



# PROBLEM SUMMARY

Sample Rating Trend

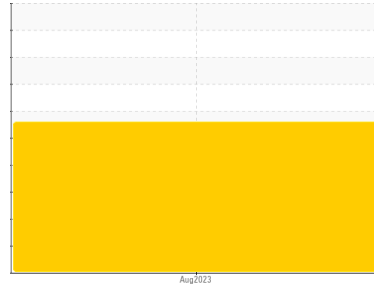
SOOT



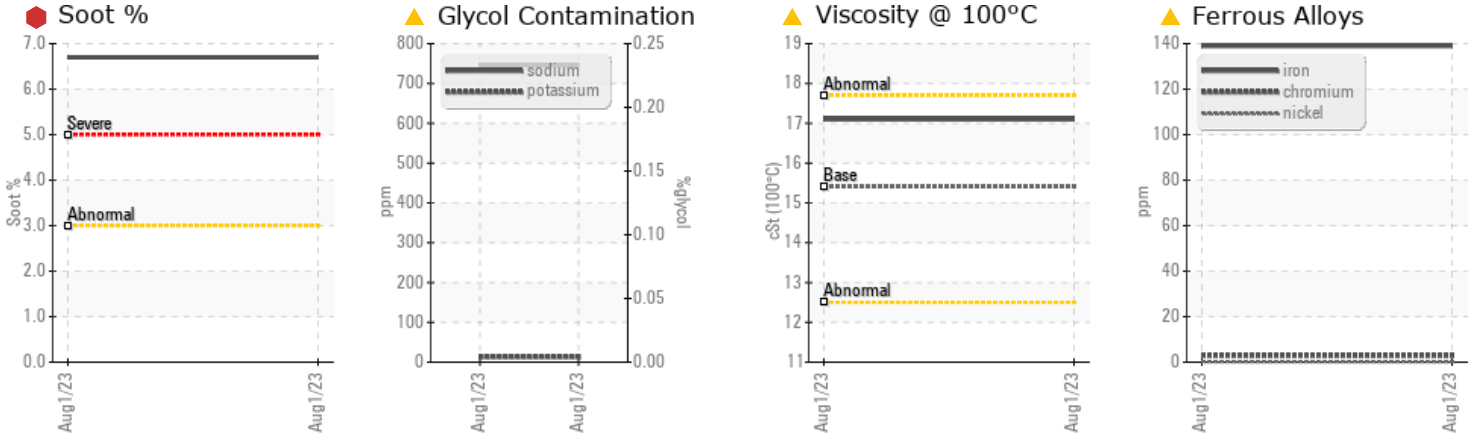
Machine Id  
**PETERBILT 828054-101291**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (--- 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 for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. 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	---	---
Iron	ppm	ASTM D5185m	>110	▲ 139	---	---
Sodium	ppm	ASTM D5185m		▲ 746	---	---
Soot %	%	*ASTM D7844	>3	● 6.7	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 0.0	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 17.1	---	---

Customer Id: GFL842  
 Sample No.: GFL0087042  
 Lab Number: 05925903  
 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

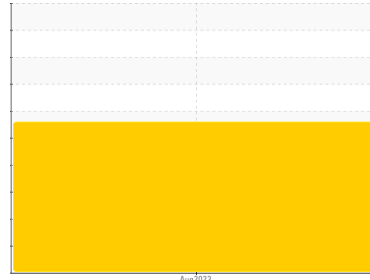
Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	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.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

## HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

Sample Rating Trend



SOOT



Machine Id  
**PETERBILT 828054-101291**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (--- 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 for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. 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

Cylinder, crank, or cam shaft wear is indicated.

### Contamination

Sodium and/or potassium levels are high. 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.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0087042</b>	---	---
Sample Date	Client Info	<b>01 Aug 2023</b>	---	---
Machine Age	hrs	<b>0</b>	---	---
Oil Age	hrs	<b>0</b>	---	---
Oil Changed	Client Info	<b>Changed</b>	---	---
Sample Status		<b>SEVERE</b>	---	---

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<b>&lt;1.0</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >110	<b>▲ 139</b>	---	---
Chromium	ppm ASTM D5185m >4	<b>3</b>	---	---
Nickel	ppm ASTM D5185m >2	<b>&lt;1</b>	---	---
Titanium	ppm ASTM D5185m	<b>0</b>	---	---
Silver	ppm ASTM D5185m >2	<b>0</b>	---	---
Aluminum	ppm ASTM D5185m >25	<b>4</b>	---	---
Lead	ppm ASTM D5185m >45	<b>5</b>	---	---
Copper	ppm ASTM D5185m >85	<b>2</b>	---	---
Tin	ppm ASTM D5185m >4	<b>1</b>	---	---
Vanadium	ppm ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm ASTM D5185m	<b>0</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>13</b>	---	---
Barium	ppm ASTM D5185m 0	<b>0</b>	---	---
Molybdenum	ppm ASTM D5185m 60	<b>82</b>	---	---
Manganese	ppm ASTM D5185m 0	<b>2</b>	---	---
Magnesium	ppm ASTM D5185m 1010	<b>923</b>	---	---
Calcium	ppm ASTM D5185m 1070	<b>1136</b>	---	---
Phosphorus	ppm ASTM D5185m 1150	<b>1021</b>	---	---
Zinc	ppm ASTM D5185m 1270	<b>1280</b>	---	---
Sulfur	ppm ASTM D5185m 2060	<b>3689</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >30	<b>18</b>	---	---
Sodium	ppm ASTM D5185m	<b>▲ 746</b>	---	---
Potassium	ppm ASTM D5185m >20	<b>13</b>	---	---
Glycol	% *ASTM D2982	<b>NEG</b>	---	---

## INFRA-RED

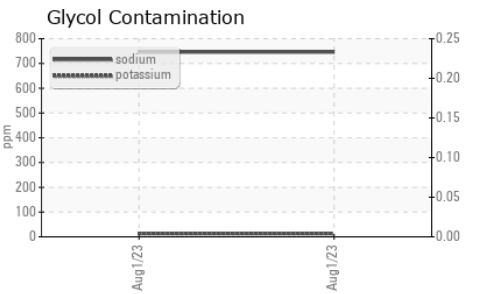
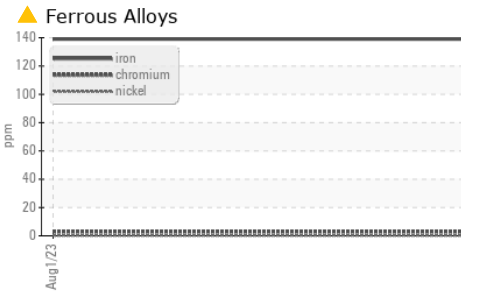
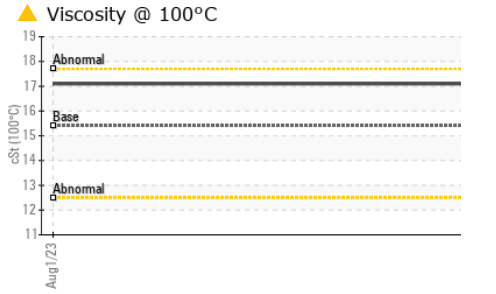
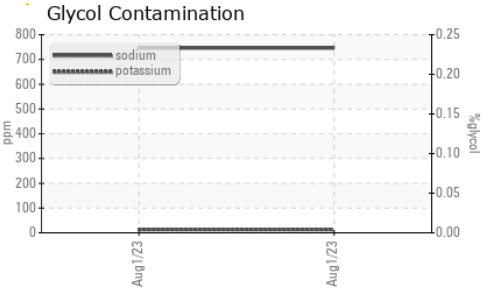
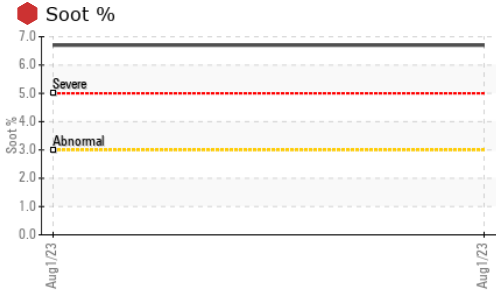
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>● 6.7</b>	---	---
Nitration	Abs/cm *ASTM D7624 >20	<b>15.2</b>	---	---
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>31.7</b>	---	---

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>16.9</b>	---	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>▲ 0.0</b>	---	---



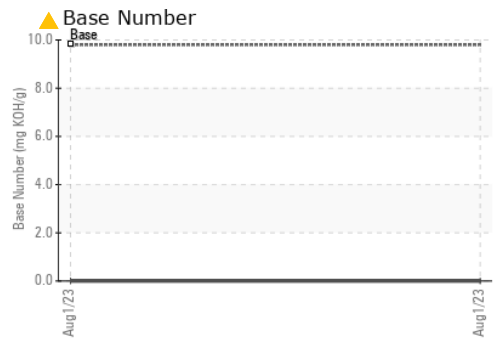
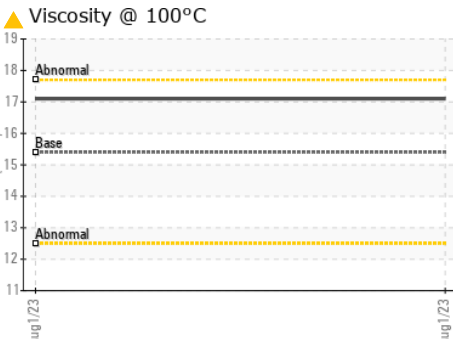
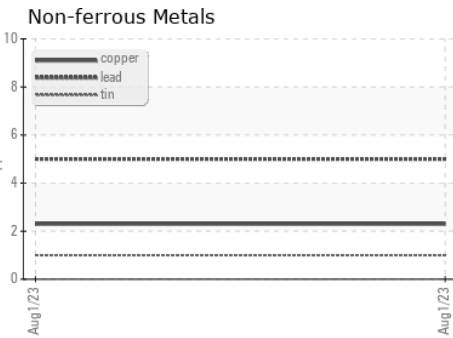
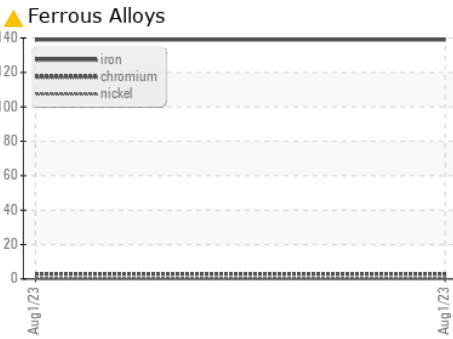
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 17.1	---	---

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0087042 **Received** : 16 Aug 2023  
**Lab Number** : 05925903 **Diagnosed** : 17 Aug 2023  
**Unique Number** : 10605850 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol )

**GFL Environmental - 842 - Lewisport Hauling**  
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 Lewisport, KY  
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\* - 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)