



## C30+ COMPOSITIONAL ANALYSIS

WABASCA HEAVY

B336774:GI7990

MaxID

Client ID

Meter Number

Laboratory Number

CRUDE QUALITY INC.

Operator Name

LSD

Well ID

CRUDE QUALITY INC. MINI ASSAY

MAXXAM ANALYTICS

Well Name

Initials of Sampler

Sampling Company

WH NAPHTHA IBP - 190°C

4L CAN

Field or Area

Pool or Zone

Sample Point

Container Identity

Percent Full

Test Recovery

Interval

Elevations (m)

Sample Gathering Point

Solution Gas

Test Type

No.

Multiple Recovery

From:

To:

KB

GRD

Well Fluid Status

Well Status Mode

Production Rates

Gauge Pressures kPa

Temperature °C

Well Status Type

Well Type

Water m3/d

Oil m3/d

Gas 1000m3/d

Source

As Received

Source

As Received

Gas or Condensate Project

Licence No.

23

Date Sampled Start

Date Sampled End

2013/05/10

Date Received

2013/07/22

Date Reported

2013/07/22

Date Reissued

SK1,FA1

Analyst

### COMPOSITION

| COMPONENT | MOLE FRACTION | MASS FRACTION | VOLUME FRACTION |
|-----------|---------------|---------------|-----------------|
| N2        |               |               |                 |
| CO2       |               |               |                 |
| H2S       |               |               |                 |
| C1        | 0.0000        | 0.0000        | 0.0000          |
| C2        | Trace         | Trace         | Trace           |
| C3        | 0.0076        | 0.0034        | 0.0048          |
| IC4       | 0.0466        | 0.0279        | 0.0348          |
| NC4       | 0.1199        | 0.0719        | 0.0862          |
| IC5       | 0.0621        | 0.0461        | 0.0518          |
| NC5       | 0.0724        | 0.0538        | 0.0597          |
| C6        | 0.1084        | 0.0962        | 0.1008          |
| C7+       | 0.5830        | 0.7007        | 0.6619          |
| TOTAL     | 1.0000        | 1.0000        | 1.0000          |

### PROPERTIES

| RESIDUE | RELATIVE DENSITY @ 15 °C |            | RELATIVE MOLECULAR MASS |            | DATA SUMMARY  |               |                 |
|---------|--------------------------|------------|-------------------------|------------|---------------|---------------|-----------------|
|         | OBSERVED                 | CALCULATED | OBSERVED                | CALCULATED | MOLE FRACTION | MASS FRACTION | VOLUME FRACTION |
| C5+     |                          | 0.719      |                         | 105        | 0.8259        | 0.8968        | 0.8742          |
| C6+     |                          | 0.732      |                         | 112        | 0.6914        | 0.7969        | 0.7627          |
| C7+     | 0.742                    |            | 117                     | 117        | 0.5830        | 0.7007        | 0.6619          |
| C10+    |                          |            |                         |            | 0.1472        | 0.2225        | 0.2046          |
| C12+    |                          |            |                         |            | 0.0027        | 0.0054        | 0.0046          |
| TOTAL   |                          | 0.701      |                         | 97         |               |               |                 |

Calculated Absolute Density Total Sample:

700.4 kg/m3 @ 15°C

Gas Equivalent Factor:

170.19 m3 Gas/m3 Liquid

\*\* Information not supplied by client -- data derived from LSD information

Results relate only to items tested

Remarks:



# C30+ COMPOSITIONAL ANALYSIS

CRUDE QUALITY INC.

B336774:GI7990

Operator Name

Laboratory Number

CRUDE QUALITY INC. MINI ASSAY

WH NAPHTHA IBP - 190°C

Well Name

Sample Point

MAXXAM ANALYTICS

WABASCA HEAVY

Sampling Company

MaxxID

Client ID

Date Sampled Start

Date Sampled End

2013/05/10

2013/07/22

2013/07/22

SK1,FA1

Date Received

Date Reported

Date Reissued

Analyst

| COMPONENT              | BOILING<br>POINT (°C) | MOLE<br>FRACTION | MASS<br>FRACTION | VOLUME<br>FRACTION |
|------------------------|-----------------------|------------------|------------------|--------------------|
| Nitrogen               | -196                  |                  |                  |                    |
| Carbon Dioxide         | -79                   |                  |                  |                    |
| Hydrogen Sulphide      | -60                   |                  |                  |                    |
| Methane                | -162                  | 0.0000           | 0.0000           | 0.0000             |
| Ethane                 | -89                   | Trace            | Trace            | Trace              |
| Propane                | -42                   | 0.0076           | 0.0034           | 0.0048             |
| Iso-Butane             | -12                   | 0.0466           | 0.0279           | 0.0348             |
| n-Butane               | 0                     | 0.1199           | 0.0719           | 0.0862             |
| Iso-Pentane            | 28                    | 0.0621           | 0.0461           | 0.0518             |
| n-Pentane              | 36                    | 0.0724           | 0.0538           | 0.0597             |
| Hexanes                | 37-69                 | 0.1084           | 0.0962           | 0.1008             |
| Heptanes               | 70-98                 | 0.1531           | 0.1478           | 0.1450             |
| Octanes                | 99-126                | 0.1678           | 0.1856           | 0.1773             |
| Nonanes                | 127-151               | 0.1149           | 0.1448           | 0.1350             |
| Decanes                | 152-174               | 0.0960           | 0.1392           | 0.1313             |
| Undecanes              | 175-196               | 0.0485           | 0.0779           | 0.0687             |
| Dodecanes              | 197-216               | 0.0027           | 0.0048           | 0.0042             |
| Triadecanes            | 217-236               | Trace            | Trace            | Trace              |
| Tetradecanes           | 237-253               | Trace            | Trace            | Trace              |
| Pentadecanes           | 254-271               | Trace            | Trace            | Trace              |
| Hexadecanes            | 272-287               | Trace            | Trace            | Trace              |
| Heptadecanes           | 288-302               | Trace            | Trace            | Trace              |
| Octadecanes            | 303-317               | Trace            | Trace            | Trace              |
| NonaDecanes            | 318-331               | Trace            | Trace            | Trace              |
| Eicosanes              | 332-343               | Trace            | Trace            | Trace              |
| Heneicosanes           | 344-357               | Trace            | 0.0001           | 0.0001             |
| Docosanes              | 358-369               | Trace            | 0.0001           | 0.0001             |
| Triacosanes            | 370-380               | Trace            | Trace            | Trace              |
| Tetracosanes           | 381-391               | Trace            | 0.0002           | 0.0001             |
| Pentacosanes           | 392-402               | 0.0000           | 0.0000           | 0.0000             |
| Hexacosanes            | 403-412               | Trace            | Trace            | Trace              |
| Heptacosanes           | 413-422               | Trace            | Trace            | Trace              |
| Octacosanes            | 423-432               | Trace            | Trace            | Trace              |
| Nonacosanes            | 433-441               | Trace            | Trace            | Trace              |
| triacontanes+          | 442-449+              | Trace            | 0.0002           | 0.0001             |
| Totals                 |                       | 1.0000           | 1.0000           | 1.0000             |
| neoHexane              | 50                    | 0.0000           | 0.0000           | 0.0000             |
| Methylcyclopentane     | 70                    | 0.0267           | 0.0231           | 0.0215             |
| Benzene                | 80                    | 0.0046           | 0.0036           | 0.0029             |
| Cyclohexane            | 81                    | 0.0277           | 0.0240           | 0.0215             |
| Methylcyclohexane      | 101                   | 0.0510           | 0.0516           | 0.0468             |
| Toluene                | 111                   | 0.0143           | 0.0135           | 0.0109             |
| Ethylbenzene           | 136                   | 0.0046           | 0.0050           | 0.0040             |
| m&p-Xylene             | 139                   | 0.0190           | 0.0208           | 0.0166             |
| o-Xylene               | 144                   | 0.0066           | 0.0072           | 0.0057             |
| 1,2,4-Trimethylbenzene | 169                   | 0.0080           | 0.0102           | 0.0081             |

\*\* Information not supplied by client -- data derived from LSD information

Results relate only to items tested

Remarks: