

### **OIL ANALYSIS REPORT**

#### Sample Rating Trend



# Machine Id 813000

Component Diesel Engine Fluid DIESEL ENGINE OIL SAE 40 (--- GAL)

#### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. 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.

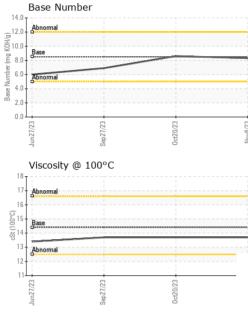
#### Fluid Condition

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

		Jun202	3 Sep2023	Oct2023 No	ov2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0083892	GFL0083871	GFL0083861
Sample Date		Client Info		08 Nov 2023	20 Oct 2023	27 Sep 2023
Machine Age	hrs	Client Info		2939	2797	2641
Oil Age	hrs	Client Info		2939	2797	2641
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
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	12	8	26
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	2	1
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	3	2	10
Tin	ppm	ASTM D5185m	>15	1	<1	2
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base 250	current 8	history1 9	history2 2
Boron	ppm ppm					
Boron Barium		ASTM D5185m	250	8	9	2
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	250 10	8 <1	9 3	2 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	8 <1 62	9 3 61	2 0 57
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	8 <1 62 <1	9 3 61 0	2 0 57 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	8 <1 62 <1 930	9 3 61 0 905	2 0 57 <1 934
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	8 <1 62 <1 930 1128	9 3 61 0 905 1098	2 0 57 <1 934 1050
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150	8 <1 62 <1 930 1128 989	9 3 61 0 905 1098 983	2 0 57 <1 934 1050 977
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	250 10 100 450 3000 1150 1350	8 <1 62 <1 930 1128 989 1229	9 3 61 0 905 1098 983 1214	2 0 57 <1 934 1050 977 1241
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	250 10 100 450 3000 1150 1350 4250	8 <1 62 <1 930 1128 989 1229 3111	9 3 61 0 905 1098 983 1214 3581	2 0 57 <1 934 1050 977 1241 2814
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	8 <1 62 <1 930 1128 989 1229 3111 current	9 3 61 0 905 1098 983 1214 3581 history1	2 0 57 <1 934 1050 977 1241 2814 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b>	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216	8 <1 62 <1 930 1128 989 1229 3111 current 4	9 3 61 0 905 1098 983 1214 3581 history1 3	2 0 57 <1 934 1050 977 1241 2814 <b>history2</b> 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm 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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216	8 <1 62 <1 930 1128 989 1229 3111 current 4 0	9 3 61 0 905 1098 983 1214 3581 history1 3 0	2 0 57 <1 934 1050 977 1241 2814 <b>history2</b> 6 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216 >20	8 <1 62 <1 930 1128 989 1229 3111 current 4 0 2	9 3 61 0 905 1098 983 1214 3581 history1 3 0 2	2 0 57 <1 934 1050 977 1241 2814 history2 6 4 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >216 >216 >20	8 <1 62 <1 930 1128 989 1229 3111 current 4 0 2 2 current	9 3 61 0 905 1098 983 1214 3581 history1 3 0 2 history1 0.5	2 0 57 <1 934 1050 977 1241 2814 <b>history2</b> 6 4 1 1 <b>history2</b> 1.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >216 >216 >20 <b>limit/base</b> >3 >20	8 <1 62 <1 930 1128 989 1229 3111 <i>current</i> 4 0 2 2 <i>current</i> 0.6	9 3 61 0 905 1098 983 1214 3581 history1 3 0 2 history1	2 0 57 <1 934 1050 977 1241 2814 <b>history2</b> 6 4 1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 20 imit/base >25 >216 >20 imit/base	8 <1 62 <1 930 1128 989 1229 3111 current 4 0 2 current 0.6 7.2	9 3 61 0 905 1098 983 1214 3581 history1 3 0 2 history1 0.5 6.6	2 0 57 <1 934 1050 977 1241 2814 history2 6 4 1 1 history2 1.2 9.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 20 imit/base >25 >216 >20 imit/base >3 >20 >30	8 <1 62 <1 930 1128 989 1229 3111 current 4 0 2 current 0.6 7.2 19.2	9 3 61 0 905 1098 983 1214 3581 history1 3 0 2 history1 0.5 6.6 18.6	2 0 57 <1 934 1050 977 1241 2814 <b>history2</b> 6 4 1 <b>history2</b> 1.2 9.0 21.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >216 >20 <b>imit/base</b> >3 >20 >30 <b>imit/base</b>	8 <1 62 <1 930 1128 989 1229 3111 current 4 0 2 current 0.6 7.2 19.2 current	9 3 61 0 905 1098 983 1214 3581 history1 3 0 2 history1 0.5 6.6 18.6 18.6	2 0 57 31 934 1050 977 1241 2814 history2 6 4 1 1 history2 1.2 9.0 21.2 history2



## **OIL ANALYSIS REPORT**



VISUAL		method	limit/base	current	history1	history
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 PROPE	RTIES	method	limit/base	current	history1	history
Visc @ 100°C	cSt	ASTM D445	14.4	13.7	13.7	13.7
GRAPHS						
Ferrous Alloys						
iron						
chromium						
5 - nickel						
10						
5-						
0-						
5						
the state of the s						
0		23	53			
0		let20/23	Nov8/23			
Jun27/23	5	0ct20/23 -	Nov8/23			
Non-ferrous Metals	5	0ct20/23	Nov8/23			
رال دیر دیرارتسم Non-ferrous Metals	5	0ct20/23	Nov6/23			
Non-ferrous Metals	5	0et20/23	Nov6/23			
Non-ferrous Metals	5	0et20/23	Nov8/23			
Non-ferrous Metals	S	0ct20/23	Nov6/23			
Non-ferrous Metals	5	Oct20/23	Nov6/23			
Non-ferrous Metals	5	0ct20/23	Nov6/23			
Non-ferrous Metals	5	0ct20/23	Nov823			
Non-ferrous Metals	5					
Non-ferrous Metals	5					
Non-ferrous Metals						
Non-ferrous Metals				Base Number		
Non-ferrous Metals				T		
Non-ferrous Metals			EC00000 14.0 12.0	Abnormal		
Non-ferrous Metals			EC00000 14.0 12.0	Abnormal		
Non-ferrous Metals			EC00000 14.0 12.0	Abnormal Base		
Non-ferrous Metals			EC00000 14.0 12.0	Abnomal Base		
Non-ferrous Metals			14.0 12.0 10.0	Abnormal Base Abnormal		

2.0

0.0

Jun27/23

Sep27/23 -

Nov8/23 -

: 13 Nov 2023

: 15 Nov 2023



 Unique Number
 : 10739153
 Diagnostician
 : Wes Davis

 Certificate L2367
 Test Package
 : FLEET

 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)

Sep27/23

0ct20/23

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

Received

Diagnosed

12

11-

Laboratory

Sample No.

Lab Number

Jun27/23

: GFL0083892

: 06005391

0ct20/23 -

GFL Environmental - 652 - Fredericksburg Hauling

Vov8/23 -

10954 Houser Drive

Fredericksburg, VA

wmilo@gflenv.com

Contact: WILLIAM MILO

US 22408

T: