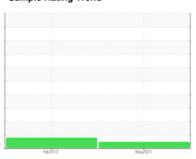


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id **I-07**Component
Hydraulic System

MOBIL DTE 10 EXCEL 32 (45 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

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.

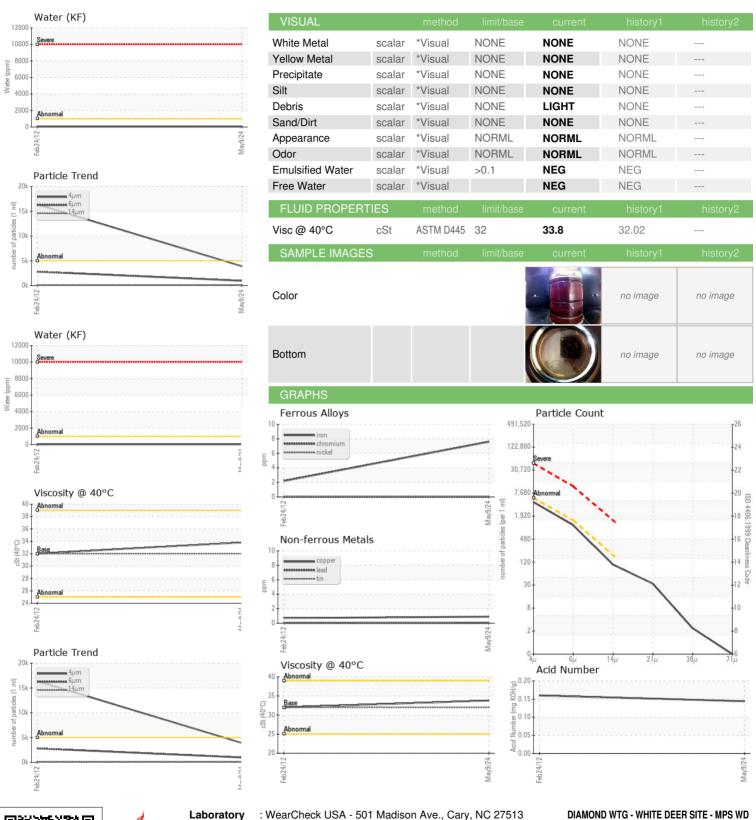
Fluid Condition

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

Sample Date Client Info O9 May 2024 24 Feb 2012 Machine Age hrs Client Info O				Feb 2012	May2024		
Sample Date Client Info O9 May 2024 24 Feb 2012	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 Oil Age hrs Client Info N/A Not Changd Oil Changed Client Info N/A Not Changd Sample Status NORMAL ABNORMAL WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 8 2 Chromium ppm ASTM D5185m >20 0 0 Nickel ppm ASTM D5185m >20 <1	Sample Number		Client Info		MHI026924	RP106564	
Oil Age	Sample Date		Client Info		09 May 2024	24 Feb 2012	
Cilient Info N/A Not Changd NoRMAL ABNORMAL ABNORMAL Not Changd NoRMAL ABNORMAL Not Changd NoRMAL ABNORMAL Not Changd NoRMAL NO	Machine Age	hrs	Client Info		-	0	
Oil Changed Sample Status	Oil Age	hrs	Client Info		0	0	
WEAR METALS	Oil Changed		Client Info		N/A	Not Changd	
Tron	Sample Status				NORMAL	ABNORMAL	
Chromium ppm ASTM D5185m >20 0 0 Nickel ppm ASTM D5185m >20 <1	WEAR METALS		method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	8	2	
Nickel ppm ASTM D5185m >20 <1 <1	Chromium	ppm	ASTM D5185m	>20	0	0	
Titanium ppm ASTM D5185m 0 0 Silver ppm ASTM D5185m 0 0 Aluminum ppm ASTM D5185m >20 0 0 Lead ppm ASTM D5185m >20 0 0 Copper ppm ASTM D5185m >20 <1 <1 Tin ppm ASTM D5185m >20 <1 0 Antimony ppm ASTM D5185m 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 Molybdenum ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1	Nickel	ppm	ASTM D5185m	>20	<1	<1	
Silver	Titanium		ASTM D5185m		0	0	
Aluminum ppm ASTM D5185m >20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Silver		ASTM D5185m		0	0	
Lead ppm ASTM D5185m >20 0 0 Copper ppm ASTM D5185m >20 <1 <1 Tin ppm ASTM D5185m >20 <1 0 Antimony ppm ASTM D5185m 0 0 Vanadium ppm ASTM D5185m 0 0 Cadmium ppm ASTM D5185m 0 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Molybdenum ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m <1 0 Calcium ppm ASTM D5185m 120 122 114 Phosphorus ppm ASTM D5185m	Aluminum		ASTM D5185m	>20	0	0	
Copper ppm ASTM D5185m >20 <1	Lead			>20	0	0	
Tin ppm ASTM D5185m >20 <1 0 Antimony ppm ASTM D5185m 0 0 Cadmium 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 0 Barium ppm ASTM D5185m 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Manganese ppm ASTM D5185m 0 0 0 Manganesium ppm ASTM D5185m 120 122 114 Zalcium ppm ASTM D5185m 120 122 114 Zinc ppm ASTM D5185m 37 3 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m 3 0 Sodium ppm ASTM D5185m 3 0 FUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D647 >5000 3885 16366 FUID CLEANLINESS method limit/base current history1 history2 Particles >6μm ASTM D647 >1000 43 40 Particles >6μm ASTM D7647 >1000 969 2802 Particles >6μm ASTM D7647 >100 2 2 Particles >7μm ASTM D7647 >100 2 Particle							
Antimony ppm ASTM D5185m 0 Cadmium ppm ASTM D5185m 0 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 Manganesium ppm ASTM D5185m 120 122 114 Calcium ppm ASTM D5185m 120 122 114 Phosphorus ppm ASTM D5185m 120 122 114 Zinc ppm ASTM D5185m 1275 1650 1536 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS	• • •						
Vanadium ppm ASTM D5185m 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 Barium ppm ASTM D5185m <1				720			
Cadmium ppm ASTM D5185m 0 <1	•						
ADDITIVES	Cadmium						
Boron ppm ASTM D5185m	ADDITIVES		method	limit/base	current	historv1	historv2
Barium ppm ASTM D5185m <1	Boron	ppm	ASTM D5185m		0	•	
Molybdenum ppm ASTM D5185m 0 0 Manganese ppm ASTM D5185m <1 0 Magnesium ppm ASTM D5185m 4 0 Calcium ppm ASTM D5185m 120 122 114 Phosphorus ppm ASTM D5185m 120 122 114 Phosphorus ppm ASTM D5185m 127 398 590 Zinc ppm ASTM D5185m 37 3 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m 3 0	Barium		ASTM D5185m		<1	0	
Manganese ppm ASTM D5185m <1							
Magnesium ppm ASTM D5185m 4 0 Calcium ppm ASTM D5185m 120 122 114 Phosphorus ppm ASTM D5185m 475 398 590 Zinc ppm ASTM D5185m 37 3 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m >+30 2 0 Water % A	•	• •					
Calcium ppm ASTM D5185m 120 122 114 Phosphorus ppm ASTM D5185m 475 398 590 Zinc ppm ASTM D5185m 37 3 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m >+30 2 0 Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D5185m >20 2 0 Water % ASTM D5185m >20 2 0 Particles > 4µm ASTM D6304 >0.1 0.004 0.004 FLUID CLEANLINESS	•					0	
Phosphorus ppm ASTM D5185m 475 398 590 Zinc ppm ASTM D5185m 1275 1650 1536 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m >20 2 0 Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D5185m >20 2 0 Water % ASTM D5185m >20 2 0 Particles >4µm ASTM D6304 >0.1 0.004 0.004 Particles >4µm ASTM D647 >1300 969 <th>-</th> <th></th> <th></th> <th>120</th> <th>122</th> <th>114</th> <th></th>	-			120	122	114	
Zinc ppm ASTM D5185m 37 3 Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m >20 2 0 Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D6304 >0.1 0.004 0.004 ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 Δ 16366 Particles >54μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17							
Sulfur ppm ASTM D5185m 1275 1650 1536 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D6304 >0.1 0.0004 0.004 Particles >4µm ASTM D7647 >5000 3885 Δ 16366 Particles >21µm ASTM D7647 >160 91 <td< th=""><th>·</th><th></th><th></th><th>170</th><th></th><th></th><th></th></td<>	·			170			
Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D6304 >0.1 0.004 0.004 ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 △ 16366 Particles >6μm ASTM D7647 >1300 969 △ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 ▲ 21/19/13	Sulfur			1275	_		
Silicon ppm ASTM D5185m >+30 2 0 Sodium ppm ASTM D5185m 3 0 Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D6304 >0.1 0.004 0.004 ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 △ 16366 Particles >6μm ASTM D7647 >1300 969 △ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 ▲ 21/19/13	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 0 Water % ASTM D6304 >0.1 0.004 0.004 ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 ▲ 16366 Particles >6μm ASTM D7647 >1300 969 ▲ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 ≥1/19/13	Silicon	ppm	ASTM D5185m	>+30	2	0	
Water % ASTM D6304 >0.1 0.004 0.004 ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 Δ 16366 Particles >6μm ASTM D7647 >1300 969 Δ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	Sodium	ppm	ASTM D5185m		3	0	
Water % ASTM D6304 >0.1 0.004 0.004 ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 Δ 16366 Particles >6μm ASTM D7647 >1300 969 Δ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	Potassium	ppm	ASTM D5185m	>20	2	0	
ppm Water ppm ASTM D6304 >1000 43 40 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 3885 ▲ 16366 Particles >6μm ASTM D7647 >1300 969 ▲ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	Water		ASTM D6304	>0.1	0.004	0.004	
Particles >4μm ASTM D7647 >5000 3885 ▲ 16366 Particles >6μm ASTM D7647 >1300 969 ▲ 2802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	ppm Water	ppm	ASTM D6304	>1000	43	40	
Particles >6μm ASTM D7647 >1300 969 ≥802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 ≥1/19/13	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
Particles >6μm ASTM D7647 >1300 969 ≥802 Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 ≥1/19/13	Particles >4µm		ASTM D7647	>5000	3885	<u> 16366</u>	
Particles >14μm ASTM D7647 >160 91 73 Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	Particles >6µm						
Particles >21μm ASTM D7647 >40 29 17 Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	•						
Particles >38μm ASTM D7647 >10 2 2 Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13							
Particles >71μm ASTM D7647 >3 0 0 Oil Cleanliness ISO 4406 (c) >19/17/14 19/17/14 Δ 21/19/13	•						
Oil Cleanliness ISO 4406 (c) >19/17/14	•						
FLUID DEGRADATION method limit/base current history1 history2	Oil Cleanliness						
	FLUID DEGRADA	TION _	method	limit/base	current	history1	history2



OIL ANALYSIS REPORT





Sample No.

: MHI026924 Lab Number : 06204598 Unique Number : 11072059

Received **Tested** Diagnosed

: 10 Jun 2024 : 11 Jun 2024

: 12 Jun 2024 - Angela Borella

PO BOX 872 WHITE DEER, TX US 79097 Contact: WESLEY CAMPBELL

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)

wesley.campbell@diamondwtg.com T: (806)883-1051 F: (806)883-2004