



# PROBLEM SUMMARY

Sample Rating Trend

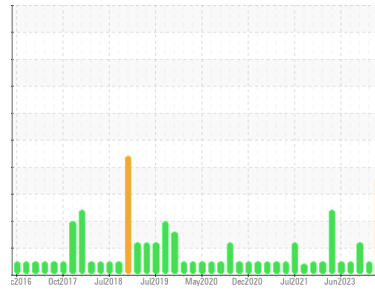
SOOT



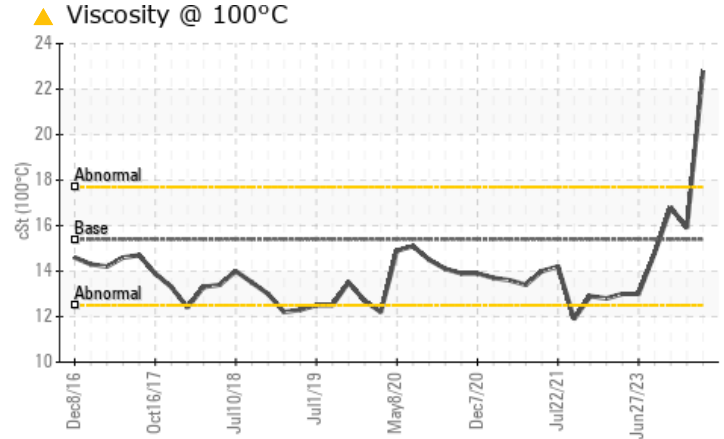
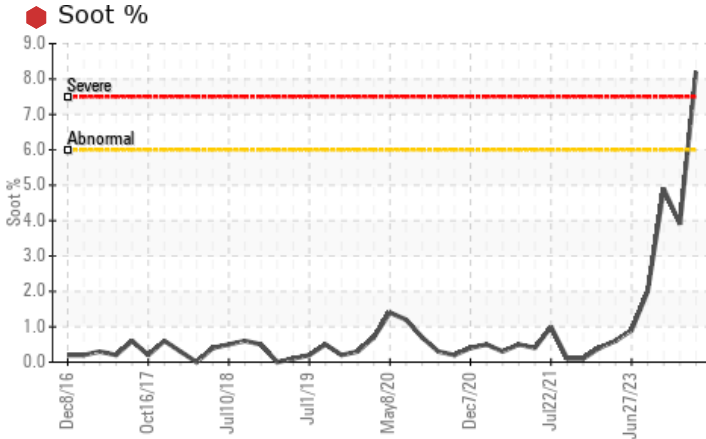
Machine Id  
**10460**

Component  
**Diesel Engine**

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



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	ABNORMAL
Soot %	%	*ASTM D7844	>6	8.2	3.9	4.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	0.0	7.8	0.0
Visc @ 100°C	cSt	ASTM D445	15.4	22.8	15.9	16.8

Customer Id: GFL073  
Sample No.: GFL0097177  
Lab Number: 06035606  
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Don Baldrige +1  
[don.b505@comcast.net](mailto:don.b505@comcast.net)

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 Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

## HISTORICAL DIAGNOSIS

### 27 Oct 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



### 07 Sep 2023 Diag: Don Baldrige

DEGRADATION



We recommend that you drain the oil and perform a filter service on this component if not already done. 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 level is low. The oil is no longer serviceable.

view report



### 21 Aug 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.

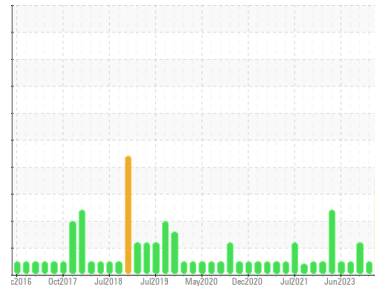
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



SOOT



Machine Id  
**10460**

Component  
**Diesel Engine**

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

## DIAGNOSIS

### Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

### Wear

All component wear rates are normal.

### Contamination

There is an abnormal amount of solids and carbon present in the oil.

### Fluid Condition

The oil viscosity is higher than normal. The BN level is low. 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>GFL0097177</b>	GFL0097203	GFL0069208
Sample Date	Client Info		<b>11 Dec 2023</b>	27 Oct 2023	07 Sep 2023
Machine Age	hrs	Client Info	<b>7028</b>	6596	6455
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>Changed</b>	Not Changd	Not Changd
Sample Status			<b>SEVERE</b>	NORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
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 >75	<b>30</b>	15	28
Chromium	ppm	ASTM D5185m >5	<b>2</b>	<1	1
Nickel	ppm	ASTM D5185m >4	<b>&lt;1</b>	0	0
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 >15	<b>3</b>	2	3
Lead	ppm	ASTM D5185m >25	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m >100	<b>1</b>	<1	1
Tin	ppm	ASTM D5185m >4	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>&lt;1</b>	1	7
Barium	ppm	ASTM D5185m 0	<b>12</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>54</b>	54	66
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	1
Magnesium	ppm	ASTM D5185m 1010	<b>828</b>	823	1040
Calcium	ppm	ASTM D5185m 1070	<b>922</b>	925	1143
Phosphorus	ppm	ASTM D5185m 1150	<b>892</b>	1025	1088
Zinc	ppm	ASTM D5185m 1270	<b>1093</b>	1097	1391
Sulfur	ppm	ASTM D5185m 2060	<b>2814</b>	2724	4057

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>6</b>	4	7
Sodium	ppm	ASTM D5185m	<b>3</b>	5	6
Potassium	ppm	ASTM D5185m >20	<b>4</b>	2	4

## INFRA-RED

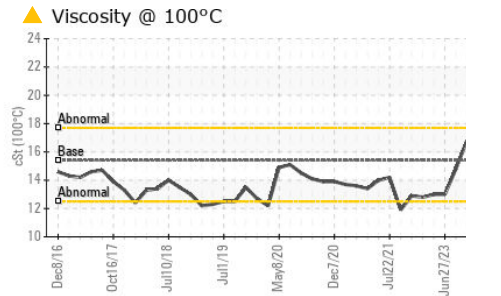
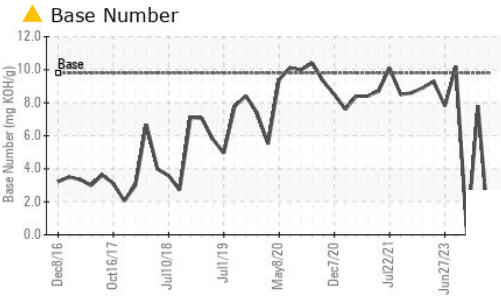
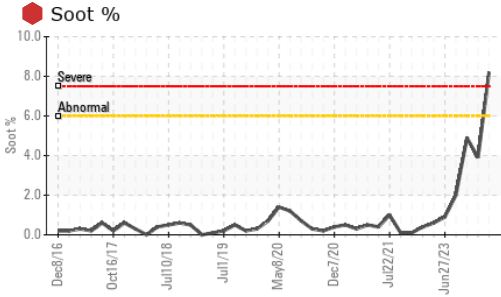
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	<b>8.2</b>	3.9	4.9
Nitration	Abs/cm	*ASTM D7624 >20	<b>33.8</b>	10.0	14.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>58.0</b>	25.8	30.3

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>72.4</b>	14.1	19.0
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>0.0</b>	7.8	0.0



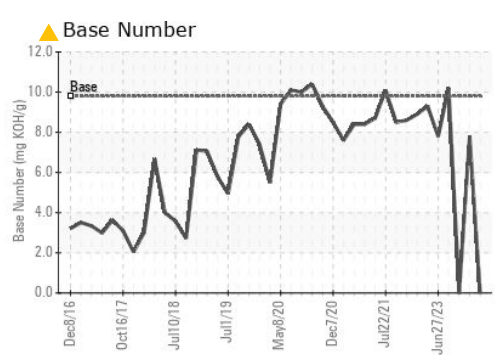
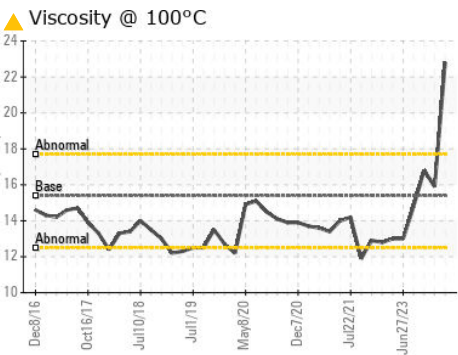
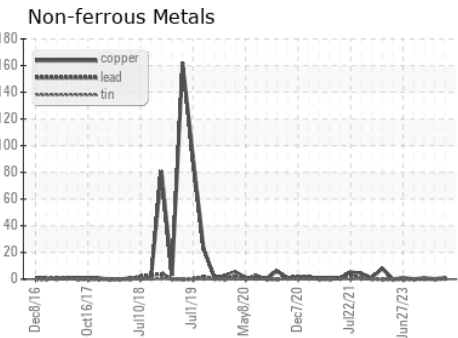
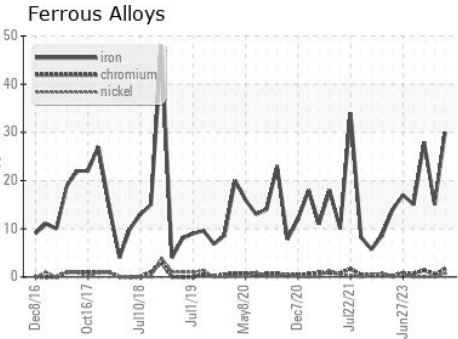
# OIL ANALYSIS REPORT



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 ▲ 22.8	15.9	16.8

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0097177 **Received** : 15 Dec 2023  
**Lab Number** : 06035606 **Diagnosed** : 19 Dec 2023  
**Unique Number** : 10790835 **Diagnostician** : Don Baldrige  
**Test Package** : FLEET

GFL Environmental - 073 - Warner Robins - Transwaste  
 155 Story Road  
 Warner Robins, GA  
 US 31093  
 Contact: JOSH MALONEY  
 jmaloney@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: