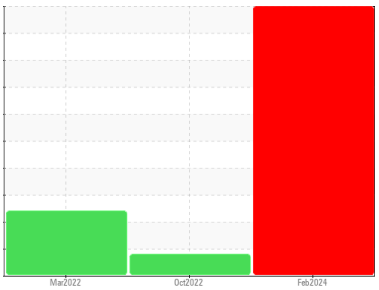
PROBLEM SUMMARY

Sample Rating Trend

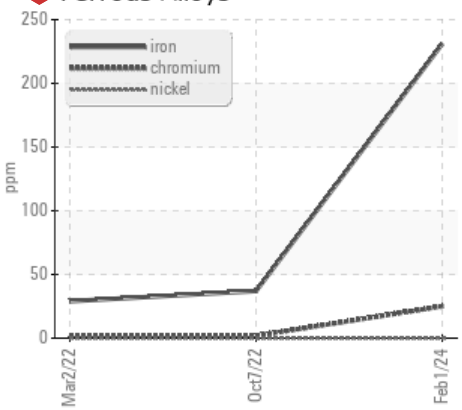


WEAR

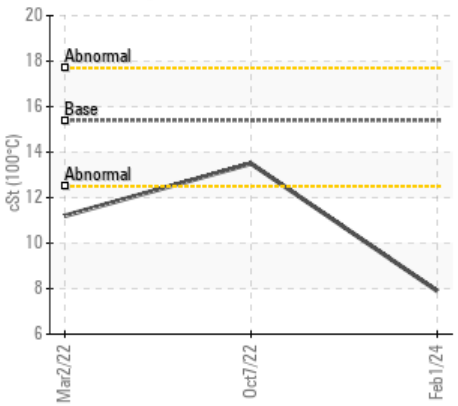
Machine Id
789M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (36 QTS)

COMPONENT CONDITION SUMMARY

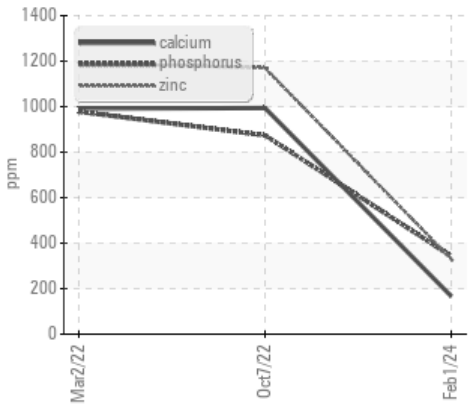
Ferrous Alloys



Viscosity @ 100°C



Additives



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	MARGINAL	SEVERE
Iron	ppm	ASTM D5185m	>100	**231**	37	29
Chromium	ppm	ASTM D5185m	>20	**25**	2	2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**0.0**	6.0	6.6

Customer Id: GFL410
Sample No.: GFL0109973
Lab Number: 06081137
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

07 Oct 2022 Diag: Aaron Black

FUEL

No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

02 Mar 2022 Diag: Jonathan Hester

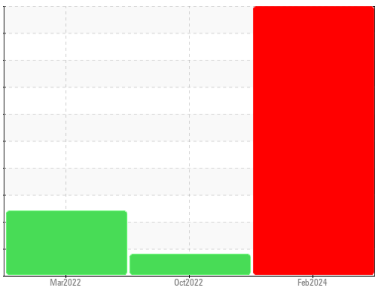
FUEL

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. 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.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
789M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (36 QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Wear
Ring and cylinder wear is indicated.

Contamination
Fuel content negligible. There is no indication of any contamination in the oil.

Fluid Condition
The oil viscosity is lower than normal. Additive levels indicate the addition of a different brand, or type of oil. The BN level is low. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0109973**	GFL0052066	GFL0018450
Sample Date		Client Info		**01 Feb 2024**	07 Oct 2022	02 Mar 2022
Machine Age	hrs	Client Info		**16618**	5720	5143
Oil Age	hrs	Client Info		**600**	5143	0
Oil Changed		Client Info		**Changed**	Changed	N/A
Sample Status				**SEVERE**	MARGINAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	● **231**	37	29
Chromium	ppm	ASTM D5185m	>20	▲ **25**	2	2
Nickel	ppm	ASTM D5185m	>4	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	8	11
Lead	ppm	ASTM D5185m	>40	**0**	0	<1
Copper	ppm	ASTM D5185m	>330	**4**	<1	1
Tin	ppm	ASTM D5185m	>15	**0**	0	0
Antimony	ppm	ASTM D5185m		**---**	---	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**24**	0	2
Barium	ppm	ASTM D5185m	0	**5**	0	0
Molybdenum	ppm	ASTM D5185m	60	▲ **4**	52	56
Manganese	ppm	ASTM D5185m	0	**3**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	▲ **64**	846	860
Calcium	ppm	ASTM D5185m	1070	▲ **167**	994	991
Phosphorus	ppm	ASTM D5185m	1150	▲ **343**	874	978
Zinc	ppm	ASTM D5185m	1270	▲ **330**	1170	1192
Sulfur	ppm	ASTM D5185m	2060	▲ **1220**	2640	2404

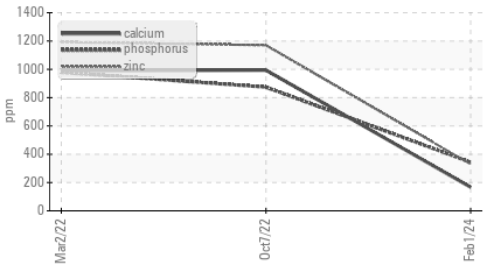
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**12**	4	5
Sodium	ppm	ASTM D5185m		**0**	8	10
Potassium	ppm	ASTM D5185m	>20	**2**	6	8
Fuel	%	ASTM D3524	>5	**0.5**	▲ 2.2	● 14.9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	1.5	1.3
Nitration	Abs/cm	*ASTM D7624	>20	**3.5**	13.6	13.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.1**	27.8	25.3

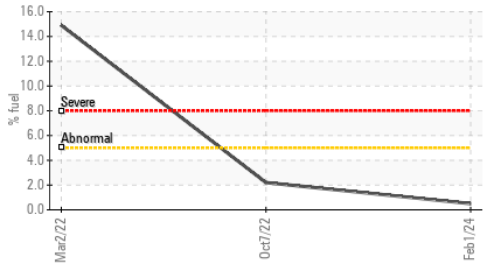
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**21.7**	25.1	23.2
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	6.0	6.6

OIL ANALYSIS REPORT

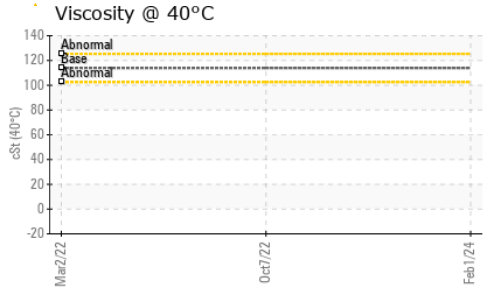
Additives



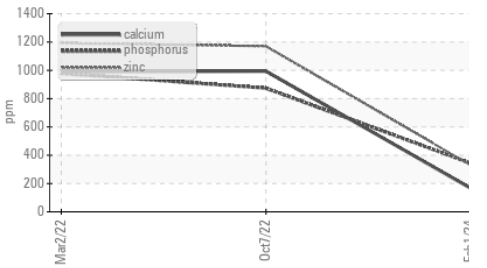
Fuel Dilution



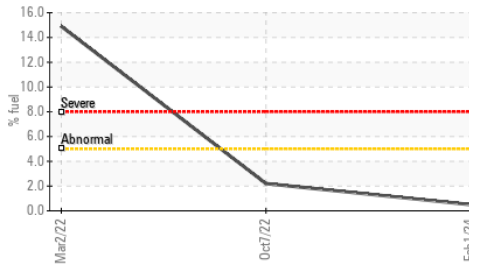
Viscosity @ 40°C



Additives



Fuel Dilution

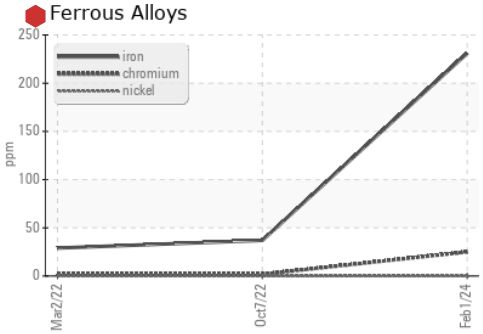


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

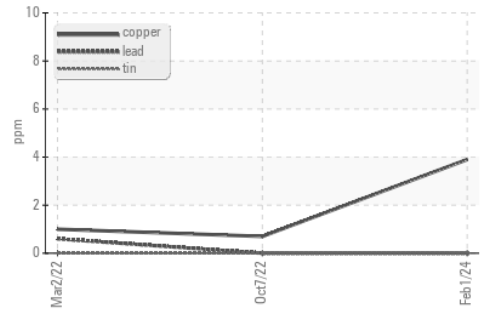
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **7.9**	13.5	▲ 11.2

GRAPHS

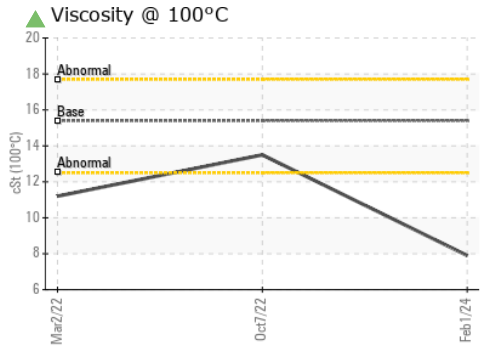
Ferrous Alloys



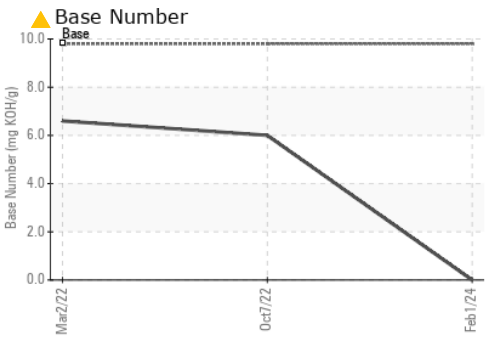
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109973
Lab Number : 06081137
Unique Number : 10863228
Test Package : FLEET (Additional Tests: FuelDilution, KV40, PercentFuel)

Received : 06 Feb 2024
Tested : 09 Feb 2024
Diagnosed : 09 Feb 2024 - Jonathan Hester

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)

GFL Environmental - 410 - Michigan West
39000 Van Born Rd
Wayne, MI
US 48184
Contact: Belal Dgheish
bdgheish@gflenv.com
T: (734)714-2340
F:

Report Id: GFL410 [WUSCAR] 06081137 (Generated: 02/09/2024 13:04:07) Rev: 1

Submitted By: "Billy" see also GFL468 - Belal Dgheish