



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**CATERPILLAR 321 DLCR EX-69 (S/N MPG00889)**  
 Component  
**Diesel Engine**  
 Fluid  
**DURAMAX 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DC0034643</b>	DC05888256	DC0021452
Sample Date		Client Info		<b>19 Jun 2024</b>	20 Jun 2023	19 Apr 2022
Machine Age	hrs	Client Info		<b>6180</b>	5662	5143
Oil Age	hrs	Client Info		<b>500</b>	500	500
Filter Age	hrs	Client Info		<b>500</b>	500	500
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>11</b>	13	12
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>25	<b>2</b>	0	1
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	1
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	<1	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	1	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

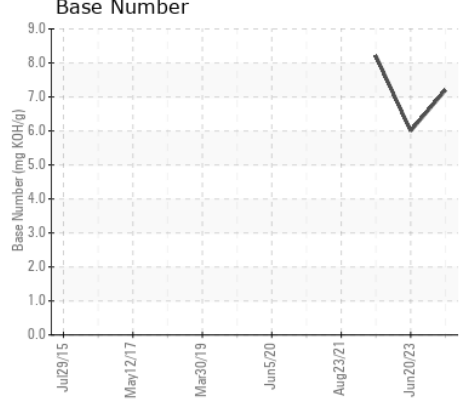
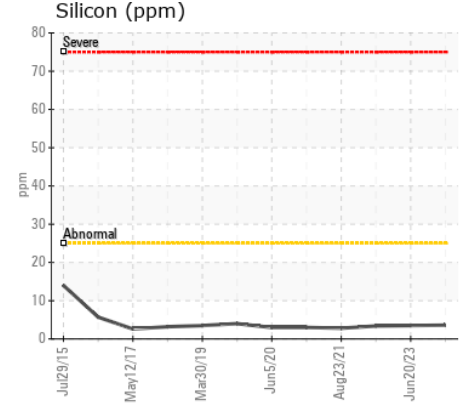
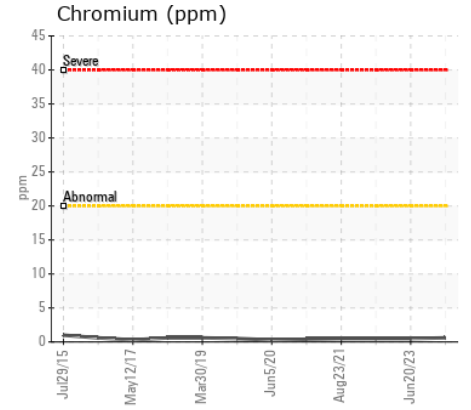
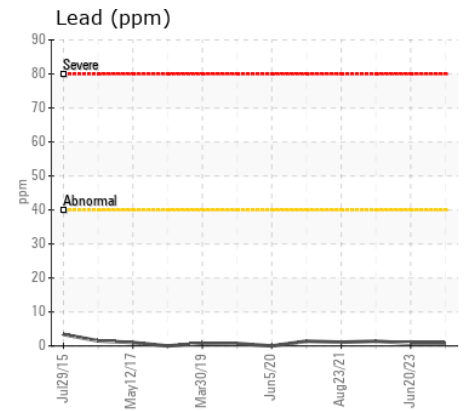
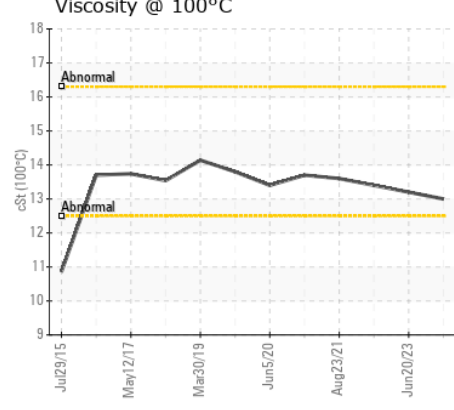
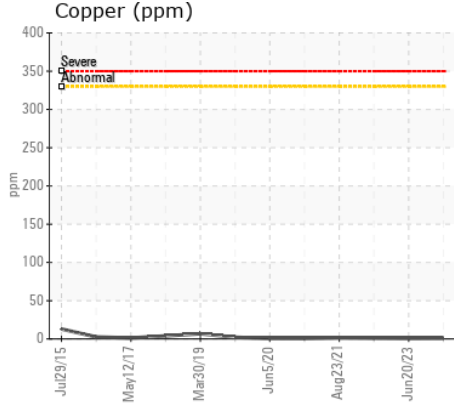
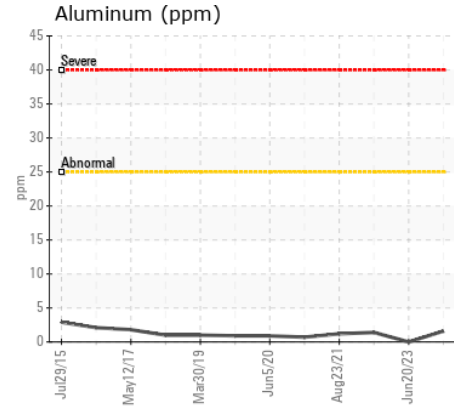
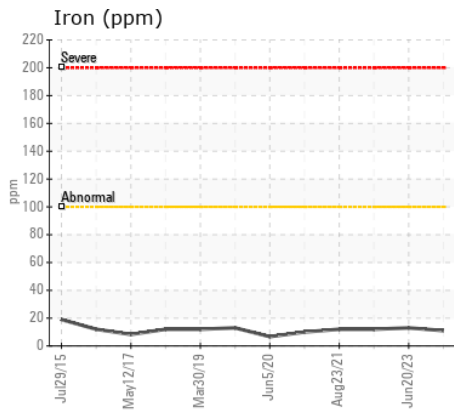
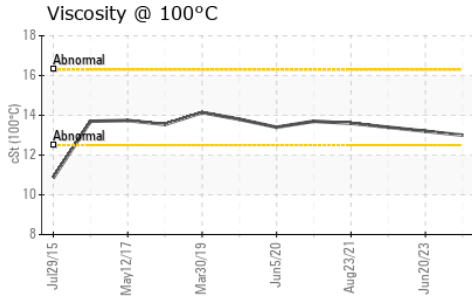
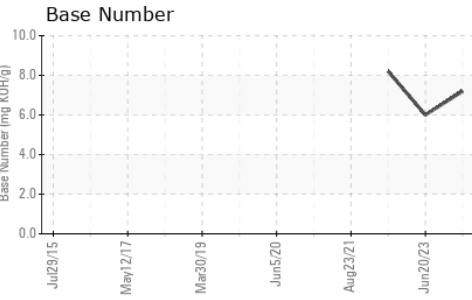
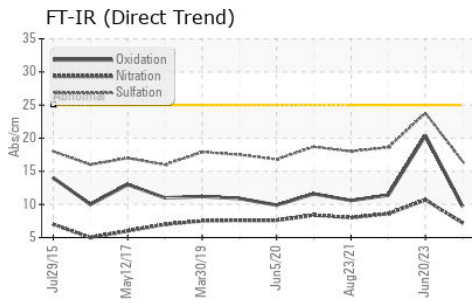
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>4</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	1.1	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.2</b>	10.7	8.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.5</b>	23.8	18.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## 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.

Sodium	ppm	ASTM D5185m		<b>2</b>	<1	1
Boron	ppm	ASTM D5185m		<b>3</b>	3	9
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>3</b>	3	4
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>42</b>	38	59
Calcium	ppm	ASTM D5185m		<b>2268</b>	2349	2541
Phosphorus	ppm	ASTM D5185m		<b>864</b>	897	970
Zinc	ppm	ASTM D5185m		<b>1041</b>	1074	1177
Sulfur	ppm	ASTM D5185m		<b>3704</b>	4077	3539
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.7</b>	20.4	11.4
Base Number (BN)	mg KOH/g	ASTM D2896		<b>7.2</b>	6.0	8.2
Visc @ 100°C	cSt	ASTM D445		<b>13.0</b>	13.2	13.4



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DC0034643  
**Lab Number** : 06232073  
**Unique Number** : 11115566  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**ROSS CONTRACTING INC.**  
 1007 RISING RIDGE ROAD  
 MOUNT AIRY, MD  
 US 21771

**Received** : 10 Jul 2024  
**Tested** : 11 Jul 2024  
**Diagnosed** : 11 Jul 2024 - Wes Davis

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