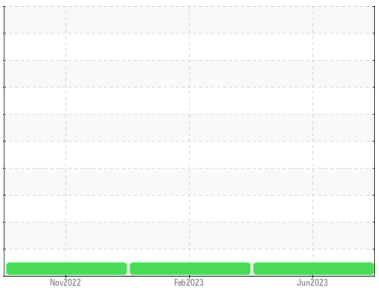
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
513019
Component
Diesel Engine
Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**GFL0073479**	GFL0064734	GFL0060818
Sample Date		Client Info		**26 Jun 2023**	10 Feb 2023	22 Nov 2022
Machine Age	hrs	Client Info		**1843**	1062	420
Oil Age	hrs	Client Info		**781**	600	420
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	**<1.0**	<1.0	0.6
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	**29**	33	39
Chromium	ppm	ASTM D5185m	>20	**2**	2	1
Nickel	ppm	ASTM D5185m	>4	**1**	<1	0
Titanium	ppm	ASTM D5185m		**14**	12	0
Silver	ppm	ASTM D5185m	>3	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**18**	14	10
Lead	ppm	ASTM D5185m	>40	**1**	2	<1
Copper	ppm	ASTM D5185m	>330	**3**	6	26
Tin	ppm	ASTM D5185m	>15	**1**	2	0
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m		**51**	73	61
Barium	ppm	ASTM D5185m		**0**	0	3
Molybdenum	ppm	ASTM D5185m		**37**	45	10
Manganese	ppm	ASTM D5185m		**1**	1	4
Magnesium	ppm	ASTM D5185m		**769**	654	645
Calcium	ppm	ASTM D5185m		**1714**	1484	1360
Phosphorus	ppm	ASTM D5185m		**728**	689	696
Zinc	ppm	ASTM D5185m		**875**	836	783
Sulfur	ppm	ASTM D5185m		**3875**	2846	3219

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	**11**	15	41
Sodium	ppm	ASTM D5185m		**5**	4	3
Potassium	ppm	ASTM D5185m	>20	**37**	39	33

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	**0.8**	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**10.5**	10.2	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.0**	21.7	21.1

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.2**	16.7	16.5
Base Number (BN)	mg KOH/g	ASTM D2896		**6.8**	6.8	8.0

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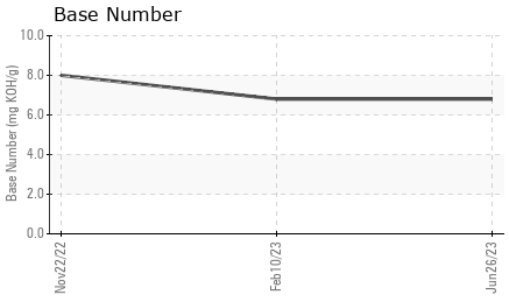
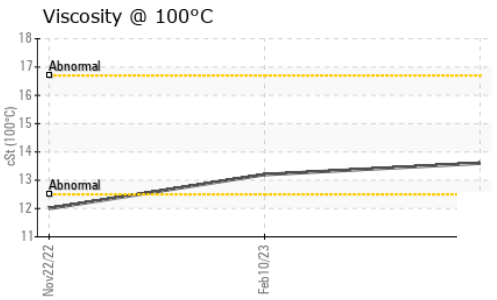
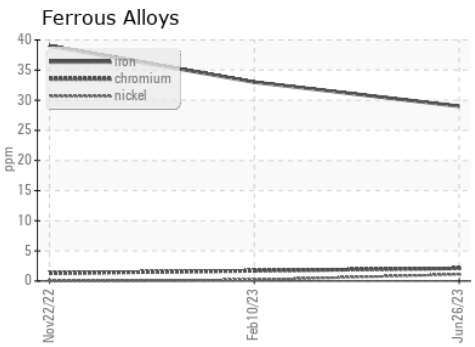


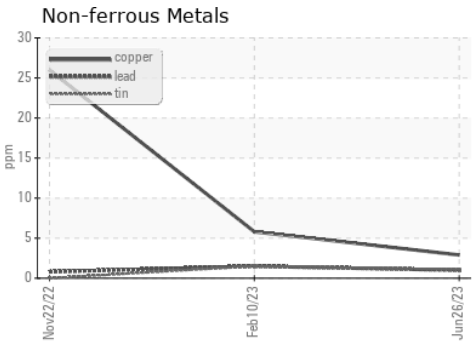


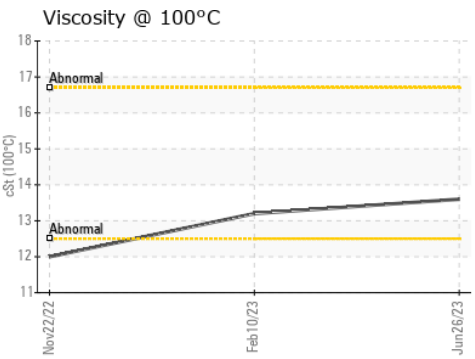
VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

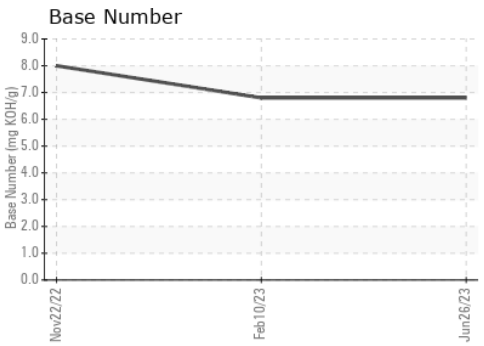
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445		**13.6**	13.2	12.0

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0073479
Lab Number : 05886450
Unique Number : 10536933
Test Package : FLEET

Received : 29 Jun 2023
Diagnosed : 03 Jul 2023
Diagnostician : Don Baldridge

GFL Environmental - 629 - Northern A1
3947 US 131 N
Kalkaska, MI
US 49646-8428
Contact: MITCH HERSHBERGER
T: (231)624-0848
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)