



Area

[16W16595]

Machine Id

HITACHI ZX350LC3 FF00ASP920190

Component

Diesel Engine

Fluid

JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (40 QTS)

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: 16W16595)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0217326	---	---
Sample Date		Client Info		08 Jul 2024	---	---
Machine Age	hrs	Client Info		13107	---	---
Oil Age	hrs	Client Info		269	---	---
Filter Age	hrs	Client Info		269	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				ABNORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	18	---	---
Chromium	ppm	ASTM D5185m	>20	<1	---	---
Nickel	ppm	ASTM D5185m	>4	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	0	---	---
Aluminum	ppm	ASTM D5185m	>20	10	---	---
Lead	ppm	ASTM D5185m	>40	2	---	---
Copper	ppm	ASTM D5185m	>330	19	---	---
Tin	ppm	ASTM D5185m	>15	4	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

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

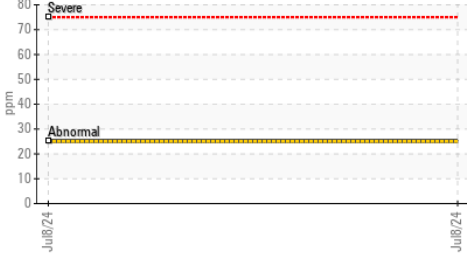
Silicon	ppm	ASTM D5185m	>25	▲ 25	---	---
Potassium	ppm	ASTM D5185m	>20	2	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	6.8	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

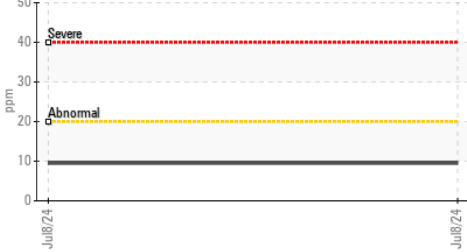
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		2	---	---
Boron	ppm	ASTM D5185m		304	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		242	---	---
Manganese	ppm	ASTM D5185m		4	---	---
Magnesium	ppm	ASTM D5185m		763	---	---
Calcium	ppm	ASTM D5185m		1338	---	---
Phosphorus	ppm	ASTM D5185m		888	---	---
Zinc	ppm	ASTM D5185m		1033	---	---
Sulfur	ppm	ASTM D5185m		3016	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	9.4	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	---	---

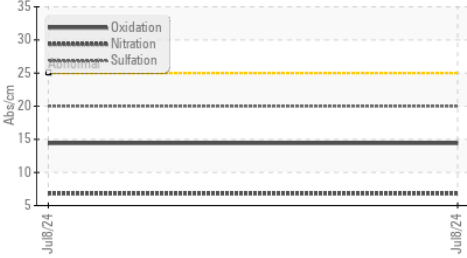
▲ Silicon (ppm)



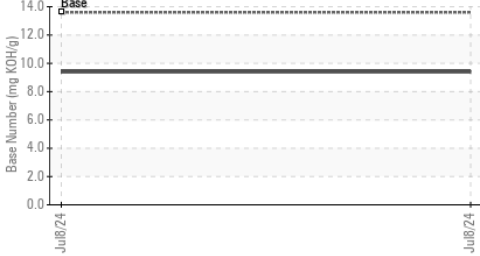
● Aluminum (ppm)



FT-IR (Direct Trend)



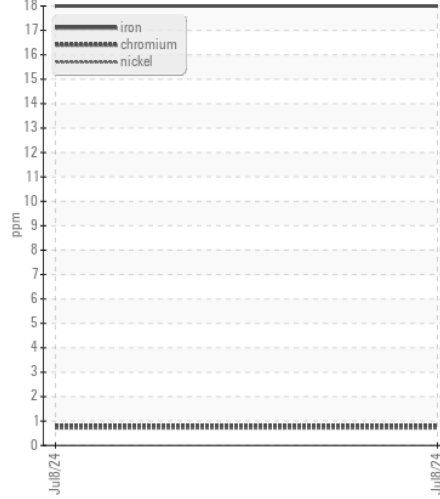
Base Number



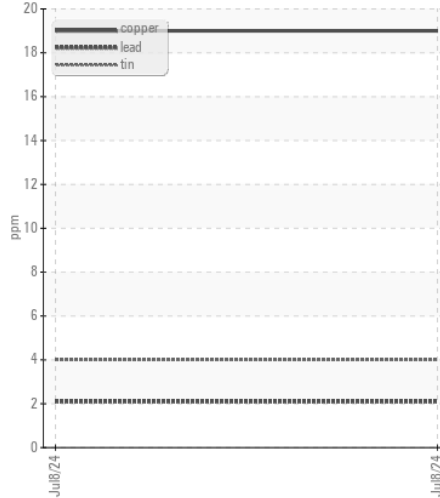
Viscosity @ 100°C



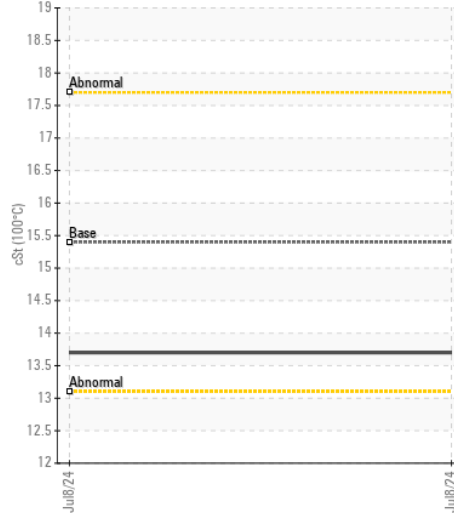
Ferrous Alloys



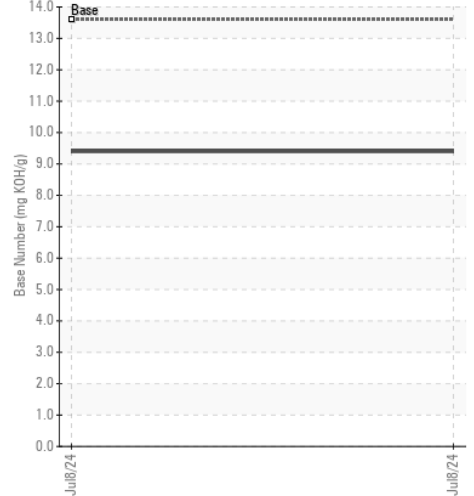
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : JR0217326

Lab Number : 06232039

Unique Number : 11115532

Test Package : CONST (Additional Tests: TBN)

Received : 10 Jul 2024

Tested : 11 Jul 2024

Diagnosed : 11 Jul 2024 - Don Baldrige

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)

JRE - CASTLE HAYNE

113 CROWATAN ROAD

CASTLE HAYNE, NC

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