



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



Area
(BC46664)
Machine Id
710013
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (6 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0115129 | GFL0115183 | GFL0105735 |
| Sample Date | | Client Info | | 20 May 2024 | 22 Mar 2024 | 18 Dec 2023 |
| Machine Age | hrs | Client Info | | 11281 | 10697 | 9705 |
| Oil Age | hrs | Client Info | | 584 | 600 | 9523 |
| Filter Age | hrs | Client Info | | 584 | 600 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >90 | 20 | 14 | 35 |
| Chromium | ppm | ASTM D5185m | >20 | 1 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | 2 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 11 | 5 | 12 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 0 | 1 |
| Copper | ppm | ASTM D5185m | >330 | 3 | 2 | 58 |
| Tin | ppm | ASTM D5185m | >15 | 1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 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.

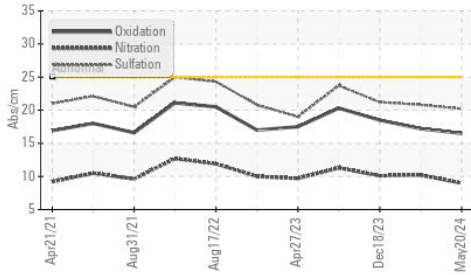
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 6 | 4 | 21 |
| Potassium | ppm | ASTM D5185m | >20 | 15 | 6 | 24 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >6 | 0.5 | 0.7 | 0.7 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.0 | 10.2 | 10.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.2 | 20.8 | 21.2 |
| 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

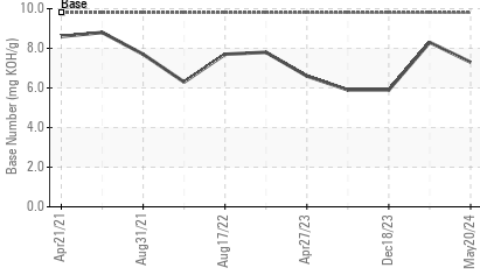
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 29 | 6 | 8 |
| Boron | ppm | ASTM D5185m | 0 | <1 | 2 | 23 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 60 | 59 | 67 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | 1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 956 | 911 | 812 |
| Calcium | ppm | ASTM D5185m | 1070 | 1088 | 1013 | 1078 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 912 | 1044 | 851 |
| Zinc | ppm | ASTM D5185m | 1270 | 1280 | 1229 | 1027 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3068 | 3108 | 2479 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.5 | 17.2 | 18.5 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 7.3 | 8.3 | 5.9 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.1 | 13.9 | 12.9 |

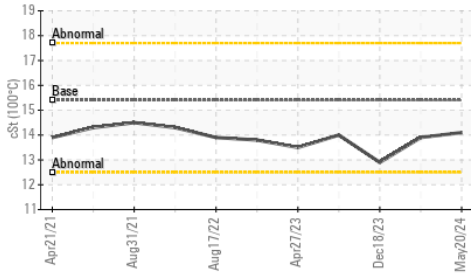
FT-IR (Direct Trend)



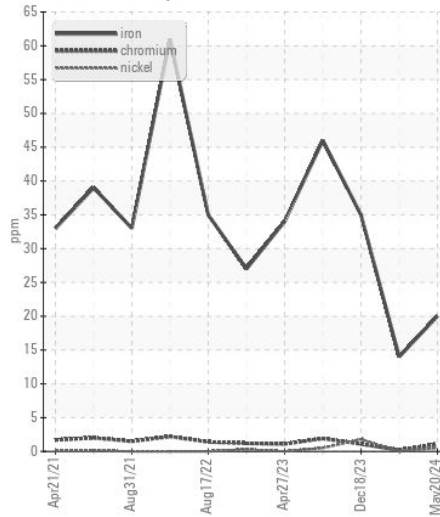
Base Number



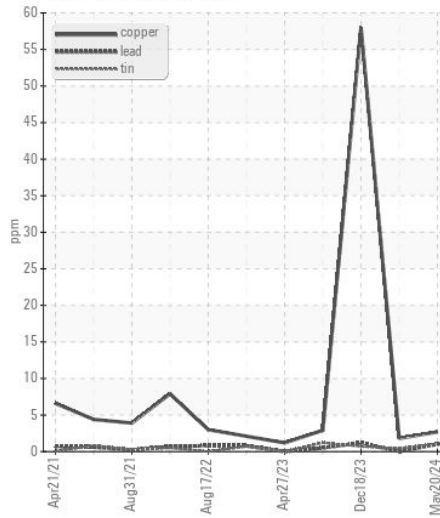
Viscosity @ 100°C



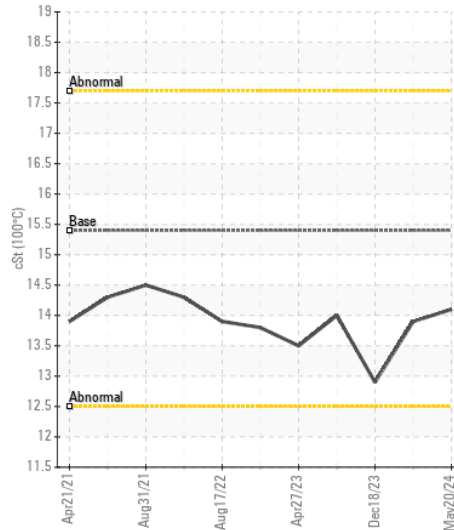
Ferrous Alloys



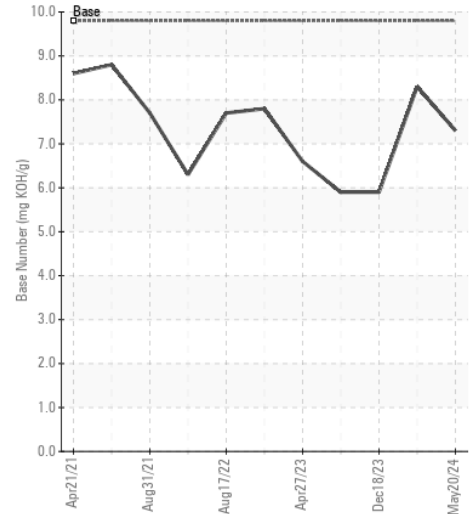
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0115129
Lab Number : 06190258
Unique Number : 11047010
Test Package : FLEET

Received : 24 May 2024
Tested : 25 May 2024
Diagnosed : 25 May 2024 - Wes Davis

GFL Environmental - 405 - Arbor Hills
 7811 Chubb Rd
 NORTHVILLE, MI
 US 48168

Contact: Anthony Hopkins
 ahopkins@gflenv.com

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)

T:
F: