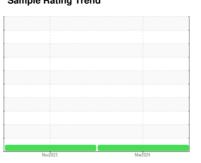


OIL ANALYSIS REPORT

Sample Rating Trend







RRHP HPU 699 Elevation 029-200-412 Unit 2 HPU

Hydraulic System

MOBIL DTE 26 (1446 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

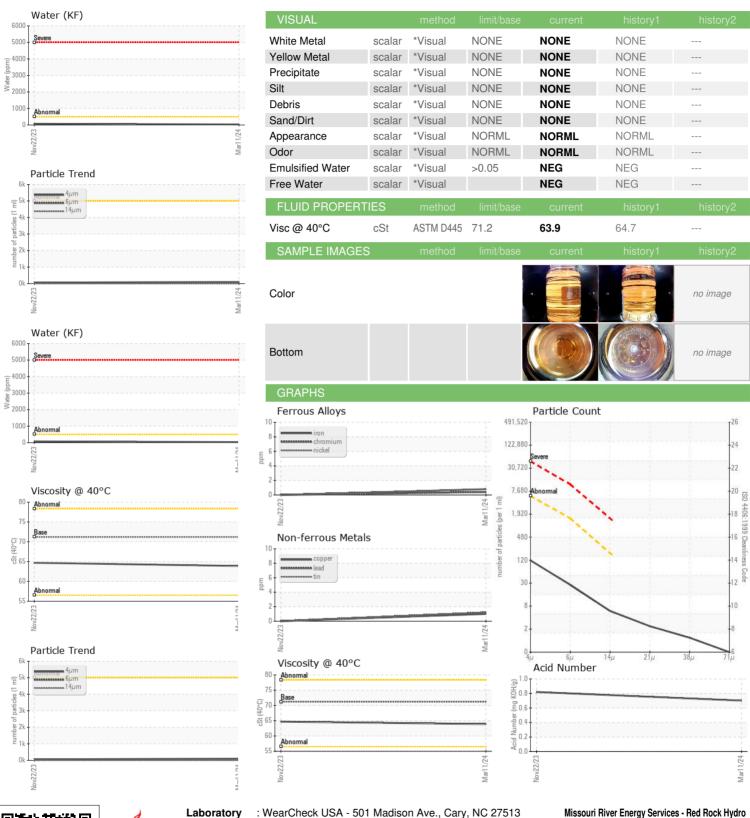
Fluid Condition

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

SAMPLE INFORMATION method limitbase current history1 history2 Sample Number Client Info WC0927633 WC0879260 Sample Date Client Info 11 Mar 2024 22 Nov 2023 Oil Age hrs Client Info 7867 7480 Oil Changed Client Info Not Changd Filtered Sample Status method Imulbass current history1 Iron ppm ASTM 05185m >20 <1 0 Chromium ppm ASTM 05185m >20 <1 0 Nickel ppm ASTM 05185m >20 <1 0 Silver ppm ASTM 05185m >20 <1 0 Aluminum ppm ASTM 05185m >20 1 0 Calcium ppm ASTM 05185m >20 1 0 C				Nov2023	Mar2024		
Sample Number Client Info WC0927633 WC0879260	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Date						•	
Machine Age hrs Client Info 7867 7480 Oil Age hrs Client Info 7867 7480 Oil Changed Client Info Not Changd Filtered Sample Status method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 0 Chromitium ppm ASTM D5185m >20 <1 0 Nickel ppm ASTM D5185m >20 <1 0 Silver ppm ASTM D5185m >20 <1 0 Aluminum ppm ASTM D5185m >20 1 0 Lead ppm ASTM D5185m >20 1 0 Vanadium ppm ASTM D5185m >20 1 0 Vanadium ppm ASTM D5185m 1 0 <							
Oil Age Oil Changed Sample Status hrs Client Info 7867 Not Changd NORMAL 7480 Filtered NORMAL		hrs					
Oil Changed Sample Status Client Info Not Changd NORMAL Filtered NORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 0 Chromium ppm ASTM D5185m >20 <1 0 Nickel ppm ASTM D5185m >20 <1 0 Silver ppm ASTM D5185m 20 1 0 Aluminum ppm ASTM D5185m 20 1 0 Lead ppm ASTM D5185m >20 1 0 Lead ppm ASTM D5185m >20 1 0 Copper ppm ASTM D5185m >20 1 0 Vanadium ppm ASTM D5185m >20 1 0 Cadmium ppm ASTM D5185m 0 0							
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WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 0			Oliciti IIIIo				
Iron	-		mothod	limit/base			
Chromium ppm ASTM D5185m >20 <1						•	
Nickel ppm ASTM D5185m >20 <1 0 Titanium ppm ASTM D5185m <1	-						
Titanium							
Stilver				>20			
Aluminum ppm ASTM D5185m >20 1 0 Lead ppm ASTM D5185m >20 1 0 Copper ppm ASTM D5185m >20 1 0 Tin ppm ASTM D5185m >20 1 0 Vanadium ppm ASTM D5185m >20 1 0 Cadmium ppm ASTM D5185m <1							
Lead ppm ASTM D5185m >20 1 0 Copper ppm ASTM D5185m >20 1 0 Tin ppm ASTM D5185m >20 1 0 Vanadium ppm ASTM D5185m <1				> 20			
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Tin ppm ASTM D5185m >20 1 0 Vanadium ppm ASTM D5185m <1							
Vanadium ppm ASTM D5185m <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m <1							
Cadmium ppm ASTM D5185m 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m <1 0 Molybdenum ppm ASTM D5185m <1 0 Manganese ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1 0 Calcium ppm ASTM D5185m <1 1 27 Phosphorus ppm ASTM D5185m 501 461 Zinc ppm ASTM D5185m 501 461 Sulfur ppm ASTM D5185m 682 672 Sulfur ppm ASTM D5185m 8832 7879 CONTAMINANTS method limit/base				>20			
ADDITIVES							
Boron ppm ASTM D5185m c1 0		ppm			1		
Barium	ADDITIVES		method	limit/base	current	history1	history2
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Manganese ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1	Barium	ppm	ASTM D5185m		<1	0	
Magnesium ppm ASTM D5185m <1 0 Calcium ppm ASTM D5185m 131 127 Phosphorus ppm ASTM D5185m 501 461 Zinc ppm ASTM D5185m 682 672 Sulfur ppm ASTM D5185m 8832 7879 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m >15 1 1 Potassium ppm ASTM D5185m >20 <1	Molybdenum	ppm	ASTM D5185m		<1	0	
Calcium ppm ASTM D5185m 131 127 Phosphorus ppm ASTM D5185m 501 461 Zinc ppm ASTM D5185m 682 672 Sulfur ppm ASTM D5185m 8832 7879 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m		<1	0	
Phosphorus ppm ASTM D5185m 501 461 Zinc ppm ASTM D5185m 682 672 Sulfur ppm ASTM D5185m 8832 7879 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m		<1	0	
Zinc ppm ASTM D5185m 682 672 Sulfur ppm ASTM D5185m 8832 7879 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m >20 <1 0 Potassium ppm ASTM D5185m >20 <1 0 Water % ASTM D6304 >0.05 0.003 0.007 FLUID CLEANLINESS method limit/base current history1 histor	Calcium	ppm	ASTM D5185m		131	127	
Sulfur ppm ASTM D5185m 8832 7879 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m		501	461	
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m >20 <1 0 Potassium ppm ASTM D5185m >20 <1 0 Water % ASTM D6304 >0.05 0.003 0.007 ppm Water ppm ASTM D6304 >500 33 76 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >5000 104 58 Particles >6µm ASTM D7647 >1300 24 25 Particles >14µm ASTM D7647 >160 5 5 Particles >21µm ASTM D7647 >10 1 0 Particles >71µm ASTM D7647 >3 0 0	Zinc	ppm	ASTM D5185m		682	672	
Silicon ppm ASTM D5185m >15 1 1 Sodium ppm ASTM D5185m <1	Sulfur	ppm	ASTM D5185m		8832	7879	
Sodium ppm ASTM D5185m <1	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 0 Water % ASTM D6304 >0.05 0.003 0.007 ppm Water ppm ASTM D6304 >500 33 76 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 104 58 Particles >6μm ASTM D7647 >1300 24 25 Particles >14μm ASTM D7647 >160 5 5 Particles >21μm ASTM D7647 >40 2 1 Particles >38μm ASTM D7647 >3 0 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history	Silicon	ppm	ASTM D5185m	>15	1	1	
Water % ASTM D6304 >0.05 0.003 0.007 ppm Water ppm ASTM D6304 >500 33 76 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 104 58 Particles >6μm ASTM D7647 >1300 24 25 Particles >14μm ASTM D7647 >160 5 5 Particles >21μm ASTM D7647 >40 2 1 Particles >38μm ASTM D7647 >10 1 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	Sodium	ppm	ASTM D5185m		<1	<1	
ppm Water ppm ASTM D6304 >500 33 76 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 104 58 Particles >6μm ASTM D7647 >1300 24 25 Particles >14μm ASTM D7647 >160 5 5 Particles >21μm ASTM D7647 >40 2 1 Particles >38μm ASTM D7647 >10 1 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	Potassium	ppm	ASTM D5185m	>20	<1	0	
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 104 58 Particles >6μm ASTM D7647 >1300 24 25 Particles >14μm ASTM D7647 >160 5 5 Particles >21μm ASTM D7647 >40 2 1 Particles >38μm ASTM D7647 >10 1 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	Water	%	ASTM D6304	>0.05	0.003	0.007	
Particles >4μm ASTM D7647 >5000 104 58 Particles >6μm ASTM D7647 >1300 24 25 Particles >14μm ASTM D7647 >160 5 5 Particles >21μm ASTM D7647 >40 2 1 Particles >38μm ASTM D7647 >10 1 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	ppm Water	ppm	ASTM D6304	>500	33	76	
Particles >6μm ASTM D7647 >1300 24 25 Particles >14μm ASTM D7647 >160 5 5 Particles >21μm ASTM D7647 >40 2 1 Particles >38μm ASTM D7647 >10 1 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Particles >4µm		ASTM D7647	>5000	104	58	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Particles >6µm		ASTM D7647	>1300	24	25	
Particles >38μm ASTM D7647 >10 1 0 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >14µm		ASTM D7647	>160	5	5	
Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >21µm		ASTM D7647	>40	2	1	
Oil Cleanliness ISO 4406 (c) >19/17/14 14/12/10 13/12/10 FLUID DEGRADATION method limit/base current history1 history2	Particles >38μm		ASTM D7647	>10	1	0	
FLUID DEGRADATION method limit/base current history1 history2	Particles >71µm		ASTM D7647	>3	0	0	
	Oil Cleanliness		ISO 4406 (c)	>19/17/14	14/12/10	13/12/10	
Acid Number (AN) mg KOH/g ASTM D8045 0.701 0.82	FLUID DEGRADA	TION	method	limit/base	current	history1	history2
	Acid Number (AN)	mg KOH/g	ASTM D8045		0.701	0.82	



OIL ANALYSIS REPORT





Laboratory Sample No.

Lab Number : 06147331

: WC0927633 Unique Number : 10977409

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 12 Apr 2024 Tested

: 15 Apr 2024 Diagnosed : 16 Apr 2024 - Don Baldridge

1004 216th Place Pella, IA CA 50219 Contact: Vern Cochran

Test Package : PLANT 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.

vern.cochran@mrenergy.com T: (605)357-6920

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: MISPEL [WUSCAR] 06147331 (Generated: 04/16/2024 11:03:43) Rev: 1

Submitted By: RRHP Pella Iowa - Vern Cochran