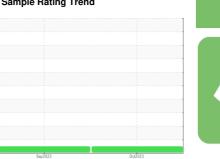


# **OIL ANALYSIS REPORT**

### Sample Rating Trend









Machine Id 413022 Component **Diesel Engine** NOT GIVEN (--- 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.

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

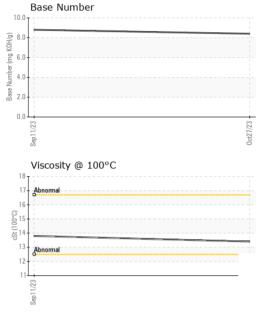
### **Fluid Condition**

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							
Sample Number   Client Info   GFL0092952   GFL0092936				Sep2023	0ct2023		
Sample Date	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age   hrs   Client Info   1335   1043       Oil Age   hrs   Client Info   1043   0       Oil Age   hrs   Client Info   1043   0       Oil Changed   Client Info   N/A   N/	Sample Number		Client Info		GFL0092952	GFL0092936	
Oil Age	Sample Date		Client Info		27 Oct 2023	11 Sep 2023	
Contamped   Client Info   N/A   N/A   N/A   NORMAL   NO	Machine Age	hrs	Client Info		1335	1043	
CONTAMINATION   method   met	Oil Age	hrs	Client Info		1043	0	
CONTAMINATION         method         limit/base         current         history1         history2           Fuel         WC Method         >3.0         <1.0	Oil Changed		Client Info		N/A	N/A	
Fuel	Sample Status				NORMAL	NORMAL	
WEAR METALS	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >120         10         5	Fuel		WC Method	>3.0	<1.0	<1.0	
Tron	Glycol		WC Method		NEG	NEG	
Chromium	WEAR METALS	S	method	limit/base	current	history1	history2
Chromium	Iron	ppm	ASTM D5185m	>120	10	5	
Nickel	Chromium		ASTM D5185m	>20	<1	<1	
Silver	Nickel		ASTM D5185m	>5	<1	<1	
Silver	Titanium		ASTM D5185m	>2	<1	<1	
Aluminum	Silver				<1	<1	
Lead	Aluminum		ASTM D5185m	>20	7	2	
Copper         ppm         ASTM D5185m         >330         3         2            Tin         ppm         ASTM D5185m         >15         <1	Lead		ASTM D5185m	>40	0	<1	
Tin	Copper		ASTM D5185m	>330	3	2	
Vanadium         ppm         ASTM D5185m         <1         0            Cadmium         ppm         ASTM D5185m         <1         <1            ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         3         5            Barium         ppm         ASTM D5185m         65         55            Molybdenum         ppm         ASTM D5185m         0         1            Manganese         ppm         ASTM D5185m         980         863            Magnesium         ppm         ASTM D5185m         910            Phosphorus         ppm         ASTM D5185m         1104         991            Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8					<1	1	
ADDITIVES						0	
ADDITIVES	Cadmium					<1	
Boron   ppm   ASTM D5185m   3   5	ADDITIVES		method	limit/base	current	history1	history2
Barium		nnm	ASTM D5185m		3	5	
Molybdenum         ppm         ASTM D5185m         65         55            Manganese         ppm         ASTM D5185m         0         1            Magnesium         ppm         ASTM D5185m         980         863            Calcium         ppm         ASTM D5185m         1104         991            Phosphorus         ppm         ASTM D5185m         1065         919            Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         >20         16         8            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         *ASTM D7844		• • • • • • • • • • • • • • • • • • • •					
Manganese         ppm         ASTM D5185m         0         1            Magnesium         ppm         ASTM D5185m         980         863            Calcium         ppm         ASTM D5185m         1104         991            Phosphorus         ppm         ASTM D5185m         1065         919            Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         >20         16         8            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Sulfation         <							
Magnesium         ppm         ASTM D5185m         980         863            Calcium         ppm         ASTM D5185m         1104         991            Phosphorus         ppm         ASTM D5185m         1065         919            Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATIO	•						
Calcium         ppm         ASTM D5185m         1104         991            Phosphorus         ppm         ASTM D5185m         1065         919            Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2	· ·				-		
Phosphorus         ppm         ASTM D5185m         1065         919            Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1 <t< td=""><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	-						
Zinc         ppm         ASTM D5185m         1284         1126            Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         1					-		
Sulfur         ppm         ASTM D5185m         3550         3244            CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9	·						
CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9	-						
Silicon         ppm         ASTM D5185m         >25         7         8            Sodium         ppm         ASTM D5185m         7         4            Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9				limit/hase			history2
Sodium							
Potassium         ppm         ASTM D5185m         >20         16         8            INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9				>20			
INFRA-RED				>20			
Soot %         *ASTM D7844         >4         0.3         0.2            Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9		ρριτι					
Nitration         Abs/cm         *ASTM D7624         >20         7.1         5.3            Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9				limit/base			history2
Sulfation         Abs/.1mm         *ASTM D7415         >30         18.6         17.2            FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         14.2         12.9	Soot %		*ASTM D7844	>4			
FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 14.2 12.9		Abs/cm		>20	7.1		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	17.2	
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 8.4 8.8	Oxidation	Abs/.1mm	*ASTM D7414	>25	14.2	12.9	
	Base Number (BN)	mg KOH/g	ASTM D2896		8.4	8.8	



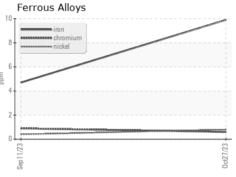
# **OIL ANALYSIS REPORT**

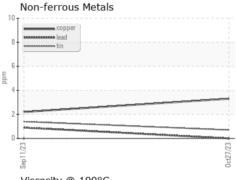


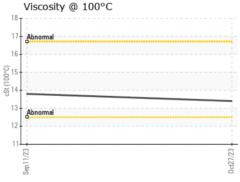
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
	DTIEO	us a the a al	lineit/le e e e		la i a t a un ed	histow.0

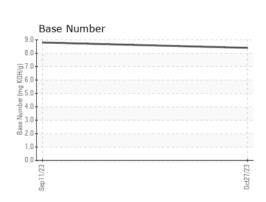
FLUID PROPI	EHILO	method		riistory i	History∠
Visc @ 100°C	cSt	ASTM D445	13.4	13.8	

### **GRAPHS**











Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10723759

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0092952 : 05995399

Received Diagnosed

: 01 Nov 2023 : 02 Nov 2023 Diagnostician : Wes Davis

GFL Environmental - 463 - Cheboygan

501 N. Western Ave Cheboygan, MI US 49721

Contact: GARY BREWER

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: