



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CUMMINS 229
Component
Rear Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0889098	WC0866504	WC0866562
Sample Date		Client Info		16 Jan 2024	04 Dec 2023	23 Oct 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9186	9075	10970
Filter Age	kms	Client Info		9186	9075	10970
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	5	6	13
Chromium	ppm	ASTM D5185(m)	>20	0	0	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	2	1	3
Lead	ppm	ASTM D5185(m)	>40	<1	0	<1
Copper	ppm	ASTM D5185(m)	>330	4	3	6
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

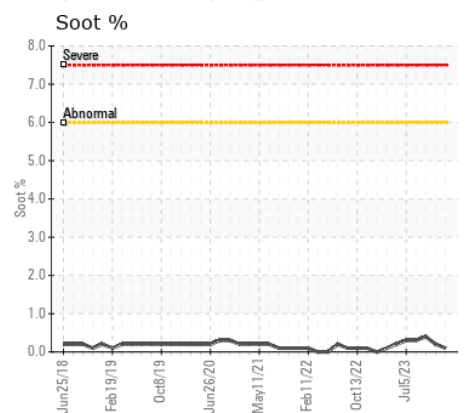
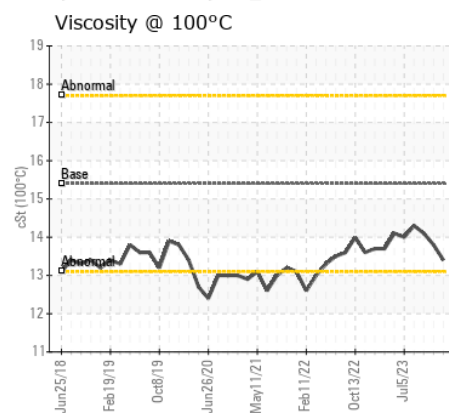
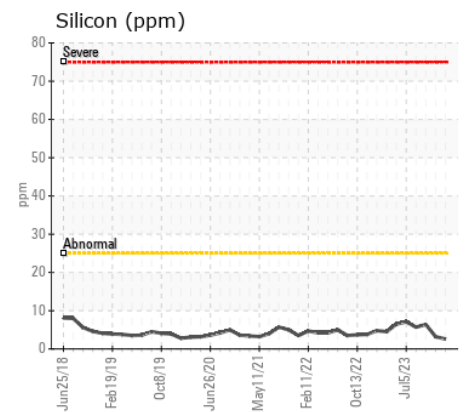
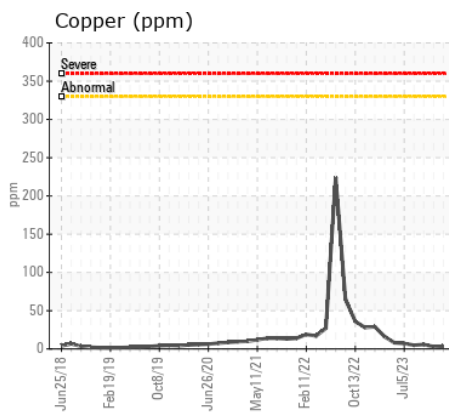
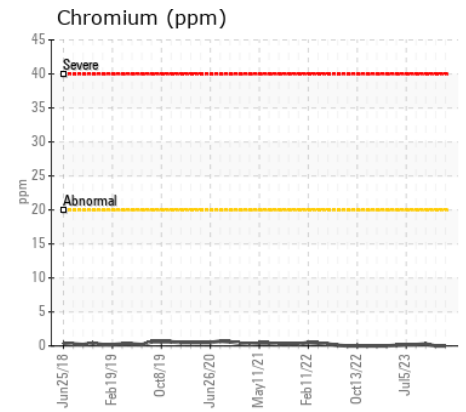
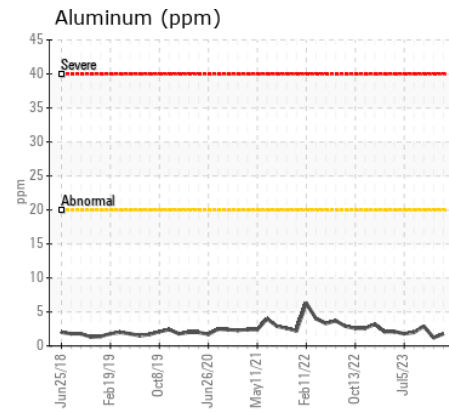
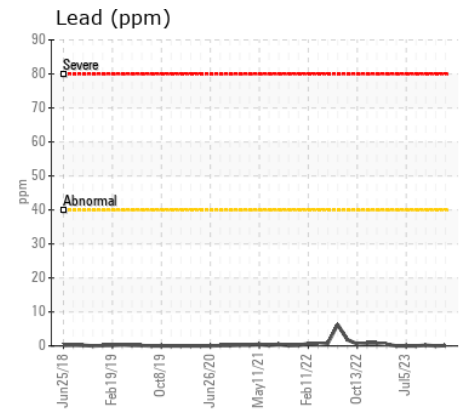
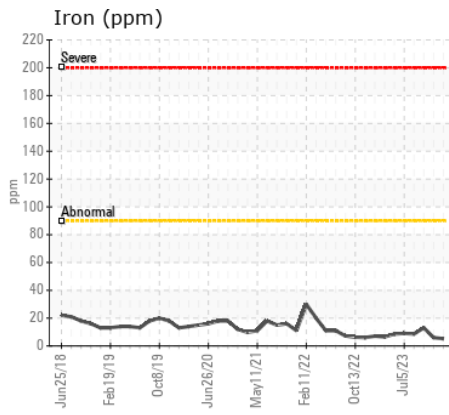
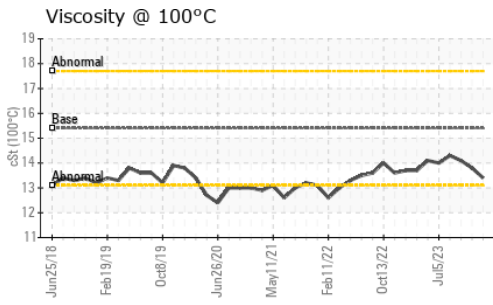
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	3	3	6
Potassium	ppm	ASTM D5185(m)	>20	6	6	8
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>6	0.1	0.2	0.4
Nitration	Abs/cm	ASTM D7624*	>20	8.5	8.6	9.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.0	22.4	25.7
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)	>192	5	7	18
Boron	ppm	ASTM D5185(m)		126	120	77
Barium	ppm	ASTM D5185(m)		0	<1	<1
Molybdenum	ppm	ASTM D5185(m)		1	<1	<1
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		21	13	16
Calcium	ppm	ASTM D5185(m)	3780	2154	2184	2150
Phosphorus	ppm	ASTM D5185(m)	1370	951	946	875
Zinc	ppm	ASTM D5185(m)	1500	1121	1156	1049
Sulfur	ppm	ASTM D5185(m)	3800	3004	2865	2758
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.9	19.0	24.9
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.4	13.8	14.1



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889098 **Received** : 19 Jan 2024
Lab Number : 02609876 **Diagnosed** : 19 Jan 2024
Unique Number : 5710962 **Diagnostician** : Wes Davis
Test Package : MOB 1

CITY OF THUNDER BAY
 AUTO MAINTENANCE STORES, 570 FORT WILLIAM ROAD
 THUNDER BAY, ON
 CA P7B 2Z8
 Contact: Sean Malcolm
 sean.malcolm@thunderbay.ca
 T: (807)684-2716
 F: (807)344-0237

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.