



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id
JOHN DEERE 310E 1DW310EXHJF691304
Component
Diesel Engine
Fluid
{not provided} (--- GAL)

RECOMMENDATION

Check for low coolant level. We advise that you check for the source of the coolant leak. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0221303	JR0192276	JR0176454
Sample Date		Client Info		17 May 2024	30 Nov 2023	14 Jun 2023
Machine Age	hrs	Client Info		5988	5466	4963
Oil Age	hrs	Client Info		0	503	478
Filter Age	hrs	Client Info		0	0	478
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ATTENTION	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	35	24	38
Chromium	ppm	ASTM D5185m	>11	<1	<1	1
Nickel	ppm	ASTM D5185m	>5	1	<1	2
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>31	7	4	6
Lead	ppm	ASTM D5185m	>26	<1	0	0
Copper	ppm	ASTM D5185m	>26	4	1	<1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Sodium and/or potassium levels are high.

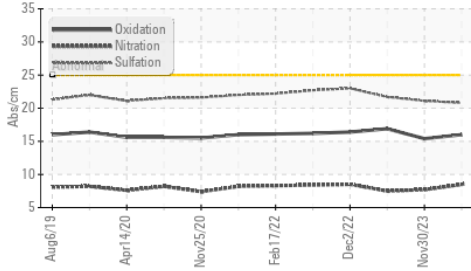
Silicon	ppm	ASTM D5185m	>22	16	8	9
Potassium	ppm	ASTM D5185m	>20	34	2	2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.5	7.7	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.8	21.1	21.7
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

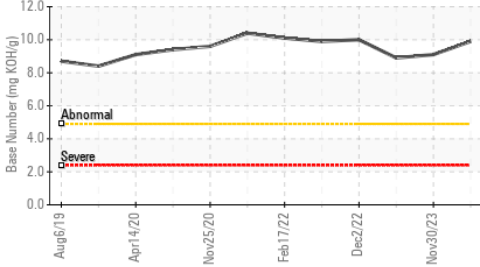
The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>31	281	0	2
Boron	ppm	ASTM D5185m		152	247	260
Barium	ppm	ASTM D5185m		0	3	0
Molybdenum	ppm	ASTM D5185m		221	267	245
Manganese	ppm	ASTM D5185m		1	<1	1
Magnesium	ppm	ASTM D5185m		801	774	891
Calcium	ppm	ASTM D5185m		1642	1461	1479
Phosphorus	ppm	ASTM D5185m		931	850	956
Zinc	ppm	ASTM D5185m		1135	1075	1199
Sulfur	ppm	ASTM D5185m		3593	3795	3956
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.0	15.4	16.9
Base Number (BN)	mg KOH/g	ASTM D2896		9.9	9.1	8.9
Visc @ 100°C	cSt	ASTM D445		12.7	13.4	13.7

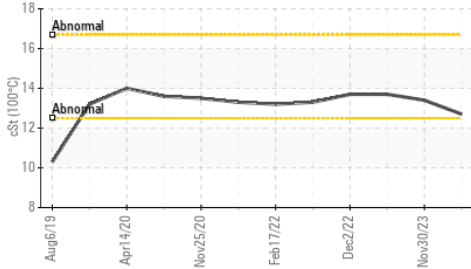
FT-IR (Direct Trend)



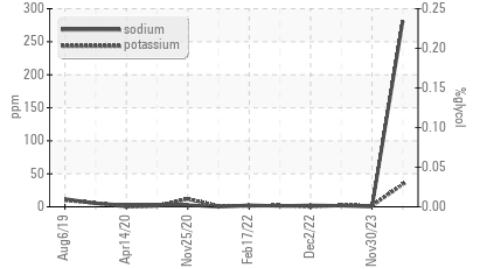
Base Number



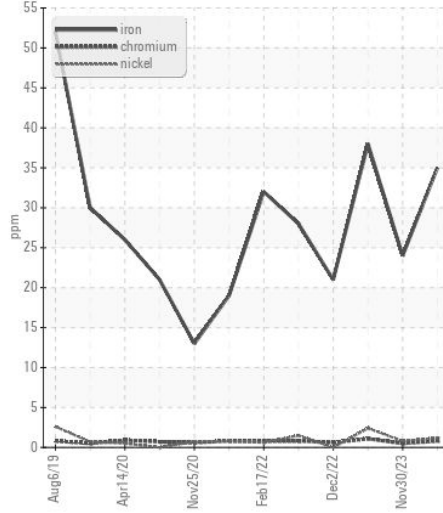
Viscosity @ 100°C



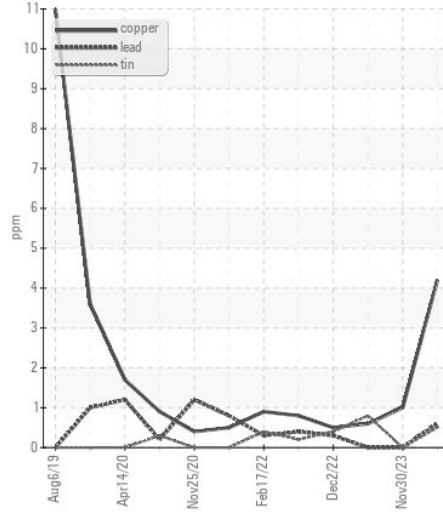
Glycol Contamination



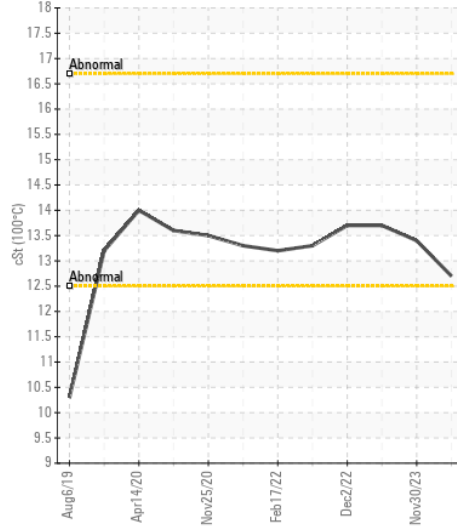
Ferrous Alloys



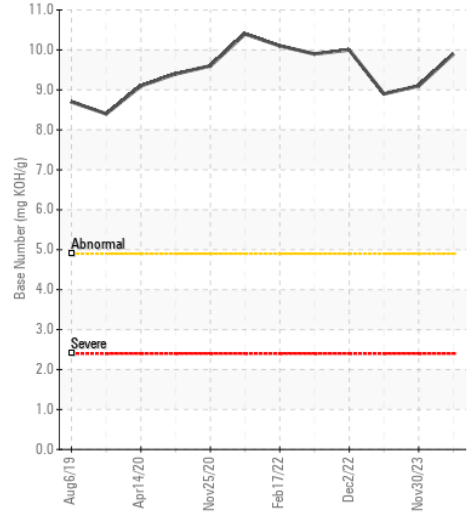
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0221303 **Received** : 21 Jun 2024
Lab Number : 06216731 **Tested** : 24 Jun 2024
Unique Number : 11089595 **Diagnosed** : 24 Jun 2024 - Sean Felton
Test Package : CONST (Additional Tests: Glycol, TBN)

HERITAGE SITE DEVELOPMENT
 26 CATTLEMANS DR
 BERRYVILLE, VA
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 Contact: SERVICE MANAGER
 dieselpro44@yahoo.com
 T: (540)327-2857
 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)