



Area  
**(83J3TW)**  
Machine Id  
**229035-632119**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0118807</b>	GFL0118760	GFL0114114
Sample Date		Client Info		<b>17 Apr 2024</b>	16 Apr 2024	20 Mar 2024
Machine Age	hrs	Client Info		<b>10802</b>	10793	10617
Oil Age	hrs	Client Info		<b>10401</b>	10392	10350
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Sample Status				<b>SEVERE</b>	SEVERE	ABNORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>55</b>	55	40
Chromium	ppm	ASTM D5185m	>20	<b>2</b>	2	1
Nickel	ppm	ASTM D5185m	>4	<b>1</b>	1	<1
Titanium	ppm	ASTM D5185m		<b>1</b>	1	0
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>5</b>	6	4
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	1
Copper	ppm	ASTM D5185m	>330	<b>79</b>	80	57
Tin	ppm	ASTM D5185m	>15	<b>2</b>	2	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

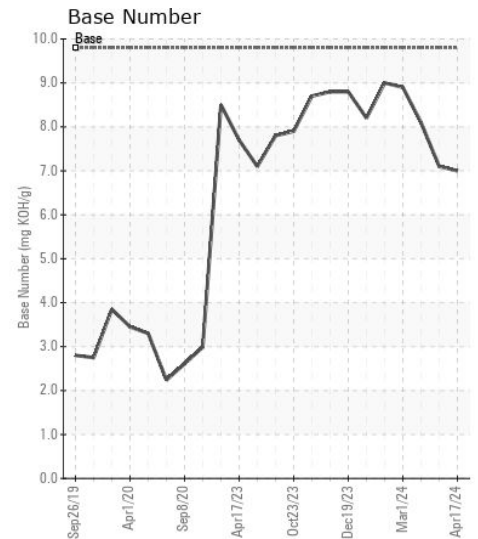
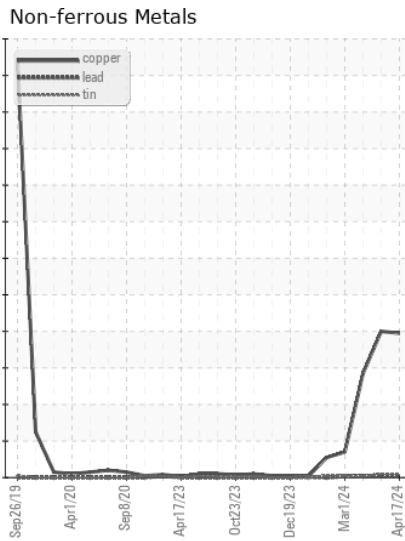
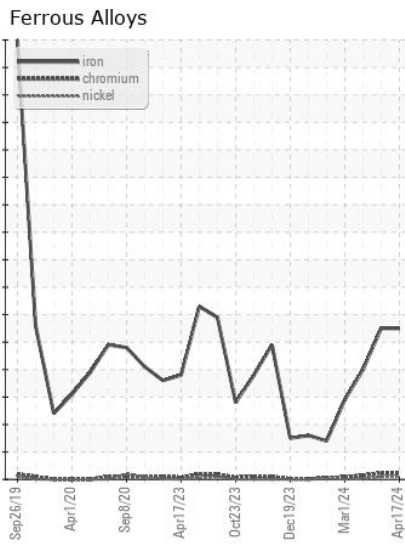
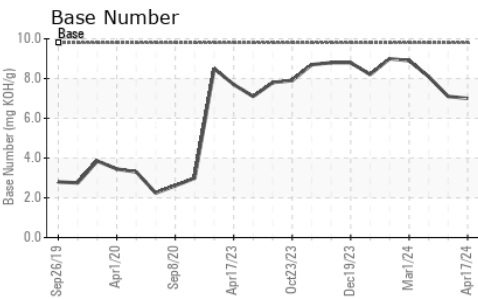
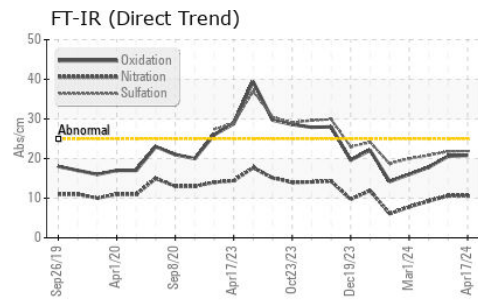
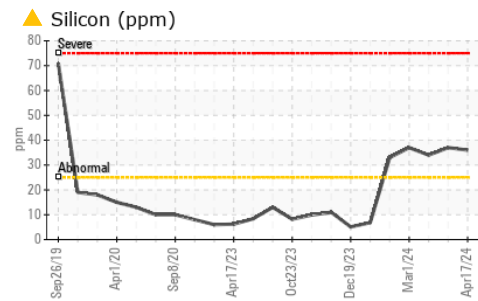
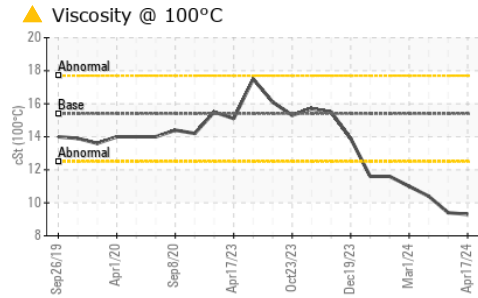
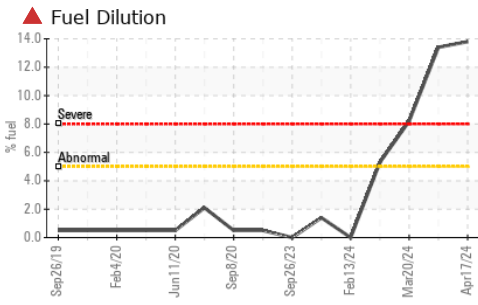
There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	<b>▲ 36</b>	▲ 37	▲ 34
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	9	5
Fuel	%	ASTM D3524	>5	<b>▲ 13.8</b>	▲ 13.4	▲ 8.2
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.7</b>	0.7	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.6</b>	10.6	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.9</b>	21.8	20.8
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>2</b>	2	3
Boron	ppm	ASTM D5185m	0	<b>8</b>	8	8
Barium	ppm	ASTM D5185m	0	<b>13</b>	13	14
Molybdenum	ppm	ASTM D5185m	60	<b>46</b>	46	47
Manganese	ppm	ASTM D5185m	0	<b>5</b>	5	4
Magnesium	ppm	ASTM D5185m	1010	<b>645</b>	638	761
Calcium	ppm	ASTM D5185m	1070	<b>1162</b>	1163	1339
Phosphorus	ppm	ASTM D5185m	1150	<b>900</b>	890	866
Zinc	ppm	ASTM D5185m	1270	<b>1050</b>	1037	1170
Sulfur	ppm	ASTM D5185m	2060	<b>2681</b>	2636	3199
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.8</b>	20.6	17.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>7.0</b>	7.1	8.1
Visc @ 100°C	cSt	ASTM D445	15.4	<b>▲ 9.3</b>	▲ 9.4	▲ 10.4



Certificate L2367

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

Sample No. : GFL0118807

Lab Number : 06156723

Unique Number : 10992146

Test Package : FLEET ( Additional Tests: PercentFuel )

Received : 22 Apr 2024

Tested : 25 Apr 2024

Diagnosed : 25 Apr 2024 - Don Baldrige

GFL Environmental - 837 - Harrison TS

22820 S State Route 291

Harrisonville, MO

US 64701

Contact: SARA PATRICK

spatrick@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)