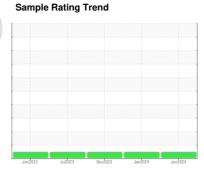


OIL ANALYSIS REPORT







DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

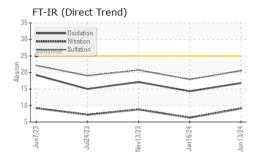
Fluid Condition

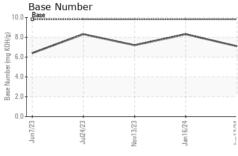
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

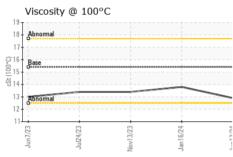
Client Info GFL0110777 GFL0092876 GF	N 3HP 15W40 (IU GAL)	Jun2023	Juizuza	NOV2U23 Jan2U24	Jun2024	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 11213 10634 10495 5011 Age hrs Client Info 579 139 598	Sample Number		Client Info		GFL0110777	GFL0092876	GFL009284
Dil Age	Sample Date		Client Info		13 Jun 2024	16 Jan 2024	13 Nov 2023
Client Info	Machine Age	hrs	Client Info		11213	10634	10495
NORMAL NORMAL NORMAL NORMAL CONTAMINATION method imit/base current history1 history2 history3 history4 history4 history4 history4 history4 history5 his	Oil Age	hrs	Client Info		579	139	598
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 7 1 6 Chromium ppm ASTM D5185m >20 <1 0 <1 Nickel ppm ASTM D5185m >5 <1 0 0 Sliver ppm ASTM D5185m >2 <1 0 0 Sliver ppm ASTM D5185m >20 2 1 2 Sliver ppm ASTM D5185m >40 1 0 <1 Copper ppm ASTM D5185m >40 1 0 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	CONTAMINA	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >120 7 1 6 Chromium ppm ASTM D5185m >20 <1	Water		WC Method	>0.2	NEG	NEG	NEG
	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAI	LS	method	limit/base	current	history1	history2
Nickel	ron	ppm	ASTM D5185m	>120	7	1	6
Description	Chromium	ppm	ASTM D5185m	>20	<1	0	<1
Silver	Nickel	ppm	ASTM D5185m	>5	<1	0	0
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1	Aluminum	ppm	ASTM D5185m	>20	2	1	2
Tin	Lead	ppm	ASTM D5185m	>40	1	0	<1
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 7 9 2 Barium ppm ASTM D5185m 0 <1 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1070 1116 969 994 Phosphorus ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 0 0 <	Copper	ppm	ASTM D5185m	>330	1	<1	<1
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 7 9 2 Barium ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	<1	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	<1
Boron	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 55 55 52 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 907 902 873 Calcium ppm ASTM D5185m 1070 1116 969 994 Phosphorus ppm ASTM D5185m 1150 1123 943 903 Zinc ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td>7</td> <td>9</td> <td>2</td>	Boron	ppm	ASTM D5185m	0	7	9	2
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 907 902 873 Calcium ppm ASTM D5185m 1070 1116 969 994 Phosphorus ppm ASTM D5185m 1150 1123 943 903 Zinc ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.1 0.3 Nitration Abs/cm *ASTM D78415	Barium	ppm	ASTM D5185m	0	<1	0	0
Magnesium ppm ASTM D5185m 1010 907 902 873 Calcium ppm ASTM D5185m 1070 1116 969 994 Phosphorus ppm ASTM D5185m 1150 1123 943 903 Zinc ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m 3 <1	Molybdenum	ppm	ASTM D5185m	60	55	55	52
Calcium ppm ASTM D5185m 1070 1116 969 994 Phosphorus ppm ASTM D5185m 1150 1123 943 903 Zinc ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.1 6.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <t< td=""><td>Manganese</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td>0</td><td><1</td><td><1</td></t<>	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 1150 1123 943 903 Zinc ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m >20 2 0 0 Potassium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.1 0.3 Nitration Abs/cm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *A	Magnesium	ppm	ASTM D5185m	1010	907	902	873
Zinc ppm ASTM D5185m 1270 1235 1183 1147 Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m 3 <1	Calcium	ppm	ASTM D5185m	1070	1116	969	994
Sulfur ppm ASTM D5185m 2060 2923 2974 2650 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m 3 <1	Phosphorus	ppm	ASTM D5185m	1150	1123	943	903
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m 3 <1	Zinc	ppm	ASTM D5185m	1270	1235	1183	1147
Silicon ppm ASTM D5185m >25 5 2 3 Sodium ppm ASTM D5185m 3 <1 3 Potassium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.1 6.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	Sulfur	ppm	ASTM D5185m	2060	2923	2974	2650
Sodium ppm ASTM D5185m 3 <1 3 Potassium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.1 6.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.3 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.1 6.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	Silicon	ppm	ASTM D5185m	>25	5	2	3
INFRA-RED	Sodium	ppm	ASTM D5185m		3	<1	3
Soot % *ASTM D7844 >4 0.3 0.1 0.3 Nitration Abs/cm *ASTM D7624 >20 9.1 6.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	Potassium	ppm	ASTM D5185m	>20	2	0	0
Nitration Abs/cm *ASTM D7624 >20 9.1 6.3 8.8 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.5 17.9 20.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	Soot %	%	*ASTM D7844	>4	0.3	0.1	0.3
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	Nitration	Abs/cm	*ASTM D7624	>20	9.1	6.3	8.8
Oxidation Abs/.1mm *ASTM D7414 >25 16.8 14.3 17.1	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.5	17.9	20.7
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.8	14.3	17.1
	Base Number (BN)		ASTM D2896		7.1	8.3	7.2



OIL ANALYSIS REPORT



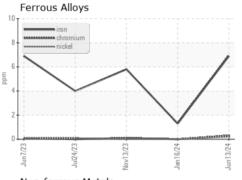


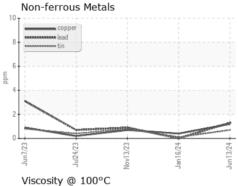


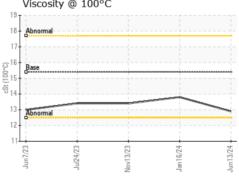
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

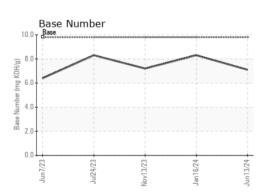
FLUID PROPE	RHES	metnoa	ilmit/base	current	nistory i	nistory2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	13.8	13.4

GRAPHS













Certificate 12367

Laboratory Sample No.

Lab Number : 06212916 Unique Number : 11085780

: GFL0110777

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

: 17 Jun 2024 : 19 Jun 2024 Diagnosed : 19 Jun 2024 - Wes Davis

GFL Environmental - 411 - Kingsford HC

1001 E Blvd Kingsford, MI US 49802

Contact: Service Manager

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)

Report Id: GFL411 [WUSCAR] 06212916 (Generated: 06/22/2024 01:04:46) Rev: 1

Submitted By: TECHNICIAN ACCOUNT

T:

F: