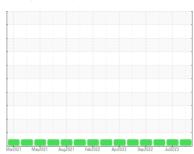


# **OIL ANALYSIS REPORT**

### **Sample Rating Trend**



NORMAL



# 410005 AUTOCAR DC64

Component

**Diesel Engine** 

**DIESEL ENGINE OIL SAE 40 (48 QTS)** 

### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. 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.

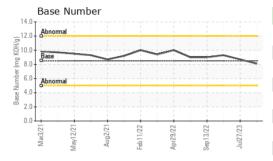
### **Fluid Condition**

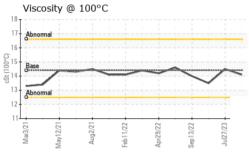
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

		Mar2021 Mi	ay2021 Aug2021 Feb	2022 Apr2022 Sep2022	Jul2023	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0094692	GFL0089265	GFL0056546
Sample Date		Client Info		10 Oct 2023	27 Jul 2023	09 Dec 2022
Machine Age	hrs	Client Info		7162	6604	5001
Oil Age	hrs	Client Info		558	1603	628
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>90	7	11	13
Chromium	ppm	ASTM D5185m	>20	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	5	6
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	<1	0	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	4	2	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	4	2	6
				-		
Barium	ppm	ASTM D5185m	10	0	0	0
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m	10	0 57	0 63	0 59
Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	100	0 57 <1	0 63 <1	0 59 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450	0 57 <1 916	0 63 <1 1043	0 59 <1 799
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000	0 57 <1 916 1017	0 63 <1 1043 1122	0 59 <1 799 1089
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 57 <1 916 1017 998	0 63 <1 1043 1122 1103	0 59 <1 799 1089 940
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 ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350	0 57 <1 916 1017 998 1200	0 63 <1 1043 1122 1103 1337	0 59 <1 799 1089 940 1122
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250	0 57 <1 916 1017 998 1200 2876	0 63 <1 1043 1122 1103 1337 3744	0 59 <1 799 1089 940 1122 3240
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	10 100 450 3000 1150 1350 4250	0 57 <1 916 1017 998 1200 2876	0 63 <1 1043 1122 1103 1337 3744 history1	0 59 <1 799 1089 940 1122 3240 history2
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 57 <1 916 1017 998 1200 2876 current	0 63 <1 1043 1122 1103 1337 3744 history1	0 59 <1 799 1089 940 1122 3240 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 57 <1 916 1017 998 1200 2876 current 3	0 63 <1 1043 1122 1103 1337 3744 history1	0 59 <1 799 1089 940 1122 3240 history2 2
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 57 <1 916 1017 998 1200 2876 current 3 4	0 63 <1 1043 1122 1103 1337 3744 history1 3 4	0 59 <1 799 1089 940 1122 3240 history2 2 5
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	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20	0 57 <1 916 1017 998 1200 2876 current 3 4 7	0 63 <1 1043 1122 1103 1337 3744 history1 3 4 11	0 59 <1 799 1089 940 1122 3240 history2 2 5 17 history2
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 ASTM D5185m	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >6	0 57 <1 916 1017 998 1200 2876 current 3 4 7	0 63 <1 1043 1122 1103 1337 3744 history1 3 4 11 history1 0.9	0 59 <1 799 1089 940 1122 3240 history2 2 5 17 history2 1.1
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 D5185m  ASTM D5185m  ASTM D76185m  ASTM D7844  *ASTM D7624  *ASTM D7624	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base	0 57 <1 916 1017 998 1200 2876 current 3 4 7 current 0.8 7.2	0 63 <1 1043 1122 1103 1337 3744 history1 3 4 11 history1 0.9 8.0	0 59 <1 799 1089 940 1122 3240 history2 2 5 17 history2 1.1 8.7
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 D5185m  ASTM D5185m  ASTM D76185m  ASTM D7844  *ASTM D7624  *ASTM D7624	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >6 >20 >30	0 57 <1 916 1017 998 1200 2876 current 3 4 7 current 0.8 7.2 18.9	0 63 <1 1043 1122 1103 1337 3744 history1 3 4 11 history1 0.9 8.0 20.2	0 59 <1 799 1089 940 1122 3240 history2 2 5 17 history2 1.1 8.7 21.4
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 D7624  *ASTM D7415  Method	10 100 450 3000 1150 1350 4250 limit/base >25 >216 >20 limit/base >6 >20 >30 limit/base	0 57 <1 916 1017 998 1200 2876 current 3 4 7 current 0.8 7.2 18.9 current	0 63 <1 1043 1122 1103 1337 3744 history1 3 4 11 history1 0.9 8.0 20.2 history1	0 59 <1 799 1089 940 1122 3240 history2 2 5 17 history2 1.1 8.7 21.4 history2



## **OIL ANALYSIS REPORT**

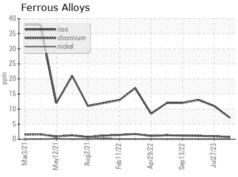


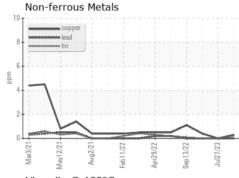


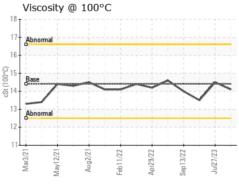
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

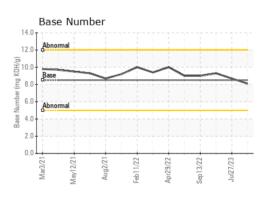
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	14.4	14.1	14.5	13.5

### **GRAPHS**













Certificate L2367

Laboratory Sample No.

Lab Number **Unique Number** Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0094692 : 05975376 : 10687326

Received : 11 Oct 2023 Diagnosed : 11 Oct 2023 Diagnostician : Wes Davis

GFL Environmental - 001 - Raleigh(CNG)

3741 Conquest Drive Garner, NC US 27529 Contact: Craig Johnson

craig.johnson@gflenv.com

T: (919)662-7100 F: (919)662-7130

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)