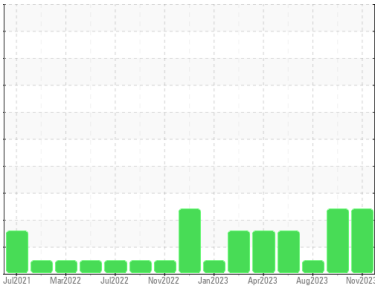
PROBLEM SUMMARY

Sample Rating Trend

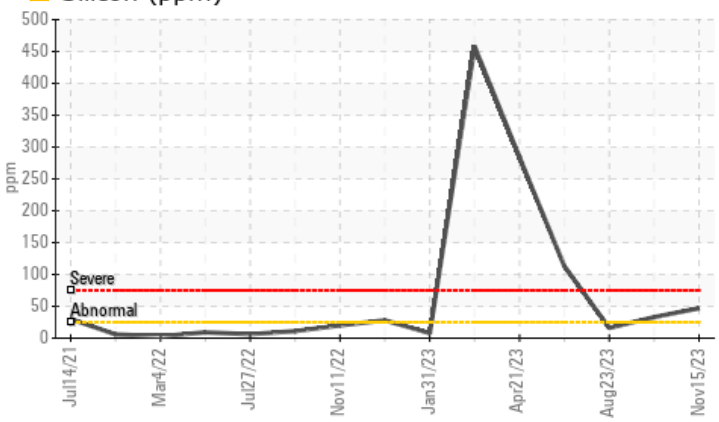


DIRT

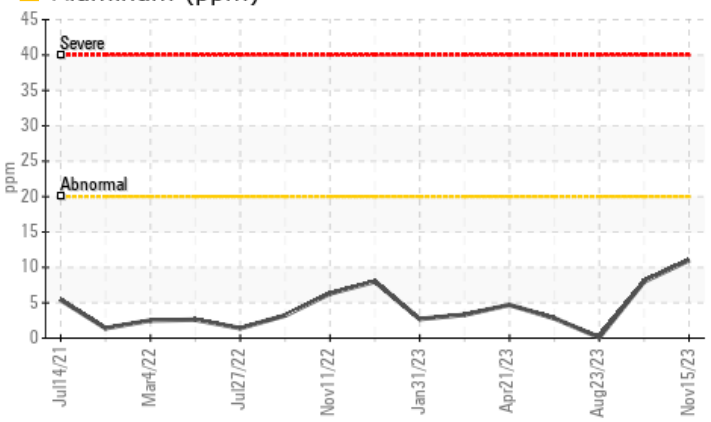
Machine Id
CUMMINS ART VSI
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Silicon (ppm)



▲ Aluminum (ppm)



RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	NORMAL
Aluminum	ppm	ASTM D5185m	>20	▲ **11**	▲ 8	<1
Silicon	ppm	ASTM D5185m	>25	▲ **47**	▲ 33	16

Customer Id: RAMHOB
Sample No.: KL0013260
Lab Number: 06010109
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.

HISTORICAL DIAGNOSIS

02 Oct 2023 Diag: Don Baldridge

DIRT

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.All component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

23 Aug 2023 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

02 Jun 2023 Diag: Don Baldridge

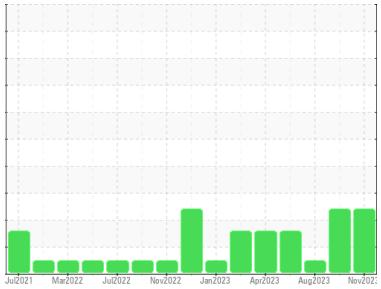
DIRT

Resample at the next service interval to monitor.All component wear rates are normal. Elemental level of silicon (Si) above normal. Additive? The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
CUMMINS ART VSI
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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 INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0013260**	KL0013242	KL0011643
Sample Date		Client Info		**15 Nov 2023**	02 Oct 2023	23 Aug 2023
Machine Age	hrs	Client Info		**0**	45200	45160
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
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	>90	**50**	34	15
Chromium	ppm	ASTM D5185m	>20	**12**	7	2
Nickel	ppm	ASTM D5185m	>2	**0**	<1	0
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	▲ **11**	▲ 8	<1
Lead	ppm	ASTM D5185m	>40	**3**	4	2
Copper	ppm	ASTM D5185m	>330	**5**	6	5
Tin	ppm	ASTM D5185m	>15	**2**	3	2
Vanadium	ppm	ASTM D5185m		**0**	<1	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**300**	277	323
Barium	ppm	ASTM D5185m	10	**4**	4	0
Molybdenum	ppm	ASTM D5185m	100	**95**	97	96
Manganese	ppm	ASTM D5185m		**4**	4	3
Magnesium	ppm	ASTM D5185m	450	**465**	471	449
Calcium	ppm	ASTM D5185m	3000	**1848**	1748	1780
Phosphorus	ppm	ASTM D5185m	1150	**867**	867	854
Zinc	ppm	ASTM D5185m	1350	**1052**	1054	1035
Sulfur	ppm	ASTM D5185m	4250	**2892**	3119	3710

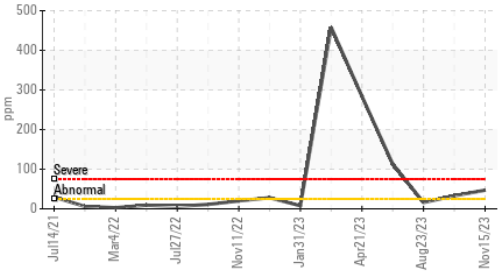
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **47**	▲ 33	16
Sodium	ppm	ASTM D5185m	>216	**0**	6	3
Potassium	ppm	ASTM D5185m	>20	**3**	4	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>6	**0.2**	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**6.7**	6.4	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.9**	20.2	19.6

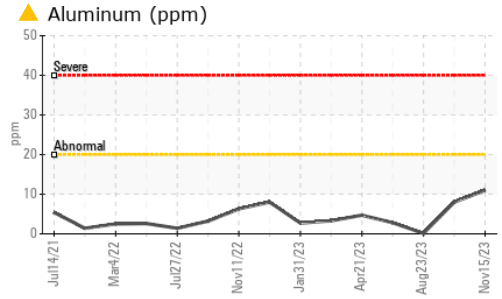
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.2**	14.7	13.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**8.4**	8.8	8.42

OIL ANALYSIS REPORT

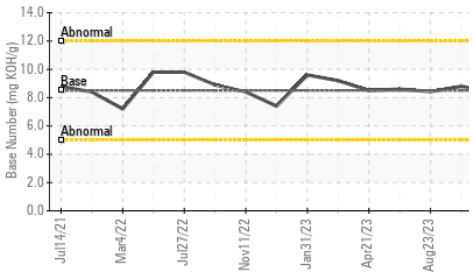
Silicon (ppm)



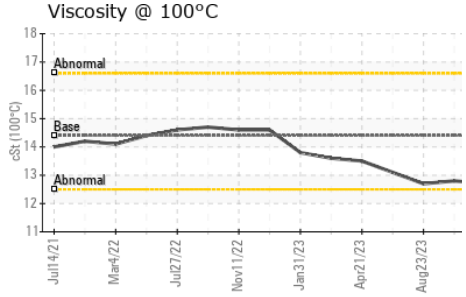
Aluminum (ppm)



Base Number



Viscosity @ 100°C

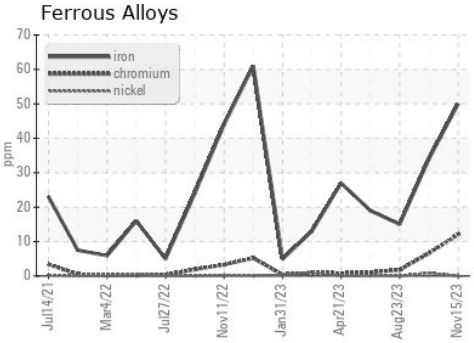


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

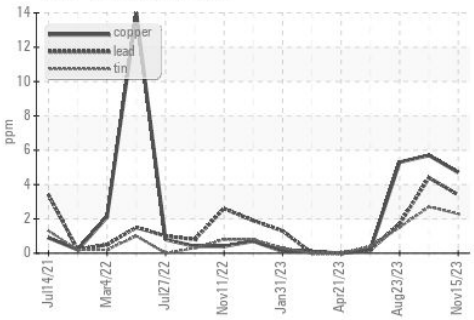
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**12.7**	12.8	12.7

GRAPHS

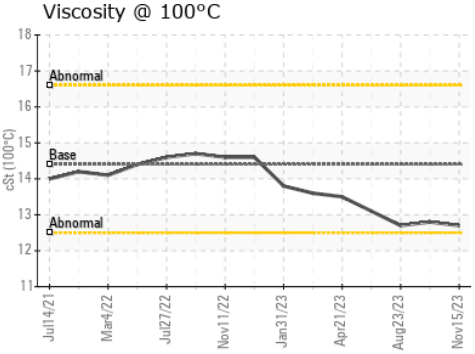
Ferrous Alloys



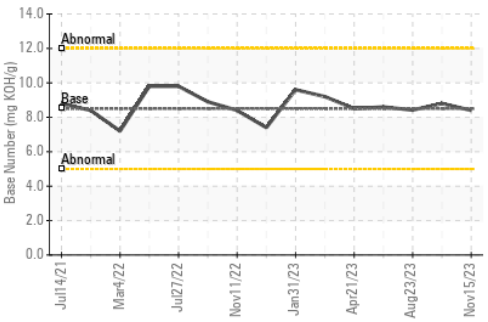
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013260
Lab Number : 06010109
Unique Number : 10749253
Test Package : FLEET

Received : 16 Nov 2023
Diagnosed : 20 Nov 2023
Diagnostician : Don Baldridge

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)

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