



## C6+ GAS/VAPOR FRACTIONAL ANALYSIS

### SAMPLE ID

|               |                    |
|---------------|--------------------|
| Customer      | Pilot Ceritas, LLC |
| Station No    | N/A                |
| Operator      | Pilot Ceritas, LLC |
| Plant         | Golden Hammer      |
| Sample Of     | Inlet              |
| Pressure      | 545 psig           |
| Temperature   | N/A                |
| Atm. Temp     | 65 F               |
| Sample Date   | 1/8/17             |
| Sample Time   | 3:45:00 PM         |
| Sampled By    | Pantechs/DCB       |
| Analysis Date | 01/11/18           |
| Sample Cyl No | PL1337             |

| COMPONENT        | SYM | MOL %   | WT %    | GPM    |
|------------------|-----|---------|---------|--------|
| Nitrogen         | N2  | 2.466   | 1.619   | 0.270  |
| Carbon Dioxide   | CO2 | 89.288  | 92.102  | 15.223 |
| Field Hyd. Sulf. | H2S | 0.792   | 0.633   | 0.107  |
| Oxygen           | O2  | ----    | ----    | ----   |
| Helium           | He  | ----    | ----    | ----   |
| Hydrogen         | H2  | ----    | ----    | ----   |
| Argon            | Ar  | ----    | ----    | ----   |
| Methane          | C1  | 3.768   | 1.417   | 0.639  |
| Ethane           | C2  | 1.385   | 0.976   | 0.371  |
| Propane          | C3  | 1.052   | 1.087   | 0.290  |
| i-Butane         | iC4 | 0.159   | 0.217   | 0.052  |
| n-Butane         | nC4 | 0.391   | 0.533   | 0.123  |
| i-Pentane        | iC5 | 0.154   | 0.260   | 0.056  |
| n-Pentane        | nC5 | 0.122   | 0.206   | 0.044  |
| Hexanes+         | C6+ | 0.423   | 0.950   | 0.182  |
| Totals:          |     | 100.000 | 100.000 | 17.357 |

### DISTRIBUTION

Pilot Ceritas, LLC

• Saul Ramirez; Goldsmith, TX (sramirez@ceritasgroup.com)

### GASOLINE CONTENT (GPM)

|                    |       |
|--------------------|-------|
| Ethane & Heavier   | 1.118 |
| Propane & Heavier  | 0.747 |
| Butanes & Heavier  | 0.457 |
| Pentanes & Heavier | 0.282 |
| 26# Gasoline       | 0.43  |

### HEATING VALUE (Gross Btu/CF)

|                        |        |
|------------------------|--------|
| Ideal, Dry             | 144.70 |
| Ideal, Water Saturated | 143.00 |
| Real, Dry              | 145.50 |
| Real, Water Saturated  | 143.90 |

### CALCULATIONS / METHODS

|                     |       |
|---------------------|-------|
| Pressure Base, PSIA | 14.65 |
| Temp Base, DEG F    | 60    |
| Ideal/Real Gas      | Real  |

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND  
CONSTANTS ARE USED

### REMARKS / COMMENTS / OTHER

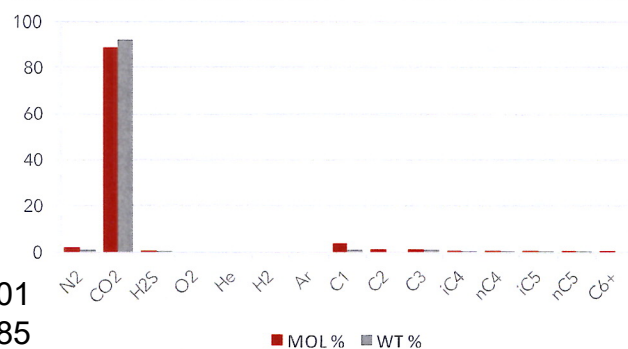
Field H2S Determination by Tutweiler  
Hydrogen Sulfide: 7,997.0 ppmv; 502.95 Grains/100 SCF

### CALC. PROPERTIES

|                 | SG    | Z     | MW     |
|-----------------|-------|-------|--------|
| Dry             | 1.481 | 0.994 | 42.665 |
| Water Saturated | 1.467 | 0.994 | 41.919 |

Wobbe Index, Real 119.55

### RELATIVE CONCENTRATION





## C6+ GAS/VAPOR FRACTIONAL ANALYSIS

| SAMPLE ID     |                    | COMPONENT        | SYM | MOL %   | WT %    | GPM    |
|---------------|--------------------|------------------|-----|---------|---------|--------|
| Customer      | Pilot Ceritas, LLC | Nitrogen         | N2  | 2.673   | 1.771   | 0.293  |
| Station No    | N/A                | Carbon Dioxide   | CO2 | 90.315  | 94.031  | 15.393 |
| Operator      | Pilot Ceritas, LLC | Field Hyd. Sulf. | H2S | 0.805   | 0.649   | 0.108  |
| Plant         | Golden Hammer      | Oxygen           | O2  | -----   | -----   | -----  |
| Sample Of     | Outlet             | Helium           | He  | -----   | -----   | -----  |
| Pressure      | 525 psig           | Hydrogen         | H2  | -----   | -----   | -----  |
| Temperature   | N/A                | Argon            | Ar  | -----   | -----   | -----  |
| Atm. Temp     | 65 F               | Methane          | C1  | 3.779   | 1.434   | 0.641  |
| Sample Date   | 1/8/17             | Ethane           | C2  | 1.390   | 0.989   | 0.372  |
| Sample Time   | 3:54:00 PM         | Propane          | C3  | 0.981   | 1.023   | 0.270  |
| Sampled By    | Pantechs/DCB       | i-Butane         | iC4 | 0.023   | 0.032   | 0.008  |
| Analysis Date | 01/11/18           | n-Butane         | nC4 | 0.007   | 0.010   | 0.002  |
| Sample Cyl No | PL2259             | i-Pentane        | iC5 | 0.001   | 0.002   | 0.000  |
|               |                    | n-Pentane        | nC5 | 0.001   | 0.002   | 0.000  |
|               |                    | Hexanes+         | C6+ | 0.025   | 0.057   | 0.011  |
|               |                    | Totals:          |     | 100.000 | 100.000 | 17.098 |

### DISTRIBUTION

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• Saul Ramirez; Goldsmith, TX (sramirez@ceritasgroup.com)

### GASOLINE CONTENT (GPM)

|                    |       |
|--------------------|-------|
| Ethane & Heavier   | 0.663 |
| Propane & Heavier  | 0.291 |
| Butanes & Heavier  | 0.021 |
| Pentanes & Heavier | 0.011 |
| 26# Gasoline       | 0.017 |

### HEATING VALUE (Gross Btu/CF)

|                        |       |
|------------------------|-------|
| Ideal, Dry             | 94.60 |
| Ideal, Water Saturated | 93.80 |
| Real, Dry              | 95.10 |
| Real, Water Saturated  | 94.40 |

### CALCULATIONS / METHODS

|                     |       |
|---------------------|-------|
| Pressure Base, PSIA | 14.65 |
| Temp Base, DEG F    | 60    |
| Ideal/Real Gas      | Real  |

APPLICABLE CURRENT GPA & ASTM METHODS, PROCEDURES, AND  
CONSTANTS ARE USED

### REMARKS / COMMENTS / OTHER

Field H2S Determination by Tutweiler  
Hydrogen Sulfide: 8,128.1 ppmv; 511.20 Grains/100 SCF

### CALC. PROPERTIES

|                 | SG    | Z     | MW     |
|-----------------|-------|-------|--------|
| Dry             | 1.467 | 0.995 | 42.270 |
| Water Saturated | 1.453 | 0.994 | 41.531 |

Wobbe Index, Real 78.52

### RELATIVE CONCENTRATION

