

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

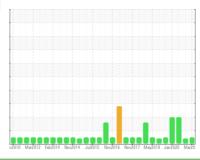
Machine Id

360.XX040-29 HYDRAULIC DRUM DOOR

Component

Hydraulic System

MOBIL DTE 10 EXCEL 68 (10 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.

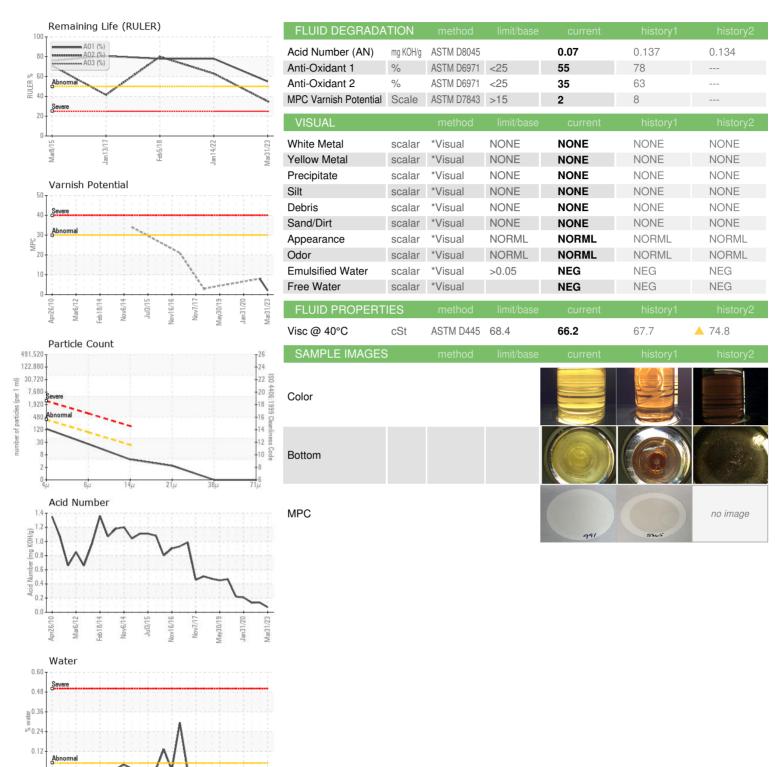
Fluid Condition

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 WC0799239 RP0001023 RP0003354 Sample Date Client Info 0 31 Mar 2023 14 Jan 2022 22 Apr 2020 Machine Age mths Client Info 0 0 8 Oil Changed Client Info N/A N/A Not Changd Sample Status method Imit base base Current history1 history2 Iron ppm ASTM 55185m >20 0 <1 0 WEAR METALS method Imit base current history1 history2 Iron ppm ASTM 55185m >20 0 <1 0 Chromium ppm ASTM 55185m >20 0 <0 0 Iron ppm ASTM 55185m >20 0 0 <1 Lead ppm ASTM 55185m >20 0 <1 <1 <th colspan="8">x2010 Mxx2012 Feb2014 Nox2014 Ju2015 Nov2016 Nov2017 Mxx2019 Jxx2020 Mxx20</th>	x2010 Mxx2012 Feb2014 Nox2014 Ju2015 Nov2016 Nov2017 Mxx2019 Jxx2020 Mxx20							
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 Not Changed Sample Status Client Info N/A N/A NORMAL ABNORMAL WEAR METALS method limit/base current fistory1 fistory2 Iron ppm ASTM D5185m ≥0 0 <1	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
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 Not Changd Sample Status method limit/base current history1 history2 Iron ppm ASTM D5185m ≥20 0 <1	Sample Number		Client Info		WC0799239	RP0001023	RP0003354	
Machine Age mths Client Info 0 0 0 Oil Age mths Client Info 0 0 0 0 Oil Changed Client Info N/A N/A N/A Not Changd Sample Status method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 <1	Sample Date		Client Info		31 Mar 2023	14 Jan 2022	22 Apr 2020	
Oil Changed Sample Status Client Info N/A N/A N/A Not Changed ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 0 <1 0 Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m >20 0 0 0 Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 0 Copper ppm ASTM D5185m >20 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 0	Machine Age	mths	Client Info		0	0		
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WEAR METALS	Oil Changed		Client Info		N/A	N/A	Not Changd	
Iron	Sample Status				NORMAL	ABNORMAL	ABNORMAL	
Chromium ppm ASTM D5185m >20 0 0 0 Nickel ppm ASTM D5185m >20 0 0 0 Titanium ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 20 0 0 0 -1 Aluminum ppm ASTM D5185m >20 0 0 0 -1 Aluminum ppm ASTM D5185m >20 0 0 -1	WEAR METALS		method	limit/base	current	history1	history2	
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Silver ppm ASTM D5185m 0 0 <1	Nickel	ppm	ASTM D5185m	>20	0	0	0	
Aluminum ppm ASTM D5185m >20 0 0 0 Lead ppm ASTM D5185m >20 0 0 <1 Copper ppm ASTM D5185m >20 0 <1 <1 Tin ppm ASTM D5185m >20 0 0 0 Antimony ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 Boron ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 4 <1 <1 Calcium ppm ASTM D5185m 121 101 89 Phosphorus ppm ASTM D5185m 121 10	Titanium	ppm	ASTM D5185m		0	0	0	
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Copper ppm ASTM D5185m >20 0 <1	Aluminum	ppm	ASTM D5185m	>20	0	0	0	
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ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 <1 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 4 <1 <1 Calcium ppm ASTM D5185m 4 <1 <1 Calcium ppm ASTM D5185m 121 101 89 Phosphorus ppm ASTM D5185m 464 397 395 Zinc ppm ASTM D5185m 0 13 53 Sulfur ppm ASTM D5185m 1513 1597 2543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 2 Sodium ppm ASTM D5185m >20 <td< th=""><th>Vanadium</th><th>ppm</th><th>ASTM D5185m</th><th></th><th>0</th><th>0</th><th>0</th></td<>	Vanadium	ppm	ASTM D5185m		0	0	0	
Boron ppm ASTM D5185m Q	Cadmium	ppm	ASTM D5185m		0	0	0	
Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1	ADDITIVES		method	limit/base	current	history1	history2	
Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	<1	<1	
Manganese ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		0	0	0	
Magnesium ppm ASTM D5185m 4 <1	Molybdenum	ppm	ASTM D5185m		0	0	0	
Calcium ppm ASTM D5185m 121 101 89 Phosphorus ppm ASTM D5185m 464 397 395 Zinc ppm ASTM D5185m 0 13 53 Sulfur ppm ASTM D5185m 1513 1597 2543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 2 Sodium ppm ASTM D5185m >20 <1 0 0 Potassium ppm ASTM D5185m >20 <1 0 0 Water % ASTM D6304 >0.05 0.005 0.002 0.006 ppm Water ppm ASTM D6304 >500 58.4 19.7 61.5 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >320 117 4997 4	Manganese	ppm	ASTM D5185m		<1	0	0	
Phosphorus ppm ASTM D5185m 464 397 395 Zinc ppm ASTM D5185m 0 13 53 Sulfur ppm ASTM D5185m 1513 1597 2543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 2 Sodium ppm ASTM D5185m >15 <1 <1 0 0 Potassium ppm ASTM D5185m >20 <1 0 0 0 Water % ASTM D5185m >20 <1 0	Magnesium	ppm	ASTM D5185m		4	<1	<1	
Zinc ppm ASTM D5185m 0 13 53 Sulfur ppm ASTM D5185m 1513 1597 2543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 2 Sodium ppm ASTM D5185m >1 1 1 0 Potassium ppm ASTM D5185m >20 <1 0 0 Water % ASTM D5185m >20 <1 0 0 Water % ASTM D5185m >1 1 1 0 Water % ASTM D6305m >0.005 0.002 0.006 0 Water % ASTM D6304 >0.005 0.005 0.002 0.006 Particles >4µm ASTM D7647 >32.0 117 △ 997 △ 4749 Particles >21µm ASTM D7647 >20 4 7 △ 75 </th <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>121</th> <th>101</th> <th>89</th>	Calcium	ppm	ASTM D5185m		121	101	89	
Sulfur ppm ASTM D5185m 1513 1597 2543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 <1 <1 2 Sodium ppm ASTM D5185m >1 1 1 0 Potassium ppm ASTM D5185m >20 <1 0 0 Water % ASTM D5185m >20 <1 0 0 Water % ASTM D5185m >20 <1 0 0 Water % ASTM D6304 >0.005 0.005 0.002 0.006 ppm Water ppm ASTM D6304 >500 58.4 19.7 61.5 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >320 117 997 4749 Particles >21µm ASTM D7647 >20 4 7	Phosphorus	ppm	ASTM D5185m		464	397	395	
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Sodium ppm ASTM D5185m 1 1 0 Potassium ppm ASTM D5185m >20 <1 0 0 Water % ASTM D6304 >0.05 0.005 0.002 0.006 ppm Water ppm ASTM D6304 >500 58.4 19.7 61.5 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >320 117 40 997 40 4749 Particles >6µm ASTM D7647 >80 22 77 40 1129 Particles >14µm ASTM D7647 >20 4 7 40 75 Particles >21µm ASTM D7647 >4 2 2 4 13 Particles >38µm ASTM D7647 >3 0 0 0 Particles >71µm ASTM D7647 >3 0 0 0	CONTAMINANTS		method	limit/base	current	history1	history2	
Potassium ppm ASTM D5185m >20 <1	Silicon	ppm	ASTM D5185m	>15	<1	<1	2	
Water % ASTM D6304 >0.05 0.005 0.002 0.006 ppm Water ppm ASTM D6304 >500 58.4 19.7 61.5 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >320 117 40 997 40 4749 Particles >6μm ASTM D7647 >80 22 77 1129 Particles >14μm ASTM D7647 >20 4 7 75 Particles >21μm ASTM D7647 >4 2 2 13 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Sodium	ppm	ASTM D5185m		1	1	0	
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FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >320 117 ▲ 997 ▲ 4749 Particles >6μm ASTM D7647 >80 22 77 ▲ 1129 Particles >14μm ASTM D7647 >20 4 7 ▲ 75 Particles >21μm ASTM D7647 >4 2 2 ▲ 13 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Water	%	ASTM D6304	>0.05	0.005	0.002	0.006	
Particles >4μm ASTM D7647 >320 117 Φ 997 Δ 4749 Particles >6μm ASTM D7647 >80 22 77 Δ 1129 Particles >14μm ASTM D7647 >20 4 7 Δ 75 Particles >21μm ASTM D7647 >4 2 2 Δ 13 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	ppm Water	ppm	ASTM D6304	>500	58.4	19.7	61.5	
Particles >6μm ASTM D7647 >80 22 77 ▲ 1129 Particles >14μm ASTM D7647 >20 4 7 ▲ 75 Particles >21μm ASTM D7647 >4 2 2 ▲ 13 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2	
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Particles >21μm ASTM D7647 >4 2 2 ▲ 13 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Particles >6µm		ASTM D7647	>80	22	77	<u>▲</u> 1129	
Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0	Particles >14µm		ASTM D7647	>20	4	7		
Particles >71μm	Particles >21µm		ASTM D7647	>4	2	2	▲ 13	
	Particles >38µm		ASTM D7647	>3	0	0	0	
Oil Cleanliness ISO 4406 (c) >15/13/11 14/12/9 🔺 17/13/10 🔺 19/17/13	Particles >71µm		ASTM D7647	>3	0	0	0	
	Oil Cleanliness		ISO 4406 (c)	>15/13/11	14/12/9	1 7/13/10	1 9/17/13	



OIL ANALYSIS REPORT





Certificate L2367

Laboratory Sample No. Lab Number **Unique Number**

: 10406520

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0799239 : 05808991

Received Diagnosed Diagnostician Test Package : AOM 1 (Additional Tests: KF)

: 03 Apr 2023 : 14 Apr 2023 : Doug Bogart

US 28586 Contact: DOUG WEIR Doug. Weir@ipaper.com; jon.fazenbaker@wearcheck.com

T: (252)633-7350 F: (252)633-7761

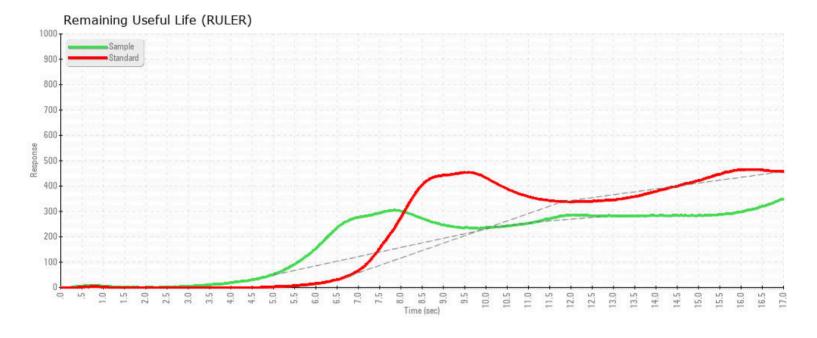
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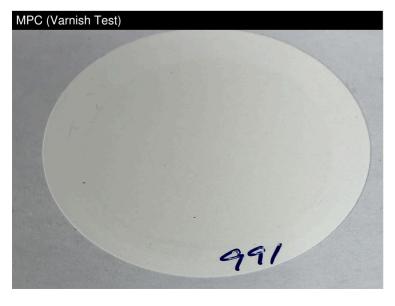
1785 Weyerhaeuser Road

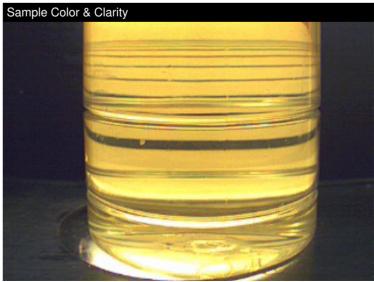
VANCEBORO, NC

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)







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