



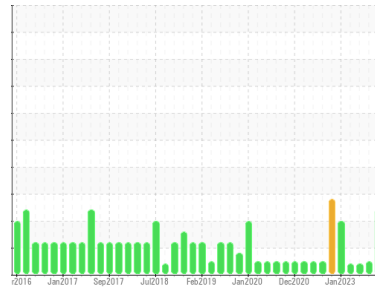
# PROBLEM SUMMARY

Sample Rating Trend

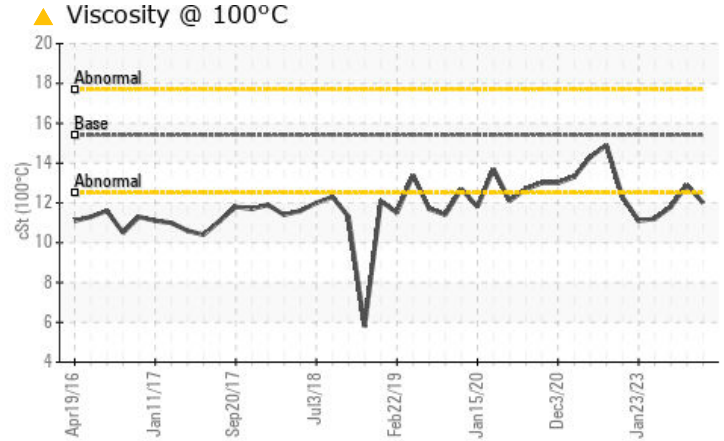
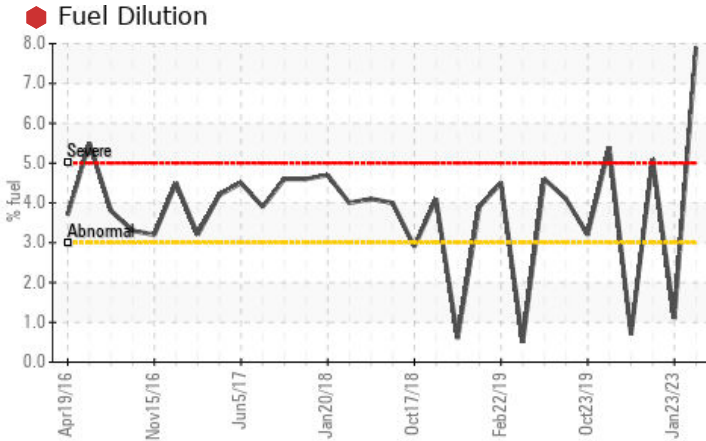
FUEL



Machine Id  
**2412**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (48 QTS)**



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				<b>SEVERE</b>	NORMAL	ATTENTION
Fuel	%	ASTM D3524	>3.0	<b>7.9</b>	<1.0	<1.0
Visc @ 100°C	cSt	ASTM D445	15.4	<b>12.0</b>	12.9	11.8

Customer Id: GFL001  
Sample No.: GFL0089291  
Lab Number: 05948646  
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Wes Davis +1 905-569-8600 x223  
[wesd@wearcheck.ca](mailto:wesd@wearcheck.ca)

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 Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

## HISTORICAL DIAGNOSIS

### 09 Jun 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](#)



### 01 May 2023 Diag: Jonathan Hester

#### VISCOSITY



Oil and filter change at the time of sampling has been noted. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

[view report](#)



### 17 Feb 2023 Diag: Don Baldrige

#### VISCOSITY



Oil and filter change at the time of sampling has been noted. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

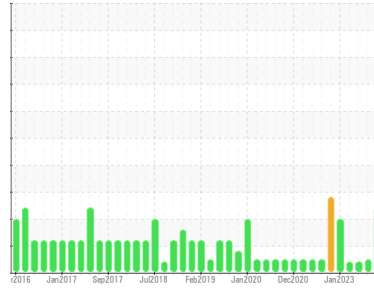
[view report](#)





# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**2412**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (48 QTS)**

## DIAGNOSIS

### Recommendation

We advise that you check the fuel injection system. The oil 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

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. 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>GFL0089291</b>	GFL0056726	GFL0056720
Sample Date	Client Info	<b>08 Sep 2023</b>	09 Jun 2023	01 May 2023
Machine Age	hrs	<b>28473</b>	27857	27509
Oil Age	hrs	<b>0</b>	348	528
Oil Changed	Client Info	<b>Changed</b>	Changed	Changed
Sample Status		<b>SEVERE</b>	NORMAL	ATTENTION

## CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >120	<b>8</b>	4	6
Chromium	ppm	ASTM D5185m >20	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m >5	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>0</b>	0	2
Lead	ppm	ASTM D5185m >40	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m >330	<b>1</b>	<1	2
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	0
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>0</b>	<1	3
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>57</b>	56	55
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 1010	<b>928</b>	872	859
Calcium	ppm	ASTM D5185m 1070	<b>1102</b>	1022	949
Phosphorus	ppm	ASTM D5185m 1150	<b>951</b>	973	850
Zinc	ppm	ASTM D5185m 1270	<b>1210</b>	1166	1150
Sulfur	ppm	ASTM D5185m 2060	<b>3510</b>	2995	3547

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	<b>4</b>	4	3
Sodium	ppm	ASTM D5185m	<b>3</b>	<1	3
Potassium	ppm	ASTM D5185m >20	<b>2</b>	1	<1
Fuel	%	ASTM D3524 >3.0	<b>7.9</b>	<1.0	<1.0

## INFRA-RED

method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >4	<b>0.7</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624 >20	<b>9.7</b>	8.1	9.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.8</b>	19.2	19.4

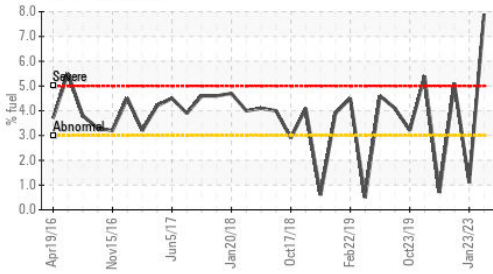
## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>15.7</b>	15.9	17.8
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>5.6</b>	8.0	4.0

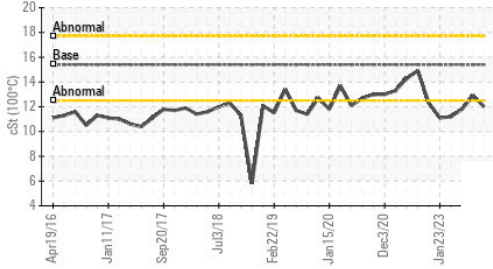


# OIL ANALYSIS REPORT

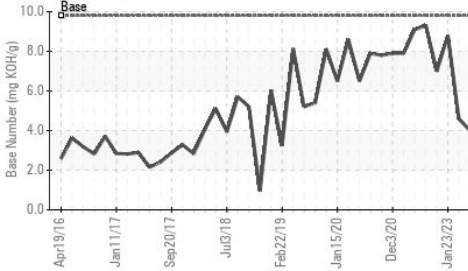
## Fuel Dilution



## Viscosity @ 100°C



## Base Number



## VISUAL

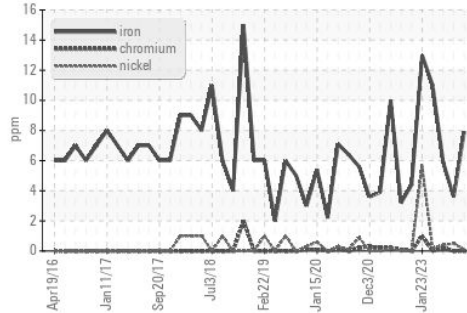
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

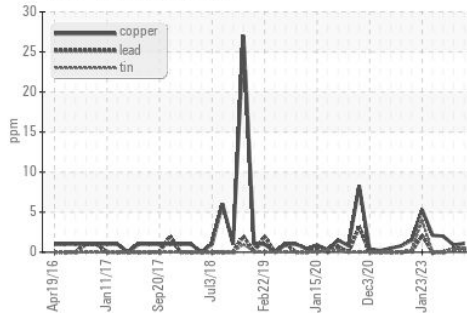
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 12.0	12.9	▲ 11.8

## GRAPHS

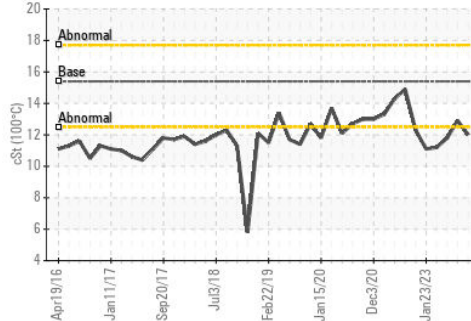
### Ferrous Alloys



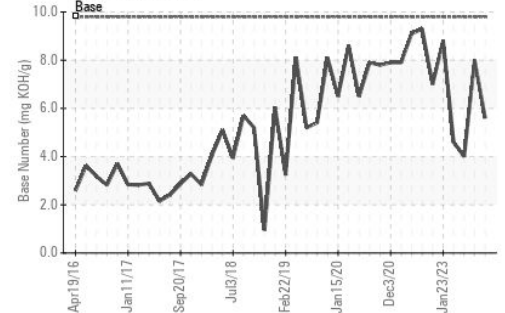
### Non-ferrous Metals



## Viscosity @ 100°C



## Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0089291 **Received** : 12 Sep 2023  
**Lab Number** : 05948646 **Diagnosed** : 14 Sep 2023  
**Unique Number** : 10644605 **Diagnostician** : Wes Davis  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

**GFL Environmental - 001 - Raleigh(CNG)**

3741 Conquest Drive  
 Garner, NC  
 US 27529

Contact: Craig Johnson  
 craig.johnson@gflenv.com

T: (919)662-7100  
 F: (919)662-7130

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)