



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL



Machine Id
4667M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (5 GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. 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		GFL0097744	GFL0097723	GFL0097672
Sample Date		Client Info		13 Dec 2023	26 Nov 2023	08 Nov 2023
Machine Age	hrs	Client Info		15773	15616	15196
Oil Age	hrs	Client Info		600	110	0
Filter Age	hrs	Client Info		600	110	800
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	SEVERE

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	22	57	51
Chromium	ppm	ASTM D5185m	>20	<1	2	2
Nickel	ppm	ASTM D5185m	>2	0	0	1
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	3	8
Lead	ppm	ASTM D5185m	>40	0	<1	1
Copper	ppm	ASTM D5185m	>330	19	<1	91
Tin	ppm	ASTM D5185m	>15	0	0	1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

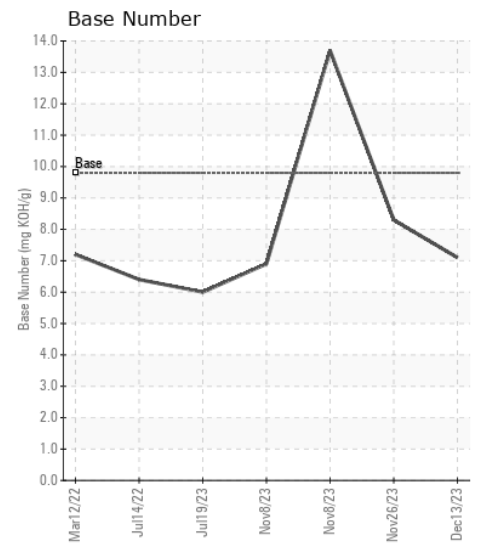
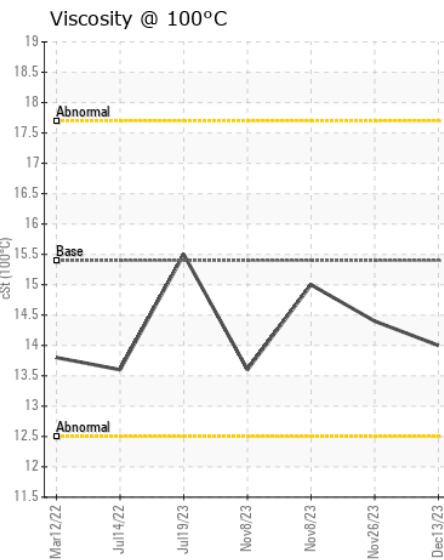
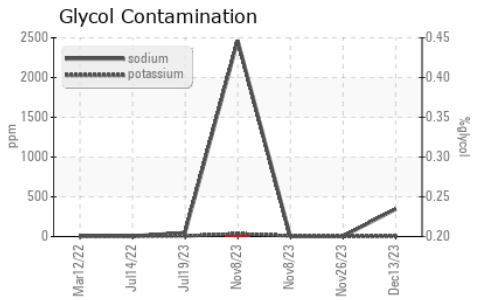
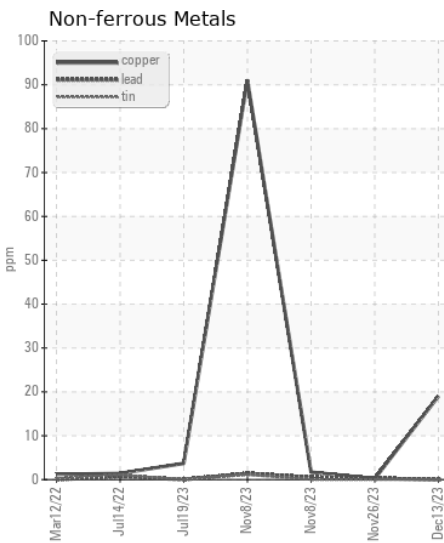
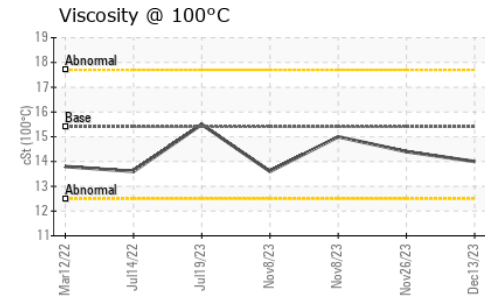
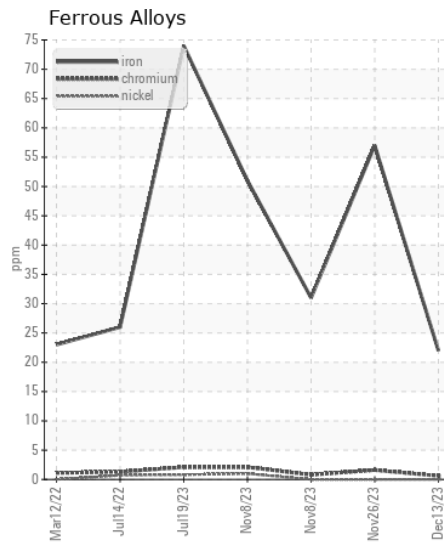
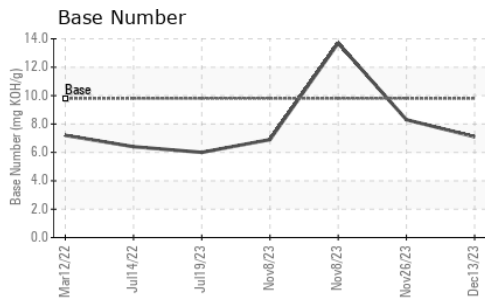
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>25	9	7	▲ 54
Potassium	ppm	ASTM D5185m	>20	4	<1	▲ 35
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	▲ 0.20
Soot %	%	*ASTM D7844	>6	0.6	0.6	0.7
Nitration	Abs/cm	*ASTM D7624	>20	9.3	8.9	16.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.7	20.0	24.7
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.

Sodium	ppm	ASTM D5185m		▲ 344	3	▲ 2465
Boron	ppm	ASTM D5185m	0	5	8	62
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	63	64	146
Manganese	ppm	ASTM D5185m	0	<1	0	2
Magnesium	ppm	ASTM D5185m	1010	894	1105	779
Calcium	ppm	ASTM D5185m	1070	993	1284	984
Phosphorus	ppm	ASTM D5185m	1150	1011	1254	749
Zinc	ppm	ASTM D5185m	1270	1234	1607	1172
Sulfur	ppm	ASTM D5185m	2060	2870	3706	2522
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	16.7	19.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.1	8.3	13.7
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.4	15.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0097744 **Received** : 22 Dec 2023
Lab Number : 06042843 **Tested** : 26 Dec 2023
Unique Number : 10803451 **Diagnosed** : 26 Dec 2023 - Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 405 - Arbor Hills
 7400 Napier Rd
 NORTHVILLE, MI
 US 48168
 Contact: Anthony Hopkins
 ahopkins@gflenv.com

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)

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F: