



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL



Area
GFL035
Machine Id
2453
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (11 GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0102362	GFL0085155	GFL0071534
Sample Date		Client Info		07 Feb 2024	09 Nov 2023	26 Apr 2023
Machine Age	hrs	Client Info		0	387314	387314
Oil Age	hrs	Client Info		600	600	600
Filter Age	hrs	Client Info		0	600	600
Oil Changed		Client Info		Not Chngd	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				ABNORMAL	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	79	▲ 134	44
Chromium	ppm	ASTM D5185m	>20	2	4	1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	4	3
Lead	ppm	ASTM D5185m	>40	1	4	0
Copper	ppm	ASTM D5185m	>330	8	14	8
Tin	ppm	ASTM D5185m	>15	2	3	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

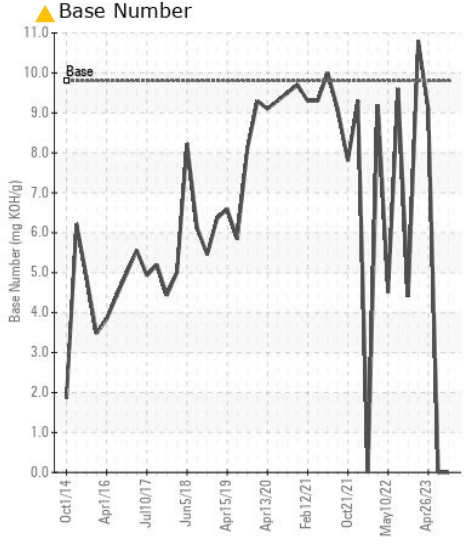
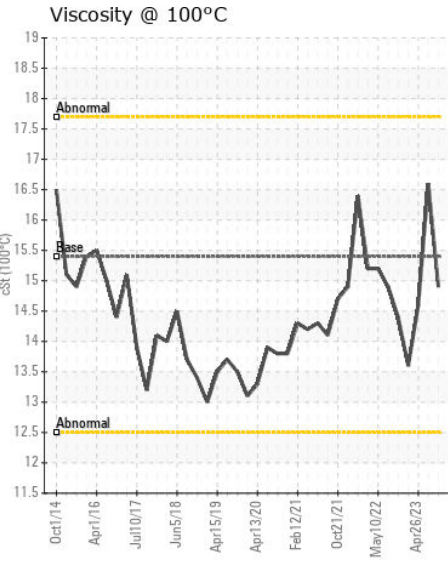
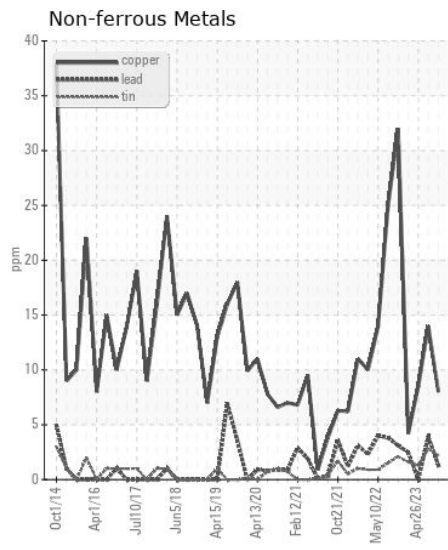
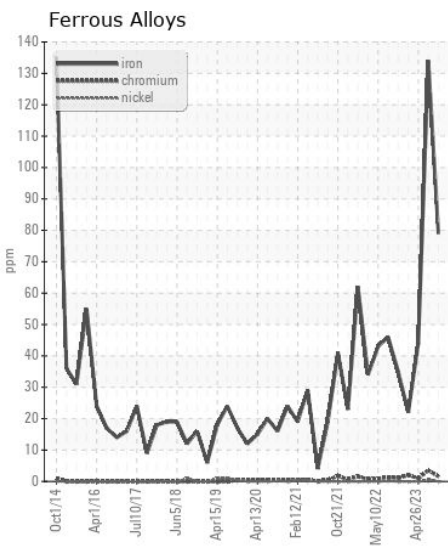
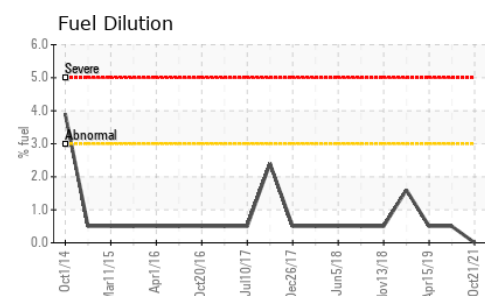
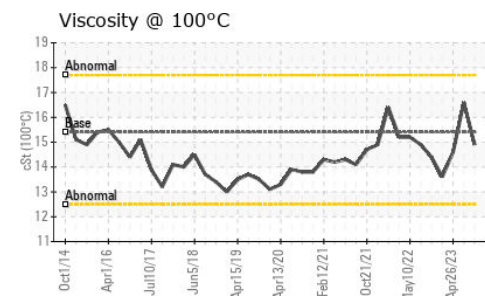
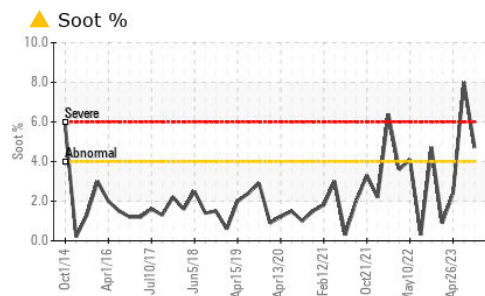
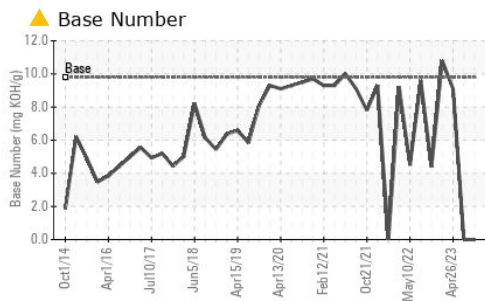
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>25	4	8	8
Potassium	ppm	ASTM D5185m	>20	0	<1	0
Fuel	%	ASTM D3524	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	▲ 4.7	● 8	2.4
Nitration	Abs/cm	*ASTM D7624	>20	10.5	49.0	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.5	61.8	22.2
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 level is low.

Sodium	ppm	ASTM D5185m		1	1	<1
Boron	ppm	ASTM D5185m	0	5	2	8
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	60	60	63
Manganese	ppm	ASTM D5185m	0	<1	2	<1
Magnesium	ppm	ASTM D5185m	1010	903	899	1000
Calcium	ppm	ASTM D5185m	1070	1121	1066	1273
Phosphorus	ppm	ASTM D5185m	1150	1004	1029	1075
Zinc	ppm	ASTM D5185m	1270	1243	1225	1409
Sulfur	ppm	ASTM D5185m	2060	2973	2554	3626
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	114.8	14.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 0.0	▲ 0.0	9.1
Visc @ 100°C	cSt	ASTM D445	15.4	14.9	▲ 16.6	14.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0102362 **Received** : 08 Feb 2024
Lab Number : 06084281 **Tested** : 12 Feb 2024
Unique Number : 10871726 **Diagnosed** : 12 Feb 2024 - Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution)

GFL Environmental - 035 - Greensboro
 1236 Elon Place
 High Point, NC
 US 27263
 Contact: JORGE COSTA
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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)