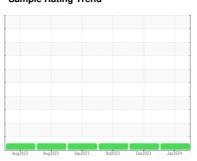


## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



NORMAL



# AUTOCAR 813022

Component

**Diesel Engine** 

{not provided} (--- 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.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

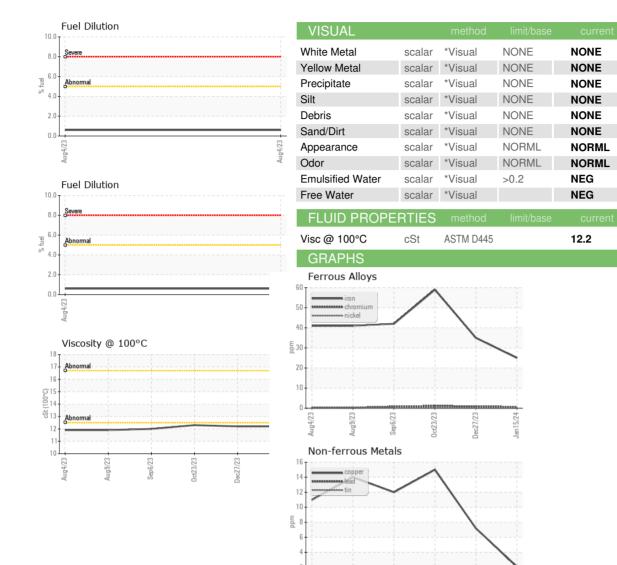
#### **Fluid Condition**

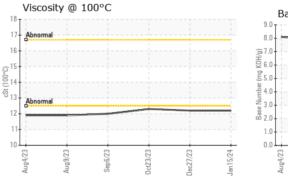
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

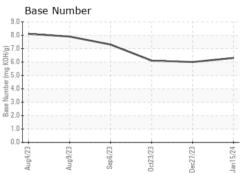
		Aug2023	Aug2023 Sep2023	Oct2023 Dec2023	Jan 2024	
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0109108	GFL0086255	GFL0086197
Sample Date		Client Info		15 Jan 2024	27 Dec 2023	23 Oct 2023
Machine Age	hrs	Client Info		1188	1064	714
Oil Age	hrs	Client Info		1188	0	714
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	25	35	59
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	12	16	24
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	2	7	15
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method				history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 16	history1 16	history2 22
	ppm		limit/base			
Boron		ASTM D5185m	limit/base	16	16	22
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	16 0	16 2	22
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 66	16 2 56	22 0 49
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 66 1	16 2 56 3	22 0 49 7
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 66 1 825	16 2 56 3 760	22 0 49 7 830
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 66 1 825 1260	16 2 56 3 760 1233	22 0 49 7 830 1237
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	16 0 66 1 825 1260 1015	16 2 56 3 760 1233 794	22 0 49 7 830 1237 693
Boron 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	limit/base	16 0 66 1 825 1260 1015	16 2 56 3 760 1233 794 1067	22 0 49 7 830 1237 693 947
Boron 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		16 0 66 1 825 1260 1015 1252 3071	16 2 56 3 760 1233 794 1067 2516	22 0 49 7 830 1237 693 947 2137
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	16 0 66 1 825 1260 1015 1252 3071	16 2 56 3 760 1233 794 1067 2516	22 0 49 7 830 1237 693 947 2137 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base	16 0 66 1 825 1260 1015 1252 3071 current	16 2 56 3 760 1233 794 1067 2516 history1	22 0 49 7 830 1237 693 947 2137 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25	16 0 66 1 825 1260 1015 1252 3071 current 5	16 2 56 3 760 1233 794 1067 2516 history1 9 3	22 0 49 7 830 1237 693 947 2137 history2 18 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20	16 0 66 1 825 1260 1015 1252 3071 current 5 1	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38	22 0 49 7 830 1237 693 947 2137 history2 18 6 52
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >25 >20 >5	16 0 66 1 825 1260 1015 1252 3071 current 5 1 28 <1.0	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38 <<1.0	22 0 49 7 830 1237 693 947 2137 history2 18 6 52 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	limit/base >25 >20 >5 limit/base	16 0 66 1 825 1260 1015 1252 3071 current 5 1 28 <1.0 current 0.5	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38 <1.0 history1	22 0 49 7 830 1237 693 947 2137 history2 18 6 52 <1.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	limit/base >25 >20 >5 limit/base >3	16 0 66 1 825 1260 1015 1252 3071 current 5 1 28 <1.0	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38 <1.0 history1 0.6	22 0 49 7 830 1237 693 947 2137 history2 18 6 52 <1.0 history2 0.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624	limit/base >25 >20 >5 limit/base >3 >20	16 0 66 1 825 1260 1015 1252 3071 current 5 1 28 <1.0 current 0.5 8.6	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38 <1.0 history1 0.6 10.2	22 0 49 7 830 1237 693 947 2137 history2 18 6 52 <1.0 history2 0.6 12.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D7624 *ASTM D7624 *ASTM D7415 method	limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	16 0 66 1 825 1260 1015 1252 3071 current 5 1 28 <1.0 current 0.5 8.6 19.9 current	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38 <1.0 history1 0.6 10.2 20.9 history1	22 0 49 7 830 1237 693 947 2137 history2 18 6 52 <1.0 history2 0.6 12.1 23.3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	limit/base >25 >20 >5 limit/base >3 >20 >3	16 0 66 1 825 1260 1015 1252 3071 current 5 1 28 <1.0 current 0.5 8.6 19.9	16 2 56 3 760 1233 794 1067 2516 history1 9 3 38 <1.0 history1 0.6 10.2 20.9	22 0 49 7 830 1237 693 947 2137 history2 18 6 52 <1.0 history2 0.6 12.1 23.3



## **OIL ANALYSIS REPORT**







NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

NEG

NEG

12.2

NONE

NONE

NONE

NONE

NONE

NONE

**NORML** 

NORML

NEG

NEG

12.3





Laboratory Sample No. Lab Number **Unique Number** 

: GFL0109108 : 06065443 : 10836825

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

Recieved : 19 Jan 2024 Diagnosed : 22 Jan 2024

Diagnostician : Don Baldridge

Test Package : FLEET ( Additional Tests: FuelDilution ) 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)

GFL Environmental - 009 - Fairburn

6905 Roosevelt Hwy Fairburn, GA US 30213 Contact: Eric Jones

erjones@gflenv.com T: (678)630-9927