



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HAMM H12IP H2350115
 Component
Diesel Engine
 Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0220069	JR0188835	JR0150553
Sample Date		Client Info		07 Jul 2024	31 Oct 2023	16 Nov 2022
Machine Age	hrs	Client Info		3089	2662	2020
Oil Age	hrs	Client Info		427	1677	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	N/A
Filter Changed		Client Info		N/A	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	32	48	49
Chromium	ppm	ASTM D5185m	>20	2	2	4
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	11	13	13
Lead	ppm	ASTM D5185m	>40	2	6	5
Copper	ppm	ASTM D5185m	>330	4	5	5
Tin	ppm	ASTM D5185m	>15	<1	0	2
Vanadium	ppm	ASTM D5185m		<1	<1	<1
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.

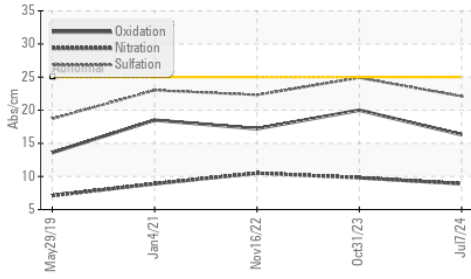
Silicon	ppm	ASTM D5185m	>25	21	14	14
Potassium	ppm	ASTM D5185m	>20	2	3	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.9	9.8	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.1	24.9	22.3
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

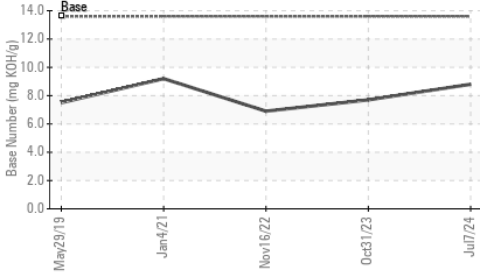
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		3	1	1
Boron	ppm	ASTM D5185m		213	96	27
Barium	ppm	ASTM D5185m		0	7	0
Molybdenum	ppm	ASTM D5185m		268	238	94
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m		815	706	91
Calcium	ppm	ASTM D5185m		1506	1625	2176
Phosphorus	ppm	ASTM D5185m		987	904	973
Zinc	ppm	ASTM D5185m		1147	1132	1169
Sulfur	ppm	ASTM D5185m		3606	3447	3854
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	20.0	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	8.8	7.7	6.9
Visc @ 100°C	cSt	ASTM D445	15.4	13.3	13.4	13.1

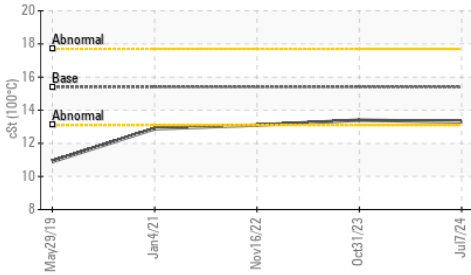
FT-IR (Direct Trend)



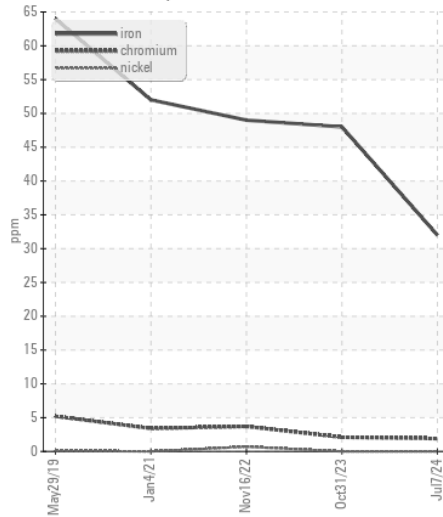
Base Number



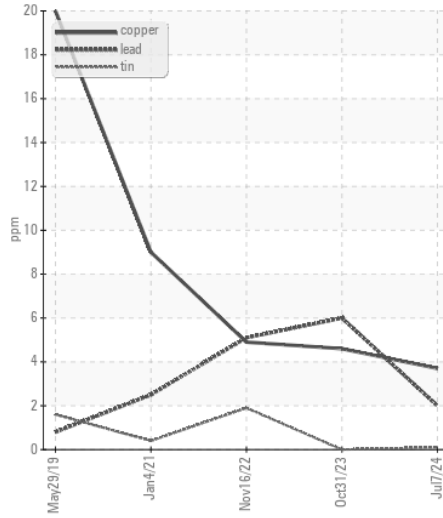
Viscosity @ 100°C



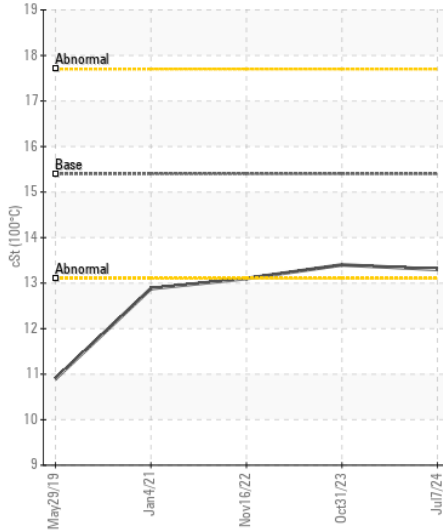
Ferrous Alloys



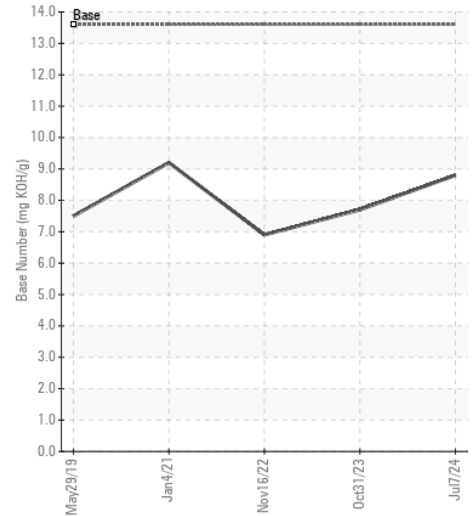
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0220069 **Received** : 09 Jul 2024
Lab Number : 06231250 **Tested** : 10 Jul 2024
Unique Number : 11114743 **Diagnosed** : 10 Jul 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

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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)