

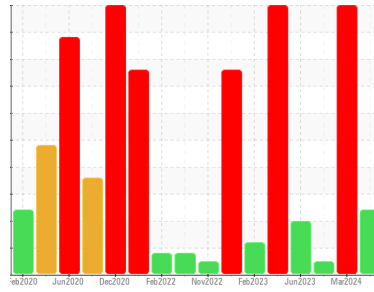


# OIL ANALYSIS REPORT



Machine Id  
**723025-305163**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

Sample Rating Trend



GLYCOL



## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter 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

Sodium and/or potassium levels remain high.

### Fluid Condition

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>GFL0106856</b>	GFL0106763	GFL0092073
Sample Date	Client Info	<b>15 Apr 2024</b>	27 Mar 2024	02 Dec 2023
Machine Age	hrs	<b>4242</b>	4130	302439
Oil Age	hrs	<b>3157</b>	600	299282
Oil Changed	Client Info	<b>Changed</b>	Changed	Not Changed
Sample Status		<b>ABNORMAL</b>	SEVERE	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

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >80	<b>33</b>	▲ 270	11
Chromium	ppm ASTM D5185m >5	<b>3</b>	▲ 19	<1
Nickel	ppm ASTM D5185m >2	<b>0</b>	6	0
Titanium	ppm ASTM D5185m	<b>&lt;1</b>	1	0
Silver	ppm ASTM D5185m >3	<b>0</b>	0	0
Aluminum	ppm ASTM D5185m >30	<b>5</b>	20	1
Lead	ppm ASTM D5185m >30	<b>5</b>	31	0
Copper	ppm ASTM D5185m >150	<b>18</b>	122	1
Tin	ppm ASTM D5185m >5	<b>2</b>	6	0
Vanadium	ppm ASTM D5185m	<b>&lt;1</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>0</b>	0	7
Barium	ppm ASTM D5185m 0	<b>0</b>	1	2
Molybdenum	ppm ASTM D5185m 60	<b>111</b>	456	58
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	4	0
Magnesium	ppm ASTM D5185m 1010	<b>962</b>	748	739
Calcium	ppm ASTM D5185m 1070	<b>1049</b>	812	1146
Phosphorus	ppm ASTM D5185m 1150	<b>1036</b>	766	847
Zinc	ppm ASTM D5185m 1270	<b>1206</b>	996	1017
Sulfur	ppm ASTM D5185m 2060	<b>3569</b>	2930	2848

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >20	<b>10</b>	53	6
Sodium	ppm ASTM D5185m	▲ <b>140</b>	▲ 931	39
Potassium	ppm ASTM D5185m >20	▲ <b>114</b>	▲ 831	38
Glycol	% *ASTM D2982	<b>NEG</b>	▲ 0.20	NEG

## INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>0.6</b>	0.8	0.2
Nitration	Abs/cm *ASTM D7624 >20	<b>7.3</b>	16.9	6.8
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>19.0</b>	24.3	18.0

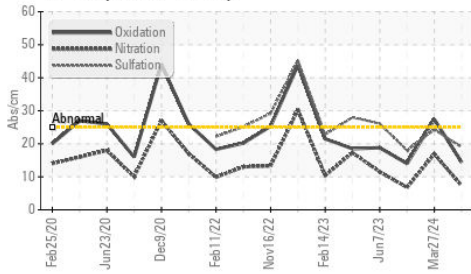
## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>14.4</b>	27.4	14.0
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>8.8</b>	8.0	8.4

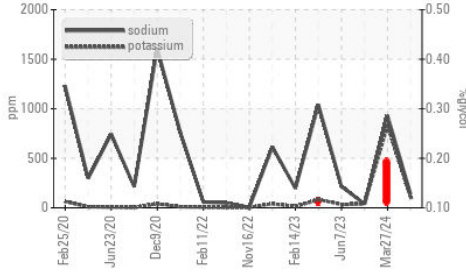


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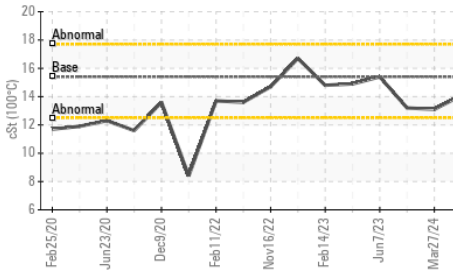
FT-IR (Direct Trend)



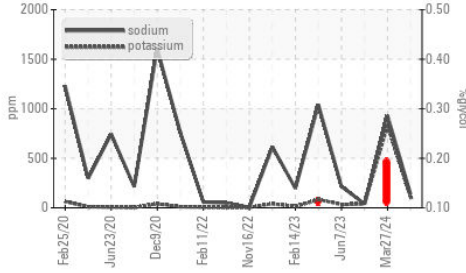
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

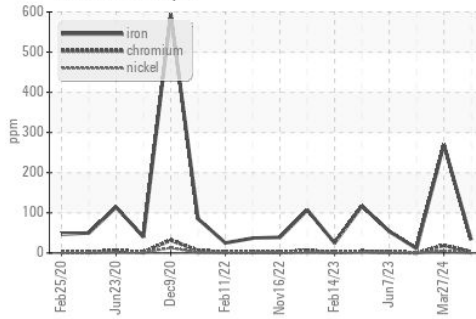


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

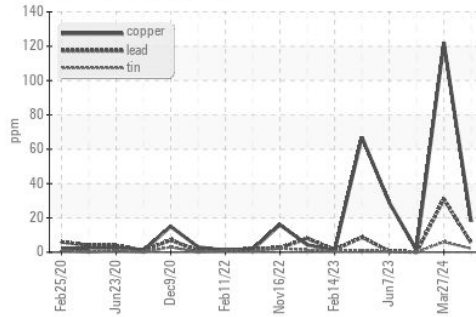
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	13.1

## GRAPHS

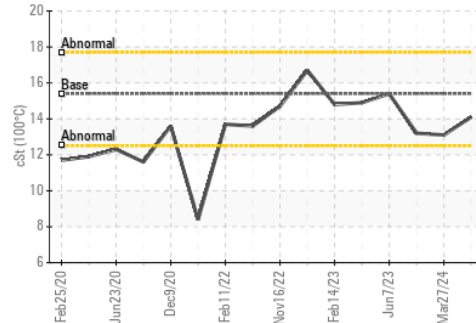
Ferrous Alloys



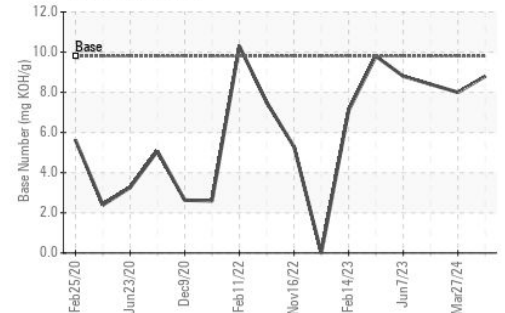
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : GFL0106856  
 Lab Number : 06154067  
 Unique Number : 10989490  
 Test Package : FLEET

Received : 19 Apr 2024  
 Tested : 23 Apr 2024  
 Diagnosed : 23 Apr 2024 - Jonathan Hester

GFL Environmental - 856 - Houston South  
 8515 Highway 6 South  
 Houston, TX  
 US 77083  
 Contact: Apolinar Zacarias  
 pzacariascano@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)