



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Area
Store 9 - Marietta [146001]
Machine Id
JOHN DEERE 672G GRADER 1DW672GXCA0628964
Component
Diesel Engine
Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (7 GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. (Customer Sample Comment: coolant found in engine oil pan)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0044734	LEC0043553	LEC0040539
Sample Date		Client Info		12 Dec 2023	06 Sep 2023	22 Aug 2023
Machine Age	hrs	Client Info		6816	6773	6771
Oil Age	hrs	Client Info		45	2	0
Filter Age	hrs	Client Info		45	2	0
Oil Changed		Client Info		Not Chngd	Changed	Not Chngd
Filter Changed		Client Info		Not Chngd	Changed	Not Chngd
Sample Status				SEVERE	ABNORMAL	SEVERE

WEAR

The copper level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	14	4	28
Chromium	ppm	ASTM D5185m	>11	1	<1	2
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>31	▲ 6	2	6
Lead	ppm	ASTM D5185m	>26	3	0	5
Copper	ppm	ASTM D5185m	>26	▲ 86	12	▲ 246
Tin	ppm	ASTM D5185m	>4	<1	<1	4
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

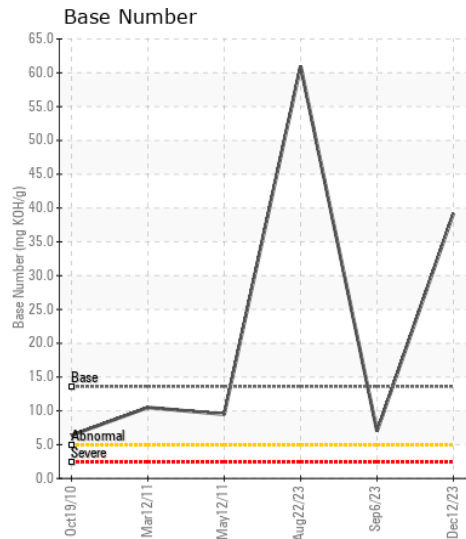
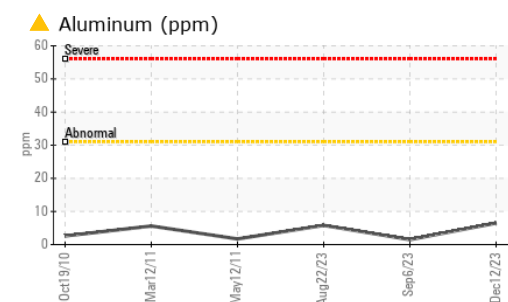
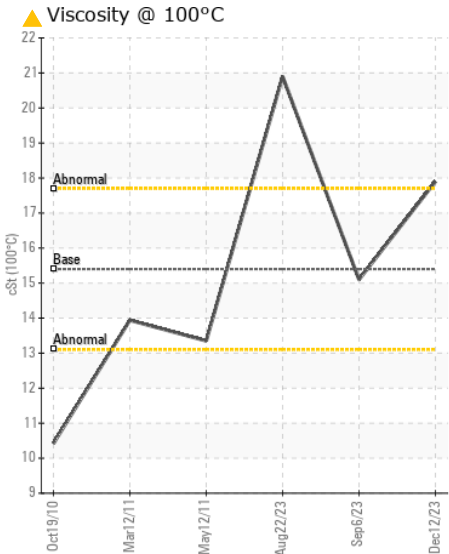
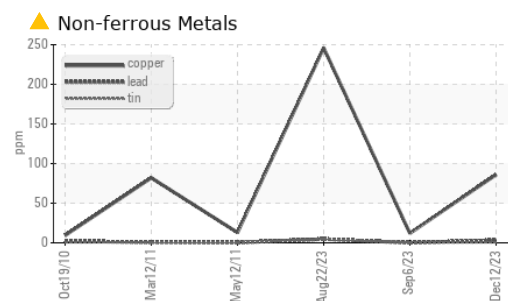
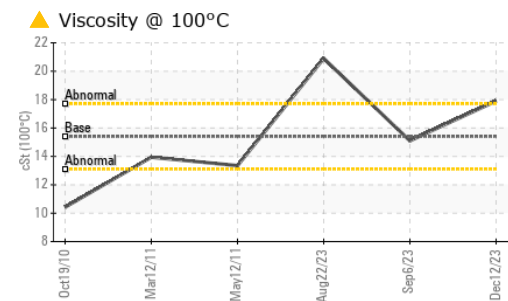
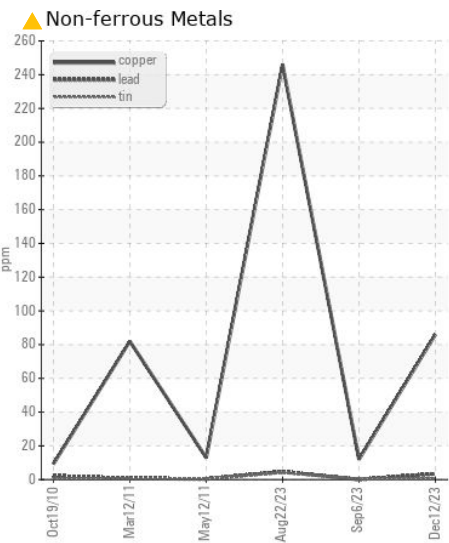
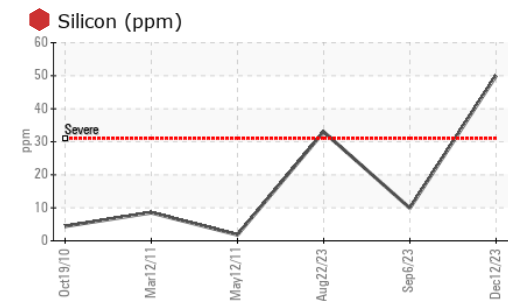
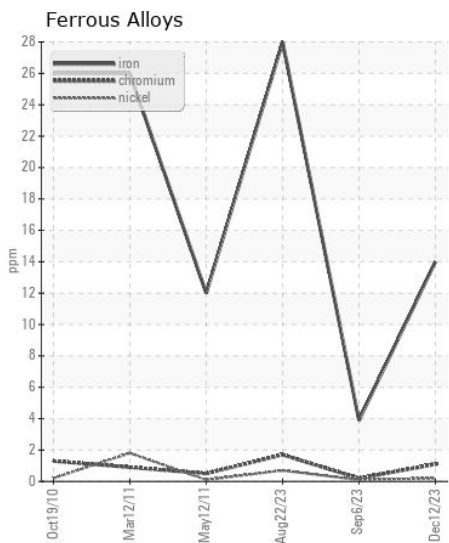
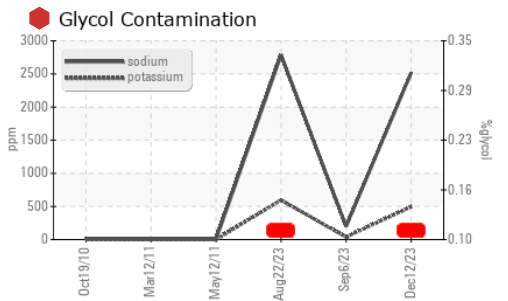
Sodium and/or potassium levels are high. Test for glycol is positive. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>120	● 50	10	● 33
Potassium	ppm	ASTM D5185m	>20	▲ 494	39	▲ 595
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol	%	*ASTM D2982		● 0.12	NEG	● 0.12
Soot %	%	*ASTM D7844	>3	0.1	0.5	0.2
Nitration	Abs/cm	*ASTM D7624	>20	10.2	9.7	20.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	21.5	7.1
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	0.2%	NEG

FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>31	▲ 2516	▲ 200	▲ 2785
Boron	ppm	ASTM D5185m		320	284	312
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		562	249	636
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m		549	760	463
Calcium	ppm	ASTM D5185m		1157	1560	1226
Phosphorus	ppm	ASTM D5185m		882	939	691
Zinc	ppm	ASTM D5185m		954	1162	766
Sulfur	ppm	ASTM D5185m		2943	3930	2720
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.3	17.0	19.2
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	39.2	7.0	61.0
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 17.9	15.1	▲ 20.9



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0044734 **Received** : 14 Dec 2023
Lab Number : 06034446 **Diagnosed** : 18 Dec 2023
Unique Number : 10789675 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: Glycol, TBN)

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Certificate L2367
 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)