



Machine Id  
**424045-402329**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check the fuel injection system. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0109785</b>	GFL0103331	GFL0099931
Sample Date		Client Info		<b>26 Feb 2024</b>	20 Jan 2024	02 Jan 2024
Machine Age	hrs	Client Info		<b>21641</b>	21493	21361
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>SEVERE</b>	NORMAL	NORMAL

**WEAR**

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>120	<b>▲ 103</b>	8	5
Chromium	ppm	ASTM D5185m	>20	<b>5</b>	0	<1
Nickel	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>6</b>	2	1
Lead	ppm	ASTM D5185m	>40	<b>9</b>	0	1
Copper	ppm	ASTM D5185m	>330	<b>4</b>	2	1
Tin	ppm	ASTM D5185m	>15	<b>1</b>	<1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

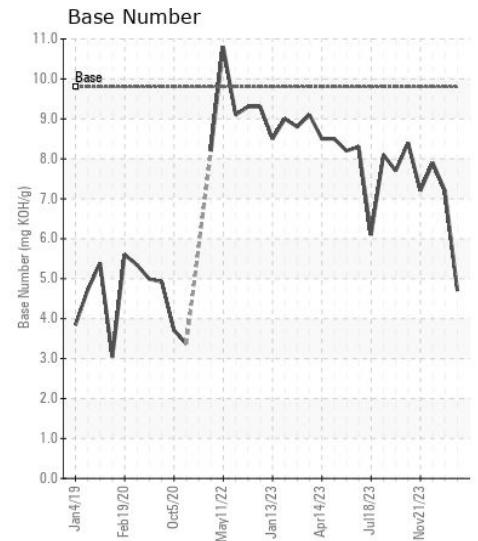
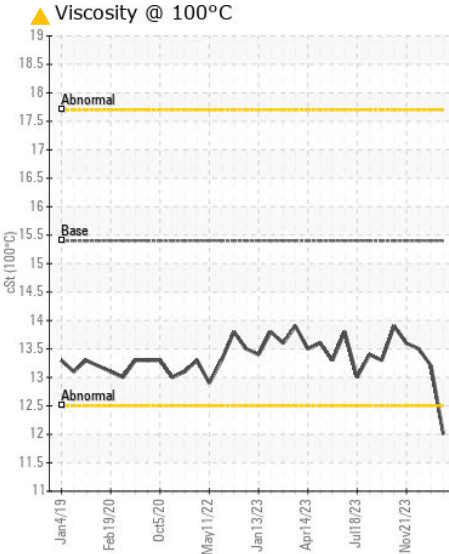
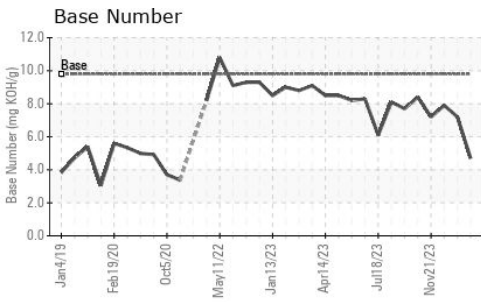
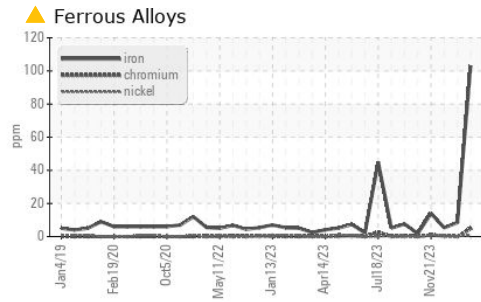
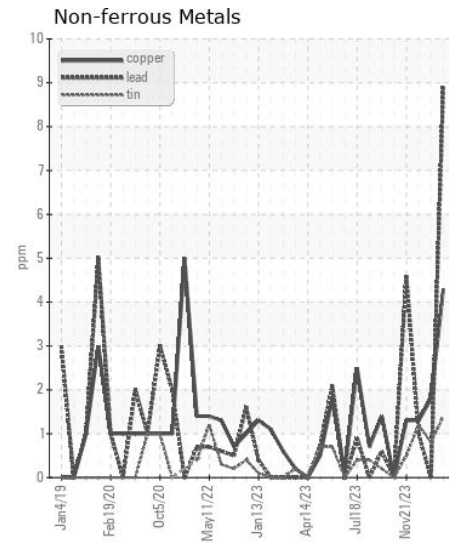
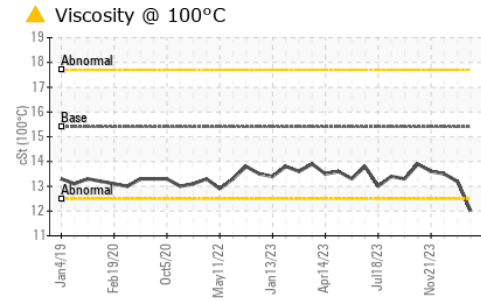
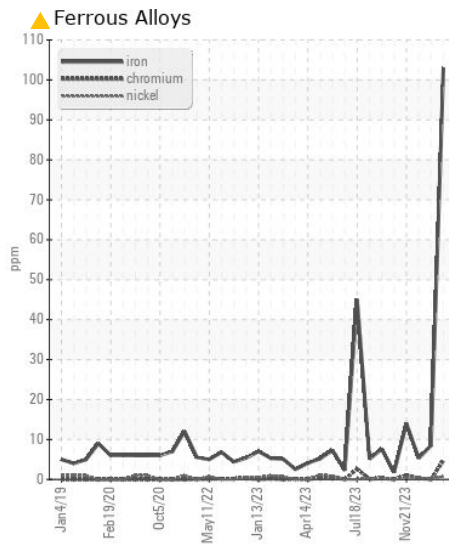
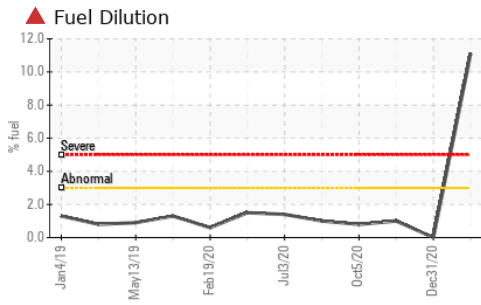
There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>12</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	0
Fuel	%	ASTM D3524	>3.0	<b>▲ 11.1</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>1.7</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>16.5</b>	8.0	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>31.9</b>	19.3	18.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

**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. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>4</b>	6	6
Boron	ppm	ASTM D5185m	0	<b>5</b>	2	3
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>59</b>	52	62
Manganese	ppm	ASTM D5185m	0	<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1010	<b>891</b>	877	936
Calcium	ppm	ASTM D5185m	1070	<b>1037</b>	1049	1110
Phosphorus	ppm	ASTM D5185m	1150	<b>932</b>	881	1024
Zinc	ppm	ASTM D5185m	1270	<b>1174</b>	1088	1235
Sulfur	ppm	ASTM D5185m	2060	<b>2671</b>	2405	2937
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>36.0</b>	16.4	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>4.7</b>	7.2	7.9
Visc @ 100°C	cSt	ASTM D445	15.4	<b>▲ 12.0</b>	13.2	13.5



Certificate L2367

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

Sample No. : GFL0109785

Lab Number : 06102819

Unique Number : 10901049

Test Package : FLEET ( Additional Tests: FuelDilution, PercentFuel )

Received : 28 Feb 2024

Tested : 04 Mar 2024

Diagnosed : 04 Mar 2024 - Jonathan Hester

GFL Environmental - 836 - Kansas City Hauling

7801 East Truman Road

Kansas City, MO

US 64126

Contact: Loyce Stewart

loyce.stewart@gflenv.com

T:

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)