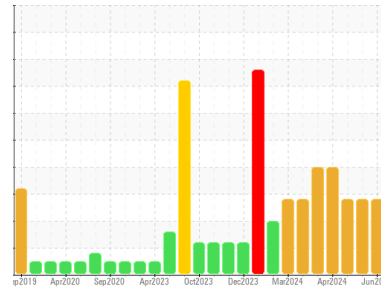




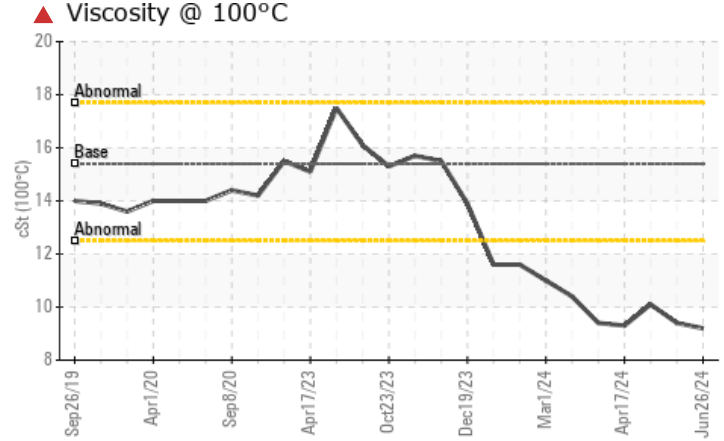
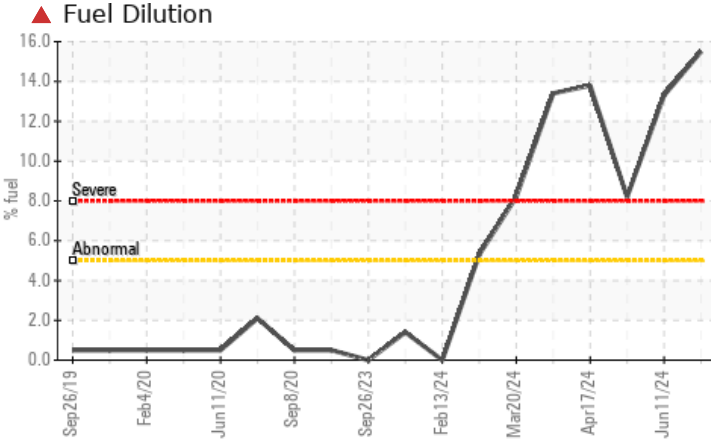
# PROBLEM SUMMARY

Area  
**(83J3TW)**  
 Machine Id  
**229035-632119**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

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.

## PROBLEMATIC TEST RESULTS

Sample Status				<b>SEVERE</b>	SEVERE	SEVERE
Fuel	%	ASTM D3524	>5	<b>▲ 15.5</b>	▲ 13.3	▲ 8.2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>▲ 9.2</b>	▲ 9.4	▲ 10.1

Customer Id: GFL837  
 Sample No.: GFL0122853  
 Lab Number: 06225606  
 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
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
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

FUEL



### 11 Jun 2024 Diag: Wes Davis

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. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel 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. The oil is no longer serviceable due to the presence of contaminants.

view report



FUEL



### 17 May 2024 Diag: Wes Davis

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. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel 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. The oil is no longer serviceable due to the presence of contaminants.

view report



FUEL



### 17 Apr 2024 Diag: Don Baldrige

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

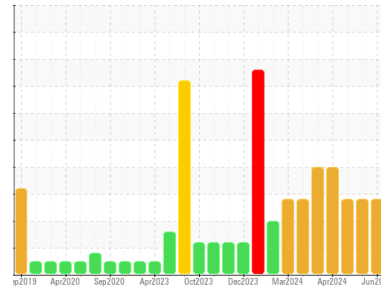
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area  
**(83J3TW)**  
 Machine Id  
**229035-632119**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### ▲ Recommendation

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.

### 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>GFL0122853</b>	GFL0122890	GFL0122814
Sample Date	Client Info		<b>26 Jun 2024</b>	11 Jun 2024	17 May 2024
Machine Age	hrs	Client Info	<b>11207</b>	11107	10966
Oil Age	hrs	Client Info	<b>11793</b>	11693	164
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	N/A
Sample Status			<b>SEVERE</b>	SEVERE	SEVERE

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>100	<b>31</b>	26	15
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	3	3
Lead	ppm	ASTM D5185m	>40	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>14</b>	15	14
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	<b>26</b>	27	42
Barium	ppm	ASTM D5185m	0	<b>0</b>	1	0
Molybdenum	ppm	ASTM D5185m	60	<b>45</b>	48	50
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	1	1
Magnesium	ppm	ASTM D5185m	1010	<b>909</b>	916	971
Calcium	ppm	ASTM D5185m	1070	<b>723</b>	749	789
Phosphorus	ppm	ASTM D5185m	1150	<b>840</b>	957	963
Zinc	ppm	ASTM D5185m	1270	<b>1045</b>	1076	1141
Sulfur	ppm	ASTM D5185m	2060	<b>2827</b>	2938	3438

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>12</b>	8	8
Sodium	ppm	ASTM D5185m		<b>3</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	3	3
Fuel	%	ASTM D3524	>5	<b>▲ 15.5</b>	▲ 13.3	▲ 8.2

## INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.6</b>	9.9	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.8</b>	20.9	19.9

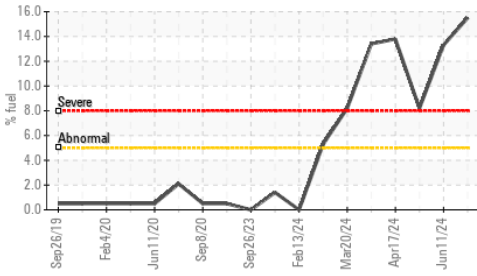
## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.8</b>	19.3	17.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>7.0</b>	7.5	8.5

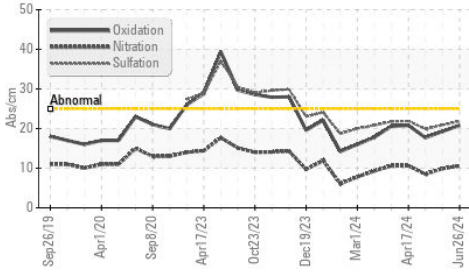


# OIL ANALYSIS REPORT

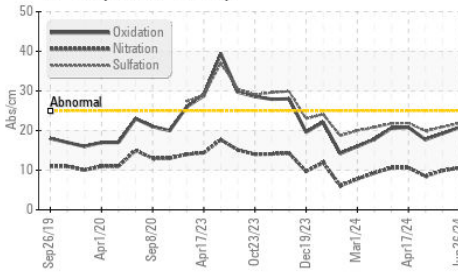
## Fuel Dilution



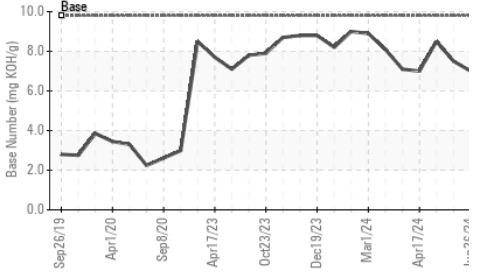
## FT-IR (Direct Trend)



## FT-IR (Direct Trend)



## Base Number



## VISUAL

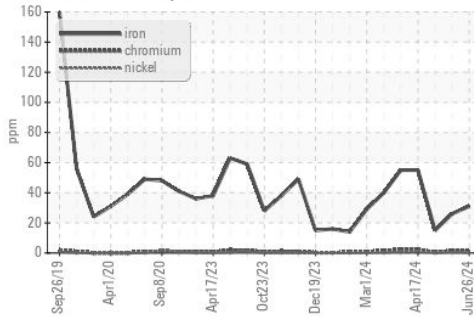
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

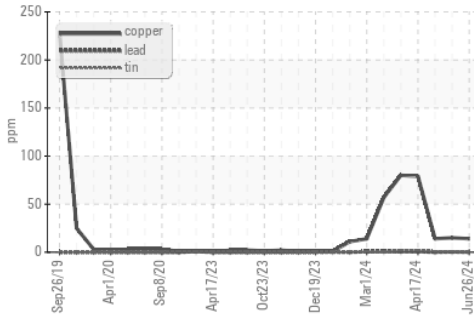
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 9.2	▲ 9.4

## GRAPHS

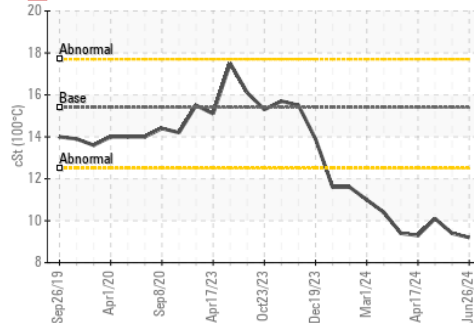
### Ferrous Alloys



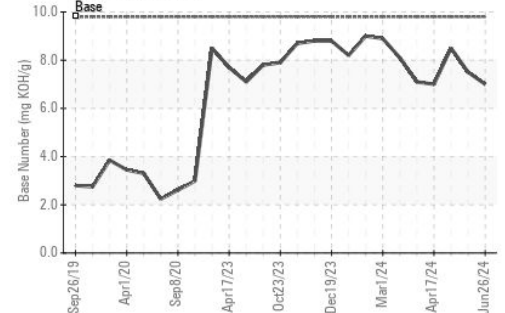
### Non-ferrous Metals



### Viscosity @ 100°C



### Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0122853

Lab Number : 06225606

Unique Number : 11103803

Test Package : FLEET ( Additional Tests: PercentFuel )

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)

Received : 01 Jul 2024

Tested : 03 Jul 2024

Diagnosed : 03 Jul 2024 - Wes Davis

GFL Environmental - 837 - Harrison TS

22820 S State Route 291

Harrisonville, MO

US 64701

Contact: SARA PATRICK

spatrack@gflenv.com

T:

F: