



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id  
**TOYOTA LAND CRUISER FMC031**

Component  
**Diesel Engine**

Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC</b>	WC0892400	WC0695805
Sample Date		Client Info		<b>03 Mar 2024</b>	04 Feb 2024	25 Nov 2022
Machine Age	hrs	Client Info		<b>0</b>	7	131
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	Changed	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	SEVERE	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	<b>17</b>	263	55
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	12	1
Nickel	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	7	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>8</b>	135	7
Lead	ppm	ASTM D5185(m)	>40	<b>&lt;1</b>	1	2
Copper	ppm	ASTM D5185(m)	>330	<b>10</b>	49	84
Tin	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	9	7
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## CONTAMINATION

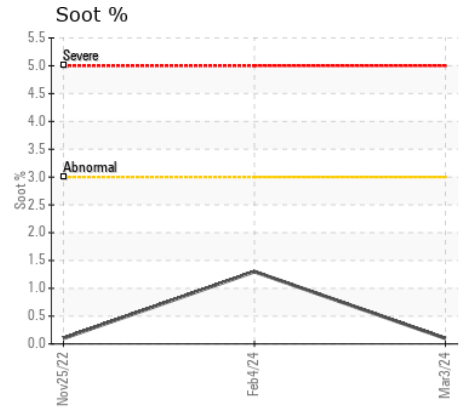
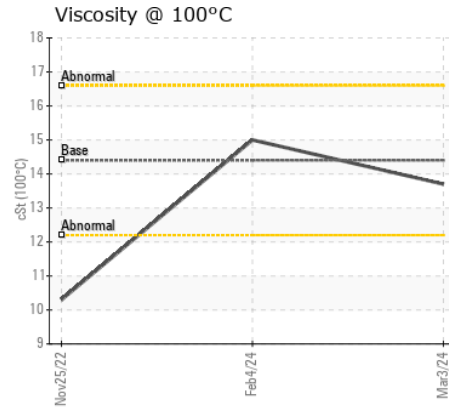
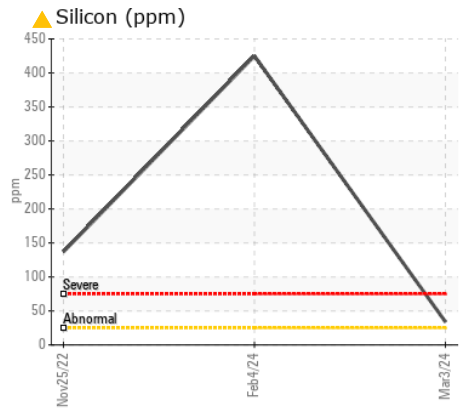
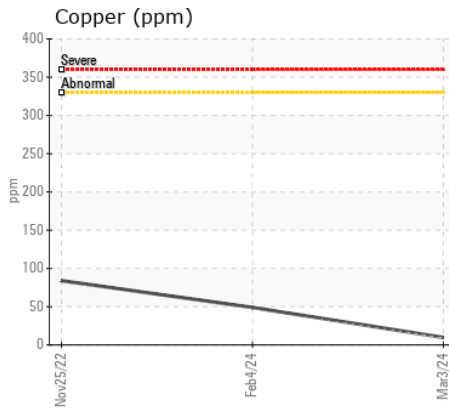
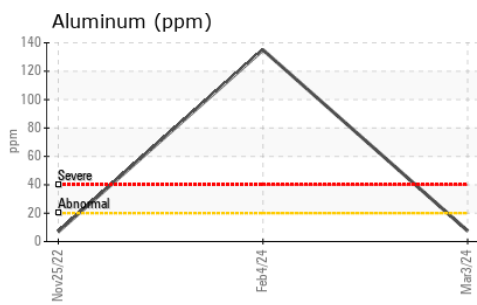
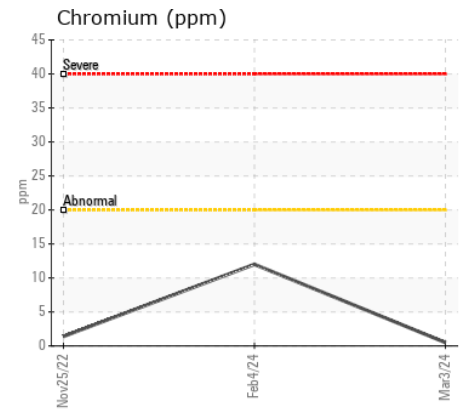
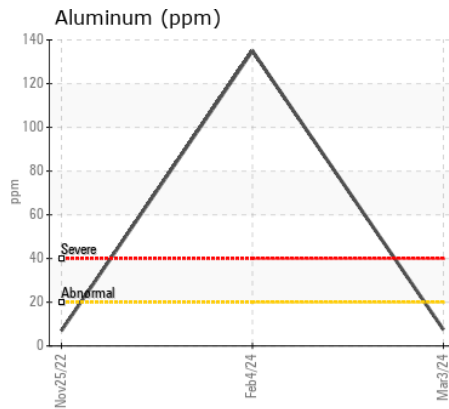
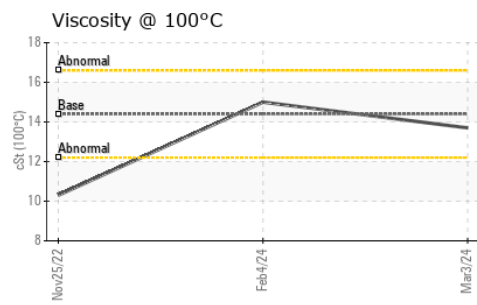
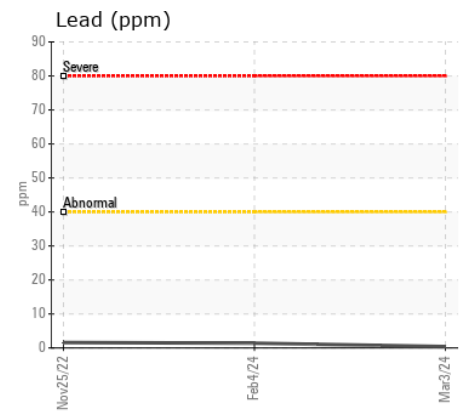
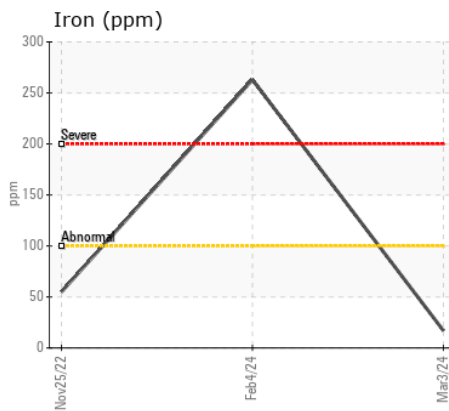
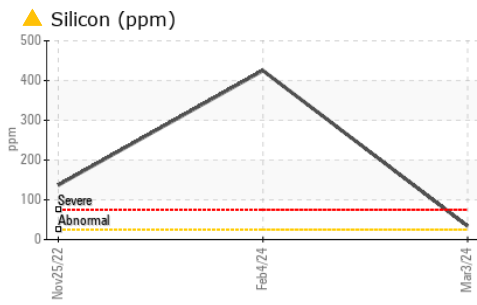
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185(m)	>25	<b>▲ 34</b>	▲ 425	137
Potassium	ppm	ASTM D5185(m)	>20	<b>3</b>	64	<1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	0.9
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	0.0	NEG
Soot %	%	ASTM D7844*	>3	<b>0.1</b>	1.3	0.1
Nitration	Abs/cm	ASTM D7624*	>20	<b>5.3</b>	10.6	7.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>22.3</b>	27.5	18.9
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)	>158	<b>4</b>	51	2
Boron	ppm	ASTM D5185(m)	250	<b>50</b>	19	28
Barium	ppm	ASTM D5185(m)	10	<b>&lt;1</b>	5	3
Molybdenum	ppm	ASTM D5185(m)	100	<b>38</b>	50	105
Manganese	ppm	ASTM D5185(m)		<b>0</b>	4	2
Magnesium	ppm	ASTM D5185(m)	450	<b>492</b>	728	69
Calcium	ppm	ASTM D5185(m)	3000	<b>1706</b>	1900	4040
Phosphorus	ppm	ASTM D5185(m)	1150	<b>748</b>	788	1192
Zinc	ppm	ASTM D5185(m)	1350	<b>864</b>	1017	1407
Sulfur	ppm	ASTM D5185(m)	4250	<b>2223</b>	2058	3728
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>19.8</b>	24.1	9.1
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	<b>13.7</b>	15.0	10.3



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC  
**Lab Number** : 02619491  
**Unique Number** : 5736601  
**Test Package** : MOB 1  
**Received** : 04 Mar 2024  
**Tested** : 04 Mar 2024  
**Diagnosed** : 04 Mar 2024 - Kevin Marson

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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.