



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ATTENTION

Machine Id  
**CATERPILLAR OFF ROAD 156**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check for the source of the coolant leak. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0878816</b>	WC0868192	WC0517502
Sample Date		Client Info		<b>15 Feb 2024</b>	20 Nov 2023	15 Aug 2023
Machine Age	hrs	Client Info		<b>1258</b>	1024	12640
Oil Age	hrs	Client Info		<b>234</b>	247	250
Filter Age	hrs	Client Info		<b>234</b>	247	250
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>26</b>	30	37
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>1</b>	1	3
Lead	ppm	ASTM D5185m	>40	<b>15</b>	1	2
Copper	ppm	ASTM D5185m	>330	<b>20</b>	3	5
Tin	ppm	ASTM D5185m	>15	<b>1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

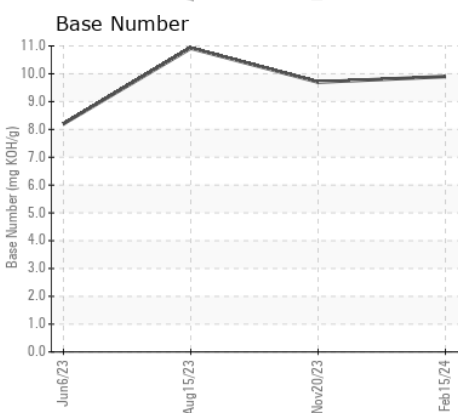
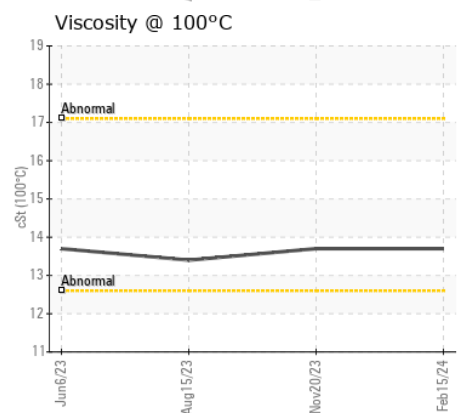
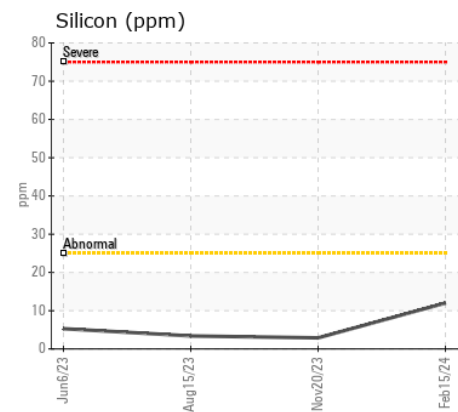
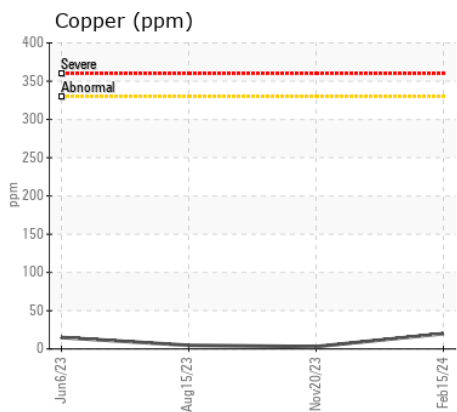
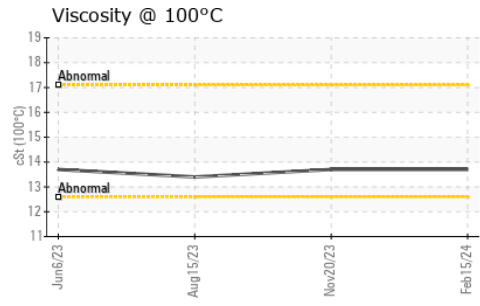
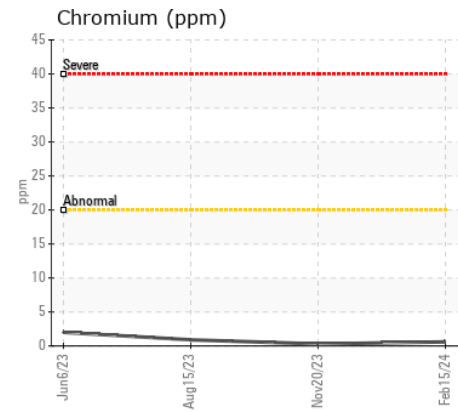
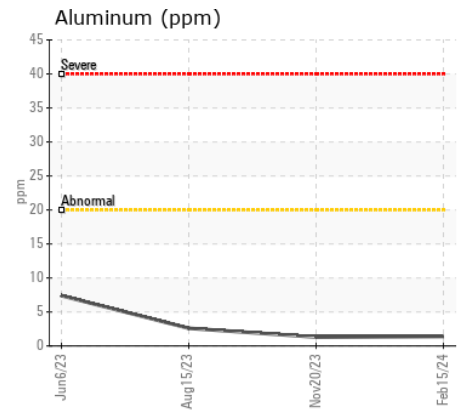
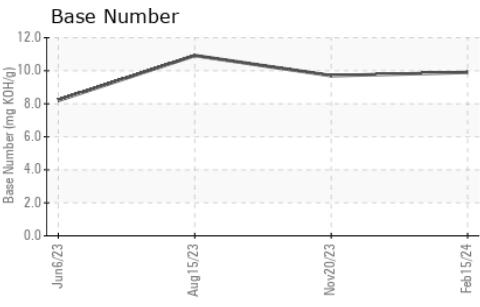
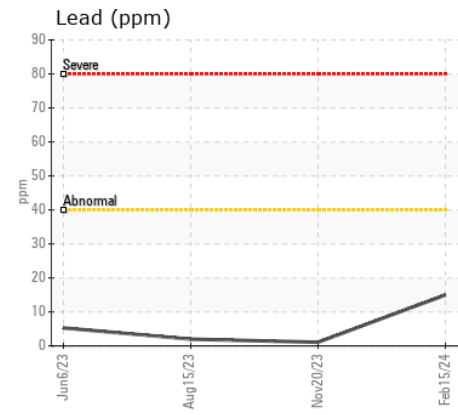
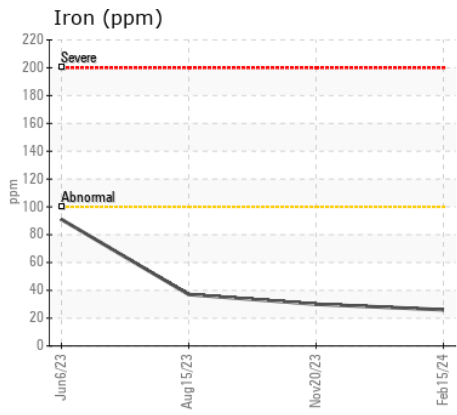
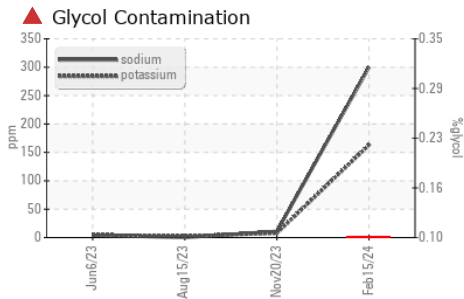
Test for glycol is positive. There is a high concentration of glycol present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>12</b>	3	3
Potassium	ppm	ASTM D5185m	>20	<b>▲ 163</b>	8	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	%	*ASTM D2982		<b>▲ 0.10</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.7	1.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.2</b>	7.6	7.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.3</b>	18.2	20.0
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 oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>● 300</b>	11	<1
Boron	ppm	ASTM D5185m		<b>22</b>	5	6
Barium	ppm	ASTM D5185m		<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m		<b>56</b>	58	61
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>879</b>	867	868
Calcium	ppm	ASTM D5185m		<b>1014</b>	1122	1159
Phosphorus	ppm	ASTM D5185m		<b>1259</b>	951	1030
Zinc	ppm	ASTM D5185m		<b>1194</b>	1161	1201
Sulfur	ppm	ASTM D5185m		<b>2979</b>	3139	3052
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.6</b>	12.7	14.3
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.9</b>	9.7	10.92
Visc @ 100°C	cSt	ASTM D445		<b>13.7</b>	13.7	13.4



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0878816 **Received** : 29 Feb 2024  
**Lab Number** : 06105015 **Tested** : 01 Mar 2024  
**Unique Number** : 10903245 **Diagnosed** : 01 Mar 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: Glycol, TBN )

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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)