



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
BOBCAT S590 SKID 22

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (3 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05957171	TR05957168	TR05824510
Sample Date		Client Info		13 Sep 2023	23 Jun 2023	08 Apr 2023
Machine Age	hrs	Client Info		1150	925	750
Oil Age	hrs	Client Info		900	500	500
Filter Age	hrs	Client Info		900	500	500
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	70	50	40
Chromium	ppm	ASTM D5185m	>20	3	2	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	4	3
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	23	13	10
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

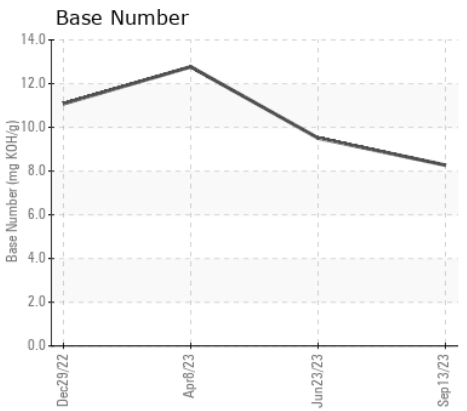
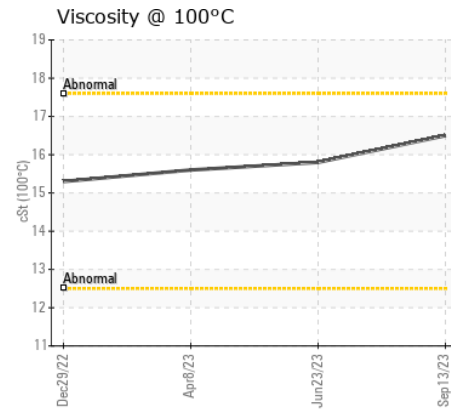
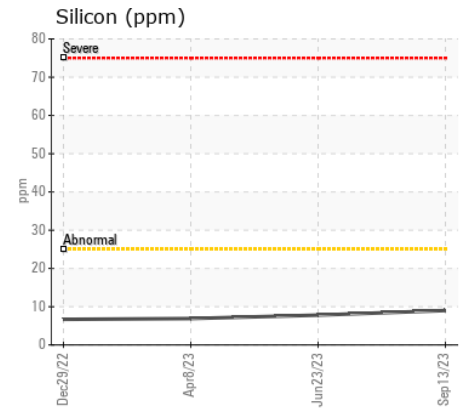
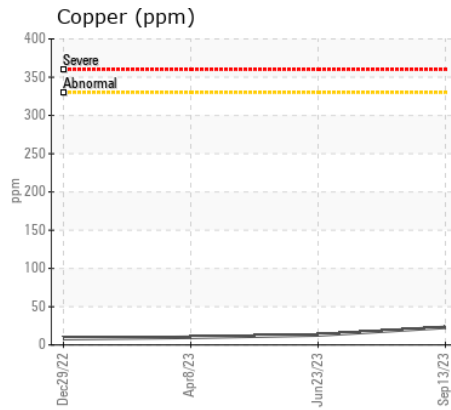
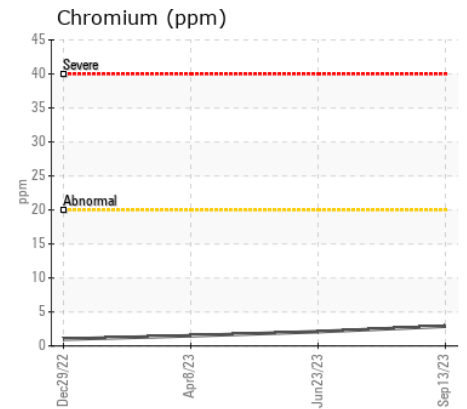
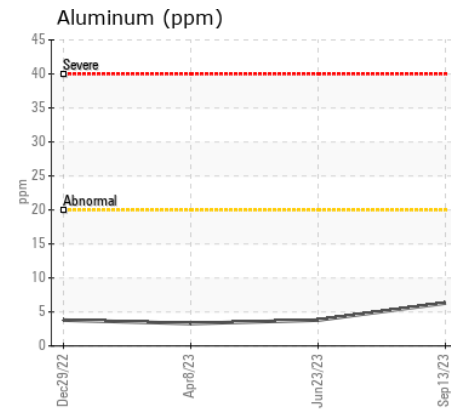
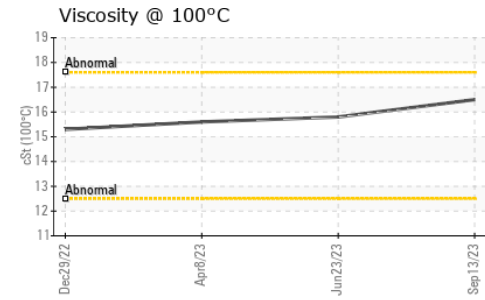
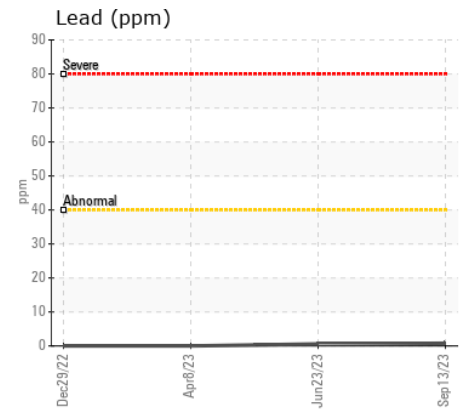
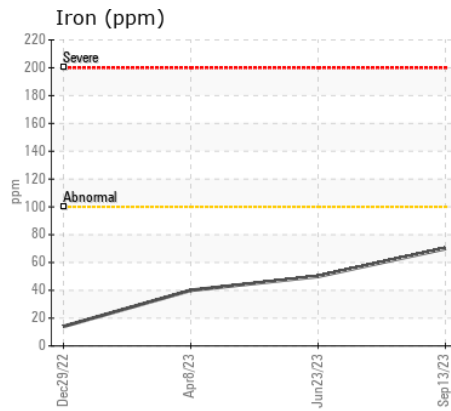
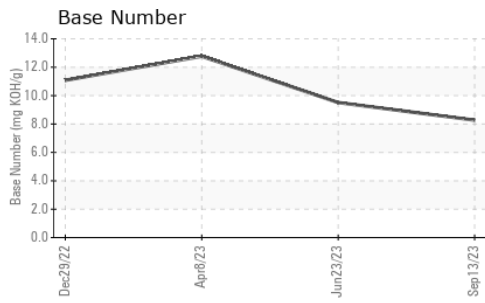
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	9	8	7
Potassium	ppm	ASTM D5185m	>20	5	5	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	19.0	15.7	11.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	38.3	33.3	24.2
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	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		5	4	4
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		143	135	129
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m		124	115	96
Calcium	ppm	ASTM D5185m		5224	4884	4463
Phosphorus	ppm	ASTM D5185m		1155	1099	1007
Zinc	ppm	ASTM D5185m		1395	1313	1192
Sulfur	ppm	ASTM D5185m		5549	5334	4916
Oxidation	Abs/.1mm	*ASTM D7414	>25	28.2	22.0	15.5
Base Number (BN)	mg KOH/g	ASTM D2896		8.27	9.51	12.77
Visc @ 100°C	cSt	ASTM D445		16.5	15.8	15.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05957171
Lab Number : 05957171
Unique Number : 10658384
Test Package : MOB 2
Received : 20 Sep 2023
Tested : 25 Sep 2023
Diagnosed : 25 Sep 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)

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F: