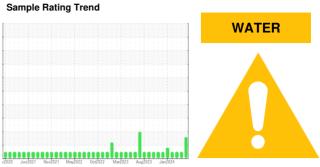


OIL ANALYSIS REPORT

Enviromental RTO 4 Hydraulic Unit (S/N EN242)

Hydraulic System

DEXRON III (--- GAL)



DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is a light concentration of water present in the oil. The amount and size of particulates present in the system are acceptable.

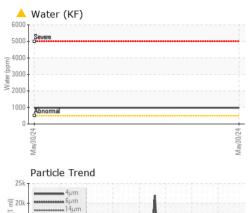
Fluid Condition

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

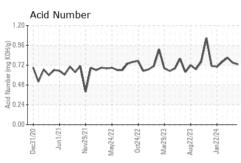
Sample Number Client Info WC0895141 WC0895062 WC0895013 Sample Date Client Info Jo Machine Age hrs Client Info Jo O O O O O O O O O			c2020 Jun20	21 Nov2021 May2022	Oct2022 Mar2023 Aug2023	Jan 2024	
Sample Date Client Info 30 May 2024 23 Apr 2024 28 Mar 2024	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 0 0 0 0 0 0	Sample Number		Client Info		WC0895141	WC0895062	WC0895013
Oil Age hrs Client Info N/A Particles > 20 Particles > 21 Date	Sample Date		Client Info		30 May 2024	23 Apr 2024	28 Mar 2024
Oil Changed Sample Status Client Info N/A N/A N/A N/A WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m ≥20 13 13 14 Chromium ppm ASTM D5185m ≥20 0 0 <1 Nikotel ppm ASTM D5185m >20 0 0 <1 Ritural India ppm ASTM D5185m >20 0 0 <1 Silver ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >20 2 2 2 3 Copper ppm ASTM D5185m >20 31 29 31 Tin ppm ASTM D5185m >20 2 <1 2 Vanadium ppm ASTM D5185m 0 0 <1 1 ADDITIVES <td>Machine Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <th>0</th> <td>0</td> <td>0</td>	Machine Age	hrs	Client Info		0	0	0
ABNORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 13 13 14 Chromium ppm ASTM D5185m >20 0 0 <1	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 13 13 14 Chromium ppm ASTM D5185m >20 0 0 <1	Oil Changed		Client Info		N/A	N/A	N/A
Irron	Sample Status				ABNORMAL	NORMAL	NORMAL
Chromium ppm ASTM D5185m >20 0 0 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel ppm ASTM D5185m >20 0 0 0 <1 Titanium ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >20 2 2 3 Copper ppm ASTM D5185m >20 31 29 31 Tin ppm ASTM D5185m >20 2 2 <1 2 Vanadium ppm ASTM D5185m >0 0 0 <1 Cadmium ppm ASTM D5185m >0 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 81 72 73 Barium ppm ASTM D5185m 0 0 0 1 Manganese ppm ASTM D5185m 1 0 2 Calcium ppm ASTM D5185m 1 0 2 Calcium ppm ASTM D5185m 1 0 2 Calcium ppm ASTM D5185m 1 1 0 2 Calcium ppm ASTM D5185m 1 1 0 2 Calcium ppm ASTM D5185m 1 1 0 2 Sodium ppm ASTM D5185m 1 1 0 1 101 108 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 1 1003 979 961 CONTAMINANTS method limit/base current history1 history2 Sodium ppm ASTM D5185m 1 1 1 1 2 Sodium ppm ASTM D5185m 1 1 1 1 2 Sodium ppm ASTM D5185m 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Iron	ppm	ASTM D5185m	>20	13	13	14
Titanium ppm ASTM D5185m	Chromium	ppm	ASTM D5185m	>20	0	0	<1
Silver	Nickel	ppm	ASTM D5185m	>20	0	0	<1
Aluminum ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >20 2 2 3 Copper ppm ASTM D5185m >20 2 2 2 3 Tin ppm ASTM D5185m >20 2 <1 2 Vanadium ppm ASTM D5185m 0 0 <1 2 Cadmium ppm ASTM D5185m 0 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 1 Magnesium ppm ASTM D5185m 1 0 2 2 Calcium ppm ASTM D5185m 101 101	Titanium	ppm	ASTM D5185m		<1	0	<1
Lead ppm ASTM D5185m >20 2 2 3 Copper ppm ASTM D5185m >20 31 29 31 Tin ppm ASTM D5185m >20 2 <1 2 Vanadium ppm ASTM D5185m 0 0 <1 2 Cadmium ppm ASTM D5185m 0 0 <1 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 81 72 73 Barium ppm ASTM D5185m <1 0 0 Manganese ppm ASTM D5185m <1 0 0 1 Magnesium ppm ASTM D5185m 101 101 108 108 Phosphorus ppm ASTM D5185m 256 240 269 22 Zinc ppm ASTM D5185m 1003 979 961	Silver	ppm	ASTM D5185m		0	0	0
Copper ppm ASTM D5185m >20 31 29 31 Tin ppm ASTM D5185m >20 2 <1	Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Tin	Lead	ppm	ASTM D5185m	>20	2	2	3
Tin	Copper	ppm	ASTM D5185m	>20	31	29	31
Cadmium ppm ASTM D5185m 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 81 72 73 Barium ppm ASTM D5185m <1	Tin	ppm	ASTM D5185m	>20	2	<1	2
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 81 72 73 Barium ppm ASTM D5185m <1	Vanadium	ppm	ASTM D5185m		0	0	<1
Boron ppm ASTM D5185m	Cadmium	ppm	ASTM D5185m		0	0	<1
Barium ppm ASTM D5185m <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 1 Manganese ppm ASTM D5185m <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1 0 2 2 Calcium ppm ASTM D5185m 101 101 101 108 Phosphorus ppm ASTM D5185m 256 240 269 Zinc ppm ASTM D5185m 33 33 33 33 Sulfur ppm ASTM D5185m 1003 979 961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m >14 13 13 13 Potassium ppm ASTM D5185m >20 2 <1 3	Boron	ppm	ASTM D5185m		81	72	73
Manganese ppm ASTM D5185m <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 </td <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th><1</th> <td>0</td> <td>0</td>	Barium	ppm	ASTM D5185m		<1	0	0
Magnesium ppm ASTM D5185m 1 0 2 Calcium ppm ASTM D5185m 101 101 108 Phosphorus ppm ASTM D5185m 256 240 269 Zinc ppm ASTM D5185m 33 33 33 Sulfur ppm ASTM D5185m 1003 979 961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m >14 13 13 13 Potassium ppm ASTM D5185m >20 2 <1 3 Water % ASTM D5185m >20 2 <1 3 Water % ASTM D6185m >20 2 <1 3 Particles > 4µm ASTM D6304 >0.0 4 980 FLUID CLEANLINESS	Molybdenum	ppm	ASTM D5185m		0	0	1
Calcium ppm ASTM D5185m 101 101 108 Phosphorus ppm ASTM D5185m 256 240 269 Zinc ppm ASTM D5185m 33 33 33 Sulfur ppm ASTM D5185m 1003 979 961 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m >20 2 1 3 Potassium ppm ASTM D5185m >20 2 <1	Manganese	ppm	ASTM D5185m		<1	<1	<1
Phosphorus ppm ASTM D5185m 256 240 269 Zinc ppm ASTM D5185m 33 33 33 33 Sulfur ppm ASTM D5185m 1003 979 961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m >20 2 <1	Magnesium	ppm	ASTM D5185m		1	0	2
Zinc ppm ASTM D5185m 33 35 26 CONTAMINANTS method limit/base current history1 history2 Solidum ppm ASTM D5185m >15 2 1 2 1 2 1 2 2 1 2 <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td></td> <th>101</th> <td>101</td> <td>108</td>	Calcium	ppm	ASTM D5185m		101	101	108
Sulfur ppm ASTM D5185m 1003 979 961 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m >20 2 <1	Phosphorus	ppm	ASTM D5185m		256	240	269
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m 14 13 13 Potassium ppm ASTM D5185m >20 2 <1	Zinc	ppm	ASTM D5185m		33	33	33
Silicon ppm ASTM D5185m >15 2 1 2 Sodium ppm ASTM D5185m 14 13 13 Potassium ppm ASTM D5185m >20 2 <1 3 Water % ASTM D6304 >0.05 ▲ 0.098 ppm ASTM D6304 >500 ▲ 980 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADAT	Sulfur	ppm	ASTM D5185m		1003	979	961
Sodium ppm ASTM D5185m 14 13 13 Potassium ppm ASTM D5185m >20 2 <1 3 Water % ASTM D6304 >0.05 ▲ 0.098 ppm Water ppm ASTM D6304 >500 ▲ 980 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >3 0 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FL	CONTAMINANTS	}	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 <1 3 Water % ASTM D6304 >0.05 ▲ 0.098 ppm Water ppm ASTM D6304 >500 ♠ 980 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Silicon	ppm	ASTM D5185m	>15	2	1	2
Water % ASTM D6304 >0.05 ▲ 0.098 ppm Water ppm ASTM D6304 >500 ▲ 980 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		14	13	13
ppm Water ppm ASTM D6304 >500 ▲ 980 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	2	<1	3
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.05	△ 0.098		
Particles >4μm ASTM D7647 >2500 487 545 265 Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>500	△ 980		
Particles >6μm ASTM D7647 >640 265 151 86 Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	IESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >80 45 9 7 Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >4µm		ASTM D7647	>2500	487	545	265
Particles >21μm ASTM D7647 >20 15 1 2 Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >6µm		ASTM D7647	>640	265	151	86
Particles >38μm ASTM D7647 >4 2 0 0 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >14μm		ASTM D7647	>80	45	9	7
Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>20	15	1	2
Oil Cleanliness ISO 4406 (c) >18/16/13 16/15/13 16/14/10 15/14/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >38μm		ASTM D7647	>4	2	0	0
FLUID DEGRADATION method limit/base current history1 history2	Particles >71μm		ASTM D7647	>3	0	0	0
	Oil Cleanliness		ISO 4406 (c)	>18/16/13	16/15/13	16/14/10	15/14/10
Acid Number (AN) mg KOH/g ASTM D8045 0.73 0.75 0.81	FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.73	0.75	0.81

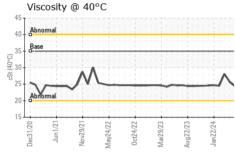


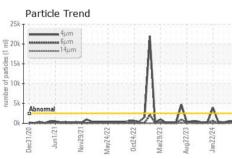
OIL ANALYSIS REPORT

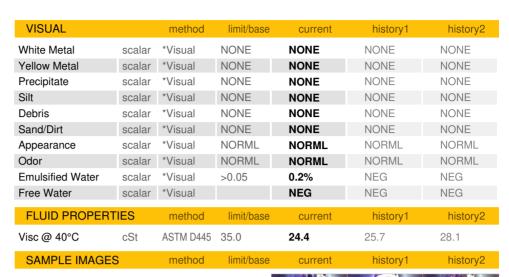


0k - ****	 Б <i>j.</i>	um um Jum					
5k -					1		
0k							
Ok Abr	normal				4	A	
0	21	Nov29/21	4/22	0ct24/22	Mar29/23	23	Jan22/24

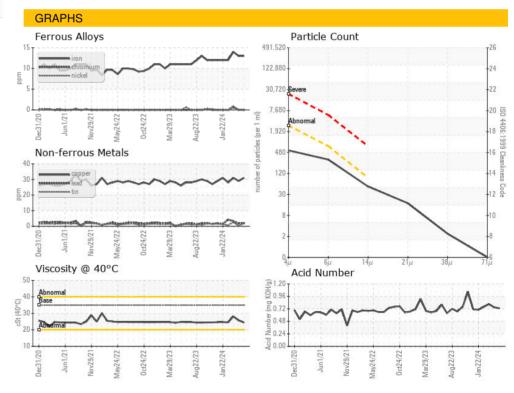








Color **Bottom**



: 13 Jun 2024 - Jonathan Hester





Lab Number

Laboratory Sample No.

: WC0895141

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 05 Jun 2024 : 06200098 **Tested** : 13 Jun 2024

Diagnosed Unique Number : 11062221

Test Package : IND 2 (Additional Tests: KF) Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - 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)

J.M. Huber Corporation

PO BOX 38 CRYSTAL HILL, VA US 24539

Contact: Ted Hudson ted.hudson@huber.com

T: (434)476-6628 F: (434)476-8133