



# OIL ANALYSIS REPORT

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



Area  
**Store 5 - Cross Lanes**  
Machine Id  
**CASE CX210C E-38 (S/N CSAH1206)**  
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		<b>LEC0049431</b>	LEC0013363	LEC0012219
Sample Date		Client Info		<b>08 May 2024</b>	29 Sep 2020	24 Jul 2020
Machine Age	hrs	Client Info		<b>5530</b>	2745	2444
Oil Age	hrs	Client Info		<b>500</b>	285	0
Filter Age	hrs	Client Info		<b>500</b>	285	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>42</b>	15	34
Chromium	ppm	ASTM D5185m	>11	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	<1	2
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>3</b>	0	6
Lead	ppm	ASTM D5185m	>26	<b>0</b>	0	1
Copper	ppm	ASTM D5185m	>26	<b>&lt;1</b>	<1	4
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
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.

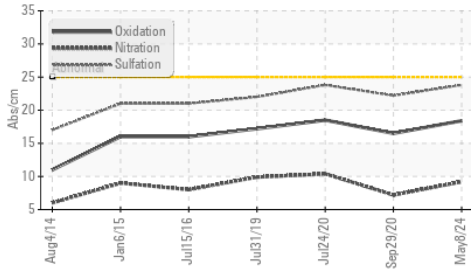
Silicon	ppm	ASTM D5185m	>120	<b>10</b>	4	8
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	0
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.9</b>	0.4	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.2</b>	7.2	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.8</b>	22.2	23.8
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

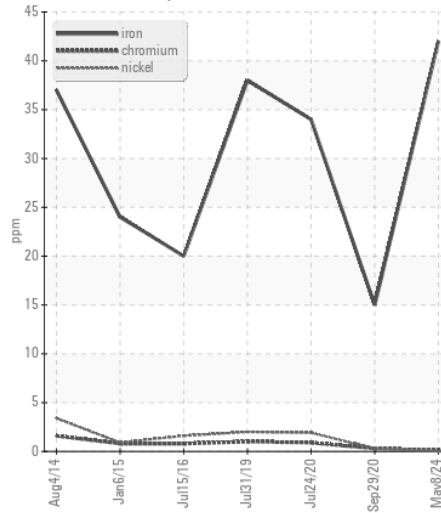
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>31	<b>3</b>	4	4
Boron	ppm	ASTM D5185m		<b>316</b>	408	188
Barium	ppm	ASTM D5185m		<b>1</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>94</b>	132	235
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>553</b>	536	856
Calcium	ppm	ASTM D5185m		<b>1426</b>	1405	1483
Phosphorus	ppm	ASTM D5185m		<b>1188</b>	760	877
Zinc	ppm	ASTM D5185m		<b>1355</b>	868	1034
Sulfur	ppm	ASTM D5185m		<b>3882</b>	2262	2394
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.4</b>	16.5	18.5
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.2</b>	9	9.8
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.6</b>	14.5	15.3

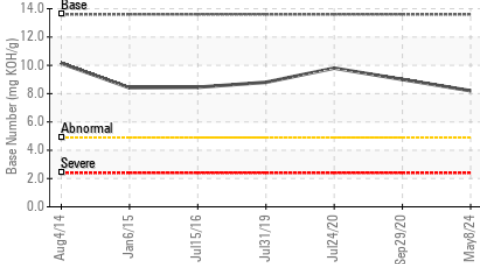
**FT-IR (Direct Trend)**



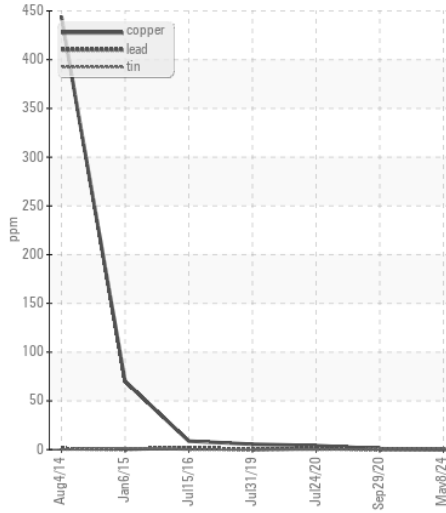
**Ferrous Alloys**



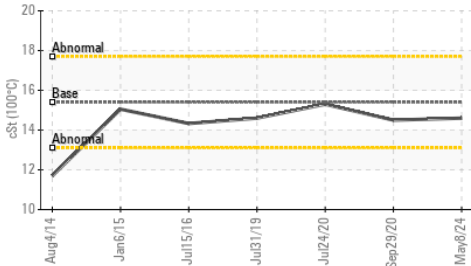
**Base Number**



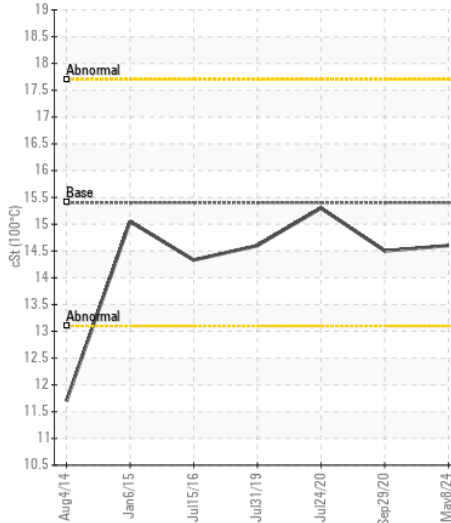
**Non-ferrous Metals**



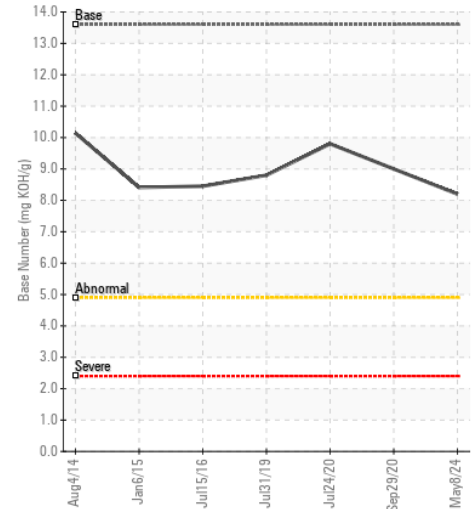
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0049431 **Received** : 14 May 2024  
**Lab Number** : 06178471 **Tested** : 15 May 2024  
**Unique Number** : 11029797 **Diagnosed** : 16 May 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: TBN )

**APEX PIPELINE**

P.O. BOX 580  
 NITRO, WV  
 US 25143  
 Contact: KELLY TUCKER

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)

T: (304)204-0080

F: (304)204-0083