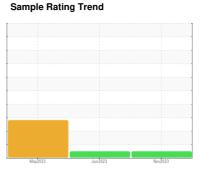


OIL ANALYSIS REPORT







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

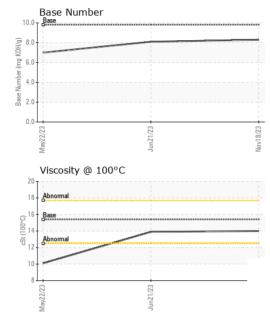
Fluid Condition

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

Sample Number Client Info GFL0089075 GFL0069813 GFL0069913 GFL0069913 GFL0069913 GFL0069913 GFL0069913 GFL0069913 GFL0069913 GFL0069913 QFL0069913 QFL0069913 QFL0069913 QPL0069913 QPL006913 QPL0069913 QPL006913 QPSP11	N SHP 15W40 (-	GAL)	Ma	₁₇ 2023	Jun 2023 Nov20	123	
Sample Date Client Info 18 Nov 2023 21 Jun 2023 22 May 202 Machine Age hrs Client Info 4545 3263 2991 Oil Age hrs Client Info 200 600 600 Oil Age hrs Client Info Changed Changed Changed Sample Status Client Info Changed Changed Changed Changed Changed CONTAMINATION method Immitibase current history1 history1 Fuel WC Method >0.2 NEG NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG NEG Method WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 18 7 33 Chromium ppm ASTM D5185m >20 <1 <1 <1 Iron ppm ASTM D5185m >2<	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 200 600	Sample Number		Client Info		GFL0089075	GFL0069813	GFL0069902
Oil Age hrs Client Info 200 600 600 Oil Changed Sample Status Client Info Changed	Sample Date		Client Info		18 Nov 2023	21 Jun 2023	22 May 2023
Contact Con	Machine Age	hrs	Client Info		4545	3263	2991
NORMAL NORMAL SEVERE	Oil Age	hrs	Client Info		200	600	600
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
Fuel WC Method >3.0	Sample Status				NORMAL	NORMAL	SEVERE
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 18 7 33 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ΓΙΟΝ	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	0.2	9.1
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	_S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	18	7	33
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	1	<1	4
Aluminum	Titanium	ppm	ASTM D5185m	>2	<1	0	0
Lead	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper ppm ASTM D5185m >330 2 2 10 Tin ppm ASTM D5185m >15 <1	Aluminum	ppm	ASTM D5185m	>20	2	1	1
Tin	Lead	ppm	ASTM D5185m	>40	<1	0	0
Tin	Copper	ppm	ASTM D5185m	>330	2	2	10
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 4 3 Barium ppm ASTM D5185m 0 9 0 0 Molybdenum ppm ASTM D5185m 0 9 0 0 Molybdenum ppm ASTM D5185m 0 58 58 53 Manganese ppm ASTM D5185m 0 <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
ADDITIVES	Vanadium		ASTM D5185m		0	0	0
Boron	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 9 0 0 Molybdenum ppm ASTM D5185m 60 58 58 53 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 868 971 830 Calcium ppm ASTM D5185m 1070 1036 1055 992 Phosphorus ppm ASTM D5185m 1150 947 1047 847 Zinc ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m >20 2 <1 3 INFRA-RED method limit/base	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 58 58 53 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 868 971 830 Calcium ppm ASTM D5185m 1070 1036 1055 992 Phosphorus ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m >20 2 <1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.1 6.6 9.2 Sulfation Abs/:mm *ASTM D7414	Boron	ppm	ASTM D5185m	0	0	4	3
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 868 971 830 Calcium ppm ASTM D5185m 1070 1036 1055 992 Phosphorus ppm ASTM D5185m 1150 947 1047 847 Zinc ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m 2 2 7 Potassium ppm ASTM D5185m 20 2 <1	Barium	ppm	ASTM D5185m	0	9	0	0
Magnesium ppm ASTM D5185m 1010 868 971 830 Calcium ppm ASTM D5185m 1070 1036 1055 992 Phosphorus ppm ASTM D5185m 1150 947 1047 847 Zinc ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m >20 2 -1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.8 Nitration Abs/cm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION *ASTM D7414 <	Molybdenum	ppm	ASTM D5185m	60	58	58	53
Calcium ppm ASTM D5185m 1070 1036 1055 992 Phosphorus ppm ASTM D5185m 1150 947 1047 847 Zinc ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m >20 2 2 7 Potassium ppm ASTM D5185m >20 2 <1	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Phosphorus ppm ASTM D5185m 1150 947 1047 847 Zinc ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m 2 2 2 7 Potassium ppm ASTM D5185m >20 2 <1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.8 Nitration Abs/cm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION *ASTM D7414 >25 17.7 14.3 17.5	Magnesium	ppm	ASTM D5185m	1010	868	971	830
Zinc ppm ASTM D5185m 1270 1154 1300 1083 Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m 2 2 2 7 Potassium ppm ASTM D5185m >20 2 <1	Calcium	ppm	ASTM D5185m	1070	1036	1055	992
Sulfur ppm ASTM D5185m 2060 3202 2994 2942 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m 2 2 7 Potassium ppm ASTM D5185m >20 2 <1	Phosphorus	ppm	ASTM D5185m	1150	947	1047	847
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m 2 2 7 Potassium ppm ASTM D5185m >20 2 <1	Zinc	ppm	ASTM D5185m	1270	1154	1300	1083
Silicon ppm ASTM D5185m >25 5 4 8 Sodium ppm ASTM D5185m 2 2 7 Potassium ppm ASTM D5185m >20 2 <1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 6.6 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	Sulfur	ppm	ASTM D5185m	2060	3202	2994	2942
Sodium ppm ASTM D5185m 2 2 7 Potassium ppm ASTM D5185m >20 2 <1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 6.6 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	CONTAMINAN	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 <1 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.6 0.4 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 6.6 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	Silicon	ppm	ASTM D5185m	>25	5	4	8
INFRA-RED	Sodium	ppm	ASTM D5185m		2	2	7
Soot % % *ASTM D7844 >4 0.6 0.4 0.8 Nitration Abs/cm *ASTM D7624 >20 8.1 6.6 9.2 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	Potassium	ppm	ASTM D5185m	>20	2	<1	3
Nitration Abs/cm *ASTM D7624 >20 8.1 6.6 9.2 Sulfation Abs/.1mm *ASTM D7615 >30 20.3 18.6 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 18.6 21.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	Soot %	%	*ASTM D7844	>4	0.6	0.4	0.8
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	Nitration	Abs/cm	*ASTM D7624	>20	8.1	6.6	9.2
Oxidation Abs/.1mm *ASTM D7414 >25 17.7 14.3 17.5	Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	18.6	
	FLUID DEGRA	AOITAD.	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.3 8.1 7.0	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.7	14.3	17.5
	Base Number (BN)	mg KOH/a	ASTM D2896	9.8	8.3	8.1	7.0



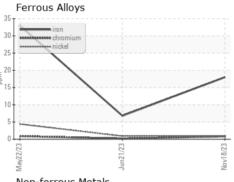
OIL ANALYSIS REPORT



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	RTIES	method	limit/base	current	history1	history2

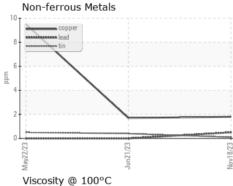
14.0

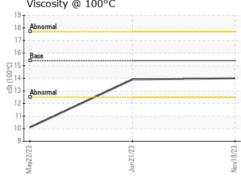
Visc @	100°C
GRA	РНС

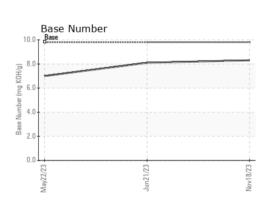


cSt

ASTM D445 15.4











Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10752767

: GFL0089075 : 06013623 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 21 Nov 2023 Diagnosed : 21 Nov 2023

Diagnostician : Wes Davis

GFL Environmental - 415 - Michigan East

6200 Elmridge Sterling Heights, MI US 48313 Contact: Frank Wolak fwolak@gflenv.com T: (586)825-9514

• 10.1

13.9

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)