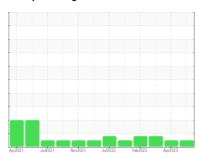


# **OIL ANALYSIS REPORT**

Sample Rating Trend







# Machine Id **811002**

Component **Diesel Engine** 

**DIESEL ENGINE OIL SAE 40 (--- 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

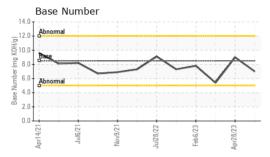
## **Fluid Condition**

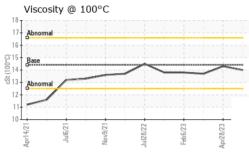
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Apr2021	Jul2021 Nov2021	Jul2022 Feb2023 Ap	or2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0083846	GFL0061472	GFL0061512
Sample Date		Client Info		14 Jul 2023	28 Apr 2023	21 Apr 2023
Machine Age	hrs	Client Info		4759	4759	4759
Oil Age	hrs	Client Info		4759	4759	4759
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	16	2	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	3	1	<u>^</u> 7
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	4	1	12
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	3	5	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	3	5 0	5
Barium						
Barium Molybdenum	ppm	ASTM D5185m	10	0	0	0
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	10	0 62	0 61	0 64
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	100	0 62 <1	0 61 <1	0 64 1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450	0 62 <1 900	0 61 <1 1018	0 64 1 907
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000	0 62 <1 900 1082	0 61 <1 1018 1130	0 64 1 907 1140
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150	0 62 <1 900 1082 967	0 61 <1 1018 1130 1087	0 64 1 907 1140 937
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350	0 62 <1 900 1082 967 1198	0 61 <1 1018 1130 1087 1382	0 64 1 907 1140 937 1279
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25	0 62 <1 900 1082 967 1198 2737	0 61 <1 1018 1130 1087 1382 3934 history1	0 64 1 907 1140 937 1279 2868
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250	0 62 <1 900 1082 967 1198 2737	0 61 <1 1018 1130 1087 1382 3934 history1	0 64 1 907 1140 937 1279 2868 history2 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25	0 62 <1 900 1082 967 1198 2737 current	0 61 <1 1018 1130 1087 1382 3934 history1	0 64 1 907 1140 937 1279 2868 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216	0 62 <1 900 1082 967 1198 2737 current 4	0 61 <1 1018 1130 1087 1382 3934 history1	0 64 1 907 1140 937 1279 2868 history2 5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20	0 62 <1 900 1082 967 1198 2737 current 4 2	0 61 <1 1018 1130 1087 1382 3934 history1 3 2	0 64 1 907 1140 937 1279 2868 history2 5 4
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >3	0 62 <1 900 1082 967 1198 2737 current 4 2 2	0 61 <1 1018 1130 1087 1382 3934 history1 3 2 5	0 64 1 907 1140 937 1279 2868 history2 5 4 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >3 >20	0 62 <1 900 1082 967 1198 2737 current 4 2 2	0 61 <1 1018 1130 1087 1382 3934 history1 3 2 5 history1	0 64 1 907 1140 937 1279 2868 history2 5 4 0 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  MEthod  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D76185m  ASTM D76185m  ASTM D76185m  ASTM D76185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >3 >20	0 62 <1 900 1082 967 1198 2737 current 4 2 2 current 0.8 8.2	0 61 <1 1018 1130 1087 1382 3934 history1 3 2 5 history1 0.1 5.1	0 64 1 907 1140 937 1279 2868 history2 5 4 0 history2 0.6 8.5
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  MEthod  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D76185m  ASTM D76185m  ASTM D76185m  ASTM D76185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >3 >20 >30	0 62 <1 900 1082 967 1198 2737 current 4 2 2 current 0.8 8.2 20.0	0 61 <1 1018 1130 1087 1382 3934 history1 3 2 5 history1 0.1 5.1 18.2	0 64 1 907 1140 937 1279 2868 history2 5 4 0 history2 0.6 8.5 18.7
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  Method ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m ASTM D5185m  ASTM D5185m  Method  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >3 >20 >30 limit/base	0 62 <1 900 1082 967 1198 2737 current 4 2 2 current 0.8 8.2 20.0 current	0 61 <1 1018 1130 1087 1382 3934 history1 3 2 5 history1 0.1 5.1 18.2 history1	0 64 1 907 1140 937 1279 2868 history2 5 4 0 history2 0.6 8.5 18.7 history2



## **OIL ANALYSIS REPORT**

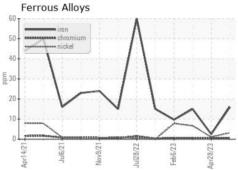


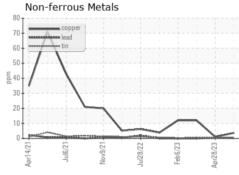


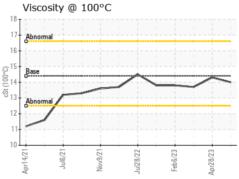
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

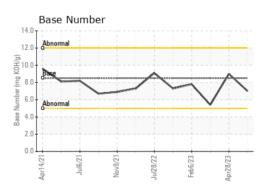
FLUID PROP	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	14.0	14.3	13.7

## **GRAPHS**













Certificate L2367

Laboratory Test Package : FLEET

Sample No. Lab Number Unique Number : 10561048

: GFL0083846 : 05899692

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Jul 2023

Diagnosed : 19 Jul 2023 Diagnostician : Jonathan Hester GFL Environmental - 652 - Fredericksburg Hauling

10954 Houser Drive Fredericksburg, VA US 22408

Contact: WILLIAM MILO

wmilo@gflenv.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)

F: