

01-001-CE

## **OIL ANALYSIS REPORT**

Sample Rating Trend







Component New (Unused) Oil Fluid PETRO CANADA LUMINOL TRI (--- GAL)

## DIAGNOSIS

Area [4390] Machine Id

Recommendation

This is a baseline read-out on the submitted sample.

Wear {not applicable}

Contamination {not applicable}

Fluid Condition

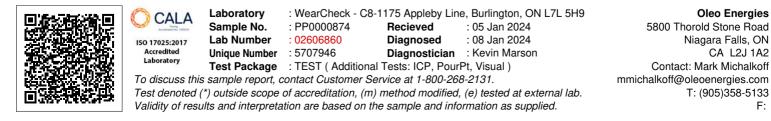
Pour Point = -63°C.

| SAMPLE INFORM                                                                                                                                                                                                                                          | IATION                                                             | method                                                                                                                                                                                                                                                                       | limit/base                                                                                         | current                                                                                                                                                                                                                                                                                                                                                    | history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | history2                                                                                         |
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| Sample Number                                                                                                                                                                                                                                          |                                                                    | Client Info                                                                                                                                                                                                                                                                  |                                                                                                    | PP0000874                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Sample Date                                                                                                                                                                                                                                            |                                                                    | Client Info                                                                                                                                                                                                                                                                  |                                                                                                    | 04 Jan 2024                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Machine Age                                                                                                                                                                                                                                            | hrs                                                                | Client Info                                                                                                                                                                                                                                                                  |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Oil Age                                                                                                                                                                                                                                                | hrs                                                                | Client Info                                                                                                                                                                                                                                                                  |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Oil Changed                                                                                                                                                                                                                                            |                                                                    | Client Info                                                                                                                                                                                                                                                                  |                                                                                                    | N/A                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Sample Status                                                                                                                                                                                                                                          |                                                                    |                                                                                                                                                                                                                                                                              |                                                                                                    | NORMAL                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| CONTAMINATION                                                                                                                                                                                                                                          | ۷                                                                  | method                                                                                                                                                                                                                                                                       | limit/base                                                                                         | current                                                                                                                                                                                                                                                                                                                                                    | history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | history2                                                                                         |
| Water                                                                                                                                                                                                                                                  |                                                                    | WC Method                                                                                                                                                                                                                                                                    |                                                                                                    | NEG                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| WEAR METALS                                                                                                                                                                                                                                            |                                                                    | method                                                                                                                                                                                                                                                                       | limit/base                                                                                         | current                                                                                                                                                                                                                                                                                                                                                    | history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | history2                                                                                         |
| Iron                                                                                                                                                                                                                                                   | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Chromium                                                                                                                                                                                                                                               | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Nickel                                                                                                                                                                                                                                                 | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | <1                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Titanium                                                                                                                                                                                                                                               | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Silver                                                                                                                                                                                                                                                 | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Aluminum                                                                                                                                                                                                                                               | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | <1                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Lead                                                                                                                                                                                                                                                   | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Copper                                                                                                                                                                                                                                                 | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Tin                                                                                                                                                                                                                                                    | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | >5                                                                                                 | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Antimony                                                                                                                                                                                                                                               | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Vanadium                                                                                                                                                                                                                                               | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Beryllium                                                                                                                                                                                                                                              | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Cadmium                                                                                                                                                                                                                                                | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                |                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| ADDITIVES                                                                                                                                                                                                                                              |                                                                    | method                                                                                                                                                                                                                                                                       |                                                                                                    |                                                                                                                                                                                                                                                                                                                                                            | history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | history2                                                                                         |
| ABBIIIVEO                                                                                                                                                                                                                                              |                                                                    | method                                                                                                                                                                                                                                                                       | mmbasc                                                                                             | current                                                                                                                                                                                                                                                                                                                                                    | TIIStOLA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Thotory                                                                                          |
| Boron                                                                                                                                                                                                                                                  | ppm                                                                | ASTM D5185(m)                                                                                                                                                                                                                                                                | 0                                                                                                  | 0                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium                                                                                                                                                                                                                                        | ppm<br>ppm                                                         | ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                                                                                                               | 0                                                                                                  | 0<br>0                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum                                                                                                                                                                                                                          | ppm<br>ppm                                                         | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                                                                                              | 0<br>0<br>0                                                                                        | 0<br>0<br>0                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese                                                                                                                                                                                                             | ppm                                                                | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                                                                             | 0<br>0<br>0<br>0                                                                                   | 0<br>0<br>0                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium                                                                                                                                                                                                | ppm<br>ppm<br>ppm<br>ppm                                           | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                                                            | 0<br>0<br>0<br>0                                                                                   | 0<br>0<br>0<br>0                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium                                                                                                                                                                                     | ppm<br>ppm<br>ppm<br>ppm                                           | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                                           | 0<br>0<br>0<br>0<br>0<br>0                                                                         | 0<br>0<br>0<br>0<br>0<br>0                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus                                                                                                                                                                       | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                          | 0<br>0<br>0<br>0<br>0<br>0<br>0                                                                    | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc                                                                                                                                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                          | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                                               | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br><1                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur                                                                                                                                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                        | 0<br>0<br>0<br>0<br>0<br>0<br>0                                                                    | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>2<br>1<br>0                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc                                                                                                                                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                                                          | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                                               | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br><1                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur                                                                                                                                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                                        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                                               | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>2<br>1<br>0                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon                                                                                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)                                                                                      | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>10                                               | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>2<br>1<br>0<br><1<br>0<br><1<br>0<br>0                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS                                                                                                                          | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                                                                                       | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>10<br>10<br><b>limit/base</b>                         | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>2<br>1<br>0<br><1<br>0<br>4<br>1                                                                                                                                                                                                                                                                              | <br><br><br><br><br><br>history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <br><br><br><br><br><br>history2                                                                 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon                                                                                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)                                                                                      | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>10<br>10<br>10<br>10<br>15                       | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>2<br>1<br>0<br><1<br>0<br><1<br>0<br>0                                                                                                                                                                                                                                                                        | <br><br><br><br><br><br>history1<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <br><br><br><br><br><br>history2                                                                 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium                                                                                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185(m)<br>ASTM D5185(m)                                                                                      | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br><1<br>0<br><1<br>0<br>current<br>0<br>0                                                                                                                                                                                                                                                                       | <br><br><br><br><br><br>history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <br><br><br><br><br><br><br>history2                                                             |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal                                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185(m)<br>ASTM D5185(m)                                                    | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>10<br>10<br><b>imit/base</b><br>>15<br>>5<br>>20 | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>4<br>1<br>0<br><1<br>0<br>0<br><1                                                                                                                                                                                                                                                                             | <br><br><br><br><br><br>history1<br><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <br><br><br><br><br><br><br>history2<br><br>                                                     |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL                                                                              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185(m)<br>ASTM D5185(m)                                                    | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>4<br>1<br>0<br>4<br>1<br>0<br>0<br>4<br>1<br>0<br>0<br>4<br>1<br>0<br>0<br>4<br>1<br>0<br>0<br>4<br>1<br>0<br>0<br>4<br>1<br>0<br>0<br>0<br>0                                                                                                                                                                      | <br><br><br><br><br><br>history1<br><br><br>history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <br><br><br><br><br><br>history2<br><br><br>history2                                             |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal                                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m) | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>0<br>0                                                                                                                                                                                                                          | <br><br><br><br><br><br>history1<br><br>history1<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <br><br><br><br><br>history2<br><br><br>history2                                                 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal<br>Yellow Metal                                               | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>Cusual*<br>Visual*<br>Visual*                   | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br><1<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>0<br>0                                                                                                                                                                                                  | <br><br><br><br><br><br><br>history1<br><br><br>history1<br><br>history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <br><br><br><br><br><br>history2<br><br><br><br>history2                                         |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal<br>Yellow Metal<br>Precipitate                                | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>Chisual*                       | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>0<br>0                                                                                                                                                                                                              | <br><br><br><br><br><br>history1<br><br>history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <br><br><br><br><br><br>history2<br><br>history2<br><br>history2                                 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal<br>Precipitate<br>Silt                                        | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>Cusual*<br>Visual*<br>Visual*                   | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br><1<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>0<br><1<br>0<br>0<br>0<br>0                                                                                                                                                                                             | history1 history1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <br><br><br><br><br><br><br>history2<br><br>history2<br><br>history2                             |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal<br>Precipitate<br>Silt<br>Debris                              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>Visual*<br>Visual*<br>Visual*                   | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0        | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0 | <t< th=""><th><br/><br/><br/><br/><br/><br/><br/>history2<br/><br/>history2<br/><br/>history2<br/><br/><br/><br/><br/><br/><br/></th></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <br><br><br><br><br><br><br>history2<br><br>history2<br><br>history2<br><br><br><br><br><br><br> |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>VISUAL<br>White Metal<br>Yellow Metal<br>Precipitate<br>Silt<br>Debris<br>Sand/Dirt | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>Visual*<br>Visual*<br>Visual*<br>Visual*        | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0                                                              | 0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>1<br>0<br>0<br>1<br>1<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>0<br>1<br>1<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0<br>0                                    | intermediate in | <br><br><br><br><br><br><br>history2<br><br>history2<br><br>history2<br><br><br><br><br><br><br> |



## **OIL ANALYSIS REPORT**

| FLUID PROPERTIES |    | method    | limit/base | current | history1 | history2 |
|------------------|----|-----------|------------|---------|----------|----------|
| Pour Point       | °C | ASTM D97* | -60        | -63     |          |          |
| SAMPLE IMAGES    |    | method    | limit/base | current | history1 | history2 |
| Color            |    |           |            |         | no image | no image |
| Bottom           |    |           |            | 0       | no image | no image |
| GRAPHS           |    |           |            |         |          |          |



Contact/Location: Mark Michalkoff - OLENIA

F: