

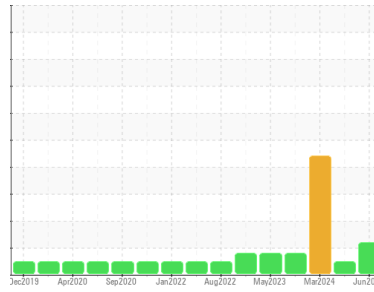


# OIL ANALYSIS REPORT



Machine Id  
**425046-402189**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

Sample Rating Trend



**SOOT**



## 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. ( Customer Sample Comment: please update last oil/filter change at 34475 )

### Wear

All component wear rates are normal.

### Contamination

There is an abnormal amount of solids and carbon present in the oil.

### Fluid Condition

The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0093441</b>	GFL0109410	GFL0109258
Sample Date	Client Info	<b>04 Jun 2024</b>	29 Apr 2024	08 Mar 2024
Machine Age	hrs	<b>34763</b>	34475	36086
Oil Age	hrs	<b>288</b>	136	328
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
Fuel	WC Method >3.0	<b>&lt;1.0</b>	<1.0	▲ 2.5
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>33</b>	14	26
Chromium	ppm ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Nickel	ppm ASTM D5185m >5	<b>&lt;1</b>	<1	0
Titanium	ppm ASTM D5185m >2	<b>8</b>	7	<1
Silver	ppm ASTM D5185m >2	<b>0</b>	<1	0
Aluminum	ppm ASTM D5185m >20	<b>4</b>	2	1
Lead	ppm ASTM D5185m >40	<b>&lt;1</b>	<1	<1
Copper	ppm ASTM D5185m >330	<b>2</b>	1	2
Tin	ppm ASTM D5185m >15	<b>&lt;1</b>	<1	0
Vanadium	ppm ASTM D5185m	<b>0</b>	<1	0
Cadmium	ppm ASTM D5185m	<b>0</b>	<1	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>6</b>	7	<1
Barium	ppm ASTM D5185m 0	<b>1</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>57</b>	52	52
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	<1	0
Magnesium	ppm ASTM D5185m 1010	<b>888</b>	839	880
Calcium	ppm ASTM D5185m 1070	<b>1134</b>	1050	968
Phosphorus	ppm ASTM D5185m 1150	<b>1003</b>	1011	852
Zinc	ppm ASTM D5185m 1270	<b>1235</b>	1154	1041
Sulfur	ppm ASTM D5185m 2060	<b>3314</b>	3142	2971

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>10</b>	5	4
Sodium	ppm ASTM D5185m	<b>0</b>	<1	<1
Potassium	ppm ASTM D5185m >20	<b>3</b>	2	<1

## INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	▲ <b>3.9</b>	3.1	▲ 6.2
Nitration	Abs/cm *ASTM D7624 >20	<b>9.8</b>	7.6	13.1
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>26.4</b>	23.0	30.3

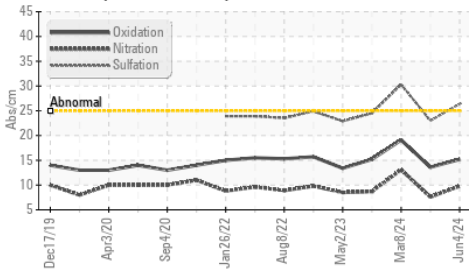
## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>15.2</b>	13.6	19.1
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>4.7</b>	9.0	▲ 0.0

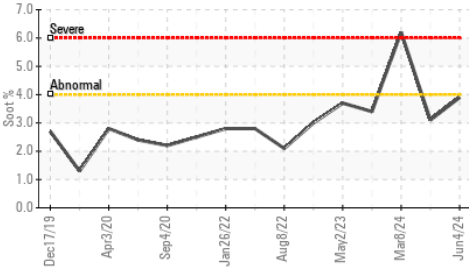


# OIL ANALYSIS REPORT

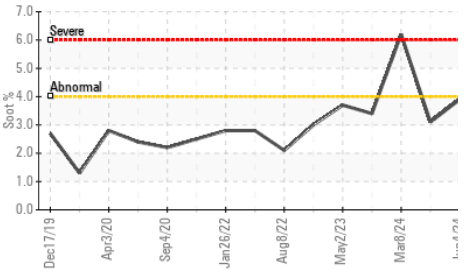
▲ FT-IR (Direct Trend)



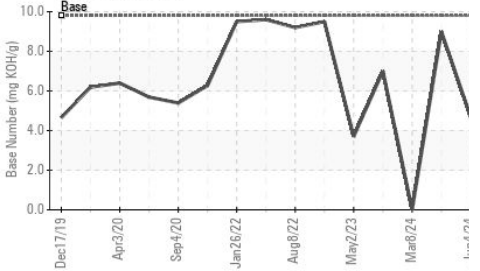
▲ Soot %



▲ Soot %



Base Number

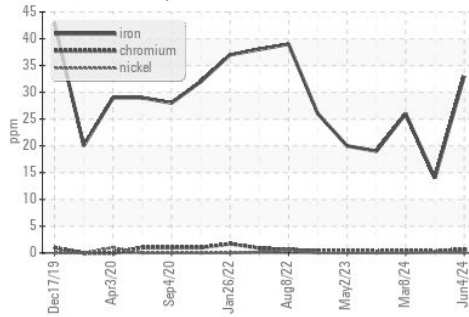


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

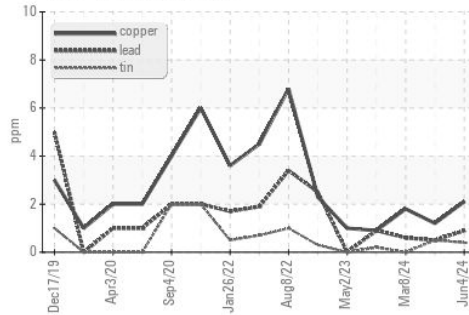
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 17.5	15.2

## GRAPHS

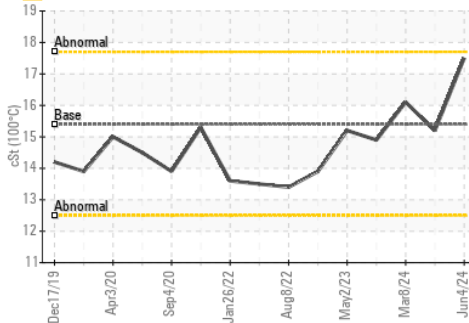
Ferrous Alloys



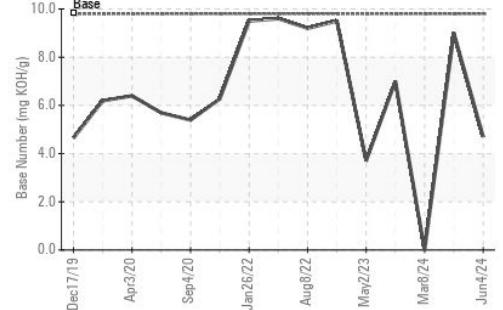
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : GFL0093441  
 Lab Number : 06201009  
 Unique Number : 11063132  
 Test Package : FLEET

Received : 05 Jun 2024  
 Tested : 06 Jun 2024  
 Diagnosed : 08 Jun 2024 - Don Baldrige

GFL Environmental - 891 - Oklahoma City Hauling  
 1001 South Rockwell  
 Oklahoma City, OK  
 US 73128  
 Contact: JUSTIN JOHNSON  
 ju.johnson@gflenv.com

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)