



Machine Id
4588M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. The oil 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		GFL0108851	GFL0101477	GFL0073890
Sample Date		Client Info		29 Jan 2024	01 Dec 2023	03 May 2023
Machine Age	hrs	Client Info		23394	13006	22221
Oil Age	hrs	Client Info		22221	22221	19108
Filter Age	hrs	Client Info		19108	22221	19108
Oil Changed		Client Info		Changed	Not Changed	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				SEVERE	SEVERE	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	35	24	51
Chromium	ppm	ASTM D5185m	>20	1	0	2
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	2	3
Lead	ppm	ASTM D5185m	>40	1	0	0
Copper	ppm	ASTM D5185m	>330	107	5	1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

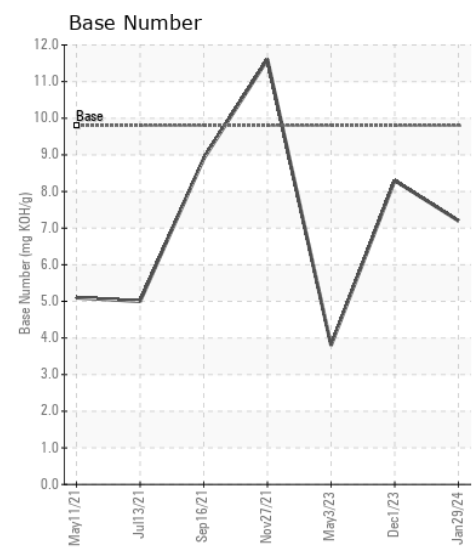
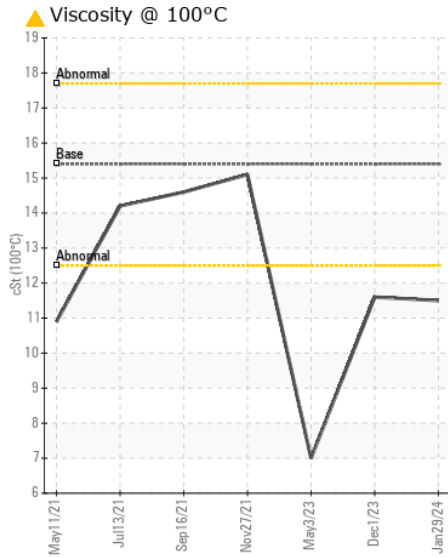
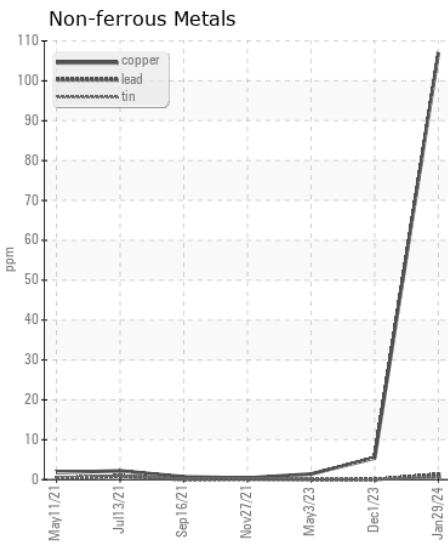
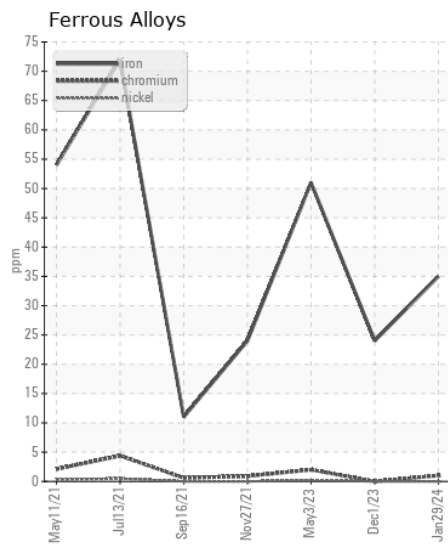
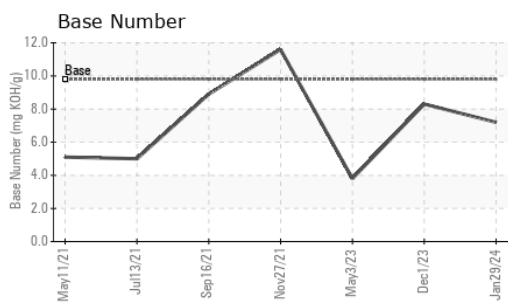
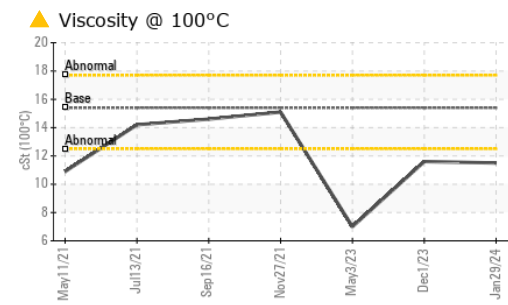
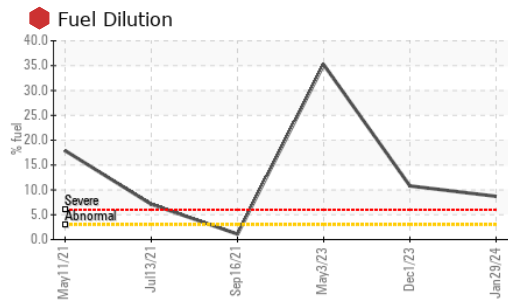
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	8	7	10
Potassium	ppm	ASTM D5185m	>20	1	0	2
Fuel	%	ASTM D3524	>3.0	8.7	10.8	35.2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.3	0.2	1
Nitration	Abs/cm	*ASTM D7624	>20	11.1	9.3	15.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.1	19.9	23.1
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		3	2	4
Boron	ppm	ASTM D5185m	0	19	24	<1
Barium	ppm	ASTM D5185m	0	5	0	0
Molybdenum	ppm	ASTM D5185m	60	41	45	38
Manganese	ppm	ASTM D5185m	0	3	2	<1
Magnesium	ppm	ASTM D5185m	1010	568	601	539
Calcium	ppm	ASTM D5185m	1070	1188	1231	661
Phosphorus	ppm	ASTM D5185m	1150	863	957	636
Zinc	ppm	ASTM D5185m	1270	1023	1144	777
Sulfur	ppm	ASTM D5185m	2060	2434	2781	1782
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.9	18.3	28.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.2	8.3	3.8
Visc @ 100°C	cSt	ASTM D445	15.4	11.5	11.6	7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0108851 **Received** : 31 Jan 2024
Lab Number : 06075448 **Diagnosed** : 01 Feb 2024
Unique Number : 10857539 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: 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)