

## Results of Directional Survey

|             |                     |           |                            |
|-------------|---------------------|-----------|----------------------------|
| API number: | <b>30-025-41251</b> |           |                            |
| OGRID:      |                     | Operator: | <b>CIMAREX ENERGY CO.</b>  |
|             |                     | Property: | <b>JAMES FEDERAL</b> # 20H |

|         |        |          |           |            |            |             |            |
|---------|--------|----------|-----------|------------|------------|-------------|------------|
| surface | ULSTR: | <b>C</b> | <b>29</b> | <b>T</b>   | <b>23S</b> | <b>R</b>    | <b>32E</b> |
|         |        |          |           | <b>185</b> | <b>FNL</b> | <b>1880</b> | <b>FWL</b> |

|              |           |               |            |             |            |             |            |
|--------------|-----------|---------------|------------|-------------|------------|-------------|------------|
| BH Loc       | ULSTR:    | <b>N</b>      | <b>29</b>  | <b>T</b>    | <b>23S</b> | <b>R</b>    | <b>32E</b> |
| <b>14067</b> | <b>MD</b> | <b>9424.9</b> | <b>TVD</b> | <b>328</b>  | <b>FSL</b> | <b>2204</b> | <b>FWL</b> |
|              |           |               |            | <b>4952</b> | <b>FNL</b> |             |            |

|             |           |               |            |            |            |             |            |
|-------------|-----------|---------------|------------|------------|------------|-------------|------------|
| Top Perf/OH | ULSTR:    | <b>C</b>      | <b>29</b>  | <b>T</b>   | <b>23S</b> | <b>R</b>    | <b>32E</b> |
| <b>9343</b> | <b>MD</b> | <b>9267.7</b> | <b>TVD</b> | <b>344</b> | <b>FNL</b> | <b>1880</b> | <b>FWL</b> |

|              |           |               |            |             |            |             |            |
|--------------|-----------|---------------|------------|-------------|------------|-------------|------------|
| Bot Perf/OH  | ULSTR:    | <b>N</b>      | <b>29</b>  | <b>T</b>    | <b>23S</b> | <b>R</b>    | <b>32E</b> |
| <b>14030</b> | <b>MD</b> | <b>9424.7</b> | <b>TVD</b> | <b>365</b>  | <b>FSL</b> | <b>2204</b> | <b>FWL</b> |
|              |           |               |            | <b>4915</b> | <b>FNL</b> |             |            |

|              |              |          |        |         |
|--------------|--------------|----------|--------|---------|
|              | MD           | N/S      | E/W    | VD      |
|              | 9312         | -144.32  | -20.80 | 9249.66 |
| TOP PERFS/OH | <b>9343</b>  | -159.18  | -0.40  | 9267.67 |
|              | 9343         | -159.18  | -0.40  | 9267.67 |
|              | 13985        | -4684.78 | 325.10 | 9424.35 |
| BOT PERFS/OH | <b>14030</b> | -4729.77 | 324.24 | 9424.65 |
|              | 14067        | -4766.76 | 323.54 | 9424.90 |

|              |              |          |        |         |
|--------------|--------------|----------|--------|---------|
| NEXT TO LAST | 13985        | -4684.78 | 325.10 | 9424.35 |
| LAST READING | 14067        | -4766.76 | 323.54 | 9424.90 |
| TD           | <b>14067</b> | -4766.76 | 323.54 | 9424.90 |

|                  |      |    |      |    |
|------------------|------|----|------|----|
| Surface Location | 185  | FN | 1880 | FW |
| Projected BHL    | 4952 | FN | 2204 | FW |
| Location of      |      |    |      |    |
| Top Perfs/OH     | 344  | FN | 1880 | FW |
| Bottom Perfs/OH  | 4915 | FN | 2204 | FW |

### SUMMARY of Subsurface Locations

|                  |              |      |    |      |    |             |
|------------------|--------------|------|----|------|----|-------------|
| Surface Location | C-29-23S-32E | 185  | FN | 1880 | FW | Vert. Depth |
|                  |              |      |    |      |    |             |
| Top Perfs/OH     | C-29-23S-32E | 344  | FN | 1880 | FW | 9267.67     |
| Bottom Perfs/OH  | N-29-23S-32E | 4915 | FN | 2204 | FW | 9424.65     |
|                  |              |      |    |      |    |             |
| Projected TD     | N-29-23S-32E | 4952 | FN | 2204 | FW | 9424.90     |