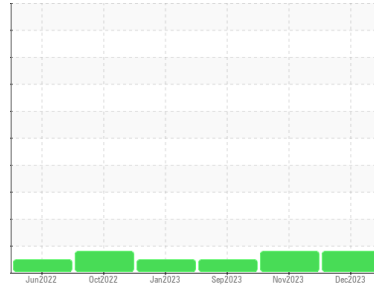




PROBLEM SUMMARY

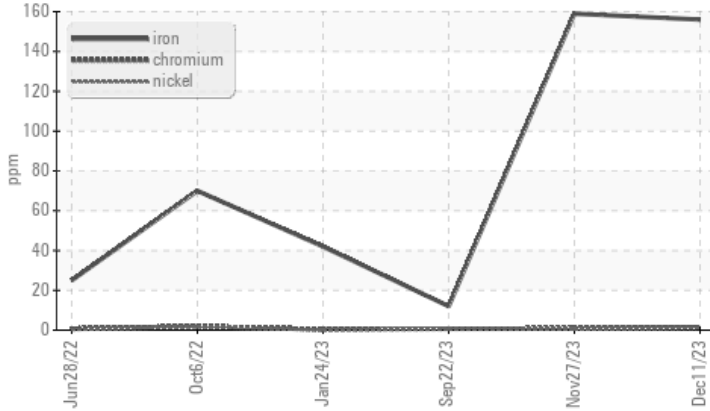
Sample Rating Trend



Machine Id
724047
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



RECOMMENDATION

No corrective action is recommended at this time.
 Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | ABNORMAL | ABNORMAL | NORMAL |
|---------------|-----|-------------|------|-----------------|----------|--------|
| Iron | ppm | ASTM D5185m | >100 | ▲ 156 | ▲ 159 | 12 |

Customer Id: GFL641
 Sample No.: GFL0097480
 Lab Number: 06034371
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

27 Nov 2023 Diag: Sean Felton

WEAR



No corrective action is recommended at this time. Resample at the next service interval to monitor. Cylinder, crank, or cam shaft wear is indicated. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



22 Sep 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



24 Jan 2023 Diag: Don Baldrige

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

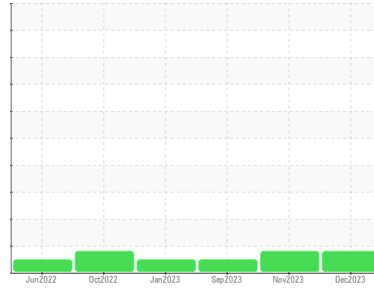
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
724047

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

▲ Wear

Cylinder, crank, or cam shaft wear is indicated. 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 suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0097480 | GFL0097476 | GFL0092898 |
| Sample Date | Client Info | | 11 Dec 2023 | 27 Nov 2023 | 22 Sep 2023 |
| Machine Age | hrs | Client Info | 18969 | 18969 | 18969 |
| Oil Age | hrs | Client Info | 17932 | 17932 | 17932 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | ABNORMAL | ABNORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >2.0 | <1.0 | <1.0 | <1.0 |
| Water | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | ▲ 156 | ▲ 159 | 12 |
| Chromium | ppm | ASTM D5185m >20 | 1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m >4 | 1 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >20 | 4 | 4 | 2 |
| Lead | ppm | ASTM D5185m >40 | 3 | 2 | 2 |
| Copper | ppm | ASTM D5185m >330 | 6 | 5 | <1 |
| Tin | ppm | ASTM D5185m >15 | <1 | 1 | <1 |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m 0 | 6 | 8 | 8 |
| Barium | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 60 | 62 | 64 | 56 |
| Manganese | ppm | ASTM D5185m 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 1010 | 904 | 985 | 831 |
| Calcium | ppm | ASTM D5185m 1070 | 1102 | 1179 | 1000 |
| Phosphorus | ppm | ASTM D5185m 1150 | 962 | 960 | 926 |
| Zinc | ppm | ASTM D5185m 1270 | 1248 | 1285 | 1122 |
| Sulfur | ppm | ASTM D5185m 2060 | 1943 | 2596 | 2944 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 6 | 7 | 4 |
| Sodium | ppm | ASTM D5185m | 4 | 5 | 3 |
| Potassium | ppm | ASTM D5185m >20 | 0 | 0 | 2 |

INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 2.1 | 2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 9.3 | 9.1 | 6.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 22.2 | 21.8 | 17.9 |

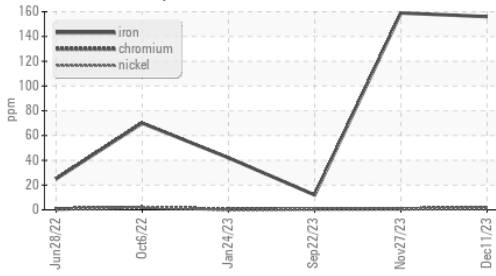
FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 17.0 | 16.5 | 14.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8 | 7.2 | 7.5 | 7.9 |

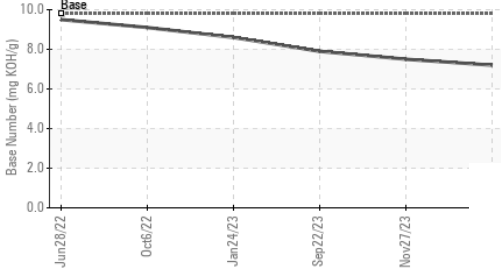


OIL ANALYSIS REPORT

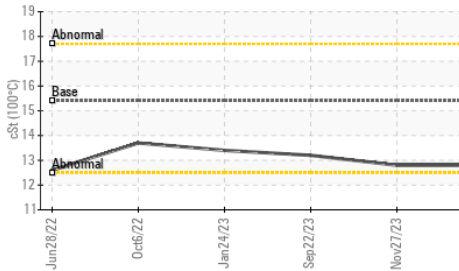
▲ Ferrous Alloys



Base Number



Viscosity @ 100°C

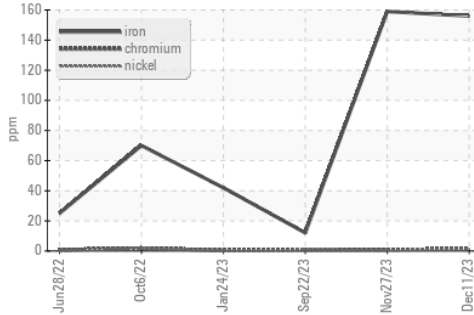


| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

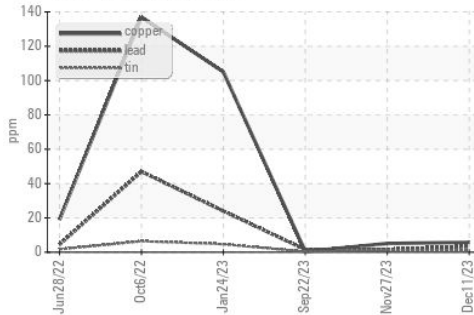
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 12.8 | 12.8 |

GRAPHS

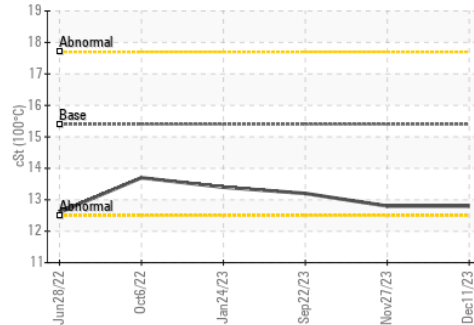
▲ Ferrous Alloys



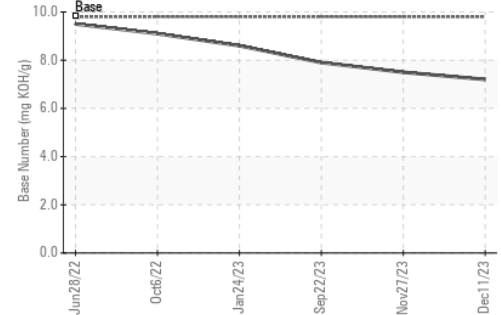
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0097480 **Received** : 14 Dec 2023
Lab Number : 06034371 **Diagnosed** : 18 Dec 2023
Unique Number : 10789600 **Diagnostician** : Don Baldrige
Test Package : FLEET

GFL Environmental - 641 - Alpena
 1241 KING SETTLEMENT RD
 ALPENA, MI
 US 49707

Contact: DYLAN TOLAN
 dylan.tolan@gflenv.com
 T: (989)854-7203

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)

F: