



# OIL ANALYSIS REPORT

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

Machine Id  
**167**  
Component  
**Rear Diesel Engine**  
Fluid  
**ESSO XD-3 EXTRA 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check the fuel injection system. 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>WC0889106</b>	WC0866615	WC0866496
Sample Date		Client Info		<b>29 Dec 2023</b>	19 Dec 2023	29 Nov 2023
Machine Age	kms	Client Info		<b>0</b>	0	0
Oil Age	kms	Client Info		<b>6304</b>	4579	9731
Filter Age	kms	Client Info		<b>6304</b>	4579	9731
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	<b>9</b>	7	16
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	<b>1</b>	2	1
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>330	<b>&lt;1</b>	<1	<1
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## CONTAMINATION

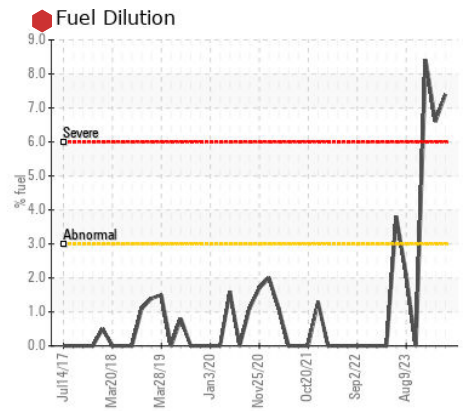
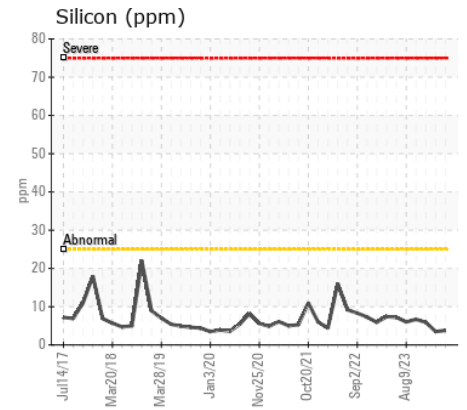
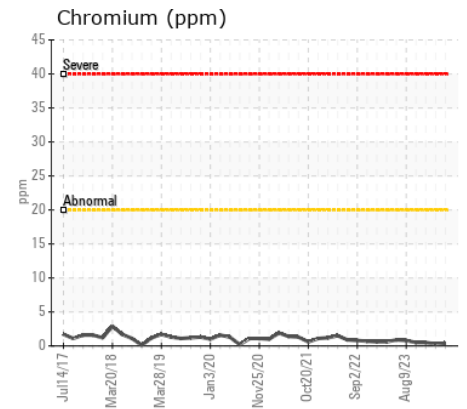
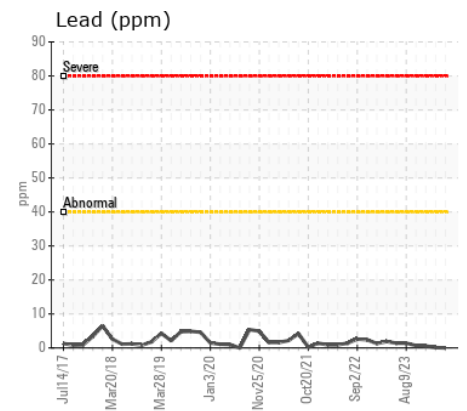
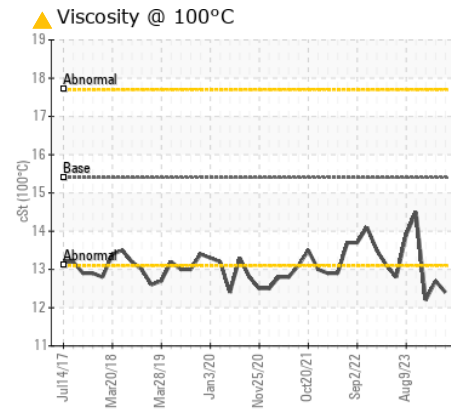
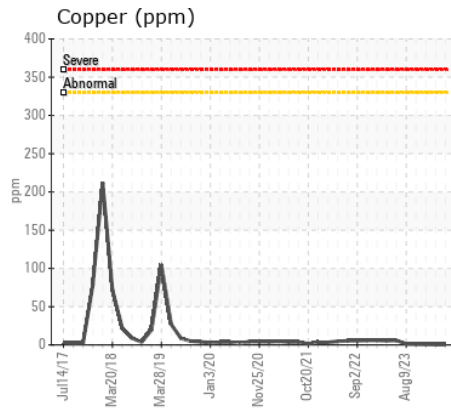
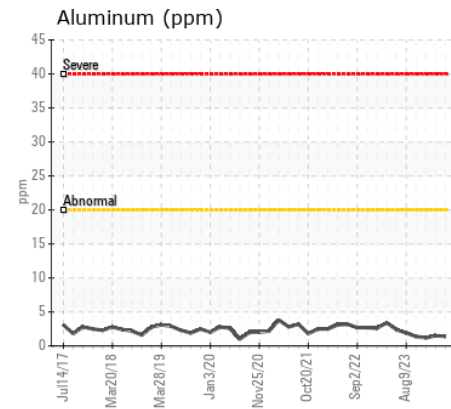
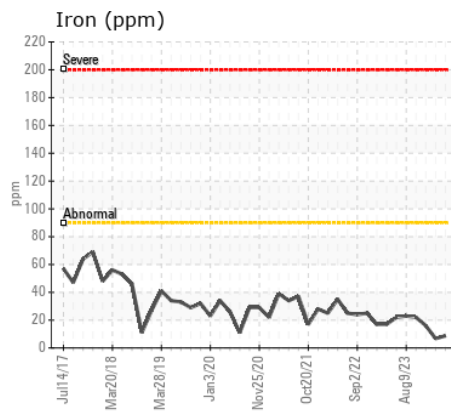
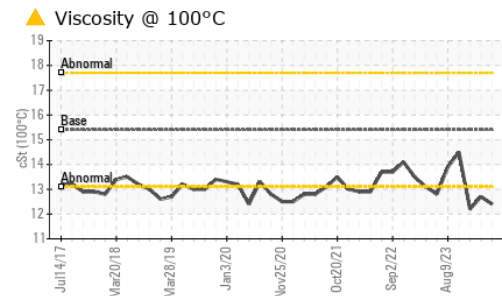
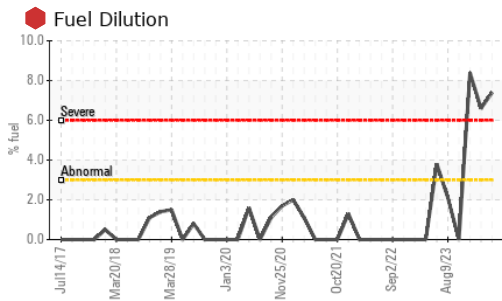
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185(m)	>25	<b>4</b>	4	6
Potassium	ppm	ASTM D5185(m)	>20	<b>6</b>	6	21
Fuel	%	ASTM D7593*	>3.0	<b>7.4</b>	6.6	8.4
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	0.0
Soot %	%	ASTM D7844*	>6	<b>0.9</b>	0.7	1.2
Nitration	Abs/cm	ASTM D7624*	>20	<b>9.9</b>	9.1	11.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>23.8</b>	22.8	27.6
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)	>192	<b>2</b>	2	3
Boron	ppm	ASTM D5185(m)		<b>82</b>	98	59
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>14</b>	13	14
Calcium	ppm	ASTM D5185(m)	3780	<b>2063</b>	2087	2028
Phosphorus	ppm	ASTM D5185(m)	1370	<b>902</b>	909	817
Zinc	ppm	ASTM D5185(m)	1500	<b>1075</b>	1069	1001
Sulfur	ppm	ASTM D5185(m)	3800	<b>2878</b>	2846	2614
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>19.6</b>	18.7	25.2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	<b>12.4</b>	12.7	12.2



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0889106 **Received** : 05 Jan 2024  
**Lab Number** : 02606751 **Diagnosed** : 08 Jan 2024  
**Unique Number** : 5707837 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: PercentFuel )

**CITY OF THUNDER BAY**  
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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.