



NATIONAL IRANIAN OIL COMPANY (NIOC)  
RESEARCH INSTITUTE OF PETROLEUM INDUSTRY (RIPI)  
CRUDE OIL AND PETROLEUM PRODUCTS EVALUATION DEPARTMENT

**SIRRI CRUDE OIL**

**TABLE 1: CRUDE OIL GENERAL PROPERTIES ANALYSIS**

| CHARACTERISTICS                    | UNITS              | RESULT            | TEST METHOD |
|------------------------------------|--------------------|-------------------|-------------|
| Specific Gravity @ 15.56 /15.56 °C | ---                | <b>0.8604</b>     | ASTM D5002  |
| API Gravity                        | °API               | <b>33.0</b>       | ASTM D5002  |
| Sulfur Content (Total)             | wt.%               | <b>1.83</b>       | ASTM D4294  |
| H <sub>2</sub> S Content           | ppm                | <b>17</b>         | IP 570      |
| Mercaptan Content                  | ppm                | <b>18</b>         | UOP 163     |
| Nitrogen Content (Total)           | wt.%               | <b>0.13</b>       | ASTM D 5762 |
| Water & Sediment                   | vol.%              | <b>&lt; 0.05</b>  | ASTM D4007  |
| Water Content                      | vol.%              | <b>&lt; 0.025</b> | ASTM D4006  |
| Salt Content                       | PTB                | <b>7</b>          | ASTM D3230  |
| Kinematic Viscosity @ 10 °C        | mm <sup>2</sup> /s | <b>13.33</b>      | ASTM D445   |
| Kinematic Viscosity @ 20 °C        | mm <sup>2</sup> /s | <b>8.95</b>       |             |
| Kinematic Viscosity @ 40 °C        | mm <sup>2</sup> /s | <b>5.219</b>      |             |
| Pour Point (Upper)                 | °C                 | <b>-9</b>         | ASTM D5853  |
| Reid Vapor Pressure                | psi                | <b>9.10</b>       | ASTM D323   |
| Asphaltene Content                 | wt.%               | <b>1.2</b>        | IP 143      |
| Wax Content                        | wt.%               | <b>3.8</b>        | BP 237      |
| Drop Melting Point of Wax          | °C                 | <b>60</b>         | IP 133      |
| Conradson Carbon Residue           | wt.%               | <b>3.80</b>       | ASTM D189   |
| Total Acid Number                  | mg KOH/g           | <b>0.05</b>       | UOP 565     |
| Nickel Content                     | mg/kg              | <b>9</b>          | ASTM D5863  |
| Vanadium Content                   | mg/kg              | <b>33</b>         |             |
| Iron Content                       | mg/kg              | <b>&lt;1</b>      |             |
| Lead Content                       | mg/kg              | <b>&lt;1</b>      |             |
| Sodium Content                     | mg/kg              | <b>13</b>         |             |
| Zinc Content                       | mg/kg              | <b>&lt;1</b>      |             |
| Copper Content                     | mg/kg              | <b>&lt;1</b>      |             |

Sampling Date: 19 Day 1395 (08 Jan. 2017)

Report Date: 17 Esfand 1395 (07 Mar. 2017)