

OIL ANALYSIS REPORT

Sample Rating Trend









(24552UA)
Machine Id
811009
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

Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

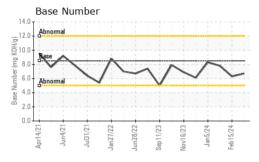
Fluid Condition

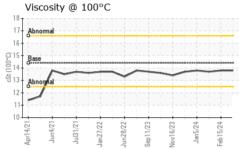
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method imitibase current history1 history2	SAE 40 (GAL)						
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 8221 8084 7953 Oil Age hrs Client Info 8221 8084 7953 Oil Changed Client Info Changed Not Changd Not Changd Not Changd Sample Status Image: Client Info Changed Not Changd Not Changd Not Changd CONTAMINATION method Imilibase current history history Fuel WC Method >3.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG NEG NEG NEG NEG NEG WEAR METALS method Imitibase current history history Iron ppm ASTM D5185m >20 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <	Sample Number		Client Info		GFL0111862	GFL0108289	GFL0108302
Oil Age hrs Client Info 8221 8084 7953 Oil Changed Sample Status Client Info Changed Not Changed Not Changd	Sample Date		Client Info		07 Mar 2024	15 Feb 2024	29 Jan 2024
Oil Changed Sample Status Client Info Changed NORMAL NORMAL Not Changd NORMAL NORMAL Not Changd NORMAL Not Changd NORMAL NORMAL NORMAL ASTM D5180 2 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 <1.0 <1.0 <1.0 <1.0	Machine Age	hrs	Client Info		8221	8084	7953
CONTAMINATION	Oil Age	hrs	Client Info		8221	8084	7953
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limil/base current history1 history2 Iron ppm ASTM DS185m >12.0 11 8 3 Chromium ppm ASTM DS185m >2.2 <1 <1 <1 Nickel ppm ASTM DS185m >2.2 <1 <1 <1 <1 Silver ppm ASTM DS185m >2.2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Oil Changed		Client Info		Changed	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 11 8 3 Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 2 1 <1 <1 Silver ppm ASTM D5185m >2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol WC Method MEG NEG NEG	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 11 8 3 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 <1 <1 Nickel ppm ASTM D5185m >5 2 1 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	11	8	3
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	2	1	<1
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Lead		ppm	ASTM D5185m	>2	<1	0	0
Copper ppm ASTM D5185m >330 14 10 10 Tin ppm ASTM D5185m >15 2 1 <1	Aluminum	ppm	ASTM D5185m	>20	3	2	2
Tin ppm ASTM D5185m >15 2 1 <1 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES Boron ppm ASTM D5185m 250 8 7 8 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 54 61 Manganese ppm ASTM D5185m 100 62 54 61 Magnesium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m >25 5 4 2 Sodium ppm ASTM D5185m >26	Lead	ppm	ASTM D5185m	>40	1	0	<1
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 8 7 8 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 54 61 Manganese ppm ASTM D5185m 100 62 54 61 Magnesium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 1150 1051 929 957 Zinc ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m 225 5 4 <t< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>>330</td><th>14</th><td>10</td><td>10</td></t<>	Copper	ppm	ASTM D5185m	>330	14	10	10
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 250 8 7 8 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 54 61 Manganese ppm ASTM D5185m 100 62 54 61 Magnesium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m >25 3165 2808 3063 CONTAMINANTS method limit/base current history1 history2 Silicon ppm	Tin	ppm		>15	2		<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 250 8 7 8 Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 54 61 Manganese ppm ASTM D5185m 100 62 54 61 Magnesium ppm ASTM D5185m 100 954 874 886 Calcium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m 4250 3165 2808 3063 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >216 2 1 0 Potassium ppm ASTM D5185m	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 10 0 0 0 Molybdenum ppm ASTM D5185m 100 62 54 61 Manganese ppm ASTM D5185m 100 954 874 886 Calcium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m 4250 3165 2808 3063 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 2 Sodium ppm ASTM D5185m >20 3 2 3 INFRA-RED method	ADDITIVES		method	limit/base	current	history1	history2
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Manganese ppm ASTM D5185m <1 <1 0 Magnesium ppm ASTM D5185m 450 954 874 886 Calcium ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 1150 1051 929 957 Zinc ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m 4250 3165 2808 3063 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 2 Sodium ppm ASTM D5185m >216 2 1 0 Potassium ppm ASTM D5185m >20 3 2 3 INFRA-RED method limit/base current history1 history2 Soot % % ASTM D7844 >4 0.6 <td></td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th></th> <td></td> <td></td>		ppm	ASTM D5185m				
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Calcium ppm ASTM D5185m 3000 1149 1046 1115 Phosphorus ppm ASTM D5185m 1150 1051 929 957 Zinc ppm ASTM D5185m 1350 1236 1166 1190 Sulfur ppm ASTM D5185m 4250 3165 2808 3063 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 2 Sodium ppm ASTM D5185m >216 2 1 0 Potassium ppm ASTM D5185m >20 3 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.4 8.3 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION imit/	-	ppm					
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Sodium ppm ASTM D5185m >216 2 1 0 Potassium ppm ASTM D5185m >20 3 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 8.4 8.3 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9		ITS	method		current	history1	history2
Potassium ppm ASTM D5185m >20 3 2 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 8.4 8.3 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9							
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 8.4 8.3 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9		ppm	ASTM D5185m	>216			
Soot % % *ASTM D7844 >4 0.6 0.5 0.4 Nitration Abs/cm *ASTM D7624 >20 8.4 8.3 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9	Potassium	ppm	ASTM D5185m	>20	3	2	3
Nitration Abs/cm *ASTM D7624 >20 8.4 8.3 7.1 Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.6 19.5 18.5 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9	Soot %	%	*ASTM D7844	>4	0.6		0.4
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9	Nitration	Abs/cm	*ASTM D7624	>20	8.4	8.3	7.1
Oxidation Abs/.1mm *ASTM D7414 >25 14.8 14.9 13.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.6	19.5	18.5
	FLUID DEGRA	NOITAC	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.5 6.7 6.3 7.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.8	14.9	13.9
	Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.7	6.3	7.8



OIL ANALYSIS REPORT

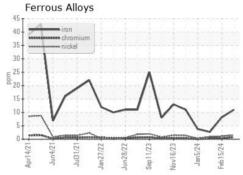


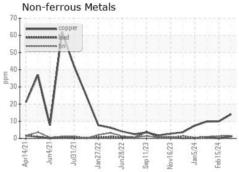


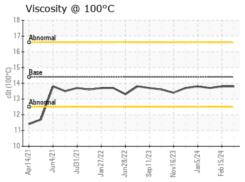
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

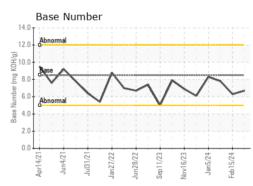
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.8	13.7

GRAPHS













Laboratory Sample No.

Lab Number : 06113491 Unique Number: 10916988

: GFL0111862 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 08 Mar 2024 **Tested**

: 11 Mar 2024 Diagnosed : 11 Mar 2024 - Wes Davis

GFL Environmental - 652 - Fredericksburg Hauling

10954 Houser Drive Fredericksburg, VA US 22408

Contact: WILLIAM MILO wmilo@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:

F: