



# PROBLEM SUMMARY

Sample Rating Trend

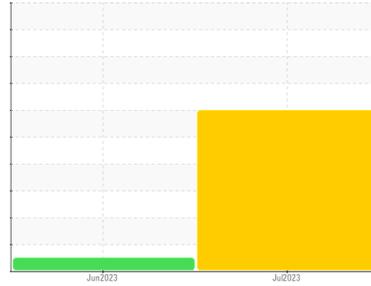
DIRT



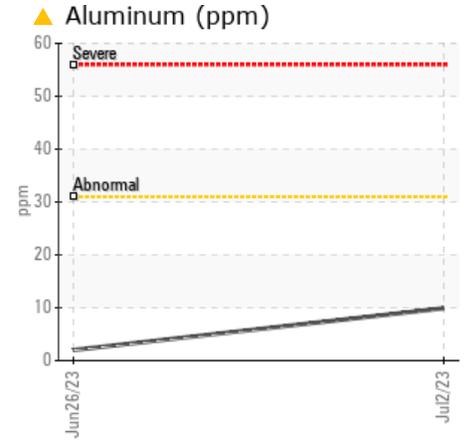
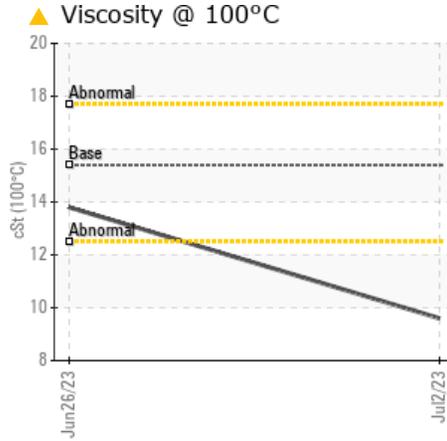
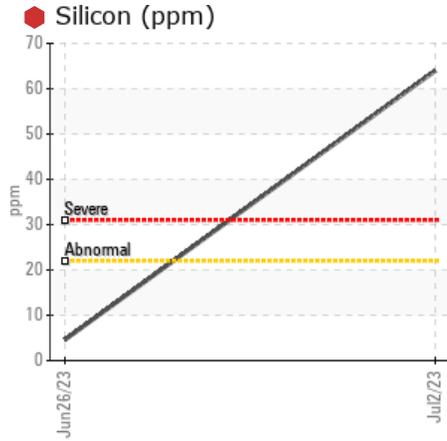
Machine Id  
**414045**

Component  
**Diesel Engine**

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



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	---
Aluminum	ppm	ASTM D5185m	>31	▲ 10	2	---
Silicon	ppm	ASTM D5185m	>22	● 64	5	---
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 9.6	13.8	---

Customer Id: GFL084  
Sample No.: GFL0058538  
Lab Number: 05888919  
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@wearcheckusa.com)

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

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

## HISTORICAL DIAGNOSIS

26 Jun 2023 Diag: Jonathan Hester

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.

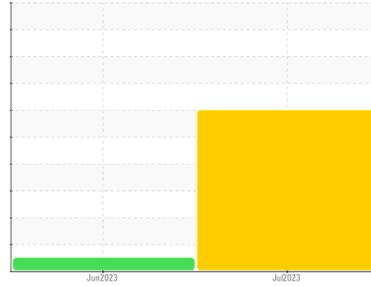
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id  
**414045**

Component  
**Diesel Engine**

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

## DIAGNOSIS

### Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

### Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

## SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	<b>GFL0058538</b>	GFL0058538	---
Sample Date	Client Info	<b>02 Jul 2023</b>	26 Jun 2023	---
Machine Age	hrs	<b>0</b>	0	---
Oil Age	hrs	<b>0</b>	0	---
Oil Changed	Client Info	<b>N/A</b>	Not Chngd	---
Sample Status		<b>SEVERE</b>	NORMAL	---

## CONTAMINATION

method	limit/base	current	history 1	history 2
Glycol	WC Method	<b>NEG</b>	NEG	---

## WEAR METALS

method	limit/base	current	history 1	history 2	
Iron	ppm	ASTM D5185m >51	<b>18</b>	51	---
Chromium	ppm	ASTM D5185m >11	<b>2</b>	4	---
Nickel	ppm	ASTM D5185m >5	<b>2</b>	3	---
Titanium	ppm	ASTM D5185m	<b>2</b>	<1	---
Silver	ppm	ASTM D5185m >3	<b>2</b>	0	---
Aluminum	ppm	ASTM D5185m >31	<b>10</b>	2	---
Lead	ppm	ASTM D5185m >26	<b>4</b>	<1	---
Copper	ppm	ASTM D5185m >26	<b>17</b>	<1	---
Tin	ppm	ASTM D5185m >4	<b>4</b>	0	---
Vanadium	ppm	ASTM D5185m	<b>1</b>	0	---
Cadmium	ppm	ASTM D5185m	<b>2</b>	0	---

## ADDITIVES

method	limit/base	current	history 1	history 2	
Boron	ppm	ASTM D5185m 0	<b>349</b>	<1	---
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m 60	<b>106</b>	60	---
Manganese	ppm	ASTM D5185m 0	<b>6</b>	<1	---
Magnesium	ppm	ASTM D5185m 1010	<b>661</b>	927	---
Calcium	ppm	ASTM D5185m 1070	<b>1467</b>	1072	---
Phosphorus	ppm	ASTM D5185m 1150	<b>632</b>	994	---
Zinc	ppm	ASTM D5185m 1270	<b>768</b>	1214	---
Sulfur	ppm	ASTM D5185m 2060	<b>2726</b>	3100	---

## CONTAMINANTS

method	limit/base	current	history 1	history 2	
Silicon	ppm	ASTM D5185m >22	<b>64</b>	5	---
Sodium	ppm	ASTM D5185m >31	<b>6</b>	2	---
Potassium	ppm	ASTM D5185m >20	<b>23</b>	1	---
Fuel	%	ASTM D3524 >2.1	<b>0.2</b>	<1.0	---

## INFRA-RED

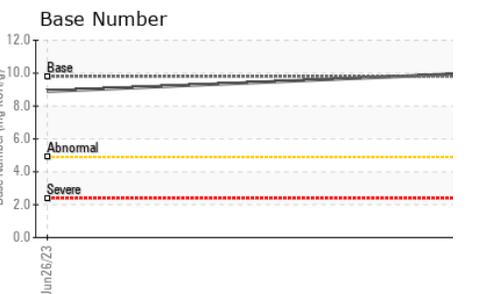
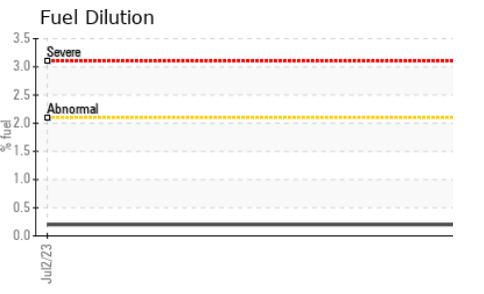
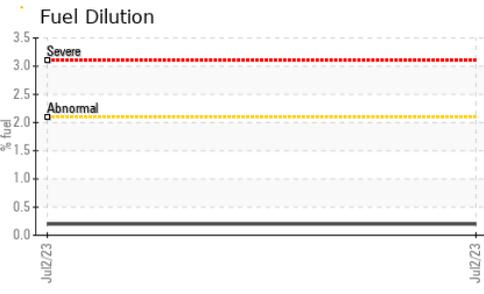
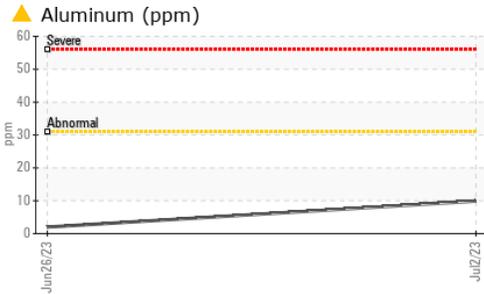
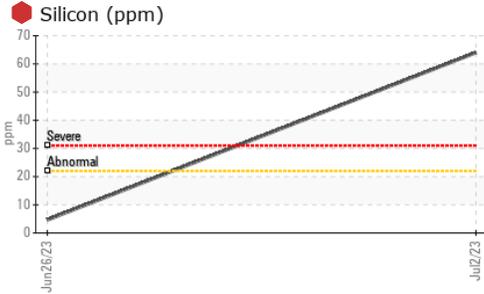
method	limit/base	current	history 1	history 2	
Soot %	%	*ASTM D7844 >3	<b>0.1</b>	0.6	---
Nitration	Abs/cm	*ASTM D7624 >20	<b>6.8</b>	9.1	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>26.5</b>	20.1	---

## FLUID DEGRADATION

method	limit/base	current	history 1	history 2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>21.0</b>	16.5	---
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>10.0</b>	8.9	---



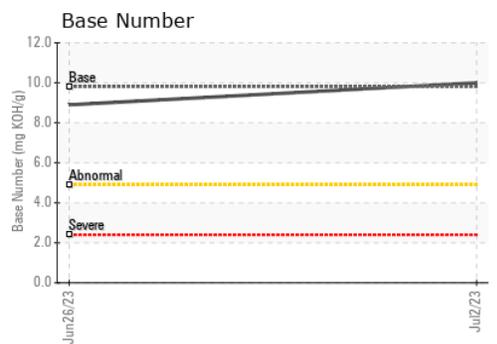
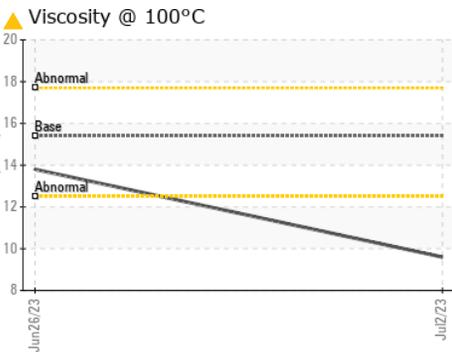
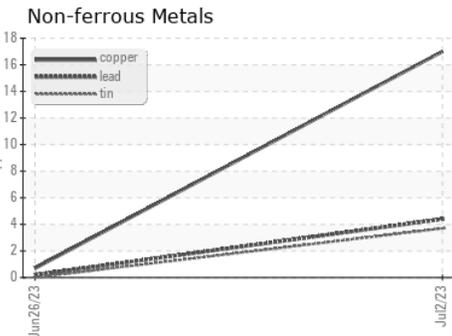
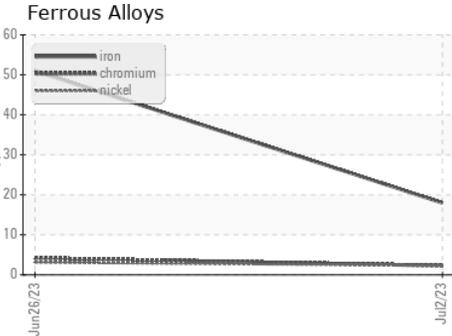
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.21	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 9.6	13.8

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0058538 **Received** : 03 Jul 2023  
**Lab Number** : 05888919 **Diagnosed** : 06 Jul 2023  
**Unique Number** : 10539402 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

**GFL Environmental - 084 - Clarksville**  
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 Clarksville, TN  
 US 37042  
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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)