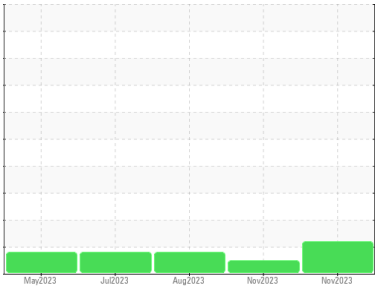
PROBLEM SUMMARY

Sample Rating Trend

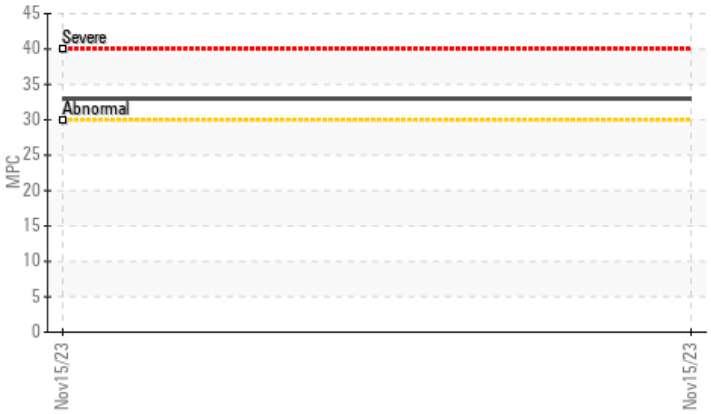


INSOLUBLES

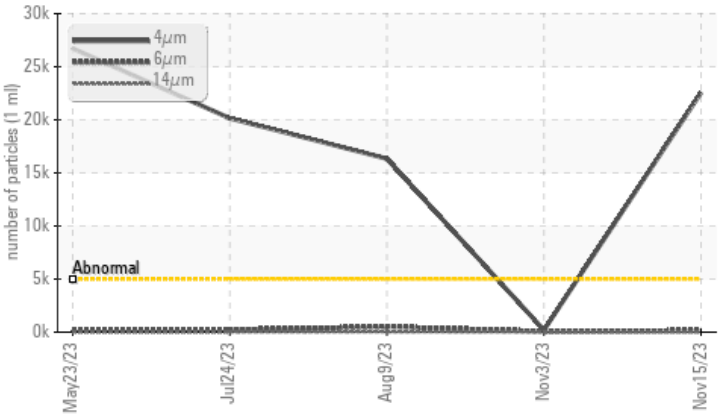
Machine Id
101-LYO-904
Component
Hydraulic System
Fluid
NAVI-GUARD PREMIUM AW-32 HYDRAULIC (--- LTR)

COMPONENT CONDITION SUMMARY

Varnish Potential



Particle Trend



RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	---	ABNORMAL
Particles >4µm		ASTM D7647	>5000	▲ **22557**	195	▲ 16338
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **22/14/10**	15/14/10	▲ 21/16/12
MPC Varnish Potential	Scale	ASTM D7843	>15	▲ **33**	---	---

Customer Id: MERDUR
Sample No.: WC0770768
Lab Number: 06009636
Test Package: AOM 1

To manage this report scan the QR code

To discuss the diagnosis or test data:
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.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

03 Nov 2023 Diag:

UNKNOWN

view report

09 Aug 2023 Diag: Wes Davis

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

24 Jul 2023 Diag: Wes Davis

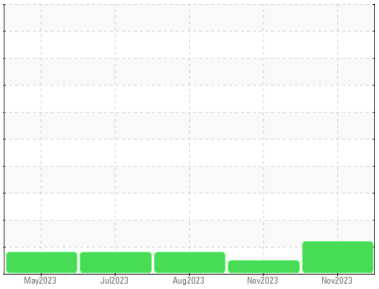
ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



INSOLUBLES

Machine Id
101-LYO-904
Component
Hydraulic System
Fluid
NAVI-GUARD PREMIUM AW-32 HYDRAULIC (--- LTR)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a high amount of silt (particulates < 6 microns in size) present in the oil. MPC (Membrane Patch Colorimetry) test indicates a moderate concentration of varnish present.

Fluid Condition
The AN level is acceptable for this fluid. Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0770768**	WC0846276	WC0789084
Sample Date		Client Info		**15 Nov 2023**	03 Nov 2023	09 Aug 2023
Machine Age	yrs	Client Info		**0**	0	0
Oil Age	yrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	---	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**<1**	0	<1
Chromium	ppm	ASTM D5185m	>20	**0**	0	0
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**<1**	0	0
Lead	ppm	ASTM D5185m	>20	**0**	0	0
Copper	ppm	ASTM D5185m	>20	**2**	0	2
Tin	ppm	ASTM D5185m	>20	**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

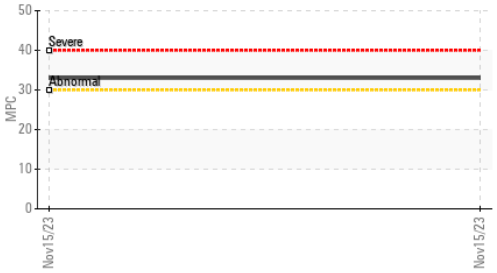
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**30**	<1	32
Barium	ppm	ASTM D5185m		**7**	0	0
Molybdenum	ppm	ASTM D5185m		**13**	0	13
Manganese	ppm	ASTM D5185m		**0**	0	0
Magnesium	ppm	ASTM D5185m		**99**	5	110
Calcium	ppm	ASTM D5185m		**1010**	▲ 73	1101
Phosphorus	ppm	ASTM D5185m		**279**	313	291
Zinc	ppm	ASTM D5185m		**267**	440	285
Sulfur	ppm	ASTM D5185m		**2758**	▲ 2420	2875

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**2**	0	2
Sodium	ppm	ASTM D5185m		**0**	1	2
Potassium	ppm	ASTM D5185m	>20	**<1**	0	<1
Water	%	ASTM D6304	>0.05	**0.021**	---	---
ppm Water	ppm	ASTM D6304	>500	**214.8**	---	---

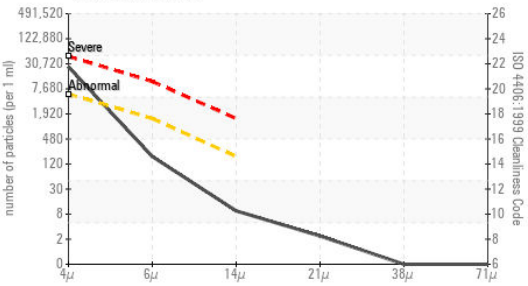
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **22557**	195	▲ 16338
Particles >6µm		ASTM D7647	>1300	**160**	85	512
Particles >14µm		ASTM D7647	>160	**8**	8	30
Particles >21µm		ASTM D7647	>40	**2**	1	5
Particles >38µm		ASTM D7647	>10	**0**	0	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **22/14/10**	15/14/10	▲ 21/16/12

OIL ANALYSIS REPORT

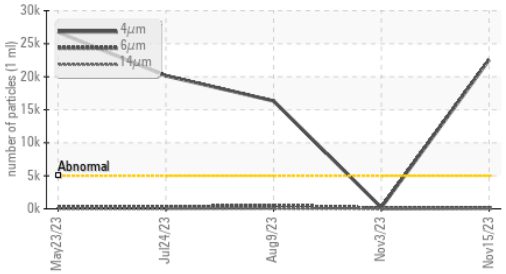
Varnish Potential



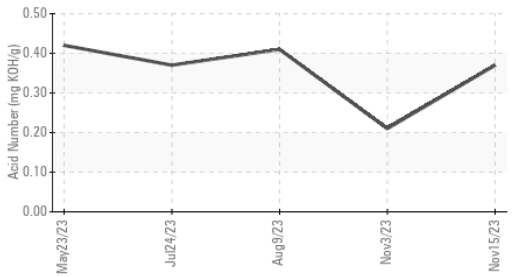
Particle Count



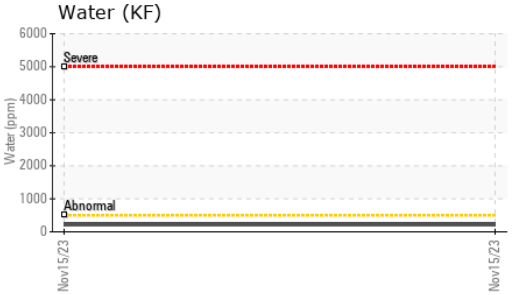
Particle Trend



Acid Number



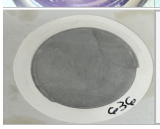
Water (KF)



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.37**	0.21	0.41
Anti-Oxidant 1	%	ASTM D6971	<25	**101**	---	---
Anti-Oxidant 2	%	ASTM D6971	<25	**80**	---	---
MPC Varnish Potential	Scale	ASTM D7843	>15	▲ **33**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	30	**31.1**	34.3	31.3
Visc @ 100°C	cSt	ASTM D445	5	**---**	6.1	---
Viscosity Index (VI)	Scale	ASTM D2270	87	**---**	▲ 125	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
MPC				*no image*	*no image*

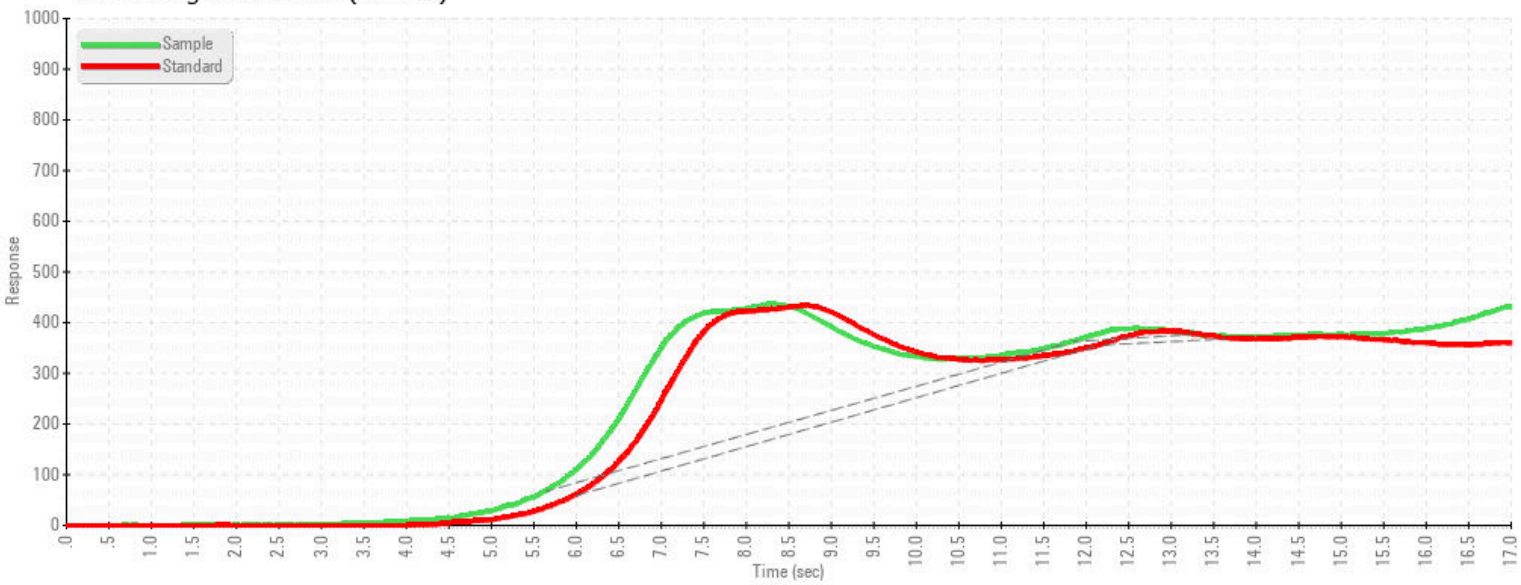
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0770768 **Received** : 16 Nov 2023
Lab Number : 06009636 **Diagnosed** : 05 Dec 2023
Unique Number : 10743398 **Diagnostician** : Doug Bogart
Test Package : AOM 1 (Additional Tests: KF)

Certificate L2367

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)

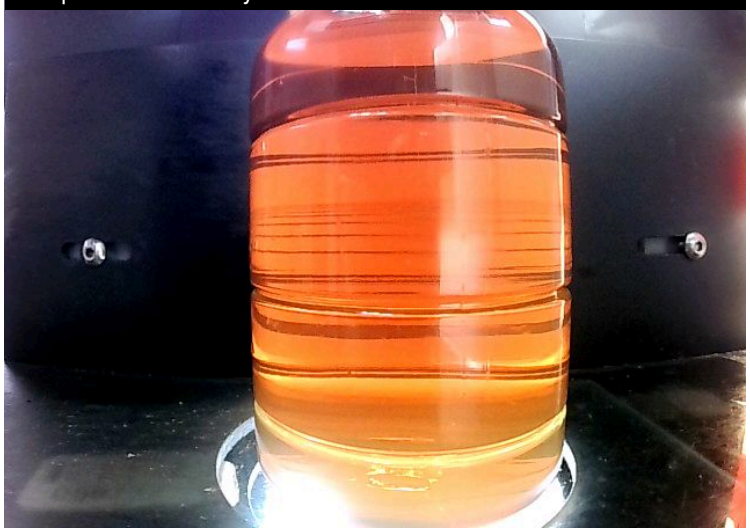
MERCK & COMPANY
5325 OLD OXFORD RD
DURHAM, NC
US 27712
Contact: Mark Montalvo
mark_montalvo@merck.com
T: (919)884-4103
F:

Remaining Useful Life (RULER)



MPC (Varnish Test)

Sample Color & Clarity



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