OIL ANALYSIS REPORT

WEAR CONTAMINATION FLUID CONDITION

NORMAL NORMAL

TORO GROUNDSMASTER 4110-D T9 (S/N 30447-312000109)

Component Diesel Engine

NAPA PREM PERF UFMO 15W40 (10 QTS)

Test	NAPA PREM PERF UFMO 15W40 (10 QTS)					.,		
Resample at the next service interval to monitor.	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age hrs Cilient Info 1994		Sample Number		Client Info		TR05976611		
Oil Age		Sample Date		Client Info		18 Jul 2023		
Filter Age		Machine Age	hrs	Client Info		1964		
Colin		Oil Age	hrs	Client Info		189		
Filter Changed Sample Status		Filter Age	hrs	Client Info		189		
Normal N		Oil Changed		Client Info		Changed		
Iron		Filter Changed		Client Info		Changed		
All component wear rates are normal.		Sample Status				NORMAL		
All component wear rates are normal.	WEAR	Iron	nnm	ASTM D5185m	>100	7		
Nickel ppm ASTM D5185m 34 0	WEAT							
Titanium ppm ASTM DSI85m 0	All component wear rates are normal.							
Silver					77			
Aluminum ppm ASTIN D5185m >20 2					~3			
Lead ppm ASTM D5185m >4.0 0								
Copper								
Tin								
Vanadium ppm ASTM D5185m NONE NONE								
White Metal Scalar Visual NONE NON					210			
Vellow Metal Scalar Visual NONE NONE Potassium ppm ASTM D5185m >25 3 Potassium ppm ASTM D5185m >20 <1 Visual NONE NONE Visual					NONE	-		
Silicon ppm ASTM D5185m >25 3								
Potassium ppm ASTM D5185m 2-20 -1	<u></u>	reliow Metai	Scalar	Visual	NONE	INONE		
Fuel WC Method >5 <1.0	CONTAMINATION	Silicon	ppm			3		
Water	There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m	>20	<1		
Giycol Soot % % *ASTM D7844 >3 0.2 Nitration Abs/lmm *ASTM D78624 >20 7.3 Sulfation Abs/lmm *ASTM D7845 >30 17.0 Sulfation Abs/lmm *ASTM D7845 >30 17.0 Sulfation Abs/lmm *ASTM D7845 >30 17.0 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Appearance scalar *Visual NORM NORML NORML Appearance scalar *Visual NORM NORML Codor scalar *Visual NORM NORML Emulsified Water scalar *Visual NORM NORM Molybdenum ppm ASTM D5185m 2 Barium ppm ASTM D5185m 5 Molybdenum ppm ASTM D5185m 42 Magnesium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 1046 Oxidation Abs/lmm *ASTM D7414 >25 10.2 Oxidation Abs/lmm *ASTM D7896 9.36		Fuel		WC Method	>5	<1.0		
Soot %		Water		WC Method	>0.2	NEG		
Nitration Abs/cm *ASTM D7624 >20 7.3		Glycol		WC Method		NEG		
Sulfation		Soot %	%	*ASTM D7844	>3	0.2		
Silt Scalar *Visual NONE NORML NOR		Nitration	Abs/cm	*ASTM D7624	>20	7.3		
Debris Scalar *Visual NONE NONE NONE Sand/Dirt Scalar *Visual NONE NONE		Sulfation	Abs/.1mm	*ASTM D7415	>30	17.0		
Sand/Dirt Scalar *Visual NONE NONE Appearance Scalar *Visual NORML		Silt	scalar	*Visual	NONE	NONE		
Appearance Scalar *Visual NORML NORM		Debris	scalar	*Visual	NONE	NONE		
Codor Emulsified Water Scalar *Visual NORML NORML		Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water scalar *Visual >0.2 NEG		Appearance	scalar	*Visual	NORML	NORML		
Sodium ppm ASTM D5185m 2		Odor	scalar	*Visual	NORML	NORML		
Boron ppm ASTM D5185m 5 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 6 Magnesium ppm ASTM D5185m 6 Magnesium ppm ASTM D5185m 42 Magnesium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 42 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36		Emulsified Water	scalar	*Visual	>0.2	NEG		
Boron ppm ASTM D5185m 5 Barium ppm ASTM D5185m 0 Molybdenum ppm ASTM D5185m 6 Magnesium ppm ASTM D5185m 6 Magnesium ppm ASTM D5185m 42 Magnesium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 42 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36	ELUID CONDITION	Codium	nnm	ACTM DE10Em		2		
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service. Barium ppm ASTM D5185m 6 Molybdenum ppm ASTM D5185m 6 Magnesium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 2234 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36	PLUID CONDITION							
oil. The condition of the oil is suitable for further service. Molybdenum ppm ASTM D5185m 6 Manganese ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 2234 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36								
Manganese ppm ASTM D5185m <1 Magnesium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 2234 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36								
Magnesium ppm ASTM D5185m 42 Calcium ppm ASTM D5185m 2234 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36		-						
Calcium ppm ASTM D5185m 2234 Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36								
Phosphorus ppm ASTM D5185m 907 Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36		•						
Zinc ppm ASTM D5185m 1046 Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36								
Sulfur ppm ASTM D5185m 3455 Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36		·						
Oxidation Abs/.1mm *ASTM D7414 >25 10.2 Base Number (BN) mg KOH/g ASTM D2896 9.36								
Base Number (BN) mg KOH/g ASTM D2896 9.36					0-			
					>25			
VISC @ 100°C cSt ASIM D445 13.5								
		Visc @ 100°C	cSt	ASTM D445		13.5		







Certificate L2367

Laboratory Sample No.

: TR05976611 Lab Number : 05976611 Unique Number : 10688561 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 11 Oct 2023 : 12 Oct 2023 **Tested**

: 12 Oct 2023 - Wes Davis Diagnosed

LEBANON MUNICIPAL AIRPORT

5 AIRPARK RD, SUITE 1 WEST LEBANON, NH US 03784

Contact: SCOTT BURRELL

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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)

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