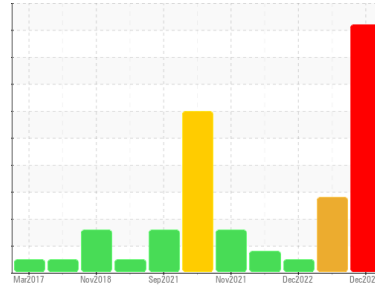




# OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id  
**9237**  
Component  
**Natural Gas Engine**  
Fluid  
**PETRO CANADA DURON GEO LD 15W40 (24 LTR)**

## DIAGNOSIS

### Recommendation

We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

### Wear

Iron ppm levels are severe. Nickel and chromium ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Ring wear is indicated. Exhaust valve wear is indicated.

### Contamination

There is an abnormal level of sulfation indicated.

### Fluid Condition

A small degree of oil oxidation was indicated. Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0097786</b>	GFL0081590	GFL0064281
Sample Date	Client Info	<b>01 Dec 2023</b>	29 May 2023	14 Dec 2022
Machine Age	hrs	<b>10480</b>	15315	14363
Oil Age	hrs	<b>1200</b>	1200	1200
Oil Changed	Client Info	<b>Changed</b>	Changed	Changed
Sample Status		<b>SEVERE</b>	ABNORMAL	NORMAL

## CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.1	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>21</b>	3	---
Iron	ppm ASTM D5185(m) >50	<b>160</b>	112	90
Chromium	ppm ASTM D5185(m) >4	<b>11</b>	8	9
Nickel	ppm ASTM D5185(m) >2	<b>2</b>	1	1
Titanium	ppm ASTM D5185(m)	<b>0</b>	<1	<1
Silver	ppm ASTM D5185(m) >3	<b>0</b>	0	0
Aluminum	ppm ASTM D5185(m) >9	<b>5</b>	3	3
Lead	ppm ASTM D5185(m) >30	<b>6</b>	4	4
Copper	ppm ASTM D5185(m) >35	<b>22</b>	21	26
Tin	ppm ASTM D5185(m) >4	<b>&lt;1</b>	<1	<1
Antimony	ppm ASTM D5185(m)	<b>0</b>	0	<1
Vanadium	ppm ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm ASTM D5185(m)	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 50	<b>8</b>	6	14
Barium	ppm ASTM D5185(m) 5	<b>&lt;1</b>	0	0
Molybdenum	ppm ASTM D5185(m) 50	<b>87</b>	68	62
Manganese	ppm ASTM D5185(m) 0	<b>2</b>	2	2
Magnesium	ppm ASTM D5185(m) 560	<b>746</b>	757	695
Calcium	ppm ASTM D5185(m) 1510	<b>2125</b>	1945	1843
Phosphorus	ppm ASTM D5185(m) 780	<b>993</b>	957	945
Zinc	ppm ASTM D5185(m) 870	<b>1247</b>	1128	1087
Sulfur	ppm ASTM D5185(m) 2040	<b>2150</b>	2126	2068
Lithium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >+100	<b>22</b>	9	10
Sodium	ppm ASTM D5185(m)	<b>15</b>	15	10
Potassium	ppm ASTM D5185(m) >20	<b>2</b>	2	<1

## INFRA-RED

method	limit/base	current	history1	history2
Soot %	% ASTM D7844*	<b>0</b>	0	0
Nitration	Abs/cm ASTM D7624*	<b>17.9</b>	14.7	6.7
Sulfation	Abs/.1mm ASTM D7415*	<b>31.7</b>	29.8	17.7

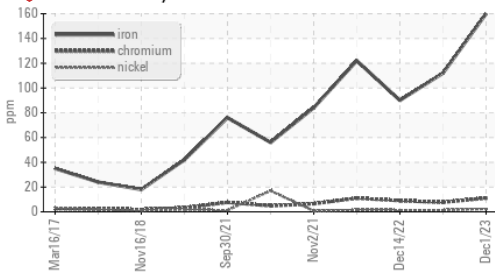
## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm ASTM D7414*	<b>32.2</b>	27.8	11.5

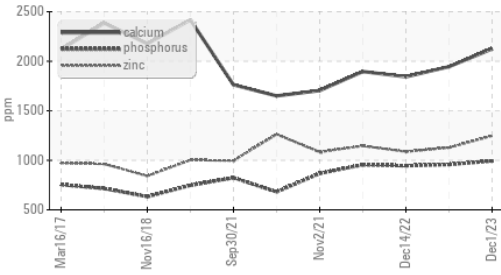


# OIL ANALYSIS REPORT

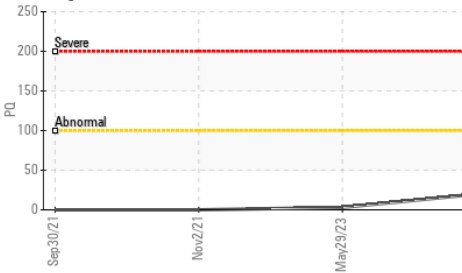
### Ferrous Alloys



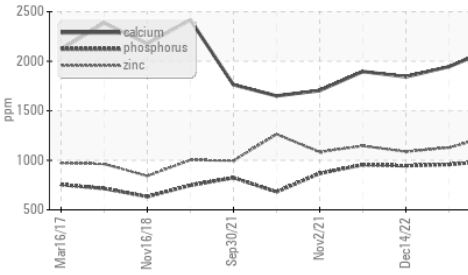
### Additives



### PQ



### Additives



### VISUAL

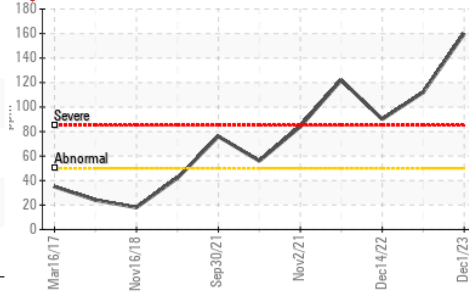
	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

### FLUID PROPERTIES

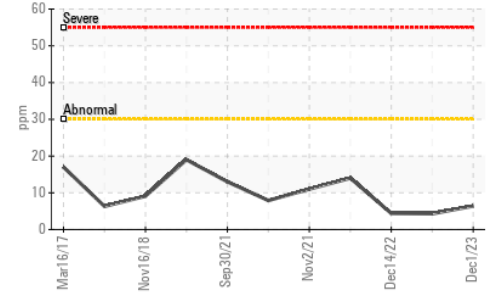
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.1	14.8	15.1

### GRAPHS

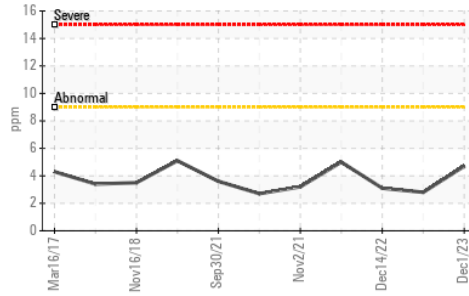
#### Iron (ppm)



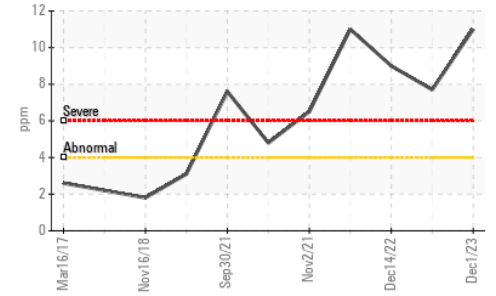
#### Lead (ppm)



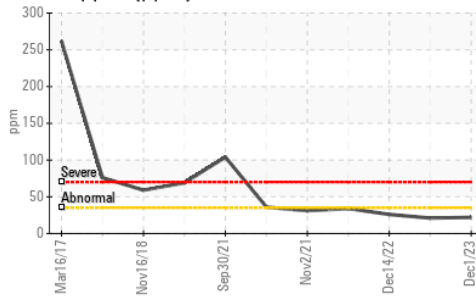
#### Aluminum (ppm)



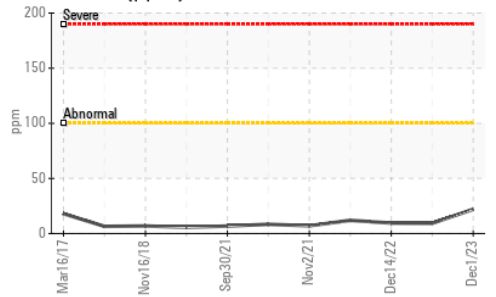
#### Chromium (ppm)



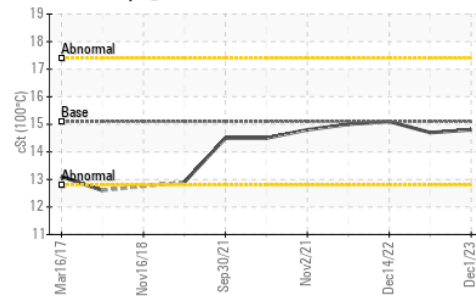
#### Copper (ppm)



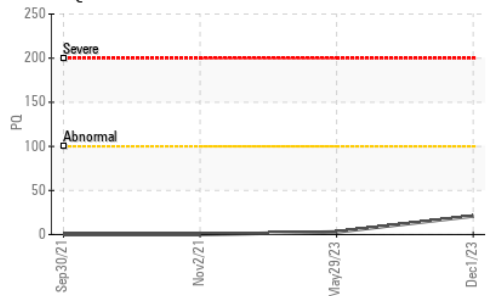
#### Silicon (ppm)



#### Viscosity @ 100°C



#### PQ



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 209 - Hamilton**  
**Sample No.** : GFL0097786 **Received** : 07 Dec 2023  
**Lab Number** : 02601392 **Diagnosed** : 07 Dec 2023  
**Unique Number** : 5694477 **Diagnostician** : Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: PQ )

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.

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