



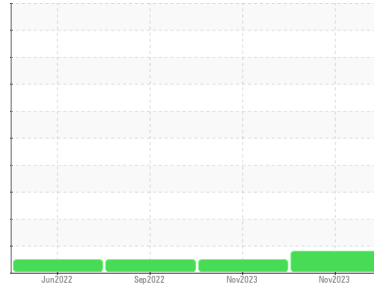
# PROBLEM SUMMARY

Sample Rating Trend

WEAR

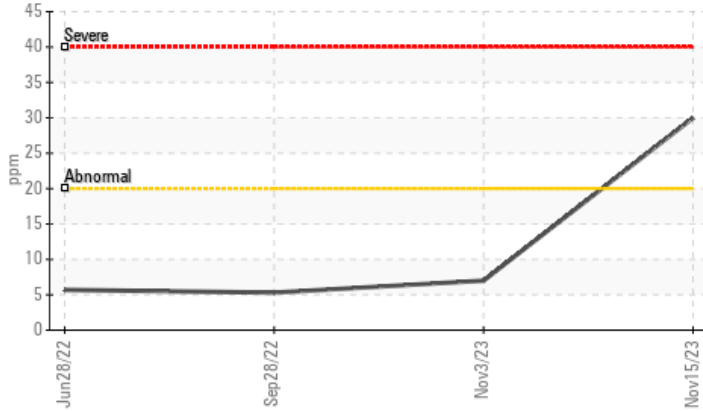


Machine Id  
**4663M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## COMPONENT CONDITION SUMMARY

### ▲ Aluminum (ppm)



## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL
Aluminum	ppm	ASTM D5185m	>20	<b>▲ 30</b>	7	5

Customer Id: GFL410  
Sample No.: GFL0084957  
Lab Number: 06010557  
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.

## HISTORICAL DIAGNOSIS

### 03 Nov 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



### 28 Sep 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. 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



### 28 Jun 2022 Diag: Don Baldrige

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





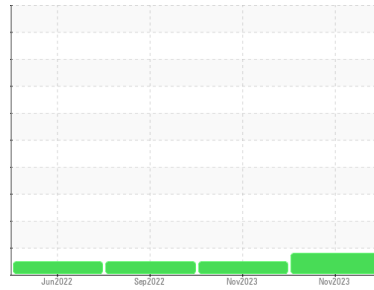
# OIL ANALYSIS REPORT

Sample Rating Trend

**WEAR**



Machine Id  
**4663M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## DIAGNOSIS

### ▲ Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### ▲ Wear

The aluminum level is abnormal. All other component wear rates are normal.

### Contamination

Test for glycol is negative. There is no indication of any contamination in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0084957</b>	GFL0059171	GFL0052110
Sample Date	Client Info		<b>15 Nov 2023</b>	03 Nov 2023	28 Sep 2022
Machine Age	hrs	Client Info	<b>13968</b>	13968	13968
Oil Age	hrs	Client Info	<b>13968</b>	13968	13968
Oil Changed	Client Info		<b>Changed</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## 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

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >90	<b>23</b>	26	46
Chromium	ppm	ASTM D5185m >20	<b>3</b>	1	2
Nickel	ppm	ASTM D5185m >2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m >2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>▲ 30</b>	7	5
Lead	ppm	ASTM D5185m >40	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >330	<b>5</b>	1	2
Tin	ppm	ASTM D5185m >15	<b>1</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>3</b>	1	3
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	2
Molybdenum	ppm	ASTM D5185m 60	<b>61</b>	61	64
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 1010	<b>968</b>	1022	927
Calcium	ppm	ASTM D5185m 1070	<b>1080</b>	1138	1105
Phosphorus	ppm	ASTM D5185m 1150	<b>1045</b>	1061	1025
Zinc	ppm	ASTM D5185m 1270	<b>1311</b>	1391	1263
Sulfur	ppm	ASTM D5185m 2060	<b>2986</b>	2943	3315

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>10</b>	6	10
Sodium	ppm	ASTM D5185m	<b>40</b>	1	11
Potassium	ppm	ASTM D5185m >20	<b>53</b>	1	5
Glycol	%	*ASTM D2982	<b>0.0</b>	NEG	NEG

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	<b>0.7</b>	1.5	0.8
Nitration	Abs/cm	*ASTM D7624 >20	<b>8.1</b>	13.0	13.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.4</b>	24.3	24.7

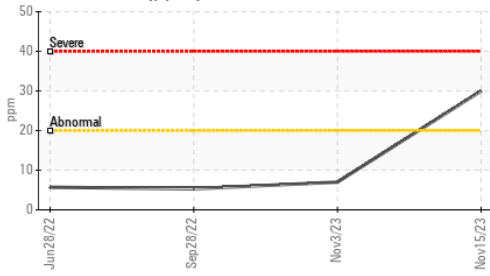
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>15.0</b>	22.1	23.0
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>8.7</b>	8.2	7.5



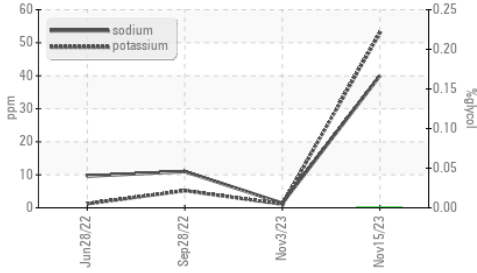
# OIL ANALYSIS REPORT

▲ Aluminum (ppm)



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

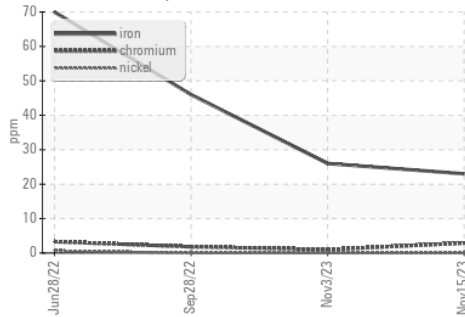
Glycol Contamination



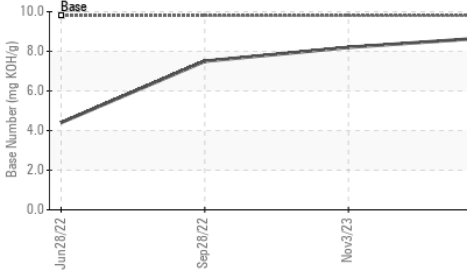
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.4</b>	14.5	13.85

## GRAPHS

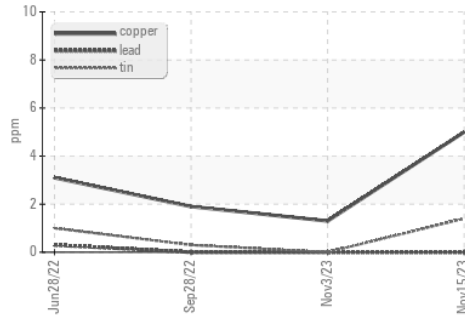
Ferrous Alloys



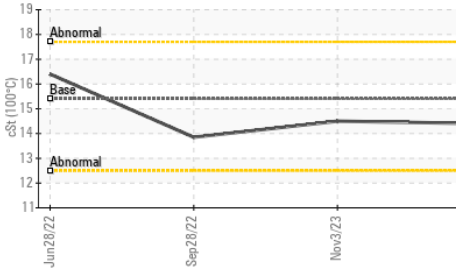
Base Number



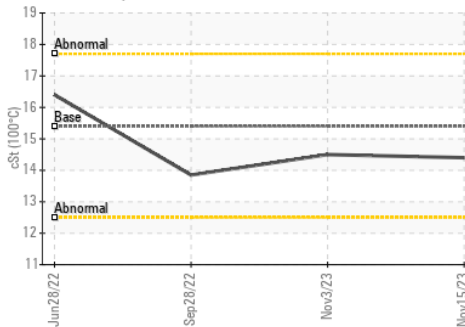
Non-ferrous Metals



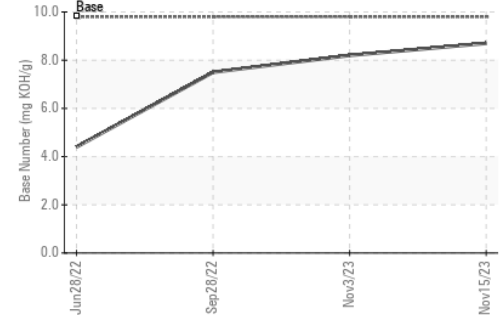
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0084957 **Received** : 17 Nov 2023  
**Lab Number** : 06010557 **Diagnosed** : 21 Nov 2023  
**Unique Number** : 10749701 **Diagnostician** : Jonathan Hester

**GFL Environmental - 410 - Michigan West**  
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 Wayne, MI  
 US 48184  
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 bdgheish@gflenv.com  
 T: (734)714-2340  
 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)