



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

NMOCD  
Hobbs

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No.  
NMNM105885

1a. Type of Well  Oil Well  Gas Well  Dry  Other  
b. Type of Completion  New Well  Work Over  Deepen  Plug Back  Diff. Resvr.  
Other \_\_\_\_\_

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.  
NMNM124555

2. Name of Operator Chesapeake Contact: LINDA GOOD  
CHESAPEAKE OPERATING INC E-Mail: linda.good@chk.com

8. Lease Name and Well No.  
PERSEUS 10 FEDERAL COM 3H

3. Address OKLAHOMA CITY, OK 73154-0496 3a. Phone No. (include area code)  
Ph: 405-935-4275

9. API Well No.  
30-005-29137-00-S1

4. Location of Well (Report location clearly and in accordance with Federal requirements)\*  
At surface SENE 1980FNL 200FEL  
At top prod interval reported below SWNW 1981FNL 355FWL  
At total depth SWNW 1980FNL 330FWL

10. Field and Pool, or Exploratory  
UNDESIGNATED-WOLFCAMP

11. Sec., T., R., M., or Block and Survey  
or Area Sec 10 T15S R31E Mer NMP

12. County or Parish CHAVES 13. State NM

14. Date Spudded 06/17/2010 15. Date T.D. Reached 07/16/2010 16. Date Completed 10/04/2010  
 D & A  Ready to Prod.

17. Elevations (DF, KB, RT, GL)\*  
4414 GL

18. Total Depth: MD 13360 TVD 8743 19. Plug Back T.D.: MD TVD 20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each)  
CBL GR MWD 22. Was well cored?  No  Yes (Submit analysis)  
Was DST run?  No  Yes (Submit analysis)  
Directional Survey?  No  Yes (Submit analysis)

23. Casing and Liner Record (Report all strings set in well)

| Hole Size | Size/Grade  | Wt. (#/ft.) | Top (MD) | Bottom (MD) | Stage Cementer Depth | No. of Sk. & Type of Cement | Slurry Vol. (BBL) | Cement Top* | Amount Pulled |
|-----------|-------------|-------------|----------|-------------|----------------------|-----------------------------|-------------------|-------------|---------------|
| 17.500    | 13.375 H-40 | 48.0        | 0        | 436         |                      | 534                         | 167               | 0           |               |
| 12.250    | 9.625 J-55  | 40.0        | 0        | 3972        |                      | 2275                        | 670               | 0           |               |
| 7.875     | 5.500 P-110 | 17.0        | 0        | 13360       |                      | 1930                        | 614               |             |               |

24. Tubing Record

| Size  | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) | Size | Depth Set (MD) | Packer Depth (MD) |
|-------|----------------|-------------------|------|----------------|-------------------|------|----------------|-------------------|
| 2.875 | 5112           |                   |      |                |                   |      |                |                   |

25. Producing Intervals 26. Perforation Record

| Formation   | Top  | Bottom | Perforated Interval | Size | No. Holes | Perf. Status |
|-------------|------|--------|---------------------|------|-----------|--------------|
| A) WOLFCAMP | 9240 | 13322  | 9240 TO 13322       |      | 732       | OPEN         |
| B)          |      |        |                     |      |           |              |
| C)          |      |        |                     |      |           |              |
| D)          |      |        |                     |      |           |              |

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

| Depth Interval | Amount and Type of Material                 |
|----------------|---|
| 9240 TO 13322  | FRAC W/1.895,093# SAND & 2,509,122 GAL GEL. |

28. Production - Interval A

| Date First Produced | Test Date            | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method     |
|---------------------|----------------------|--------------|-----------------|---------|---------|-----------|-----------------------|-------------|-----------------------|
| 10/06/2010          | 10/17/2010           | 24           | →               | 99.0    | 69.0    | 363.0     |                       |             | ELECTRIC PUMPING UNIT |
| Choke Size          | Tbg. Press. Flwg. SI | Csg. Press.  | 24 Hr. Rate     | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio         | Well Status |                       |
|                     |                      |              | →               | 99      | 69      | 363       |                       | POW         |                       |

28a. Production - Interval B

| Date First Produced | Test Date            | Hours Tested | Test Production | Oil BBL | Gas MCF | Water BBL | Oil Gravity Corr. API | Gas Gravity | Production Method |
|---------------------|----------------------|--------------|-----------------|---------|---------|-----------|-----------------------|-------------|-------------------|
|                     |                      |              | →               |         |         |           |                       |             |                   |
| Choke Size          | Tbg. Press. Flwg. SI | Csg. Press.  | 24 Hr. Rate     | Oil BBL | Gas MCF | Water BBL | Gas:Oil Ratio         | Well Status |                   |
|                     |                      |              | →               |         |         |           |                       |             |                   |

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #95475 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED

ACCEPTED APPROVED FOR 6 MONTH PERIOD ENDING APR 04 2011

DAVID R. GLASS  
OCT 27 2010  
DAVID R. GLASS

**Additional data for transaction #95475 that would not fit on the form**

**32. Additional remarks, continued**



Job Number: 1010364  
 Company: Chesapeake Operating Inc.  
 Lease/Well: Perseus 10 Federal Com #3H  
 Location: Chavez County  
 Rig Name: Western Rig #6  
 RKB: 17'  
 G.L. or M.S.L.: GL - 4404' X - 663124.3 Y - 739618.4

State/Country: New Mexico, USA  
 Declination: 7.86647  
 Grid: -0.27  
 File name: C:\101036-1\PEF3H.SVY  
 Date/Time: 21-Jul-10 / 08:53  
 Curve Name: Perseus 10 Federal Com # 3H Surveys

**Perseus 10 Federal Com # 3H Surveys**

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 269.50  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

| Measured Depth<br>FT                          | Incl Angle<br>Deg | Drift Direction<br>Deg | True Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | CLOSURE<br>Distance Direction<br>FT Deg |        | Dogleg<br>Severity<br>Deg/100 |
|---|-------------------|------------------------|------------------------|-----------|-----------|---------------------------|---|--------|-------------------------------|
| <b>Gyro Tie In point</b>                      |                   |                        |                        |           |           |                           |   |        |                               |
| 8200.00                                       | 2.84              | 101.42                 | 8199.33                | -11.92    | -3.54     | 3.65                      | 12.43                                   | 196.56 | .00                           |
| <b>First Nevis MWD Surveys</b>                |                   |                        |                        |           |           |                           |   |        |                               |
| 8305.00                                       | 4.10              | 95.10                  | 8304.13                | -12.77    | 2.75      | -2.63                     | 13.06                                   | 167.86 | 1.25                          |
| 8336.00                                       | 3.60              | 97.50                  | 8335.06                | -12.99    | 4.81      | -4.70                     | 13.85                                   | 159.67 | 1.69                          |
| 8366.00                                       | 1.80              | 104.10                 | 8365.03                | -13.23    | 6.21      | -6.09                     | 14.61                                   | 154.87 | 6.08                          |
| 8397.00                                       | 2.40              | 255.50                 | 8396.02                | -13.51    | 6.05      | -5.93                     | 14.80                                   | 155.88 | 13.14                         |
| 8428.00                                       | 6.60              | 263.50                 | 8426.92                | -13.87    | 3.65      | -3.53                     | 14.35                                   | 165.26 | 13.67                         |
| 8460.00                                       | 11.70             | 267.30                 | 8458.50                | -14.24    | -1.42     | 1.55                      | 14.31                                   | 185.71 | 16.04                         |
| 8491.00                                       | 16.90             | 269.00                 | 8488.53                | -14.46    | -9.07     | 9.20                      | 17.07                                   | 212.10 | 16.83                         |
| 8523.00                                       | 21.80             | 268.80                 | 8518.71                | -14.67    | -19.67    | 19.80                     | 24.54                                   | 233.29 | 15.31                         |
| 8553.00                                       | 26.50             | 269.40                 | 8546.08                | -14.86    | -31.94    | 32.07                     | 35.22                                   | 245.06 | 15.69                         |
| 8585.00                                       | 30.60             | 270.00                 | 8574.18                | -14.93    | -47.23    | 47.36                     | 49.53                                   | 252.46 | 12.84                         |
| 8617.00                                       | 34.70             | 271.50                 | 8601.12                | -14.69    | -64.49    | 64.61                     | 66.14                                   | 257.17 | 13.06                         |
| 8648.00                                       | 38.80             | 271.40                 | 8625.95                | -14.22    | -83.02    | 83.15                     | 84.23                                   | 260.28 | 13.23                         |
| 8680.00                                       | 42.80             | 272.00                 | 8650.17                | -13.60    | -103.92   | 104.04                    | 104.81                                  | 262.54 | 12.56                         |
| 8711.00                                       | 46.70             | 272.70                 | 8672.18                | -12.70    | -125.72   | 125.83                    | 126.36                                  | 264.23 | 12.68                         |
| <b>Hard Line Crossing//Interpolated Point</b> |                   |                        |                        |           |           |                           |   |        |                               |
| 8718.00                                       | 47.58             | 272.75                 | 8676.95                | -12.46    | -130.85   | 130.95                    | 131.44                                  | 264.56 | 12.59                         |
| 8742.00                                       | 50.60             | 272.90                 | 8692.66                | -11.56    | -148.96   | 149.06                    | 149.41                                  | 265.56 | 12.59                         |
| 8772.00                                       | 53.80             | 273.40                 | 8711.05                | -10.26    | -172.63   | 172.71                    | 172.93                                  | 266.60 | 10.75                         |
| 8804.00                                       | 56.90             | 272.90                 | 8729.24                | -8.81     | -198.91   | 198.98                    | 199.10                                  | 267.46 | 9.77                          |
| 8835.00                                       | 60.20             | 272.00                 | 8745.41                | -7.69     | -225.33   | 225.38                    | 225.46                                  | 268.05 | 10.93                         |

| Measured<br>Depth<br>FT | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | True<br>Vertical<br>Depth |           |           | Vertical<br>Section<br>FT | CLOSURE        |                  | Dogleg<br>Severity<br>Deg/100 |
|-------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
|                         |                      |                           |                           | N-S<br>FT | E-W<br>FT |                           | Distance<br>FT | Direction<br>Deg |                               |
| 8865.00                 | 63.50                | 270.00                    | 8759.56                   | -7.23     | -251.77   | 251.82                    | 251.87         | 268.35           | 12.47                         |
| 8897.00                 | 68.00                | 268.20                    | 8772.70                   | -7.70     | -280.93   | 280.99                    | 281.04         | 268.43           | 14.97                         |
| 8928.00                 | 73.40                | 267.00                    | 8782.95                   | -8.93     | -310.15   | 310.22                    | 310.28         | 268.35           | 17.80                         |
| 8959.00                 | 79.80                | 266.60                    | 8790.13                   | -10.61    | -340.24   | 340.32                    | 340.41         | 268.21           | 20.68                         |
| 8993.00                 | 87.20                | 267.00                    | 8793.97                   | -12.50    | -373.95   | 374.04                    | 374.16         | 268.09           | 21.80                         |
| 9023.00                 | 90.00                | 267.00                    | 8794.71                   | -14.06    | -403.90   | 404.00                    | 404.14         | 268.01           | 9.33                          |
| 9053.00                 | 90.00                | 266.90                    | 8794.71                   | -15.66    | -433.85   | 433.97                    | 434.14         | 267.93           | .33                           |
| 9148.00                 | 89.30                | 268.60                    | 8795.29                   | -19.39    | -528.78   | 528.92                    | 529.13         | 267.90           | 1.94                          |
| 9242.00                 | 89.30                | 270.00                    | 8796.43                   | -20.54    | -622.76   | 622.91                    | 623.10         | 268.11           | 1.49                          |
| 9335.00                 | 89.80                | 271.10                    | 8797.16                   | -19.65    | -715.75   | 715.89                    | 716.02         | 268.43           | 1.30                          |
| 9426.00                 | 90.70                | 272.40                    | 8796.77                   | -16.87    | -806.70   | 806.82                    | 806.88         | 268.80           | 1.74                          |
| 9521.00                 | 91.10                | 271.80                    | 8795.28                   | -13.39    | -901.63   | 901.71                    | 901.73         | 269.15           | .76                           |
| 9614.00                 | 91.60                | 271.70                    | 8793.08                   | -10.55    | -994.56   | 994.61                    | 994.61         | 269.39           | .55                           |
| 9704.00                 | 91.60                | 271.50                    | 8790.57                   | -8.04     | -1084.49  | 1084.52                   | 1084.52        | 269.58           | .22                           |
| 9792.00                 | 91.30                | 271.50                    | 8788.34                   | -5.73     | -1172.43  | 1172.44                   | 1172.44        | 269.72           | .34                           |
| 9887.00                 | 91.00                | 271.10                    | 8786.44                   | -3.58     | -1267.39  | 1267.37                   | 1267.39        | 269.84           | .53                           |
| 9979.00                 | 90.90                | 271.00                    | 8784.91                   | -1.89     | -1359.36  | 1359.32                   | 1359.36        | 269.92           | .15                           |
| 10074.00                | 90.50                | 270.90                    | 8783.75                   | -.32      | -1454.34  | 1454.28                   | 1454.34        | 269.99           | .43                           |
| 10168.00                | 90.30                | 270.70                    | 8783.10                   | 1.00      | -1548.33  | 1548.26                   | 1548.33        | 270.04           | .30                           |
| 10263.00                | 90.00                | 270.20                    | 8782.85                   | 1.74      | -1643.32  | 1643.24                   | 1643.32        | 270.06           | .61                           |
| 10357.00                | 89.60                | 270.00                    | 8783.18                   | 1.91      | -1737.32  | 1737.24                   | 1737.32        | 270.06           | .48                           |
| 10452.00                | 90.80                | 269.40                    | 8782.84                   | 1.41      | -1832.32  | 1832.24                   | 1832.32        | 270.04           | 1.41                          |
| 10545.00                | 90.70                | 269.30                    | 8781.63                   | .35       | -1925.30  | 1925.23                   | 1925.30        | 270.01           | .15                           |
| 10640.00                | 92.30                | 270.10                    | 8779.14                   | -.14      | -2020.27  | 2020.19                   | 2020.27        | 270.00           | 1.88                          |
| 10735.00                | 92.70                | 270.10                    | 8775.00                   | .02       | -2115.17  | 2115.09                   | 2115.17        | 270.00           | .42                           |
| 10829.00                | 92.80                | 270.20                    | 8770.49                   | .27       | -2209.07  | 2208.98                   | 2209.07        | 270.01           | .15                           |
| 10924.00                | 91.40                | 270.30                    | 8767.00                   | .68       | -2304.00  | 2303.91                   | 2304.00        | 270.02           | 1.48                          |
| 11018.00                | 91.20                | 269.80                    | 8764.87                   | .76       | -2397.97  | 2397.88                   | 2397.97        | 270.02           | .57                           |
| 11113.00                | 91.10                | 269.70                    | 8762.97                   | .35       | -2492.95  | 2492.86                   | 2492.95        | 270.01           | .15                           |
| 11205.00                | 90.40                | 269.10                    | 8761.76                   | -.61      | -2584.94  | 2584.85                   | 2584.94        | 269.99           | 1.00                          |
| 11297.00                | 90.00                | 268.30                    | 8761.44                   | -2.70     | -2676.92  | 2676.84                   | 2676.92        | 269.94           | .97                           |
| 11391.00                | 89.80                | 268.30                    | 8761.60                   | -5.49     | -2770.87  | 2770.82                   | 2770.88        | 269.89           | .21                           |
| 11486.00                | 89.80                | 267.70                    | 8761.94                   | -8.81     | -2865.81  | 2865.78                   | 2865.83        | 269.82           | .63                           |
| 11581.00                | 89.90                | 267.70                    | 8762.18                   | -12.62    | -2960.74  | 2960.74                   | 2960.77        | 269.76           | .11                           |
| 11676.00                | 90.30                | 267.40                    | 8762.02                   | -16.68    | -3055.65  | 3055.68                   | 3055.70        | 269.69           | .53                           |
| 11770.00                | 89.80                | 267.20                    | 8761.94                   | -21.11    | -3149.55  | 3149.61                   | 3149.62        | 269.62           | .57                           |
| 11864.00                | 89.90                | 267.20                    | 8762.18                   | -25.70    | -3243.43  | 3243.53                   | 3243.54        | 269.55           | .11                           |
| 11958.00                | 89.90                | 267.20                    | 8762.35                   | -30.29    | -3337.32  | 3337.46                   | 3337.46        | 269.48           | .00                           |
| 12053.00                | 89.90                | 266.70                    | 8762.51                   | -35.35    | -3432.19  | 3432.36                   | 3432.37        | 269.41           | .53                           |
| 12148.00                | 89.20                | 267.80                    | 8763.26                   | -39.90    | -3527.07  | 3527.29                   | 3527.30        | 269.35           | 1.37                          |
| 12243.00                | 90.10                | 268.00                    | 8763.84                   | -43.38    | -3622.01  | 3622.25                   | 3622.27        | 269.31           | .97                           |
| 12338.00                | 91.90                | 267.80                    | 8762.18                   | -46.86    | -3716.92  | 3717.19                   | 3717.22        | 269.28           | 1.91                          |
| 12431.00                | 93.00                | 267.80                    | 8758.21                   | -50.43    | -3809.77  | 3810.06                   | 3810.10        | 269.24           | 1.18                          |
| 12525.00                | 93.10                | 268.50                    | 8753.20                   | -53.46    | -3903.59  | 3903.90                   | 3903.95        | 269.22           | .75                           |
| 12618.00                | 91.20                | 269.30                    | 8749.72                   | -55.25    | -3996.50  | 3996.83                   | 3996.88        | 269.21           | 2.22                          |

| Measured<br>Depth<br>FT       | Incl<br>Angle<br>Deg | Drift<br>Direction<br>Deg | True<br>Vertical<br>Depth | N-S<br>FT | E-W<br>FT | Vertical<br>Section<br>FT | C L O S U R E  |                  | Dogleg<br>Severity<br>Deg/100 |
|-------------------------------|----------------------|---------------------------|---------------------------|-----------|-----------|---------------------------|----------------|------------------|-------------------------------|
|                               |                      |                           |                           |           |           |                           | Distance<br>FT | Direction<br>Deg |                               |
| 12713.00                      | 91.40                | 269.10                    | 8747.56                   | -56.57    | -4091.46  | 4091.80                   | 4091.86        | 269.21           | .30                           |
| 12807.00                      | 90.60                | 270.60                    | 8745.92                   | -56.82    | -4185.45  | 4185.78                   | 4185.83        | 269.22           | 1.81                          |
| 12902.00                      | 89.60                | 271.20                    | 8745.75                   | -55.32    | -4280.43  | 4280.75                   | 4280.79        | 269.26           | 1.23                          |
| 12997.00                      | 90.10                | 271.50                    | 8746.00                   | -53.09    | -4375.41  | 4375.70                   | 4375.73        | 269.30           | .61                           |
| 13090.00                      | 91.20                | 271.80                    | 8744.95                   | -50.41    | -4468.36  | 4468.63                   | 4468.64        | 269.35           | 1.23                          |
| 13183.00                      | 90.00                | 271.50                    | 8743.97                   | -47.73    | -4561.31  | 4561.56                   | 4561.56        | 269.40           | 1.33                          |
| 13277.00                      | 90.40                | 271.60                    | 8743.65                   | -45.19    | -4655.28  | 4655.50                   | 4655.50        | 269.44           | .44                           |
| <b>Last nevis MWD Surveys</b> |                      |                           |                           |           |           |                           |                |                  |                               |
| 13305.00                      | 90.10                | 271.60                    | 8743.52                   | -44.41    | -4683.27  | 4683.48                   | 4683.48        | 269.46           | 1.07                          |
| <b>Projection to TD</b>       |                      |                           |                           |           |           |                           |                |                  |                               |
| 13360.00                      | 90.10                | 271.60                    | 8743.43                   | -42.87    | -4738.25  | 4738.44                   | 4738.44        | 269.48           | .00                           |



|       |      |       |         |        |          |         |         |
|-------|------|-------|---------|--------|----------|---------|---------|
| 9023  | 90   | 267   | 8794.71 | -14.06 | -403.9   | 404     | 404.14  |
| 9053  | 90   | 266.9 | 8794.71 | -15.66 | -433.85  | 433.97  | 434.14  |
| 9148  | 89.3 | 268.6 | 8795.29 | -19.39 | -528.78  | 528.92  | 529.13  |
| 9242  | 89.3 | 270   | 8796.43 | -20.54 | -622.76  | 622.91  | 623.1   |
| 9335  | 89.8 | 271.1 | 8797.16 | -19.65 | -715.75  | 715.89  | 716.02  |
| 9426  | 90.7 | 272.4 | 8796.77 | -16.87 | -806.7   | 806.82  | 806.88  |
| 9521  | 91.1 | 271.8 | 8795.28 | -13.39 | -901.63  | 901.71  | 901.73  |
| 9614  | 91.6 | 271.7 | 8793.08 | -10.55 | -994.56  | 994.61  | 994.61  |
| 9704  | 91.6 | 271.5 | 8790.57 | -8.04  | -1084.49 | 1084.52 | 1084.52 |
| 9792  | 91.3 | 271.5 | 8788.34 | -5.73  | -1172.43 | 1172.44 | 1172.44 |
| 9887  | 91   | 271.1 | 8786.44 | -3.58  | -1267.39 | 1267.37 | 1267.39 |
| 9979  | 90.9 | 271   | 8784.91 | -1.89  | -1359.36 | 1359.32 | 1359.36 |
| 10074 | 90.5 | 270.9 | 8783.75 | -0.32  | -1454.34 | 1454.28 | 1454.34 |
| 10168 | 90.3 | 270.7 | 8783.1  | 1      | -1548.33 | 1548.26 | 1548.33 |
| 10263 | 90   | 270.2 | 8782.85 | 1.74   | -1643.32 | 1643.24 | 1643.32 |
| 10357 | 89.6 | 270   | 8783.18 | 1.91   | -1737.32 | 1737.24 | 1737.32 |
| 10452 | 90.8 | 269.4 | 8782.84 | 1.41   | -1832.32 | 1832.24 | 1832.32 |
| 10545 | 90.7 | 269.3 | 8781.63 | 0.35   | -1925.3  | 1925.23 | 1925.3  |
| 10640 | 92.3 | 270.1 | 8779.14 | -0.14  | -2020.27 | 2020.19 | 2020.27 |
| 10735 | 92.7 | 270.1 | 8775    | 0.02   | -2115.17 | 2115.09 | 2115.17 |
| 10829 | 92.8 | 270.2 | 8770.49 | 0.27   | -2209.07 | 2208.98 | 2209.07 |
| 10924 | 91.4 | 270.3 | 8767    | 0.68   | -2304    | 2303.91 | 2304    |
| 11018 | 91.2 | 269.8 | 8764.87 | 0.76   | -2397.97 | 2397.88 | 2397.97 |
| 11113 | 91.1 | 269.7 | 8762.97 | 0.35   | -2492.95 | 2492.86 | 2492.95 |
| 11205 | 90.4 | 269.1 | 8761.76 | -0.61  | -2584.94 | 2584.85 | 2584.94 |
| 11297 | 90   | 268.3 | 8761.44 | -2.7   | -2676.92 | 2676.84 | 2676.92 |
| 11391 | 89.8 | 268.3 | 8761.6  | -5.49  | -2770.87 | 2770.82 | 2770.88 |
| 11486 | 89.8 | 267.7 | 8761.94 | -8.81  | -2865.81 | 2865.78 | 2865.83 |
| 11581 | 89.9 | 267.7 | 8762.18 | -12.62 | -2960.74 | 2960.74 | 2960.77 |
| 11676 | 90.3 | 267.4 | 8762.02 | -16.68 | -3055.65 | 3055.68 | 3055.7  |
| 11770 | 89.8 | 267.2 | 8761.94 | -21.11 | -3149.55 | 3149.61 | 3149.62 |
| 11864 | 89.9 | 267.2 | 8762.18 | -25.7  | -3243.43 | 3243.53 | 3243.54 |
| 11958 | 89.9 | 267.2 | 8762.35 | -30.29 | -3337.32 | 3337.46 | 3337.46 |
| 12053 | 89.9 | 266.7 | 8762.51 | -35.35 | -3432.19 | 3432.36 | 3432.37 |
| 12148 | 89.2 | 267.8 | 8763.26 | -39.9  | -3527.07 | 3527.29 | 3527.3  |
| 12243 | 90.1 | 268   | 8763.84 | -43.38 | -3622.01 | 3622.25 | 3622.27 |
| 12338 | 91.9 | 267.8 | 8762.18 | -46.86 | -3716.92 | 3717.19 | 3717.22 |
| 12431 | 93   | 267.8 | 8758.21 | -50.43 | -3809.77 | 3810.06 | 3810.1  |
| 12525 | 93.1 | 268.5 | 8753.2  | -53.46 | -3903.59 | 3903.9  | 3903.95 |
| 12618 | 91.2 | 269.3 | 8749.72 | -55.25 | -3996.5  | 3996.83 | 3996.88 |
| 12713 | 91.4 | 269.1 | 8747.56 | -56.57 | -4091.46 | 4091.8  | 4091.86 |
| 12807 | 90.6 | 270.6 | 8745.92 | -56.82 | -4185.45 | 4185.78 | 4185.83 |
| 12902 | 89.6 | 271.2 | 8745.75 | -55.32 | -4280.43 | 4280.75 | 4280.79 |
| 12997 | 90.1 | 271.5 | 8746    | -53.09 | -4375.41 | 4375.7  | 4375.73 |
| 13090 | 91.2 | 271.8 | 8744.95 | -50.41 | -4468.36 | 4468.63 | 4468.64 |
| 13183 | 90   | 271.5 | 8743.97 | -47.73 | -4561.31 | 4561.56 | 4561.56 |
| 13277 | 90.4 | 271.6 | 8743.65 | -45.19 | -4655.28 | 4655.5  | 4655.5  |
| 13305 | 90.1 | 271.6 | 8743.52 | -44.41 | -4683.27 | 4683.48 | 4683.48 |
| 13360 | 90.1 | 271.6 | 8743.43 | -42.87 | -4738.25 | 4738.44 | 4738.44 |

CLOSURE Dogleg

| Direction<br>Deg | Severity<br>Deg/100 |
|------------------|---------------------|
| 196.56           | 0                   |
| 167.86           | 1.25                |
| 159.67           | 1.69                |
| 154.87           | 6.08                |
| 155.88           | 13.14               |
| 165.26           | 13.67               |
| 185.71           | 16.04               |
| 212.1            | 16.83               |
| 233.29           | 15.31               |
| 245.06           | 15.69               |
| 252.46           | 12.84               |
| 257.17           | 13.06               |
| 260.28           | 13.23               |
| 262.54           | 12.56               |
| 264.23           | 12.68               |
| 264.56           | 12.59               |
| 265.56           | 12.59               |
| 266.6            | 10.75               |
| 267.46           | 9.77                |
| 268.05           | 10.93               |
| 268.35           | 12.47               |
| 268.43           | 14.97               |
| 268.35           | 17.8                |
| 268.21           | 20.68               |
| 268.09           | 21.8                |



|        |      |
|--------|------|
| 268.01 | 9.33 |
| 267.93 | 0.33 |
| 267.9  | 1.94 |
| 268.11 | 1.49 |
| 268.43 | 1.3  |
| 268.8  | 1.74 |
| 269.15 | 0.76 |
| 269.39 | 0.55 |
| 269.58 | 0.22 |
| 269.72 | 0.34 |
| 269.84 | 0.53 |
| 269.92 | 0.15 |
| 269.99 | 0.43 |
| 270.04 | 0.3  |
| 270.06 | 0.61 |
| 270.06 | 0.48 |
| 270.04 | 1.41 |
| 270.01 | 0.15 |
| 270    | 1.88 |
| 270    | 0.42 |
| 270.01 | 0.15 |
| 270.02 | 1.48 |
| 270.02 | 0.57 |
| 270.01 | 0.15 |
| 269.99 | 1    |
| 269.94 | 0.97 |
| 269.89 | 0.21 |
| 269.82 | 0.63 |
| 269.76 | 0.11 |
| 269.69 | 0.53 |
| 269.62 | 0.57 |
| 269.55 | 0.11 |
| 269.48 | 0    |
| 269.41 | 0.53 |
| 269.35 | 1.37 |
| 269.31 | 0.97 |
| 269.28 | 1.91 |
| 269.24 | 1.18 |
| 269.22 | 0.75 |
| 269.21 | 2.22 |
| 269.21 | 0.3  |
| 269.22 | 1.81 |
| 269.26 | 1.23 |
| 269.3  | 0.61 |
| 269.35 | 1.23 |
| 269.4  | 1.33 |
| 269.44 | 0.44 |
| 269.46 | 1.07 |
| 269.48 | 0    |