



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
(YA163862)
Machine Id
12009
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (8 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		GFL0099831	GFL0099814	GFL0066839
Sample Date		Client Info		10 Feb 2024	22 Nov 2023	04 Jul 2023
Machine Age	hrs	Client Info		15812	15305	78395
Oil Age	hrs	Client Info		200	78395	78395
Filter Age	hrs	Client Info		0	78395	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	None	Changed
Sample Status				ABNORMAL	NORMAL	MARGINAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	39	17	25
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>2	1	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	13	6	8
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	2	<1	2
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

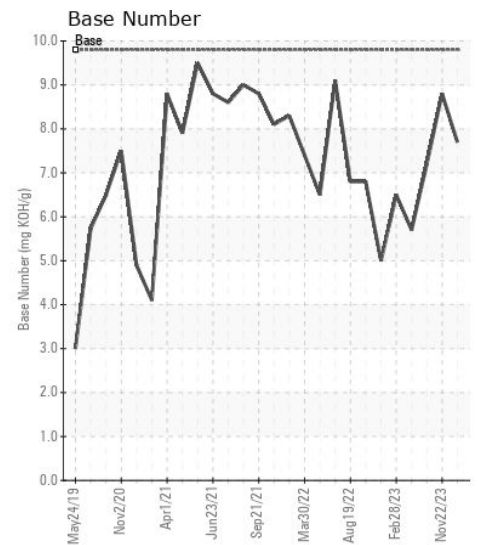
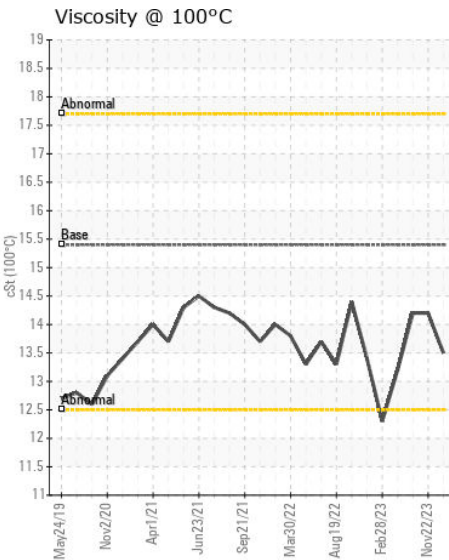
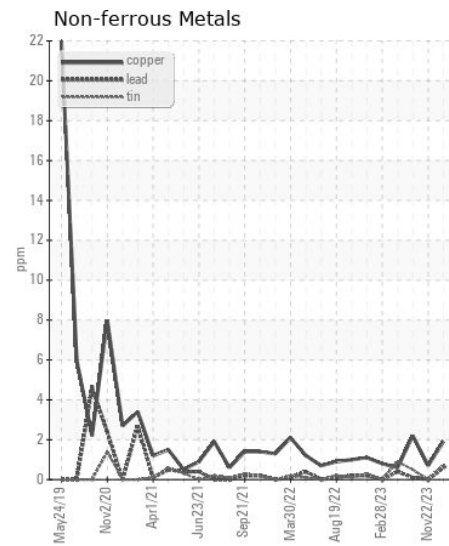
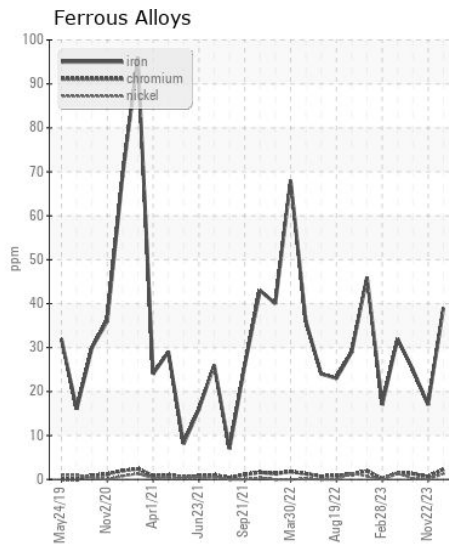
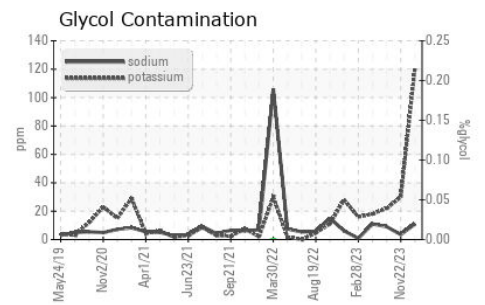
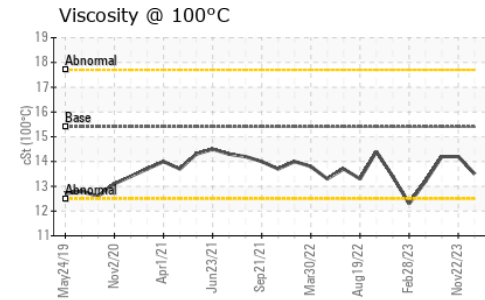
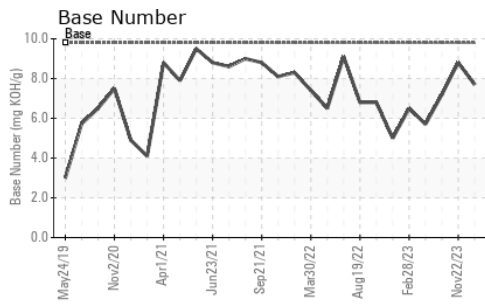
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>25	13	6	9
Potassium	ppm	ASTM D5185m	>20	▲ 121	30	22
Fuel		WC Method	>3.0	<1.0	<1.0	▲ 4.1
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	0.8	0.4	0.6
Nitration	Abs/cm	*ASTM D7624	>20	10.7	8.3	13.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.2	19.5	24.0
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.

Sodium	ppm	ASTM D5185m		11	4	9
Boron	ppm	ASTM D5185m	0	4	4	3
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	81	62	59
Manganese	ppm	ASTM D5185m	0	1	0	1
Magnesium	ppm	ASTM D5185m	1010	1313	949	949
Calcium	ppm	ASTM D5185m	1070	1417	1113	1013
Phosphorus	ppm	ASTM D5185m	1150	1498	1067	983
Zinc	ppm	ASTM D5185m	1270	1666	1272	1222
Sulfur	ppm	ASTM D5185m	2060	5184	3314	3552
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.3	15.9	24.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.7	8.8	7.2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	14.2	14.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0099831 **Received** : 14 Feb 2024
Lab Number : 06088542 **Tested** : 19 Feb 2024
Unique Number : 10875987 **Diagnosed** : 19 Feb 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 018 - Fayetteville
 4621 Marracco Drive
 Hope Mills, NC
 US 28348
 Contact: Robert Carter
 robert.carter@gflenv.com
 T: (910)596-1170
 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)