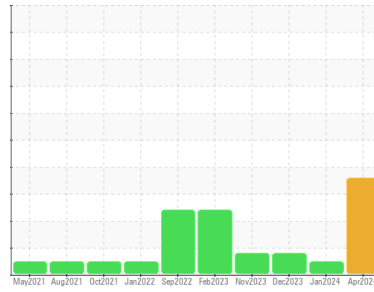




# PROBLEM SUMMARY

## Sample Rating Trend



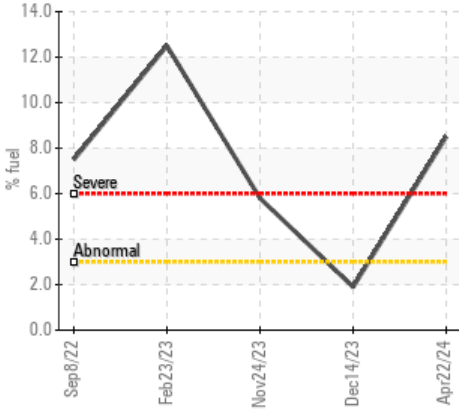
FUEL



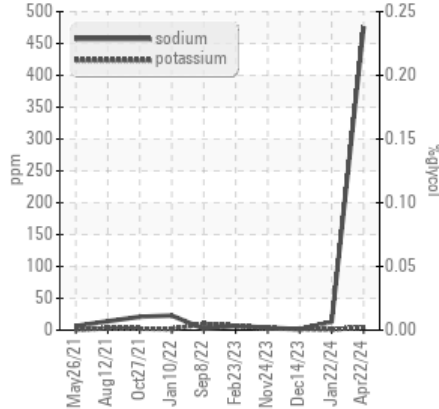
Machine Id  
**4603M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## COMPONENT CONDITION SUMMARY

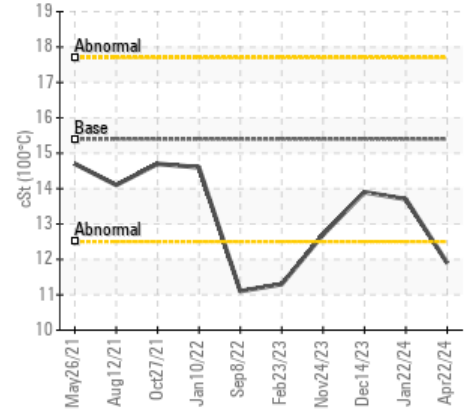
### ▲ Fuel Dilution



### ▲ Glycol Contamination



### ▲ Viscosity @ 100°C



## RECOMMENDATION

We advise that you check for possible coolant leak. Check for low coolant level. We advise that you check the fuel injection system. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	MARGINAL
Sodium	ppm	ASTM D5185m		▲ 476	13	2
Fuel	%	ASTM D3524	>3.0	▲ 8.5	<1.0	▲ 1.9
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 11.9	13.7	13.9

Customer Id: GFL415  
 Sample No.: GFL0117617  
 Lab Number: 06158811  
 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 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

NORMAL



### 22 Jan 2024 Diag: Don Baldrige

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



FUEL



### 14 Dec 2023 Diag: Wes Davis

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected 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



FUEL



### 24 Nov 2023 Diag: Wes Davis

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

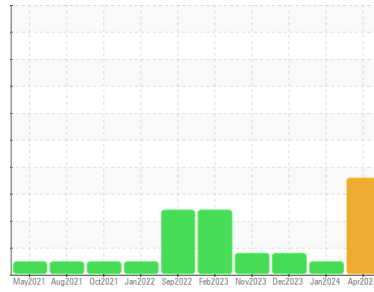
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**4603M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check for possible coolant leak. Check for low coolant level. We advise that you check the fuel injection system. 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.

### 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>GFL0117617</b>	GFL0108694	GFL0105581
Sample Date	Client Info	<b>22 Apr 2024</b>	22 Jan 2024	14 Dec 2023
Machine Age	hrs	<b>21352</b>	20965	20629
Oil Age	hrs	<b>20965</b>	20629	20483
Oil Changed	Client Info	<b>Not Changed</b>	Changed	Changed
Sample Status		<b>SEVERE</b>	NORMAL	MARGINAL

## CONTAMINATION

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

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >90	<b>23</b>	45	6
Chromium	ppm ASTM D5185m >20	<b>&lt;1</b>	3	<1
Nickel	ppm ASTM D5185m >2	<b>0</b>	<1	<1
Titanium	ppm ASTM D5185m >2	<b>0</b>	0	0
Silver	ppm ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm ASTM D5185m >20	<b>3</b>	8	1
Lead	ppm ASTM D5185m >40	<b>0</b>	0	0
Copper	ppm ASTM D5185m >330	<b>2</b>	2	<1
Tin	ppm ASTM D5185m >15	<b>0</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>9</b>	2	1
Barium	ppm ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>69</b>	57	53
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm ASTM D5185m 1010	<b>857</b>	897	901
Calcium	ppm ASTM D5185m 1070	<b>965</b>	1033	995
Phosphorus	ppm ASTM D5185m 1150	<b>916</b>	1019	986
Zinc	ppm ASTM D5185m 1270	<b>1135</b>	1229	1241
Sulfur	ppm ASTM D5185m 2060	<b>3005</b>	2538	3061

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>11</b>	13	2
Sodium	ppm ASTM D5185m	<b>▲ 476</b>	13	2
Potassium	ppm ASTM D5185m >20	<b>5</b>	1	2
Fuel	% ASTM D3524 >3.0	<b>▲ 8.5</b>	<1.0	<b>▲ 1.9</b>
Glycol	% *ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

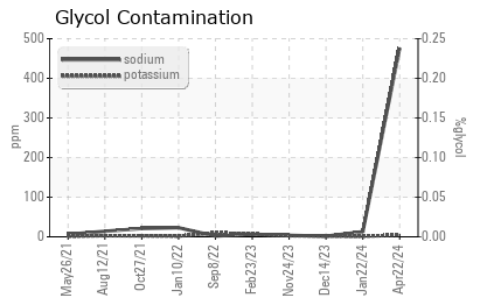
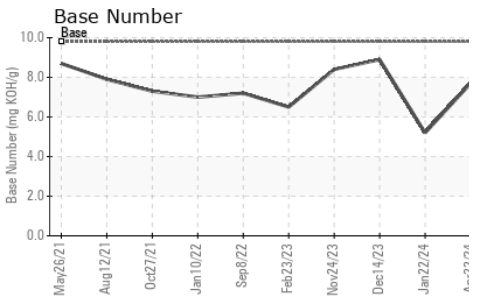
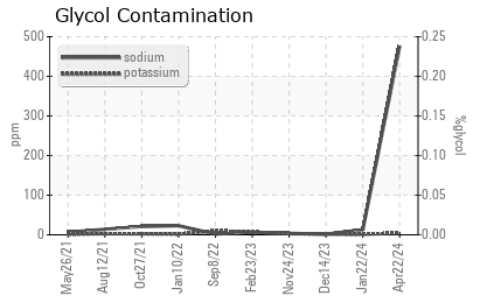
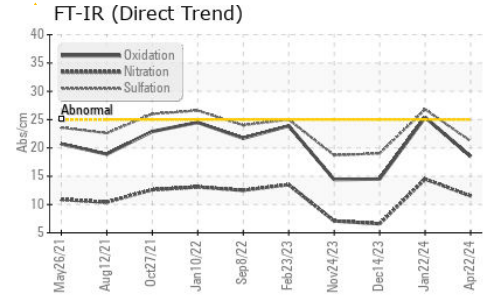
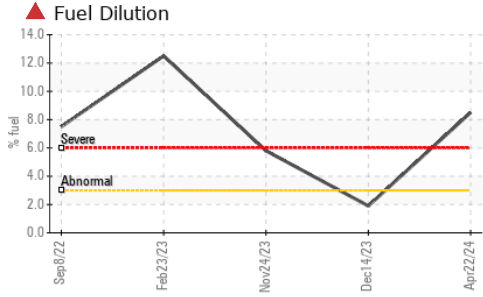
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	<b>0.7</b>	1.2	0.5
Nitration	Abs/cm *ASTM D7624 >20	<b>11.5</b>	14.5	6.6
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>21.2</b>	26.8	19.0

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>18.5</b>	25.4	14.5
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>7.7</b>	5.2	8.9



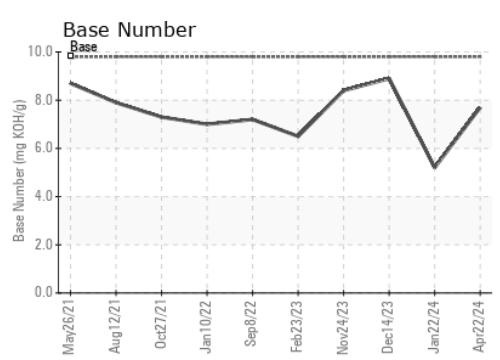
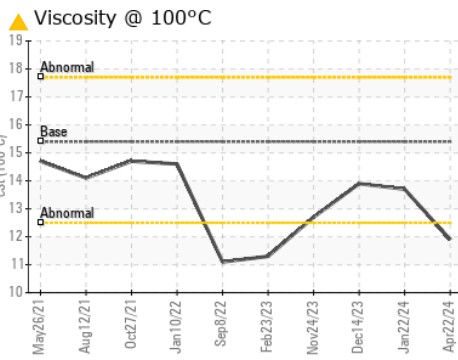
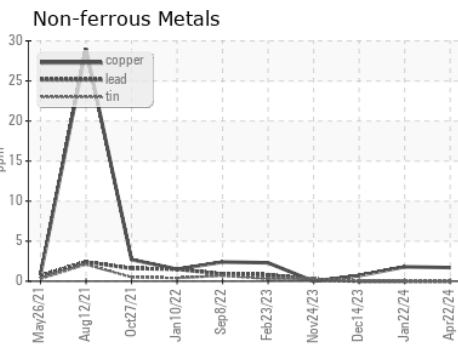
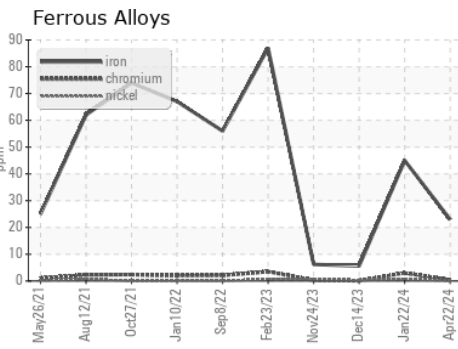
# OIL ANALYSIS REPORT



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	▲ 11.9	13.7	13.9

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0117617 **Received** : 24 Apr 2024  
**Lab Number** : 06158811 **Tested** : 30 Apr 2024  
**Unique Number** : 10994234 **Diagnosed** : 30 Apr 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests : FuelDilution, Glycol, PercentFuel )

**GFL Environmental - 415 - Michigan East**  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
 fwolak@gflenv.com  
 T: (586)825-9514  
 F:

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)