FLEET LUBE 360™ OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Area
**MONTGOMERY**
Machine Id
**MACK 928112**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (--- LTR)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

## WEAR

The aluminum level is abnormal. All other component wear rates are normal.

## CONTAMINATION

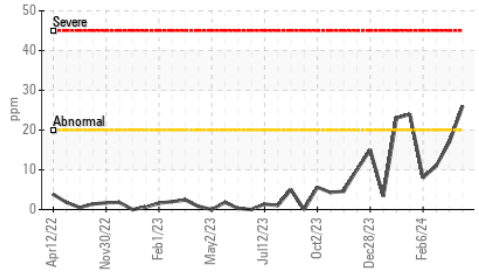
There is no indication of any contamination in the oil.

## FLUID CONDITION

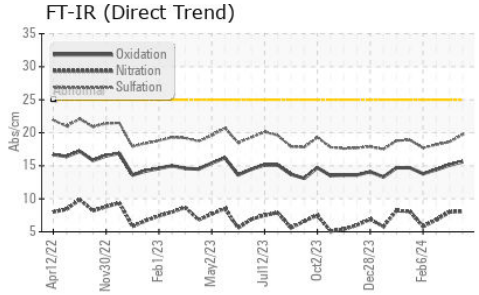
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0083572 | GFL0115601 | GFL0088647 |
| Sample Date | | Client Info | | 12 Apr 2024 | 27 Mar 2024 | 27 Feb 2024 |
| Machine Age | hrs | Client Info | | 17168 | 14569 | 14440 |
| Oil Age | hrs | Client Info | | 3002 | 403 | 14440 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >120 | 14 | 11 | 4 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | ▲ 26 | 17 | 11 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 7 | 5 | 5 |
| Potassium | ppm | ASTM D5185m | >20 | 22 | 16 | 11 |
| 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 | 0.4 | 0.3 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.1 | 8.0 | 6.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.7 | 18.6 | 18.2 |
| 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 |
| Sodium | ppm | ASTM D5185m | | 11 | 8 | 4 |
| Boron | ppm | ASTM D5185m | 0 | 3 | 3 | 5 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 64 | 60 | 55 |
| Manganese | ppm | ASTM D5185m | 0 | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 925 | 1045 | 887 |
| Calcium | ppm | ASTM D5185m | 1070 | 1121 | 1119 | 932 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1086 | 1086 | 950 |
| Zinc | ppm | ASTM D5185m | 1270 | 1259 | 1316 | 1206 |
| Sulfur | ppm | ASTM D5185m | 2060 | 2798 | 3635 | 2834 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 15.6 | 15.1 | 14.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 6.7 | 7.0 | 7.8 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.7 | 13.7 | 13.8 |

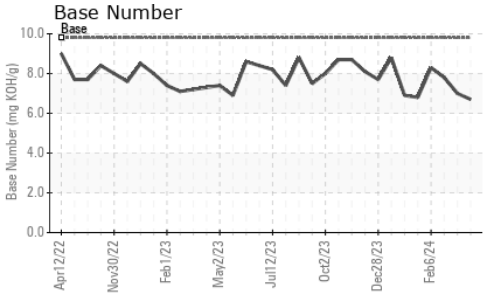
Aluminum (ppm)



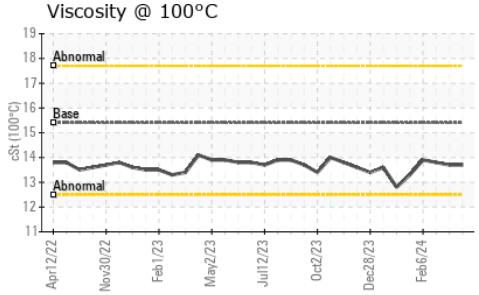

FT-IR (Direct Trend)



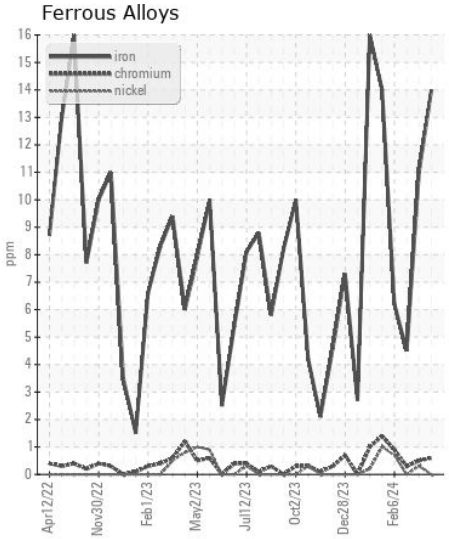

Base Number



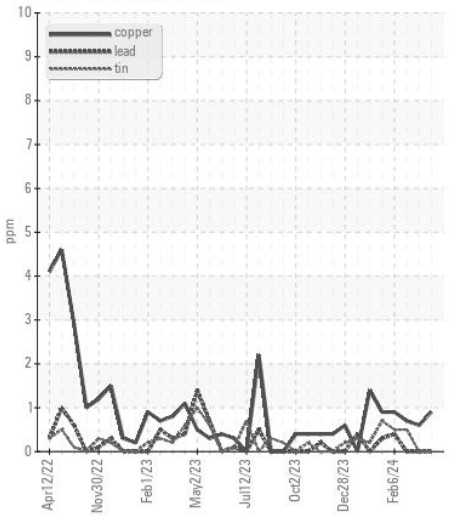

Viscosity @ 100°C



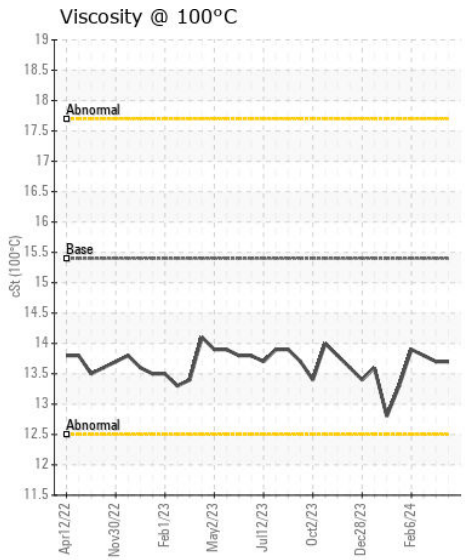

Ferrous Alloys



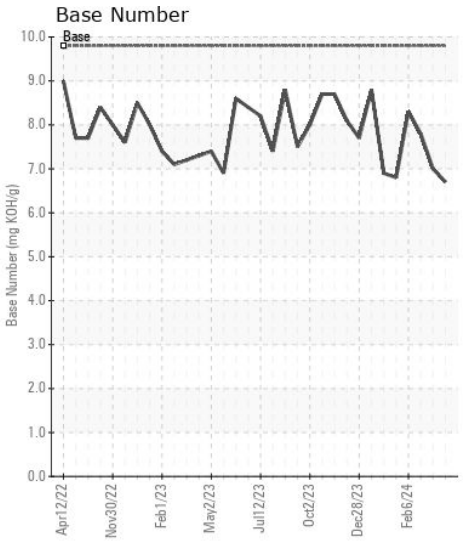

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0083572
**Lab Number** : 06151783
**Unique Number** : 10981861
**Test Package** : FLEET

**Received** : 17 Apr 2024
**Tested** : 18 Apr 2024
**Diagnosed** : 19 Apr 2024 - Don Baldridge

**GFL Environmental - 955 - Montgomery**
1121 Wilbanks St
Montgomery, AL
US 36108
Contact: LISA REEVES

*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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