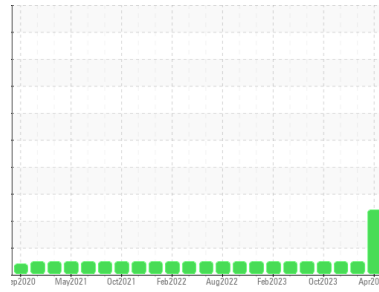




# OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id  
**12055**  
 Component  
**Diesel Engine**  
 Fluid

**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

### 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>GFL0090021</b>	GFL0089978	GFL0080530
Sample Date	Client Info		<b>04 Apr 2024</b>	23 Jan 2024	24 Oct 2023
Machine Age	hrs	Client Info	<b>51994</b>	51994	51994
Oil Age	hrs	Client Info	<b>0</b>	51994	51994
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## 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>60</b>	32	13
Chromium	ppm	ASTM D5185m >20	<b>6</b>	1	<1
Nickel	ppm	ASTM D5185m >4	<b>2</b>	<1	<1
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m >3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>8</b>	4	2
Lead	ppm	ASTM D5185m >40	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185m >330	<b>2</b>	<1	<1
Tin	ppm	ASTM D5185m >15	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>12</b>	1	6
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	3
Molybdenum	ppm	ASTM D5185m 60	<b>54</b>	57	61
Manganese	ppm	ASTM D5185m 0	<b>1</b>	<1	0
Magnesium	ppm	ASTM D5185m 1010	<b>817</b>	971	882
Calcium	ppm	ASTM D5185m 1070	<b>1208</b>	1073	1067
Phosphorus	ppm	ASTM D5185m 1150	<b>1014</b>	1037	1044
Zinc	ppm	ASTM D5185m 1270	<b>1223</b>	1279	1199
Sulfur	ppm	ASTM D5185m 2060	<b>3108</b>	3141	3384

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>▲ 26</b>	8	4
Sodium	ppm	ASTM D5185m	<b>5</b>	3	<1
Potassium	ppm	ASTM D5185m >20	<b>4</b>	<1	17

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.5</b>	0.5	0.2
Nitration	Abs/cm	*ASTM D7624 >20	<b>9.2</b>	9.2	6.3
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.8</b>	19.1	18.2

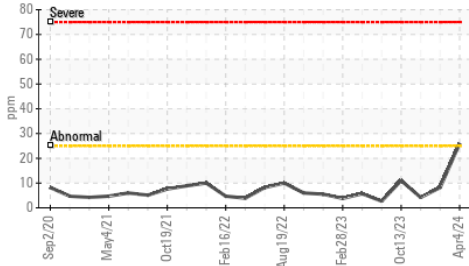
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>16.5</b>	15.9	14.6
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>7.7</b>	8.1	9.1

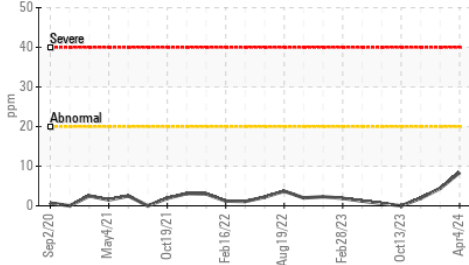


# OIL ANALYSIS REPORT

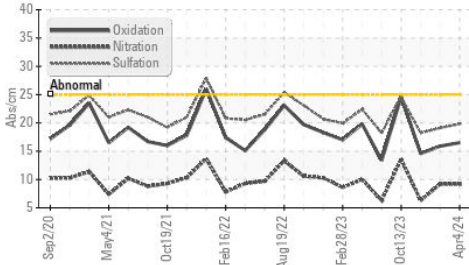
### ▲ Silicon (ppm)



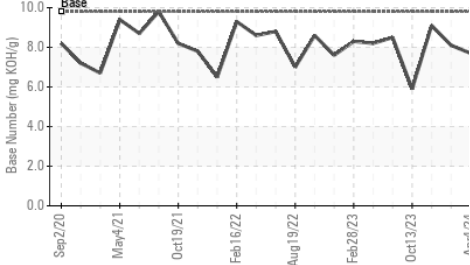
### ● Aluminum (ppm)



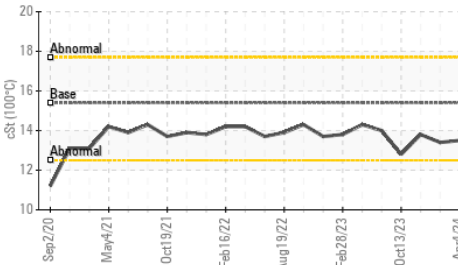
### FT-IR (Direct Trend)



### Base Number



### Viscosity @ 100°C

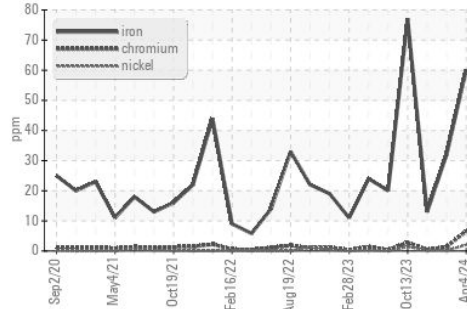


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

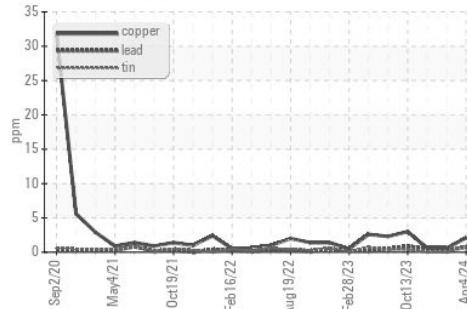
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.4

## GRAPHS

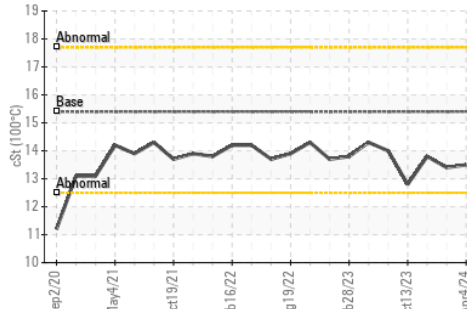
### Ferrous Alloys



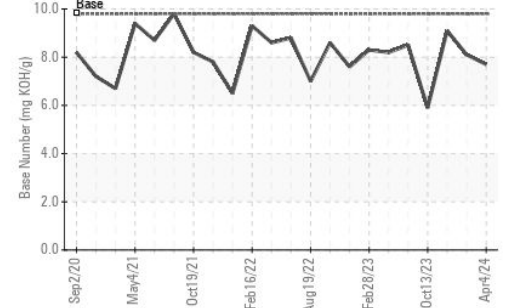
### Non-ferrous Metals



### Viscosity @ 100°C



### Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0090021

Lab Number : 06139495

Unique Number : 10964303

Test Package : FLEET

Received : 05 Apr 2024

Tested : 05 Apr 2024

Diagnosed : 06 Apr 2024 - Don Baldrige

GFL Environmental - 018 - Fayetteville

4621 Marracco Drive

Hope Mills, NC

US 28348

Contact: Robert Carter

robert.carter@gflenv.com

T: (910)596-1170

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)