



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CUMMINS 228
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		WC0889140	WC0889173	WC0866466
Sample Date		Client Info		07 Feb 2024	21 Dec 2023	03 Nov 2023
Machine Age	kms	Client Info		0	0	0
Oil Age	kms	Client Info		9042	8986	9863
Filter Age	kms	Client Info		9042	8986	9863
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	5	7
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>2	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	1	1	2
Lead	ppm	ASTM D5185(m)	>40	0	0	0
Copper	ppm	ASTM D5185(m)	>330	2	2	3
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

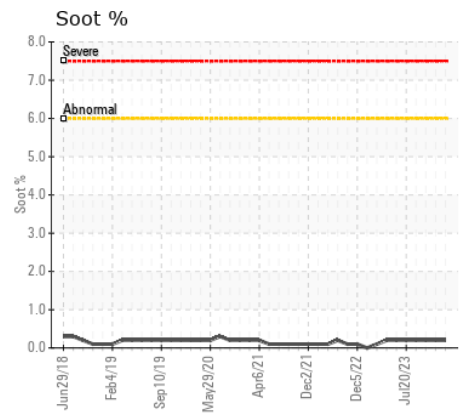
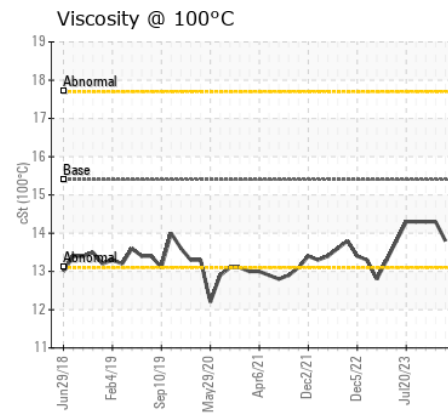
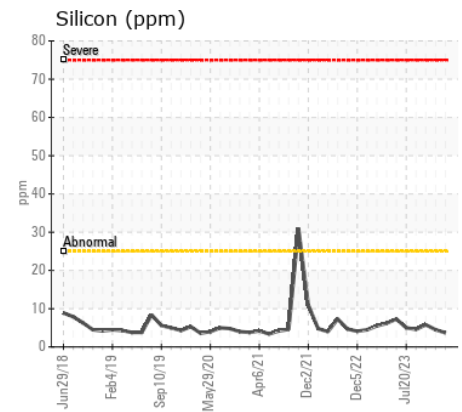
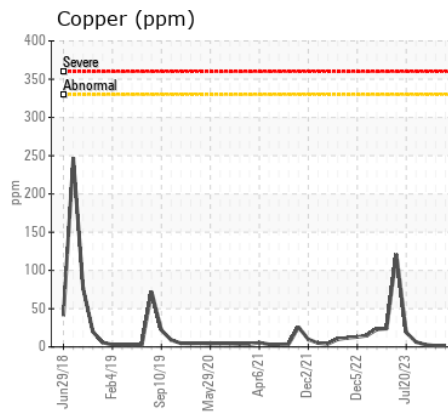
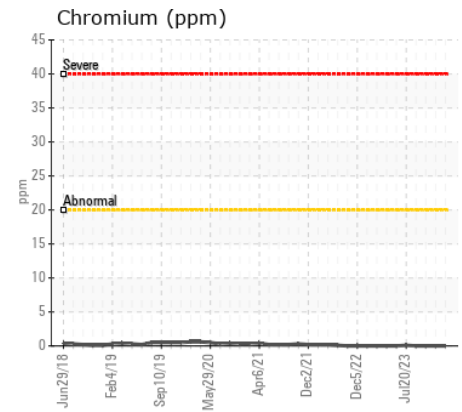
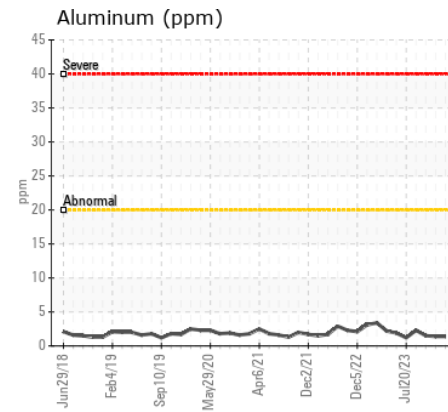
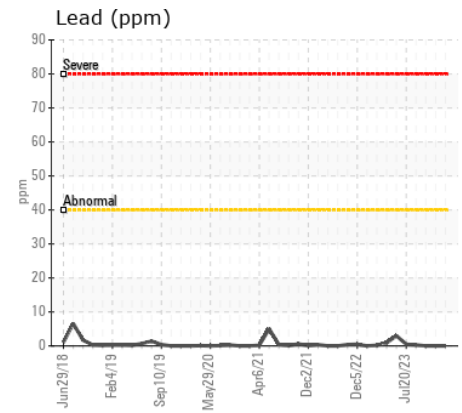
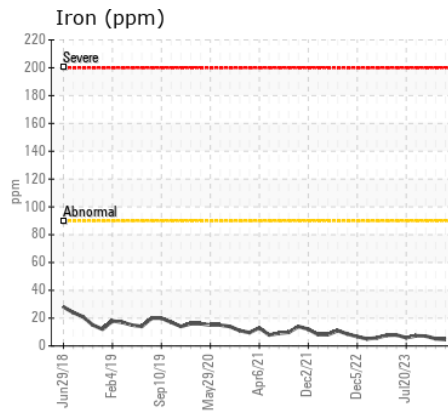
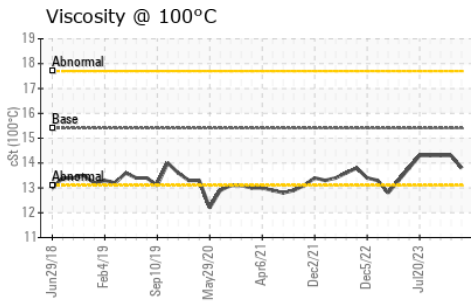
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	4	4	6
Potassium	ppm	ASTM D5185(m)	>20	6	8	4
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	0.2	0.2	0.2
Nitration	Abs/cm	ASTM D7624*	>20	8.6	8.6	9.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.4	22.3	23.5
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
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	2	2	3
Boron	ppm	ASTM D5185(m)		105	111	101
Barium	ppm	ASTM D5185(m)		0	0	<1
Molybdenum	ppm	ASTM D5185(m)		1	<1	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		20	15	14
Calcium	ppm	ASTM D5185(m)	3780	2193	2219	2214
Phosphorus	ppm	ASTM D5185(m)	1370	936	961	921
Zinc	ppm	ASTM D5185(m)	1500	1121	1152	1172
Sulfur	ppm	ASTM D5185(m)	3800	2970	3056	2817
Oxidation	Abs/.1mm	ASTM D7414*	>25	18.5	18.5	20.6
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.8	14.3	14.3



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0889140 **Received** : 20 Feb 2024
Lab Number : 02616569 **Tested** : 20 Feb 2024
Unique Number : 5733679 **Diagnosed** : 20 Feb 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: Visual)

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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.