0</b> | Gas - MCF<br><b>677</b> | Water - Bbl.<br><b>10</b>                                   | Oil Gravity - API - (Corr.) |                 |

|                                                                                    |                   |
|------------------------------------------------------------------------------------|-------------------|
| 29. Disposition of Gas ( <i>Sold, used for fuel, vented, etc.</i> )<br><b>Sold</b> | Test Witnessed By |
|------------------------------------------------------------------------------------|-------------------|

|                                                                |  |
|----------------------------------------------------------------|--|
| 30. List Attachments<br><b>Logs, Directional Survey, C-104</b> |  |
|----------------------------------------------------------------|--|

|                                                                                                                                        |                                    |                                 |                        |
|----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------|------------------------|
| 31. I hereby certify that the information shown on both sides of this form as true and complete to the best of my knowledge and belief |                                    |                                 |                        |
| Signature <b>Brenda Coffman</b>                                                                                                        | Printed Name <b>Brenda Coffman</b> | Title <b>Regulatory Analyst</b> | Date <b>12/28/2004</b> |
| E-mail Address <b>bcoffman@chkenergy.com</b>                                                                                           |                                    |                                 |                        |

# INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

## INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

| Southeastern New Mexico |                         | Northwestern New Mexico |                  |
|-------------------------|-------------------------|-------------------------|------------------|
| T. Anhy                 | T. Canyon               | T. Ojo Alamo            | T. Penn "B"      |
| T. Salt                 | T. Strawn 10398         | T. Kirtland-Fruitland   | T. Penn. "C"     |
| B. Salt                 | T. Atoka 10855          | T. Pictured Cliffs      | T. Penn. "D"     |
| T. Yates                | T. Miss                 | T. Cliff House          | T. Leadville     |
| T. 7 Rivers             | T. Devonian             | T. Menefee              | T. Madison       |
| T. Queen                | T. Silurian             | T. Point Lookout        | T. Elbert        |
| T. Grayburg             | T. Montoya              | T. Mancos               | T. McCracken     |
| T. San Andres           | T. Simpson              | T. Gallup               | T. Ignacio Otzte |
| T. Glorieta             | T. McKee                | Base Greenhorn          | T. Granite       |
| T. Paddock              | T. Ellenburger          | T. Dakota               | T.               |
| T. Blinebry             | T. Gr. Wash             | T. Morrison             | T.               |
| T. Tubb                 | T. Delaware Sand        | T. Todilto              | T.               |
| T. Drinkard             | T. Bone Springs 5159    | T. Entrada              | T.               |
| T. Abo                  | T. 11447 Morrow Clastic | T. Wingate              | T.               |
| T. Wolfcamp 8832        | T. 11708 Lower Morrow   | T. Chinle               | T.               |
| T. Penn                 | T. 11834 Barnett        | T. Permian              | T.               |
| T. Cisco (Bough C)      | T.                      | T. Penn "A"             | T.               |

## OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....  
 No. 2, from.....to..... No. 4, from.....to.....

## IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....  
 No. 2, from.....to.....feet.....  
 No. 3, from.....to.....feet.....

## LITHOLOGY RECORD (Attach additional sheet if necessary)

| From  | To    | Thickness<br>In Feet | Lithology      | From | To | Thickness<br>In Feet | Lithology |
|-------|-------|----------------------|----------------|------|----|----------------------|-----------|
| 0     | 1980  | 1980                 | Dolo/Lm/Salt   |      |    |                      |           |
| 1980  | 5150  | 3170                 | Sd/Sh          |      |    |                      |           |
| 5150  | 8830  | 3680                 | Lm/Sh/minor sd |      |    |                      |           |
| 8830  | 10325 | 1495                 | Sh/Lm/VF Sd    |      |    |                      |           |
| 10325 | 10785 | 460                  | Lm/Sh          |      |    |                      |           |
| 10785 | 10930 | 145                  | Dk/Sh/minor sd |      |    |                      |           |
| 10930 | 11410 | 480                  | Lm/minor sh    |      |    |                      |           |
| 11410 | 11430 | 20                   | Sd             |      |    |                      |           |
| 11430 | 11520 | 90                   | Lm/minor sh    |      |    |                      |           |
| 11520 | 12000 | 480                  | Sh/thin sands  |      |    |                      |           |

## DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

## DISTRICT II

811 South First, Artesia, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

2040 South Pacheco, Santa Fe, NM 87505

## State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised March 17, 1999

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## OIL CONSERVATION DIVISION

2040 South Pacheco

Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

|                            |                                             |                                                |
|----------------------------|---------------------------------------------|------------------------------------------------|
| API Number<br>30-015-33412 | Pool Code<br>73960                          | Pool Name<br>Carlsbad; Marren, South (Pro Gas) |
| Property Code<br>33998     | Property Name<br>ESPERANZA                  | Well Number<br>4                               |
| OGRID No.<br>147179        | Operator Name<br>CHESAPEAKE OPERATING, INC. | Elevation<br>3120'                             |

## Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| N             | 4       | 22 S     | 27 E  |         | 660           | SOUTH            | 1530          | WEST           | EDDY   |

## Bottom Hole Location If Different From Surface

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
|               |         |          |       |         |               |                  |               |                |        |

|                        |                 |                    |           |
|------------------------|-----------------|--------------------|-----------|
| Dedicated Acres<br>320 | Joint or Infill | Consolidation Code | Order No. |
|------------------------|-----------------|--------------------|-----------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

|  |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>RECEIVED</p> <p>DEC 29 2004</p> <p>ESPARTESIA</p> | <p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Brenda Coffman</i></p> <p>Signature</p> <p>BRENDA COFFMAN</p> <p>Printed Name</p> <p>Regulatory Analyst</p> <p>Title</p> <p>12-28-04</p> <p>Date</p>                                                                                                                                        |
|  |                                                      | <p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>MARCH 29, 2004</p> <p>Date Surveyed</p> <p>Signature and Seal of Professional Surveyor</p> <p>GARY L. JONES</p> <p>W.O. No. 4134</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p> |
|  |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|  |                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

ESPERANZA 4 #4

SEC. 4, 22S, 27E

EDDY COUNTY, NEW MEXICO

LEASE & WELL

(Give Unit, Section, Township and Range)

OPERATOR

CHESAPEAKE OPERATING, INC. P.O. BOX 18496 OKLAHOMA CITY, OK 7315

DRILLING CONTRACTOR

NABORS DRILLING USA, LP

The Undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above-described well and that he has conducted deviation tests and obtained the following results:

| DEGREES @ DEPTH | DEGREES @ DEPTH | DEGREES @ DEPTH | DEGREES @ DEPTH |
|-----------------|-----------------|-----------------|-----------------|
|-----------------|-----------------|-----------------|-----------------|

|     |     |  |  |
|-----|-----|--|--|
| 1/2 | 241 |  |  |
|-----|-----|--|--|

|     |     |  |  |
|-----|-----|--|--|
| 3/4 | 460 |  |  |
|-----|-----|--|--|

ADDITIONAL SURVEYS ARE DIRECTIONAL

RECEIVED

DEC 29 2004

000-01251A

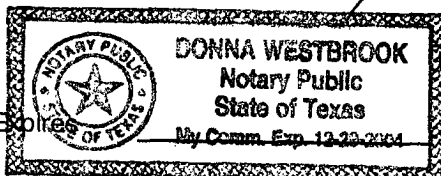
Drilling Contractor

Nabors Drilling USA, LP

By

Troy Blair District Drilling Superintendent

Subscribed and sworn to before me this 22 day of November, 2004



Notary Public

My Commision Expires

MIDLAND

County

TEXAS



Client : Chesapeake Operating  
Well : Esperanza #4-4  
Location : Eddy County, New Mexico  
License :

Page: 1  
Date : 12/28/2004  
File : 51-125

UWI #:

**Vertical Section Calculated Along Azimuth 327.15°****KB Elevation = 0.00ft**

|    | MD      | Inc   | Azi    | TVD     | North  | East    | V'Sect | D'Leg | Build | Turn    |
|----|---------|-------|--------|---------|--------|---------|--------|-------|-------|---------|
|    | ft      | deg   | deg    | ft      | ft     | ft      | ft     | °/100 | °/100 | °/100   |
| 0  | 5363.00 | 0.25  | 30.10  | 5361.74 | 4.26   | 95.84   | -48.41 | 0.00  | 0.00  | 0.00    |
| 1  | 5415.00 | 0.50  | 300.70 | 5413.74 | 4.47   | 95.70   | -48.15 | 1.07  | 0.48  | -171.92 |
| 2  | 5478.00 | 1.40  | 303.40 | 5476.73 | 5.04   | 94.82   | -47.20 | 1.43  | 1.43  | 4.29    |
| 3  | 5541.00 | 2.40  | 316.90 | 5539.69 | 6.42   | 93.28   | -45.20 | 1.73  | 1.59  | 21.43   |
| 4  | 5604.00 | 3.20  | 320.80 | 5602.62 | 8.75   | 91.27   | -42.16 | 1.30  | 1.27  | 6.19    |
| 5  | 5667.00 | 3.90  | 321.30 | 5665.50 | 11.79  | 88.82   | -38.28 | 1.11  | 1.11  | 0.79    |
| 6  | 5730.00 | 4.50  | 321.30 | 5728.33 | 15.39  | 85.93   | -33.69 | 0.95  | 0.95  | 0.00    |
| 7  | 5793.00 | 5.70  | 326.20 | 5791.08 | 19.92  | 82.64   | -28.10 | 2.02  | 1.90  | 7.78    |
| 8  | 5857.00 | 7.00  | 318.70 | 5854.69 | 25.49  | 78.30   | -21.06 | 2.41  | 2.03  | -11.72  |
| 9  | 5920.00 | 7.60  | 314.70 | 5917.17 | 31.30  | 72.81   | -13.20 | 1.25  | 0.95  | -6.35   |
| 10 | 5983.00 | 8.30  | 319.40 | 5979.57 | 37.68  | 66.89   | -4.62  | 1.52  | 1.11  | 7.46    |
| 11 | 6046.00 | 8.60  | 323.60 | 6041.89 | 44.93  | 61.13   | 4.58   | 1.09  | 0.48  | 6.67    |
| 12 | 6110.00 | 9.70  | 328.90 | 6105.07 | 53.40  | 55.51   | 14.75  | 2.16  | 1.72  | 8.28    |
| 13 | 6173.00 | 10.50 | 327.30 | 6167.10 | 62.77  | 49.66   | 25.79  | 1.35  | 1.27  | -2.54   |
| 14 | 6235.00 | 11.80 | 326.20 | 6227.92 | 72.79  | 43.09   | 37.78  | 2.12  | 2.10  | -1.77   |
| 15 | 6298.00 | 13.20 | 327.80 | 6289.43 | 84.23  | 35.67   | 51.42  | 2.29  | 2.22  | 2.54    |
| 16 | 6361.00 | 13.90 | 328.50 | 6350.68 | 96.77  | 27.88   | 66.17  | 1.14  | 1.11  | 1.11    |
| 17 | 6425.00 | 14.90 | 328.80 | 6412.66 | 110.37 | 19.60   | 82.08  | 1.57  | 1.56  | 0.47    |
| 18 | 6488.00 | 15.40 | 328.00 | 6473.47 | 124.39 | 10.97   | 98.55  | 0.86  | 0.79  | -1.27   |
| 19 | 6551.00 | 16.50 | 324.20 | 6534.05 | 138.74 | 1.31    | 115.84 | 2.41  | 1.75  | -6.03   |
| 20 | 6614.00 | 17.20 | 322.70 | 6594.34 | 153.41 | -9.57   | 134.07 | 1.31  | 1.11  | -2.38   |
| 21 | 6678.00 | 18.20 | 322.40 | 6655.31 | 168.85 | -21.40  | 153.46 | 1.57  | 1.56  | -0.47   |
| 22 | 6741.00 | 19.30 | 324.50 | 6714.97 | 185.12 | -33.45  | 173.67 | 2.05  | 1.75  | 3.33    |
| 23 | 6804.00 | 19.70 | 323.00 | 6774.36 | 202.08 | -45.89  | 194.66 | 1.02  | 0.63  | -2.38   |
| 24 | 6867.00 | 19.60 | 321.40 | 6833.69 | 218.82 | -58.87  | 215.76 | 0.87  | -0.16 | -2.54   |
| 25 | 6930.00 | 18.80 | 324.00 | 6893.18 | 235.29 | -71.43  | 236.41 | 1.86  | -1.27 | 4.13    |
| 26 | 6994.00 | 19.10 | 326.90 | 6953.72 | 252.41 | -83.21  | 257.18 | 1.54  | 0.47  | 4.53    |
| 27 | 7057.00 | 19.50 | 326.30 | 7013.18 | 269.79 | -94.67  | 278.00 | 0.71  | 0.63  | -0.95   |
| 28 | 7159.00 | 19.10 | 327.20 | 7109.44 | 297.98 | -113.16 | 311.71 | 0.49  | -0.39 | 0.88    |
| 29 | 7223.00 | 19.00 | 327.30 | 7169.94 | 315.55 | -124.46 | 332.60 | 0.16  | -0.16 | 0.16    |
| 30 | 7286.00 | 20.20 | 326.80 | 7229.29 | 333.28 | -135.96 | 353.73 | 1.92  | 1.90  | -0.79   |
| 31 | 7349.00 | 19.50 | 325.40 | 7288.55 | 351.04 | -147.88 | 375.12 | 1.34  | -1.11 | -2.22   |
| 32 | 7413.00 | 19.40 | 323.70 | 7348.89 | 368.40 | -160.24 | 396.41 | 0.90  | -0.16 | -2.66   |
| 33 | 7476.00 | 19.20 | 325.90 | 7408.35 | 385.41 | -172.25 | 417.21 | 1.20  | -0.32 | 3.49    |
| 34 | 7540.00 | 18.50 | 325.70 | 7468.92 | 402.51 | -183.87 | 437.88 | 1.10  | -1.09 | -0.31   |



Client : Chesapeake Operating  
Well : Esperanza #4-4  
Location : Eddy County, New Mexico  
License :

Page: 2  
Date : 12/28/2004  
File : 51-125

UWI #:

**Vertical Section Calculated Along Azimuth 327.15°****KB Elevation = 0.00ft**

|    | MD<br>ft | Inc<br>deg | Azi<br>deg | TVD<br>ft | North<br>ft | East<br>ft | V'Sect<br>ft | D'Leg<br>°/100 | Build<br>°/100 | Turn<br>°/100 |
|----|----------|------------|------------|-----------|-------------|------------|--------------|----------------|----------------|---------------|
| 35 | 7603.00  | 18.90      | 324.80     | 7528.59   | 419.10      | -195.38    | 458.07       | 0.78           | 0.63           | -1.43         |
| 36 | 7666.00  | 19.50      | 324.20     | 7588.09   | 435.97      | -207.41    | 478.76       | 1.00           | 0.95           | -0.95         |
| 37 | 7727.00  | 19.70      | 319.70     | 7645.56   | 452.07      | -220.02    | 499.13       | 2.50           | 0.33           | -7.38         |
| 38 | 7790.00  | 19.20      | 323.10     | 7704.97   | 468.45      | -233.11    | 519.99       | 1.96           | -0.79          | 5.40          |
| 39 | 7855.00  | 19.10      | 322.60     | 7766.37   | 485.45      | -245.98    | 541.25       | 0.30           | -0.15          | -0.77         |
| 40 | 7916.00  | 20.20      | 319.80     | 7823.82   | 501.42      | -258.84    | 561.65       | 2.37           | 1.80           | -4.59         |
| 41 | 7979.00  | 21.10      | 324.70     | 7882.77   | 518.99      | -272.42    | 583.77       | 3.09           | 1.43           | 7.78          |
| 42 | 8042.00  | 20.10      | 326.80     | 7941.74   | 537.30      | -284.90    | 605.92       | 1.97           | -1.59          | 3.33          |
| 43 | 8105.00  | 17.80      | 325.90     | 8001.33   | 554.33      | -296.23    | 626.38       | 3.68           | -3.65          | -1.43         |
| 44 | 8167.00  | 17.30      | 323.20     | 8060.44   | 569.56      | -307.06    | 645.05       | 1.54           | -0.81          | -4.35         |
| 45 | 8230.00  | 19.00      | 322.70     | 8120.30   | 585.22      | -318.89    | 664.62       | 2.71           | 2.70           | -0.79         |
| 46 | 8323.00  | 21.50      | 326.20     | 8207.55   | 611.43      | -337.55    | 696.76       | 2.99           | 2.69           | 3.76          |
| 47 | 8417.00  | 20.60      | 324.00     | 8295.28   | 639.13      | -356.85    | 730.50       | 1.27           | -0.96          | -2.34         |
| 48 | 8511.00  | 21.00      | 322.90     | 8383.15   | 665.94      | -376.73    | 763.81       | 0.59           | 0.43           | -1.17         |
| 49 | 8605.00  | 21.10      | 323.90     | 8470.88   | 693.04      | -396.86    | 797.50       | 0.40           | 0.11           | 1.06          |
| 50 | 8699.00  | 21.10      | 327.50     | 8558.58   | 720.99      | -415.92    | 831.31       | 1.38           | 0.00           | 3.83          |
| 51 | 8794.00  | 19.70      | 325.20     | 8647.62   | 748.56      | -434.25    | 864.41       | 1.70           | -1.47          | -2.42         |
| 52 | 8888.00  | 18.90      | 325.40     | 8736.34   | 774.10      | -451.94    | 895.46       | 0.85           | -0.85          | 0.21          |
| 53 | 8983.00  | 18.90      | 323.90     | 8826.22   | 799.20      | -469.74    | 926.21       | 0.51           | 0.00           | -1.58         |
| 54 | 9078.00  | 19.70      | 328.00     | 8915.88   | 825.21      | -487.29    | 957.58       | 1.66           | 0.84           | 4.32          |
| 55 | 9174.00  | 18.60      | 324.00     | 9006.57   | 851.32      | -504.87    | 989.05       | 1.78           | -1.15          | -4.17         |
| 56 | 9269.00  | 19.00      | 321.20     | 9096.51   | 875.63      | -523.46    | 1019.56      | 1.04           | 0.42           | -2.95         |
| 57 | 9363.00  | 17.60      | 323.00     | 9185.75   | 898.90      | -541.60    | 1048.95      | 1.61           | -1.49          | 1.91          |
| 58 | 9458.00  | 17.60      | 322.90     | 9276.30   | 921.83      | -558.91    | 1077.60      | 0.03           | 0.00           | -0.11         |
| 59 | 9551.00  | 18.30      | 320.90     | 9364.78   | 944.38      | -576.60    | 1106.14      | 1.00           | 0.75           | -2.15         |
| 60 | 9646.00  | 18.00      | 319.70     | 9455.05   | 967.14      | -595.50    | 1135.52      | 0.50           | -0.32          | -1.26         |
| 61 | 9740.00  | 18.60      | 322.70     | 9544.30   | 990.15      | -613.98    | 1164.86      | 1.19           | 0.64           | 3.19          |
| 62 | 9834.00  | 19.00      | 325.20     | 9633.29   | 1014.64     | -631.80    | 1195.10      | 0.96           | 0.43           | 2.66          |
| 63 | 9887.00  | 19.00      | 327.70     | 9683.40   | 1029.02     | -641.33    | 1212.35      | 1.54           | 0.00           | 4.72          |
| 64 | 9960.00  | 18.20      | 328.80     | 9752.59   | 1048.81     | -653.59    | 1235.63      | 1.20           | -1.10          | 1.51          |
| 65 | 10022.00 | 16.40      | 325.80     | 9811.78   | 1064.33     | -663.52    | 1254.06      | 3.24           | -2.90          | -4.84         |
| 66 | 10085.00 | 16.00      | 321.30     | 9872.28   | 1078.47     | -673.95    | 1271.59      | 2.09           | -0.63          | -7.14         |
| 67 | 10148.00 | 16.10      | 319.60     | 9932.83   | 1091.90     | -685.04    | 1288.89      | 0.76           | 0.16           | -2.70         |
| 68 | 10211.00 | 16.10      | 320.90     | 9993.35   | 1105.33     | -696.21    | 1306.23      | 0.57           | 0.00           | 2.06          |
| 69 | 10273.00 | 15.20      | 323.90     | 10053.06  | 1118.57     | -706.42    | 1322.89      | 1.95           | -1.45          | 4.84          |



Client : Chesapeake Operating  
Well : Esperanza #4-4  
Location : Eddy County, New Mexico  
License :

UWI #:

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**Vertical Section Calculated Along Azimuth 327.15°****KB Elevation = 0.00ft**

|     | MD<br>ft | Inc<br>deg | Azi<br>deg | TVD<br>ft | North<br>ft | East<br>ft | V'Sect<br>ft | D'Leg<br>°/100 | Build<br>°/100 | Turn<br>°/100 |
|-----|----------|------------|------------|-----------|-------------|------------|--------------|----------------|----------------|---------------|
| 70  | 10336.00 | 15.50      | 323.50     | 10113.81  | 1132.01     | -716.30    | 1339.54      | 0.50           | 0.48           | -0.63         |
| 71  | 10399.00 | 17.20      | 324.40     | 10174.26  | 1146.35     | -726.73    | 1357.25      | 2.73           | 2.70           | 1.43          |
| 72  | 10460.00 | 17.10      | 324.60     | 10232.55  | 1160.99     | -737.17    | 1375.21      | 0.19           | -0.16          | 0.33          |
| 73  | 10517.00 | 15.70      | 325.50     | 10287.23  | 1174.18     | -746.40    | 1391.30      | 2.50           | -2.46          | 1.58          |
| 74  | 10580.00 | 16.00      | 327.70     | 10347.83  | 1188.54     | -755.86    | 1408.50      | 1.07           | 0.48           | 3.49          |
| 75  | 10643.00 | 14.70      | 325.30     | 10408.58  | 1202.45     | -765.05    | 1425.17      | 2.30           | -2.06          | -3.81         |
| 76  | 10738.00 | 13.70      | 326.10     | 10500.68  | 1221.70     | -778.19    | 1448.47      | 1.07           | -1.05          | 0.84          |
| 77  | 10801.00 | 12.80      | 324.10     | 10562.00  | 1233.55     | -786.44    | 1462.90      | 1.60           | -1.43          | -3.17         |
| 78  | 10865.00 | 11.90      | 323.90     | 10624.52  | 1244.62     | -794.49    | 1476.56      | 1.41           | -1.41          | -0.31         |
| 79  | 10928.00 | 9.70       | 324.50     | 10686.40  | 1254.19     | -801.40    | 1488.35      | 3.50           | -3.49          | 0.95          |
| 80  | 10991.00 | 9.30       | 329.70     | 10748.54  | 1262.91     | -807.05    | 1498.74      | 1.50           | -0.63          | 8.25          |
| 81  | 11053.00 | 8.70       | 329.70     | 10809.77  | 1271.28     | -811.94    | 1508.43      | 0.97           | -0.97          | 0.00          |
| 82  | 11115.00 | 6.90       | 325.10     | 10871.20  | 1278.39     | -816.44    | 1516.84      | 3.07           | -2.90          | -7.42         |
| 83  | 11184.00 | 4.70       | 326.00     | 10939.84  | 1284.13     | -820.39    | 1523.80      | 3.19           | -3.19          | 1.30          |
| 84  | 11247.00 | 3.70       | 326.30     | 11002.67  | 1287.96     | -822.96    | 1528.42      | 1.59           | -1.59          | 0.48          |
| 85  | 11310.00 | 2.60       | 323.40     | 11065.58  | 1290.80     | -824.94    | 1531.88      | 1.76           | -1.75          | -4.60         |
| 86  | 11405.00 | 0.30       | 333.20     | 11160.54  | 1292.75     | -826.34    | 1534.27      | 2.43           | -2.42          | 10.32         |
| 87  | 11468.00 | 0.60       | 273.80     | 11223.54  | 1292.92     | -826.74    | 1534.63      | 0.82           | 0.48           | -94.29        |
| 88  | 11561.00 | 0.50       | 238.10     | 11316.53  | 1292.74     | -827.57    | 1534.93      | 0.38           | -0.11          | -38.39        |
| 89  | 11624.00 | 0.80       | 253.10     | 11379.53  | 1292.47     | -828.23    | 1535.06      | 0.54           | 0.48           | 23.81         |
| 90  | 11687.00 | 0.80       | 265.20     | 11442.52  | 1292.30     | -829.09    | 1535.39      | 0.27           | 0.00           | 19.21         |
| 91  | 11750.00 | 0.80       | 344.90     | 11505.52  | 1292.69     | -829.64    | 1536.01      | 1.63           | 0.00           | 126.51        |
| 92  | 11812.00 | 0.40       | 4.00       | 11567.51  | 1293.32     | -829.74    | 1536.60      | 0.71           | -0.65          | 30.81         |
| 93  | 11876.00 | 0.30       | 286.50     | 11631.51  | 1293.59     | -829.88    | 1536.90      | 0.70           | -0.16          | -121.09       |
| 94  | 11960.00 | 0.90       | 294.30     | 11715.51  | 1293.93     | -830.70    | 1537.62      | 0.72           | 0.71           | 9.29          |
| EXT | 12000.00 | 0.90       | 294.30     | 11755.50  | 1294.19     | -831.27    | 1538.15      | 0.00           | 0.00           | 0.00          |

**Bottom Hole Closure 1538.16ft Along Azimuth 327.29°**