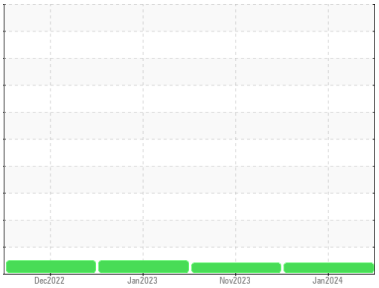
OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY

Machine Id
225021-825
Component
Diesel Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (6 QTS)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. 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 oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0096288**	GFL0096314	GFL0064393
Sample Date		Client Info		**22 Jan 2024**	28 Nov 2023	13 Jan 2023
Machine Age	mls	Client Info		**160884**	0	137468
Oil Age	mls	Client Info		**137468**	0	5584
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0
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	**104**	87	50
Chromium	ppm	ASTM D5185m	>20	**3**	2	2
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	1
Titanium	ppm	ASTM D5185m		**11**	12	4
Silver	ppm	ASTM D5185m	>3	**0**	0	<1
Aluminum	ppm	ASTM D5185m	>20	**16**	13	8
Lead	ppm	ASTM D5185m	>40	**0**	0	1
Copper	ppm	ASTM D5185m	>330	**22**	24	14
Tin	ppm	ASTM D5185m	>15	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**43**	35	39
Barium	ppm	ASTM D5185m		**0**	2	0
Molybdenum	ppm	ASTM D5185m		**75**	80	197
Manganese	ppm	ASTM D5185m		**2**	<1	1
Magnesium	ppm	ASTM D5185m		**735**	659	588
Calcium	ppm	ASTM D5185m		**1691**	1529	1483
Phosphorus	ppm	ASTM D5185m	760	**745**	696	721
Zinc	ppm	ASTM D5185m	830	**921**	873	909
Sulfur	ppm	ASTM D5185m	2770	**3130**	3089	3148

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**13**	14	13
Sodium	ppm	ASTM D5185m		**8**	6	4
Potassium	ppm	ASTM D5185m	>20	**2**	4	3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**24.9**	23.6	16.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**43.2**	41.3	28.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**52.3**	48.4	27.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	**4.2**	4.0	4.7

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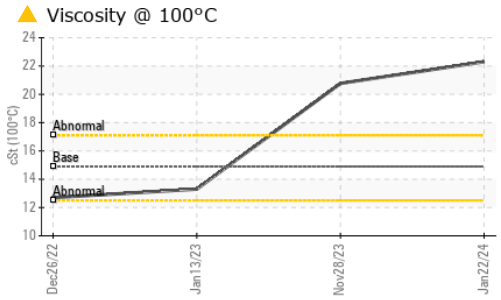
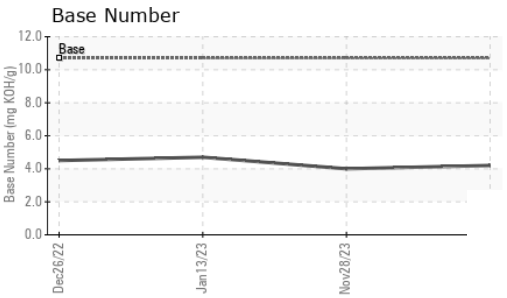


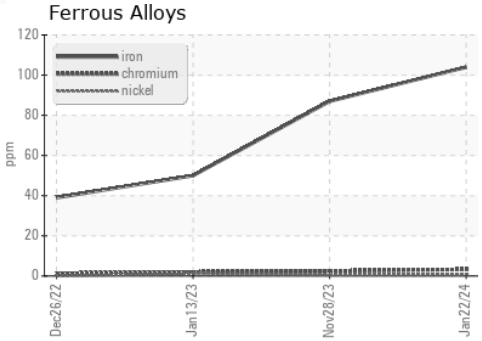


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

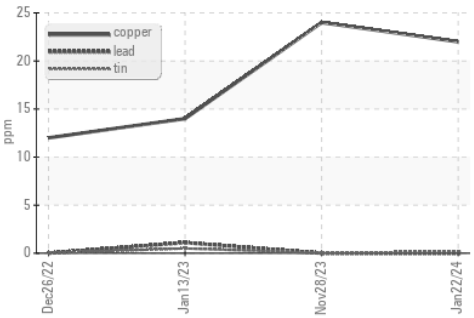
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	▲ **22.3**	▲ 20.77	13.3

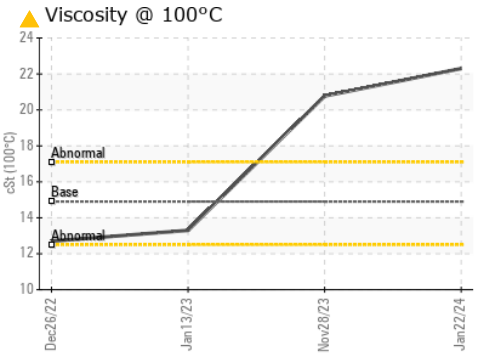
GRAPHS

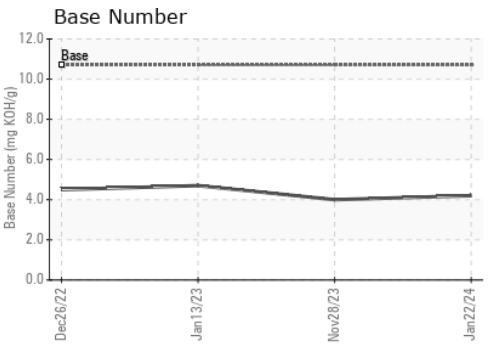
Ferrous Alloys



Non-ferrous Metals







Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0096288
Lab Number : 06072154
Unique Number : 10848831
Test Package : FLEET

Recieved : 26 Jan 2024
Diagnosed : 30 Jan 2024
Diagnostician : 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 - 624 - Elmira Hauling
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Elmira, MI
US 49730
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Report Id: GFL624 [WUSCAR] 06072154 (Generated: 01/31/2024 04:07:55) Rev: 1

Submitted By: KEITH CAMPBELL