



# PROBLEM SUMMARY

Sample Rating Trend

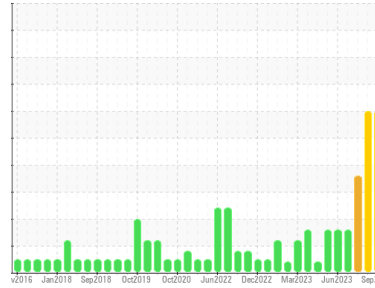
FUEL



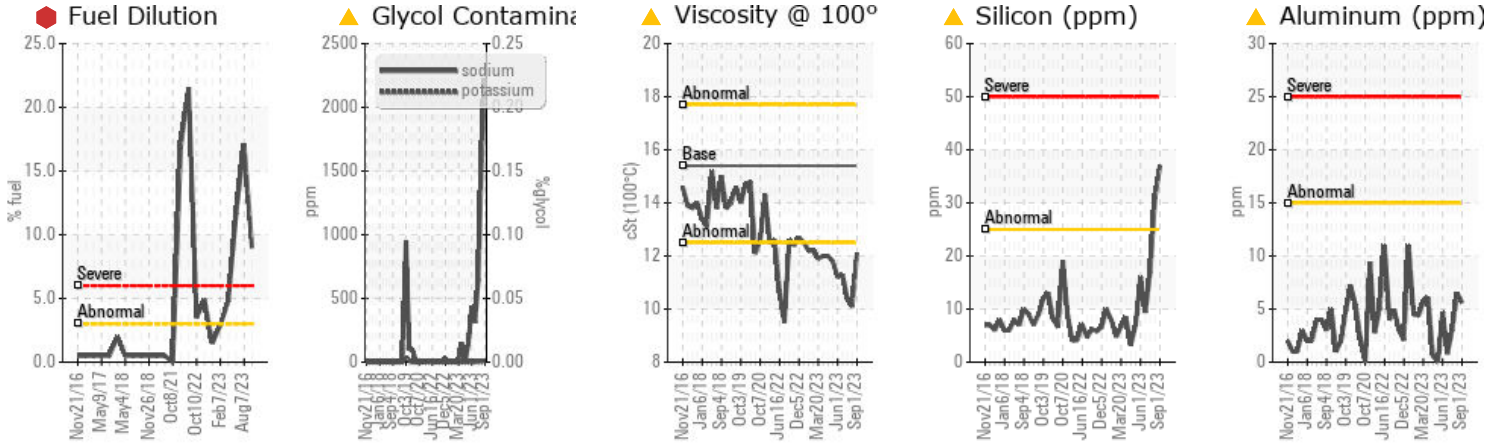
Machine Id  
**10669**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (7 GAL)**



## 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. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	SEVERE	SEVERE
Aluminum	ppm	ASTM D5185m	>15	▲ 6	▲ 6	3
Silicon	ppm	ASTM D5185m	>25	▲ 37	▲ 31	17
Sodium	ppm	ASTM D5185m		▲ 2218	▲ 1580	▲ 648
Fuel	%	ASTM D3524	>3.0	● 9.0	● 17.1	● 11.7
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 12.1	▲ 10.1	▲ 10.4

Customer Id: GFL010  
 Sample No.: GFL0091402  
 Lab Number: 05943295  
 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
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 Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.
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

### FUEL



#### 07 Aug 2023 Diag: Jonathan Hester

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. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels are high. There is a high amount of fuel present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

[view report](#)



### FUEL



#### 12 Jul 2023 Diag: Angela Borella

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. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels are high. There is a high amount of fuel present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. Confirm oil type. The oil is no longer serviceable due to the presence of contaminants.

[view report](#)



### GLYCOL



#### 19 Jun 2023 Diag: Jonathan Hester

We advise that you check for possible coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels are high. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

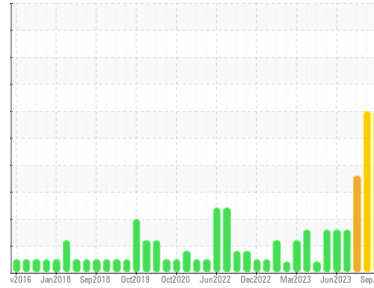
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**10669**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (7 GAL)**

## 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. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter 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. There is a high amount of fuel present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

### 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. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0091402</b>	GFL0088748	GFL0086140
Sample Date	Client Info		<b>01 Sep 2023</b>	07 Aug 2023	12 Jul 2023
Machine Age	hrs	Client Info	<b>49671</b>	49475	49357
Oil Age	hrs	Client Info	<b>626</b>	837	719
Oil Changed	Client Info		<b>Changed</b>	Not Changd	Not Changd
Sample Status			<b>SEVERE</b>	SEVERE	SEVERE

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >75	<b>56</b>	48	27
Chromium	ppm	ASTM D5185m >5	<b>3</b>	3	2
Nickel	ppm	ASTM D5185m >4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >15	<b>6</b>	6	3
Lead	ppm	ASTM D5185m >25	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >100	<b>2</b>	2	2
Tin	ppm	ASTM D5185m >4	<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185m	<b>&lt;1</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>40</b>	27	0
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>138</b>	112	81
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 1010	<b>679</b>	610	674
Calcium	ppm	ASTM D5185m 1070	<b>1022</b>	868	955
Phosphorus	ppm	ASTM D5185m 1150	<b>750</b>	688	761
Zinc	ppm	ASTM D5185m 1270	<b>1024</b>	913	978
Sulfur	ppm	ASTM D5185m 2060	<b>3107</b>	2880	2973

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>37</b>	31	17
Sodium	ppm	ASTM D5185m	<b>2218</b>	1580	648
Potassium	ppm	ASTM D5185m >20	<b>10</b>	8	5
Fuel	%	ASTM D3524 >3.0	<b>9.0</b>	17.1	11.7
Glycol	%	*ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	<b>2.6</b>	2.6	1.6
Nitration	Abs/cm	*ASTM D7624 >20	<b>16.8</b>	15.6	12.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>27.9</b>	26.7	22.7

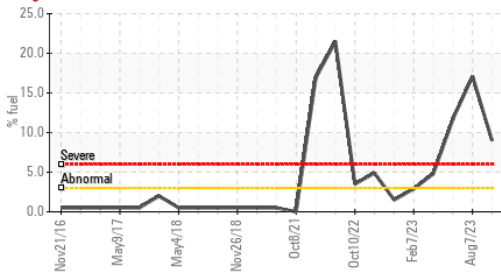
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>19.4</b>	18.7	16.9
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>9.2</b>	7.9	7.7

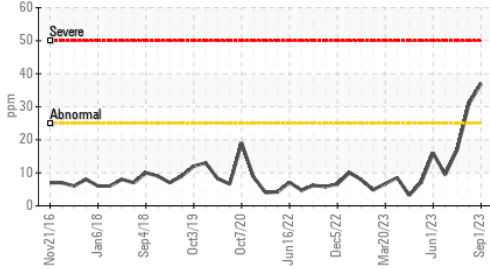


# OIL ANALYSIS REPORT

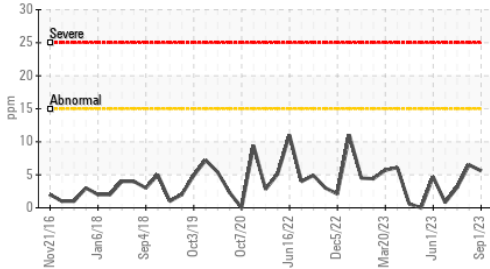
## Fuel Dilution



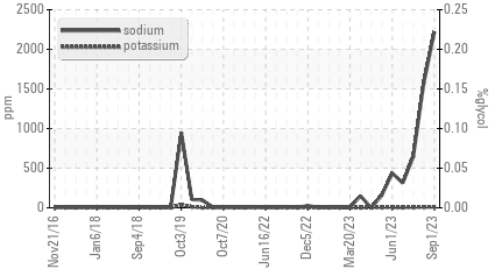
## Silicon (ppm)



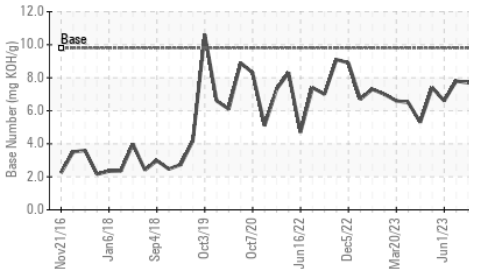
## Aluminum (ppm)



## Glycol Contamination



## Base Number



## VISUAL

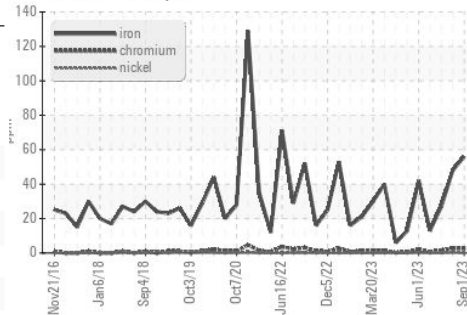
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

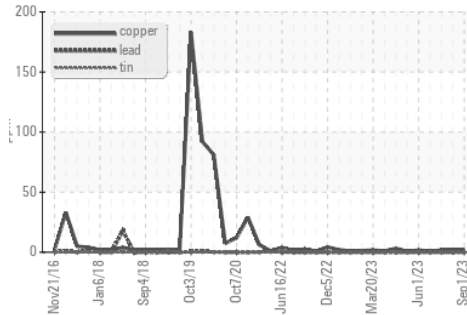
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 12.1	▲ 10.1

## GRAPHS

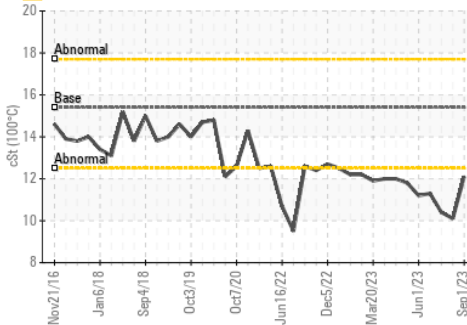
### Ferrous Alloys



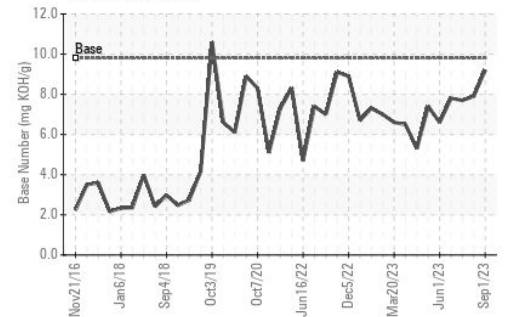
### Non-ferrous Metals



## Viscosity @ 100°C



## Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0091402 **Received** : 06 Sep 2023  
**Lab Number** : 05943295 **Diagnosed** : 08 Sep 2023  
**Unique Number** : 10633907 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol, PercentFuel )

**GFL Environmental - 010 - Stockbridge**  
 1280 Rum Creek Parkway  
 Stockbridge, GA  
 US 30281  
 Contact: JOSHUA TINKER  
 joshuatinker@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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F: