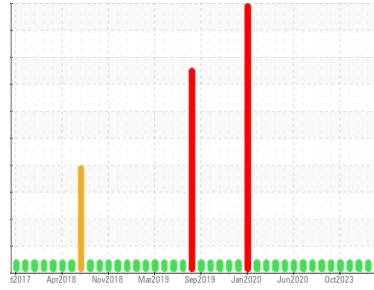


Area  
**Fwd Machinery Space [450258432]**  
Machine Id  
**Thruster Fwd Fore - Steering System (S/N Sample Tag CL-06005-S2)**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX MV 36 (200 LTR)**



**DIAGNOSIS**

**Recommendation**  
Resample at the next service interval to monitor.

**Wear**  
All component wear rates are normal.

**Contamination**  
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

**Fluid Condition**  
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

**SAMPLE INFORMATION** method limit/base current history1 history2

|               |             |                    |             |             |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | <b>PC0080541</b>   | PC          | PC          |
| Sample Date   | Client Info | <b>29 Jan 2024</b> | 05 Jan 2024 | 04 Dec 2023 |
| Machine Age   | hrs         | <b>0</b>           | 0           | 0           |
| Oil Age       | hrs         | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

**CONTAMINATION** method limit/base current history1 history2

|       |           |       |            |     |     |
|-------|-----------|-------|------------|-----|-----|
| Water | WC Method | >0.05 | <b>NEG</b> | NEG | NEG |
|-------|-----------|-------|------------|-----|-----|

**WEAR METALS** method limit/base current history1 history2

|           |             |                   |              |    |    |
|-----------|-------------|-------------------|--------------|----|----|
| PQ        | ASTM D8184* |                   | <b>0</b>     | 0  | 0  |
| Iron      | ppm         | ASTM D5185(m) >20 | <b>&lt;1</b> | <1 | <1 |
| Chromium  | ppm         | ASTM D5185(m) >10 | <b>0</b>     | 0  | 0  |
| Nickel    | ppm         | ASTM D5185(m) >10 | <b>&lt;1</b> | <1 | <1 |
| Titanium  | ppm         | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |
| Silver    | ppm         | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |
| Aluminum  | ppm         | ASTM D5185(m) >10 | <b>&lt;1</b> | <1 | <1 |
| Lead      | ppm         | ASTM D5185(m) >20 | <b>&lt;1</b> | 0  | <1 |
| Copper    | ppm         | ASTM D5185(m) >20 | <b>2</b>     | 2  | 2  |
| Tin       | ppm         | ASTM D5185(m) >10 | <b>0</b>     | 0  | 0  |
| Antimony  | ppm         | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |
| Vanadium  | ppm         | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |
| Beryllium | ppm         | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |
| Cadmium   | ppm         | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |

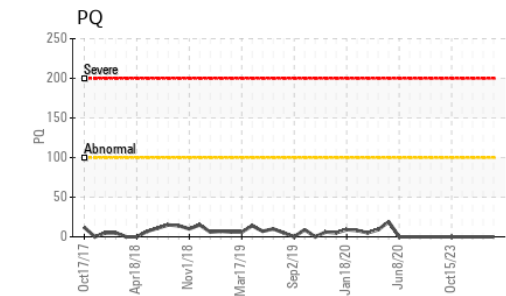
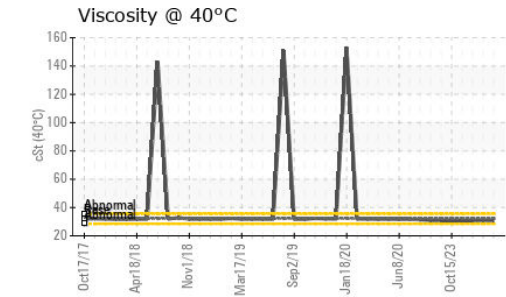
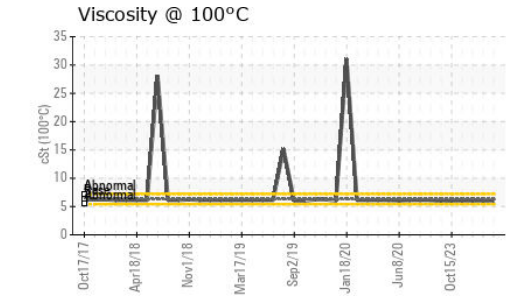
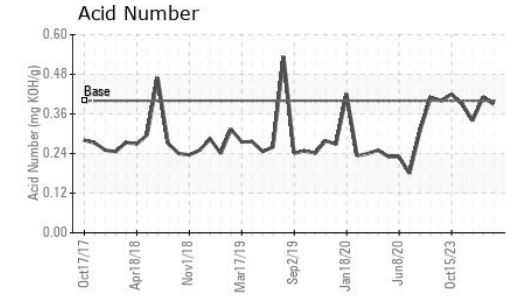
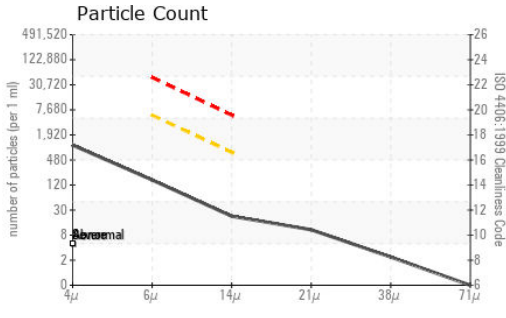
**ADDITIVES** method limit/base current history1 history2

|            |     |                   |              |     |     |
|------------|-----|-------------------|--------------|-----|-----|
| Boron      | ppm | ASTM D5185(m) 0   | <b>0</b>     | <1  | 0   |
| Barium     | ppm | ASTM D5185(m) 0   | <b>0</b>     | 0   | 0   |
| Molybdenum | ppm | ASTM D5185(m) 0   | <b>0</b>     | 0   | 0   |
| Manganese  | ppm | ASTM D5185(m) 1   | <b>0</b>     | 0   | 0   |
| Magnesium  | ppm | ASTM D5185(m) 0   | <b>1</b>     | <1  | 1   |
| Calcium    | ppm | ASTM D5185(m) 135 | <b>51</b>    | 50  | 52  |
| Phosphorus | ppm | ASTM D5185(m) 236 | <b>320</b>   | 318 | 323 |
| Zinc       | ppm | ASTM D5185(m) 317 | <b>404</b>   | 393 | 405 |
| Sulfur     | ppm | ASTM D5185(m) 561 | <b>747</b>   | 959 | 748 |
| Lithium    | ppm | ASTM D5185(m)     | <b>&lt;1</b> | <1  | <1  |

**CONTAMINANTS** method limit/base current history1 history2

|           |     |                   |              |    |    |
|-----------|-----|-------------------|--------------|----|----|
| Silicon   | ppm | ASTM D5185(m) >15 | <b>0</b>     | 0  | <1 |
| Sodium    | ppm | ASTM D5185(m)     | <b>0</b>     | 0  | 0  |
| Potassium | ppm | ASTM D5185(m) >20 | <b>&lt;1</b> | <1 | 0  |

# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0080541 **Received** : 16 Feb 2024  
**Lab Number** : **02616241** **Tested** : 20 Feb 2024  
**Unique Number** : 5733351 **Diagnosed** : 20 Feb 2024 - Kevin Marson  
**Test Package** : MAR 2 ( Additional Tests: KV100, PQ, VI )

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

| FLUID CLEANLINESS |  | method       | limit/base | current         | history1 | history2 |
|-------------------|--|--------------|------------|-----------------|----------|----------|
| Particles >4µm    |  | ASTM D7647   |            | <b>957</b>      | 1017     | 4615     |
| Particles >6µm    |  | ASTM D7647   | >5000      | <b>140</b>      | 84       | 797      |
| Particles >14µm   |  | ASTM D7647   | >640       | <b>19</b>       | 10       | 57       |
| Particles >21µm   |  | ASTM D7647   | >160       | <b>9</b>        | 4        | 13       |
| Particles >38µm   |  | ASTM D7647   | >40        | <b>2</b>        | 1        | 1        |
| Particles >71µm   |  | ASTM D7647   | >10        | <b>0</b>        | 1        | 0        |
| Oil Cleanliness   |  | ISO 4406 (c) | >--/19/16  | <b>17/14/11</b> | 17/14/10 | 19/17/13 |

| FLUID DEGRADATION |          | method     | limit/base | current     | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D974* | 0.40       | <b>0.39</b> | 0.41     | 0.34     |

| VISUAL           |        | method  | limit/base | current      | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal      | scalar | Visual* | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Yellow Metal     | scalar | Visual* | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Precipitate      | scalar | Visual* | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Silt             | scalar | Visual* | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Debris           | scalar | Visual* | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Sand/Dirt        | scalar | Visual* | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Appearance       | scalar | Visual* | NORML      | <b>NORML</b> | NORML    | NORML    |
| Odor             | scalar | Visual* | NORML      | <b>NORML</b> | NORML    | NORML    |
| Emulsified Water | scalar | Visual* | >0.05      | <b>NEG</b>   | NEG      | NEG      |
| Free Water       | scalar | Visual* |            | <b>NEG</b>   | NEG      | NEG      |

| FLUID PROPERTIES     |       | method        | limit/base | current     | history1 | history2 |
|----------------------|-------|---------------|------------|-------------|----------|----------|
| Visc @ 40°C          | cSt   | ASTM D7279(m) | 32.25      | <b>30.5</b> | 31.0     | 30.5     |
| Visc @ 100°C         | cSt   | ASTM D7279(m) | 6.3        | <b>5.9</b>  | 6        | 6        |
| Viscosity Index (VI) | Scale | ASTM D2270*   | 148        | <b>141</b>  | 143      | 146      |

### SAMPLE IMAGES

