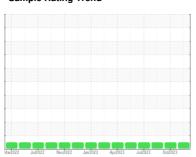


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



CUMMINS ART GENERATOR

Component

Diesel Engine

SHELL ROTELLA T 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil

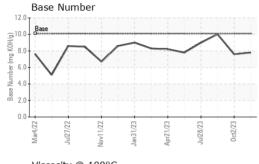
Fluid Condition

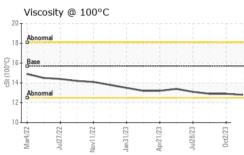
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Mad2022 Jud2022 Nov2022 Jan2023 Apr2023 Jud2023 Oct2023						
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		KL0013261	KL0013240	KL0011644
Sample Date		Client Info		06 Nov 2023	02 Oct 2023	23 Aug 2023
Machine Age	hrs	Client Info		45200	45200	45160
Oil Age	hrs	Client Info		45200	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	V	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	0	3	2
Chromium	ppm	ASTM D5185m	>20	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	0	<1
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	0	<1	<1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	316	331	350	351
	ppm			331 0	350 2	351 0
Boron		ASTM D5185m	316			
Boron Barium	ppm	ASTM D5185m ASTM D5185m	316 0.0	0	2	0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0	0 99	2 113	0 102
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2	0 99 <1	2 113 <1	0 102 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2	0 99 <1 450	2 113 <1 447	0 102 <1 458
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292	0 99 <1 450 1510	2 113 <1 447 1503	0 102 <1 458 1635
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064	0 99 <1 450 1510 871	2 113 <1 447 1503 889	0 102 <1 458 1635 844
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160	0 99 <1 450 1510 871 1051	2 113 <1 447 1503 889 1057	0 102 <1 458 1635 844 1036
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	0 99 <1 450 1510 871 1051 2939	2 113 <1 447 1503 889 1057 3614	0 102 <1 458 1635 844 1036 3682
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	0 99 <1 450 1510 871 1051 2939	2 113 <1 447 1503 889 1057 3614 history1	0 102 <1 458 1635 844 1036 3682 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996	0 99 <1 450 1510 871 1051 2939 current	2 113 <1 447 1503 889 1057 3614 history1	0 102 <1 458 1635 844 1036 3682 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	0 99 <1 450 1510 871 1051 2939 current 4	2 113 <1 447 1503 889 1057 3614 history1 5	0 102 <1 458 1635 844 1036 3682 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25	0 99 <1 450 1510 871 1051 2939 current 4 0	2 113 <1 447 1503 889 1057 3614 history1 5 0	0 102 <1 458 1635 844 1036 3682 history2 4 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base	0 99 <1 450 1510 871 1051 2939 current 4 0	2 113 <1 447 1503 889 1057 3614 history1 5 0	0 102 <1 458 1635 844 1036 3682 history2 4 <1 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base	0 99 <1 450 1510 871 1051 2939 current 4 0 current 0.1	2 113 <1 447 1503 889 1057 3614 history1 5 0 1 history1	0 102 <1 458 1635 844 1036 3682 history2 4 <1 1 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base	0 99 <1 450 1510 871 1051 2939 current 4 0 0 current 0.1 6.4	2 113 <1 447 1503 889 1057 3614 history1 5 0 1 history1 0.1 5.9	0 102 <1 458 1635 844 1036 3682 history2 4 <1 1 history2 0.1 5.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method *ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	316 0.0 1.2 24 2292 1064 1160 4996 limit/base >25 >20 limit/base >6 >20 >30	0 99 <1 450 1510 871 1051 2939 current 4 0 0 current 0.1 6.4 20.6	2 113 <1 447 1503 889 1057 3614 history1 5 0 1 history1 0.1 5.9 19.3	0 102 <1 458 1635 844 1036 3682 history2 4 <1 1 history2 0.1 5.6 19.5



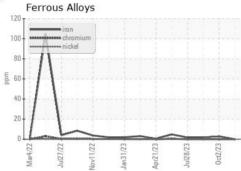
OIL ANALYSIS REPORT

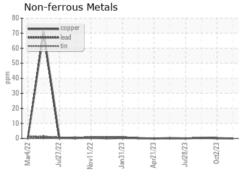


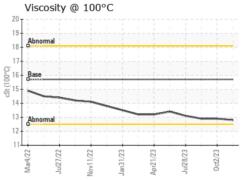


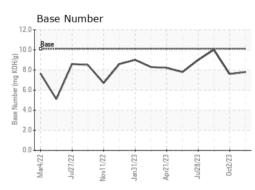
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPERI	IES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.7	12.8	12.9	12.9













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10749252 Test Package : FLEET

: KL0013261 : 06010108

To discuss this sample report, contact Customer Service at 1-800-237-1369.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 16 Nov 2023 Diagnosed : 17 Nov 2023 Diagnostician : Wes Davis

HOBBS, NM US 88240 Contact: Rick Davidson

3404 N ENTERPRISE DR

rickdavidson.rsi@gmail.com

T: F:

RAMIREZ & SONS

* - 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)