



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id
JOHN DEERE 644K 1DW644KZLGF674754
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- QTS)

RECOMMENDATION

Check for low coolant level. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0201398	JR0160641	JR0160644
Sample Date		Client Info		10 Jan 2024	19 Nov 2023	26 Oct 2023
Machine Age	hrs	Client Info		25332	24891	24692
Oil Age	hrs	Client Info		215	199	206
Filter Age	hrs	Client Info		215	199	206
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	15	9	6
Chromium	ppm	ASTM D5185m	>11	<1	<1	0
Nickel	ppm	ASTM D5185m	>5	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>31	3	2	2
Lead	ppm	ASTM D5185m	>26	<1	<1	0
Copper	ppm	ASTM D5185m	>26	3	2	0
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Sodium and/or potassium levels are high.

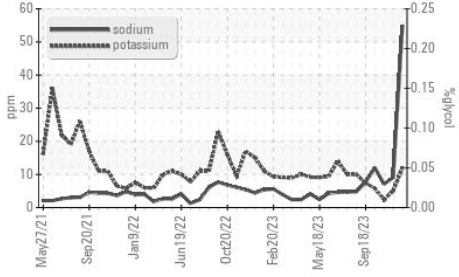
Silicon	ppm	ASTM D5185m	>22	8	12	14
Potassium	ppm	ASTM D5185m	>20	12	5	2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.6	7.2	6.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	16.5	18.9	18.8
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	>0.21	NEG	NEG	NEG

FLUID CONDITION

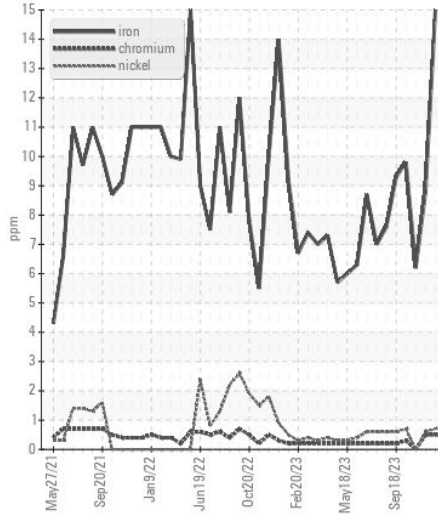
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	55	9	7
Boron	ppm	ASTM D5185m	316	91	40	35
Barium	ppm	ASTM D5185m	0.0	<1	<1	0
Molybdenum	ppm	ASTM D5185m	1.2	89	50	45
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	24	32	538	541
Calcium	ppm	ASTM D5185m	2292	2199	1501	1463
Phosphorus	ppm	ASTM D5185m	1064	1135	1153	1023
Zinc	ppm	ASTM D5185m	1160	1226	1237	1208
Sulfur	ppm	ASTM D5185m	4996	4266	3432	3390
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	15.1	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	11.1	9.4	9.1
Visc @ 100°C	cSt	ASTM D445	15.7	13.5	13.4	13.4

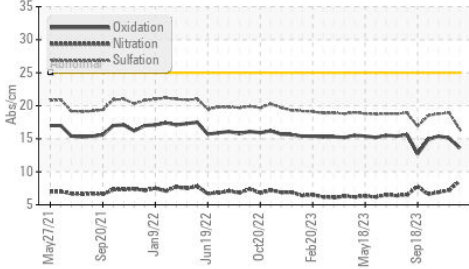
Glycol Contamination



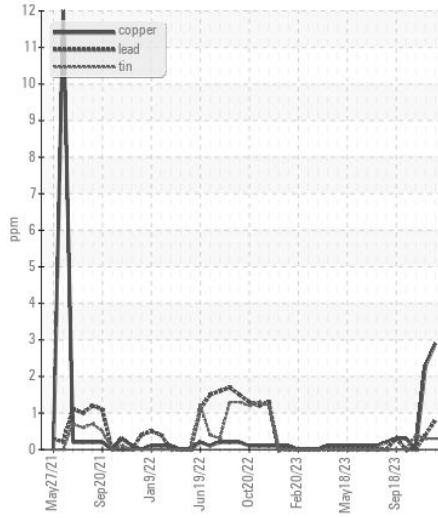
Ferrous Alloys



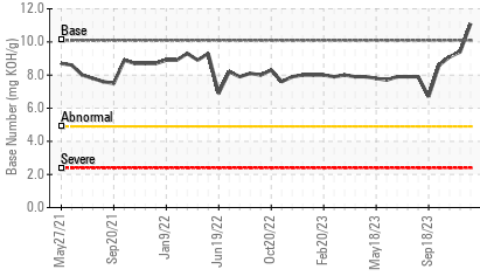
FT-IR (Direct Trend)



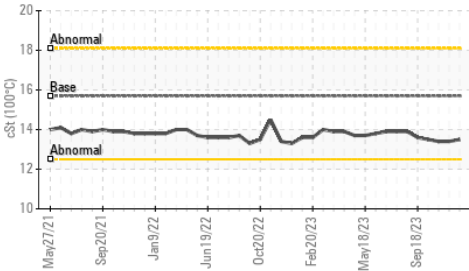
Non-ferrous Metals



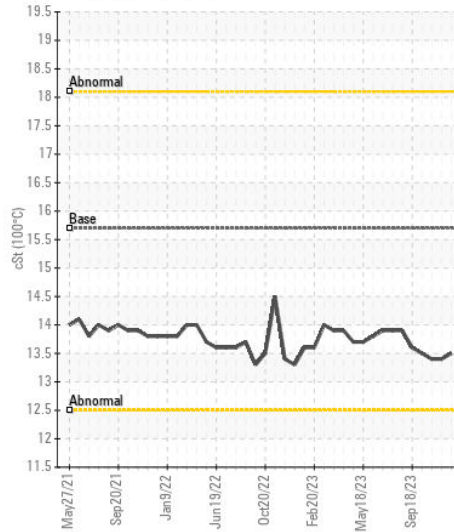
Base Number



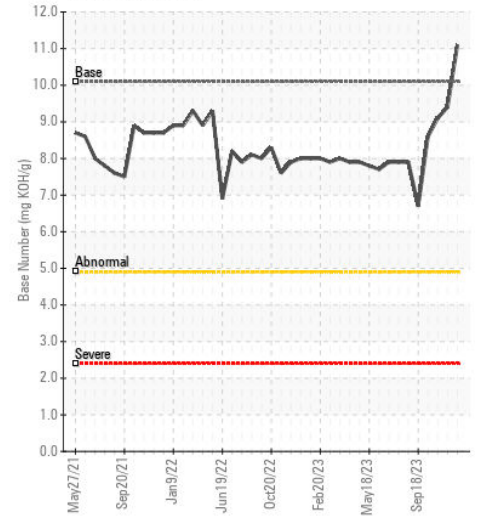
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0201398
Lab Number : 06196361
Unique Number : 11058484
Test Package : CONST (Additional Tests: TBN)

Baxter Healthcare - Wood Boiler Biomass
 2859 OLD LINVILLE RD
 MARION, NC
 US 28752
 Contact: RICKY STYLES
 ricky_styles@baxter.com
 T: (828)756-4946
 F:

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)