

OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL





(41434UA) 813006 Component

Diesel Engine

DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS Recommendation

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

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

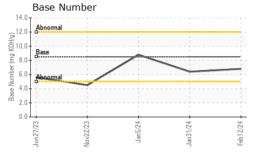
Fluid Condition

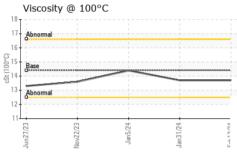
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0108290 GFL0108283 GFL009 Sample Date Client Info 12 Feb 2024 31 Jan 2024 05 Jan 2 Machine Age hrs Client Info 3623 3548 3360 Oil Age hrs Client Info 3623 3548 3360 Oil Changed Client Info Changed Not Changd Not Changed Not Changed North Changed N	SAE 40 (GAL)		Jun 2023	Nov2023	Jan2024 Jan2024	Feb 2024	
Sample Date Client Info 3623 3548 3360	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 3623 3548 3360 Oil Age hrs Client Info 3623 3548 3360 Oil Changed Client Info Change Not Changd N/A Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 hist Fuel WC Method >0.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Sample Number		Client Info		GFL0108290	GFL0108263	GFL0098239
Oil Age hrs Client Info 3623 3548 3360 Oil Changed Sample Status Client Info Changed Not Changd N/A Not Changd N/A N/A CONTAMINATION method limit/base current history1 hist 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 NEG WEAR METALS method limit/base current history1 hist Iron ppm ASTM D5185m >120 16 10 5 Chromium ppm ASTM D5185m >20 <1 <1 0 WEAR METALS method limit/base current history1 hist Iron ppm ASTM D5185m >20 <1 <1 0 Silver ppm ASTM D5185m >20 2 2 2 <1 <1 </td <td>Sample Date</td> <td></td> <td>Client Info</td> <td></td> <th>12 Feb 2024</th> <td>31 Jan 2024</td> <td>05 Jan 2024</td>	Sample Date		Client Info		12 Feb 2024	31 Jan 2024	05 Jan 2024
Coli Changed Client Info NoRMAL	Machine Age	hrs	Client Info		3623	3548	3360
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 hist history1 hist history1 hist history1 hist history1 hist history1 hist	Oil Age	hrs	Client Info		3623	3548	3360
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 hist history1 hist history1 hist history1 hist history1 hist history1 hist			Client Info		Changed	Not Changd	N/A
Fuel	Sample Status				_	NORMAL	NORMAL
Water WC Method SO.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 hist Iron ppm ASTM D5185m >120 16 10 5 Chromium ppm ASTM D5185m >20 -1 -1 0 Nickel ppm ASTM D5185m >20 -1 -1 0 Nickel ppm ASTM D5185m >2 -1 -1 0 Silver ppm ASTM D5185m >2 -1 0 0 Aluminum ppm ASTM D5185m >20 2 -1 0 0 Aluminum ppm ASTM D5185m >20 2 2 -1 0 Copper ppm ASTM D5185m >20 0 0 0 0 Calcad ppm ASTM D5185m 0 0 0	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 16 10 5 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Description	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	16	10	5
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Silver	Nickel	ppm	ASTM D5185m	>5	3	3	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Deciding	Silver	ppm	ASTM D5185m	>2	<1	0	0
Copper ppm ASTM D5185m >330 4 3 2 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	2	2	<1
Trin	_ead	ppm	ASTM D5185m	>40	0	0	0
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 250 7 6 9 Barium ppm ASTM D5185m 10 12 <1 0 Molybdenum ppm ASTM D5185m 100 59 61 56 Manganese ppm ASTM D5185m 100 59 61 56 Magnesium ppm ASTM D5185m 450 893 901 922 Calcium ppm ASTM D5185m 3000 1128 1146 1074 Phosphorus ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 250 3413 2985 3104 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	4	3	2
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 250 7 6 9 Barium ppm ASTM D5185m 10 12 <1	Tin	ppm	ASTM D5185m	>15	<1	<1	0
ADDITIVES method limit/base current history1 hist Boron ppm ASTM D5185m 250 7 6 9 Barium ppm ASTM D5185m 10 12 <1	Vanadium	ppm	ASTM D5185m		0	0	<1
Boron ppm ASTM D5185m 250 7 6 9	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 10 12 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 100 59 61 56 Manganese ppm ASTM D5185m <1 <1 <1 <1 Magnesium ppm ASTM D5185m 450 893 901 922 Calcium ppm ASTM D5185m 3000 1128 1146 1074 Phosphorus ppm ASTM D5185m 1150 1057 978 1043 Zinc ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/b	Boron	ppm	ASTM D5185m	250	7	6	9
Manganese ppm ASTM D5185m <1 <1 <1 Magnesium ppm ASTM D5185m 450 893 901 922 Calcium ppm ASTM D5185m 3000 1128 1146 1074 Phosphorus ppm ASTM D5185m 1150 1057 978 1043 Zinc ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Barium	ppm	ASTM D5185m	10	12	<1	0
Magnesium ppm ASTM D5185m 450 893 901 922 Calcium ppm ASTM D5185m 3000 1128 1146 1074 Phosphorus ppm ASTM D5185m 1150 1057 978 1043 Zinc ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Molybdenum	ppm	ASTM D5185m	100	59	61	56
Calcium ppm ASTM D5185m 3000 1128 1146 1074 Phosphorus ppm ASTM D5185m 1150 1057 978 1043 Zinc ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 1057 978 1043 Zinc ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Magnesium	ppm	ASTM D5185m	450	893	901	922
Zinc ppm ASTM D5185m 1350 1167 1217 1238 Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Calcium	ppm	ASTM D5185m	3000	1128	1146	1074
Sulfur ppm ASTM D5185m 4250 3413 2985 3104 CONTAMINANTS method limit/base current history1 hist Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Phosphorus	ppm	ASTM D5185m	1150	1057	978	1043
CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1	Zinc	ppm	ASTM D5185m	1350	1167	1217	1238
Silicon ppm ASTM D5185m >25 5 3 4 Sodium ppm ASTM D5185m >216 0 0 <1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >4 0.6 0.5 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 8.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	Sulfur	ppm	ASTM D5185m	4250	3413	2985	3104
Sodium ppm ASTM D5185m >216 0 0 <1 Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 hist Soot % % *ASTM D7844 >4 0.6 0.5 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 8.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 2 1 INFRA-RED method limit/base current history1 hist Soot % % *ASTM D7844 >4 0.6 0.5 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 8.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	Silicon	ppm	ASTM D5185m	>25	5	3	4
INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.6 0.5 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 8.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	Sodium	ppm	ASTM D5185m	>216	0	0	<1
Soot % % *ASTM D7844 >4 0.6 0.5 0.2 Nitration Abs/cm *ASTM D7624 >20 8.8 8.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	Potassium	ppm	ASTM D5185m	>20	1	2	1
Nitration Abs/cm *ASTM D7624 >20 8.8 8.6 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.2 19.7 17.6	Soot %	%	*ASTM D7844	>4	0.6	0.5	0.2
	Nitration	Abs/cm	*ASTM D7624	>20	8.8	8.6	5.4
FLUID DEGRADATION method limit/base current history1 history1	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.2	19.7	17.6
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Oxidation	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	15.3	13.4
Base Number (BN) mg KOH/g ASTM D2896 8.5 6.8 6.4 8.8	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.8	6.4	8.8



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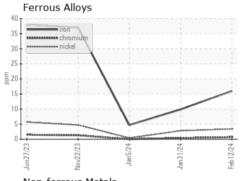


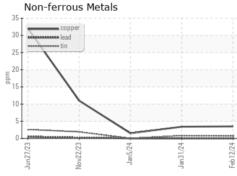


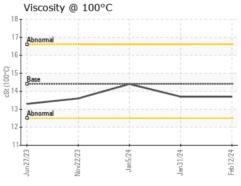
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

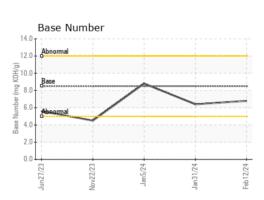
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.7	13.7	14.4

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number : 06088657 Unique Number : 10876102 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0108290 Received : 14 Feb 2024 **Tested**

: 15 Feb 2024 Diagnosed : 15 Feb 2024 - Wes Davis

GFL Environmental - 652 - Fredericksburg Hauling

10954 Houser Drive Fredericksburg, VA

US 22408 Contact: TECHNICIAN ACCOUNT

To discuss this sample report, contact Customer Service at 1-800-237-1369.

catherine.anastasio@wearcheck.com T:

* - 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)

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