



LIEBHERR

OIL ANALYSIS REPORT

WEAR

NORMAL

CONTAMINATION

ABNORMAL

FLUID CONDITION

NORMAL



Machine Id
LIEBHERR L586 068244

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LH0278463 | LH0278596 | LH0278518 |
| Sample Date | | Client Info | | 22 Mar 2024 | 21 Feb 2024 | 22 Dec 2023 |
| Machine Age | hrs | Client Info | | 5517 | 8026 | 7142 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|---------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185(m) | >50 | 6 | 9 | 7 |
| Chromium | ppm | ASTM D5185(m) | >5 | 1 | 2 | 2 |
| Nickel | ppm | ASTM D5185(m) | >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >5 | <1 | 1 | <1 |
| Lead | ppm | ASTM D5185(m) | >15 | <1 | 4 | 2 |
| Copper | ppm | ASTM D5185(m) | >10 | <1 | 1 | 1 |
| Tin | ppm | ASTM D5185(m) | >2 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| White Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | NONE |

CONTAMINATION

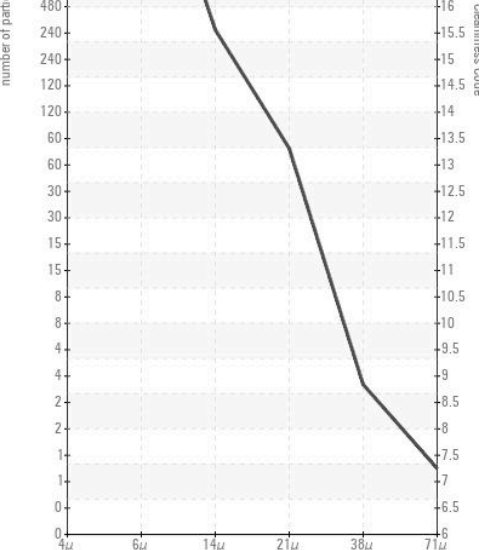
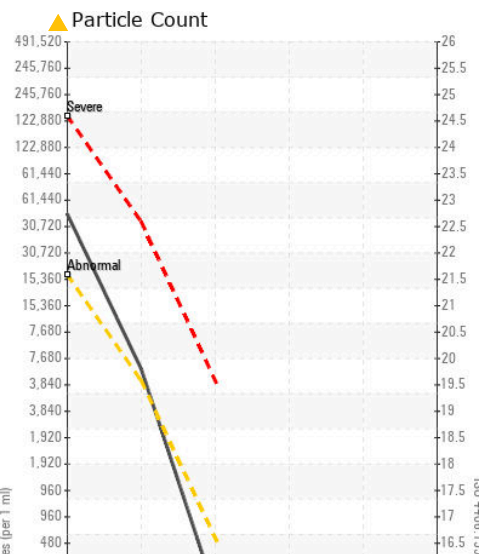
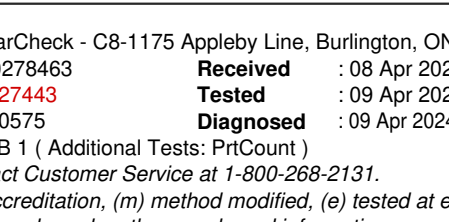
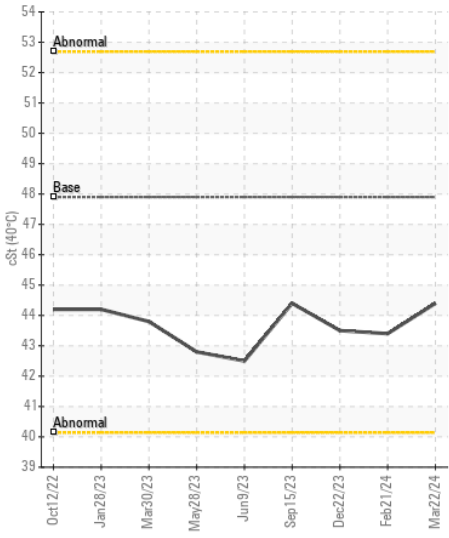
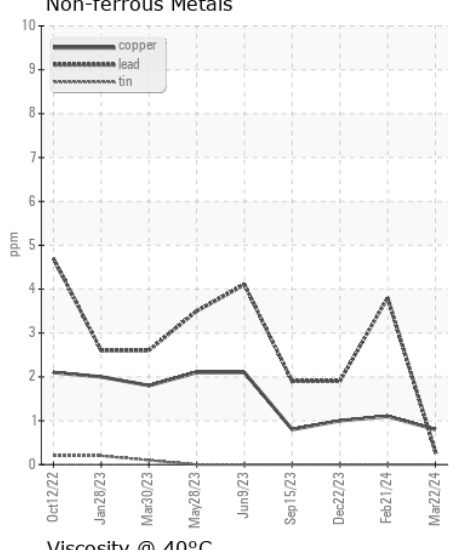
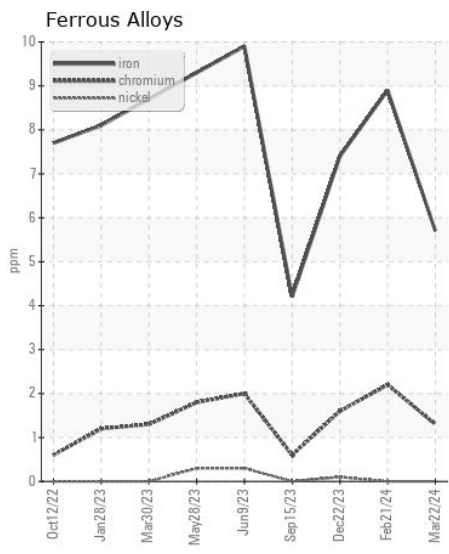
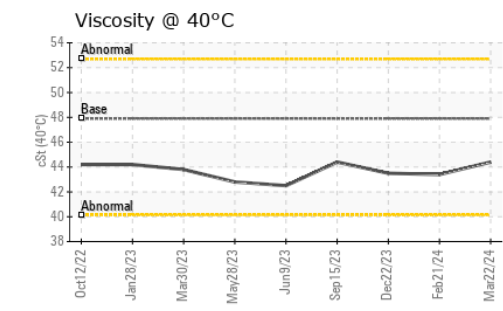
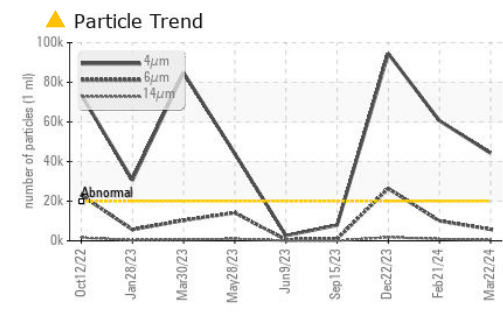
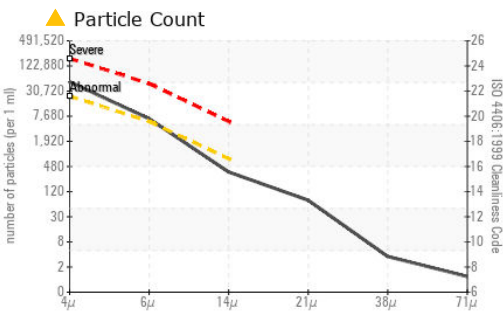
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

| | | | | | | |
|------------------|--------|---------------|-----------|-------------------|------------|------------|
| Silicon | ppm | ASTM D5185(m) | >15 | <1 | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | <1 | <1 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >20000 | ▲ 44270 | ▲ 60599 | ▲ 94488 |
| Particles >6µm | | ASTM D7647 | >5000 | ● 5814 | ● 9993 | ▲ 26430 |
| Particles >14µm | | ASTM D7647 | >640 | 312 | ● 902 | ▲ 1766 |
| Particles >21µm | | ASTM D7647 | >160 | 66 | ● 243 | ▲ 352 |
| Particles >38µm | | ASTM D7647 | >40 | 3 | 13 | 14 |
| Particles >71µm | | ASTM D7647 | >10 | 1 | 1 | 1 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | ▲ 23/20/15 | ▲ 23/20/17 | ▲ 24/22/18 |
| Silt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Debris | scalar | Visual* | NONE | NONE | NONE | VLITE |
| Sand/Dirt | scalar | Visual* | NONE | VLITE | NONE | NONE |
| Appearance | scalar | Visual* | NORML | NORML | NORML | NORML |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.1 | NEG | NEG | NEG |

FLUID CONDITION

The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

| | | | | | | |
|-------------|-----|---------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185(m) | | 0 | <1 | <1 |
| Boron | ppm | ASTM D5185(m) | 0 | <1 | 0 | 0 |
| Barium | ppm | ASTM D5185(m) | 0 | <1 | <1 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | 0 | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | 1 | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 0 | 11 | 17 | 20 |
| Calcium | ppm | ASTM D5185(m) | 100 | 146 | 189 | 189 |
| Phosphorus | ppm | ASTM D5185(m) | 670 | 610 | 607 | 549 |
| Zinc | ppm | ASTM D5185(m) | 850 | 792 | 760 | 688 |
| Sulfur | ppm | ASTM D5185(m) | 1600 | 1691 | 1708 | 1625 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 47.9 | 44.4 | 43.4 | 43.5 |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0278463
Lab Number : 02627443
Unique Number : 5760575
Test Package : MOB 1 (Additional Tests: PrtCount)
Received : 08 Apr 2024
Tested : 09 Apr 2024
Diagnosed : 09 Apr 2024 - Wes Davis

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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.