



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



Machine Id
729045-361500
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0123143 | GFL0104896 | GFL0104906 |
| Sample Date | | Client Info | | 06 Jun 2024 | 14 Mar 2024 | 25 Jan 2024 |
| Machine Age | hrs | Client Info | | 29032 | 28794 | 28494 |
| Oil Age | hrs | Client Info | | 28794 | 28794 | 28210 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | Changed | Changed |
| Filter Changed | | Client Info | | N/A | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >120 | 8 | 6 | 16 |
| Chromium | ppm | ASTM D5185m | >20 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 2 | 1 | 3 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 14 | 13 | ▲ 44 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 3 | <1 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | 2 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 2 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| 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.

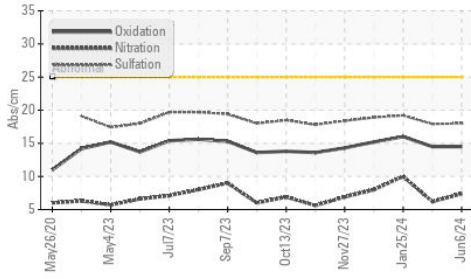
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 6 | 10 | 11 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 3 | <1 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >4 | 0.3 | 0.2 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.4 | 6.2 | 10.0 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.0 | 17.9 | 19.2 |
| 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

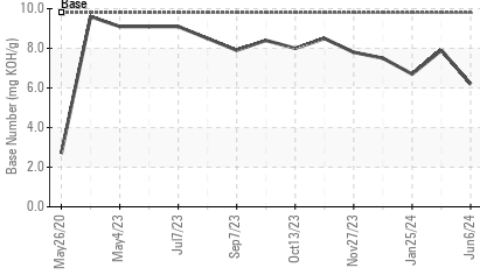
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 4 | 1 | 4 |
| Boron | ppm | ASTM D5185m | 0 | 4 | <1 | <1 |
| Barium | ppm | ASTM D5185m | 0 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 55 | 59 | 53 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 922 | 927 | 863 |
| Calcium | ppm | ASTM D5185m | 1070 | 1028 | 1089 | 934 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1085 | 1220 | 932 |
| Zinc | ppm | ASTM D5185m | 1270 | 1232 | 1213 | 1173 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3553 | 3427 | 2731 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.5 | 14.5 | 16.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 6.2 | 7.9 | 6.7 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.1 | 13.3 | 12.6 |

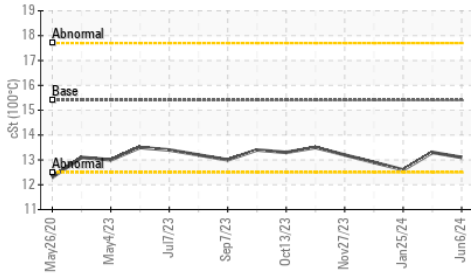
FT-IR (Direct Trend)



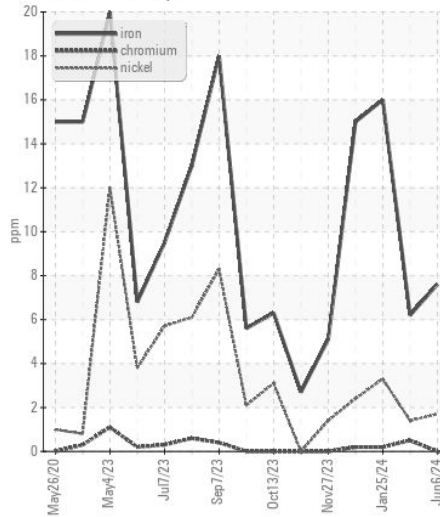
Base Number



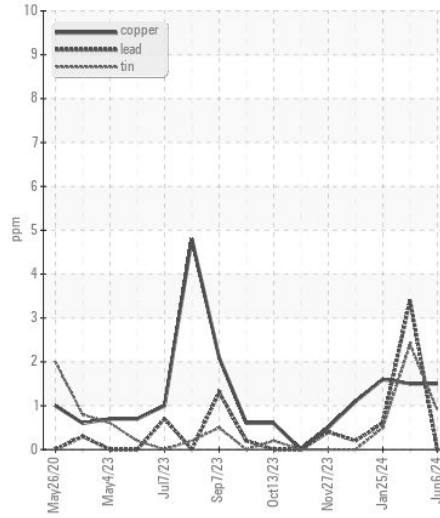
Viscosity @ 100°C



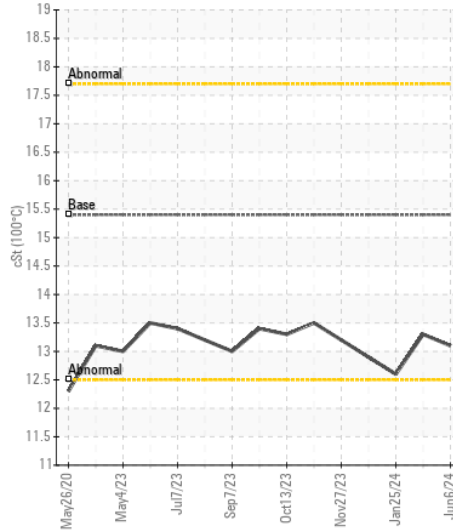
Ferrous Alloys



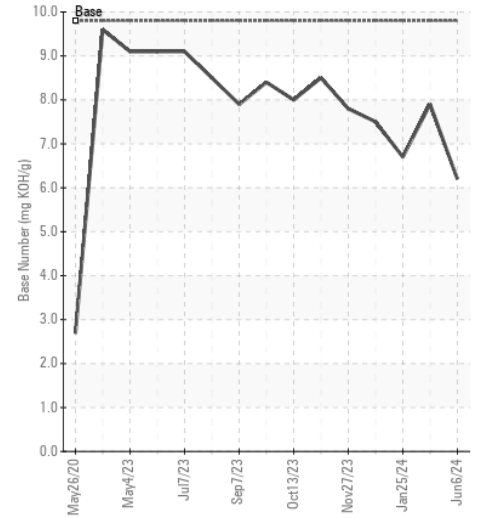
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0123143
 Lab Number : 06214112
 Unique Number : 11086976
 Test Package : FLEET

Received : 18 Jun 2024
 Tested : 20 Jun 2024
 Diagnosed : 20 Jun 2024 - Wes Davis

GFL Environmental - 820 - Joplin Hauling
 3700 West 7th Street
 Joplin, MO
 US 64801

Contact: James Jarrett
 jjarrett@gflenv.com

T: (417)310-2802

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)

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