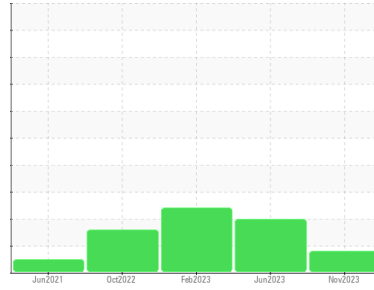




# PROBLEM SUMMARY

Sample Rating Trend



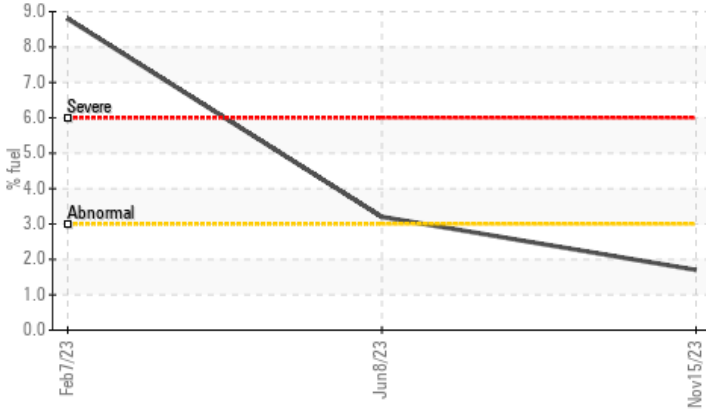
FUEL



Machine Id  
**489M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## COMPONENT CONDITION SUMMARY

### ▲ Fuel Dilution



## RECOMMENDATION

No corrective action is recommended at this time.  
 Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status				MARGINAL	ABNORMAL	SEVERE
Fuel	%	ASTM D3524	>3.0	▲ 1.7	▲ 3.2	● 8.8

Customer Id: GFL415  
 Sample No.: GFL0101519  
 Lab Number: 06010500  
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Wes Davis +1 905-569-8600 x223  
[wesd@wearcheck.ca](mailto:wesd@wearcheck.ca)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

There are no recommended actions for this sample.

## HISTORICAL DIAGNOSIS

### 08 Jun 2023 Diag: Don Baldrige

#### WEAR



We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Cylinder, crank, or cam shaft wear is indicated. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report



### 07 Feb 2023 Diag: Doug Bogart

#### FUEL



We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

view report



### 31 Oct 2022 Diag: Don Baldrige

#### DIRT



Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. Elemental level of silicon (Si) above normal. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

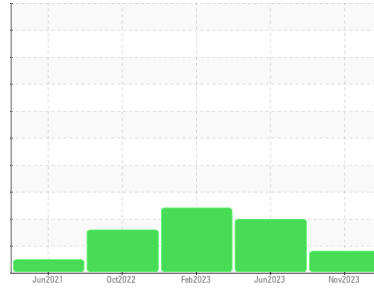
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**489M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

### Fluid Condition

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

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0101519</b>	GFL0081413	GFL0068676
Sample Date	Client Info	<b>15 Nov 2023</b>	08 Jun 2023	07 Feb 2023
Machine Age	hrs	<b>25555</b>	24373	23607
Oil Age	hrs	<b>24373</b>	23607	22967
Oil Changed	Client Info	<b>Not Changed</b>	Changed	Changed
Sample Status		<b>MARGINAL</b>	ABNORMAL	SEVERE

## CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >90	<b>20</b>	▲ 120	51
Chromium	ppm ASTM D5185m >20	<b>2</b>	4	2
Nickel	ppm ASTM D5185m >2	<b>0</b>	1	<1
Titanium	ppm ASTM D5185m >2	<b>&lt;1</b>	0	0
Silver	ppm ASTM D5185m >2	<b>0</b>	0	<1
Aluminum	ppm ASTM D5185m >20	<b>4</b>	5	1
Lead	ppm ASTM D5185m >40	<b>&lt;1</b>	2	2
Copper	ppm ASTM D5185m >330	<b>49</b>	4	2
Tin	ppm ASTM D5185m >15	<b>&lt;1</b>	1	1
Vanadium	ppm ASTM D5185m	<b>&lt;1</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>4</b>	4	2
Barium	ppm ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>53</b>	53	48
Manganese	ppm ASTM D5185m 0	<b>1</b>	1	1
Magnesium	ppm ASTM D5185m 1010	<b>832</b>	770	786
Calcium	ppm ASTM D5185m 1070	<b>1112</b>	962	1025
Phosphorus	ppm ASTM D5185m 1150	<b>963</b>	1009	837
Zinc	ppm ASTM D5185m 1270	<b>1218</b>	1287	1067
Sulfur	ppm ASTM D5185m 2060	<b>2719</b>	2837	2608

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>8</b>	13	11
Sodium	ppm ASTM D5185m	<b>8</b>	11	8
Potassium	ppm ASTM D5185m >20	<b>3</b>	2	2
Fuel	% ASTM D3524 >3.0	▲ <b>1.7</b>	▲ 3.2	■ 8.8

## INFRA-RED

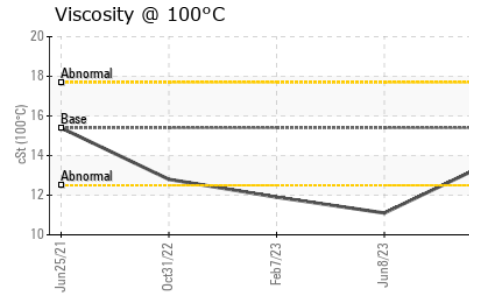
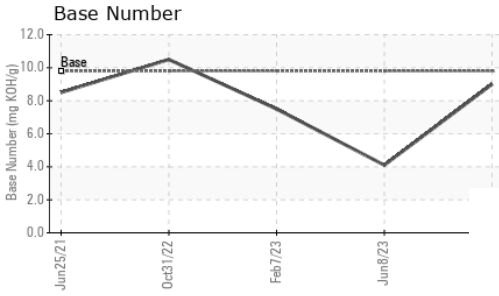
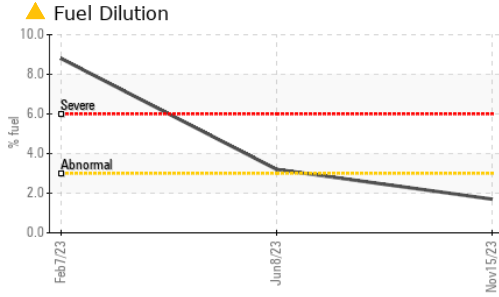
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	<b>0.4</b>	1.9	0.8
Nitration	Abs/cm *ASTM D7624 >20	<b>8.3</b>	10.2	10.9
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>19.5</b>	26.9	21.4

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>16.5</b>	22.0	19.5
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>9.0</b>	4.1	7.5



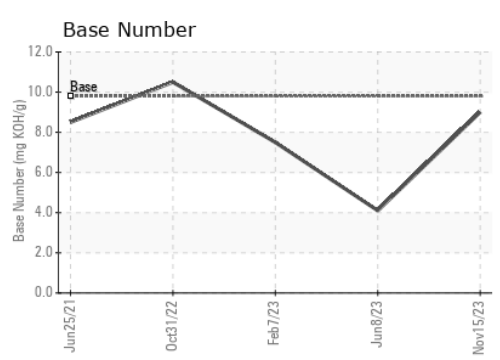
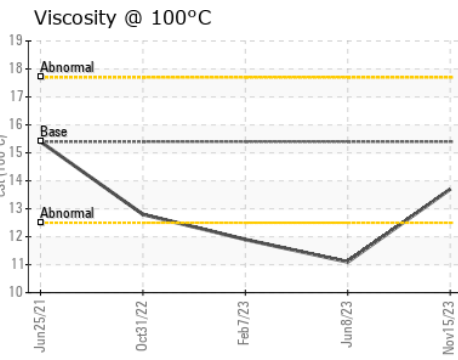
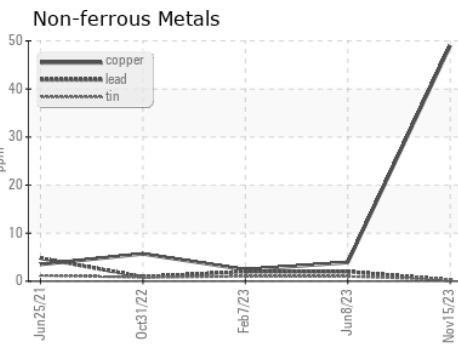
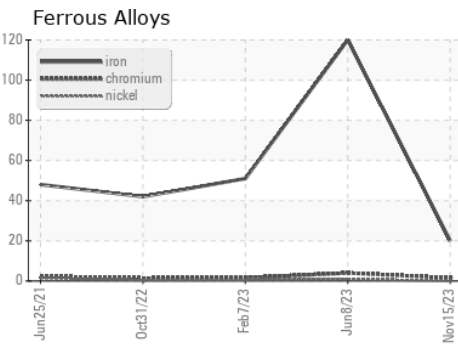
# OIL ANALYSIS REPORT



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	<b>13.7</b>	▲ 11.1 ▲ 11.9

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0101519 **Received** : 17 Nov 2023  
**Lab Number** : 06010500 **Diagnosed** : 20 Nov 2023  
**Unique Number** : 10749644 **Diagnostician** : Wes Davis  
**Test Package** : FLEET ( Additional Tests: PercentFuel )

**GFL Environmental - 415 - Michigan East**  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
 fwolak@gflenv.com  
 T: (586)825-9514  
 F:

Certificate L2367  
 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)