



OIL ANALYSIS REPORT

Sample Rating Trend

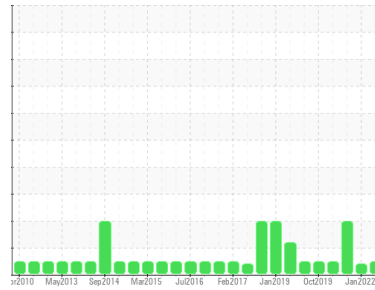
NORMAL



Machine Id
360.XX140-29 HYDRAULIC CHIPPER SERVICE (S/N 360-140-29)

Component
Hydraulic System

Fluid
MOBIL DTE 10 EXCEL 68 (15 GAL)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. 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. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

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		WC0799240	RP0001024	RP0003355
Sample Date	Client Info		31 Mar 2023	14 Jan 2022	22 Apr 2020
Machine Age	mths	Client Info	0	0	0
Oil Age	mths	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ATTENTION	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	0	<1	<1
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	<1
Aluminum	ppm	ASTM D5185m >20	0	0	0
Lead	ppm	ASTM D5185m >20	0	0	0
Copper	ppm	ASTM D5185m >20	0	<1	1
Tin	ppm	ASTM D5185m >20	0	0	<1
Antimony	ppm	ASTM D5185m	---	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	<1
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	0
Manganese	ppm	ASTM D5185m	<1	0	0
Magnesium	ppm	ASTM D5185m	4	1	<1
Calcium	ppm	ASTM D5185m	120	112	107
Phosphorus	ppm	ASTM D5185m	466	425	433
Zinc	ppm	ASTM D5185m	0	10	104
Sulfur	ppm	ASTM D5185m	1545	1606	3947

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<1	<1	0
Sodium	ppm	ASTM D5185m	1	<1	0
Potassium	ppm	ASTM D5185m >20	<1	0	0
Water	%	ASTM D6304 >0.05	0.007	0.003	0.004
ppm Water	ppm	ASTM D6304 >500	77.8	31.5	44.0

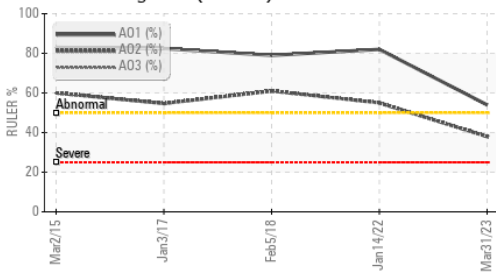
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>320	198	▲ 407	▲ 2281
Particles >6µm	ASTM D7647	>80	43	63	▲ 744
Particles >14µm	ASTM D7647	>20	5	9	▲ 56
Particles >21µm	ASTM D7647	>4	2	3	▲ 15
Particles >38µm	ASTM D7647	>3	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>15/13/11	15/13/10	▲ 16/13/10	▲ 18/17/13

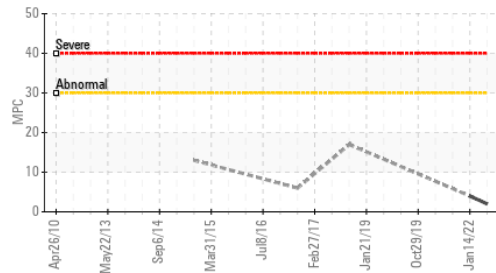


OIL ANALYSIS REPORT

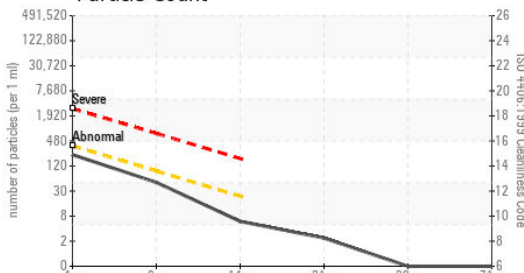
Remaining Life (RULER)



Varnish Potential



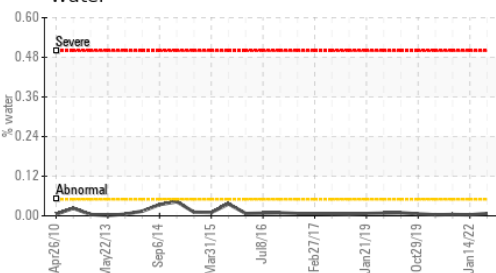
Particle Count



Acid Number



Water

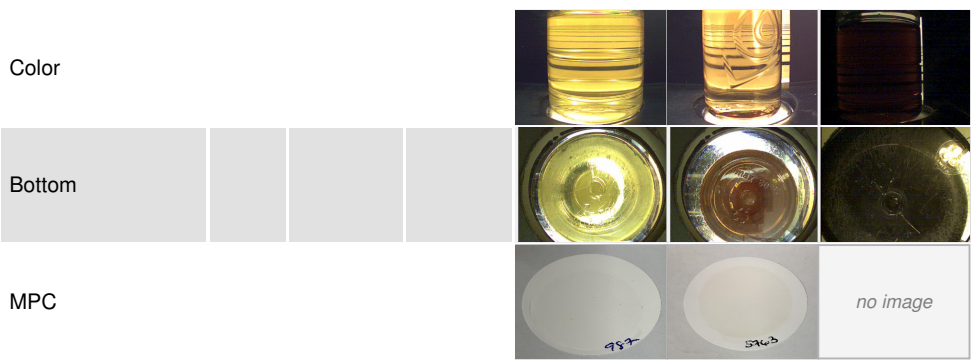


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	0.132	0.197
Anti-Oxidant 1	%	ASTM D6971	54	82	---
Anti-Oxidant 2	%	ASTM D6971	38	55	---
MPC Varnish Potential	Scale	ASTM D7843	2	4	---

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	NEG	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	67.2	69.7	▲ 72.0

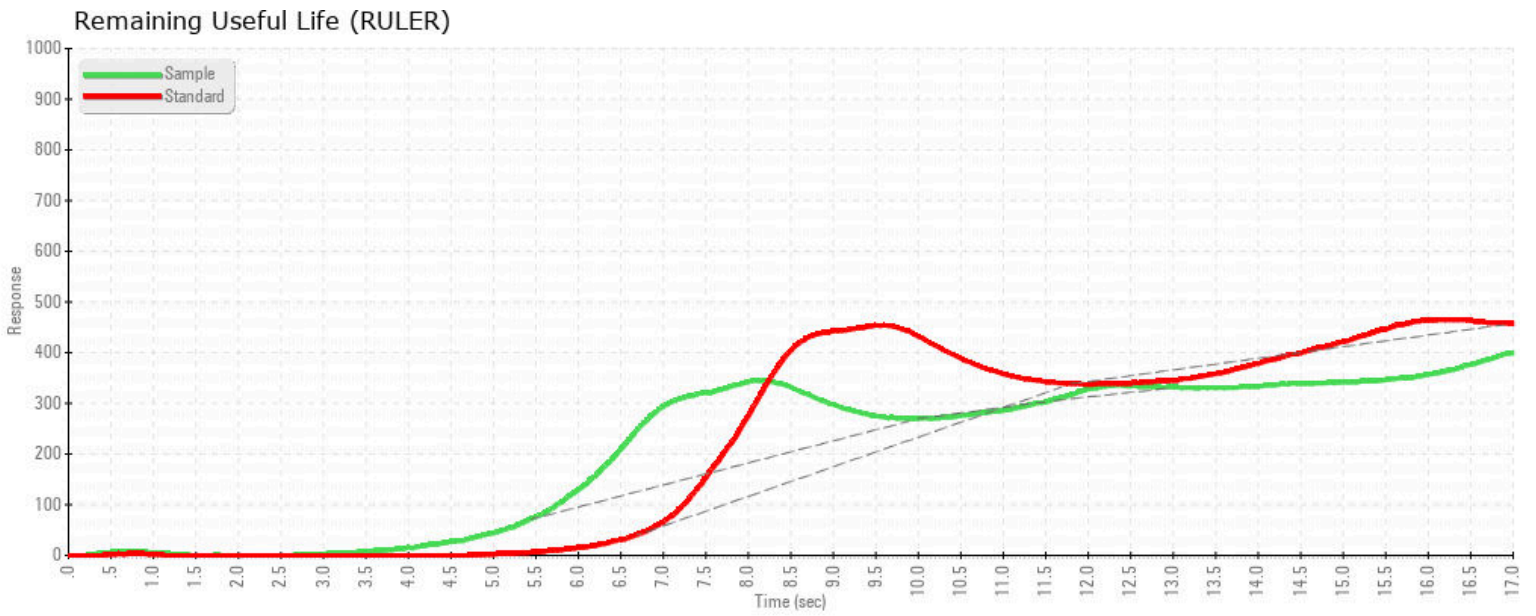
SAMPLE IMAGES



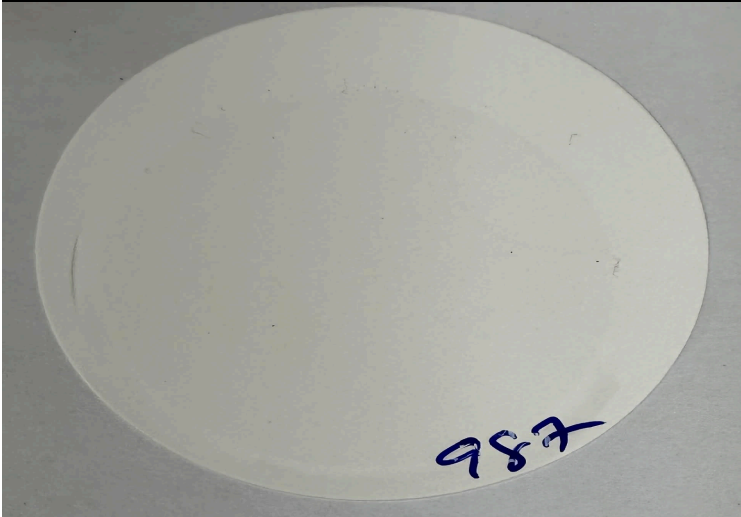
Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0799240 **Received** : 03 Apr 2023
Lab Number : **05808987** **Diagnosed** : 14 Apr 2023
Unique Number : 10406516 **Diagnostician** : Doug Bogart
Test Package : AOM 1 (Additional Tests: KF)

INTERNATIONAL PAPER
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 VANCEBORO, NC
 US 28586
 Contact: DOUG WEIR
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 F: (252)633-7761

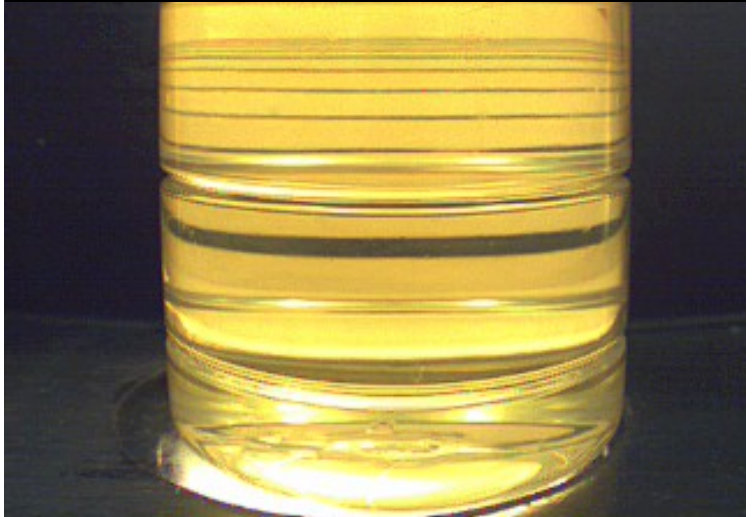
Certificate L2367
 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)



MPC (Varnish Test)



Sample Color & Clarity



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