FLEET LUBE 360 OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Machine Id
**12036**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (32 QTS)**

## RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

## WEAR

All component wear rates are normal.

## CONTAMINATION

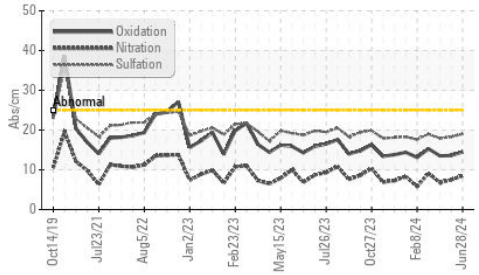
Sodium and/or potassium levels are high.

## FLUID CONDITION

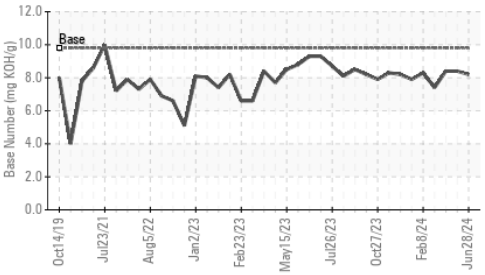
The BN result indicates that there is suitable alkalinity remaining in the oil.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0111446** | GFL0111423 | GFL0111414 |
| Sample Date | | Client Info | | **28 Jun 2024** | 05 Jun 2024 | 20 May 2024 |
| Machine Age | hrs | Client Info | | **14867** | 14766 | 14668 |
| Oil Age | hrs | Client Info | | **535** | 434 | 336 |
| Filter Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Not Changd |
| Filter Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >75 | **19** | 16 | 8 |
| Chromium | ppm | ASTM D5185m | >5 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >15 | **5** | 5 | 2 |
| Lead | ppm | ASTM D5185m | >25 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >100 | **2** | 1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **0** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | **7** | 7 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | **9** | 10 | 3 |
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | % | *ASTM D2982 | | **NEG** | 0.0 | NEG |
| Soot % | % | *ASTM D7844 | >6 | **0.4** | 0.4 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **8.5** | 7.5 | 6.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.0** | 18.3 | 17.9 |
| 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 | | ▲ **182** | 157 | 79 |
| Boron | ppm | ASTM D5185m | 0 | **4** | 3 | 1 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **61** | 62 | 61 |
| Manganese | ppm | ASTM D5185m | 0 | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 1010 | **880** | 883 | 1011 |
| Calcium | ppm | ASTM D5185m | 1070 | **978** | 984 | 1091 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **964** | 923 | 1068 |
| Zinc | ppm | ASTM D5185m | 1270 | **1169** | 1159 | 1343 |
| Sulfur | ppm | ASTM D5185m | 2060 | **2675** | 3186 | 3774 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **14.5** | 13.6 | 13.5 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **8.2** | 8.4 | 8.4 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **13.2** | 13.4 | 13.4 |

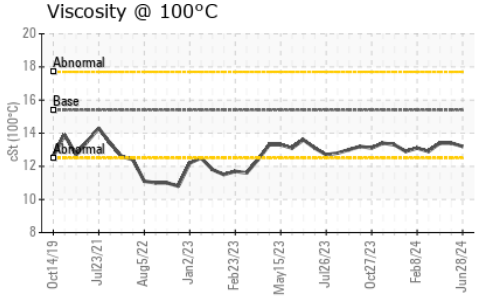
FT-IR (Direct Trend)



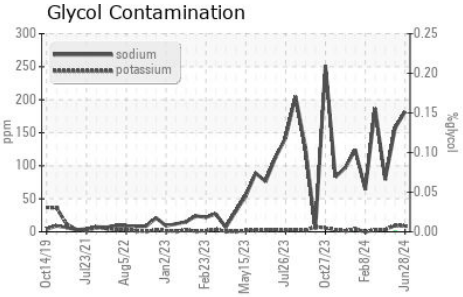

Base Number



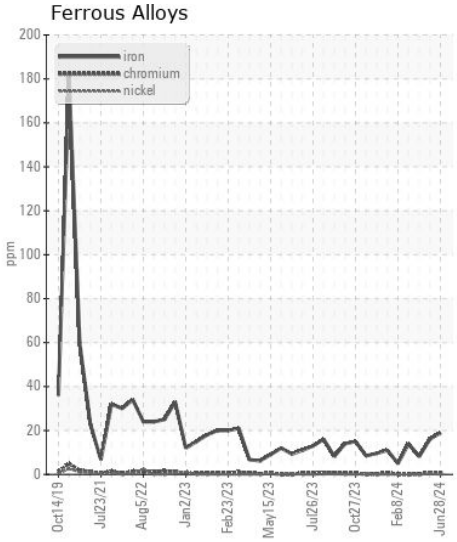

Viscosity @ 100°C



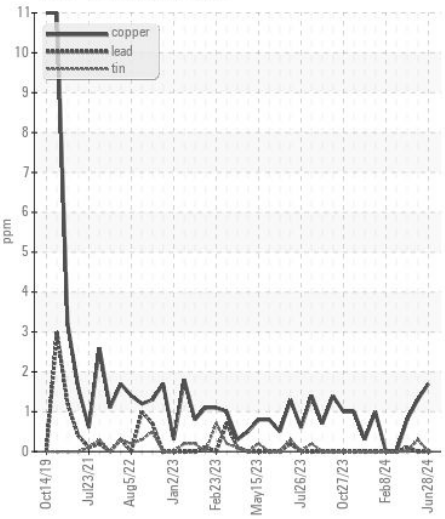

Glycol Contamination



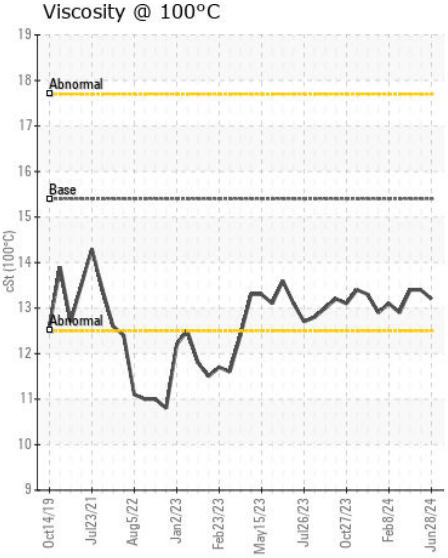

Ferrous Alloys



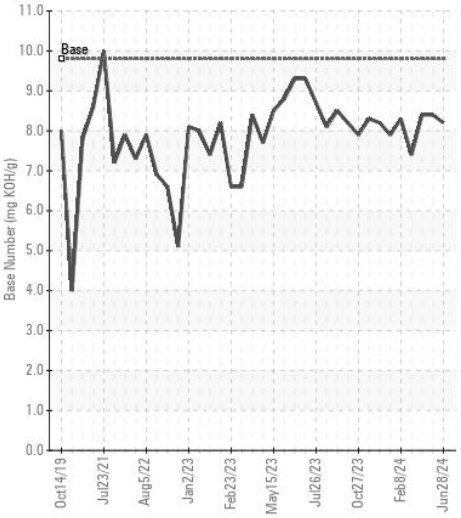

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0111446
**Lab Number** : 06227073
**Unique Number** : 11110566
**Test Package** : FLEET ( Additional Tests: Glycol )

**Received** : 03 Jul 2024
**Tested** : 05 Jul 2024
**Diagnosed** : 05 Jul 2024 - Jonathan Hester

*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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