



PROBLEM SUMMARY

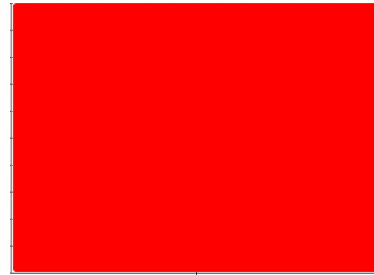
Sample Rating Trend

WEAR PARTICLES

Machine Id
JOHN DEERE 9860

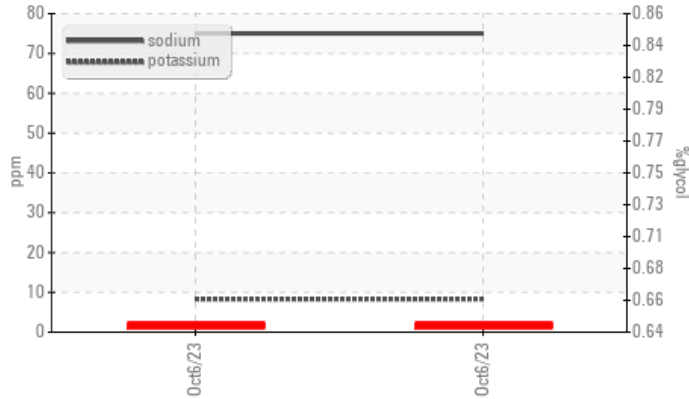
Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (18 LTR)



COMPONENT CONDITION SUMMARY

Glycol Contamination



RECOMMENDATION

We understand that this sample is for warranty/insurance purposes. We understand that corrective action has already been taken. Diagnostician's Note: The oil contains a very high concentration of glycol that is consistent with a major bearing failure. The cause of the failure would be a high glycol contamination of the oil causing a seizure of the main bearings and bearing/crankshaft failure.

PROBLEMATIC TEST RESULTS

Sample Status	Scale	ASTM	SEVERE	---	---
Ferrous Rubbing	Scale 0-10	ASTM D7684*	8		
Ferrous Rolling	Scale 0-10	ASTM D7684*	7		
Patch Weight	mg	ASTM D7684*	1318	---	---
Sodium	ppm	ASTM D5185(m) >31	75	---	---
Potassium	ppm	ASTM D5185(m) >20	8	---	---
Glycol	%	ASTM D7922*	0.647	---	---

Customer Id: GRE6WOO
 Sample No.: PP
 Lab Number: 02588454
 Test Package: INS



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1
 (289)291-4641 x4641
Bill.Quesnel@wearcheck.com

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

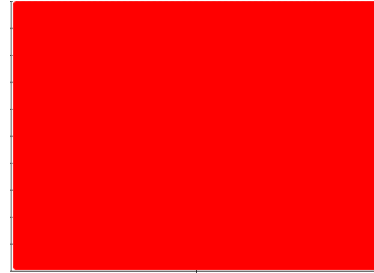
Sample Rating Trend

WEAR PARTICLES

Machine Id
JOHN DEERE 9860

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (18 LTR)



DIAGNOSIS

Recommendation

We understand that this sample is for warranty/insurance purposes. We understand that corrective action has already been taken.

Diagnostician's Note: The oil contains a very high concentration of glycol that is consistent with a major bearing failure. The cause of the failure would be a high glycol contamination of the oil causing a seizure of the main bearings and bearing/crankshaft failure.

Wear Particles

Wear particle analysis indicates that the ferrous rolling and ferrous rubbing particles are severe. Wear particle analysis indicates that the patch weight particles are abnormal.

Contaminants

Test for glycol is positive. There is a high concentration of glycol present in the oil.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PP	---	---
Sample Date	Client Info		06 Oct 2023	---	---
Machine Age	hrs	Client Info	3569	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			SEVERE	---	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>2.1	<1.0	---	---

WEAR METALS

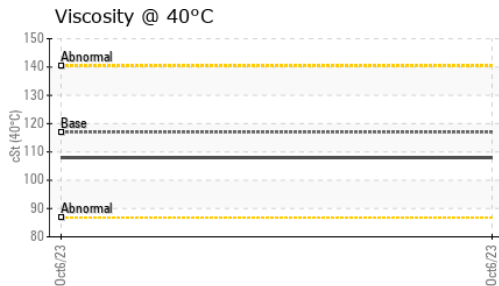
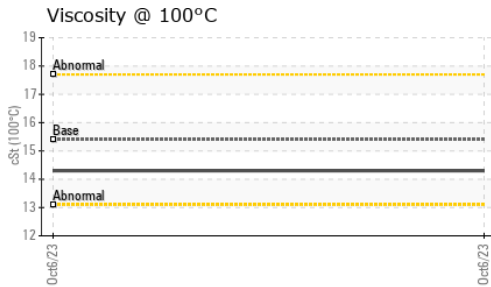
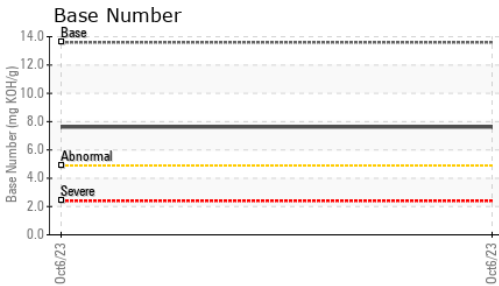
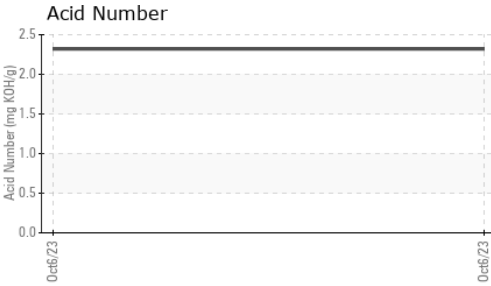
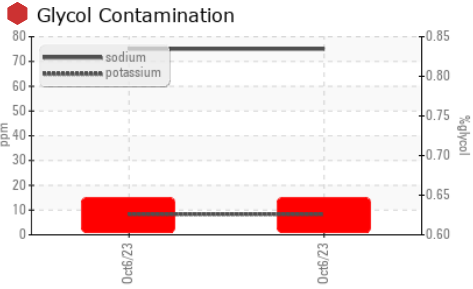
	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >51	45	---	---
Chromium	ppm	ASTM D5185(m) >11	<1	---	---
Nickel	ppm	ASTM D5185(m) >5	<1	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m) >3	<1	---	---
Aluminum	ppm	ASTM D5185(m) >31	2	---	---
Lead	ppm	ASTM D5185(m) >26	8	---	---
Copper	ppm	ASTM D5185(m) >26	5	---	---
Tin	ppm	ASTM D5185(m) >4	<1	---	---
Antimony	ppm	ASTM D5185(m)	0	---	---
Vanadium	ppm	ASTM D5185(m)	0	---	---
Beryllium	ppm	ASTM D5185(m)	0	---	---
Cadmium	ppm	ASTM D5185(m)	0	---	---

FERROGRAPHY

	method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*	8		
Ferrous Sliding	Scale 0-10	ASTM D7684*	3		
Ferrous Cutting	Scale 0-10	ASTM D7684*			
Ferrous Rolling	Scale 0-10	ASTM D7684*	7		
Ferrous Break-in	Scale 0-10	ASTM D7684*			
Ferrous Spheres	Scale 0-10	ASTM D7684*			
Ferrous Black Oxides	Scale 0-10	ASTM D7684*			
Ferrous Red Oxides	Scale 0-10	ASTM D7684*			
Ferrous Corrosive	Scale 0-10	ASTM D7684*			
Ferrous Other	Scale 0-10	ASTM D7684*			
Nonferrous Rubbing	Scale 0-10	ASTM D7684*			
Nonferrous Sliding	Scale 0-10	ASTM D7684*			
Nonferrous Cutting	Scale 0-10	ASTM D7684*			
Nonferrous Rolling	Scale 0-10	ASTM D7684*			
Nonferrous Other	Scale 0-10	ASTM D7684*			
Sand/Dirt	Scale 0-10	ASTM D7684*	2		
Fibres	Scale 0-10	ASTM D7684*	1		
Spheres	Scale 0-10	ASTM D7684*			
Other	Scale 0-10	ASTM D7684*			
Patch Weight	mg	ASTM D7684*	1318	---	---



OIL ANALYSIS REPORT



ADDITIVES	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	85	---	---
Barium	ppm	ASTM D5185(m)	<1	---	---
Molybdenum	ppm	ASTM D5185(m)	56	---	---
Manganese	ppm	ASTM D5185(m)	0	---	---
Magnesium	ppm	ASTM D5185(m)	284	---	---
Calcium	ppm	ASTM D5185(m)	1803	---	---
Phosphorus	ppm	ASTM D5185(m)	998	---	---
Zinc	ppm	ASTM D5185(m)	1191	---	---
Sulfur	ppm	ASTM D5185(m)	2861	---	---
Lithium	ppm	ASTM D5185(m)	<1	---	---

CONTAMINANTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>22	7	---
Sodium	ppm	ASTM D5185(m)	>31	75	---
Potassium	ppm	ASTM D5185(m)	>20	8	---
Glycol	%	ASTM D7922*	0.647	---	---

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	2.32	---	---
Base Number (BN)	mg KOH/g	ASTM D2896*	13.6	7.62	---

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	LIGHT	---
Yellow Metal	scalar	Visual*	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	---
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	---
Free Water	scalar	Visual*		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	117	108	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.3	---
Viscosity Index (VI)	Scale	ASTM D2270*	139	134	---



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP
Lab Number : 02588454
Unique Number : 5657520
Test Package : INS (Additional Tests: Glycol, TAN Man, VI)

GREAT LAKES APPRAISALS
 RR # 6
 WOODSTOCK, ON
 CA N4S 7W1
 Contact: Neil Langlois
 neil@workcity.ca
 T: (519)532-0944
 F: (519)462-1068

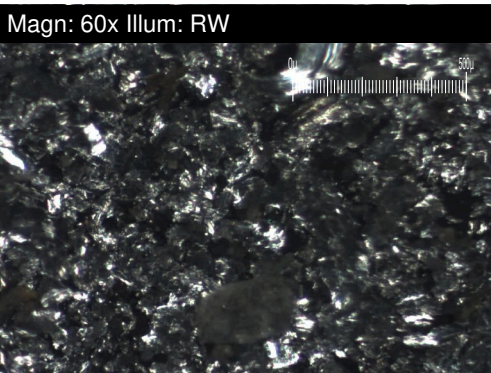
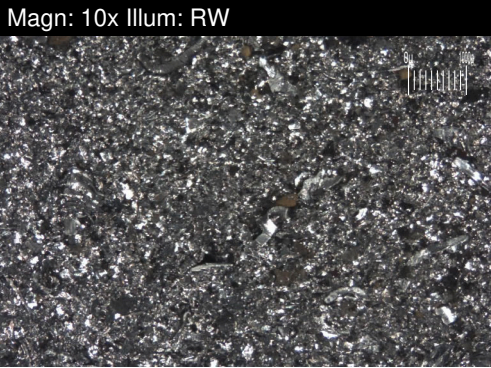
To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

FILTER REPORT

Machine Id
JOHN DEERE 9860

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (18 LTR)



FERROGRAPHY			method	limit/base	current	history1	history2
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Ferrous Cutting	Scale 0-10	ASTM D7684*					
Ferrous Rolling	Scale 0-10	ASTM D7684*		●	7		
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Nonferrous Cutting	Scale 0-10	ASTM D7684*					
Nonferrous Rolling	Scale 0-10	ASTM D7684*					
Nonferrous Other	Scale 0-10	ASTM D7684*					
Sand/Dirt	Scale 0-10	ASTM D7684*			2		
Fibres	Scale 0-10	ASTM D7684*			1		
Spheres	Scale 0-10	ASTM D7684*					
Other	Scale 0-10	ASTM D7684*					
Patch Weight	mg	ASTM D7684*		▲	1318	---	---

WEAR

Wear particle analysis indicates that the ferrous rolling and ferrous rubbing particles are severe. Wear particle analysis indicates that the patch weight particles are abnormal.

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