



| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |



Area
(YA163862)
Machine Id
12009
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (8 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0115942 | GFL0090012 | GFL0099831 |
| Sample Date | | Client Info | | 18 Jun 2024 | 05 Mar 2024 | 10 Feb 2024 |
| Machine Age | hrs | Client Info | | 15305 | 15305 | 15812 |
| Oil Age | hrs | Client Info | | 0 | 0 | 200 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Changed |
| Filter Changed | | Client Info | | N/A | N/A | Changed |
| Sample Status | | | | NORMAL | NORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >90 | 13 | 10 | 39 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 0 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | 1 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | <1 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | 3 | 2 | 13 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >330 | <1 | 0 | 2 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is no indication of any contamination in the oil.

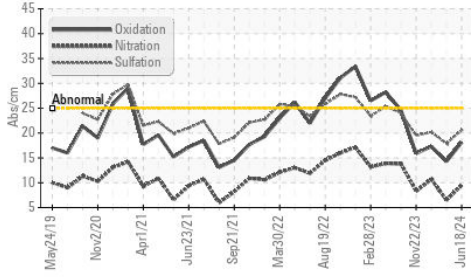
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 19 | 4 | 13 |
| Potassium | ppm | ASTM D5185m | >20 | 21 | 27 | ▲ 121 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >6 | 0.4 | 0.2 | 0.8 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.5 | 6.5 | 10.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.6 | 17.9 | 20.2 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

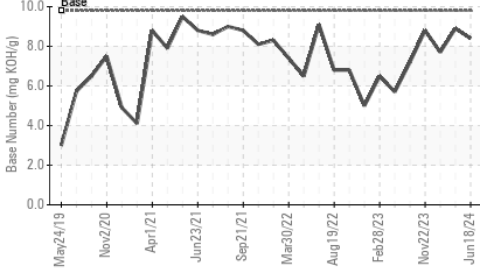
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 4 | 4 | 11 |
| Boron | ppm | ASTM D5185m | 0 | 22 | 6 | 4 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 44 | 56 | 81 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | 0 | 1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 764 | 880 | 1313 |
| Calcium | ppm | ASTM D5185m | 1070 | 1125 | 1015 | 1417 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 731 | 1036 | 1498 |
| Zinc | ppm | ASTM D5185m | 1270 | 874 | 1183 | 1666 |
| Sulfur | ppm | ASTM D5185m | 2060 | 2660 | 2885 | 5184 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 18.1 | 14.3 | 17.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 8.4 | 8.9 | 7.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.2 | 13.8 | 13.5 |

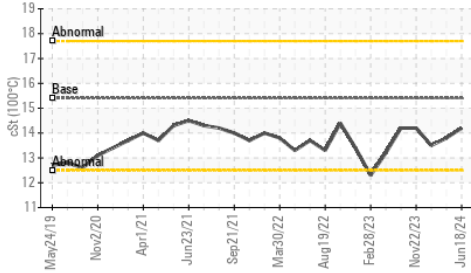
FT-IR (Direct Trend)



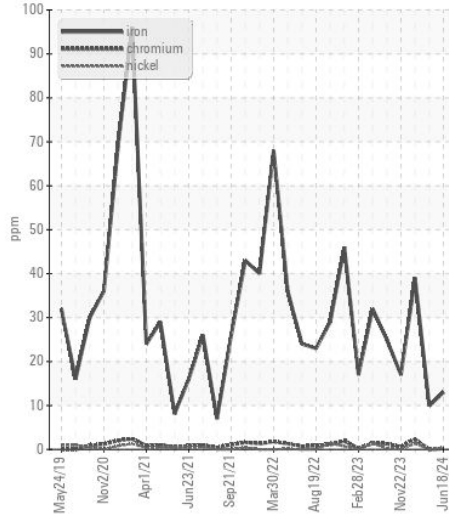
Base Number



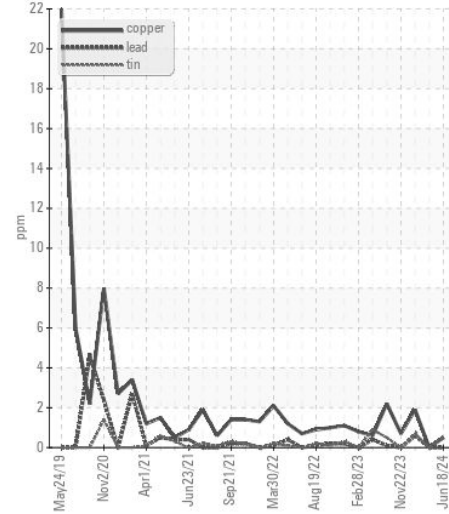
Viscosity @ 100°C



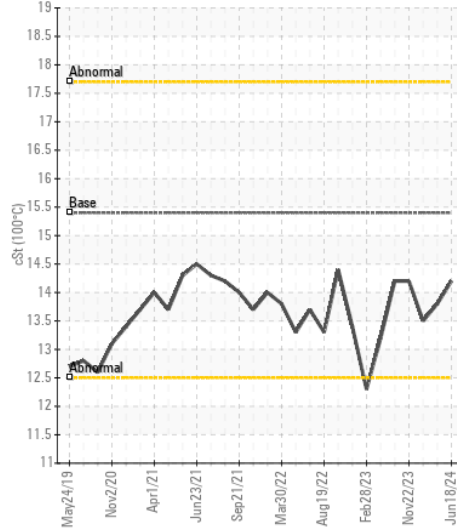
Ferrous Alloys



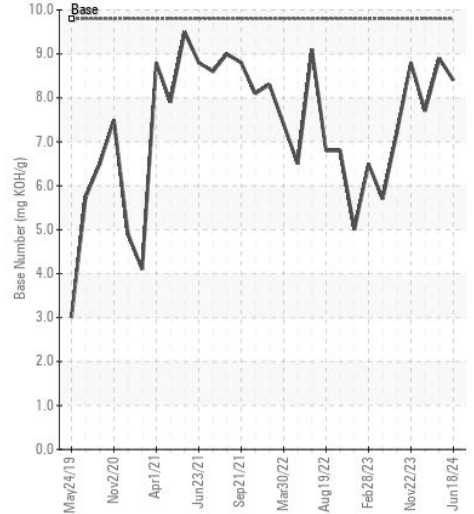
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0115942
Lab Number : 06214470
Unique Number : 11087334
Test Package : FLEET

GFL Environmental - 018 - Fayetteville
 4621 Marracco Drive
 Hope Mills, NC
 US 28348
 Contact: Robert Carter
 robert.carter@gflenv.com
 T: (910)596-1170
 F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)