



OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>ABNORMAL</b>



Machine Id  
**JOHN DEERE 944k 1DW944KSKLF703589**  
Component  
**Diesel Engine**  
Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (12 GAL)**

**RECOMMENDATION**

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LEC0031572</b>	LEC0043042	LEC0038497
Sample Date		Client Info		<b>13 Nov 2023</b>	17 Aug 2023	09 May 2023
Machine Age	hrs	Client Info		<b>4978</b>	4471	4005
Oil Age	hrs	Client Info		<b>507</b>	466	534
Filter Age	hrs	Client Info		<b>507</b>	466	534
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>16</b>	16	14
Chromium	ppm	ASTM D5185m	>11	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>4</b>	5	5
Lead	ppm	ASTM D5185m	>26	<b>12</b>	8	8
Copper	ppm	ASTM D5185m	>26	<b>10</b>	10	8
Tin	ppm	ASTM D5185m	>4	<b>2</b>	2	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

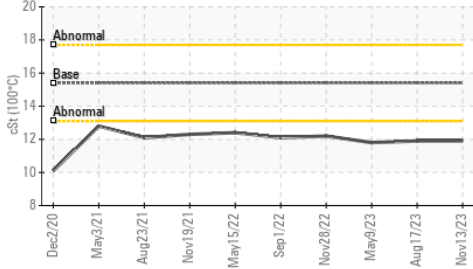
Silicon	ppm	ASTM D5185m	>120	<b>8</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	4	4
Fuel	%	ASTM D3524	>8.0	<b>6.0</b>	6.4	▲ 5.7
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.6</b>	0.6	0.6
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.1</b>	9.8	10.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>25.7</b>	23.9	25.0
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.21	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

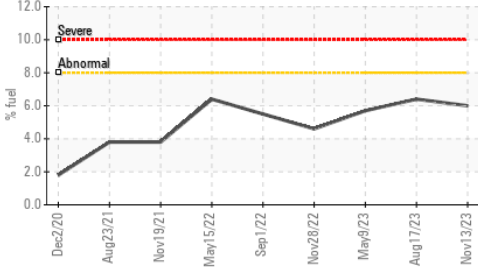
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>31	<b>7</b>	4	6
Boron	ppm	ASTM D5185m		<b>49</b>	63	81
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>247</b>	259	253
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>829</b>	795	863
Calcium	ppm	ASTM D5185m		<b>1373</b>	1394	1465
Phosphorus	ppm	ASTM D5185m		<b>874</b>	775	805
Zinc	ppm	ASTM D5185m		<b>1061</b>	994	1002
Sulfur	ppm	ASTM D5185m		<b>2952</b>	3057	3273
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.8</b>	18.1	19.1
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>7.5</b>	6.9	7.1
Visc @ 100°C	cSt	ASTM D445	15.4	▲ <b>11.9</b>	▲ 11.9	▲ 11.8

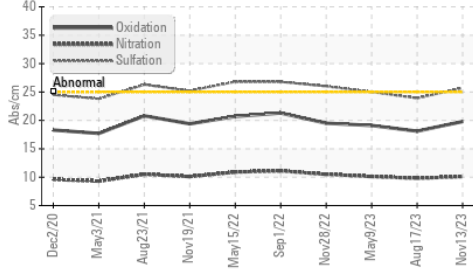
▲ Viscosity @ 100°C



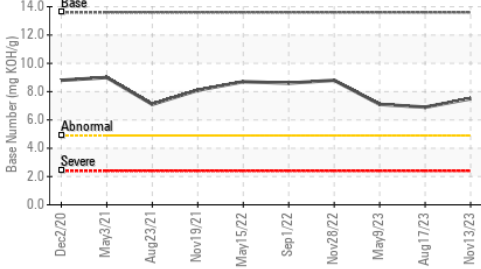
Fuel Dilution



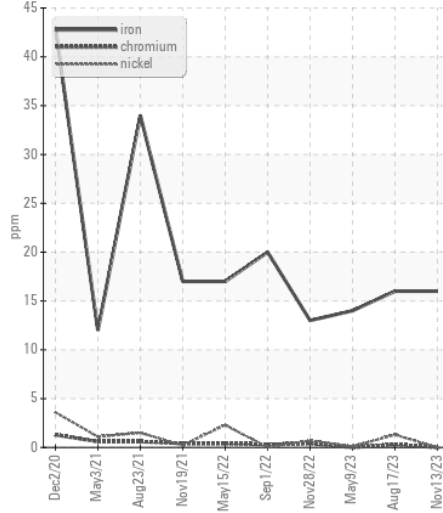
FT-IR (Direct Trend)



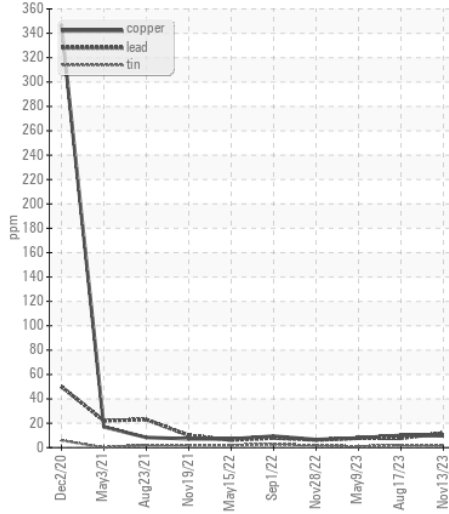
Base Number



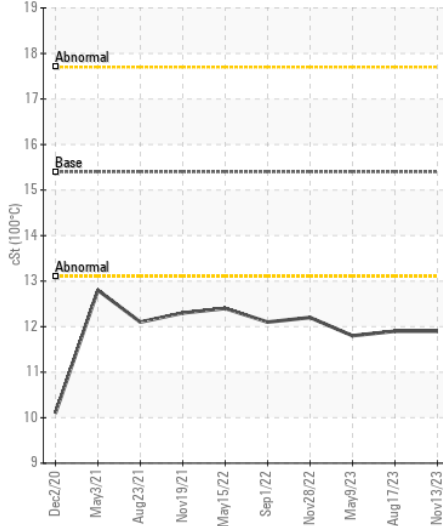
Ferrous Alloys



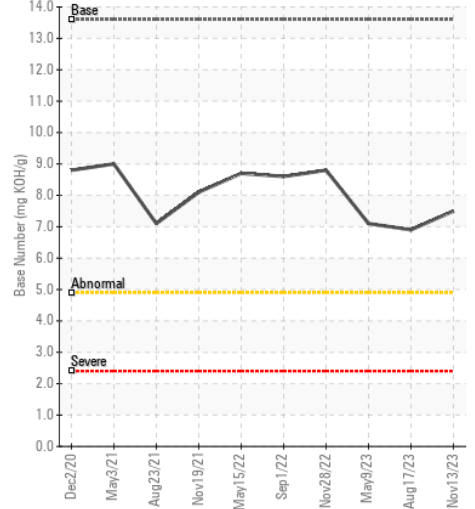
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : LEC0031572 Received : 15 Nov 2023  
 Lab Number : 06008121 Tested : 20 Nov 2023  
 Unique Number : 10741883 Diagnosed : 29 Nov 2023 - Doug Bogart  
 Test Package : CONST ( Additional Tests: FUELDILUTION, PercentFuel, TBN )

**APPALACHIAN AGGREGATES**  
 2950 CHARLES AVENUE  
 DUNBAR, WV  
 US 25064  
 Contact: VERNON SPARKS  
 vernon.sparks@appagg.wv.com

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)

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F: