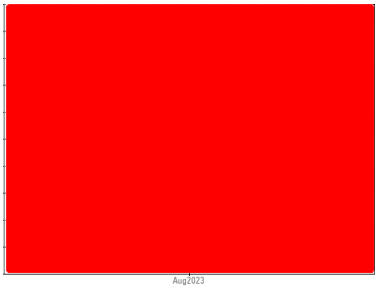
PROBLEM SUMMARY

Machine Id
05936885
Component
Filter
Fluid
PG 46 (10 GAL)

Sample Rating Trend



WEAR PARTICLES

COMPONENT CONDITION SUMMARY

No relevant graphs to display

RECOMMENDATION

The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	---	---
Ferrous Rubbing	Scale 0-10	ASTM D7684*	7		
Ferrous Sliding	Scale 0-10	ASTM D7684*	2		
Ferrous Rolling	Scale 0-10	ASTM D7684*	4		
Ferrous Spheres	Scale 0-10	ASTM D7684*	2		
Ferrous Black Oxides	Scale 0-10	ASTM D7684*	3		

Customer Id: WEACAR
Sample No.: PP
Lab Number: 02580156
Test Package: FLTRO

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

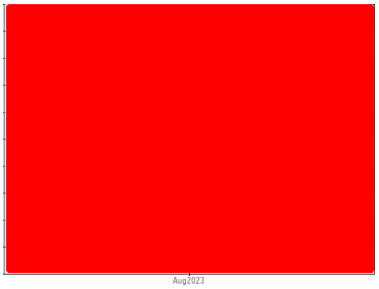
RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR PARTICLES

Machine Id
05936885
Component
Filter
Fluid
PG 46 (10 GAL)

DIAGNOSIS

Recommendation

The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear Particles

The most likely alloy match is Low alloy steel 92XX (92XX). Wear particle analysis indicates that the ferrous rolling and ferrous rubbing particles are severe. Wear particle analysis indicates that the ferrous spheres and ferrous black oxides particles are abnormal. Wear particle analysis indicates that the ferrous sliding particles are marginal. Black oxides are produced when metal particles are completely oxidized. This can be caused by insufficient or spent lubricant, or extreme heat at the wear surface. Tempered wear particles exhibit blue and/or purple colors. The colors are the result of oxidation of the particle and signify high heat in the area that the particle was formed.

Contaminants

The filter contained only normal levels of contaminants, and debris. All filter contaminant levels are normal.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PP**	---	---
Sample Date		Client Info		**24 Aug 2023**	---	---
Machine Age	hrs	Client Info		**2300**	---	---
Oil Age	hrs	Client Info		**2300**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**SEVERE**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)		**2358**	---	---
Chromium	ppm	ASTM D5185(m)		**4**	---	---
Nickel	ppm	ASTM D5185(m)		**2**	---	---
Titanium	ppm	ASTM D5185(m)		**0**	---	---
Silver	ppm	ASTM D5185(m)		**2**	---	---
Aluminum	ppm	ASTM D5185(m)		**6**	---	---
Lead	ppm	ASTM D5185(m)		**2**	---	---
Copper	ppm	ASTM D5185(m)		**7**	---	---
Tin	ppm	ASTM D5185(m)		**2**	---	---
Antimony	ppm	ASTM D5185(m)		**<1**	---	---
Vanadium	ppm	ASTM D5185(m)		**<1**	---	---
Beryllium	ppm	ASTM D5185(m)		**<1**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

FERROGRAPHY		method	limit/base	current	history1	history2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		**7**		
Ferrous Sliding	Scale 0-10	ASTM D7684*		**2**		
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		**4**		
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*		**2**		
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		**3**		
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*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		**2**		
Patch Weight	mg	ASTM D7684*		**341**	---	---

OIL ANALYSIS REPORT

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**20**	---	---
Barium	ppm	ASTM D5185(m)		**7**	---	---
Molybdenum	ppm	ASTM D5185(m)		**1**	---	---
Manganese	ppm	ASTM D5185(m)		**17**	---	---
Magnesium	ppm	ASTM D5185(m)		**3**	---	---
Calcium	ppm	ASTM D5185(m)		**63**	---	---
Phosphorus	ppm	ASTM D5185(m)		**98210**	---	---
Zinc	ppm	ASTM D5185(m)		**5**	---	---
Sulfur	ppm	ASTM D5185(m)		**80**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

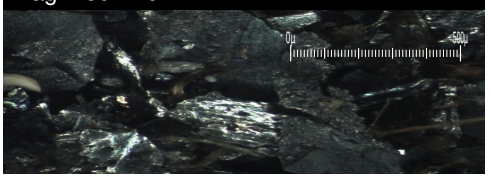
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)		**41**	---	---
Sodium	ppm	ASTM D5185(m)		**206**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**24**	---	---

SAMPLE IMAGES				current	history1	history2
Color				*no image*	*no image*	*no image*
Bottom				*no image*	*no image*	*no image*

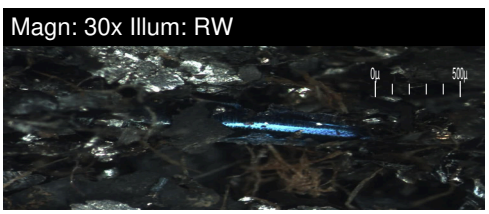
GRAPHS

Magn: 10x Illum: RW

Magn: 60x Illum: RW



Magn: 30x Illum: RW



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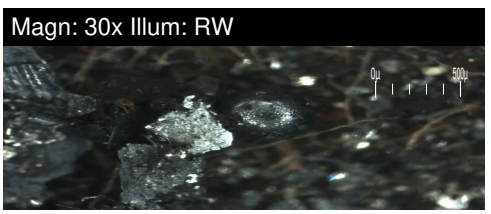


ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP **Received** : 01 Sep 2023
Lab Number : 02580156 **Diagnosed** : 14 Sep 2023
Unique Number : 5633216 **Diagnostician** : Kevin Marson
Test Package : FLTRO (Additional Tests: ICP, ICP-DIGEST)

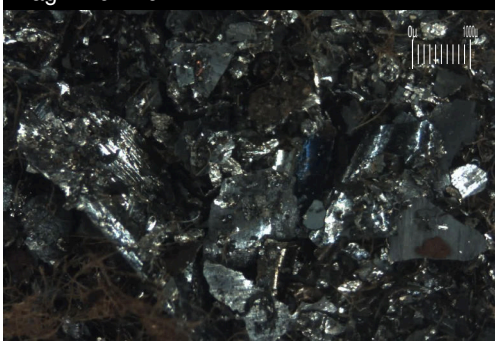
To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

WEARCHECK USA
501 Madison Ave
Cary, NC
US 27513
Contact: JEFF AIKEN
jaiken@wearcheckusa.com
T:
F: (919)379-4050

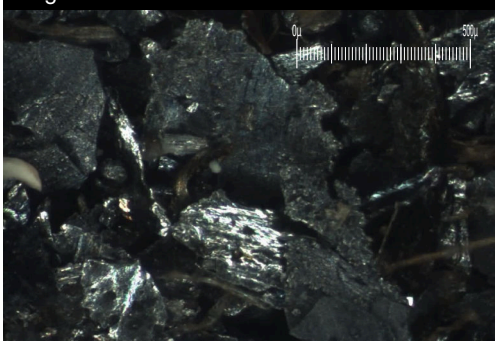
FILTER REPORT

Machine Id
05936885
Component
Filter
Fluid
PG 46 (10 GAL)

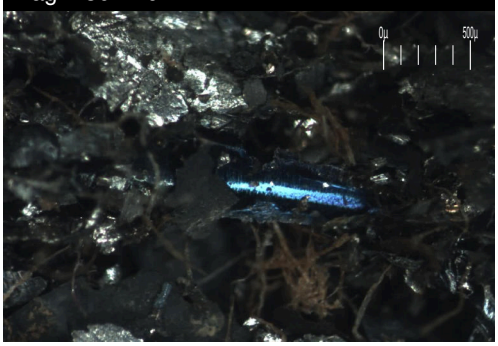
Magn: 10x Illum: RW



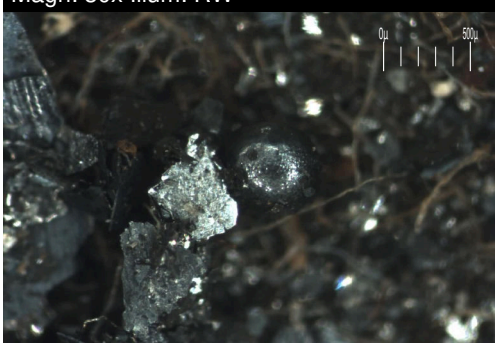
Magn: 60x Illum: RW



Magn: 30x Illum: RW



Magn: 30x Illum: RW



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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*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		2		
Patch Weight	mg	ASTM D7684*		341	---	---

WEAR

The most likely alloy match is Low alloy steel 92XX (92XX). Wear particle analysis indicates that the ferrous rolling and ferrous rubbing particles are severe. Wear particle analysis indicates that the ferrous spheres and ferrous black oxides particles are abnormal. Wear particle analysis indicates that the ferrous sliding particles are marginal. Black oxides are produced when metal particles are completely oxidized. This can be caused by insufficient or spent lubricant, or extreme heat at the wear surface. Tempered wear particles exhibit blue and/or purple colors. The colors are the result of oxidation of the particle and signify high heat in the area that the particle was formed.

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