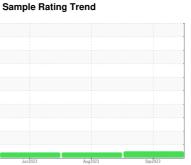


# **OIL ANALYSIS REPORT**







# CATERPILLAR 330C HOE 121

Component **Diesel Engine** 

PETRO CANADA 15W40 (--- GAL)

### 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

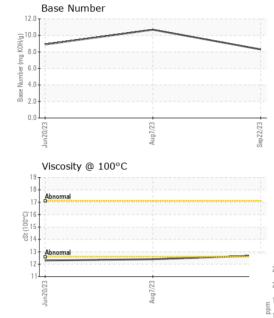
### **Fluid Condition**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM						
	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0822240	WC0517492	WC0822335
Sample Date		Client Info		22 Sep 2023	07 Aug 2023	20 Jun 2023
Machine Age	hrs	Client Info		8920	8725	8473
Oil Age	hrs	Client Info		245	252	263
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ATTENTION	MARGINAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	0.2
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	11	10	15
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	<1	2	1
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	2	1	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		5	5	12
Barium	ppm	ASTM D5185m		3	0	0
Molybdenum	ppm	ASTM D5185m		61	65	62
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m				
				908	951	968
Calcium	ppm	ASTM D5185m		908 1083	951 1163	968 1237
	ppm ppm	ASTM D5185m ASTM D5185m				
Phosphorus				1083	1163	1237
Phosphorus	ppm	ASTM D5185m		1083 954	1163 1086	1237 1094
Phosphorus Zinc	ppm ppm	ASTM D5185m ASTM D5185m	limit/base	1083 954 1151	1163 1086 1273	1237 1094 1361
Phosphorus Zinc Sulfur	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	1083 954 1151 2780	1163 1086 1273 3296	1237 1094 1361 3946
Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method		1083 954 1151 2780 current	1163 1086 1273 3296 history1	1237 1094 1361 3946 history2
Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m		1083 954 1151 2780 current	1163 1086 1273 3296 history1	1237 1094 1361 3946 history2
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	>25	1083 954 1151 2780 current 4	1163 1086 1273 3296 history1 6	1237 1094 1361 3946 history2 10
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20	1083 954 1151 2780 current 4 2	1163 1086 1273 3296 history1 6 0	1237 1094 1361 3946 history2 10 1
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	>25 >20 limit/base >3	1083 954 1151 2780 current 4 2 0	1163 1086 1273 3296 history1 6 0 1	1237 1094 1361 3946 history2 10 1 0
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method *ASTM D7844	>25 >20 limit/base >3	1083 954 1151 2780 current 4 2 0 current	1163 1086 1273 3296 history1 6 0 1 history1 0.3	1237 1094 1361 3946 history2 10 1 0 history2 0.3
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624	>25 >20 limit/base >3 >20	1083 954 1151 2780 current 4 2 0 current 0.2 6.5	1163 1086 1273 3296 history1 6 0 1 history1 0.3 6.6	1237 1094 1361 3946 history2 10 1 0 history2 0.3 6.7
Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm Abs/cm	ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D7415	>25 >20 limit/base >3 >20 >30	1083 954 1151 2780 current 4 2 0 current 0.2 6.5 18.2	1163 1086 1273 3296 history1 6 0 1 history1 0.3 6.6 18.8	1237 1094 1361 3946 history2 10 1 0 history2 0.3 6.7 19.3



## **OIL ANALYSIS REPORT**



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPER	TIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		12.7	<u>12.4</u>	<b>▲</b> 12.3
GRAPHS						
Iron (ppm)			100	Lead (ppm)		
Severe			100	Severe		
-			80	1		
Abnormal			E 60	Abnormal		
50			20			
0						
	Aug7/23 -				Aug7/23 -	2/23 -
Jun20/23	Aug		Sep22/23	Jun20/23	Aug	Sep22/23
Aluminum (ppm)			50	Chromium (p	pm)	
Severe			40	Severe		
Abnormal 20			E 20	Abnormal		
10+			10	1		
0	-			1:		
Jun20/23	Aug7/23 -		Sep22/23	Jun20/23	Aug7/23	Sep 22/23
	Aug		Sep			Sept
Copper (ppm)			80	Silicon (ppm)		
Several						
00			E 40	Abnormal		
00-			20			
0						
Jun20/23	Aug7/23		Sep22/23 -	Jun20/23	Aug7/23	Sep22/23
			S			S
Viscosity @ 100°(	ن 			Base Numbe	r 	
			0.01 (R) 8.0 B	1		
Abnormal			¥ 8.0	)		

6.0 4.0 8g 2.0

0.0

: 16 Oct 2023

: 17 Oct 2023





Laboratory Sample No. Lab Number

: 05980231 Unique Number : 10697526

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: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0822240 Received Diagnosed

Diagnostician : Wes Davis Test Package : MOB 1 (Additional Tests: TBN)

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

**C.L. BENTON & SONS INC** 706 38TH AVE N

MYRTLE BEACH, SC US 29577 Contact: NEIL

neil@clbenton.com

T: F:

Report Id: CLBMYR [WUSCAR] 05980231 (Generated: 10/27/2023 05:56:43) Rev: 1

Contact/Location: NEIL ? - CLBMYR