



WEAR	ATTENTION
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
[W63004]
 Machine Id
HAMM H11i C276348 (S/N H2100761)
 Component
Diesel Engine
 Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (3)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: W63004)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0198447	JR0171810	---
Sample Date		Client Info		17 Jan 2024	13 Jun 2023	---
Machine Age	hrs	Client Info		3754	3237	---
Oil Age	hrs	Client Info		517	3237	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	51	20	---
Chromium	ppm	ASTM D5185m	>20	3	1	---
Nickel	ppm	ASTM D5185m	>4	0	<1	---
Titanium	ppm	ASTM D5185m		0	<1	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>20	▲ 15	7	---
Lead	ppm	ASTM D5185m	>40	<1	0	---
Copper	ppm	ASTM D5185m	>330	7	1	---
Tin	ppm	ASTM D5185m	>15	<1	<1	---
Vanadium	ppm	ASTM D5185m		<1	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

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

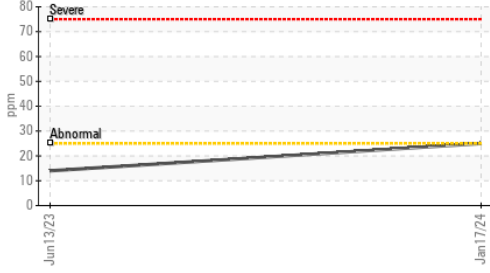
Silicon	ppm	ASTM D5185m	>25	▲ 25	14	---
Potassium	ppm	ASTM D5185m	>20	2	3	---
Fuel		WC Method	>5	<1.0	0.4	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	8.5	6.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1	20.3	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

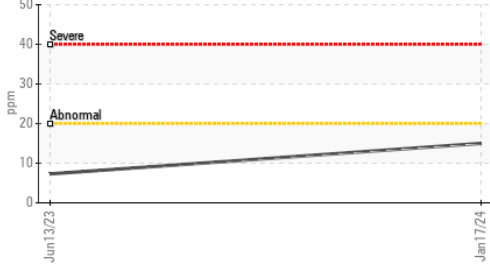
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	<1	---
Boron	ppm	ASTM D5185m		227	291	---
Barium	ppm	ASTM D5185m		<1	0	---
Molybdenum	ppm	ASTM D5185m		228	222	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		824	804	---
Calcium	ppm	ASTM D5185m		1542	1459	---
Phosphorus	ppm	ASTM D5185m		1012	930	---
Zinc	ppm	ASTM D5185m		1255	1133	---
Sulfur	ppm	ASTM D5185m		3371	3896	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.1	15.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	8.2	10.0	---
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	▲ 11.8	---

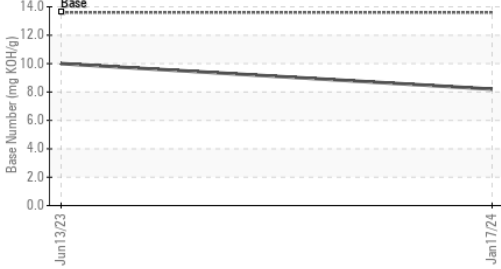
▲ Silicon (ppm)



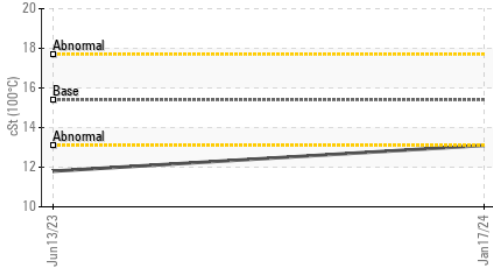
▲ Aluminum (ppm)



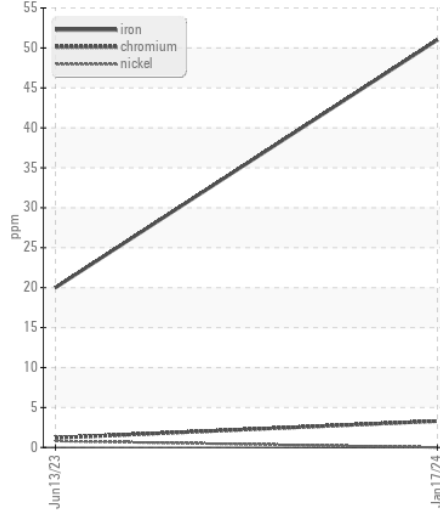
Base Number



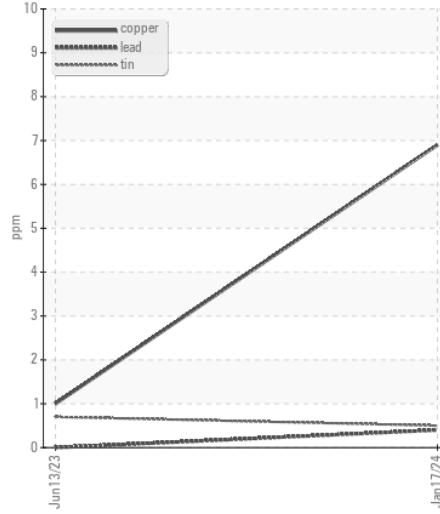
Viscosity @ 100°C



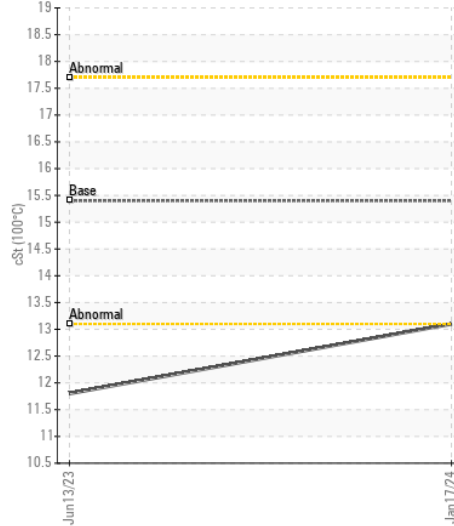
Ferrous Alloys



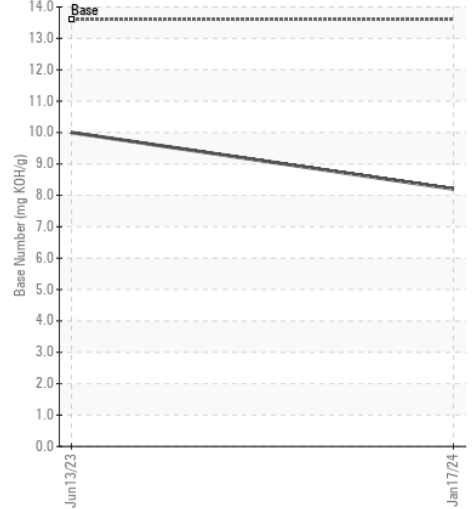
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0198447 **Received** : 19 Jan 2024
Lab Number : 06065438 **Diagnosed** : 22 Jan 2024
Unique Number : 10836820 **Diagnostician** : Don Baldrige
Test Package : CONST (Additional Tests: TBN)

JRE - CHARLOTTE
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 CHARLOTTE, NC
 US 28269

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 F: (704)596-6198

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)