

WEAR CONTAMINATION FLUID CONDITION **NORMAL NORMAL NORMAL**

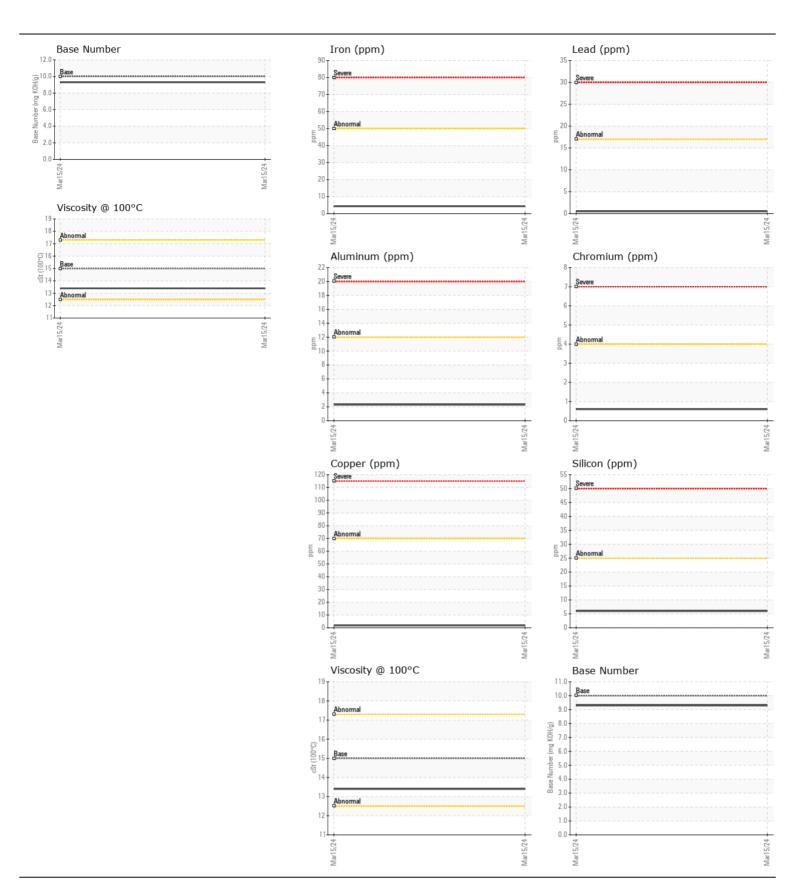
BLAKE LANE

CUMMINS L100176772

Component Genset

VOI VO III TRA DIFSEL ENGINE OIL 15W40 VDS-3 (2 GAL)

Sample Number Cilent Info VPA982030 15 Mar 2024	VOLVO ULTRA DIESEL ENGINE OIL 15W40 VE)S-3 (2 GAL)	<u>)</u>			.,		
Sample Namber Collent Into College Col	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Date Machine Age hrs Client Info Delient Info Delient Info Delien		Sample Number		Client Info		VPA059203		
Oil Age	Resample at the next service interval to monitor.	Sample Date		Client Info		15 Mar 2024		
Filter Age Filter Age Filter Age Filter Age Filter Changed Filter Changed Filter Changed Filter Changed Client Info Changed		Machine Age	hrs	Client Info		2420		
Cil Changed Cilent Info Cilent Info Changed Cilent Info Cile		Oil Age	hrs	Client Info		0		
Filter Changed Sample Status		Filter Age	hrs	Client Info		0		
NOBMAL N		Oil Changed		Client Info		Changed		
Iron		Filter Changed		Client Info		Changed		
Chromium Spin ASTM Disistin 4-1		Sample Status				NORMAL		
Chromium Spin ASTM Disistin 4-1	WEAD	Iron	nnm	ACTM DE195m	\ F0	4		
Nickel ppm ASTM D5185m >2 <1 .	WEAR							
Nicket Dpin ASTM D6186m < 1 Titanium ppm ASTM D6186m < 1 Aluminum ppm ASTM D6186m < 1 Aluminum ppm ASTM D6186m < 1 2 2 Lead ppm ASTM D6186m > 17 < 1 Copper ppm ASTM D6186m > 17 < 1 Copper ppm ASTM D6186m > 17 < 1 Copper ppm ASTM D6186m > 17 < 1 Vanadium ppm ASTM D6186m > 17 < 1 Valuer WC Method 4-0 < 1-0 < 1 Water WC Method 4-0 < 1-0 < 1 Valuer WC Method 4-0 < 1-0 < 1 Valuer WC Method 4-0 < 1-0 < 1 Valuer WC Method 4-0	All component wear rates are normal.							
Silver					>2			
Aluminum ppm ASTM D5185m >12 2					_			
Lead								
Copper								
Tin Vanadium Van								
Vanadium ppm ASTM D5185m <1								
White Metal Scalar *Visual NONE NO					>15			
Vellow Metal Scalar Visual NONE NONE Potassium ppm ASTM D5185m >20 2 FLUID CONDITION The BN result indicates that there is suitable alkalinity remaining in the oil. The Condition of the oil is acceptable for the time in service. Solium ppm ASTM D5185m 0.0 0.1 NEG Marganese ppm ASTM D5185m 0.7 57 Marganese ppm ASTM D5185m 0.0 0 Marganese ppm ASTM D5185m 0.0 0 0 Marganese ppm ASTM D5185m 0.0 0 0 Marganese ppm					NONE			
Silicon ppm ASTM D5185m >25 6								
Potassium ppm ASTM D5185m >20 2		Yellow Metal	scalar	^Visual	NONE	NONE		
Potassium ppm ASTM D5185m >20 2	CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	6		
Water	There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m	>20	2		
Glycol		Fuel		WC Method	>4.0	<1.0		
Glycol		Water		WC Method	>0.1	NEG		
Nitration Abs/cm 'ASTM D7624 >20 5.7 Sulfation Abs/.tmm 'ASTM D7415 >30 17.8 Sitt scalar *Visual NONE NONE Debris scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORM		Glycol				NEG		
Sulfation Abs./imm *ASTM D7415 >30 17.8		Soot %	%	*ASTM D7844		0.1		
Silt Scalar *Visual NONE NONE NONE Sand/Dirt Scalar *Visual NONE NONE NONE Sand/Dirt Scalar *Visual NONE NONE NONE Sand/Dirt Scalar *Visual NONE NORML		Nitration	Abs/cm	*ASTM D7624	>20	5.7		
Debris Scalar *Visual NONE NONE NONE Sand/Dirt Scalar *Visual NONE		Sulfation	Abs/.1mm	*ASTM D7415	>30	17.8		
Sand/Dirt Scalar *Visual NONE NORML		Silt	scalar	*Visual	NONE	NONE		
Appearance Scalar *Visual NORML NORML NORML Emulsified Water Scalar *Visual NORML NORML NORML Emulsified Water Scalar *Visual NORML		Debris	scalar	*Visual	NONE	NONE		
Codor Scalar *Visual NORML N		Sand/Dirt	scalar	*Visual	NONE	NONE		
Emulsified Water scalar *Visual >0.1 NEG		Appearance	scalar	*Visual	NORML	NORML		
Emulsified Water scalar *Visual >0.1 NEG		Odor	scalar	*Visual	NORML	NORML		
Boron ppm ASTM D5185m 2.5 12		Emulsified Water	scalar	*Visual	>0.1	NEG		
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Boron ppm ASTM D5185m 0.0 0 0 0 0 0 0 0 0								
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. Barium ppm ASTM D5185m 0.0 0 Molybdenum ppm ASTM D5185m 0.0 <1 Magnesium ppm ASTM D5185m 256 858 Calcium ppm ASTM D5185m 2057 1162 Calcium ppm ASTM D5185m 935 988 Zinc ppm ASTM D5185m 1223 1177 Sulfur ppm ASTM D5185m 4079 3215 Oxidation Abs/.1mm *ASTM D7414 >25 14.0 Base Number (BN) mg KOH/g ASTM D2896 10 9.3	-LUID CONDITION				0.5			
oil. The condition of the oil is acceptable for the time in service. Molybdenum ppm ASTM D5185m 0.0	The BN result indicates that there is suitable alkalinity remaining in the							
Molybdenum ppm ASIM D5185m 0.7 57 Manganese ppm ASTM D5185m 0.0 <1	oil. The condition of the oil is acceptable for the time in service.							
Magnesium ppm ASTM D5185m 256 858 Calcium ppm ASTM D5185m 2057 1162 Phosphorus ppm ASTM D5185m 935 988 Zinc ppm ASTM D5185m 1223 1177 Sulfur ppm ASTM D5185m 4079 3215 Oxidation Abs/.1mm *ASTM D7414 >25 14.0 Base Number (BN) mg KOH/g ASTM D2896 10 9.3		-						
Calcium ppm ASTM D5185m 2057 1162 Phosphorus ppm ASTM D5185m 935 988 Zinc ppm ASTM D5185m 1223 1177 Sulfur ppm ASTM D5185m 4079 3215 Oxidation Abs/.1mm *ASTM D7414 >25 14.0 Base Number (BN) mg KOH/g ASTM D2896 10 9.3								
Phosphorus ppm ASTM D5185m 935 988 Zinc ppm ASTM D5185m 1223 1177 Sulfur ppm ASTM D5185m 4079 3215 Oxidation Abs/.1mm *ASTM D7414 >25 14.0 Base Number (BN) mg KOH/g ASTM D2896 10 9.3		•						
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Base Number (BN) mg KOH/g ASTM D2896 10 9.3								
Visc @ 100°C cSt ASTM D445 15.0 13.4		, ,						
		Visc @ 100°C	cSt	ASTM D445	15.0	13.4		





Laboratory Sample No.

Lab Number : 06123458 Unique Number : 10937609

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : VPA059203

Received : 20 Mar 2024 **Tested** Diagnosed

: 21 Mar 2024 : 22 Mar 2024 - Don Baldridge

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Endor Marine LLC - Coastal Marine - 152124

Test Package : MOB 1 (Additional Tests: TBN) Certificate L2367 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)