



Area
Scoop 10 Yard
Machine Id
LHD1502
Component
Front Axle
Fluid
PETRO CANADA TRAXON 80W90 (--- LTR)

RECOMMENDATION

We advise that you check for the source of water entry. We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. 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 | | PC0048867 | PC0047743 | PC0046793 |
| Sample Date | | Client Info | | 04 May 2024 | 26 Jul 2022 | 29 Apr 2021 |
| Machine Age | hrs | Client Info | | 2699 | 6438 | 0 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | SEVERE | NORMAL | SEVERE |

WEAR

PQ levels are abnormal. Chromium and copper and iron ppm levels are abnormal. Aluminum ppm levels are noted. Titanium ppm levels are marginal. Gear wear is indicated. Bearing and/or bushing wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

| | | | | | | |
|--------------|--------|---------------|------|---------------|-------|--------|
| PQ | | ASTM D8184* | | ▲ 336 | 133 | ▲ 3327 |
| Iron | ppm | ASTM D5185(m) | >500 | ▲ 1246 | 643 | ▲ 1378 |
| Chromium | ppm | ASTM D5185(m) | >10 | ▲ 12 | 4 | ▲ 14 |
| Nickel | ppm | ASTM D5185(m) | >10 | 4 | <1 | 6 |
| Titanium | ppm | ASTM D5185(m) | | ▲ 12 | <1 | ▲ 15 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >25 | ● 143 | 2 | ● 211 |
| Lead | ppm | ASTM D5185(m) | >25 | 7 | 2 | 15 |
| Copper | ppm | ASTM D5185(m) | >50 | ▲ 255 | 83 | ▲ 446 |
| Tin | ppm | ASTM D5185(m) | >10 | 5 | 2 | 10 |
| Vanadium | ppm | ASTM D5185(m) | | <1 | 0 | <1 |
| White Metal | scalar | Visual* | NONE | NONE | NONE | VLITE |
| Yellow Metal | scalar | Visual* | NONE | NONE | LIGHT | NONE |

CONTAMINATION

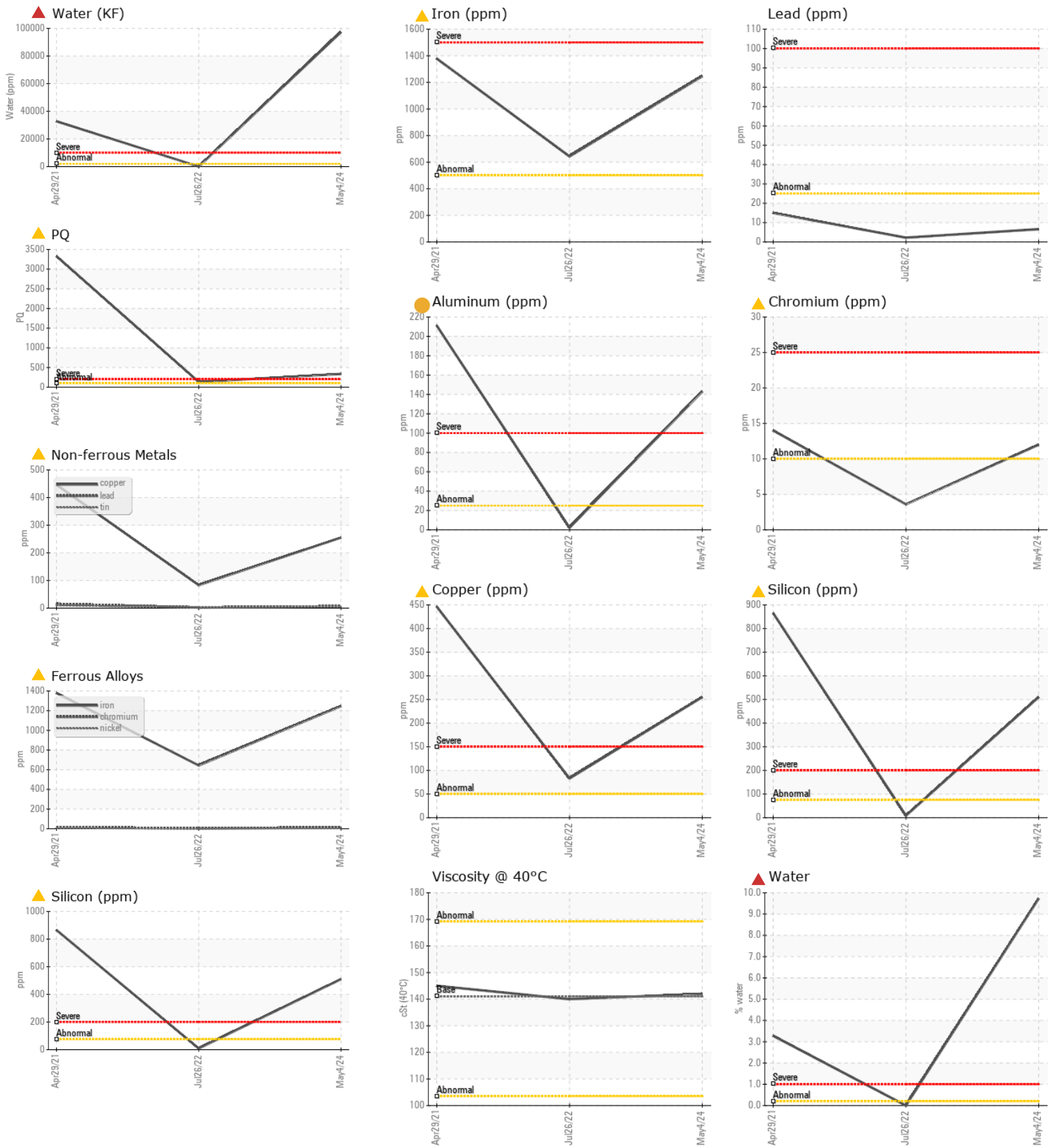
There is a high concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

| | | | | | | |
|------------------|--------|---------------|-------|----------------|-------|-----------|
| Silicon | ppm | ASTM D5185(m) | >75 | ▲ 510 | 9 | ▲ 865 |
| Potassium | ppm | ASTM D5185(m) | >20 | 56 | 1 | 113 |
| Water | % | ASTM D6304* | >0.2 | ▲ 9.730 | --- | ▲ 3.275 |
| ppm Water | ppm | ASTM D6304* | >2000 | ▲ 97304 | --- | ▲ 32756.3 |
| Silt | scalar | Visual* | NONE | MODER | NONE | NONE |
| Debris | scalar | Visual* | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Appearance | scalar | Visual* | NORML | ▲ HAZY | NORML | NORML |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.2 | ▲ .2% | NEG | ▲ .1% |

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) | | 69 | 3 | 97 |
| Boron | ppm | ASTM D5185(m) | 243 | 143 | 11 | ● 22 |
| Barium | ppm | ASTM D5185(m) | 1 | 6 | 2 | 8 |
| Molybdenum | ppm | ASTM D5185(m) | | 0 | 5 | <1 |
| Manganese | ppm | ASTM D5185(m) | | 17 | 7 | ● 19 |
| Magnesium | ppm | ASTM D5185(m) | 2 | ● 94 | 2 | ● 75 |
| Calcium | ppm | ASTM D5185(m) | 6 | ● 849 | 269 | ● 452 |
| Phosphorus | ppm | ASTM D5185(m) | 987 | 930 | 1626 | ● 455 |
| Zinc | ppm | ASTM D5185(m) | 1 | 306 | 78 | ● 199 |
| Sulfur | ppm | ASTM D5185(m) | 21530 | 14696 | 19552 | 17298 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 141.0 | 142 | 140 | 145 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.06 | --- | 14.4 | 19.9 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 108 | --- | 100 | 158 |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0048867 **Received** : 29 May 2024
Lab Number : 02638667 **Tested** : 03 Jun 2024
Unique Number : 5787829 **Diagnosed** : 03 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: KF, KV100, PQ, VI)

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 CA
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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.