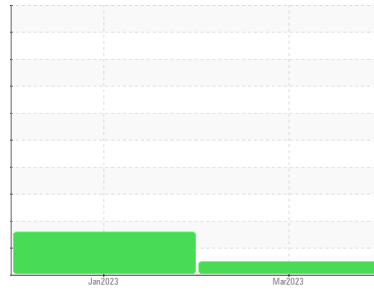




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
CATES FG2
 Component
Compressor
 Fluid
 {not provided} (--- GAL)

DIAGNOSIS

Recommendation
 Resample at the next service interval to monitor.

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
 Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the oil. 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		WC0782169	WC0782417	---
Sample Date	Client Info		21 Mar 2023	19 Jan 2023	---
Machine Age	hrs	Client Info	0	0	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		N/A	N/A	---
Sample Status			NORMAL	ABNORMAL	---

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>50	0	1	---
Chromium	ppm	ASTM D5185m	>5	0	0	---
Nickel	ppm	ASTM D5185m		0	0	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m	>15	0	0	---
Lead	ppm	ASTM D5185m	>65	0	0	---
Copper	ppm	ASTM D5185m	>65	0	0	---
Tin	ppm	ASTM D5185m	>10	0	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		0	0	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		0	0	---
Manganese	ppm	ASTM D5185m		0	<1	---
Magnesium	ppm	ASTM D5185m		0	<1	---
Calcium	ppm	ASTM D5185m		0	2	---
Phosphorus	ppm	ASTM D5185m		141	149	---
Zinc	ppm	ASTM D5185m		0	4	---
Sulfur	ppm	ASTM D5185m		310	250	---

CONTAMINANTS

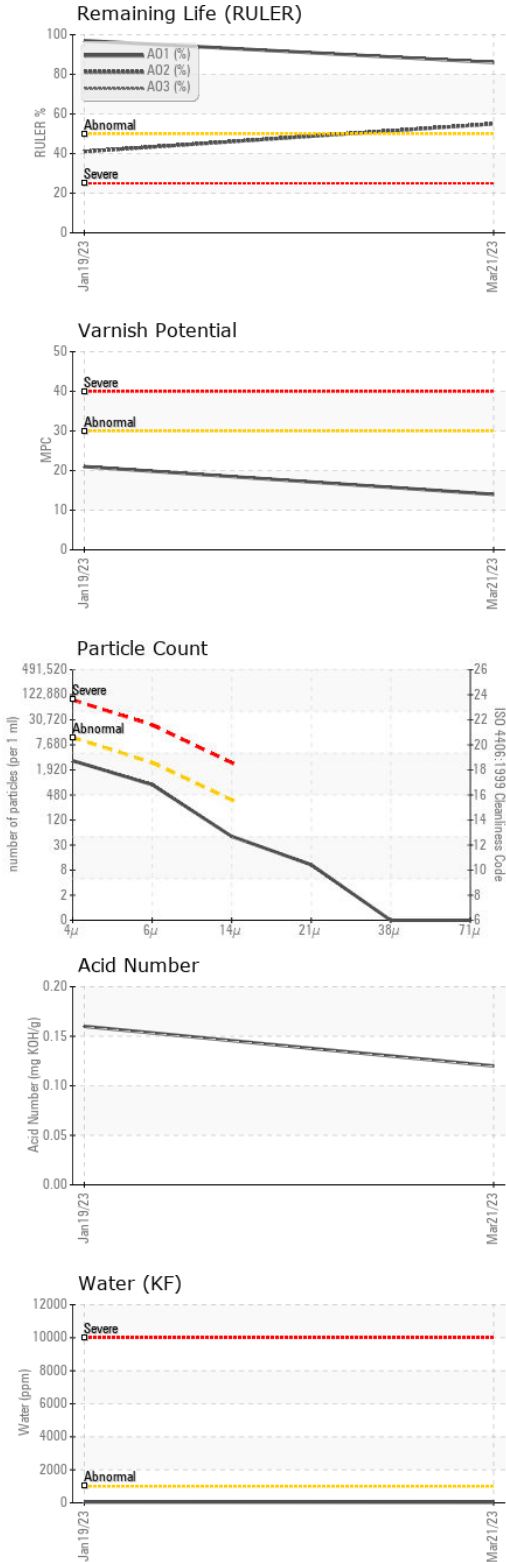
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>35	<1	<1	---
Sodium	ppm	ASTM D5185m		0	0	---
Potassium	ppm	ASTM D5185m	>20	0	1	---
Water	%	ASTM D6304	>0.1	0.003	0.004	---
ppm Water	ppm	ASTM D6304	>1000	35.9	49.2	---

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	2799	▲ 21536	---
Particles >6µm	ASTM D7647	>2500	745	● 3768	---
Particles >14µm	ASTM D7647	>320	43	58	---
Particles >21µm	ASTM D7647	>80	9	15	---
Particles >38µm	ASTM D7647	>20	0	2	---
Particles >71µm	ASTM D7647	>4	0	0	---
Oil Cleanliness	ISO 4406 (c)	>20/18/15	19/17/13	▲ 22/19/13	---



OIL ANALYSIS REPORT



FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.12	0.16	---
Anti-Oxidant 1	%	ASTM D6971	86	97	---
Anti-Oxidant 2	%	ASTM D6971	55	41	---
MPC Varnish Potential	Scale	ASTM D7843	14	▲ 21	---

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	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	121	119	---

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



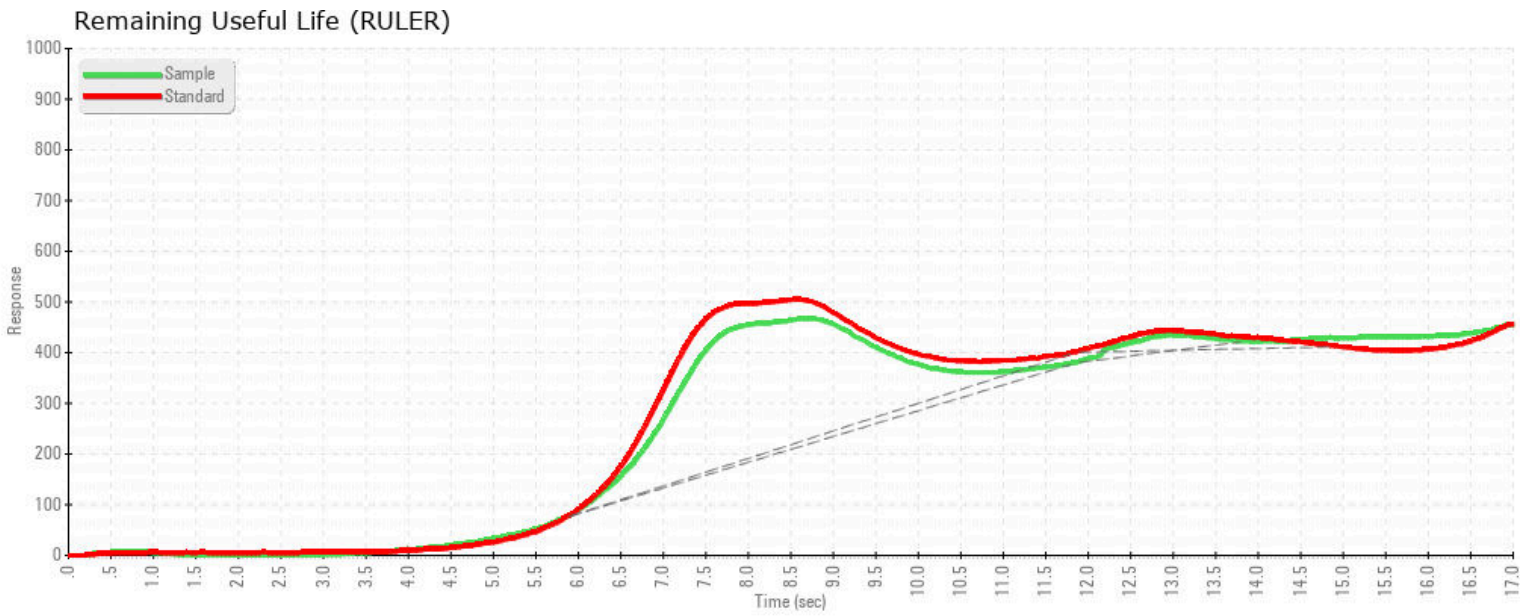
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0782169 **Received** : 21 Mar 2023
Lab Number : **05798295** **Tested** : 31 Mar 2023
Unique Number : 10387979 **Diagnosed** : 31 Mar 2023 - Doug Bogart
Test Package : AOM 1 (Additional Tests: KF)

NORTH CAROLINA STATE UNIVERSITY
 621 MOTOR POOL DR, FACILITIES DIVISION WAREHOUSE
 RALEIGH, NC
 US 27607
 Contact: PAUL WALKER
 apwalke3@ncsu.edu
 T: (919)513-3646
 F:

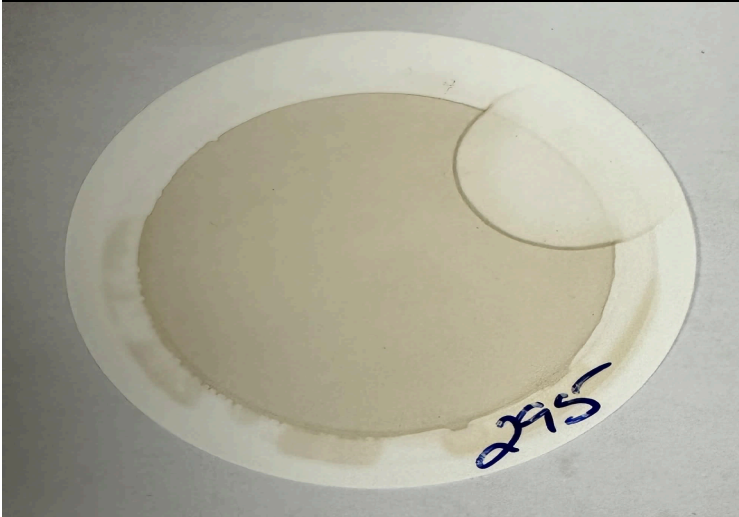
To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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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