

PETRO-TECH PERUANA

# DIRECTIONAL SURVEY FOR WELL RAW DATA

No USAF *Quirato*  
PROVISIONAL

WELL NO. (L06-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

THE CONDUCTOR IS VERTICAL

WORKING FILE  
GEOSCIENCES

| No. | MEASURED DEPTH | DEVIATION ANGLE | ORIENTATION   |
|-----|----------------|-----------------|---------------|
| 1   | 408            | 1.25            | S - 66.00 - E |
| 2   | 439            | 0.25            | S - 70.00 - E |
| 3   | 469            | 1.00            | S - 44.00 - E |
| 4   | 500            | 1.25            | S - 48.00 - E |
| 5   | 560            | 2.75            | S - 52.00 - E |
| 6   | 622            | 3.25            | S - 65.00 - E |
| 7   | 682            | 4.00            | S - 54.00 - E |
| 8   | 715            | 4.75            | S - 54.00 - W |
| 9   | 746            | 4.75            | S - 33.00 - W |
| 10  | 821            | 7.60            | S - 38.50 - W |
| 11  | 852            | 8.90            | S - 40.30 - E |
| 12  | 933            | 11.25           | S - 45.00 - W |
| 13  | 1008           | 15.00           | S - 50.60 - W |
| 14  | 1038           | 16.30           | S - 49.60 - W |
| 15  | 1070           | 17.50           | S - 52.10 - W |
| 16  | 1101           | 18.60           | S - 51.30 - W |
| 17  | 1132           | 20.00           | S - 51.00 - W |
| 18  | 1231           | 22.50           | S - 53.50 - E |
| 19  | 1323           | 23.00           | S - 53.50 - E |
| 20  | 1417           | 24.00           | S - 54.00 - E |
| 21  | 1510           | 24.75           | S - 51.00 - E |
| 22  | 1595           | 24.00           | S - 51.50 - E |
| 23  | 1688           | 26.00           | S - 50.50 - E |
| 24  | 1740           | 25.75           | S - 45.00 - E |
| 25  | 1803           | 28.00           | S - 41.50 - E |
| 26  | 1835           | 29.60           | S - 39.30 - E |
| 27  | 1866           | 30.60           | S - 39.10 - E |
| 28  | 1898           | 31.50           | S - 38.40 - E |
| 29  | 1960           | 33.70           | S - 36.30 - E |
| 30  | 2022           | 36.00           | S - 34.70 - E |
| 31  | 2084           | 38.30           | S - 32.60 - E |
| 32  | 2147           | 40.40           | S - 32.10 - E |
| 33  | 2170           | 41.40           | S - 32.50 - E |
| 34  | 2210           | 42.80           | S - 32.80 - E |
| 35  | 2271           | 44.90           | S - 32.50 - E |
| 36  | 2327           | 46.50           | S - 36.00 - E |
| 37  | 2480           | 47.75           | S - 35.50 - E |
| 38  | 2635           | 49.75           | S - 34.50 - E |
| 39  | 2792           | 51.50           | S - 34.50 - E |
| 40  | 2949           | 51.00           | S - 34.50 - E |
| 41  | 3105           | 51.50           | S - 33.50 - E |
| 42  | 3260           | 51.50           | S - 33.00 - E |
| 43  | 3415           | 52.50           | S - 30.50 - E |
| 44  | 3510           | 53.00           | S - 30.00 - E |
| 45  | 3665           | 53.00           | S - 28.50 - E |
| 46  | 3758           | 52.50           | S - 28.00 - E |
| 47  | 3883           | 51.50           | S - 28.00 - E |
| 48  | 4008           | 50.00           | S - 27.00 - E |
| 49  | 4226           | 48.50           | S - 25.50 - E |
| 50  | 4420           | 47.00           | S - 25.50 - E |
| 51  | 4605           | 46.00           | S - 25.00 - E |

PETRO-TECH PERUANA S.A.  
GEOLOGIST WELL FILE

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GEOLOGIST WELL FILE

WORKING FILE  
GEOSCIENCES

61-907

# DIRECTIONAL SURVEY FOR WELL

## RAW DATA

WELL NO. (L06-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

THE CONDUCTOR IS VERTICAL

| No. | MEASURED DEPTH | DEVIATION ANGLE | ORIENTATION   |
|-----|----------------|-----------------|---------------|
| 52  | 4698           | 45.75           | S - 24.50 - E |
| 53  | 4849           | 46.00           | S - 30.00 - E |
| 54  | 5006           | 43.75           | S - 29.50 - E |
| 55  | 5433           | 41.00           | S - 27.00 - E |
| 56  | 5775           | 45.50           | S - 28.50 - E |
| 57  | 6091           | 44.50           | S - 23.50 - E |
| 58  | 6175           | 43.00           | S - 23.50 - E |
| 59  | 6429           | 43.75           | S - 21.50 - E |
| 60  | 6739           | 44.00           | S - 18.00 - E |
| 61  | 7047           | 44.00           | S - 15.00 - E |
| 62  | 7328           | 48.50           | S - 8.50 - E  |

## DIRECTIONAL SURVEY FOR WELL L06-19

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WELL NO. (L06-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

|   | MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL | CO - ORDINATES |   | HORIZONTAL<br>DISTANCE |
|---|-------------------|-------------------|-----------------|-------|----------------|---|------------------------|
| * | 350               | 350.00            | 300.00          | N     | 0.00           | E | 0.00                   |
|   | 360               | 360.00            | 310.00          | S     | 0.02           | E | 0.03                   |
|   | 370               | 370.00            | 320.00          | S     | 0.05           | E | 0.10                   |
|   | 380               | 380.00            | 330.00          | S     | 0.09           | E | 0.21                   |
|   | 390               | 390.00            | 340.00          | S     | 0.15           | E | 0.34                   |
|   | 400               | 400.00            | 350.00          | S     | 0.23           | E | 0.52                   |
| * | 408               | 407.99            | 357.99          | S     | 0.30           | E | 0.67                   |
|   | 410               | 409.99            | 359.99          | S     | 0.31           | E | 0.71                   |
|   | 420               | 419.99            | 369.99          | S     | 0.37           | E | 0.86                   |
|   | 430               | 429.99            | 379.99          | S     | 0.40           | E | 0.94                   |
| * | 439               | 438.99            | 388.99          | S     | 0.41           | E | 0.98                   |
|   | 440               | 439.99            | 389.99          | S     | 0.42           | E | 0.98                   |
|   | 450               | 449.99            | 399.99          | S     | 0.48           | E | 1.05                   |
|   | 460               | 459.99            | 409.99          | S     | 0.58           | E | 1.14                   |
| * | 469               | 468.99            | 418.99          | S     | 0.69           | E | 1.25                   |
|   | 470               | 469.99            | 419.99          | S     | 0.70           | E | 1.26                   |
|   | 480               | 479.99            | 429.99          | S     | 0.83           | E | 1.41                   |
|   | 490               | 489.99            | 439.99          | S     | 0.97           | E | 1.56                   |
| * | 500               | 499.98            | 449.98          | S     | 1.11           | E | 1.72                   |
|   | 510               | 509.98            | 459.98          | S     | 1.27           | E | 1.93                   |
|   | 520               | 519.97            | 469.97          | S     | 1.46           | E | 2.17                   |
|   | 530               | 529.97            | 479.97          | S     | 1.68           | E | 2.44                   |
|   | 540               | 539.96            | 489.96          | S     | 1.92           | E | 2.75                   |
|   | 550               | 549.95            | 499.95          | S     | 2.19           | E | 3.09                   |
| * | 560               | 559.94            | 509.94          | S     | 2.48           | E | 3.47                   |
|   | 570               | 569.93            | 519.93          | S     | 2.69           | E | 3.92                   |
|   | 580               | 579.91            | 529.91          | S     | 2.91           | E | 4.38                   |
|   | 590               | 589.90            | 539.90          | S     | 3.13           | E | 4.85                   |
|   | 600               | 599.89            | 549.89          | S     | 3.35           | E | 5.34                   |
|   | 610               | 609.87            | 559.87          | S     | 3.59           | E | 5.84                   |
|   | 620               | 619.86            | 569.86          | S     | 3.82           | E | 6.35                   |
| * | 622               | 621.85            | 571.85          | S     | 3.87           | E | 6.45                   |
|   | 630               | 629.84            | 579.84          | S     | 4.15           | E | 6.83                   |
|   | 640               | 639.82            | 589.82          | S     | 4.50           | E | 7.32                   |
|   | 650               | 649.80            | 599.80          | S     | 4.87           | E | 7.83                   |
|   | 660               | 659.78            | 609.78          | S     | 5.25           | E | 8.35                   |
|   | 670               | 669.76            | 619.76          | S     | 5.65           | E | 8.90                   |
|   | 680               | 679.73            | 629.73          | S     | 6.06           | E | 9.46                   |
| * | 682               | 681.73            | 631.73          | S     | 6.14           | E | 9.57                   |
|   | 690               | 689.71            | 639.71          | S     | 6.48           | E | 9.10                   |
|   | 700               | 699.68            | 649.68          | S     | 6.93           | E | 8.48                   |
|   | 710               | 709.64            | 659.64          | S     | 7.41           | E | 7.82                   |
| * | 715               | 714.63            | 664.63          | S     | 7.65           | E | 7.49                   |
|   | 720               | 719.61            | 669.61          | S     | 8.00           | E | 7.26                   |
|   | 730               | 729.58            | 679.58          | S     | 8.69           | E | 6.81                   |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL    | CD | ORDINATES     | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------|----|---------------|------------------------|
|                   | 740               | 739.54          | 689.54   | S  | 9.39 E 6.36   | 11.34                  |
| *                 | 746               | 745.52          | 695.52   | S  | 9.80 E 6.09   | 11.54                  |
|                   | 750               | 749.51          | 699.51   | S  | 10.07 E 5.88  | 11.66                  |
|                   | 760               | 759.46          | 709.46   | S  | 10.79 E 5.30  | 12.02                  |
|                   | 770               | 769.42          | 719.42   | S  | 11.56 E 4.69  | 12.48                  |
|                   | 780               | 779.36          | 729.36   | S  | 12.39 E 4.03  | 13.03                  |
|                   | 790               | 789.30          | 739.30   | S  | 13.26 E 3.34  | 13.68                  |
|                   | 800               | 799.23          | 749.23   | S  | 14.19 E 2.60  | 14.43                  |
|                   | 810               | 809.15          | 759.15   | S  | 15.17 E 1.82  | 15.28                  |
|                   | 820               | 819.06          | 769.06   | S  | 16.20 E 1.00  | 16.23                  |
| *                 | 821               | 820.05          | 770.05   | S  | 16.30 E 0.92  | 16.33                  |
|                   | 830               | 828.97          | 778.97   | S  | 17.25 E 1.73  | 17.34                  |
|                   | 840               | 838.86          | 788.86   | S  | 18.37 E 2.67  | 18.56                  |
|                   | 850               | 848.74          | 798.74   | S  | 19.54 E 3.66  | 19.88                  |
| *                 | 852               | 850.72          | 800.72   | S  | 19.77 E 3.86  | 20.15                  |
|                   | 860               | 858.61          | 808.61   | S  | 20.67 E 2.97  | 20.88                  |
|                   | 870               | 868.48          | 818.48   | S  | 21.83 E 1.81  | 21.90                  |
|                   | 880               | 878.34          | 828.34   | S  | 23.02 E 0.62  | 23.03                  |
|                   | 890               | 888.18          | 838.18   | S  | 24.25 W 0.61  | 24.26                  |
|                   | 900               | 898.02          | 848.02   | S  | 25.51 W 1.88  | 25.58                  |
|                   | 910               | 907.85          | 857.85   | S  | 26.81 W 3.17  | 27.00                  |
|                   | 920               | 917.67          | 867.67   | S  | 28.15 W 4.51  | 28.50                  |
|                   | 930               | 927.48          | 877.48   | S  | 29.51 W 5.88  | 30.09                  |
| *                 | 933               | 930.43          | 880.43   | S  | 29.93 W 6.29  | 30.58                  |
|                   | 940               | 937.28          | 887.28   | S  | 30.82 W 7.38  | 31.69                  |
|                   | 950               | 947.06          | 897.06   | S  | 32.15 W 9.00  | 33.39                  |
|                   | 960               | 956.82          | 906.82   | S  | 33.54 W 10.68 | 35.20                  |
|                   | 970               | 966.56          | 916.56   | S  | 34.98 W 12.43 | 37.12                  |
|                   | 980               | 976.28          | 926.28   | S  | 36.47 W 14.25 | 39.15                  |
|                   | 990               | 985.98          | 935.98   | S  | 38.01 W 16.13 | 41.30                  |
|                   | 1000              | 995.66          | 945.66   | S  | 39.61 W 18.08 | 43.55                  |
| *                 | 1008              | 1,003.38        | 953.38   | S  | 40.93 W 19.68 | 45.42                  |
|                   | 1010              | 1,005.31        | 955.31   | S  | 41.27 W 20.08 | 45.89                  |
|                   | 1020              | 1,014.95        | 964.95   | S  | 43.00 W 22.12 | 48.35                  |
|                   | 1030              | 1,024.56        | 974.56   | S  | 44.78 W 24.21 | 50.91                  |
| *                 | 1038              | 1,032.24        | 982.24   | S  | 46.24 W 25.92 | 53.01                  |
|                   | 1040              | 1,034.16        | 984.16   | S  | 46.58 W 26.36 | 53.53                  |
|                   | 1050              | 1,043.74        | 993.74   | S  | 48.35 W 28.64 | 56.20                  |
|                   | 1060              | 1,053.29        | 1,003.29 | S  | 50.16 W 30.96 | 58.95                  |
| *                 | 1070              | 1,062.83        | 1,012.83 | S  | 52.01 W 33.33 | 61.77                  |
|                   | 1080              | 1,072.35        | 1,022.35 | S  | 53.93 W 35.73 | 64.69                  |
|                   | 1090              | 1,081.85        | 1,031.85 | S  | 55.88 W 38.17 | 67.67                  |
|                   | 1100              | 1,091.33        | 1,041.33 | S  | 57.87 W 40.65 | 70.72                  |
| *                 | 1101              | 1,092.28        | 1,042.28 | S  | 58.07 W 40.90 | 71.03                  |
|                   | 1110              | 1,100.79        | 1,050.79 | S  | 59.92 W 43.18 | 73.85                  |

## DIRECTIONAL SURVEY FOR WELL LD6-19

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WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL | CD -   | ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|-------|--------|-----------|------------------------|
| 1120              | 1,110.22          | 1,060.22        | S     | 62.01  | W 45.77   | 77.07                  |
| 1130              | 1,119.62          | 1,069.62        | S     | 64.15  | W 48.41   | 80.37                  |
| * 1132            | 1,121.50          | 1,071.50        | S     | 64.58  | W 48.94   | 81.04                  |
| 1140              | 1,129.00          | 1,079.00        | S     | 66.23  | W 46.72   | 81.05                  |
| 1150              | 1,138.37          | 1,088.37        | S     | 68.31  | W 43.91   | 81.21                  |
| 1160              | 1,147.73          | 1,097.73        | S     | 70.41  | W 41.07   | 81.51                  |
| 1170              | 1,157.07          | 1,107.07        | S     | 72.54  | W 38.20   | 81.98                  |
| 1180              | 1,166.39          | 1,116.39        | S     | 74.69  | W 35.29   | 82.61                  |
| 1190              | 1,175.70          | 1,125.70        | S     | 76.87  | W 32.35   | 83.40                  |
| 1200              | 1,184.99          | 1,134.99        | S     | 79.07  | W 29.37   | 84.35                  |
| 1210              | 1,194.26          | 1,144.26        | S     | 81.29  | W 26.36   | 85.46                  |
| 1220              | 1,203.52          | 1,153.52        | S     | 83.54  | W 23.32   | 86.74                  |
| 1230              | 1,212.76          | 1,162.76        | S     | 85.82  | W 20.25   | 88.17                  |
| * 1231            | 1,213.68          | 1,163.68        | S     | 86.04  | W 19.94   | 88.33                  |
| 1240              | 1,221.99          | 1,171.99        | S     | 88.10  | W 17.17   | 89.75                  |
| 1250              | 1,231.23          | 1,181.23        | S     | 90.38  | W 14.08   | 91.47                  |
| 1260              | 1,240.45          | 1,190.45        | S     | 92.67  | W 10.98   | 93.32                  |
| 1270              | 1,249.68          | 1,199.68        | S     | 94.97  | W 7.88    | 95.30                  |
| 1280              | 1,258.90          | 1,208.90        | S     | 97.27  | W 4.77    | 97.39                  |
| 1290              | 1,268.12          | 1,218.12        | S     | 99.58  | W 1.65    | 99.59                  |
| 1300              | 1,277.33          | 1,227.33        | S     | 101.89 | E 1.47    | 101.90                 |
| 1310              | 1,286.54          | 1,236.54        | S     | 104.21 | E 4.60    | 104.31                 |
| 1320              | 1,295.75          | 1,245.75        | S     | 106.53 | E 7.74    | 106.81                 |
| * 1323            | 1,298.51          | 1,248.51        | S     | 107.23 | E 8.69    | 107.58                 |
| 1330              | 1,304.95          | 1,254.95        | S     | 108.84 | E 10.91   | 109.39                 |
| 1340              | 1,314.14          | 1,264.14        | S     | 111.16 | E 14.09   | 112.05                 |
| 1350              | 1,323.33          | 1,273.33        | S     | 113.48 | E 17.29   | 114.79                 |
| 1360              | 1,332.50          | 1,282.50        | S     | 115.81 | E 20.50   | 117.61                 |
| 1370              | 1,341.67          | 1,291.67        | S     | 118.16 | E 23.73   | 120.52                 |
| 1380              | 1,350.84          | 1,300.84        | S     | 120.51 | E 26.97   | 123.49                 |
| 1390              | 1,359.99          | 1,309.99        | S     | 122.88 | E 30.22   | 126.54                 |
| 1400              | 1,369.14          | 1,319.14        | S     | 125.25 | E 33.49   | 129.65                 |
| 1410              | 1,378.28          | 1,328.28        | S     | 127.63 | E 36.77   | 132.82                 |
| * 1417            | 1,384.68          | 1,334.68        | S     | 129.31 | E 39.07   | 135.08                 |
| 1420              | 1,387.42          | 1,337.42        | S     | 130.07 | E 40.02   | 136.09                 |
| 1430              | 1,396.55          | 1,346.55        | S     | 132.64 | E 43.19   | 139.50                 |
| 1440              | 1,405.67          | 1,355.67        | S     | 135.22 | E 46.38   | 142.96                 |
| 1450              | 1,414.78          | 1,364.78        | S     | 137.81 | E 49.57   | 146.45                 |
| 1460              | 1,423.89          | 1,373.89        | S     | 140.40 | E 52.77   | 149.99                 |
| 1470              | 1,433.00          | 1,383.00        | S     | 143.01 | E 55.99   | 153.58                 |
| 1480              | 1,442.10          | 1,392.10        | S     | 145.62 | E 59.21   | 157.20                 |
| 1490              | 1,451.19          | 1,401.19        | S     | 148.24 | E 62.45   | 160.85                 |
| 1500              | 1,460.28          | 1,410.28        | S     | 150.86 | E 65.69   | 164.54                 |
| * 1510            | 1,469.36          | 1,419.36        | S     | 153.50 | E 68.94   | 168.27                 |
| 1520              | 1,478.45          | 1,428.45        | S     | 156.09 | E 72.21   | 171.99                 |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL | CD -   | ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|-------|--------|-----------|------------------------|
| 1530              | 1,487.54          | 1,437.54        | S     | 158.68 | E 75.46   | 175.71                 |
| 1540              | 1,496.64          | 1,446.64        | S     | 161.26 | E 78.71   | 179.45                 |
| 1550              | 1,505.75          | 1,455.75        | S     | 163.83 | E 81.94   | 183.18                 |
| 1560              | 1,514.86          | 1,464.86        | S     | 166.40 | E 85.16   | 186.92                 |
| 1570              | 1,523.98          | 1,473.98        | S     | 168.95 | E 88.37   | 190.67                 |
| 1580              | 1,533.11          | 1,483.11        | S     | 171.50 | E 91.57   | 194.41                 |
| 1590              | 1,542.24          | 1,492.24        | S     | 174.03 | E 94.76   | 198.16                 |
| * 1595            | 1,546.81          | 1,496.81        | S     | 175.30 | E 96.35   | 200.03                 |
| 1600              | 1,551.37          | 1,501.37        | S     | 176.60 | E 97.93   | 201.93                 |
| 1610              | 1,560.49          | 1,510.49        | S     | 179.22 | E 101.10  | 205.77                 |
| 1620              | 1,569.58          | 1,519.58        | S     | 181.86 | E 104.31  | 209.65                 |
| 1630              | 1,578.66          | 1,528.66        | S     | 184.52 | E 107.54  | 213.57                 |
| 1640              | 1,587.73          | 1,537.73        | S     | 187.21 | E 110.80  | 217.54                 |
| 1650              | 1,596.78          | 1,546.78        | S     | 189.91 | E 114.08  | 221.54                 |
| 1660              | 1,605.81          | 1,555.81        | S     | 192.64 | E 117.39  | 225.59                 |
| 1670              | 1,614.83          | 1,564.83        | S     | 195.39 | E 120.72  | 229.68                 |
| 1680              | 1,623.83          | 1,573.83        | S     | 198.16 | E 124.09  | 233.81                 |
| * 1688            | 1,631.02          | 1,581.02        | S     | 200.39 | E 126.79  | 237.14                 |
| 1690              | 1,632.82          | 1,582.82        | S     | 201.01 | E 127.41  | 237.99                 |
| 1700              | 1,641.81          | 1,591.81        | S     | 204.11 | E 130.51  | 242.26                 |
| 1710              | 1,650.81          | 1,600.81        | S     | 207.20 | E 133.59  | 246.53                 |
| 1720              | 1,659.81          | 1,609.81        | S     | 210.28 | E 136.68  | 250.79                 |
| 1730              | 1,668.81          | 1,618.81        | S     | 213.36 | E 139.75  | 255.05                 |
| * 1740            | 1,677.82          | 1,627.82        | S     | 216.43 | E 142.82  | 259.31                 |
| 1750              | 1,686.80          | 1,636.80        | S     | 219.72 | E 145.74  | 263.66                 |
| 1760              | 1,695.75          | 1,645.75        | S     | 223.06 | E 148.69  | 268.08                 |
| 1770              | 1,704.67          | 1,654.67        | S     | 226.44 | E 151.68  | 272.55                 |
| 1780              | 1,713.57          | 1,663.57        | S     | 229.86 | E 154.71  | 277.08                 |
| 1790              | 1,722.44          | 1,672.44        | S     | 233.32 | E 157.77  | 281.66                 |
| 1800              | 1,731.28          | 1,681.28        | S     | 236.83 | E 160.87  | 286.30                 |
| * 1803            | 1,733.92          | 1,683.92        | S     | 237.88 | E 161.81  | 287.70                 |
| 1810              | 1,740.09          | 1,690.09        | S     | 240.45 | E 163.91  | 291.01                 |
| 1820              | 1,748.84          | 1,698.84        | S     | 244.19 | E 166.97  | 295.81                 |
| 1830              | 1,757.56          | 1,707.56        | S     | 247.98 | E 170.07  | 300.70                 |
| * 1835            | 1,761.91          | 1,711.91        | S     | 249.89 | E 171.64  | 303.16                 |
| 1840              | 1,766.25          | 1,716.25        | S     | 251.82 | E 173.20  | 305.63                 |
| 1850              | 1,774.90          | 1,724.90        | S     | 255.71 | E 176.36  | 310.63                 |
| 1860              | 1,783.53          | 1,733.53        | S     | 259.64 | E 179.55  | 315.67                 |
| * 1866            | 1,788.69          | 1,738.69        | S     | 262.01 | E 181.48  | 318.72                 |
| 1870              | 1,792.13          | 1,742.13        | S     | 263.61 | E 182.75  | 320.76                 |
| 1880              | 1,800.70          | 1,750.70        | S     | 267.64 | E 185.95  | 325.90                 |
| 1890              | 1,809.25          | 1,759.25        | S     | 271.71 | E 189.17  | 331.08                 |
| * 1898            | 1,816.07          | 1,766.07        | S     | 274.99 | E 191.77  | 335.25                 |
| 1900              | 1,817.77          | 1,767.77        | S     | 275.83 | E 192.39  | 336.30                 |
| 1910              | 1,826.26          | 1,776.26        | S     | 280.09 | E 195.52  | 341.58                 |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL | CO -   | ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|-------|--------|-----------|------------------------|
| 1920              | 1,834.72          | 1,784.72        | S     | 284.40 | E 198.68  | 346.92                 |
| 1930              | 1,843.14          | 1,793.14        | S     | 288.74 | E 201.87  | 352.31                 |
| 1940              | 1,851.52          | 1,801.52        | S     | 293.13 | E 205.10  | 357.76                 |
| 1950              | 1,859.88          | 1,809.88        | S     | 297.56 | E 208.35  | 363.25                 |
| * 1960            | 1,868.20          | 1,818.20        | S     | 302.03 | E 211.64  | 368.80                 |
| 1970              | 1,876.48          | 1,826.48        | S     | 306.64 | E 214.82  | 374.40                 |
| 1980              | 1,884.73          | 1,834.73        | S     | 311.29 | E 218.04  | 380.06                 |
| 1990              | 1,892.94          | 1,842.94        | S     | 315.98 | E 221.29  | 385.77                 |
| 2000              | 1,901.11          | 1,851.11        | S     | 320.72 | E 224.57  | 391.53                 |
| 2010              | 1,909.25          | 1,859.25        | S     | 325.50 | E 227.88  | 397.34                 |
| 2020              | 1,917.35          | 1,867.35        | S     | 330.32 | E 231.22  | 403.21                 |
| * 2022            | 1,918.96          | 1,868.96        | S     | 331.29 | E 231.89  | 404.39                 |
| 2030              | 1,925.41          | 1,875.41        | S     | 335.28 | E 234.45  | 409.12                 |
| 2040              | 1,933.43          | 1,883.43        | S     | 340.31 | E 237.66  | 415.08                 |
| 2050              | 1,941.41          | 1,891.41        | S     | 345.39 | E 240.91  | 421.10                 |
| 2060              | 1,949.36          | 1,899.36        | S     | 350.50 | E 244.18  | 427.17                 |
| 2070              | 1,957.26          | 1,907.26        | S     | 355.66 | E 247.48  | 433.29                 |
| 2080              | 1,965.13          | 1,915.13        | S     | 360.87 | E 250.81  | 439.47                 |
| * 2084            | 1,968.26          | 1,918.26        | S     | 362.96 | E 252.15  | 441.94                 |
| 2090              | 1,972.96          | 1,922.96        | S     | 366.12 | E 254.13  | 445.68                 |
| 2100              | 1,980.75          | 1,930.75        | S     | 371.43 | E 257.46  | 451.94                 |
| 2110              | 1,988.50          | 1,938.50        | S     | 376.78 | E 260.82  | 458.25                 |
| 2120              | 1,996.22          | 1,946.22        | S     | 382.17 | E 264.20  | 464.60                 |
| 2130              | 2,003.90          | 1,953.90        | S     | 387.60 | E 267.60  | 471.00                 |
| 2140              | 2,011.54          | 1,961.54        | S     | 393.06 | E 271.03  | 477.45                 |
| * 2147            | 2,016.87          | 1,966.87        | S     | 396.90 | E 273.44  | 481.98                 |
| 2150              | 2,019.15          | 1,969.15        | S     | 398.55 | E 274.49  | 483.93                 |
| 2160              | 2,026.70          | 1,976.70        | S     | 404.08 | E 278.01  | 490.48                 |
| * 2170            | 2,034.20          | 1,984.20        | S     | 409.66 | E 281.56  | 497.09                 |
| 2180              | 2,041.66          | 1,991.66        | S     | 415.25 | E 285.17  | 503.74                 |
| 2190              | 2,049.08          | 1,999.08        | S     | 420.89 | E 288.80  | 510.44                 |
| 2200              | 2,056.46          | 2,006.46        | S     | 426.56 | E 292.46  | 517.19                 |
| * 2210            | 2,063.80          | 2,013.80        | S     | 432.27 | E 296.14  | 523.98                 |
| 2220              | 2,071.10          | 2,021.10        | S     | 438.04 | E 299.81  | 530.82                 |
| 2230              | 2,078.35          | 2,028.35        | S     | 443.84 | E 303.51  | 537.70                 |
| 2240              | 2,085.57          | 2,035.57        | S     | 449.69 | E 307.23  | 544.62                 |
| 2250              | 2,092.74          | 2,042.74        | S     | 455.56 | E 310.98  | 551.58                 |
| 2260              | 2,099.87          | 2,049.87        | S     | 461.48 | E 314.74  | 558.59                 |
| 2270              | 2,106.96          | 2,056.96        | S     | 467.43 | E 318.53  | 565.64                 |
| * 2271            | 2,107.66          | 2,057.66        | S     | 468.02 | E 318.91  | 566.35                 |
| 2280              | 2,114.01          | 2,064.01        | S     | 473.18 | E 322.66  | 572.73                 |
| 2290              | 2,121.03          | 2,071.03        | S     | 478.95 | E 326.85  | 579.85                 |
| 2300              | 2,128.01          | 2,078.01        | S     | 484.74 | E 331.06  | 587.00                 |
| 2310              | 2,134.95          | 2,084.95        | S     | 490.56 | E 335.29  | 594.20                 |
| 2320              | 2,141.86          | 2,091.86        | S     | 496.41 | E 339.54  | 601.42                 |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL | CD -   | ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|-------|--------|-----------|------------------------|
| * 2327            | 2,146.68          | 2,096.68        | S     | 500.52 | E 342.52  | 606.50                 |
| 2330              | 2,148.74          | 2,098.74        | S     | 502.29 | E 343.79  | 608.68                 |
| 2340              | 2,155.61          | 2,105.61        | S     | 508.21 | E 348.01  | 615.94                 |
| 2350              | 2,162.47          | 2,112.47        | S     | 514.13 | E 352.23  | 623.22                 |
| 2360              | 2,169.32          | 2,119.32        | S     | 520.06 | E 356.46  | 630.50                 |
| 2370              | 2,176.16          | 2,126.16        | S     | 526.00 | E 360.70  | 637.79                 |
| 2380              | 2,182.99          | 2,132.99        | S     | 531.95 | E 364.94  | 645.10                 |
| 2390              | 2,189.81          | 2,139.81        | S     | 537.90 | E 369.19  | 652.41                 |
| 2400              | 2,196.62          | 2,146.62        | S     | 543.87 | E 373.44  | 659.74                 |
| 2410              | 2,203.41          | 2,153.41        | S     | 549.84 | E 377.70  | 667.07                 |
| 2420              | 2,210.20          | 2,160.20        | S     | 555.82 | E 381.97  | 674.41                 |
| 2430              | 2,216.98          | 2,166.98        | S     | 561.81 | E 386.24  | 681.77                 |
| 2440              | 2,223.74          | 2,173.74        | S     | 567.80 | E 390.51  | 689.13                 |
| 2450              | 2,230.50          | 2,180.50        | S     | 573.80 | E 394.79  | 696.50                 |
| 2460              | 2,237.24          | 2,187.24        | S     | 579.81 | E 399.08  | 703.88                 |
| 2470              | 2,243.98          | 2,193.98        | S     | 585.83 | E 403.37  | 711.27                 |
| * 2480            | 2,250.70          | 2,200.70        | S     | 591.86 | E 407.67  | 718.67                 |
| 2490              | 2,257.41          | 2,207.41        | S     | 597.97 | E 411.87  | 726.09                 |
| 2500              | 2,264.10          | 2,214.10        | S     | 604.10 | E 416.08  | 733.52                 |
| 2510              | 2,270.77          | 2,220.77        | S     | 610.23 | E 420.30  | 740.97                 |
| 2520              | 2,277.43          | 2,227.43        | S     | 616.38 | E 424.53  | 748.43                 |
| 2530              | 2,284.07          | 2,234.07        | S     | 622.55 | E 428.76  | 755.91                 |
| 2540              | 2,290.69          | 2,240.69        | S     | 628.72 | E 433.01  | 763.40                 |
| 2550              | 2,297.30          | 2,247.30        | S     | 634.91 | E 437.26  | 770.91                 |
| 2560              | 2,303.89          | 2,253.89        | S     | 641.11 | E 441.52  | 778.43                 |
| 2570              | 2,310.46          | 2,260.46        | S     | 647.32 | E 445.79  | 785.97                 |
| 2580              | 2,317.02          | 2,267.02        | S     | 653.54 | E 450.07  | 793.52                 |
| 2590              | 2,323.55          | 2,273.55        | S     | 659.78 | E 454.35  | 801.09                 |
| 2600              | 2,330.08          | 2,280.08        | S     | 666.03 | E 458.65  | 808.67                 |
| 2610              | 2,336.58          | 2,286.58        | S     | 672.29 | E 462.95  | 816.26                 |
| 2620              | 2,343.07          | 2,293.07        | S     | 678.56 | E 467.26  | 823.87                 |
| 2630              | 2,349.54          | 2,299.54        | S     | 684.84 | E 471.58  | 831.50                 |
| * 2635            | 2,352.77          | 2,302.77        | S     | 687.99 | E 473.74  | 835.32                 |
| 2640              | 2,355.99          | 2,305.99        | S     | 691.13 | E 475.90  | 839.14                 |
| 2650              | 2,362.43          | 2,312.43        | S     | 697.44 | E 480.24  | 846.79                 |
| 2660              | 2,368.86          | 2,318.86        | S     | 703.75 | E 484.58  | 854.45                 |
| 2670              | 2,375.27          | 2,325.27        | S     | 710.08 | E 488.92  | 862.13                 |
| 2680              | 2,381.66          | 2,331.66        | S     | 716.42 | E 493.28  | 869.81                 |
| 2690              | 2,388.04          | 2,338.04        | S     | 722.76 | E 497.64  | 877.52                 |
| 2700              | 2,394.40          | 2,344.40        | S     | 729.12 | E 502.01  | 885.23                 |
| 2710              | 2,400.75          | 2,350.75        | S     | 735.49 | E 506.38  | 892.95                 |
| 2720              | 2,407.09          | 2,357.09        | S     | 741.86 | E 510.77  | 900.69                 |
| 2730              | 2,413.41          | 2,363.41        | S     | 748.25 | E 515.16  | 908.44                 |
| 2740              | 2,419.71          | 2,369.71        | S     | 754.65 | E 519.55  | 916.21                 |
| 2750              | 2,426.00          | 2,376.00        | S     | 761.06 | E 523.96  | 923.98                 |



## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL | CD -     | ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|-------|----------|-----------|------------------------|
| 2760              | 2,432.27          | 2,382.27        | S     | 767.47   | E 528.37  | 931.77                 |
| 2770              | 2,438.53          | 2,388.53        | S     | 773.90   | E 532.79  | 939.57                 |
| 2780              | 2,444.78          | 2,394.78        | S     | 780.34   | E 537.21  | 947.38                 |
| 2790              | 2,451.00          | 2,401.00        | S     | 786.79   | E 541.64  | 955.20                 |
| * 2792            | 2,452.25          | 2,402.25        | S     | 788.08   | E 542.53  | 956.77                 |
| 2800              | 2,457.23          | 2,407.23        | S     | 793.24   | E 546.07  | 963.03                 |
| 2810              | 2,463.47          | 2,413.47        | S     | 799.68   | E 550.50  | 970.84                 |
| 2820              | 2,469.70          | 2,419.70        | S     | 806.12   | E 554.93  | 978.66                 |
| 2830              | 2,475.95          | 2,425.95        | S     | 812.56   | E 559.35  | 986.47                 |
| 2840              | 2,482.19          | 2,432.19        | S     | 819.00   | E 563.78  | 994.28                 |
| 2850              | 2,488.44          | 2,438.44        | S     | 825.43   | E 568.20  | 1,002.09               |
| 2860              | 2,494.70          | 2,444.70        | S     | 831.86   | E 572.62  | 1,009.89               |
| 2870              | 2,500.96          | 2,450.96        | S     | 838.29   | E 577.04  | 1,017.69               |
| 2880              | 2,507.22          | 2,457.22        | S     | 844.71   | E 581.45  | 1,025.49               |
| 2890              | 2,513.49          | 2,463.49        | S     | 851.13   | E 585.86  | 1,033.28               |
| 2900              | 2,519.76          | 2,469.76        | S     | 857.55   | E 590.28  | 1,041.07               |
| 2910              | 2,526.04          | 2,476.04        | S     | 863.97   | E 594.68  | 1,048.85               |
| 2920              | 2,532.32          | 2,482.32        | S     | 870.38   | E 599.09  | 1,056.63               |
| 2930              | 2,538.60          | 2,488.60        | S     | 876.79   | E 603.50  | 1,064.41               |
| 2940              | 2,544.89          | 2,494.89        | S     | 883.20   | E 607.90  | 1,072.19               |
| * 2949            | 2,550.56          | 2,500.56        | S     | 888.96   | E 611.86  | 1,079.18               |
| 2950              | 2,551.18          | 2,501.18        | S     | 889.61   | E 612.29  | 1,079.96               |
| 2960              | 2,557.47          | 2,507.47        | S     | 896.09   | E 616.58  | 1,087.73               |
| 2970              | 2,563.76          | 2,513.76        | S     | 902.58   | E 620.88  | 1,095.51               |
| 2980              | 2,570.04          | 2,520.04        | S     | 909.07   | E 625.17  | 1,103.29               |
| 2990              | 2,576.31          | 2,526.31        | S     | 915.56   | E 629.47  | 1,111.07               |
| 3000              | 2,582.58          | 2,532.58        | S     | 922.06   | E 633.77  | 1,118.86               |
| 3010              | 2,588.85          | 2,538.85        | S     | 928.56   | E 638.07  | 1,126.65               |
| 3020              | 2,595.11          | 2,545.11        | S     | 935.06   | E 642.37  | 1,134.45               |
| 3030              | 2,601.37          | 2,551.37        | S     | 941.56   | E 646.68  | 1,142.25               |
| 3040              | 2,607.62          | 2,557.62        | S     | 948.07   | E 650.98  | 1,150.05               |
| 3050              | 2,613.87          | 2,563.87        | S     | 954.58   | E 655.29  | 1,157.85               |
| 3060              | 2,620.12          | 2,570.12        | S     | 961.09   | E 659.60  | 1,165.66               |
| 3070              | 2,626.36          | 2,576.36        | S     | 967.61   | E 663.92  | 1,173.48               |
| 3080              | 2,632.60          | 2,582.60        | S     | 974.13   | E 668.23  | 1,181.29               |
| 3090              | 2,638.83          | 2,588.83        | S     | 980.65   | E 672.55  | 1,189.11               |
| 3100              | 2,645.05          | 2,595.05        | S     | 987.17   | E 676.87  | 1,196.94               |
| * 3105            | 2,648.17          | 2,598.17        | S     | 990.44   | E 679.02  | 1,200.85               |
| 3110              | 2,651.28          | 2,601.28        | S     | 993.72   | E 681.16  | 1,204.76               |
| 3120              | 2,657.51          | 2,607.51        | S     | 1,000.28 | E 685.42  | 1,212.58               |
| 3130              | 2,663.73          | 2,613.73        | S     | 1,006.84 | E 689.68  | 1,220.41               |
| 3140              | 2,669.96          | 2,619.96        | S     | 1,013.41 | E 693.94  | 1,228.23               |
| 3150              | 2,676.18          | 2,626.18        | S     | 1,019.97 | E 698.21  | 1,236.05               |
| 3160              | 2,682.41          | 2,632.41        | S     | 1,026.53 | E 702.47  | 1,243.88               |
| 3170              | 2,688.63          | 2,638.63        | S     | 1,033.10 | E 706.73  | 1,251.70               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL CO - ORDINATES |          |  | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------------------|----------|--|------------------------|
| 3180              | 2,694.86          | 2,644.86        | S 1,039.66           | E 710.99 |  | 1,259.53               |
| 3190              | 2,701.08          | 2,651.08        | S 1,046.22           | E 715.25 |  | 1,267.35               |
| 3200              | 2,707.31          | 2,657.31        | S 1,052.79           | E 719.52 |  | 1,275.17               |
| 3210              | 2,713.53          | 2,663.53        | S 1,059.35           | E 723.78 |  | 1,283.00               |
| 3220              | 2,719.76          | 2,669.76        | S 1,065.92           | E 728.04 |  | 1,290.82               |
| 3230              | 2,725.98          | 2,675.98        | S 1,072.48           | E 732.30 |  | 1,298.65               |
| 3240              | 2,732.21          | 2,682.21        | S 1,079.04           | E 736.57 |  | 1,306.47               |
| 3250              | 2,738.43          | 2,688.43        | S 1,085.61           | E 740.83 |  | 1,314.29               |
| * 3260            | 2,744.66          | 2,694.66        | S 1,092.17           | E 745.09 |  | 1,322.12               |
| 3270              | 2,750.88          | 2,700.88        | S 1,098.92           | E 749.07 |  | 1,329.93               |
| 3280              | 2,757.08          | 2,707.08        | S 1,105.67           | E 753.04 |  | 1,337.76               |
| 3290              | 2,763.28          | 2,713.28        | S 1,112.43           | E 757.03 |  | 1,345.59               |
| 3300              | 2,769.47          | 2,719.47        | S 1,119.20           | E 761.01 |  | 1,353.42               |
| 3310              | 2,775.65          | 2,725.65        | S 1,125.98           | E 765.00 |  | 1,361.27               |
| 3320              | 2,781.83          | 2,731.83        | S 1,132.75           | E 769.00 |  | 1,369.12               |
| 3330              | 2,787.99          | 2,737.99        | S 1,139.54           | E 772.99 |  | 1,376.98               |
| 3340              | 2,794.14          | 2,744.14        | S 1,146.33           | E 776.99 |  | 1,384.84               |
| 3350              | 2,800.29          | 2,750.29        | S 1,153.13           | E 781.00 |  | 1,392.72               |
| 3360              | 2,806.43          | 2,756.43        | S 1,159.93           | E 785.00 |  | 1,400.60               |
| 3370              | 2,812.55          | 2,762.55        | S 1,166.74           | E 789.01 |  | 1,408.48               |
| 3380              | 2,818.67          | 2,768.67        | S 1,173.56           | E 793.03 |  | 1,416.38               |
| 3390              | 2,824.78          | 2,774.78        | S 1,180.38           | E 797.05 |  | 1,424.28               |
| 3400              | 2,830.88          | 2,780.88        | S 1,187.20           | E 801.07 |  | 1,432.19               |
| 3410              | 2,836.98          | 2,786.98        | S 1,194.04           | E 805.09 |  | 1,440.10               |
| * 3415            | 2,840.02          | 2,790.02        | S 1,197.45           | E 807.11 |  | 1,444.06               |
| 3420              | 2,843.06          | 2,793.06        | S 1,200.89           | E 809.09 |  | 1,448.02               |
| 3430              | 2,849.14          | 2,799.14        | S 1,207.77           | E 813.06 |  | 1,455.94               |
| 3440              | 2,855.21          | 2,805.21        | S 1,214.65           | E 817.03 |  | 1,463.87               |
| 3450              | 2,861.27          | 2,811.27        | S 1,221.54           | E 821.01 |  | 1,471.81               |
| 3460              | 2,867.33          | 2,817.33        | S 1,228.43           | E 824.99 |  | 1,479.75               |
| 3470              | 2,873.37          | 2,823.37        | S 1,235.33           | E 828.97 |  | 1,487.69               |
| 3480              | 2,879.41          | 2,829.41        | S 1,242.23           | E 832.96 |  | 1,495.64               |
| 3490              | 2,885.45          | 2,835.45        | S 1,249.14           | E 836.94 |  | 1,503.60               |
| 3500              | 2,891.47          | 2,841.47        | S 1,256.05           | E 840.93 |  | 1,511.56               |
| * 3510            | 2,897.49          | 2,847.49        | S 1,262.96           | E 844.93 |  | 1,519.53               |
| 3520              | 2,903.51          | 2,853.51        | S 1,269.98           | E 848.74 |  | 1,527.49               |
| 3530              | 2,909.53          | 2,859.53        | S 1,277.00           | E 852.55 |  | 1,535.44               |
| 3540              | 2,915.55          | 2,865.55        | S 1,284.02           | E 856.36 |  | 1,543.39               |
| 3550              | 2,921.56          | 2,871.56        | S 1,291.04           | E 860.17 |  | 1,551.35               |
| 3560              | 2,927.58          | 2,877.58        | S 1,298.06           | E 863.98 |  | 1,559.30               |
| 3570              | 2,933.60          | 2,883.60        | S 1,305.08           | E 867.79 |  | 1,567.25               |
| 3580              | 2,939.62          | 2,889.62        | S 1,312.09           | E 871.60 |  | 1,575.21               |
| 3590              | 2,945.64          | 2,895.64        | S 1,319.11           | E 875.41 |  | 1,583.16               |
| 3600              | 2,951.66          | 2,901.66        | S 1,326.13           | E 879.22 |  | 1,591.12               |
| 3610              | 2,957.67          | 2,907.67        | S 1,333.15           | E 883.03 |  | 1,599.07               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL CD - ORDINATES |            |  | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------------------|------------|--|------------------------|
| 3620              | 2,963.69          | 2,913.69        | S 1,340.17           | E 886.85   |  | 1,607.03               |
| 3630              | 2,969.71          | 2,919.71        | S 1,347.19           | E 890.66   |  | 1,614.99               |
| 3640              | 2,975.73          | 2,925.73        | S 1,354.21           | E 894.47   |  | 1,622.94               |
| 3650              | 2,981.75          | 2,931.75        | S 1,361.22           | E 898.28   |  | 1,630.90               |
| 3660              | 2,987.77          | 2,937.77        | S 1,368.24           | E 902.09   |  | 1,638.86               |
| * 3665            | 2,990.78          | 2,940.78        | S 1,371.75           | E 903.99   |  | 1,642.83               |
| 3670              | 2,993.79          | 2,943.79        | S 1,375.28           | E 905.87   |  | 1,646.81               |
| 3680              | 2,999.82          | 2,949.82        | S 1,382.32           | E 909.61   |  | 1,654.75               |
| 3690              | 3,005.85          | 2,955.85        | S 1,389.36           | E 913.35   |  | 1,662.69               |
| 3700              | 3,011.90          | 2,961.90        | S 1,396.39           | E 917.09   |  | 1,670.62               |
| 3710              | 3,017.95          | 2,967.95        | S 1,403.42           | E 920.83   |  | 1,678.55               |
| 3720              | 3,024.01          | 2,974.01        | S 1,410.45           | E 924.57   |  | 1,686.47               |
| 3730              | 3,030.08          | 2,980.08        | S 1,417.46           | E 928.30   |  | 1,694.39               |
| 3740              | 3,036.15          | 2,986.15        | S 1,424.48           | E 932.03   |  | 1,702.30               |
| 3750              | 3,042.23          | 2,992.23        | S 1,431.49           | E 935.75   |  | 1,710.20               |
| * 3758            | 3,047.10          | 2,997.10        | S 1,437.09           | E 938.73   |  | 1,716.52               |
| 3760              | 3,048.32          | 2,998.32        | S 1,438.49           | E 939.48   |  | 1,718.10               |
| 3770              | 3,054.42          | 3,004.42        | S 1,445.49           | E 943.20   |  | 1,726.00               |
| 3780              | 3,060.53          | 3,010.53        | S 1,452.48           | E 946.91   |  | 1,733.88               |
| 3790              | 3,066.66          | 3,016.66        | S 1,459.46           | E 950.63   |  | 1,741.75               |
| 3800              | 3,072.79          | 3,022.79        | S 1,466.43           | E 954.33   |  | 1,749.62               |
| 3810              | 3,078.94          | 3,028.94        | S 1,473.40           | E 958.04   |  | 1,757.48               |
| 3820              | 3,085.09          | 3,035.09        | S 1,480.35           | E 961.74   |  | 1,765.33               |
| 3830              | 3,091.26          | 3,041.26        | S 1,487.30           | E 965.43   |  | 1,773.17               |
| 3840              | 3,097.44          | 3,047.44        | S 1,494.25           | E 969.12   |  | 1,781.00               |
| 3850              | 3,103.63          | 3,053.63        | S 1,501.18           | E 972.81   |  | 1,788.83               |
| 3860              | 3,109.83          | 3,059.83        | S 1,508.11           | E 976.49   |  | 1,796.65               |
| 3870              | 3,116.04          | 3,066.04        | S 1,515.03           | E 980.17   |  | 1,804.45               |
| 3880              | 3,122.26          | 3,072.26        | S 1,521.94           | E 983.85   |  | 1,812.25               |
| * 3883            | 3,124.13          | 3,074.13        | S 1,524.01           | E 984.95   |  | 1,814.59               |
| 3890              | 3,128.49          | 3,078.49        | S 1,528.89           | E 987.44   |  | 1,820.04               |
| 3900              | 3,134.75          | 3,084.75        | S 1,535.84           | E 990.98   |  | 1,827.80               |
| 3910              | 3,141.02          | 3,091.02        | S 1,542.79           | E 994.52   |  | 1,835.55               |
| 3920              | 3,147.30          | 3,097.30        | S 1,549.71           | E 998.05   |  | 1,843.29               |
| 3930              | 3,153.60          | 3,103.60        | S 1,556.63           | E 1,001.57 |  | 1,851.01               |
| 3940              | 3,159.92          | 3,109.92        | S 1,563.54           | E 1,005.09 |  | 1,858.73               |
| 3950              | 3,166.26          | 3,116.26        | S 1,570.43           | E 1,008.60 |  | 1,866.42               |
| 3960              | 3,172.61          | 3,122.61        | S 1,577.32           | E 1,012.11 |  | 1,874.11               |
| 3970              | 3,178.97          | 3,128.97        | S 1,584.19           | E 1,015.61 |  | 1,881.78               |
| 3980              | 3,185.36          | 3,135.36        | S 1,591.05           | E 1,019.11 |  | 1,889.45               |
| 3990              | 3,191.76          | 3,141.76        | S 1,597.89           | E 1,022.59 |  | 1,897.09               |
| 4000              | 3,198.17          | 3,148.17        | S 1,604.73           | E 1,026.08 |  | 1,904.73               |
| * 4008            | 3,203.31          | 3,153.31        | S 1,610.19           | E 1,028.86 |  | 1,910.83               |
| 4010              | 3,204.60          | 3,154.60        | S 1,611.57           | E 1,029.52 |  | 1,912.35               |
| 4020              | 3,211.04          | 3,161.04        | S 1,618.48           | E 1,032.81 |  | 1,919.94               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL CO - ORDINATES |            | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------------------|------------|------------------------|
| 4030              | 3,217.49          | 3,167.49        | S 1,625.38           | E 1,036.10 | 1,927.53               |
| 4040              | 3,223.94          | 3,173.94        | S 1,632.27           | E 1,039.39 | 1,935.10               |
| 4050              | 3,230.41          | 3,180.41        | S 1,639.15           | E 1,042.67 | 1,942.68               |
| 4060              | 3,236.89          | 3,186.89        | S 1,646.03           | E 1,045.95 | 1,950.24               |
| 4070              | 3,243.37          | 3,193.37        | S 1,652.90           | E 1,049.23 | 1,957.80               |
| 4080              | 3,249.86          | 3,199.86        | S 1,659.76           | E 1,052.50 | 1,965.35               |
| 4090              | 3,256.37          | 3,206.37        | S 1,666.62           | E 1,055.78 | 1,972.89               |
| 4100              | 3,262.88          | 3,212.88        | S 1,673.47           | E 1,059.04 | 1,980.42               |
| 4110              | 3,269.40          | 3,219.40        | S 1,680.31           | E 1,062.31 | 1,987.95               |
| 4120              | 3,275.93          | 3,225.93        | S 1,687.15           | E 1,065.57 | 1,995.47               |
| 4130              | 3,282.47          | 3,232.47        | S 1,693.98           | E 1,068.82 | 2,002.98               |
| 4140              | 3,289.02          | 3,239.02        | S 1,700.80           | E 1,072.08 | 2,010.49               |
| 4150              | 3,295.58          | 3,245.58        | S 1,707.61           | E 1,075.33 | 2,017.99               |
| 4160              | 3,302.14          | 3,252.14        | S 1,714.42           | E 1,078.57 | 2,025.48               |
| 4170              | 3,308.72          | 3,258.72        | S 1,721.22           | E 1,081.82 | 2,032.96               |
| 4180              | 3,315.30          | 3,265.30        | S 1,728.01           | E 1,085.06 | 2,040.44               |
| 4190              | 3,321.90          | 3,271.90        | S 1,734.80           | E 1,088.29 | 2,047.90               |
| 4200              | 3,328.50          | 3,278.50        | S 1,741.58           | E 1,091.53 | 2,055.36               |
| 4210              | 3,335.11          | 3,285.11        | S 1,748.35           | E 1,094.76 | 2,062.82               |
| 4220              | 3,341.73          | 3,291.73        | S 1,755.11           | E 1,097.98 | 2,070.26               |
| * 4226            | 3,345.71          | 3,295.71        | S 1,759.17           | E 1,099.92 | 2,074.73               |
| 4230              | 3,348.36          | 3,298.36        | S 1,761.87           | E 1,101.21 | 2,077.70               |
| 4240              | 3,355.00          | 3,305.00        | S 1,768.62           | E 1,104.43 | 2,085.13               |
| 4250              | 3,361.65          | 3,311.65        | S 1,775.36           | E 1,107.64 | 2,092.55               |
| 4260              | 3,368.31          | 3,318.31        | S 1,782.09           | E 1,110.85 | 2,099.96               |
| 4270              | 3,374.98          | 3,324.98        | S 1,788.82           | E 1,114.06 | 2,107.37               |
| 4280              | 3,381.66          | 3,331.66        | S 1,795.53           | E 1,117.26 | 2,114.76               |
| 4290              | 3,388.35          | 3,338.35        | S 1,802.24           | E 1,120.46 | 2,122.15               |
| 4300              | 3,395.06          | 3,345.06        | S 1,808.94           | E 1,123.66 | 2,129.52               |
| 4310              | 3,401.77          | 3,351.77        | S 1,815.63           | E 1,126.85 | 2,136.89               |
| 4320              | 3,408.49          | 3,358.49        | S 1,822.32           | E 1,130.04 | 2,144.25               |
| 4330              | 3,415.22          | 3,365.22        | S 1,828.99           | E 1,133.22 | 2,151.60               |
| 4340              | 3,421.96          | 3,371.96        | S 1,835.66           | E 1,136.40 | 2,158.95               |
| 4350              | 3,428.71          | 3,378.71        | S 1,842.32           | E 1,139.58 | 2,166.28               |
| 4360              | 3,435.47          | 3,385.47        | S 1,848.97           | E 1,142.75 | 2,173.60               |
| 4370              | 3,442.24          | 3,392.24        | S 1,855.61           | E 1,145.92 | 2,180.92               |
| 4380              | 3,449.02          | 3,399.02        | S 1,862.24           | E 1,149.08 | 2,188.23               |
| 4390              | 3,455.81          | 3,405.81        | S 1,868.87           | E 1,152.24 | 2,195.53               |
| 4400              | 3,462.61          | 3,412.61        | S 1,875.49           | E 1,155.40 | 2,202.82               |
| 4410              | 3,469.42          | 3,419.42        | S 1,882.10           | E 1,158.55 | 2,210.10               |
| * 4420            | 3,476.24          | 3,426.24        | S 1,888.70           | E 1,161.70 | 2,217.37               |
| 4430              | 3,483.07          | 3,433.07        | S 1,895.32           | E 1,164.79 | 2,224.63               |
| 4440              | 3,489.90          | 3,439.90        | S 1,901.94           | E 1,167.87 | 2,231.88               |
| 4450              | 3,496.74          | 3,446.74        | S 1,908.55           | E 1,170.95 | 2,239.13               |
| 4460              | 3,503.59          | 3,453.59        | S 1,915.15           | E 1,174.03 | 2,246.37               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL CO - ORDINATES |            | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------------------|------------|------------------------|
| 4470              | 3,510.45          | 3,460.45        | S 1,921.75           | E 1,177.11 | 2,253.60               |
| 4480              | 3,517.31          | 3,467.31        | S 1,928.35           | E 1,180.19 | 2,260.83               |
| 4490              | 3,524.18          | 3,474.18        | S 1,934.93           | E 1,183.26 | 2,268.05               |
| 4500              | 3,531.05          | 3,481.05        | S 1,941.51           | E 1,186.33 | 2,275.27               |
| 4510              | 3,537.93          | 3,487.93        | S 1,948.09           | E 1,189.39 | 2,282.48               |
| 4520              | 3,544.82          | 3,494.82        | S 1,954.66           | E 1,192.46 | 2,289.68               |
| 4530              | 3,551.72          | 3,501.72        | S 1,961.22           | E 1,195.52 | 2,296.88               |
| 4540              | 3,558.62          | 3,508.62        | S 1,967.78           | E 1,198.57 | 2,304.07               |
| 4550              | 3,565.53          | 3,515.53        | S 1,974.33           | E 1,201.63 | 2,311.26               |
| 4560              | 3,572.44          | 3,522.44        | S 1,980.88           | E 1,204.68 | 2,318.43               |
| 4570              | 3,579.37          | 3,529.37        | S 1,987.42           | E 1,207.73 | 2,325.61               |
| 4580              | 3,586.30          | 3,536.30        | S 1,993.95           | E 1,210.78 | 2,332.77               |
| 4590              | 3,593.23          | 3,543.23        | S 2,000.48           | E 1,213.82 | 2,339.93               |
| 4600              | 3,600.18          | 3,550.18        | S 2,007.00           | E 1,216.86 | 2,347.09               |
| * 4605            | 3,603.65          | 3,553.65        | S 2,010.26           | E 1,218.38 | 2,350.66               |
| 4610              | 3,607.12          | 3,557.12        | S 2,013.54           | E 1,219.87 | 2,354.23               |
| 4620              | 3,614.08          | 3,564.08        | S 2,020.08           | E 1,222.86 | 2,361.37               |
| 4630              | 3,621.03          | 3,571.03        | S 2,026.61           | E 1,225.84 | 2,368.51               |
| 4640              | 3,627.99          | 3,577.99        | S 2,033.15           | E 1,228.81 | 2,375.64               |
| 4650              | 3,634.95          | 3,584.95        | S 2,039.68           | E 1,231.79 | 2,382.77               |
| 4660              | 3,641.92          | 3,591.92        | S 2,046.21           | E 1,234.77 | 2,389.90               |
| 4670              | 3,648.88          | 3,598.88        | S 2,052.74           | E 1,237.74 | 2,397.03               |
| 4680              | 3,655.86          | 3,605.86        | S 2,059.26           | E 1,240.71 | 2,404.15               |
| 4690              | 3,662.83          | 3,612.83        | S 2,065.78           | E 1,243.68 | 2,411.27               |
| * 4698            | 3,668.41          | 3,618.41        | S 2,071.00           | E 1,246.06 | 2,416.96               |
| 4700              | 3,669.81          | 3,619.81        | S 2,072.24           | E 1,246.78 | 2,418.39               |
| 4710              | 3,676.79          | 3,626.79        | S 2,078.44           | E 1,250.36 | 2,425.56               |
| 4720              | 3,683.76          | 3,633.76        | S 2,084.65           | E 1,253.94 | 2,432.72               |
| 4730              | 3,690.73          | 3,640.73        | S 2,090.86           | E 1,257.53 | 2,439.89               |
| 4740              | 3,697.70          | 3,647.70        | S 2,097.07           | E 1,261.11 | 2,447.06               |
| 4750              | 3,704.67          | 3,654.67        | S 2,103.28           | E 1,264.70 | 2,454.23               |
| 4760              | 3,711.63          | 3,661.63        | S 2,109.50           | E 1,268.29 | 2,461.41               |
| 4770              | 3,718.60          | 3,668.60        | S 2,115.71           | E 1,271.88 | 2,468.58               |
| 4780              | 3,725.56          | 3,675.56        | S 2,121.93           | E 1,275.47 | 2,475.76               |
| 4790              | 3,732.52          | 3,682.52        | S 2,128.15           | E 1,279.06 | 2,482.94               |
| 4800              | 3,739.47          | 3,689.47        | S 2,134.37           | E 1,282.65 | 2,490.12               |
| 4810              | 3,746.43          | 3,696.43        | S 2,140.59           | E 1,286.24 | 2,497.31               |
| 4820              | 3,753.38          | 3,703.38        | S 2,146.82           | E 1,289.83 | 2,504.50               |
| 4830              | 3,760.33          | 3,710.33        | S 2,153.04           | E 1,293.43 | 2,511.68               |
| 4840              | 3,767.28          | 3,717.28        | S 2,159.27           | E 1,297.03 | 2,518.87               |
| * 4849            | 3,773.53          | 3,723.53        | S 2,164.88           | E 1,300.26 | 2,525.35               |
| 4850              | 3,774.23          | 3,724.23        | S 2,165.50           | E 1,300.62 | 2,526.07               |
| 4860              | 3,781.19          | 3,731.19        | S 2,171.75           | E 1,304.15 | 2,533.24               |
| 4870              | 3,788.18          | 3,738.18        | S 2,177.98           | E 1,307.67 | 2,540.39               |
| 4880              | 3,795.18          | 3,745.18        | S 2,184.19           | E 1,311.19 | 2,547.53               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL CO - ORDINATES |            | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------------------|------------|------------------------|
| 4890              | 3,802.20          | 3,752.20        | S 2,190.39           | E 1,314.70 | 2,554.65               |
| 4900              | 3,809.24          | 3,759.24        | S 2,196.57           | E 1,318.19 | 2,561.75               |
| 4910              | 3,816.29          | 3,766.29        | S 2,202.74           | E 1,321.68 | 2,568.83               |
| 4920              | 3,823.37          | 3,773.37        | S 2,208.89           | E 1,325.16 | 2,575.90               |
| 4930              | 3,830.46          | 3,780.46        | S 2,215.03           | E 1,328.64 | 2,582.95               |
| 4940              | 3,837.56          | 3,787.56        | S 2,221.15           | E 1,332.10 | 2,589.98               |
| 4950              | 3,844.69          | 3,794.69        | S 2,227.26           | E 1,335.55 | 2,596.99               |
| 4960              | 3,851.83          | 3,801.83        | S 2,233.35           | E 1,339.00 | 2,603.99               |
| 4970              | 3,859.00          | 3,809.00        | S 2,239.42           | E 1,342.44 | 2,610.97               |
| 4980              | 3,866.17          | 3,816.17        | S 2,245.48           | E 1,345.86 | 2,617.93               |
| 4990              | 3,873.37          | 3,823.37        | S 2,251.53           | E 1,349.28 | 2,624.87               |
| 5000              | 3,880.58          | 3,830.58        | S 2,257.55           | E 1,352.69 | 2,631.79               |
| * 5006            | 3,884.92          | 3,834.92        | S 2,261.16           | E 1,354.74 | 2,635.94               |
| 5010              | 3,887.81          | 3,837.81        | S 2,263.63           | E 1,355.99 | 2,638.70               |
| 5020              | 3,895.04          | 3,845.04        | S 2,269.78           | E 1,359.13 | 2,645.59               |
| 5030              | 3,902.29          | 3,852.29        | S 2,275.92           | E 1,362.26 | 2,652.47               |
| 5040              | 3,909.54          | 3,859.54        | S 2,282.06           | E 1,365.38 | 2,659.34               |
| 5050              | 3,916.79          | 3,866.79        | S 2,288.19           | E 1,368.51 | 2,666.20               |
| 5060              | 3,924.06          | 3,874.06        | S 2,294.31           | E 1,371.63 | 2,673.06               |
| 5070              | 3,931.33          | 3,881.33        | S 2,300.43           | E 1,374.74 | 2,679.90               |
| 5080              | 3,938.61          | 3,888.61        | S 2,306.53           | E 1,377.85 | 2,686.74               |
| 5090              | 3,945.90          | 3,895.90        | S 2,312.63           | E 1,380.96 | 2,693.57               |
| 5100              | 3,953.20          | 3,903.20        | S 2,318.73           | E 1,384.07 | 2,700.40               |
| 5110              | 3,960.50          | 3,910.50        | S 2,324.81           | E 1,387.17 | 2,707.21               |
| 5120              | 3,967.81          | 3,917.81        | S 2,330.89           | E 1,390.26 | 2,714.02               |
| 5130              | 3,975.13          | 3,925.13        | S 2,336.96           | E 1,393.36 | 2,720.82               |
| 5140              | 3,982.46          | 3,932.46        | S 2,343.03           | E 1,396.45 | 2,727.61               |
| 5150              | 3,989.80          | 3,939.80        | S 2,349.08           | E 1,399.53 | 2,734.39               |
| 5160              | 3,997.14          | 3,947.14        | S 2,355.13           | E 1,402.62 | 2,741.16               |
| 5170              | 4,004.49          | 3,954.49        | S 2,361.17           | E 1,405.69 | 2,747.93               |
| 5180              | 4,011.85          | 3,961.85        | S 2,367.21           | E 1,408.77 | 2,754.69               |
| 5190              | 4,019.21          | 3,969.21        | S 2,373.23           | E 1,411.84 | 2,761.44               |
| 5200              | 4,026.58          | 3,976.58        | S 2,379.25           | E 1,414.91 | 2,768.18               |
| 5210              | 4,033.96          | 3,983.96        | S 2,385.27           | E 1,417.97 | 2,774.91               |
| 5220              | 4,041.35          | 3,991.35        | S 2,391.27           | E 1,421.03 | 2,781.64               |
| 5230              | 4,048.75          | 3,998.75        | S 2,397.27           | E 1,424.08 | 2,788.35               |
| 5240              | 4,056.15          | 4,006.15        | S 2,403.26           | E 1,427.14 | 2,795.06               |
| 5250              | 4,063.56          | 4,013.56        | S 2,409.24           | E 1,430.18 | 2,801.76               |
| 5260              | 4,070.98          | 4,020.98        | S 2,415.22           | E 1,433.23 | 2,808.45               |
| 5270              | 4,078.41          | 4,028.41        | S 2,421.18           | E 1,436.27 | 2,815.14               |
| 5280              | 4,085.84          | 4,035.84        | S 2,427.14           | E 1,439.31 | 2,821.81               |
| 5290              | 4,093.28          | 4,043.28        | S 2,433.10           | E 1,442.34 | 2,828.48               |
| 5300              | 4,100.73          | 4,050.73        | S 2,439.04           | E 1,445.37 | 2,835.14               |
| 5310              | 4,108.18          | 4,058.18        | S 2,444.98           | E 1,448.39 | 2,841.79               |
| 5320              | 4,115.65          | 4,065.65        | S 2,450.91           | E 1,451.42 | 2,848.43               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL CO - ORDINATES |            | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|----------------------|------------|------------------------|
| 5330              | 4,123.12          | 4,073.12        | S 2,456.83           | E 1,454.43 | 2,855.07               |
| 5340              | 4,130.60          | 4,080.60        | S 2,462.75           | E 1,457.45 | 2,861.69               |
| 5350              | 4,138.08          | 4,088.08        | S 2,468.66           | E 1,460.46 | 2,868.31               |
| 5360              | 4,145.57          | 4,095.57        | S 2,474.56           | E 1,463.46 | 2,874.92               |
| 5370              | 4,153.07          | 4,103.07        | S 2,480.45           | E 1,466.47 | 2,881.52               |
| 5380              | 4,160.58          | 4,110.58        | S 2,486.34           | E 1,469.47 | 2,888.11               |
| 5390              | 4,168.10          | 4,118.10        | S 2,492.21           | E 1,472.46 | 2,894.70               |
| 5400              | 4,175.62          | 4,125.62        | S 2,498.08           | E 1,475.45 | 2,901.27               |
| 5410              | 4,183.15          | 4,133.15        | S 2,503.95           | E 1,478.44 | 2,907.84               |
| 5420              | 4,190.69          | 4,140.69        | S 2,509.80           | E 1,481.42 | 2,914.40               |
| 5430              | 4,198.23          | 4,148.23        | S 2,515.65           | E 1,484.40 | 2,920.95               |
| * 5433            | 4,200.50          | 4,150.50        | S 2,517.40           | E 1,485.30 | 2,922.91               |
| 5440              | 4,205.77          | 4,155.77        | S 2,521.45           | E 1,487.49 | 2,927.51               |
| 5450              | 4,213.29          | 4,163.29        | S 2,527.24           | E 1,490.64 | 2,934.10               |
| 5460              | 4,220.80          | 4,170.80        | S 2,533.04           | E 1,493.79 | 2,940.70               |
| → 5470            | 4,228.29          | 4,178.29        | S 2,538.87           | E 1,496.95 | 2,947.32               |
| 5480              | 4,235.77          | 4,185.77        | S 2,544.70           | E 1,500.12 | 2,953.96               |
| 5490              | 4,243.23          | 4,193.23        | S 2,550.55           | E 1,503.29 | 2,960.61               |
| 5500              | 4,250.67          | 4,200.67        | S 2,556.42           | E 1,506.48 | 2,967.28               |
| 5510              | 4,258.10          | 4,208.10        | S 2,562.30           | E 1,509.67 | 2,973.97               |
| 5520              | 4,265.52          | 4,215.52        | S 2,568.20           | E 1,512.88 | 2,980.68               |
| 5530              | 4,272.92          | 4,222.92        | S 2,574.11           | E 1,516.09 | 2,987.40               |
| 5540              | 4,280.30          | 4,230.30        | S 2,580.04           | E 1,519.30 | 2,994.14               |
| 5550              | 4,287.67          | 4,237.67        | S 2,585.98           | E 1,522.53 | 3,000.90               |
| 5560              | 4,295.02          | 4,245.02        | S 2,591.94           | E 1,525.76 | 3,007.67               |
| 5570              | 4,302.36          | 4,252.36        | S 2,597.91           | E 1,529.01 | 3,014.46               |
| 5580              | 4,309.68          | 4,259.68        | S 2,603.89           | E 1,532.26 | 3,021.27               |
| 5590              | 4,316.99          | 4,266.99        | S 2,609.90           | E 1,535.51 | 3,028.09               |
| 5600              | 4,324.28          | 4,274.28        | S 2,615.91           | E 1,538.78 | 3,034.94               |
| 5610              | 4,331.55          | 4,281.55        | S 2,621.94           | E 1,542.05 | 3,041.79               |
| 5620              | 4,338.81          | 4,288.81        | S 2,627.99           | E 1,545.34 | 3,048.67               |
| 5630              | 4,346.05          | 4,296.05        | S 2,634.05           | E 1,548.63 | 3,055.56               |
| 5640              | 4,353.28          | 4,303.28        | S 2,640.12           | E 1,551.92 | 3,062.47               |
| 5650              | 4,360.49          | 4,310.49        | S 2,646.21           | E 1,555.23 | 3,069.39               |
| 5660              | 4,367.69          | 4,317.69        | S 2,652.31           | E 1,558.54 | 3,076.33               |
| 5670              | 4,374.86          | 4,324.86        | S 2,658.43           | E 1,561.87 | 3,083.29               |
| 5680              | 4,382.03          | 4,332.03        | S 2,664.56           | E 1,565.19 | 3,090.26               |
| 5690              | 4,389.17          | 4,339.17        | S 2,670.71           | E 1,568.53 | 3,097.25               |
| 5700              | 4,396.31          | 4,346.31        | S 2,676.87           | E 1,571.88 | 3,104.26               |
| 5710              | 4,403.42          | 4,353.42        | S 2,683.05           | E 1,575.23 | 3,111.28               |
| 5720              | 4,410.52          | 4,360.52        | S 2,689.24           | E 1,578.59 | 3,118.32               |
| 5730              | 4,417.60          | 4,367.60        | S 2,695.44           | E 1,581.96 | 3,125.38               |
| 5740              | 4,424.67          | 4,374.67        | S 2,701.66           | E 1,585.34 | 3,132.45               |
| 5750              | 4,431.72          | 4,381.72        | S 2,707.89           | E 1,588.72 | 3,139.54               |
| 5760              | 4,438.75          | 4,388.75        | S 2,714.14           | E 1,592.11 | 3,146.64               |



## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL      | CO - ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|------------|----------------|------------------------|
| 5770              | 4,445.77          | 4,395.77        | S 2,720.40 | E 1,595.51     | 3,153.76               |
| * 5775            | 4,449.27          | 4,399.27        | S 2,723.53 | E 1,597.21     | 3,157.33               |
| 5780              | 4,452.78          | 4,402.78        | S 2,726.80 | E 1,598.63     | 3,160.87               |
| 5790              | 4,459.79          | 4,409.79        | S 2,733.34 | E 1,601.48     | 3,167.94               |
| 5800              | 4,466.81          | 4,416.81        | S 2,739.87 | E 1,604.32     | 3,175.01               |
| 5810              | 4,473.84          | 4,423.84        | S 2,746.40 | E 1,607.15     | 3,182.08               |
| 5820              | 4,480.86          | 4,430.86        | S 2,752.92 | E 1,609.99     | 3,189.15               |
| 5830              | 4,487.89          | 4,437.89        | S 2,759.44 | E 1,612.83     | 3,196.21               |
| 5840              | 4,494.93          | 4,444.93        | S 2,765.96 | E 1,615.66     | 3,203.26               |
| 5850              | 4,501.97          | 4,451.97        | S 2,772.48 | E 1,618.49     | 3,210.32               |
| 5860              | 4,509.01          | 4,459.01        | S 2,778.99 | E 1,621.32     | 3,217.37               |
| 5870              | 4,516.06          | 4,466.06        | S 2,785.49 | E 1,624.15     | 3,224.41               |
| 5880              | 4,523.11          | 4,473.11        | S 2,792.00 | E 1,626.98     | 3,231.46               |
| 5890              | 4,530.16          | 4,480.16        | S 2,798.50 | E 1,629.81     | 3,238.50               |
| 5900              | 4,537.22          | 4,487.22        | S 2,804.99 | E 1,632.63     | 3,245.53               |
| 5910              | 4,544.28          | 4,494.28        | S 2,811.49 | E 1,635.45     | 3,252.56               |
| 5920              | 4,551.35          | 4,501.35        | S 2,817.98 | E 1,638.28     | 3,259.59               |
| 5930              | 4,558.42          | 4,508.42        | S 2,824.46 | E 1,641.10     | 3,266.62               |
| 5940              | 4,565.49          | 4,515.49        | S 2,830.94 | E 1,643.91     | 3,273.64               |
| 5950              | 4,572.57          | 4,522.57        | S 2,837.42 | E 1,646.73     | 3,280.65               |
| 5960              | 4,579.65          | 4,529.65        | S 2,843.90 | E 1,649.55     | 3,287.67               |
| 5970              | 4,586.73          | 4,536.73        | S 2,850.37 | E 1,652.36     | 3,294.68               |
| 5980              | 4,593.82          | 4,543.82        | S 2,856.83 | E 1,655.17     | 3,301.68               |
| 5990              | 4,600.92          | 4,550.92        | S 2,863.30 | E 1,657.98     | 3,308.68               |
| 6000              | 4,608.01          | 4,558.01        | S 2,869.76 | E 1,660.79     | 3,315.68               |
| 6010              | 4,615.12          | 4,565.12        | S 2,876.22 | E 1,663.60     | 3,322.68               |
| 6020              | 4,622.22          | 4,572.22        | S 2,882.67 | E 1,666.41     | 3,329.67               |
| 6030              | 4,629.33          | 4,579.33        | S 2,889.12 | E 1,669.21     | 3,336.66               |
| 6040              | 4,636.44          | 4,586.44        | S 2,895.57 | E 1,672.01     | 3,343.64               |
| 6050              | 4,643.56          | 4,593.56        | S 2,902.01 | E 1,674.81     | 3,350.62               |
| 6060              | 4,650.68          | 4,600.68        | S 2,908.45 | E 1,677.61     | 3,357.60               |
| 6070              | 4,657.80          | 4,607.80        | S 2,914.88 | E 1,680.41     | 3,364.57               |
| 6080              | 4,664.93          | 4,614.93        | S 2,921.31 | E 1,683.21     | 3,371.54               |
| 6090              | 4,672.06          | 4,622.06        | S 2,927.74 | E 1,686.00     | 3,378.50               |
| * 6091            | 4,672.78          | 4,622.78        | S 2,928.38 | E 1,686.28     | 3,379.20               |
| 6100              | 4,679.21          | 4,629.21        | S 2,934.15 | E 1,688.79     | 3,385.45               |
| 6110              | 4,686.39          | 4,636.39        | S 2,940.54 | E 1,691.57     | 3,392.37               |
| 6120              | 4,693.58          | 4,643.58        | S 2,946.91 | E 1,694.34     | 3,399.27               |
| 6130              | 4,700.80          | 4,650.80        | S 2,953.26 | E 1,697.10     | 3,406.15               |
| 6140              | 4,708.04          | 4,658.04        | S 2,959.58 | E 1,699.85     | 3,413.01               |
| 6150              | 4,715.30          | 4,665.30        | S 2,965.89 | E 1,702.59     | 3,419.84               |
| 6160              | 4,722.58          | 4,672.58        | S 2,972.18 | E 1,705.32     | 3,426.66               |
| 6170              | 4,729.89          | 4,679.89        | S 2,978.44 | E 1,708.05     | 3,433.44               |
| * 6175            | 4,733.54          | 4,683.54        | S 2,981.57 | E 1,709.41     | 3,436.83               |
| 6180              | 4,737.20          | 4,687.20        | S 2,984.74 | E 1,710.66     | 3,440.21               |



## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL      | CO - ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|------------|----------------|------------------------|
| 6190              | 4,744.51          | 4,694.51        | S 2,991.09 | E 1,713.16     | 3,446.96               |
| 6200              | 4,751.81          | 4,701.81        | S 2,997.45 | E 1,715.66     | 3,453.72               |
| 6210              | 4,759.11          | 4,709.11        | S 3,003.80 | E 1,718.17     | 3,460.48               |
| 6220              | 4,766.41          | 4,716.41        | S 3,010.17 | E 1,720.67     | 3,467.25               |
| 6230              | 4,773.70          | 4,723.70        | S 3,016.53 | E 1,723.18     | 3,474.02               |
| 6240              | 4,781.00          | 4,731.00        | S 3,022.90 | E 1,725.69     | 3,480.79               |
| 6250              | 4,788.28          | 4,738.28        | S 3,029.27 | E 1,728.20     | 3,487.57               |
| 6260              | 4,795.57          | 4,745.57        | S 3,035.65 | E 1,730.71     | 3,494.35               |
| 6270              | 4,802.85          | 4,752.85        | S 3,042.02 | E 1,733.22     | 3,501.14               |
| 6280              | 4,810.12          | 4,760.12        | S 3,048.41 | E 1,735.74     | 3,507.93               |
| 6290              | 4,817.40          | 4,767.40        | S 3,054.79 | E 1,738.25     | 3,514.72               |
| 6300              | 4,824.67          | 4,774.67        | S 3,061.18 | E 1,740.77     | 3,521.52               |
| 6310              | 4,831.93          | 4,781.93        | S 3,067.57 | E 1,743.29     | 3,528.32               |
| 6320              | 4,839.19          | 4,789.19        | S 3,073.97 | E 1,745.80     | 3,535.13               |
| 6330              | 4,846.45          | 4,796.45        | S 3,080.37 | E 1,748.33     | 3,541.94               |
| 6340              | 4,853.71          | 4,803.71        | S 3,086.77 | E 1,750.85     | 3,548.75               |
| 6350              | 4,860.96          | 4,810.96        | S 3,093.18 | E 1,753.37     | 3,555.57               |
| 6360              | 4,868.21          | 4,818.21        | S 3,099.59 | E 1,755.90     | 3,562.39               |
| 6370              | 4,875.45          | 4,825.45        | S 3,106.00 | E 1,758.42     | 3,569.21               |
| 6380              | 4,882.69          | 4,832.69        | S 3,112.42 | E 1,760.95     | 3,576.04               |
| 6390              | 4,889.93          | 4,839.93        | S 3,118.84 | E 1,763.48     | 3,582.88               |
| 6400              | 4,897.17          | 4,847.17        | S 3,125.26 | E 1,766.01     | 3,589.72               |
| 6410              | 4,904.40          | 4,854.40        | S 3,131.69 | E 1,768.54     | 3,596.56               |
| 6420              | 4,911.62          | 4,861.62        | S 3,138.12 | E 1,771.07     | 3,603.40               |
| * 6429            | 4,918.13          | 4,868.13        | S 3,143.91 | E 1,773.35     | 3,609.57               |
| 6430              | 4,918.85          | 4,868.85        | S 3,144.57 | E 1,773.57     | 3,610.24               |
| 6440              | 4,926.07          | 4,876.07        | S 3,151.15 | E 1,775.71     | 3,617.02               |
| 6450              | 4,933.29          | 4,883.29        | S 3,157.72 | E 1,777.84     | 3,623.80               |
| 6460              | 4,940.51          | 4,890.51        | S 3,164.30 | E 1,779.98     | 3,630.59               |
| 6470              | 4,947.73          | 4,897.73        | S 3,170.89 | E 1,782.12     | 3,637.37               |
| 6480              | 4,954.95          | 4,904.95        | S 3,177.47 | E 1,784.26     | 3,644.16               |
| 6490              | 4,962.17          | 4,912.17        | S 3,184.05 | E 1,786.40     | 3,650.94               |
| 6500              | 4,969.39          | 4,919.39        | S 3,190.63 | E 1,788.54     | 3,657.73               |
| 6510              | 4,976.60          | 4,926.60        | S 3,197.22 | E 1,790.67     | 3,664.52               |
| 6520              | 4,983.82          | 4,933.82        | S 3,203.80 | E 1,792.81     | 3,671.31               |
| 6530              | 4,991.03          | 4,941.03        | S 3,210.39 | E 1,794.95     | 3,678.11               |
| 6540              | 4,998.24          | 4,948.24        | S 3,216.98 | E 1,797.09     | 3,684.90               |
| 6550              | 5,005.45          | 4,955.45        | S 3,223.56 | E 1,799.24     | 3,691.70               |
| 6560              | 5,012.67          | 4,962.67        | S 3,230.15 | E 1,801.38     | 3,698.49               |
| 6570              | 5,019.88          | 4,969.88        | S 3,236.74 | E 1,803.52     | 3,705.29               |
| 6580              | 5,027.08          | 4,977.08        | S 3,243.34 | E 1,805.66     | 3,712.09               |
| 6590              | 5,034.29          | 4,984.29        | S 3,249.93 | E 1,807.80     | 3,718.89               |
| 6600              | 5,041.50          | 4,991.50        | S 3,256.52 | E 1,809.94     | 3,725.70               |
| 6610              | 5,048.71          | 4,998.71        | S 3,263.11 | E 1,812.09     | 3,732.50               |
| 6620              | 5,055.91          | 5,005.91        | S 3,269.71 | E 1,814.23     | 3,739.31               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL      | CD - ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|------------|----------------|------------------------|
| 6630              | 5,063.11          | 5,013.11        | S 3,276.31 | E 1,816.37     | 3,746.12               |
| 6640              | 5,070.32          | 5,020.32        | S 3,282.90 | E 1,818.52     | 3,752.93               |
| 6650              | 5,077.52          | 5,027.52        | S 3,289.50 | E 1,820.66     | 3,759.74               |
| 6660              | 5,084.72          | 5,034.72        | S 3,296.10 | E 1,822.80     | 3,766.55               |
| 6670              | 5,091.92          | 5,041.92        | S 3,302.70 | E 1,824.95     | 3,773.36               |
| 6680              | 5,099.12          | 5,049.12        | S 3,309.30 | E 1,827.09     | 3,780.18               |
| 6690              | 5,106.32          | 5,056.32        | S 3,315.90 | E 1,829.24     | 3,786.99               |
| 6700              | 5,113.52          | 5,063.52        | S 3,322.50 | E 1,831.38     | 3,793.81               |
| 6710              | 5,120.71          | 5,070.71        | S 3,329.11 | E 1,833.53     | 3,800.63               |
| 6720              | 5,127.91          | 5,077.91        | S 3,335.71 | E 1,835.67     | 3,807.45               |
| 6730              | 5,135.10          | 5,085.10        | S 3,342.32 | E 1,837.82     | 3,814.27               |
| * 6739            | 5,141.58          | 5,091.58        | S 3,348.26 | E 1,839.75     | 3,820.41               |
| 6740              | 5,142.30          | 5,092.30        | S 3,348.94 | E 1,839.93     | 3,821.09               |
| 6750              | 5,149.49          | 5,099.49        | S 3,355.65 | E 1,841.73     | 3,827.84               |
| 6760              | 5,156.68          | 5,106.68        | S 3,362.35 | E 1,843.53     | 3,834.58               |
| 6770              | 5,163.88          | 5,113.88        | S 3,369.06 | E 1,845.33     | 3,841.33               |
| 6780              | 5,171.07          | 5,121.07        | S 3,375.77 | E 1,847.12     | 3,848.08               |
| 6790              | 5,178.26          | 5,128.26        | S 3,382.48 | E 1,848.92     | 3,854.83               |
| 6800              | 5,185.46          | 5,135.46        | S 3,389.19 | E 1,850.72     | 3,861.58               |
| 6810              | 5,192.65          | 5,142.65        | S 3,395.90 | E 1,852.52     | 3,868.33               |
| 6820              | 5,199.84          | 5,149.84        | S 3,402.61 | E 1,854.31     | 3,875.08               |
| 6830              | 5,207.04          | 5,157.04        | S 3,409.32 | E 1,856.11     | 3,881.83               |
| 6840              | 5,214.23          | 5,164.23        | S 3,416.03 | E 1,857.91     | 3,888.59               |
| 6850              | 5,221.42          | 5,171.42        | S 3,422.74 | E 1,859.71     | 3,895.34               |
| 6860              | 5,228.62          | 5,178.62        | S 3,429.45 | E 1,861.51     | 3,902.10               |
| 6870              | 5,235.81          | 5,185.81        | S 3,436.16 | E 1,863.30     | 3,908.85               |
| 6880              | 5,243.00          | 5,193.00        | S 3,442.87 | E 1,865.10     | 3,915.61               |
| 6890              | 5,250.20          | 5,200.20        | S 3,449.58 | E 1,866.90     | 3,922.36               |
| 6900              | 5,257.39          | 5,207.39        | S 3,456.29 | E 1,868.70     | 3,929.12               |
| 6910              | 5,264.58          | 5,214.58        | S 3,463.00 | E 1,870.50     | 3,935.88               |
| 6920              | 5,271.78          | 5,221.78        | S 3,469.71 | E 1,872.29     | 3,942.64               |
| 6930              | 5,278.97          | 5,228.97        | S 3,476.42 | E 1,874.09     | 3,949.39               |
| 6940              | 5,286.16          | 5,236.16        | S 3,483.13 | E 1,875.89     | 3,956.15               |
| 6950              | 5,293.36          | 5,243.36        | S 3,489.84 | E 1,877.69     | 3,962.91               |
| 6960              | 5,300.55          | 5,250.55        | S 3,496.55 | E 1,879.48     | 3,969.68               |
| 6970              | 5,307.74          | 5,257.74        | S 3,503.26 | E 1,881.28     | 3,976.44               |
| 6980              | 5,314.94          | 5,264.94        | S 3,509.97 | E 1,883.08     | 3,983.20               |
| 6990              | 5,322.13          | 5,272.13        | S 3,516.68 | E 1,884.88     | 3,989.96               |
| 7000              | 5,329.32          | 5,279.32        | S 3,523.39 | E 1,886.68     | 3,996.73               |
| 7010              | 5,336.52          | 5,286.52        | S 3,530.10 | E 1,888.47     | 4,003.49               |
| 7020              | 5,343.71          | 5,293.71        | S 3,536.81 | E 1,890.27     | 4,010.25               |
| 7030              | 5,350.90          | 5,300.90        | S 3,543.52 | E 1,892.07     | 4,017.02               |
| 7040              | 5,358.10          | 5,308.10        | S 3,550.23 | E 1,893.87     | 4,023.79               |
| * 7047            | 5,363.13          | 5,313.13        | S 3,554.92 | E 1,895.13     | 4,028.52               |
| 7050              | 5,365.29          | 5,315.29        | S 3,556.99 | E 1,895.43     | 4,030.49               |

## DIRECTIONAL SURVEY FOR WELL LD6-19

10

WELL NO. (LD6-19) ELEVATION: 50 FEET NUMBER OF DATA POINTS: 62

CONDUCTOR IS VERTICAL

CONDUCTOR DATA: 350' MD

| MEASURED<br>DEPTH | VERTICAL<br>DEPTH | TRUE<br>SUB-SEA | TOTAL      | CO - ORDINATES | HORIZONTAL<br>DISTANCE |
|-------------------|-------------------|-----------------|------------|----------------|------------------------|
| 7060              | 5,372.46          | 5,322.46        | S 3,563.88 | E 1,896.47     | 4,037.06               |
| 7070              | 5,379.60          | 5,329.60        | S 3,570.80 | E 1,897.50     | 4,043.65               |
| 7080              | 5,386.73          | 5,336.73        | S 3,577.73 | E 1,898.54     | 4,050.26               |
| 7090              | 5,393.84          | 5,343.84        | S 3,584.69 | E 1,899.57     | 4,056.89               |
| 7100              | 5,400.93          | 5,350.93        | S 3,591.66 | E 1,900.62     | 4,063.54               |
| 7110              | 5,408.00          | 5,358.00        | S 3,598.66 | E 1,901.66     | 4,070.22               |
| 7120              | 5,415.05          | 5,365.05        | S 3,605.67 | E 1,902.71     | 4,076.91               |
| 7130              | 5,422.08          | 5,372.08        | S 3,612.71 | E 1,903.76     | 4,083.62               |
| 7140              | 5,429.09          | 5,379.09        | S 3,619.76 | E 1,904.82     | 4,090.35               |
| 7150              | 5,436.08          | 5,386.08        | S 3,626.83 | E 1,905.87     | 4,097.10               |
| 7160              | 5,443.06          | 5,393.06        | S 3,633.92 | E 1,906.93     | 4,103.87               |
| 7170              | 5,450.01          | 5,400.01        | S 3,641.03 | E 1,908.00     | 4,110.66               |
| 7180              | 5,456.94          | 5,406.94        | S 3,648.16 | E 1,909.06     | 4,117.48               |
| 7190              | 5,463.85          | 5,413.85        | S 3,655.31 | E 1,910.13     | 4,124.31               |
| 7200              | 5,470.74          | 5,420.74        | S 3,662.48 | E 1,911.20     | 4,131.15               |
| 7210              | 5,477.61          | 5,427.61        | S 3,669.67 | E 1,912.27     | 4,138.02               |
| 7220              | 5,484.46          | 5,434.46        | S 3,676.87 | E 1,913.35     | 4,144.91               |
| 7230              | 5,491.28          | 5,441.28        | S 3,684.10 | E 1,914.43     | 4,151.82               |
| 7240              | 5,498.09          | 5,448.09        | S 3,691.34 | E 1,915.51     | 4,158.75               |
| 7250              | 5,504.88          | 5,454.88        | S 3,698.60 | E 1,916.60     | 4,165.70               |
| 7260              | 5,511.65          | 5,461.65        | S 3,705.88 | E 1,917.69     | 4,172.66               |
| 7270              | 5,518.40          | 5,468.40        | S 3,713.18 | E 1,918.78     | 4,179.65               |
| 7280              | 5,525.12          | 5,475.12        | S 3,720.50 | E 1,919.87     | 4,186.65               |
| 7290              | 5,531.83          | 5,481.83        | S 3,727.84 | E 1,920.97     | 4,193.68               |
| 7300              | 5,538.51          | 5,488.51        | S 3,735.20 | E 1,922.07     | 4,200.72               |
| 7310              | 5,545.18          | 5,495.18        | S 3,742.57 | E 1,923.17     | 4,207.78               |
| 7320              | 5,551.82          | 5,501.82        | S 3,749.96 | E 1,924.27     | 4,214.86               |
| * 7328            | 5,557.12          | 5,507.12        | S 3,755.89 | E 1,925.16     | 4,220.54               |

# DIRECTIONAL SURVEY FOR WELL L06-19 RAW DATA

THE CONDUCTOR IS VERTICAL

| No. | MEASURED DEPTH | DEVIATION ANGLE | ORIENTATION   |
|-----|----------------|-----------------|---------------|
| 1   | 408            | 1.25            | S - 66.00 - E |
| 2   | 439            | 0.25            | S - 70.00 - E |
| 3   | 469            | 1.00            | S - 44.00 - E |
| 4   | 500            | 1.25            | S - 48.00 - E |
| 5   | 560            | 2.75            | S - 52.00 - E |
| 6   | 622            | 3.25            | S - 65.00 - E |
| 7   | 682            | 4.00            | S - 54.00 - E |
| 8   | 715            | 4.75            | S - 54.00 - W |
| 9   | 746            | 4.75            | S - 33.00 - W |
| 10  | 821            | 7.60            | S - 38.50 - W |
| 11  | 852            | 8.90            | S - 40.30 - E |
| 12  | 933            | 11.25           | S - 45.00 - W |
| 13  | 1008           | 15.00           | S - 50.60 - W |
| 14  | 1038           | 16.30           | S - 49.60 - W |
| 15  | 1070           | 17.50           | S - 52.10 - W |
| 16  | 1101           | 18.60           | S - 51.30 - W |
| 17  | 1132           | 20.00           | S - 51.00 - W |
| 18  | 1231           | 22.50           | S - 53.50 - E |
| 19  | 1323           | 23.00           | S - 53.50 - E |
| 20  | 1417           | 24.00           | S - 54.00 - E |
| 21  | 1510           | 24.75           | S - 51.00 - E |
| 22  | 1595           | 24.00           | S - 51.50 - E |
| 23  | 1688           | 26.00           | S - 50.50 - E |
| 24  | 1740           | 25.75           | S - 45.00 - E |
| 25  | 1803           | 28.00           | S - 41.50 - E |
| 26  | 1835           | 29.60           | S - 39.30 - E |
| 27  | 1866           | 30.60           | S - 39.10 - E |
| 28  | 1898           | 31.50           | S - 38.40 - E |
| 29  | 1960           | 33.70           | S - 36.30 - E |
| 30  | 2022           | 36.00           | S - 34.70 - E |
| 31  | 2084           | 38.30           | S - 32.60 - E |
| 32  | 2147           | 40.40           | S - 32.10 - E |
| 33  | 2170           | 41.40           | S - 32.50 - E |
| 34  | 2210           | 42.80           | S - 32.80 - E |
| 35  | 2271           | 44.90           | S - 32.50 - E |
| 36  | 2327           | 46.50           | S - 36.00 - E |
| 37  | 2480           | 47.75           | S - 35.50 - E |
| 38  | 2635           | 49.75           | S - 34.50 - E |
| 39  | 2792           | 51.50           | S - 34.50 - E |
| 40  | 2949           | 51.00           | S - 34.50 - E |
| 41  | 3105           | 51.50           | S - 33.50 - E |
| 42  | 3260           | 51.50           | S - 33.00 - E |
| 43  | 3415           | 52.50           | S - 30.50 - E |
| 44  | 3510           | 53.00           | S - 30.00 - E |
| 45  | 3665           | 53.00           | S - 28.50 - E |
| 46  | 3758           | 52.50           | S - 28.00 - E |
| 47  | 3883           | 51.50           | S - 28.00 - E |
| 48  | 4008           | 50.00           | S - 27.00 - E |
| 49  | 4226           | 48.50           | S - 25.50 - E |
| 50  | 4420           | 47.00           | S - 25.50 - E |
| 51  | 4605           | 46.00           | S - 25.00 - E |

DIRECTIONAL SURVEY FOR WELL LD6-19  
RAW DATA

THE CONDUCTOR IS VERTICAL

| No. | MEASURED DEPTH | DEVIATION ANGLE | ORIENTATION   |
|-----|----------------|-----------------|---------------|
| 52  | 4698           | 45.75           | S - 24.50 - E |
| 53  | 4849           | 46.00           | S - 30.00 - E |
| 54  | 5006           | 43.75           | S - 29.50 - E |
| 55  | 5433           | 41.00           | S - 27.00 - E |
| 56  | 5775           | 45.50           | S - 28.50 - E |
| 57  | 6091           | 44.50           | S - 23.50 - E |
| 58  | 6175           | 43.00           | S - 23.50 - E |
| 59  | 6429           | 43.75           | S - 21.50 - E |
| 60  | 6739           | 44.00           | S - 18.00 - E |
| 61  | 7047           | 44.00           | S - 15.00 - E |
| 62  | 7328           | 48.50           | S - 8.50 - E  |