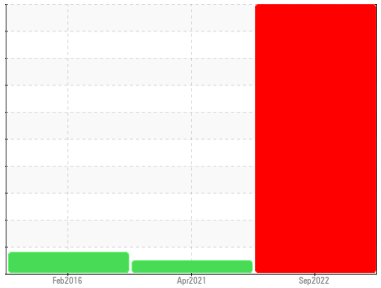
OIL ANALYSIS REPORT

Machine Id
KOMATSU WA500-3LK 5044 (S/N A72019)
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (8 GAL)

Sample Rating Trend



WEAR

DIAGNOSIS

Recommendation
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear
Piston and cylinder wear is indicated.

Contamination
Sodium and/or potassium levels are high. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Test for glycol is negative.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0744233**	WC0558953	WCM1311133
Sample Date		Client Info		**22 Sep 2022**	06 Apr 2021	04 Feb 2016
Machine Age	hrs	Client Info		**17405**	15890	28335
Oil Age	hrs	Client Info		**0**	250	1052
Oil Changed		Client Info		**N/A**	Changed	N/A
Sample Status				**SEVERE**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **134**	6	75
Chromium	ppm	ASTM D5185m	>20	**4**	<1	3
Nickel	ppm	ASTM D5185m	>4	**2**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	● **120**	10	5
Lead	ppm	ASTM D5185m	>40	**<1**	<1	▲ 52
Copper	ppm	ASTM D5185m	>330	**5**	<1	17
Tin	ppm	ASTM D5185m	>15	**<1**	<1	0
Antimony	ppm	ASTM D5185m		**---**	0	6
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**5**	51	14
Barium	ppm	ASTM D5185m	10	**0**	0	1
Molybdenum	ppm	ASTM D5185m	100	**65**	40	79
Manganese	ppm	ASTM D5185m		**1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**929**	509	1023
Calcium	ppm	ASTM D5185m	3000	**1180**	1522	1227
Phosphorus	ppm	ASTM D5185m	1150	**1042**	881	1035
Zinc	ppm	ASTM D5185m	1350	**1312**	1046	1346
Sulfur	ppm	ASTM D5185m	4250	**3290**	2547	3348

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	● **82**	8	10
Sodium	ppm	ASTM D5185m	>158	**16**	1	13
Potassium	ppm	ASTM D5185m	>20	▲ **63**	4	18
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.8**	0.1	1.4
Nitration	Abs/cm	*ASTM D7624	>20	**11.0**	6	11.
Sulfation	Abs/.1mm	*ASTM D7415	>30	**24.4**	23.5	25.

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.8**	20.5	19.
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**8.0**	---	---

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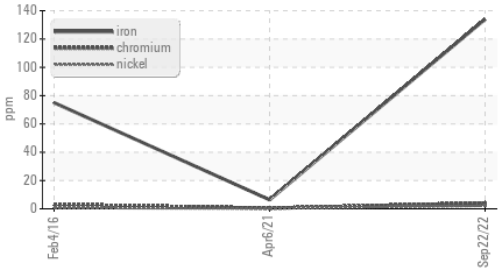
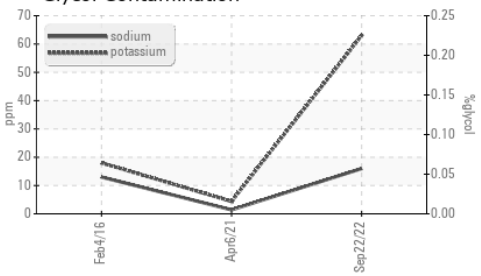
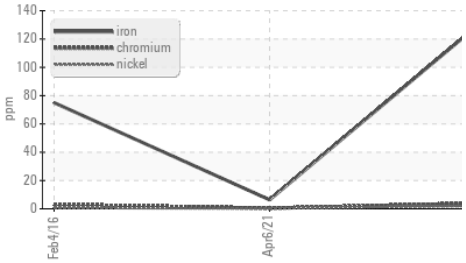
Ferrous Alloys



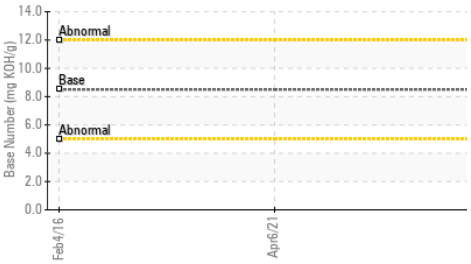
Glycol Contamination



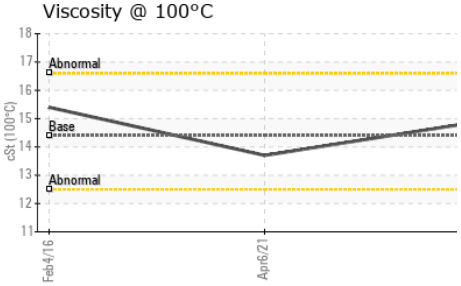
Ferrous Alloys



Base Number



Viscosity @ 100°C

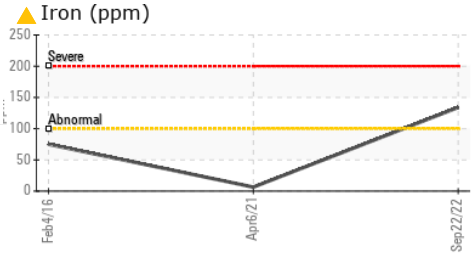


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

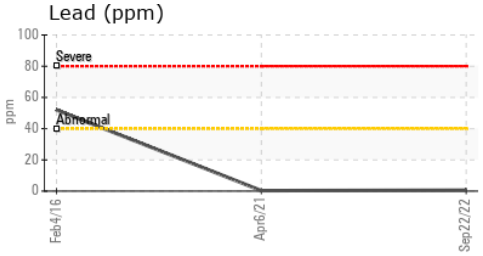
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.9**	13.7	15.4

GRAPHS

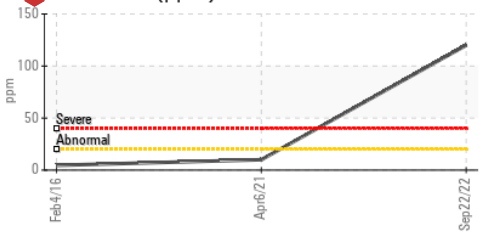
Iron (ppm)



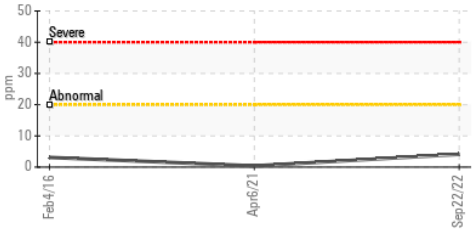
Lead (ppm)



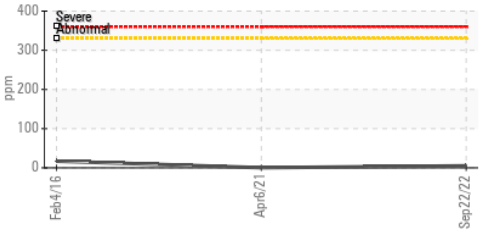
Aluminum (ppm)



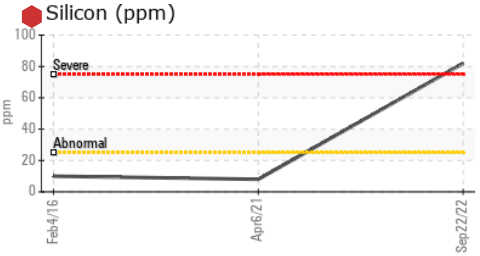
Chromium (ppm)



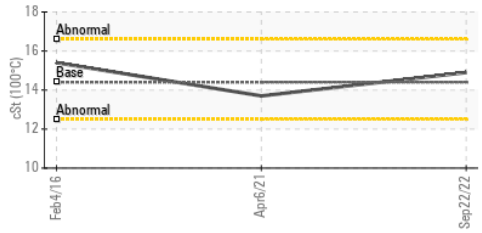
Copper (ppm)



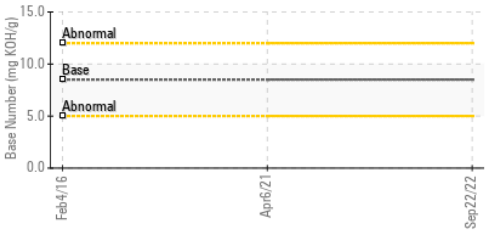
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0744233 **Received** : 27 Sep 2022
Lab Number : 05652079 **Diagnosed** : 29 Sep 2022
Unique Number : 10151631 **Diagnostician** : Jonathan Hester
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

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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