



# **PICEANCE VLY NAD 83**

**GV 10-07S-096W**

**MV 5-10 Pad**

**GM 543-10 - Slot B07**

**Wellbore #1**

**Plan: Design #1 07Aug14 mab**

## **Standard Planning Report - Geographic**

**14 October, 2014**

**WPX**  
Planning Report - Geographic

|                  |                       |                                     |  |
|------------------|-----------------------|-------------------------------------|--|
| <b>Database:</b> | COMPASS-PICEANCE      | <b>Local Co-ordinate Reference:</b> | Well GM 543-10 - Slot B07                            |
| <b>Company:</b>  | PICEANCE VLY NAD 83   | <b>TVD Reference:</b>               | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Project:</b>  | GV 10-07S-096W        | <b>MD Reference:</b>                | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Site:</b>     | MV 5-10 Pad           | <b>North Reference:</b>             | True   |
| <b>Well:</b>     | GM 543-10             | <b>Survey Calculation Method:</b>   | Minimum Curvature                                    |
| <b>Wellbore:</b> | Wellbore #1           |                                     |  |
| <b>Design:</b>   | Design #1 07Aug14 mab |                                     |  |

|                    |                           |                      |                             |
|--------------------|---------------------------|----------------------|-----------------------------|
| <b>Project</b>     | GV 10-07S-096W            |                      |                             |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level              |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                             |
| <b>Map Zone:</b>   | Colorado Central Zone     |                      | Using geodetic scale factor |

|                              |             |                     |                      |                                  |
|------------------------------|-------------|---------------------|----------------------|----------------------------------|
| <b>Site</b>                  | MV 5-10 Pad |                     |                      |                                  |
| <b>Site Position:</b>        |             | <b>Northing:</b>    | 1,600,354.00000 usft | <b>Latitude:</b> 39.45298        |
| <b>From:</b> Map             |             | <b>Easting:</b>     | 2,266,910.20000 usft | <b>Longitude:</b> -108.09653     |
| <b>Position Uncertainty:</b> | 0.00 usft   | <b>Slot Radius:</b> | 13.200 in            | <b>Grid Convergence:</b> -1.64 ° |

|                             |                      |           |                            |                      |
|-----------------------------|----------------------|-----------|----------------------------|----------------------|
| <b>Well</b>                 | GM 543-10 - Slot B07 |           |                            |                      |
| <b>Well Position</b>        | <b>+N/-S</b>         | 0.00 usft | <b>Northing:</b>           | 1,600,363.50000 usft |
|                             | <b>+E/-W</b>         | 0.00 usft | <b>Easting:</b>            | 2,266,907.10000 usft |
| <b>Position Uncertainty</b> | 0.00 usft            |           | <b>Wellhead Elevation:</b> | 0.00 usft            |
|                             |                      |           | <b>Ground Level:</b>       | 6,148.00 usft        |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 8/7/2014           | 9.99                   | 65.60                | 51,895                     |

|                          |                                |                     |                      |                            |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------------|
| <b>Design</b>            | Design #1 07Aug14 mab          |                     |                      |                            |
| <b>Audit Notes:</b>      |                                |                     |                      |                            |
| <b>Version:</b>          | <b>Phase:</b>                  | PLAN                | <b>Tie On Depth:</b> | 0.00                       |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b>  | <b>Direction (bearing)</b> |
|                          | 0.00                           | 0.00                | 0.00                 | 135.85                     |

| <b>Plan Sections</b>  |                 |                   |                       |              |              |                         |                        |                       |         |                      |
|-----------------------|-----------------|-------------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (bearing) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target               |
| 0.00                  | 0.00            | 0.00              | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                      |
| 120.00                | 0.00            | 0.00              | 120.00                | 0.00         | 0.00         | 0.00                    | 0.00                   | 0.00                  | 0.00    |                      |
| 1,698.35              | 39.46           | 135.85            | 1,576.51              | -374.82      | 363.81       | 2.50                    | 2.50                   | 0.00                  | 135.85  |                      |
| 3,563.25              | 39.46           | 135.85            | 3,016.36              | -1,225.27    | 1,189.27     | 0.00                    | 0.00                   | 0.00                  | 0.00    |                      |
| 5,536.18              | 0.00            | 0.00              | 4,837.00              | -1,693.80    | 1,644.03     | 2.00                    | -2.00                  | 0.00                  | 180.00  |                      |
| 5,636.18              | 0.00            | 0.00              | 4,937.00              | -1,693.80    | 1,644.03     | 0.00                    | 0.00                   | 0.00                  | 0.00    | Top Gas (50' Radius) |
| 7,486.18              | 0.00            | 0.00              | 6,787.00              | -1,693.80    | 1,644.03     | 0.00                    | 0.00                   | 0.00                  | 0.00    |                      |

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Planning Report - Geographic

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|------------------|-----------------------|-------------------------------------|--|
| <b>Database:</b> | COMPASS-PICEANCE      | <b>Local Co-ordinate Reference:</b> | Well GM 543-10 - Slot B07                            |
| <b>Company:</b>  | PICEANCE VLY NAD 83   | <b>TVD Reference:</b>               | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Project:</b>  | GV 10-07S-096W        | <b>MD Reference:</b>                | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Site:</b>     | MV 5-10 Pad           | <b>North Reference:</b>             | True   |
| <b>Well:</b>     | GM 543-10             | <b>Survey Calculation Method:</b>   | Minimum Curvature                                    |
| <b>Wellbore:</b> | Wellbore #1           |                                     |  |
| <b>Design:</b>   | Design #1 07Aug14 mab |                                     |  |

| Planned Survey              |                    |                      |                             |                 |                 |                           |                          |          |            |  |
|-----------------------------|--------------------|----------------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|----------|------------|--|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(bearing) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude | Longitude  |  |
| 0.00                        | 0.00               | 0.00                 | 0.00                        | 0.00            | 0.00            | 1,600,363.50000           | 2,266,907.10000          | 39.45301 | -108.09654 |  |
| 120.00                      | 0.00               | 0.00                 | 120.00                      | 0.00            | 0.00            | 1,600,363.50000           | 2,266,907.10000          | 39.45301 | -108.09654 |  |
| Start Build 2.50            |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 200.00                      | 2.00               | 135.85               | 199.98                      | -1.00           | 0.97            | 1,600,362.47085           | 2,266,908.04331          | 39.45300 | -108.09654 |  |
| 400.00                      | 7.00               | 135.85               | 399.30                      | -12.26          | 11.90           | 1,600,350.90732           | 2,266,918.64233          | 39.45297 | -108.09650 |  |
| 600.00                      | 12.00              | 135.85               | 596.50                      | -35.94          | 34.88           | 1,600,326.58211           | 2,266,940.93859          | 39.45291 | -108.09642 |  |
| 800.00                      | 17.00              | 135.85               | 790.07                      | -71.86          | 69.75           | 1,600,289.68037           | 2,266,974.76239          | 39.45281 | -108.09630 |  |
| 1,000.00                    | 22.00              | 135.85               | 978.54                      | -119.75         | 116.23          | 1,600,240.48293           | 2,267,019.85631          | 39.45268 | -108.09613 |  |
| 1,200.00                    | 27.00              | 135.85               | 1,160.47                    | -179.25         | 173.98          | 1,600,179.36422           | 2,267,075.87716          | 39.45251 | -108.09593 |  |
| 1,400.00                    | 32.00              | 135.85               | 1,334.49                    | -249.89         | 242.55          | 1,600,106.78938           | 2,267,142.39859          | 39.45232 | -108.09568 |  |
| 1,600.00                    | 37.00              | 135.85               | 1,499.26                    | -331.15         | 321.42          | 1,600,023.31076           | 2,267,218.91433          | 39.45210 | -108.09541 |  |
| 1,698.35                    | 39.46              | 135.85               | 1,576.51                    | -374.82         | 363.81          | 1,599,978.45229           | 2,267,260.03117          | 39.45198 | -108.09526 |  |
| Hold 39.46° Inc, 135.85° Az |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 1,748.35                    | 39.46              | 135.85               | 1,615.11                    | -397.62         | 385.94          | 1,599,955.02757           | 2,267,281.50206          | 39.45191 | -108.09518 |  |
| 9 5/8"                      |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 1,800.00                    | 39.46              | 135.85               | 1,654.99                    | -421.18         | 408.80          | 1,599,930.83088           | 2,267,303.68051          | 39.45185 | -108.09510 |  |
| 2,000.00                    | 39.46              | 135.85               | 1,809.41                    | -512.38         | 497.33          | 1,599,837.13608           | 2,267,389.56031          | 39.45160 | -108.09478 |  |
| 2,200.00                    | 39.46              | 135.85               | 1,963.83                    | -603.59         | 585.85          | 1,599,743.44128           | 2,267,475.44010          | 39.45135 | -108.09447 |  |
| 2,400.00                    | 39.46              | 135.85               | 2,118.24                    | -694.80         | 674.38          | 1,599,649.74647           | 2,267,561.31990          | 39.45110 | -108.09416 |  |
| 2,489.05                    | 39.46              | 135.85               | 2,187.00                    | -735.41         | 713.80          | 1,599,608.02663           | 2,267,599.55993          | 39.45099 | -108.09402 |  |
| Top of "G" Sand             |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 2,600.00                    | 39.46              | 135.85               | 2,272.66                    | -786.00         | 762.91          | 1,599,556.05167           | 2,267,647.19968          | 39.45085 | -108.09384 |  |
| 2,618.57                    | 39.46              | 135.85               | 2,287.00                    | -794.47         | 771.13          | 1,599,547.34998           | 2,267,655.17557          | 39.45082 | -108.09381 |  |
| Base of "G" Sand            |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 2,800.00                    | 39.46              | 135.85               | 2,427.08                    | -877.21         | 851.43          | 1,599,462.35686           | 2,267,733.07948          | 39.45060 | -108.09353 |  |
| 3,000.00                    | 39.46              | 135.85               | 2,581.49                    | -968.42         | 939.96          | 1,599,368.66206           | 2,267,818.95927          | 39.45035 | -108.09322 |  |
| 3,200.00                    | 39.46              | 135.85               | 2,735.91                    | -1,059.62       | 1,028.49        | 1,599,274.96726           | 2,267,904.83907          | 39.45010 | -108.09290 |  |
| 3,400.00                    | 39.46              | 135.85               | 2,890.33                    | -1,150.83       | 1,117.01        | 1,599,181.27245           | 2,267,990.71886          | 39.44985 | -108.09259 |  |
| 3,563.25                    | 39.46              | 135.85               | 3,016.36                    | -1,225.27       | 1,189.27        | 1,599,104.79629           | 2,268,060.81620          | 39.44964 | -108.09233 |  |
| Start Drop -2.00°/100       |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 3,600.00                    | 38.72              | 135.85               | 3,044.89                    | -1,241.90       | 1,205.41        | 1,599,087.71231           | 2,268,076.47522          | 39.44960 | -108.09228 |  |
| 3,800.00                    | 34.72              | 135.85               | 3,205.16                    | -1,327.70       | 1,288.69        | 1,598,999.57382           | 2,268,157.26215          | 39.44936 | -108.09198 |  |
| 4,000.00                    | 30.72              | 135.85               | 3,373.39                    | -1,405.27       | 1,363.97        | 1,598,919.89142           | 2,268,230.29830          | 39.44915 | -108.09171 |  |
| 4,200.00                    | 26.72              | 135.85               | 3,548.74                    | -1,474.23       | 1,430.91        | 1,598,849.05333           | 2,268,295.22785          | 39.44896 | -108.09148 |  |
| 4,400.00                    | 22.72              | 135.85               | 3,730.37                    | -1,534.24       | 1,489.15        | 1,598,787.40465           | 2,268,351.73445          | 39.44879 | -108.09127 |  |
| 4,461.13                    | 21.50              | 135.85               | 3,787.00                    | -1,550.75       | 1,505.18        | 1,598,770.44401           | 2,268,367.28042          | 39.44875 | -108.09121 |  |
| Mesaverde                   |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 4,600.00                    | 18.72              | 135.85               | 3,917.39                    | -1,585.01       | 1,538.43        | 1,598,735.24574           | 2,268,399.54283          | 39.44865 | -108.09110 |  |
| 4,800.00                    | 14.72              | 135.85               | 4,108.90                    | -1,626.30       | 1,578.51        | 1,598,692.83071           | 2,268,438.42005          | 39.44854 | -108.09095 |  |
| 5,000.00                    | 10.72              | 135.85               | 4,303.94                    | -1,657.90       | 1,609.18        | 1,598,660.36620           | 2,268,468.17672          | 39.44845 | -108.09085 |  |
| 5,200.00                    | 6.72               | 135.85               | 4,501.59                    | -1,679.66       | 1,630.31        | 1,598,638.01038           | 2,268,488.66787          | 39.44839 | -108.09077 |  |
| 5,400.00                    | 2.72               | 135.85               | 4,700.87                    | -1,691.48       | 1,641.78        | 1,598,625.87215           | 2,268,499.79366          | 39.44836 | -108.09073 |  |
| 5,536.18                    | 0.00               | 0.00                 | 4,837.00                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| Vertical                    |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 5,600.00                    | 0.00               | 0.00                 | 4,900.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 5,636.18                    | 0.00               | 0.00                 | 4,937.00                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| Top Gas - Approx. Top Gas   |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 5,800.00                    | 0.00               | 0.00                 | 5,100.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 6,000.00                    | 0.00               | 0.00                 | 5,300.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 6,200.00                    | 0.00               | 0.00                 | 5,500.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 6,400.00                    | 0.00               | 0.00                 | 5,700.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 6,600.00                    | 0.00               | 0.00                 | 5,900.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |

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| <b>Database:</b> | COMPASS-PICEANCE      | <b>Local Co-ordinate Reference:</b> | Well GM 543-10 - Slot B07                            |
| <b>Company:</b>  | PICEANCE VLY NAD 83   | <b>TVD Reference:</b>               | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Project:</b>  | GV 10-07S-096W        | <b>MD Reference:</b>                | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Site:</b>     | MV 5-10 Pad           | <b>North Reference:</b>             | True   |
| <b>Well:</b>     | GM 543-10             | <b>Survey Calculation Method:</b>   | Minimum Curvature                                    |
| <b>Wellbore:</b> | Wellbore #1           |                                     |  |
| <b>Design:</b>   | Design #1 07Aug14 mab |                                     |  |

| Planned Survey              |                    |                      |                             |                 |                 |                           |                          |          |            |  |
|-----------------------------|--------------------|----------------------|-----------------------------|-----------------|-----------------|---------------------------|--------------------------|----------|------------|--|
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(bearing) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Map<br>Northing<br>(usft) | Map<br>Easting<br>(usft) | Latitude | Longitude  |  |
| 6,800.00                    | 0.00               | 0.00                 | 6,100.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 6,906.18                    | 0.00               | 0.00                 | 6,207.00                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| Cameo Coals                 |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 7,000.00                    | 0.00               | 0.00                 | 6,300.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 7,200.00                    | 0.00               | 0.00                 | 6,500.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 7,386.18                    | 0.00               | 0.00                 | 6,687.00                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| Rollins SS                  |                    |                      |                             |                 |                 |                           |                          |          |            |  |
| 7,400.00                    | 0.00               | 0.00                 | 6,700.82                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| 7,486.18                    | 0.00               | 0.00                 | 6,787.00                    | -1,693.80       | 1,644.03        | 1,598,623.48665           | 2,268,501.98018          | 39.44836 | -108.09072 |  |
| TD at 7486.18 - TD          |                    |                      |                             |                 |                 |                           |                          |          |            |  |

| Design Targets  |               |                    |            |              |              |                 |                 |          |            |  |
|---|---------------|--------------------|------------|--------------|--------------|-----------------|-----------------|----------|------------|--|
| Target Name<br>- hit/miss target<br>- Shape                                     | Dip Angle (°) | Dip Dir. (bearing) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft)  | Latitude | Longitude  |  |
| Top Gas (50' Radius) G1<br>- plan hits target center<br>- Circle (radius 50.00) | 0.00          | 0.00               | 4,937.00   | -1,693.80    | 1,644.03     | 1,598,623.48665 | 2,268,501.98018 | 39.44836 | -108.09072 |  |

| Casing Points         |                       |        |  |  |  |  | Casing Diameter (in) | Hole Diameter (in) |
|-----------------------|-----------------------|--------|--|--|--|--|----------------------|--------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name   |  |  |  |  |                      |                    |
| 1,748.35              | 1,615.11              | 9 5/8" |  |  |  |  | 9.625                | 13.500             |

| Formations            |                       |                  |  |           |  |  | Dip (°) | Dip Direction (bearing) |
|-----------------------|-----------------------|------------------|--|-----------|--|--|---------|-------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name             |  | Lithology |  |  |         |                         |
| 2,489.05              | 2,187.00              | Top of "G" Sand  |  |           |  |  |         |                         |
| 2,618.57              | 2,287.00              | Base of "G" Sand |  |           |  |  |         |                         |
| 4,461.13              | 3,787.00              | Mesaverde        |  |           |  |  |         |                         |
| 5,636.18              | 4,937.00              | Approx. Top Gas  |  |           |  |  |         |                         |
| 6,906.18              | 6,207.00              | Cameo Coals      |  |           |  |  |         |                         |
| 7,386.18              | 6,687.00              | Rollins SS       |  |           |  |  |         |                         |
| 7,486.18              | 6,787.00              | TD               |  |           |  |  |         |                         |

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|                  |                       |                                     |  |
|------------------|-----------------------|-------------------------------------|--|
| <b>Database:</b> | COMPASS-PICEANCE      | <b>Local Co-ordinate Reference:</b> | Well GM 543-10 - Slot B07                            |
| <b>Company:</b>  | PICEANCE VLY NAD 83   | <b>TVD Reference:</b>               | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Project:</b>  | GV 10-07S-096W        | <b>MD Reference:</b>                | KELLY BUSHING @ 6174.00usft (Nabors _ (26' RKB) mab) |
| <b>Site:</b>     | MV 5-10 Pad           | <b>North Reference:</b>             | True   |
| <b>Well:</b>     | GM 543-10             | <b>Survey Calculation Method:</b>   | Minimum Curvature                                    |
| <b>Wellbore:</b> | Wellbore #1           |                                     |  |
| <b>Design:</b>   | Design #1 07Aug14 mab |                                     |  |

| Plan Annotations      |                       |                   |              |                             |
|-----------------------|-----------------------|-------------------|--------------|-----------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                     |
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                             |
| 120.00                | 120.00                | 0.00              | 0.00         | Start Build 2.50            |
| 1,698.35              | 1,576.51              | -374.82           | 363.81       | Hold 39.46° Inc, 135.85° Az |
| 3,563.25              | 3,016.36              | -1,225.27         | 1,189.27     | Start Drop -2.00°/100       |
| 5,536.18              | 4,837.00              | -1,693.80         | 1,644.03     | Vertical                    |
| 5,636.18              | 4,937.00              | -1,693.80         | 1,644.03     | Top Gas                     |
| 7,486.18              | 6,787.00              | -1,693.80         | 1,644.03     | TD at 7486.18               |