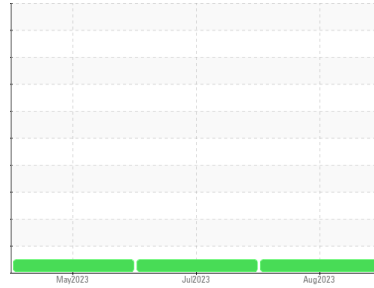




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
[53471780]
 Machine Id
102-LYO-903
 Component
Hydraulic System
 Fluid
NAVI-GUARD PREMIUM AW-32 HYDRAULIC (--- LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please submit a sample of the new (unused) oil to establish a baseline for RULER.

Wear

All component wear rates are normal.

Contamination

MPC (Membrane Patch Colorimetry) test indicates acceptable levels of varnish present. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0770765	WC0789080	WC0789096
Sample Date	Client Info		07 Aug 2023	12 Jul 2023	17 May 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			NORMAL	NORMAL	NORMAL

WEAR METALS

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

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<1	1	2
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	5	5	6
Manganese	ppm	ASTM D5185m	0	0	0
Magnesium	ppm	ASTM D5185m	15	15	18
Calcium	ppm	ASTM D5185m	122	121	145
Phosphorus	ppm	ASTM D5185m	278	284	275
Zinc	ppm	ASTM D5185m	342	340	337
Sulfur	ppm	ASTM D5185m	3969	3946	3914

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	2	2	3
Sodium	ppm	ASTM D5185m	<1	<1	<1
Potassium	ppm	ASTM D5185m >20	0	<1	<1
Water	%	ASTM D6304 >0.05	0.005	---	---
ppm Water	ppm	ASTM D6304 >500	59.6	---	---

FLUID CLEANLINESS

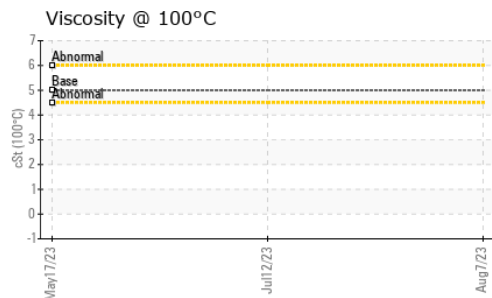
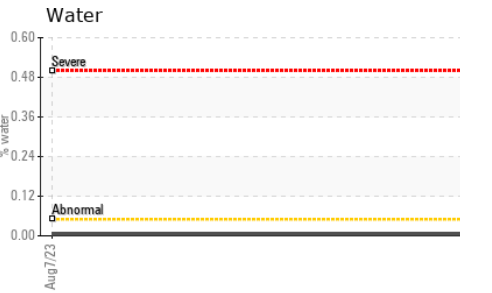
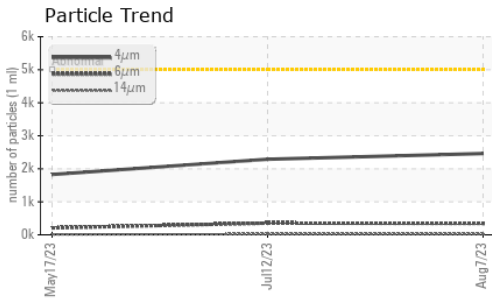
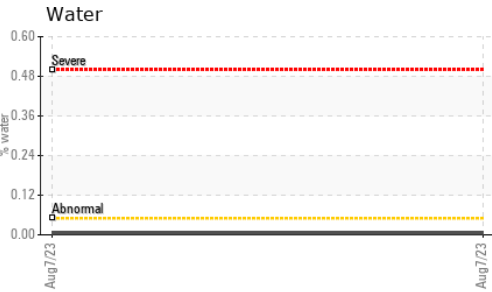
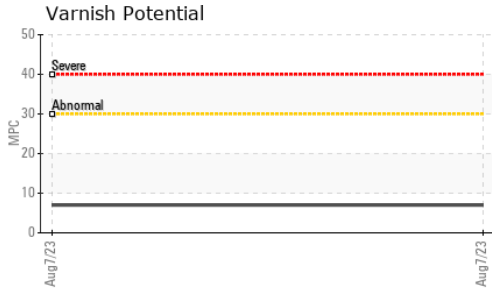
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	2462	2289	1827
Particles >6µm	ASTM D7647	>1300	346	354	208
Particles >14µm	ASTM D7647	>160	21	19	12
Particles >21µm	ASTM D7647	>40	7	4	1
Particles >38µm	ASTM D7647	>10	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	18/16/12	18/16/11	18/15/11

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.35	0.35	0.35
MPC Varnish Potential	Scale	ASTM D7843 >15	7	---	---



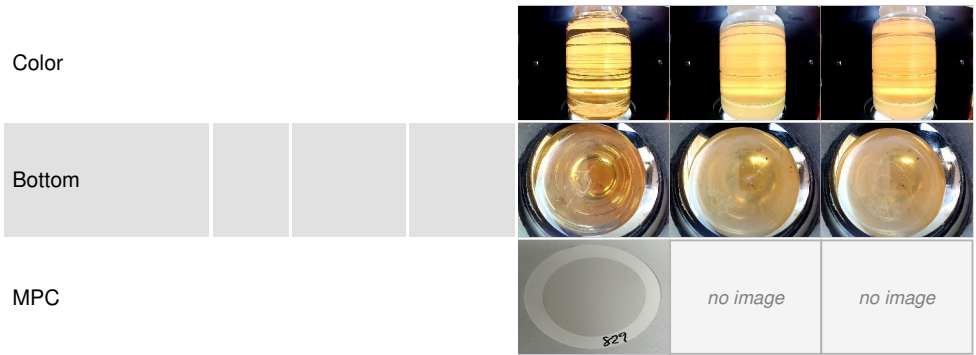
OIL ANALYSIS REPORT



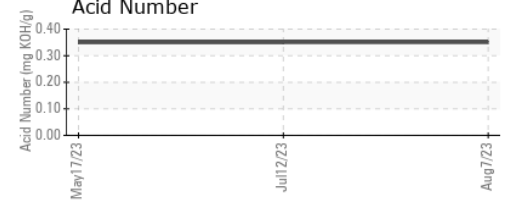
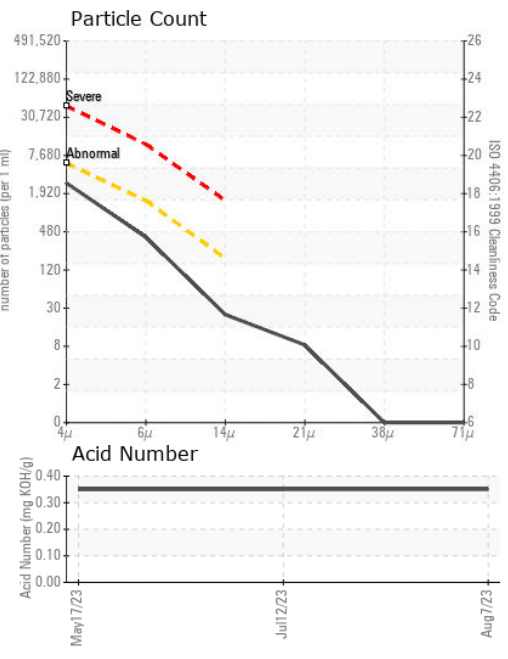
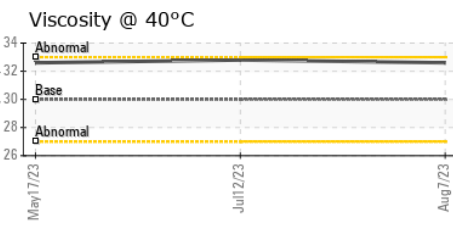
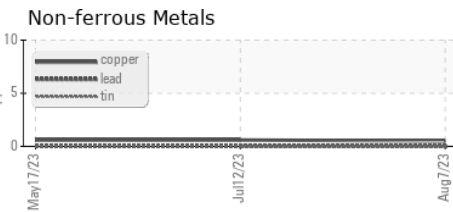
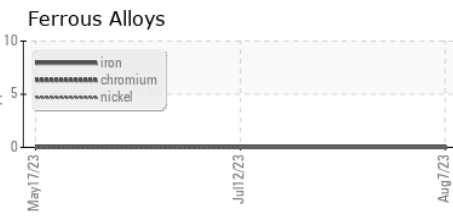
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 30	32.6	32.8	32.6

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS

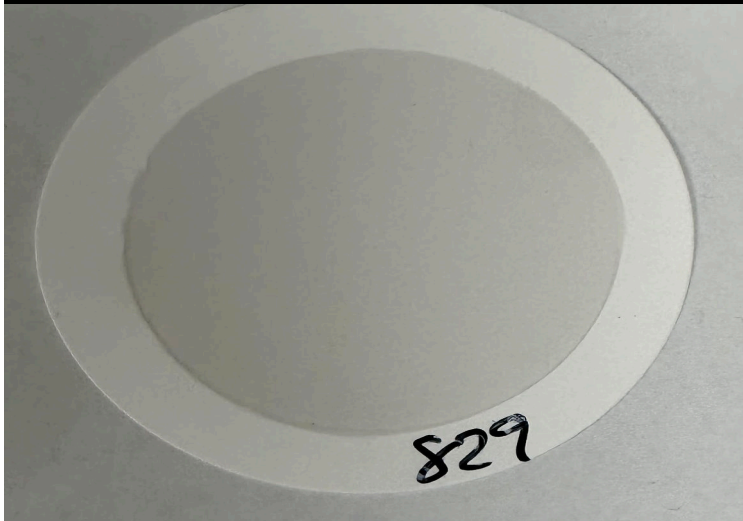


Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0770765 **Received** : 17 Aug 2023
Lab Number : 05927829 **Diagnosed** : 23 Aug 2023
Unique Number : 10607776 **Diagnostician** : Doug Bogart
Test Package : AOM 1 (Additional Tests: KF)

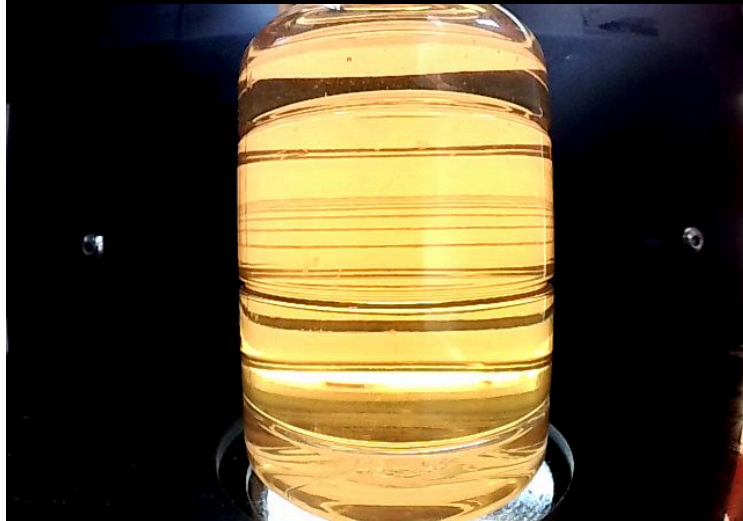
MERCK & COMPANY
 5325 OLD OXFORD RD
 DURHAM, NC
 US 27712
 Contact: Mark Montalvo
 mark_montalvo@merck.com
 T: (919)884-4103
 F:

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)

MPC (Varnish Test)



Sample Color & Clarity



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