



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

SEVERE
SEVERE
ABNORMAL



Area
Store 1 - Cowen [139181]
Machine Id
JOHN DEERE 848H 1DW848HXHED665648
Component
Diesel Engine
Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (7 GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. 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 advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0039047	---	---
Sample Date		Client Info		16 May 2023	---	---
Machine Age	hrs	Client Info		6907	---	---
Oil Age	hrs	Client Info		6907	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Not Chngd	---	---
Filter Changed		Client Info		Not Chngd	---	---
Sample Status				SEVERE	---	---

WEAR

Piston, ring and cylinder wear is indicated. Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>51	370	---	---
Chromium	ppm	ASTM D5185m	>11	7	---	---
Nickel	ppm	ASTM D5185m	>5	5	---	---
Titanium	ppm	ASTM D5185m		1	---	---
Silver	ppm	ASTM D5185m	>3	<1	---	---
Aluminum	ppm	ASTM D5185m	>31	123	---	---
Lead	ppm	ASTM D5185m	>26	105	---	---
Copper	ppm	ASTM D5185m	>26	61	---	---
Tin	ppm	ASTM D5185m	>4	20	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

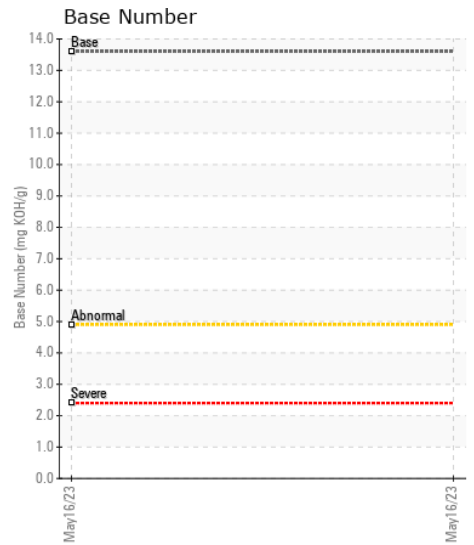
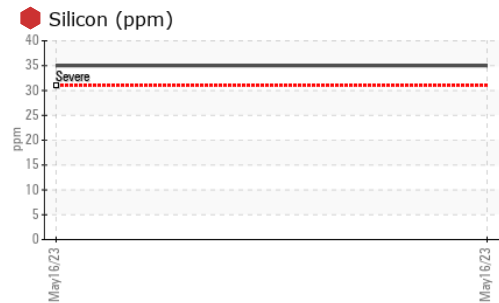
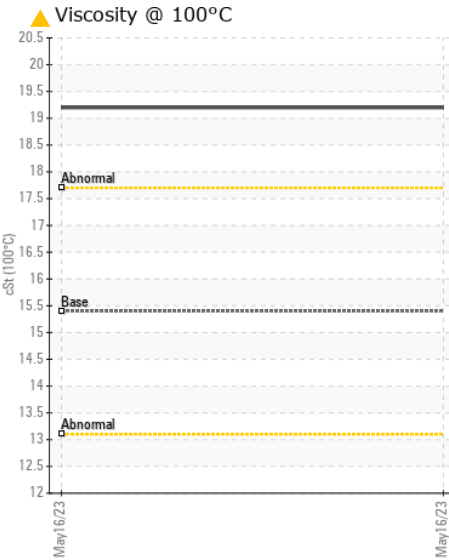
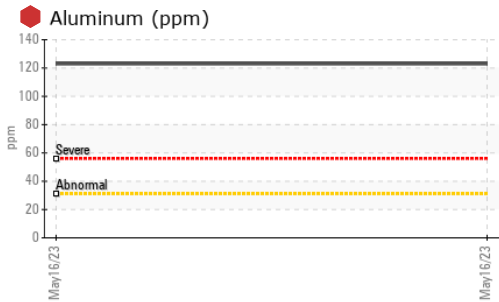
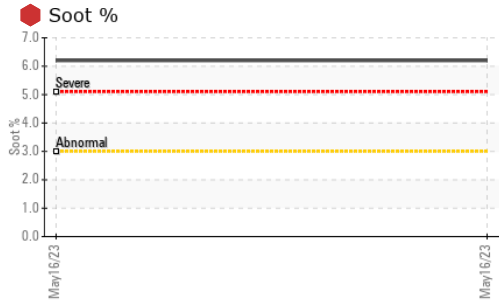
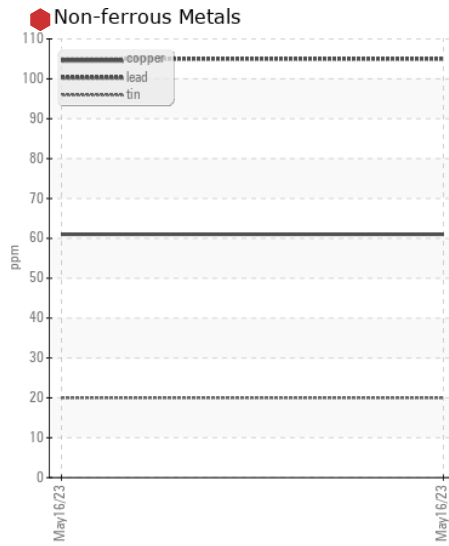
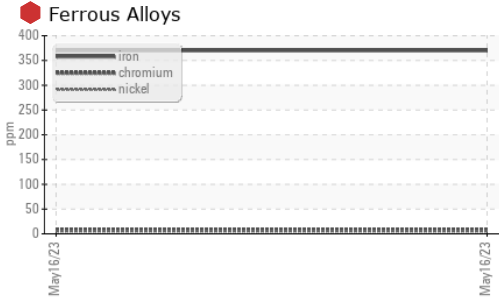
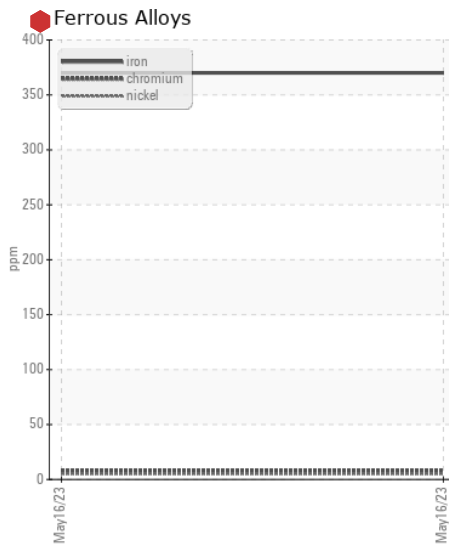
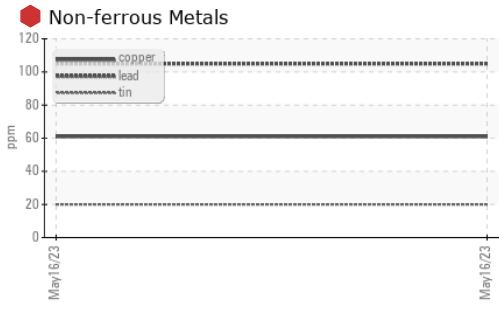
There is an abnormal amount of solids and carbon present in the oil. Elemental level of silicon (Si) above normal indicating ingress of dirt/seal material.

Silicon	ppm	ASTM D5185m	>120	35	---	---
Potassium	ppm	ASTM D5185m	>20	3	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.21	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	6.2	---	---
Nitration	Abs/cm	*ASTM D7624	>20	17.8	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	36.8	---	---
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	>0.21	NEG	---	---

FLUID CONDITION

The oil viscosity is higher than normal. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>31	3	---	---
Boron	ppm	ASTM D5185m		41	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		165	---	---
Manganese	ppm	ASTM D5185m		5	---	---
Magnesium	ppm	ASTM D5185m		923	---	---
Calcium	ppm	ASTM D5185m		1699	---	---
Phosphorus	ppm	ASTM D5185m		1081	---	---
Zinc	ppm	ASTM D5185m		1348	---	---
Sulfur	ppm	ASTM D5185m		3409	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	28.3	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	19.2	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0039047 **Received** : 19 May 2023
Lab Number : 05851634 **Diagnosed** : 22 May 2023
Unique Number : 10480989 **Diagnostician** : Doug Bogart
Test Package : CONST (Additional Tests: TBN)

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 MARIETTA, OH
 US 45750-9765
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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)