



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
414063
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0115777	GFL0103461	GFL0103457
Sample Date		Client Info		16 Apr 2024	29 Mar 2024	08 Mar 2024
Machine Age	hrs	Client Info		1837	1717	1586
Oil Age	hrs	Client Info		251	131	1586
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Not Chngd	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	4	4	11
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	<1	2	4
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	32	36	226
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

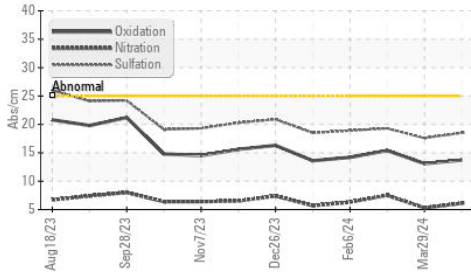
Silicon	ppm	ASTM D5185m	>25	3	5	7
Potassium	ppm	ASTM D5185m	>20	2	2	8
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.2	0.1	0.3
Nitration	Abs/cm	*ASTM D7624	>20	6.1	5.3	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.5	17.6	19.3
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

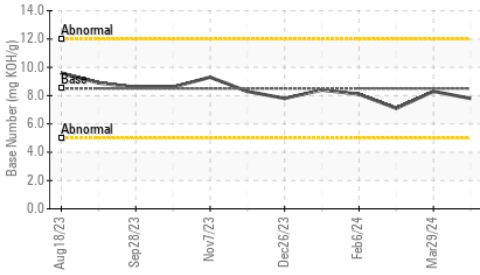
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	1	3	2
Boron	ppm	ASTM D5185m	250	12	21	18
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	75	79	76
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m	450	929	830	836
Calcium	ppm	ASTM D5185m	3000	1245	1129	1082
Phosphorus	ppm	ASTM D5185m	1150	1031	855	914
Zinc	ppm	ASTM D5185m	1350	1277	1076	1115
Sulfur	ppm	ASTM D5185m	4250	3567	2587	2673
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	13.1	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.8	8.3	7.1
Visc @ 100°C	cSt	ASTM D445	14.4	12.8	13.0	12.8

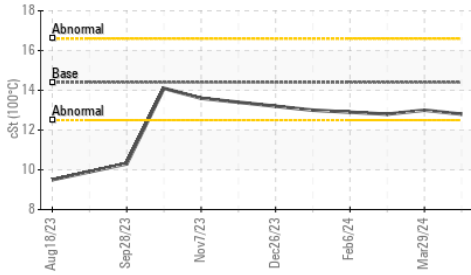
FT-IR (Direct Trend)



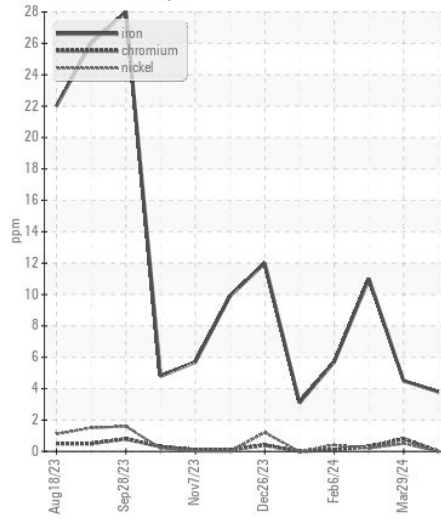
Base Number



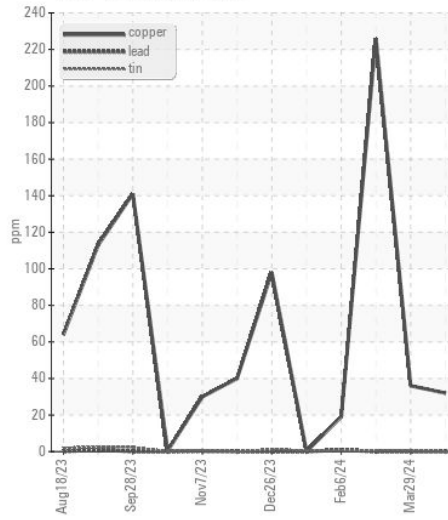
Viscosity @ 100°C



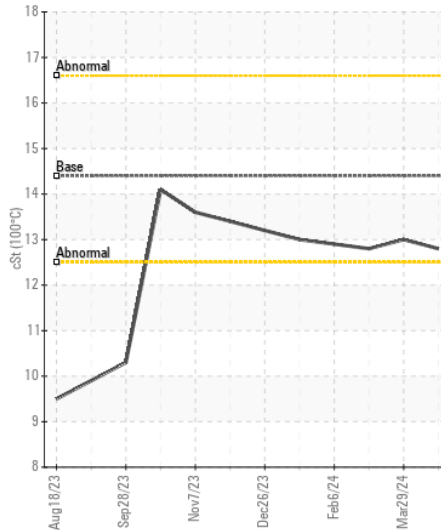
Ferrous Alloys



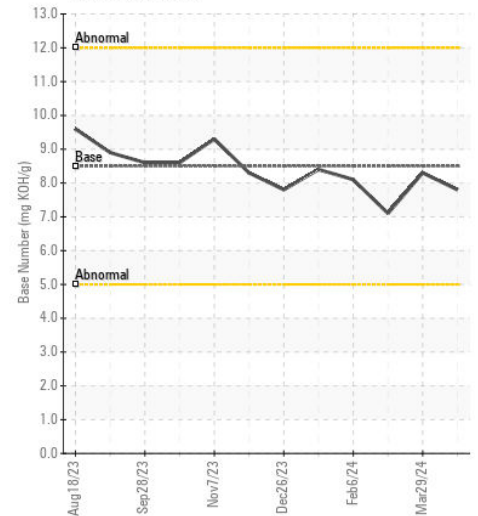
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0115777
 Lab Number : 06158748
 Unique Number : 10994171
 Test Package : FLEET

Received : 24 Apr 2024
 Tested : 25 Apr 2024
 Diagnosed : 25 Apr 2024 - Wes Davis

GFL Environmental - 180 - Tuscaloosa Hauling
 4701 12TH ST NE
 Tuscaloosa, AL
 US 35404

Contact: FREDERICK ROGERS
 fred.rogers@gflenv.com

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)

T:
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