



TRAAP

Texas Refinery Advanced Analysis Program

# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**BOBCAT 773 SKID 773 (S/N S19020476)**

Component  
**Diesel Engine**

Fluid  
**TRC MOLY XL PRO-SPEC IV XP 15W40 (2 GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TR06031820</b>	TR05957174	TR05887538
Sample Date		Client Info		<b>04 Dec 2023</b>	13 Sep 2023	23 Jun 2023
Machine Age	hrs	Client Info		<b>5500</b>	5380	5250
Oil Age	hrs	Client Info		<b>900</b>	600	550
Filter Age	hrs	Client Info		<b>900</b>	600	550
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>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal for time on oil.

Iron	ppm	ASTM D5185m	>100	<b>31</b>	28	21
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	1	1
Nickel	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>8</b>	4	6
Lead	ppm	ASTM D5185m	>40	<b>0</b>	2	<1
Copper	ppm	ASTM D5185m	>330	<b>149</b>	159	116
Tin	ppm	ASTM D5185m	>15	<b>1</b>	1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

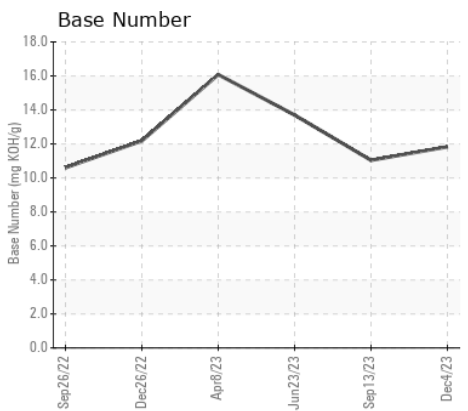
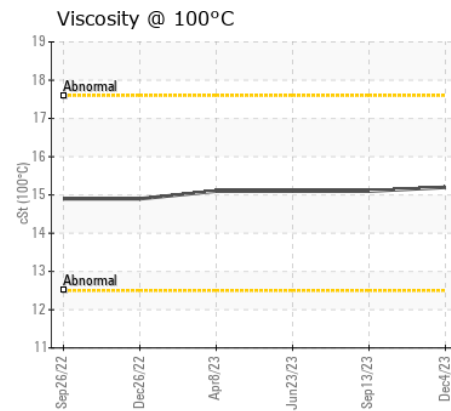
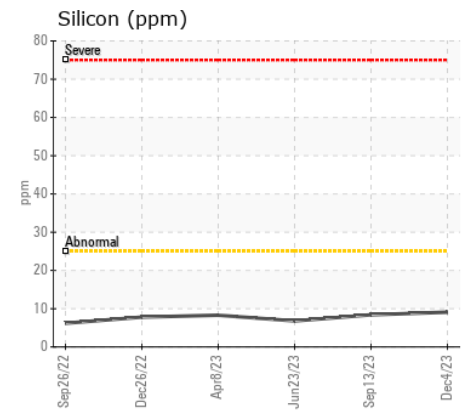
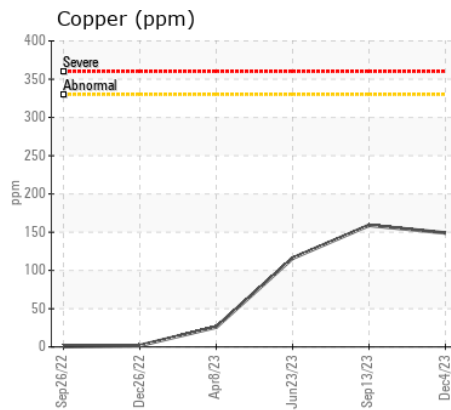
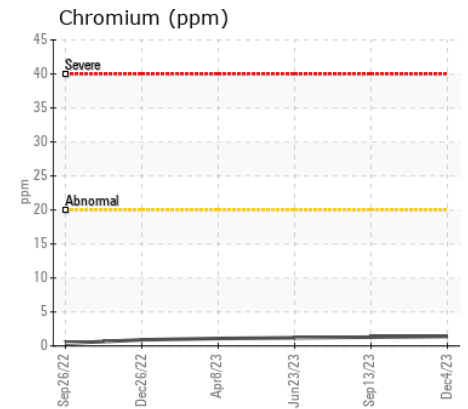
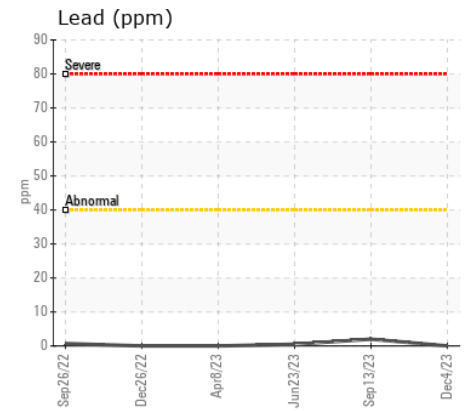
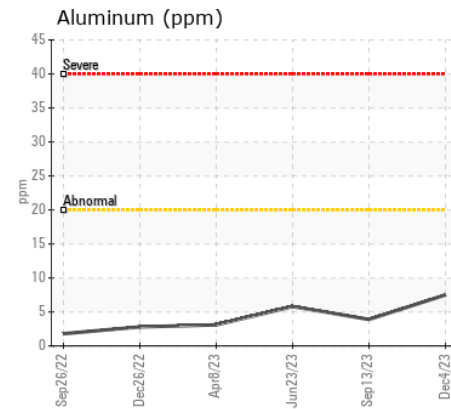
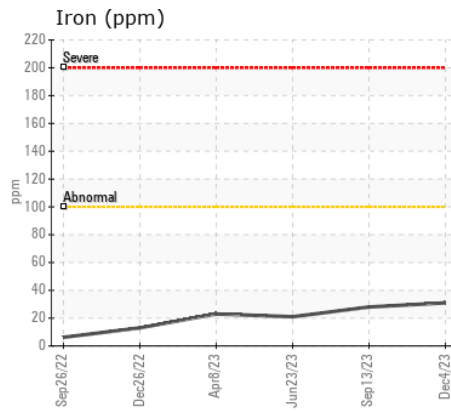
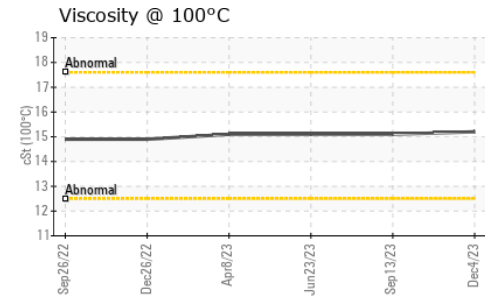
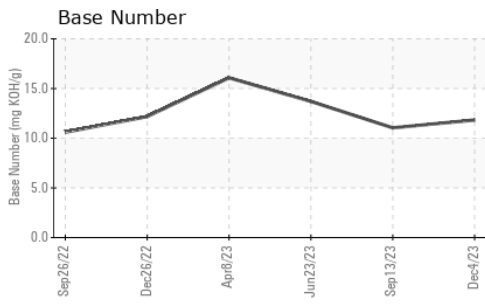
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>9</b>	8	7
Potassium	ppm	ASTM D5185m	>20	<b>27</b>	29	26
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
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>	0.2	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>19.7</b>	11.5	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>35.5</b>	25.5	21.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>21</b>	22	20
Boron	ppm	ASTM D5185m		<b>24</b>	24	23
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>117</b>	122	115
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>22</b>	23	20
Calcium	ppm	ASTM D5185m		<b>4310</b>	4610	4387
Phosphorus	ppm	ASTM D5185m		<b>971</b>	988	960
Zinc	ppm	ASTM D5185m		<b>1164</b>	1216	1185
Sulfur	ppm	ASTM D5185m		<b>4124</b>	4937	5201
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>29.3</b>	14.0	13.4
Base Number (BN)	mg KOH/g	ASTM D2896		<b>11.83</b>	11.04	13.70
Visc @ 100°C	cSt	ASTM D445		<b>15.2</b>	15.1	15.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR06031820  
**Lab Number** : 06031820  
**Unique Number** : 10781611  
**Test Package** : MOB 2  
**Received** : 11 Dec 2023  
**Tested** : 15 Dec 2023  
**Diagnosed** : 15 Dec 2023 - Jonathan Hester

**SPRAGUE RANCH**  
 6907 ROUTE 14  
 BROOKFIELD, VT  
 US 05036  
 Contact: SCOTT BURRELL

To discuss this sample report, contact Customer Service at 1-800-827-0711.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

T:  
F: