



T R A A P
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
BOBCAT S510 SKID 21 (S/N B4RE11091)
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		TR05957159	TR05887543	TR05824523
Sample Date		Client Info		13 Sep 2023	23 Jun 2023	08 Apr 2023
Machine Age	hrs	Client Info		1770	1529	1300
Oil Age	hrs	Client Info		1200	1000	720
Filter Age	hrs	Client Info		1200	1000	720
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 for time on oil.

Iron	ppm	ASTM D5185m	>100	46	30	21
Chromium	ppm	ASTM D5185m	>20	2	2	1
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	8	8	4
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	14	10	18
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

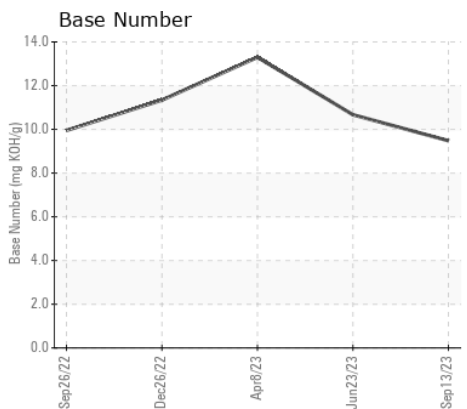
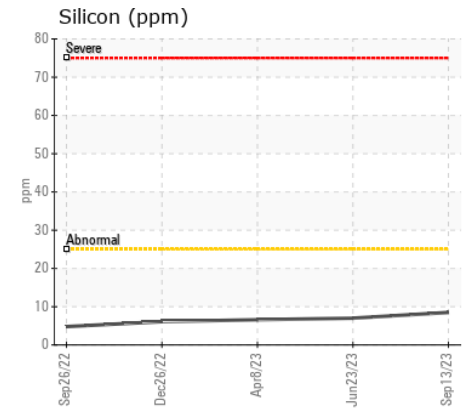
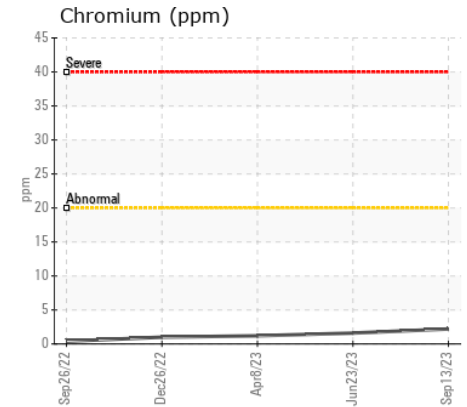
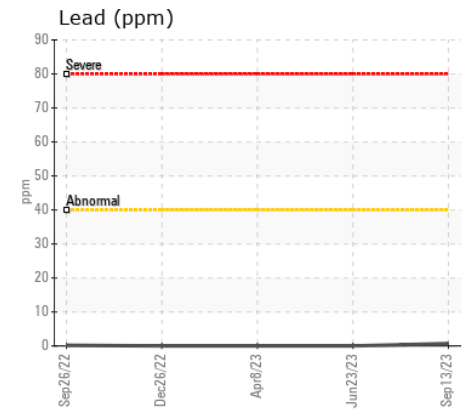
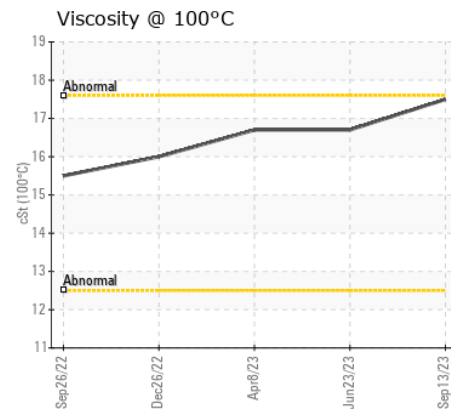
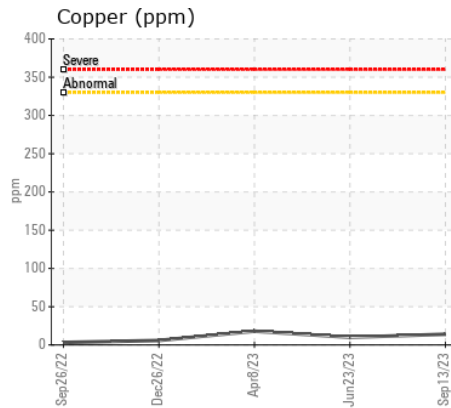
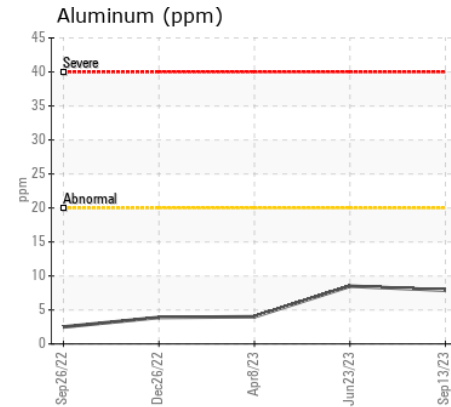
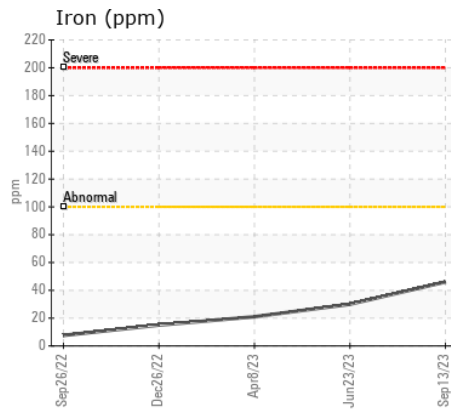
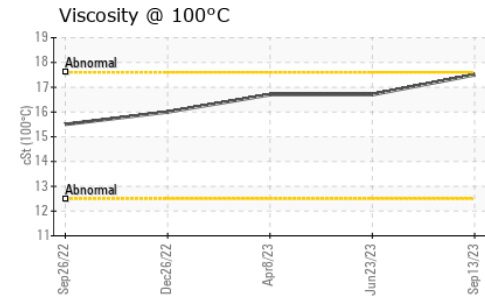
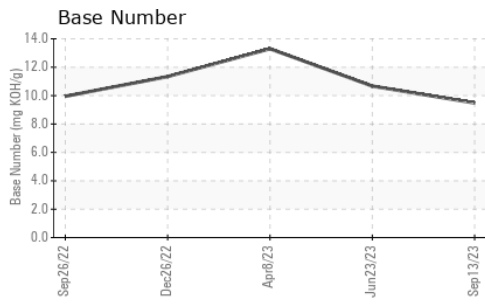
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	8	7	7
Potassium	ppm	ASTM D5185m	>20	4	3	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	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	20.2	15.2	12.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	39.3	31.4	23.9
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		2	6	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		140	130	122
Manganese	ppm	ASTM D5185m		1	1	1
Magnesium	ppm	ASTM D5185m		42	35	32
Calcium	ppm	ASTM D5185m		5396	5115	4574
Phosphorus	ppm	ASTM D5185m		1148	1097	975
Zinc	ppm	ASTM D5185m		1372	1321	1173
Sulfur	ppm	ASTM D5185m		5669	5908	4962
Oxidation	Abs/.1mm	*ASTM D7414	>25	30.8	23.6	16.6
Base Number (BN)	mg KOH/g	ASTM D2896		9.48	10.67	13.30
Visc @ 100°C	cSt	ASTM D445		17.5	16.7	16.7



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR05957159
Lab Number : 05957159
Unique Number : 10658372
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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