



# PROBLEM SUMMARY

Sample Rating Trend



GLYCOL

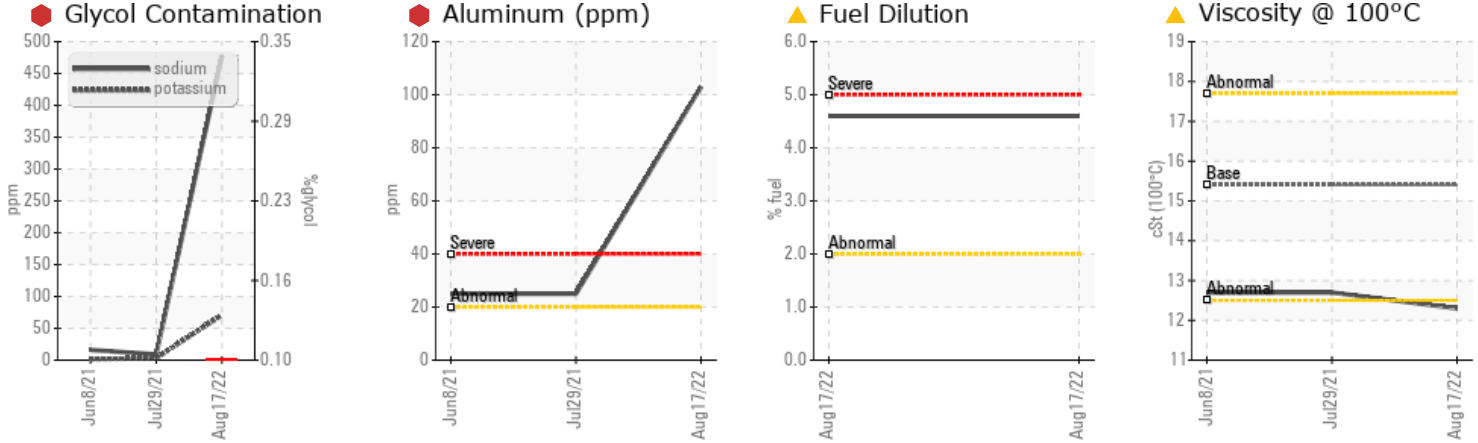


Machine Id  
**222054**

Component  
**Diesel Engine**

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

## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	ABNORMAL
Aluminum	ppm	ASTM D5185m	>20	103	25	25
Sodium	ppm	ASTM D5185m		477	9	16
Potassium	ppm	ASTM D5185m	>20	71	3	1
Fuel	%	ASTM D3524	>2.0	4.6	<1.0	<1.0
Glycol	%	*ASTM D2982		0.10	NEG	NEG
Visc @ 100°C	cSt	ASTM D445	15.4	12.3	12.7	12.7

Customer Id: GFL882  
Sample No.: GFL0057100  
Lab Number: 05625440  
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
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

## HISTORICAL DIAGNOSIS

### 29 Jul 2021 Diag: Jonathan Hester

#### WEAR



No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other 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](#)



### 08 Jun 2021 Diag: Jonathan Hester

#### WEAR



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The aluminum level is abnormal. All other 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 acceptable for the time in service.

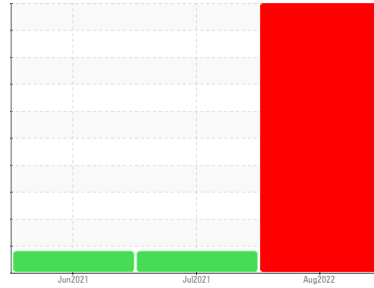
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id  
**222054**

Component  
**Diesel Engine**

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

## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

### Wear

The aluminum level is severe.

### Contamination

Sodium and/or potassium levels are high. Test for glycol is positive. There is a moderate amount of fuel present in the oil.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0057100</b>	GFL0029751	GFL0024476
Sample Date	Client Info		<b>17 Aug 2022</b>	29 Jul 2021	08 Jun 2021
Machine Age	hrs	Client Info	<b>22245</b>	21062	20732
Oil Age	hrs	Client Info	<b>1513</b>	330	330
Oil Changed	Client Info		<b>Changed</b>	Not Changd	Changed
Sample Status			<b>SEVERE</b>	ABNORMAL	ABNORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	<b>77</b>	19	13
Chromium	ppm	ASTM D5185m >20	<b>8</b>	1	<1
Nickel	ppm	ASTM D5185m >4	<b>1</b>	<1	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m >3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m >20	<b>103</b>	25	25
Lead	ppm	ASTM D5185m >40	<b>5</b>	<1	<1
Copper	ppm	ASTM D5185m >330	<b>7</b>	1	1
Tin	ppm	ASTM D5185m >15	<b>2</b>	<1	<1
Antimony	ppm	ASTM D5185m	<b>---</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>5</b>	7	9
Barium	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>78</b>	53	50
Manganese	ppm	ASTM D5185m 0	<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 1010	<b>807</b>	729	674
Calcium	ppm	ASTM D5185m 1070	<b>1024</b>	1237	1484
Phosphorus	ppm	ASTM D5185m 1150	<b>839</b>	985	1009
Zinc	ppm	ASTM D5185m 1270	<b>1113</b>	1084	1221
Sulfur	ppm	ASTM D5185m 2060	<b>2736</b>	2595	2705

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>15</b>	5	4
Sodium	ppm	ASTM D5185m	<b>477</b>	9	16
Potassium	ppm	ASTM D5185m >20	<b>71</b>	3	1
Fuel	%	ASTM D3524 >2.0	<b>4.6</b>	<1.0	<1.0
Glycol	%	*ASTM D2982	<b>0.10</b>	NEG	NEG

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.9</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624 >20	<b>12.5</b>	7.9	8.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>24.7</b>	19	20.7

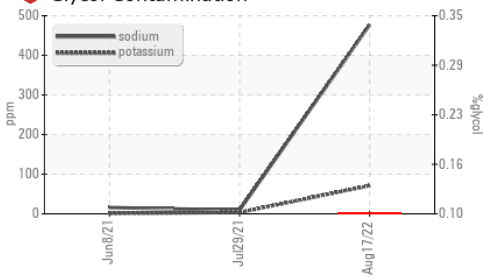
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>21.3</b>	15	16.1
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>9.5</b>	7.9	8.5

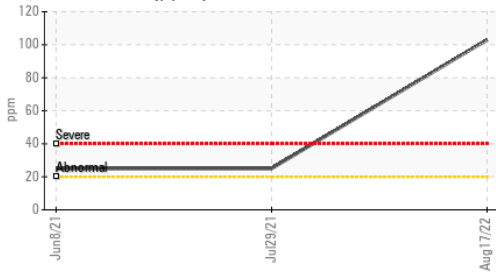


# OIL ANALYSIS REPORT

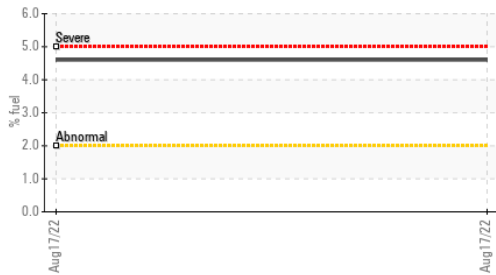
## Glycol Contamination



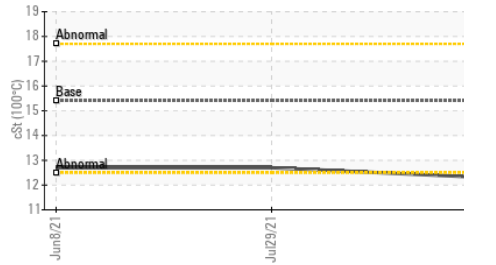
## Aluminum (ppm)



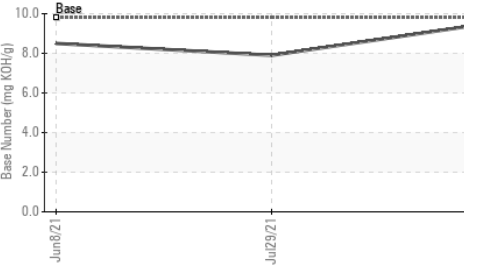
## Fuel Dilution



## Viscosity @ 100°C



## Base Number

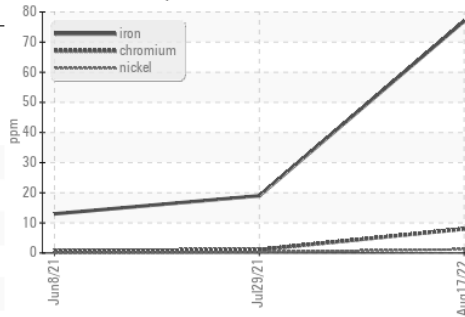


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

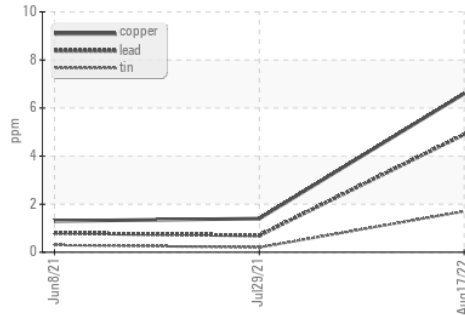
PARAMETER	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 12.3	12.7

## GRAPHS

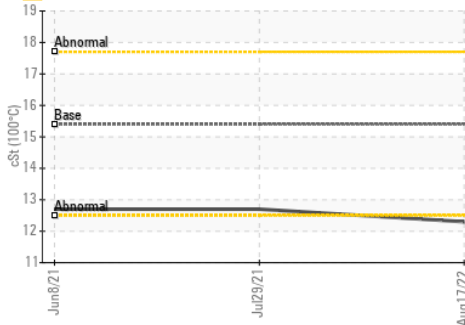
### Ferrous Alloys



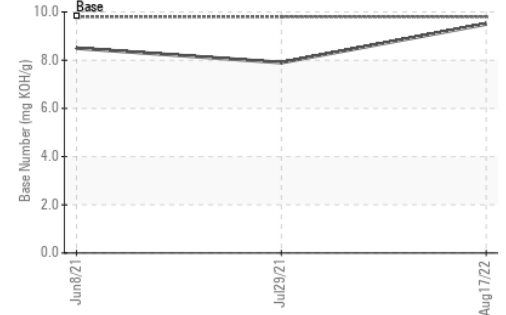
### Non-ferrous Metals



### Viscosity @ 100°C



### Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0057100 **Received** : 24 Aug 2022  
**Lab Number** : 05625440 **Diagnosed** : 26 Aug 2022  
**Unique Number** : 10104947 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: FuelDilution, Glycol, PercentFuel )

**GFL Environmental - 882 - Gainesville**  
 5002 SW 41st Blvd  
 Gainesville, FL  
 US 32608  
 Contact: ROBERT CLARK  
 robert.clark@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)

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