WEAR CONTAMINATION FLUID CONDITION **ABNORMAL NORMAL ABNORMAL**

(P8963D)

945008-260260

Component
Natural Gas Engine

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0114562	GFL0081090	GFL008110
Sample Date		Client Info		14 Mar 2024	21 Feb 2024	02 Nov 202
Machine Age	hrs	Client Info		4323	17066	3192
Oil Age	hrs	Client Info		1200	941	1200
Filter Age	hrs	Client Info		1200	941	1200
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMA
Iron	ppm	ASTM D5185m	>50	4 79	△ 69	<u> </u>
Chromium	ppm	ASTM D5185m	>4	4	3	8
Nickel	ppm	ASTM D5185m	>2	3	2	4
Titanium	ppm	ASTM D5185m		<1	<1	1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm			9	6	12
Lead	ppm			4	2	3
Copper	ppm			3	1	1
	ppm		>4			2
Vanadium	ppm			_	<1	<1
	scalar					NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>+100	20	12	56
Potassium	ppm	ASTM D5185m	>20	8	2	5
Water		WC Method	>0.1	NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.8	0.1
	Abs/cm			11.8	9.7	7.6
						21.2
	scalar					NONE
						NONE
						NONE
						NORM
						NORM
Emuisined water	Scalar	visuai	>0.1	NEG	NEG	NEG
		AOTH DEGOE		11	11	4
Sodium	ppm	ASTM D5185m		'''		
Boron	ppm	ASTM D5185m		8	5	153
Boron Barium	ppm	ASTM D5185m ASTM D5185m	5	8 0	5 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	5 50	8 0 68	5 0 61	0 101
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 50 0	8 0 68 1	5 0 61 1	0 101 3
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 50 0 560	8 0 68 1 600	5 0 61 1 536	0 101 3 446
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 50 0 560 1510	8 0 68 1 600 1785	5 0 61 1 536 1699	0 101 3 446 1559
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 50 0 560 1510 780	8 0 68 1 600 1785 850	5 0 61 1 536 1699 758	0 101 3 446 1559 977
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	5 50 0 560 1510 780 870	8 0 68 1 600 1785	5 0 61 1 536 1699	0 101 3 446 1559
	Sample Number Sample Date Machine Age Oil Age Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal Yellow Metal Yellow Metal Silicon Potassium Water Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor	Test UOM Sample Number Sample Date Machine Age hrs Oil Age hrs Filter Age Oil Changed Filter Changed Sample Status Iron ppm Chromium ppm Nickel ppm Titanium ppm Silver ppm Aluminum ppm Lead ppm Copper ppm Tin ppm Vanadium ppm White Metal scalar Yellow Metal scalar Silicon ppm Potassium ppm Water Soot % Nitration Abs/cm Sulfation Abs/cm Sulfation Silt scalar Sand/Dirt scalar Appearance scalar	Test UOM Method Sample Number Client Info Sample Date Client Info Machine Age hrs Client Info Oil Age hrs Client Info Oil Changed Client Info Oil Changed Client Info Sample Status Iron ppm ASTM D5185m Chromium ppm ASTM D5185m Nickel ppm ASTM D5185m Titanium ppm ASTM D5185m Silver ppm ASTM D5185m Lead ppm ASTM D5185m Lead ppm ASTM D5185m Copper ppm ASTM D5185m Tin ppm ASTM D5185m Vanadium ppm ASTM D5185m Vallow Metal scalar *Visual Vellow Metal scalar *Visual Silicon Abs/cm *ASTM D7415 Silt scalar *Visual Debris scalar *Visual Appearance scalar *Visual Visual	Sample Number Sample Date Machine Age Oil Age hrs Client Info Oil Age hrs Client Info Oil Changed Filter Age Oil Changed Filter Changed Sample Status Iron Chromium ppm ASTM D5185m Nickel ppm ASTM D5185m Silver Aluminum ppm ASTM D5185m Silver ASTM D5185m Silver ASTM D5185m Silver ppm ASTM D5185m Silver ppm ASTM D5185m Silver ASTM D5185m None ASTM D5185m Silver Ppm ASTM D5185m Silver Ppm ASTM D5185m ASTM D5185m Silver ASTM D5185m Silver ASTM D5185m Silver ASTM D5185m Silver ASTM D5185m Vanadium ppm ASTM D5185m ASTM D5185m Vanadium ppm ASTM D5185m ASTM D5185m Vone ASTM D5185m Vone ASTM D5185m ASTM D5185m ASTM D5185m AVANAGIum ASTM D5185m ASTM D5	Sample Number Client Info GFL0114562 Sample Date Client Info 14 Mar 2024 Machine Age hrs Client Info 4323 Oil Age hrs Client Info 1200 Filter Age hrs Client Info 1200 Cilent Changed Client Info Changed Filter Changed Client Info Changed Sample Status ABNORMAL Iron ppm ASTM D5185m >50 ↑ 79 Chromium ppm ASTM D5185m >4 4 Nickel ppm ASTM D5185m >2 3 Titanium ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >3 0 Aluminum ppm ASTM D5185m >3 0 Lead ppm ASTM D5185m >30 4 Copper ppm ASTM D5185m >30 4 Copper ppm ASTM D5185m >30 4 Copper ppm ASTM D5185m >4 2 Vanadium ppm ASTM D5185m >4 2 Vanadium ppm ASTM D5185m >0 White Metal scalar *Visual NONE NONE Yellow Metal scalar *Visual NONE NONE Silicon ppm ASTM D5185m >20 8 Water WC Method >0.1 NEG Soot % % *ASTM D7844 0.1 Nitration Abs/cm *ASTM D7845 >30 26.7 Silt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE Sand/Dirt scalar *Visual NONE NONE Appearance scalar *Visual NORML NORML Appearance scalar *Visual NORML Appearance	Sample Number Client Info GFL0114562 GFL0081090 Sample Date Client Info 14 Mar 2024 21 Feb 2024 Machine Age hrs Client Info 4323 17066 Oil Age hrs Client Info 1200 941 Filter Age hrs Client Info Changed Not Changd Filter Changed Client Info Changed Not Changd Filter Changed Sample Status Client Info Changed Not Changd Iron ppm ASTM D5185m >50 T9 69 Chromium ppm ASTM D5185m >4 4 3 Nickel ppm ASTM D5185m >2 3 2 Titanium ppm ASTM D5185m >3 0 0 Silver ppm ASTM D5185m >9 9 6 Lead ppm ASTM D5185m >9 9 6 Lead ppm ASTM D5185m >3 1 1 <

Oxidation

Visc @ 100°C cSt

Abs/.1mm *ASTM D7414 >25

ASTM D445 15.1

Base Number (BN) mg KOH/g ASTM D2896 10.2

4.8

18.5

14.8

22.9

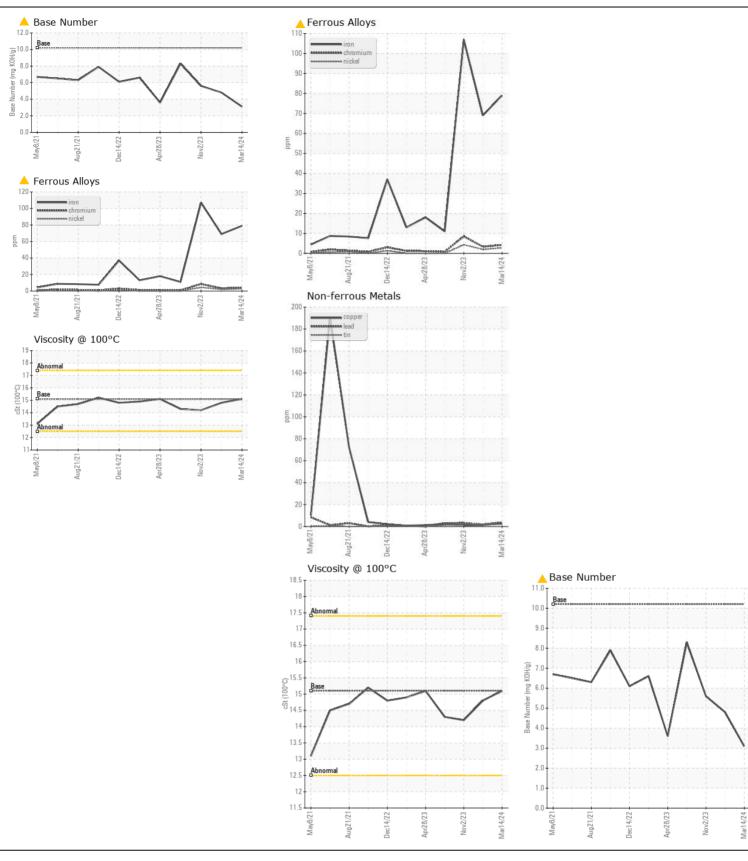
3.1

15.1

15.8

14.2

5.6







Certificate L2367

Laboratory

Sample No.

Lab Number : 06121360 Unique Number: 10930193

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 18 Mar 2024 : GFL0114562 : 19 Mar 2024

Tested Diagnosed

: 20 Mar 2024 - Don Baldridge

GFL Environmental - 884 - Lake County - Tavares 321 Southridge Industrial Way

Tavares, FL US 32778

Contact: RON FERAGOTTI

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: