



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
4567M
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. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0122370	GFL0108878	GFL0101461
Sample Date		Client Info		20 May 2024	19 Mar 2024	05 Dec 2023
Machine Age	hrs	Client Info		22113	21838	21130
Oil Age	hrs	Client Info		21073	21073	21073
Filter Age	hrs	Client Info		0	0	21073
Oil Changed		Client Info		Changed	Not Changed	N/A
Filter Changed		Client Info		Changed	Not Changed	N/A
Sample Status				ABNORMAL	SEVERE	MARGINAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	9	14	6
Chromium	ppm	ASTM D5185m	>20	1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	3	<1	4
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	1	0	<1
Tin	ppm	ASTM D5185m	>15	1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

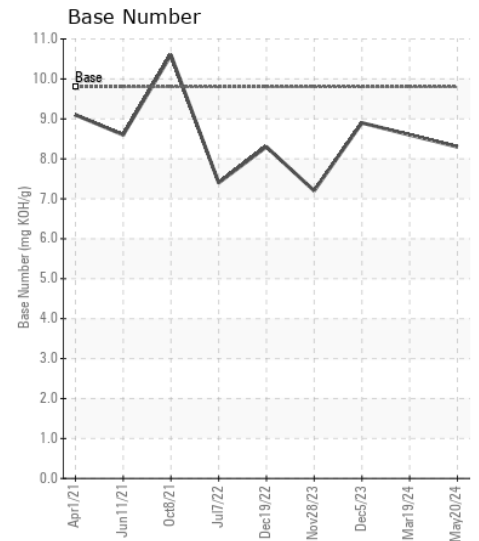
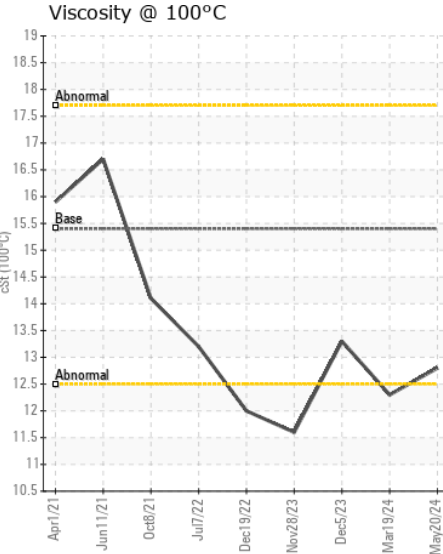
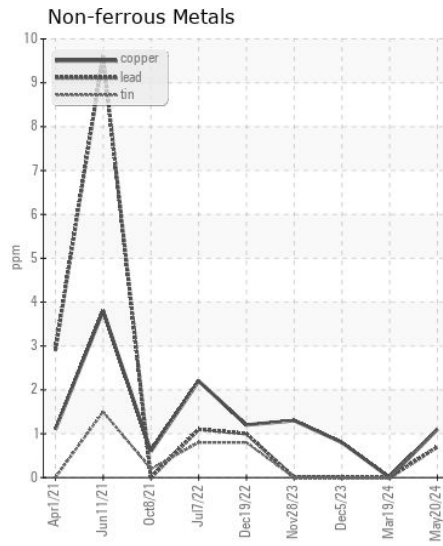
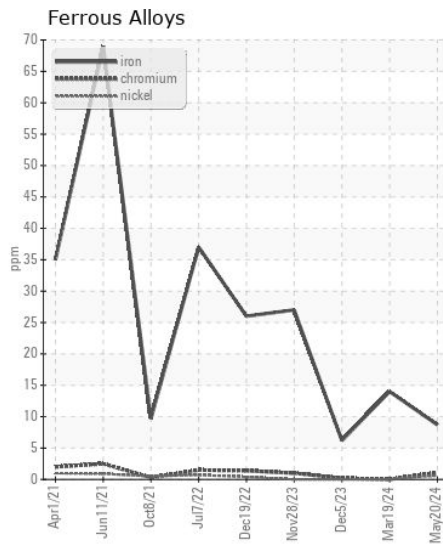
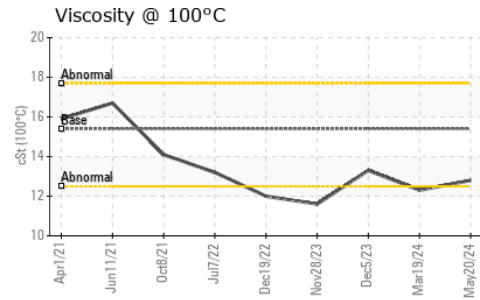
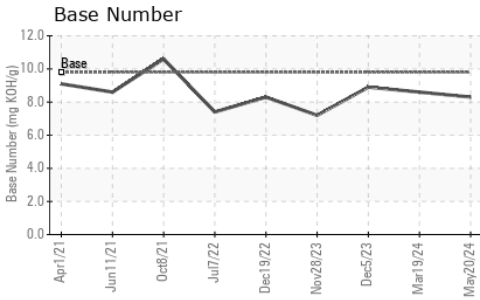
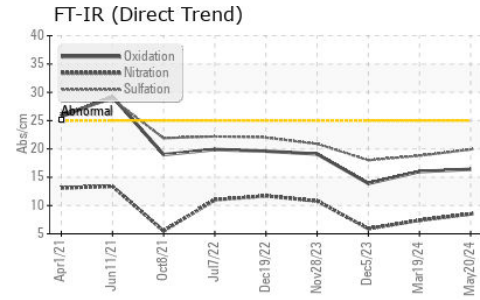
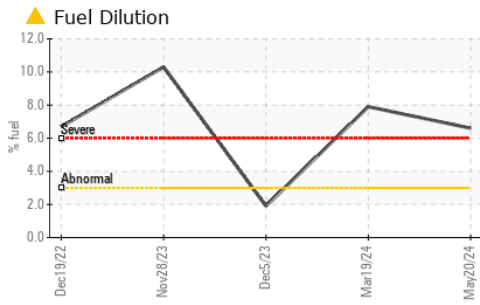
There is a moderate amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	5	2	4
Potassium	ppm	ASTM D5185m	>20	2	0	9
Fuel	%	ASTM D3524	>3.0	6.6	7.9	1.9
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.6	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.5	7.4	5.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.9	18.8	18.0
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		3	2	3
Boron	ppm	ASTM D5185m	0	0	1	10
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	54	51	57
Manganese	ppm	ASTM D5185m	0	<1	0	<1
Magnesium	ppm	ASTM D5185m	1010	883	867	893
Calcium	ppm	ASTM D5185m	1070	1008	976	1113
Phosphorus	ppm	ASTM D5185m	1150	1042	972	980
Zinc	ppm	ASTM D5185m	1270	1171	1163	1207
Sulfur	ppm	ASTM D5185m	2060	3496	3303	2952
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.4	16.0	13.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	8.6	8.9
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	12.3	13.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0122370 **Received** : 22 May 2024
Lab Number : 06187371 **Tested** : 28 May 2024
Unique Number : 11044123 **Diagnosed** : 28 May 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 415 - Michigan East
 6200 Elmridge
 Sterling Heights, MI
 US 48313
 Contact: Frank Wolak
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 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)