



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HITACHI 85USB-5 HCMDEF60J00023328
 Component
Diesel Engine
 Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (3 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0217594	JR0199036	JR0173016
Sample Date		Client Info		20 Jun 2024	04 Jan 2024	22 May 2023
Machine Age	hrs	Client Info		1426	1002	457
Oil Age	hrs	Client Info		424	545	0
Filter Age	hrs	Client Info		424	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	13	16	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	5	2
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	1	1	4
Tin	ppm	ASTM D5185m	>15	0	<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

There is no indication of any contamination in the oil.

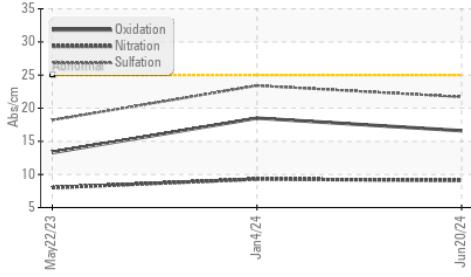
Silicon	ppm	ASTM D5185m	>25	11	14	43
Potassium	ppm	ASTM D5185m	>20	1	12	▲ 181
Fuel		WC Method	>5	<1.0	<1.0	1.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.4	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.1	9.3	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.7	23.4	18.2
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

FLUID CONDITION

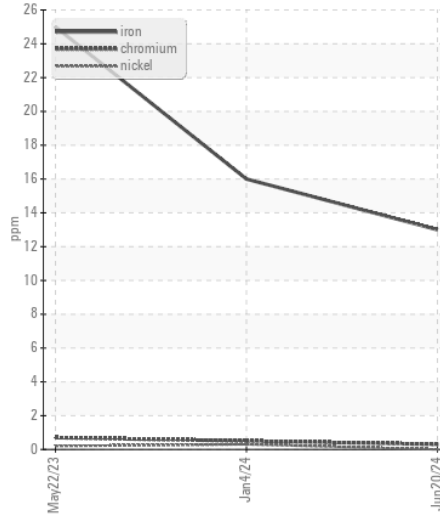
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	2	14
Boron	ppm	ASTM D5185m		226	211	231
Barium	ppm	ASTM D5185m		<1	<1	<1
Molybdenum	ppm	ASTM D5185m		258	250	176
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		877	786	90
Calcium	ppm	ASTM D5185m		1602	1501	2225
Phosphorus	ppm	ASTM D5185m		1006	947	684
Zinc	ppm	ASTM D5185m		1217	1078	819
Sulfur	ppm	ASTM D5185m		3704	3091	2825
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.6	18.5	13.3
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	8.9	8.2	6.8
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.5	● 10.6

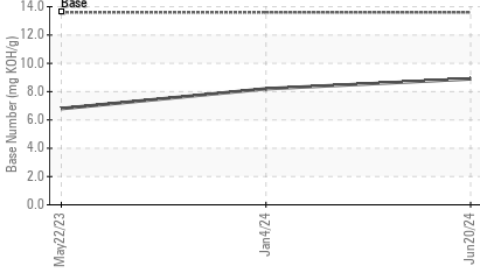
FT-IR (Direct Trend)



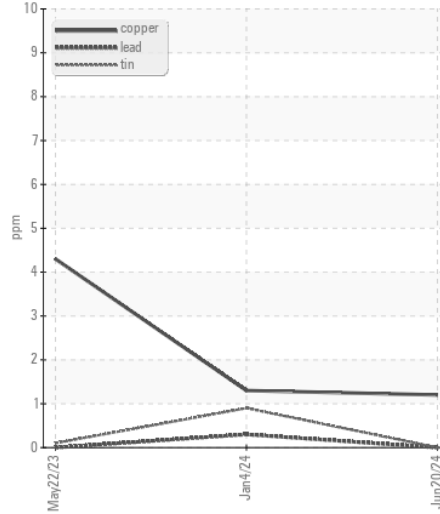
Ferrous Alloys



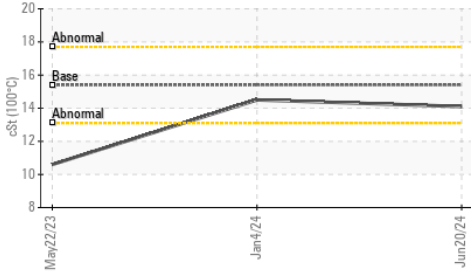
Base Number



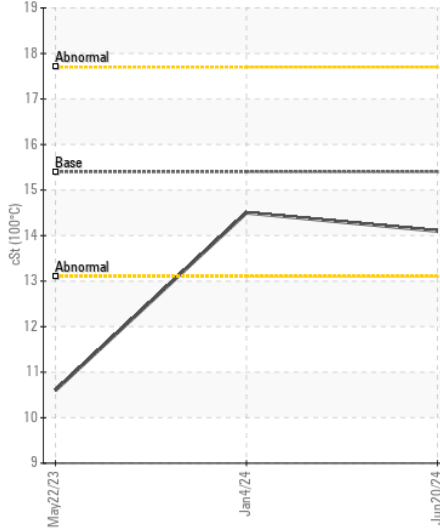
Non-ferrous Metals



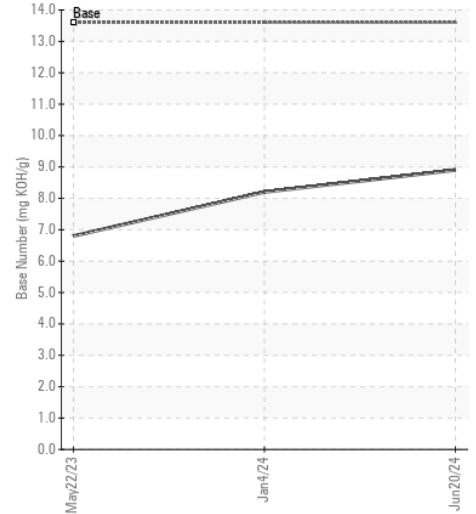
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0217594 **Received** : 24 Jun 2024
Lab Number : 06217984 **Tested** : 25 Jun 2024
Unique Number : 11096181 **Diagnosed** : 25 Jun 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

JRE - MANASSAS PARK
 9107 OWENS DRIVE
 MANASSAS PARK, VA
 US 20111
 Contact: DON VEST
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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)