

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id Machine Id ME-60 CATERPILLAR 982M MK800210 Rear Differential

CAT TDTO SAE 50 (22 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Area

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

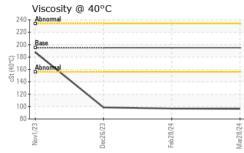
Fluid Condition

The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	1ATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0909673	WC0909677	WC0880657
Sample Date		Client Info		28 Mar 2024	28 Feb 2024	26 Dec 2023
Machine Age	hrs	Client Info		11887	11413	10932
Oil Age	hrs	Client Info		1000	500	2000
Oil Changed		Client Info		N/A	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Water		WC Method	>.2	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	16	21	21
Chromium	ppm	ASTM D5185m	>3	<1	<1	<1
Nickel	ppm	ASTM D5185m	>3	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>30	3	4	2
Lead	ppm	ASTM D5185m	>13	0	<1	<1
Copper	ppm	ASTM D5185m	>103	3	4	13
Tin	ppm	ASTM D5185m	>5	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
Dawaw				-	0	_
Boron	ppm	ASTM D5185m		2	2	5
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m		2 0	0	7
Barium	ppm	ASTM D5185m		0	0	7
Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m		0 2	0 4	7 2
Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2980	0 2 <1	0 4 <1	7 2 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2980 1100	0 2 <1 25	0 4 <1 41	7 2 <1 25
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		0 2 <1 25 3001	0 4 <1 41 4653	7 2 <1 25 3110
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100	0 2 <1 25 3001 1029	0 4 <1 41 4653 1665	7 2 <1 25 3110 1010
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100	0 2 <1 25 3001 1029 1250	0 4 <1 41 4653 1665 2055	7 2 <1 25 3110 1010 1267
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1270	0 2 <1 25 3001 1029 1250 6696	0 4 <1 41 4653 1665 2055 11206	7 2 <1 25 3110 1010 1267 8046
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1270 limit/base	0 2 <1 25 3001 1029 1250 6696 current	0 4 <1 41 4653 1665 2055 11206 history1	7 2 <1 25 3110 1010 1267 8046 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1100 1270 limit/base >100	0 2 <1 25 3001 1029 1250 6696 current 8	0 4 <1 41 4653 1665 2055 11206 history1 11	7 2 <1 25 3110 1010 1267 8046 history2 6
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	1100 1270 limit/base >100	0 2 <1 25 3001 1029 1250 6696 <u>current</u> 8 <	0 4 <1 41 4653 1665 2055 11206 history1 11 2	7 2 <1 25 3110 1010 1267 8046 history2 6 0
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1100 1270 limit/base >100 >20	0 2 <1 25 3001 1029 1250 6696 <u>current</u> 8 <1 2	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1100 1270 limit/base >100 >20 limit/base	0 2 <1 25 3001 1029 1250 6696 <u>current</u> 8 <1 2 <u>current</u>	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 2 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	1100 1270 limit/base >100 >20 limit/base NONE	0 2 <1 25 3001 1029 1250 6696 current 8 <1 2 current NONE	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 history2 NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yisual	1100 1270 limit/base >100 >20 limit/base NONE NONE	0 2 <1 25 3001 1029 1250 6696 <u>current</u> 8 <1 2 2 <u>current</u> NONE NONE	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE NONE	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 2 history2 NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL VISUAL Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yisual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE	0 2 <1 25 3001 1029 1250 6696 <u>current</u> 8 <1 2 2 <u>current</u> NONE NONE NONE	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE NONE NONE NONE	7 2 <1 25 3110 1010 1267 8046 <u>history2</u> 6 0 2 2 <u>history2</u> NONE NONE NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE	0 2 <1 25 3001 1029 1250 6696 <u>current</u> 8 <1 2 2 <u>current</u> NONE NONE NONE NONE	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE NONE NONE NONE NONE NONE	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 2 history2 NONE NONE NONE NONE NONE NONE
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL VISUAL Vhite Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yuisual *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE	0 2 <1 25 3001 1029 1250 6696 current 8 <1 2 current NONE NONE NONE NONE NONE NONE	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 history1 NONE NONE NONE NONE NONE NONE NONE	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 kistory2 6 0 2 NONE NONE NONE NONE NONE NONE NONE NO
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE NONE NON	0 2 <1 25 3001 1029 1250 6696 current 8 <1 2 current 8 NONE NONE NONE NONE NONE NONE NONE NO	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE NONE NONE NONE NONE NONE NONE NON	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 2 history2 NONE NONE NONE NONE NONE NONE NONE NON
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Yisual *Visual *Visual *Visual *Visual *Visual	1100 1270 imit/base >100 >20 imit/base NONE NONE NONE NONE NONE NONE NONE	0 2 <1 25 3001 1029 1250 6696 current 8 <1 2 current 2 NONE NONE NONE NONE NONE NONE NONE N	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE NONE NONE NONE NONE NONE NONE NON	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 2 history2 NONE NONE NONE NONE NONE NONE NONE NON
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE NONE NON	0 2 <1 25 3001 1029 1250 6696 <i>current</i> 8 <1 2 <i>current</i> NONE NONE NONE NONE NONE NONE NONE NON	0 4 <1 41 4653 1665 2055 11206 history1 11 2 2 2 history1 NONE NONE NONE NONE NONE NONE NONE NON	7 2 <1 25 3110 1010 1267 8046 history2 6 0 2 2 history2 NONE NONE NONE NONE NONE NONE NONE NON



OIL ANALYSIS REPORT



FLUID PROPERTIES		limit/base	current	history1	his
Visc @ 40°C cS		195	96.4	96.9	98.7
SAMPLE IMAGES	method	limit/base	current	history1	his
Color			no image	no image	no in
-				ne mage	
Bottom			no imago	no imago	
Bottom			no image	no image	no ii
GRAPHS					1
Ferrous Alloys					
20- 18 - iron 18 - iron					
16-					
14 E 12					
الم 10 8					
6					
4					
3 3	24				
Nov1/23 Dec26/23	Feb28/24	Mar28/24			
Non-ferrous Metals					
12 copper lead					
					
mdd 6	\mathbf{i}				
4					
2					
	24	4			
Nov1/23 Dec26/23	Feb28/24	Mar28/24			
Viscosity @ 40°C		-			
240 Abnormal					
220 - 200 - Base					
180	 				
0 0 0 0 0 0 0 0 0 0 0 0 0 0					
⁵³ 140					
120					
100-					
03 Nov1/23	Feb 28/24 -	8/24			
Nov1/23 Dec26/23	Feb2	Mar28/24			
		NO			
: WearCheck USA - 501 M	adison Ave., Cary	, NC 27513		COVIA -	CAMDE
		4 Apr 2024		1700 9	SAND M



 Unique Number
 : 10963707
 Diagnosed
 : 05 Apr 2024 - Wes Davis

 Certificate L2307
 Test Package
 : CONST

 To discuss this sample report, contact Customer Service at 1-800-237-1369.
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 * - 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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T: F:

Contact/Location: TRACY KEE - COVCAMTN Page 2 of 2