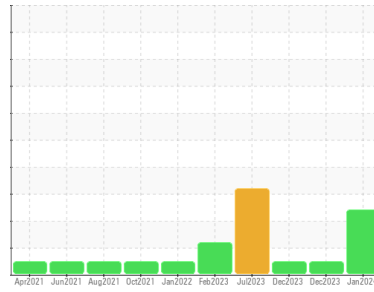




# OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id  
**4682M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. 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 are high. There is a moderate amount of fuel present in the oil.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. 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>GFL0108693</b>	GFL0105859	GFL0105848
Sample Date	Client Info		<b>23 Jan 2024</b>	21 Dec 2023	20 Dec 2023
Machine Age	hrs	Client Info	<b>14630</b>	15345	14300
Oil Age	hrs	Client Info	<b>0</b>	14095	14095
Oil Changed	Client Info		<b>Changed</b>	Changed	Not Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >80	<b>31</b>	28	0
Chromium	ppm	ASTM D5185m >5	<b>1</b>	<1	0
Nickel	ppm	ASTM D5185m >2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m >3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >30	<b>5</b>	2	<1
Lead	ppm	ASTM D5185m >30	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m >150	<b>3</b>	2	<1
Tin	ppm	ASTM D5185m >5	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>15</b>	3	4
Barium	ppm	ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Molybdenum	ppm	ASTM D5185m 60	<b>69</b>	64	60
Manganese	ppm	ASTM D5185m 0	<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m 1010	<b>660</b>	1002	949
Calcium	ppm	ASTM D5185m 1070	<b>771</b>	1138	1025
Phosphorus	ppm	ASTM D5185m 1150	<b>741</b>	1155	1123
Zinc	ppm	ASTM D5185m 1270	<b>927</b>	1381	1278
Sulfur	ppm	ASTM D5185m 2060	<b>2064</b>	2991	3243

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	<b>17</b>	4	6
Sodium	ppm	ASTM D5185m	<b>▲ 698</b>	7	2
Potassium	ppm	ASTM D5185m >20	<b>9</b>	<1	<1
Fuel	%	ASTM D3524 >5	<b>▲ 4.9</b>	<1.0	<1.0
Glycol	%	*ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

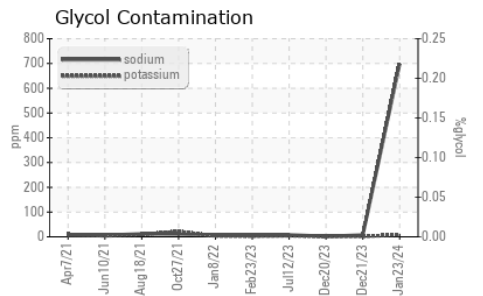
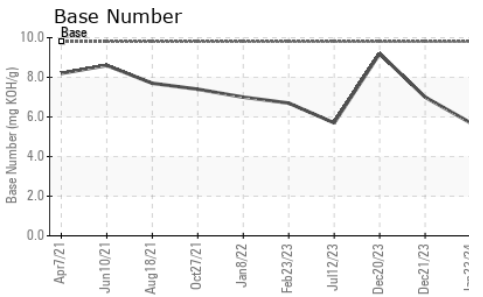
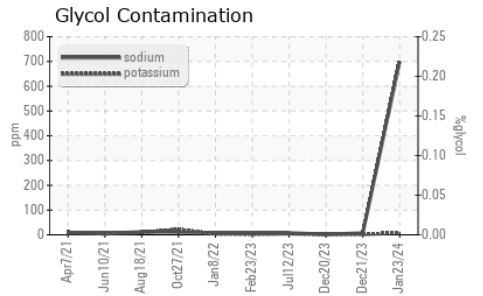
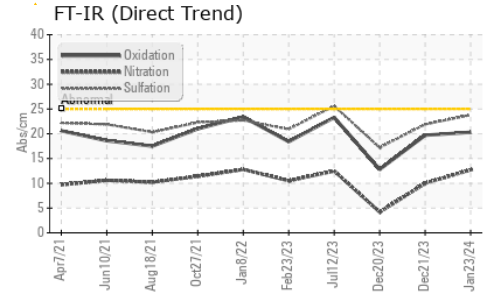
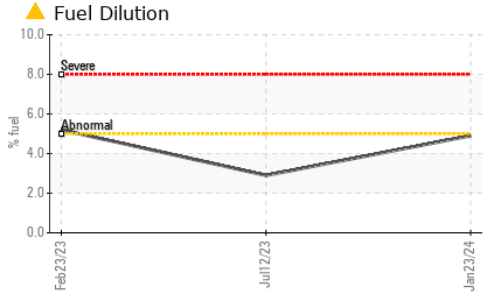
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.9</b>	0.7	0
Nitration	Abs/cm	*ASTM D7624 >20	<b>12.7</b>	10.0	4.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>23.8</b>	21.9	17.2

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>20.3</b>	19.7	12.8
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>5.7</b>	7.0	9.2



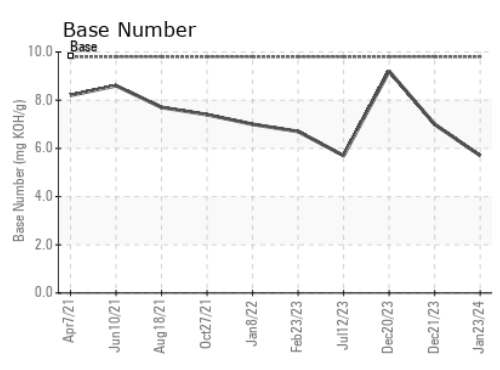
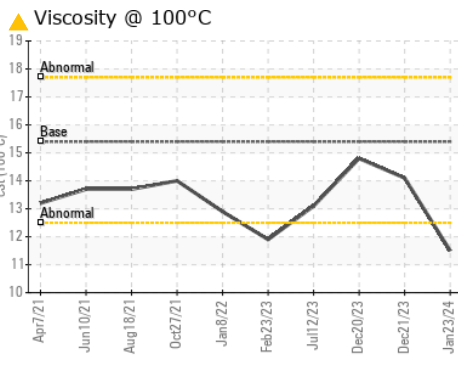
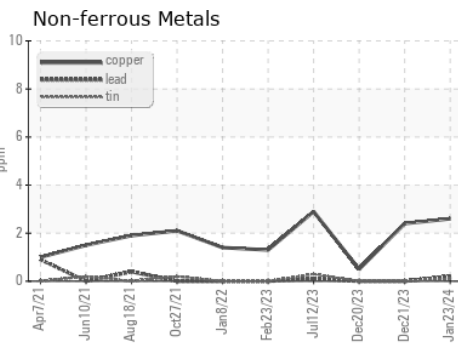
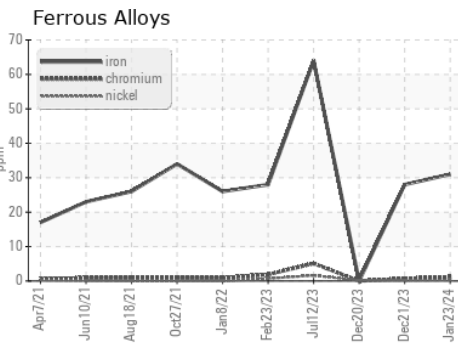
# OIL ANALYSIS REPORT



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	▲ 11.5	14.1

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0108693 **Received** : 25 Jan 2024  
**Lab Number** : 06070223 **Tested** : 01 Feb 2024  
**Unique Number** : 10846900 **Diagnosed** : 01 Feb 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests : FuelDilution, Glycol, PercentFuel )

**GFL Environmental - 415 - Michigan East**  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
 fwolak@gflenv.com  
 T: (586)825-9514  
 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)