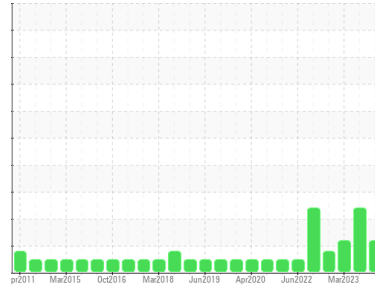




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**4421**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (40 LTR)**

## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0110247</b>	GFL0097759	GFL0064331
Sample Date	Client Info		<b>14 Feb 2024</b>	02 Nov 2023	15 Mar 2023
Machine Age	hrs	Client Info	<b>39973</b>	39398	38423
Oil Age	hrs	Client Info	<b>600</b>	600	600
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	SEVERE	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
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 D5185(m)	>120	<b>16</b>	27	8
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	0
Nickel	ppm	ASTM D5185(m)	>5	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>2</b>	2	1
Lead	ppm	ASTM D5185(m)	>40	<b>&lt;1</b>	4	<1
Copper	ppm	ASTM D5185(m)	>330	<b>4</b>	7	3
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	<1	0
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)	0	<b>2</b>	2	9
Barium	ppm	ASTM D5185(m)	0	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185(m)	60	<b>55</b>	57	54
Manganese	ppm	ASTM D5185(m)	0	<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185(m)	1010	<b>906</b>	931	870
Calcium	ppm	ASTM D5185(m)	1070	<b>1024</b>	1012	1135
Phosphorus	ppm	ASTM D5185(m)	1150	<b>952</b>	923	1008
Zinc	ppm	ASTM D5185(m)	1270	<b>1102</b>	1131	1078
Sulfur	ppm	ASTM D5185(m)	2060	<b>2523</b>	2279	2500
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	<b>2</b>	3	4
Sodium	ppm	ASTM D5185(m)		<b>1</b>	2	1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	1	<1
Fuel	%	ASTM D7593*	>3.0	<b>▲ 4.7</b>	◆ 5.7	▲ 2.9

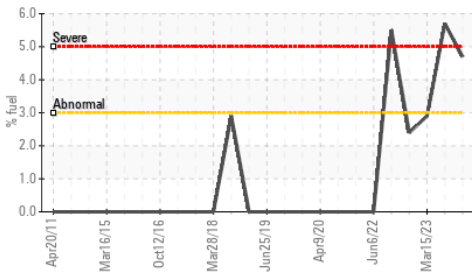
## INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>4	<b>1.7</b>	2.4	0.7
Nitration	Abs/cm	ASTM D7624*	>20	<b>8.5</b>	10.5	6.8
Sulfation	Abs./1mm	ASTM D7415*	>30	<b>21.3</b>	23.7	22.3

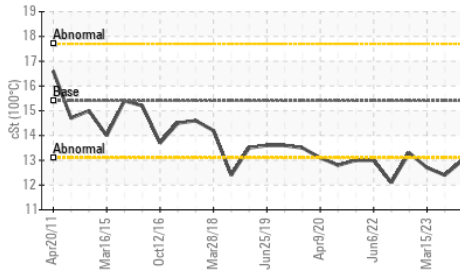


# OIL ANALYSIS REPORT

## ▲ Fuel Dilution



## ▲ Viscosity @ 100°C



## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs./1mm ASTM D7414*	>25	14.7	16.5	14.5

## VISUAL

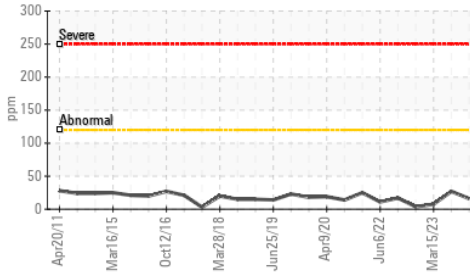
method	limit/base	current	history1	history2	
Emulsified Water	scalar Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar Visual*	NEG	NEG	NEG	NEG

## FLUID PROPERTIES

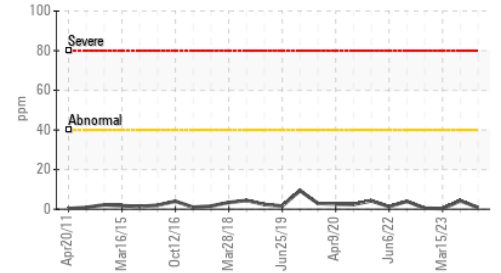
method	limit/base	current	history1	history2	
Visc @ 100°C	cSt ASTM D7279(m)	15.4	▲ 13.0	▲ 12.4	▲ 12.7

## GRAPHS

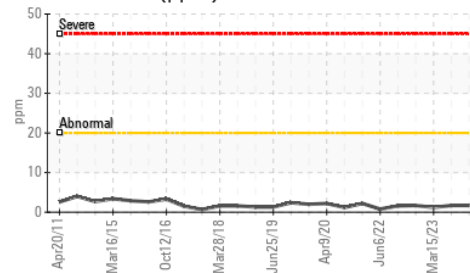
### Iron (ppm)



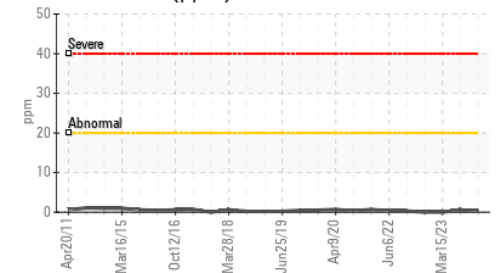
### Lead (ppm)



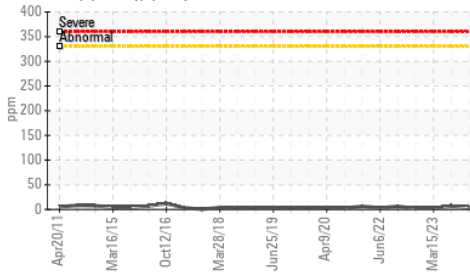
### Aluminum (ppm)



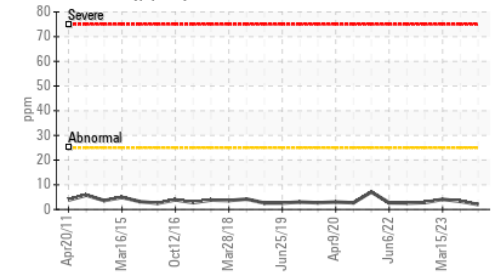
### Chromium (ppm)



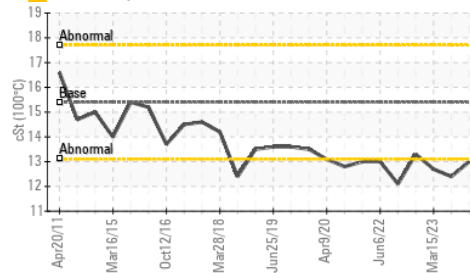
### Copper (ppm)



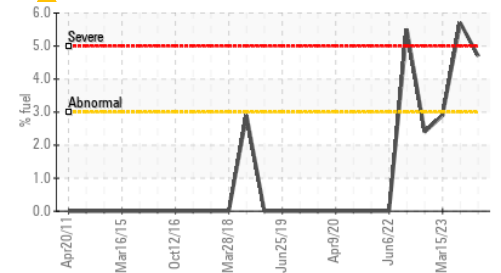
### Silicon (ppm)



## ▲ Viscosity @ 100°C



## ▲ Fuel Dilution



ISO 17025:2017  
Accredited  
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Sample No. : GFL0110247

Lab Number : 02617598

Unique Number : 5734708

Test Package : MOB 1 ( Additional Tests: PercentFuel )

Received : 23 Feb 2024

Tested : 26 Feb 2024

Diagnosed : 26 Feb 2024 - Wes Davis

GFL Environmental - 209 - Hamilton

560 Seaman Street

Stoney Creek, ON

CA L8E 3X7

Contact: Fred Carleton

fred.carleton@gflenv.com

T: (289)925-6693

F: (905)664-9008

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.