

# **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL



Area MINING Machine Id ME-60 CATERPILLAR 982M MK800210 Component

Rear Differential

### CAT TDTO SAE 50 (22 GAL)

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#### 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.

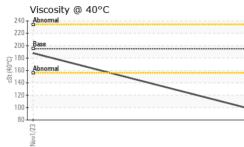
### Fluid Condition

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		WC0880657	WC0866091	
Sample Date		Client Info		26 Dec 2023	01 Nov 2023	
Machine Age	hrs	Client Info		10932	0	
Oil Age	hrs	Client Info		2000	1500	
Oil Changed		Client Info		Changed	N/A	
Sample Status				NORMAL	NORMAL	
CONTAMINATION	١	method	limit/base	current	history1	history2
Water		WC Method	>.2	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	21	1	
Chromium	ppm	ASTM D5185m	>3	<1	0	
Nickel	ppm	ASTM D5185m	>3	<1	0	
Titanium	ppm	ASTM D5185m	>2	<1	0	
Silver	ppm	ASTM D5185m	>2	0	0	
Aluminum	ppm	ASTM D5185m	>30	2	<1	
Lead	ppm	ASTM D5185m	>13	<1	0	
Copper	ppm	ASTM D5185m	>103	13	0	
Tin	ppm	ASTM D5185m	>5	<1	0	
Vanadium	ppm	ASTM D5185m		0	0	
Cadmium	ppm	ASTM D5185m		<1	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		5	3	
Barium	ppm	ASTM D5185m		7	0	
		ASTM D5185m		2	2	
Molybdenum	ppm	AGTIVI DJTOJIT		-	<u>_</u>	
Manganese	ppm	ASTM D5185m		<1	0	
Manganese	ppm	ASTM D5185m	2980	<1	0	
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	2980 1100	<1 25	0 29	
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m		<1 25 3110	0 29 2838	
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100	<1 25 3110 1010	0 29 2838 899	
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100	<1 25 3110 1010 1267	0 29 2838 899 1214	
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1270	<1 25 3110 1010 1267 8046	0 29 2838 899 1214 7200	
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1270 limit/base	<1 25 3110 1010 1267 8046 current	0 29 2838 899 1214 7200 history1	
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	1100 1270 limit/base >100	<1 25 3110 1010 1267 8046 current 6	0 29 2838 899 1214 7200 history1 7	   history2 
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	1100 1270 limit/base >100	<1 25 3110 1010 1267 8046 <u>current</u> 6 0	0 29 2838 899 1214 7200 history1 7 2	   history2 
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1270 limit/base >100 >20	<1 25 3110 1010 1267 8046 <u>current</u> 6 0 2	0 29 2838 899 1214 7200 history1 7 2 2 0	   history2  
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1100 1270 limit/base >100 >20 limit/base	<1 25 3110 1010 1267 8046 current 6 0 2 current	0 29 2838 899 1214 7200 history1 7 2 0 0 history1	   history2   history2
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m XSTM D5185m	1100 1270 limit/base >100 >20 limit/base NONE	<1 25 3110 1010 1267 8046 current 6 0 2 2 current NONE	0 29 2838 899 1214 7200 history1 7 2 0 0 history1 LIGHT	   history2   history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL White Metal Yellow Metal	ppm ppm ppm ppm ppm ppm ppm ppm ppm scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Yisual	1100 1270 limit/base >100 >20 limit/base NONE NONE	<1 25 3110 1010 1267 8046  current 6 0 2 current NONE NONE	0 29 2838 899 1214 7200 history1 7 2 0 0 history1 LIGHT NONE	   history2   history2  history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL VISUAL White Metal Yellow Metal Precipitate	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Yuisual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE	<1 25 3110 1010 1267 8046  current 6 0 2  current NONE NONE NONE	0 29 2838 899 1214 7200 history1 7 2 0 history1 LIGHT NONE NONE	   history2   history2  history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL VISUAL White Metal Yellow Metal Precipitate Silt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE	<1 25 3110 1010 1267 8046  current 6 0 2  current NONE NONE NONE NONE NONE	0 29 2838 899 1214 7200 history1 7 2 0 history1 LIGHT NONE NONE NONE	   history2  history2  history2 
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium VISUAL VISUAL Vhite Metal Yellow Metal Precipitate Silt Debris	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *Visual *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE	<1 25 3110 1010 1267 8046  Current 6 0 2 Current NONE NONE NONE NONE NONE NONE NONE NON	0 29 2838 899 1214 7200 history1 7 2 0 history1 LIGHT NONE NONE NONE NONE NONE	  history2  history2  history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur <b>CONTAMINANTS</b> Silicon Sodium Potassium <b>VISUAL</b> White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Visual *Visual *Visual *Visual *Visual *Visual	1100 1270 limit/base >100 >20 limit/base NONE NONE NONE NONE NONE NONE	<1 25 3110 1010 1267 8046  current 6 0 2 current NONE NONE NONE NONE NONE NONE NONE NON	0 29 2838 899 1214 7200 history1 7 2 0 history1 LIGHT NONE NONE NONE NONE NONE NONE	history2 history2 history2 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur <b>CONTAMINANTS</b> 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m 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	<1 25 3110 1010 1267 8046  current 6 0 2 current NONE NONE NONE NONE NONE NONE NONE NON	0 29 2838 899 1214 7200 history1 7 2 0 history1 LIGHT NONE NONE NONE NONE NONE NONE NONE NON	   history2   history2      
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 scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m 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	<1 25 3110 1010 1267 8046  current  6 0 2  current NONE NONE NONE NONE NONE NONE NONE NON	0 29 2838 899 1214 7200 history1 2 0 history1 LIGHT NONE NONE NONE NONE NONE NONE NONE NON	history2 history2



## **OIL ANALYSIS REPORT**



I LUIL	PROPERTIES	method				history2
Visc @	40°C cSt	ASTM D445	195	98.7	188	
SAM	PLE IMAGES	method	limit/base	current	history1	history2
Color				no image	no image	no image
Bottom				no image	no image	no image
GRA	PHS					
22 20 18 16 14 12 0 57 10 8 6 4 2 0 57 10 9 8 6 4 2 0 57 10 9 8 6 4 2 0 57 10 9 8 6 4 2 0 57 10 9 10 9 10 9 10 9 10 9 10 9 10 9 10	errous Metals		23 Dec26/23			
240 Abnorma	sity @ 40°C		Dec26/23			
220 - 200 - Base 180 - 180 - 1						
140			<b>_</b>			
080 000 1/23			Dec26/23			
Laboratory : WearC Sample No. : WC088 Lab Number : 060543 Unique Number : 108203 Test Package : CONS is sample report, contact CL	78Diagno327Diagnos11	ed : 08 J sed : 10 J stician : Jona	an 2024 an 2024 athan Hester		1700 S	<b>/IA - CAMDEN</b> GAND MILL RE CAMDEN, TN US 38320 :t: TRACY KEE

Contact/Location: TRACY KEE - COVCAMTN