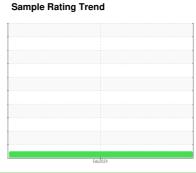


OIL ANALYSIS REPORT







Machine Id **834032** Component

Natural Gas Engine

{not provided} (--- 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.

Metal levels are typical for a components first oil change.

Contamination

There is no indication of any contamination in the

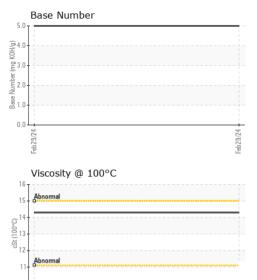
Fluid Condition

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

Client Info 29 Feb 2024							
Sample Number Client Info GFL0111835					Feb 2024		
Client Info 29 Feb 2024	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 672	Sample Number		Client Info		GFL0111835		
Machine Age hrs Client Info 672			Client Info		29 Feb 2024		
Contamped Client Info Not Changd NoRMAL Contamped NoRMAL Contamped Contamp	•	hrs	Client Info		672		
Contamped Client Info Not Changd NoRMAL Contamped NoRMAL Contamped Contamp	Oil Age	hrs	Client Info		672		
NORMAL NORMAL NORMAL	-		Client Info		Not Changd		
Water WC Method >0.1 NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 33 Chromium ppm ASTM D5185m >4 0 Nickel ppm ASTM D5185m >2 0 Titanium ppm ASTM D5185m 0 Aluminum ppm ASTM D5185m >9 2 Aluminum ppm ASTM D5185m >9 2 Lead ppm ASTM D5185m >9 2 Lead ppm ASTM D5185m >9 2 Lead ppm ASTM D5185m 0 Copper ppm ASTM D5185m 0 Tin	-				NORMAL		
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
Chromium	Water		WC Method	>0.1	NEG		
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	lron	ppm	ASTM D5185m	>50	33		
Titanium	Chromium	ppm	ASTM D5185m	>4	0		
Description	Nickel		ASTM D5185m	>2	0		
Silver	Titanium		ASTM D5185m		0		
Aluminum			ASTM D5185m	>3	-		
Lead	Aluminum				-		
Copper ppm ASTM D5185m >35 11 Tin ppm ASTM D5185m >4 <1					_		
Tin	Copper		ASTM D5185m	>35			
Vanadium ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 16 Barium ppm ASTM D5185m 1 Molybdenum ppm ASTM D5185m 49 Manganese ppm ASTM D5185m 8 Magnesium ppm ASTM D5185m 739 Calcium ppm ASTM D5185m 1207 Phosphorus ppm ASTM D5185m 696 Zinc ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 h					<1		
ADDITIVES							
Boron							
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 49 Manganese ppm ASTM D5185m 8 Magnesium ppm ASTM D5185m 739 Calcium ppm ASTM D5185m 1207 Phosphorus ppm ASTM D5185m 696 Zinc ppm ASTM D5185m 841 Sulfur ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m +100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m 20 1 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7624 >20<	Boron	ppm	ASTM D5185m		16		
Manganese ppm ASTM D5185m 8 Magnesium ppm ASTM D5185m 739 Calcium ppm ASTM D5185m 1207 Phosphorus ppm ASTM D5185m 696 Zinc ppm ASTM D5185m 2077 Sulfur ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 Sulfation Abs/.1mm *ASTM D7	Barium	ppm	ASTM D5185m		1		
Magnesium ppm ASTM D5185m 739 Calcium ppm ASTM D5185m 1207 Phosphorus ppm ASTM D5185m 696 Zinc ppm ASTM D5185m 2077 Sulfur ppm ASTM D5185m 2077 Sulfcon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 Nitration Abs/cm *ASTM D7624 >20 11.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Ab	Molybdenum	ppm	ASTM D5185m		49		
Calcium ppm ASTM D5185m 1207 Phosphorus ppm ASTM D5185m 696 Zinc ppm ASTM D5185m 841 Sulfur ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 <t< td=""><td>Manganese</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>8</th><td></td><td></td></t<>	Manganese	ppm	ASTM D5185m		8		
Phosphorus ppm ASTM D5185m 696 Zinc ppm ASTM D5185m 841 Sulfur ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 Nitration Abs/cm *ASTM D7624 >20 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2	Magnesium	ppm	ASTM D5185m		739		
Sulfur ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % 'ASTM D7844 0 Nitration Abs/cm 'ASTM D7624 >20 11.2 Sulfation Abs/.1mm 'ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm 'ASTM D7414 >25 20.1 Covering Sulfation Abs/.1mm 'ASTM D7414 >25 20.1 Covering Sulfation Abs/.1mm 'ASTM D7414 >25 20.1 Covering Sulfation Abs/.1mm 'ASTM D7414 >25 20.1 Covering Sulfation Abs/.1mm 'ASTM D7414 >25 20.1 Covering Sulfation Abs/.1mm 'ASTM D7414 Covering Sulfation Abs/.1mm 'ASTM D7414 Covering Sulfation Abs/.1mm 'ASTM D7414 -	Calcium	ppm	ASTM D5185m		1207		
Sulfur ppm ASTM D5185m 2077	Phosphorus		ASTM D5185m		696		
Sulfur ppm ASTM D5185m 2077 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 Nitration Abs/cm *ASTM D7624 >20 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1	•		ASTM D5185m		841		
Silicon ppm ASTM D5185m >+100 25 Sodium ppm ASTM D5185m 4 Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % 'ASTM D7844 0 Nitration Abs/cm 'ASTM D7624 >20 11.2 Sulfation Abs/.1mm 'ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm 'ASTM D7414 >25 20.1	Sulfur		ASTM D5185m		2077		
Sodium	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0 Nitration Abs/cm *ASTM D7624 >20 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1	Silicon	ppm	ASTM D5185m	>+100	25		
INFRA-RED	Sodium	ppm	ASTM D5185m		4		
Soot % % *ASTM D7844 0 Nitration Abs/cm *ASTM D7624 >20 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1	Potassium	ppm	ASTM D5185m	>20	1		
Nitration Abs/cm *ASTM D7624 >20 11.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1	Soot %	%	*ASTM D7844		0		
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.1	Nitration	Abs/cm	*ASTM D7624	>20	11.2		
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.9		
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.1		
	Base Number (BN)	mg KOH/g	ASTM D2896		5.0		



OIL ANALYSIS REPORT

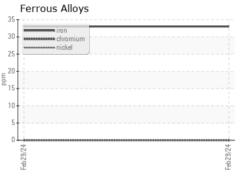


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
Precipitate	scalar	*Visual	NONE	NONE		
Silt	scalar	*Visual	NONE	NONE		
Debris	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual	NONE	NONE		
Appearance	scalar	*Visual	NORML	NORML		
Odor	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.1	NEG		
Free Water	scalar	*Visual		NEG		
FLUID PROPE	RTIFS	method	limit/base	current	historv1	historv2

14.3

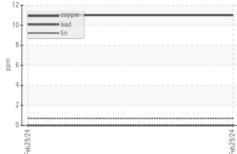
Visc @	100°C
GRA	PHS

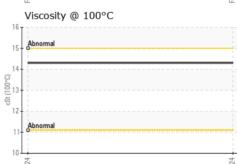
Non-ferrous Metals

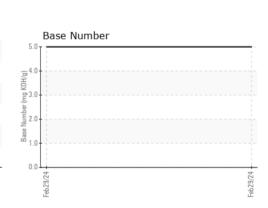


cSt

ASTM D445









Certificate L2367

Laboratory Sample No.

: GFL0111835 Lab Number : 06109256 Unique Number : 10912753

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 05 Mar 2024 **Tested** : 06 Mar 2024 Diagnosed

: 06 Mar 2024 - Wes Davis

GFL Environmental - 652 - Fredericksburg Hauling

10954 Houser Drive Fredericksburg, VA US 22408

Contact: WILLIAM MILO wmilo@gflenv.com

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)

T:

F: