



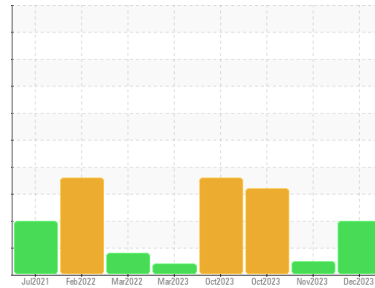
# OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION



Machine Id  
**727065-361316.1**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. Resample at the next service interval to monitor. 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 BN level is low.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0098740</b>	GFL0098747	GFL0065469
Sample Date	Client Info	<b>13 Dec 2023</b>	24 Nov 2023	27 Oct 2023
Machine Age	hrs	<b>452</b>	319	150
Oil Age	hrs	<b>150</b>	150	150
Oil Changed	Client Info	<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status		<b>ABNORMAL</b>	NORMAL	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 >120	<b>9</b>	9	19
Chromium	ppm ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Nickel	ppm ASTM D5185m >5	<b>0</b>	<1	<1
Titanium	ppm ASTM D5185m >2	<b>0</b>	<1	<1
Silver	ppm ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm ASTM D5185m >20	<b>&lt;1</b>	<1	4
Lead	ppm ASTM D5185m >40	<b>0</b>	1	1
Copper	ppm ASTM D5185m >330	<b>2</b>	2	9
Tin	ppm ASTM D5185m >15	<b>&lt;1</b>	<1	<1
Vanadium	ppm ASTM D5185m	<b>0</b>	0	<1
Cadmium	ppm ASTM D5185m	<b>0</b>	<1	<1

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>1</b>	<1	0
Barium	ppm ASTM D5185m 0	<b>0</b>	<1	<1
Molybdenum	ppm ASTM D5185m 60	<b>53</b>	58	58
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	<1	0
Magnesium	ppm ASTM D5185m 1010	<b>903</b>	916	905
Calcium	ppm ASTM D5185m 1070	<b>968</b>	1022	993
Phosphorus	ppm ASTM D5185m 1150	<b>920</b>	969	993
Zinc	ppm ASTM D5185m 1270	<b>1196</b>	1152	1177
Sulfur	ppm ASTM D5185m 2060	<b>2779</b>	3265	2975

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>2</b>	4	4
Sodium	ppm ASTM D5185m	<b>0</b>	0	3
Potassium	ppm ASTM D5185m >20	<b>0</b>	2	2
Fuel	% ASTM D3524 >3.0	<b>&lt;1.0</b>	<1.0	<1.0

## INFRA-RED

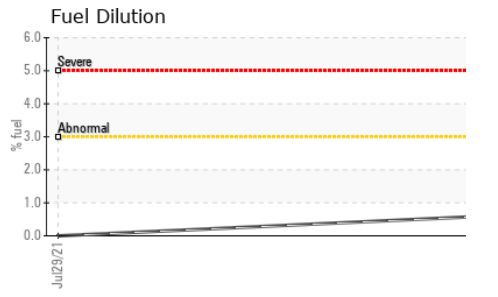
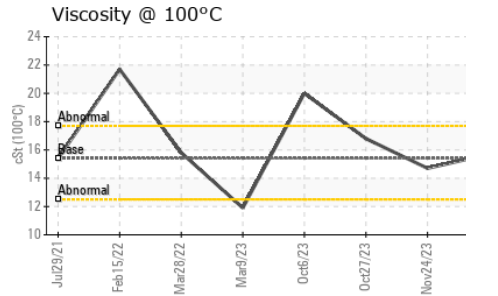
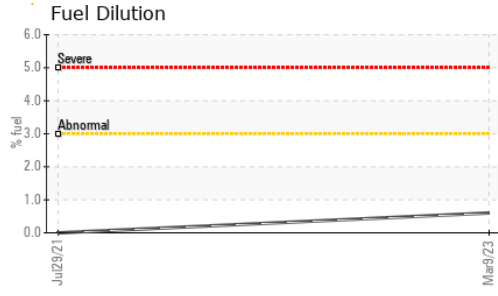
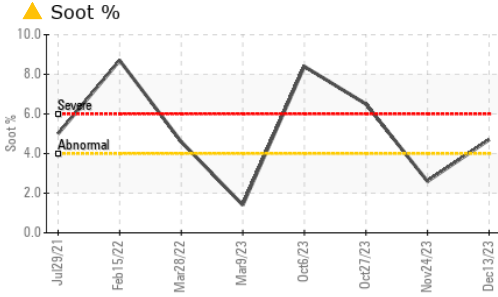
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	<b>▲ 4.7</b>	2.6	● 6.5
Nitration	Abs/cm *ASTM D7624 >20	<b>9.2</b>	6.7	12.1
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>26.1</b>	21.4	31.5

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>13.4</b>	13.3	19.6
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>▲ 0.0</b>	8.8	▲ 0.0



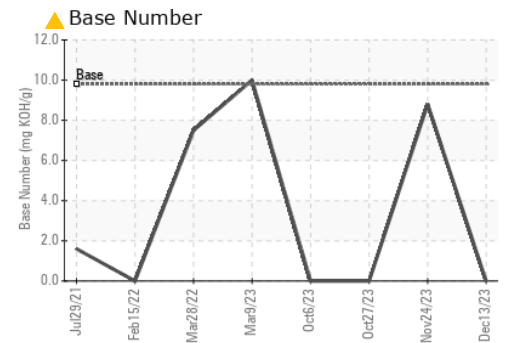
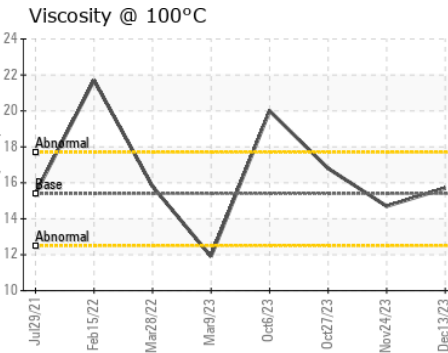
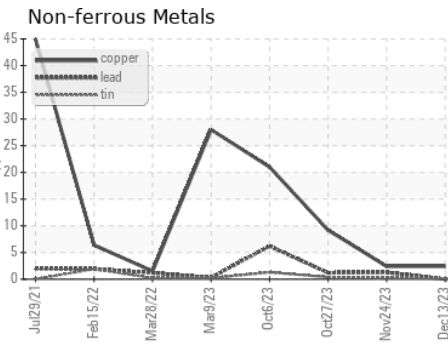
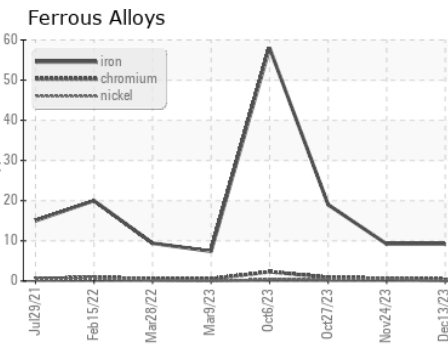
# OIL ANALYSIS REPORT



PARAMETER	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

PARAMETER	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	15.7	14.7

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0098740 **Received** : 18 Dec 2023  
**Lab Number** : 06037505 **Diagnosed** : 20 Dec 2023  
**Unique Number** : 10792734 **Diagnostician** : Don Baldrige

**GFL Environmental - 829 - Wilco Hauling**  
 5054 Highway HH  
 Hartville, MO  
 US 65667  
 Contact: James Jones  
 james.jones@gflenv.com  
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 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)