



# OIL ANALYSIS REPORT

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



Machine Id  
**JOHN DEERE 644K 1DW644KZHCEL642287**

Component  
**Diesel Engine**

Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. 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.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LEC0046683	---	---
Sample Date		Client Info		29 Jan 2024	---	---
Machine Age	hrs	Client Info		13401	---	---
Oil Age	hrs	Client Info		43	---	---
Filter Age	hrs	Client Info		43	---	---
Oil Changed		Client Info		Not Chngd	---	---
Filter Changed		Client Info		Not Chngd	---	---
Sample Status				SEVERE	---	---

## WEAR

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

Iron	ppm	ASTM D5185m	>51	34	---	---
Chromium	ppm	ASTM D5185m	>11	<1	---	---
Nickel	ppm	ASTM D5185m	>5	2	---	---
Titanium	ppm	ASTM D5185m		2	---	---
Silver	ppm	ASTM D5185m	>3	<1	---	---
Aluminum	ppm	ASTM D5185m	>31	3	---	---
Lead	ppm	ASTM D5185m	>26	3	---	---
Copper	ppm	ASTM D5185m	>26	▲ 89	---	---
Tin	ppm	ASTM D5185m	>4	2	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

## CONTAMINATION

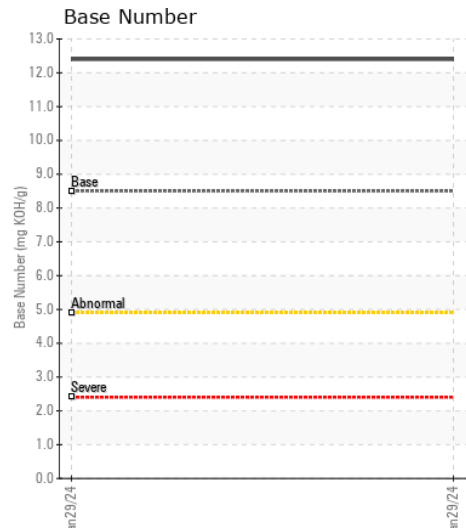
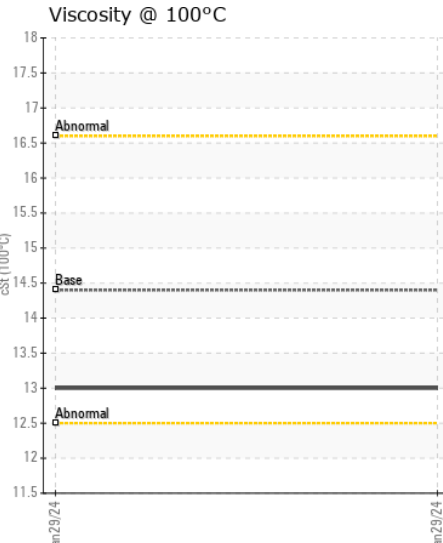
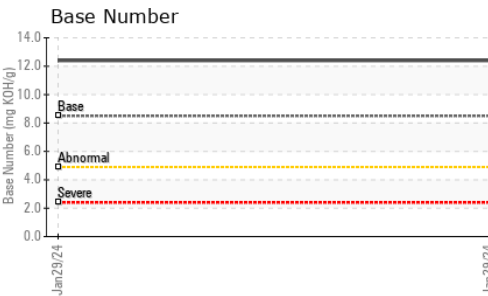
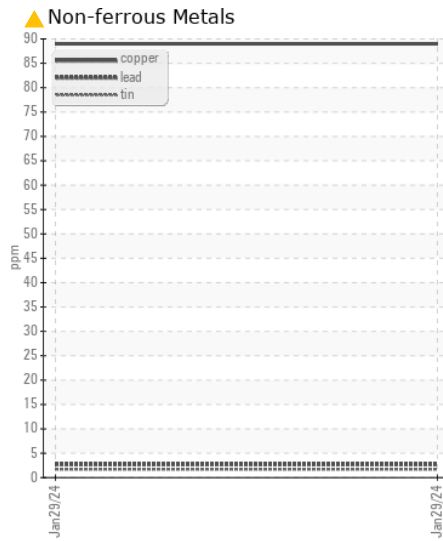
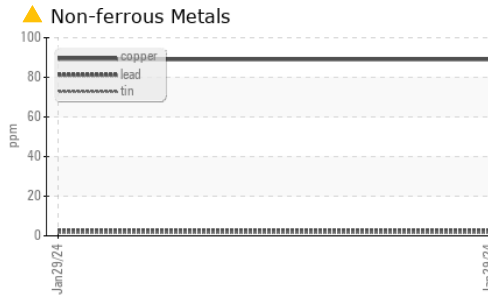
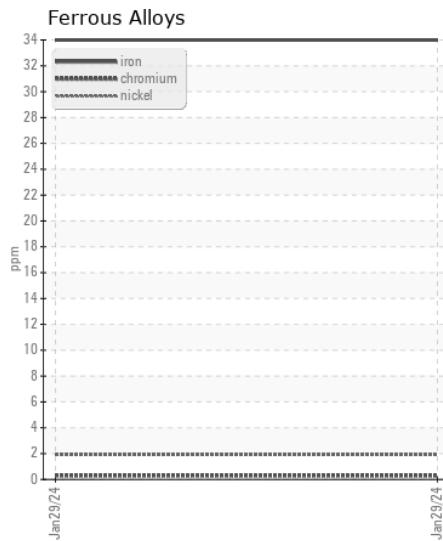
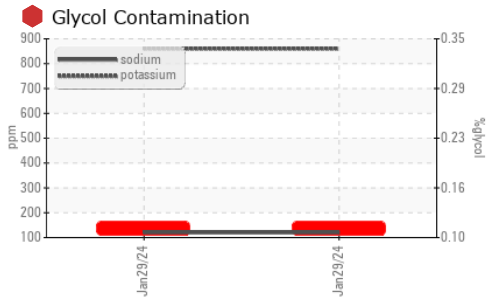
Sodium and/or potassium levels are high. Test for glycol is positive.

Silicon	ppm	ASTM D5185m	>120	5	---	---
Potassium	ppm	ASTM D5185m	>20	▲ 860	---	---
Fuel		WC Method	>2.1	<1.0	---	---
Water		WC Method	>0.21	NEG	---	---
Glycol	%	*ASTM D2982		◆ 0.12	---	---
Soot %	%	*ASTM D7844	>3	0.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	8.3	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	---	---
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 BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>158	▲ 119	---	---
Boron	ppm	ASTM D5185m	250	28	---	---
Barium	ppm	ASTM D5185m	10	0	---	---
Molybdenum	ppm	ASTM D5185m	100	122	---	---
Manganese	ppm	ASTM D5185m		1	---	---
Magnesium	ppm	ASTM D5185m	450	371	---	---
Calcium	ppm	ASTM D5185m	3000	1294	---	---
Phosphorus	ppm	ASTM D5185m	1150	894	---	---
Zinc	ppm	ASTM D5185m	1350	1117	---	---
Sulfur	ppm	ASTM D5185m	4250	2780	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.8	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	12.4	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	13.0	---	---



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0046683 **Received** : 30 Jan 2024  
**Lab Number** : 06074470 **Diagnosed** : 01 Feb 2024  
**Unique Number** : 10856561 **Diagnostician** : Jonathan Hester  
**Test Package** : CONST ( Additional Tests: Glycol, TBN )

**GARRETT COUNTY ROADS**  
 13266 NATIONAL PIKE RD  
 GRANTSVILLE, MD  
 US 21536  
 Contact:

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: