

Machine Id  
**EX0040**  
Component  
**Hydraulic System**  
Fluid  
**PETRO CANADA HYDREX AW 32 (--- GAL)**

**RECOMMENDATION**

The oil change at the time of sampling has been noted. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

| Test           | UOM | Method      | Limit/Abn | Current            | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number  |     | Client Info |           | <b>GFL0113152</b>  | ---      | ---      |
| Sample Date    |     | Client Info |           | <b>22 Feb 2024</b> | ---      | ---      |
| Machine Age    | hrs | Client Info |           | <b>4876</b>        | ---      | ---      |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | ---      | ---      |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | ---      | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | ---      | ---      |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ---      | ---      |

**WEAR**

Chromium and iron ppm levels are abnormal. Ring wear is indicated. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

|              |        |               |      |              |     |     |
|--------------|--------|---------------|------|--------------|-----|-----|
| PQ           |        | ASTM D8184*   |      | <b>0</b>     | --- | --- |
| Iron         | ppm    | ASTM D5185(m) | >20  | <b>▲ 38</b>  | --- | --- |
| Chromium     | ppm    | ASTM D5185(m) | >10  | <b>▲ 14</b>  | --- | --- |
| Nickel       | ppm    | ASTM D5185(m) | >10  | <b>&lt;1</b> | --- | --- |
| Titanium     | ppm    | ASTM D5185(m) |      | <b>0</b>     | --- | --- |
| Silver       | ppm    | ASTM D5185(m) |      | <b>0</b>     | --- | --- |
| Aluminum     | ppm    | ASTM D5185(m) | >10  | <b>2</b>     | --- | --- |
| Lead         | ppm    | ASTM D5185(m) | >10  | <b>&lt;1</b> | --- | --- |
| Copper       | ppm    | ASTM D5185(m) | >75  | <b>7</b>     | --- | --- |
| Tin          | ppm    | ASTM D5185(m) | >10  | <b>0</b>     | --- | --- |
| Vanadium     | ppm    | ASTM D5185(m) |      | <b>0</b>     | --- | --- |
| White Metal  | scalar | Visual*       | NONE | <b>NONE</b>  | --- | --- |
| Yellow Metal | scalar | Visual*       | NONE | <b>NONE</b>  | --- | --- |

**CONTAMINATION**

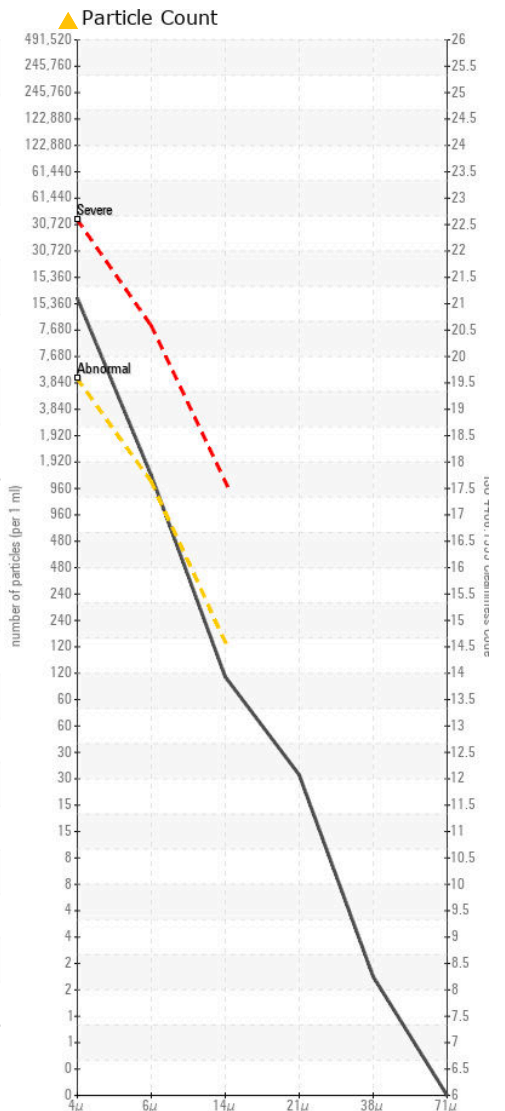
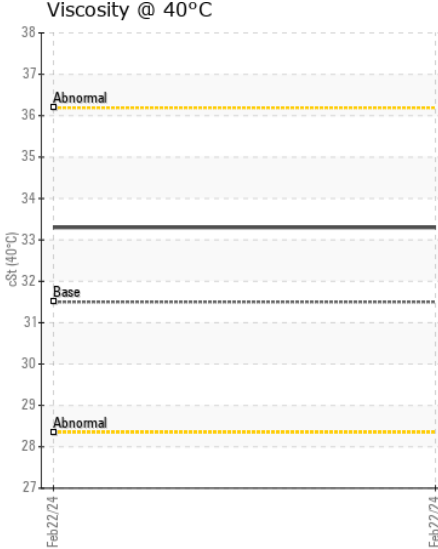
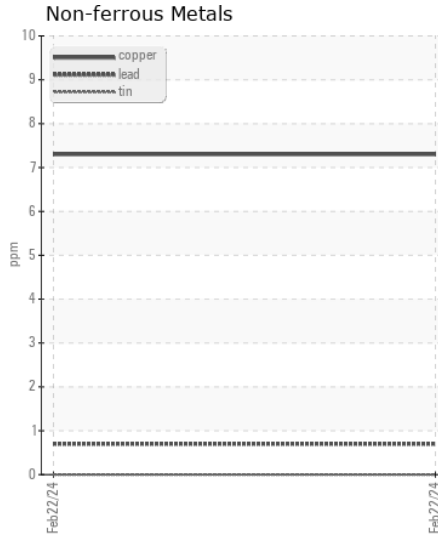
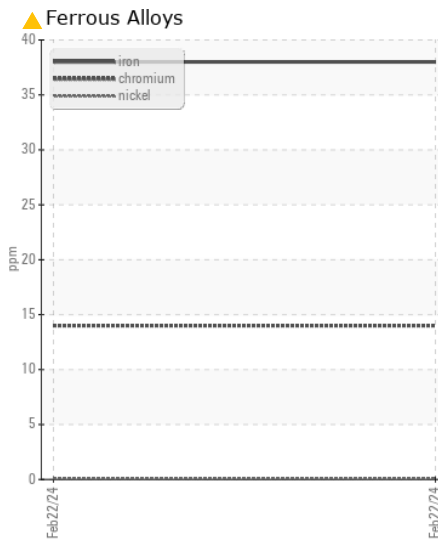
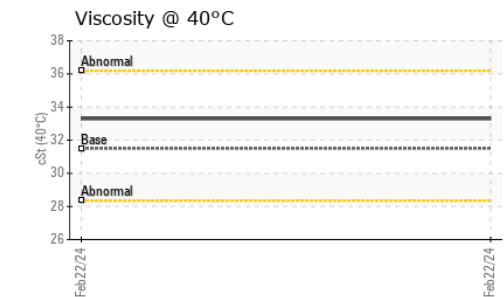
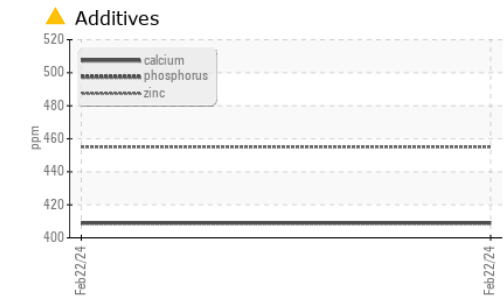
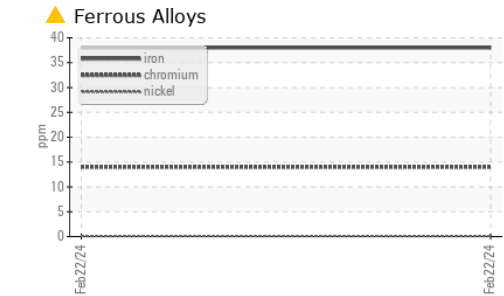
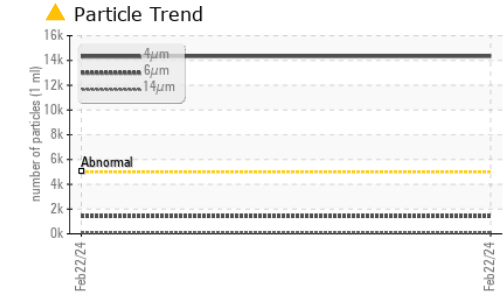
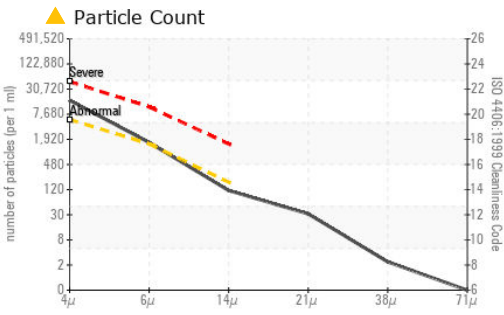
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

|                  |        |               |           |                   |     |     |
|------------------|--------|---------------|-----------|-------------------|-----|-----|
| Silicon          | ppm    | ASTM D5185(m) | >20       | <b>7</b>          | --- | --- |
| Potassium        | ppm    | ASTM D5185(m) | >20       | <b>2</b>          | --- | --- |
| Water            |        | WC Method     | >0.1      | <b>NEG</b>        | --- | --- |
| Particles >4µm   |        | ASTM D7647    | >5000     | <b>▲ 14339</b>    | --- | --- |
| Particles >6µm   |        | ASTM D7647    | >1300     | <b>▲ 1412</b>     | --- | --- |
| Particles >14µm  |        | ASTM D7647    | >160      | <b>101</b>        | --- | --- |
| Particles >21µm  |        | ASTM D7647    | >40       | <b>28</b>         | --- | --- |
| Particles >38µm  |        | ASTM D7647    | >10       | <b>2</b>          | --- | --- |
| Particles >71µm  |        | ASTM D7647    | >3        | <b>0</b>          | --- | --- |
| Oil Cleanliness  |        | ISO 4406 (c)  | >19/17/14 | <b>▲ 21/18/14</b> | --- | --- |
| Silt             | scalar | Visual*       | NONE      | <b>NONE</b>       | --- | --- |
| Debris           | scalar | Visual*       | NONE      | <b>NONE</b>       | --- | --- |
| Sand/Dirt        | scalar | Visual*       | NONE      | <b>NONE</b>       | --- | --- |
| Appearance       | scalar | Visual*       | NORML     | <b>NORML</b>      | --- | --- |
| Odor             | scalar | Visual*       | NORML     | <b>NORML</b>      | --- | --- |
| Emulsified Water | scalar | Visual*       | >0.1      | <b>NEG</b>        | --- | --- |

**FLUID CONDITION**

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

|             |     |               |      |               |     |     |
|-------------|-----|---------------|------|---------------|-----|-----|
| Sodium      | ppm | ASTM D5185(m) |      | <b>1</b>      | --- | --- |
| Boron       | ppm | ASTM D5185(m) | 0    | <b>8</b>      | --- | --- |
| Barium      | ppm | ASTM D5185(m) | 0    | <b>&lt;1</b>  | --- | --- |
| Molybdenum  | ppm | ASTM D5185(m) | 0    | <b>0</b>      | --- | --- |
| Manganese   | ppm | ASTM D5185(m) | 0    | <b>0</b>      | --- | --- |
| Magnesium   | ppm | ASTM D5185(m) | 0    | <b>6</b>      | --- | --- |
| Calcium     | ppm | ASTM D5185(m) | 50   | <b>▲ 409</b>  | --- | --- |
| Phosphorus  | ppm | ASTM D5185(m) | 330  | <b>409</b>    | --- | --- |
| Zinc        | ppm | ASTM D5185(m) | 430  | <b>455</b>    | --- | --- |
| Sulfur      | ppm | ASTM D5185(m) | 760  | <b>▲ 2516</b> | --- | --- |
| Visc @ 40°C | cSt | ASTM D7279(m) | 31.5 | <b>33.3</b>   | --- | --- |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0113152  
**Lab Number** : 02618418  
**Unique Number** : 5735528  
**Test Package** : MOB 1 ( Additional Tests: PQ, PrtCount )

**GFL Environmental - 582 - Nanaimo**  
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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.