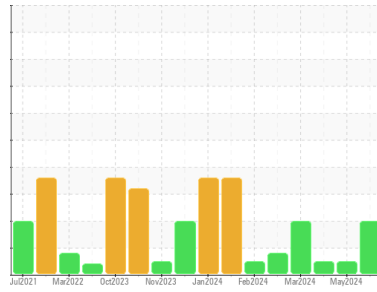




# OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION



Machine Id  
**727065-361316.1**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (8 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>GFL0112256</b>	GFL0112200	GFL0112206
Sample Date	Client Info	<b>31 May 2024</b>	10 May 2024	19 Apr 2024
Machine Age	hrs	<b>1512</b>	1369	1235
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	NORMAL

## 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>13</b>	9	5
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	<1
Aluminum	ppm	ASTM D5185m >20	<b>2</b>	2	3
Lead	ppm	ASTM D5185m >40	<b>&lt;1</b>	1	1
Copper	ppm	ASTM D5185m >330	<b>6</b>	3	3
Tin	ppm	ASTM D5185m >15	<b>0</b>	<1	1
Vanadium	ppm	ASTM D5185m	<b>0</b>	<1	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	<1	<1

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	<b>0</b>	0	0
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>53</b>	53	55
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 1010	<b>866</b>	833	799
Calcium	ppm	ASTM D5185m 1070	<b>1022</b>	969	942
Phosphorus	ppm	ASTM D5185m 1150	<b>976</b>	992	833
Zinc	ppm	ASTM D5185m 1270	<b>1150</b>	1156	1060
Sulfur	ppm	ASTM D5185m 2060	<b>3178</b>	3073	2792

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	<b>0</b>	3	3
Sodium	ppm	ASTM D5185m	<b>2</b>	2	0
Potassium	ppm	ASTM D5185m >20	<b>3</b>	4	3
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>▲ 4.9</b>	3.5	2
Nitration	Abs/cm	*ASTM D7624 >20	<b>9.6</b>	7.9	5.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>26.4</b>	24.0	20.5

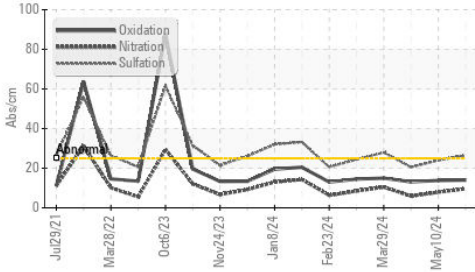
## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>14.0</b>	13.8	13.1
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>▲ 2.6</b>	8.0	8.6

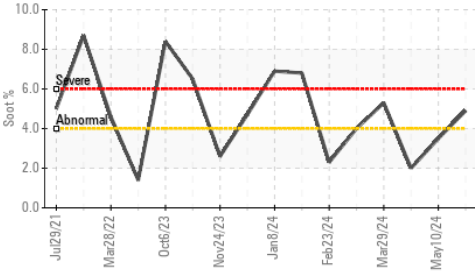


# OIL ANALYSIS REPORT

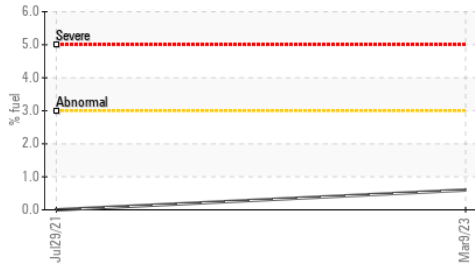
▲ FT-IR (Direct Trend)



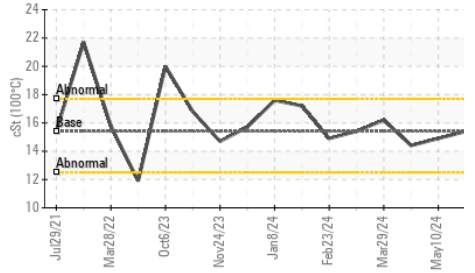
▲ Soot %



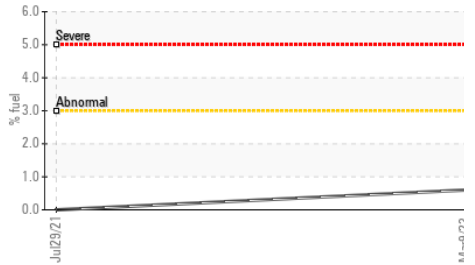
▲ Fuel Dilution



▲ Viscosity @ 100°C



▲ Fuel Dilution

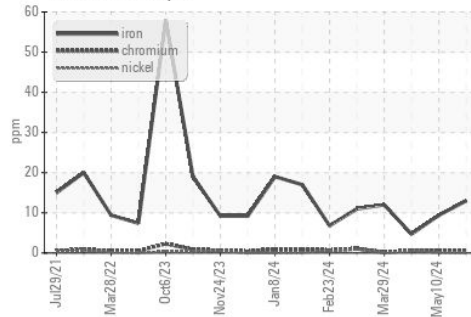


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

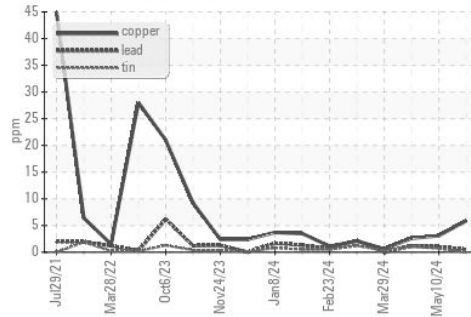
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.9	14.4

## GRAPHS

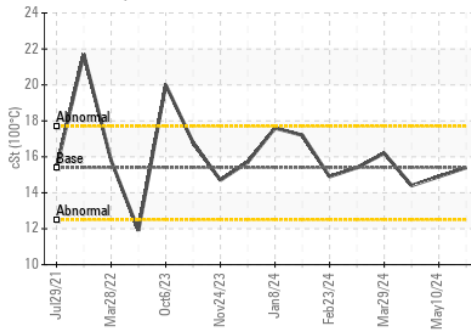
▲ Ferrous Alloys



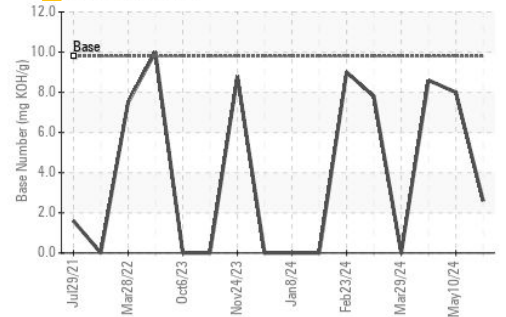
▲ Non-ferrous Metals



▲ Viscosity @ 100°C



▲ Base Number



Certificate L2367

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

Sample No. : GFL0112256

Lab Number : 06198777

Unique Number : 11060900

Test Package : FLEET ( Additional Tests : FuelDilution )

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 : 04 Jun 2024

Tested : 05 Jun 2024

Diagnosed : 05 Jun 2024 - Jonathan Hester

GFL Environmental - 829 - Wilco Hauling

5054 Highway HH

Hartville, MO

US 65667

Contact: James Jones

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T: (417)349-5006

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