



# OIL ANALYSIS REPORT

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

Machine Id  
**BOBCAT L-10**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 10W30 (5 LTR)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0922836</b>	WC0772788	WC0550247
Sample Date		Client Info		<b>04 Jul 2024</b>	08 Mar 2024	06 Dec 2022
Machine Age	hrs	Client Info		<b>1483</b>	1395	1128
Oil Age	hrs	Client Info		<b>260</b>	172	98
Filter Age	hrs	Client Info		<b>260</b>	172	98
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	<b>21</b>	11	16
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>2</b>	2	4
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>330	<b>2</b>	1	2
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>VLITE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---

## CONTAMINATION

Fuel content negligible. There is no indication of any contamination in the oil.

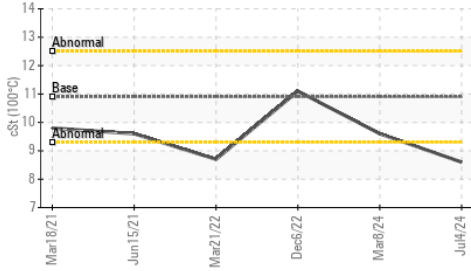
Silicon	ppm	ASTM D5185(m)	>25	<b>3</b>	3	4
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	2	1
Fuel	%	ASTM D7593*	>5	<b>0.5</b>	▲ 2.3	1.8
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	ASTM D7844*	>3	<b>0.3</b>	0.1	0
Nitration	Abs/cm	ASTM D7624*	>20	<b>6.6</b>	7.1	7.7
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>14.9</b>	15.3	18.3
Silt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

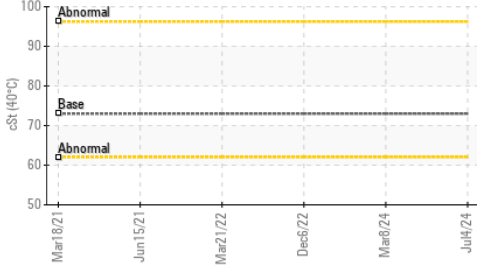
Viscosity of sample indicates oil is within SAE 20 range, advise investigate. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<b>2</b>	<1	2
Boron	ppm	ASTM D5185(m)	250	<b>23</b>	● 39	57
Barium	ppm	ASTM D5185(m)	10	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	100	<b>43</b>	62	9
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185(m)	450	<b>249</b>	358	22
Calcium	ppm	ASTM D5185(m)	3000	<b>1060</b>	● 1386	2197
Phosphorus	ppm	ASTM D5185(m)	1150	<b>604</b>	708	1002
Zinc	ppm	ASTM D5185(m)	1350	<b>705</b>	790	1069
Sulfur	ppm	ASTM D5185(m)	4250	<b>1697</b>	2141	3241
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>7.9</b>	8.5	12.3
Visc @ 40°C	cSt	ASTM D7279(m)	73	▲ <b>53.9</b>	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	10.9	▲ <b>8.6</b>	▲ 9.6	▲ 11.1
Viscosity Index (VI)	Scale	ASTM D2270*	138	<b>135</b>	---	---

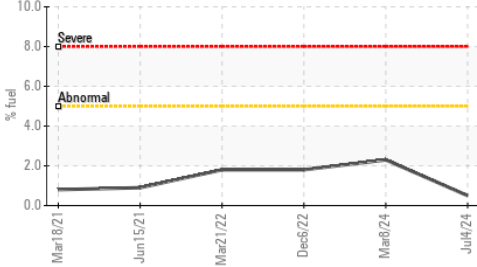
▲ Viscosity @ 100°C



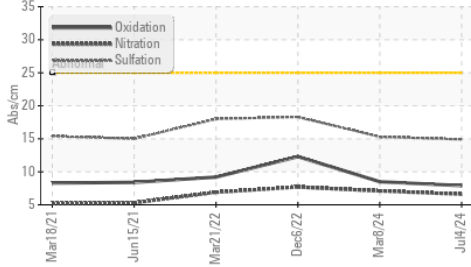
▲ Viscosity @ 40°C



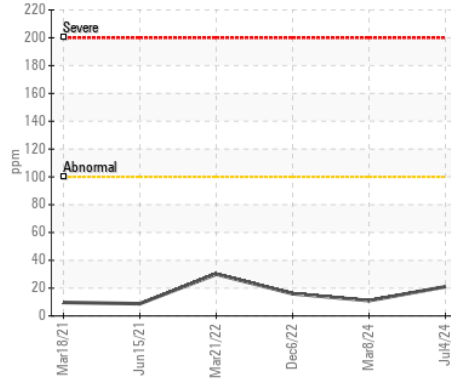
Fuel Dilution



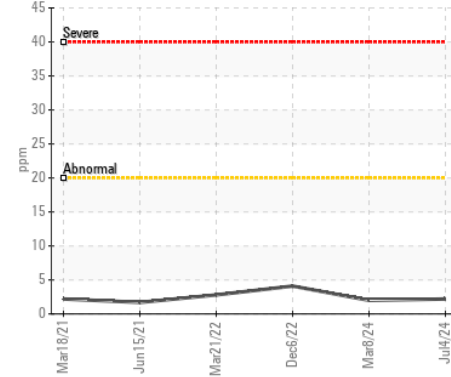
FT-IR (Direct Trend)



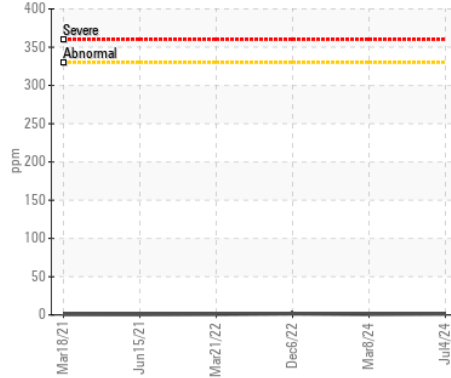
Iron (ppm)



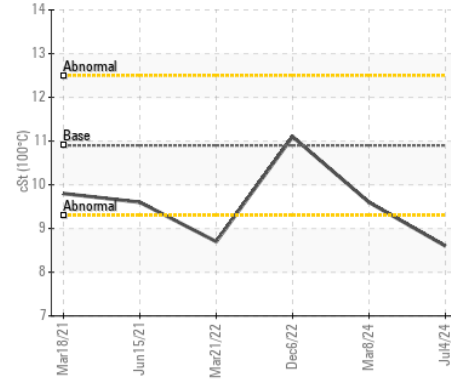
Aluminum (ppm)



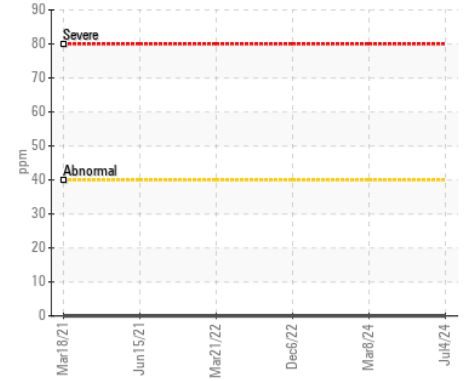
Copper (ppm)



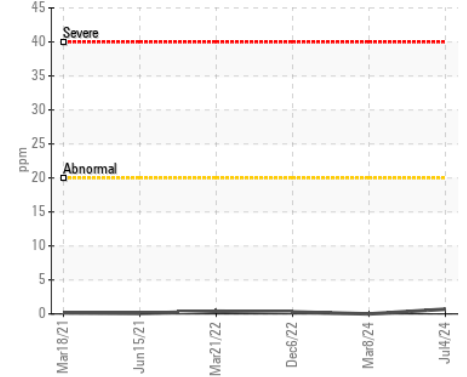
▲ Viscosity @ 100°C



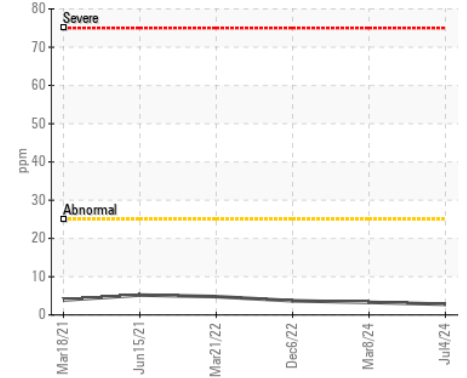
Lead (ppm)



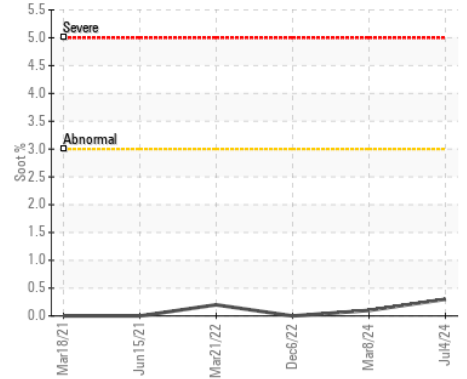
Chromium (ppm)



Silicon (ppm)



Soot %



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0922836  
**Lab Number** : 02645731  
**Unique Number** : 5803270  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, KV40, PercentFuel, VI, Visual )

**MIDDLESEX COUNTY ROAD DEPARTMENT**  
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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.*