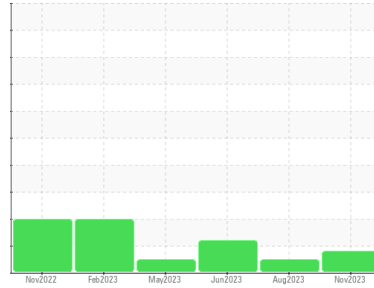




# PROBLEM SUMMARY

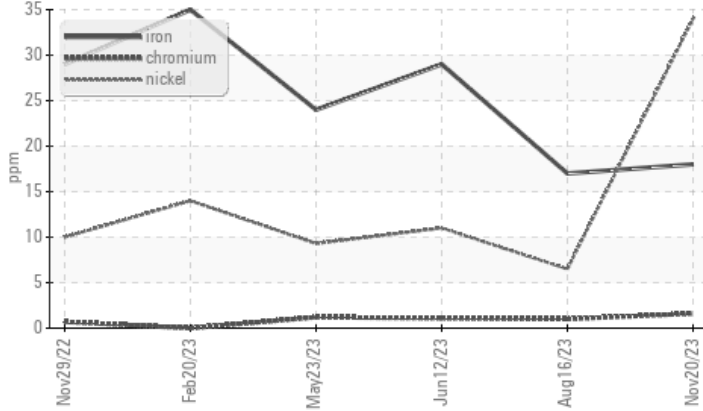
Sample Rating Trend



Machine Id  
**813014**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## COMPONENT CONDITION SUMMARY

### ▲ Ferrous Alloys



## RECOMMENDATION

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

## PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	NORMAL	ABNORMAL
Nickel	ppm	ASTM D5185m	>4	▲ 34	6	11

Customer Id: GFL683  
 Sample No.: GFL0091982  
 Lab Number: 06014765  
 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

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

### 16 Aug 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. Please specify the component make and model with your 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



### 12 Jun 2023 Diag: Jonathan Hester

DEGRADATION



Oil and filter change at the time of sampling has been noted. 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 level is low. The condition of the oil is acceptable for the time in service.

view report



### 23 May 2023 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Metal levels are typical for a new component breaking in. 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.

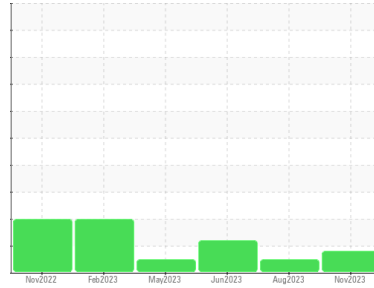
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Machine Id  
**813014**

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

Valve wear is indicated.

### Contamination

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 suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0091982</b>	GFL0075041	GFL0075050
Sample Date	Client Info		<b>20 Nov 2023</b>	16 Aug 2023	12 Jun 2023
Machine Age	Client Info		<b>1878</b>	1344	941
Oil Age	Client Info		<b>534</b>	403	430
Oil Changed	Client Info		<b>N/A</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
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	>100	<b>18</b>	17	29
Chromium	ppm ASTM D5185m	>20	<b>2</b>	1	1
Nickel	ppm ASTM D5185m	>4	<b>▲ 34</b>	6	11
Titanium	ppm ASTM D5185m		<b>&lt;1</b>	<1	0
Silver	ppm ASTM D5185m	>3	<b>&lt;1</b>	1	<1
Aluminum	ppm ASTM D5185m	>20	<b>2</b>	1	0
Lead	ppm ASTM D5185m	>40	<b>&lt;1</b>	2	0
Copper	ppm ASTM D5185m	>330	<b>27</b>	126	184
Tin	ppm ASTM D5185m	>15	<b>&lt;1</b>	1	2
Vanadium	ppm ASTM D5185m		<b>0</b>	<1	0
Cadmium	ppm ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	0	<b>2</b>	1	10
Barium	ppm ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m	60	<b>61</b>	63	69
Manganese	ppm ASTM D5185m	0	<b>1</b>	1	2
Magnesium	ppm ASTM D5185m	1010	<b>1044</b>	1026	939
Calcium	ppm ASTM D5185m	1070	<b>1118</b>	1141	1145
Phosphorus	ppm ASTM D5185m	1150	<b>1013</b>	996	929
Zinc	ppm ASTM D5185m	1270	<b>1279</b>	1264	1204
Sulfur	ppm ASTM D5185m	2060	<b>2766</b>	3126	2482

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m	>25	<b>10</b>	8	15
Sodium	ppm ASTM D5185m		<b>4</b>	4	1
Potassium	ppm ASTM D5185m	>20	<b>1</b>	2	2

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	>3	<b>0.7</b>	0.6	0.6
Nitration	Abs/cm *ASTM D7624	>20	<b>9.1</b>	8.0	8.6
Sulfation	Abs/.1mm *ASTM D7415	>30	<b>20.6</b>	19.7	19.5

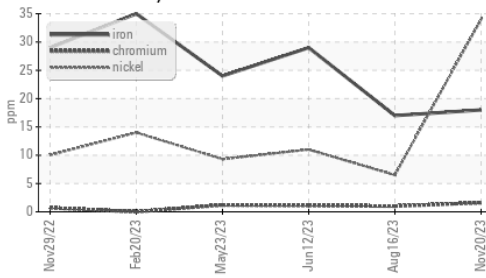
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414	>25	<b>16.5</b>	15.5	17.2
Base Number (BN)	mg KOH/g ASTM D2896	9.8	<b>6.8</b>	7.3	<b>▲ 3.3</b>



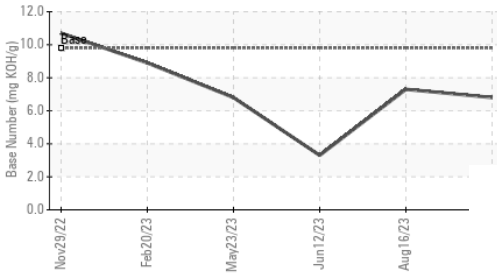
# OIL ANALYSIS REPORT

### ▲ Ferrous Alloys



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

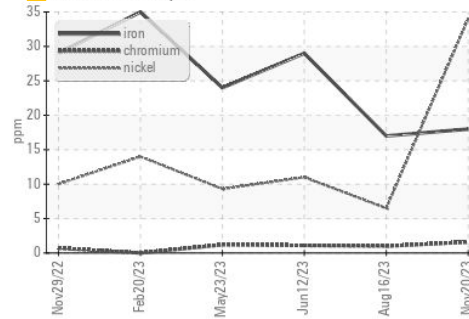
### Base Number



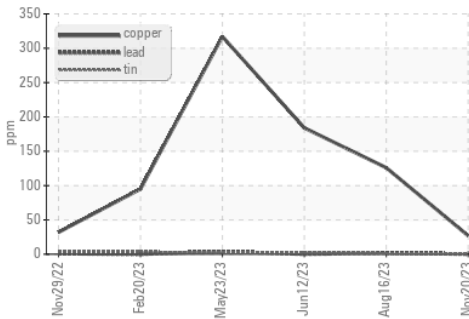
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.4

### GRAPHS

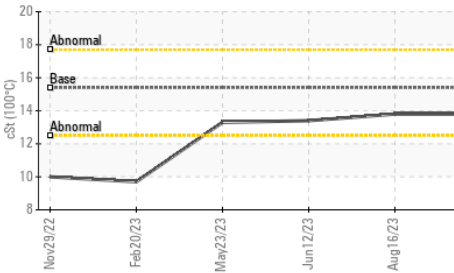
### ▲ Ferrous Alloys



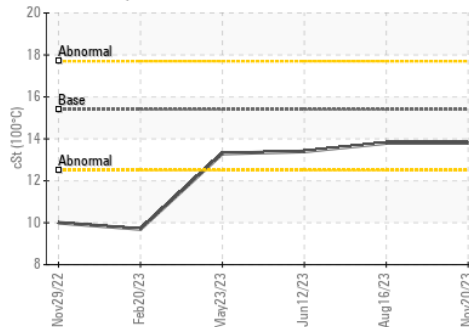
### Non-ferrous Metals



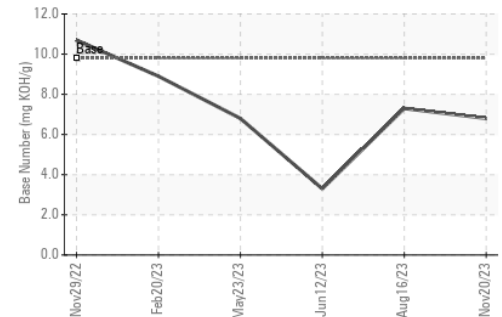
### Viscosity @ 100°C



### Viscosity @ 100°C



### Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0091982 **Received** : 22 Nov 2023  
**Lab Number** : 06014765 **Diagnosed** : 27 Nov 2023  
**Unique Number** : 10753909 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET

**GFL Environmental - 683 - Ruckersville Hauling**  
 261 INDUSTRIAL DR  
 Ruckersville, VA  
 US 22698  
 Contact: Jaf Finney  
 jfinney@gflenv.com  
 T: (434)990-4972  
 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)